Construction Solicitation #69303,1 (BID)

Residential Sound Insulation Program Phase 19A

Specification Number:1315458A

Required for use by: CHICAGO DEPARTMENT OF AVIATION

Bid/Proposal Submittal Date and Time: 11:00 AM Central Time, 29-JUN-2026

Deadline for Questions:
Buyer: KNIGHT JR, DERRICK
Email Address: derrick.knightJr@cityofchicago.org
Phone Number: 312-744-8214
Pre-Solicitation Conference Date and Time: N/A
Pre-Solicitation Conference Location: No Pre-Bid Conference
Site Visit Date & Time: N/A
Site Visit Location: N/A

Please submit your response to:

http://www.cityofchicago.org/eProcurement
iSupplier vendor portal registration is required.
Allow 3 business days to complete registration.

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1 Header Information

1.1 General Information

Title	**Specification:1315458A Residential Sound Insulation Program Phase 19A**
Description	**Residential Sound Insulation Program Phase 19A**
Amendment Date	**24-JUN-2026 16:39:12**
Amendment Description	**The Bid Funding strip has been changed from 751-HG24B71E to 2026-0751-085-4971-9071-HG26A71E**

Preview Date	**12-JUN-2026 09:21:09**	Open Date	**12-JUN-2026 09:21:09**
Close Date	**11:00 AM Central Time, 29-JUN-2026**	Award Date	**Not Specified**
Time Zone	**Central Time**	Buyer	**KNIGHT JR, DERRICK**
Quote Style	**Sealed**	Email	**derrick.knightJr@cityofchicago.org**
Event	**Construction**	Outcome	**Blanket Purchase Agreement**

1.2 Terms

Effective Start Date	**Not Specified**	Effective End Date	**Not Specified**
Ship-To Address	**085- O'HARE 11601 W. TOUHY Chicago, IL 60666 United States**	Bill-To Address	**085- O'HARE 11601 W. TOUHY Chicago, IL 60666 United States**
Payment Terms	**IMMEDIATE**	Carrier	
FOB		Freight Terms	
Total Agreement Amount (USD)	**Not Specified**	Minimum Release Amount (USD)	**Not Specified**

1.3 Requirements

<B>KEY SOLICITATION PARAMETERS</B>
BID DEPOSIT: Required. ..... Type **No Response Required**
PERFORMANCE BOND: Required. ..... Type **No Response Required**
CITY BUSINESS PREFERENCE: ..... Type **No Response Required**
LOCAL MANUFACTURE PREFERENCE: ..... Type **No Response Required**
ALTERNATIVE FUEL VEHICLE PREFERENCE: ..... Type **No Response Required**
CONTRACT SPECIFIC GOALS: DBE 0 Percent Goals. ..... Type **No Response Required**
FUNDING SOURCE: Federally Funded. ..... Type **No Response Required**
FUND NUMBER: 2026-0751-085-4971-9071-HG26A71E .....

<B>KEY SOLICITATION PARAMETERS</B>
Type **No Response Required**
DPS UNIT:Aviation. ..... Type **No Response Required**
REVERSE AUCTION: ..... Type **No Response Required**
DRAWINGS: ..... Type **No Response Required** Value Type **Numeric Value only**
EXHIBITS: ..... Type **No Response Required** Value Type **Numeric Value only**
MAPS: ..... Type **No Response Required** Value Type **Numeric Value only**
CONTRACT TERM: 60 Months. ..... Type **No Response Required**
PRE-BID/PRE-PROPOSAL CONFERENCE: No Pre-Bid Conference. ..... Type **No Response Required**
<B>BIDDER EXCEPTIONS</B>
Any deviations from or exceptions to any provisions or requirements of the bidding documents, including but not limited to the specifications of the goods and/or services to be provided, must be noted here or in an attachment, with the exact nature of the change outlined in sufficient detail, and as provided in the contract terms and conditions "Trade Names and Substitutions," as applicable. Bidder must provide the reason for which deviations were made. Failure of a bidder to comply with the terms of this paragraph may be cause for rejection of its bid. ..... Type **Optional** ..... Provide your answer below
Enter the EDS number from your EDS Certificate and attach the certificate. ..... Value Type **Numeric Value only** ..... Provide your answer below
<B>COMMODITIES/WORK

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
This is a checklist of all supporting documents that must be attached to your bid response. Attach all documents specified below. After attaching, click "YES" to indicate that the attachment was completed. ..... Type **No Response Required**
- Bid Form properly completed. - (Construction) ..... Circle one from the response values below: YES NO
- Award Criteria Determination completed. - (Construction) ..... Circle one from the response values below: YES NO
- Schedule of Prices, completed and totaled. - (Construction) ..... Circle one from the response values below: YES NO
- Proposal Page completed, signed and notarized - (ALL) ..... Circle one from the response values below: YES NO
- Proposal To Be Completed By a Corporation - (ALL) ..... Circle one from the response values below: YES NO
- Proposal To Be Completed By a Partnership - (ALL) ..... Circle one from the response values below: YES NO
- Proposal To Be Completed By a Joint Venture - (ALL) ..... Circle one from the response values below: YES NO
- Proposal To Be Completed By a Sole Proprietor - (ALL) ..... Circle one from the response values below: YES NO
- Bid Execution Page - (ALL) ..... Circle one from the response values below: YES NO
- Performance Bond (Construction) ..... Circle one from the response values below:

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
YES NO
- Request for a reduction or waiver of MBE/WBE goals - (ALL) ..... Circle one from the response values below: YES NO
- Certificate of Filing of Economic Disclosure Statement and Affidavit (EDS) - (ALL) ..... Circle one from the response values below: YES NO
- Certificate of Insurance ..... Circle one from the response values below: YES NO
BID INCENTIVE / PREFERENCE AFFIDAVIT(S) ..... Type **No Response Required**
- Local Manufacture Affidavit - (ALL) ..... Circle one from the response values below: YES NO
- Chicago Business Affidavit - (ALL) ..... Circle one from the response values below: YES NO
- Small Business/Veterans Preference Joint Venture - (ALL) ..... Circle one from the response values below: YES NO
- Alternatively Powered Vehicles affidavit - (ALL) ..... Circle one from the response values below: YES NO
- Copy of current Registration for Authority to Deal in Vehicles issued by the Illinois Secretary of State (Vehicle/Heavy Equipment) ..... Circle one from the response values below: YES NO
- Evidence validating the Contractor’s current status of authorized dealer or distributor of the manufacturer of the proposed vehicles and/or parts (Vehicle/Heavy Equipment) ..... Circle one from the response values below: YES NO

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
- Literature / Data (i.e. Manufacturer's published literature for the proposed vehicle) (if required) (Vehicle/Heavy Equipment) ..... Circle one from the response values below: YES NO
- Manuals, Certificates, Applications(if required) ..... Circle one from the response values below: YES NO
- Bidder Contact Information - (ALL) ..... Circle one from the response values below: YES NO
- Bidder qualifications and/or certifications, permits, licenses, vehicle stickers, etc. (if required) ..... Circle one from the response values below: YES NO
- Affidavit of Uncompleted Work (Construction) ..... Circle one from the response values below: YES NO
- Affidavit of Availability (Construction) ..... Circle one from the response values below: YES NO
- Department of Procurement Services Bid Bond (Construction) ..... Circle one from the response values below: YES NO
- Contractor’s Affidavit Regarding Removal of All Waster Materials and Identification of all Legal Dump Sites (Construction) ..... Circle one from the response values below: YES NO
- Schedule AP: Letter of Intent to Hire/Sponsor Union Apprentices (Construction) ..... Circle one from the response values below: YES NO
- Exhibit D, DBE Requirement for Bidder/Proposer List completed (Construction) ..... Circle one from the response values below: YES NO
- Schedule B - MBE/WBE Affidavit of Joint Venture - (ALL)

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
.....
Circle one from the response values below: YES NO
- Schedule C-1 - – MBE/WBE Letter of Intent To Perform As a Subcontractor or Supplier - (ALL)
.....
Circle one from the response values below: YES NO
-Schedule D-1 - Compliance Plan Regarding MBE and WBE Utilization - (ALL)
.....
Circle one from the response values below: YES NO
- Schedule F - Report of Subcontractor Solicitations - (Construction)
.....
Circle one from the response values below: YES NO
- Schedule H -Documentation of Good Faith Efforts (Construction)
.....
Circle one from the response values below: YES NO
- Request for Full or Partial Waiver - (ALL)
.....
Circle one from the response values below: YES NO
- Letters of Certification for all M/WBE's - (ALL)
.....
Circle one from the response values below: YES NO
DBE DOCUMENTS – CONSTRUCTION (Federal)
.....
Type **No Response Required**
- Schedule B — DBE Affidavit of Joint Venture (Construction)
.....
Circle one from the response values below: YES NO
- Schedule C — Letter of Intent from DBE (Construction)
.....
Circle one from the response values below: YES NO
- Schedule D — Affidavit of Prime Contractor-DBE (Construction)
.....
Circle one from the response values below: YES NO

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
- Schedule F – Report of Subcontractor Solicitations – (Construction) ..... Circle one from the response values below: YES NO
- Schedule H – Documentation of Good Faith Efforts (Construction) ..... Circle one from the response values below: YES NO
- DBE Full or Partial Waiver Requested - (Construction) ..... Circle one from the response values below: YES NO
- Current Letter of Certification from the City of Chicago or Cook County for Bidder and any other MBE/WBE participant(s) ..... Circle one from the response values below: YES NO
- Schedule B-2 - (Joint Venture) ..... Circle one from the response values below: YES NO
- Schedule C-2 ..... Circle one from the response values below: YES NO
- Schedule D-2 ..... Circle one from the response values below: YES NO
- Schedule B-6 - Affidavit of SBE Joint Venture ..... Circle one from the response values below: No Yes
- Schedule C-6-P - Letter of Intent to Perform as a Prime Contractor ..... Circle one from the response values below: No Yes
- Schedule C-6-S - Letter of Intent to Perform as a Supplier or Subcontractor ..... Circle one from the response values below: No Yes
- Schedule D-6 - Affidavit of Prime Contractor SBI-2 Compliance Plan

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
..... Circle one from the response values below: No Yes
- Letters of Certification for all SBE's ..... Circle one from the response values below: No Yes
- Schedule B-7- Affidavit of MSB Joint Venture ..... Provide your answer below
- Schedule C-7-P - Mid-Sized Business Enterprise (MSB) Letter of Intent to Perform as Prime Contractor ..... Provide your answer below
- Schedule C-7-S Mid-Sized Business Enterprise (MSB) Letter of Intent to Perform as Subcontractor or Supplier ..... Provide your answer below
- Schedule D-7 - Affidavit of Prime Contractor Regarding Mid-Sized Business Initiative Compliance Plan ..... Provide your answer below
- AFFIDAVIT OF MID-SIZED BUSINESS STATUS ..... Provide your answer below

SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST</B>
- If you are not bidding a specific line(s) within a Group, enter a price of $0.0000000001 into the unit price field of the bid line(s). Please comply with other solicitation provisions, if any, requiring bidding of all lines in order for your bid to be considered responsive. ..... Type **No Response Required**

1.4 Attachments

Name	Data Type	Description
Attachment 01: Book One	File	
Attachment 02: Book Two	File	
Attachment 03: Book Three	File	
Attachment 04: Addendum 01	File	

1.5 Response Rules

- ☐ Solicitation is restricted to invited suppliers
- ☐ Suppliers are allowed to view other suppliers' contract terms, notes and attachments
- ☐ Suppliers are allowed to respond to selected lines
- ☒ Suppliers are allowed to provide multiple responses
- ☐ Buyer may close the solicitation before the Close Date
- ☐ Buyer may manually extend the solicitation while it is open

2 Price Schedule

2.1 Line Information

Display Rank As **No indicator displayed**
Ranking **Price Only**
Cost Factors **None**

Line	Item, Rev / Job	Target Quantity	Unit	Unit Price	Amount
1 REQ. FOR RE-BID OF NEW CDA CONST. PROJ.: PHASE 19A OF RSIP AT ORD; 200 HOMES; PROJ. #OH8057.20-19; FEDERALLY FUNDED.		1	USD		

2.2 Line Details

2.2.1 Line 1 REQ. FOR RE-BID OF NEW CDA CONST. PROJ.: PHASE 19A OF RSIP AT ORD; 200 HOMES; PROJ. #OH8057.20-19; FEDERALLY FUNDED.

Category **96820.**
Shopping Category **Not Specified**
Minimum Release Amount (USD) **Not Specified**
Estimated Total Amount (USD) **Not Specified**
Start Price (USD) **Not Specified**
Target Price (USD) **Not Specified**

CITY OF CHICAGO
DEPARTMENT OF AVIATION
CHICAGO O'HARE INTERNATIONAL AIRPORT
RESIDENTIAL SOUND INSULATION PROGRAM O'HARE PHASE 19A

PART ONE OF THREE
INSTRUCTIONS AND EXECUTION DOCUMENTS
SPECIFICATION NUMBER: 1315458A

CDA PROJECT NUMBER: OH8057.20-19
GRANT NUMBER: TBD

CITY OF CHICAGO
Brandon Johnson
Mayor

CHICAGO DEPARTMENT OF AVIATION
Michael J. McMurray
Commissioner

Issued by:

DEPARTMENT OF PROCUREMENT SERVICES
Sharla D. Roberts
Chief Procurement Officer

June 12, 2026
ISSUED FOR BID

INSTRUCTIONS AND EXECUTION DOCUMENTS

ADVERTISEMENT FOR BIDS

ATTACH
LEGAL
ADVERTISEMENT
HERE

BID PACKAGE CONTENTS
Specification Number: 1315458A
Project Number: OH8057.20-19
Grant Number: TBD

- **Appendix 1 - eProcurement**
- **Part One of Three - Instructions and Execution Documents**
- **Part Two of Three - General Conditions**
- **Part Three of Three - Technical Specifications**

APPENDIX 1
ePROCUREMENT

This is an eProcurement Bid. Bids are to be submitted through the City's "iSupplier" system, the City's eProcurement computer system for electronic bidding and providing Contractors with access to Contract, ordering and payment information for their City Contracts. The following provisions apply to this bid and supersede any conflicting provisions in Parts One ("Instructions and Execution Documents"), Part Two ("General Conditions"), and Part Three ("Technical Specifications").

1. Obtaining the Bid Documents

Bidders are solely responsible for obtaining all Bid Documents, including Clarifications and Addenda. Documents may be downloaded from the Department of Procurement Service's ("DPS") website at the following URL:

http://www.cityofchicago.org/eProcurement

Click on "Current Bids".

In order to receive notice of clarifications and addenda, Bidders must be registered for and log-in to iSupplier, search for the solicitation number, open the solicitation for review, and accept the disclaimer. This will sign Bidders up for notifications.

Bid Document Holders are listed on the Bid and Bond Room Opportunity Take Out List. The Opportunity Take Out List is public information and is posted to the DPS web site at www.cityofchicago.org/TOL. To find Opportunity Take Out lists go to "GetStarted Online", and search by the specification number.

2. Clarifications and Addenda

The City will send an email notification to suppliers who have indicated intent in a Bid that an addendum or clarification has been issued. The Clarifications and Addenda incorporated into the electronic Bid Document available at the following URL:

https://www.cityofchicago.org/eProcurement

Suppliers that have indicated interest in a Bid will receive email notification that an addendum or clarification has been issued. There may be multiple Clarifications and Addenda. Failure to obtain Clarifications and/or Addenda, for whatever cause, will not relieve a Bidder from the obligation to bid according to, and comply with any changed or additional terms and conditions contained in the Clarifications and Addenda.

Electronic Acknowledgement of Clarifications and/or Addenda is mandatory to submit an electronic Bid. Any harm to the Bidder resulting from failure to obtain all necessary documents, for whatever cause, will not be valid grounds for a protest against Award(s) made under this bid solicitation.

3. Questions Regarding the Bid Documents, Bidder Inquiry Deadline

Bidder questions will not be allowed.

4. Completion of the Bid Documents

Each Bidder must complete all of the forms listed on the Bid Submittal Checklist (with the exception of the Proposal Pages) in the Requirements section and scan and upload them as attachments to the electronic bid submission. Bidders may not change any of the Bid Documents. Any changes made by a Bidder to the Bid Documents may result in rejection of the Bid, and will not be binding upon the City.

Bidders must submit their pricing electronically by filling out bid lines in the electronic Price Schedule in the iSupplier system.

Bidders must use the Bid Execution Page that is appropriate for their form of business organization (e.g., sole proprietorship, corporation, partnership, or joint venture). The individual(s) that sign the Bid Execution Page on

behalf of the Bidder, by their signature, represents, and warrants to the City that such individual is authorized to execute bids and Contracts on behalf of the Bidder, and that the Bidder agrees and will be bound to all of the terms and conditions of the Bid Documents and, upon execution by the City, the Contract Documents. Signatures must be sworn before a Notary Public. The form must be printed, signed, notarized, and scanned then uploaded as an attachment to the electronic bid submission.

5. Date, Time, and Place

Bids are to be submitted electronically to the DPS on the date and prior to the time stated on the Cover Page of the Bid Documents, or any addendum issued by the City to change such Bid Opening Date. No bid will be accepted after the Bid Opening Date. The time of the receipt of the bid will be determined solely by the "Time of Quote", generated by the iSupplier system.

6. Bid Deposit

Two percent of the Total Base Bid. When submitting an electronic bid, scan and upload a copy of your bid deposit with your submittal documents. The first and second apparent low Bidders will be required to deliver their original and properly executed bid deposit to the Bid and Bond Room within two Business Days following the Bid Opening Date.

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DOCUMENT SUBMITTAL CHECKLIST
(Federally Funded)

This checklist is intended to assist Bidders but does not necessarily reference all documents required in this particular Specification. Bidders should review this entire Part One ("Instructions and Execution Documents"), for additional requirements. Missing forms may invalidate a bid.

1. Bid Form Properly completed. _____
2. Award Criteria Determination completed _____
3. Schedule of Prices completed and totaled. _____
4. Appropriate Proposal Page completed, signed, and notarized. _____
5. Department of Procurement Services Bid Bond/Bid Deposit _____
6. Addenda (if any) acknowledged on the Proposal Page. _____
7. Online EDS Number Provided. _____
8. Online EDS Certificate of Filing. _____
9. DBE Schedules completed. _____
    a. Schedule B: Affidavit of DBE/Non-DBE Joint Venture, if applicable, completed, signed, and notarized. (Optional). _____
    b. Schedule C: Letter(s) of Intent from DBE to perform as Subcontractor, Supplier, and/or Consultant, if applicable; completed and signed. (Optional) _____
    c. Schedule D: Affidavit of Prime Contractor Regarding Disadvantaged Business Enterprises (DBEs), completed and signed, and notarized. (Optional) _____
    d. Schedule F: Report of Subcontractor Solicitations, completed, signed, and notarized. _____
    e. Exhibit D, completed. _____
10. Contractor's Statement of Experience and Financial Condition on Field. (if requested by Chief Procurement Officer). _____
11. Affidavit of Uncompleted Work completed, signed, and notarized. _____
12. Proper Insurance Certificate provided. _____
13. Contractor's Affidavit regarding Removal of All Waste Materials and Identification of all Disposal Facilities. _____
14. Affidavit of Chicago Business. _____
15. Certification of Buy American Compliance for Total Facility. _____

16. Certification of Trade Restriction. _____

17. Certification Regarding Debarment and Suspension. _____

18. Certification Regarding Lobbying and Influencing of Federal Employees. _____

19. Certification of Non-Segregated Facilities. _____

20. Certification of Tax Delinquency and Felony Conviction. _____

21. Sexual Harassment Policy Affidavit. _____

PRE-BID CONFERENCE NOTICE

A pre-bid conference will not be conducted for this solicitation.

Bidder questions will not be allowed.

Project Name:	Residential Sound Insulation Program, O'Hare Phase 19A
Specification Number:	1315458A
CDA Project Number:	OH8057.20-19
Grant Number:	TBD

PLANS AND SPECIFICATIONS AVAILABLE AT:

CITY OF CHICAGO DEPARTMENT OF PROCUREMENT SERVICES
http://www.cityofchicago.org/eProcurement

PRE-BID CONFERENCE LOCATION MAP
AVIATION ADMINISTRATION BUILDING (AAB)
10510 W. ZEMKE ROAD, BUILDING 804
CHICAGO, ILLINOIS 60666



SPECIAL NOTICE REGARDING
DISADVANTAGED BUSINESS ENTERPRISE COMMITMENT

NOTICE! NOTICE! NOTICE!
NOTICE! NOTICE! NOTICE!

All Bidders are directed to carefully examine this Contract's DBE Special Conditions for Federal Aviation Administration ("FAA")/Federal Transit Administration ("FTA")/Federal Highway Administration ("FHWA")/Illinois Department of Transportation ("IDOT") Funded Contracts, Construction, Services, Task Order, and Supply.

Notwithstanding contrary terms below, if there is no goal set for DBE participation on this contract (when the goal is 0%), Bidders are not required to submit a DBE compliance plan (Schedules D, D-1, or D-3 and Schedules C, C-1, or C-3) or Letters of Certification from proposed DBE firms, bidders proposing joint ventures are not required to submit Schedule B and the proposed joint venture agreement, and all Bidders are not required to submit documentation of good faith efforts to obtain DBE participation for this Contract or to otherwise make good faith efforts under 49 CFR 26.53.

All Bidders, however, must submit a completed Schedule F report pursuant to 49 CFR 26.11.

Special notice should be given to the following paragraphs extracted from Part One ("Instructions and Execution Documents"), Section 5 ("DBE Conditions for FAA/FTA/FHWA (IDOT) Funded Contracts, Construction, Services, Task Order Services, and Supply"), paragraph 1.6 ("Procedure to Determine Bid/Proposal Compliance").

> Schedule B: Affidavit of DBE/Non-DBE Joint Venture
> Where the Bidders DBE proposal includes the participation of any DBE firm as a joint venturer, prime, or Subcontractor, the Bidder must submit, together with its bid, a Schedule B with an attached copy of the joint venture Agreement proposed among the parties.
>
> Schedule C: Letter of Intent to Perform as a Subcontractor, Subconsultant, or Material Supplier
> A Schedule C, executed by the DBE firm (or Joint Venturer) must be submitted by the Bidder for each DBE included on its Schedule D.
>
> Schedule D: Affidavit of Prime Contractor Regarding DBE's
> Bidders must submit, together with their bid, a completed Schedule D committing them to the utilization of each listed DBE firm.
>
> Except in cases where the Bidder has submitted a complete request for a waiver or variance of the DBE Goal See Part One, Section 5, paragraph 1.7 ("Good Faith Efforts"), the Bidder must commit to the expenditure of a specific dollar amount of participation by each DBE firm included in their Schedule D. The total dollar commitment to proposed DBE firms must at least equal the DBE goal. Bidders are responsible for calculating the dollar equivalent of the DBE goal as a percentage of their total base bid.
>
> Schedule F: Report of Subcontractor Solicitations
> All Bidders must submit, together with their bid, a completed Schedule F report containing information on all Subcontractors, DBEs, and Non-DBEs, solicited for participation in this Contract.
>
> Letters of Certification
> A copy of each proposed DBE firm's Letter of Certification from the City or the Illinois Department of Transportation should be submitted with the bid if currently certified.

Bidders who fail to submit, together with their bid, either complete information required per Part One, Section 5, pages S5-25 through S5-40, of the DBE Special Conditions (committing to the full achievement of the Contract's

DBE goals), or a completed request for a waiver of variance of DBE goals per Part One, Section 5, paragraph 1.7 ("Good Faith Efforts"), may be deemed non-responsive and their bid may be rejected.

NOTICE! NOTICE! NOTICE!
NOTICE! NOTICE! NOTICE!

PROJECT OVERVIEW

Project Name:	**Residential Sound Insulation Program O'Hare Phase 19A**
Specification Number:	**1315458A**
CDA Project Number:	**OH8057.20-19**
Grant Number:	**TBD**

General Description of the Work:

The Work consists of furnishing all means, methods, labor, materials, tools, equipment, transportation, and services for performing the Sound Insulation Work as shown on the Construction Modifications and as described in the Technical Specifications, including all appurtenant Work and accessories, to the complete satisfaction of, approval and acceptance by the City. This includes, but is not limited to; alterations and modifications of approximately 220 dwelling units in the area surrounding Chicago O'Hare International Airport ("Homes"), consisting of single-family and multi-family Residences in various communities.

Homes are single-family or multi-family structures that include apartments and condominiums, and vary in construction type, external materials, and style. The residential construction documents for the Work on the Homes will be provided to Contractor(s) with the Notice to Proceed for the Contract. Additional scope information is included in Part One, Section 6 ("Project Description and Special Procedures"). A general location map of Homes is included in Part One, Section 7 ("General Location of Homes").

This description of Work is intended to be general in nature and is neither a complete description nor a limitation on the Work to be performed. Contractor must perform all Work described in the Contract Documents or reasonably inferable as necessary to produce the results specified therein, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

Estimated Project Cost:	$18,700,000 - $19,700,000
Advertisement Date:	June 12, 2026
Pre-Bid Conference Date/Time:	N/A
Question Cut-Off Date/Time:	N/A
Bid Opening Date/Time:	June 29, 2026, at 11:00 a.m., CDT Bid and Bond Room, Room 103, City Hall, Chicago, Illinois 60602

The Bidder must complete and submit an Electronic Bid prior to the bid due date. An electronic bid must be submitted through the City of Chicago's website at http://www.cityofchicago.org/eprocurement, on or before the due date and time stated below. The City's system will not accept electronic bids after the due date and time. Bidders must register for a log-in account to submit an electronic bid. Please allow up to three business days for creation of your log-in account. Paper bids will not be accepted. All Bids will be opened and publicly read aloud.

Paper bids will not be accepted. All Bids will be opened and publicly read aloud.

Bids are due in the office of the Chief Procurement Officer, Department of Procurement Services, http://www.cityofchicago.org/eProcurement, at **11:00 a.m. CDT on June, 29, 2026.** The bid opening will be live streamed on DPS' YouTube Channel DPS as City Hall remains closed to the public for bid openings.

Please submit your response to: http://www.cityofchicago.org/eProcurement.

iSupplier vendor portal registration is required. Allow three business days to complete registration.

The Contract Documents are available on DPS's website.

Bid Deposit/Bond:
For this Project, a bid deposit is required in the amount of two percent of the Contract Base Bid in the form of a bond, or the equivalent in cashier's check, money order or certified check.

DBE Goal: None / 0%
Per 49 CFR 26.51(h), under the DBE program, recipients of United States Department of Transportation financial assistance are prohibited from setting "any contract goals until the UCP that covers [the recipient] has completed the reevaluation process described in 49 CFR 26.111." Because the Illinois UCP has not completed the reevaluation process required by 49 CFR 26.111 as of the date this Contract was advertised for bidding, federal regulation prohibits setting DBE goals for this contract. Therefore, to maintain federal funding eligibility for the project, the contract DBE participation goal is expressed as 0%, indicating that no goal has been set.

Award of Contract:
Bids will be compared based on the Contract Base Bid, correctly computed, and a Contract, if Awarded, will be to the lowest responsible and responsive Bidder, as determined by the Chief Procurement Officer, in the amount of the Contract Base Bid.

SECTION 1
REQUIREMENTS FOR BIDDING AND INSTRUCTIONS FOR BIDDERS
(Federally Funded)

1. DEFINITIONS:

a. "Bidder" means a party that executes and submits the Contract Documents in connection with this invitation for bids.

b. "Chief Procurement Officer" ("CPO") means the chief executive of the DPS for the City of Chicago, and any representative duly authorized in writing to act on the CPO's behalf.

c. "Commissioner of Aviation" or "Commissioner" means the chief executive of the Department of Aviation for the City of Chicago, and any representative duly authorized in writing to act on the Commissioner's behalf.

d. "CDA" means the Chicago Department of Aviation.

e. "Contract" means any contract, purchase order, construction Project, or other agreement (other than a delegate agency contract or lease of real property or collective bargaining agreement) awarded by the City and whose cost is to be paid from funds belonging to or administered by the City.

f. "Contract Documents" are Part One ("Instructions and Execution Documents"), Part Two ("General Conditions"), Part Three ("Technical Specifications"), Project Requirements, any Addenda, reference standards promulgated by various agencies including Federal, State, or local government units, as well as any other specialized documents that are referred to in Part Three ("Technical Specifications").

g. "Construction Manager" or "CM" means the organization or entity(ies) that the City has retained to provide construction management services for the Residential Sound Insulation Program.

h. "MCC" means the Municipal Code of Chicago.

i. "NTP" means the Notice to Proceed. The Commissioner will provide written direction to the Contractor to commence its Work hereunder.

j. "Official Printed Copy" of the Contract Documents means a copy of the Contract Documents as they appear on the DPS website at http://www.chicago.gov./city/en/depts/dps/issupplier/current-bids.html.

k. Additional definitions are found in Part Two ("General Conditions").

2. COMPLIANCE WITH LAWS:

The Bidder will, at all times, observe and comply with all laws, ordinances, regulations, executive orders, and codes of Federal, State, City, and other government agencies, which affect the preparation of bids. The Bidder will reflect in its bid all costs of compliance with all such laws, ordinances, regulations, executive orders, and codes.

3. EXAMINATION BY BIDDER:

The Bidder will carefully examine all the Contract Documents before submitting its bid. The Bidder will also familiarize itself with the Part Three ("Technical Specifications") of the Contract Documents. If its bid is accepted, the Bidder will bear the cost for all errors in its bid resulting from its failure or neglect to comply with these Requirements for Bidding and Instructions in the Contract Documents.

4. BID DEPOSIT:

AMOUNT OF BID DEPOSIT: Two percent of Contract Base Bid.

If a bid deposit is required and not provided, the bid will be rejected. The bid deposit must be a bond, or the equivalent in cashier's check, money order, or certified check. Any bond must be executed by a surety authorized to do business in the State of Illinois, and it must be in the form provided by the CPO, an example of which is found herein in Part One, Section 5, pages S5-63 through S5-64 ("BID BOND"). All certified checks must be drawn on a responsible bank doing business in the United States and will be made payable to the order of the City of Chicago. **CASH OR COMPTROLLER'S CERTIFICATE IS NOT AN ACCEPTABLE FORM OF BID DEPOSIT.**

a. The bid deposit of all Bidders, except for the three lowest Bidders, will be returned shortly after the bid opening. Notwithstanding the foregoing, the CPO reserves the right to hold all bid deposits, if the intent is

to Award multiple Contracts for a requirement and/or if the three lowest responsible Bidders cannot be readily determined based on price, until all proposals have been evaluated.

b. The remaining bid deposits will be returned, with the exception of the bid deposit for the accepted bid, after the CPO has Awarded the Contract. The bid deposit for the accepted bid will be returned after the Contract has been Awarded and a satisfactory Performance and Payment Bond has been approved by the City, where such bond is required.

5. DOCUMENT DEPOSIT:

For this Project, Contract Documents will be available for download on the DPS website at http://www.cityofchicago.org/eProcurement. The initial set of Contract Documents will be provided to the Bidder at no cost. All Contract Documents are provided on the DPS website at http://www.cityofchicago.org/eProcurement, including Part One ("Instructions and Execution Documents"), and the remainder of the documents.

6. INTERPRETATION OF ESTIMATED QUANTITIES:

An estimate of quantities of Work to be done and materials to be furnished under these specifications is given on the Schedule of Prices pages. It is given only as a basis for comparison of bids and the Award of the Contract. The City does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith, nor will the Bidder plead misunderstanding, or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the Work. Payment to Contractor will be made only for the actual quantities of Work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in Part Two, Article X ("Changes in the Work"), without in any way invalidating the unit bid prices.

7. EXAMINATION OF SPECIFICATIONS AND CONTRACT DOCUMENTS:

The Bidder is expected to carefully examine the Contract Documents, specifications, and Contract forms. Bidders will satisfy themselves to the character, quality, and quantities of Work to be performed, materials to be furnished, and to the requirements of the proposed Contract. The submission of a bid will be prima facie evidence that the Bidder has made such examination and is satisfied to the conditions to be encountered in performing the Work and the requirements of the proposed Contract, plans, and specifications.

8. PREPARATION OF BID:

The Bidder will complete its bid by filling out and signing only one copy of the entire Part One ("Instructions and Execution Documents"). All applicable blank spaces on the bid page or pages must be correctly filled in, in ink or typewritten, the Bidder will state the price (written in ink or typed) which it proposes for each pay item. In case of conflict between unit prices and extended prices, the unit price, unless obviously incorrect, will govern. Failure to submit all required pages may result in rejection of the bid.

The Bidder will correctly sign the bid in ink. If the bid is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the bid will give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a bid as an agent will file evidence of their authority to do so and that the signature is binding upon the firm or corporation. See Appendix 1, eProcurement.

9. SUBMISSION OF BID:

See Appendix 1, eProcurement.

10. TERM OF BID:

a. The Bidder may withdraw its bid at any time prior to the date and time for bid opening. Thereafter, the Bidder may not withdraw or cancel its Bid for a period of 90 Calendar Days after the bid opening date.

b. The 90-day period will not be extended without the signed written consent of the Bidder to extend the bid on the same terms and conditions.

c. The 90-day period for bid withdrawal is tolled for any period of time that the Bidder requires to submit any necessary Contract document to the City including, but not limited to, bonds, Economic Disclosure Statements, Insurance Certificates, and compliance schedules.

11. QUALIFICATIONS OF BIDDERS:

a. The Award of the Contract will be made to the lowest responsive and responsible Bidder. The CPO reserves the right to request, and the Bidder must promptly provide evidence satisfactory to the CPO of the Bidder's responsibility. No Contract will be Awarded to any Bidder which is determined to be non-responsible in the sole discretion of the CPO.
b. Each Bidder will submit evidence of competency and evidence of financial responsibility to perform the Work to the City at the time of bid opening.
c. Evidence of competency, unless otherwise specified, will consist of statements covering the Bidder's past experience on similar Work, and a list of equipment and a list of key personnel that would be available for the Work.
d. Each Bidder (or if a joint venture, the Bidder's joint venturers) must furnish the City satisfactory evidence of their financial responsibility. Failure to provide such evidence may be a cause for rejection of the Bidder's bid. Evidence of financial responsibility, unless otherwise specified, will consist of either:
    i. Evidence that Bidder is prequalified with the Illinois State Highway Division and are on the current "Bidder's list" of the State of Illinois.
    ii. Submission of "Contractor's Statement of Experience and Financial Condition". This statement is available in the City's Bid and Bond Room.

12. RESPONSIVE AND RESPONSIBLE BIDDER:

a. A responsive bid conforms to all significant terms and conditions contained in the invitation for bid. It is the CPO's responsibility to decide if the exceptions taken by a Bidder to the solicitation are material or not and the extent of deviation the City is willing to accept.
b. A responsible Bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, financial and technical resources.

13. IRREGULAR BIDS:

Bids will be considered irregular for the following reasons:

a. If the bid is on a form other than that furnished by the City, or if the City's form is altered, or if any part of the proposal form is detached.
b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the bid incomplete, indefinite, or otherwise ambiguous.
c. If the bid does not contain a unit price for each pay item listed in the Schedule of Prices, except in the case of authorized alternate pay items, for which the Bidder is not required to furnish a unit price.
d. If the bid contains unit prices that are obviously unbalanced.
e. If the bid is not accompanied by the proposal guaranty/bid bond specified by the City.
f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The City reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the City and conforms to local laws and ordinances pertaining to the letting of construction Contracts.

14. DISQUALIFICATION OF BIDDERS:

A Bidder will be considered disqualified for any of the following reasons:

a. Submitting more than one bid from the same partnership, firm, or corporation under the same or different name.
b. Evidence of collusion among Bidders. Bidders participating in such collusion will be disqualified as Bidders for any future Work of the City until any such participating Bidder has been reinstated by the City as a qualified Bidder.

c. If the Bidder is considered to be in "default" for any of the following reasons:
   i. Failure to comply with any prequalification rules or regulations of the City, if such rules or regulations are cited, or otherwise included, in the Contract Documents as a requirement for bidding.
   ii. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former Contracts in force with the City at the time of bid opening.
   iii. Documented record of Contractor default under previous Contracts with the City.
   iv. Documented record of unsatisfactory Work on previous Contracts with the City or Sister Agency of the City.
   v. Debarred or otherwise ineligible for Contracting

15. CONSIDERATION OF BID:

After the bids are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the Schedule of Prices by the unit bid prices. If a Bidder's proposal contains a discrepancy between unit bid prices and extended prices, the unit bid price, unless obviously incorrect, will govern.

Until the Award of a Contract is made, the City reserves the right to reject a Bidder's bid for any of the following reasons:

a. If the bid is irregular as specified in "Irregular Proposals", above.
b. If the Bidder is disqualified for any of the reasons specified in "Disqualification of Bidders", above.

In addition, until the Award of a Contract is made, the City reserves the right to reject any or all bids, waive technicalities, if such waiver is in the best interest of the City and is in conformance with applicable State and local laws or regulations pertaining to the letting of construction Contracts, advertise for new bids, or proceed with the Work otherwise. All such actions will promote the City's best interests.

When, in the CPO's opinion, the best interest of the City will be served, the CPO may, in her sole discretion, reject any, or all, bids or disregard any informality in the bids or bidding process.

16. DISCREPANCIES AND OMISSIONS:

A bidder who discovers discrepancies or omissions with the bid documents will immediately notify the City of the matter via the email address for bid questions (see page ii). A bidder that has doubt as to the true meaning of a project requirement may submit to the City a written request for interpretation no later than the deadline for bid questions.

Any interpretation of the project bid documents by the City will be by written addendum issued by the City. The City will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

17. RESPONSIBILITY OF BIDDER:

a. The Award of the Contract will be made to the lowest responsive and responsible Bidder.
   The CPO reserves the right to request, and the Bidder must promptly provide evidence satisfactory to the CPO of the Bidder's responsibility. No Contract will be Awarded to any Bidder which is determined to be non-responsible in the sole discretion of the CPO.
b. If requested by the CPO, the Bidder (or if a joint venture, the Bidder's joint venturers) must complete a "Contractor's Statement of Experience and Financial Condition". This statement is available in the City's Bid and Bond Room. Failure to complete and return this statement may be a cause for rejection of the Bidder's bid.

18. BALANCED BIDS:

Bidder's pricing for each line item must carry its full share of the cost of Work, plus its share of overhead and profit. Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. The CPO reserves the right to reject any bid that is materially unbalanced.

19. AWARD OF CONTRACT

If the City elects to proceed with an award of contract, the City will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

20. CANCELLATION OF AWARD

The City reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty/bid bond, at any time before a contract has been fully executed by all parties and is approved by the City in accordance with "Approval of Contract" section below.

21. EXECUTION OF CONTRACT

The successful bidder will sign (execute) the necessary agreements for entering into the contract and return the signed contract to the City, within seven calendar days from the date mailed or otherwise delivered to the successful bidder.

Failure of the successful bidder to execute the contract within the period specified above and furnish an acceptable surety bond or bonds within the period specified in the section "Performance and Payment Bond" below will be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the City.

22. APPROVAL OF CONTRACT

Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the City will complete the execution of the contract in accordance with local laws or ordinances and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor will constitute the City's approval to be bound by the successful bidder's proposal and the terms of the contract.

23. PERFORMANCE AND PAYMENT BOND:

a. The successful Bidder or Bidders must, within seven Calendar Days of receipt of written notice from the City, furnish a Performance and Payment Bond in the amount of $3,600,000.00 or 10 percent of the Contract value whichever is greater. The Bond must be on Contractor's Performance and Payment Bond, form, issued by a surety that is satisfactory to the CPO and City Comptroller, and complies with the provisions of 30 ILCS 550/1, *et seq*., as amended, and Section 2-92-030 of the MCC .
b. If the Performance and Payment Bond is not so furnished, the bid will be rejected, and the bid deposit will be forfeited by the City. The forfeiture will not limit any other City remedies against the Bidder.

NOTE: Section 2-92-040 of the MCC requires that Contractor's surety be listed as a certified surety in the current edition of U.S. Treasury Department Circular 570 and have an underwriting limitation in that publication in an amount equal to or greater than the amount bid by Contractor. This Circular 570 is available on the Internet at https://www.fiscal.treasury.gov/surety-bonds/circular-570.html. Co-sureties may be accepted in the sole discretion of the CPO, but each surety must individually meet the foregoing requirement. Reinsurance may not be used to achieve a sufficient underwriting limitation.

24. INTERPRETATION OF CONTRACT DOCUMENTS:

a. Bidders may only rely upon written addenda issued by the Chief Procurement Officer. Oral explanations or interpretations will not be binding with the City.
b. The order of precedence of the component parts of the Contract Documents will be as follows:
    i. General Conditions for Federally Funded Projects
    ii. Instructions and Execution
    iii. All other Contract Documents
c. The foregoing order of precedence will govern the interpretation of the Contract in all cases of conflict or inconsistency therein.

25. SUBSTITUTION:

Reference to a specific manufacturer, trade name, or catalog is intended to be descriptive but not restrictive and only to indicate to the Bidder items that will be satisfactory. The Bidder must, if Awarded the Contract, provide the items specified in the Contract Documents when those items are specified by manufacturer's trade name in Part Three ("Technical Specifications"), unless equivalent alternatives have been proposed as described below. The Bidder may bid another product(s) provided that the alternative product is on a separate sheet of paper designated as such and is supported by the type of information listed in Part Two, Article VI, Section E.3 ("Substitution of Materials"), in order to facilitate the CPO's evaluation of such product. The CPO may, in their sole discretion, accept an alternate bid for a specified item, provided the alternate item so bid is, in the CPO's sole opinion, the equivalent of the item specified in the Contract Documents. An alternate that is not equivalent to the specified item may render the bid non-responsive. Unless the alternate item is identified, it is understood that the Bidder proposes and will be required to provide the specific item described in the Contract Documents. No substitution of specified items will be allowed thereafter except as provided in Part Two, Article VI, paragraph E.3 ("Substitution of Materials").

26. TAXES:

With few exceptions, certain Federal Excise Tax does not apply to materials purchased by the City of Chicago. The Illinois Retailers' Occupation Tax, Use Tax, and Municipal Retailers' Occupation Tax also do not apply to materials or services purchased by the City of Chicago. The price or prices quoted herein will include all other Federal and/or State, direct and/or indirect taxes which apply. The prices quoted herein will agree with all Federal Laws and Regulations.

27. INSURANCE:

Receipt of a satisfactory and duly executed certificate of insurance is a condition precedent to the Award of the Contract; however, Bidders are not required to submit the certificate of insurance with their bid. The certificate of insurance found herein must be executed by an insurance company authorized to do business in the State of Illinois and acceptable to the City in accordance with the insurance requirements set forth in Part One, Section 2 ("Contract Insurance Requirements"). The insurance certificate must list, at a minimum, the types and limits of insurance set forth herein under the Contract Insurance Requirements.

28. AFFIDAVIT OF UNCOMPLETED WORK:

Bidders are required to submit, together with their bid, a complete and properly executed "Affidavit of Uncompleted Work" found in Part One, Section 5, pages S5-60 through S5-62, showing all uncompleted Contracts either as a Contractor or Subcontractor.

29. ACKNOWLEDGEMENT OF FEDERAL FUNDS:

The Work in this Contract, which is being undertaken and accomplished by the U.S. DOT, FAA, and the City of Chicago Department of Aviation, hereinafter called the Co-Sponsors. In accordance with the terms and conditions of a Grant Agreement between the Co-Sponsors and the United States, under the Airport and Airway Improvement Act of 1982 (Public Law 97-248, Title V, 501, *et seq.*, September 3, 1982, 96, Stat. 671, codified at 49 U.S.C. 2201, *et seq*.), and FAA Part 152. Regulations (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs of the Project that are determined to be allowable Project costs under the Act. The United States is not a party to this Contract and no reference in this Contract to FAA or any representative thereof, or to any rights granted to the FAA or any representatives thereof, or the United States, by the Contract, makes the United States a party to this Contract.

30. ECONOMIC DISCLOSURE STATEMENT AND AFFIDAVIT (EDS):

Contractor will be required to execute an Economic Disclosure Statement and Affidavit, ("EDS"), including the Disclosure of Retained Parties in the Economic Disclosure Statement and Affidavit as required by Executive Order 97-1. Refusal to execute such disclosure will result in the CPO declaring the Bidder non-responsible and the City retaining the bid deposit. Moreover, if a Bidder is deemed non-responsible under this provision, the Bidder's status as a non-responsible Bidder may apply to the Bidder's subsequent bids.

31. ADDITIONAL DBE REQUIREMENTS:

Contractor, sub recipient or Subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor will carry out applicable requirements of 49 CFR Part 26, in the Award and administration of DOT-assisted Contracts. Failure by Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the City deems appropriate. Contractor must include the provision set forth in the paragraph above in all of its subcontracts.

32. DBE REQUIREMENT FOR BIDDER/PROPOSER LIST:

Pursuant to 49 CFR 26.11, the City is required to maintain a Bidders list, consisting of all firms bidding or proposing on prime Contracts and bidding or quoting subcontracts on DOT-assisted Contracts. The Bidder/proposer is required to provide a list of all DBE and non-DBE Subcontractors who bid or quote price information on this Contract. Failure to cooperate may result in the Bidder/proposer being deemed non-responsible in this and future bids. The Bidder/proposer is required to submit Part One, Section 5, pages S5-58 through S5-59 ("DBE Requirement for Bidder/Proposer List"), for itself and all DBE and non-DBE Subcontractors who bid or quote price information on this Contract.

33. NON-APPROPRIATION OF FUNDS:

This Contract can be terminated upon 30 Days written notice by the CPO in the event that no funds or insufficient funds are appropriated and budgeted in any fiscal period of the City for payments to be made under this Contract. The City will notify Contractor of such occurrence and this Contract will terminate on the earliest of the last day of the fiscal period for which sufficient appropriation was made or whenever the funds appropriated for payment under this Contract are exhausted. No payments will be made or due to Contractor under this Contract beyond those amounts appropriated and budgeted by the City to fund payments under this Contract.

34. MINIMUM QUALIFICATIONS:

References to a minimum number of years of experience found in Part Three ("Technical Specifications"), is for guidance only. The Contractor may use individuals, Subcontractors, vendors, etc., with fewer years of experience than stated in the specification if the City determines that those individuals, Subcontractors, vendors, etc., are qualified to perform.

35. ELECTRONIC ORDERING AND INVOICES:

Contractor will cooperate in good faith with the City in implementing electronic ordering and invoicing, including, but not limited to, catalogs, purchase orders, releases, and invoices. Contractor will accept electronic purchase orders and releases upon request of the CPO. Contractor will provide the City electronic catalogs, copies of invoices, and other electronic documents upon request. The electronic ordering and invoice documents will be in a format specified by the City and transmitted by an electronic means specified by the City. Such electronic means of transmission may include, but are not limited to; disks, email, EDI, FTP, websites, and third-party electronic services. The CPO reserves the right to change the document format and/or the means of transmission upon written notice to Contractor. Contractor will ensure that the essential information, as determined by the CPO, in the electronic document, corresponds to that information submitted by Contractor in its paper documents. The electronic documents will be in addition to paper documents required by this Contract, however, by written notice to Contractor, the CPO may deem any or all of the electronic ordering and invoice documents the official documents and/or eliminate the requirement for paper ordering and invoice documents.

36. SUBCONTRACTOR PAYMENTS:

The Contractor must submit a status report of Subcontractor payments monthly for the duration of the Contract on a form acceptable to the Commissioner or CM. The form must be received by the 10th of each month. For the Contractor, each Subcontractor, and each supplier the status report of Subcontractor payments must list the following for the period for which payment is requested:

a. Total amount invoiced by Contractor for the prior month;
b. The name of each particular Subcontractor or supplier utilized during the prior month;
c. Indication if the Subcontractor or supplier is acting as an DBE, or non-certified firm on this Contract;

d. The vendor/supplier number of each Subcontractor or supplier;
e. Total amount invoiced that is to be paid to each Subcontractor or supplier.

37. BID PROTEST PROCEDURES:

Any Bidder desiring to protest these procedures and the eventual Award of a Contract must file such protest in accordance with the City's "Solicitation and Contracting Process Protest Procedures", available at the City's website at: BidProtestRules.DPS.12.2018.pdf (chicago.gov)

38. INVOICE PROCESSING:

As part of the invoice process, Contractor will submit a Progress Payment directly to the CDA Commissioner or designee on a monthly basis. The Progress Payment becomes part of the Payment Estimate process that the RSIP Contract Administration Division submits to the City of Chicago for processing and payment. The Progress Payment should include payment for each Home that has been determined to have reached Substantial Completion of the Home, or Final Completion of the Home, by the PM. The Progress Payment may also include any changes in the Work, pursuant to Part Two, Article X ("Changes in the Work"). The procedure for Progress Payments is covered in Part Two, Article IX, Section B ("Procedure for Progress Payments and Final Payment").

Progress Payments should be sent to:
Chicago Department of Aviation
ATTN: Commissioner of Aviation
10510 W. Zemke Road
Chicago, Illinois 60666

All Progress Payments must be signed, marked "original", and include the following information or payment will be delayed:

- Invoice number and date
- Contract/Purchase Order number
- Blanket Release number (if applicable)
- Vendor name and/or number
- Remittance address
- Name of City Department that ordered the goods or services
- Name and phone number of your contact at the ordering department
- Invoice quantities, commodity codes, description of deliverable(s)
- Amount due
- Receipt number (provided by the ordering department after delivery of goods/services)

Invoice quantities, service description, unit of measure, pricing and/or catalog information must correspond to the terms of the Bid Page(s). If applicable, if invoicing Price List/Catalog items, indicate Price List/Catalog number, item number, Price List/Catalog date, and Price List/Catalog page number on the invoice.

Invoices for over-shipments or items with price/wage escalations will be rejected unless the Contract includes a provision for such an adjustment and such provisions have been complied with in accordance with the Contract. Freight, handling, and shipping costs are not to be invoiced, deliveries are to be made Freight on Board ("FOB") F.O.B., City of Chicago. As stated, the City of Chicago is exempt from paying State of Illinois sales tax and Federal excise taxes on purchases. If required, Subcontractor Payment Certification forms must be mailed to the department that ordered the goods or services.

39. TITLE VI SOLICITATION NOTICE:

As a condition of a grant award, the Sponsor shall demonstrate that it complies with the provisions of Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq) and implementing regulations (49 CFR Part 21) including amendments thereto, the Airport and Airway Improvement Act of 1982 (49 U.S.C. 47123), the Age

Discrimination Act of 1975 (42 U.S.C. 6101 et seq.), Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794 et seq.), the Americans with Disabilities Act of 1990 (42 U.S.C. 12101, et seq.), U.S. Department of Transportation and Federal Aviation Administration ("FAA") Assurances, and other relevant civil rights statutes, regulations, or authorities, including any amendments or updates thereto. This may include, as applicable, providing a current Title VI Program Plan to the FAA for approval, in the format and according to the timeline required by the FAA, and other information about the communities that will be benefited and impacted by the project. A completed FAA Title VI Pre-Grant Award Checklist is required for every grant application, unless excused by the FAA. The Sponsor shall affirmatively ensure that when carrying out any project supported by this grant that it complies with all federal nondiscrimination and civil rights laws based on race, color, national origin, sex, creed, age, disability, genetic information, in consideration for federal financial assistance. The Department's and FAA's Office of Civil Rights may provide resources and technical assistance to recipients to ensure full and sustainable compliance with Federal civil rights requirements. Failure to comply with civil rights requirements will be considered a violation of the agreement or contract and be subject to any enforcement action as authorized by law.

40. EDS UPDATE OBLIGATION:

Contractor is required to notify the City and update the EDS whenever there is a change in circumstances that makes any certification or information provided in an EDS inaccurate, obsolete, or misleading. Failure to notify the City and update the EDS is grounds for declaring Contractor in default, termination of the Contract for default, and declaring that Contractor is ineligible for future Contracts.

41. ELECTRONIC MAIL COMMUNICATION:

Electronic mail communication between Contractor and City employees must relate only to business matters between Contractor and the City.

42. POLICY ON NON-DISCLOSURE OF SALARY HISTORY (SECTION 2-92-385 OF THE MCC):

This section applies if this Contract was advertised on or after August 25, 2018. For purposes of this section, the following definitions will apply:

"Contract" means any Agreement or transaction pursuant to which Contractor (1) receives City funds in consideration for services, Work or goods provided or rendered, including Contracts for legal or other professional services, or (2) pays the City money in consideration for a license, grant, or concession allowing it to conduct a business on City premises, and includes any Contracts not Awarded or processed by the DPS.

"Contractor" means the person to whom a Contract is Awarded.

As a condition of Contract Award, Contractor will, as prescribed by the CPO, attest by affidavit that Contractor has a policy that conforms to the following requirements: Contractor will not screen job applicants based on their wage or salary history, including by requiring that an applicant's prior wages, including benefits or other compensation, satisfy minimum or maximum criteria, or by requesting or requiring an applicant to disclose prior wages or salary, either (1) as a condition of being interviewed, (2) as a condition of continuing to be considered for an offer of employment, (3) as a condition of an offer of employment or an offer of compensation, or (4) as a condition of employment, and Contractor will not seek an applicant's wage or salary history, including benefits or other compensation, from any current or former employer.

Contractor's affidavit is included in Appendix C to Contractor's Economic Disclosure Statement.

If Contractor violates the above requirements, Contractor may be deemed ineligible to Contract with the City, any Contract, extension, or renewal thereof Awarded in violation of the above requirements may be voidable at the option of the City. Provided, however, that upon a finding of a violation by Contractor, no Contract will be voided, terminated, or revoked without consideration by the CPO, of such action's impact on Contractor's DBE Subcontractors.

SECTION 2
CONTRACT INSURANCE REQUIREMENTS

Contractor must provide and maintain at Contractor's own expense, during the term of the Contract and during the time period following expiration if Contractor is required to return and perform any Work, services, or operations, the insurance coverages and requirements specified below, insuring all Work, services, or operations related to the Contract.

A. INSURANCE REQUIRED FROM CONTRACTOR

1. **Workers' Compensation and Employer's Liability**
   Workers' Compensation Insurance, as prescribed by applicable law covering all employees who are to provide a service under this Contract and Employer's Liability coverage with limits of not less than $1,000,000 each accident; $1,000,000 disease-policy limit and $1,000,000 disease-each employee, or the full per occurrence limits of the policy, whichever is greater.

   The Contractor may use a combination of primary and Excess/Umbrella policy/policies to satisfy the limits of liability required herein. The Excess/Umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

2. **Commercial General Liability**
   Commercial General Liability Insurance or equivalent must be maintained with limits of not less than $1,000,000 per occurrence and $2,000,000 aggregate for bodily injury, personal injury, and property damage liability. Coverages must include but not be limited to, the following: all premises and operations, products/completed operations (for a minimum of five years following project completion), explosion, collapse, underground, separation of insureds, defense, contractual liability (not to include endorsement CG 21 39 or equivalent), no exclusion for damage to Work performed by Subcontractors, any limitation of coverage for designated premises or Project is not permitted (not to include endorsement CG 21 44 or equivalent) and any endorsement modifying or deleting the exception to the Employer's Liability exclusion is not permitted. Where the general aggregate limit applies, the general aggregate must apply per Project/location and once per policy period if applicable, or Contractor may obtain separate insurance to provide the required limits which will not be subject to depletion because of claims arising out of any other Work or activity of Contractor. If a general aggregate applies to products/completed operations, the general aggregate limits must apply per Project and once per policy period.

   The City and other entities required by the City must be provided additional insured status with respect to liability arising out of Contractor's Work, services or operations and completed operations performed on behalf of the City. Such additional insured coverage must be provided on Insurance Services Office, Inc., ("ISO") form CG 2010 10 01 and CG 2037 10 01 or on an endorsement form at least as broad for ongoing operations and completed operations. The City's additional insured status must apply to liability and defense of suits arising out of Contractor's acts or omissions, whether such liability is attributable to the Contactor or to the City. The full policy limits and scope of protection also will apply to the City as an additional insured, even if they exceed the City's minimum limits required herein. A copy of the physical 'Additional Insured' endorsement must accompany the Certificate of Insurance ("COI") when submitted. Contractor's liability insurance must be primary without right of contribution by any other insurance or self-insurance maintained by or available to the City.

   The CM and its Subcontractors and assigns, are also to be named as additional insureds on a primary, non-contributory basis for any liability arising directly or indirectly from the Work, and all Homeowners/Property Owners are to be named as additional insureds on a blanket basis.

The Contractor may use a combination of primary and Excess/Umbrella policy/policies to satisfy the limits of liability required herein. The Excess/Umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

3. **Automobile Liability**
A Business Auto Policy covering any motor vehicles (owned, non-owned and hired) which are used in connection with Work, services, or operations to be performed, must be maintained by the Contractor. Limits of not less than $1,000,000 per accident for bodily injury and property damage and covering the ownership, maintenance, or use of any auto whether owned, leased, non-owned or hired used in the performance of the Work or services. The City and other entities required by the City are to be named as additional insureds on a primary, non-contributory basis. A copy of the physical 'Additional Insured' endorsement must accompany the COI when submitted.

The Contractor may use a combination of primary and Excess/Umbrella policy/policies to satisfy the limits of liability required herein. The Excess/Umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

4. **Umbrella or Excess**
Umbrella or Excess Liability Insurance must be maintained with limits of not less than $5,000,000 per occurrence, or the full per occurrence limits of the policy, whichever is greater. The policy/policies must provide the same coverages/follow form as the underlying Commercial General Liability, Automobile Liability, Employers Liability, and Completed Operations coverage required herein and expressly provide that the Excess or Umbrella policy/policies will drop down over reduced and/or exhausted aggregate limit, if any, of the underlying insurance. The Excess/Umbrella policy/policies must be primary without the right of contribution by any other insurance or self-insurance maintained by or available to the City.

The Contractor may use a combination of primary and Excess/Umbrella policies to satisfy the limits of liability required under Workers' Compensation, Employer's Liability, Commercial General Liability, and Automobile Liability.

5. **Builders Risk/Installation Floater (Course of Construction)**
When Contractor undertakes any construction, including improvements, betterments, and/or repairs to real property, the Contractor must provide All Risk Builders Risk Insurance at replacement cost for materials, supplies, equipment, machinery, and fixtures that are or will be part of the Project. Coverage(s) must include, but are not limited to, the following: material stored off-site and in-transit, collapse, water including leakage, overflow, sewer backup or seepage, debris removal, landscaping, and faulty workmanship or materials. The City of Chicago is to be named as an additional insured and loss payee.

6. **Valuable Papers**
Valuable Papers Insurance must be maintained in an amount to insure against any loss whatsoever and must have limits sufficient to pay for the re-creation and reconstruction of such records.

*Insurance coverages that begin with "**when**", "**if**", or "**where**", are considered conditional, and it is the Contractor's responsibility to obtain the applicable coverage when performing such Work, service, or operation as described in the conditional coverage paragraph(s). If it is determined that conditional coverage is not initially applicable, it is the Contractor's continuing responsibility to update the insurance coverage as needed. If at any time, the Contractor or City determines that a conditional coverage is applicable, the Contractor will not perform the Work, service, or operation in connection with the contract until evidence of all applicable insurance coverage is provided to the City.*

7. **Property**

Contractor is responsible for all loss or damage to City property at full replacement cost as a result of the Contract.

Contractor is responsible for all loss or damage to personal property (including materials, equipment, tools, and supplies) owned, rented, or used by Contractor.

8. **Professional Liability (When applicable)**
When any professional consultants perform Work, services, or operations in connection with this Contract, Professional Liability Insurance covering acts, errors, or omissions must be maintained with limits of not less than $5,000,000 per claim. Coverage must include, but not be limited to, technology errors and omissions, and/or pollution liability if environmental site assessments are conducted, when applicable. When policies are renewed or replaced, the policy retroactive date must coincide with, or precede, start of Work under the Contract. A claims-made policy which is not renewed or replaced must have an extended reporting period of five years.

9. **Pollution Liability Insurance (When applicable)**
When any remediation work or services performed involves a potential pollution risk that may arise from the operations in connection with the Project that may fall under the scope and direction of the Contractor, the Contractor must maintain applicable Pollution Liability Insurance with limits no less than $5,000,000 per occurrence or claim and $10,000,000 aggregate per policy period of one year. Coverage must be provided, or caused to be provided, covering bodily injury, property damage, and other losses caused by pollution conditions. Coverage must include, but not be limited to, completed operations, contractual liability, defense, excavation, environmental cleanup, remediation, disposal, and if applicable, include transportation and owned and non-owned disposal site coverage. When policies are renewed or replaced, the policy retroactive date must coincide with, or precede, start of Work on the Contract. A claims-made policy which is not renewed or replaced must have an extended reporting period of five years. If the services involve lead-based paint or asbestos identification/remediation, the Policy will not contain a lead-based paint or asbestos exclusion.

The City must be provided with an additional insured status with respect to liability arising out of Contractor's Work, services, or operations performed on behalf of the City. The City's additional insured status must apply to liability and defense of suits arising out of Contractor's acts or omissions, whether such liability is attributable to the Contractor or to the City on an additional insured endorsement form acceptable to the City. The City is to be named as an additional insured on a primary, non-contributory basis. The Contractor and any Subcontractor(s) will comply with any additional insurance requirements that are stipulated by the Interstate Commerce Commission's regulations, Title 49 of the Code of Federal Regulations, Department of Transportation; Title 40 of the Code of Federal Regulations, Protection of the Environment and any other federal, state, or local regulations concerning the removal and transportation of Hazardous Materials.

The full policy limits and scope of protection will also apply to the City as an additional insured, even if they exceed the City's minimum limits required herein. Contractor's liability insurance must be primary without right of contribution by any other insurance or self-insurance maintained by or available to the City.

10. **Blanket Crime (When applicable)**
When applicable, Contractor must maintain Crime Insurance or equivalent covering all persons handling funds under this Contract, against loss by employee dishonesty, forgery or alteration, funds transfer fraud, robbery, theft, destruction or disappearance, computer fraud, credit card forgery, and other related crime risks. The policy limit will be written to cover losses in the amount of the maximum monies collected or received and in the possession of Contractor at any given time under this Contract.

11. **Railroad Protective Liability (When applicable)**

When, in connection with this Contract, any work is to be done within 50 feet adjacent to or on property owned by a railroad or public transit entity, Contractor will procure and maintain, or cause to be procured and maintained, with respect to the operations that Contractor or any Subcontractor will perform, railroad protective liability insurance in the name of such railroad or public transit entity. The policy will have limits of not less than $2,000,000 per occurrence, combined single limit, and $6,000,000 in the aggregate for losses arising out of injuries to or death of all persons, and for damage to or destruction of property, including the loss of use thereof.

12. **Marine Protection & Indemnity (When applicable)**
When Contractor undertakes any marine operation in connection with this Agreement, Contractor must provide Marine Protection & Indemnity coverage with limits of not less than $1,000,000 per occurrence. Coverage must include, but not be limited to: property damage and bodily injury to third parties, injuries to crew members if not provided through other insurance; damage to wharves, piers and other structures, and collision. The City of Chicago is to be named as an additional insured.

B. ADDITIONAL REQUIREMENTS

Evidence of Insurance. Contractor must furnish the City of Chicago, COIs and additional insured endorsement, or other evidence of insurance, to be in force on the date of this Contract, and renewal COIs and endorsement, or such similar evidence, if the coverages have an expiration or renewal date occurring during the term of this Contract. The Contractor must submit evidence of insurance prior to execution of Contract. The receipt of any COI does not constitute agreement by the City that the insurance requirements in the Contract have been fully met or that the insurance policies indicated on the COI are in compliance with all requirements of the Contract. The failure of the City to obtain, nor the City's receipt of, or failure to object to a non-complying COI, endorsement, or other insurance evidence from Contractor, its insurance broker(s) and/or insurer(s) will not be construed as a waiver by the City of any of the required insurance provisions. Contractor must advise all insurers of the Contract provisions regarding insurance. The City in no way warrants that the insurance required herein is sufficient to protect the Contractor for liabilities which may arise from, or relate to, the Contract. The City reserves the right to obtain complete, certified copies of any required insurance policies at any time.

Failure to Maintain Insurance. Failure of Contractor to comply with required coverage and terms and conditions outlined herein will not limit Contractor's liability or responsibility nor does it relieve Contractor of the obligation to provide insurance as specified in this Contract. Nonfulfillment of the insurance conditions may constitute a violation of the Contract, and the City retains the right to suspend this Contract until proper evidence of insurance is provided, or the Contract may be terminated.

Notice of Material Change, Cancellation, or Non-Renewal. Consistent with State law, Contractor must provide for 60 Days prior written notice to be given to the City in the event coverage is substantially changed, canceled, or non-renewed and 10 Days prior written notice for non-payment of premium. See 215 ILCS 5/143.16 and 143.17(a). COI should evidence this requirement, and a copy of the physical endorsements must accompany the COI for General Liability, Automobile Liability, and Workers Compensation in order to comply with the insurance requirements.

Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions on referenced insurance coverages must be borne by Contractor.

Waiver of Subrogation. Contractor hereby waives its rights and its insurer(s)' rights of, and agrees to require their insurers to waive their rights of, subrogation against the City under all required insurance herein for any loss arising from, or relating to, this Contract. The Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether the City receives a waiver of subrogation endorsement for Contractor's insurer(s).

Contractors Insurance Primary. All insurance required of Contractor under this Contract will be endorsed to state that Contractor's insurance policy is primary and not contributory with any insurance carrier by the City.

Acceptability of Insurers. Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A-, Class VIII, unless otherwise approved by the City.

No Limitation as to Contractor's Liabilities. The coverages and limits furnished by Contractor in no way limit Contractor's liabilities and responsibilities specified within the Contract or by law.

No Contribution by City. Any insurance or self-insurance programs maintained by the City do not contribute with insurance provided by Contractor under this Contract.

Insurance not Limited by Indemnification. The required insurance to be carried is not limited by any limitations expressed in the indemnification language in this Contract or any limitation placed on the indemnity in this Contract given as a matter of law.

Insurance and Limits Maintained. If Contractor maintains higher limits and/or broader coverage than the minimums shown herein, the City requires and will be entitled the higher limits and/or broader coverage maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage will be available to the City.

Joint Venture or Limited Liability Company. If Contractor is a joint venture or limited liability company, the insurance policies must name the joint venture or limited liability company as a named insured.

Other Insurance obtained by Contractor. If Contractor desires additional coverages, the Contractor will be responsible for the acquisition and cost.

Insurance required of Subcontractors. Contractor will name Subcontractor(s) as a named insured(s) under Contractor's insurance or Contractor will require each Subcontractor(s) to provide and maintain Commercial General Liability, Commercial Automobile Liability, Worker's Compensation, Employers Liability, and when applicable, Excess/Umbrella Liability, Professional Liability, and/or Pollution Liability Insurance with coverage at least as broad as outlined in Part One, Section 2, paragraph A ("Insurance Required From Contractor"). The limits of coverage will be determined by Contractor. Contractor will determine if Subcontractor(s) must also provide any additional coverage or other coverage outlined in Part One, Section 2, paragraph A ("Insurance Required From Contractor"). The Contractor is responsible for ensuring that each Subcontractor has named the City and other entities required by the City as an additional insured where required, as well as specifically naming the City as an additional insured on any endorsement form at least as broad and acceptable to the City. The Contractor is also responsible for ensuring that each Subcontractor has complied with the required coverage and terms and conditions outlined in this Part One, Section 2, paragraph B ("Additional Requirements"). When requested by the City, the Contractor must provide to the City COI and additional insured endorsements or other evidence of insurance. The City reserves the right to obtain complete, certified copies of any required insurance policies at any time. Failure of the Subcontractor(s) to comply with required coverage and terms and conditions outlined herein will not limit Contractor's liability or responsibility.

City's Right to Modify. Notwithstanding any provisions in the Contract to the contrary, the City, Department of Finance, Risk Management Division maintains the right to modify, delete, alter, or change these requirements.

SECTION 3
BID FORM

CONTRACT BASE BID

BIDDER: _____

The Bidder agrees to submit its bid without limitations or exceptions, except as permitted by the Contract Documents.

The Bidder further agrees that if Awarded the Contract, the Bidder will perform the Contract with no limitations or exceptions.

The Contract will be Awarded to the responsive and responsible Bidder offering the lowest Contract Base Bid, as determined by the CPO.

The Contract Base Bid will include the entire scope of Work and requirements of Part One ("Instructions and Execution Documents"), Part Two ("General Conditions"), and Part Three ("Technical Specifications"), and includes the total of Group A Base Bid and Group B Base Bid pricing.

GROUP A BASE BID

_____ Dollars ($_____)
(Words) (Figures)

GROUP B BASE BID

_____ Dollars ($_____)
(Words) (Figures)

CONTRACT BASE BID (SUM OF GROUP A AND GROUP B BASE BIDS)

_____ Dollars ($_____)
(Words) (Figures)

NOTE: TAKE THE CONTRACT BASE BID FIGURE FROM THE SCHEDULE OF PRICES.

SCHEDULE OF PRICES

Residential Sound Insulation Program O'Hare Phase 19A
Specification Number: 1315458A

Bidder: _____

ITEM NO.		DESCRIPTION						UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID											
A1.	**STC 40 WINDOW – VINYL ACOUSTIC**										
	1.	DOUBLE HUNG									
		a.		UP	TO	73.9	U.I.	EACH	397		
		b.	74	U.I.	TO	91.9	U.I.	EACH	887		
		c.	92	U.I.	TO	109.9	U.I.	EACH	214		
		d.	110	U.I.	TO	125.0	U.I.	EACH	14		
	2.	CASEMENT/FIXED CASEMENT									
		a.		UP	TO	74.9	U.I.	EACH	417		
		b.	75	U.I.	TO	87.9	U.I.	EACH	409		
		c.	88	U.I.	TO	119.9	U.I.	EACH	221		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	3.	TWIN CASEMENT									
		a.		UP	TO	74.9	U.I.	EACH	23		
		b.	75	U.I.	TO	95.9	U.I.	EACH	90		
		c.	96	U.I.	TO	126.0	U.I.	EACH	162		
	4.	3-LITE CASEMENT									
		a.		UP	TO	119.9	U.I.	EACH	56		
		b.	120	U.I.	TO	139.9	U.I.	EACH	53		
		c.	140	U.I.	TO	161.9	U.I.	EACH	26		
		d.	162	U.I.	TO	190	U.I.	EACH	9		
	5.	FIXED									
		a.		UP	TO	89.9	U.I.	EACH	113		
		b.	90	U.I.	TO	119.9	U.I.	EACH	81		
		c.	120	U.I.	TO	139.9	U.I.	EACH	18		
		d.	140	U.I.	TO	160	U.I.	EACH	3		
	6.	SLIDER									
		a.		UP	TO	74.9	U.I.	EACH	153		
		b.	75	U.I.	TO	109.9	U.I.	EACH	138		
		c.	110	U.I.	TO	124.9	U.I.	EACH	10		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		e.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	7.	3-LITE SLIDER									
		a.		UP	TO	100.9	U.I.	EACH	9		
		b.	101	U.I.	TO	129.9	U.I.	EACH	37		
		c.	130	U.I.	TO	155.9	U.I.	EACH	23		

ITEM NO.		DESCRIPTION						UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID											
		d.	156	U.I.	TO	180	U.I.	EACH	11		
	8.	AWNING									
		a.		UP	TO	71.9	U.I.	EACH	134		
		b.	72	U.I.	TO	83.9	U.I.	EACH	21		
		c.	84	U.I.	TO	125	U.I.	EACH	1		
A2.	**(NOT USED)**										
B1.	**STC 29 WINDOW – VINYL**										
	1.	DOUBLE HUNG									
		a.		UP	TO	73.9	U.I.	EACH	80		
		b.	74	U.I.	TO	91.9	U.I.	EACH	52		
		c.	92	U.I.	TO	109.9	U.I.	EACH	7		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	2.	CASEMENT/FIXED CASEMENT									
		a.		UP	TO	74.9	U.I.	EACH	84		
		b.	75	U.I.	TO	91.9	U.I.	EACH	15		
		c.	92	U.I.	TO	109	U.I.	EACH	1		
	3.	TWIN CASEMENT									
		a.		UP	TO	74.9	U.I.	EACH	1		
		b.	75	U.I.	TO	95.9	U.I.	EACH	8		
		c.	96	U.I.	TO	126	U.I.	EACH	3		
	4.	3-LITE CASEMENT									
		a.		UP	TO	119.9	U.I.	EACH	2		
		b.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		c.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	5.	FIXED									
		a.		UP	TO	89.9	U.I.	EACH	14		
		b.	90	U.I.	TO	119.9	U.I.	EACH	2	-	-
		c.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	6.	SLIDER									
		a.		UP	TO	89.9	U.I.	EACH	128		
		b.	90	U.I.	TO	109.9	U.I.	EACH	3		
		c.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		e.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
	7.	3-LITE SLIDER									
		a.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		b.	101	U.I.	TO	129.9	U.I.	EACH	2		
		c.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-
		d.	SEE GROUP B (SELDOM USED PRODUCTS)					-	-	-	-

ITEM NO.		DESCRIPTION						UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID											
	8.	AWNING									
		a.		UP	TO	71.9	U.I.	EACH	101		
		b.	72	U.I.	TO	84	U.I.	EACH	2		
B2.	**(NOT USED)**										
C1.	**(NOT USED)**										
C2.	**(NOT USED)**										
C3.	**(NOT USED)**										
C4.	**(NOT USED)**										
C5.	**(NOT USED)**										
C6.	**(NOT USED)**										
C7.	**(NOT USED)**										
C8.	**(NOT USED)**										
C9.	**(NOT USED)**										
C10.	**(NOT USED)**										
C11.	**(NOT USED)**										
C12.	**(NOT USED)**										
C13.	**(NOT USED)**										
C14.	**(NOT USED)**										
C15.	**(NOT USED)**										
C16.	**WINDOW RESTRICTOR HARDWARE**										
	1.	DOUBLE-HUNG						EACH	69		
	2.	CASEMENT						EACH	34		
	3.	SLIDER						EACH	11		
D.	**PREMIUM VINYL COLORS**										
	1.	BEIGE WINDOWS						EACH	864		
	2.	COCOA WINDOWS						EACH	425	-	-
E.	**GLASS MODIFICATIONS**										
	1.	(NOT USED)									
	2.	(NOT USED)									
	3.	(NOT USED)									
	4.1	FULLY TEMPERED CLEAR GLASS (BOTH LITES) INSULATED GLAZING UNIT						EACH	2,275		
	4.2	FULLY TEMPERED CLEAR GLASS FOR STORM WINDOW GLAZING IN LIEU OF NON-TEMPERED GLASS						EACH	1,705		
	5.	“COLONIAL” STYLE GRILLE						EACH	1,162		
	6.	“DIAMOND” STYLE GRILLE						EACH	70		
F.	**EXTERIOR FIN MOUNTED METAL STORM WINDOW**										
	1.	SEE GROUP B (SELDOM USED PRODUCTS)						-	-	-	-
	2.	SEE GROUP B (SELDOM USED PRODUCTS)						-	-	-	-
G.	**WINDOW MODIFICATIONS**										

ITEM NO.				DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID								
	1.			ENLARGEMENT OF EXISTING WINDOW ROUGH OPENING FOR EGRESS WINDOWS				
		a.		SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.		SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	2.			REMOVE THRU WALL AIR CONDITIONER AND TRIM OUT FOR NEW WINDOW				
		a.		SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.		SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	3.			EXTERIOR TRIM AND MOLDING / WINDOWS				
		a.		SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.		EXTERIOR TRIM / BRICKMOLD – EXISTING WINDOWS	L.F.	110		
	4.			INTERIOR TRIM				
		a.		INTERIOR TRIM – WINDOWS / UP TO 3.5-INCHES WIDE	L.F.	17,133		
		b.		INTERIOR TRIM – WINDOWS / GREATER THAN 3.5-INCHES WIDE	L.F.	644		
		c.		INTERIOR TRIM – OTHER	L.F.	187		
		d.		INTERIOR TRIM – LATTICE	L.F.	4,556		
		e.		SECONDARY WINDOW TRIM	L.F.	220		
	5.			INTERIOR/EXTERIOR ALUMINUM CLADDING – WINDOWS				
		a.		ALUMINUM CLADDING UP TO 8-INCHES WIDE	L.F.	1,068		
		b.		ALUMINUM CLADDING GREATER THAN 8-INCHES WIDE	L.F.	290		
	6.			REPLACE ROTTED OR STRUCTURALLY UNSOUND WOOD FOR WINDOW FRAMES				
		a.		1” x 6”	L.F.	1,548		
		b.		2” x 2”	L.F.	1,518		
		c.		2” x 4”	L.F.	807		
		d.		2” x 6”	L.F.	1,697		
		e.		2” x 8”	L.F.	26		
	7.			REMOVE AND REPLACE AND/OR SUPPLEMENT FRAMING / STRUCTURE				
		a.		WALLS/WINDOW OPENINGS				
			1)	1” x 6”	L.F.	5,810		
			2)	2” x 2”	L.F.	8,900		
			3)	2” x 4”	L.F.	3,127		
			4)	2” x 6”	L.F.	1,948		
			5)	2” x 8”	L.F.	26		
			6)	2” x 10” and higher	L.F.	26		
		b.		CEILINGS				
			1)	2” x 2”	L.F.	26		
			2)	2” x 4”	L.F.	26		
			3)	2” x 6”	L.F.	26		
			4)	2” x 8”	L.F.	26		

ITEM NO.		DESCRIPTION						UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID											
			5)	2” x 10” and higher				L.F.	26		
	8.	REPLACEMENT FRAMING FOR METAL PAN WINDOWS									
		a.		UP	TO	73.9	U.I.	EACH	18		
		b.	74	U.I.	TO	97.9	U.I.	EACH	9		
		c.	98	U.I.	TO	121.9	U.I.	EACH	4		
		d.	122	U.I.	TO	145.9	U.I.	EACH	4		
		e.	146	U.I.	TO	180	U.I.	EACH	4		
	9.	FACTORY MANUFACTURED FRAME FOR BOW OR BAY WINDOW									
		a.	PREFABRICATED BAY OR BOW WINDOW FRAME					EACH	73		
		b.	BOW OR BAY WINDOW ROOF REPLACEMENT					EACH	19		
	10.	EXTERIOR J-MOULDING TRIM AT WINDOWS AND DOORS						L.F.	4,001		
	11.	ABANDONED WEIGHT POCKETS						EACH	699		
H.	**SPECIAL WINDOWS**										
	1.	INTERIOR MOUNTED STORM WINDOW (SLIDING)									
		a.		UP	TO	74.9	U.I.	EACH	56		
		b.	75	U.I.	TO	150	U.I.	EACH	22		
	2.	INTERIOR MOUNTED STORM WINDOW (FIXED)									
		a.		UP	TO	74.9	U.I.	EACH	11		
		b.	75	U.I.	TO	150	U.I.	EACH	17		
	3.	INTERIOR MOUNTED STORM WINDOW (OPERABLE)									
		a.		UP	TO	74.9	U.I.	EACH	63	-	-
		b.	75	U.I.	TO	150	U.I.	EACH	22	-	-
	4.	EXTERIOR POLYGON FIN MOUNT METAL STORM WINDOW						S.F.	87		
	5.	EXTERIOR ARCH, ROUND, AND GOTHIC TOP FIN MOUNT METAL STORM WINDOW						S.F.	317		
	6.	SEE GROUP B (SELDOM USED PRODUCTS)						-	-	-	-
	7.	SEE GROUP B (SELDOM USED PRODUCTS)						-	-	-	-
	8.	NEW INTERIOR MOUNTED SKYLIGHT STORM PANEL (HINGED)									
		a.		UP	TO	74.9	U.I.	EACH	23		
		b.	75	U.I.	TO	150	U.I.	EACH	7		
	9.	NEW INTERIOR MOUNTED SKYLIGHT STORM PANEL (REMOVABLE)									
		a.		UP	TO	74.9	U.I.	EACH	31		
		b.	75	U.I.	TO	150	U.I.	EACH	15		
	10.	INTERIOR MOUNTED POLYGON METAL STORM WINDOW						S.F.	87		
	11.	INTERIOR MOUNTED ARCH, ROUND, AND GOTHIC TOP METAL STORM WINDOWS						S.F.	317		

ITEM NO.		DESCRIPTION		UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID							
I.	**DOORS EXTERIOR/INTERIOR**						
	1.	WOOD DOORS, – PRIME, PRE-HUNG INCLUDING HARDWARE					
		a.	P1	EACH	4		
		b.	P2	EACH	62		
		c.	P3	EACH	3		
		d.	P4	EACH	2		
		e.	P5	EACH	7		
		f.	P6	EACH	9		
		g.	P7	EACH	7		
		h.	P8	EACH	25		
		i.	P9	EACH	25		
		j.	P10	EACH	8		
		WOOD PRE-HUNG SIDELIGHTS					
		k.	SIDELIGHT FRAMES – TYPE “A”	EACH	4		
		l.	SIDELIGHT FRAMES – TYPE “B”	EACH	6		
		m.	SIDELIGHT FRAMES – TYPE “C”	EACH	3		
	2.	WOOD DOORS – PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE					
		a.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.	Flush Door Slab – Style P1-FR – 45-minute fire rating	EACH	26		
	3.	FIBERGLASS DOORS, - PRIME, PRE-HUNG INCLUDING HARDWARE					
		a.	F1	EACH	32		
		b.	F2	EACH	40		
		c.	F3	EACH	23		
		d.	F4	EACH	50		
		e.	F5	EACH	18		
		f.	F6	EACH	8		
		g.	F7	EACH	21		
		h.	F8	EACH	28		
		i.	F9	EACH	22		
		j.	F10	EACH	21		
		k.	F11	EACH	18		
		FIBERGLASS PRE-HUNG SIDELIGHTS					
		l.	SIDELIGHT FRAMES – TYPE “A” WITH TEMPERED GLASS	EACH	8		
		m.	SIDELIGHT FRAMES – TYPE “B” WITH TEMPERED GLASS	EACH	17		
		n.	SIDELIGHT FRAMES – TYPE “C” WITH TEMPERED GLASS	EACH	7		
	4.	FIBERGLASS DOORS – PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE/SLAB					

ITEM NO.			DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID							
		a.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		c.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	5.	**(NOT USED)**					
	6.	**(NOT USED)**					
	7.	**(NOT USED)**					
	8.	**(NOT USED)**					
	9.	WEATHER-STRIPPING INSTALLATION TO EXISTING DOOR		EACH	85		
	10.	**(NOT USED)**					
	11.	**(NOT USED)**					
	12.	**(NOT USED)**					
	13.	DOORS – STORM DOORS					
		a.	S1	EACH	4		
		b.	S2	EACH	25		
		c.	S3	EACH	14		
		d.	S4	EACH	63		
		e.	S5	EACH	140		
		f.	S6	EACH	136		
		g.	S7	EACH	25		
		h.	S8	EACH	3		
		i.	S9	EACH	1		
		j.	S10	EACH	20		
		k.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	14.	**(NOT USED)**					
	15.	SLIDING ALUMINUM-FRAMED GLASS DOORS – STYLES SL1 & SL2					
		a.	SL1	EACH	3		
		b.	SL2	EACH	3		
	16.	SLIDING PLASTIC-FRAMED GLASS DOORS					
		a.	SL1	EACH	68		
		b.	SL2	EACH	7		
	17.	TRANSOM LIGHT FOR PRIME SLIDING GLASS DOOR		EACH	2		
	18.	ADD FOR LARGER JAMB		EACH	323		
	19.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
	20.	OTHER WORK					
		a.	INSTALL SILL	EACH	281		
		b.	INSTALL APRON	EACH	70		
		c.	REMOVAL OF CONCRETE STOOP	EACH	3		
		d.	REINSTALL EXISTING HARDWARE (CREDIT)	EACH	1		
		e.	EXTERIOR TRIM – DOORS	L.F.	83		
		f.	SECONDARY DOOR TRIM	L.F.	22		

ITEM NO.			DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID							
		g.	**(NOT USED)**				
		h.	REINSTALLATION OF EXISTING STORM DOOR	EACH	3		
		i.	REINSTALLATION OF EXISTING SECURITY STORM DOOR	EACH	4		
		j.	PATCH EXTERIOR SIDING	S.F.	47		
		k.	PREMIUM COLOR FOR SLIDING PLASTIC-FRAMED GLASS DOORS	EACH	14		
		l.	MASTER KEY LOCK	EACH	3		
		m.	REPLACE THRESHOLD	EACH	3		
		n.	REMOVAL AND REINSTALLATION/DISPOSAL OF AWNINGS	EACH	34		
		o.	TILE REPAIR	S.F.	66		
	21.		HOURLY RATE FOR CARPENTER	PER HOUR	94		
	22.		HOURLY RATE FOR MASON	PER HOUR	18		
J.	**ACCESS OPENINGS**						
	1.		NEW PERIMETER GASKET	L.F.	15		
	2.		NEW CEILING ATTIC ACCESS OPENING	S.F.	15		
	3.		NEW WALL ACCESS PANEL	S.F.	15		
	4.		REPLACE PLYWOOD CEILING ACCESS PANEL	EACH	2		
	5.		ADD PANEL TO EXISTING PULL DOWN STAIR OPENING	EACH	2		
	6.		NEW INTERIOR SOLID CORE DOOR	EACH	2		
	7.		NEW INTERIOR LOUVERED DOOR	EACH	2		
	8.		NEW INTERIOR BI-FOLD DOOR	EACH	2		
	9.		THREE-QUARTER INCH (3/4”) PLYWOOD	S.F.	211		
K.	**WALLS**						
	1.		DRYWALL – ONE LAYER 5/8”	S.F.	317		
	2.		NEW BASEBOARD	L.F.	104		
	3.		DRYWALL SOFFITS INCLUDING FRAMING	S.F.	387		
	4.		EXISTING WALL DEMOLITION	S.F.	127		
L.	**CEILINGS**						
	1.		ACOUSTICAL TILE				
		a.	DEMOLITION OF EXISTING SUSPENDED OR GRID CEILING	S.F.	129		
		b.	NEW GRID AND ACOUSTICAL CEILING TILE	S.F.	129		
	2.		DRYWALL				
		a.	DEMOLITION OF EXISTING CEILING MATERIAL	S.F.	199		
		b.	ONE LAYER OF 5/8” DRYWALL	S.F.	141		
		c.	NEW CROWN MOLDING	L.F.	76		
		d.	NEW COVE MOLDING	L.F.	222		
M.	**PAINTING – PRIME AND FINISH COATS**						
	1.		INTERIOR PAINTING – WALLS and CEILINGS	S.F.	695		
N.	**INSULATION**						

ITEM NO.			DESCRIPTION		UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID								
	1.	WALLS						
		a.	R-13 BATT (BLANKET) WALL INSULATION		S.F.	100		
		b.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
	2.	ATTICS						
		a.	R-49 BATT INSULATION FOR ATTIC SPACES		S.F.	2,243		
		b.	R-49 LOOSE FILL INSULATION FOR ATTIC SPACES		S.F.	2,243		
		c.	SOFFIT INTAKE VENT		EACH	35		
		d.	ROOF EXHAUST VENT		EACH	9		
O.	**VENTS/BAFFLES AND FENCES**							
	1.	SEE GROUP B (SELDOM USED PRODUCTS)			-	-	-	-
	2.	NEW INTERIOR FIXED BAFFLE BOX AC COVER FOR EXISTING THRU-WALL A/C UNIT			S.F.	17		
	3.	NEW INTERIOR REMOVEABLE BAFFLE BOX AC COVER FOR EXISTING THRU-WALL A/C UNIT			S.F.	62		
	4.	SEE GROUP B (SELDOM USED PRODUCTS)			-	-	-	-
	5.	SEE GROUP B (SELDOM USED PRODUCTS)			-	-	-	-
	6.	SEE GROUP B (SELDOM USED PRODUCTS)			-	-	-	-
P.	**HVAC FOR AIR CONDITIONING SYSTEMS**							
	1.	CONDENSERS						
		a.	1.5 TON		EACH	1		
		b.	2 TON		EACH	1		
		c.	2.5 TON		EACH	1		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
		e.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
		f.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
		g.	SEE GROUP B (SELDOM USED PRODUCTS)		-	-	-	-
	2.	FORCED AIR FURNACES						
		a.	90% EFFICIENCY FURNACES					
			1)	30,000 TO 39,900 BTU	EACH	1		
			2)	40,000 TO 59,900 BTU	EACH	1		
			3)	60,000 TO 79,900 BTU	EACH	1		
			4)	80,000 TO 99,900 BTU	EACH	1		
			5)	100,000 TO 120,000 BTU	EACH	1		
		b.	80% EFFICIENCY FURNACES					
			1)	30,000 TO 39,900 BTU	EACH	1		
			2)	40,000 TO 59,900 BTU	EACH	1		
			3)	60,000 TO 79,900 BTU	EACH	1		
			4)	80,000 TO 99,900 BTU	EACH	1		
			5)	100,000 TO 120,000 BTU	EACH	1		
	3.	ADDITIONAL DUCTWORK						

ITEM NO.			DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID							
		a.	GALVANIZED DUCT IN UNFINISHED SPACE	PER POUND	838		
		b.	GALVANIZED DUCT IN FINISHED SPACE	PER POUND	501		
		c.	DUCT INSULATION	S.F.	1,364		
		d.	SAFETY PAN	EACH	4		
	4.		SPLIT DUCTLESS SYSTEMS – COOLING				
		a.	¾ TON WITH 1 EVAPORATOR	EACH	2		
		b.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		c.	2 TON WITH 2 EVAPORATORS	EACH	3		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		e.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	5.		FORCED AIR FAN COIL UNIT W/ CONDENSER				
		a.	1.5 TON	EACH	1		
		b.	2 TON	EACH	1		
		c.	2.5 TON	EACH	1		
		d.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		e.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		f.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		g.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	6.		ADDITIONAL COST OF REFRIGERANT PIPING, > 50 FT.	L.F.	88		
Q.	**HVAC MODIFICATIONS**						
	1.		RELOCATE HOT WATER BASEBOARD/ FIN TUBE RADIATION	L.F.	9		
	2.		EXTEND HOT WATER BASEBOARD/FIN TUBE RADIATION	L.F.	9		
	3.		INSTALL CHIMNEY LINER (25 FEET)	EACH	1		
	4.		NEW GAS VENT				
		a.	NEW GAS VENT	EACH	1		
		b.	ADDITIONAL PIPE	L.F.	4		
	5.		GAS LINE, > 5 FEET	L.F.	5		
	6.		NEW HUMIDIFIER	EACH	1		
	7.		ALUMINUM COVER FOR HVAC LINES	L.F.	307		
	8.		HOURLY RATE FOR SHEET METAL WORKER	PER HOUR	3		
	9.		ADD EXTERIOR SHEET METAL ACOUSTICAL BAFFLE PANEL				
		a.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		b.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		c.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
R.	**ELECTRICAL**						
	1.		200 AMP PANEL				
		a.	REPLACE EXISTING 200 AMPS PANEL (UP TO 42 CIRCUITS)	EACH	1		

ITEM NO.			DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID							
		b.	UPGRADE PANEL TO 200 AMPS (UP TO 42 CIRCUITS)	EACH	1		
		c.	NEW 200 AMP RISER	EACH	1		
		d.	NEW RISER/EQUIPMENT SERVICE CONDUIT ADDITIONAL COST > 14 FEET	L.F.	22		
		e.	NEW 2-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER	EACH	1		
		f.	NEW 3-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER	EACH	1		
		g.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		h.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		i.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
		j.	SEE GROUP B (SELDOM USED PRODUCTS)	-	-	-	-
	2.	100 AMP PANEL					
		a.	REPLACE EXISTING 100 AMPS PANEL (UP TO 32 CIRCUITS)	EACH	1		
		b.	UPGRADE PANEL TO 100 AMPS (UP TO 32 CIRCUITS)	EACH	1		
		c.	NEW 100 AMP RISER	EACH	1		
		d.	NEW RISER/EQUIPMENT SERVICE CONDUIT ADDITIONAL COST > 14 FEET	L.F.	22		
		e.	NEW 2-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER	EACH	1		
		f.	NEW 100 AMPS PANEL (UP TO 16 CIRCUITS)	EACH	1		
	3.	NEW CIRCUIT IN EXISTING PANEL					
		a.	NEW ADDITIONAL 240 VAC CIRCUIT UP TO 35 LINEAR FEET	EACH	1		
		b.	NEW ADDITIONAL 120 VAC CIRCUIT UP TO 25 LINEAR FEET	EACH	1		
	4.	ADDITIONAL COST OF NEW CIRCUIT, 120 VAC > 25 FEET		L.F.	138		
	5.	ADDITIONAL COST OF NEW CIRCUIT 240 VAC, > 35 FEET		L.F.	110		
	6.	RE-ESTABLISH CIRCUIT		EACH	3		
	7.	NEW RISER THRU ROOF		EACH	1		
	8.	REROUTE CONDUIT		EACH	8		
	9.	RELOCATE SERVICE PANEL TO CORRECT EXISTING CODE VIOLATIONS		L.F.	18		
	10.	RELOCATE SERVICE HEAD TO CORRECT EXISTING CODE VIOLATIONS		EACH	1		
	11.	RELOCATE UTILITY BOX		EACH	1		
	12.	REMOVE AND REINSTALL LIGHT FIXTURES (INCANDESCENT OR FLUORESCENT)		EACH	4		
	13.	REMOVE AND REINSTALL CEILING FAN		EACH	1		
	14.	EXTEND WALL OR CEILING ELECTRICAL BOX		EACH	1		
	15.	REMOVE/REPLACE ALUMINUM WIRES		EACH	1		
	16.	HOURLY RATE FOR ELECTRICIAN		PER HOUR	9		

ITEM NO.		DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
GROUP A – ITEMS BID						
S.	**NEW CONCRETE SIDEWALK**		S.F.	88		
T.	**ALLOWANCE FOR PAST PROGRAM REMEDIAL WORK**		AL	100%	$10,000.00	$10,000.00
U.	**ALLOWANCE FOR REIMBURSEMENT OF DISCONNECT/RECONNECT OF SECURITY**		AL	100%	$40,000.00	$40,000.00
V.	**ALLOWANCE FOR PERMITS**		AL	100%	$20,000.00	$20,000.00
W.	**ALLOWANCE FOR ASBESTOS REMOVAL**		AL	100%	$10,000.00	$10,000.00
X.	**ALLOWANCE FOR REIMBURSEMENT OF UTILITY FEES**		AL	100%	$10,000.00	$10,000.00
Y.	**ALLOWANCES – OTHER**					
	1.	UNFORESEEN CONDITIONS WORK	AL	100%	$30,000.00	$30,000.00
	2.	MATERIAL ONLY	AL	100%	$30,000.00	$30,000.00
Z.	**MOBILIZATION FEE**		LUMP SUM	100%		
AA.	**PROJECT CLOSE-OUT DOCUMENTATION**		LUMP SUM	100%	$75,000.00	$75,000.00
GROUP A BASE BID (SUM OF ALL UNIT PRICE EXTENSIONS)						

SCHEDULE OF PRICES

Residential Sound Insulation Program O'Hare Phase 19A
Specification Number: 1315458A

Bidder: _____

ITEM NO.	DESCRIPTION							UNIT	MAXIMUM UNIT
GROUP B (SELDOM USED PRODUCTS) – ASSUME A QUANTITY OF ONE (1) PER UNIT OF MEASUREMENT									
A1.	**STC 40 WINDOW – VINYL ACOUSTIC**								
	2.	CASEMENT/FIXED CASEMENT							
		d.	120	U.I.	TO	140	U.I.	EACH	
	6.	SLIDER							
		d.	125	U.I.	TO	131.9	U.I.	EACH	
		e.	132	U.I.	TO	140	U.I.	EACH	
B1.	**STC 29 WINDOW – VINYL**								
	1.	DOUBLE HUNG							
		d.	110	U.I.	TO	125	U.I.	EACH	
	4.	3-LITE CASEMENT							
		b.	120	U.I.	TO	139.9	U.I.	EACH	
		c.	140	U.I.	TO	161.9	U.I.	EACH	
		d.	162	U.I.	TO	190	U.I.	EACH	
	5.	FIXED							
		c.	120	U.I.	TO	139.9	U.I.	EACH	
		d.	140	U.I.	TO	162	U.I.	EACH	
	6.	SLIDER							
		c.	110	U.I.	TO	124.9	U.I.	EACH	
		d.	125	U.I.	TO	131.9	U.I.	EACH	
		e.	132	U.I.	TO	146	U.I.	EACH	
	7.	3-LITE SLIDER							
		a.		UP	TO	100.9	U.I.	EACH	
		c.	130	U.I.	TO	155.9	U.I.	EACH	
		d.	156	U.I.	TO	180	U.I.	EACH	
F1.	**EXTERIOR FIN MOUNTED METAL STORM WINDOW**								
	1.		UP	TO	89.9	U.I.		EACH	
	2.	90	U.I.	TO	150	U.I.		EACH	

ITEM NO.		DESCRIPTION						UNIT	MAXIMUM UNIT PRICE
GROUP B (SELDOM USED PRODUCTS) – ASSUME A QUANTITY OF ONE (1) PER UNIT OF MEASUREMENT									
G.	**WINDOW MODIFICATIONS**								
	1.	ENLARGEMENT OF EXISTING WINDOW ROUGH OPENING FOR EGRESS WINDOWS							
		a.	FRAME					S.F.	
		b.	BRICK					S.F.	
	2.	REMOVE THRU WALL AIR CONDITIONER AND TRIM OUT FOR NEW WINDOW							
		a.		UP	TO	39.9	U.I.	EACH	
		b.	40	U.I.	TO	75	U.I.	EACH	
	3.	EXTERIOR TRIM AND MOLDING / WINDOWS							
		a.	EXTERIOR TRIM / BRICKMOLD – NEW WINDOWS					L.F.	
	6.	EXTERIOR POLYGON FLUSH MOUNT METAL STORM WINDOW						L.F.	
	7.	EXTERIOR ARCH, ROUND, AND GOTHIC TOP FLUSH MOUNT METAL STORM WINDOWS						L.F.	
I.	**DOORS EXTERIOR/INTERIOR**								
	2.	WOOD DOORS – PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE							
		a.	Flush Door Slab – Style P1-FR – 20 – minute fire rating					EACH	
	4.	FIBERGLASS DOORS – PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE							
		a.	F1-FR					EACH	
		b.	F2-FR					EACH	
		c.	F3-FR					EACH	
	13.	DOORS – STORM DOORS							
		k.	S11 (ARCH TOP)					EACH	
	19.	NEW MAILBOX (BLACK OR WHITE)						EACH	
N.	**INSULATION**								
	1.	WALLS							
		b.	R-13 BLOWN-IN LOOSE FILL WALL INSULATION					S.F.	

ITEM NO.		DESCRIPTION		UNIT	MAXIMUM UNIT
GROUP B (SELDOM USED PRODUCTS) – ASSUME A QUANTITY OF ONE (1) PER UNIT OF MEASUREMENT					
O.	**VENTS/BAFFLES AND FENCES**				
	1.	REMOVE THRU-WALL AIR CONDITIONER		EACH	
	4.	SCREENING FENCE FOR AC CONDENSER – 1 SIDED		EACH	
	5.	SCREENING FENCE FOR AC CONDENSER – 2 SIDED		EACH	
	6.	SCREENING FENCE FOR AC CONDENSER – 3 SIDED		EACH	
P.	**HVAC FOR AIR CONDITIONING SYSTEMS**				
	1.	CONDENSERS			
		d.	3 TON	EACH	
		e.	3.5 TON	EACH	
		f.	4 TON	EACH	
		g.	5 TON	EACH	
	4.	SPLIT DUCTLESS SYSTEMS – COOLING			
		b.	1 TON WITH 1 EVAPORATOR	EACH	
		d.	3 TON WITH 3 EVAPORATORS	EACH	
		e.	4 TON WITH 4 EVAPORATORS	EACH	
	5.	FORCED AIR FAN COIL UNIT W/ CONDENSER			
		d.	3 TON	EACH	
		e.	3.5 TON	EACH	
		f.	4 TON	EACH	
		g.	5 TON	EACH	
Q.	**HVAC MODIFICATIONS**				
	9.	ADD EXTERIOR SHEET METAL ACOUSTICAL BAFFLE PANEL			
		a.	2” THICK BAFFLE PANEL	EACH	
		b.	3” THICK BAFFLE PANEL	EACH	
		c.	4” THICK BAFFLE PANEL	EACH	

ITEM NO.		DESCRIPTION		UNIT	MAXIMUM UNIT PRICE
GROUP B (SELDOM USED PRODUCTS) – ASSUME A QUANTITY OF ONE (1) PER UNIT OF MEASUREMENT					
R.	**ELECTRICAL**				
	1.	200 AMP PANEL			
		g.	NEW 4-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER	EACH	
		h.	NEW METER SOCKET WITH INTEGRAL BREAKER	EACH	
		i.	NEW 200 AMP UNDERGROUND SERVICE AND CUSTOMER POLE	EACH	
		j.	NEW UNDERGROUND SERVICE CONDUIT ADDITIONAL COST > 50 FEET	L.F.	
GROUP B BASE BID (SUM OF ALL UNIT PRICE EXTENSIONS)					
CONTRACT BASE BID (GROUP A BASE BID + GROUP B BASE BID)					_____

NOTES TO BIDDER:

1. **Total price for mobilization must not exceed three percent of the Group A Base Bid.**
2. **Bidders should round all quoted prices to the nearest two decimal points.**
3. **In the event of discrepancy between the "Unit Price" and the "Total Price" the Unit Price will prevail.**
4. **The CPO reserves the right to make corrections, after receiving the bids, to any clerical error apparent on the above Line Items, including but not limited to obviously incorrect units or misplaced decimal points, or arithmetic error. The Bidder must bid all line items set forth on the Schedule of Prices, except to the extent that the Specifications expressly allows otherwise. In the event that comparison of the Bidder's "Unit Price" and "Total Price" submitted for any line item reveals a calculation error, the Unit Price will prevail.**

SECTION 4
TIME OF COMPLETION

Contract Duration

The Contract Duration to achieve Substantial Completion of the Project is 334 Calendar Days. The Contract Duration to achieve Final Completion of the Project is 494 Days.

The date specified in the Notice to Proceed for commencement of Work will not be counted as a Calendar Day, but each subsequent day thereafter, from midnight to midnight will be counted as one Calendar Day and the last day counted will be the day on which Contractor has achieved Final Completion of the Contract and the Commissioner will have accepted the entire Work under this Contract.

Holidays

Included in the Contract duration is 23 Calendar Days to accommodate seven holidays and a 16 Day, year-end Holiday break that may fall within the Contract time. The following are a list of holidays during which Contractor is not permitted to perform Work:

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Weekend Work will not be permitted before or after any of the holidays listed above.

Contractor will complete the entire scope of Work, and the intermediate milestones, within the durations shown on the table found on page S4-2.

LIQUIDATED DAMAGES FOR DELAY

As provided in Part Two, Article VIII, paragraph A.4 ("Liquidated Damages") will be assessed as shown on the table found on page S4-2.

Note: Nothing herein contained will be construed as limiting the right of the City to recover from Contractor any and all amounts due or to come due, and any and all costs and expenses sustained by the City for improper performance hereunder, repudiation of the Contract by Contractor, failure to perform or breach or breaches in any other respect, including, but not limited to, defective workmanship or materials.

TIME OF COMPLETION / LIQUIDATED DAMAGES FOR DELAY TABLE

MILESTONE	DESCRIPTION OF WORK INCLUDING RESTRICTIONS	DURATION (inclusive of Weather and Holiday/Holiday Break Days)	LIQUIDATED DAMAGES (per each day exceeding the indicated duration)
Substantial Completion of the Home or Dwelling Unit of a Multi-Unit Building	Acoustical Treatment Packages 1 and M, Acoustical Treatment Packages 2, 3, and 4	5 Business Days for Acoustical Treatment Packages 1 and M and 10 Business Days for Acoustical Treatment Packages 2, 3 and 4	$250/day/Home
Punch List Work of the Home or Dwelling Unit of a Multi-Unit Building	All Acoustical Treatment Packages 1 day will be reserved for the installation of Product Replacement and completion of punch list)	3 Business Days	$250/day/Home
Product Replacement	Replacement of specified items such as windows or doors which were damaged or incorrectly measured or installed by Contractor and are required to be replaced.	98 Calendar Days from Substantial Completion of Each Home	$250/day/Home
Substantial Completion of the Project	Substantial Completion of the Homes for all homes (Excluding Punch List Work and Product Replacement)	334 Calendar Days	$250/day/Home
Final Completion of the Home for all homes	Substantial Completion of the Project and completion of all Punch List Work and Product Replacement.	434 Calendar Days	N/A
Final Completion of the Project	Final Completion of the Home for all homes (including Punch List Work, and Product Replacement), completion of QDRs, and completion of all remaining Work as required in the Contract Documents.	494 Calendar Days	N/A

ALLOWANCES

Compensation for Work done under an allowance will be as indicated in Part Two, Article X ("Changes in the Work").

Allowance for Past Program Remedial Work – A distinct and separate allowance has been established for this Contract in the event the Commissioner requests remedial Work to be performed on a Home from a past program year or phase. In such event, the Work will be performed on a Contract Unit Price basis, if applicable, and charged to the Past Program Remedial Work Allowance.

Security System Disconnect/Reconnect Allowance – A distinct and separate allowance has been established for this Contract to reimburse Homeowners for the disconnection and reconnection of existing security systems.

Permit Fee Allowance – A distinct and separate allowance has been established for this Contract to reimburse Contractor for construction permit fees.

Asbestos Testing/ Remediation Allowance – A distinct and separate allowance has been established for this Contract to reimburse Contractor for asbestos testing and/or remediation costs.

Utility Fee Allowance – A distinct and separate allowance has been established for this Contract to reimburse Contractor for Commonwealth Edison or other utility fees.

Material Only Allowance – A distinct and separate allowance has been established for this Contract to reimburse Contractor for the material costs of a line item when the item is not installed.

Unforeseen Conditions Allowance – A distinct and separate allowance has been established for this Contract to reimburse Contractor for unforeseen conditions due to concealed conditions not covered by line items or added Work needed in order to complete the acoustical treatment package selected by the Homeowner.

CONTRACTOR

For Work authorized by the Commissioner to be paid under an allowance, the compensation due to Contractor will be processed in accordance with Part Two, Article X ("Changes in the Work"), unless otherwise noted. Contractor will not be entitled to any remaining balance of an allowance after completion of the Project. The remaining balance will be credited back to the City by a Contract Modification adjusting the Contract Price.

MOBILIZATION

Contractor is to bid a mobilization fee which must not exceed three percent of the Group A Base Bid amount to cover startup costs associated with the Contract. Such costs may include bonding, insurance, administrative, warehousing, submittals, and associated Field Measurement appointment costs. Payment will be made in accordance with Part Two, Article IX ("Payments"), and as accepted by the Commissioner.

PROJECT CLOSE-OUT DOCUMENTATION

A unit cost line item has been created for General Condition's costs for close-out items. This amount will be reserved until Final Completion of the Project has been achieved and all permits, all warranties, all final waivers, the approved final sworn statement and affidavit, and final Home Invoices, and the first manufacturer's quarterly log is submitted and accepted by the Commissioner. Payment will be made in accordance with Part Two, Article IX, Section F ("Payment for Project Closeout Documentation").

SECTION 5: EXECUTION PAGES
PROPOSAL TO BE EXECUTED BY A CORPORATION

The undersigned, hereby acknowledges having received **Specification Number** 1315458A containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings (if applicable), 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications, and 8) Addenda Numbers. **(none unless indicated here) _____**, and affirms that the corporation will be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the corporation has taken express written exception thereto in the sections of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line, (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line, and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate, or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any Agreement with any other Bidder (proposer) or prospective Bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any Agreement or arrangement under which any act or omission in restraint of freedom of competition among Bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

NAME OF CORPORATION: _____
(Print or Type)

SIGNATURE OF PRESIDENT: _____
(or Authorized Officer) (Signature)

TITLE OF SIGNATORY: _____
(Print or Type)

BUSINESS ADDRESS: _____
(Print or Type)

***Note:** In the event that this bid (proposal) is signed by other than the President, or Chief Executive Officer attach hereto a certified copy of that section of Corporate By-Laws or other authorization, such as a resolution by the Board of Directors, which permits the person to sign the offer for the Corporation.

ATTEST: _____
(Corporate Secretary Signature)
(Affix Corporate Seal)

State of _____
County of _____

This instrument was acknowledged before me on this _____ day of _____, 20___ by _____
_____ as President (or other authorized officer) and _____
_____ as Secretary of _____ (Corporation Name).

(Seal)

_____
Notary Public Signature
Commission Expires: _____

PROPOSAL TO BE EXECUTED BY A PARTNERSHIP

The undersigned, hereby acknowledges having received **Specification Number** 1315458A containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings, (if applicable), 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria, and Submittal Requirements, (If RFP/RFQ), 6) Proposal Pages, 7) Certifications, and 8) Addenda Numbers. **(none unless indicated here)** _____, and affirms that the partnership will be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the partnership has taken express written exception thereto in the articles of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line, (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line, and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any Agreement with any other Bidder (proposer) or prospective Bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any Agreement or arrangement under which any act or omission in restraining of free competition among Bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

BUSINESSNAME: _____
(Print or Type)

BUSINESS ADDRESS:_____
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Assumed Business Name Act, (805 ILCS 405/1), and (MCC § 4-4-050).

Registration Number: _____

SIGNATURES AND ADDRESSES OF ALL MEMBERS OF THE PARTNERSHIP (If all General Partners do not sign, indicate authority of partner signatories by attaching copy of partnership Agreement or other authorizing document):

Partner Signature: _____
(Signature)

Address: _____
(Print or Type)

Partner Signature: _____
(Signature)

Address: _____
(Print or Type)

Partner Signature: _____
(Signature)

Address: _____
(Print or Type)

State of _____
County of _____

This instrument was acknowledged before me on this _____ day of _____, 20___ by _____
_____ as President (or other authorized officer) and _____
_____ as Secretary of _____ (Corporation Name).
(Seal)

_____
Notary Public Signature
Commission Expires: _____

PROPOSAL TO BE EXECUTED BY A SOLE PROPRIETOR

The undersigned, hereby acknowledges having received **Specification Number** 1315458A containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings, (if applicable), 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications, and 8) Addenda Numbers. **(none unless indicated here)**, _____ and affirms that the sole proprietor will be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the sole proprietor has taken express written exception thereto in the articles of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line, (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line, and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any Agreement with any other Bidder (proposer) or prospective Bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any Agreement or arrangement under which any act or omission in restraining of free competition among Bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

SIGNATURE OF PROPRIETOR: _____
(Signature)

DOING BUSINESS AS: _____
(Print or Type)

BUSINESS ADDRESS: _____
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Assumed Business Name Act (805 ILCS 405/1) and the MCC (Chicago Municipal Code § 4-4-050).

Registration Number**:** _____
(Print or Type)

State of _____
County of _____

This instrument was acknowledged before me on this _____ day of _____, 20___ by _____ as President (or other authorized officer) and _____ as Secretary of _____
(Corporation Name)

_____
Notary Public Signature (Seal)

Commission Expires: _____

PROPOSAL TO BE EXECUTED BY A JOINT VENTURE

The undersigned, hereby acknowledges having received **Specification Number** 1315458A containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings, (if applicable), 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications, and 8) Addenda Numbers. **(none unless indicated here)_____**, and affirms that the Joint Venture will be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the Joint Venture has taken express written exception thereto in the articles of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line, (2) warrants that all certifications and statements contained in the EDS are true, accurate, and complete as of the date the EDS was submitted on-line, and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any Agreement with any other Bidder (proposer) or prospective Bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any Agreement or arrangement under which any act or omission in restraining of free competition among Bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

JOINT VENTURE NAME: _____
(Print or Type)

JOINT VENTURE ADDRESS: _____
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Assumed Business Name Act (805 ILCS 405/1) and the MCC (Chicago Municipal Code § 4-4-050).

Registration Number: _____

SIGNATURES AND ADDRESSES OF ALL PARTNERS OF THE JOINT VENTURE (If all members of the Joint Venture do not sign, indicate authority of signatories by attaching copy of Joint Venture Agreement or other authorizing document).

SIGNATURE OF AUTHORIZED PARTY: _____
(Signature)

TITLE OF SIGNATORY: _____
(Print or Type)

BUSINESS ADDRESS: _____
(Print or Type)

ATTEST: _____
(Joint Venture Secretary Signature)
(Affix Joint Venture Seal)

OR

JOINT VENTURER SIGNATURE: _____
(Signature)

ADDRESS: _____
(Print or Type)

JOINT VENTURER SIGNATURE: _____
(Signature)

ADDRESS: _____
(Print or Type)

JOINT VENTURER SIGNATURE: _____
(Signature)

ADDRESS: _____
(Print or Type)

State of _____
County of _____

This instrument was acknowledged before me on this _____ day of _____, 20___ by _____ as President (or other authorized officer) and _____ as Secretary of _____
(Corporation Name)

_____
Notary Public Signature (Seal)
Commission Expires: _____

PROPOSAL ACCEPTANCE

Contract Number: _____

Specification Number: 1315458A_____

Vendor Name: _____

Total Amount (Value): _____

Fund Chargeable: _____

The undersigned, on behalf of the CITY OF CHICAGO, a municipal corporation of the State of Illinois, hereby accept the foregoing bid items as identified in the proposal.

CITY OF CHICAGO

_____

Mayor Date

_____

Comptroller Date

_____

Chief Procurement Officer Date

INSTRUCTIONS FOR COMPLETING ECONOMIC DISCLOSURE STATEMENT AND AFFIDAVIT (EDS) ONLINE

The Bidder will complete an online EDS prior to the bid due date. A Bidder who does not file an electronic EDS prior to the bid due date may be found non-responsive and its bid rejected. If you are unable to complete the online EDS and print a Certificate of Filing prior to the bid due date, the City will accept a paper EDS provided written justification is submitted with the bid explaining the Bidder's good faith efforts to complete it before the bid due date and the reasons why the online EDS could not be completed.

1.1. *ONLINE EDS FILING REQUIRED PRIOR TO BID OPENING*

The Bidder must complete an online EDS prior to the bid opening date.

A Bidder that does not file an electronic EDS prior to the bid opening will be found non-responsive, unless a EDS justification is submitted with the bid as described above. **EDS forms may be obtained on the City's website at: https://webapps1.chicago.gov/eds/login**

1.2. *ONLINE EDS WEB LINK*

The web link for the Online EDS is https://webapps1.cityofchicago.org/EDSWeb

1.3. *ONLINE EDS NUMBER*

Upon completion of the online EDS submission process, the Proposer will be provided an EDS number. Bidders should provide this number here:

EDS Number:_____

1.4. *ONLINE EDS CERTIFICATION OF FILING*

Upon completion of the online submission process, the Proposer will be able to print a copy of the Certificate of Filing. The Proposer should submit the signed Certificate of Filing with its bid. Please insert your Certification of Filing following this page.

A Proposer that does not include a signed Certificate of Filing with its bid must provide it upon the request of the CPO.

1.5. *PREPARATION CHECKLIST FOR REGISTRATION*

To expedite and ease your registration process, we recommend that you collect the following information prior to registering for an Online EDS user account:

	1. Invitation number, if you were provided an invitation number.
	2. EDS document from previous years, if available.
	3. Email address to correspond with the Online EDS system.
	4. Company Information:
	a. Legal Name
	b. FEIN/SSN
	c. City of Chicago Vendor Number, if available.
	d. Address and phone number information that you would like to appear on your EDS documents.
	e. EDS Captain. Check for an EDS Captain in your company – this maybe the person that usually submits EDS for your company, or the first person that registers for your company.

1.6. *PREPARATION CHECKLIST FOR EDS SUBMISSION*

To expedite and ease your EDS submission, we recommend that you collect the following information prior to updating your EDS information online.

Item Numbers 1 through 7, are needed for both EDS information updates and Contract related EDS documents:

	1. Invitation number, if you were provided with an invitation number.
	2. Site address that is specific to this EDS.
	3. Contact that is responsible for this EDS.
	4. EDS document from previous years, if available.
	5. Ownership structure, and if applicable, owners' company information:
	a. % of ownership
	b. Legal Name
	c. FEIN/SSN
	d. City of Chicago Vendor Number, if available.
	e. Address
	6. List of directors, officers, titleholders, etc. (if applicable).
	7. For partnerships/LLC/LLP/Joint ventures, etc.:
	a. List of controlling parties (if applicable).

Item Numbers 8 and 9, are needed ONLY for Contract related EDS documents:

	8. Contract related information (if applicable):
	a. City of Chicago Contract package
	b. Cover page of City of Chicago bid/solicitation package
	c. If EDS is related to a mod, then cover page of your current Contract with the City.
	9. List of Subcontractors and retained parties:
	a. Name
	b. Address
	c. Fees – Estimated or paid

1.7. *EDS FREQUENTLY ASKED QUESTIONS*

Q: Where do I file?

A: The web link for the Online EDS is **https://webapps1.cityofchicago.org/EDSWeb**

Q: How do I get help?

A: If there is a question mark on a page or next to a field, click on the question mark for help filling out the page or field. You may also consult the User Manual and the Training Videos available on the left menu.

Q: Why do I have to submit an EDS?

A: The Economic Disclosure Statement (EDS) is required of applicants making an application to the City for action requiring City Council, City department or other City agency approval. For example, all Bidders seeking a City Contract are required to submit an EDS. Through the EDS, applicants make disclosures required by State law and City ordinances and certify compliance with various laws and ordinances. An EDS is also required of certain parties related to the applicant, such as owners and controlling parties.

Q: Who is the Applicant?

A: "Applicant" means any entity or person making an application to the City for action requiring City Council or other City agency approval. The applicant does not include owners and parent companies.

Q: Who is the Disclosing Party?

A: "Disclosing Party" means any entity or person submitting an EDS. This includes owners and parent companies.

Q: What is an entity or legal entity?

A: "Entity" or "Legal Entity" means a legal entity (for example, a corporation, partnership, joint venture, limited liability company or trust).

Q: What is a person for purposes of the EDS?

A: "Person" means a human being.

Q: Who must submit an EDS?

A. An EDS must be submitted in any of the following three circumstances:

Applicants:	An Applicant must always file this EDS. If the Applicant is a legal entity, state the full name of that legal entity. If the Applicant is a person acting on his/her own behalf, state his/her name.
Entities holding an interest:	Whenever a legal entity has a beneficial interest (E. G. direct or indirect ownership) of more than 7.5% in the Applicant, each such legal entity must file an EDS on its own behalf.
Controlling entities:	Whenever a Disclosing Party is a general partnership, limited partnership, limited liability company, limited liability partnership or joint venture that has a general partner, managing member, manager or other entity that can control the day-to-day management of the Disclosing Party, that entity must also file an EDS on its own behalf. Each entity with a beneficial interest of more than 7.5% in the controlling entity must also file an EDS on its own behalf.

Q: What information is needed to submit an EDS?

A: The information contained in the Preparation Checklist for EDS submission.

Q: I don't have a user ID & password. Can I still submit an Online EDS?

A: No, you must register and create a user ID and password before submitting an Online EDS.

Q: What information is needed to request a user ID & password for Online EDS?

A: The information contained in the Preparation Checklist for Registration is needed to request a login for the Online EDS.

Q: I already have a username and password from another City web site (City Web Portal, Department of Construction and Permits, Department of Consumer Services, etc.). Can I log-in the Online EDS with that account?

A: Usually not. The Online EDS uses a user ID and password system that is shared by the Public Vehicle Advertising and Water Payment web sites. You may use a username and password from those sites by answering "Yes" to "Is this an existing City of Chicago user ID?" when registering. Other usernames and passwords will not be automatically recognized. However, you may choose to create an identical username for the Online EDS if it is not already taken.

Q: I don't have an email address. How do I submit an Online EDS?

A: You cannot get an account to submit an online EDS without an email address. If you need an email address, we suggest that you use a free internet email provider such as www.hotmail.com or www.yahoo.com or www.gmail.com to open an account. The City does not endorse any particular free internet email provider. Public computers are available at all Chicago Public Library branches.

Q: I forgot my user ID. Can I register again?

A: No. If you are the EDS Captain of your organization, please contact the DPS at (312) 744-4900. If you are an EDS team member, contact your EDS Captain, who can look up your user ID.

Q: Who is the EDS Captain?

A: The EDS Captain is a person who performs certain administrative functions for an organization which files an EDS. Each organization registered with the Online EDS has at least one EDS Captain. There may be co-captains, who are all equal. EDS Captains approve new users, change contact information for an organization, and de-active accounts of employees who have left the organization. Please see the User Manual for more information.

Q: Why do we need EDS Captains?

A: The Online EDS is designed to be a self-service web application which allows those doing or seeking to do business with the City to perform as many routine functions as possible without City intervention. Because many organizations have multiple staff filing an EDS, the EDS Captain role allows those organizations to self-manage the contact information and users.

Q: Who is the EDS team?

A: The EDS team for an organization is everyone who is registered to file an EDS on behalf of the organization.

Q: I forgot my password. What should I do?

A: To retrieve a temporary password, click the "Forgot your password?" link on the login page. Enter your user ID that you provided when you registered your account. The system will automatically generate a temporary password and send it to you. When you log in with your temporary password, you will be asked to create a new password.

Q: How do I complete an Online EDS?

A: Click on "Create New" after logging in. The Online EDS system will walk you through the EDS questions. Please see the User Manual for details.

Q: How do I fill out a Disclosure of Retained Parties?

A: There is no longer a separate Disclosure of Retained Parties filing. After logging in, click on "Create New". Answer (click) "Contract" to "Is this EDS for a Contract or an EDS information update?" Click "Fill out EDS", and click on the "Retained Parties" tab. When finished, click on "Ready to Submit".

Q: How do I attach documents?

A: Attachments are discouraged. If at all possible, please provide a concise explanation in the space provided in the online form. Attachments with pages of officers are not acceptable. Names of officers must be typed into the system. If you must provide an attachment for another reason, please send it to your City of Chicago contact (Contract administrator or negotiator for procurements) and they will attach it for you. Documents can be sent in PDF (preferred), Word, or paper format.

Q: Who can complete an Economic Disclosure Statement online?

A: Any authorized representative of your business with a user ID and password can complete your EDS online. One person, such as an assistant, can fill in the information and save it, and another person can review and electronically sign the Online EDS.

Q: What are the benefits of filing my Economic Disclosure statement electronically?

A: Filing electronically reduces the chance of filing an incomplete EDS and speeds up the processing of Contract Awards. A certificate of filing can be printed at the completion of the process and inserted into your bid package. The biggest benefit for those who frequently do business with the City is that after the first EDS, each EDS is much easier to fill out because non-Contract specific information is pre-filled from the last submitted EDS.

Q: Will my information be secure?

A: Yes. When making your internet connection to our Web Server, you will connect through a Secure Socket Layer (SSL for short) to the "Online EDS" login page. All information you type will be protected using strong encryption. Within the login page, you will provide us with a user ID, password, and secret question for user authentication. Only you will have knowledge of this unique identification information.

Q: I am filing electronically. How do I sign my EDS?

A: Once you have completed the EDS, you will be prompted to enter your password and answer to your secret question. Together, these will serve as your electronic signature. Although you will also print and physically sign an EDS certification of filing as a notice that your EDS was filed, your EDS is complete as a legal document with only the electronic filing.

Q: My address has changed. How can I update my information?

A: You must be an EDS Captain for your organization to update this. Log-in and click on "Vendor Admin, Site Administration". Select the appropriate site and click edit.

Q: I have more questions. How can I contact the DPS?

A: Please contact the Contract administrator or negotiator assigned to your solicitation or Contract. You may call DPS at (312) 744-4900 between 8:30 a.m. and 5:00 p.m. CDT.

Q: Can I save a partially complete EDS?

A: Yes. Click "Save". To avoid data loss, we recommend you save your Work periodically while filling out your EDS.

Q: Do I have to re-type my information each time I submit an EDS?

A: No. The system will remember non-Contract specific information from your last submitted EDS for one year. This information will be filled-in for you in your new EDS. You will have an opportunity to correct it if it has changed since your last filing. When you submit your new EDS, the information is saved, and the one year clock begins running anew.

Q: What are the system requirements to use the Online EDS?

A: The following are minimum requirements to use the Online EDS:

- A PDF viewer such as Adobe Reader is installed, and your web browser is configured to display PDFs automatically. You may download and install Adobe Reader free at:

  http://get.adobe.com/reader/

- Your web browser is set to permit running of JavaScript.
- Your web browser allows cookies to be set for this site. Please note that while we use cookies in the Online EDS, we do not use them to track personally identifiable information, so your privacy is maintained.
- Your monitor resolution is set to a minimum of 1024 x 768.

The Online EDS has been tested on Internet Explorer 6.0 and 7.0 and Firefox 2.0 and 3.0 on Windows XP and Mac OS X. Although it should Work on other browsers and operating systems, the City of Chicago cannot guarantee compatibility.

Note that Internet Explorer (IE) is an unsupported browser as of June 15, 2022.
All users who use IE should start using Microsoft Edge.

Contractor's Affidavit Regarding
Removal of All Waste Materials and Identification of all Disposal Facilities

PROJECT: _____

PERSON COMPLETING THIS FORM: _____ **PHONE NUMBER:** _____

Provide the requested information for each facility Contractor proposes to accept the waste materials generated during the above-named project. This includes fill locations, landfills, recycling facilities, composting facilities, and any other disposal facility. Attach copied pages as needed. The Facility ID number is issued on the permit by the IEPA, USEPA, or other state licensing agencies for any facility outside Illinois. These waste facilities must meet all zoning and other requirements.

TYPE OF MATERIALS TO BE REMOVED:
FACILITY LEGAL NAME:
FACILITY ADDRESS:
FACILITY CONTACT & PHONE:
FACILITY PERMIT ID NUMBER: PERMIT/LICENSE IS ATTACHED: YES ☐ NO ☐

TYPE OF MATERIALS TO BE REMOVED:
FACILITY LEGAL NAME:
FACILITY ADDRESS:
FACILITY CONTACT & PHONE:
FACILITY PERMIT ID NUMBER: PERMIT/LICENSE IS ATTACHED: YES ☐ NO ☐

TYPE OF MATERIALS TO BE REMOVED:
FACILITY LEGAL NAME:
FACILITY ADDRESS:
FACILITY CONTACT & PHONE:
FACILITY PERMIT ID NUMBER: PERMIT/LICENSE IS ATTACHED: YES ☐ NO ☐

CERTIFICATION OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

(Buildings such as Terminal, SRE, ARFF, etc.)

As a matter of bid responsiveness, the Bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The Bidder or offeror must indicate how they intend to comply with 49 U.S.C. 50101 and BABA by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e., not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 49 U.S.C. 50101 by:

1. Installing iron, steel, manufactured products, and construction materials produced in the U.S.;
2. Installing manufactured products that are not produced in the U.S. where the FAA has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; and
3. Installing products that are not produced in the U.S. that are listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the Bidder or offeror agrees:

1. To provide the Owner evidence that documents the source and origin of the steel and manufactured product.
2. To faithfully comply with providing U.S. domestic products
3. To refrain from seeking a waiver request after establishment of the Contract, unless extenuating circumstances emerge that the FAA determines justified.
4. Certify that all construction materials used in the project are produced in the U.S. as detailed at 2 CFR 184.3 and 2 CFR 184.6.

☐ The Bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 U.S.C. 50101(a) but may qualify for either a Type 3 or Type 4 waiver under 49 U.S.C. 50101(b). By selecting this certification statement, the apparent Bidder or offeror with the apparent low bid agrees:

1. To submit to the Owner within 15 calendar days of being selected as the responsive bidder, a formal waiver request and required documentation that support the type of waiver being requested.
2. Failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination may results in rejection of the proposal.
3. To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
4. To furnish U.S. domestic product for any waiver request that the FAA rejects.
5. To refrain from seeking a waiver request after establishment of the Contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 3 Waiver - The cost of components and subcomponents produced in the U.S. is more that 60 percent of the cost of all components and subcomponents of the "facility". The required documentation for a type 3 waiver is:

1. Listing of all manufactured products that are not comprised of 100 percent U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108; products of unknown origin must be considered as non-domestic products in their entirety)
2. Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly and installation at Project location.
3. Percentage of non-domestic component and subcomponent cost as compared to total "facility" component and subcomponent costs, excluding labor costs associated with final assembly and installation at Project location.

Type 4 Waiver – Total cost of Project using U.S. domestic source product exceeds the total Project cost using non-domestic product by 25 percent. The required documentation for a type 4 of waiver is:

1. Detailed cost information for total Project using U.S. domestic product.
2. Detailed cost information for total Project using non-domestic product.

False Statements: Per 49 U.S.C. 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date	Signature
Company Name	Title

BUY AMERICAN PRODUCT CONTENT PERCENTAGE WORKSHEET

If Contractor is requesting a Buy American waiver, then Contractor is responsible for obtaining the current, applicable forms from the FAA website:

https://www.faa.gov/airports/aip/buy_american/

BUY AMERICAN FINAL ASSEMBLY QUESTIONNIARE

If Contractor is requesting a Buy American waiver, then Contractor is responsible for obtaining the current, applicable forms from the FAA website:

https://www.faa.gov/airports/aip/buy_american/

BUY AMERICAN CONSTRUCTION PROJECT WORKSHEET

If Contractor is requesting a Buy American waiver, then Contractor is responsible for obtaining the current, applicable forms from the FAA website:

https://www.faa.gov/airports/aip/buy_american/

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant Contract, the Offeror.

a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (U.S.T.R.);

b. has not knowingly entered into any Contract or subcontract for this Project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the U.S.T.R; and

c. has not entered into any subcontract for any product to be used on the Federal on the Project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under 18 U.S.C. 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a Subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. Contractor must require Subcontractors provide immediate written notice to Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no Contract will be Awarded to an Offeror or Subcontractor:

(1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the U.S.T.R., or
(2) whose Subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such U.S.T.R., list or
(3) who incorporates in the public works Project any product of a foreign country on such U.S.T.R., list;

Nothing contained in the foregoing will be construed to require the establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if Awarded a Contract resulting from this solicitation, it will incorporate this provision for certification without modification in in all lower tier subcontracts. Contractor may rely on the certification of a prospective Subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by U.S.T.R., unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an Award. If it is later determined that Contractor or Subcontractor knowingly rendered an erroneous certification, the FAA may direct through the Owner cancellation of the Contract or subcontract for default at no cost to the Owner or the FAA.

Business Name: _____

Date: _____ By: _____
Name and Title of Authorized Representative

_____
Signature of Authorized Representative

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

By submitting a bid/proposal under this solicitation, the Bidder or offeror certifies that at the time the Bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION
(SUCCESSFUL BIDDER REGARDING LOWER TIER PARTICIPANTS)

The successful Bidder, by administering each lower tier subcontract that exceeds $25,000 as a "covered transaction", must verify each lower tier participant of a "covered transaction", under the Project is not presently debarred or otherwise disqualified from participation in this Federally-assisted Project. The successful Bidder will accomplish this by:

1. Checking the System for Award Management at website: http://www.sam.gov
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier Contract

If the FAA later determines that a lower tier participant failed to tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedy, including suspension and debarment.

Business Name: _____

Date: _____ By: _____
Name and Title of Authorized Representative

_____
Signature of Authorized Representative

CERTIFICATION REGARDING LOBBYING AND INFLUENCING OF FEDERAL EMPLOYEES

Contractor certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of Contractor, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal Contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative Agreement, and the extension, continuation, renewal, amendment, or modification of any Federal Contract, grant, loan, or cooperative Agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative Agreement, the undersigned will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

3. Contractor will require that the language of this certification be included in the Award documents for all sub-Awards at all tiers (including, subcontracts, sub-grants, and Contracts under grants, loans, and cooperative Agreements) and that all sub-recipients will certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification will be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Business Name: _____

Date: _____ By: _____
Name and Title of Authorized Representative

_____
Signature of Authorized Representative

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Federally-assisted construction Contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location under his control, where segregated facilities are maintained. The Federally-assisted construction Contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Federally-assisted construction Contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this Contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, Work areas, restrooms, washrooms, restaurants, and other eating areas, time clocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation, or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, sex, or national origin because of habit, employee custom, written or oral policies, or any other reason. The term does not include separate or single-user restrooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

The Federally-assisted construction Contractor agrees that (except where she or he has obtained identical certifications from proposed Subcontractors for specific time periods), she or he will obtain identical certifications from proposed Subcontractors prior to the Award of subcontracts exceeding $10,000, which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

Business Name: _____

Date: _____ By: _____
Name and Title of Authorized Representative

_____
Signature of Authorized Representative

CERTIFICATE REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if Awarded a Contract resulting from this solicitation, it will incorporate this provision for certification in all lower-tier Subcontractors.

Certifications

1. The applicant represents that it is ( ) is not ( ) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an Agreement with the authority responsible for collecting the tax liability.

2. The applicant represents that it is ( ) is not ( ) is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Business Name: _____

Date: _____ By: _____
Name and Title of Authorized Representative

_____
Signature of Authorized Representative

Note: If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an Award unless the sponsor has received notification from the agency suspension and debarment official ("SDO") that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant, therefore, must provide information to the Owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before Award decisions are made.

Terms Definitions

Felony Conviction: Felony conviction means a conviction within the preceding 24 months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S.C. that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an Agreement with the authority responsible for collecting the tax liability.

Policy Prohibiting Sexual Harassment (Section 2-92-612 of the MCC)

For purposes of this section, "Sexual Harassment" is as defined in MCC 6-10-020. For the avoidance of doubt, Contractor will be considered an "Employer" as defined in MCC 6-10-020.

In accordance with MCC 2-92-612, Contractor must attest by affidavit that Contractor has a written policy, compliant with the requirements of MCC 6-10-040, prohibiting Sexual Harassment. The affidavit must be in a form acceptable to the Chief Procurement Officer. Contractor's affidavit is attached as the Exhibit titled "Sexual Harassment Policy Affidavit".

Contractor's failure to have a written policy prohibiting Sexual Harassment as provided above will constitute an event of default. In the event of default, the Chief Procurement Officer will notify Contractor of such noncompliance and may, as appropriate: (i) issue Contractor an opportunity to cure consistent with the default provisions in this Agreement; (ii) terminate the contract; or (iii) take any other action consistent with the default provisions in the contract. This section will not be construed to prohibit the City from prosecuting any person who knowingly makes a false statement of material fact to the city pursuant to Chapter 1-21 of the MCC, or from availing itself of any other remedies under contract or law.

(1) Policy Prohibiting Sexual Harassment (Section 2-92-612 of the MCC) (EXTRA PROVISION FOR INSTRUCTIONS TO BIDDERS SECTION OF NON-CONSTRUCTION TEMPLATES ONLY)

In accordance with Section 2-62-612 of the MCC<Bidder will, as prescribed by the CPO, attest by affidavit (in the form of the "Sexual Harassment Policy Affidavit" Exhibit attached hereto) that Bidder has a written policy prohibiting sexual harassment that will include, at a minimum, the following information: (1) the illegality of sexual harassment, (2) the definition of sexual harassment, and (3) the legal recourse available for victims of sexual harassment.

SEXUAL HARASSMENT POLICY AFFIDAVIT (SECTION 2-92-612)

The policy prohibiting sexual harassment as described in Section 2-92-612 of the MCC, is applicable to Contracts paid from funds belonging to or administered by the City.

Contract Title:_____

Specification Number:_____

In accordance with requirements set forth in Section 2-92-612 of the MCC, Contractor hereby attests that Contractor has a written policy prohibiting sexual harassment in compliance with Section 6-10-040 of the MCC.

In accordance with Section 6-10-040 of the MCC, Contractor's written policy prohibiting sexual harassment will include, at a minimum, the following information:

(i) a statement that sexual harassment is illegal in Chicago;

(ii) the following definition of sexual harassment: "'Sexual harassment' means any (i) unwelcome sexual advances or unwelcome conduct of a sexual nature; or (ii) requests for sexual favors or conduct of a sexual nature when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, or (2) submission to or rejection of such conduct by an individual is used as the basis for any employment decision affecting the individual, or (3) such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment; or (iii) sexual misconduct, which means any behavior of a sexual nature which also involves coercion, abuse of authority, or misuse of an individual's employment position.";

(iii) a requirement that all employees participate in: (1) sexual harassment prevention training annually, (a) Employees will participate in a minimum of one hour of sexual harassment prevention training annually, and (b) Anyone who supervises or manages employees will participate in a minimum of two hours of sexual harassment prevention training annually, and (2) one hour of bystander training annually;

(iv) Examples of prohibited conduct that constitute sexual harassment;

(v) Details on: (1) how an individual can report an allegation of sexual harassment, including, as appropriate, instructions on how to make a confidential report, with an internal complaint form, to a manager, employer's corporate headquarters or human resources department, or other internal reporting mechanism; and (2) legal services, including governmental, available to employees who may be victims of sexual harassment; and

(vi) A statement that retaliation for reporting sexual harassment is illegal in Chicago.

Contractor understands that it may be required to produce records to the CPO to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of Contractor, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Contractor:_____
(Print or Type)

Signature of Authorized Officer: _____
(Signature)

Title of Signatory: _____
(Print or Type)

State of _____

County of _____

Signed and sworn (or affirmed) to before me on_____(date) by
(name/s of person/s making statement).

(Seal)

_____
(Signature of Notary Public)

Policy on Non-Disclosure of Salary History (Section 2-92-385 of the MCC)

This section applies if this Contract was advertised on or after August 25, 2018. For purposes of this section, the following definitions will apply:

"Contract" means any Agreement or transaction pursuant to which Contractor (1) receives City funds in consideration for services, Work or goods provided or rendered, including Contracts for legal or other professional services, or (2) pays the City money in consideration for a license, grant or concession allowing it to conduct a business on City premises, and includes any Contracts not Awarded or processed by the DPS.

"Contractor" means the person to whom a Contract is Awarded.

As a condition of Contract Award, Contractor will, as prescribed by the CPO, attest by affidavit that Contractor has a policy that conforms to the following requirements:

(1) Contractor will not screen job applicants based on their wage or salary history, including by requiring that an applicant's prior wages, including benefits or other compensation, satisfy minimum or maximum criteria; or by requesting or requiring an applicant to disclose prior wages or salary, either (1) as a condition of being interviewed, (2) as a condition of continuing to be considered for an offer of employment, (3) as a condition of an offer of employment or an offer of compensation, or (4) as a condition of employment; and

(2) Contractor will not seek an applicant's wage or salary history, including benefits or other compensation, from any current or former employer.

Contractor's affidavit is included in Appendix C to Contractor's Economic Disclosure Statement.

If Contractor violates the above requirements, Contractor may be deemed ineligible to Contract with the City; any Contract, extension, or renewal thereof Awarded in violation of the above requirements may be voidable at the option of the City. Provided, however, that upon a finding of a violation by Contractor, no Contract will be voided, terminated, or revoked without consideration by the CPO of such action's impact on Contractor's MBE, WBE, or DBE Subcontractors.

CITY OF CHICAGO
Department of Procurement Services
Sharla D. Roberts, Chief Procurement Officer
121 N. LaSalle Street, Room 806
Chicago, Illinois 60602-1284

DBE SPECIAL CONDITIONS FOR FAA/FTA/FHWA (IDOT) FUNDED CONTRACTS CONSTRUCTION, SERVICES, TASK ORDER SERVICES, AND SUPPLY

ARTICLE 1. SPECIAL CONDITIONS REGARDING DISADVANTAGED BUSINESS ENTERPRISE COMMITMENT

Contractor must comply with the following terms and conditions where Work or Services are funded in whole or in part by any U.S. Department of Transportation ("DOT") federal funds including but not limited to FHWA, FTA and FAA.

These terms and conditions may be unilaterally updated or amended by the City at any time, as may be required to comply with federal regulations or other federal requirements relating to the DBE program. However, the DBE goal will not be unilaterally increased.

1.1. Policy and Terms

In the event of a conflict between these Special Conditions and 49 CFR Part 26, the provisions of 49 CFR Part 26 will control.

It is the policy of the City that Disadvantaged Business Enterprises (DBEs) as defined in 49 CFR Part 26, have the maximum opportunity to participate fully in the performance of contracts subject to 49 CFR Part 26. Contractor must not discriminate against any person or business on the basis of race, color, national origin or sex in the performance of this Contract. Contractor must carry out applicable requirements of 49 CFR Part 26 in the award and administration of United States Department of Transportation (DOT)-assisted contracts and take affirmative action to ensure that businesses owned by socially and economically disadvantaged individuals have full opportunity to participate.

The City has set an overall DBE Program Goal of 30 percent.

Failure to carry out the commitments and policies set forth in this Article constitutes a material breach of the Contract and may result in the termination of the Contract or such remedy as the City deems appropriate.

1.1.1. Contract-Specific DBE Participation Goal

The City sets contract-specific goals for participation in furtherance of reaching its overall DBE Program Goal.

For purposes of this contract, the City has set the following contract goal:

Contract DBE Participation Goal: None / 0%

Per 49 CFR 26.51(h), under the DBE program, recipients of United States Department of Transportation financial assistance are prohibited from setting "any contract goals until the UCP that covers [the recipient] has completed the reevaluation process described in 49 CFR 26.111." Because the Illinois UCP has not completed the reevaluation process required by 49 CFR 26.111 as of the date this Contract was advertised for bidding, federal regulation prohibits setting DBE goals for this contract. Therefore, to maintain federal

funding eligibility for the project, the contract DBE participation goal is expressed as 0%, indicating that no goal has been set.

Notwithstanding contrary terms of these Special Conditions Regarding Disadvantaged Business Enterprise Commitment, if there is no goal set for DBE participation on this contract (when the goal is 0%), Bidders are not required to submit a DBE compliance plan (Schedules D, D-1, or D-3 and Schedules C, C-1, or C-3) or Letters of Certification from proposed DBE firms, bidders proposing joint ventures are not required to submit Schedule B and the proposed joint venture agreement, and all Bidders are not required to submit documentation of good faith efforts to obtain DBE participation for this Contract or to otherwise make good faith efforts under 49 CFR 26.53. Further, while the goals are set at 0%, Section 1.1.3, below, will not apply to this Contract.

All Bidders, however, must submit a completed Schedule F report pursuant to 49 CFR 26.11. See Section 1.6.4, below, for more information on this requirement.

Note: if this contract is task-order based, goals will be set for the individual task orders; in the context of each task order, these provisions will apply to those task order goals as if they were an overall contract goal.

Award of this contract will be conditioned upon meeting the requirements of 49 CFR 26.53. Among other things, a bid or proposal will be rejected as non-responsive if the bidder/proposer fails to submit one or more of the following with its bid demonstrating its good faith efforts to meet the Contract DBE Participation Goal by reaching out to DBEs to perform work on the contract:

A. A DBE compliance plan demonstrating how the bidder/proposer plans to meet the Contract DBE Participation Goal (Schedule D, D-1 or D-3 and Schedule(s) C, C-1 or C-3); and/or

B. Documentation of Good Faith Efforts to obtain DBE participation in this contract.

Note: Schedules D and C are used for contracts for construction work. Schedules D-1 and D-3 are used for contracts for services, and Schedules D-3 and C-3 are used for task order based contracts

In evaluating the bid/proposal, the Chief Procurement Officer has the option to require bidder/proposer to correct mistakes in the DBE compliance plan or documentation of Good Faith Efforts, if the Chief Procurement Officer determines in their sole discretion that the mistakes were made in a bona fide, good-faith effort to provide a compliance plan and not obtaining the correction would be contrary to the intent of the DBE program, or to require bidder/proposer to provide additional information. In the event that corrections or additional information is requested, it must be submitted within five calendar days of the request unless otherwise specified by the Chief Procurement Officer . Failure to provide requested corrections, information, and/or an adequate explanation may result in rejection of the bid, and forfeiture of the bid deposit if applicable.

The bidder/proposer must make good faith efforts to obtain DBE participation in this contract. The commitment will be reflected in Schedule D, D-1 or D-3. The bidder/proposer must document that it has obtained enough DBE participation to meet the Contract DBE Participation Goal set forth above or, if unsuccessful in doing so, has made adequate Good Faith Efforts to meet the goal (see Section 1.7 “Good Faith Efforts”). If awarded the Contract, Contractor must expend not less than the committed percentage of the total Contract Price (including any amendments and modifications) for contract participation by DBEs.

For purposes of evaluating bidder/proposer’s responsiveness, the Contract DBE Participation Goal will be a percentage of the total contract value. The Contract DBE Participation Goal applies to the total value of the contract, inclusive of all amendments and modifications. The Chief Procurement Officer also has the authority to review each proposed contract modification and amendment that by itself or aggregated with previous modification/amendment requests, increases the contract value by 10 percent of the initial award or $50,000, whichever is greater, for opportunities to increase participation of DBEs already involved in the contract.

The Contract DBE Participation Goal may be met by the bidder/proposer's status as DBE, or by joint venture with one or more DBEs (but only work performed by the DBEs own forces will be counted), or by subcontracting a portion of the work to one or more DBEs, or by purchasing materials used in the performance of the contract from one or more DBEs or by any combination of the foregoing, as further described in Section 1.5, "Counting DBE Participation Towards the Contract DBE Participation Goal".

1.1.2. DBE Financial Institutions

Bidder/Proposer is encouraged to use financial institutions owned and controlled by socially and economically disadvantaged individuals. Use of such institutions may be considered by the City as evidence of bidder/proposer's willingness to do business with DBEs. Information about such institutions is available in the City's DBE Program document. In addition, the Illinois Unified Certification Program (IL UCP) Disadvantaged Business Enterprises Directory is available via the Internet at https://idot.illinois.gov/doing-business/certifications/dbe/il-ucp/illinois-ucp-directory.html.

1.1.3. DBE Participation Goals for Contract Modifications

The DBE Participation Goals established at the time of bid/proposal submission will also apply to any modifications to the Contract after award. This is, any additional work and/or money added to the Contract must also adhere to these Special Conditions requiring Contractor to (sub)contract with DBEs to meet the DBE Participation Goals.

- Contractor must assist the construction manager or user department in preparing its "proposed contract modification" by evaluating the subject matter of the modification and determining whether there are opportunities for DBE participation and at what rates.
- Contractor must produce a statement listing the DBEs that will be utilized on any contract modification. The statement must include the percentage of utilization of the firms. If no DBE participation is available, an explanation of good faith efforts to obtain participation must be included.

The Chief Procurement Officer will review each proposed contract modification and amendment that by itself or aggregated with previous modification/amendment requests, increases the contract value by 10 percent of the initial award, or $50,000, whichever is less, for opportunities to increase the participation of DBEs already involved in the Contract.

1.2. Definitions and Usage

Terms that are capitalized in these Special Conditions are defined terms and have the meanings set forth in 49 Part 26.5, unless otherwise defined in these Special Conditions or the Contract Documents.

"Area of Specialty" means the description of a DBE firm's business which has been determined by the certifying agency to be most reflective of the DBE firm's claimed specialty or expertise. Each DBE letter of certification contains a description of the firm's Area of Specialty including applicable NAICS codes. This information is also contained in the Directory. Credit toward the Contract DBE Participation Goal is limited to the participation of firms certified in a NAICS code applicable to the kind of work the firm would perform on the project.

NOTICE: The Department of Procurement Services does not make any representation concerning the ability of any DBE to perform work within its Area of Specialty. It is the responsibility of all bidders/proposers to determine the capability and capacity of DBE firms to satisfactorily perform the work proposed.

Certain terms are used in these Special Conditions to indicate the stage of bidding, proposing or contracting in which certain obligations arise. The term "proposer" means a firm responding to a request for proposals by the City for professional or technical services or other procurement not adaptive to competitive bidding; a bidder or proposer becomes a "Contractor" after being awarded a contract by the City.

"Contractor" also means "Consultant", if Consultant is the term used for the entity that has entered into this Agreement or Contract with the City.

"Directory" means the IL UCP Disadvantaged Business Enterprises Directory, maintained by the City as well as all IL UCP participating agencies, that identifies all firms eligible to participate as DBEs. The Directory lists the firm's name, address, phone number, website(s), date of most recent certification and the type of work the firm has been certified to perform as a DBE. The City revises the Directory on a monthly basis. The Directory is available via the internet at https://idot.illinois.gov/doing-business/certifications/dbe/il-ucp/illinois-ucp-directory.html. Bidder/Proposers are responsible for verifying the current certification status of all proposed DBE firms.

"Disadvantaged Business Enterprise" or **"DBE"** means a for-profit small business concern that (i) is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged; (ii) whose management and daily operations are controlled by one or more of the socially and economically disadvantaged individuals who own it; (iii) the personal net worth of the individuals who own it does not exceed the limit specified at 49 CFR Part 26; and (iv) it has been certified as a DBE in accordance with the procedures set out in 49 CFR Part 26.

"Joint Venture" means an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the Work of the Contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

1.3. Third Party Challenges To Certification Of DBE Firm

As noted in 49 CFR Section 26.87, any third party (complainant) may file a complaint explaining, with specificity, why the City should decertify a DBE. The complaint must be made in writing to the City The confidentiality of the complainant's identity will be protected as provided in 49 CFR Section 26.109(b). The City will review its records concerning the DBE, any material the DBE and/or complainant provides, and any other available information. The City may request additional information from the DBE or conduct any other investigation that it deems necessary. If the City determines that there is reasonable cause to decertify the DBE, it will initiate a decertification proceeding. If the City determines that there is not such reasonable cause, it will notify the complainant and the DBE in writing of its decisions and the reasons for it. During the pendency of any complaint, a DBE remains certified until the City issues a Notice of Decision ("NOD").

1.4. Joint Ventures

Bidders/proposers may develop joint venture agreements as an instrument to provide participation by DBEs in Contract Work. A joint venture may consist of any combination of DBEs and non-certified firms as long as one member is a DBE.

A. The joint venture may be eligible for DBE participation credit towards the Contract Specific Goals only if:

   1. The DBE joint venture partner's share in the capital contribution, control, management, risks and profits of the joint venture is equal to its ownership interest;

   2. The DBE joint venture partner is responsible for a distinct, clearly defined portion of the requirements of the contract for which it is at risk;

   3. Each joint venture partner executes the bid/contract to the City; and

   4. The joint venture partners have entered into a written Agreement specifying the terms and conditions of the relationship between the partners and their relationship and responsibilities to the contract, and all such terms and conditions are in accordance with the conditions set forth in Items 1, 2, and 3 above in this Paragraph A.

B. The Chief Procurement Officer will evaluate the proposed joint venture agreement, the Schedule B submitted on behalf of the proposed joint venture, and all related documents to determine whether these requirements have been satisfied. The Chief Procurement Officer will also consider the record of the joint venture partners on other City of Chicago Contracts. The decision of the Chief Procurement Officer regarding the eligibility of the joint

venture for credit towards meeting the Contract Specific Goals, and the portion of those goals met by the joint venture, will be final.

The joint venture may receive DBE credit for Work performed by the DBE joint venture partner(s) equal to the value of work performed by the DBE with its own forces for a distinct, clearly defined portion of the work.

The Chief Procurement Officer may also count the dollar value of work subcontracted to other DBEs. Work performed by the forces of a non-certified joint venture partner will not be counted toward the Contract Specific Goals.

C. Schedule B: DBE Affidavit of Joint Venture.

Where the bidder/proposer's compliance plan includes the participation of any DBE as a joint venture partner, the bidder/proposer must submit with its bid or proposal a Schedule B and the proposed joint venture agreement. These documents must both clearly evidence that the DBE joint venture partner(s) will be responsible for a clearly defined portion of the work to be performed, and that the DBE's responsibilities and risks are proportionate to its ownership percentage. The proposed joint venture agreement must include specific details related to:

1. The parties' contributions of capital, personnel, and equipment and share of the costs of insurance and bonding;

2. Work items to be performed by the DBE's own forces and/or work to be performed by employees of the newly formed joint venture entity;

3. Work items to be performed under the supervision of the DBE joint venture partner; and

4. The DBE's commitment of management, supervisory, and operative personnel to the performance of the contract.

Vague, general descriptions of the responsibilities of the DBE joint venture partner do not provide any basis for awarding credit. For example, descriptions such as "participate in the budgeting process", "assist with hiring", or "Work with managers to improve customer service" do not identify distinct, clearly defined portions of the Work. Roles assigned should require activities that are performed on a regular, recurring basis rather than as needed. The roles must also be pertinent to the nature of the business for which credit is being sought. For instance, if the scope of work required by the City entails the delivery of goods or services to various sites in the City, stating that the DBE joint venture partner will be responsible for the performance of all routine maintenance and all repairs required to the vehicles used to deliver such goods or services is pertinent to the nature of the business for which credit is being sought.

D. DBE Participation Level in Joint Venture

Credit for participation by DBEs in joint ventures with non-DBEs does not require a minimum participation of 51 percent in venture ownership and control on the part of the DBE. Credit is based on the percentage of the work performed by the DBE's own forces. *See* Section 1.5, "Counting DBE Participation Toward the Contract DBE Participation Goal").

NOTE: The City requires that whenever a joint venture submits a bid/proposal as prime contractor, each joint venturer must separately sign the bid/proposal to the City on the pages marked TO BE EXECUTED BY A CORPORATION; TO BE EXECUTED BY A PARTNERSHIP; and/or TO BE EXECUTED BY A SOLE PROPRIETOR as applicable.

1.5. Counting DBE Participation Toward The Contract DBE Participation Goal

When a DBE participates in a Contract, count only the value of the Work performed by the DBE toward the DBE Participation Goal, as described in 49 CFR 26.55. To count toward meeting a goal, each DBE firm must be certified in a NAICS code applicable to the kind of Work the DBE will perform on the Contract.

Refer to this section when preparing the DBE compliance plan and completing the applicable Schedule D for guidance on what value of the participation by DBEs will be counted toward the stated DBE Participation Goal. The "Percent Amount of Participation" depends on whether and with whom a DBE subcontracts out any portion of its work and other factors.

Expenditures to a DBE contractor, subcontractor, or supplier may be counted only if the DBE is performing a "commercially useful function" on the contract. The term "commercially useful function" is defined in 49 CFR 26.55(c). If a DBE does not perform or exercise responsibility for at least 40 percent of the total cost of its Contract with its own Work force, or the DBE subcontracts a greater portion of the Work of a Contract than would be expected within normal industry practice for the type of Work involved, the City will presume that the DBE is not performing a commercially useful function.

A Contractor (and bidder/proposers in their proposals) may count only the following toward the Contract DBE Participation Goal and should report only the following to the Chief Procurement Officer :

A. **The value of the Work actually performed by a DBE**, as described below:

1. For construction Contracts and other contracts not covered by A.2., below:
   The entire amount of that portion of a Contract that is performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the Work of the Contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime Contractor or its Affiliate). (See 49 CFR 26.55(a)(1).)

2. For Contracts involving the provision of "bona fide services" (such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted Contract):

   The entire amount of fees or commissions charged by a DBE for providing a bona fide service, provided that the fee is reasonable and not excessive as compared with fees customarily allowed for similar services. The determination of whether the fee is reasonable and not excessive will be made by the City. (See 49 CFR 26.55(a)(2).)

3. When a DBE subcontracts part of the work of its contract to another firm:
   The value of the subcontracted Work may be counted toward the Contract DBE Participation Goal only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward the Contract DBE Participation Goal. (See 49 CFR 26.55(a)(3).)

B. **Joint Ventures:** When a DBE performs as a participant in a joint venture, the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces is counted towards the Contract DBE Participation Goal. (See 49 CFR 26.55(b).)

C. **Materials and Supplies:** Regarding expenditures with a DBE for materials or supplies:

1. If the materials or supplies are obtained from a DBE "manufacturer", as that term is described in 49 CFR 26.55(e)(1), 100 percent of the cost of the materials or supplies. A manufacturer is a firm that owns (or leases) and operates a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the Contract and of the general character described in the specifications. Manufacturing includes blending or modifying raw materials or assembling components to create the product to meet Contract specifications. When a DBE makes minor modifications to the materials, supplies, articles, or equipment, the DBE is not a manufacturer. Minor modifications are additional changes to a manufactured product that are small in scope and add minimal value to the final product.

2. If the materials or supplies are purchased from a DBE "regular dealer", as that term is described in 49 CFR 26.55(e)(2), 60 percent of the cost of the materials or supplies.

3. If the materials or supplies are purchased from a DBE "distributor", as that neither maintains sufficient inventory nor uses its own distribution equipment for the products in question, count 40 percent of the cost of materials or supplies (including transportation costs).

4. With respect to materials or supplies purchased from a DBE that is neither a manufacturer, a regular dealer, nor a distributor, the amount of fees or commissions charged that the City deems to be reasonable, including transportation charges for the delivery of materials or supplies. Do not count any portion of the cost of materials and supplies themselves.

The City will determine the amount of credit awarded to a firm for the provisions of materials and supplies (e.g., whether a firm is acting as a regular dealer, distributor, or a transaction facilitator) on a Contract-by-Contract basis.

D. **Trucking Firms:** If the DBE manages and supervises the entire trucking operation for which it is responsible on a particular Contract and the DBE itself owns and operates at least one fully licensed, insured and operational truck used on the Contract and all leased trucks display the name and identification number of the DBE and the lease indicates that the DBE lessee has exclusive use of and control over the truck, or, if the truck is used for work for others with the DBE lessee's consent, then the lease must give the DBE lessee absolute priority over its use, then:

1. The total value of the transportation services a DBE provides on the Contract using trucks it owns, insures and operates using drivers it employs.

2. The total value of the transportation services a DBE provides on the Contract using trucks leased from another DBE trucking firm, including an owner-operator who is certified as a DBE trucking firm.

3. The total value of transportation services provided by non-DBE leased trucks (trucks leased from a non-DBE firm, including an owner-operator) equipped with drivers, but not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional credit by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement.

E. Other Considerations:

1. Firm Not Currently Certified: If a firm is not currently certified as a DBE in accordance with the standards of 49 CFR Part 26, subpart D, at the time of execution of the Contract, do not count or report the firm's participation, except as provided in 49 CFR 26.87(i).

2. Firm Whose Certification Has Been Removed: Do not count/report the dollar value of Work performed under a Contract with a firm after it has ceased to be certified.

3. Payment: Do not report the participation of a DBE subcontractor until the Contractor has paid the DBE the amount being counted.

4. Area of Specialty: Only the value of the dollars paid to the DBE firm for Work that it performs in its Area of Specialty in which it is certified counts toward the DBE Participation Goal.

1.6. Procedure To Determine Bid/Proposal Compliance

The following Schedules and documents constitute the bidder's/proposer's DBE proposal, and must be submitted at the time of submission of proposals unless stated otherwise:

1.6.1. Schedule B: Affidavit of DBE/Non-DBE Joint Venture

Where the bidder/proposer's DBE proposal includes the participation of any DBE as a joint venturer prime or subcontractor, the bidder/proposer must submit, together with its bid/proposal, a Schedule B: Affidavit of DBE/Non-DBE Joint Venture with an attached copy of the joint venture Agreement proposed among the parties. See Section 1.4 above, "Joint Ventures", for detailed requirements.

1.6.2. Schedule C, C-1 or C-3: Letter of Intent to Perform as a Subcontractor, Consultant, Subconsultant or Material Supplier

Bidder/proposer must submit a Schedule C, C-1 or C-3, for each DBE included on its Schedule D, D-1, or D-3 (including any DBE joint venture partners), signed by the respective DBE firm. Schedule C and D must be used for Contracts for construction Work, and Schedule C-1 and Schedule D-1 for all other Contracts, except for task order based Contracts, where Schedule C-3 and Schedule D-3 must be used instead.

Each Schedule C, C-1 or C-3 must accurately detail the Work to be performed by the DBE firm and the agreed rates and prices to be paid. Each Schedule must specify the percentage of the dollar value of the DBE's subcontract that will be sublet to non-DBE and DBE Contractors and be signed and dated by the DBE. Each Schedule must also include a separate sheet as an attachment on which the DBE fully describes its proposed scope of Work, including a description of the commercially useful function being performed by the DBE in its Area of Specialty and including the applicable NAICS code(s). If a facsimile copy of Schedule C, C-1 or C-3 has been submitted with the bid or proposal, an executed original Schedule C-1 must be submitted promptly by the bidder/proposer for each DBE included on the Schedule D, D-1 or D-3 after the date of bid or proposal opening.

Failure to submit any Schedule C, C-1, or C-3 as required by this section will result in a Chief Procurement Officer's determination that a bid or proposal is "non-responsive". The Chief Procurement Officer has the discretion to apply additional suitable sanctions against any bidder/proposer who fails to comply with the requirements of this section. Appropriate sanctions may include, without limitation, forfeiture of the bidder/proposer's bid deposit, or, where fraud is involved, suspension of the bidder/proposer's eligibility to enter into future contracting opportunities with the City.

1.6.3. Schedule D, D-1 or D-3: Affidavit of Prime Contractor Regarding DBEs

Bidders/Proposers must submit at the time specified in the request for proposals, a completed Schedule D or D-1 (or for Task Order based Contracts, Schedule D-3, which must be submitted at the time specified in the request for task order proposals) committing them to the utilization of each listed DBE firm (*but see*, Section 1.7, Good Faith Efforts). The Schedule D, D-1 or D-3 must include the name, address, description of the work to be performed and dollar amount participation of each DBE subcontractor, supplier or consultant.

The bidder/proposer must use "Good Faith Efforts", as that term is described in Section 1.7 to meet the Contract DBE Participation Goal (i.e., the specific dollar amount of participation by each DBE firm included on its Schedule D-1 or D-3). The total dollar commitment to proposed DBE firms should equal the Contract DBE Participation Goal. Bidders/proposers are responsible for calculating the dollar equivalent of the Contract DBE Participation Goal as a percentage of their proposal. All commitments made by the bidder/proposer's Schedule D, D-1 or D-3 must conform to those presented in the submitted Schedule Cs, C-1s or C-3s.

A Contractor may not modify its compliance plan after proposal opening except as directed by the Department of Procurement Services to correct minor errors or omissions. Bidders/proposers will not be permitted to add DBEs after proposal opening to meet the Contract DBE Participation Goals, however, Contractors are encouraged to add additional DBE vendors to their approved compliance plan during the performance of the Contract when additional opportunities for participation are identified. Except in cases where substantial, documented justification is provided, the bidder/proposer or Contractor will not reduce the dollar commitment made to any DBE in order to achieve conformity between the Schedule Cs/ C-1s/C-3s and Schedule D/D-1/D-3. All terms and conditions for DBE participation on the Contract must be negotiated and agreed to between the bidder/proposer or Contractor and the DBE prior to submission of the compliance plan. If a proposed DBE ceases to be available after submission of the compliance plan, the bidder/proposer or Contractor must comply with the provisions of Section 1.10, "DBE Terminations".

1.6.4. Schedule F: Report of Subcontractor Solicitations

All Bidders/Proposers must submit, together with their bid/proposal, a completed Schedule F report containing information on all subcontractors, DBEs and non-DBEs, solicited for participation in the Contract. The Schedule F will include the following subcontractor information:

Contractor name; Address; Contact person; DBE status; Type of Work solicited.

1.6.5. Letters of Certification

A copy of each proposed DBE firm's Letter of Certification from the IL UCP must be submitted with the bid or proposal if currently certified. All Letters of Certification issued by the IL UCP include a statement of the DBE firm's Area of Specialty and NAICS code(s) corresponding to the DBE firm's Area of Specialty. The DBE firm's scope of Work, as detailed by its Schedule C, C-1, or C-3 must conform to the NAICS code(s) of its Area(s) of Specialty listed in the Letter of Certification.

NOTE: Failure to submit the following information at the time of submission of bids or proposals (or in the case of task order Contracts, the time of submission of task order proposals) will render the bid or proposal non-responsive: the **names and addresses** of DBE firms that will participate in the Contract (Schedule D, D-1 or D-3), a **description of the Work** that each DBE will perform (Schedule D, D-1 or D-3), the **dollar amount** of the participation of each DBE firm participating (Schedule D, D-1 or D-3), **written documentation** of the bidder/proposer's commitment to use a DBE subcontractor whose participation it submits to meet a Contract goal (Schedule D, D-1 or D-3), **written confirmation from the DBE** that it is participating in the Contract as provided in the prime Contractor's commitment (Schedule C, C-1 or C-3), **affidavit of joint venture** when a DBE participates in the Contract for DBE credit as a joint venturer (Schedule B), **report on all subcontractors solicited** for participation in the Contract (Schedule F) and if the Contract goal is not met, **evidence of good faith efforts**, as set out in Section 1.7, "Good Faith Efforts".

1.6.6. Procedure

A. The submittals must have all blank spaces on the Schedule pages applicable to the subject specification filled incorrectly.

   Agreements between a bidder/proposer and a DBE in which the DBE promises not to provide subcontracting quotations to other bidder/proposers are prohibited.

B. During the period before Award, the submitted documentation will be evaluated. As required under 49 CFR 26.109(c), all participants in the DBE Program, including the bidder/proposer, must give, upon request, earnest and prompt cooperation to the using department and the City's Chief Procurement Officer or his or her authorized delegate in submitting to interviews that may be necessary, or in allowing entry to places of business or in providing further documentation, or in soliciting the cooperation of a proposed DBE in providing such assistance. A bid/proposal may be treated as non-responsive by reason of the determination that the bidder/proposer was found to be unresponsive or uncooperative when asked for further information about the bid/proposal, or that false statements were made in the Schedules.

C. Bidders/Proposers will not be permitted to modify their DBE proposal except as permitted to do so by the City. All terms and conditions stipulated for prospective DBE sub-contractors or suppliers therefore should be satisfactorily negotiated prior to the submission to the City of the bidder/proposer's DBE commitment as part of the DBE proposal. If circumstances arise, where a proposed DBE becomes no longer available, the process described in Section 1.10, DBE Terminations, should be followed.

D. When necessary in the interest of time, the City may treat a bid/proposal as non-responsive instead of granting extended time for a bidder/proposer to replace DBEs named in the DBE proposal that are later determined to be ineligible or unavailable.

1.7. Good Faith Efforts

1.7.1. Demonstration of Good Faith Efforts

In order for a bid/proposal to be responsive, at the time specified in the request for bids/proposals, the bidder/proposer must demonstrate it has made Good Faith Efforts to meet the Contract DBE Participation Goal. The demonstration is made in the form of the documentation described in Section 1.7.2, "Documenting Good Faith Efforts". The bidder/proposer can demonstrate it has made Good Faith Efforts to meet the Contract DBE Participation Goal either by:

A. Meeting the Contract DBE Participation Goal, as provided in these Special Conditions, and documenting commitments for participation by DBE firms sufficient for this purpose; or

B. Documenting, in the manner described below, adequate Good Faith Efforts to meet Contract DBE Participation Goal. This will include attaching all the forms (Forms 1-3) in Attachment A to these Special Conditions, as well as any other information your firm finds relevant. This means bidders/proposers must submit at the time specified in the request for bids/proposals, documentation to show that it took all necessary and reasonable steps to achieve the Contract DBE Participation Goal or other requirements of 49 CFR Part 26, Appendix A, which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if the bidder/proposer was not fully successful. The following are examples of documented actions the City may consider to determine whether the bidder/proposer made Good Faith Efforts:

   i. Conducting market research to identify small business contractors and suppliers and soliciting through all reasonable and available means (e.g., attendance at pre-bid/proposal meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the Work of the Contract. The bidder/proposer must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder/proposer must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

   ii. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the Contract DBE Participation Goal will be achieved. This includes, where appropriate, breaking out Contract Work items into economically feasible units to facilitate DBE participation, even where the prime Contractor might otherwise prefer to perform these work items with its own forces.

   iii. Providing interested DBEs with adequate information about the plans, specifications and requirements of the Contract in a timely manner to assist them in responding to a solicitation.

   iv. Negotiating in good faith with interested DBEs. It is the bidder/proposer's responsibility to make a portion of the Work available to DBE subcontractors and suppliers and to select those portions of the Work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the Work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the Work. A bidder/proposer using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as Contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder/proposer's failure to meet the Contract DBE Participation Goal, as long as such costs are reasonable. Also, the ability or desire of a prime Contractor to perform the Work of a Contract within its own organization does not relieve the bidder/proposer of the responsibility to make Good Faith Efforts. Prime Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

   v. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The DBE's standing within its industry, membership in specific groups, organization, or associations and political or social affiliation (for example union vs. non-union employee status) are not

legitimate causes for the rejection or non-solicitation of bids in the bidder/proposer's efforts to meet the Contract DBE Participation Goal. A prime Contractor's inability to find a replacement DBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DBE. The fact that the Contractor has the ability and/or desire to perform the Contract Work with its own forces does not relieve the Contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

vi. Making efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance as required by the City or the bidder/proposer.

vii. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

viii. Effectively using the services of available minority/women community organizations and Contractors' groups; local, State and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

1.7.2. Documentation of Good Faith Efforts

The following 11 types of documentation, and such other documentation and information as outlined in 49 CFR Part 26, as applicable to the situation, will be considered by the Chief Procurement Officer in determining whether the bidder/proposer has made Good Faith Efforts to meet the Contract DBE Participation Goal. Documentation of Good Faith Efforts must be submitted at the time of submission of proposals or the proposal will be deemed non-responsive.

A. Copies of each DBE and non-DBE subcontractor quote submitted to the bidder/proposer when a non-DBE subcontractor was selected over a DBE for Work on the Contract. This must be included in the documentation of Good Faith Efforts whenever a non-DBE subcontractor is selected over a DBE for Work on the Contract.

B. A detailed statement of efforts to identify and select portions of Work identified in the request for proposals to certified DBE firms. Include copies of attendance logs from pre-bid/proposal meetings, advertisements and written notices, as applicable.

C. A listing of all DBE firms contacted that includes:
   - names, address and telephone numbers of DBE firms solicited;
   - date and time of Contact;
   - method of Contact (written, telephone, facsimile transmittal, etc.)
   - name of the person contacted.

D. Copies of letters or any other evidence of mailing that substantiates outreach to DBE vendors that includes:
   - project identification and location;
   - classification/commodity of Work items for which quotations were sought;
   - date, item and location for acceptance of subcontractor bid proposals;
   - detailed statement which summarizes direct negotiations with appropriate DBE firms for specific portions of the Work and indicates why negotiations were unsuccessful;
   - affirmation that good faith efforts have been demonstrated by choosing subcontracting opportunities likely to achieve the Contract DBE Participation Goal by not imposing any limiting conditions which were not mandatory for all subcontractors; or denying the benefits ordinarily conferred on DBE subcontractors for the type of Work that was solicited.

E. Copies of proposed plans for selecting portions of the Work to be performed by DBEs in order to increase the likelihood that the Contract DBE Participation Goal will be achieved.

F. Evidence that the bidder/proposer negotiated in good faith with interested DBEs.

G. Evidence that the bidder/proposer did not reject DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.

H. Evidence that the bidder/proposer made efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance, as required by the City or the bidder/proposer.

I. Evidence that the bidder/proposer made efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.

J. Evidence that the bidder/proposer has provided timely notice of the need for subcontractors to at least 50 percent of the DBEs listed in the City's Directory as being certified in the applicable Areas of Specialty. Proof of notification (e.g., certified mail receipt or facsimile transmittal receipt) prior to the date a bidder/proposer's DBE proposal is due is required for any proposal to be deemed responsive. The Chief Procurement Officer may contact the certified DBEs for verification of notification.

K. Evidence that subcontractor participation is excessively costly. Submit the following:

1. A detailed statement of the Work identified for DBE participation for which the bidder/proposer asserts the DBE quote(s) were excessively costly.

2. A listing of all potential subcontractors contacted for a quotation on that Work item.

3. A copy of every DBE and non-DBE subcontractor quote received for the Work item.

4. Calculation of the average price quoted. Subcontractor participation will be deemed excessively costly when the DBE subcontractor proposal exceeds the average price quoted by more than 15 percent.

5. If applicable, other documentation that demonstrates to the satisfaction of the Chief Procurement Officer that the DBE proposals are excessively costly, even though not in excess of 15 percent higher than the average price quoted. This determination will be based on factors that include, but are not limited to the following:

(A) the City's estimate for the Work under a specific subcontract;

(B) the bidder/proposer's own estimate for the Work under the subcontract;

(C) an average of the bona fide prices quoted for the subcontract;

(D) demonstrated increase in other contract costs as a result of subcontracting to the DBE or other firm.

Note: The City reserves the right to modify this procedure when deemed appropriate.

1.8. Reporting

A. The Contractor will, not later than 15 calendar days from the award of a contract by the City, execute formal contracts or purchase orders with the DBEs included in their approved DBE Utilization Plan.

B. The Contractor will be responsible for reporting payments to all subcontractors on a monthly basis in the form of an electronic audit. Upon the first payment issued by the City of Chicago to the Contractor for services performed, on the first day of each month and every month thereafter, email and or fax audit notifications will be sent out to the Contractor with instructions to report payments that have been made in the prior month to each subcontractor. The reporting of payments to all subcontractors must be entered into the Certification and Compliance Monitoring System (C2), or whatever reporting system is currently in place, on or before the 15th day of each month.

C. Once the prime Contractor has reported payments made to each DBE, including zero dollar amount payments, the DBE will receive an email and/or fax notification requesting them to log into the system and confirm payments received. All monthly confirmations must be reported on or before the 20th day of each month. Contractor and subcontractor reporting to the C2 system must be completed by the 25th of each month or payments may be withheld.

D. All subcontract agreements between the Contractor and DBE firms or any first tier non-certified firm and lower tier DBE firms must contain language requiring the DBE to respond to email and/or fax notifications from the City of Chicago requiring them to report payments received for the prime or the non-certified firm.

Access to the Certification and Compliance System (C2), which is a web based reporting system, can be found at: https://chicago.mwdbe.com

E. The Chief Procurement Officer or any party designated by the Chief Procurement Officer , will have access to the Contractor's books and records, including without limitation payroll records, tax returns and records and books of account, to determine the Contractor's compliance with its commitment to DBE participation and the status of any DBE performing any portion of the Contract. This provision will be in addition to, and not a substitute for, any other provision allowing inspection of the Contractor's records by any officer or official of the City for any purpose.

F. The Contractor will maintain records of all relevant data with respect to the utilization of DBEs retaining these records for a period that is the longer of three years following the performance of the Contract or as required by relevant retention schedules after final acceptance of the Work. Full access to these records will be granted to City, Federal or State authorities or other authorized persons.

G. The Contractor must make available upon request a copy of all DBE subcontracts. The Contractor must ensure that all subcontracts or Agreements with DBEs to supply labor or materials require that the subcontract and all lower tier subcontractors be performed in accordance with the provisions of 49 CFR Part 26.

1.9. Required Assurance

Contractor must comply with, and each subcontract Contractor signs with a subcontractor must include, the following assurance:

The Contractor, sub recipient or subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor will carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted Contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to, (1) withholding monthly progress payments, (2) assessing sanctions, (3) liquidated damages, and/or (4) disqualifying the Contractor from future bidding as non-responsible.

1.10. DBE Terminations

A. Arbitrary changes by the bidder/proposer of the commitments earlier certified in the Schedule D, D-1 or D-3 are prohibited. Further, after once entering into each approved DBE subcontract, the bidder/proposer may neither terminate the subcontract, nor reduce the scope of the Work to be performed by the DBE, nor decrease the price to the DBE, without the City's prior written consent, unless the City causes the termination or reduction. A termination includes any reduction or underrun in work listed for a DBE not caused by a material change to the prime Contract by the recipient. This requirement applies to instances that include but are not limited to: when a prime Contractor seeks to perform Work originally designed for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

Unless the City provides written approval for the termination of a DBE, the Contractor will not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

1. The bidder/proposer must give the Chief Procurement Officer reasons that justify the bidder/proposer's terminating a DBE, reducing the scope of Work to be performed by a DBE, or decreasing the price to a DBE. The termination procedure will be as follows:

   a) Before transmitting the request to terminate a DBE subcontractor or any portion of its Work to the Chief Procurement Officer , the bidder/proposer/Contractor must give notice in writing to the DBE subcontractor, with a copy to the Chief Procurement Officer sent concurrently, of its intent to request to terminate and the reason for the proposed request.

   b) Bidder/proposer/Contractor's written notice must give the DBE five days to respond, advising the City and bidder/proposer/Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract or portion thereof and why the City should not approve the bidder/proposer/Contractor's request. If required in a particular case as a matter of public necessity (e.g., safety), the City may provide a response period shorter than five days.

2. The bidder/proposer/Contractor must have good cause to terminate the listed DBE or any portion of its work. Good cause does not exist if the bidder/proposer/contractor seeks to terminate a DBE or any portion of its work that is relied upon to obtain the contract so that the bidder/proposer/contractor can self-perform the work for which the DBE contractor was engaged, or so that the bidder/proposer/contractor can substitute another DBE or non-DBE contractor after contract award. For purposes of this DBE termination section, good cause includes the following circumstances:

   a) The listed DBE subcontractor fails or refuses to execute a written Contract;
   b) The listed DBE subcontractor fails or refuses to perform the Work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its Work on the subcontract results from the bad faith or discriminatory action of the prime Contractor;
   c) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements.
   d) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
   e) The listed DBE subcontractor is ineligible to Work on public Works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200, or applicable state law;
   f) The City has determined that the listed DBE subcontractor is not responsible;
   g) The listed DBE subcontractor voluntarily withdraws from the project and provides to the City written notice of its withdrawal;
   h) The listed DBE is ineligible to receive DBE credit for the type of Work required;
   i) A DBE owner dies or becomes disabled with the result that the listed DBE Contractor is unable to complete its Work on the Contract;
   j) Other documented good cause that the City may determine compels the termination of the DBE subcontractor.

The bidder/proposer/Contractor's position in these cases must be fully explained and supported with adequate documentation. Stated reasons which will not be acceptable include: A replacement firm has been recruited to perform the same Work under terms more advantageous to the prime Contractor; issues about performance by the committed DBE were disputed (unless every reasonable effort has already been made to have the issues resolved or mediated satisfactorily); a DBE has requested reasonable price escalation which may be justified due to unforeseen circumstances; or the bidder/proposer seeks to terminate a DBE it relied upon to obtain the Contract so that the bidder/proposer can self-perform the Work for which the DBE subcontractor was engaged.

3. If termination of a DBE subcontractor is approved, or a DBE subcontractor fails to complete its Work on the Contract for any reason, including when Work committed to a DBE is not countable or reduced due to overestimations made prior to Award, the bidder/proposer/Contractor must use good faith efforts to include additional DBE participation to the extent needed to meet the Contract goal. The good faith efforts will be documented by the bidder/proposer. If the City requests documentation, the bidder/proposer/Contractor will submit the documentation within seven days, which may be extended for an additional seven days, if necessary, at the request of the bidder/proposer/Contractor. The City will provide a written determination to the bidder/proposer/Contractor stating whether or not good faith efforts have been demonstrated.

B. The Chief Procurement Officer will make the determination of whether the bidder/proposer/Contractor has exercised Good Faith Efforts.

1.11. Non-Compliance

A. Each of the following constitutes a material breach of this Contract and entitles the City to declare a default, terminate the Contract, and exercise those remedies provided for in the Contract, at law or in equity:

1. failure to make Good Faith Efforts to satisfy the Contract DBE Participation Goal proposed by the bidder/proposer and accepted by the City; and

2. the Contractor, a subcontractor or supplier is disqualified as a DBE, where the status was a factor in the Contract Award and was misrepresented by the Contractor.

If the Contractor is determined by the City not to have been involved in any misrepresentation of the status of a disqualified subcontractor or supplier, the Contractor must discharge the disqualified subcontractor or supplier and, if possible, identify and engage a qualified DBE as its replacement. Furthermore, Contractor's continued eligibility to enter into future contracting arrangements with the City may be jeopardized as a result of non-compliance. The City may withhold payments due to the Contractor until corrective action is taken.

B. When the Contract requirements are completed, in the event that the City has determined that the bidder/proposer/Contractor failed to comply with the Contract DBE Participation Goal proposed by the bidder/proposer/Contractor and accepted by the City, but not to the extent the under- or non-utilization occurs pursuant to Good Faith Efforts approved by the City or approved DBE terminations, the City will thereby be damaged in the failure to provide the benefit of participation to DBEs to the degree set forth in the Special Conditions. Therefore, in such case of non-compliance, the City will deduct as liquidated damages cumulative amounts computed as follows:

For each one percent (or fraction thereof) of shortfall toward the Contract DBE Participation Goal, one percent of the base bid for this Contract will be surrendered by the bidder/proposer to the City of Chicago in payment as liquidated damages.

C. For Contracts funded in whole or in part by the Federal Aviation Administration only: The Contractor's failure to comply with the Contract DBE Participation Goal proposed by the bidder/proposer and accepted by the City, or failure to comply with the provisions of Section 1.10, above, "DBE Terminations", will entitle the affected DBEs to recover from the Contractor damages suffered by these DBEs as a result of such under- or non-utilization, but this provision will not apply to the extent the under- or non-utilization occurs pursuant to Good Faith Efforts approved by the City. *See* Section 1.12, "Arbitration (FAA Funded Contracts)".

1.12. Arbitration (FAA Funded Contracts)

A. The Contractor hereby agrees that any disputes between the Contractor and any affected DBE regarding damages as a result of Contractor's under- or non-utilization of the DBE on any contract funded, in whole or in part, by the Federal Aviation Administration may, at the sole discretion of the DBE, be resolved by binding arbitration before an independent arbitrator other than the City, with reasonable expenses, including attorneys' fees, being recoverable by a prevailing DBE in accordance with applicable City regulations. This provision is intended for the benefit of any DBEs affected by under- or non-utilization and grants them specific third party

beneficiary rights. In cases where deemed appropriate by the City, notification of a dispute by the affected DBE or prime Contractor may lead to the withholding of final Contract payouts until the City receives a copy of the final arbitration decision. Any rights conferred by this regulation are non-waivable and take precedence over any agreement to the contrary, including those contained in a subcontract, suborder or communicated orally between a Contractor and a DBE.

B. If requested by the DBE, the DBE has the right to arbitrate. A DBE desiring to arbitrate must contact the Contractor in writing to initiate the arbitration process. Except as otherwise agreed to in writing by the affected parties, subject to the limitation contained in the last sentence of the previous paragraph, within 10 days of the Contractor receiving notification of the intent to arbitrate from the DBE the above-described disputes must be arbitrated in accordance with the Commercial Arbitration Rules of the American Arbitration Association (AAA), a not-for-profit agency, with an office 150 N. Michigan Avenue, Suite 3050, Chicago, Illinois 60601. (Phone: 312-616-6560; website at: https://go.adr.org/chicago-regional-office). All such arbitrations must be initiated by the DBE filing a demand for arbitration with the AAA; must be conducted by the AAA; and held in Chicago, Illinois.

C. All fees of the arbitrator are the initial responsibility of the DBE; the arbitrator, however, is authorized to Award reasonable expenses, including attorney's and arbitrator fees, as damages to a prevailing DBE.

D. The DBE must send the City a copy of the "Demand for Arbitration" within 10 days after it is filed with the AAA. The DBE also must send the City a copy of the decision of the arbitrator within 10 days of receiving the decision. Judgment upon the Award rendered by the arbitrator may be entered in any court of competent jurisdiction.

1.13. Prime Contractor Assistance

Prime Contractors should themselves assist DBEs in overcoming barriers to program participation. The following instruments of assistance, for example, should be used as applicable:

- Developing solicitations of sub-contract bids so as to increase potential DBE participation. This can take the form of breaking down large subcontracts into smaller ones, and of issuing notice of solicitations in a timely manner.
- Providing technical assistance and guidance in the bidding, estimating and scheduling processes.
- Considering purchasing supplies and/or leasing the required equipment for a job, then subcontracting only for the expertise required to perform the Work.
- Providing accelerated payments or establishing pro-rated payment and delivery schedules so as to minimize cash flow problems faced by small firms.
- Providing, waiving or reducing subcontractor bonding requirements; allowing stage bonding (bonding carried over from one project stage to the next).
- Providing a pre-bid conference for potential sub-Contractors.

In addition to the employment of DBEs, the bidder/proposer should consider the utilization of DBEs in fields indirectly related to the Contract, such as banking, office equipment sales, vehicles sales, mechanical repair, legal and accounting services, building security, graphics and advertising, etc.

1.14. Record Keeping

The Contractor will maintain records of all relevant data with respect to the utilization of DBEs, retaining these records for a period of at least three years following the performance of the contract or as required by relevant retention schedules after final acceptance of the work. Full access to these records will be granted to the City of Chicago, Federal or State authorities in this project, the U. S. Department of Justice, or any duly authorized representatives thereof.

1.15. DBE Financial Institutions

Information on DBE financial institutions can be found online at:
https://webapps.dot.illinois.gov/UCP/ExternalSearch.

1.16. Assistance Agencies

Small business guaranteed loans, surety bond guarantees; 8(a) certification:
U. S. Small Business Administration
500 W. Madison Street, Suite 1250
Chicago, Illinois 60601
(312) 353-4528

S.B.A. Bond Guarantee Program/Surety Bonds
500 W. Madison Street, Suite 1250
Chicago, Illinois 60601
(312) 353-7331

S.B.A. Procurement Assistance
500 W. Madison Street, Suite 1250
Chicago, Illinois 60601
(312) 744-1895

City of Chicago Department of Procurement Services Web site: www.cityofchicago.org/dps

Information on DBE availability in the manufacturing, sales or supplies, and related fields (direct assistance from 42 regional affiliates located throughout the U.S.):

National Minority Supplier
Development Council, Inc.
1040 Avenue of the Americas – 2nd Floor
New York, New York 10018
(212) 944-2430

Chicago Minority Business Development Council
11 South LaSalle Street – Suite 850
Chicago, Illinois 60603
(312) 263-0105

1.17. Equal Employment Opportunity
Compliance with DBE requirements will not diminish or supplant Equal Employment Opportunity and Civil Rights provisions as specified elsewhere in this contract and as they relate to prime Contractor and subcontractor obligations.

1.18. Bidder's List Collection Form
In accordance with 49 CFR 26.11, all bidders must provide the information requested in the Bidder's List Collection Form, which is attached to these Special Conditions as Attachment A, for itself, as the prime contract, as well for all its subcontracts. Bidders are required to submit the information below regardless of whether the prime contract is a DBE. If you need additional pages, please attach them. If the information below is not provided with the bid, the bid will be rejected as non-responsive.

ATTACHMENT A
GOOD FAITH EFFORTS FORMS

Demonstration of Good Faith Efforts - Forms 1, 2, and 3

FORM 1: DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner:

□ Bidder/offeror has met the DBE contract goal
The bidder/offeror is committed to a minimum of ____ % DBE utilization on this contract.

□ Bidder/offeror has not met the DBE contract goal
The bidder/offeror is committed to a minimum of ____% DBE utilization on this contract and has submitted documentation demonstrating good faith efforts.

Legal name of bidder/offeror's firm: _____

Bidder/Offeror Representative:

_____
Name & Title

_____ _____
Signature Date

FORM 2: LETTER OF INTENT

Note: The authorized representative (AR) named below must be an individual vested with the authority to make contracting decisions on behalf of the firm.

Name of bidder/offeror's firm: _____

Name & title of firm's AR: _____

Phone: _____ Email: _____

Name of DBE firm: _____

Name & title of DBE firm's AR: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

DEPARTMENT OF PROCUREMENT SERVICES

CITY OF CHICAGO
ASSIST AGENCY LIST

Assist Agencies are comprised of not-for-profit agencies and/or chamber of commerce agencies that represent the interest of small, minority and/or women owned businesses.

Prime Contractors should contact agency with subcontracting opportunities to connect certified firms.

Rev. October 2021 – Information subject to change – visit www.chicago.gov/dps for the most recent list.

ATTACHMENT B

(On Bidder/Proposer's Letterhead)

RETURN RECEIPT REQUESTED

(Date)

Re: Specification: _____ Description: _____

Assist Agency Name and Address:

Dear _____:

(Bidder/Proposer) _____ intends to submit a bid/proposal in response to the above referenced specification with the City of Chicago. Bids are due on _____.

The following areas have been identified for Subcontracting opportunities on both a direct and indirect basis:

_____

_____

_____

Our efforts to identify potential Subcontractors have not been successful in order to meet the Disadvantaged Business Enterprise ("DBE") Contract goal. If you are aware of any DBE firms that would be capable of performing in any of the above identified areas, please contact:

(Bidder/Proposer) _____ At

_____

Name of Company Representative
Address/phone

within 10 working Days of receipt of this letter.

Due to our inability to identify an appropriate DBE firm(s) certified by the Illinois Unified Certification Program ("IL UCP") to participate as a Subcontractor or joint venture partner on this Project, a request for the waiver of the Contract goals will be submitted. Written comments on (Bidders/Proposer's) waiver request may be directed within 15 working Days of your receipt of this letter to:

Sharla D. Roberts
Chief Procurement Officer
DPS City of Chicago
121 N. LaSalle Street, Room 806
Chicago, Illinois 60602

If you wish to discuss this matter, please contact the undersigned at _____.

Sincerely,

SCHEDULE B: Affidavit of DBE/Non-DBE Joint Venture
(FTA, FHWA and FAA Funded Contracts)

Note: If all joint venturers are DBEs, a written joint venture Agreement between the DBE venturers may be submitted in lieu of this form. In all proposed joint ventures, each DBE venturer must submit a copy of its current Letter of Certification.

ALL INFORMATION REQUESTED BY THIS SCHEDULE MUST BE ANSWERED IN THE SPACES PROVIDED. DO NOT REFER TO YOUR JOINT VENTURE AGREEMENT EXCEPT TO EXPAND ON ANSWERS PROVIDED ON THIS FORM. IF ADDITIONAL SPACE IS REQUIRED, ADDITIONAL SHEETS MAY BE ATTACHED.

I. Name of joint venture:_____
Address of joint venture:_____
_____
Phone number of joint venture:_____

II. Identify each non-DBE venturer(s):_____
Name of Firm:_____
Address: _____
_____
Phone: _____
Contact person for matters concerning DBE compliance:_____

III. Identify each non-DBE venturer(s):_____
Name of Firm:_____
Address: _____
_____
Phone: _____
Contact person for matters concerning DBE compliance:_____

IV. Describe the role(s) of the DBE venturer(s) in the joint venture:
_____
_____
_____
_____

V. Attach a copy of the joint venture Agreement. In order to demonstrate the DBE venturer's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture Agreement must include specific details related to: (1) the contributions of capital and equipment, (2) Work items to be performed by the DBE's own forces, (3) Work items to be performed under the supervision of the DBE venturer, and (4) the commitment of management, supervisory and operative personnel employed by the DBE to be dedicated to the performance of the Project.

VI. Ownership of the Joint Venture.
A. What are the percentage(s) of DBE ownership of the joint venture?
DBE ownership percentage(s)_____
Non-DBE ownership percentage(s)_____

B. Specify DBE percentages for each of the following (provide narrative descriptions and other details as applicable):
1. Profit and loss sharing:_____
2. Capital contributions:
a. Dollar amounts of initial contribution:_____
b. Dollar amounts of anticipated ongoing contributions:_____

3. Contributions of equipment (specify types and quantities of equipment to be provided by each venturer): _____
_____
_____
_____

4. Other applicable ownership interests, including ownership options or other Agreements which restrict or limit ownership and/or control: _____
_____
_____

5. Provide copies of all written Agreements between venturers concerning this Project.

6. Identify each current City of Chicago Contract (and each Contract completed during the past two years) by a joint venture of two or more firms participating in this joint venture:
_____
_____

VII. Control of and Participation in the Joint Venture. Identify by name and firm those individuals who are, or will be, responsible for, and have the authority to engage in the following management functions and policy decisions. (Indicate any limitations to their authority such as dollar limits and co-signatory requirements.):

A. Joint venture check signing:
_____
_____
_____

B. Authority to enter Contracts on behalf of the joint venture:
_____
_____
_____

C. Signing, co-signing and/or collateralizing loans:
_____
_____
_____

D. Acquisition of lines of credit:
_____
_____
_____

E. Acquisition and indemnification of payment and performance bonds:
_____
_____
_____

F. Negotiating and signing labor Agreements:
_____
_____
_____

G. Management of Contract performance. (identify by name and firm only):
1. Supervision of field operations: _____
2. Major purchases: _____
3. Estimating: _____

4. Engineering:_____

VIII. Financial Controls of joint venture:

A. Which firm and/or individual will be responsible for keeping the books of account?

_____

B. Identify the "managing partner", if any, and describe the means and measure of their compensation:

_____

_____

_____

C. What authority does each venturer have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, Subcontractors, and/or other parties participating in the performance of this Contract or the Work of this Project?

_____

_____

_____

IX. State the approximate number of operative personnel (by trade) needed to perform the joint venture's Work under this Contract. Indicate whether they will be employees of the non-DBE firm, the DBE firm, or the joint venture.

Trade	Non-DBE Firm (number of employees)	DBE (number of employees)	Joint Venture (number of employees)

Note: If <u>any</u> personnel proposed for this Project will be employees of the joint venture:

A. Are <u>any</u> proposed joint venture employees currently employed by either venturer?
Currently employed by non-DBE (number)_____
Currently employed by DBE_____

B. Identify by name and firm the individual who will be responsible for hiring joint venture employees:

_____

C. Which venturer will be responsible for the preparation of joint venture payrolls:

_____

X. Please state any material facts of additional information pertinent to the control and structure of this joint venture.

Attach additional sheets as needed.

The undersigned affirms that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operations of our joint venture and the intended participation of each venturer in the undertaking. Further, the undersigned covenant and agree to provide to the City current, complete, and accurate information regarding actual joint venture Work and the payment therefore, and any proposed changes in any provision of the joint venture Agreement, and to permit the audit and examination of the books, records, and files of the joint venture, or those of each venturer relevant to the joint venture by authorized representatives of the City or the Federal funding agency.

Any material misrepresentation will be grounds for terminating any Contract which may be Awarded and for initiating action under Federal or State laws concerning false statements.

Note: If there are any changes in the information submitted after filing this Schedule B and before the completion of the joint venture's Work on the Project, the joint venture must inform the City of Chicago, either directly or through the prime Contractor if the joint venture is a Subcontractor.

_____	_____
Name of DBE Partner Firm	Name of Non-DBE Partner Firm
_____	_____
Signature of Affiant	Signature of Affiant
_____	_____
Name and Title of Affiant	Name and Title of Affiant
_____	_____
Date	Date

On this_____day of_____, 20____, the above-signed officers

_____,
(names of affiants)

personally appeared and, known to me to be the persons described in the foregoing Affidavit, acknowledged that they executed the same in the capacity therein stated and for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
Signature of Notary Public

My Commission Expires:_____**(SEAL)**

FOR CONSTRUCTION PROJECTS ONLY

SCHEDULE C

DBE Letter of Intent to Perform as a Subcontractor or Supplier

Project Name:_____ Specification Number: _____

From: _____
(Name of DBE Firm)

To:_____and the City of Chicago.
(Name of Prime Contractor)

The DBE status of the undersigned is confirmed by the attached City of Chicago or Illinois Uniform Certification Program Certification Letter.

The undersigned is prepared to perform the following services in connection with the above-named Project/Contract. If more space is required to fully describe the DBE proposed scope of Work and/or payment schedule, attach additional sheets as necessary:

_____

_____

The above described performance is offered for the following price and described terms of payment:

Pay Item Number/Description	**Quantity/Unit Price**	**Total**

Grand Total: $_____

Partial Pay Items

For any of the above items that are partial pay items specifically describe the Work and Subcontract dollar amount(s):

_____

_____

_____

_____

Grand Total: $_____

SUB-SUBCONTRACTING LEVELS

A zero must be shown in each blank if the DBE will not be Subcontracting any of the Work listed or attached to this schedule.

_____% of the dollar value of the DBE Subcontract that will be Subcontracted to non-DBE Contractors.

_____% of the dollar value of the DBE Subcontract that will be Subcontracted to DBE Contractors.

NOTICE: If any of the DBE scope of Work will be Subcontracted, list the name of the vendor, and attach a brief explanation, description and pay item number of the Work that will be Subcontracted.

The undersigned will enter into a formal written Agreement for the above Work with you as a Prime Contractor, conditioned upon your execution of a Contract with the City of Chicago, within three Business Days of your receipt of a signed Contract from the City of Chicago.

NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES.

(Signature of President/Owner/CEO or Authorized Agent of DBE) (Date)

(Name/Title-Please Print)

(Email & Phone Number)

SCHEDULE D
Affidavit of Prime Contractor
Regarding Disadvantaged Business Enterprises (DBEs)
(FTA/FHWA and FAA Funded Projects)

Project Name: _____

Department Project Number: _____

Specification Number: _____

State of_____)
) :ss
County (City) of_____)

In connection with the above captioned Contract, I HEREBY DECLARE AND AFFIRM that I am the _____ and duly authorized representative of
(Title of Affiant)

_____
(Name of Prime Contractor)

and that I have personally reviewed the material and facts set forth in and submitted with the attached Schedules of Disadvantaged Business Enterprises (DBE), Schedule Cs and Schedule Bs (if applicable), being such information.

Names of DBE Firms	**Type of Work to be Performed (in accordance with Schedule Cs)**	**Credit Toward DBE Goal**
		$
		$
		$
		$
		$
		$
		$
		$
		$
		$
		$
		$
		$

Total DBE Credit: $_____

Schedule D: Affidavit of Prime Contractor – DBE (FTA/FHWA/FAA Funded Projects)

To the best of my knowledge, information and belief, the facts, and representations contained in the aforementioned attached Schedules are true, and no material facts have been omitted.

The undersigned will enter into formal Agreements with all listed DBE firms for Work as indicated by this Schedule D and accompanying Schedules and will enter into such Agreements within five Business Days after receipt of the Contract executed by the City of Chicago. Copies of each signed Subcontract, purchase order, or other Agreement will be submitted to DPS so as to assure receipt within 10 Business Days after Award.

The Prime Contractor designates the following person as their DBE Liaison Officer:

_____ _____
(Name, Please Print or Type) (Phone)

Email Address: _____

Fax Number: _____

I DO SOLEMNLY DECLARE AND AFFIRM UNDER PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED ON BEHALF OF THE PRIME CONTRACTOR TO MAKE THIS AFFIDAVIT.

_____
(Name of Prime Contractor - Print or Type)

_____
(Signature)

_____
(Name of Affiant)

_____
(Date)

On this_____day of_____, 20____ , the

above signed officer,_____,
(Name of Affiant)
personally appeared and, known by me to be the person described in the foregoing Affidavit, acknowledges that that (s)he executed the same in the capacity stated therein and for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

_____
Notary Public Signature

Commission Expires:_____(Seal)

SCHEDULE F: Report of Subcontractor Solicitations
(FHWA, FTA and FAA Funded Contracts)

Project Name: _____
Specification Number: _____

I,_____ on behalf of_____
(Name of reporter) (Prime Contractor)

have either personally solicited, or permitted a duly authorized representative of this firm to solicit, Work for this Contract from the following Subcontractors which comprise all DBE and non-DBE Subcontractors who bid or quoted price information on this Contract:

Name of Subcontractor_____
Address of Subcontractor_____
Contact Person_____
Status: DBE Certified?_____ ☐Yes ☐ No
Type of Work Solicited_____
Years in Business (if available)_____
Annual Gross Receipts (if available)_____

Name of Subcontractor_____
Address of Subcontractor_____
Contact Person_____
Status: DBE Certified?_____ ☐Yes ☐ No
Type of Work Solicited_____
Years in Business (if available)_____
Annual Gross Receipts (if available)_____

Name of Subcontractor_____
Address of Subcontractor_____
Contact Person_____
Status: DBE Certified?_____ ☐Yes ☐ No
Type of Work Solicited_____
Years in Business (if available)_____
Annual Gross Receipts (if available)_____

Name of Subcontractor_____
Address of Subcontractor_____
Contact Person_____
Status: DBE Certified?_____ ☐Yes ☐ No
Type of Work Solicited_____
Years in Business (if available)_____
Annual Gross Receipts (if available)_____

Name of Subcontractor_____
Address of Subcontractor_____
Contact Person_____
Status: DBE Certified?_____ ☐Yes ☐ No
Type of Work Solicited_____
Years in Business (if available)_____
Annual Gross Receipts (if available)_____

DBE/MBE/WBE Utilization Report

NOTICE: **THIS REPORT IS NOT TO BE COMPLETED AT THE TIME OF BID OR PROPOSAL SUBMISSION.** IF AWARDED A CONTRACT WITH AN APPROVED DBE/MBE/WBE PLAN, THE PRIME CONTRACTOR WILL BE REQUIRED TO SUBMIT THIS REPORT IN ACCORDANCE WITH THE REPORTING REQUIREMENTS STATED IN THE SPECIAL CONDITION REGARDING DISADVANTAGED OR MINORITY AND WOMEN BUSINESS ENTERPRISE COMMITMENT.

Contract Administrator: _____ Specification Number: _____

Phone Number: _____ Purchase Order Number: _____

Date of Award: _____

Utilization Report Number: _____

STATE OF: (_____)

COUNTY (CITY) OF: (_____)

In connection with the above-captioned Contract:

I HEREBY DECLARE AND AFFIRM that I am the _____
(Title - Print or Type)

and duly authorized representative of _____
(Name of Company - Print or Type)

_____ (____) _____
(Address of Company) (Phone)

and that the following Disadvantaged, Minority and Women Business Enterprises have been Contracted with, and have furnished, or are furnishing and preparing materials for, and rendering services stated in the Contract Agreement.

The following Schedule accurately reflects the value of each DBE/MBE/WBE sub-Agreement, and the amounts of money paid to each to date.

DBE/MBE/WBE Firm Name	Indicate Type of Firm (DBE/MBE/WBE)	Amount of Contract	Amount Paid To-Date
		$	$

Amount Billed to City: $_____

Amount Paid to Prime Contractor: $_____

DBE/MBE/WBE Utilization Report

For each DBE/MBE and/or WBE listed on this report, briefly describe the Work or goods/services provided in relation to this Contract. (Indicate line items, if applicable)

DBE/MBE/WBE Name	Description of Work/Services and/or Goods Provided

DBE/MBE/WBE Utilization Report

I do solemnly declare and affirm under the penalties of perjury that the contents of the foregoing document are true and correct, and that I am authorized, on behalf of Contractor, to make this affidavit.

Name of Contractor: _____
(Print or Type)

Signature: _____
(Signature of affiant)

Name of Affiant: _____
(Print or Type)

Date: _____
(Print or Type)

State of _____

County (City) of _____

This instrument was acknowledged before me on _____ (date)

By _____ (name/s of person/s)

as _____ (type of authority, e.g., officer, trustee, etc.)

of _____ (name of party on behalf of whom instrument was executed).

_____
Signature of Notary Public

(Seal)

STATUS REPORT OF DBE (SUB) CONTRACT PAYMETS

(FHWA, FTA and FAA Funded Contracts)

Specification Number: _____

Department Project Number: _____

Date: _____

Voucher Number: _____

STATE OF:_____)

COUNTY (CITY) OF:_____)

In connection with the above-captioned Contract:

I HEREBY DECLARE AND AFFIRM that I am the _____
(Title - Print or Type)

and duly authorized representative of _____
(Name of Company - Print or Type)

_____ (_____)_____
(Address of Company) (Phone)

and that the following Disadvantaged Business Enterprises (DBEs) have been contracted with, and have furnished, or are furnishing and preparing materials for, and have done or are doing labor on the above-referenced Project, that there is due and to become due them, respectively the amounts set opposite their names for material or labor stated, and that this is a full, true, and complete statement of all such DBEs and of the amounts paid, due and to become due to them:

DBE NAME	GOODS/SERVICES PROVIDED	AMOUNT OF CONTRACT	AMOUNT PAID TO DATE

TOTAL AMOUNT PAID TO DBEs TO DATE: $_____

STATUS REPORT OF DBE (SUB) CONTRACT PAYMENTS

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF CONTRACTOR, TO MAKE THIS AFFIDAVIT.

Name of Contractor: _____
(Print or Type)

Signature: _____
(Signature of Affiant)

Name of Affiant: _____
(Print or Type)

Date: _____
(Print or Type)

State of _____

County (City) of _____

This instrument was acknowledged before me on_____(date)

by_____(name(s) of person(s))

as _____ (type of authority, e.g., officer, trustee, etc.)

of _____ (name of party on behalf of whom instrument was executed).

_____
Signature of Notary Public

(Seal)

EXHIBIT D
DBE REQUIREMENT FOR BIDDER/PROPOSER LIST

Pursuant to 49 CFR 26.11, The City is required to maintain a Bidders list, consisting of all firms bidding or proposing on prime Contracts and bidding or quoting Subcontracts. The Bidder/proposer is requested to provide a list of all DBE AND non-DBE Subcontractors who bid or quote price information on this Contract. Failure to cooperate may result in the Bidder/proposer being deemed non-responsive in this and future bids. Bidder/proposer is requested to provide the following information:

Prime Contractor (Including all partners to a Joint Venture, if applicable) Name:

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

Subcontractors (all DBE AND non-DBE Subcontractors)

1. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

2. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

Exhibit D: DBE Requirement for Bidder/Proposer List

3. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

4. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

5. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

6. Name: _____

Address: _____

Address: _____

City, State, Zip: _____

Goods or Services: _____

Attach Additional Pages as Needed

AFFIDAVIT OF UNCOMPLETED WORK

(Complete this form by either typing or using black ink.)

PART I. WORK UNDER CONTRACT

List below all Work you have under Contract as either a prime Contractor or a Subcontractor, including all pending low bids not yet Awarded or rejected.

	1	2	3	4	5	Awards Pending	
PROJECT							
CONTRACT WITH							
ESTIMATED COMPLETION DATE							
TOTAL CONTRACT PRICE							TOTAL
UNCOMPLETED DOLLAR VALUE							

PART II. UNCOMPLETED WORK TO BE DONE WITH YOUR OWN FORCES.

List below the uncompleted dollar value of Work for each Contract to be completed with your own forces including all Work indicated as Awards pending. All Work Subcontracted to others will be listed on PART III of this form. In a joint venture, list only that portion of the Work to be done by your company.

							TOTALS
EXCAVATING & GRADING							
PCC BASE, C&G PAVING							
BIT CONCRETE PAVING							
STABILIZED BASE (BAM, CAM, PAM)							
AGGREGATE BASE AND FILL							
FOUNDATION (CAISSON & PILE)							
HIGHWAY STRUCTURES							
SEWER & DRAIN STRUCTURES							
PAINTING							
PAVEMENT MARKING							
SIGNING							
LANDSCAPING							
DEMOLITION							
FENCING							

		1	2	3	4	5	Awards Pending
OTHERS (LIST)							
STRUCT. STEEL (BLDG. CONST.)							
ORNAMENTAL STEEL (BLDG. CONST.)							
MISCELLANEOUS CONCRETE							
FIREPROOFING							
MASONRY							
H.V.A.C.							
MECHANICAL							
ELECTRICAL							
PLUMBING							
ROOFING & SHEET METAL							
FLOORING & TILE WORK							
DRYWALL AND PLASTER WORK							
CEILING CONST.							
HOLLOW METAL AND HARDWARE							
GLAZING AND CAULKING							
MISCELLANEOUS ARCH. WORK							
OTHERS (LIST)							
TOTALS							

REMARKS _____

PART III. WORK SUBCONTRACTED TO OTHERS.

List below the Work, according to each Contract on the preceding page, which you have Subcontracted to others. DO NOT include Work to be performed by another prime Contractor in a joint venture. No Work may be indicated as Subcontracted to others on Awards pending. If no Work is Subcontracted to others, show NONE.

	1	2	3	4	5
SUBCONTRACTOR					
TYPE O F WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					

I, being duly sworn do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted Contracts of the undersigned for Federal, State, County, City, and private Work including ALL Subcontract Work, ALL pending low bids not yet Awarded or rejected, and ALL estimated completion dates.

Subscribed and sworn to before me Signed _____

this_____day of_____20___. Company_____

Address _____

My commission expires: _____

BID BOND

For use when bidding on City of Chicago Projects. See instructions following.

PRINCIPAL (Legal name and business address)

State of incorporation or organization:

SURETY (Legal name and business address)

State of incorporation:

BID IDENTIFICATION

BID OPENING DATE:

SPECIFICATION NUMBER:

SPECIFICATION TITLE (AND PROJECT NUMBER IF AVAILABLE):

PENAL SUM OF BOND

_____ %, PERCENT OF BASE BID

Surety Bond Number:

Obligation:

We, the Principal and Surety, are firmly bound to the City of Chicago (hereinafter called the City) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally.

Conditions:

The Principal has submitted the bid identified above.

Therefore:

The above obligation is void if the City accepts the bid identified above and the Principal enters into a Contract with the City in accordance with the terms of such bid, executes such further contractual documents that may be required by the terms of the bid or Contract Documents, and gives such bond(s) as may be specified in the bidding or Contract Documents with surety acceptable to the City.

The Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the City. Notice to the surety of extension(s) is waived.

In the event the City brings suit upon this bond, Surety will pay reasonable attorney's fees and costs incurred by the City in such suit.

Witness:

The Principal and Surety executed this bid bond and affixed their seals on the below dates. The person signing below on behalf of the Principal warrants that he or she is authorized to execute this document on behalf of the Principal.

PRINCIPAL

PRINCIPAL NAME		*Corporate Seal*
PRINCIPAL SIGNATURE		
SIGNER'S NAME & TITLE		
DATE		

SURETY

SURETY NAME		*Corporate Seal*
ATTORNEY-IN-FACT SIGNATURE		
ATTORNEY-IN-FACT NAME		
DATE		

NOTARY

STATE OF _____, COUNTY OF _____

I, _____, a Notary Public in the County and State aforesaid, do hereby certify that _____ of the _____ who is personally known to be the same person whose name he/she subscribed in the foregoing instrument as such Attorney-in-Fact, appeared before me this day in person and acknowledged that he/she signed, sealed, and delivered the said instrument of writing as his/her free and voluntary act, and as the free and voluntary act of the said _____ for the uses and purposes therein set forth, and caused the corporate seal of said company to be thereto attached.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____, 20

	NOTARY PUBLIC	*Notary Seal*

The signature of the Surety's attorney-in-fact must be notarized, and an original power of attorney granting him or her authority to sign this document must be attached to this document.

INSTRUCTIONS FOR CITY OF CHICAGO BID BOND FORM

Bidders/Proposers: Give these instructions to your surety.

1. The Bond must be on the City's form. No substitutions will be acceptable.

2. Copies of the form are acceptable. However, copies of the Bond must be double sided, with page one on one side of the paper, and page two on the opposite side of the paper.

3. The amount of the Bond must be that stated in the Legal Advertisement. Unless otherwise specified, the amount of the bond should be expressed as a percentage of the bid amount.

4. All blank spaces to be filled in must be completed using a typewriter or legible hand printing unless otherwise indicated. Determinations of legibility will be in the sole discretion of the CPO. Photocopied insertions will not be accepted, nor will any Bond form on which there is any evidence of correction fluid ("white-out").

5. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. If the Bidder/Proposer is bidding under an assumed name ("d/b/a") the assumed name must be separately stated in the same space as the full legal name for identification purposes.

6. The address of the Principal must be complete. If a different mailing address should be used, it should be included as well, as bonds to be returned will be mailed to address shown on the bond.

7. The Bond must include the Surety's name, the state in which the Surety was incorporated, and the Surety's address.

8. The Specification number must appear on the Bond.

9. The Surety executing the bond must appear on the Department of the Treasury's list of approved sureties (available at https://fiscal.treasury.gov/surety-bonds/list-certified-companies.html) and must act within the limitations listed therein.

10. The names and titles of the people signing the bond must be given in the spaces provided.

11. Corporations executing the bond will affix their corporate seals if required. If a seal is not required, please indicate "seal not required" in the space where the seal would otherwise be affixed.

12. A person authorized to bind the Bidder/Proposer as the Principal must sign the bond.

13. The Bond must be signed by an attorney-in-fact of the Surety company. An original Power of Attorney that identifies the surety company's signatory as an attorney-in-fact must be attached.

14. The date on which the Surety's Power of Attorney was certified should be the same or later than the date on which the bond was signed by the Surety.

15. In its application to negotiated Contracts, the terms "bid", and "Bidder", will include "proposal", and "offeror".

*RIDER ATTACHED
CONTRACTORS PERFORMANCE & PAYMENT BOND

Know All Men By these Presents, That we, Principal, hereinafter referred to as Contractor, and Surety of the County of Cook and State of Illinois, are held and firmly bound unto the CITY OF CHICAGO in the penal sum of lawful money of the United States, for the payment of which sum of money, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this_____ day of _____ A.D., 20___

The Condition of the Above Obligation is such,

That whereas the above bounden Contractor has entered into a certain Contract with the CITY OF CHICAGO, bearing Contract Number and Specification Number all in conformity with said Contract, for,

S P E C I M E N

The said Contract is incorporated herein reference in its entirety, including without limitation, any and all indemnification provisions. *The attached rider is incorporated herein by reference.

Now, if the said Contractor will in all respects well and truly keep and perform the said Contract on its part, in accordance with the terms and provisions of all of the Contract Documents comprising said Contract, and in the time and manner therein prescribed, and further will save, indemnify and keep harmless the City of Chicago against all loss, damages, claims, liabilities, judgments, cost and expenses which may in anywise accrue against said City of Chicago, in consequence of the granting of said Contract, or which may in anywise result therefrom, or which may result from strict liability, or which may in anywise result from any injuries to, or death of, any person or damage to real or personal property, arising directly or indirectly from or in connection with, Work performed or to be performed under said Contract by said Contractor, its Agents, Employees or Workmen, assignees, Subcontractors, or anyone else, in any respect whatever, or which may result on account of any infringement of any patent by reason of the materials, machinery, devices or apparatus used in the performance of said Contract, and moreover, will pay to said City any sum or sums of money determined by the CPO, and/or by a court of competent jurisdiction, to be due said City by reason of any failure or neglect in the performance of the requirements of said Contract, wherefore the CPO will have elected to suspend or cancel the same, and will pay all claims and demands whatsoever, which may accrue to each materialman and Subcontractor, and to each and every person who will be employed by the said Contractor or by its assignees and Subcontractors, in or about the performance of said Contract, and with wages paid at prevailing wage rates if so required by said Contract, and will insure its ability to pay the compensation, and will pay all claims and demands for compensation which may accrue to each and every person who will be employed by them or any of them in or about the performance of said Contract, or which will accrue to the beneficiaries or dependents of any such person, under the provisions of the Workers' Compensation Act, 820 ILCS 305, as amended, and the Workers' Occupational Disease Act, 820 ILCS 310, as amended (hereinafter referred to as "Acts") then is this obligation to be null and void, otherwise to remain in full force and effect.

And it is hereby expressly understood and agreed, and made a condition hereof, that any judgment rendered against said City in any suit based upon any loss, damages, claims, liabilities, judgments, cost or expenses which may in anywise accrue against said City as a consequence of the granting of said Contract, or which may in anywise result therefrom, or which in anywise result from any injuries to, or death of any person, or damage to any real or personal property, arising or indirectly from, or in connection with, Work performed, or to be performed under said Contract by said Contractor or its agents, employees or workmen, assignees, Subcontractors, or anyone else and also any decision of the Industrial Commission of the State of Illinois, and any order of court based upon such decision, or judgment thereon, render against said City of Chicago in any suit or claim arising under the aforementioned Acts when notice of the pendency or arbitration proceedings or suit will have given said Contractor, will be conclusive against each and all parties to this obligation, as to amount, liability and all other things pertaining thereto.

Every person furnishing material or performing labor in the performance of said Contract, either as an individual, as Subcontractor, or otherwise, will have the right to sue on this bond in the name of the City of Chicago, for his use and benefit, and in such suit said person, as plaintiff, will file a copy of this bond, certified by the party or parties in whose charge this bond will be, which copy will be, unless execution thereof be denied under oath, prima facie evidence of the execution and delivery of the original, provided that nothing in this bond contained will be taken to make the City of Chicago liable to any Subcontractor, materialman, laborer, or to any other person to any greater extent than it would have been liable prior to the enactment of the Public Construction Bond Act, 30 ILCS 550, as amended; provided further, that any person having a claim for labor and materials furnished in the performance of this Contract will have no right of action unless he will have filed a verified notice of such claim with the Clerk of the City of Chicago within 180 Days after the date of the last item of Work or the furnishing of the last item of materials, and will have furnished a copy of such verified notice to Contractor within 10 Days of the filing of the notice with the City of Chicago. Such claim will be verified and will contain the name and address of the claimant, the business address of the claimant within the State of Illinois, if any, or if the claimant be a foreign corporation having no place of business with the State the principal place of business of said corporation, and in all cases of partnership the names and Residences of each of the partners, the name of Contractor for the City of Chicago, the name of the person, firm or corporation by whom the claimant was employed or to whom such claimant furnished materials, the amount of the claim and a brief description of the public improvement for the construction or installation of which the Contract is to be performed. Provided, further, that no defect in the notice herein provided for will deprive the claimant of his right of action under the terms and provisions of this bond unless it will affirmatively appear that such defect has prejudiced the rights of an interested party asserting the same, provided, further that no action will be brought until the expiration of 120 Days after the date of the last item of Work or of the furnishing of the last item of material, except in cases where the final settlement between the City of Chicago and Contractor will have been made prior to the expiration of the 120 day period in which case action may be taken immediately following such final settlement, and provided, further, that no action of any kind will be brought later that six months after the acceptance by the City of Chicago of the completion of Work. Any suit upon this bond will be brought only in a circuit court of the State of Illinois in the judicial district in which the Contract will have been performed.

The said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of any of the Contract Documents comprising said Contract, or to the Work to be performed thereunder, will in anywise affect the obligations on this bond, and it does hereby waive notice of any change, extension of time, alteration, or addition to the terms of said Contract Documents or to the Work.

Approved_____,20___ _____(Seal)

_____ _____(Seal)

Chief Procurement Officer

_____(Seal)

_____(Seal)

Approved as to form and legality: _____(Seal)

_____ _____(Seal)

Assistant Corporation Counsel

(REV. 6/30/2000)

RIDER TO CONTRACTOR'S
PERFORMANCE AND PAYMENT BOND

This Rider supplements Contractor's Performance and Payment Bond ("Bond") on that certain Contract with the City of Chicago ("City") bearing Contract Number_____and Specification Number_____("Contract"). Surety acknowledges that the Contract requires Contractor to obtain from each of its Subcontractors' consent to a collateral assignment of their Contracts with Contractor to the City. The Contract further grants the City the right, upon Contractor's default for failure to comply with Chapter 4-36 of the MCC, and at the City's sole option, to take over and complete the Work to be performed by Contractor through the City's assumption of some or all of Contractor's Subcontracts. If the City, in its sole discretion, exercises this right, then Surety waives any rights it may have to cure Contractor's default by performing the Work itself or through others and remains bound by its other obligations under the Bond.

U.S. DEPARTMENT OF LABOR WAGE RATES

For updates see website at https://sam.gov/content/wage-determinations.
Additional information on contractor requirements and worker protections under Executive Order 13658 is available at https://www.dol.gov.general/topic/wages/govtcontracts.

"General Decision Number: IL20260009 01/02/2026

Superseded General Decision Number: IL20250009

State: Illinois

Construction Types: Building, Heavy, Highway and Residential

County: Cook County in Illinois.

BUILDING, RESIDENTIAL, HEAVY, AND HIGHWAY PROJECTS (does not include landscape projects).

Modification Number	Publication Date
0	01/02/2026

ASBE0017-001 06/01/2024

	Rates	Fringes
ASBESTOS WORKER/INSULATOR Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems	$ 55.02	35.75
Fire Stop Technician	$ 44.02	32.76
HAZARDOUS MATERIAL HANDLER includes preparation, wetting, stripping removal scrapping, vacuuming, bagging and disposal of all insulation materials, whether they contain asbestos or not, from mechanical systems	$ 41.27	32.76

BOIL0001-001 05/01/2024

	Rates	Fringes
BOILERMAKER	$ 53.10	9.5%+33.50

BRIL0021-001 06/01/2016

	Rates	Fringes
BRICKLAYER	$ 44.88	26.62

BRIL0021-004 06/01/2017

	Rates	Fringes

Marble Mason.....$ 44.63 26.83

BRIL0021-006 06/01/2017

	Rates	Fringes
TERRAZZO WORKER/SETTER	$ 44.38	25.84
TILE FINISHER	$ 38.56	22.10
TILE SETTER	$ 45.49	25.72

BRIL0021-009 06/01/2017

	Rates	Fringes
MARBLE FINISHER	$ 33.95	26.03

BRIL0021-012 06/01/2017

	Rates	Fringes
Pointer, cleaner and caulker	$ 45.42	24.06

CARP0555-001 06/01/2022

BUILDING, HEAVY, AND HIGHWAY

	Rates	Fringes
CARPENTER		
Carpenter, Lather, Millwright, Piledriver, and Soft Floor Layer		
Building	$ 52.01	38.85
Heavy & Highway	$ 52.01	38.85

CARP0555-002 10/01/2023

RESIDENTIAL CONSTRUCTION

	Rates	Fringes
CARPENTER	$ 45.61	35.31

ELEC0009-003 05/26/2024

	Rates	Fringes
Line Construction		
Groundman	$ 48.44	60.05%
Lineman and Equipment Operator	$ 62.10	60.05%

ELEC0134-001 06/02/2025

	Rates	Fringes
ELECTRICIAN	$ 57.75	42.89

ELEC0134-003 06/02/2025

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 51.14	30.55

The work will consist of the installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data appatatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment and residential purposes, including but not limited to communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidential conduit.

ELEV0002-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC	$ 70.68	38.435+a+b

FOOTNOTES:

a) PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving Day; Veterans' Day and Christmas Day.

b) Employer contributes 8% of regular hourly rate as vacation pay credit for employee with more than 5 years of service, and 6% for employee with less than 5 years service

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* ENGI0150-006 06/01/2025

Building and Residential Construction

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1	$ 64.80	51.00
GROUP 2	$ 63.50	51.00
GROUP 3	$ 60.95	51.00
GROUP 4	$ 59.20	51.00

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant*; Asphalt Spreader; Autograde*; Backhoes with Caisson attachment*:Batch Plant*; Benoto(Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs*; Central Redi-Mix Plant*; Combination Backhoe Front Endloader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)*; Concrete Conveyor; Concrete Conveyor, Truck Mounted; Concrete Paver over 27E cu. ft.*; Concrete Paver 27E cu ft and Under*; Concrete Placer*; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes*; Cranes, Hammerhead*; Cranes, (GCI and similar type Requires two operators only); Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling*; Formless Curb and Gutter Machine*; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2 1/4 yd. and over; Hoists, Elevators, Outside Type Rack and pinion and similar Machines; Hoists, One, Two, and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes*; Hydraulic Boom Trucks; Hydraulic Vac (and similar equipment);Locomotives; Motor Patrol*; Pile Drivers amd Skid Rig*; Post Hole Digger; Pre- Stress Machine; Pump Cretes Dual Ram(Requiring frequent Lubrication and Water); Pump Cretes; Squeeze Cretes-Screw Type Pumps Gypsum Bulker and Pump; Raised and Blind Hole Drill*; Roto Mill Grinder (36"" and Over)*; Roto Mill Grinder (Less Than 36"")*; Scoops-Tractor Drawn; Slip-Form Paver*; Straddle Buggies; Tournapull; Tractor with Boom, and Side Boom; and Trenching Machines*.

GROUP 2: Bobcat (over 3/4 cu yd); Boilers; Broom, Power Propelled; Bulldozers; Concrete Mixer (Two Bag and over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front End loaders under 2 1/4 cu yd; Aotomatic Hoists, Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted)*; Rollers; Steam Generators; Tractors; Tractor Drawn Vibratory Roller (Receives an additional $.50 per hour); Winch Trucks with ""A"" Frame.

GROUP 3: Air Compressor-Small 250 and Under (1 to 5 not to exceed a total of 300 ft); Air Compressor-Large over 250; Combination-Small Equipment Operator; Generator- Small 50 kw and under; Generator-Large over 50 kw; Heaters, Mechanical; Hoists, Inside Elevators (Remodeling or Renovatin work); Hydrualic Power Units (Pile Driving, Extracting, and Drilling); Low Boys; Pumps Over 3"" (1 To 3 not to exceed a total of 300 ft); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu yd)

GROUP 4 - Bobcats and/or other Skid Steer Loaders; Brick Forklifts; Oilers

*-Requires Oiler

* ENGI0150-025 06/01/2025

Heavy and Highway Construction

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1	$ 63.00	51.00
GROUP 2	$ 62.45	51.00
GROUP 3	$ 60.40	51.00
GROUP 4	$ 59.00	51.00
GROUP 5	$ 57.80	51.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant*; Asphalt Heater and Planer combination; Asphalt Heater Scarfire*, Asphalt Spreader; Autograder/ GOMACO or similar; ABG Paver*, Backhoes with Caisson attachment*, Ballast Regulator, Belt Loader*; Caisson Rigs*Car Dumper, Central Redi-Mix Plant*, Combination Backhoe; Front End Loader Machine (1 cu yd or over Backhoe bucket or with attachments); Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft*; Concrete Placer*; Concrete Tube Float; Cranes, all attachments*; Cranes, Hammerhead, Linden, Peco and machines of a like nature*; Creter Crane; Crusher, stone; All Derricks; Derrick Boats; Derricks, traveling*; Dowell Machine with Air Compressor ($1.00 above Class 1); Dredges*; Field Mechanic Welder; Formless Curb and Gutter Machine*; Gradall and machines of a like nature*; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted*; Hoists, one, two, and three Drum; Hydraulic Backhoes*; Backhoes with Shear attachments*; Mucking Machine; Pile Drivers and Skid Rig*; Pre-Stress Machine; Pump Cretes Dual Ram (requires frequent lubrication and water)*; Rock Drill- Crawler or Skid Rig*; Rock Drill truck mounted*; Rock/ Track Tamper; Roto Mill Grinder, (36"" and over)*; Slip-Form Paver*; Soil Test Drill Rig, truck mounted*; Straddle Buggies; Hydraulic Telescoping Form (tunnel); Tractor Drawn Belt Loader*; Tractor Drawn Belt Loader with attached Pusher (two engineers); Tractor with boom; Tractaire with attachment; Traffic Barrier Transfer Machine*; Trenching Machine; Truck Mounted Concrete Pump with boom*; Underground Boring and/or Mining Machines 5 ft in diameter and over tunnel, etc.*; Wheel Excavator* & Widener (Apsco); Raised or Blind Hoe Drill, Tunnel & Shaft*

GROUP 2: Batch Plant*; Bituminous Mixer; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backkhoe Front End Loader Machine, (less than 1 cu yd Backhoe Bucket with attachments); Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine; Burlap Machine; Belting Machine and Sealing Machine; Concrete

Wheel Saw; Conveyor Muck Cars (Haglund or similar type); Drills (all); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist- Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Hydro-Blaster (requires two operators); Laser Screed*; Locomotives, Dinky; Off-Road Hauling Units (including articulating); Pump Cretes; Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, self-Propelled; Scoops-Tractor Drawn; Self- propelled Compactor; Spreader-Chip-Stone; Scraper; Scraper-Prime Mover in Tandem regardless of size (add $1.00 to Group 2 hourly rate for each hour and for each machine attached thereto add $1.00 to Group 2 hourly rate for each hour); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 250 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 250; Combination - Small Equipment Operator; Directional Boring Machine; Generators - Small 50 kw and under; Generators - Large , over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants (1 to 5); Pumps, over 3"" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches;

GROUP 5: Bobcats (All); Brick Forklifts; Oilers; Directional Boring

*Requires Oiler

IRON0001-026 06/01/2025

	Rates	Fringes
IRONWORKER		
Sheeter	$ 62.71	46.58
Structural and Reinforcing	$ 62.46	46.58

IRON0063-001 06/01/2025

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 59.26	44.81

IRON0063-002 06/01/2025

	Rates	Fringes
IRONWORKER		
Fence Erector	$ 52.25	34.31

IRON0136-001 07/01/2025

	Rates	Fringes
IRONWORKER		
Machinery Movers; Riggers;		
Machinery Erectors	$ 54.25	47.38
Master Riggers	$ 56.75	47.38

LABO0002-006 06/01/2025

	Rates	Fringes
LABORER (BUILDING & RESIDENTIAL)		
GROUP 1	$ 51.40	36.94
GROUP 2	$ 51.40	36.94
GROUP 3	$ 51.48	36.94
GROUP 4	$ 51.50	36.94
GROUP 5	$ 51.55	36.94
GROUP 6	$ 51.60	36.94
GROUP 7	$ 51.63	36.94
GROUP 8	$ 51.73	36.94
GROUP 9	$ 51.75	36.94
GROUP 10	$ 51.85	36.94
GROUP 11	$ 51.68	36.94
GROUP 12	$ 52.40	36.94

LABORER CLASSIFICATIONS

GROUP 1: Building Laborers; Plasterer Tenders; Pumps for Dewatering; and other unclassified laborers.

GROUP 2: Fireproofing and Fire Shop laborers.

GROUP 3: Cement Gun.

GROUP 4: Chimney over 40 ft.; Scaffold Laborers.

GROUP 5: Cement Gun Nozzle Laborers (Gunite); Windlass and capstan person.

GROUP 6: Stone Derrickmen & Handlers.

GROUP 7: Jackhammermen; Power driven concrete saws; and other power tools.

GROUP 8: Firebrick & Boiler Laborers.

GROUP 9: Chimney on fire brick; Caisson diggers; & Well Point System men.

GROUP 10: Boiler Setter Plastic Laborers.

GROUP 11: Jackhammermen on fire brick work only.

GROUP 12: Dosimeter use (any device) monitoring nuclear exposure); Asbestos Abatement Laborer; Toxic and Hazardous Waste Removal Laborers.

LABO0002-007 06/01/2025

	Rates	Fringes
LABORER (HEAVY & HIGHWAY)		
GROUP 1	$ 51.40	36.94
GROUP 2	$ 51.48	36.94
GROUP 3	$ 51.55	36.94
GROUP 4	$ 51.68	36.94
GROUP 5	$ 51.40	36.94

LABORER CLASSIFICATIONS

GROUP 1: Common laborer; Tenders; Material expeditor (asphalt plant); Street paving, Grade separation, sidewalk, curb & gutter, strippers & All laborers not otherwise mentioned

GROUP 2: Asphalt tampers & smoothers; Cement gun laborers

GROUP 3: Cement Gun Nozzle (laborers), Gunite

GROUP 4: Rakers, Lutemen; Machine-Screwmen; Kettlemen; Mixermen; Drun-men; Jackhammermen (asphalt); Paintmen; Mitre box spreaders; Laborers on birch, overman and similar spreader equipment; Laborers on APSCO; Laborers on air compressor; Paving Form Setter; Jackhammermen (concrete); Power drive concrete saws; other power tools.

GROUP 5: Asbestos Abatement Laborers; Toxic and Hazardous Waste Removal Laborers, Dosimeter (any device) monitoring nuclear exposure

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LABO0002-008 06/01/2025

	Rates	Fringes
LABORER (Compressed Air)		
0 - 15 POUNDS	$ 52.40	36.94
16 - 20 POUNDS	$ 52.90	36.94
21 - 26 POUNDS	$ 53.40	36.94
27 - 33 POUNDS	$ 54.40	36.94
34 - AND OVER	$ 55.40	36.94
LABORER (Tunnel and Sewer)		

GROUP 1	$ 51.40	36.94
GROUP 2	$ 51.53	36.94
GROUP 3	$ 51.63	36.94
GROUP 4	$ 51.75	36.94
GROUP 5	$ 51.40	36.94

LABORER CLASSIFICATIONS (TUNNEL)

GROUP 1: Cage tenders; Dumpmen; Flagmen; Signalmen; Top laborers

GROUP 2: Air hoist operator; Key board operator; concrete laborer; Grout; Lock tenders (Free Air Side); Steel setters; Tuggers; Switchmen; Car pusher

GROUP 3: Concrete repairmen; Lock tenders (pressure side); Mortar men; Muckers; Grout machine operators; Track layers

GROUP 4: Air trac drill operator; Miner; Bricklayer tenders; Concrete blower operator; Drillers; Dynamiters; Erector operator; Form men; Jackhammermen; Powerpac; Mining machine operators; Mucking machine operator; Laser beam operator; Liner plate and ring setters; Shield drivers; Power knife operator; Welder- burners; Pipe jacking machine operator; skinners; Maintenance technician

GROUP 5: Asbestos abatement laborer; Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABORER CLASSIFICATIONS (SEWER)

GROUP 1: Signalmen; Top laborers and All other laborers

GROUP 2: Concrete laborers and Steel setters

GROUP 3: Cement carriers; Cement mixers; Concrete repairmen; Mortar men; Scaffold men; Second Bottom men

GROUP 4: Air trac drill operator; Bottom men; Bracers-bracing; Bricklayer tenders; Catch basin diggers; Drainlayers; dynamiters; Form men; Jackhammermen; Powerpac; Pipelayers; Rodders; Welder-burners; Well point systems men

GROUP 5: Asbestos abatement laborer, Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

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LABO0225-001 06/01/2025

	Rates	Fringes
LABORER (DEMOLITION/WRECKING)		
GROUP 1	$ 46.40	36.94
GROUP 2	$ 51.40	36.94
GROUP 3	$ 51.40	36.94

LABORER CLASSIFICATIONS

GROUP 1 - Complete Demolition

GROUP 2 - Interior Wrecking and Strip Out Work

GROUP 3 - Asbestos Work with Complete Demolition/Wrecking or Strip Out Work

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PAIN0014-001 06/01/2024

	Rates	Fringes
PAINTER (including taper)	$ 53.05	33.91

PAIN0027-001 06/01/2024

	Rates	Fringes
GLAZIER	$ 51.55	44.09

PLAS0005-002 07/01/2015

	Rates	Fringes
PLASTERER	$ 42.25	26.65

PLAS0502-001 06/01/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 53.10	43.80

PLUM0130-001 06/01/2025

	Rates	Fringes
PLUMBER	$ 60.50	39.02

PLUM0597-002 06/01/2023

	Rates	Fringes
PIPEFITTER	$ 55.00	38.62

ROOF0011-001 12/01/2024

	Rates	Fringes
ROOFER	$ 50.25	30.43

SFIL0281-001 07/01/2025

	Rates	Fringes

SPRINKLER FITTER.....$ 63.25 36.50

SHEE0073-001 06/01/2022

	Rates	Fringes
Sheet Metal Worker.....	$ 49.10	42.91

SHEE0073-002 06/08/2018

	Rates	Fringes
Sheet Metal Worker		
ALUMINUM GUTTER WORK.....	$ 31.32	37.02

TEAM0731-001 06/01/2025

COOK COUNTY - HEAVY AND HIGHWAY

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axles.....	$ 45.55	30.27
4 Axles.....	$ 45.80	30.27
5 Axles.....	$ 46.00	30.27
6 Axles.....	$ 46.20	30.27

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

B. 900 straight time hours or more in 1 calendar year for the same employer will receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

C. An additional $.20 per axle will be paid for all vehicles with more than six (6) axles.

Low-Boy is an additional $1.50 per hour
Health and Welfare: $448.80 per week
Pension: $562.80 per week

TEAM0731-002 04/01/2025

	Rates	Fringes
Traffic Control Device Monitor		
TRAFFIC SAFETY WORKER: Primary duties include but are not limited to the delivery, maintenance and pick-up of traffic control devices, the set-up and		

installation of traffic
signs, pavement markings,
barricades, crash barrels
and glare screens, traffic
control surveillance, the
repair and maintenance
trucks, cars, arrow
boards, message signs,
barricade and sign
fabrication equipment.....$ 43.40 22.71

TEAM0786-001 06/01/2025

COOK COUNTY - BUILDING AND RESIDENTIAL

	Rates	Fringes
TRUCK DRIVER		
2 & 3 Axles	$ 53.95	0.30+a
4 Axles	$ 54.21	0.30+a
5 Axles	$ 54.43	0.30+a
6 Axles	$ 54.64	0.30+a

FOOTNOTES:

a. An additional $.20 per axle will be paid for all vehicles with more than six (6) axles.

Low-Boy work classification is an additional $1.50 per hour.
Health and Welfare: $445.00 per week
Pension: $408 per week.

B. 900 straight time hours or more in 1 calendar year for the same employer will receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including

preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were

adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an

interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION
"

SECTION 6
PROJECT DESCRIPTION AND SPECIAL PROCEDURES

A. PROJECT DESCRIPTION

1. Descriptions of the Work for each line item are stated in Part Three, Section 01 22 00 ("Unit Prices"). The unit prices will include all costs of any kind to complete the Contract, including, but not limited to, the cost of labor, materials, equipment, permits, licenses, overhead and profit.

2. The following Acoustical Treatment Packages have been incorporated into the Contract Documents. The Work in individual Homes will include, but not be limited to, the items identified in one of the following individual Acoustical Treatment Package:

   a. Acoustical Treatment Package 1 – Replacement of windows, prime doors, storm doors, and sliding glass doors.

   b. Acoustical Treatment Package 2 – Replacement of windows and sliding glass doors, adding a layer of drywall on perimeter walls, and weather-stripping prime doors.

   c. Acoustical Treatment Package 3 – Replacement of windows, sliding glass doors, adding air conditioning in Homes that do not have an existing forced air mechanical system, ductwork, weather-stripping prime doors, and removing through-wall air conditioning units.

   d. Acoustical Treatment Package 4 – Replacement of windows, sliding glass doors, adding air conditioning in Homes that have an existing forced air mechanical system, ductwork where necessary, furnace, weather-stripping prime doors, and removing through-wall air conditioning units.

   e. Acoustical Treatment Package Multi-family (M) – Replacement of windows, prime doors, storm doors, sliding glass doors, and a removable baffle installed over through-wall air conditioning units.

B. SPECIAL PROCEDURES

1. The anticipated scope of Work for each Home will be included in a Construction Modification Package. The Construction Modification Package includes window and door schedules that identify the proposed windows and doors by location, style, and color. Also included are floor plans with room names and numbers that correspond to the window and door schedules.

2. The Construction Modifications for the Homes in this Contract ("Homes") will be delivered to Contractor at the time the NTP is issued. Contractor will receive electronic copies of the Construction Modifications Packages for each Home and will be responsible for reproducing copies for Field Measurements appointments, and for any other copies needed to complete the Work.

3. Immediately after approval of Contractor's submittals, as required by Part Two, Article XI, Section C ("Contractor's Responsibilities and Submittal Procedures") and Part Two, Article XI, Section D ("Review by the Commissioner"), Contractor will schedule, through the Commissioner, Field Measurement appointments for each Home included in the Contract. Field Measurement appointments may not begin until all Subcontractor Agreements are approved, all insurance submittals are approved, and all other submittals required in the Contract are reviewed and approved in accordance with Part Two, Article XI ("Shop Drawings, Product Data, and Samples"). One approved sample, as outlined in Part Two, Article IV, paragraph E.3., will be required to be brought to each Field Measurement appointment. The purpose of the Field Measurement appointment is for Contractor to obtain all required field measurements and all the information necessary for the ordering of its materials. Contractor may not field measure more than five Homes each day, unless authorized in writing by the Commissioner. No more than three Field Measurement appointments will be conducted in the morning and no more than two Field Measurement appointments will be conducted in

the afternoon. Contractor may not proceed with Field Measurement appointments until all submittals, including all Subcontractor Agreements and insurance submittals, have been approved, unless otherwise directed by the Commissioner. If any additional Homes are subsequently assigned to Contractor, Contractor will schedule, through the Commissioner, Field Measurement appointments for each Home added to the Contract.

4. Contractor must employ only competent and efficient laborers, mechanics, or artisans, and whenever, in the opinion of the Commissioner, any such worker is careless, incompetent, violates safety or security rules, obstructs the progress of the Work, acts contrary to instructions or acts improperly, or fails to follow the safety requirements of this Contract, Contractor must, upon request of the Commissioner, discharge or otherwise remove such worker from the Work and must not use such worker again, except with the written consent of the Commissioner. Contractor must not permit any person to enter any part of the work or any buildings connected therewith who is under the influence of intoxicating liquors or controlled substances. See Part Two, Article VII, Section D ("Employee Photographic Identification Card") for additional requirements.

5. Contractor must require all employees who will be present on a Homeowner's property to have a Photographic Identification Card ("ID Card") issued by Contractor. The ID Card must be clearly displayed above the waist with the photo side showing at all times while the employees are working at the Home. Any employee not properly displaying an ID Card will be directed by the CM to leave the Home. See Part Two, Article VII, Section D ("Employee Photographic Identification Cards") for requirements.

6. Before Contractor or its Subcontractors enter any of the Homes for any purpose, Contractor must provide the Commissioner the Certificate of Insurance with the coverages set out in Part One, Section 2 ("Contract Insurance Requirements"), and Part Two, Article XV ("Insurance, Indemnity, and Bonds") showing that for Commercial General Liability Coverage, all Homeowners have been named as additional insureds on a blanket basis, and that all Homeowners have been named as additional insureds and loss payees on the Builders Risk Coverage.

7. Contractor will submit revised line item quantities no later than 30 Days after the completion of Field Measurement appointments in all Homes, at which time a Contract Modification will be processed to reflect field measured quantities for each line item.

8. Contractor must obtain a warehouse for the storage of material prior to installations in a Home. Contractor's warehouse must be located within five miles of the Aviation Administration Building ("AAB") located at 10510 W. Zemke Road, Chicago, Illinois 60666, and must be independent from any material supplier. The use of space provided by, or leased from, the fabricator or manufacturer of any material used for the Project is not permitted. Prior to the Commissioner's inspection of materials, Contractor must provide written confirmation, in the form of a Request for Inspection of Materials ("RFIM"), or "Warehouse Inspection" that all materials have passed their inspection as required in their quality control plan. Contractor's inspection must confirm, at a minimum, that all the materials for each individual Home are of the correct style, are the correct dimension, have the correct grilles, are the correct color, and are not damaged. Contractor may submit an RFIM for any Home that it has received and inspected all materials for that Home, including but not limited to, windows and doors, and that those materials passed its inspection. Contractor must notify the Commissioner that materials are ready for inspection in Contractor's warehouse no later than 16 Calendar Days prior to the scheduled commencement of construction for each Home. Contractor must coordinate warehouse inspections so that there are no more than two inspections per week. At the time of, or prior to, the inspection of materials at Contractor's warehouse, Contractor must furnish to the Commissioner the delivery tickets for all items being inspected. Delivery tickets must be coded to correspond with the line items in this bid package. Delivery tickets not so coded will not be accepted. To facilitate the commissioner's inspection of materials Contractor materials must be sorted by address and Contractor may be required to remove all packaging from materials.

9. The start date for each Home cannot be changed less than seven Calendar Days prior to the scheduled commencement of construction shown on the last schedule delivered to the Commissioner, without the written approval of the Commissioner.

10. Contractor must not exceed a total of five construction starts per day unless authorized in writing by the Commissioner.

11. From the date of the NTP, Contractor must begin construction in the Homes no earlier than Calendar Day 153 of the Contract and no later than Calendar Day 243 and continue construction until all Homes are complete. Contractor will not be allowed to start construction in any Home prior to the completion of Field Measurement appointments in all Homes without the approval of the Commissioner.

12. Contractor working hours will begin no earlier than 7:00 a.m. and end no later than 6:00 p.m., Monday through Friday, unless local ordinance requires a later start time and/or an earlier end time. Working hours other than the stated Work hours must be approved by the Homeowner in writing and permitted by local ordinance.

13. Contractor must achieve Substantial Completion of the Home, within five Business Days of the start of construction for Acoustical Treatment Package 1 and for Acoustical Treatment Package M homes, and within 10 Business Days of the start of construction for Acoustical Treatment Packages 2, 3, and 4 homes.

14. If, after Substantial Completion of a Home, a product(s) is found to be damaged, defective, or incorrectly measured or installed by Contractor and a Product Replacement(s) is required, Contractor must receive the replacement product(s) from the manufacturer and inspect it for conformance with the specifications and use in the Home. After its inspection, Contractor will request an RFIM from the CM. After the CM reviews the product(s) in Contractor's warehouse and confirms the product(s) is ready for installation, the CM will contact the Homeowner to schedule an installation appointment and final punch list review. Contractor, CM, and the Homeowner will be required to sign off on the Product Replacement and final Punch List review.

15. For Homes receiving air conditioning, the mechanical and electrical Subcontractor must meet with the Homeowner no later than seven Calendar Days prior to the scheduled commencement of construction. The purpose of the meeting will be for the review of the mechanical and electrical design build submittals with Homeowner and to obtain Homeowner's signature approving the Work to be performed.

16. Contractor is expected to be sensitive to the needs and requirements of each Homeowner. Contractor will make every effort during the construction period to cause minimal disruption and disturbance to the Homeowner. Contractor will also advise the Commissioner as to what construction activities will be carried out each day. During the execution of all Work, Home furnishings must be protected by Contractor. When necessary, Contractor will be required to assist Homeowners with moving of furnishings. The Homeowner, or a representative, will be expected to be present at all times while Contractor is on the premises. Periodic construction observation will be provided by the Commissioner.

17. The removal of all products that are assumed to contain Lead-Based Paint ("LBP") will be performed in accordance with Part Three, Section 02 83 33.13 ("Lead-Based Paint Removal and Disposal"). There will be no additional compensation and Contractor's line-item prices must include U.S. EPA Renovation, Repair & Painting (RRP) lead-safe Work practices.

18. Contractor will confine its operations to actual Work areas and use limited access routes on the Homeowner's property. Interior and exterior circulation areas will be kept free of debris and construction materials at all times for clear and safe access. Contractor will, 1) keep driveways and entrances clear and available to the Homeowner, and 2) not use these areas for parking or storage of materials. Contractor will keep rooms adjacent to construction dust free using a polyethylene barrier.

19. If there is pre-existing damage in an area adjacent to Contractor's Work (i.e., cracked wall, soiled carpet, etc.), Contractor must document and notify the Commissioner of these conditions prior to the commencement of Work. Failure to do so may make Contractor responsible for repair of such damage.

20. Contractor will maintain the Home in a weather tight condition throughout the construction period, repair damage caused by construction operations and take all precautions necessary to protect the building and its occupants during the construction period.

21. Contractor, with the Homeowner, will designate and maintain a "room of refuge" for the Homeowner. This room will be weather tight and free of any construction materials, debris, and equipment for the duration of the Project. The "room of refuge" location may change during the course of construction to accommodate Contractor's schedule and progress.

22. Contractor will not be responsible for preparatory Work such as removing window treatments and wall hangings.

23. Contractor will remove and reinstall curtain rods and brackets for window treatments as part of completing the Work.

24. Contractor will alert the Homeowner of construction activities involving dust and/or vibrations, etc., and make suggestions to the Homeowner as to methods for protection of valuables.

25. Toilet facility use in the Home is not permitted. Contractor must provide portable toilets or use other facilities. Portable toilets may not be placed on a Homeowner's property without the Homeowner's permission.

26. Contractor will not have telephone access in any Home. All telephone calls will be made on Contractor's own equipment.

27. Water and power will be provided by the Homeowner at no cost to Contractor for use on the Work. Contractor will provide its own necessary connections and will remove same at the end of the completion of the Work each day.

28. At the end of each Workday, Contractor will shop vacuum the general area in which Work was completed, and remove all unused materials, tools, debris, etc. The Home must be left in a safe, clean, habitable condition each night with all Homeowner utilities reconnected and serviceable. At completion of each Home, Contractor will clean the Home as required under Part Three ("Technical Specifications").

29. If removal, relocation, and reinstallation of heating system components occur during cold months, Contractor must reinstall and make operable the heating system at the end of each Workday.

30. Contractor will not store any material in or at the Home overnight. Storage of materials or equipment for the Work will be at Contractor's risk and expense.

31. The Homeowner will be given first right to claim salvage incurred through removal of existing construction. Care will be taken to maintain the condition of these salvaged items until the Homeowner either claims them or rejects them. All salvageable materials not claimed will be removed from the premises and disposed of by Contractor.

32. Contractor will keep the area around all dumpsters free of all construction debris and will keep the dumpster secured when not in use. Dumpsters should be removed without delay when no longer needed.

33. Mock-ups: The purpose of the mock-ups will be for Contractor to demonstrate that its Work is in conformance with the Contract Documents. Mock-ups will be required for each type of treatment including, but not limited to, installation of vinyl and aluminum windows, bow or bay windows including new roofs,

interior and exterior trim as necessary. Installation of interior or exterior storm windows, installation of exterior wood or fiberglass doors including interior and exterior trim and hardware as necessary, installation of storm doors and installation of HVAC equipment including electrical service, access panels, and soffits as necessary.

34. The Commissioner will select five to 10 Homes that will be identified for incorporation of mock-ups. Contractor will schedule the mock-up Homes for the first two weeks of its Home Schedule. The Work in the mock-ups will be inspected for conformance to the Contract Documents by the CM, Manufacturer's Representatives, Contractor, and the Architect/Engineer. A sign-off on the mock-up Work will be required before Contractor can proceed with the Work in any additional Homes. Any rework of the mock-ups will be the responsibility of Contractor. No additional compensation or Time Extensions will be provided for mock-up rework.

    a. Mock-ups will include a complete installation of the acoustical treatment including all ancillary Work and clean-up.
    b. Mock-up construction should be performed by and supervised by employees who will be working on the Project.
    c. Mock-ups should demonstrate the proposed range of aesthetic effects and workmanship.

35. New Structural Mullions: Contractor will not order or install any new windows that may require new structural mullions and will not install any new structural mullions in an opening if there are none existing. If Contractor recommends a new structural mullion(s) in said opening, Contractor must submit an RFI during the Field Measurement appointment, and before windows are ordered, stating the reason it recommends additional structural members. Contractor must have the Commissioner's approval before performing stated services.

36. Glass Width and Height: If Contractor intends to replace any existing window with a new window that measures less than 24" in width or 24" in height, the Commissioner must be notified at the time of field measurements, and before windows are ordered. If the window chosen is less than these measurements, the window must be approved by the Commissioner and the Homeowner.

C. PROJECT SCHEDULES

1. Contractor will provide Progress Schedules in conformance of the requirements identified in Part Two, Article VIII, Section D ("Progress Schedule").

2. Contractor must provide three types of schedules:

    a. Major Milestone Schedule in Critical Path Method ("CPM") form prepared in Microsoft Project, or Oracle Primavera P6. The schedule must include at a minimum, the following: Contract Award & NTP, Pre-Construction activities, Field Measurement appointments, Construction activities and Project Close-Out activities.

    b. A Master Schedule in bar chart form prepared in Microsoft Project, Primavera P6, or Excel with the following minimum information for each Home: Home Address, Homeowner Name, Field Measurement appointment, Material Delivery Date, Construction Start Date, Construction Completion Date, Acoustical Treatment Package and Construction Duration.

    c. Weekly Progress Schedule in bar chart form prepared in Microsoft Project, Primavera P6, or Excel with the following minimum information for each Home: Homes completed the previous week, Homes planned for the current week and Homes planned for the following week.

3. The following durations should be incorporated into Contractor's Major Milestone Schedule, Master Schedule, and Progress Schedule

    a. Notice to Proceed 0 Calendar Day

b.	Submittals	70 Calendar Days
c.	Inspection of Materials Prior to Construction	16 Calendar Days
d.	Mock-Ups	14 Calendar Days
e.	Construction (Acoustical Treatment Packages 1, and M)	5 Business Days
f.	Construction (Acoustical Treatment Packages 2, 3, and 4)	10 Business Days
g.	Punch List Completions	3 Business Days
h.	Product Replacement	98 Calendar Days
i.	Holidays	7 Calendar Days
j.	Year End Holiday Break	16 Calendar Days

4. A copy of the schedule will be provided to the Commissioner, and Commissioner may require Contractor to make such revisions to the schedule as the Commissioner deems necessary or desirable. If any additional Homes are subsequently assigned to Contractor, Contractor will update its Major Milestone Schedule, Master Schedule, and Progress Schedule accordingly.

4. KEY PERSONNEL

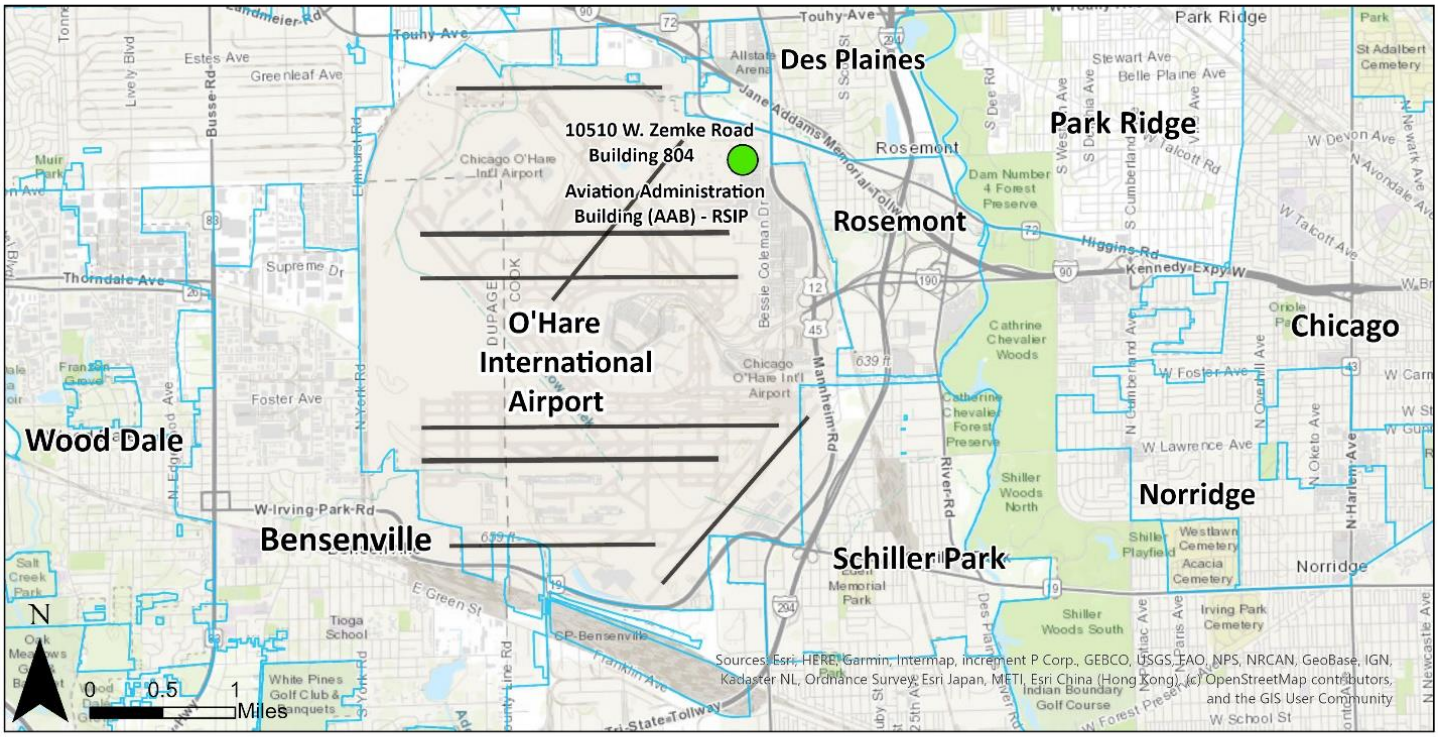
1. Contractor must provide a management staff that is assigned to this Contract on a full-time basis. If Contractor is Awarded more than one Contract, or has existing Contracts, for which construction will run concurrently, a separate management staff is to be in place for each Contract. The management staff on this Contract will consist of Key Personnel who will perform the following functions:

   a. Project Manager
   b. Field Superintendent
   c. Field Foremen for each trade
   d. Warehouse Manager
   e. Administrative Staff (Office Engineer)

SECTION 7
GENERAL LOCATION OF HOMES

The following map shows the general location of Homes included in this Contract.

CHICAGO AND SUBURBAN DWELLING UNITS



SAMPLE

SECTION 8
SAMPLE CONSTRUCTION MODIFICATIONS

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM (NEW WORK)

CONSTRUCTION MODIFICATIONS

Home ID Number	
Name of Homeowner	
Address	
Inventory Date	
RSIP Representative	
Package	One

Field Measurements Information
Date
PM/CM Representative
A/E Representative

DOOR SCHEDULE

KD #	LOCATION	TYPE	NEW STYLE	DIMENSIONS W (in.)	DIMENSIONS H (in.)	JAMB (in.)	STC	SIDELIGHT	FINISH	PEEP HOLE	HARDWARE STYLE	HARDWARE FINISH	GLASS	DETAIL	NOTES
KD01	LIVING ROOM 1	PRIME	P2	36	81	8	28	NONE	MEDIUM	YES	LEVER	SATIN NICKEL	CLEAR	D2	
KD02	LIVING ROOM 1	STORM	S2	36	81		30	NONE	WHITE	NO	N/A	N/A	CLEAR	D6	
KD03	STAIRWAY 1	PRIME	P9	32	80	8	28	NONE	MEDIUM	NO	LEVER	SATIN NICKEL	CLEAR	D2	
KD04	STAIRWAY 1	STORM	S2	32	80		30	NONE	WHITE	NO	N/A	N/A	CLEAR	D6	

WINDOW SCHEDULE

KW #	LOCATION	NEW STYLE	DIMENSIONS W (in.)	DIMENSIONS H (in.)	U.I.	COLOR	STC	GRILLE TYPE	GRILLE SASH	GLASS	TEMPERED	DETAIL	NOTES
KW01	LAUNDRY 1	NO WORK			0								
KW02	LAUNDRY 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW03	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW04	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW05	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW06	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW07	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW08	STORAGE 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW09	LAUNDRY 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW10	LAUNDRY 1	SLIDER	33	16	49	WHITE	29	NONE	NONE	CLEAR	TEMPERED	W2P	See note KWW7
KW11	LIVING ROOM 1	3 LITE CASEMENT	53	50	103	WHITE	40	COLONIAL	ALL	CLEAR		W6	See note KWW2. Ratio 111
KW12	LIVING ROOM 1	COMBINE			0								See note KWW2
KW13	KITCHEN 1	3 LITE CASEMENT	53	50	103	WHITE	40	COLONIAL	ALL	CLEAR		W2P	Ratio 111
KW14	BATHROOM 1	FIXED	27	18	45	WHITE	29	NONE	NONE	FROSTED	TEMPERED	W2P	See note KWW7
KW15	BATHROOM 1	AWNING	27	16	43	WHITE	29	NONE	NONE	FROSTED	TEMPERED	W2P	See note KWW7
KW16	BEDROOM 1	DOUBLE HUNG	37	50	87	WHITE	40	COLONIAL	BOTH	CLEAR		W6	See note KWW2
KW17	BEDROOM 1	COMBINE			0								See note KWW2
KW18	BEDROOM 1	DOUBLE HUNG	37	50	87	WHITE	40	COLONIAL	BOTH	CLEAR		W6	See note KWW2
KW19	BEDROOM 1	COMBINE			0								See note KWW2
KW20	BEDROOM 2	DOUBLE HUNG	37	50	87	WHITE	40	COLONIAL	BOTH	CLEAR		W6	See note KWW2
KW21	BEDROOM 2	COMBINE			0								See note KWW2
KW22	BEDROOM 2	DOUBLE HUNG	37	50	87	WHITE	40	COLONIAL	BOTH	CLEAR		W6	See note KWW2
KW23	BEDROOM 2	COMBINE			0								See note KWW2
KW24	STORAGE 2	3 LITE CASEMENT	53	50	103	WHITE	29	COLONIAL	ALL	CLEAR		W2P	Ratio 111
KW25	LIVING ROOM 1	DOUBLE HUNG	35	50	85	WHITE	40	COLONIAL	BOTH	CLEAR		W6	See note KWW2
KW26	LIVING ROOM 1	COMBINE			0								See note KWW2
KW27	LIVING ROOM 1	COMBINE			0								See note KWW2
KW28	LIVING ROOM 1	3 LITE CASEMENT	68	62	130	WHITE	40	COLONIAL	ALL	CLEAR		W6	See note KWW2. Ratio 121

Page 1 of 2

Acoustical Treatment Package 1

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(NEW WORK)**

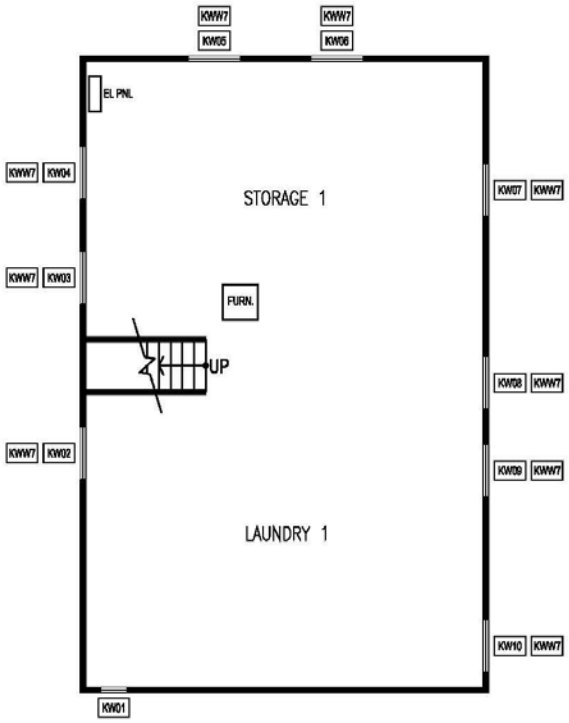
CONSTRUCTION MODIFICATIONS

KW29	LIVING ROOM 1	COMBINE			0							See note KWW2

WINDOWS	QTY.	UNIT	DETAIL	COMMENTS
-- KWW2 _ In BEDROOM 1 & BEDROOM 2 the existing FXD-CSMT window configuration will be replaced with a new DH window configuration. KW16, KW18, KW20 & KW22 remaining.	N/A	N/A	W6,W7	(See Window Schedule)
-- KWW2 _ In LIVING ROOM 1, the existing STACKED: 3CSMT-FXD window configuration will be replaced with a new 3CSMT window configuration. KW11 remaining @ a new window ratio of 1:1:1	N/A	N/A	W6,W7	(See Window Schedule)
-- KWW2 _ In LIVING ROOM 1, the existing STACKED: 3CSMT-FXD window configuration will be replaced with a new 3CSMT window configuration. KW28 remaining @ a new window ratio of 1:2:1	N/A	N/A	W6,W7	(See Window Schedule)
-- KWW2 _ In LIVING ROOM 1, the existing STACKED: FXD-CSMT:FXD window configuration will be replaced with a new DH window configuration. KW25 remaining.	N/A	N/A	W6,W7	(See Window Schedule)
-- KWW7 _ The following windows will have sashes containing tempered glass to comply with local code. KW02- KW10, KW14, KW15.	20	Sashes	N/A	(See Window Schedule)

Acoustical Treatment Package 1

SAMPLE



= 2' 0"

SCALE 1' 2' 4' 8'

FLOOR BASEMENT

NORTH

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM

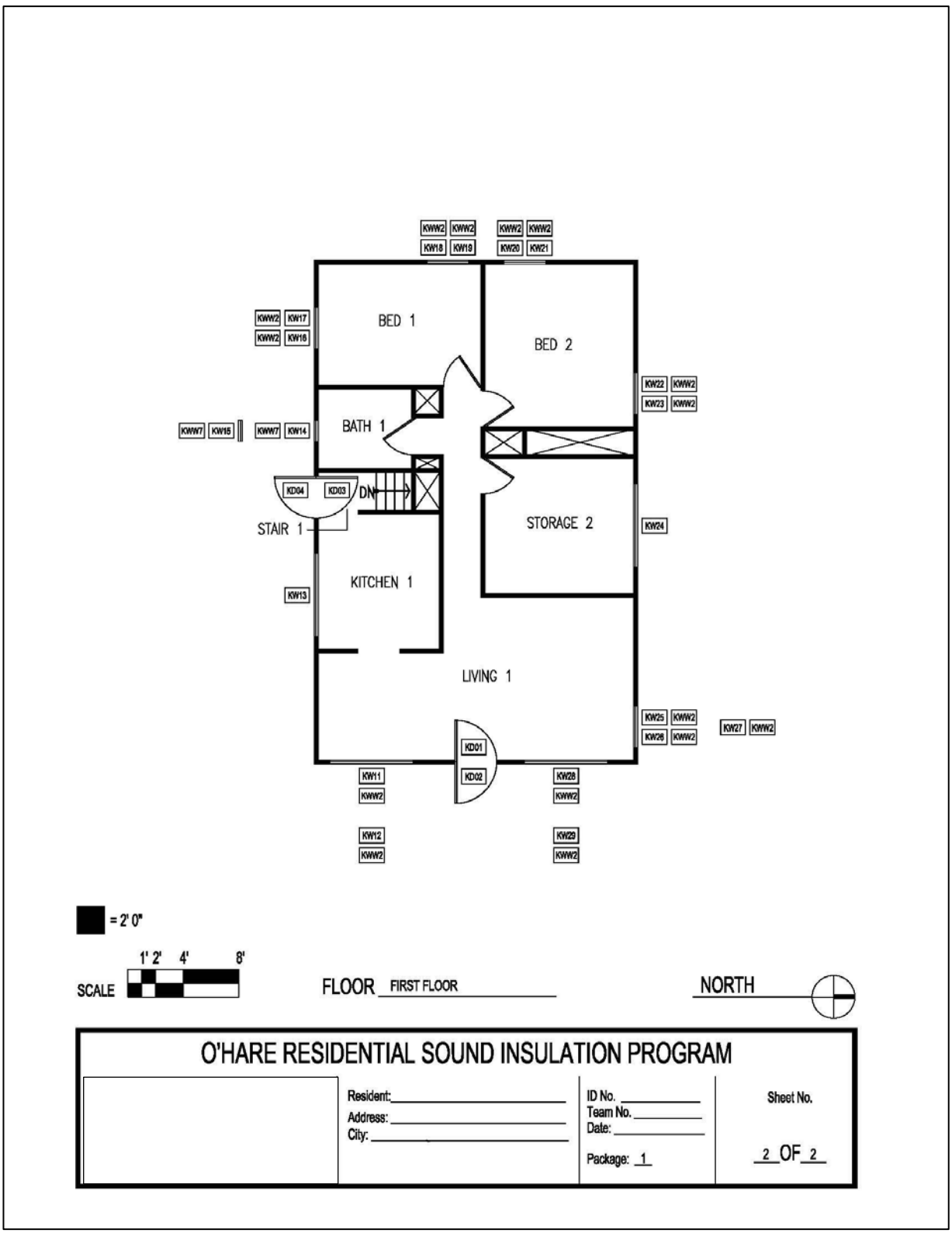
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ID No. _____
Team No. _____
Date: _____
Package: 1

Sheet No.
1 OF 2

Acoustical Treatment Package 1

SAMPLE

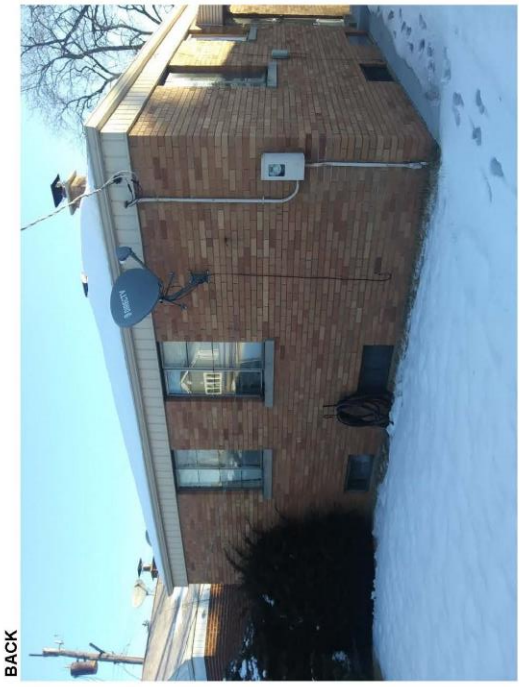


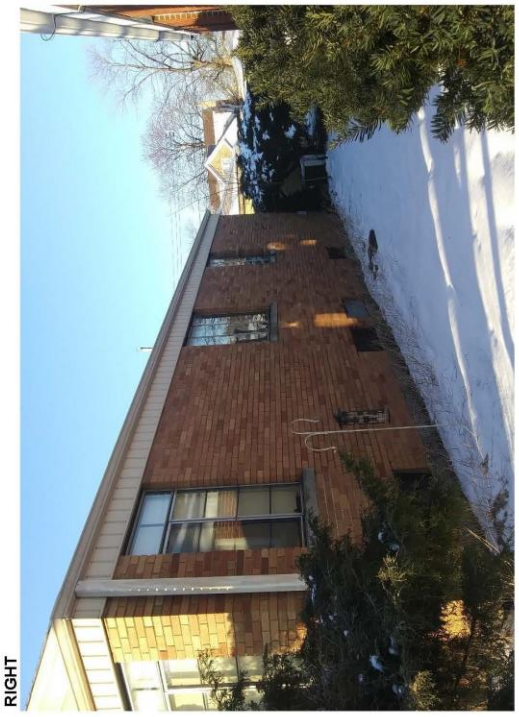
Acoustical Treatment Package 1

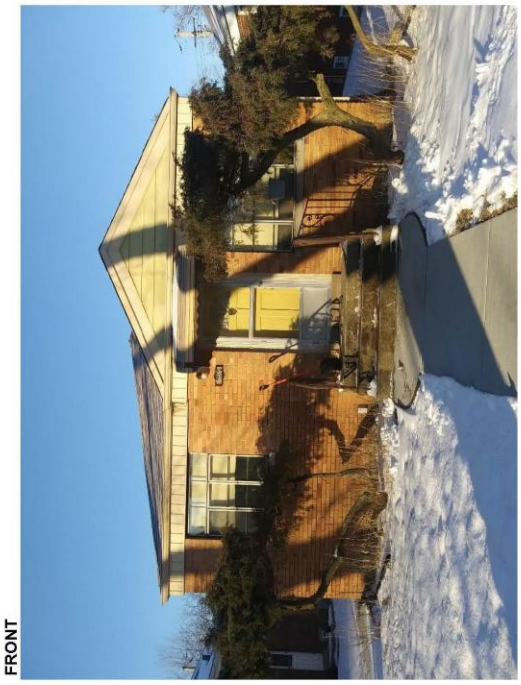
SAMPLE

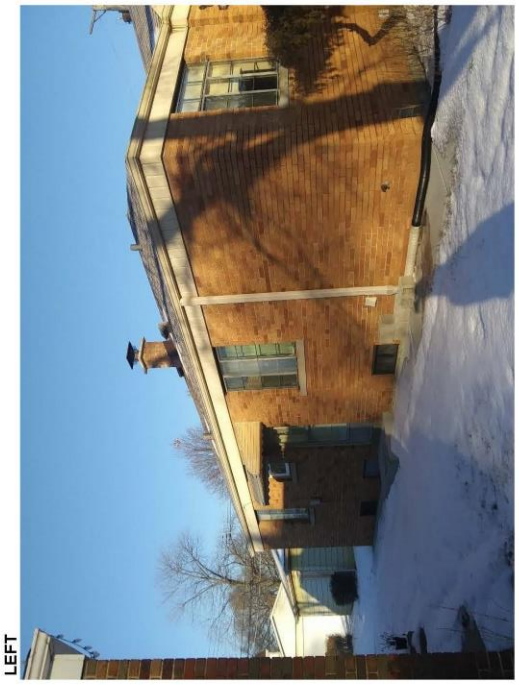
O'HARE RESIDENTIAL SOUND INSULATION PROGRAM

PHOTOGRAPHS









Acoustical Treatment Package 1

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(EXISTING CONDITIONS)**

HOME INVENTORY

Home ID Number	
Name of Homeowner	
Address	
Inventory Date	
RSIP Representative	
Package	**One**

EXTERIOR MATERIALS

Exterior of the main house is:	
X	Brick or Masonry
	Stucco
	Wood Siding
	Vinyl Siding
	Aluminum Siding
	Asphalt Siding

Exterior of the addition is:	
	Brick or Masonry
	Stucco
	Wood Siding
	Vinyl Siding
	Aluminum Siding
	Asphalt Siding

The basement is:	
	Below grade
X	75% below grade
	50% below grade
	Finished
X	Unfinished
	Crawl Space
	No Basement

LOCATION	FLOOR	WALL	CEILING	TREATMENT
STORAGE 1	CONCRETE	OTHER	OPEN JOISTS	NON-HABITABLE
LAUNDRY 1	CONCRETE	OTHER	OPEN JOISTS	NON-HABITABLE
LIVING ROOM 1	WOOD	DRYWALL	DRYWALL	HABITABLE
KITCHEN 1	VINYL	DRYWALL	DRYWALL	HABITABLE
STAIRWAY 1	VINYL	DRYWALL	DRYWALL	NON-HABITABLE
BATHROOM 1	VINYL	DRYWALL	DRYWALL	NON-HABITABLE
BEDROOM 1	WOOD	DRYWALL	DRYWALL	HABITABLE
BEDROOM 2	WOOD	DRYWALL	DRYWALL	HABITABLE
STORAGE 2	WOOD	DRYWALL	DRYWALL	NON-HABITABLE

EXISTING VISIBLE DAMAGE

	Water Damage
	Cracks in the existing drywall
	Visible insect damage
	Rotted framing structure
	Evidence of mold
	Other:
DESC.:	

SECURITY SYSTEM

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(EXISTING CONDITIONS)**

HOME INVENTORY

DOORS

NOTE: Opening dimensions are approximate. Contractor to verify actual dimensions at field measurements.

KD #	LOCATION	DOOR TYPE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	JAMB (In.)	EXISTING MATERIAL	SIDELIGHT	EXISTING THRESHOLD HEIGHTS	NOTES
KD01	LIVING ROOM 1	PRIME	36	81	8	SC WOOD	NONE	OK	
KD02	LIVING ROOM 1	STORM	36	81		ALUMINUM	NONE	OK	
KD03	STAIRWAY 1	PRIME	32	80	8	SC WOOD	NONE	OK	
KD04	STAIRWAY 1	STORM	32	80		ALUMINUM	NONE	OK	

WINDOWS

NOTE: Opening dimensions are approximate. Contractor to verify actual dimensions at field measurements.

KW #	LOCATION	EXISTING WINDOW STYLE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	U.I.	INTERIOR TRIM FINISH	NOTES
KW01	LAUNDRY 1	GLASS BLOCK	7	7	14	NONE	
KW02	LAUNDRY 1	HOPPER	33	16	49	NONE	
KW03	STORAGE 1	HOPPER	33	16	49	NONE	
KW04	STORAGE 1	HOPPER	33	16	49	NONE	
KW05	STORAGE 1	HOPPER	33	16	49	NONE	
KW06	STORAGE 1	HOPPER	33	16	49	NONE	
KW07	STORAGE 1	HOPPER	33	16	49	NONE	
KW08	STORAGE 1	HOPPER	33	16	49	NONE	
KW09	LAUNDRY 1	HOPPER	33	16	49	NONE	
KW10	LAUNDRY 1	HOPPER	33	16	49	NONE	
KW11	LIVING ROOM 1	3 LT CASEMENT	53	38	91	STAINED WOOD	
KW12	LIVING ROOM 1	FIXED	53	12	65	STAINED WOOD	
KW13	KITCHEN 1	3 LT CASEMENT	53	50	103	STAINED WOOD	
KW14	BATHROOM 1	FIXED	27	18	45	STAINED WOOD	
KW15	BATHROOM 1	AWNING	27	16	43	STAINED WOOD	
KW16	BEDROOM 1	CASEMENT	17	50	67	STAINED WOOD	
KW17	BEDROOM 1	FIXED	18	50	68	STAINED WOOD	
KW18	BEDROOM 1	FIXED	18	50	68	STAINED WOOD	
KW19	BEDROOM 1	CASEMENT	17	50	67	STAINED WOOD	
KW20	BEDROOM 2	CASEMENT	17	50	67	STAINED WOOD	
KW21	BEDROOM 2	FIXED	18	50	68	STAINED WOOD	
KW22	BEDROOM 2	CASEMENT	17	50	67	STAINED WOOD	
KW23	BEDROOM 2	FIXED	18	50	68	STAINED WOOD	
KW24	STORAGE 2	3 LT CASEMENT	53	50	103	STAINED WOOD	
KW25	LIVING ROOM 1	FIXED	18	50	68	STAINED WOOD	
KW26	LIVING ROOM 1	CASEMENT	17	50	67	STAINED WOOD	
KW27	LIVING ROOM 1	FIXED	35	12	47	STAINED WOOD	
KW28	LIVING ROOM 1	3 LT CASEMENT	68	50	118	STAINED WOOD	
KW29	LIVING ROOM 1	FIXED	68	12	80	STAINED WOOD	

NOTE: Where the existing window style indicates "double-hung", window may be single-hung or double-hung.

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(EXISTING CONDITIONS)**

HOME INVENTORY

HEATING SYSTEM

SYSTEM #	HEATING TYPE	LOCATION	MANUFACTURER	INPUT	OUTPUT	AGE	MODEL #	IGNITION TYPE	HUMIDIFIER
SYSTEM 1	FORCED AIR	STORAGE 1	N/A	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE

ELECTRICAL SYSTEM

SYSTEM #	PANEL TYPE	LOCATION	AMPS	FUSE / BREAKERS	RECESSED / SURFACE MOUNTED	# OF SPACES	# FULL	# OPEN
SYSTEM 1	MAIN PANEL	STORAGE 1	100	BREAKERS	SURFACE MOUNTED	17	13	4

X	Home has central air-conditioning, and all habitable rooms are cooled by this system
	Home has central air-conditioning, but not all habitable rooms are cooled by this system
	Home has a through-wall air-conditioning system installed in one or more locations
	Home has a window air-conditioning system installed in one or more window openings
	Home has no air-conditioning system installed at this time

X	All habitble rooms have existing ductwork supply.
	These habitable rooms do not have existing ductwork supply and need ductwork added:

Page 3 of 3

Acoustical Treatment Package 3

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(NEW WORK)**

CONSTRUCTION MODIFICATIONS

Home ID Number	
Name of Homeowner	
Address	
Inventory Date	
Technician	
Package	**Three**

Field Measurements Information	
Date	
PM/CM Representative	
A/E Representative	

DOOR SCHEDULE

KD #	LOCATION	TYPE	NEW STYLE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	JAMB (In.)	STC	SIDELIGHT	FINISH	PEEP HOLE	HARDWARE STYLE	HARDWARE FINISH	GLASS	DETAIL	NOTES
KD01	KITCHEN 1	PRIME	REUSE											D5	See note KDD1
KD02	LIVING ROOM 1	PRIME	REUSE											D5	See note KDD1

WINDOW SCHEDULE

KW #	LOCATION	NEW STYLE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	U.I.	COLOR	STC	GRILLE TYPE	GRILLE SASH	GLASS	TEMPERED	DETAIL	NOTES
KW01	KITCHEN 1	AWNING	36	24	60	WHITE	40	COLONIAL	ALL	CLEAR		W1P	
KW02	LIVING ROOM 1	AWNING	36	27	63	WHITE	40	COLONIAL	ALL	CLEAR		W1P	
KW03	LIVING ROOM 1	AWNING	36	27	63	WHITE	40	COLONIAL	ALL	CLEAR		W1P	
KW04	LIVING ROOM 1	AWNING	36	27	63	WHITE	40	COLONIAL	ALL	CLEAR		W1P	
KW05	LIVING ROOM 1	AWNING	36	27	63	WHITE	40	COLONIAL	ALL	CLEAR		W1P	
KW06	BATHROOM 1	NO WORK			0								
KW07	BEDROOM 1	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW08	BEDROOM 1	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW09	BEDROOM 2	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW10	BEDROOM 2	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW11	BEDROOM 3	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW12	BEDROOM 3	DOUBLE HUNG	35	37	72	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW13	BEDROOM 4	DOUBLE HUNG	20	53	73	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW14	BEDROOM 4	FIXED	52	53	105	WHITE	40	NONE	NONE	CLEAR		W1P	
KW15	BEDROOM 4	DOUBLE HUNG	20	53	73	WHITE	40	COLONIAL	BOTH	CLEAR		W1P	
KW16	BEDROOM 4	NO WORK			0								

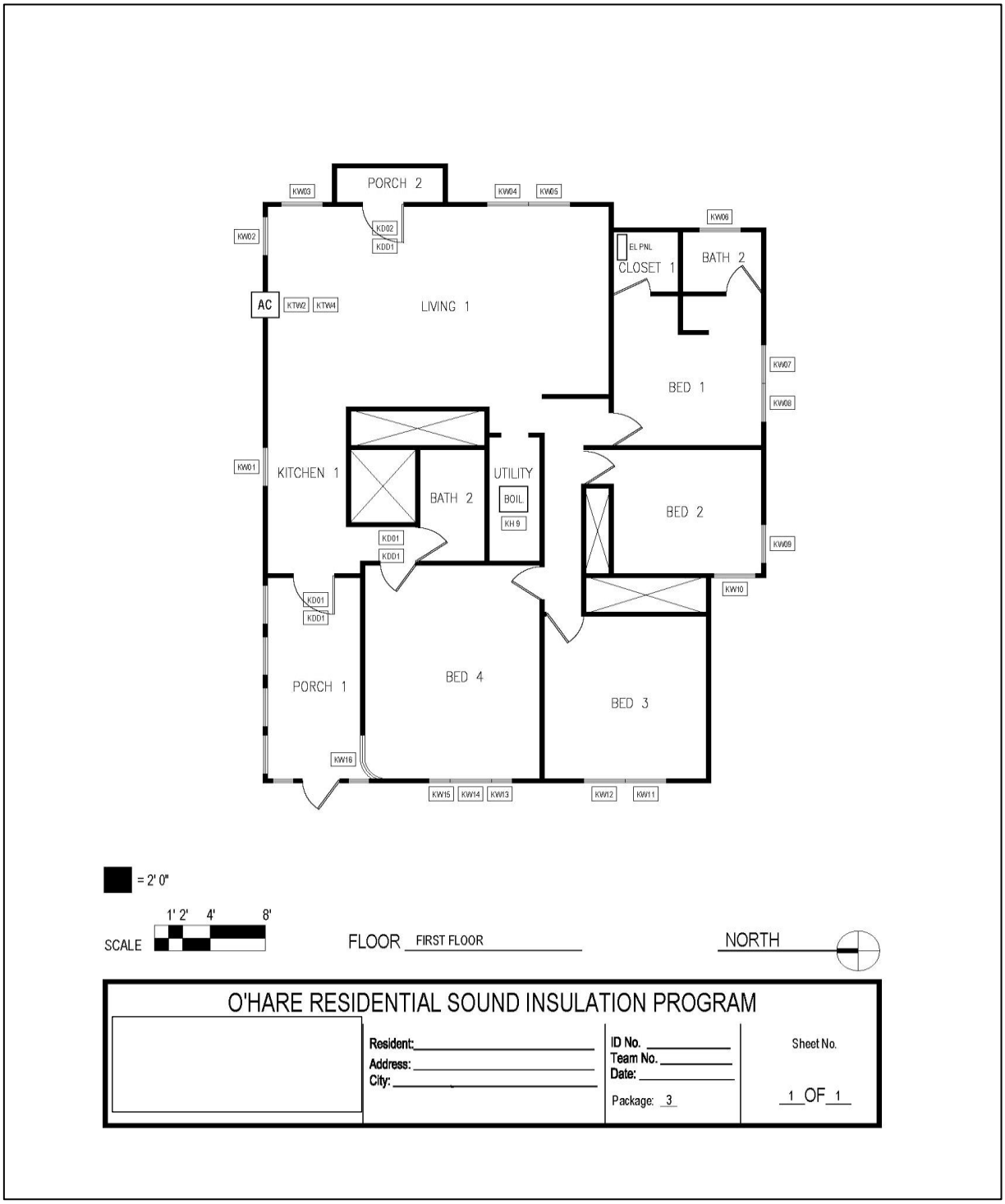
DOORS	QTY.	UNIT	DETAIL	COMMENTS
-- KDD1 _ Add weatherstrip to existing prime doors KD01 & KD02.	2	Each	D5	(See Door Schedule)

AIR CONDITIONING	QTY.	UNIT	DETAIL	COMMENTS
-- KH7 _ There is a proposed location for the new condensing unit.	N/A	N/A	N/A	(See Floor Plan)
-- KH8 _ Provide supply ductwork and all registers of appropriate size to rooms keynoted KH8. Match existing register styles and finishes if possible.	N/A	N/A	N/A	(See Floor Plan)
-- KH9 _ Contractor to inspect existing HVAC system and submit a proposal to architect outlining all work required to cool home. Proposal shall include an evaluation of existing supply and return ductwork for appropriate size.	N/A	N/A	N/A	(See Floor Plan)
-- KTW2 _ In LIVING ROOM 1, remove existing through-wall air conditioner. Terminate electrical circuits as required. Patch each remaining wall opening with necessary framing, insulation, drywall and/or plaster. Finish each exterior opening to blend with the existing exterior finish.	3.6	S.F.	WA4	(See Floor Plan)
-- KTW4 _ In LIVING ROOM 1, prime and paint the wall patches where the original through-wall air conditioner and/or unit heater was removed.	3.6	S.F.	WA4	(See Floor Plan)

MISCELLANEOUS	QTY.	UNIT	DETAIL	COMMENTS
-- KM2 _ Homeowner to coordinate disconnection and reconnection of security system with contractor and security company.	N/A	N/A	N/A	N/A

Acoustical Treatment Package 3

SAMPLE



Acoustical Treatment Package 3

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM

PHOTOGRAPHS









Acoustical Treatment Package 3

SAMPLE

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM **(EXISTING CONDITIONS)**

HOME INVENTORY

Home ID Number	
Name of Homeowner	
Address	
Inventory Date	
Technician	
Package	**Three**

EXTERIOR MATERIALS

Exterior of the main house is:	
	Brick or Masonry
	Stucco
	Wood Siding
X	Vinyl Siding
	Aluminum Siding
	Asphalt Siding

Exterior of the addition is:	
	Brick or Masonry
	Stucco
	Wood Siding
	Vinyl Siding
	Aluminum Siding
	Asphalt Siding

The basement is:	
	Below grade
	75% below grade
	50% below grade
	Finished
	Unfinished
	Crawl Space
X	No Basement

LOCATION	FLOOR	WALL	CEILING	TREATMENT
KITCHEN 1	VINYL	DRYWALL	DRYWALL	HABITABLE
LIVING ROOM 1	VINYL	DRYWALL	DRYWALL	HABITABLE
CLOSET 1	VINYL	DRYWALL	DRYWALL	NON-HABITABLE
BATHROOM 1	CERAMIC TILE	CERAMIC TILE	DRYWALL	NON-HABITABLE
BEDROOM 1	VINYL	DRYWALL	DRYWALL	HABITABLE
BEDROOM 2	VINYL	DRYWALL	DRYWALL	HABITABLE
BEDROOM 3	VINYL	DRYWALL	DRYWALL	HABITABLE
BEDROOM 4	VINYL	DRYWALL	DRYWALL	HABITABLE
PORCH 1	VINYL	DRYWALL	DRYWALL	NON-HABITABLE
PORCH 2	WOOD	OTHER	OTHER	NON-HABITABLE
UTILITY 1	VINYL	DRYWALL	DRYWALL	NON-HABITABLE
BATHROOM 2	CERAMIC TILE	DRYWALL	DRYWALL	NON-HABITABLE

EXISTING VISIBLE DAMAGE

	Water Damage
	Cracks in the existing drywall
	Visible insect damage
	Rotted framing structure
	Evidence of mold
	Other:
DESC.:	

SECURITY SYSTEM

X	

Page 1 of 2

O'HARE RESIDENTIAL SOUND INSULATION PROGRAM

(EXISTING CONDITIONS)

HOME INVENTORY

DOORS

NOTE: Opening dimensions are approximate. Contractor to verify actual dimensions at field measurements.

KD #	LOCATION	DOOR TYPE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	JAMB (In.)	EXISTING MATERIAL	SIDELIGHT	EXISTING THRESHOLD HEIGHTS	NOTES
KD01	KITCHEN 1	PRIME	36	80	5.5	SC WOOD	NONE	OK	
KD02	LIVING ROOM 1	PRIME	36	80	8	SC WOOD	NONE	OK	

WINDOWS

NOTE: Opening dimensions are approximate. Contractor to verify actual dimensions at field measurements.

KW #	LOCATION	EXISTING WINDOW STYLE	DIMENSIONS W (In.)	DIMENSIONS H (In.)	U.I.	INTERIOR TRIM FINISH	NOTES
KW01	KITCHEN 1	AWNING	36	24	60	PAINTED WOOD	
KW02	LIVING ROOM 1	AWNING	36	27	63	PAINTED WOOD	
KW03	LIVING ROOM 1	AWNING	36	27	63	PAINTED WOOD	
KW04	LIVING ROOM 1	AWNING	36	27	63	PAINTED WOOD	
KW05	LIVING ROOM 1	AWNING	36	27	63	PAINTED WOOD	
KW06	BATHROOM 1	GLASS BLOCK	31	31	62	NONE	
KW07	BEDROOM 1	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW08	BEDROOM 1	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW09	BEDROOM 2	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW10	BEDROOM 2	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW11	BEDROOM 3	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW12	BEDROOM 3	DOUBLE HUNG	35	37	72	PAINTED WOOD	
KW13	BEDROOM 4	DOUBLE HUNG	20	53	73	PAINTED WOOD	
KW14	BEDROOM 4	FIXED	52	53	105	PAINTED WOOD	
KW15	BEDROOM 4	DOUBLE HUNG	20	53	73	PAINTED WOOD	
KW16	BEDROOM 4	GLASS BLOCK	54	93	147	DRYWALL RTN.	

NOTE: Where the existing window style indicates "double-hung", window may be single-hung or double-hung.

HEATING SYSTEM

SYSTEM #	HEATING TYPE	LOCATION	MANUFACTURER	INPUT	OUTPUT	AGE	MODEL #	IGNITION TYPE	HUMIDIFIER
SYSTEM 1	STEAM	LIVING ROOM 1	WEIL McLAIN	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE
SYSTEM 2	STEAM	KITCHEN 1	WEIL McLAIN	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE
SYSTEM 3	STEAM	BEDROOM 1	WEIL McLAIN	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE
SYSTEM 4	STEAM	BEDROOM 2	N/A	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE
SYSTEM 5	STEAM	BEDROOM 3	N/A	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE
SYSTEM 6	STEAM	BEDROOM 4	N/A	N/A	N/A	N/A	N/A	ELECTRIC IGNITION	NONE

ELECTRICAL SYSTEM

SYSTEM #	PANEL TYPE	LOCATION	AMPS	FUSE / BREAKERS	RECESSED / SURFACE MOUNTED	# OF SPACES	# FULL	# OPEN
SYSTEM 1	MAIN PANEL	CLOSET 1	100	BREAKERS	RECESSED	30	23	7

	Home has central air-conditioning, and all habitable rooms are cooled by this system
	Home has central air-conditioning, but not all habitable rooms are cooled by this system
X	Home has a through-wall air-conditioning system installed in one or more locations
	Home has a window air-conditioning system installed in one or more window openings
	Home has no air-conditioning system installed at this time

	All habitble rooms have existing ductwork supply.
X	These habitable rooms do not have existing ductwork supply and need ductwork added:
	LIVING ROOM 1, KITCHEN 1, BEDROOM1, BEDROOM 2, BEDROOM 3 & BEDROOM 4.

CITY OF CHICAGO
DEPARTMENT OF AVIATION
CHICAGO O'HARE INTERNATIONAL AIRPORT
RESIDENTIAL SOUND INSULATION PROGRAM O'HARE PHASE 19A

PART TWO OF THREE
GENERAL CONDITIONS
SPECIFICATION NUMBER: 1315458A

CDA PROJECT NUMBER: OH8057.20-19
GRANT NUMBER: TBD

CITY OF CHICAGO
Brandon Johnson
Mayor

CHICAGO DEPARTMENT OF AVIATION
Michael J. McMurray
Commissioner

Issued by:

DEPARTMENT OF PROCUREMENT SERVICES
Sharla D. Roberts
Chief Procurement Officer

June 12, 2026
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REFERENCES TO FEDERAL REQUIREMENTS

The Work in this Contract may be funded in whole or in part by the Federal Airport Improvement Program. The United States is not a party to this Contract and no reference in this Contract to the Federal Aviation Administration ("FAA") or any representative thereof, or to any rights granted to the FAA or any representative thereof, makes the United States a party to this Contract. The following Federally required provisions are material terms of this Contract. References to Article and Section numbers are to articles and sections of Part Two ("General Conditions") unless otherwise noted. References to the EDS are to the Economic Disclosure Statement and Affidavit contained in Part One ("Instructions and Execution Documents").

1. ACCESS TO RECORDS AND REPORTS - Part Two, Article XII, Section D, ("Project Account Records")

2. AFFIRMATIVE ACTION REQUIREMENT – Part Two, Article XVIII, Section D ("Affirmative Action, Equal Employment Opportunity, Goals and Timetable")

3. BREACH OF CONTRACT TERMS – Part Two, Article XVII ("Events of Default and Termination"), and Part Two, Article XVIII ("Compliance with all Laws")

4. BUY AMERICAN PREFERENCE – Part Two, Article XVIII, Section V ("Buy American")

5. CIVIL RIGHTS – GENERAL – Part Two, Article XVIII, Section C ("Human Rights")

6. CIVIL RIGHTS – TITLE VI ASSURANCE – Part One, Section 1, paragraph 39 ("Title VI Solicitation Notice") and Part Two, Article XVIII, Section C ("Human Rights")

7. CLEAN AIR AND WATER POLLUTION CONTROL – Part Two, Article XIV, Section C ("Environmental Provisions") and Part Two, Article XVIII, Section U ("Environmental Requirements")

8. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT REQUIREMENTS – Part Two, Article IX, paragraph L.4 ("Contract Work Hours and Safety Standards Act")

9. COPELAND ANTI-KICKBACK ACT – Part Two, Article XVIII, Section K ("Copeland "Anti-Kickback" Act")

10. DAVIS-BACON ACT – Part Two, Article IX, paragraph L.3 ("Davis-Bacon and Related Acts")

11. DEBARMENT AND SUSPENSION – Part One, Section 5, page S5-7 ("Instructions for Completing Economic Disclosure Statement and Affidavit (EDS) Online"), and Part Two, Article XVIII, Section M (Economic Disclosure Statement ("EDS") and Contractor's Affidavit")

12. DISADVANTAGED BUSINESS ENTERPRISE – Part Two, Article XVIII, Section F ("Disadvantaged Business Enterprise")

13. DISTRACTED DRIVING – Part Two, Article XVIII, Section QQ, ("Texting When Driving")

14. PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT – Part Two, Article XVIII, Section EEE ("Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment")

15. DRUG-FREE WORKPLACE REQUIREMENTS – Part Two, Article XIV, Section A, ("Health and Safety")

16. EQUAL EMPLOYMENT OPPORTUNITY (EEO) – Part Two, Article XVIII, Section D, ("Affirmative Action, Equal Employment Opportunity, Goals and Timetables")

17. FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE) – Part Two, Article IX, Section M (“Fail Labor Standards Act”)

18. LOBBYING AND INFLUENCING FEDERAL EMPLOYEES – Part One, Section 5, page S5-19 (“Certification Regarding Lobbying and Influencing of Federal Employees”)

19. PROHIBITION OF SEGREGATED FACILITIES – Part Two, Article XVIII, Section XX (“Prohibition of Segregated Facilities”)

20. OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 – Part Two, Article IX, Section N (“Occupational Safety and Health Act”)

21. PROCUREMENT OF RECOVERED MATERIALS – Part Two, Article XVIII, Section WW (“Procurement of Recovered Materials”)

22. RIGHT TO INVENTIONS – Part Two, Article XVIII, Section GG (“Patent Rights”)

23. SEISMIC SAFETY – Part Two, Article XVIII, Section YY (“Seismic Safety”)

24. TAX DELINQUENCY AND FELONY CONVICTIONS – Part One, Section 5, page S5-21 (“Certificate Regarding Tax Delinquency and Felony Convictions”)
25. TERMINATION OF CONTRACT – Part Two, Article XVII (“Events of Default and Termination”)

26. TRADE RESTRICTION CERTIFICATION – Part One, Section 5 (“Execution Pages”)

27. VETERAN’S PREFERENCE – Part Two, Article XVIII, Section X (“Veterans Preferences”)

28. DOMESTIC PREFERENCS FOR PROCUREMENTS – Part Two, Article XVIII, Section FFF (“Domestic Preferences for Procurements”)

CITY OF CHICAGO
DEPARTMENT OF AVIATION
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

I. GENERAL PROVISIONS

A. Definitions

1. "Affiliate" of a person or entity means a person or entity that directly or indirectly through one or more intermediaries or third parties, controls or is controlled by, or is under common control with, the person or entity. A person or entity will be deemed to be controlled by another person or entity if it is controlled in any manner whatsoever that results in control in fact by that other person or entity (either acting individually or acting jointly or in concert with others) whether directly or indirectly and whether through share ownership, a trust, a Contract or otherwise. Indicia of control may include, without limitation: interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or reorganization of a business entity following a determination of City contracting ineligibility using substantially the same management, employees, ownership or principals. In determining whether persons or entities are Affiliates, the City will consider all appropriate factors, including, but not limited to; common ownership, common management, and contractual relationships.
2. "Airport" means the Chicago O'Hare International Airport and Chicago Midway International Airport together with any additions thereto, improvements, or enlargements thereof, now or hereafter made, except any land rights-of-way or improvements which are now or may hereafter be owned by or are part of the transportation system operated by the Chicago Transit Authority, or any successor thereto, wherever located within the boundaries of the Airport.
3. "Architect/Engineer" or "A/E" means the organization or entity that the City has chosen to oversee the design of the Residential Sound Insulation Program.
4. "Aviation" means the Chicago Department of Aviation for the City of Chicago.
5. "Award" means the date that the Contract is released by the Chicago Department of Procurement Services.
6. "Business Days" means Business Days according to the City of Chicago Calendar.
7. "CDA" means the Chicago Department of Aviation.
8. "Calendar Day" means every day shown on the calendar including Saturdays, Sundays, and holidays.
9. "Chief Procurement Officer" or ("CPO") means the chief executive of the Chicago Department of Procurement Services ("DPS") for the City of Chicago and any representative duly authorized in writing to act on the CPO's behalf.
10. "City" means the City of Chicago, a municipal corporation and Home-rule government under Sections 1 and 6(a), Article VII, respectively, of the 1970 Constitution of the State of Illinois.
11. "Commissioner of Aviation", hereafter "Commissioner", means the chief executive of the Department of Aviation for the City of Chicago and any representative duly authorized in writing to act on the Commissioner's behalf.
12. "Comptroller" means the chief executive of the Department of Finance for the City of Chicago and any representative duly authorized in writing to act on the Comptroller's behalf.
13. "Contaminant" means any of those materials set forth in 415 ILCS 5/3.165, as amended from time to time, that are subject to regulation under any Environmental Law.
14. "Contract" or "Agreement" means this Contract for Construction, including all exhibits attached hereto and/or incorporated by reference herein, and all amendments, modifications, or revisions made from time to time in accordance with the terms hereof.

15. “Contract Documents” means Part One (“Instructions and Execution Documents”), Part Two (“General Conditions”), Part Three (“Technical Specifications”), and the Residential Construction Documents.

16. “Contract Completion Date” is the date, determined by the Commissioner, on which the Contract has achieved Final Completion of the Project and all Project Closeout Documentation has been submitted to, and accepted by, the Commissioner, and all contractual requirements for final payment have been completed.

17. “Contract Modification” is a document signed by Contractor and City, (or the City alone under certain circumstances stated in Part Two (“General Conditions”)), that adjusts the scope of Work, Contractor’s compensation, The Contact Completion Date, or the time allowed by the Contract for completion of any phase or milestone.

18. “Contract Price” is the total compensation to be paid to Contractor for the Work by the City as may be amended from time to time by Contract Modifications.

19. “Contractor” refers to the person or entity that is Awarded the Contract.

20. “Contractor’s Warranty” means Contractor’s representation as to the character and quality of the Work in accordance with the terms and conditions of the Contract Documents, and Contractor’s promise to repair and replace the Work not in conformance with such representations.

21. “Construction Manager” or “CM” means the organization or entity that the City has chosen to oversee the construction of the Residential Sound Insulation Program.

22. “Construction Modifications” are sets of documents including window schedules, door schedules, photographs, and floor plans for each individual Home identifying observed existing conditions and the proposed new Work planned to be performed in the Home. The Construction Modifications are to be provided to Contractor after the NTP is issued.

23. “Corporation Counsel” means the head of the City’s Department of Law and any Assistant Corporation Counsel duly authorized to act on the Corporation Counsel’s behalf.

24. “Correction Period” means a period of one year, unless otherwise specified, that will begin on the date of Final Completion of the Home. For all other parts of the Project the one-year Correction Period will begin on the date of Final Completion of the Project. Without limiting the scope or duration of any Manufacturer’s Warranty provided for specific parts of the Work, or Contractor’s Warranty, Contractor promises to repair or replace all Work furnished under this Contract consisting of defective materials and/or workmanship, improper installation, or performance, and/or non-compliance with the Contract Documents.

25. “Days” or “Day” (whether or not capitalized) means Calendar Days, unless otherwise stated.

26. “Daytime Work” means Work performed between the hours of 6:00 a.m. and 6:00 p.m., unless otherwise defined in the plans.

27. “Detailed Specifications” means the written requirements for materials and equipment to be used in the Work, including any plans or drawings, and standards of performance for the Work, which are set forth in Part Three (“Technical Specifications”), or incorporated by reference.

28. “Environmental Law(s)” means any Federal, state, or local law, statute, ordinance, code, rule, permit, plan, regulation, license, authorization, order, or injunction which pertains to health, safety, any Hazardous Substance or Other Regulated Material, or the environment (including, but not limited to, ground, air, water or noise pollution or contamination, and underground or aboveground tanks) and includes, without limitation, the Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42 U.S.C. 11001 et seq.; the Toxic Substances Control Act (“TSCA”), 15 U.S.C. 2601 et seq.; the Hazardous Material Transportation Act, 49 U.S.C. 1801 et seq.; the Resource Conservation and Recovery Act (“RCRA”), 42 U.S.C. 6901 et seq., as amended by the Hazardous and Solid Waste Amendments of 1984; the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601 et seq. (“CERCLA”), as amended by the Superfund Amendments and Reauthorization Act of 1986 (“SARA”); the Occupational Safety and Health Act, 29 U.S.C. 651 et seq.;

the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq.; the Clean Air Act, 42 U.S.C. 7401 et seq.; the Illinois Environmental Protection Act, 415 ILCS 5/1 et seq.; the Gasoline Storage Act, 430 ILCS 15/0.01 et seq.; the Sewage and Waste Control Ordinance of the Metropolitan Water Reclamation District of Greater Chicago ("MWRD"); the Municipal Code of Chicago; and any other local, state, or Federal environmental statutes, and all rules, regulations, orders, and decrees now or hereafter promulgated under any of the foregoing, as any of the foregoing now exist or may be changed or amended or come into effect in the future.

29. "Equipment" means all machinery and equipment, together with the necessary supplies for upkeep and maintenance, and all tools and apparatus necessary for the proper and acceptable completion of the Work.

30. "FAA" means the Federal Aviation Administration created under the Federal Aviation Act of 1958, as amended, or any successor agency thereto.

31. "Field Measurement appointment" means an appointment at each Home included in the Contract attended by the Architect, Commissioner's Representative, Contractor, and the Homeowner. The purpose of the Field Measurement appointment is to finalize the scope of Work for the Home and for Contractor to obtain all necessary field measurements and other information as needed to order all materials.

32. "Field Order" means a written order to Contractor unilaterally directing changes in the Work and/or in Contract time. Field Orders with an estimated cost below $5,000 will be signed by the CM and issued to the Contractor. Field Orders with estimated costs of $5,000 or more, will be signed by the CM and issued to the Contractor after receiving written approval from the Commissioner and the CPO.

33. "File Transfer Application" refers to the process of copying or moving a file from one computer to another over a network or Internet connection. It enables sharing, transferring, or transmitting a file between different users and/or computers both locally and remotely. This transfer of files is made over an application. The File Transfer Application will be provided by the Commissioner.

34. "Final Completion of the Home" is the date upon which, in the determination of the Commissioner, Contractor has completed all Work on a Home in accordance with the Contract Documents, including Punch List Work and, if necessary, Product Replacement.

35. "Final Completion of the Project" means the last date on which all of the following events have occurred. The Commissioner has determined that the Contractor has achieved Final Completion of the Home for all homes (including all Punch List Work, and Product Replacement), and any other remaining Work has been completed in accordance with the Contract Documents; closeout of all Quality Deficiency Reports, all deliverables have been provided to the Commissioner, and all contractual requirements for final payment have been completed. The date of Final Completion of the Project will be determined based on the duration for the Project set by the Contract as adjusted by any Contract Modifications that extend or reduce the duration of the Project.

36. "Final Home Invoice" means an invoice showing the final cost of each Home after the final audit is completed on the Home and Agreement is reached by the CM and Contractor.

37. "Hazardous Substance" has the meaning set forth in 415 ILCS 5/3.215, as amended from time to time.

38. "Homeowner's Residence" or "Home" means a single-family residence, or each separate dwelling unit of a multi-family building, and is the real property on which the Homeowner has agreed to have construction Work done pursuant to the Residential Sound Insulation Program.

39. "Homeowner" is the person(s) who own(s) or has beneficial interest in the Residence that is designated, by the Commissioner, to have sound insulation construction accomplished under this Contract.

40. "Key Personnel" means those job titles and the persons assigned to those positions in accordance with the provisions of this Contract.

41. “Major Milestone Schedule” means a Critical Path Method (“CPM”) Schedule that will be provided by Contractor to the Commissioner, in accordance with the requirements of the Contract showing the major milestones of the Project.

42. “Manufacturer’s Warranty” means a representation by a fabricator or manufacturer as to the character and quality of materials that are a part of the Work, along with a promise to repair or replace materials not in conformance with such representation, which Warranty is provided by a fabricator or manufacturer in the normal course of its business.

43. “Master Schedule” means the bar chart schedule provided by Contractor to the Commissioner, in accordance with the requirements of the Contract, showing the construction start and finish dates for all Homes in the Project.

44. “MCC”, or “Municipal Code”, means the Municipal Code of Chicago.

45. “Monthly Update Schedule” means a version of an original Baseline Schedule that contains a record of progress to date and additions representing accepted changes in the future sequence of the Work. The Monthly Update Schedule will accurately forecast Contractor’s plan to complete the remaining Work within the time established by the Contract Documents or as adjusted by Contract Modifications or Field Order.

46. “Notice to Proceed” or “NTP” means written direction from the Commissioner for Contractor to commence its Work hereunder.

47. “Other Regulated Material” means any Waste, Contaminant, or any other material not otherwise specifically listed or designated as a Hazardous Substance, that is or contains: petroleum, including crude oil or any fraction thereof, motor fuel, jet fuel, natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel or mixtures of natural gas and such synthetic gas, asbestos or asbestos-containing materials in any form or condition, radon, any polychlorinated biphenyl, urea formaldehyde foam insulation, explosive or radioactive material or by-product material, mold, materials known to contain per- and polyfluoroalkyl substances (“PFAS”), or is a hazard to the environment or to the health or safety of persons.

48. “Owner” means the City of Chicago.

49. “Pay Estimate” or “Payment Estimate” means a payment request to the City prepared by the CM for Work performed by Contractor. Pay Estimates will be based on actual quantities of Work performed at the unit prices specified in Contractor’s bid or, if a lump sum line item or lump sum Contract, at the prices specified.

50. “Premium Time Cost” means additional labor costs resulting from working outside of regular scheduled working hours. Premium Time Costs include overtime and shift differentials as determined by the applicable union Contract.

51. “Product Replacement” means the replacement, by Contractor, of specified items such as windows or doors which were damaged, defective, or incorrectly measured or installed by Contractor and required to be replaced as determined by the CM at the time the Punch List is issued.

52. “Progress Schedule” means a schedule in bar chart format that identifies the Homes completed in the previous week, planned for the current week, and planned of the following week.

53. “Project” means, collectively, the improvements to be constructed by Contractor, on all Homes, in accordance with the Contract.

54. “Project Manager” or “PM” means the entity(ies) that the City has retained to provide overall management services for the Residential Sound Insulation Program.

55. “Project Record Documents” are all documents the Contract requires Contractor to provide to the City including, but not limited to; shop drawings, as-built documents, parts manuals, operation and maintenance manuals, blue line drawings, and Project manuals and/or specifications.

56. “Punch List” or “Punch List Work” means the list of items, or the actual work performed, for minor adjustments, repairs, or the correction of deficiencies in the Work on each Home. Whether an item is Punch List Work or necessary for the Substantial Completion of the Home, will be determined in the sole discretion of the Commissioner. Punch List Work is considered complete when the Work required in the Punch List, including Punch List for Product Replacement, is complete as determined by the Commissioner.

57. “Record Documents” are all documents pertaining to the completed Work and the Project that the Contract requires you to provide to the City, which may include Record Drawings, Record Shop Drawings, product data, instructions, parts list, certified payrolls and operations and maintenance manuals.

58. “Request for Inspection of Materials” (“RFIM”) is a Contractor notification to the Commissioner that all materials for a particular Home have been received and have passed their inspections and are ready for the Commissioner’s Representative to perform its inspection.

59. “Residence” means a single-family Home or each separate dwelling unit of a multi-family building, and is the real property on which the Homeowner has agreed to have construction Work done pursuant to the Residential Sound Insulation Program.

60. “Risk Management Office” means the City’s Risk Management Office in the Department of Finance, which is under the direction of the Comptroller, and which is charged with the review and analysis of related liability matters for the City.

61. “RSIP” means Residential Sound Insulation Program.

62. “Subcontractor” means any person or entity with whom Contractor Subcontracts to provide any part of the Work and all Subcontractors of any tier, suppliers, and material men, whether or not in privity with Contractor.

63. “Substantial Completion of the Home” is the date upon which, in the determination of the Commissioner, Contractor has completed all Work on the Home in accordance with the Contract Documents, excluding Punch List Work and Product Replacement.

64. “Substantial Completion of the Project” is the date upon which, in the determination of the Commissioner, Contractor has achieved Substantial Completion of the Home for all homes in accordance with the Contract Documents, excluding Punch List Work and Product Replacement.

65. “Time Extension” means the additional period of time, in Calendar Days, that will be provided to Contractor for additional Work or for the delay in the critical path of the latest approved Master Schedule that affected the Substantial Completion of any Milestone, or the Project, provided that the delay was caused by a City-directed change in the Work or an event for which Contractor is entitled to additional time to perform the Work under the terms of Part Two (“General Conditions”).

66. “Waste” includes those materials defined in the Illinois Environmental Protection Act, 415 ILCS 5/1 et seq. as waste and identified subcategories thereof, including but not limited to, construction or demolition debris, garbage, household waste, industrial process waste, landfill waste, landscape waste, municipal waste, pollution control waste, potentially infectious medical waste, refuse, or special waste.

67. “Work” means all labor, materials, equipment, and other incidentals furnished by Contractor necessary or convenient to the successful completion of the Project, and which are required by, incidental or collateral to the Contract Documents.

68. “Workday” means every Calendar Day on the approved Major Milestone and Master Schedules indicate that Contractor is to perform Work.

B. Contract Interpretation

Any headings of this Contract are for convenience of reference only and do not define or limit the provisions thereof. In this Contract, unless the context otherwise requires, the terms “hereby”, “herein”, “hereof”, “hereto”, “hereunder”, and any similar terms used in this Contract refer to this Contract. All section

references, unless otherwise expressly indicated, are to sections of this Contract. Words importing persons must include firms, associations, partnerships, trusts, corporations, joint ventures, and other legal entities, including public bodies, as well as natural persons. Words of any gender must be deemed and construed to include correlative words of other genders. Words importing the singular number must include the plural and vice versa, unless the context otherwise indicates. All references to any exhibit or document must be deemed to include all supplements and/or amendments to any such exhibits or documents entered into in accordance with the terms and conditions hereof and thereof. All references to any person or entity must be deemed to include any person or entity succeeding to the rights, duties, and obligations of such persons or entities in accordance with the terms and conditions of this Contract. The terms "include", "includes", or "including", when followed by one or more examples, denote a nonexclusive list.

C. Severability

If any provision of this Contract is held or considered to be or is in fact invalid, illegal, inoperative, or unenforceable as applied in any particular case or in any jurisdiction or in all cases because it conflicts with any other provision or provisions of this Contract or of any constitution, statute, ordinance, rule of law or public policy, or for any other reason, those circumstances do not have the effect of rendering the provision in question invalid, illegal, inoperative, or unenforceable in any case or circumstances, or of rendering any other provision or provisions in this Contract invalid, illegal, inoperative, or unenforceable to any extent whatsoever. The invalidity, illegality, inoperativeness, or unenforceability of any one or more phrases, sentences, clauses, or sections in this Contract does not affect the remaining portions of this Contract or any part of it.

D. Interpretation/Rules

1. Intent of Plans and Specifications

a. The intent of the plans and specifications is to describe the Work that Contractor will undertake to fulfill the requirements of the Contract. Contractor must perform all Work as provided in the Contract Documents and such additional, collateral, and incidental Work as required and necessary to complete the Work in accordance with the Contract Documents. Contractor must furnish all required materials, equipment, tools, labor, temporary light, and power, shop plans, working drawings, and incidentals, unless otherwise provided in the Contract, and must include the cost of all such items in the Contract unit and lump sum prices for several units of Work.

b. The specifications and plans are not intended to cover every detail of materials, parts, or construction. Contractor must furnish all materials, parts, and labor necessary to complete the Work, whether or not said details are particularly shown or specified, all at no additional cost to the City.

c. Except as otherwise expressly stated in the Contract Documents, Contractor's bid price(s) includes, and Contractor must provide and furnish, all items necessary and incidental to the Work and the Project, including, but not limited to; all materials, parts, labor, supervision, coordination, administration, equipment, tools, temporary light, and power, shop plans, working drawings, and incidentals required by the Contract Documents and desirable for the full completion of the Work, whether or not particularly shown, described, or specified in the Contract Documents, and Contractor's bid price(s) includes all costs relating to, or associated with, the foregoing including, but not limited to; all direct costs, overhead, and profit. Wherever the imperative form of address is used in the Contract Documents (such as "perform the excavating", "provide equipment required", "remove obstructions encountered", "furnish and install"), it is understood and agreed that such address is directed to Contractor and that Contractor's bid price(s) includes all associated costs. No terms of the Contract Documents, which more specifically indicate that Contractor will bear the costs of an item or which more specifically indicate that an item will be performed at no additional cost to the City, will be construed or interpreted to in any way limit the foregoing.

d. Wherever the imperative form of address is used, such as "perform the excavating", "provide equipment required", "remove obstructions encountered", "furnish and install reinforcing steel bars", it is understood and agreed that such address is directed to Contractor.

e. "Provide" as used in these specifications means furnish and install.

f. Unless a contrary meaning is specifically noted elsewhere, words “as required”, “as directed”, “as permitted”, and similar words mean that requirements, directions of, and permission of the Commissioner are intended, similarly the words “approved”, “acceptable”, “satisfactory”, or words of like import, mean “approved by”, “acceptable to”, or “satisfactory to”, the Commissioner. Words “necessary”, “proper”, or words of like import as used with respect to extent, conduct, or character of Work specified will mean that Work must be conducted in a manner, or be of character which is “necessary”, or “proper”, in the opinion of the Commissioner.

g. Wherever the words “approved,”, “reasonable”, “suitable”, “acceptable”, “properly”, satisfactory”, or words of like effect and import are used, they mean, unless otherwise particularly herein specified, approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the Commissioner.

h. The Work under this Contract has not been completely segregated into the divisions of Work to be performed by any trade or Subcontractor. Contractor will be responsible for all segregation of Work between the trade or craft jurisdictional limits.

i. As provided in Part Two, Article IV (“Scope of Work”), before Contractor physically begins the Work, Contractor must check the City’s plans and specifications. Should any errors, discrepancies, or omissions be found in these plans and specifications, or any discrepancy found between the Construction Modifications and the physical conditions at the site or in any subsequent drawings that may be provided thereafter. Contractor must notify the Commissioner in writing, immediately. Any Work done after such discovery, unless authorized by the Commissioner, will be done at Contractor’s expense. Contractor will not be allowed to take advantage of any error, omission, or discrepancy in the Contract Documents.

j. Contractor will not be allowed to take advantage of any error, omission, or discrepancy in the Contract Documents.

k. Contractor will be furnished additional copies of the plans and specifications at the cost of reproduction. Specifications by organizations other than the City to which reference is made in the City’s Specifications will be obtained by Contractor at its expense.

l. Contractor must keep on hand at the Work site, for reference, a complete set of specifications for the Work, a complete set of all plans of the Work, copies of all plans furnished by Contractor, all additional and revised plans furnished by the City and all orders issued to Contractor by the Commissioner that relate to the Work.

2. Unless otherwise noted in Part One (“Instructions and Execution Documents”), the following will govern the Interpretation of the Contract in all cases of conflict or inconsistency therein.

   In the event a seeming conflict between provisions within one or more of the items in the Contract Documents is discovered, an interpretation which reconciles the otherwise inconsistent and/or conflicting provisions, without ignoring either or any of them will be preferred.

   If such reconciliation is not possible, then the various Contract Documents will be deemed to govern in the following order of precedence:

   a. First: Part One (“Instructions and Execution Documents”), as issued for bid or as subsequently amended.

   b. Second: Part Two (“General Conditions”), as issued for bid or as subsequently amended.

   c. Third: Part Three (“Technical Specifications”), as issued for bid or as subsequently amended.

   d. Fourth: All other Contract Documents.

   In the event of conflict or inconsistency between the Contract Documents as provided to Contractor on the Department of Procurement Services’ website at www.cityofchicago.org/eProcurement and the Official Printed Copy of the Contract Documents, the Official Printed Copy will take precedence.

E. Entire Agreement

The Contract Documents, and the exhibits attached to them and incorporated thereby, constitute the entire Agreement between the parties with respect to the subject matter hereof, and no other oral or written understandings, representations, inducements, consideration, promises, or interpretations will be implied or impressed upon this Contract that are not expressly addressed herein and therein.

END OF I

II. PROJECT ORGANIZATION

A. City of Chicago

1. The City of Chicago administers the RSIP.

2. Personal Liability of Public Officials: In carrying out any of the provisions of this Contract or in exercising any power or authority granted to them thereby, there will be no liability upon the CPO, Commissioner, their authorized representatives, or any employee of the City, either personally or as officials of the City, it being understood that in such matters they act as representatives of the City.

B. The Commissioner

Except where otherwise specified in this Contract, for the purposes of this Contract, the Commissioner, will represent the City in all matters relating to Contractor's performance of its Work, such as to the quality and acceptability of materials furnished and Work performed, rate of progress of the Work, the amount of Work performed and materials furnished and the estimates thereof. The Commissioner's determination with respect to such matters is a condition precedent to the right of Contractor to receive money due under the Contract, provided that Contract Modifications are approved in accordance with Part Two, Article X ("Changes in the Work").

C. The City CPO

The City CPO has the statutory authority to enter into this Contract, and any modifications of the Contract, for the City and will represent the City in most administrative matters relating to the Contract, such as approval of Subcontractors and approval of DBE plans.

D. The Construction Manager

The CM is the organization, or entity, which the Commissioner has retained to oversee the construction of the RSIP. In carrying out any of the provisions of this Contract or in exercising any power or authority granted to it, there will be no liability upon any officer, employee, or authorized representative of the CM, either personally or as officials of the CM, it being understood in such matters they act as representatives of the CM. The CM responsibilities may include the following with respect to overseeing the construction of the RSIP:

1. Coordinate activities of, and provide day-to-day oversight of, the Contractor.

2. Enforce compliance with the Contract Documents.

3. Notify the CDA of potential problems due to labor or material shortages, proposed changes, and problems in the Work.

4. Refuse entry to the construction jobsite for all Contractors that do not have a proper photographic identification card.

5. Chair construction progress meetings.

6. Review Contractor materials, certifications, and samples to ensure compliance with the Contract Documents.

7. Inspect delivered materials and equipment at the warehouse and at the construction jobsite to ensure compliance with the Contract Documents.

8. Create and maintain records as needed including, but not limited to:

    a. Daily inspection report,
    b. Measurements and computations of all quantities of materials used in the Home,
    c. Minutes of meetings held relative to the Contract,
    d. Any documents required by outside agencies, and
    e. Project photographs, as needed.

9. Review Contractor schedules and usage of manpower to ensure compliance with the Contract Documents.

10. Prepare Field Orders for issuance to Contractor.

11. Make recommendations regarding Contract Modification adjustment in the Contract sum and/or Contract time or a change in the Work to the CDA.

12. Verify material quantities installed by the Contractor in Homes for progress payments.

13. Verify Substantial Completion of the Home, create a Punch List of outstanding items, facilitate Contractor completion of Punch List Work items, and verify Final Completion of the Home.

14. Conduct an audit of materials for each Home.

E. Program Manager

The PM is the entity that the City has retained to assist the Commissioner in overall management of the RSIP. Among its duties relating to this Contract, the PM will review Contractor's invoices and perform other administrative functions. The PM will have no authority to issue approvals that the Contract requires Contractor to obtain from the Commissioner, to bind the City contractually, or to make modifications to this Contract. The representatives and employees of the PM will have no personal liability to Contractor relating to performance of their duties for the City in relation to this Contract, it being understood that in such matters they act as representatives of the PM. The PM responsibilities may include the following with respect to overall management of the RSIP:

1. Ensure collection, review, and maintenance of any required certificates of insurance by the Contractor and all on-site Subcontractors to determine compliance with the Contract Documents.

2. Review canvass reports and review Contractor payroll information submitted electronically. Provide written comments to each Contractor when discrepancies in payroll information are identified. Conduct field visits to the jobsite to verify the employee workforce information that is reported electronically.

3. Prepare construction contract Payment Estimates, collect, and review submittals, and track payment status. Resolve contract payments disputes and coordinate with Contractor and CDA concerning contract payment compliance.

4. Prepare contract modifications for line-item adjustments as well as change orders. Audit Field Orders for compliance with contract requirements.

5. Facilitate avoidance management of Contractor claims and disputes and Subcontractor mechanic's liens.

6. Assist the City by collecting and reviewing documentation regarding participation by DBE compliance.

7. Manage contract closeout including:

    a. Receiving all contract deliverables,
    b. Finalizing all Contract Modifications,
    c. Facilitate resolution of all claims, disputes, and liens,
    d. Determine final quantities for final payment, and prepare a Request for Final Compliance Determination package for DPS.

8. Investigate Homeowner warranty claims and refer Homeowner to Contractor or Manufacturer, as applicable.

F. Architect/Engineer

The A/E is the organization or entity, which the Commissioner has retained, to oversee the design of the RSIP. Contractor will have no direct contact with the A/E, except as authorized by the Commissioner. The A/E responsibilities may include the following with respect to overseeing the design of the RSIP:

1. Review and respond to Contractor's Requests For Information ("RFI").

2. Review and action Contractor submittals in accordance with Part Two, Article XI ("Shop Drawings, Product Data and Samples").

3. Review and action material substitution requests submitted by the Contractor in accordance with the substitution procedures in the applicable sections of Part Three ("Technical Specifications").

4. Attend all Field Measurement appointments to verify tempered glass, window restrictor, and threshold height requirements, record existing mechanical and electrical conditions, and verify the field accuracy of construction modifications.

5. Review design/build mechanical and electrical shop drawings submitted by the Contractor to ensure conformance with the construction contract technical specifications, and program scope.

6. Conduct site visits as needed to investigate and determine solutions to issues caused by pre-existing field conditions affecting the Work.

G. Contractor's Responsibility for Work:

1. Contractor will be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

2. The Work will be under the charge and care of Contractor until Final Completion of the Project, including, all "Punch List Work" and "Product Replacement", unless otherwise specified in the Contract Documents. Contractor must assume all responsibility for injury or damage to the Work by action of the elements, and fire or from any other causes whatsoever, whether arising from the execution, or from the non-execution, of the Work. Contractor must rebuild, repair, restore, and make good, at its expense, all injuries or damages to any portion of its Work occasioned by any of the above causes before its completion and final acceptance.

3. When equipment or materials are furnished to Contractor by the City for Contractor's use or inclusion in the Work, Contractor's responsibility for all such equipment and materials will be the same as for materials furnished by Contractor.

4. The Work will not be considered as completed and accepted until a written notice from the Commissioner, confirming the Final Completion of the Project, including Punch List Work, and Product Replacement, has been received by Contractor.

H. Subcontractors

1. Except as otherwise provided in the Contract, all transactions of the City and the Commissioner will be with Contractor. The Subcontractors will be recognized only in the capacity of employees or workers.

2. Contractor further will implement such measures as may be necessary to ensure that its staff and its Subcontractors are bound by all provisions of the Contract.

3. All Subcontractors are subject to approval by the CPO. Contractor may not make any substitution for a Subcontractor that has been accepted by the CPO, unless the substitution is acceptable to the CPO. Prior to proposing the use of a certain Subcontractor, either with its bid or after Contract Award, Contractor must verify that neither the Subcontractor nor any of its owners is debarred from or otherwise ineligible to participate on City Contracts. This information can be found on the City's website:

   https://www.chicago.gov/city/en/depts/dps/provdrs/debarred_firms_list.html

4. Contractor is responsible for all Subcontractors' Work.

   a. There is no privity between the Subcontractors and the City. Subcontractors have no rights as third-party beneficiaries under this Contract.
   b. Contractor will require the Subcontractors to communicate with the City through Contractor only.
   c. All requests to subcontract must be submitted on the form approved by the Commissioner and the CPO.

I. Consultants

The City may retain, during the Project, consultants who may provide inspection services as the City's representative on various Project matters. The City will advise Contractor of the names and duties of such consultants. When the City does not retain a construction inspector for the Project, the CM may be assigned to provide those services.

END OF II

III. PROPERTY

A. Ownership of Drawings and Documents

1. All drawings, specifications and copies thereof furnished by the Commissioner are the property of the City. They are not to be used on other Work.

2. The Contract Documents are available for download on the DPS' website at www.cityofchicago.org/eProcurement.

3. Additional requested copies of drawings and/or specifications will be furnished at reproduction cost.

4. All documents, data, studies, reports, and instruments of service prepared for or by the City under this Contract, are the property of the City. During the performance of its Work, Contractor will be responsible for any loss or damage to documents while in Contractor's possession or the possession of a Subcontractor and any such document so lost or damaged must be restored at the expense of Contractor.

5. Contractor must deliver, or cause to be delivered, at any time during the term of this Contract all documents, including, but not limited to; drawings, specifications, estimates, and computations, prepared by or for the City, under the terms of this Contract, to the City promptly upon reasonable demand therefore or upon termination or completion of the Work hereunder. In the event of the failure by Contractor to make such delivery, Contractor will pay to the City damages the City may sustain by reason thereof, including consequential damages.

6. Contractor must not issue publicity, or news releases, nor grant press interviews, and except as may be required by law during or after the performance of this Agreement, disseminate any information regarding the Project without the prior written consent of the Commissioner. In the event Contractor is presented with requests for documents by any administrative agency or with subpoena duces tecum regarding any data, Contractor must immediately give notice to the Commissioner and to the Corporation Counsel of the City of Chicago with the understanding that the City will have the opportunity to contest such a process by any means available to it before such data are submitted to a court or other third party; provided, however, that Contractor will not be obligated to withhold such delivery beyond that time as may be ordered by a court or administrative agency, unless the subpoena or request is quashed or the time to produce is otherwise extended.

B. Right of Entry

1. In coordination with Homeowner, Contractor, and any of its officers, employees, agents, and Subcontractors, will be permitted to enter upon any part of the Project site owned by the Homeowner in connection with the performance of the Work hereunder, subject to the terms and conditions contained in the Contract Documents, including but not limited to; the photographic identification requirements of Part Two, Article VII, Section D ("Employee Photographic Identification Cards").

2. Contractor must use, and will cause each of its officers, employees, agents, and Subcontractors to use, the highest degree of care when entering upon property owned by the Homeowner in connection with the Work and must comply and will cause each of its officers, employees, agents, and Subcontractors, to comply, with any and all instructions and requirements for the use of such property. Any and all claims, suits, judgments, costs, or expenses, including reasonable attorneys' fees, arising from, by reason of, or in connection with, any such entry will be treated in accordance with the applicable terms and conditions of the Contract, including, without limitation, the indemnification provisions.

   Damage to Homeowner's Residence or property: If Contractor causes damage to the Homeowner's Residence or property, Contractor must at the option of the Commissioner either 1) pay the cost of repair of the damage, or 2) repair or replace the damage. If Contractor fails to pay for or repair the damage within 10 Days of a written direction to do so by the CM, the Commissioner has the right to withhold payments to Contractor for the cost of repairs.

C. Information Provided by the Commissioner

Surveys, data, plans, or other information generally describing the Homeowner's Residence or existing structures at the site may be provided to Contractor by the Commissioner. Such information is not warranted

by the Commissioner to be accurate. Contractor will not be entitled to rely on it. When such information is provided by the Commissioner and it appears on Contract Documents prepared by the Architect/Engineer, Contractor acknowledges that the Architect/Engineer and Commissioner have not verified such information.

D. Permits and Licenses

1. Wherever the Work requires the obtaining of permits from the City of Chicago, the City, village or unincorporated area where the Homeowner's Residence is located, or other public authorities, Contractor will be responsible for obtaining such permit, and a copy of such permits must be furnished to the Commissioner by Contractor hereunder before the Work covered thereby is started. Contractor will be reimbursed for all permit fees through the Allowance.

2. If inspections by local building departments are required, Contractor will make all necessary arrangements for the inspection, before the Work or Punch List period ends for each house. If any municipal code deficiencies are found during inspections by local officials, the remedial Work must be done prior to the end of the period for Punch List completion.

E. No Lien Provisions

1. Contractor understands and agrees that the Work to be performed for this Project is done on behalf of the City for the Homeowners. Accordingly, Contractor agrees that this Project will be considered as being governed by the Illinois Public Mechanics Lien Act, 770 ILCS 60/23 and no other section of the Mechanics Lien Act, 770 ILCS 60/1, *et seq*.

2. Contractor must notify its Subcontractors that no mechanics' liens will be permitted to arise, be filed, or maintained against any Homeowner's Residence or any part thereof or any interest therein, or any improvements thereon on account of any Work, labor, services, materials, equipment, or other items performed or furnished for or in connection with the Project, and Contractor, for itself and its Subcontractors, does hereby expressly waive, release, and relinquish such liens and all rights to file, or maintain such liens, and agrees further that this waiver of liens and waiver of the right to file or maintain such liens will be an independent covenant.

3. If any of Contractor's Subcontractors, employees, officials, agents, or any other person directly or indirectly acting for, through, or under any of them, files or maintains a lien or claim as described in paragraph E.2 above, Contractor agrees to cause such liens and claims to be satisfied, removed, or discharged, by payment within 30 Days from the date of filing thereof, provided; however, that the City may extend the 30 day period if the City determines that such lien claim cannot be so satisfied, removed, or discharged in such period and that Contractor is proceeding diligently to cause such liens or claims to be satisfied, removed, or discharged. Contractor must meet with the Commissioner's representatives immediately upon being requested to do so regarding any notice of lien or lien against Homeowner's Residence, and advise the City as to the actions Contractor intends to take to have the liens satisfied, removed or discharged. Contractor will keep the City advised regarding its progress. The City will have the right, in addition to all other rights and remedies provided under this Contract or by law, to cause such liens or claims to be satisfied, removed, or discharged by any means at Contractor's sole cost, such cost to include reasonable legal fees.

4. Contractor must give, or cause to be given, a copy of these provisions to all Subcontractors and must include these provisions in all Contracts with Subcontractors and/or give written notice of same to all Subcontractors or other persons having oral or written Agreement with such Subcontractors.

F. Ownership of Property

The Homeowner will be and become the owner of each of the improvements upon the Final Completion of the Home.

END OF III

IV. SCOPE OF WORK

A. The Scope of Work for the Project

The Work that Contractor must provide under this Contract includes, but is not limited to, the Work designated for each Homeowner's Residence according to the Contract Documents, Field Measurement appointment 3-part forms, heating, ventilation, and air conditioning drawings, and any Field Orders provided. However, if a Homeowner who agrees to participate is unable or refuses to participate, the Commissioner has the right to delete that Home from the Contract. Contractor must provide the Work in accordance with the standards of performance set forth in the Contract Documents.

B. Prior to the Start of Work

Before Contractor physically begins the Work, Contractor must check the City's plans and specifications. Should any errors, discrepancies or omissions be found in these plans and specifications or any discrepancy found between the Contract Drawings and the physical conditions at the site or in any subsequent drawings that may be provided thereafter, Contractor must notify the Commissioner, in writing, immediately. Any Work done after such discovery, unless authorized by the Commissioner, will be done at Contractor's expense. Contractor will not be allowed to take advantage of any error, omission, or discrepancy in the Contract Documents.

C. Request for Information ("RFI")

All Contractor questions and requests for clarifications of the Contract Documents must be addressed through a Request for Information. RFIs will be generated by Contractor and answered by written directive of the Commissioner.

D. Construction Operations Plan and Procedures

1. Sustainability

The CDA encourages Contractor to implement the best possible environmental, social, and fiscally responsible practices. The Sustainable Airport Manual™ ("SAM®") has been developed as an integral part of the overall sustainability standards for the CDA and is incorporated into this Contract by reference. Contractors are strongly encouraged to incorporate as many sustainability elements into their Project as are feasible. The SAM is meant to supplement existing federal, state and/or local regulatory requirements with additional best practice sustainability strategies and considerations. The SAM does not supersede any existing standards, regulations, codes, guidelines or practices (visit https://www.flychicago.com/community/environment/sam/Pages/default.aspx to obtain the latest version of SAM).

a. Sustainability Requirements: Within 30 Days prior to the start of Construction, Contractor must submit to the Commissioner all required pre-construction sustainability plans, equipment/material lists, and estimates as detailed in the Part Three ("Technical Specifications"). Pre-construction submittals required by the Technical Specifications may include: Diesel Emission Compliance Plan Pre-Construction Form; Local/Regional Materials Pre-Construction Estimate, Recycled Content Pre-Construction Estimates, Construction Waste Management Plan, Pre-Construction Estimate of Construction & Debris Form.

b. Submittals: Monthly and/or Project Completion submittals as detailed in the Part Three ("Technical Specifications"), must be submitted as required. Failure to submit the required submittals and documentation may result in non-payment.

E. Field Measurement Appointments

1. Contractor will be required to participate in a Field Measurement appointment at each Home included in the Contract. The purpose of the Field Measurement appointment is to finalize the scope of Work for the Home and for Contractor to obtain all necessary field measurements and other information as needed to order all materials.

2. Any additions, deletions or corrections made during the Field Measurement appointment for each Home must be rewritten on a new 3-part form, supplied by the Commissioner. All such modifications must be

signed by Contractor, Commissioner, and Homeowner. All such modifications become part of the scope of Work for that Home and do not require a Field Order.

3. The following samples will be required to be brought to each Field Measurement appointment: paint and stain samples on both oak and pine on trim styles specified, window, storm window, cladding color samples, storm door color samples, and a color picture of the security storm door. Other samples include, but are not limited to, wood door and fiberglass door color samples, prime door threshold samples. door hardware finish samples, sliding aluminum and sliding plastic framed glass door color samples, obscure and rain glass samples. color samples of HVAC screening. The samples must be marked with the colors they represent, the Contract number, and on the stain samples, the type of wood, and a fourth sample must be provided by Contractor to assist the Homeowner in selecting colors at the time the field measurements are made, and must be used for the purpose of resolving any disputes with Homeowners that may arise at a later date regarding color selections made by the Homeowner.
4. Contractor may not field measure more than five Homes each day. The schedule must provide for no more than three Field Measurement appointments in the morning, and two Field Measurement appointments in the afternoon.
5. If the Home is to have Heating, Ventilation and Air Conditioning ("HVAC") Work done, Contractor's mechanical Subcontractor and electrical Subcontractor must be at the Home during Field Measurement appointments to evaluate the need for electrical upgrades for the HVAC Work.
6. Contractor must require a representative of the window and door manufacturers to be present in the Homes during the first week of Field Measurement appointments in order to advise Contractor whether the measurements are being taken according to the manufacturers' requirements.

END OF IV

V. SUBCONTRACTING AND ASSIGNMENT

A. No Assignment of Contract

The Contract will not be assigned or any part of the same subcontracted without the written consent of the CPO. If the CPO provides consent, such consent does not relieve Contractor from any of its obligations or change the terms of the Contract and Contractor will remain responsible for satisfactory performance of all Work undertaken by the assignee or Subcontractor.

B. No Assignment of Contract Funds

Contractor will not transfer or assign any Contract funds or claims due or to become due without the prior written consent of the CPO. The transfer or assignment of any Contract funds, either in whole or in part, or any interest therein, which are due or to become due to Contractor, without the prior written consent of the CPO, is void so far as the City is concerned.

C. Subcontracts

1. All Subcontractors are subject to the approval of the CPO before they may provide material, labor or services on the Project. "Request for Subcontractor" forms for all proposed Subcontractors and suppliers have been submitted to the Commissioner in the designated format, and approved by the CPO. Contractor, upon entering into any Agreement with a Subcontractor that has been approved by the CPO must furnish the CPO with one copy of a written Contract evidencing such Agreement signed by Contractor and Subcontractor. Copies of all written Subcontractor Agreements and Purchase Orders for Suppliers must be provided to the CPO within 15 Days after the effective date stated in the NTP. All subcontracts must be in writing, and must require each Subcontractor to be bound by the terms of this Contract. The Subcontractor Agreements must require the Subcontractor to assume, all the obligations and responsibilities which Contractor, by this Contract, assumes toward the City. All subcontracts must require that any services to be performed will be performed in strict accordance with this Contract and must provide that the Subcontractor is bound by and subject to the requirements of this Contract, whether or not a particular provision specifically mentions Subcontractors, and will provide that the City's rights are not thereby prejudiced. All Contractors and Subcontractors must have a Vendor Number. Vendor number requests will be made on the form provided by the Commissioner.

2. Contractor hereby collaterally assigns any or all subcontracts to the City, effective upon the City's exercise, in its sole discretion, of its right to assume such assignment as a remedy for Contractor's default or in the event of early termination. Contractor must require each of its Subcontractors (including material suppliers) to consent to a collateral assignment to the City of its respective subcontract with Contractor. Contractor's subcontracts must include language stating:

> "Contractor has collaterally assigned this subcontract to the City of Chicago, effective upon written assumption of such assignment by the City in the event of Contractor's default or early termination of Contractor's Contract with the City. The Subcontractor hereby consents to such assignment and assumption. The Subcontractor acknowledges and agrees that, in the event of such an assignment and assumption, the City will have no liability to Subcontractor for Work performed by Subcontractor prior to the effective date of the assignment and assumption and that the Subcontractor will look solely to Contractor for any compensation or other obligations arising under the subcontract prior to such date".
>
> "Compliance with Laws. The Subcontractor will be solely responsible to comply with all Federal, State, and local laws, ordinances, regulations and rules with respect to the development and operation of the Project. This subcontract is subject to each of the provisions contained in Contractor's Agreement with the City, which is attached hereto as (Exhibit A)".

3. Subcontracts may contain different provisions than are provided herein with respect to payments, schedules, and matters not affecting the quality or timely completion of the Work. The subcontract must preserve the rights of the City under this Contract with respect to the Work performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights. Where appropriate, Contractor must require each Subcontractor to enter into similar subcontracts with its Subcontractors.

Contractor will make available to each Subcontractor, prior to the execution of such subcontract, copies of this Contract to which the Subcontractor will be bound by this paragraph.

D. City's Right To Assign

The City expressly reserves the right to assign or otherwise transfer all or any part of its interests hereunder without the consent or approval of Contractor.

END OF V

VI. QUALITY OF WORKMANSHIP, EQUIPMENT AND MATERIALS

A. Standards of Performance

1. Without limiting Contractor's obligations to complete the Project in accordance with the Contract Documents, Contractor must perform, or cause to be performed, all of the Work required by the Contract with that degree of skill, care, and diligence normally exercised by experienced Contractors performing that type of Work in Projects of a scope and magnitude comparable to the Project. Contractor must assure timely and satisfactory completion of the Work. Contractor must at all times act in the best interests of the City. Contractor must perform, or cause to be performed, all Work in accordance with the terms and conditions of this Contract and to the reasonable satisfaction of the Commissioner.

2. Contractor will further perform, or cause to be performed, all Work hereunder according to those standards for Work at the Airports promulgated by CDA, the FAA, and any other interested Federal, State, or local governmental units.

B. Compliance with Contract Documents

Contractor must supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor is responsible for ensuring that the Work complies with the Contract Documents.

C. Correction of Work

1. Contractor, when directed in writing by the Commissioner, must promptly re-perform, correct, or remove all Work identified to be defective or as failing to conform to the standards set forth in Part Two, Article VI, Section A ("Standards of Performance") or elsewhere in the Contract Documents, whether observed before or after Substantial Completion of Contractor's Work and whether or not fabricated, installed, or complete. This requirement is separate and apart from the requirements found in Part Two, Article VI, Section F ("Warranties"). Contractor must bear all costs of correcting such defective or nonconforming Work, including costs associated with removing and reinstalling any nonconforming Work, and compensation for any additional services made necessary thereby.

2. If Contractor does not proceed with re-performance, correction, or removal of such defective or nonconforming Work after written notice from the Commissioner and within the time period designated, the Commissioner may correct or remove it. In addition, the Commissioner may store any materials or equipment at the expense of Contractor, and then complete the corrective Work. If Contractor does not pay the cost incurred for any such removal and storage within 10 Days thereafter, the Commissioner may upon 10 additional Days written notice sell such Work at auction or at private sale and may account for the net proceeds thereof, after deducting all the costs that should have been borne by Contractor, including compensation for the Commissioner's additional Work or services made necessary thereby. If such proceeds of sale do not cover all costs Contractor should have borne for removal and correction of the Work, the difference will be charged to Contractor, deducted from any amounts due Contractor, and an appropriate Contract Modification will be issued. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor must pay the difference to the City.

3. Neither the final certificate of Project completion, nor payment, nor any provisions in the Contract Documents will relieve Contractor of responsibility for nonconforming Work, faulty materials, equipment or workmanship, and unless otherwise specified. Contractor will remedy any defects due thereto and pay for any damage to other Work resulting therefrom. The requirements found in this sub-section run through the contractual Statute of Limitations. The Commissioner will give written notice of such observed defects with reasonable promptness.

D. Failure to Proceed with Directed Work

In the event that Contractor fails to execute Work in accordance with the Contract or a Field Order, the Commissioner may give Contractor written direction to perform the Work within a specific period of time. If Contractor fails to comply with such written direction, the Commissioner may give notice in writing to Contractor and, with the approval of the CPO, may self-perform the Work or direct others to proceed to

execute such Work as may be deemed necessary, and the cost thereof will be deducted from compensation due or which may become due to Contractor under the Contract.

E. Materials

1. Quality of Materials:

a. Unless otherwise specified in the Contract Documents, all material incorporated into the Project must be new and must be incorporated in such manner as to produce completed construction, which is in conformance with the Contract Documents and acceptable in every detail to the Commissioner. Contractor must certify on the "Request For Inspection of Material" ("RFIM") form designated by the Commissioner that all materials and equipment to be used in the Project comply with all Contract requirements. Only materials which conform to the requirements of the Contract Documents will be incorporated in the Work.

b. In the absence of a definite specification, materials must be the best of their respective kinds with properties best suited to the Work required. Inspection of materials will be as specified in Part Two, Article XIII ("Testing and Inspection").

c. The manufacturer's Quality Assurance/Quality Control Plan for any material incorporated into the Project must be provided if requested by the Commissioner.

2. Source of Materials:

a. Contractor must notify the Commissioner in writing of the source (or sources) from which Contractor expects to obtain the various construction materials, within 14 Calendar Days of the receipt of the NTP. The source of supply of each material used must be approved by the Commissioner before such materials are ordered. Contractor will supply full size samples of each acoustical product at the Commissioner's request. If sources previously approved are found to be unacceptable at any time and fail to produce materials satisfactory to the Commissioner. Contractor must furnish materials from other approved sources at no additional cost to the City.

b. If Contractor seeks to investigate new sources of supply, Contractor must furnish without charge such preliminary samples as the Commissioner may require. Tests will be made on these preliminary samples and reports rendered, but it is understood that such tests are for information purposes only and that the tests are not to be construed as a guarantee of acceptance of any alternate supply of materials.

3. Substitution of Materials:

a. Except for requests for substitution that were identified in Contractor's bid and approved by the Commissioner and CPO in accordance with Part One ("Instructions and Execution Documents"), requests for substitution will be considered only in case of product unavailability or other conditions beyond the control of Contractor.

b. Each request for substitution must be submitted separately and must include:

(1) Complete data substantiating compliance of proposed substitution with requirements stated in the Contract Documents.

(a) Product identification, including manufacturer's name, and address.
(b) Manufacturer's literature identifying:
i) Product description
ii) Reference standards
iii) Performance and test data
(c) Samples, as applicable.
(d) Name and address of similar Projects on which the product has been used, and date of each installation.

(2) Itemized comparison of the proposed substitution with specified product; list significant variations.

(3) Data relating to changes in construction schedule.

(4) Any effect of substitution on other parts of the Work, any Subcontractors, or any separate Contracts.

(5) List of changes required in other Work or products.

(6) Accurate cost data comparing proposed substitution with product specified, including amount of any net change to Contract Price.

(7) Designation of required license fees or royalties.

(8) Designation of availability of maintenance services and sources of replacement materials.

c. Contractor warrants and represents that in making a formal request for substitution that:

(1) The proposed substitution is equivalent to or superior in all respects to the product specified;

(2) The same warranties and guarantees will be provided for the substitute as for the product specified; and

(3) Contractor will coordinate the installation of accepted substitutes into the Work and will make such changes as may be required for the Work to be complete in all respects.

d. If the evidence presented by Contractor does not provide a sufficient basis for such reasonable certainty that the proposed substitution or deviations will provide a quality or result at least equal to that attainable by the product specified, the Commissioner may reject substitution or deviation without further investigation.

e. The Commissioner will judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Commissioner will not approve proposed substitutes as equal to items specified which, in the Commissioner's opinion, would be unharmonious, or otherwise inconsistent with the character, quality, or design of the Project.

f. Any additional cost, or any loss or damage, arising from the substitution of any material, or method for those specified must be borne by Contractor, including the cost for damages incurred by other Contractors notwithstanding approval or acceptance of such substitution by the Commissioner, unless such substitution was initiated at the written request or direction of the Commissioner.

g. The investigation, review, and approval of substitute materials requires a minimum of 30 Days beyond that required for specified routine items. Contractor agrees that no request for a delay or disruption will be allowed whether or not the substitution is granted.

h. Approval by the Commissioner of a substitution of material must be given pursuant to a Contract Modification as required in Part Two, Article X ("Changes in the Work").

F. Warranties

1. Contractor's Warranties to the City of Chicago.

a. Contractor warrants to the City that materials and equipment furnished and installed under the Contract are of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including, substitutions not properly approved and authorized, may be considered defective. In addition to the warranty requirements found in this sub-section, the City also may assert the warranty rights found in Part Two, Article VI, paragraph F.2 ("Contractor's Warranties to the Homeowner"), on behalf of the Homeowner. Contractor's warranty excludes remedy for damage, or defect caused by abuse, modifications not executed by Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

b. All Work furnished under this Contract will be warranted against defective materials, and workmanship, improper installation or performance, and non-compliance with the Contract Documents for the period of time provided by law or provided by the Manufacturer's Warranty for

each Homeowner's Residence, except as otherwise specifically specified in other parts of the Contract Documents.

c. Correction Period. Without limiting, and in addition to complying with, all warranties and guarantees contained herein, Contractor will, for a period of one year from the date of Final Completion of the Home for each Homeowner's Residence, at its own expense and without any cost to the City, repair, and replace, or cause to be repaired and replaced, all Work or materials that has developed or contains defects whether these defects were the result of Contractor's Work, were inherent in the equipment or materials, in the functioning of the piece of equipment or in the functioning and operation of pieces of equipment operating together as a functional unit, or were the result of Work performed by the Manufacturer. This will be known as the "Correction Period". The correction period will commence on the first day following the Final Completion of the Home. Any equipment or material which is repaired or replaced will have the applicable Correction Period extended for one additional year (from the date of the last repair or replacement.) Nothing in this section limits the right of Contractor from recovering on costs incurred from repairing, or replacing Work, or materials within the Correction Period from the responsible party.

2. Contractor's Warranties to the Homeowner

a. Contractor's Warranty must include the name of the Homeowner as designated in the Contract Documents, be signed by an officer of the company having authority to provide the warranty, and state:

> "This document serves as a written warranty for the Work performed, and material and equipment installed on the above referenced Project. This warranty will remain in effect the periods of time specified that refer or relate to the warranty. This warranty is commenced on the first day following Final Completion of the Home. This written warranty is assignable by the Homeowner to any subsequent purchaser of the Home, at no cost".

b. Contractor must provide a "Home Warranty Package", in the form required by the Commissioner, containing: 1) the warranties on all labor, materials, hardware and equipment installed in the Home, and 2) the written guarantee required by Part Two, Article VI, paragraph F.1.b. The warranties for labor, materials, hardware, and equipment must be assignable by the Homeowner to any subsequent purchaser of the Home, at no cost. The Home Warranty Package must be provided to the Commissioner no later than the time of Final Inspection. Contractor must also submit a sample Home Warranty Package to the Commissioner within 60 Days of the NTP. The Sample Home Warranty Package should include a sample of the Warranty claims Logs for each manufacturer with a warranty period greater than one year as referenced in Part Two, Article VI, paragraph F.7 ("Manufacturer's Warranties").

If any of the Manufacturer's Warranties do not meet the requirements of the Contract Documents, Contractor must list the variances on a separate page of the Home Warranty Package, and sign that sheet acknowledging that Contractor will provide the required warranty at its cost, without any charge to the City or Homeowner. For the purpose of all warranties and guarantees provided by the General Contractor, its Subcontractors or material suppliers, the company providing the Warranty or Guarantee must have a designated Contractor, distributor or material supplier in the Chicago area which will have been authorized to make warranty or guarantee repairs or replacement. The names, addresses, and phone numbers of the Chicago area Contractor, distributor, or material supplier or an (800) number (if there is no local number) must be listed in the Home Warranty Package indicating the labor, material, or equipment the warranty, or guarantee relates to.

c. Contractor must perform all installation Work hereunder in a manner so as to preserve all manufacturer materials and equipment warranties. Upon Final Completion of the Home, Contractor must transfer all warranties from all suppliers of materials or equipment for the Work to the Homeowner. It is expressly understood and agreed that Homeowner is a Third-Party Beneficiary under this Contract and, as such, has full authority to enforce all express and implied workmanship, materials, and equipment warranties provided hereunder.

3. Contractor's Warranty Submittal Requirements

a. Contractor must provide a "Home Warranty Package", in the form required by the Commissioner, containing: 1) the warranties on all labor, materials, hardware and equipment installed in the Home, and 2) the written warranty required by Part Two, Article VI, paragraph F.1 ("Contractor's Warranties to the City of Chicago"). The warranties for labor, materials, hardware, and equipment must be assignable by the Homeowner to any subsequent purchaser of the Home, at no cost. The Home Warranty Package must be provided to the Commissioner no later than 10 Days after Substantial Completion of the Home. Contractor must submit a sample Home Warranty Package to the Commissioner within 60 Days of the NTP for review and approval. The sample Home warranty package should include: (1) the Sample Home Warranty Package, and (2) a sample of the Warranty claims Logs for each manufacturer with a warranty period greater than one year as referenced in Part Two, Article VI, Section F ("Warranties"). The "Home Warranty Package" must include warranties from all manufacturers and suppliers on the Contract. Contractor must submit a sample "Home Warranty Package" and Warranty Logs within 60 Days of the NTP.

b. If any of the Manufacturer's Warranties do not meet the requirements of the Contract Documents, Contractor must list the variances on a separate page of the Home Warranty Package, and sign that sheet acknowledging that Contractor will provide the required warranty at its cost, without any charge to the City or Homeowner.

c. For the purpose of all warranties and guarantees provided by the General Contractor, its Subcontractors or material suppliers, the company providing the Warranty or Guarantee must have a designated Contractor, distributor or material supplier in the Chicago area which will have been authorized to make warranty or guarantee repairs or replacement. The names, addresses, and phone numbers of the Chicago area Contractor, distributor or material supplier or an (800) number (if there is no local number) must be listed in the Home Warranty Package indicating the labor, material, or equipment the warranty or guarantee relates to.

d. Contractor must perform all installation Work hereunder in a manner so as to preserve all manufacturer materials and equipment warranties. Upon Final Completion of the Home, Contractor must transfer all warranties from all suppliers of materials or equipment for the Work to the Homeowner and provide a copy to the City. It is expressly understood and agreed that Homeowner is a Third-Party Beneficiary under this Contract and, as such, has full authority to enforce all express and implied workmanship, materials, and equipment warranties provided hereunder.

4. In addition to all warranties imposed by law and equity, Contractor will provide both Contractor's written warranties to the City, and where applicable, the Homeowner, in the manner prescribed by Part Two, Article VI, paragraph F.3 ("Contractor's Warranty Submittal Requirements"). All warranties, whether written or implied, will be equally and separately enforceable.

5. Contractor and its Subcontractors during the Correction Period and the Manufacturers during the Manufacturer's extended warranty periods must employ a local Customer Service Representative to ensure that the Homeowners receive appropriate customer care for all warranty claims. The names of these local representatives must be on file with the Commissioner. As part of the Contract close-out line item, the Commissioner must be provided with a list of those representatives. If any of those local representatives change during the Correction Period and/or during the duration of any warranty under this Contract, express or implied, Contractor, Subcontractor, or Manufacturer must immediately notify the Commissioner and provide the name of the new representative.

a. The Customer Service Representative must ensure that all Homeowner service requests are responded to within two Business Days of receiving the request. The warranty service must be performed within 10 Business Days.

b. If after the initial call, it is determined that unique material needs to be ordered and the warranty service cannot be performed within 10 Business Days, the Customer Service Representative must provide the Homeowner with an estimated delivery time for the material and provide any updates, if needed, and schedule the repair with the Homeowner when the materials are procured.

c. The Customer Service Representative must ensure that all deliveries or service in the Home is coordinated with each Homeowner prior to the delivery or service appointment.

d. In the event that the Customer Service Representative fails to meet its obligations.

6. In the event that Contractor fails to perform any warranty requirements under this section, but the nonperformance does not constitute an Event of Default as described in Part Two, Article XVII, Section B ("Events of Default"), the Commissioner may give notice, in writing to Contractor, and with the approval of the CPO, may self-perform the warranty requirements or direct others to proceed to perform such warranty requirements as may be deemed necessary, and the cost thereof will be deducted from compensation due or which may become due to Contractor under the Contract.

7. Manufacturer's Warranties

   a. Contractor must:

      (1) Ensure that all required Manufacturer's warranties pass through to the CDA and are enforceable by the Homeowner.
      (2) Submit all applicable Manufacturer's Warranties to the Commissioner and ensure that all warranty forms have been completed in the City's name and registered with the appropriate manufacturer.

   b. Repairs and replacements made by Contractor, pursuant to Part Two, Article VI, Section F ("Warranties") will include a Manufacturer's Warranty, if standard with the Manufacturer, in addition to Contractor's Warranty.

   c. For all products that have a specified Manufacturer's Warranty greater than the Correction Period, the Manufacturer must provide to Contractor a Warranty Claims Log on a quarterly basis. Contractor will submit the Warranty Claims Log to the Commissioner upon receipt. The requirements for the Warranty Claims Log will begin at Substantial Completion of the Project and run through the entire warranty period. The Commissioner's acceptance of the first submission is a requirement of the Project Closeout Line Item. After Contractor submits the first three Warranty Claims Logs, Contractor is required to direct the Manufacturer to submit the subsequent Warranty Claims Logs to the Commissioner. The Warranty Claims Log should include any information the Manufacturer deems necessary to track warranty service, but at a minimum, must include the following: Schedule of warranty end dates for Homes within the Contract.

      (1) Schedule of warranty end dates for Homes within the Contract.
      (2) Date and time of each warranty service request.
      (3) Description of warranty service request.
      (4) Date and time manufacturer's Customer Service Representative responded to the Homeowner.
      (5) Date and time manufacture's Customer Service Representative contacted the Homeowner again if warranty service could not be performed within 10 Business Days.
      (6) Date and time manufacturer's Customer Service Representative told the Homeowner warranty service would be complete.
      (7) Date and time warranty service is complete.
      (8) Description of completed warranty service.

G. Testing Laboratory Labels

In compliance with City of Chicago Ordinances, or applicable Ordinances in the communities where the various Homeowners' Residences are located, all items of equipment furnished and installed or assembled by Contractor under this Contract must be approved and so labeled by one of the following Testing Laboratories:

1. Underwriters' Laboratories ("U.L.")
2. Canadian Standards Association ("C.S.A.")
3. Electrical Testing Laboratory of New York ("E.T.L.")

H. Materials, Inspection, and Responsibility

Without limiting the City's rights of inspection under Part Two, Article XIII ("Testing and Inspection") or elsewhere in the Contract:

1. The Commissioner, or his or her representatives, have the right to inspect any material to be used in carrying out this Contract.
2. The City does not assume any responsibility for the availability of any controlled materials or other materials and equipment required under this Contract.
3. Contractor will be responsible for, and bear the risk of loss or damage to, all materials, components, and completed Work furnished under this Contract on each Home up to the time that Punch List Work has been completed and the Work on the Home has been accepted by the Commissioner.
4. Materials, components, or completed Work not complying herewith may be rejected by the Commissioner and must be replaced by Contractor at no cost to the City.
5. Any materials or components rejected must be promptly removed from the Project, or Project site at the sole expense of Contractor following receipt of notice from the Commissioner that such materials or components have been rejected.

I. Local Codes

Contractor must comply with all local building codes and regulations.

J. Contractor's Quality Assurance/Quality Control Plan

1. Contractor must submit a Quality Assurance/Quality Control Plan ("QA/QC" Plan) within 10 Days of the NTP. Requirements for the content of the QA/QC Plan are set forth in Part Three, Section 01 40 00 ("Quality Requirements").
2. In developing its QA/QC Plan Contractor must conform to the applicable guidelines and requirements of the FAA Advisory Circular Number 150/5370-10H 100 (as amended, modified, or replaced from time to time), and Part Three, Section 01 40 00 ("Quality Requirements").
3. In no event will the Commissioner's quality surveillance or recommendations made thereupon relieve Contractor of executing all aspects of its QA/QC Plan with respect to all items of material and equipment, and on-site or off-site Contractor's or Subcontractor's Work.

K. Cooperation Between Contractors

Contractor and Subcontractors will cooperate with the City, the Commissioner, the CM, any Architect/Engineer, and any consultants retained by the foregoing parties, to ensure compliance with FAA Advisory Circular No. 150/5370-12B (as amended, modified, or replaced from time-to-time).

END OF VI

VII. PERSONNEL

A. General

Contractor must assign and maintain during the term of the Contract and any extension of it, an adequate staff of competent personnel who are fully equipped, licensed as appropriate, available as needed, qualified and assigned exclusively to perform the Work. Contractor must include among its staff such Key Personnel and positions as identified below.

B. Key Personnel

1. Contractor must submit a Project staff organizational chart which includes the names and resumes of employees in key positions for this Project at the pre-construction meeting. All employees in key positions must be approved by the Commissioner.

2. If any Key Personnel furnished by Contractor for the Project in accordance with the Key Personnel provisions under this section of the Contract should be unable to continue in the performance of assigned duties for reasons due to death, disability or termination, Contractor must promptly notify the Commissioner explaining the circumstances. Changes in assignment of Key Personnel due to commitments not related to this Contract are prohibited without Commissioner's approval.

3. On request by the Commissioner, Contractor must furnish to the Commissioner within 10 Working Days the name of the person substituting for the individual unable to continue, together with any information the Commissioner may require, to judge the experience and competence of the substitute person. Upon approval by the Commissioner, such substitute person must be assigned to the Project and if the Commissioner rejects the substitute, Contractor will have 10 Days thereafter to submit a second substitute person. Such process will be repeated for a reasonable period until a proposed replacement has been approved by the Commissioner.

4. In the event that, in the opinion of the Commissioner, the performance of personnel of Contractor assigned to this Project is at an unacceptable level, such personnel will cease to be assigned to this Project, must return to Contractor, and Contractor must furnish to the Commissioner the name of a substitute person or persons in accordance with the previous paragraph.

C. Character of Workers

1. Contractor must employ only competent and efficient laborers, mechanics, or artisans, and whenever, in the opinion of the Commissioner, any such worker is careless, incompetent, violates safety, or security rules, obstructs the progress of the Work, acts contrary to instructions or acts improperly, or fails to follow the safety requirements of this Contract, Contractor must, upon request of the Commissioner, discharge, or otherwise remove such worker from the Work and must not use such worker again, except with the written consent of the Commissioner. Contractor must not permit any person to enter any part of the Work, or any buildings connected therewith, who is under the influence of intoxicating liquors or controlled substances.

2. The safety and security of each participating Homeowner and their personal property are of utmost importance in the prosecution of the Work and the success of the Program. Contractor must employ only individuals of good character and must conduct such background checks to ensure this including, but not limited to; Criminal Record History Checks ("CRHC"), verification of eligibility to Work, and appropriate tax identification/social security numbers. Contractor must verify that all individuals employed by Contractor that will have contact with any Homeowners, Homeowners' Residences, or Homeowner's personal property have not committed any crime, other than a minor traffic violation, within the past seven years. Further, Contractor must not employ any person whose criminal convictions, no matter how old, or whose employment history, indicate that person would pose a risk to the Homeowners, or Homeowners' Residences or personal property. Contractor's failure to conduct such background checks may be deemed an event of default and Contractor will be liable for any and all damages arising out of such failure.

3. Contractor must submit to the Commissioner the procedure it uses to conduct background checks and the safeguards it has in place to ensure that only individuals of good character are permitted to have

contact with and access to Homeowners and their Residences. This process must be part of Contractor's Safety Program as identified in Part Two, Article XIV, Section A ("Health and Safety").

D. Employee Photographic Identification Cards

1. Contractor will procure such equipment as necessary, as further described below, and provide Photographic Identification Cards ("ID Cards") for its employees and its Subcontractors' employees who require access to the private Residences of Homeowners participating in the Project prior to commencement of Work, including Field Measurement appointments. Contractor will not issue any person an ID Card who has been convicted of a crime, other than a minor traffic violation, within the past seven years, or any person whose criminal convictions, or whose employment history, in the reasonable opinion of Contractor, would pose a risk to the Homeowners, or Homeowners' Residences or personal property. Issuance of an ID Card will constitute Contractor's representation to the Commissioner that Contractor vouches for the good character of the employee issued such ID Card. The issuance and control of the ID Cards must be part of Contractor's Safety Program as identified in Part Two, Article XIV, Section A ("Health and Safety").

2. Contractor must require all employees who will be present on a Homeowner's property to have a Photo Identification Card ("ID Card") issued by Contractor. The ID Card must be clearly displayed above the waist with the photo side showing at all times while the employees are working at the Home. Any employee not properly displaying an ID Card will be directed by the CM to leave the Home.

3. Photographic Identification Cards will comply with the following:

   a. The equipment and materials used to create the ID Cards must be functionally equivalent to the following; such equipment will be considered overhead and the cost of which will not be reimbursed.

      (1) Fargo DTC1250e Single Sided Card Printer
      (2) AsureID Express Badging Software
      (3) Canon A810 Digital Camera Package
      (4) Fargo #45000 YMCKO Full Color Ribbon
      (5) Fargo #45102 Black Resin Ribbon
      (6) Fargo #PVC-Holo, Anti-Counterfeiting Hologram Cards
      (7) Fargo #3943-1000, Handheld Slot Punch
      (8) Fargo #2105-200, Strap Clips

   b. ID Cards will be produced using digital ID equipment with the following minimum requirements:

      (1) ID Cards will be white PVC ("polyvinyl chloride"), 3.36" L x 2.125" W containing an anti-counterfeiting hologram with rounded corners.
      (2) Photographs and other information will be printed directly on the PVC card in full color. No laminating or other materials will be allowed to affix information to cards.
      (3) Information will be printed on both sides of the ID Cards.
      (4) ID Cards will contain a 1/8" x 1/2" slot for insertion of a strap clip or lanyard.
      (5) An ID Card physical exemplar and a color photocopy form will be furnished to Contractor at the pre-construction meeting. ID Cards subsequently issued by Contractor will be identical in appearance to the exemplar.
      (6) Software to duplicate the exemplar must be used to create the ID Cards.

   c. The CM will assign Contractor a block of numbers for numerical identification of the ID Cards, and all assigned numbers will be unique. Contractor will only use the assigned unique numbers.

   d. Disclaimer on the back of the ID Card will be exactly as stated on the template furnished by the Commissioner.

   e. ID Cards must expire no later than 30 Days after the scheduled date of Final Completion of the Home for all homes. Any ID Card must be returned upon demand by the Commissioner.

4. ID Cards will be issued by each Contractor.

5. New employees hired must be issued ID Cards prior to commencing Work in or on any participating Residence property.

6. If Contractor or a Subcontractor currently has employees working on multiple Contracts on the Project, such employee should be issued an ID Card utilizing a number from that block of ID Card numbers assigned for that Contract with the appropriate expiration date. Except as noted immediately hereafter, no employee of Contractor or a Subcontractor will be issued or possess more than one ID Card at any given time. Exception: Each employee, of a Subcontractor working simultaneously for more than one prime Contractor, who are or will be working on more than one concurrent Contract, will be issued an ID Card by each prime Contractor.

7. Contractor is responsible to retrieve and destroy ID Cards within 30 Days of the following events whichever will first occur:

   a. All ID Cards then outstanding on the date of Final Completion of the Home for all homes as amended; or
   b. Any ID Card issued to an employee whose employment has been terminated; or
   c. Any ID Card issued by Contractor whose retrieval is demanded by the Commissioner.

8. Contractor must keep detailed records of each ID issued including, a color photocopy of each ID issued (including any replacements) and a log of all ID's issued. The log will include the following information and be in a format approved by the Commissioner: ID Number (from block of assigned numbers), Employee Name, Employee Company, Date of CRHC, Date of Employment Eligibility Verification, Date of Issuance, Initial ID Expiration Date, Turn In Date, Reason for Turn In, and Destruction Date. These records must be retained by Contractor for seven years. Updated copies of the Log are to be submitted to the CM once a month. Contractor must provide duplicates of the color photocopies of issued IDs upon request of the CM. As part of the log, Contractor will provide a short summary of its procedure for conducting background checks as described above in Part Two, Article VII, Section C ("Character of Workers").

9. Contractor must ensure that individuals to whom ID Cards have been issued protect them from loss, theft, or misuse. Contractor and its Subcontractors must dismiss from Work on the Project any person who misuses, or allows to be misused, an ID Card issued to him or her.

E. Supervision and Superintendence

1. Contractor must personally supervise and superintend the Work and must have a competent jobsite Superintendent at the site at all times that the Work is being performed.

2. Contractor also must have a full-time experienced and qualified PM assigned to the Project.

3. Job Superintendent and PM of designee must provide 24 hour emergency phone numbers. The PM must reside in the six county Chicago metropolitan area, which includes Cook, DuPage, Kane, Lake, McHenry and Will Counties, from the date of the NTP until Final Completion of the Project.

F. Employment Outreach Requirements

1. The City is committed to improving access to employment for low-income individuals and residents of socio-economically disadvantaged areas. To this end, the City supports and encourages the promotion of Work opportunities to Chicago residents living in socio-economically disadvantaged areas. Contractor is strongly encouraged to employ residents of socio-economically disadvantaged areas and other low-income individuals.

2. The City is also committed to connecting veterans to employers, and employers to veterans. Therefore, Contractor is reminded of its obligation under 49 U.S.C. 47112(c) ("Veteran's Preference") and is encouraged to employ Chicago veterans and partner with the Chicago Office of Veterans Affairs to advertise job openings, obtain resumes, and promote general hiring outreach.

3. No later than the NTP Date, the City may identify Socio-Economically Disadvantaged Areas. Contractor must conduct a minimum of one job fair in each of up to three Socio-Economically Disadvantaged Areas (to be identified by the City) to foster hiring employees from such areas. The job fairs are to be held no

later than 30-Days following the NTP unless otherwise agreed by the City. Job fairs must include Contractor's Subcontractors to the extent applicable. Contractor must also participate in any City-sponsored job fairs or similar outreach events as reasonably requested by the City, including but not limited to; job fairs for veterans. Nothing in this section prohibits Contractor from conducting additional job fairs in other locations or at other times.

4. For any new hires of Contractor or its Subcontractors, Contractor or Subcontractor must provide job postings or employment listings to area workforce development groups or agencies as identified by the City, assist agencies, and the Chicago Office of Veterans Affairs.

5. In order to help promote the efficiency of the Work, Contractor must designate and identify a member of its team as an Employment Services Coordinator who will be assigned to assist employees, particularly new hires who are low income or are from Socio-Economically Disadvantaged Areas, or employees who are veterans, regarding access to information and social services that may help them be successful employees.

6. The Employment Services Coordinator will also serve as a liaison between Contractor and social services organizations, assist agencies, workforce development groups, or agencies, and labor organizations to help Contractor advertise job openings, obtain resumes, and plan and execute job fairs in Socio-Economically Disadvantaged Areas in order to promote hiring outreach throughout Chicago and especially in Socio-Economically Disadvantaged Areas. Likewise, the Employment Services Coordinator will also serve as a liaison between Contractor and the City's Office of Veterans' Affairs and other veterans' affairs organizations to promote the employment of veterans. Contractor must report to the City in a form acceptable to the Commissioner regarding its efforts under this section, and also the number of employees ultimately hired who are veterans or are from Socio-Economically Disadvantaged Areas.

G. Employment Plan

No later than 20 Business Days after Contract Award Contractor must provide a written plan outlining the steps it intends to take to ensure compliance with its Equal Employment Opportunity obligations as well as its plans for outreach to veterans and to workers in Socio-Economically Disadvantaged Areas.

END OF VII

VIII. SCHEDULE

A. Time

1. The Contract Duration for Final Completion of the Project is the period of time allotted in Part One ("Instructions and Execution Documents"), for Final Completion of the Project. Contractor must achieve Final Completion of the Project within the duration listed in Part One, Section 4 ("Time of Completion").

2. The date of commencement of the Work will be the date set forth in the Contract or such other date as may be established at the discretion of the Commissioner in the NTP.

3. Progress and Completion:

   a. TIME IS OF THE ESSENCE IN THIS CONTRACT.
   b. No Time Extensions will be allowed unless they are contained in a Contract Modification which has been approved and executed by the City.
   c. Without the Commissioner's prior written approval, Contractor must not suspend any Work.
   d. Notwithstanding any other terms contained herein, Contractor must take measures to protect its Work and to minimize the impact of climatic conditions on the progress of the Work.

4. Liquidated Damages: Except as otherwise noted immediately below, liquidated damages will be assessed against Contractor at a rate of $250 per Calendar Day of delay in excess of the time periods allowed below to attain defined status for EACH Home for EACH occurrence listed below.

   a. Failure to attain "Substantial Completion of the Home", for EACH Home within five or 10 Business Days from the start of Work on the Home, depending on the acoustical treatment package selected by the Homeowner.
   b. Failure to complete "Punch List Work" for EACH Home within three Business Days as required by Part Two, Article VIII, Section C ("Completion of Punch List").
   c. Failure to complete "Product Replacement" for EACH Home within 98 Calendar Days from the date of Substantial Completion of the Home.
   d. Failure to attain "Substantial Completion of the Project" within the time frame established for Substantial Completion of the Project.

   These liquidated damages are for Contractor's delay only, and nothing contained in this Contract limits the right of the City to recover from Contractor any damages, costs and expenses sustained by the City due to Contractor's improper performance hereunder, repudiation of the Contract by Contractor, Contractor's failure to perform, or Contractor's breaches in any other respect, including, but not limited to; to defective workmanship or materials.

5. Daily Progress Reports: Contractor and all Subcontractors must prepare and submit to the Commissioner daily progress reports on the various parts of the Work in the form that is approved by the Commissioner. The Daily Progress Reports must include, but not be limited to, the number of workers and the classification of the trades involved, equipment used, and any pertinent information regarding possible delays in the Work. Daily Progress Reports must be submitted to the CM prior to the completion of the following business day.

B. No Damages for Delay and Extensions of Time

1. If Contractor is delayed in the commencement, prosecution or completion of the Work by any act of the City, including but not limited to; a delay, change, addition, deletion, or modification in the Work or any omission, neglect, or default of the City, or by order of the Commissioner, or anyone employed by the Commissioner, or by any cause beyond Contractor's control, none of which are due to any fault, neglect, act, or omission on Contractor's part, then Contractor will be entitled solely and exclusively to an extension of time only. Such extension of time will release and discharge the City, its employees and representatives from any and all claims for damages of whatever character, including but not limited to; disruption, changes in sequence, interference, inefficiency, field, or Home office costs claimed by Contractor on account of the aforesaid or any other causes of delay.

2. Notice of Delay: In the event that Contractor's performance of its Work is delayed by causes beyond the reasonable control of Contractor, the Master Schedule or any Progress Schedule may be extended by the

City to reflect the extent of such delay. Contractor must give the Commissioner written notice within two Calendar Days of the commencement of such delay. The written notice by Contractor must comply with the requirements of Part Two, Article VIII, Section B ("No Damages for Delay and Extensions of Time"). Consideration of a Time Extension for events beyond the reasonable control of Contractor will only be made if the delay directly impacts those schedules based on the latest approved Contractor's schedule.

a. Events considered to be beyond the reasonable control of Contractor include, but are not limited to, acts of God, acts of the public enemy, fires, floods, earthquakes, epidemics, quarantine restrictions, freight embargoes, or weather significantly more severe than the norm, provided that the listed causes were not foreseeable, and did not result from the fault, or negligence of Contractor, and provided further that Contractor has taken reasonable precautions to prevent further delays owing to such causes.
b. Another event considered to be beyond the control of Contractor is the Homeowner's denial of access to the Home during normal working Days and times established by Part One ("Instructions and Execution Documents").
c. No extension of time will be granted under this section for any delay: (1) if the delay was caused by the action and/or inaction of Contractor, including, but not limited to; the fault or negligence of Contractor or its Subcontractors, or (2) for which any remedies are provided for or excluded by any other provision of the Contract. The Commissioner's permitting Contractor to proceed with its Work, or any part thereof, after such extension will in no way operate as a waiver of any other rights on the part of the City.

3. Any request for extension of time must be made in writing to the Commissioner not more than two Calendar Days after the commencement of the delay; otherwise, the claim is waived. Any request for extension of time must (1) state the cause of the delay, (2) specifically demonstrate the impact of the delay on Contractor's approved Master Schedule or Progress Schedule, and (3) state the number of Days requested. If the cause of the delay is continuing, only one request is necessary, but Contractor must report, in writing, the termination of the cause for the delay within five Calendar Days after such termination. Any request for extension of time that does not comply with this provision is waived.

4. The Commissioner may: 1) grant the entire Time Extension, 2) grant a portion of the Time Extension, or 3) deny the Time Extension.

5. If Contractor does not agree with the Commissioner's decision on a request for Time Extension, Contractor may appeal the decision to the CPO under Part Two, Article XVI ("Claims and Disputes") of the Contract. However, Contractor may not appeal the decision unless Contractor has complied with the requirements of Part Two, Article XVI, paragraph B.3 ("Disputes: CPO's Decision").

6. Contractor's refusal or failure to begin the Work on individual Homes according to the approved Master Schedule, or refusal or failure to carry the Work forward expeditiously with adequate forces, equipment, material, or other resources, will be an event of default under Part Two, Article XVII ("Events of Default and Termination").

7. The liquidated damages assessed pursuant to Part Two, Article VIII, Section A ("Time") will be the City's exclusive remedy for the delays caused by Contractor therein defined. Such damages are otherwise in addition to and not in lieu of any and all remedies otherwise available to the City at law or in equity for any other damages sustained by the City as the result of Contractor's failure to perform, or improper performance of the Work, but which are otherwise not attributable to or do not arise out of those occurrences of delay identified in Part Two, Article VIII, paragraph A.4 ("Liquidated Damages").

C. Completion of Punch List

1. Contractor also understands and agrees that TIME IS OF THE ESSENCE IN CLOSING OUT THE JOBSITE WORK ON EACH HOMEOWNER'S RESIDENCE. Contractor agrees to begin Work immediately after receipt of a Punch List.

a. It is understood and agreed that the Punch List Work must be completed within three Business Days from the receipt of the formal Punch List from the Commissioner. If Product Replacement is

required by the Commissioner, Contractor must reserve one day of the period for completing Punch List Work on the day of installation of Product Replacement.

b. The failure to complete the Punch List Work within three Business Days of receipt will result in the assessment of liquidated damages as stated in the Contract for late completion of the Home, for each day beyond the three Business Days to complete the Punch List, unless a longer period of time is agreed to in writing by the Commissioner.

c. When Product Replacement of windows or doors has been directed by the Commissioner, and one day of the three workday period for completion of Punch List Work has been reserved by Contractor, failure to complete the Punch List Work, excluding the Product Replacement, within the two remaining Days will result in the charging of liquidated damages as stated in the Contract for late completion of the Home, for each day beyond the two Days, unless a longer period of time is agreed to in writing by the Commissioner.

d. If liquidated damages are assessed for failure to complete Punch List Work, they will be added to any previously determined liquidated damages assessed at the time of Substantial Completion of the Home.

e. If Contractor does not complete the Punch List Work within three Business Days of Substantial Completion of each Home, the additional Work needed to complete the Punch List will be done at the Homeowner's convenience, which may include weekend and/or evening Work, and must be done by Contractor at no additional cost to the City.

f. Contractor must provide final installed quantities for each Home to the CM prior to completion of Punch List Work for the Home.

D. Progress Schedule

1. General

a. Contractor also understood and agreed that "TIME IS OF THE ESSENCE OF THE CONTRACT". Contractor agrees to begin actual Work covered by this Contract in conformity with the provisions set forth herein and to prosecute the same with all due diligence, so as to complete all Homes under this Contract within the number of Calendar Days stated in the Requirements for Bidding and Instructions to Bidders, after the date for commencement of Work, as specified in the written NTP to Contractor from the Commissioner. Contractor must have all materials for each Home in a warehouse or other storage area ready for inspection, and provide delivery tickets for the materials to the Commissioner at least 16 Calendar Days prior to the start of construction of that Home. Materials must be segregated by Home and easily accessible for inspection without the need to move materials blocking those being inspected. Materials not separated as such will be deemed not available for inspection. In addition, Contractor must achieve Substantial Completion of each individual Home within five or 10 Business Days, of the scheduled start of construction on that Home based on the approved Master Schedule as required by the Contract. Contractor must, when necessary, use an increased labor force and/or overtime, weekend, or holiday Work (with the written permission of the Homeowner) to maintain the approved schedule, without additional compensation. If Contractor does not achieve Substantial Completion of the Home within five or 10 Business Days of the start of construction, the additional Work needed to achieve Substantial Completion will be done at the Homeowner's convenience, which may include weekend and/or evening Work, and must be done by Contractor at no additional cost to the City.

b. Contractor must provide three types of schedules:

(1) A major Milestone CPM schedule prepared in Microsoft Project or Oracle Primavera P6.

The schedule must include at a minimum the following:

(a) Contract Award & NTP;
(b) Pre-Construction activities;
(c) Field Measurement appointment Activities;
(d) Construction Activities;

(e) Project Closeout Activities;

(2) A Master Schedule in bar chart form with the following information minimum for each Home.

(a) Home Address;
(b) Homeowner Name;
(c) Field Measurement appointment;
(d) Material Delivery Date;
(e) Construction Start Date;
(f) Construction Completion Date;
(g) Acoustical Treatment Package;
(h) Construction Duration.

(3) A Weekly Progress Schedule in bar chart form with the following minimum information for each Home:

(a) Homes completed the previous week;
(b) Homes planned for the current week;
(c) Homes planned for the following week.

(4) Contractor must update the Major Milestone, Master and Progress Schedules with the following frequency:

(a) Major Milestone Schedule -Monthly
(b) Master Schedule - Monthly
(c) Progress Schedule - Weekly

(5) The start and finish dates for the Homes on the approved Master Schedule may not be changed without the written approval of the Commissioner.

c. The Commissioner's approvals of Contractor's Major Milestone Schedule, Master Schedule and each Weekly Progress Schedule are done for the sole purpose of insuring that all scheduling documents prepared by Contractor are in conformance with the Contract requirements. This approval does not relieve Contractor of the responsibility for the means, methods, procedures, and sequence of the construction process nor does it provide any entitlement to additional funds for Project completion in a period that is less than the Contract Calendar Day duration.

2. Schedule Submittal Requirements

a. Contractor must submit the required Master Schedule for the group of Homes assigned to Contractor with the NTP within 14 Days of receipt of the NTP. Schedules for subsequent Homes assigned to Contractor must be provided to the Commissioner by Contractor within 14 Days of receipt of assignment of subsequent Homes.

b. In the event Contractor fails to provide the required Major Milestone Schedule, Master Schedule, or Progress Schedules as outlined in this section within the time prescribed, Contractor will be in default of the Contract requirements, and the Commissioner may, in addition to any other remedies available to the City, withhold monthly progress payments until such time as Contractor submits the required information.

3. Submittal, Acceptance, and Contractor's Responsibility for the Schedule.

a. Prior to submitting the Major Milestone Schedule, Master Schedule, and Progress Schedule to the Commissioner, Contractor must review and verify the procurement lead time for the fabrication and delivery of all construction materials and Project equipment along with the erection and/or installation durations for all the construction activities.

b. Contractor must coordinate its letting of subcontracts, material purchases, shop drawing submissions, delivery of material, and sequence of operations to conform to the Major Milestone Schedule, Master Schedule, and Progress Schedule, and must furnish proof of same as may be required by written notification from the Commissioner.

c. Upon receipt of the Major Milestone Schedule, Master Schedule, and Progress Schedule, the Commissioner will review the schedules for conformance with the Contract Documents and degree of detail. The Commissioner will approve or reject the schedules with written comments within seven Calendar Days after receipt of the schedules. If a schedule(s) is rejected, Contractor must submit a revised schedule within five Calendar Days after the date of rejection.

d. Failure of Contractor to have received the Commissioner's approval of the Major Milestone Schedule and Master Schedule within 28 Calendar Days of the NTP, or the first Progress Schedule within 21 Calendar Days of the completion of Field Measurement appointments is grounds for the Commissioner to delay the start of construction until the Major Milestone Schedule, Master Schedule, and/or Progress Schedules are approved. Any delay in the Project which results from the Commissioner's order to halt the construction because of Contractor's failure to submit and receive approval of its Major Milestone Schedule, Master Schedule, and/or Progress Schedules in a timely basis will not entitle Contractor to a Time Extension.

4. Updating

a. Contractor must update the Major Milestone Schedule and Master Schedule each month, or as otherwise directed by the Commissioner when subsequent groups of Homes are assigned to Contractor and provide two copies of the updated schedule to the Commissioner.

b. Contractor must update the Progress Schedules weekly. Updated Progress will be distributed at the weekly progress meetings.

c. Progress payments may be withheld by the Commissioner, if updates of the Major Milestone Schedule, Master Schedules, and Progress Schedules are not submitted by Contractor as required and approved by the Commissioner.

d. Project progress will be discussed at the weekly progress meeting. The purpose of this review is to discuss past progress, current status, problem areas, and future progress. Contractor's Representatives at this meeting will have the authority to commit manpower and/or other resources to correct any negative impact to the schedule.

e. The updated Master Schedule and Progress Schedules will be used as a guide for verifying Homes completed for which payment is requested and must accurately represent the Project's current status.

5. Recovery Schedule

a. Contractor must maintain an adequate workforce and the necessary materials, supplies, and equipment to meet the current approved Master Schedule. In the event that Contractor, in the judgment of the Commissioner, is failing to meet the approved Master Schedule, Contractor will be directed to submit a Recovery Schedule.

b. The Recovery Schedule for the Master Schedule must set forth a plan to eliminate the schedule slippage. The plan must be specific to show the methods to achieve the recovery of time, i.e., increasing manpower, and/or with the permission of the individual Homeowners, working overtime, and weekend Work. All costs associated with implementing the Recovery Schedule must be borne by Contractor.

c. In the event Contractor refuses to follow the direction of the Commissioner, the Commissioner reserves the right after 10 Days written notice to Contractor, to procure the materials, equipment, and labor to proceed with or to complete the Work or any portion of it and charge the cost to Contractor. The Commissioner's rights under this provision are cumulative to rights under any other provisions of the Contract including the City's rights to terminate for default or convenience.

E. Suspension of Work

1. The Commissioner has authority to suspend the Work wholly, or in part for such period of time as the Commissioner may deem necessary due to conditions unfavorable for the satisfactory prosecution of the Work, or to conditions which, in the Commissioner's opinion, warrant such actions or for such time as is necessary to carry out orders given, or to perform any or all provisions of the Contract. If the

Commissioner suspends Work for more than seven Calendar Days, Contractor will be entitled to compensation for the following costs of the suspension unless the suspension and/or costs were caused by any act or omission of Contractor: demobilization, and remobilization, field supervision (based upon the approved staffing plan), and idle equipment costs as provided in Part Two, Article X ("Changes in the Work").

2. If it becomes necessary to stop Work for an indefinite period of time, Contractor must store all materials in such manner that they will not become damaged in any way, take every precaution to prevent damage, or deterioration of the Work performed, and erect temporary structures where necessary. Contractor must not suspend Work without written consent from the Commissioner.

F. Weekly Project Progress Meeting

Contractor's PM and Field Superintendent, along with any Subcontractors/Suppliers as requested by the CM, must attend a weekly Project progress meeting with the CM. Contractor's PM must submit a Progress Schedule from the current approved Master Schedule at each weekly progress meeting.

END OF VIII

IX. PAYMENTS

A. General

The Contract Price is the unit price multiplied by the total of the actual quantities installed for each Home as provided for in the Contract. The Contract Price includes all costs of any kind to complete the Project, including, but not limited to; labor, equipment, materials, permits, licenses, taxes, overhead, and profit.

The City may opt to include allowances for certain Work in the Contract. Any allowances will be defined in the Contract Documents. Unless otherwise noted, the value of an allowance will be included in the Contract's bid to arrive at the Contract Price. Allowances will be paid for in accordance with the terms outlined in the allowance description and Part Two, Article X ("Changes in the Work").

B. Procedure for Progress Payments and Final Payment

1. If Contractor has properly performed and completed the Work under the Contract, progress payments will be processed on a monthly basis. The monthly progress payment may include payment for each Home that has been determined to have reached Substantial Completion of the Home, or Final Completion of the Home, by the Commissioner. The payment for each Home will be based on the unit prices listed in Part One ("Instructions and Execution Documents"), and actual quantities installed for each Home as agreed upon by Contractor and Commissioner. The monthly payment may also include any changes in the Work, pursuant to Part Two, Article X ("Changes in the Work") on Homes that have reached Final Completion of the Home. In order for the Commissioner to make payment to Contractor for the Work on a Home that the Commissioner has determined is complete, Contractor must provide the Commissioner with a complete invoice for each Home in the form supplied by the Commissioner.

2. One original of the following submittals must be received by the Commissioner prior to processing the monthly progress payment. All submittals must clearly identify the Project's Contract and Specification Number.

   a. Certified Statement: Contractor must submit a certified statement (signed by Contractor and notarized) with each payment request. The statement, in the form designated by the Commissioner, must list the amount earned by each Subcontractor, supplier, and Contractor during the payment period and include the following:

      (1) The name and business address of the particular Subcontractor or supplier;
      (2) Description of the Work performed and/or product supplied;
      (3) Indication that the Subcontractor or supplier is a DBE or a non-certified firm;
      (4) The total amount of the particular subcontract;
      (5) The amount previously paid to the Subcontractor or supplier;
      (6) The amount of the progress payment Contractor will pay to each individual Subcontractor and/or supplier once Contractor receives payment from the City;
      (7) The balance remaining under the subcontract to complete the Work.

   b. Partial Waivers of Lien to Date and Contractor's Affidavit: Contractor must submit the "Partial Waivers of Lien to Date and Contractor's Affidavit", in the form designated by the Commissioner, from all Subcontractors and suppliers indicating the total payment requested by each and for which payment has been previously received by them from funds paid to Contractor by the City pursuant to prior Pay Estimates. The "Partial Waivers of Lien to Date and Contractor's Affidavit" must be clearly identified with Pay Estimate number and period covered. Contractor's Affidavit must include the total amount invoiced by the Subcontractor and supplier to date. In the event that after submitting a current Pay Estimate, but before payment by the City is received, Contractor will secure appropriate waivers of lien from all Subcontractors and Suppliers whose total payment to date is affected thereby. Such waivers will be updated to reflect receipt of said additional payment and Contractor will tender such waivers to the City on or before the date payment of the current Pay Estimate is made.

   c. DBE Utilization Report: A status report of DBE Subcontractor payments, as required by Part One ("Instructions and Execution Documents"), must be submitted with each progress payment in the form required by the City. The submittal of the DBE status report is in addition to the electronic

reporting of DBE participation in the C2 system required by the Department of Procurement Services ("DPS").

d. Certified Payrolls: Certified payrolls for the payment period must be submitted by Contractor and all the Subcontractors working on the jobsite electronically through the City's LCP Tracker System every week. Additionally, any Apprentice payroll certificates must be submitted with Certified Payroll through the LCP Tracker System. All the payrolls must be identified with Contractor's or Subcontractor's NAME, PROJECT DESCRIPTION, AND PROJECT NUMBER, and must be sequentially numbered. The payroll must be submitted by Contractor and Subcontractors until all Work by that Contractor or Subcontractor is completed. If there are periods of no Work by a Contractor or Subcontractor, a payroll labeled "NO WORK" must be submitted. The final payroll must be clearly labeled "FINAL". Certified payrolls are required to assure, among other things, compliance with prevailing wage rates. Race, work classification, and gender should be clearly marked for each employee on the certified payroll along with all additional information required by the CPO. An employee's address should appear every time its name appears on the payroll. Contractor must submit the certified payrolls in the form required by the CPO.

e. Schedule Requirement: Contractor must satisfy all requirements and submissions as described in Part Two, Article VIII, Section D ("Progress Schedule").

f. Subcontractor Payment Certification: Contractor must submit a Subcontractor Payment Certification (Certification) form signed by Contractor with each progress payment. The Certification in the form designated by the CPO, must list the estimated amount to be paid to each Subcontractor, supplier and Contractor for the payment period. The CPO may utilize the information from the form to post the information on the City's website. City vendor numbers must be shown for all companies listed.

g. The Commissioner may, from time to time, require additional documentation to facilitate payment. Contractor will comply with any reasonable request for additional documentation.

C. Payment for Stored Material

1. Payment for material stored off-site, if approved by the Commissioner, will be 100 percent of a valid invoice when Contractor has complied with the following requirements and has:

   a. Provided a paid invoice from the supplier showing the unit, quantity, description of the material or equipment and cost.

   b. Provided an unconditional waiver of lien from the supplier for the total amount of material purchased.

   c. Provided inspection tickets for all the material stored.

   d. Material invoices should reference the applicable Contract line item of material.

2. Payment for material stored off-site, if authorized in Part Three ("Technical Specifications"), or when approved in writing by the Commissioner and CPO, will be 100 percent of a valid invoice when Contractor has provided documentation and complied with the requirements listed below:

   a. Provided a paid invoice from the supplier showing the unit, quantity, description of the material or equipment and costs.

   b. Provided a signed unconditional waiver of lien from the supplier for the total amount of the material purchased.

   c. Provided inspection tickets for all the material stored.

   d. Provided a Contractor-certified statement giving the exact location of the materials or equipment, and stating that:

(1) Such materials are suitably stored and maintained at a bonded, secure and environmentally appropriate location agreed upon and subject to such conditions required or established by the Commissioner.
(2) Contractor has complied with procedures satisfactory to the Commissioner to establish the City's title to such materials or otherwise protect the City's interest therein, including, but not limited to; insurance, storage, and transportation to the Project Site for such materials stored off- site, as the Commissioner may reasonably require.
(3) The materials, equipment, and associated fabricated components will not be diverted away from the Project.

e. The risk of loss will remain with Contractor. Contractor must provide the CM with a certificate of insurance coverage for the stored material upon which payment is requested.

f. Simultaneously with payment for such material, and in addition to Contractor's certification required by paragraph C.2.d above, Contractor must prepare and execute any and all documents required to transfer title to the City, including without limitation, any Uniform Commercial Code Documentation necessary to perfect transfer of title. However, nothing in this Part Two, Article IX ("Payments") is intended nor will be construed to modify and/or accelerate the date on which any warranty of the materials is to commence as may elsewhere be specified by the Contract Documents.

g. All material and Work covered by payments made will thereupon become the sole property of the City; however, the risk of loss will remain with Contractor until Substantial Completion of the Home.

h. Contractor must pay the City's reasonable costs for consultants or attorneys, relating to administration of the payment for material stored off-site, to verify and review required filings and documents, inspect materials, and travel. Travel costs are to be paid based upon the current City Travel Guidelines.

D. Payment for Mobilization

Payment for Mobilization may be requested upon completion of the following:

1. "Request for Subcontractor Approval" forms for all proposed Subcontractors and suppliers have been submitted to the Commissioner in the designated format, and approved by the CPO.

2. All submittals required by Part Three ("Technical Specifications"), have been submitted and found acceptable by the Architect.

3. A "Master Schedule" has been submitted as required under Part Two, Article VIII, Section D ("Progress Schedule") and found acceptable by the Commissioner.

4. Certificates of Insurance for Contractor and all Subcontractors have been submitted as required under Part Two, Article XV, Section C ("Insurance") and Section D ("Proof of Insurance and Certificates of Insurance"), and found acceptable by the Department of Aviation's Legal Division.

5. Field Measurement appointments for all Homes have been completed, and a list of field measured line item quantities has been provided to the Commissioner.

6. The Commissioner may withhold payment for this item at any time as provided for in Part Two, Article IX, Section H ("Payments Withheld"), or as stated elsewhere in the Contract Documents.

7. At the discretion of the Commissioner, 50 percent of the mobilization cost may be paid prior to the completion of all items 1-6, but no sooner than the approval of all submittals required by the Part Three ("Technical Specifications") and the completion of the first Field Measurement appointment. The remaining 50 percent of the mobilization costs will be paid after the completion of all items 1-6, including the completion all of Field Measurement appointments.

E. Payment for Allowances

Payment for Allowances will be made only at the direction of the Commissioner. Contractor is not entitled to any unused portions of an allowance after Project completion. Any remaining allowance balances will be credited back to the City by a Contract Modification.

F. Payment for Project Closeout Documentation

The work must consist of preparing and obtaining approval of the Project Closeout Documentation per Part Two, Article IX, Section I ("Final Payment"). Contractor must submit all documentation as described in Part Two ("General Conditions"), of the Contract and receive acceptance from the Commissioner prior to the request for Payment for Project Closeout Documentation and includes the items below:

1. All Permits – Part Two, Article III, Section D ("Permits and Licenses").
2. All Warranties Submitted – Part Two, Article VI, Section F ("Warranties").
3. Final Waivers – Part Two, Article IX, Section I ("Final Payment").
4. Final Sworn Statement and Affidavit – Part Two, Article IX, Section I ("Final Payment").
5. Final Home Invoices – Part Two, Article IX, Section I ("Final Payment").
6. Product Replacement – Part Two, Article I, paragraph A.51 ("Product Replacement"), Part Two, Article VIII, paragraph A.4 ("Liquidated Damages"), and Part Two, Article VIII, Section C ("Completion of Punch List").
7. First, Quarterly Warranty Claims Log – Part Two, Article VI, paragraph F.7 ("Manufacturer's Warranties").

A unit cost line item has been created for General Condition's costs for Project Closeout Documentation. At the Commissioner's discretion, Payment for Project Closeout Documentation can be paid prior to the completion of items 1-7.

G. Retainage

Pursuant to Section 2-92-250 the MCC and 49 CFR 26.29, no retainage will be withheld by the City. As a matter of prompt payment to Subcontractors as required by Part Two, Article IX, Section J ("Prompt Payment to Subcontractors"), Contractor must not withhold retainage from Subcontractors in any form, including, but not limited to; administrative fees.

H. Payments Withheld

1. No payment will be made to Contractor until certificates of insurance, bonds, or other evidence of compliance by Contractor with all the requirements of the Contract for insurance and bonds have been provided to the Commissioner. Further, no payments on the basis of Work performed by a Subcontractor must be paid until copies of all bonds required and any certificates of insurance required of the Subcontractors by the Contract have been filed with the Commissioner.
2. The Commissioner may decline a Payment Estimate if, in the Commissioner's opinion, the payment request is not adequately supported. If Contractor and Commissioner cannot agree on a revised amount, the Commissioner will process payment in the amount the Commissioner deems appropriate.
3. The Commissioner may decline to process any Payment Estimate or may rescind in whole or in part any approval previously made to such extent as may be necessary in his/her opinion because of any failure of Contractor to perform any obligation under the Contract, including, but not limited to:
    a. Contractor's failure or refusal to provide the Commissioner with the required initial schedule for the Work or monthly schedule updates and obtain the Commissioner's approval for either as required by the Contract.
    b. Contractor's failure to remedy defective Work.

c. Contractor's failure to make payments properly to the Subcontractors, employees, or material suppliers or for labor, materials or equipment, or provide partial waivers of lien to date with Pay Estimates.

d. Contractor's failure to maintain progress of the Work as required in Contractor's Master Schedule, as determined by the City, or failure to carry out the Work in accordance with the Contract.

e. Contractor's refusal to follow City, State, Federal, or Contract safety and security requirements.

4. Pursuant to Section 2-92-270 of the MCC, the CPO may also notify Contractor that payments to Contractor will be suspended if the CPO has determined that Contractor has failed to pay any Subcontractor, employee, or workman, for Work performed. If Contractor has not cured a failure to pay a Subcontractor, employee, or workman within 10 Days after receipt of such notice, the CPO may request the Comptroller to apply any money due, or that may become due, to Contractor under the Contract to the payment of such Subcontractors, workmen, and employees and the effect will be the same, for purposes of payment to Contractor of the Contract Price, as if the City had paid Contractor directly. Further, if such action is otherwise in the City's best interests, pursuant to Section 2-92-270 of the MCC, the CPO may (but is not obligated to) request the Comptroller to make direct payments to the Subcontractors for monies earned on Contracts and the effect will be the same, for purposes of payment to Contractor of the Contract Price, as if the City had paid Contractor directly. The City's election to exercise or not to exercise its rights under this paragraph will not in any way affect the liability of Contractor or its sureties to the City or to any such Subcontractor, workman, or employee upon any bond given in connection with such Contract.

I. Final Payment

1. When the Commissioner has determined that Contractor has achieved Final Completion of the Project, and Contractor has submitted all Project Closeout Documentation, including but not limited to a final sworn affidavit, less any damages or other amounts that the CPO determines should be deducted, Contractor may request Final Payment. The final sworn affidavit will state the following:

   a. All payrolls, bills for materials and equipment, and all other indebtedness connected with the Work for which the City might in any way be responsible, have been paid or otherwise satisfied.

   b. All claims made by any Subcontractor, or supplier, of any tier, and others against Contractor, the City, any agents of the City, the Commissioner or CM have been resolved.

   c. "Final Waiver of Lien and Contractor's Affidavit" forms for all Subcontractors, and suppliers, of any tier, have been provided to the CM.

   d. The Warranties and Guarantees, required by the Contract, have been provided to the CM.

   e. All Warranties and Guarantees are in full force and effect.

   f. The Surety's written consent, signed by its authorized representative, for final payment to be made directly to Contractor, has been provided to the CM.

   g. Complete submission of certified payrolls through the City's LCP Tracker System.

   h. Contractor agrees that acceptance of final payment will constitute a general release to the City, its agents, officials and employees of all claims of liability for anything done or furnished or relating to the Work of the Contract or for any act or neglect of the City or its agents, officials and employees relating to or connected with the Contract.

   i. Operations and Maintenance Manuals have been provided to the CM.

   j. All other documents requested by the Commissioner have been provided.

   As a prerequisite to requesting final payment, Contractor must also remove all of Contractor's trailers, equipment, leftover materials, and trash from the Project sites, staging area(s) or anywhere else. Contractor must also restore Contractor's staging area(s) to its pre-construction condition. If Contractor does not comply with this requirement, the Commissioner may provide written notice to comply within

a period of time determined by the Commissioner. If Contractor fails to comply with the written notice, the Commissioner may have the work done by others, and deduct the charge from Contractor's final Payment Estimate.

J. Prompt Payment to Subcontractors

1. The term "Subcontractor" has the same meaning as in Part Two, Article I, Section A ("Definitions"). The following provisions of the paragraph apply to both DBE and non-DBE Subcontractors. Contractor must state the requirements of the Prompt Payment provision in all subcontracts and purchase orders. If Contractor fails to incorporate these provisions in all subcontracts and purchase orders, the provisions of this section are deemed to be incorporated in all subcontracts and purchase orders. Contractor and the Subcontractors have a continuing obligation to make prompt payment to their respective Subcontractors. Compliance with this obligation is a condition of Contractor's participation and that of its Subcontractors on the Project.

2. Contractor must make payment to the Subcontractors so that they receive it within seven Days of receipt of payment from the City, but only if the Subcontractor has satisfactorily completed its Work in accordance with the Contract Documents and provided Contractor with all of the documents and information required of Contractor by Part Two, Article IX ("Payments"). Payment is deemed received by the Subcontractor at the time of hand delivery by Contractor, or three Calendar Days after mailing by Contractor. Contractor may delay or postpone payment for a progress payment when the Subcontractor's Work or materials do not comply with the requirements of the Contract Documents, and Contractor is acting in good faith and not in retaliation for a Subcontractor exercising legal or contractual rights.

3. Contractor must make FINAL payments to its Subcontractors within seven Days after the Subcontractor has satisfactorily completed all of its Work, including, but not limited to; completion of Punch List Work, Product Replacements, providing final lien waivers, and providing all of the documents required by the Contract Documents. Contractor may delay or postpone payment if the Subcontractor's Work or materials do not comply with the requirements of the Contract Documents, Contractor has substantial grounds for and has acted reasonably in making the determination, and Contractor is acting in good faith and not in retaliation for a Subcontractor exercising legal or contractual rights, has obtained the City's prior written approval.

   Contractor must make payment to the Subcontractors so that they receive it within seven Days of receipt of the check from the City. Payment is deemed received by the Subcontractor at the time of hand delivery by Contractor, or three Calendar Days after mailing by Contractor.

4. Contractor must not delay or refuse to timely submit pay requests for a Subcontractor's work or materials. The City may construe such delay or refusal as Contractor's failure to act in good faith. "Timely", in this context, means within 30 Days after the portion of the Subcontractor's work that the Subcontractor has invoiced is in place in the Project or the materials delivered to the City (or off-site if this Contract permits payments for off-site delivery). In addition, Contractor must not delay or postpone payment for an undisputed portion of a Subcontractor's invoice or in connection with claims or disputes involving different pay requests on the same Project or different Projects.

5. The City posts payments to the prime Contractors on the web at:

   https://webapps1.chicago.gov/vcsearch/payments

   If Contractor, without reasonable cause, fails to make any payment to its Subcontractors seven Days after receipt of payment under a City Contract, Contractor will pay to its Subcontractors, in addition to the payment due them, interest in the amount of two percent per month, calculated from the expiration of the seven-day period until fully paid.

   In the event that a Contractor fails to make payment to a Subcontractor within the seven-day period required above, the Subcontractor may notify the City by submitting a report form that may be downloaded from the DPS website at:

   https://www.chicago.gov/content/dam/city/depts/dps/ContractAdministration/StandardFormsAgreements/REPORTOFFAILURETOPROMPTLYPAYSUBCONTRACTOR.pdf

The report will require the Subcontractor to affirm that (a) its invoice to Contractor was included in the payment request submitted by Contractor to the City and (b) Subcontractor has not, at the time of the report, received payment from Contractor for that invoice. The report must reference the payment (voucher) number posted on-line by the City in the notice of the payment to Contractor, Subcontractors are hereby reminded that per Chapter 1-21, "False Statements", and Chapter 1-22, "False Claims", of the MCC, making false statements or claims to the City are violations of law and subject to a range of penalties, including, fines and debarment.

6. Whistleblower Protection. Contractor will not take any retaliatory action against any Subcontractor for reporting non-payment pursuant to this Part Two, Article IX, Section H ("Payments Withheld"). Any such retaliatory action is an event of default under this Contract and is subject to the remedies set forth herein, including termination. In addition to those remedies, any retaliatory action by a Contractor may result in a Contractor being deemed non-responsible for future City Contracts or, if, in the sole judgment of the CPO, such retaliatory action is egregious, the CPO may initiate debarment proceedings against Contractor. Any such debarment will be for a period of not less than one year.

7. Liquidated Damages for Failure to Promptly Pay. Much of the City's economic vitality derives from the success of its small businesses. The failure by Contractors to pay their Subcontractors in a timely manner, therefore, is clearly detrimental to the City. In as much as the actual damages to the City due to such failure are uncertain in amount and difficult to prove, Contractor and City agree that the CPO may assess liquidated damages against Contractors who fail to meet their prompt payment requirements. Such liquidated damages will be assessed to compensate the City for any and all damage incurred due to the failure of Contractor to promptly pay its Subcontractors, and does not constitute a penalty. Any and all such liquidated damages collected by the City will be used to improve the administration and outreach efforts of the City's Small Business Program.

8. Action by the City. Upon receipt of a report of a failure to pay, the City will issue notice to Contractor, and provide Contractor with an opportunity to demonstrate reasonable cause for failing to make payment within applicable period set forth in the Contract. The CPO, in his or her sole judgment, will determine whether any cause for nonpayment provided by a Contractor is reasonable. In the event that Contractor fails to demonstrate reasonable cause for failure to make payment, the City will notify Contractor that it will assess liquidated damages. Any such liquidated damages will be assessed according to the following schedule:

First Unexcused Report:	$50
Second Unexcused Report:	$100
Third Unexcused Report:	$250
Fourth Unexcused Report:	$500
Fifth and Each Succeeding Unexcused Report	$1,000

9. These provisions do not confer any rights to the Subcontractors against the City. Nothing in this section is to be construed to limit the rights of and remedies available to the City, including, but not limited to; various rights under Part Two ("General Conditions").

K. Payment Estimates and Payments Subject to Review

The City will not be precluded or estopped by any measurement, estimate, or certificate made by Contractor or any Subcontractor either before or after the completion and acceptance of the Work and payment for that Work, from showing the true amount and character of the Work performed and materials furnished by Contractor, or from showing that any such measurement, estimate, or certificate is untrue or incorrectly made, or that the Work or materials do not conform in fact to the Contract. The City will not be precluded, or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from Contractor and its sureties such damages as the City may sustain by reason of Contractor's failure to comply with the terms of the Contract.

L. Salaries/Payments

1. Salaries of all employees of Contractor performing Work will be paid unconditionally and not less often than once a week without deduction or rebate on any account, except only for payroll deductions as are

mandatory by law or permitted under the applicable regulations pursuant to the Copeland "Anti-Kickback" regulations, and will be responsible for the submission of affidavits required thereunder, except as the Secretary of Labor may specifically provide for variations of or exemptions from the requirements thereof. If, in the performance of this Contract, there is any under payment of salaries by Contractor, the Comptroller for the City of Chicago ("Comptroller") may withhold, out of payments due to Contractor, an amount sufficient to pay to employees underpaid, the difference between the salaries required to be paid hereby and the salaries actually paid such employees for the total number of hours worked.

2. Contractor further undertakes to pay all lawful claims made against it by such Subcontractors and all lawful claims made against it by other third persons arising out of, in connection with, or because of its performance of this Contract which are attributable to Contractor. Contractor further will cause all of its Subcontractors to pay all lawful claims made against them. In the event such lawful claims are not satisfied, the Comptroller is hereby empowered to disburse such sums for and on account of Contractor directly to the respective parties to which such sums are due and lawfully owed.

3. Davis-Bacon and Related Acts:

   a. Required Contract Clauses. In addition to the Davis-Bacon wage requirements of this Contract, the following provisions are from U.S. Department of Labor Regulations in 29 CFR 5.5, "Contract provisions and related matters", which apply to all Federal-aid construction contracts in excess of $2,000 in accordance with 29 CFR Part 5:

      (1) Minimum wages

      (i) Wage rates and fringe benefits. All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of this section, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(v) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph (a)(4) of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (a)(1)(iii) of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

      (ii) Frequently recurring classifications. (A) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR Part 1, a wage determination may contain, pursuant to 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph (a)(1)(iii) of this section, provided that:

(-1) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(-2) The classification is used in the area by the construction industry; and

(-3) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(B) The Administrator will establish wage rates for such classifications in accordance with paragraph (a)(1)(iii)(A)(3) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

(iii) Conformance.

(A) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is used in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(C) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(D) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the bidders, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(E) The contracting officer must promptly notify the Contractor of the action taken by the Wage and Hour Division under paragraphs (a)(1)(iii)(C) and (D) of this section. The Contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph (a)(1)(iii)(C) or (D) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iv) Fringe benefits not expressed as an hourly rate. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(v) Unfunded plans. If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, that the Secretary of Labor has found, upon the written request of the Contractor, in accordance with the criteria set forth in 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside, in a separate account, assets for the meeting of obligations under the plan or program.

(vi) Interest. In the event of a failure to pay all or part of the wages required by the contract, the Contractor will be required to pay interest on any underpayment of wages.

(2) Withholding.

(i) Withholding requirements. The Federal Transit Administration or the City of Chicago may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime Contractor or any Subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in paragraph (a) of this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or Federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime Contractor (as defined in 5.2). The necessary funds may be withheld from the Contractor under this contract, any other Federal contract with the same prime Contractor, or any other Federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime Contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the Contractor liability for which the funds were withheld. In the event of a Contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work (or otherwise working in construction or development of the project under a development statute) all or part of the wages required by the contract, or upon the Contractor's failure to submit the required records as discussed in paragraph (a)(3)(iv) of this section, the Federal Transit Administration or the City of Chicago may on its own initiative and after written notice to the Contractor, sponsor, applicant, owner, or other entity, as the case may be, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(ii) Priority to withheld funds. The Department has priority to funds withheld or to be withheld in accordance with paragraph (a)(2)(i) or (b)(3)(i) of this section, or both, over claims to those funds by:

(A) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(B) A contracting agency for its procurement costs;

(C) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(D) A contractor's assignee(s);

(E) A contractor's successor(s); or

(F) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

(3) Records and certified payrolls.

(i) Basic record requirements.

(A) Length of record retention. All regular payrolls and other basic records must be maintained by the Contractor and any Subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction

or development of the project under a development statute) for a period of at least three years after all the work on the prime contract is completed.

(B) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(C) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph (a)(1)(v) of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the Contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(D) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

(ii) Certified payroll requirements - (A) Frequency and method of submission. The Contractor or Subcontractor must submit weekly, for each week in which any DBA or Related Acts-covered work is performed, certified payrolls to the Federal Transit Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the certified payrolls to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to the Federal Transit Administration. The prime Contractor is responsible for the submission of all certified payrolls by all Subcontractors. A contracting agency or prime Contractor may permit or require Contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the Contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least three years after the work on the prime contract has been completed; and the contracting agency or prime Contractor permits other methods of submission in situations where the Contractor is unable or limited in its ability to use or access the electronic system.

(B) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph (a)(3)(i)(B) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the sponsoring government agency (or the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records).

(C) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance", signed by the Contractor or Subcontractor, or the Contractor's or

Subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(-1) That the certified payroll for the payroll period contains the information required to be provided under paragraph (a)(3)(ii) of this section, the appropriate information and basic records are being maintained under paragraph (a)(3)(i) of this section, and such information and records are correct and complete;

(-2) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and

(-3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(D) Use of Optional Form WH–347. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(C) of this section.

(E) Signature. The signature by the Contractor, Subcontractor, or the Contractor's or Subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(F) Falsification. The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(G) Length of certified payroll retention. The Contractor or Subcontractor must preserve all certified payrolls during the course of the work and for a period of three years after all the work on the prime contract is completed.

(iii) Contracts, subcontracts, and related documents. The Contractor or Subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The Contractor or Subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of three years after all the work on the prime contract is completed.

(iv) Required disclosures and access.

(A) Required record disclosures and access to workers. The Contractor or Subcontractor must make the records required under paragraphs (a)(3)(i) through (iii) of this section, and any other documents that the Federal Transit Administration, the City of Chicago or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by 5.1, available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration, City of Chicago or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(B) Sanctions for non-compliance with records and worker access requirements. If the Contractor or Subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the Contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to 5.12. In addition, any Contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD

requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR Part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the Contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(C) Required information disclosures. Contractors and Subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the Federal Transit Administration if the agency is a party to the contract, or to the Wage and Hour Division of the Department of Labor. If the Federal agency is not such a party to the contract, the Contractor, Subcontractor, or both, must, upon request, provide the full Social Security number and last known address, telephone number, and email address of each covered worker to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to the Federal Transit Administration, the City of Chicago, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

(4) Apprentices and equal employment opportunity.

(i) Apprentices.

(A) Rate of pay. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(B) Fringe benefits. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(C) Apprenticeship ratio. The allowable ratio of apprentices to journeyworkers on the jobsite in any craft classification must not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph (a)(4)(i)(D) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph (a)(4)(i)(A) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the jobsite in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(D) Reciprocity of ratios and wage rates. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker’s hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable

ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

(ii) Equal employment opportunity. The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of 41 CFR Part 60, as amended, and 29 CFR Part 30.

(5) Compliance with Copeland Act requirements. The Contractor will comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The Contractor or Subcontractor must insert in any subcontracts the clauses contained in paragraphs (a)(1) through (11) of this section, along with the applicable wage determination(s) and such other clauses or contract modifications as the Federal Transit Administration may by appropriate instructions require, and a clause requiring the Subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime Contractor is responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime Contractor and any Subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier Subcontractors, and may be subject to debarment, as appropriate.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract will not be subject to the general disputes clause of this contract. Such disputes will be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility. (i) By entering into this contract, the Contractor certifies that neither it nor any person or firm who has an interest in the Contractor’s firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or 5.12(a).

(ii) No part of this contract will be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or 5.12(a).

(iii) The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

(11) Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

(i) Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR Part 1 or 3;

(ii) Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR Part 1 or 3;

(iii) Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR Part 1 or 3; or

(iv) Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR Part 1 or 3.

(b) Contract Work Hours and Safety Standards Act (CWHSSA). The Agency Head must cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1) through (5) of this section in full, or (for contracts covered by the Federal Acquisition Regulation) by reference, in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses must be inserted in addition to the clauses required by paragraph (a) of this section or 29 CFR 4.6. As used in this paragraph (b), the terms "laborers and mechanics" include watchpersons and guards.

(1) Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics will require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the Contractor and any Subcontractor responsible therefore will be liable for the unpaid wages and interest from the date of the underpayment. In addition, such Contractor and Subcontractor will be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages will be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $31 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1).

(3) Withholding for unpaid wages and liquidated damages

(i) Withholding process. The Federal Transit Administration or the City of Chicago may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime Contractor or any Subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this paragraph (b) on this contract, any other Federal contract with the same prime Contractor, or any other Federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime Contractor (as defined in 5.2). The necessary funds may be withheld from the Contractor under this contract, any other Federal contract with the same prime Contractor, or any other Federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime Contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the Contractor liability for which the funds were withheld.

(ii) Priority to withheld funds. The Department has priority to funds withheld or to be withheld in accordance with paragraph (a)(2)(i) or (b)(3)(i) of this section, or both, over claims to those funds by:

(A) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(B) A contracting agency for its reprocurement costs;

(C) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(D) A contractor's assignee(s);

(E) A contractor's successor(s); or

(F) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

(4) Subcontracts. The Contractor or Subcontractor must insert in any subcontracts the clauses set forth in paragraphs (b)(1) through (5) of this section and a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor is responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs (b)(1) through (5). In the event of any violations of these clauses, the prime Contractor and any Subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier Subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

(5) Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

(i) Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

(ii) Filing any complaint, initiating or causing to be initiated, any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

(iii) Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

(iv) Informing any other person about their rights under CWHSSA or this part.

(c) CWHSSA required records clause. In addition to the clauses contained in paragraph (b) of this section, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other laws referenced by 5.1, the Agency Head must cause or require the contracting officer to insert a clause requiring that the Contractor or Subcontractor must maintain regular payrolls and other basic records during the course of the work and must preserve them for a period of three years after all the work on the prime contract is completed for all laborers and mechanics, including guards and watchpersons, working on the contract. Such records must contain the name; last known address, telephone number, and email address; and social security number of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid; daily and weekly number of hours actually worked; deductions made; and actual wages paid. Further, the Agency Head must cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph must be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview workers during working hours on the job.

(d) Incorporation of contract clauses and wage determinations by reference. Although agencies are required to insert the contract clauses set forth in this section, along with appropriate wage determinations, in full into covered contracts, and Contractors and Subcontractors are required to insert them in any lower-tier subcontracts, the incorporation by reference of the required contract clauses and appropriate wage determinations will be given the same force and effect as if they were inserted in full text.

(e) Incorporation by operation of law. The contract clauses set forth in this section (or their equivalent under the Federal Acquisition Regulation), along with the correct wage determinations, will be considered to be a part of every prime contract required by the applicable statutes referenced by 5.1 to include such clauses, and will be effective by operation of law, whether or not they are included or incorporated by reference into such contract, unless the Administrator grants a variance, tolerance, or exemption from the application of this paragraph. Where the clauses and applicable wage determinations are effective by operation of law under this paragraph, the prime Contractor must be compensated for any resulting increase in wages in accordance with applicable law. Contract Work Hours and Safety Standards Act.

4. Contract Work Hours and Safety Standards Act

Contractor agrees to comply and assures compliance with Sections 102 and 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. 327 through 333, and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Non-Construction Contracts Subject to the Contract Work Hours and Safety Standards Act)", 29 CFR Part 5; and U.S. DOL regulations, "Safety and Health Regulations for Construction", 29 CFR Part 1926. Other requirements that may apply are stated in subparagraphs a through e below:

a. Overtime Requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics will require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

b. Violation, Liability for Unpaid Wages, Liquidated Damages. In the event any violation of the clause set forth in subparagraph (1) of this paragraph, Contractor and any Subcontractor responsible therefore will be liable for the unpaid wages. In addition, such Contractor and Subcontractor will be liable to the United States (in the case of Work done under Contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages will be computed with respect to each individual laborer or mechanic, including, watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $29 for each Calendar Day for which such individual was required or permitted to Work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

c. Withholding for Unpaid Wages and Liquidated Damages. The Commissioner will upon his (or her) own action or upon written request of an authorized representative of the U.S. DOL withhold or cause to be withheld, from any monies payable on account of Work performed by Contractor or Subcontractor under any Contract or any other Federal Contract with the same Contractor, or any other Federally assisted Contract subject to Contract Work Hours and Safety Standards Act, which is held by the same Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such damages as provided in the clause set forth in subparagraph (2) of this paragraph.

d. Subcontracts. Contractor and Subcontractor will insert in any Subcontracts the clauses set forth in subparagraph a through d of this paragraph and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. Contractor will be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in subparagraphs a through d of this paragraph.

e. Working Conditions. No Contractor or Subcontractor may require any laborer or mechanic employed in the performance of any Contract to Work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his health or safety as determined under construction safety and health standards (29 CFR Part 1926) issued by the U.S. DOL.

M. Fair Labor Standards Act

All Contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 U.S.C. 201, *et seq.*, the Federal Fair Labor Standards Act ("FLSA"), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part time workers.

Contractor has full responsibility to monitor compliance to the referenced statute or regulation. Contractor must address any claims or disputes that arise from this requirement directly with the U.S. DOL - Wage and Hour Division.

N. Occupational Safety and Health Act

All Contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. Contractor retains full responsibility to monitor its compliance and their Subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). Contractor must address any claims or disputes that pertain to a referenced requirement directly with the U.S. DOL - Occupational Safety and Health Administration.

END OF IX

X. CHANGES IN THE WORK

A. City's Right to Change Work

The City reserves the right to direct, by written Field Order, changes in the Work or the Contract Schedule without prior notice to Contractor's surety and Contractor is obligated to perform in accordance with the Field Order. These changes may consist of additions, deletions, or other revisions to the Project, at the discretion of the City, with the Contract sum and the Contract time being adjusted as appropriate. Contractor must begin work upon receipt of the signed Field Order. These changes may consist of additions, deletions, or other revisions to the Work and/or changes in the Contract time, at the discretion of the City, with the Contract Price and/or the Contract Completion Date and/or the Baseline Schedule being adjusted as appropriate. Contractor must begin the changed Work upon receipt of a duly executed Field Order. A Field Order is a written order to Contractor, signed by the CM for Field Orders with an estimated cost less than $5,000, or signed by the CM with the prior approval of the Commissioner and CPO for Field Orders with an estimated cost of $5,000, or more. Contractor must begin the changed work upon receipt of the signed Field Order. Pursuant to 49 CFR Part 26, for each Field Order which, by itself or aggregated with previous Field Orders, increases the Contract value by 10 percent of the initial Contract value or $50,000, whichever is less, Contractor will make good faith efforts to increase the participation of DBE Subcontractors already participating in the Contract.

B. Contractor's Request

Contractor, prior to the commencement of such changed or revised Work or Time, must submit promptly to the Commissioner written copies of any request for adjustment to the Contract sum and Contract time for such revised Work in accordance with the requirements of Part Two, Article X ("Changes in the Work").

C. Payment for Changes

The adjustment in Contract Price, if any, for changes (either additions, deletions, or revisions) in the Work or Contract time or changes to the Baseline Schedule, will be made in accordance with paragraphs 1 through 3 below. Where Changes in the Work involve both additions and deletions, any percentage markups applicable to labor and materials as set forth below will be applied to the net difference. An adjustment in Contract Price and/or Contract time requires a Contract Modification pursuant to Part Two, Article X, Section E ("Contract Modification"), will be made after the Contract Modification is executed by the City. The Commissioner may require additional documentation to facilitate approval for changes in the work. Contractor will comply with any request for additional documentation.

1. Unit Price Basis: Should such changes in the Work result in an increase or decrease in the quantities of unit priced Work to be performed, Contractor must accept payment as follows:

    a. All increases or decreases in such Work of the type that appears in the Contract as unit price items will, except as provided in paragraph (b.) below, be paid for or deducted at the Contract unit prices as bid by Contractor or as established by an approved lump sum Breakdown.

    b. For line items that represent 10 percent or more of the original Contract Price, and actual quantities of these line items represent a 25 percent or more variance from the bid quantities, but are not deleted in their entirety, the Contract Price adjustment will be based on a negotiated unit price based on costs which are demonstrated by Contractor and agreed to by the Commissioner, subject to approval of the CPO, in a method consistent with Part Two, Article X, paragraph C.2 ("Proposal Basis").

    The negotiated unit price may be higher, lower, or equal to the unit price as bid by Contractor.

    If the Commissioner and Contractor are unable to agree on a negotiated unit price for the changed Work, the Commissioner will determine a reasonable unit price to be incorporated by a Contract Modification, which will be prepared by the Commissioner and signed by Contractor for submission to the City for execution. However, Contractor may dispute the amount of the unit price determined by the Commissioner as a Change Claim pursuant to Part Two, Article X, Section G ("Failure to Comply with Order") and Part Two, Article XVII ("Events of Default and Termination").

    c. For line items that represent 10 percent or more of the Contract Price, and are deleted in their entirety, Contractor will only be compensated for any materials or equipment that were ordered in accordance with the approved Baseline Schedule and approved submittal prior to Contractor's receipt of the notice

of deletion of the line item, providing that the materials and equipment order could not be cancelled, nor returned to the supplier less restocking fees and also provided that the materials and equipment are delivered to the City, found acceptable, and are adequately protected for storage. Contractor will not be entitled to any lost profits on Work that was deleted, or any other costs or compensation.

d. Contractor must provide a breakdown by Contract line item listing the total percentage of each line item attributable to a DBE firm.

2. Proposal Basis

To the extent that there are no unit prices for the changed Work, either as a bid or as identified in an approved Breakdown of a lump sum, the Contract Price adjustment for the changed Work may be based upon a price agreed to by the City and Contractor.

If the changed Work is to be completed on a proposal basis, a proposal for the changed Work must be provided by Contractor to the CM and accepted by the Commissioner prior to the date on which the changed Work is 50 percent complete. Until such time a proposal is agreed to by the City, Contractor will submit a Time and Material Work Report as required in Part Two, Article X, paragraph C.3 ("Time and Material Basis"). In addition, if the Commissioner has not accepted the proposal for the changed Work prior to the commencement of the changed Work, time, and material work reports must be maintained by Contractor, as required by Part Two, Article X, paragraph C.4.n ("Documentation"), until a proposal is agreed to by Contractor and City through the signing of a Contract Modification. If there is no Agreement between Contractor and City as to the Contract Price adjustment and/or Contract time adjustment for the changed Work on a proposal basis prior to the completion of 50 percent of the changed Work, the changed Work will be paid for on a time and material basis as provided for under Part Two, Article X, Section C ("Payment for Changes").

However, for pay items that are deleted in their entirety, where there are no unit prices for the changed Work, either as bid or as identified in an approved Breakdown of a lump sum, Contractor will only be compensated for any materials or equipment that were ordered in accordance with the approved Baseline Schedule prior to Contractor's receipt of the notice of deletion of the Work, providing that the materials and equipment ordered could not be cancelled, and also provided that the materials and equipment are delivered to the City and are found acceptable. Contractor will not be entitled to any lost profits on Work that was deleted, or any other costs or compensation. Proposal Pricing: The proposal submitted by Contractor will be a starting point for negotiation between the City and Contractor. Any proposal submitted in writing by Contractor for consideration for changed Work must be broken down into segments of cost as follows:

a. Labor: Number of proposed labor hours multiplied by the base wage as allowed by the applicable labor union, to which an amount not to exceed 30 percent may be added to cover jobsite general conditions, overhead, and profit. All indirect costs must be part of the overhead, including, but not limited to; supervision, engineering, safety, quality control, and other technical personnel. Fringe Benefits: Number of proposed labor hours multiplied by the fringe benefits as allowed by the applicable labor union, to which an amount not to exceed 10 percent may be allowed.

b. Insurance and Payroll Taxes: Cost for property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and social security taxes on the extra Work, to which an amount not to exceed 10 percent may be added. Contractor must furnish satisfactory evidence of the rate or rates paid for such insurance and taxes.

c. Material: Cost of materials, accepted by the Commissioner and incorporated into the Work, to which an amount not to exceed 15 percent may be added to cover profit and handling charges of Contractor performing the Work. Material cost must be supported by quotations or invoices from the suppliers, and must be net of any discounts or rebates offered by the suppliers.

d. Equipment: For equipment owned by Contractor, costs will be determined by the number of proposed equipment hours multiplied by the total Federal Highway Administration ("FHWA") hourly rate as allowed by the latest revision of the "Equipment Watch Rental Rate Blue Book" as issued by Equipment Watch. Equipment rates as allowed by the latest revision of Equipment Watch

Rental Blue Book will be the total FHWA hourly rate. Idle equipment will consist of the percentage sum of the following elements, depreciation, cost of facilities, capital ("CFC") and indirect cost multiplied by the hourly rate. For equipment rented by Contractor, rates will be determined by the Association of Equipment Distributors' Retail Rental Rates ("AED Green Book") for the period that said machinery and equipment are to be used on such Work, to which no percent will be added. Where machinery and equipment are not listed in these schedules, then the rates will be determined by the Commissioner after reviewing all available records of Contractor or other information concerning the expense of operating that type of equipment.

e. Cost for Increases in Performance Bond: Contractor must furnish the CM written documentation from the bonding company of the rate or rates applicable for additional bonding for this Contract. These rate/rates will be applied to all the changes increasing or decreasing the Contract value, to which no markup will be added. No bonding costs will be allowed for Subcontractors. In the absence of written documentation from the bonding company, a percentage of the total change will be added or subtracted, as determined by the Commissioner and CPO to cover the increase or decrease of the cost of the bond. No bond cost will be applied to proposal pricing for Contract allowances. Bond costs are acceptable if an increase is required to a Contract allowance.

f. When Work is to be performed by a Subcontractor, the proposal may include as administrative costs an amount not to exceed 10 percent of the first $10,000, and five percent of any amount over $10,000, of the total approved costs of such subcontracted Work. The Subcontractor, however, is not allowed any additional markup if it sublets its Work to a third party. The use of a Subcontractor will require prior approval of the CPO. All subcontracted costs must be supported by proposals from the Subcontractors performing the Work. Subcontractor proposals must be broken down into its various parts of Work as described in items a. through d., above or as required by the Commissioner.

g. DBE Breakdown: Contractor must provide a breakdown by cost with each proposal outlining the total dollar amounts to be paid to itself and each Subcontractor/Supplier pertaining to the changed work. This breakdown must distinguish each Subcontractor/Supplier by its minority status (i.e. Non-Minority, DBE).

3. Time and Material Basis

The CM will provide Contractor with daily Work Report forms for use on the Project. Time and Material Work Reports will be used for all changed work that does not have an approved proposal. Time and Material Work Reports are also required for all work Contractor feels is out of the Contract scope and plans to claim. If the changed Work is not subject to unit pricing and the City and Contractor cannot agree on a price based on a proposal prior to the time the Work is 50 percent complete, the Work will be paid for on a time and material basis. Contractor must notify the CM of all Time and Material Work in advance for work to be verified. Contractor will fill in detailed information on the Work Report and have it signed by the CM at the end of the shift. Contractor will submit the Work Report to the CM within 24 hours of completion. All invoices for changed Work must be submitted by Contractor within 15 Days after completion of the changed Work. Contractor's failure to provide a complete invoice for the changed Work within that period will authorize the Commissioner, subject to the approval of the CPO, to determine the final amount for the Contract Modification which may be Awarded without the signature of Contractor.

4. Time and Material Billing

a. Labor: For all hourly wage labor and hourly wage foremen in direct charge of the specific operations, Contractor will receive the actual hourly rate of wage for every hour that said labor and foremen are actually engaged in such Work. No additional allowance or payment will be made for general superintendence.

b. Fringe Benefits: Contractor will receive the actual costs paid to, or in behalf of, workers for health and welfare benefits, pension fund benefits, or other benefits, when such amounts are required by collective bargaining Agreement or other employment Contract generally applicable to the classes of labor employed on the Work.

c. An amount equal to 30 percent of above 3.a., and an amount equal to 10 percent of above 3.b., items will also be paid to Contractor to cover jobsite general conditions, overhead, and profit. No additional allowance or payment will be made for general superintendence. All indirect costs will be part of the overhead, including, but not limited to; supervision, engineering, safety, quality control, and other technical personnel.

d. No payment will be made for labor performed on a time and material basis until Contractor has furnished the CM with itemized statements of the labor cost as follows:

(1) Full name, classification, date, daily hours, total hours, rate, and extension for each journeyworker, apprentice, and foreman.

(2) Certified payrolls thereof, pertinent to the Work for which payment is requested. The payroll records must contain the full name, address and social security number of each employee, the employee's correct classification, rate of pay, daily, and weekly number of hours worked, itemized deductions made and actual wages paid. Time and material invoices will be audited and corrected against the certified payrolls. Falsification of the certified payroll is an offense punishable by law. Certified payrolls must be submitted through the City's LCP Tracker System.

e. Insurance and Payroll Taxes: Actual cost for property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and social security taxes on the time and material Work, to which 10 percent will be added. No payment will be made for insurance and payroll taxes until Contractor has furnished satisfactory evidence of the rate or rates paid for such insurance and tax.

f. Materials: For materials accepted by the Commissioner and used as an integral part of finished Work, Contractor will receive the actual cost of such materials delivered on the jobsite, including, transportation charges paid (exclusive of machinery rentals as hereinafter set forth), as shown by original receipted bills, to which 15 percent will be added to the first $10,000 and 10 percent will be added for any amounts over $10,000.

g. Contractor will be reimbursed for any materials used in the construction of the Work, such as sheeting, falsework, form lumber, burlap, or other materials for curing, etc., which are not an integral part of the finished Work. The amount of reimbursement must be reasonable and supported by invoices. No markup will be added. The salvage value of such materials will be taken into consideration in the reimbursement agreed upon.

h. No payment will be made for material costs until Contractor has furnished itemized statements of the material costs, which must include:

(1) Quantities of materials, prices, and price extensions.

(2) Material transportation costs supported by receipted invoices.

(3) Receipted invoices for all materials used. However, if materials used on the time and material Work are not specifically purchased for such Work, but are taken from Contractor's stock, then in lieu of the invoices, Contractor must furnish an affidavit certifying that such materials were from its stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to Contractor. The price quoted for such material must be reasonable and acceptable as per the normal industry practice.

i. Equipment: For equipment owned by Contractor, costs will be determined by the number of equipment hours engaged in the Work multiplied by the total FHWA hourly rate as allowed by the latest revision of the "Equipment Watch Rental Blue Book" as issued by Equipment Watch. Equipment rates as allowed by the latest revision of Equipment Watch Rental Rate Blue Book will be the total FHWA hourly rate. Idle equipment will consist of the percentage sum of the following elements: depreciation, cost of facilities, capital ("CFC") and indirect costs multiplied by the hourly rate. For equipment rented by Contractor, rates will be determined by the Association of Equipment Distributors' Retail Rental Rates ("AED Green Book") for the period that said machinery and

equipment are to be used on such Work to which no percentage will be added. Where machinery and equipment are not listed in these schedules, then the rates will be determined by the Commissioner after reviewing all available records of Contractor or other information concerning the expense of operating that type of equipment.

j. When equipment is rented, Contractor will receive actual rental costs as shown by original receipted bills to which five percent will be added to cover standard operating costs including, but not limited to; routine servicing and repair, lubricants, filters, fuel, tires, tire services, and lube trucks. No additional compensation for ordinary operating expenses will be allowed.

k. No payment will be made for equipment not shown on the Daily Work Report (see paragraph C.4.n below). No payment will be made unless designations, dates, daily hours, rental rates, and extensions for each unit of machinery and equipment are shown on the itemized statement of time and material Work.

l. Bond: The City will pay Contractor the actual increase in cost of its performance bond. Contractor must furnish, from the bonding company, written documentation of the rate or rates applicable for additional bonding for this Contract. These rate/rates will be applied to all the changes increasing or decreasing the Contract Price to which no percentage will be added. No bonding costs will be allowed for the Subcontractors. In the absence of written documentation from the bonding company, a percentage of the total change, as determined by the Commissioner and CPO, will be added or subtracted to cover the increase or decrease of the cost of the bond. No bond costs will be applied to Time and Materials pricing for Contract Allowances. Bond Costs are acceptable if an increase is required to a Contract Allowance.

m. When the Work is performed by a single Subcontractor or multiple Subcontractors, Contractor will receive as administrative costs an amount equal to 10 percent of the first $10,000, and five percent of any amount over $10,000, of the total approved costs of such Work. The Subcontractor or Subcontractors are not allowed any additional markup. All subcontracted costs must be supported by invoices from the Subcontractors performing the Work. The Subcontractor invoices must be submitted in the form described in items a., through l., above.

n. Documentation: For additional Work performed on a time and material basis Contractor must each day submit to the CM detailed and complete records of the labor, material, equipment, and other costs relating to any force account Work performed on the previous day. These Daily Work Reports are to be submitted in the format designated by the Commissioner and must be signed by Contractor and the CM. Failure of Contractor to submit Daily Work Reports to the CM within 24 hours after the completion of the shift's work may, at the sole discretion of the Commissioner, cause these reports to be rejected and disqualified for payment.

o. DBE Breakdown: Contractor must provide a breakdown by cost with each proposal outlining the total dollar amounts to be paid to itself and each Subcontractor/Supplier pertaining to the changed work. This breakdown must distinguish each Subcontractor/Supplier by its minority status (i.e. Non-Minority or DBE). If the DBE percentage of participation is less than the Contract goal, an explanation of good faith efforts to meet the goal must be provided.

p. Premium Time

(1) Premium Time Costs will be paid for Work performed outside of regularly scheduled working hours as defined by the Contract Documents, only if expressly directed in writing by the Commissioner prior to Contractor commencing the Work.

Compensation, when authorized, will cover only the direct cost of the premium portion of the time involved and will be without any charge for insurance. No payment will be made for union fringe benefits on the premium portion of the time unless expressly required by union Agreement. Taxes which are attributed to the premium portion of the time will be paid. If taxes are charged by Contractor, the Commissioner may require Contractor to supply verification that the employees' Social Security Tax, Federal Unemployment Tax, and State Unemployment Tax limits have not been exceeded.

(2) An amount equal to seven percent of the sum of the premium portion of the work plus taxes will also be paid to Contractor to cover jobsite general conditions, overhead, and profit. All indirect costs will be part of the overhead, including, but not limited to; supervision, engineering, and other technical personnel.

(3) If Contractor enters into a subcontract, Contractor will be allowed an additional two percent of the Subcontractor's premium time billing to cover Contractor's supervisory and related expense on subcontract operations. The Subcontractor is not allowed the additional two percent if it sublets its Work.

(4) Daily Work Reports for the premium time hours will be kept and signed daily. The reports must indicate the time of day when the Work was performed and wage rate differential that will be charged. Billings must reflect hours reported on Daily Work Reports.

5. Changes on Lump Sum Contracts or Lump Sum Items in Unit Priced Contracts: All increases or decreases in elements of the Work, that are listed in the Contract Price Breakdown will be compensated for the purpose of any change, based on those prices.

6. Miscellaneous:

   a. For the purposes of this section, any business entity which employs field labor and performs Contract Work on the jobsite is defined as a Subcontractor. (Suppliers/deliverers of materials are not considered as field labor).

   b. When the extra Work involves only supply of material without any field labor at the jobsite, the supplier, for the purposes of this section, will be considered as a Subcontractor and the markup as specified in Part Two, Article X, paragraph C.3 ("Time and Material Basis") will apply.

   c. Expenses incurred by the City: Upon written request of the Commissioner, Contractor must pay the bills relating to the Project that are the responsibility of the City. Contractor will be reimbursed for the actual amount paid out.

D. Allowances

When Work is authorized by the Commissioner to be paid under an allowance, the payment due to Contractor will be processed as below, unless otherwise noted. Contractor will not be entitled to any remaining balance of an allowance after completion of the Project. The remaining balance will be credited back to the City by a Contract Modification adjusting the Contract Price.

1. Past Program Remedial Work Allowance: A distinct and separate allowance has been established in the event that the Commissioner requests remedial Work be performed on a Home from a past program year. In such event, the Work will be performed on a Unit Price basis, if applicable, and charged to the Allowance.

   This Allowance will terminate 365 Calendar Days after Substantial Completion of the Project Cost of materials, accepted by the Commissioner and incorporated into the Work, to which an amount not to exceed 15 percent may be added to cover profit and handling charges of Contractor performing the Work. Material cost must be supported by quotations or invoices from the suppliers and must be net of any discounts or rebates offered by the suppliers.

2. Security System Disconnect and/or Reconnect Allowance: A distinct and separate allowance has been established to reimburse Homeowners for the disconnection and/or reconnection of existing security systems. When Contractor is directed by the Commissioner to reimburse a Homeowner for the cost of disconnection and/or reconnection of an existing home security system, the Work will be paid for on a Proposal Basis and charged to the allowance. Contractor's proposal will include a paid invoice from the security firm who performed the Work, an administrative cost not to exceed 10 percent of the total cost of such disconnection and/or reconnection, and a copy of the check issued by Contractor to the Homeowner.

3. Permit Fee Allowance: A distinct and separate allowance has been established to reimburse Contractor for construction permit fees. When the Work requires a permit, the permit fee will be paid for on a

Proposal Basis and charged to the allowance. Contractor's proposal will include a paid invoice from the permitting entity who performed the Work. All other costs associated with obtaining a permit, including but not limited to; general conditions, licenses, bonds, inspections are incidental to the Contract.

4. Asbestos Testing/Remediation Allowance: A distinct and separate allowance has been established to reimburse Contractor for Asbestos Testing and/or Remediation: When the Work requires Asbestos Testing and/or Remediation, the cost will be paid for on a Proposal Basis and charged to the allowance. Contractor's proposal will include a proposal from the firm who will be performing the Work. An administrative cost not to exceed 10 percent of the total cost can be added to the cost.

5. Utility Fee Allowance: A distinct and separate allowance has been established to reimburse Contractor for Commonwealth Edison or another other utility fees. When the Work requires utility fees, the fee will be paid for on a Proposal Basis and charged to the allowance. Contractor's proposal will include only the amount of the fee as established by the utility, as demonstrated by receipts from the utility or Homeowner for utility work, an administrative cost not to exceed 10 percent of the total cost of the utility work, and a copy of the check issued by Contractor to the utility or Homeowner. All other costs associated with obtaining a utility fee, including, but not limited to; inspections, and administrative costs are incidental to the Contract.

6. Unforeseen Conditions Allowance: A distinct and separate allowance has been established to reimburse Contractor for items which were not contemplated in the specifications, but are required to, complete the Work. This may include concealed conditions not covered by line items or added work needed in order to complete the acoustical treatment package selected by the Homeowner. The cost will be paid for on a Proposal basis and charged to the allowance. An administrative cost not to exceed 10 percent of the total cost can be added to the cost.

7. Material Only Allowance: A distinct and separate allowance has been established to reimburse Contractor for Material Only Reimbursements: When the Work requires Material Only Reimbursements, the cost will be paid for on a Proposal Basis and charged to the allowance. Material Only Reimbursements occur when Contractor orders custom fabricated material for the Home after the Field Measurement appointment and the Homeowner refuses to allow the material to be installed in their Home. Contractor's proposal will include a proposal from the firm who will be performing the Work. An administrative cost not to exceed 10 percent of the total cost can be added to the cost.

E. Contract Modification

The final terms of any adjustment in Contract Price and/or Contract Completion Date relating to changed Work must be incorporated into a written Contract Modification executed by the City and Contractor (except as provided in Part Two, Article X, paragraph C.3 ("Time and Material Basis"). Payment for a Contract Modification and/or an adjustment in Contract Completion Date will be made after the Contract Modification is executed by the City. Contract Modifications resulting in Contract Price adjustments in excess of $5,000 require execution by the Mayor, the Comptroller and the CPO.

F. Contractor's Release

Except as otherwise agreed by the Commissioner and CPO, the Contract Modification will constitute a full release to the City from granting any additional compensation or extension of time arising or resulting from the Contract Modification. The release that Contractor must sign will state: By executing this Contract Modification, Contractor certifies that it has reviewed and accepts the compensation and/or Time Extension provided in full accord and satisfaction for this Contract Modification and that it expressly waives and releases any and all additional claims and demands relating to, or arising out of, the matters covered by this Contract Modification as more fully described in the exhibit hereto including, but not limited to; direct, indirect, overhead, home or field office costs, profits, damages, disruptions, and impact.

G. Failure to Comply with Order

Contractor must promptly proceed with any changes in the Work or Project Schedule as directed by Field Order in writing, in accordance with Part Two, Article X, Section A ("City's Right to Change Work") with or without the Contract Modification. Contractor's refusal or failure to proceed promptly with the changed Work or changes in the Project Schedule as directed will constitute an event of default under the Contract.

H. Change Claims

1. If Contractor and the CM are unable to agree upon an adjustment in Contract Price and/or Contract Completion Date for changed Work in accordance with Part Two, Article X, Section C ("Payment for Changes") which is executed by the City under Part Two, Article X, Section E ("Contract Modification"), Contractor may make a claim for the changed Work under this Part Two, Article X, Section H ("Change Claims"). Contractor expressly consents to both the time requirements and notice content requirements for making a Change Claim under this Part Two, Article X, Section H ("Change Claims"). Contractor acknowledges that the notice requirements set forth in this Part Two, Article X, Section H ("Change Claims") will be strictly enforced and agrees that any failure on the part of Contractor to provide notice strictly in accordance with the requirements of this Part Two, Article X, Section H ("Change Claims") constitutes a waiver of Contractor's right to make a Change Claim for Changes in the Work or to file a dispute to the CPO under Part Two, Article XVII ("Events of Default and Termination"). Contractor further understands and agrees that, notwithstanding any case law decision to the contrary, the notice requirements of this Part Two, Article X, Section H ("Change Claims") will not be subject to or diminished by any claim on the part of Contractor that the City or any person acting on behalf of the City directed Contractor to make changes in the Work or had actual or constructive knowledge of any changes in the Work. Contractor further acknowledges that the time requirements and notice content requirements of Part Two, Article X, Section H ("Change Claims") have the purpose, among others, of allowing the City to evaluate Change Claims contemporaneously with the Work that is the subject of the Change Claim.

2. If Contractor and CM are unable to agree on the price and/or Time Extension in connection with a change, Contractor must, within 15 Days of completing the changed Work pursuant to a Field Order, provide written notice to the CM of the amount of money and/or Time Extension sought by Contractor and the contractual and factual basis for each. Contractor must designate the document "Notice of Claim".

3. The CM will, within 30 Days from receipt of the Notice of Claim, response by, requesting a meeting with Contractor, making a written request for additional information from Contractor, including, but not limited to; a general statement of the basis for the Change Claim, the facts underlying the Change Claim, the Notice of Claim to the CM, reference to the applicable Contract provisions, and all documentation that describes, relates to and supports the Change Claim, taking other action to attempt to resolve the Notice of Claim, and/or advising Contractor in writing that it should file a Claim under Part Two, Article XVI ("Claims and Disputes"). Any steps taken by the CM to resolve the Notice of Claim will not exceed 60 Days from receipt of the Notice of Claim unless Contractor agrees to an additional amount of time in writing. Contractor and CM may agree on a proposed adjustment of Contract Price and/or Contract Completion Date in resolution of a Notice of Claim, which proposal is subject to approval by the City in a Contract Modification under the requirements of Part Two, Article X ("Changes in the Work").

4. If the Notice of Claim cannot be resolved within 60 Days from the CM's receipt of the Notice of Claim as provided for in Part Two, Article X, Section H ("Change Claims"), above, Contractor must file a Claim in accordance with Part Two, Article XVI ("Claims and Disputes").

5. If Contractor does not agree with the adjustment for time and/or compensation proposed by the CM, Contractor must follow the procedures set out by the Contract to file a Claim and/or Dispute as provided in Part Two, Article XVI ("Claims and Disputes"). If Contractor does not follow the procedures set out by the Contract to file a Claim and/or Dispute as provided in Part Two, Article XVI ("Claims and Disputes"), the failure to do so constitutes a waiver of the right to make a Claim or file a Dispute to the CPO. In the event of Contractor's waiver, the Commissioner may file a Dispute, pursuant to Part Two, Article XVI, Section B ("Disputes"), with the CPO seeking a final decision as to the adjustment for the changed Work.

I. City Audit

All documents, records, books, and accounts, relating to changes in the Work, are subject to the audit provisions of Part Two, Article XII, paragraph D.2 ("Audits").

END OF X

XI. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Definitions

1. "Shop Drawings" are drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. The term "Shop Drawings" as used herein includes, but is not limited to; fabrication, erection, layout and setting drawings, manufacturers' standard drawings, schedules, wiring and control diagrams, and other drawings pertaining to materials, equipment and piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and the position thereof conform to the Contract's requirements. Shop Drawings will establish the actual detail of all manufactured and fabricated items and indicate the proper relation to adjoining Work.

2. "Product Data" are illustrations, standard schedules, performance charts, instructions, descriptive literature, catalogs and brochures, performance, and test data, diagrams, and other information furnished by Contractor to illustrate a material, product, or system for some portion of the Work.

3. "Samples" are physical examples, which illustrate materials, equipment, or workmanship and establish standards and measures by which the Work will be accepted. The term "Samples" as used herein includes materials, fabricated items, equipment, devices, appliances, or parts thereof as called for in the specifications and any other samples as may be required by the Commissioner to determine whether the kind, quality, construction, workmanship, finish, color, and other characteristics of the materials, etc., proposed by Contractor conform to the required characteristics. The various parts of the Work will be in accordance with the reviewed Samples.

4. "Submittal" refers to Shop Drawings, Product Data, or Samples and other items as may be required by the Contract Documents.

5. "File Transfer Application" refers to the process of copying or moving a file from one computer to another over a network or Internet connection. It enables sharing, transferring, or transmitting a file between different users and/or computers both locally and remotely. This transfer of files is made over an application. The File Transfer Application will be provided by the Commissioner.

B. Submission Timeline

Contractor must provide submittals as required by Part Three ("Technical Specifications"), of the Contract Documents within the durations described in Part Three ("Technical Specifications"), except mechanical and electrical shop drawings which must be provided within 10 Days of completion of Field Measurement appointments. The Contractor must provide other submittals as required in Part Three ("Technical Specifications"), that do not have a duration described, and all other submittals required in the Contract, within 70 Calendar Days of NTP.

C. Contractor's Responsibilities and Submittal Procedures

1. Providing Shop Drawings, Product Data, and Samples is part of the scope of Work under this Contract and must be done at the expense of Contractor and to the satisfaction of the Commissioner.

2. The number of Shop Drawings, Product Data, and Samples to be submitted will be determined by the Commissioner.

3. Contractor must submit to the Commissioner such Shop Drawings, Product Data, Samples, and other data required for the Work involved under this Contract in accordance with the approved Master Schedule and the form designated by the Commissioner entitled Submittal Log.

4. The "Index and Schedule" must be updated on the same schedule as the Master Schedule or as required by the Commissioner and must include a list of drawings, samples, and other data to be reviewed, a schedule of proposed submittal dates, and the date.

5. Manufacture, construction, or erection. The dates listed in the Submittal Log will allow sufficient time for review and processing by the Commissioner and review by the Architect and resubmittal, if necessary, of Shop Drawings or other data before the Shop Drawings and Samples are needed by

Contractor. No extensions of time will be granted to Contractor because of its failure to have Shop Drawings, Samples and Product Data submitted in ample time to allow for review.

6. Contractor's submission of all Shop Drawings, Samples and Product Data to the Commissioner for review will not relieve Contractor from its responsibility in preparing and submitting proper Shop Drawings, Samples, and Product Data in accordance with the Contractual Documents. By submitting Shop Drawings, Product Data, and Samples, Contractor represents that it has determined and verified all materials, field measurements, field conditions and verified quantities related thereto, or will do so; and that it has checked and coordinated the information contained within such submittal with the requirements of the Work and of the Contract Documents.

7. All submittals must be transmitted to the Commissioner and must include:

    a. Project title and Contract number.
    b. The names of Contractor, Subcontractor, Supplier, Manufacturer and separate details when pertinent.
    c. Date and revision dates.
    d. Identification of product or material.
    e. Relation to adjacent structure or materials.
    f. Field dimensions, clearly identified as such.
    g. Specification section number and paragraph.
    h. Applicable standards, such as ASTM International ("ASTM") number or Federal Specification.
    i. Identification of deviations from Contract Documents.
    j. Other data pertinent to the product or material.
    k. Contractors stamp of Approval specified in Part Two, Article XI, paragraph C.8.
    l. Installation location, where applicable.

8. Any submittal, which in the Commissioner's opinion is not complete and in proper form, will be returned to Contractor without review. Submittals that are not complete or not in proper form include, but are not limited to; those which are not clear and legible, collated into sets, complete, free of errors, checked by Contractor, representative of the actual material, or assembly and bearing Contractor's approval stamp or other mark showing review and approval by Contractor. Contractor must not submit as Shop Drawings, duplicates or reproductions of any Contract Documents issued by the City.

9. All Shop Drawings, Product Data, and Samples must be examined and coordinated by Contractor and must be dated and stamped by Contractor, using the language designated by the Commissioner, indicating that the submittal has been reviewed and checked prior to submittal and found to be in conformance with the Contract Documents. Contractor must submit all Shop Drawings, Samples, and Product Data to the Commissioner for review with: 1) an accompanying transmittal letter which states the Project by title and Contract number and identifies the Work, material, or product by Specification Section and Article number, and 2) the completed form entitled "Shop Drawing Data". Contractor must coordinate submittal into logical groups or sets to facilitate review of the several items.

10. No extensions of time will be allowed because of Contractor's failure to submit Shop Drawings and other submittals in ample time to allow review, possible rejection, resubmittal, and final review.

11. Contractor must furnish Shop Drawings, Samples, Product Data, and information which permit the Commissioner to identify and review the construction and to determine whether the Work complies with the requirements of the Contract Documents.

12. Contractor must submit not less than the following quantities unless a greater number is specified herein, or is required in the Specifications and Details, or is required by the Commissioner:

    a. Shop Drawings: Electronic format uploaded to a File Transfer Application
    b. Product Data: Electronic format uploaded to a File Transfer Application
    c. Samples: Submit three Samples.

13. Prior to submitting Shop Drawings, Product Data, or Samples, Contractor must notify the Commissioner in writing if there are any deviations in the submittals from the requirements of the Contract. If deviations

from the Contract requirements are rejected by the Commissioner, or if evaluation of the deviations delays the progress of Work, any delay caused will not be compensable by a Time Extension.

D. Review by the Commissioner

1. Submittals will be reviewed by the Commissioner for compliance with the Contract Documents. In reviewing Submittals, the Commissioner will not verify dimensions and field conditions. Any review will not be construed as a completed check nor will it relieve Contractor, Subcontractors, manufacturers, fabricators, or suppliers from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents, nor will it relieve Contractor from responsibility for errors of any sort in Shop Drawings, Samples, and Product Data, nor from responsibility for proper fitting of the Work, nor from the necessity of furnishing any Work required by the Contract Documents which may not be indicated on Shop Drawings when reviewed. Contractor will be solely responsible for any quantities which may be shown on the Shop Drawings. The Commissioner's review of a specific item must not indicate approval of an assembly of which the item is a component.

2. Contractor must modify and resubmit Submittals, as required, until review permitting fabrication is obtained. Contractor will not fabricate products, begin Work, order or have delivered any material, equipment of systems, which requires a reviewed Submittal, until return of the submittal with a stamp authorizing Work to be done. The stamps are indicated in Part Two, Article XI, Section D.3.

3. After review by the Commissioner, the Commissioner will return an electronic copy of reproducible Submittals via the File Transfer Application, which will have been reviewed by the A/E and/or the CM and actioned with a letter grade assigned to the submittals as follows:

   a. Review action "A" signifies "No Exceptions". This indicates final action, and no changes may be made to the reviewed submittal. Contractor may proceed with the Work for that submittal. Resubmittal is not required.

   b. Review action "B" signifies "Exceptions as Noted". This indicates that the submittal is accepted subject to corrections and/or comments noted. Contractor may proceed with the Work for that submittal provided Contractor incorporates the reviewer's corrections and/or comments in the Work. Resubmittal is not required.

   c. Review action "C" signifies "Revise and Resubmit". This indicates the submittal was reviewed and does not meet all the requirements necessary to proceed with the Work associated with the submittal. Contractor must resubmit in accordance with the reviewer's corrections and/or comments made regarding the submittal. Submittals marked in this manner may not be released for fabrication, delivery, or construction.

   d. Review action "D" signifies "Rejected". This indicates that the submittal does not meet the requirements set forth in the Project specifications. Contractor must resubmit this Work in accordance with the Project requirements and any corrections and/or comments made regarding the submittal by the reviewer. Submittals marked in this manner may not be released for fabrication, delivery, or construction.

   e. Review action "N" signifies "No Action Taken". This indicates that Contractor has met the contractual requirement for providing drawings and calculations for equipment, falsework, shoring, bracing, and other temporary structures or temporary services required for the Work, designed, signed, and sealed by an Illinois licensed engineer employed by that Contractor. Contractor and the licensed engineer employed by that Contractor will be solely responsible for, including, but not limited to; the proper implementation, execution, installation, operations, and/or construction procedure or method covered by this submittal.

4. If the Submittals require revision, Contractor must notify the City and all appropriate parties, in writing, that the reviewed set has been withdrawn, and Contractor must submit the substitution set in accordance with the above procedures.

5. Submittals that are rejected or require revisions must be corrected and resubmitted to the Commissioner within 10 Days to maintain the approved Shop Drawings schedule and Master Schedule.

6. Submission and Review of Samples: Contractor must submit not less than three samples of materials to the Commissioner for approval as indicated in the Specifications and Details. In case a considerable range of color, graining, texture, or other characteristics may be anticipated in finished products, a sufficient number of samples of the specified materials must be furnished by Contractor to indicate the full range of such characteristics which will be present in the finished products. Products delivered or erected without submittal and review of full range samples will be subject to rejection. All Samples must be properly labeled to indicate the Contract and Project name, Contractor, Subcontractor, supplier, and/or manufacturer's name(s), type of material submitted, intended use, and will include an indication of compliance requirements, including FAA, and be accompanied with a letter of transmittal containing similar information, together with the specification section number for identification of each item. Each tag or sticker must have clear space for the stamps of Contractor and Commissioner. Samples will be inspected and reviewed. Notice of the result of the review will be provided to Contractor with one of the stamps indicated in Part Two, Article XI, paragraph D.3. Rejected samples will be returned. Accepted samples will be retained by the Commissioner and will become the property of the City. Where color samples are required to be submitted, color samples must be submitted on the actual material which will finally be installed in the Work.

7. Product Data: After review by the Commissioner, an electronic copy of Product Data stamped by the Commissioner as previously described in Part Two, Article XI, paragraph D.3, will be returned to Contractor. All product data must include a notation indicating the corresponding line item number in Part One, Section 3 ("Schedule of Prices"). If more than one product is on a sheet, Contractor must clearly indicate the particular product being submitted for approval.

8. When reviewed by the Commissioner, Shop Drawings, Samples, and Product Data will become a part of the Contract, and the materials and equipment furnished will be in conformity with the same, provided that the review of such Submittal will in no way relieve Contractor from its responsibility for the proper installation and performance of any material or equipment, or from its liability to replace the same should it prove defective.

E. Record Shop Drawings and Product Data

1. Contractor must furnish record shop drawings to the Commissioner. Record shop drawings must be submitted electronically, for all items reviewed as shop drawings, via the File Transfer Application. Record shop drawings must be formatted on the same size sheets as the Contract Document drawings.

2. Contractor must furnish record copies of Product Data electronically via the File Transfer Application. An index of all items including Shop Drawing submittals must also be included as a separate file.

END OF XI

XII. PROJECT RECORD DOCUMENTS AND PROJECT ACCOUNT RECORDS

A. Heating, Ventilating, Air Conditioning Unit Instructions, Parts Lists and Operation and Maintenance Manuals.

1. Contractor must furnish to the Homeowner one copy of maintenance manuals, instructions, specifications relative to the assembly, installation, alignment, placing in operation and maintenance of equipment, systems, and construction under this Contract. Contractor must also submit to the Homeowner one bound copy of all items requiring spare parts and materials, and a list of required spare parts and materials for each, including manufacturers product, material, part, or re-order numbers, name, address, and telephone numbers of local suppliers, and manufacturer's corporate offices.

B. Deliverables Required Prior to Contract Completion.

Contract Completion is achieved when all Work in homes is complete, including Final Completion of the Project and all remaining Work in accordance with the Contract Documents. In addition to other requirements of the Contract Documents, all Project Closeout. Documentation is required to be delivered by the Contractor, and accepted by the Commissioner. All permits, warranties, final waivers, the approved final sworn statement and affidavit, final Home invoices, Record Shop Drawings, Product Data, and Instructions and Parts Lists are a prerequisite to Contract Completion under Part Two, Article IX, Section F ("Payment for Project Closeout Documentation").

C. Electronic Records.

Upon request by the Commissioner, Contractor will provide the City electronic versions of any hard-copy record documents that Contractor is required to prepare pursuant to the Contract Documents.

D. Project Account Records

1. Project Data and Records:

a. All books and accounts kept by Contractor in connection with the Contract will be open to the inspection of the Commissioner or the Commissioner's authorized representative and all City of Chicago authorized agencies and their representatives. Promptly following the preparation of periodic payrolls of Contractor and of each of its Subcontractors, Contractor must furnish the Commissioner with such number as may be required of certified copies of such payrolls.

b. Contractor and each Subcontractor must also keep an accurate record showing the names and occupation of all laborers, workers, and mechanics employed by them in connection with the Work and also showing the actual hourly wages paid to each of such workers, which record will be open at all reasonable hours to the inspection of the Commissioner and to the Director of Labor (State of Illinois).

c. Contractor will at any time when required furnish to the Commissioner or CPO a written statement, verified by affidavit, giving the names and addresses of all persons, firms, and corporations who have up to the date thereof furnished labor or materials in or about the performance of the Contract and the amounts due or to become due to said parties.

d. Contractor and any Subcontractor must furnish the Commissioner with such information as the Commissioner may require relating to the materials, including all information necessary to determine the cost of the Work, such as the number of workers employed, their pay, the distribution of labor into Work item, equipment time distribution and any other information which the Commissioner may require. Contractor must, on request, furnish the Commissioner with copies of delivery tickets and invoices, in triplicate, covering all expenditures on the Contract.

2. Audits:

a. Contractor must maintain, or cause to be maintained, records showing actual time devoted and costs incurred. Contractor must maintain, or cause to be maintained, its books, records, documents, and other evidence, and adopt, or cause to be adopted, accounting procedures, and practices sufficient to reflect properly all costs of whatever nature, claimed to have been incurred and anticipated to be

incurred for or in connection with the Project for five years after the date final payment is made and all pending matters are closed. This system of accounting will be in accordance with generally accepted accounting principles and practices, consistently applied throughout.

b. Contractor must furnish, or cause to be furnished; to the Commissioner such information as may be requested relative to the progress, execution, and cost of the Project. Contractor must maintain an acceptable cost accounting system. Contractor agrees to provide authorized representatives of the City, the FAA, and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers, and records of Contractor which are directly pertinent to the specific Contract for the purpose of making audit, examination, excerpts, and transcriptions. Contractor agrees to maintain all books, records, and reports under this Contract for a period of not less than five years after final payment is made and all pending matters closed. No provision in this Contract granting the City, FAA, and the Comptroller General of the United States or any of their duly authorized representatives right of access to records and documents is intended to impair, limit, or affect any right of access to such records and documents, which the parties would have had in the absence of such provisions.

c. The City may in its sole discretion audit the records of Contractor or its Subcontractors, or both, at any time during the term of this Contract or within five years after the date of Final Completion of the Project, in connection with the goods, Work, or services provided under this Contract. If, as a result of such an audit, it is determined that Contractor or any of its Subcontractors has overcharged the City, the City will notify Contractor. Contractor must then promptly reimburse the City for any amounts the City has paid Contractor due to the overcharges and also some or all of the cost of the audit, as follows:

(1) If the audit has revealed overcharges to the City representing less than five percent of the total Project cost, including any Contract Modifications, then Contractor must reimburse the City for 50 percent of the cost of the audit.

(2) If, however, the audit has revealed overcharges to the City representing five percent or more of the total Project cost, including any Contract Modifications, then Contractor must reimburse City for full cost of the audit.

Failure of Contractor to reimburse the City in accordance with (1) or (2) above is an event of default under this Contract, and Contractor will be liable for all the City's cost of collection, including any court costs and attorneys' fees.

d. Contractor agrees to provide the FAA and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers, and records of Contractor which are directly pertinent to the specific Contract for the purpose of making audit, examination, excerpts, and transcriptions.

E. Confidentiality

All of the reports, information, or data, prepared or assembled by or provided to Contractor under this Contract are confidential and Contractor agrees that, except as specifically authorized herein, or as may be required by law, neither it or its Subcontractors must make available said reports, information, or data, to any other individual or organization, without the prior approval of the Commissioner.

1. Confidentiality of Airport Security Data: Contractor acknowledges that information vital to the security of the Airport ("Airport Security Data"), including, but not limited to; Sensitive Security Information as defined by 49 CFR Part 1520, *et seq.*, may be prepared, assembled, encountered by, or provided to Contractor in connection with this Contract. Contractor has an ongoing duty to protect confidential information, including, but not limited to; any Airport Security Data. If Contractor fails to safeguard the confidentiality of Airport Security Data, Contractor is liable for the reasonable costs of actions taken by the City, the airlines, the FAA or the Transportation Security Administration ("TSA") that the applicable entity, in its sole discretion, determines to be necessary as a result, including without limitation the design and construction of improvements, procurement and installation of security devices, and posting of

guards. All Subcontractors or purchase orders entered into by Contractor, with parties providing material, labor or services in relationship to this Contract, must contain the language of this section. If Contractor fails to incorporate the required language in all Subcontracts or purchase orders, the provisions of this section are deemed incorporated in all Subcontracts or purchase orders.

F. Daily Progress Reports

Contractor and all Subcontractors must prepare and submit to the Commissioner daily progress reports on the various parts of the Work including in the report the number of workers and the classification of the trades involved, equipment used, and any pertinent information regarding possible delays in the Work. Payments will not be processed unless all daily reports have been submitted.

END OF XII

XIII. TESTING AND INSPECTION

A. General Inspection

1. All materials and equipment and each part or detail of the Work will be subject at all times to inspection, testing and approval by the Commissioner or authorized representatives of the Commissioner. Contractor will be held strictly responsible for performance of the Work so that it complies with the express requirements and intent of the Contract Documents in regard to quality of materials, workmanship and the diligent execution of the Contract. Such inspection may include mill, plant, shop, and field inspection and any material or equipment furnished. The Commissioner, the Commissioner's representatives and CM will be allowed access to all parts of the Work and will be furnished with such information and assistance by Contractor as is required to make a complete and detailed inspection. The Commissioner, the Commissioner's representatives or CM have the right to take photograph or otherwise visually record Work in progress.

2. All inspections and tests performed by the City Inspector are to verify that the materials being furnished by Contractor meet the Contract requirements and will be used as the basis for Pay Estimates. Payment will not be made for uninspected, untested, or otherwise unauthorized use of materials incorporated into the Work. Contractor, at its own expense, may perform or have others perform similar inspections and tests for the sole purpose of maintaining the quality control of the material being inspected.

3. Material and equipment inspection must be as hereinafter specified in Part Two, Article XIII, Section B ("Materials and Equipment Testing and Inspection").

4. Contractor must, if the Commissioner requests, remove or uncover such portions of the finished Work as the Commissioner may direct before the final acceptance of the same. After the examination, Contractor must restore said portion of the Work to the standard required by the Contract Documents. If the Work thus exposed or examined proves acceptable, the expenses of uncovering or removing and the replacing of the parts removed will be paid for as changed Work, unless otherwise provided in the Contract Documents. If the Work so exposed or examined is unacceptable, the expense of uncovering or removing and the replacing of the same in accordance with the Contract Documents must be borne by Contractor.

5. Except as may be otherwise specified in other sections of the Contract Documents, the Commissioner will make final inspection of all Work included in the Contract as soon as practicable after notification by Contractor as provided in Part Two, Article VIII, Section C ("Completion of Punch List") that the Work is substantially completed and ready for inspection. If the Work is not acceptable to the Commissioner at the time of such inspection, Contractor will be informed as to the particular defects to be remedied before the Project will be determined to have achieved Substantially Complete.

6. When the Contract includes Work for which the Federal Government is to pay a portion of the cost thereof, such Work will also be subject to the inspection and approval by the representatives of the Federal Government, but such inspection and approval will in no sense make the Federal Government a party to the Contract.

7. When the Contract includes Work that will ultimately be owned and/or maintained by a specific outside agency or other third party, such Work will also be subject to the inspection by the representatives of the outside agency or third party, but such inspection will in no sense make the outside agency or third party a party to the Contract.

B. Materials and Equipment Testing and Inspection

1. As stated in Part Two, Article XIII, Section A ("General Inspection"), all materials and equipment may be inspected and tested by the Commissioner. For materials which are not an integral part of equipment and for which samples may be submitted, Contractor must give sufficient advance notice of placing orders to permit tests to be completed before the materials are incorporated into the Work and must afford such facilities as the Commissioner may require for collecting and forwarding samples and making inspections and tests. All Samples must be furnished without charge. Contractor must not make use of or incorporate into the Work the materials represented by the Samples until tests have been made and the materials found to be in accordance with the requirements of the Contract Documents.

2. Contractor must notify the CM that materials and/or equipment have been delivered to Contractor's warehouse by submitting a "RFIM" form no less than 16 Days before the Approved Master Schedule Date for the start of construction on that Home. The CM will inspect the material and/or equipment for conformance to the requirements of the Contract Documents prior to its incorporation into the Work. If Contractor does not provide the RFIM Form for a Home at least 16 Days before the Approved Master Schedule Date for the start of Work on that Home, the Commissioner may delay the start of work on that Home by directing Contractor, in writing, that it may not start construction on the Home until 16 Days from the date of the Commissioner's receipt of the form. In the event the Commissioner delays the start of a Home for this reason, Contractor will not be entitled to an extension of time for the delay as it would have been caused by Contractor's failure to comply with the 16-day requirement of the Contract.

3. For materials that are an integral part of machinery or equipment or of parts of equipment normally stocked by Contractor or Subcontractor, Contractor may furnish copies of certified tests made at the time of production.

4. In addition to on-site inspection and testing, the Commissioner and CM will have free entry, at all times while Work is being performed, to all parts of the manufacturer's work that concerns the manufacture of the material or equipment ordered for the Project. The Commissioner and CM will be permitted to examine all components and subassemblies. Assemblies and parts must be numbered for identification. Contractor (or manufacturer) must provide the Commissioner with a detailed production schedule prior to the Commissioner's first inspection. After a study of the production schedule, the Commissioner or CM will inform Contractor (or manufacturer) of its methods, extent of inspection and facilities desired. The manufacturer must afford the Commissioner, without charge, all reasonable facilities to provide satisfactory documentation that the material or equipment is being furnished in accordance with the Contract Documents. All tests and inspection will be made at the place of manufacture (if applicable) prior to shipment and at Contractor's or manufacturer's expense unless otherwise specified per the product.

5. Part Three ("Technical Specifications"), may include the cost of travel and living expenses for a specific number of City employees and/or other persons for a specific test. The travel and living expenses for any additional City employees or additional person(s) will not be a cost to Contractor. The manufacturer or Contractor will furnish a certification of the ordered tests after completion. The Commissioner reserves the right to re-inspect all materials or equipment, which have been inspected and accepted at the place of manufacture or source of supply, after they have been delivered to the site and to reject any which do not meet with the requirements of the Contract Documents.

6. If the preparation of the material or equipment is at far distance or an inaccessible location, or if it is divided into unreasonably small quantities, or widely distributed to an unreasonable extent, or if the percentage of rejected material is unreasonably large, or should Contractor's production schedule and arrangements for tests and calibration is such that the cost of inspection by the City is unreasonably high, the additional cost of extra inspection resulting therefrom will be borne by Contractor. Salary and living expenses of the Inspector will be included in the additional cost of extra inspection. The Commissioner will be sole judge of what is to be deemed extra inspection.

   If the City Inspector is a City employee, the actual travel expenses of the City Inspector, limited to the applicable amounts set forth in the City's travel reimbursement guidelines, must be included in the additional cost of extra inspection and paid by Contractor. If the City Inspector is not a City employee, the City Inspector's travel expense reimbursement will be stated in the City's Contract with the City Inspector, limited to the applicable amount.

7. Unless otherwise provided, all materials will be sampled and tested in accordance with the latest published standard methods of ASTM International and revisions thereof, where such standard methods exist. In case there are no ASTM standards which apply, applicable standard methods of other recognized standardizing agencies will be used. In all cases, the standard methods and revisions thereof, are those in effect on the date of the invitation for bids.

8. For any material not covered by the designated specifications of some designated society, association, institute or governmental authority, appropriate methods of testing and inspection to be designated by the Commissioner must be followed.

END OF XIII

XIV. PROTECTION OF PERSONS AND PROPERTY

A. Health and Safety

1. Project Health and Safety:

   a. Contractor has sole and complete responsibility for implementation of a safety program ("Contractor's Safety Program"), including, but not limited to; the requirements described in Part Two, Article VII ("Personnel") above.

   b. Contractor will submit Contractor's Safety Program to the Commissioner no later than 14 Days after receiving the NTP.

   c. Although the Commissioner will, on occasion, observe construction and give Contractor opinions and suggestions about safety defects and deficiencies, the Commissioner will not be responsible for any unsafe working conditions. The Commissioner's suggestions on safety will in no way relieve Contractor of its responsibility for safety on the Project. Contractor has sole responsibility for safety.

   d. Contractor must comply with the requirements of 29 CFR Part 1926 (Originally CFR 1518) - Safety and Health Regulations for Construction of the Williams-Steiger Occupational Safety and Health Act of 1970 (Federal, OSHA). Copies may be obtained from the Regional Administrator of the U.S. DOL, Federal Office Building, and Chicago, Illinois.

      Contractor's attention is directed to the "Health and Safety Act" of the State of Illinois. The rules pursuant to this Act are on file with the Secretary of State of Illinois and are identical in every respect with the standards in effect under the Federal, OSHA, and law, pursuant to orders of the Illinois Workers' Compensation Commission. The Federal and State standards require that Contractor provide reasonable protection to the lives, health, and safety of all persons employed under the Contract. Such act and rules and the applicable parts thereof will be considered as part of these specifications.

   e. Contractor must comply with all local safety laws, including, but not limited to; those relating to blasting or use of explosives, and those set forth in Title 15 of the MCC.

   f. Contractor must take any precautions that may be necessary to render all portions of the Work secure in every respect or to decrease the liability of accidents from any cause, or to avoid contingencies which are liable to delay the completion of the Work. Contractor will furnish and install, subject to the approval of the Commissioner, all necessary facilities to provide safe means of access to all points where Work is performed and make all necessary provisions to ensure the safety of workers and of engineers and inspectors during the performance of the said work.

   g. Contractor must keep on the site of the Work, completely equipped first aid kits readily accessible at all times. Contractor will designate a person on each shift, acceptable to the Commissioner, to be in charge of first aid and will cause such person to receive proper instructions therein.

   h. Contractor's employees must participate in a drug and alcohol screening prior to beginning their assignments. Test results and consent forms must be provided to the Commissioner before the employee's assignment.

   i. All workers must wear full-length pants. Shorts are strictly prohibited and persons not dressed as required by OSHA will be removed from the jobsite.

2. Fire Protection: Fire protection must comply with all applicable fire regulations and with all specific regulations of the Commissioner and other City officials who have jurisdiction, and will include the following:

   a. An ample number of suitable, fully charged fire extinguishers will be provided as approved. Also provide water type fire extinguishers for combustible materials in case of fire prior to daily removal of debris from the site.

   b. All tarpaulins or other protective coverings will be of approved flame retardant material.

c. Not more than one day's supply of flammable liquid including oil, gasoline, paint, or solvent will be brought to the site at any one time. At 110 degrees Fahrenheit, or below, flash point liquids will be confined to "U.L." approved safety cans. No open fires of any type will be permitted.

d. Contractor must prohibit all lighting of fires about the premises and all smoking in restricted areas where posted with "NO SMOKING" signs and must use due diligence to see that such prohibition is enforced. "NO SMOKING" signs must be furnished and posted by Contractor. Smoking is prohibited everywhere on the Homeowner's property.

e. No debris or waste materials, including any Hazardous Substance and/or Other Regulated Material, will be burned at the construction site.

f. During construction, all cutting or welding operations will be carried out with all precautions taken to prevent fires resulting from sparks or hot slag. Extreme care will be exercised to determine that such sparks or embers do not fall into any combustible materials, even if such material is stored on lower floors. Sheet metal windscreens will be provided around the lead-melting furnaces whether building is enclosed or not. Portable fire extinguishers will be provided at and below all locations where cutting or welding or melting operations are being performed or, if such operations are extensive, a hose from the stand pipe system or fire hydrant will be placed nearby.

g. All combustible material, including, but not limited to; wood, crates, excelsior paper, rags or flammable solvents will not be allowed to accumulate, but will be removed to a safe location and disposed of immediately after they have served their purpose.

h. If there is a concentration of gas vapors suspected at the Project site, Contractor will be responsible for clearing the area and notifying the Commissioner and the gas utility company. All operations in the area will be suspended until the source of such vapors has been located and corrected.

i. Salamander heaters or similar forms of uncontrolled heaters will not be used except with the special written permission of the Commissioner and City fire marshal and then only when each salamander is maintained under constant supervision.

3. Environmental Compliance: As provided in Part Two, Article XIV, Section B ("Compliance with Environmental Laws"), in performing the Work under the Contract, Contractor must comply with all Environmental Laws, including excessive noise ordinances, and must otherwise conduct its operations in a manner protective of public health and safety. If Contractor causes the release or threatened release of any Hazardous Substance and/or Other Regulated Material into the Home, air, soil, water, or ground water, the removal of such Hazardous Substance and/or Other Regulated Material and the remediation of any contamination must be performed in the manner and time frame determined by the Commissioner, and by applicable Environmental Laws, at Contractor's sole expense.

4. Clean Up:

   a. During the construction, Contractor must keep the site of the Work and adjacent premises as free from material, debris, and rubbish as is practicable and when directed, must immediately remove same entirely when, in the opinion of the Commissioner, such material, debris, or rubbish constitutes a nuisance, a safety hazard, or is objectionable in any way to the public. Haul roads, streets, and public areas will be swept daily, unless otherwise provided elsewhere in the Contract Documents.

   b. Contractor must be solely responsible for and must assume all liability associated with off-site disposal of any Hazardous Substance and/or Other Regulated Material at a properly permitted disposal facility generated as a result of Contractor's construction activities. For the avoidance of doubt, this section is in addition to the other environmental provisions, including but not limited to those found in Part Two, Article XIV ("Protection of Persons and Property").

   c. Before completion of the Work, Contractor must remove from the site of the Work and adjacent premises all machinery, equipment, surplus materials, falsework, excavated and useless materials, rubbish, temporary buildings, barricades and signs and must restore the site to the same general conditions, that existed prior to the commencement of its operations. The cost of final clean-up will

not be paid for under any specific scheduled item but must be included in the prices bid for the various items or included in the Contract lump sum price as the case may be.

d. Contractor must clean off all cement streaks or drippings, paint smears or drippings, rust stains, oil, grease, dirt, and any other foreign materials deposited or accumulated on any portion of its Work, or existing Work, due to its operations.

5. Glass Breakage: All glass broken or damaged during construction must be replaced by Contractor or Subcontractor responsible for the breakage or damage. In the event responsibility cannot be determined, Contractor must make all such replacements without additional cost to the City.

6. If Contractor notices any Homeowner property that may interfere with the Work, Contractor will immediately notify CM before commencing the Work.

7. Sanitation.

   a. Contractor must enforce among its employees such regulations in regard to cleanliness and the disposal of garbage and wastes including any Hazardous Substance and/or Other Regulated Material as will be conducive to their health and tend to prevent the inception and spread of contagious and infectious disease among them and will provide an ample supply of suitable, pure drinking water and will take such means as the Commissioner may direct to effectively prevent the creation of a nuisance on any part of the site of the Work or adjacent streets or property.

   b. The manner of disposing of waste will be such that all waste is legally disposed of at properly permitted facilities without creating a public nuisance or health hazard and in accordance with the U.S. Environmental Protection Agency ("EPA"), Illinois EPA, and Illinois Department of Public Health Circular Number 815 or Educational Health Circular Number 4.001 and the MCC.

   c. Contractor must also comply with all rules and regulations of the Federal and State Governments and Chicago Department of Public Health.

8. Public Convenience.

   Contractor will be held responsible for all damage or injury, even though barricades, signs, lights, reflectors and flagmen are furnished as herein specified.

   a. All hauling and operations of equipment and all other necessary operations under this Contract must be so conducted as to cause a minimum of noise, vibration and inconvenience to the normal activities of the occupants of property and buildings in the vicinity of the Work. Whenever the Commissioner determines that any type of operation constitutes a nuisance, Contractor must, immediately, proceed to conduct its operations in an approved manner.

   b. Contractor must, at all times, conduct the Work in such a manner as to insure the least obstruction to vehicular and pedestrian traffic. Normal vehicular and pedestrian traffic on all adjacent streets, bridges, overpass structures and ramps will be maintained at all times during the performance of the Work under this Contract. Whenever such obstruction or interference is unavoidable, attention is called to the necessity of obtaining permits from the appropriate municipal or public agency before proceeding with the Work. Wherever necessary, Contractor, at its expense, must provide all temporary facilities that may be required to maintain vehicular and pedestrian traffic and access to all property.

   c. Whenever any part of a street is obstructed or closed to traffic, Contractor must provide, erect, and maintain at its own cost and expense all of the approved barricades, signs, lights and reflectors necessary to provide safe and convenient public travel. Contractor must also provide, at its expense, any flagmen that may be required for warning and directing traffic.

   d. The Commissioner may at any time require additional provisions if such are deemed necessary for public safety or convenience.

   e. Contractor will be held responsible for all damage or injury, even though barricades, signs, lights, reflectors and flagmen are furnished as herein specified.

B. Compliance with Environmental Laws

1. If Contractor fails to comply with any Environmental Laws, the City may terminate this Contract in accordance with the default provisions of this Contract.

C. Environmental Provisions

1. Use of Consultants, Contractors, Subcontractors. The Contractor has retained consultants, contractors, and/or subcontractors and/or will contract directly with third parties, to undertake the Work, services, or operations on behalf of the Contractor (collectively, the "Contractor Third Parties"). The Work, services, or operations are collectively referred to herein as "Permitted Activities".

   All of the Contractor Third Parties must be bound by agreement with the Contractor to comply at all times with the terms of this Agreement. Regardless of the use of any Contractor Third Parties, the Contractor will remain responsible for the Permitted Activities being undertaken in compliance with this Agreement by the Contractor Third Parties.

2. Hazardous Substances and Other Environmental Matters.

   a. Definitions. **For purpose of this Agreement, the following definitions will apply to environmental matters:**
      (1) "Clean construction or demolition debris" means uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, reclaimed or other asphalt pavement, or soil generated from construction or demolition activities, as set forth in 415 ILCS 5/3.160, as amended from time to time.
      (2) "Construction and Demolition Debris" or "C&D Debris" means materials resulting from the construction, remodeling, repair and demolition of utilities, structures, buildings, and roads, including but not limited to the following: bricks, concrete, and other masonry materials; soil; rock; wood, including painted, treated, and coated wood and wood products; wall coverings; plaster; drywall; plumbing fixtures; non-asbestos insulation; roofing shingles and other roof coverings; reclaimed asphalt pavement; glass; plastics; electrical wiring; and piping or metals incidental to any of those materials, as set forth in Section 11-4-120 of the Municipal Code of Chicago, as it may be amended from time to time.
      (3) "Construction Site" includes, but is not limited to, the construction footprint, any excavation area, stockpile area, and staging area (including parking, trailer area, and laydown area) associated with the Permitted Activities. The Commissioner reserves the right to amend the "Construction Site" from time to time.
      (4) "Contaminant" means any of those materials set forth in 415 ILCS 5/3.165, as amended from time to time, that are subject to regulation under any Environmental Law.
      (5) "Discharge" means an act or omission by which Hazardous Substances or Other Regulated Material, now or in the future, are leaked, spilled, poured, deposited, or otherwise disposed into land, wetlands, or Waters, or by which those substances are deposited where, unless controlled or removed, they may drain, seep, run, or otherwise enter said land, wetlands, or Waters.
      (6) "Dispose", "Disposal" as waste and identified subcategories thereof, including but not limited to, construction or demolition debris, garbage, household waste, industrial process waste, landfill waste, landscape waste, municipal waste, pollution control waste, potentially infectious medical waste, refuse, or special waste.
      (7) "Waters" has the meaning set forth in 415 ILCS 5/3.550, as amended from time to time.

   All other terms used herein will have the meaning set forth in the Contract Documents.

   b. Contractor Representations, Warranties and Covenants: Contractor represents, warrants, and covenants the following:

      (1) Contractor has obtained and will regularly maintain and timely update all applicable licenses,

permits, registrations and other authorizations and approvals required under Environmental Laws, and will provide any notices required under Environmental Laws, for conducting its operations at the Construction Site.

(2) Contractor will ensure that Contractor Third Parties obtain, maintain and update all applicable licenses, permits, registrations and other authorizations required by Environmental Laws pertaining to its and their use of and operations at the Property.

(3) Contractor will comply and will ensure that Contractor Third Parties comply, with all applicable Environmental Laws pertaining to its and their use of and operations at the Construction Site.

(4) The Contractor will not conduct the Permitted Activities at the Property in such a manner so as to cause, unlawfully allow or contribute to, and will ensure that Contractor Third Parties do not cause, unlawfully allow or contribute to:

(a) any Release, Discharge or Disposal of any Hazardous Substance or Other Regulated Material at the Construction Site, unless authorized by an Environmental Law;

(b) any violation of any applicable Environmental Law as a result, in whole or in part, of the use by or operations of the Contractor or Contractor Third Parties at the Construction Site;

(c) any Release, Discharge or Disposal in violation of any applicable Environmental Law which is a contributing cause of City exceeding any terms, conditions, or effluent limits of any NPDES permit or individual stormwater discharge permit issued to City, Multi-Sector General Permit, Municipal Separate Storm Sewer System ("MS4") permit, or any applicable Federal or State of Illinois effluent limitation guideline, or standard of the MWRD;

(d) any Release, Discharge or Disposal at, underlying, or adjacent to the Construction Site in violation of any applicable Environmental Laws; or

(e) any emissions to the air in violation of any applicable Environmental Law that results in an exceedance of an applicable emission standard at the Airport or of any terms or conditions of any air permit.

c. Information to be Provided to City. If Contractor receives any written notice, citation, order, warning, complaint, claim or demand regarding the Contractor's or Contractor Third Parties' use of or operations at the Construction Site during the Term of this Agreement or other property at the Airport used by Contractor or Contractor Third Parties pursuant to this Agreement that is not legally privileged, made confidential by applicable law, or protected as trade secrets:

(1) concerning any alleged Release, Discharge or Disposal of a Hazardous Substance or Other Regulated Material by Contractor or by its Contractor Third Parties; or

(2) alleging that Contractor or any Contractor Third Party is the subject of an Environmental Claim or alleging that Contractor or any Contractor Third Party is, or may be, in violation of any Environmental Laws; or

(3) asserting that Contractor or any Contractor Third Party is liable for the cost of investigation or remediation of a Release or Discharge;

(4) Contractor will promptly, but not later than five Business Days after Contractor's receipt, inform City in writing of same, including a copy of such notice received by Contractor.

d. Contractor's Environmental Response and Compliance Obligations. Without limiting the indemnity obligations of the section herein titled, "Environmental Indemnification and Reimbursement", if, during the Term of this Agreement, Contractor or any Contractor Third Parties causes, unlawfully allows or contributes to a Release, Discharge, or Disposal of a Hazardous Substance or Other Regulated Material (including, but not limited to those which contaminate or pollute any air, soil, Waters, storm sewer, detention basin, other stormwater infrastructure, or conveyance system) in violation of any applicable Environmental Law that is above any applicable reportable quantity, emission standard or effluent guideline set forth in an applicable Environmental Law including the O'Hare Spill Response Guide, at any portion of the Airport or adjacent Waters, in connection with their performance of the Permitted Activities at the Construction Site or at other property at the Airport used by Contractor or Contractor Third Parties pursuant to this Agreement, Contractor will

perform or cause to be performed, consistent with the provisions of the section herein titled, Investigation, Remediation, or Corrective Action Process, the following:

(1) notify the O'Hare Communications Center ("OCC") of such Release, Discharge, or Disposal as required by and in accordance with the O'Hare Spill Response Guide and applicable Environmental Laws;
(2) report such Release, Discharge, or Disposal to appropriate governmental agencies as required by and in accordance with applicable Environmental Laws;
(3) promptly Respond to the Release, Discharge, or Disposal of a Hazardous Substance or Other Regulated Material, as required by applicable Environmental Laws;
(4) promptly take all further actions required under Environmental Laws to abate any threat to human health or the environment;
(5) promptly undertake any further removals, remediation, or corrective actions as are required by Environmental Laws or a governmental agency exercising its authorized regulatory jurisdiction under Environmental Laws, to remedy any such Release, Discharge or Disposal of a Hazardous Substance or Other Regulated Material, and any resulting impacts; and
(6) promptly obtain documentation of the approval of the closure of such Release, Discharge, or Disposal from the governmental agency(ies) with regulatory jurisdiction as such may be issued under Environmental Laws and provide such documentation to City.

Any remedial or other activity undertaken by Contractor under this section will not be construed to impair Contractor's rights, if any, to seek contribution or indemnity from any person, consistent with the terms and limitations of this Agreement, including the section herein titled, Environmental Indemnification and Reimbursement.

e. Investigation, Remediation, or Corrective Action Process. Before commencing any subsurface soil, surface water, stormwater, or ground water investigations, removals, remediation, or corrective actions required to be performed at the Construction Site under this Agreement, including any such actions mandated in the preceding sections, and except for immediate removal actions required by Environmental Laws and otherwise undertaken pursuant to the section herein titled, Contractor's Environmental Response and Compliance Obligations, Contractor will promptly provide any proposed plans for such investigations, removals, remediation, or corrective actions to City for approval in accordance with applicable Environmental Laws, which approval will not be unreasonably withheld or conditioned. The work will be performed in a diligent manner consistent with the time(s) prescribed by Environmental Laws and relevant governmental authorities and at Contractor's expense, and City will have the right to review and inspect all such work at any time using consultants and representatives of City's choice, at City's expense. Specific cleanup levels for any environmental removals, remediation or corrective actions will comply with applicable Environmental Laws, with commercial and industrial remediation standards being applied to such actions consistent with the use of the Airport for such purposes. Contractor may also utilize institutional controls and other engineered barriers as part of any removals, remediation or corrective actions to the extent authorized by Environmental Laws and approved by the City in writing, which written approval will not be unreasonably withheld. In the event deed recordation by City is necessary for the utilization of commercial and industrial remediation standards or other controls as part of any removals, remediation or corrective actions or any other costs and expenses are incurred in connection with the use of such standards or controls, Contractor will reimburse City for all deed recordation fees and reasonable attorneys' fees incurred in connection with such recordation and otherwise be responsible for such other costs and expenses. Contractor will, at Contractor's own cost and expense, have all tests performed, and reports and studies prepared, and will provide such information to any governmental agency as may be required by applicable Environmental Laws, with a copy simultaneously provided to City. This obligation includes but is not limited to any requirements for a site characterization, site assessment, remediation objectives report, remedial action plan, and remedial action completion report that may be necessary to comply with applicable Environmental Laws.

f. City's Rights to Ensure Contractor Compliance with Environmental Response and Compliance

Obligations. If, as is reasonably determined by City, Contractor or Contractor Third Parties:

(1) do not take appropriate Response actions required by applicable Environmental Laws in response to a Release, Discharge or Disposal for which it is responsible under the section herein titled, Contractor's Environmental Response and Compliance Obligations, within the time(s) prescribed by such Environmental Law(s) and relevant governmental authorities; or

(2) do not perform or complete appropriate reporting, notifications, investigations, removals, remediation, corrective actions, or closure actions for which it is responsible under the section herein titled, Contractor's Environmental Response and Compliance Obligations, within the time(s) prescribed by applicable Environmental Laws and relevant governmental authorities, or within the time reasonably necessary to enable City to meet its obligations under Environmental Laws (subject to the condition that, in the case of both sections directly above, City must first provide reasonable advance written notice to Contractor of Contractor's failure to comply with such obligations and a reasonable opportunity for Contractor to cure such failure to comply by Contractor initiating or recommencing any such actions consistent with required schedules (including exercising its legal right to reasonably and in good faith challenge such alleged obligation to comply), but in any event not to exceed 45 Business Days, except in emergency circumstances in which such advance notice is not possible), then City or its authorized contractor, in addition to its rights and remedies described elsewhere in this Agreement and otherwise available at law, in equity, or otherwise, may, at its election, upon reasonable notice, enter the affected area, and take whatever action City reasonably deems necessary to meet Contractor's obligations under Environmental Laws, within the time required under such Environmental Laws, consistent with the requirements of the section titled herein, Contractor's Environmental Response and Compliance Obligations. In addition to notice and opportunity to cure as set forth in this section, City will provide Contractor with its plan to perform such work for Contractor's review and comment at least seven Business Days before the commencement of such work, which comments will be reasonably considered by City, except in emergency circumstances where such advance notice is not possible. Such action taken by City consistent with the requirements of this Agreement will be at Contractor's expense, plus administrative expenses of the greater of $500 or 25 percent of all costs incurred by City, including but not limited to reasonable attorneys' and consultants' fees and expenses, monetary fines and penalties, litigation costs or costs incurred in anticipation of litigation, expert witness fees, and expenses of investigation, removal, remediation, or other required plan, report, or Response action performed in accordance with applicable Environmental Laws.

g. Identification of Responsible Parties. The Contractor is presumed to be responsible for any Release, Discharge, or Disposal at or from the Construction Site during the Term of this Agreement requiring the completion of appropriate Response actions as provided in the section herein titled, Contractor's Environmental Response and Compliance Obligations. Contractor will be afforded a reasonable opportunity (not to exceed 45 Business Days) following any such Release, Discharge, or Disposal to commence Response actions or provide City with information on the identity of the party or parties causing, contributing to, or responsible for such Release, Discharge, or Disposal, which information will be considered in good faith by City and, as appropriate, will provide a basis for City's pursuit of any responsible parties consistent with the provisions of the section herein titled, City's Rights to Ensure Contractor Compliance with Environmental Response and Compliance Obligations. Nothing in this section is intended or will be construed so as to prevent City or Contractor from exercising, in their reasonable discretion, any rights granted or available elsewhere in Part Two, Article XIV, Section C ("Environmental Provisions"), or by law.

h. Pre-Existing Environmental Conditions. Contractor will be responsible for all costs incurred in connection with any Release or Discharge, or Disposal in violation of Environmental Law which occurred prior to the Effective Date that is encountered on any portion of the Construction Site, including investigation, removal, remediation, or other required plan, report, or Response action, which activities and related costs are necessary in order for the Permitted Activities to proceed in accordance with applicable Law.

i. Removal, Transportation and Disposal of Waste; Generator Responsibilities. Contractor will be, and will ensure that Contractor Third Parties are, responsible for the proper handling of any soils, Hazardous Substances, Other Regulated Material, debris, and other materials excavated or generated by Contractor or Contractor Third Parties, or resulting from the Permitted Activities at the Construction Site.

(1) No excavated or removed materials will be classified as Clean Construction or Demolition Debris ("CCDD") without written authorization of the City. All soil disposed of as CCDD, or uncontaminated soil must be sampled, and an LPC-663 Uncontaminated Soil Certification must be used. No soil or materials generated from the Construction Site can be disposed, as "uncontaminated soil" using an IEPA LPC-662 Source Site Certification.

(2) Pursuant to the Chicago Department of Aviation's memorandum dated October 25, 2019, entitled "C&D Debris Disposal and PFAS," Contractor must sample all airport soil and C&D Debris material which is excavated or generated by Contractor or Contractor Third Parties at the Construction Site during the Permitted Activities, and which will be disposed of off Airport property for PFAS. CDA may authorize and require PFAS sampling for material destined for reuse and/or stockpiling on Airport property. This sampling will be conducted by a trained environmental professional to ensure that cross contamination does not impact sample results and data quality. Any amount of PFAS detected during analysis will be reported to the City to assist with identification of the appropriate disposal location. All data collected will be provided to the City for its records showing both positive and negative results. As further described in the following sub-section, all soil and C&D Debris requires final approval by the City prior to shipment to the designated facility.

(3) Contractor is responsible for selecting and utilizing only properly permitted and legally authorized disposal facilities ("Disposal Facilities"). The City will have the right to review testing results and approve of the Disposal Facilities to be utilized by Contractor, but Contractor will not be entitled to rely upon the City's approval of any of the Disposal Facilities. Contractor will provide to the City upon written request all documentation associated with the disposal of the Waste (including, but not limited to generator profile, manifests, etc.) and on all Disposal Facilities possessed by Contractor or Contractor Third Parties and will provide the City copies possessed by Contractor and Contractor Third Parties of all change of status documents and any notice of violation(s) on any of the Disposal Facilities. Contractor or Contractor Third Party must complete the Contractor's Affidavit Regarding Removal of All Waste Materials and Identification of all Disposal Facilities (referred to as "Affidavit" in this section), which is found in Part One ("Instructions and Execution Documents"), for each proposed facility, and promptly provide the completed Affidavit to the Chicago Department of Aviation in accordance with the Notice provisions in the Contract Documents.

(4) Contractor acknowledges that unless otherwise authorized in writing by the City, Contractor must not continue to use a recycling/disposal/handling facility identified in the Affidavit that, (i) has been cited as being in violation of any environmental law or regulation or of any City ordinance; or (ii) does not have a necessary permit. If only one site was identified in the Affidavit, Contractor must arrange for a substitute recycling/disposal/handling facility that meets the requirements specified in the Affidavit and provide a revised Affidavit to the City. Contractor further acknowledges that any such substitution is at no additional cost to the City, regardless of the reason necessitating such substitution.

(5) If soil is sent to a location that is not approved by the City, Contractor must retrieve the materials and take it to an approved location at no additional cost to the City.

j. Generator Responsibilities. The CDA may authorize Contractor to act as an agent of the CDA for the express and limited purpose of signing Uniform Hazardous Waste Manifest (EPA Form 8700-22A, Rev. 3-05), Waste Profile Sheets, and Generator's Certification of Non-Special Waste ("Waste Manifest Documents") on behalf of the CDA, with respect to wastes arising from the Permitted Activities, on the basis of Contractor's personal knowledge of the information stated in such Waste Manifest Documents. This authorization applies only to wastes which are not Contractor's or its

Contractor Third Parties' Generator Responsibilities.

(1) Pursuant to the CDA's authorization, Contractor will acknowledge that Contractor, not the CDA nor the City of Chicago, is responsible for the proper removal, transportation, and disposal of all Hazardous Substances or Other Regulated Material generated by Contractor or its Contractor Third Parties or resulting from the Permitted Activities.

(2) When authorized by the CDA, Contractor will prepare Uniform Hazardous Waste Manifest using U.S. Environmental Protection Agency ("EPA") Form 8700-22A, Rev. 3-05 received from an EPA-approved registrant. When completing the Uniform Hazardous Waste Manifest, the Contractor will identify the CDA in box #5 of the manifest (Generator's Name) and provide the CDA's generator identification number in box #1 of the manifest (Generator ID Number). The Contractor also will identify said Contractor's company name and address, and the project name, in box #14 (Special Handling Instructions and Additional Information) of the Uniform Hazardous Waste Manifest.

(3) The Contractor will provide the CDA with and maintain on file documentation that the person signing the Uniform Hazardous Waste Manifest(s) on behalf of the CDA, and any person who prepared any portion of the Waste Manifest Document(s), has completed appropriate U.S. Department of Transportation training pursuant to 49 CFR Part 172, Subpart H, and that such training is current. Training documentation will include (1) the person(s) name, job title, and employer, (2) the name and address of the entity or person(s) that provided the training, (3) a description, copy or location of the training materials, (4) a certificate of training completion, and (5) the date of the training completion.

(4) Prior to executing or filing any manifest or waste profile sheet on behalf of the CDA, the Contractor will notify the CDA and provide to the CDA for its review and approval: the draft manifest, the waste profile sheet, and supporting documentation. If the Waste Manifest Documents are approved by the CDA, the Contractor will provide to the CDA copies of the initial Uniform Hazardous Waste Manifest(s), non-hazardous waste shipping papers, and associated waste profile sheets within five Business Days of each waste shipment.

k. Soil Imported to Construction Site. Any backfill material brought on to the Construction Site by the Contractor or Contractor Third Parties must be either (a) certified virgin stone or (b) tested for Target Compound List parameters (35 IAC 740, Appendix A) and meet the standards for Tier 1 Soil Remediation Objectives for Industrial/Commercial Properties included in 35 IAC 742, Appendix B, Table B:

(1) Quarry generated virgin source materials do not need to be tested, but certification from the source (quarry) must be provided to the City prior to importing the material to the Construction Site. Tested material will be verified by providing results from a laboratory accredited by the Illinois Environmental Protection Agency's Environmental Laboratory Accreditation Program. The date of the analysis will be within 90 Days of importing such material to the Construction Site unless otherwise approved by the City. Prior to importing, non-virgin source materials will be sampled at a frequency of one sample per 5,000 cubic yards per source unless otherwise approved by the City. Prior to importing any materials on the Construction Site, written approval provided by the City is required, which will not be unreasonably withheld.

(2) The Contractor must provide copies of all daily reports, transport manifests, and weight tickets or receipts (as applicable) to the City on a weekly basis documenting all materials imported to the Construction Site and detailing where they were specifically placed. The Contractor must prepare a log of all material imported to the Construction Site and will provide the logs, copies of daily reports, transport manifests, and weight tickets of receipts (as applicable) to the City.

(3) No biosolids or biosolids-based products from the MWRD or any other source may be imported for any purpose.

l. No Remediation by City. This Agreement does not commit the City to conduct any environmental remedial or closure activities on the Construction Site and the City does not admit and cannot be deemed to have admitted any liability as to any condition that may exist on the Construction Site or

other Airport property.

m. Environmental Indemnification and Reimbursement.

(1) Notwithstanding any other provision to the contrary, Contractor agrees to indemnify, defend, and hold harmless City, its past and present elected and appointed officials, officers, agents and employees ("Environmental Indemnitees"), from and against any and all Environmental Claims resulting from:

(a) the breach by Contractor of any representation or warranty made in Part Two, Article XIV, Section C ("Environmental Provisions");

(b) or the failure of Contractor to meet its obligations under Part Two, Article XIV, Section C ("Environmental Provisions"), whether caused or unlawfully allowed by Contractor or any Contractor Third Party; or

(c) documented loss by any Environmental Indemnitee(s) from any Environmental Claim, to the extent caused, unlawfully allowed or contributed to by the unauthorized Release, Discharge, or Disposal of a Hazardous Substance or Other Regulated Material by Contractor or by Contractor Third Parties or the failure of Contractor or any Contractor Third Party to comply with applicable Environmental Laws in connection with the operations of Contractor or Contractor Third Parties at the Construction Site or at other property at the Airport used by Contractor or Contractor Third Parties pursuant to this Agreement, during the Term of this Agreement.

(2) Notwithstanding the provisions of this section, in the event that the City and Contractor mutually agree or a court of competent jurisdiction determines by a final order that an Environmental Indemnitee's negligence or willful and wanton misconduct is at least 51 percent of the total fault which proximately caused the Environmental Claims, Contractor's obligation to indemnify the Environmental Indemnitee for amounts to be paid in connection with the Environmental Claims will be limited to the amount attributable to Contractor's and Contractor Third Parties' proportionate share of the total fault which proximately caused the Environmental Claims. The City and Contractor agree, however, that this section is not intended to obviate or lessen in any way the Contractor's duty to defend the Environmental Indemnitees; provided, however, that to the extent City and Contractor mutually agree or a court of competent jurisdiction rules that the Environmental Claims were the result of the sole negligent act or omission or the willful and wanton misconduct of an Environmental Indemnitee, the City will reimburse Contractor for its proportionate share of the costs of defense, including, but not limited to, attorneys' fees and court costs. For the avoidance of doubt, City will reimburse Contractor for all defense costs Contractor incurred with respect to defending the Environmental Indemnitees against Claims to the extent that City and Contractor mutually agree or a court of competent jurisdiction rules that such Claims were the result of the sole negligent act or omission of an Environmental Indemnitee.

(3) City will provide Contractor with prompt notice of any Environmental Claims to allow Contractor the opportunity to properly and effectively respond to, or otherwise defend, such Environmental Claims. Contractor will, at its own cost and expense, defend all Environmental Claims whether frivolous or not. In the event City undertakes any action, including but not limited to investigations, removals, remediation, or corrective actions with respect to any Environmental Claims in response to the failure of Contractor to defend such Environmental Claims as Contractor deems appropriate in its reasonable judgment, Contractor will reimburse City, upon written demand by City, for all reasonable and documented costs that City incurs in association with such action, including but not limited to consultants' fees, contractors' fees, reasonable attorneys' fees and expenses.

(4) Except to the extent set forth in this sub-section ii above, Contractor waives the right of contribution and subrogation against the Environmental Indemnitees in connection with Environmental Claims set forth in this sub-section i and iii, above.

(5) Regardless of the date of termination of this Agreement, the indemnifying party's representations, obligations and liabilities under Part Two, Article XIV, Section C ("Environmental Provisions") will continue as long as the indemnified party bears any liability or responsibility under Part Two, Article XIV, Section C ("Environmental

Provisions") or the Environmental Laws.

(6) Any claims for environmental matters will be subject to this section and will not be subject to the General Indemnity provision of Part Two, Section XVI ("Claims and Disputes").

D. Environmental Permits

1. Contractor must show evidence of, and keep current throughout the term of this Contract all waste hauling, Other Regulated Material and special waste hauling, disposal permits and insurance certificates issued by the applicable Federal, State, City, and other local governmental body and agency's Environmental Laws, including but not limited to; the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, the U.S. Department of Transportation Regulations, the Hazardous Materials Transportation Act, the Clean Air Act, and the Clean Water Act, the Illinois Environmental Protection Act, the MCC, currently in effect, and as amended during the course of this Contract period.

2. When requested by the CPO, Contractor must submit copies of all required hauling permits as required by applicable Environmental Laws. Copies of all permits and insurance certificates that require periodic renewal must be forwarded to the CPO throughout the duration of this Contract. Non-compliance with this requirement may be cause for rejection of bid and/or termination of this Contract.

E. Equipment and Environmental Control During Transport

1. Contractor must haul materials, construction debris, soil and other wastes in vehicles and/or containers complying with all applicable Environmental Laws. All equipment used to transfer materials; construction debris, soil and other wastes will be designed to prevent spillage during the hauling operation. Contractor's equipment will fully comply with all City, State, and Federal regulations, laws and ordinances pertaining to size, load weight, and safety. The City will not be liable for any violation committed on the part of Contractor in the handling, hauling, disposal or transportation (by any method) of materials, construction debris, soil and other waste. Contractor must fully comply with all applicable Environmental Laws, including, but not limited to; the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, the U.S. Department of Transportation Regulations, the Hazardous Materials Transportation Act, the Clean Air Act, and the Clean Water Act, the Illinois Environmental Protection Act, the MCC, currently in effect, and as amended during the course of this Contract period.

F. Environmental Records and Reports

1. Contractor must prepare and maintain proper, accurate and complete records of accounts of all transactions related to the operations of this Contract, including, but not limited to; the following:

a. Vehicle maintenance records.
b. Safety and accident reports.
c. IEPA manifests.
d. Disposal records, including disposal site used, date, truck number, and disposal weight. Permit documentation and all other documentation and transactions pertaining to all environmental rules and regulations.

G. Storage of Materials

1. If it is necessary to store materials, they must be protected in such a manner as to ensure the preservation of their quality and fitness for the Work. All stored materials will be inspected at the time of use in the Work even though they may have been inspected and approved before being placed in storage. Contractor must store materials in the areas provided as working areas by the Contract Documents. If no areas are provided, or if the areas provided are insufficient, the space required will be provided by Contractor at its expense. Upon completion of the Work, storage sites and working areas must be cleaned and restored to their original condition by Contractor at its expense.

2. All materials and equipment must be received at the Work undamaged. The Commissioner will have the right to reject any method of packing and shipping which, in the Commissioner's opinion, will not

adequately protect the materials and equipment against damage while they are in transit or storage, or which will damage existing structures.

H. Equipment and Falsework

1. Equipment:

   All equipment owned or controlled by Contractor, which is proposed to be used on the Work, must conform to the specifications for specific items of equipment. If not specified, equipment to be used on the Work is subject to the approval of the Commissioner under the provisions of the Part Two, Article XIV, paragraph H.3.a ("Construction Procedure, Methods, and Equipment").

2. Welding:

   a. No welding, flame cutting, or other operations involving use of flame, arcs, or sparking devices, will be allowed without adequate protection.

   b. All combustible or flammable material must be removed from immediate working area. If removal is impossible, all flammable or combustible materials will be protected with a fire blanket or suitable non-combustible shield to prevent sparks, flames, or hot metal from reaching flammable or combustible materials.

   c. Contractor must provide necessary personnel and equipment to control incipient fires resulting from welding, flame cutting, or other sources involving use of flame, arcs, or sparking devices. All welders must be certified within the last 18 months.

   d. A "Hot Work Permit", as listed in the Safety Manual, must be displayed for all welding work.

3. Construction Procedures

   a. Construction Procedure, Methods, and Equipment: Contractor will determine the methods to be employed, the procedure to be followed, the equipment, plant, falsework, shoring, bracing, and other temporary structures and equipment to be used on the Work, subject to the requirements of the Contract Documents and to the approval of the Commissioner. Only adequate and safe procedure, methods, structures, and equipment may be used.

   b. Contractor's Layout of the Work: Contractor is responsible for the correct lay-out and accurate fitting of all parts of its Work.

4. Temporary Stairs, Ladders and Equipment:

   a. Contractor must furnish and maintain all equipment such as temporary ladders, ramps, runways, hoists, scaffold, and similar items required for proper execution of Work. All such apparatus, equipment and construction will meet all requirements of Federal, State and local laws concerning the safety and protection of employees. Also, any and all rules, regulations and directions of the CDA, applicable thereto, and all other authorities having jurisdiction over same will be followed.

   b. No hoist, scaffolding or other equipment may be erected at such location as will interfere with or affect general construction or progress of other trades.

   c. Hoists, scaffolding or other equipment must be located at sufficient distance from exterior walls to prevent staining or marring of any permanent Work.

   d. All suspended scaffolding and staging must be lowered to ground level at the end of each Workday.

5. Temporary Barricades and Enclosures

   a. Contractor must provide temporary barricades or enclosures as required during the progress of the Work to protect personnel and separate work areas from the balance of building and other areas.

   b. Temporary work screens or enclosures must be provided, erected and maintained by Contractor, to separate pedestrian or vehicular traffic and building areas free of noise, debris, dirt, etc., resulting from this Work, including provisions of all required protection for passerby and building occupants against all danger of injury, as approved by the Commissioner.

c. All protective measures must be erected and maintained in accordance with the requirements of City, State, and Federal authorities.

6. Field Check of Dimensions, Cutting, and Patching

a. Whenever the Work is required to connect to existing work, Contractor must take complete field measurements affecting all construction in this Contract and will be solely responsible for the proper fit between the Work and existing structures or appurtenances.

b. Contractor must do all cutting, patching, or fitting of Work that may be required to make this Contract and the existing Work come together and fit properly.

7. Temporary Heating During Construction

Contractor must provide temporary closures or enclosures for all exterior doors, windows, roof or other types of exterior openings as required for protection from the elements during construction. It will be Contractor's responsibility to keep water in pipes from freezing and to maintain temporary heat in areas where finish Work is being performed at not less than 50 degrees Fahrenheit. Finish work includes, but is not limited to; masonry, plastering, painting, millwork, and other temperature sensitive work. The heating period is from approximately October 1st to May 30th, unless conditions warrant otherwise.

Contractor must furnish, install, operate and maintain all required temporary heating equipment, and must provide and pay all fuel costs. Oil fired or gas heating units must be self-contained units which must be furnished in sufficient number and adequate capacity to conform with the requirements for temporary heat stated above. Each oil-fired or gas-fired unit must be properly vented as required to dissipate noxious fumes and prevent discoloration of building construction.

I. Cooperation Among Contractors

1. Unless otherwise provided in Part Two ("General Conditions"), if separate Contracts are let for Work within or adjacent to the Project site, each Contractor must conduct its Work so as not to interfere with or hinder the progress of completion of the Work being performed by other Contractors. Contractor will be required to attend coordination meetings with adjacent Contractors to coordinate work activities.

2. Each Contractor involved will assume all liability, financial or otherwise, in connection with its Contract, and must protect and hold harmless the City, the CM, and the PM from any and all damages or claims that may arise because of inconvenience, delay, or loss experienced by Contractor because of the presence and operations of other Contractors working within the limits of the same improvement. Each Contractor must assume all responsibility for all Work not completed or accepted because of the presence and operations of other Contractors.

3. Contractor must arrange its Work and placement and disposal of the materials being used so as not to interfere with the operations of other Contractors within or adjacent to the limits if the Project site. Contractor must join its Work with that of others in an acceptable manner and will perform it in proper sequence to that of others.

J. Injuries To Contractor's Employees

Contractor agrees to assume entire liability for all personal injury claims suffered by its own employees, including without limitation claims asserted by persons allegedly injured on the Project, waives any limitation of liability defense based upon Worker's Compensation Act, court interpretations of said Act or otherwise, and agrees to indemnify and defend the City, the CM, any design professional, any Homeowner, and their agents, employees and consultants (the "Indemnified Parties") from and against all such loss, expense, damage or injury, including reasonable attorneys' fees, that the Indemnified Parties may sustain as a result of such claims, except to the extent that Illinois law prohibits indemnity for the Indemnified Parties own negligence. Contractor further agrees to require all of its Subcontractors to agree to this Contract provision.

END OF XIV

XV. INSURANCE, INDEMNITY, AND BONDS

A. Indemnity

1. Contractor agrees to protect, defend, indemnify, and hold the City, the CM, and their respective officers, officials, representatives, and employees (hereafter "the Indemnified Parties"), free and harmless from and against any and all claims, damages, demands, injury or death, in consequence of the granting of this Contract or arising out of or being in any way connected with Contractor's performance under this Contract except as otherwise provided in 740 ILCS 35. The indemnification provided herein will be effective to the maximum extent permitted by applicable law. This indemnity extends to all legal costs including without limitation: attorney fees, costs, liens, judgments, settlements, penalties, professional fees, or other expenses incurred by the City, including, but not limited to; fines and penalties imposed by public bodies and the reasonable settlement of such claims. This indemnification is not limited by any amount of insurance required under this Contract. Further, the indemnity contained in this section will survive the expiration or termination of this Contract.

   To the extent permissible by law, Contractor waives any limits to the amount of its obligations to indemnify, defend or contribute to any sums due under any losses, including any claim by an employee of Contractor that may be subject to the Workers Compensation Act, 820 ILCS 305/1, *et seq*., or any other law or judicial decision (such as, *Kotecki v. Cyclops Welding Corporation*, 146 Ill. 2d 155 (1991)). The City, however, does not waive any limitations it may have on its liability under the Illinois Pension Code.

2. Contractor will be solely responsible for the defense of any and all claims, demands, or suits against the Indemnified Parties, including without limitation, claims by an employee, Subcontractors, agents, or servants of Contractor even though the claimant may allege that the Indemnified Parties were in charge of the Work or allege negligence on the part of the Indemnified Parties. The City will have the right, at its sole option, to participate in the defense of any such suit, without relieving Contractor of its obligation hereunder.

3. "Injury" or "damage" as these words are used in this section will be construed to include, but will not be limited to, injury or damage consequent upon the failure of or use or misuse by Contractor, its Subcontractors, agents, servants, or employees, of any scaffolding, hoist cranes, stays, ladders, supports, rigging, blocking or nay and all other kinds of items of equipment, whether or not the same be owned, furnished, or loaned by the Indemnified Parties.

4. Contractor will promptly provide, or cause to be provided, to the Commissioner and City Corporation Counsel copies of such notices as Contractor may receive of any claims, actions, or suits as may be given or filed in connection with Contractor's performance or the performance of any Subcontractor and for which the Indemnified Parties are entitled to indemnification hereunder and to give the Indemnified Parties authority, information, and assistance for the defense of any claim or action.

B. Performance and Labor and Material Payment Bonds

1. Contractor will, within seven Calendar Days of receipt of written notice from the City, furnish a Performance and Payment Bond in the amount of $3,600,000 or 10 percent of the Contract value whichever is greater. The Bond must be on the Contractor's Performance and Payment Bond form, issued by a surety that is satisfactory to the CPO and the City Comptroller and complies with the provisions of 30 ILCS 550/1, *et seq*., as amended, and of Section 2-92-030 of the MCC. The surety or sureties issuing the Bond must be acceptable to the CPO and the City Comptroller. The surety for the bond must appear on the listing of sureties approved by the U.S. Department of Treasury in its Circular 570 and will be a Best's Key Rating Guide of "B+", Class XI, or greater. The surety must have bonding capacity per Circular 570 equal to or in excess of the Contract Price without need for reinsurance. The bond will remain in effect for the warranty period required by the Contract. Contractor may not change its surety without prior written consent of the CPO.

2. If at any time the surety or sureties, or any one of them, upon such bond become insolvent, or will in the opinion of the CPO be unsatisfactory or unable to respond in damages in case of liability on such bond, the CPO will notify Contractor and direct that a satisfactory surety or sureties be provided forthwith.

3. No payment will be made on account of Work done by Contractor until satisfactory sureties have been provided as directed. In case of neglect, failure, or refusal of Contractor to provide satisfactory sureties when so directed within 10 Days after such notification, the CPO may declare this Contract forfeited, but such forfeiture will not release Contractor or its surety or sureties from any liability which may have accrued prior to or after the date of forfeiture.

C. Insurance

Contractor must procure and maintain at all times, at Contractor's own expense, until Final Acceptance of the Work, during the warranty period and during the time period following final acceptance, if Contractor is required to return and perform additional work for any reason, the types of insurance specified in Part One, Section 1 ("Requirements for Bidding and Instructions for Bidders"), and Section 2 ("Contract Insurance Requirements"), with insurance companies authorized to do business in the State of Illinois covering all operations under this Contract, whether performed by Contractor or by the Subcontractors. If Contractor returns to do any Work on the Project after final acceptance, including Warranty or any other repair work, Contractor and any Subcontractors must procure the insurance coverage required by Part One ("Instructions and Execution Documents"), and provide certificates of insurance for the coverage to the Commissioner, no later than three weeks prior to beginning the work. Upon written request by the Commissioner, Contractor must allow the Commissioner to review and copy any original insurance policies that Contractor is obligated to maintain under this Contract.

1. Contractor hereby waives any and every claim for recovery from the City for any and all injuries and losses arising under this Contract or in any way related to the Work, including, but not limited to; any claim for loss of or damage to the Work or to the contents thereof, which injury, loss, or damage is covered by valid and collectible insurance policies, to the extent that such injury, loss, or damage is recoverable under said insurance policies. As this waiver will preclude the assignment of any claim by subrogation (or otherwise) to an insurance company (or any other person), Contractor agrees to give each insurance company which has issued, or in the future may issue, its policies of insurance, written notice of the terms of this waiver, and to have said insurance policies properly endorsed, if necessary, to prevent the invalidation of insurance coverage by reason of said waiver. Contractor must require each Subcontractor to include similar waivers of subrogation in favor of the City.

2. The City's Department of Aviation Legal Division reserves the right to change, modify, or delete these requirements, including without limitation the right to request that Contractor provide additional types of insurance.

D. Proof of Insurance and Certificates of Insurance

1. No employee of the General Contractor or any Subcontractor may enter the Residence of any Homeowner until it has provided original Certificates of Insurance to the City of Chicago, DPS, City Hall Room 806, 121 N. LaSalle Street, Chicago, Illinois, 60602, as required by Part One ("Instructions and Execution Documents"), including the Commercial General Liability Policy requirements that: 1) the City of Chicago and the CM, and its Subcontractors and assigns, are to be named as additional insured's on a primary, non-contributory basis for any liability arising directly or indirectly from the work, and 2) all Homeowners are to be named as additional insured's on a blanket basis.

2. At the time the original Certificates of Insurance are provided to the CPO, copies must be provided to the CM.

END OF XV

XVI. CLAIMS AND DISPUTES.

A. Claims

1. This provision of the Contract applies to claims for time and/or money based on changes under Part Two, Article X ("Changes in the Work") and all other claims made under the Contract. (collectively, "Claims").

2. Any claim made by Contractor regarding the Project must be made in accordance with the requirements stated below:

   a. Contractor expressly consents to both the time requirements and notice content requirements for making a Claim or Dispute under this Part Two, Article XVI ("Claims and Disputes"). Contractor acknowledges that the notice requirements set forth in this Part Two, Article XVI ("Claims and Disputes") will be strictly enforced and agrees that any failure on the part of Contractor to provide notice strictly in accordance with the requirements of this Part Two, Article XVI ("Claims and Disputes") will constitute a waiver of Contractor's right to make a Claim or submit a Dispute to the CPO. Contractor further understands and agrees that, notwithstanding any case law decision to the contrary, the notice requirements of this Part Two, Article XVI ("Claims and Disputes") will not be diminished by any claim on the part of Contractor that the Commissioner or CPO or any person acting on behalf of either of them had actual or constructive knowledge of any Claim or Dispute or any facts or circumstances supporting any such Claim or Dispute.

   b. Contractor must provide Notice of Claim in writing to the CM of any claim of site conditions differing materially for those indicate in the Contract Documents as required by Part Two, Article III, Section D ("Permits and Licenses").

   c. Contractor must provide Notice of Claim, in writing, to the CM of any Change Claim as required by Part Two, Article X, Section G ("Failure to Comply with Order").

   d. Contractor must Provide Notice of Claim, in writing, to the CM of any claim related to time as required by Part Two, Article VIII, paragraph B.2 ("Notice of Delay").

   e. The Contractor must provide notice, in writing, to the CM of any other claim that may be made, within five Days after starting the work that is affected by the claim. The notice will be referenced as a Notice of Claim Related Work and must state the nature of the claim, the work that is affected by the claim, and the anticipated duration of the work.

   f. If Contractor and CM are unable to agree on the price and/or Time Extension in connection with a claim, Contractor must, within 15 Days of completing the claim related Work, provide written notice to the CM of the amount of money and/or Time Extension sought by Contractor and the contractual and factual basis for each. Contractor must designate the document "Notice of Claim".

   g. The CM will, within 30 Days from the date of receipt of the Notice of Claim, respond by requesting a meeting with Contractor; making a written request for additional information from Contractor including, but not limited to; a general statement of the basis for the claim, the facts underlying the claim, the notice to the CM of the event that gave rise to the claim, reference to the applicable Contract provisions, and all documentation that describes, relates to and supports the claim; taking other action to attempt to resolve the Notice of Claim; and/or advising Contractor in writing that it should file a Claim with the Commissioner. Any steps taken by the CM to resolve the Notice of Claim will not exceed 60 Days from the receipt of the Notice of Claim unless Contractor agrees to an additional amount of time in writing. Contractor and CM may agree on a proposed adjustment of Contract Price and/or Contract time in resolution of a Notice of Claim, which proposal is subject to approval by the City in a Contract Modification under the requirements of Part Two, Article X, Section E ("Contract Modification").

   h. If a Notice of Claim has not been resolved by Contractor and CM within the time frame stated in Part Two, Article X, Section G ("Failure to Comply with Order") for a Notice of Claim for a Change Claim or Part Two, Article XVII, Section B ("Events of Default") for all other Notices of Claim,

Contractor must file a Claim with the Commissioner within 10 Days of being advised to do so by the CM.

i. The Claim will include: a general statement of the basis for the claim, the facts underlying the claim, a copy of the Notice of Claim to the CM of the event that gave rise to the claim, reference to the applicable Contract provisions, and all documentation that describes, relates to and supports the Claim. The Claim must be certified by Contractor. A "Certified Claim" must be made under oath by a person duly authorized by the claimant, and will contain a statement that:

(1) The Claim is in good faith;

(2) The Claim's supporting date are accurate and complete to the best of the person's knowledge and belief;

(3) The amount of the Claim accurately reflects the amount that the claimant believes is due from the City; and

(4) The certifying person is duly authorized by the claimant to certify the Claim.

j. The Claim will be sent to the Commissioner and copied to the CM and the PM.

k. The Commissioner has 15 Days from receipt of the Claim to render a written "final decision of the Commissioner" stating the Commissioner's factual and contractual basis for the decision. However, the Commissioner may take an additional period, not to exceed 10 Days, to render the "final decision". If the Commissioner does not render a "Final Decision of the Commissioner" within the prescribed time frame, then the claim will be deemed denied by the Commissioner.

l. After receiving the Commissioner's final decision, Contractor must accept the final decision of the Commissioner or file a Dispute with the CPO within 30 Days in accordance with Part Two, Article XVI, Section B ("Disputes").

m. If Contractor accepts the final decision of the Commissioner which includes an adjustment in Contract Price and/or Contract time, it is subject to execution of a Contract Modification in accordance with Part Two, Article X, Section E ("Contract Modification").

If Contractor does not accept a final decision of the Commissioner and fails to file a Dispute with the CPO within 30 Days, this will constitute a waiver of the Claim and Dispute. In the event of such waiver, the Commissioner may file a Dispute, pursuant to Part Two, Article XVI, Section B ("Disputes"), with the CPO seeking a final decision as to the Claim.

B. Disputes

1. Dispute Resolution Request: In the event of any dispute between Contractor and the Commissioner which Contractor and the Commissioner have attempted, but been unable, to resolve including without limitation changes, Time Extensions, claims, allowable costs or any other issues of fact or Contract interpretation based upon, relating to, or arising under the Contract, Contractor must and the City may submit a request for resolution to the CPO by Contractor for final determination; however, the default or termination of Contractor are not matters that may be disputed under this provision of the Contract. Contractor's failure to submit the dispute within 30 Days of final decision of the Commissioner is a waiver of the dispute. The CPO may consider issues of Contract interpretation in connection with decisions to be made in resolving disputes.

2. Request Requirements: Requests for resolution of disputes must be made by Contractor or the City in writing, specifically referencing this section, and include: 1) the issue(s) presented for resolution, 2) a statement of the respective positions of Contractor and Commissioner, 3) the facts underlying the dispute, 4) reference to the applicable provision of the Contract by page and section, 5) the identity of any other parties believed to be necessary to the resolution of the dispute, and 6) all documentation which describes and relates to the dispute. Copies of the request for resolution of the dispute must promptly be provided to the Commissioner on the same day it is given to the CPO. In addition, any correspondence that relates to the Dispute, which Contractor provides to the CPO, must be copied to the Commissioner and the CM. The Commissioner will have 30 Days to respond in writing to Contractor's submission by

supplementing Contractor's submission or to provide its own submission to the CPO and Contractor. However, the Commissioner may request, and the CPO may allow an additional period of time to respond. Failure by the Commissioner to respond will not be deemed to be an admission of any allegation(s) made in the request for dispute resolution, but may be deemed to constitute a waiver of the opportunity to respond to such allegation(s), if any, at this stage of the dispute. The CPO's decision may thereafter be reached in accordance with such other information or assistance as may be deemed reasonable, necessary or desirable by the CPO.

3. CPO's Decision: The CPO's final decision will be rendered in writing no more than 35 Days after receipt of the response of the Commissioner was filed or was due unless the CPO notifies Contractor and Commissioner before the end of the 35-Day period that an additional period, not to exceed 30 Days, is needed for the CPO to respond. The CPO's decision will be conclusive, final, and binding on all parties unless a judicial determination is sought in accordance with the provisions set forth below.

4. Implementation of Decision: The CPO's final decision will be implemented through a Contract Modification which will be made a part of the Contract with or without the signature of Contractor if Contractor refuses to sign the Contract Modification.

5. Contractor's Remedy: If either Contractor or Commissioner does not agree with the decision of the CPO, the sole and exclusive remedy is judicial review by a common law writ of certiorari. Unless such review is sought within 35 Days of receipt of the CPO's decision, all right to seek judicial review is waived.

6. Contractor's Performance of Work: Contractor may not withhold performance of and must prosecute any Work required by the Commissioner during the dispute resolution period, including judicial resolution. Contractor must prosecute all of its Work including any disputed Work with the same diligence and effort as if no dispute existed. The CPO's written determination must be complied with pending final resolution, including judicial resolution of the dispute. Neither the CPO's determination, nor the actions of Contractor or the Commissioner in connection therewith, nor the continued performance by either party, will constitute an admission as to any factual and/or legal position in connection with the dispute or a waiver of any rights under the Contract.

7. Administrative Appeal of Dispute: Contractor must follow the procedures set out in Part Two, Article XVI ("Claims and Disputes"), and receive the CPO's final decision as a condition precedent to filing a judicial review of the decision.

END OF XVI

XVII. EVENTS OF DEFAULT AND TERMINATION

A. CPO's Right

The Commissioner may notify and recommend to the CPO that in the Commissioner's opinion Contractor has committed an event of default. The CPO may, at his or her sole discretion, exercise the right to send Contractor notice under paragraph C.1 or C.2 of Part Two, Article XVII ("Events of Default and Termination").

B. Events of Default

Contractor's failure to perform any of its obligations under the Contract, including, but not limited to; the following, are events of default:

1. Failure to provide the Master Schedule and Home Schedules as required by Part Two, Article VIII ("Schedule").
2. Failure to begin the Work at the time specified.
3. Failure to perform the Work with sufficient workers and equipment or with sufficient materials to ensure the completion of the Work or any part of the Work within the time specified by the Contract.
4. Failure to perform in accordance with the Contract Documents.
5. Failure to remove materials, repair, or promptly replace Work that was rejected as defective or unsuitable.
6. Unauthorized discontinuance of the Work.
7. Insolvency, bankruptcy, or assignment for the benefit of creditors that negatively impacts Contractor's ability to pay the Subcontractors or perform the Work.
8. Failure to pay the Subcontractors or material suppliers.
9. Interruption or delay of Work for reasons within Contractor's control, including, but not limited to; labor unrest or disputes.
10. Failure to carry on the Work in a manner acceptable to the Commissioner or in a manner that complies with any laws applicable to performance of the Work.
11. Failure to comply with Federal, State, local, or Airport safety and security requirements, including, but not limited to; an approved Project safety program.
12. Failure to update its Economic Disclosure Statement to reflect any changes in information, including but not limited to; changes in ownership, and to provide it to the City.
13. Use of a Subcontractor without the CPO's approval.
14. Failure to comply with any term of this Contract in any material respect.
15. A default by Contractor or Affiliate under any other City Contract.
16. Contractor's failure to be licensed as a "General Contractor" as required by Chapter 4-36 of the MCC, at all times throughout the term of the Contract or Contractor's loss of its general license.
17. Disqualification as a DBE of Contractor or any joint venture partner, Subcontractor or supplier if its status as a DBE was a factor in the Award of the Contract and such status was misrepresented by Contractor.
18. Any violation of the MCC, whether or not in connection with the Contract.
19. Failure to comply with any other terms of this Contract that states an event of default.

C. Notices

If there is an event of default, the CPO, in his or her sole discretion, may send Contractor notice under either subparagraph C.1 or C.2.

1. Contractor's Notification of Termination for Default: If there is an event of default as defined in paragraph B, the CPO, at his or her sole discretion, may notify Contractor in writing that the Contract is terminated. The CPO's decision and declaration of default will be final and effective. Written notification of the default and termination of the Contract will be provided to Contractor and surety by the CPO.

2. Notice and Cure: In the event the CPO gives Contractor notice in writing of actions constituting default, under Part Two, Article XVII, Section C ("Notices"), Contractor must cure the default within 10 Days of receipt of the notice from the CPO. If the CPO receives written notification from the Commissioner that Contractor has not cured the default set out in the notice within the 10 day cure period, the CPO may declare that the Contract is terminated for default. The CPO's declaration of termination will be final and effective. Written notification of notice to cure and termination for default will be provided to Contractor and surety by the CPO. The failure of the CPO to default Contractor within 10 Days does not waive the City's right to terminate pursuant to the cure notice.

3. Upon receipt of such notice Contractor must immediately discontinue the Work (unless the notice directs otherwise).

D. Remedies

Upon an event of default as defined in Part Two, Article XVII, Section B ("Events of Default"), the City may invoke any or all of the following remedies:

1. The right to have all materials as may have been accumulated in performing this Contract, whether completed or in progress, delivered to the City.

2. The right to take over and complete the Work, or any part thereof, either directly or through others, and to hold Contractor liable for any amounts paid for such Work above those amounts that the City would have paid Contractor for that same Work.

3. The City may use Contractor's Subcontractors, material and equipment to complete the Work. Upon the City's notification to Contractor that it intends to invoke this remedy, any and all rights that Contractor may have in or under its subcontracts must be assigned to the City based upon the collateral assignment required by Part Two, Article V, Section C ("Subcontracts"). The sole obligation accepted by the City under such Subcontracts will be to pay for Work satisfactorily performed after the date of the assignment. In the event that a conditional assignment has not been executed, Contractor must execute or cause to be executed any assignment, Agreement, or other document which may be necessary, in the sole opinion of City's legal counsel, to evidence or effect compliance with this provision. Contractor must promptly deliver such documents upon the City's request. In the case of any Subcontract so assigned and accepted by the City, Contractor will remain liable to the Subcontractors for any payment already invoiced to and paid by the City, and for any claim, suit, or cause of action based on or the result of any error, omission, negligence, fraud, willful or intentionally tortuous conduct, or any other act or omission, or breach of Contract by Contractor, its officers, employees, agents, and other Subcontractors, arising prior to the date of assignment to the City, when such claim, suit, or cause of action has not been discharged, disposed of, or otherwise resolved as of that date. Contractor must notify its Subcontractors of these requirements.

4. The right to terminate the Contract as to any or all of the Work yet to be performed. In the event of termination, all costs and changes incurred by the City, together with the cost of completing the Work, will be deducted from any moneys due or which may become due to Contractor. In case the expense so incurred by the City will be less than the sum which would have been payable under the Contract, if it had been completed by Contractor and had not been forfeited by Contractor, then Contractor will be entitled to receive the difference, subject to any claims or liens thereon, which may have been filed or any prior assignment filed with the City. In case the expense incurred by the City will exceed the sum which would have been payable under the Contract, Contractor and the surety will be liable and will pay to the City the amount of such excess.

5. The right of specific performance, an injunction, or any other appropriate equitable remedy, as may be applicable.

6. The right of money damages, including, but not limited to; all expert witness or other consultant fees, court costs, and reasonable attorney's fees which the City may incur in connection with any claim, suit, or action based upon, related to, or arising from, directly or indirectly, an Event of Default hereunder.

7. The right to withhold all or any part of Contractor's compensation and the right of set off against payments due to become due to Contractor or retention.

8. The right to declare Contractor or its Affiliate in default under any other City Contract and to deem Contractor non-responsible in future Contracts to be Awarded by the City.

E. Non-Exclusivity

The remedies under the terms of this Contract are not intended to be exclusive of any other remedies provided, but each and every such remedy will be cumulative and will be in addition to any other remedies, existing now or hereafter, at law, or in equity. No delay or omission to exercise any right or power accruing upon any Event of Default will impair any such right or power, nor will it be construed as a waiver of any Event of Default or acquiescence therein, and every such right and power may be exercised from time to time and as often as may be deemed expedient.

F. Court Determination

In the event the Contract is terminated by the City pursuant to paragraph C.1 or C.2, and it is subsequently determined by a Court of competent jurisdiction that such termination was not justified, such termination will thereupon be deemed an Early Termination for Convenience under paragraph H, and the provisions of paragraph H will apply.

G. Discretion of CPO

1. Whether to declare Contractor in default is within the sole discretion of the CPO and neither that decision nor the factual basis for it is subject to review or challenge under Part Two, Article XVI, ("Claims and Disputes").

2. In the event of termination of the Contract by the CPO under Part Two, Article XVII ("Events of Default and Termination"), the Commissioner may use the material and equipment, whether owned or leased, which is within the scope of the Work or necessary for the completion thereof which has been paid for by the City (whether located on or off the site), to complete the Work and Contractor will receive no further payment until the Work is completed. Upon completion, if the unpaid balance of the price exceeds the City's cost of completion, such excess will be paid to Contractor. However, if the cost of completion exceeds the unpaid balance of the price, Contractor will pay the difference to the City immediately upon demand.

H. Early Termination

1. The City, through the CPO, reserves the absolute right to terminate the Work of Contractor, or any part thereof, in whole or in part for the City's convenience. Contractor will be given written notice stating the effective date of such termination. Immediately upon receipt of such notice, Contractor must then provide similar written notice to the affected Subcontractor(s), whereupon such Contractor and Subcontractor(s) must, except for services necessary for the orderly termination of the Work: (1) stop all Work and place no further order or Subcontracts for materials, services, equipment or supplies, (2) assign to the City, in the manner and to the extent directed, all of the rights of Contractor(s) under Work orders, purchase orders and Subcontracts or sub-subcontracts relating to the portion of the Work that has been completed, (3) terminate Work orders, purchase orders, and Subcontracts outstanding to the extent that they relate to the Work and are not assigned to the City, (4) take any action necessary to protect property in Contractor's possession in which the City has or may acquire an interest, and (5) take any other action toward termination of the Work which the City may direct.

2. Contractor's compensation for all Work performed prior to the effective date of termination will be on the same basis as provided in this Contract, but Contractor will not be entitled to any lost profits on Work that was terminated. The City will also pay Contractor for any materials or equipment that were ordered in accordance with the approved Master Schedule prior to Contractor's receipt of the notice of

termination and that could not be cancelled, provided that the materials and equipment are delivered to the City and are found acceptable.

3. The City may terminate this Contract, in whole or in part, at any time by a notice in writing from the City to Contractor. The effective date of termination will be the date the notice is received by Contractor or the date stated in the notice, whichever is later.

4. After the notice is received, Contractor must restrict its activities, and those of its Subcontractors, to activities pursuant to direction from the City. No costs incurred after the effective date of the termination are allowed unless the termination is partial.

5. Contractor is not entitled to any anticipated profits on services, Work, or goods that have not been provided. The payment so made to Contractor is in full settlement for all services, Work or goods satisfactorily provided under this Contract. If Contractor disputes the amount of compensation determined by the City to be due to Contractor, then Contractor must initiate dispute settlement procedures in accordance with the Disputes provision.

6. If the City's election to terminate this Contract for default pursuant to the default provisions of the Contract is determined in a court of competent jurisdiction to have been wrongful, then in that case the termination is to be deemed to be an early termination pursuant to this Early Termination provision.

END OF XVII

XVIII. COMPLIANCE WITH ALL LAWS

A. Contractor Must Comply With All Laws

Contractor will at all times observe and comply, and will cause its Subcontractors to observe and comply, with all applicable Federal, State, and local laws, ordinances, rules, regulations, codes, and executive orders, now existing or hereinafter in effect, which may in any manner affect the performance of the Contract. Provision(s) required by law, ordinance, rules, regulations, or executive orders to be inserted in this Contract will be deemed inserted, whether or not they appear in this Contract, or upon application by either party, this Contract will forthwith be physically amended to make such insertion; however, in no event will the failure to insert such provision(s) prevent the enforcement of such provision(s) or this Contract.

B. Airport Rules and Regulations

Contractor will comply, and will use all reasonable efforts to cause its workers, Subcontractors, guests, and invitees to comply with all rules and regulations governing the conduct and operation of the Airport, which may be promulgated from time to time by the Commissioner.

C. Human Rights

1. Contractor in performing under the Contract, will not discriminate against any worker, employee or applicant, or any member of the public, because of race, color, religion, age, mental or physical disability unrelated to ability to perform the duties of a particular job or position, sex, sexual orientation, marital status, ancestry or national origin, nor otherwise commit an unfair employment practice. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated without regard to their race, creed, color, religion, age, mental or physical disability unrelated to ability to perform the duties of a particular job or position, sex, sexual orientation, marital status, ancestry or national origin during employment. Such action will include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Contractor agrees to post, or cause to be posted, in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

2. Contractor or Subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. Contractor will carry out applicable requirements of 49 CFR Part 26 in the Award and administration of DOT-assisted Contracts. Failure by Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy, as the City deems appropriate.

3. No person in the United States will, on the grounds of race, creed, religious belief, age, sex, sexual orientation, marital status, citizenship as applicable, political affiliation, national origin or ancestry, physical or mental disability unrelated to ability to perform, or unfavorable discharge from military service, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Contract.

4. Compliance with Nondiscrimination Requirements

   a. During the performance of this Contract, Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

      (1) Compliance with Regulations: Contractor (hereinafter includes consultants) will comply with the Title VI "List of Pertinent Nondiscrimination Statutes and Authorities", as they may be amended from time to time, which are herein incorporated by reference and made a part of this Contract. (See below at 4.b. and FAA Order 1400.11.)

      (2) Nondiscrimination: Contractor, with regard to the Work performed by it during the Contract, will not discriminate on the grounds of race, color, national origin, creed, sex, age, or disability in the selection and retention of Subcontractors, including procurements of materials and leases of equipment. Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices

when the Contract covers any activity, Project, or program set forth in Appendix B of 49 CFR Part 21 including amendments thereto.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by Contractor for Work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential Subcontractor or supplier will be notified by Contractor of Contractor's obligations under this Contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.

(4) Information and Reports: Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the sponsor or the FAA to be pertinent to ascertain compliance with such Nondiscrimination Acts, Authorities, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, Contractor will so certify to the sponsor or the FAA, as appropriate, and will set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of a Contractor's noncompliance with the Non-discrimination provisions of this Contract, the sponsor will impose such Contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to Contractor under the Contract until Contractor complies; and/or
(b) Cancellation, termination, or suspension of the Contract, in whole or in part.

(6) Incorporation of Provisions: Contractor will include the provisions of paragraphs 1 through 6 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. Contractor will take action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if Contractor becomes involved in, or is threatened with litigation by a Subcontractor, or supplier because of such direction, Contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, Contractor may request the United States to enter into the litigation to protect the interests of the United States.

b. Title VI List of Pertinent Nondiscrimination Authorities

During the performance of this Contract, Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d, *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR Part 21 (Non-discrimination In Federally-Assisted Programs of the U.S. Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964) including amendments thereto;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and Projects);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. 794, *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27 (Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance).
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. 6101, *et seq*.), (prohibits discrimination on the basis of age);

- Airport and Airway Improvement Act of 1982, (49 U.S.C. 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-259), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and Contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101, *et seq*), (prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities) as implemented by the U.S. Department of Transportation regulations at 49 CFR Parts 37 and 38;
- Title IX of the Educations Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681, *et seq*).

c. Airport and Airway Improvement Act of 1982, Section 520 - General Civil Rights Provisions.

In all its activities within the scope of its airport program, the Contractor agrees to comply with pertinent statues, Executive Orders and such rules as identified in Title VI List of Pertinent Nondiscrimination Acts and Authorities to ensure that no person shall on the grounds of race, color, national origin, creed, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

The above provision binds the Contractor and subcontractors from the bid solicitation period through completion of the Contract.

d. Contractor will additionally comply with all other applicable Federal, State, and local non-discrimination laws, ordinances, rules and regulations and executive orders including without limitation:

(1) The provisions of 775 ILCS 10, *et seq*., as amended, prohibiting discrimination in public Contracts and incorporating the Illinois Human Rights Act, 775 ILCS 5, *et seq*., of the Illinois Revised Statues, as amended, will apply, and any rules and regulations promulgated in accordance therewith, including, but not limited to, the Equal Employment Opportunity Clause, 44 III. Admin. Code 750 Appendix A.

(2) The provisions of the Human Rights Ordinance, of the MCC, as amended, will apply. . Further, the Contractor will furnish such reports and information as requested by the Chicago Commission of Human Relations.

e. Accommodation for Non-English Speaking Homeowners

Contractor understands that as part of the overall Work it will be required to communicate with Homeowners and residents that are not able to communicate effectively in the English language, if any are included in the Project. The City will notify Contractor of the number of known affected Homes and applicable languages, if any, prior to NTP, but it is possible that other affected Homes or languages could be encountered during the Project. Contractor will submit a plan within 45 Days after the NTP outlining the methods Contractor will use to communicate with any Homeowner that is not able to communicate effectively using the English Language. Contractor's Plan should include at a minimum, a translation of any instructions to the Homeowner, translation of any signage placed in the Home to the language used in the Home, and the ability to ask the Homeowner basic questions regarding entry to the Home, restroom usage, and leaving the Home at the end of the Work period. If the City does not identify languages spoken in affected Homes or otherwise direct, the Plan may

assume that Spanish and Polish are the most likely to be encountered. The submittal will be actioned "Received for Information Only".

D. Affirmative Action, Equal Employment Opportunity, Goals and Timetables

Part Two, Article XVIII, Section D is derived from the requirements of Executive Order 11246, as amended by Executive Orders 11375, 13665, and 13672, as well as the Federal regulations that implement Executive Order 11246, as amended. On January 21, 2025, President Trump issued Executive Order 14173, which explicitly repealed Executive Order 11246 and Executive Order 13672. Executive Order 14173 further directs Federal agencies to modify regulations inconsistent with Executive Order 14173. On January 24, 2025, the Acting Secretary of Labor issued Order 03-2025, directing the cessation of all investigative and enforcement activity under the rescinded Executive Order 11246, and the regulations implementing Executive Order 11246.

The provisions set forth in Part Two, Article XVIII, Section D are included in the Contract to the extent that Executive Orders 11375 and 13665 and the implementing regulations of Executive Order 11246, as amended, have not been explicitly repealed or modified. This Part Two, Article XVIII, Section D, and any other requirements in this Contract that flow from Executive Order 11246 and its implementing regulations will be deemed to be of no effect upon such repeal of Executive order 11375 and 13665 and the regulations implementing Executive Order 11246, as amended

1. General: Contractor assures that it will undertake an affirmative action program as required by 14 CFR Part 152, Subpart E, to insure that no person will on the grounds of race, creed, color, national origin, or sex, be excluded from participation in any employment activities covered in 14 CFR Part 152, Subpart E. Contractor assures that no one person will be excluded on these grounds from participation in or receiving the services or benefits of any program or activity covered by this Subpart. Contractor assures that it will require that its covered sub-organizations provide assurance to Contractor that they similarly will undertake affirmative action programs, and they will require assurance from their sub-organizations, as required by 14 CFR Part 152, Subpart E, to the same effect.

2. Notice of Requirement for Affirmative Action (41 CFR 60-2) and (Executive Order 11246):

   a. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

   b. The goals and timetables for minority and female participation terms for Contractor's aggregate workforce in each trade on all construction Work in the covered area are as follows:

      Timetables

      Minority Group Employment Goal for each trade = 19.6%

      Female Employment Goal for each trade = 6.9%

      These goals are applicable to all Contractor's construction Work (whether or not it is Federal or Federally assisted) performed in the coverage area. If Contractor performs construction Work in a geographical area located outside of the covered area, it will apply the goals established for such geographical area where the Work is actually performed. With regard to this second area, Contractor also is subject to the goals for both its Federally involved and non-Federally involved construction.

      Contractor's compliance with the Executive Order and the regulations in 41 CFR 60-4 will be based on its implementation of specific affirmative action obligations required by the specification set forth in 41 CFR 0-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract and in each trade; and Contractor will make a good faith effort to employ minorities and woman evenly on each of its Projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from Project to Project for the sole purpose of meeting Contractor's goals will be a violation of the Contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total Work hours performed. All requirements will be monitored by the City of Chicago's Department of Procurement Services Compliance Division.

c. Contractor will provide written notification to the Director of the Office of Federal Contract Compliance Programs ("OFCCP") within 10 working Days of Award of any construction subcontract in excess of $10,000 at any tier for construction Work under the Contract. The notification will list the name, address, and telephone number of the Subcontractor, employer identification number of the Subcontractor; estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

d. As used in this provision, the "covered area" is the City of Chicago, Cook, DuPage, Kane, Lake, McHenry, and Will Counties (Standard Metropolitan Statistical Area).

3. Equal Employment Opportunity. (41 CFR 60-1.4) and (Executive Order Number 11246). During the performance of this Contract, Contractor agrees as follows:

a. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action will include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

b. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

c. Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision will not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

d. Contractor will send to each labor union representative of workers with which he has collective bargaining Agreement or other Contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of Contractor's commitments under Section 202 of Executive Order Number 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor and will post copies of the notice in conspicuous places available to employees and applicants for employment.

e. Contractor will comply with all provisions of Executive Order Number 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

f. Contractor will furnish all information and reports required by Executive Order Number 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulation, and orders.

g. In the event of Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and Contractor may be declared ineligible for further Government Contracts or Federally assisted construction Contracts in accordance with procedures authorized in

Executive Order Number 11246 of September 24, 1965, and such other sanctions may be imposed and remedies involved as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

h. Contractor will include the provisions of the above paragraphs (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order Number 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a Subcontractor as a result of such direction by the administering agency, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. Standard Federal Equal Employment Opportunity Construction Contract Provisions (41 CFR 60-4.3) and (Executive Order 11246):

   a. As used in this provision:

      (1) "Covered Area" means City of Chicago, Cook, DuPage, Kane, Lake, McHenry, and Will Counties (Stand Metropolitan Statistical Area).

      (2) "EEO Director" means Director, OFCCP, U.S. DOL, or any person to whom the EEO Director delegates authority.

      (3) "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

      (4) "Minority" includes:

         (a) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin); and
         (b) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race); and
         (c) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
         (d) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

   b. Whenever Contractor, or any Subcontractor at any tier, subcontracts a portion of the Work involving any construction trade, it will physically include in each subcontract in excess of $10,000 these provisions and a notice which contains the applicable goals for minority and female participation set forth in this Contracts.

   c. If Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. DOL in the covered area either individually or through an association, its affirmative action obligations on all Work in the Plan area (including goals and timetables) will be in accordance with the Plan for those trades which have unions participating in the Hometown Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Hometown Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Hometown Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Hometown Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Hometown Plan goals and timetables.

   d. Contractor will implement the specific affirmative action standards provided in Part Two, Article XVIII, Section D ("Affirmative Action, Equal Employment Opportunity, Goals and Timetables"). The goals set forth in this Contract are expressed as percentages of the total hours of employment

and training of minority and female utilization that Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction Work in geographical areas where they do not have a Federal or Federally assisted construction Contract will apply the minority and female goals established for the geographical areas where the Work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any OFCCP office or from Federal procurement contracting officers. Contractor is expected to make substantially uniform progress in meeting goals in each craft during the period specified.

e. Neither the provisions of any collective bargaining Agreement, nor the failure by a union with whom Contractor has a collective bargaining Agreement, to refer either minorities or women, will excuse Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

f. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by Contractor during the training period, and Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. DOL.

g. Contractor will take specific affirmative actions to ensure equal opportunity. The evaluation of Contractor's compliance with these specifications will be based upon its effort to achieve maximum results from its actions. Contractor will document these efforts fully, and will implement affirmative action steps at least as extensive as the following:

(1) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which Contractor's employees are assigned to Work. Contractor, where possible, will assign two or more women to each construction Project. Contractor will specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

(2) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when Contractor or its unions have employment opportunities available, and maintain a record for the organization's responses.

(3) Maintain a current file of the names, addresses, and telephone numbers of (each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to Contractor by the union or, if referred, not employed by Contractor, this will be documented in the file with the reason therefore along with whatever additional actions Contractor may have taken.

(4) Provide immediate written notification to the Director when the union or unions with which Contractor has a collective bargaining Agreement has not referred to Contractor a minority person or woman sent by Contractor, or when Contractor has other information that the union referral process has impeded Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly includes minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to Contractors employment needs, especially those programs funded or approved by the U.S. DOL. Contractor will provide notice of those programs to the sources compiled under Part Two, Article XVIII, paragraph D.4 ("Standard Federal Equal Employment Opportunity Construction Contract Provisions, (41 CFR 60-4.3) and (Executive Order 11246)").

(6) Disseminate Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting Contractor in meeting its EEO obligations, by including it in any policy manual and collective bargaining Agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction Work is performed.

(7) Review, at least annually, the company's EEO policy and affirmative action obligations under those specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction Work at any jobsite. A written record will be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing Contractor's EEO policy with other Contractors and Subcontractors with whom Contractor does or anticipates doing business.

(9) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving in Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, Contractor will send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's workforce.

(11) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to see or to prepare for, through appropriate training, etc., such opportunities.

(13) Ensure that seniority practices, job classifications, Work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.

(14) Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities will be provided to assure privacy between the sexes.

(15) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors, adherence to and performance under Contractor's EEO policies and affirmative action obligations.

h. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations under Part Two, Article XVIII, paragraph D.4 ("Standard Federal Equal Employment Opportunity Construction Contract Provisions (41 CFR 60-4.3) and (Executive Order 11246)"), (1) through (16). The efforts of a Contractor association, joint

Contract-union, Contractor-community, or other similar group of which Contractor is a member and participant, may be asserted as fulfilling any one or more if its obligations under Part Two, Article XVIII, paragraph D.4 ("Standard Federal Equal Employment Opportunity Construction Contract Provisions (41 CFR 60-4.3) and (Executive Order 11246)"), (1) through (16) of these Specifications, provided that Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of Contractor. The obligation to comply, however, is Contractor's and failure of such a group to fulfill an obligation will not be a defense for Contractor's noncompliance.

i. A single goal for minorities and a separate single goal for women have been established. Contractor, however, is required to provide equal employment opportunity and to make affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though Contractor has achieved its goals for women generally, Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

j. Contractor will not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

k. Contractor will not enter into any subcontracts with any person or firm debarred from Government Contracts pursuant to Executive Order 11246.

l. Contractor will carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any Contractor who fails to carry out such sanctions and penalties will be in violation of these specifications and Executive Order 11246, as amended.

m. Contractor, in fulfilling its obligations under these specifications, will implement specific affirmative action steps; at least as extensive as those standards prescribed in paragraph (g) of this provision, so as to achieve maximum results from its efforts to ensure goal employment opportunity. If Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or this provision, the EEO Director will proceed in accordance with 41 CFR 60-4.8.

n. Contractor will designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records will at least include, for each employee, the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the Work was performed. Records will be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractor will not be required to maintain separate records.

o. Nothing herein provided will be construed as a limitation upon the application of other laws, which establish different standards of compliance or upon the application of requirements for hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

E. Illinois Human Rights Act

Contractor will comply with the provisions of the Illinois Human Rights Act, 775 ILCS 5, *et seq.*, as amended, and the rules and regulations of the Illinois Department of Human Rights.

F. Disadvantaged Business Enterprise

1. Contractor acknowledges and agrees that certain portions of the Project are being funded by Federal grants and that the Project is therefore subject to the special conditions regarding Disadvantaged Business Enterprises, implementing Provisions 511(a) and 520 of the Airport and Airway Improvement Act of 1982, and Executive Orders 11625, 12138, 12432, and the regulations promulgated pursuant thereto, including without limitation 49 CFR Part 26. Contractor agrees that, in the performance of the Contract, it will abide by the "Special Conditions Regarding Disadvantaged Business Enterprise Commitment" made hereto and included in the proposal.

   Contractor is encouraged to utilize financial institutions owned and controlled by socially and economically disadvantaged individuals. Use of such institutions may be considered by the City as evidence of Contractor's willingness to do business with DBEs. Information about such institutions is available in the City of Chicago's DBE Program Document, which is available on-line at http://www.cityofchicago.org/Purchasing or

   https://www.chicago.gov/content/dam/city/depts/dps/RulesRegulations/Chicago-DBE-Program-07-02-2020%20Final.pdf

   A hard copy of the DBE Program document is available at the City of Chicago, Department of Procurement Services, City Hall Room 806, 121 N. LaSalle Street, Chicago, Illinois, 60602, addition.

2. The requirements of 49 CFR Part 26 apply to this Contract. It is the policy of the City to practice nondiscrimination based on race, color, sex or national origin in the Award or performance of this Contract. The City encourages participation by all firms qualifying under this solicitation regardless of business size or ownership.

3. Contract Assurance (49 CFR 26.13) - Contractor or Subcontractor will not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. Contractor will carry out applicable requirements of 49 CFR Part 26 in the Award and administration of DOT assisted Contracts. Failure by Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy, as the recipient deems appropriate, which may include, but is not limited to:

   a. Withholding monthly progress payments;
   b. Assessing sanctions;
   c. Liquidated damages; and/or
   d. Disqualifying the Contractor from future bidding as non-responsible.

4. Prompt Payment (49 CFR 26.29) - The prime Contractor agrees to pay each Subcontractor under this prime Contract for satisfactory performance of its Contract no later than seven Days from the receipt of each payment the prime Contractor receives from City, as more specifically set out in the payment to Subcontractors provisions of this Contract. The prime Contractor agrees further to return retainage payments to each Subcontractor promptly after the Subcontractor's Work is satisfactorily completed, also as more specifically set out in the payment to Subcontractors provisions of this Contract; holding retainage on completed Subcontractor Work until all prime Contractor retainage on the Project is released is not permitted. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City. This clause applies to both DBE and non-DBE Subcontractors.

G. Wages

Contractor must pay the highest of (1) prevailing wage/Davis Bacon rate, (2) minimum wage specified by Chicago Mayoral Executive Order 2014-1, as adjusted: (3) Chicago Minimum Wage Rate specified by MCC Chapter 6-105, or (4) the highest applicable State or Federal minimum wage. The Chicago minimum wage rates and Mayoral Order wage rates increase on July 1st of each year and are posted on the City website.

H. Minimum Wage, Mayoral Executive Order 2014-1

Mayoral Executive Order 2014-1 provides for a fair and adequate Minimum Wage to be paid to employees of City Contractors and Subcontractors performing Work on City Contracts.

Contractor must comply with Mayoral Executive Order 2014-1 and any applicable regulations issued by the CPO. The Chicago minimum wage rates and Mayoral Executive Order wage rates increase on July 1st of each year and are posted on the City website. All employees, including employees of City concessionaire, regularly performing Work on City property or at a City jobsite.

- All employees whose regular Work entails performing a service for the City under a City Contract.

The Minimum Wage is not required to be paid to employees whose Work is performed in general support of Contractors operations, does not directly relate to the services provided to the City under the Contract, and is included in the Contract Price as overhead, unless that employee's regularly assigned Work location is on City property or at a City jobsite. It is also not required to be paid by employers that are 501(c)(3) not-for-profits.

Except as further described, the Minimum Wage is also not required to be paid to categories of employees subject to subsection 4(a)(2), subsection 4(a)(3), subsection 4(d), subsection 4(e), or Section 6 of the Illinois Minimum Wage Law, 820 ILCS 105, *et seq.*, in force as of the date of this Contract or as amended. Nevertheless, the Minimum Wage is required to be paid to those workers described in subsections 820 ILCS 105/4(a)(2)(A) and 820 ILCS 105/4(a)(2)(B).

Additionally, the Minimum Wage is not required to be paid to employees subject to a collective bargaining Agreement that provides for different wages than those required by Mayoral Executive Order 2014-1, if that collective bargaining Agreement was in force prior to October 1, 2014, or if that collective bargaining Agreement clearly and specifically waives the requirements of the order.

If the payment of a prevailing wage is required and the prevailing wage is higher than the Minimum Wage, then Contractor must pay the prevailing wage.

I. Davis-Bacon Act (see the requirements set forth in Part Two, Article IX ("Payments"))

J. Chicago Paid Sick Leave Ordinance

On June 22, 2016, the City Council passed a new section of the Minimum Wage Ordinance, which requires paid sick leave and became effective July 1, 2017, codified at Section 1-24-045 of the MCC.

On October 5, 2016, the Cook County Board of Commissioners passed a new section of the Cook County Code of Ordinances, 16-4229, which has a similar paid sick leave requirement and also went into effect July 1, 2017.

K. Copeland "Anti-Kickback" Act

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 3145), as supplemented by the U.S. DOL regulation 29 CFR Part 3. Contractor and Subcontractors are prohibited from inducing, by any means, any person employed on the Project to give up any part of the compensation to which the employee is entitled. Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee performing on covered Work during the prior week. Owner must report any violations of the Act to the FAA.

L. No Exclusionary or Discriminatory Specifications

Apart from inconsistent requirements imposed by Federal statute or regulations, Contractor agrees that it will comply with the requirements of 49 U.S.C. 5323(b)(2) by refraining from using any Federal assistance to support Subcontractors procured using exclusionary or discriminatory specifications.

M. Economic Disclosure Statement ("EDS") and Contractor's Affidavit

1. Prior to Contract Award: Pursuant to Sections 2-154-010, 2-154-020, and 2-154-030, of the MCC, any person, or business entity of agency submitting a bid proposal to or contracting with the City of Chicago will be required to complete Section I, "Disclosure of Ownership Interests", in the EDS. Contractor must complete EDS(s) in which Contractor (and its parent entities, if applicable) identifies all persons with seven and one-half percent or more ownership interest and in which Contractor certifies (among other things) that Contractor, its agents, employees, officers and any Subcontractors; a) have not been engaged

in or been convicted of bribery or attempted bribery of a public officer or employee of the City of Chicago, the State of Illinois, any agency of the Federal government or any State or local government in the United States or engaged in or been convicted of bid-rigging or bid-rotation activities as defined in this section as required by the Illinois Criminal Code; b) do not owe any debts to the State of Illinois, in accordance with 65 ILCS 5/11-42.1-1, of the Illinois Municipal Code and c) are not presently debarred or suspended from public Contracts.

2. Updates: Until Final Completion of the Project, Contractor must provide, without need for request by the City, an updated EDS(s) if there is any change in ownership or change in any other circumstance that would render the EDS(s) then currently on file inaccurate or obsolete. Failure to provide an updated EDS(s) when required is an event of default. Any change in ownership that is within Contractor's reasonable control (such as the sale of an ownership interest in a non-publicly traded entity) is subject to the prior written consent by the Commissioner and CPO, and Contractor's failure to obtain such prior written consent is an event of default. In the event of a change in ownership outside of Contractor's reasonable control (such as acquisition of controlling interest in Contractor through purchase of shares on a public exchange), the City will have the right to invoke the "Early Termination" provision if the CPO determines such termination to be in the City's best interest.

N. Anti-Scofflaw (Section 2-92-380 of the MCC.)

1. In accordance with Section 2-92-380 of the MCC, and in addition to any other rights and remedies (including any of set-off) available to the City under the Contract or permitted at law or in equity, the City will be entitled to set off a portion of the Contract Price or compensation due under the Contract, in an amount equal to the amount of the fines and penalties for each outstanding parking violation complaint and/or the amount of any debt owed by the contracting party to the City.

2. For purposes of this section, "outstanding parking violation complaint" means a parking ticket, notice of parking violation, or parking violation complaint on which no payment has been made or appearance filed in the Circuit Court of Cook County within the time specified on the complaint. "Debt" means a specified sum of money owed to the City for which the period granted for payment has expired.

3. Notwithstanding the provisions of subsection 1 above, no such debt(s) or outstanding violation complaint (s) will be off-set from the Contract Price or compensation due under the Contract if one or more of the following conditions are met:

   a. Contractor has entered into an Agreement with the Department of Revenue, or other appropriate City department, for the payment of all outstanding parking complaints and/or debts owed to the City and Contractor is in compliance with the Agreement; or

   b. Contractor is contesting liability for the amount of the debt in a pending administrative or judicial proceeding; or

   c. Contractor has filed a petition in bankruptcy and the debts owed in the City are dischargeable in bankruptcy.

O. Americans with Disabilities Act and other Laws Concerning Accessibility

Any and all Work performed must comply with all Federal, State, and local laws and regulations regarding accessibility standards for disabled or environmentally limited persons including, but not limited to; the following: American with Disabilities Act, 42 U.S.C. 12101 *et seq*. and the Uniform Federal Accessibility Guidelines for Buildings and Facilities ("ADAAG"); the Architectural Barriers Act, Pub. L. 90-480 (1968), Uniform Federal Accessibility Standards ("UFAS"), and, the Illinois Environmental Barriers Act, 410 ILCS 25/1, *et seq*. (1991), and the regulations promulgated thereto at 71 IAC 400. In the event that the above cited standards are inconsistent, Contractor will comply with the standard providing greater Accessibility.

P. Firms Owned by Individuals with Disabilities (Section 2-92-586 of the MCC)

The City encourages Contractors to use Subcontractors that are firms owned or operated by individuals with disabilities, as defined by Section 2-92-586 of the MCC, where not otherwise prohibited by Federal or State law.

Q. False or Fraudulent Statements and Claims

1. Contractor recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.C.S. 3081, *et seq*., and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 CFR, the Employment of Illinois Workers on Public Works Projects Act (30 ILCS 570/0.01, *et seq.*), apply to its actions pertaining to the Project. Accordingly, by signing the Contract, Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may take pertaining to the Contract. In addition to other penalties that may be applicable, Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on Contractor to the extent the Federal Government deems appropriate.

2. Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the City or Federal Government in connection with an urbanized area formula Project financed with Federal assistance authorized by 49 U.S.C. 5307, the Government reserves the right to impose on Contractor the penalties of 18 U.S.C. 1001 and 49 U.S.C. 5307(n)(1), to the extent the Federal Government deems appropriate.

R. Disclosure of Ownership

Pursuant to Sections 2-154-010, 2-154-020, and 2-154-030, of the MCC; any person or business entity of agency submitting a bid proposal to or contracting with the City of Chicago will be required to complete Section I, Disclosure of Ownership Interests, in the EDS.

S. Employment of Illinois Laborers on Airport Projects

Contractor will use only Illinois Laborers in the performance of this Contract, to the extent: (1) required by the Employment of Illinois Workers on Public Works Projects Act 30 ILCS 570/0.01 *et seq*., as amended from time to time, and (2) otherwise permitted by law.

T. State Energy Conservation Plan

Contractor and Subcontractors will comply with all standards and policies relating to energy efficiency and energy conservation plans issued by the State of Illinois in compliance with the Energy Policy and Conservation Act (Public Law 94-163), which are incorporated in this Agreement by reference.

U. Environmental Requirements

Without limiting the environmental requirements set forth in Part Two, Article XIV, Section B ("Compliance with Environmental Laws"), and Section C ("Environmental Provisions"), Contractor acknowledges and agrees that many Federal and State Environmental Laws imposing environmental and resource conservation requirements may apply to the Contract. Some, but not all, of the major Federal Environmental Laws that may affect the Contract include: the National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, *et seq*., the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq*., various sections of 29 U.S.C., the Clean Water Act, as amended; various sections of 33 U.S.C. and 12 U.S.C., the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, *et seq*., and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. 9601, *et seq*. Contractor also recognizes the U.S. EPA, U.S. DOT and other agencies of the Federal government have issued and are expected in the future to issue regulations, guidelines, standards, orders, directives, or other requirements that may affect the Contract. Contractor agrees to adhere to, and impose on its Subcontractors, any such environmental and resource conservation requirements as the Federal government may now or in the future promulgate. Listed below are requirements of particular concern. Contractor acknowledges that this list does not constitute Contractor's entire obligation to meet all Federal environmental and resource conservation requirements. Contractor will include these provisions in all subcontracts.

1. Environmental Protection: Contractor agrees to comply with the applicable requirements of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, *et seq*., in accordance with; U.S. DOT statutory requirements on environmental matters at 49 U.S.C. 5324(b); Council of Environmental Quality regulations on compliance with the National Environmental Policy Act of 1969, as amended, 40

CFR Part 1500, *et seq*., and U.S. DOT regulations, Environmental Impact and Related Procedures, 23 CFR Part 771 and 49 CFR Part 622.

2. Air Quality: Contractor agrees to comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq*., relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114, and all other applicable standards, orders, regulations and guidelines issued thereunder. Specifically, Contractor agrees to comply with applicable requirements of the U.S. EPA regulations, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C., or the Federal Transit Laws", 40 CFR Part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans", 40 CFR Part 93. Contractor further agrees to report and require each Subcontractor at any tier to report any violation of these laws resulting from any Contract implementation activity to the City and the appropriate U.S. EPA Regional Office immediately upon discovery. Contractor must include the requirements of this paragraph in all subcontracts that exceed $150,000.

3. Clean Water: Contractor agrees to comply with all the requirements of Section 308, of the Clean Air Act, as amended, 33 U.S.C. 1251, *et seq*., relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 308 of the Acts, and all other applicable standards, orders, regulations and guidelines issued thereunder. Contractor further agrees to report and require each Subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the City and the appropriate U.S. EPA Regional Office immediately upon discovery. Contractor must include the requirements of this paragraph in all subcontracts that exceed $150,000.

4. List of Violating Facilities: Contractor agrees that any facility to be used in the performance of the Contract or Subcontract or to benefit from the Contract is not and will not be listed on the Illinois List of Violating Facilities ("List"), and Contractor will promptly notify the City if Contractor receives any communication from the U.S. EPA that a facility to be used for the performance of or benefit from the Contract is under consideration for inclusion on the List.

V. Buy American

Contractor certifies in its bid will comply with 49 U.S.C. 50101, Executive Order 14005, *Ensuring the Future Is Made in All of America by All of America's Workers* Bipartisan Infrastructure Law (Pub. L. No. 117-58), Build America, Buy American (BABA), and other related Made in America Laws[1], U.S. statutes, guidance, and FAA policies, as may be amended or updated, which provide that Federal funds may not be obligated unless all steel and manufactured goods used in AIP-funded Projects are produced in the United States, unless the FAA has issued a waiver for the product; the product is listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108, or is included in the FAA Nationwide Buy American Waivers Issued list.

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[1] Per Executive Order 14005 "Made in America Laws" means all statutes, regulations, rules, and Executive Orders relating to federal financial assistance awards or federal procurement, including those that refer to "Buy America" or "Buy American," that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.

A Bidder or offeror must submit the appropriate Buy America certification with all bids or offers on AIP-funded Projects. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive.

For RSIP Projects, the Certificate of Compliance Based on Total Facility (Terminal or Building Project) (as described below) must be submitted with all bids or offers.

Type of Certification is based on Type of Project:

There are two types of Buy American certifications.

- For Projects for a facility, the Certificate of Compliance Based on Total Facility (Terminal or Building Project) must be submitted.
- For all other Projects, the Certificate of Compliance Based on Equipment and Materials Used on the Project (Non-building construction Projects such as runway or roadway construction; or equipment acquisition Projects) must be submitted.

W. Foreign Trade Restrictions

A Bidder or offeror must submit the appropriate foreign trade restriction certification with all bids or offers on AIP-funded Projects. Bids or offers that are not accompanied by a completed foreign trade restriction certification must be rejected as nonresponsive.

X. Veterans Preference (49 U.S.C. 4711 (c)).

In the employment of labor (excluding executive, administrative, and supervisory positions), Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

Contractor will ensure that the following provision is inserted in all Contracts entered into with any Subcontractors and labor organizations which furnish skilled, unskilled and craft union skilled labor, or which may provide any material, labor, or services in connection with this Agreement:

> "Contractor will comply with the provisions of 330 ILCS 55/0.01, *et seq*., which requires that a preference be given to veterans in the employment and appointment to fill positions in the construction, addition, or alteration of all public works. In the employment of labor (except executive, administrative and supervisory positions) preference will be given to veterans of the Vietnam era and disabled veterans as defined in provision 515(c)(1), and (2) of the Airport and Airway Improvement Act of 1982. However, this preference will apply only where the individuals are available and qualified to perform the Work to which the employment relates."

Y. Office of the Inspector General (Chapter 2-56 of the MCC):

1. It will be the duty of any Bidder, proposer, Contractor, all Subcontractors, and every applicant for certification of eligibility for a City Contract or program, and all officers, directors, agents, partners and employees of any Bidder, proposer, Contractor, Subcontractor or such applicant to cooperate with the Inspector General in any investigation or hearing undertaken pursuant to Chapter 2-56 of the MCC. Contractor understands and will abide by all provisions of Chapter 2-56 of the MCC.

2. All subcontracts or purchase orders entered into by Contractor, with parties providing materials, labor or services to complete the Work, must contain the following statement regarding Chapters 2-56 of the MCC, Office of the Inspector General. If Contractor fails to incorporate the required language in all subcontracts or purchase orders, the provisions of the section are deemed to be incorporated in all subcontracts or purchase orders.

> "The Subcontractor (material supplier or other entity), its officers, directors, agents, partners, and employees, must cooperate with the Inspector General in any investigation or hearing undertaken pursuant to Chapter 2-56 of the MCC, and the Subcontractor (material supplier or other entity) understands and will abide by all provisions of this section of the MCC."

Z. City Hiring Plan Prohibitions

1. The City is subject to the June 16, 2014, "City of Chicago Hiring Plan" (the "2014 City Hiring Plan") entered in Shakman v. Democratic Organization of Cook County, Case Number 69 C 2145 (United States District Court for Northern District of Illinois). Among other things, the 2014 City Hiring Plan prohibits the City from hiring persons as governmental employees in non-exempt positions on the basis of political reasons or factors.

2. Contractor is aware that City policy prohibits City employees from directing any individual to apply for a position with Contractor, either as an employee or as a Subcontractor, and from directing Contractor to hire an individual as an employee or as a Subcontractor. Accordingly, Contractor must follow its own hiring and contracting procedures, without being influenced by City employees. Any and all personnel provided by Contractor under this Contract are employees or Subcontractors of Contractor, not employees of the City of Chicago. This Contract is not intended to and does not constitute, create, give rise to, or otherwise recognize an employer-employee relationship of any kind between the City and any personnel provided by Contractor.

3. Contractor will not condition, base, or knowingly prejudice or affect any term or aspect of the employment of any personnel provided under this Contract, or offer employment to any individual to provide services under this Contract, based upon or because of any political reason or factor, including, without limitation, any individual's political affiliation, membership in a political organization or party, political support or activity, political financial contributions, promises of such political support, activity or financial contributions, or such individual's political sponsorship or recommendation. For purposes of this Contract, a political organization or party is an identifiable group or entity that has as its primary purpose the support of or opposition to candidates for elected public office. Individual political activities are the activities of individual persons in support of or in opposition to political organizations or parties or candidates for elected public office.

4. In the event any communication to Contractor by a City employee or City official in violation of paragraph 2 above, or advocating a violation of paragraph 3 above, Contractor will, as soon as is reasonably practicable, report such communication to the Hiring Oversight Section of the City's Office of Inspector General ("OIG"), and also to the head of the relevant City Department utilizing services provided under this Contract. Contractor will also cooperate with any inquiries by OIG Hiring Oversight.

AA. Governmental Ethics Ordinance (Chapter 2-156 of the MCC.)

1. Contractor will comply with Chapter 2-156 of the MCC, "Governmental Ethics", including, but not limited to; Section 2-156-120 of the MCC pursuant to which no payment, gratuity or offer of employment will be made in connection with any City Contract, by or on behalf of a Subcontractor to the prime Contractor or higher tier Subcontractor or any person associated therewith, as an inducement for the Award of a subcontract or order.

2. Any Contract negotiated, entered into, or performed in violation of any of the provisions of this chapter will be voidable as to the City.

BB. Business Relationships with Elected Officials

1. Pursuant to Section 2-156-030(b) of the MCC, it is illegal for any elected official of the City, or any person acting at the direction of such official, to contact, either orally or in writing, any other City official or employee with respect to any matter involving any person with whom the elected official has a business relationship, or to participate in any discussion in any City Council committee hearing or in any City Council meeting or to vote on any matter involving the person with whom an elected official has a business relationship. Violation of Section 2-156-030(b) of the MCC by any elected official with respect to this Contract will be grounds for termination of this Contract. The term business relationship is defined as set forth in Section 2-156-080 of the MCC.

2. Section 2-156-080 of the MCC defines a "business relationship" as any contractual or other private business dealing of an official, or his or her spouse, or of any entity which entitles an official to compensation or payment in the amount of $2,500 or more in a calendar year; provided, however, a financial interest will not include: (1) any ownership through purchase at fair market value or inheritance of less than one percent of the share of a corporation, or any corporate subsidiary, parent or Affiliate thereof, regardless of the value of or dividends on such share, if such shares are registered on a securities exchange pursuant to the Securities Exchange Act of 1934, as amended, (2) the authorized compensation paid to an official or employee for his office or employment, (3) any economic benefit provided equally to all residents of the City, (4) a time or demand deposit in a financial institution, or (5) an endowment or insurance policy or annuity Contract purchased from an insurance company. "Contractual or other private business dealing" will not include any employment relationship of an official's spouse with an

entity when such spouse has no discretion concerning or input relating to the relationship between that entity and the City.

CC. Conflict of Interest

1. No member of the governing body of the City or other units of government and no other officer, employee, or agent of the City or other unit of government who exercises any functions or responsibilities in connection with the Services to which this Contract pertains, will have any personal interest, direct, or indirect, in this Contract. In accordance with 41 U.S.C. 22, Contractor agrees no member of or delegate to the Congress of the United States may have any share or part of the Project or any benefit derived therefrom. Also, no member of the Illinois General Assembly and no alderman of the City or City employee will be permitted to any share or part of this Contract or to any financial benefit to arise from it. Contractor covenants that it, its officers, directors and employees, and the officers, directors and employees of each of its members if a joint venture, and Subcontractors, presently have no interest and will acquire no interest, direct or indirect, which would conflict in any manner or degree with the performance of the Work hereunder. Contractor further covenants that in the performance of this Contract, no person having any such interest will be employed. Contractor agrees that if the City, by the Commissioner in his or her reasonable judgment, determines that any of Contractor's Work for others conflicts with the Work, Contractor will terminate such other services immediately upon request of the City.

DD. Steel Products

1. Except to the extent that Federal requirements otherwise provide, this Contract will be subject to all provisions of the "Steel Products Procurement Act", 30 ILCS 565/1, *et seq*., as it may be amended from time to time. Steel Products issued or supplied in the performance of this Contract or any subcontract thereto must be manufactured or produced in the United States.

2. For purposes of this section "United States" means the United States and any place subject to the jurisdiction thereof and "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed or processed by a combination of two or more such operations, from Steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making processes. Knowing violation of this section may result in the filing and prosecution of a complaint by the Attorney General of the State of Illinois and will subject violators to a fine of the greater of $5,000 or the payment price received as a result of such violation.

EE. Preference for Recycled Products

To the extent practicable and economically feasible and to the extent that it does not reduce or impair the quality of the Work, Contractor agrees to use recycled products in the Project pursuant to the U.S. EPA guidelines at 40 CFR 247-253, which implement Section 6002 of the Resources Conservation and Recovery Act, as amended, 42 U.S.C. 6962.

FF. Cargo Preference – United States Flag Vessels

Contractor agrees to comply with U.S. Marine Administration regulations, "Cargo Preference - U.S. Flag Vessels", 49 CFR Part 381, to the extent those regulations apply to the Project. Specifically, Contractor agrees to include the clauses required by those regulations, modified as necessary to identify the affected parties, in each subcontract or sub-Agreement involving equipment, materials, or commodities suitable for transport by ocean vessel.

GG. Patent Rights

1. General. If any invention, improvement, or discovery of Contractor is conceived or first actually reduced to practice in the course of or under the Project, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, Contractor agrees to notify the City immediately and provide a detailed report.

2. Federal Rights. Unless the Federal Government later makes a contrary determination in writing, the rights and responsibilities of the City, Contractor, and the Federal Government pertaining to that invention, improvement, or discovery will be determined in accordance with applicable Federal laws

and regulations, including any waiver thereof. Unless the Federal Government later makes a contrary determination in writing, Contractor agrees that, irrespective of its status or the status of any Subcontractor at any tier, (i.e., a large business, small business, nonprofit organization, institution or higher education, individual, etc.) Contractor agrees it will transmit to the Federal Government those rights due the Federal Government in any invention resulting from the Contract.

HH. Rights in Data and Copyrights

1. Definition. The term "subject data" used in this section means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Contract. Examples include, but are not limited to, computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Project administration.

2. Federal Restrictions. The following restrictions apply to all subject data first produced in the performance of the Contract. Except as provided in the Contract and except for its own internal use, Contractor may not publish or publicly reproduce subject data in whole or in part, or in any manner or form, nor may Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public.

3. Federal Rights in Data and Copyrights. Contractor agrees that any copyrightable subject data generated in performance of this Contract are deemed "works for hire" and the City or Federal Government will own all copyrights therein. In accordance with 49 CFR 18.34 and 49 CFR 19.36, the City and the Federal Government reserve a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for City or Federal Government purposes, the types of other subject data described below. Without the copyright owner's consent, the City and Federal Government may not extend their license to other parties.

   a. Any subject data developed under the Contract to the extent that a copyright has not been obtained by the City or Federal Government; and

   b. Any previously copyrighted subject data which Contractor purchases with Federal assistance.

4. Special Federal Rights for Planning, Research, and Development Projects. When the Federal Government provides financial assistance for a planning, research, development, or a demonstration Project, its general intention is to increase public knowledge rather than limit the benefits of the Project to participants in the Project. Therefore, unless the Federal government determines otherwise, Contractor on a planning, research, development, or a demonstration. Project agrees that, in addition to the rights in data and copyrights set forth above, the City or Federal Government may make available to any third party, either a license in the copyright to the subject data or a copy of the subject data. If the Project is not completed for any reason whatsoever, all data developed under the Project will become subject data and will be delivered as the City or Federal Government may direct. This subsection, however, does not apply to adaptations of automatic data processing equipment or programs for the City's use whose costs are financed with Federal transportation funds for capital Projects.

5. Hold Harmless. Unless prohibited by State law, upon request by the Federal Government, Contractor agrees to indemnify, save, and hold harmless the City and the Federal Government and their officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use or disposition or any data furnished or used under the Contract. Contractor will not be required to indemnify the City or Federal government for any such liability arising out of the wrongful acts of employees or agents of the City or Federal Government.

6. Restrictions on Access to Patent Rights. Nothing contained in this section on rights in data will imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.

7. Application on Materials Incorporated into Project. The requirements of subsections 2, 3, and 4 of this section do not apply to material furnished by the City and incorporated into the Work.

II. Licensing of General Contractor

Contractor must comply with all requirements of Chapter 4-36 of the MCC.

Important: The failure to comply with the provisions of Chapter 4-36 of the Municipal Code, as may be amended from time to time ("Chapter 4-36") may result in ineligibility to bid, inability to perform (or continue) to work, imposition of substantial fines, and/or in the City's revoking the Bidder's "general contractor" license. Information about Chapter 4-36 and application forms are available on the City's website, www.cityofchicago.org. A copy of the entire current ordinance is available on https://www.chicityclerk.com/municipal-code or www.cityofchicago.org.

As stated elsewhere in the specification, the City reserves the right to reject any or all bids.

Bidder must be in compliance with the requirements of Chapter 4-36, and as may be amended from time to time, in the appropriate license class commensurate with the size of this project, if the license is required for the scope of work, at the time Bidder submits its bid and, if it is awarded a contract, throughout the term of the contract.

Contractor's failure to be licensed as a "general contractor" at all times throughout the term of the contract, if the license is required for the scope of work, is an event of default under the Agreement and the City may exercise any and all rights and remedies permitted under the contract, at law, or in equity.

JJ. Prohibition on Certain Contributions (Mayoral Executive Order No. 2011-4)

1. No Contractor or any person or entity who directly or indirectly has an ownership or beneficial interest in Contractor of more than seven and one-half percent ("Owners"), spouses and domestic partners of such Owners, Contractor's Subcontractors, any person or entity who directly or indirectly has an ownership or beneficial interest in any Subcontractor of more than seven and one-half percent ("Sub-owners") and spouses and domestic partners of such Sub-owners (Contractor and all the other preceding classes of persons and entities are together, the "Identified Parties"), will make a contribution of any amount to the Mayor of the City of Chicago (the "Mayor") or to his political fund-raising committee during (1) the bid or other solicitation process for this Contract or Other Contract, including while this Contract or Other Contract is executory, (2) the term of this Contract or any Other Contract between the City and Contractor, and/or (3) any period in which an extension of this Contract or Other Contract with the City is being sought or negotiated.

2. Contractor represents and warrants that since the date of public advertisement of the specification, request for qualifications, request for proposals or request for information (or any combination of those requests) or, if not competitively procured, from the date the City approached Contractor or the date Contractor approached the City, as applicable, regarding the formulation of this Contract, no Identified Parties have made a contribution of any amount to the Mayor or to his political fund-raising committee.

3. Contractor will not: (1) coerce, compel or intimidate its employees to make a contribution of any amount to the Mayor or to the Mayor's political fund-raising committee, (2) reimburse its employees for a contribution of any amount made to the Mayor or to the Mayor's political fund-raising committee, or (3) bundle or solicit others to bundle contributions to the Mayor or to his political fund-raising committee.

4. The Identified Parties must not engage in any conduct whatsoever designed to intentionally violate this provision or Mayoral Executive Order Number 2011-4 or to entice, direct or solicit others to intentionally violate this provision or Mayoral Executive Order Number 2011-4.

5. Violation of, non-compliance with, misrepresentation with respect to, or breach of any covenant or warranty under this provision or violation of Mayoral Executive Order Number 2011-4 constitutes a breach and default under this Contract, and under any Other Contract for which no opportunity to cure will be granted. Such breach and default entitles the City to all remedies (including without limitation termination for default) under this Contract, under Other Contract, at law and in equity. This provision amends any other Contract and supersedes any inconsistent provision contained therein.

6. If Contractor violates this provision or Mayoral Executive Order Number 2011-4 prior to Award of the Contract resulting from this specification, the CPO may reject Contractor's bid.

7. For purposes of this provision:

   "Other Contract" means any Agreement entered into between Contractor and the City that is (1) formed under the authority of Chapter 2-92, (2) of the MCC, for the purchase, sale or lease of real or personal property, or (3) for materials, supplies, equipment or services which are approved and/or authorized by the City Council.

   "Contribution" means a "political contribution" as defined in Chapter 2-156 in the MCC, as amended.

   "Political fundraising committee" means a "political fundraising committee" as defined in Chapter 2-156 of the MCC, as amended.

KK. Federal Ineligible Contractors

Contractor warrants and represents that neither Contractor nor any Affiliate of Contractor appears on the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List, or the Debarred List as maintained by the Office of Foreign Assets Control of the U.S. Department of Treasury or by the Bureau of Industry and Security of the U.S. Department of Commerce (or their successors), or on any other list of persons or entities with which the City may not do business under any applicable law, rule, regulation, order or judgment.

LL. False Statements

False statements made in connection with the Contract, including statements in, omissions from and failures to timely update the EDS, as well as in any other affidavits, statements or Contract Documents constitute a material breach of the Contract. Any such misrepresentation renders the Agreement voidable at the option of the City, notwithstanding any prior review or acceptance by the City of any materials containing such misrepresentation. In addition, the City may debar Contractor, assert any Contract claims or seek other civil or criminal remedies as a result of a misrepresentation (including costs of replacing a terminated Contractor pursuant to Section 1-21-010 of the MCC).

MM. Ineligibility to do Business with the City

Failure by Contractor or any controlling person (as defined in Section 1-23-010 of the MCC) thereof to maintain eligibility to do business with the City of Chicago as required by Section 1-23-30 of the MCC will be grounds for termination of this Contract.

NN. [Intentionally Omitted]

OO. Clean Diesel Fleet (Section 2-92-595 of the MCC).

If this Contract is for construction, demolition, restoration, repair, renovation, environmental remediation, or environmental abatement of any building, structure, tunnel, excavation, roadway, bridge, transit station, or parcel of land and the estimated value of this Contract is $2,000,000 or more:

1. Contractor must comply with the Clean Diesel Contracting Ordinance, Section 2-92-595 of the MCC.

2. Contractor and any Subcontractor(s) must utilize Ultra Low Sulfur Diesel ("ULSD") fuel for any heavy-duty diesel-powered vehicle, non-road vehicle or non-road equipment used in the performance of the Contract.

3. Contractor and any Subcontractor(s) must minimize idling of motor vehicles and non – road vehicles used in the performance of the Contract during periods of inactivity, and must comply with the anti-idling requirements imposed by any applicable Federal, State, or local law.

4. The Contract and any Subcontractor(s) may not use any of the following vehicles and equipment in the performance of the Contract:

a. any heavy-duty diesel vehicle not meeting or exceeding the U.S. EPA's emission standards for heavy-duty diesel vehicles for the 1998 engine model year, unless such vehicle is fitted with a verified diesel emission control retrofit device; or

b. any non-road vehicle or non-road equipment not meeting or exceeding the U.S. EPA's Tier 1 Non-Road Diesel Standards, unless such vehicle or equipment is fitted with a verified diesel emission retrofit device.

5. Any heavy-duty diesel vehicles, non-road vehicles and non-road equipment used in the performance of this Contract must incorporate such engine or retrofit technology so that Contractor, through such engine or retrofit technology used directly by Contractor and all Subcontractors, will have a minimum of 3.0 clean fleet score per a reporting period, as calculated by using the methodology described in Section 2-92-595(c)(5) of the MCC. Contractor may exclude from the calculation of the clean fleet score up to 50 percent of all of the heavy-duty diesel vehicles, non-road vehicles and non-road equipment used in the performance of the Contract during a reporting period that are owned or leased by any firm that the CPO has granted a clean fleet score annual waiver certificate pursuant to Section 2-92-595(f) of the MCC. However, pursuant to Section 2-92-595(b)(6) of the MCC, if this Contract is advertised after January 1, 2020, the minimum clean fleet score is increased to 4.0, and Contractor may exclude from the calculation up to only 25 percent of vehicles owned or leased by a firm that has received a clean fleet score waiver certificate instead of 50 percent.

6. The City may conduct an audit of Contractor or inspect any vehicle or equipment used in the performance of the Contract to ensure compliance with the requirements specified above. In the event that Contractor or any Subcontractor fails to utilize ULSD or fails to minimize idling or comply with anti-idling requirements, Contractor will be subject to liquidated damages of $5,000 per day for each violation and each day of noncompliance will be a separate violation; provided, however, the damages will not exceed $50,000 for any one vehicle or piece of equipment, as specified in Section 2-92-595(e) of the MCC. Such liquidated damages are imposed not as a penalty but as an estimate of the damages that the City will sustain from delay in completion of the Project, inspection, and other enforcement costs, as well as the resultant damages to the public health of its citizens, which damages by their nature are not capable of precise proof. The City is authorized to withhold and deduct from monies otherwise payable to Contractor the amount of liquidated damages due to the City.

   Contractor understands that pursuant to Section 2-92-595(e)(6) of the MCC, any person knowingly making a false statement of material fact to any City department with respect to compliance with the Contract provisions specified in Section 2-92-595(e) of the MCC may be fined not less than $1,000 or more than $5,000 for each statement.

PP. Duty to Report Corrupt or Unlawful Activity

Pursuant to Section 2-156-018 of the MCC, it is the duty of Contractor to report to the Inspector General, directly and without undue delay, any and all information concerning conduct which it knows to involve corrupt activity. "Corrupt activity" means any conduct set forth in Section 1-23-020, subparagraph (a) (1), (2) or (3) of the MCC. Knowing failure to make such a report will be an event of default under this Contract. Reports may be made to the Inspector General's toll-free hotline, 866-IG-TIPLINE (866-448-4754).

QQ. Equal Pay Act

Contractor will comply with all applicable provisions of the Equal Pay Act of 1963, 29 U.S.C. 206(d) and the Illinois Equal Pay Act of 2003, 820 ILCS 112/1, *et seq.*, as amended, and all applicable related rules and regulations including, but not limited to; those set forth in 29 CFR Part 1620 and 56 IAC 320.

RR. Texting When Driving

In accordance with Executive Order 13513, "Federal Leadership on Reducing Text Messaging While Driving" (10/1/2009) and U.S. DOT Order 3902.10 "Text Messaging While Driving" (12/30/2009), FAA encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing Work related to a grant or sub-grant.

Contractor must promote policies and initiatives for employees and other Work personnel that decrease crashes by distracted drivers, including policies to ban text messaging while driving. Contractor must include these policies in each third-party subcontract involved on this Project.

SS. Electronic Mail Communication

Electronic mail communication between Contractor and City employees must relate only to business matters between Contractor and the City.

TT. EDS Update Obligation

Contractor is required to notify the City and update the EDS whenever there is a change in circumstances that makes any certification or information provided in an EDS inaccurate, obsolete or misleading. Failure to notify the City and update the EDS is grounds for declaring Contractor in default, termination of the Contract for default, and declaring that Contractor is ineligible for future Contracts.

UU. Wheel Tax (City Sticker)

Contractor must pay all Wheel Tax required by Chapter 3-56 of the MCC, as amended from time to time. Contractor should take particular notice of Sections 3-56-020 and 3-56-125 of the MCC which relate to payment of the tax for vehicles that are used on City streets or on City property by City residents. For the purposes of Chapter 3-56 of the MCC, any business that owns, leases or otherwise controls a place of business within the City wherein motor vehicles or semi-trailers are stored, repaired, serviced, or loaded or unloaded in connection with the business is also considered to be a City resident.

VV. Energy Conservation Requirements

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201, *et seq*.).

WW. Procurement of Recovered Materials

1. Contractor and Subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this Contract and to the extent practicable, Contractor and Subcontractors are to use of products containing the highest percentage of recovered materials for items designated by the U.S. EPA under 40 CFR Part 247 whenever:

    a. The Contract requires procurement of $10,000 or more of a designated item during the fiscal year; or,
    b. Contractor has procured $10,000 or more of a designated item using Federal funding during the previous fiscal year.

    The list of the U.S. EPA-designated items is available at: https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program.

2. Section 6002(c) establishes exceptions to the preference for recovery of the U.S. EPA-designated products if Contractor can demonstrate the item is:

    a. Not reasonably available within a timeframe providing for compliance with the Contract performance schedule;
    b. Fails to meet reasonable Contract performance requirements; or
    c. Is only available at an unreasonable price.

XX. Prohibition of Segregated Facilities

1. Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this Contract.

2. "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

3. Contractor will include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this Contract.

YY. Seismic Safety

Contractor agrees to ensure that all Work performed under this Contract, including Work performed by Subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program ("NEHRP"), Local building codes that model their code after the current version of the International Building Code ("IBC") meet the NEHRP equivalency level for seismic safety.

ZZ. Tax Delinquency and Felony Convictions

Contractor must complete the Certification Regarding Tax Delinquency and Felony Conviction included in Part One ("Instructions and Execution Documents"). Contractor agrees, if Awarded the Contract resulting from this solicitation, it will incorporate the provision in Part One ("Instructions and Execution Documents"), in all lower tier Subcontractors' certifications:

1. Contractor represents that it is/ is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an Agreement with the authority responsible for collecting the tax liability.

2. Contractor represents that it is/ is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

3. If Contractor responds in the affirmative in either of the above representations, the applicant is ineligible to receive an Award unless the City of Chicago, Department of Procurement Services has received notification from the agency suspension and debarment official ("SDO") that the SDO has considered suspension for debarment and determined that no further action is required to protect the Government's interests. Contractor therefore must provide information to the City of Chicago, Department of Procurement Services about its tax liability or conviction, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before Award decisions are made.

AAA. Safety Enhancing Vehicle Equipment Contracting (Section 2-92-697 of the MCC)

1. Definitions:

For purposes of this section, the following definitions will apply:

"Commissioner of 2FM" means the City's Commissioner of Fleet and Facility Management.

"Conventional cab" means a large vehicle configuration in which the driver is behind the front axle and the engine is in front of the axle under a discrete hood.

"Convex mirrors" means wide-angle mirrors that enable the operator of a large vehicle to see along the left and right sides of the vehicle by allowing a view of all points on an imaginary horizontal line which is: (1) three feet above the road, and (2) one foot outside the plane defined by the outer face of the wheels.

"Crossover mirror" means a fender-mounted or hood-mounted mirror that enables the operator of a large vehicle with a conventional cab to see: (1) any person or object at least three feet tall passing one foot in front of the vehicle, and (2) the area from the front bumper to where direct vision is possible.

"Large vehicle" means any motor vehicle with a gross vehicle weight rating exceeding 10,000 pounds, except an ambulance, fire apparatus, low-speed vehicle with maximum speed under 15 mph, or agricultural tractor.

"Lateral protective device" or "vehicle side guard" means an apparatus installed between the front and rear wheels of a large vehicle that is designed to prevent road users from falling underneath the vehicle.

"Subcontractor" means any person that enters into any tier subcontract to perform Work on this Contract.

"Volpe side guard standard" means the U.S. Department of Transportation's Volpe side guard standard published and referred to as U.S. DOT Standard DOT-VNTSC-OSTR-16-05, as amended; or a functionally equivalent national vehicle side guard standard, as determined by the Commissioner of 2FM.

2. Safety Enhancing Requirements

Contractor and any Subcontractor must comply with Section 2-92-597 of the MCC. Contractor and any Subcontractor must retrofit large vehicles used in the performance of the Contract, with:

a. Lateral protective devices. This requirement will be considered satisfied if: (1) the vehicle is equipped with vehicle side guards in accordance with the requirements of the Volpe side guard standard, or (2) the vehicle is so designed or equipped at the side that, by virtue of its shape and characteristics, its component parts can be regarded as replacing or functioning as vehicle side guards in accordance with the Volpe side guard standard, or (3) the vehicle cannot be retrofitted with lateral protective devices as attested by Contractor or the Subcontractor in a statement accompanied by certification from two manufacturers of such devices.
b. Left and right-side convex mirrors; and
c. At least one crossover mirror on the passenger side.

3. Compliance

Contractor will submit a written compliance plan to the Commissioner of 2FM with respect to compliance with Section 2-92-597 of the MCC within 14 Days following the NTP or the placing of the first order under the Contract, as applicable.

Every 12-month period following the NTP or the placing of the first order under the Contract, as applicable, or when requested by the Commissioner of 2FM Contractor must submit to the Commissioner of 2FM, in a form and manner provided by the CPO, a report that includes the following:

a. The number of large vehicles used in the performance of the Contract by Contractor and any Subcontractor;
b. The number of large vehicles used in the performance of the Contract by Contractor and any Subcontractor that are retrofitted with safety enhancing equipment as required as specified above and Section 2-92-597(b) of the MCC;
c. One or more photographs of each large vehicle used in the performance of the Contract by Contractor and any Subcontractor that is retrofitted with required safety enhancing equipment as specified above and set forth in Section 2-92-597(b) of the MCC. The photographs must show the large vehicle's license plate number with the safety enhancing equipment fitted on the vehicle; and
d. A certification that Contractor and any Subcontractor in the Contract have met the requirements in Section 2-92-597 of the MCC and the terms of the Contract specified pursuant to that section.

4. Annual Waiver Requests

Contractor and any Subcontractors may apply to the CPO for an annual waiver from the requirements of Section 2-92-597 of the MCC. See Section 2-92-597(g) of the MCC.

5. Costs

All costs that Contractor or any Subcontractor may incur to comply with Contract requirements imposed pursuant to this section are incidental to the overall Contract. No additional time or monies will be granted to Contractor for compliance with these.

6. Enforcement

   The CPO or Commissioner of 2FM is authorized to inspect or to have inspected any large vehicle used in the performance of this Contract in order to ensure compliance with Safety Enhancing Equipment requirements and Section 2-92-597 of the MCC.

   In addition to other remedies provided by law or specified in the Contract, any person who knowingly makes a false statement of material fact to any city agency with respect to compliance with any Contract requirements specified pursuant to Section 2-92-597 of the MCC or rules promulgated thereunder will be fined not less than $1,000 nor more than $5,000 for each such false statement. For purposes of Section 2-92-597 of the MCC, a person knowingly makes a false statement of material fact when such person makes a false statement of material fact as provided in subsection (d) of Section 1-21-010.

BBB. Policy Prohibiting Sexual Harassment (Section 2-92-612 of the MCC)

For purposes of this section, "Sexual Harassment" is as defined in MCC 6-10-020. For the avoidance of doubt, Contractor will be considered an "Employer" as defined in MCC 6-10-020.

In accordance with MCC 2-92-612, Contractor must attest by affidavit that Contractor has a written policy, compliant with the requirements of MCC 6-10-040, prohibiting Sexual Harassment. The affidavit must be in a form acceptable to the Chief Procurement Officer. Contractor's affidavit is attached as the Exhibit titled "Sexual Harassment Policy Affidavit".

Contractor's failure to have a written policy prohibiting Sexual Harassment as provided above will constitute an event of default. In the event of default, the Chief Procurement Officer will notify Contractor of such noncompliance and may, as appropriate: (i) issue Contractor an opportunity to cure consistent with the default provisions in this Agreement; (ii) terminate the contract; or (iii) take any other action consistent with the default provisions in the contract. This section will not be construed to prohibit the City from prosecuting any person who knowingly makes a false statement of material fact to the city pursuant to Chapter 1-21 of the MCC, or from availing itself of any other remedies under contract or law.

CCC. Policy on Non-disclosure of Salary History (Section 2-92-385 of the MCC)

For purpose of this section, the following definitions will apply:

"Contract" means any Agreement or transaction pursuant to which a contractor (i) receives City funds in consideration for services, work or goods provided or rendered, including contracts for legal or other professional services, or (ii) pays the City money in consideration for a license, grant or concession allowing it to conduct a business on City premises, and includes any contracts not awarded or processed by the Department of Procurement Services.

"Contractor" means the person to whom a contract is awarded.

1. As a condition of contract award, Contractor will, as prescribed by the Chief Procurement Officer, attest by affidavit that Contractor has a policy that conforms to the following requirements:
   a. Contractor will not screen job applicants based on their wage or salary history, including by requiring that an applicant's prior wages, including benefits or other compensation, satisfy minimum or maximum criteria; or by requesting or requiring an applicant to disclose prior wages or salary, either (1) as a condition of being interviewed, (2) as a condition of continuing to be considered for an offer of employment, (3) as a condition of an offer of employment or an offer of compensation, or (4) as a condition of employment.
   b. Contractor will not seek an applicant's wage or salary history, including benefits or other compensation, from any current or former employer.

Contractor's affidavit is included in Part One ("Instructions and Execution Documents"), in the form titled "Affidavit Regarding Policy on Non-Disclosure of Salary History".

If Contractor violates the above requirements, Contractor may be deemed ineligible to Contract with the City, any Contract, extension, or renewal thereof Awarded in violation of the above requirements may be voidable at the option of the City. Provided, however, that upon a finding of a violation by Contractor, no Contract

will be voided, terminated, or revoked without consideration by the CPO of such action's impact on Contractor's DBE Subcontractors.

DDD. Business Diversity Program Reporting

1. Policy

   Pursuant to Mayoral Executive Order 2021-2, Contractors must submit annual reports regarding the Contractors' efforts regarding utilization of MBE and WBE firms, and other historically underutilized firms.

2. Definitions.

   "Business Diversity Program" means a program or initiative of a business enterprise which encourages or facilitates the use of minority-owned, women-owned, and other historically underutilized businesses as contractors, consultants, suppliers, or service providers for that business.

   "Certified Firms" means firms possessing certifications recognized by the City of Chicago pursuant to MCC Chapter 2-92 or 49 CFR Parts 23 or 26. Specifically, MBEs, WBEs, BEPDs, VBEs, and DBEs.

3. Business Diversity Program Reports

   Contractor must submit an annual report on July 1st of each year (or other date designated by the CPO) containing information about the Contractor's Business Diversity Program, if information is available. However, for Contracts awarded June 1st through July 1st, the due date for the first annual report will be August 1st, all subsequent reports will be due July 1st. Information to be provided will include:

   a. Whether Contractor has a Business Diversity Program.
   b. Description of the Contractor's Business Diversity Program, if any.
   c. Information on expenditure of goods and services from minority-owned firms and women-owned firms during the prior calendar year, expressed in dollars and percentages, to the extent information is available. For reports due in 2021, information on expenditures in both 2019 and 2020 should be provided if available.
   d. For each year after the first year, information on progress or changes in the program in the prior year, if such information exists.

   Reports will be submitted to a City office or location anticipated to be identified by June 15th.

4. Applicability

   Contractor must submit the reports required by this section unless:

   a. Contractor is a Certified Firm; or
   b. The Contract is for professional consulting services of an individual who is either the majority owner of the Contractor or is him- or herself the contracting party as a sole proprietor; or
   c. All active City contracts awarded to Contractor have an award value less than $100,000 and the aggregate award value of all contracts awarded to Contractor between May 31st of the prior year and May 31st of the current year is less than $100,000; or
   d. The CPO has otherwise notified the Contractor in writing that the requirement does not apply or that an exception will be made as outlined in Mayoral Executive Order 2021-2.
   e. However, Contractors not required to report may report voluntarily.

EEE. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to use and procurement of certain telecommunications and video surveillance services or equipment in compliance with the National Defense Authorization Act [Public Law 115-232 889(f)(1)].

FFF. Domestic Preferences for Procurements

Contractor must comply with 2 CFR 200.322. As appropriate and to the extent consistent with law, the Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the

purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).

END OF XVIII

XIX. MISCELLANEOUS

A. General Provisions

1. Counterparts: This Contract is comprised of several identical counterparts, each to be fully executed by the parties and each to be deemed an original having identical legal effect.

2. Amendments: No changes, amendments, modifications, cancellation, or discharge of this Contract, or any part thereof, will be valid unless in writing and signed by the parties hereto, or their respective successors and assigns, in accordance with all applicable laws.

3. Governing Law and Jurisdiction: This Contract will be governed in accordance with the laws of the State of Illinois, without regard to choice of law principles. Contractor hereby irrevocably submits, and will cause its Subcontractors to submit, to the original jurisdiction of those State or Federal courts located within the County of Cook, State of Illinois, with regard to any controversy arising out of, relating to, or in any way concerning the execution or performance of this Contract. Contractor agrees that service of process on Contractor may be made, at the option of the City, either by registered or certified mail addressed to the applicable office as provided for in this Contract, by registered or certified mail addressed to the office actually maintained by Contractor, or by personal delivery on any officer, director, or managing or general agent of Contractor.

4. Consent to Service of Process: Contractor agrees that service of process on Contractor may be made, at the option of the City, either by registered or certified mail addressed to the applicable office as provided for in this Contract, by registered or certified mail addressed to the office actually maintained by Contractor, or by personal delivery on any officer, director, or managing or general agent of Contractor. Contractor designates and appoints the representative identified on the signature page hereto under the heading “Designation of Agent for Service Process”, as its agent in Chicago, Illinois, to receive on its behalf service of all process (which representative will be available to receive such service at all times), such service being hereby acknowledged by such representative to be effective and binding service in every respect. Said agent may be changed only upon the giving of written notice by Contractor to the City of the name and address of a new Agent for Service of Process who works within the geographical boundaries of the City of Chicago. Nothing herein will affect the right to serve process in any other manner permitted by law or will limit the right of the City to bring proceedings against Contractor in the courts of any other jurisdiction.

5. Assigns: All of the terms and conditions of this Contract will be binding upon and inure to the benefit of the parties hereto and their respective legal representatives, successors, transferees, and assigns.

6. Co-operation by Parties: The parties hereby agree to act in good faith in the performance of this Contract and to co-operate with each other in the completion of the Work hereunder. Contractor further agrees to implement such measures as may be necessary to ensure that its staff and its Subcontractors will be bound by the provisions of this Contract. The City will be expressly identified as a third-party beneficiary in the subcontracts and granted a direct right of enforcement thereunder.

7. Contractor must at all times cooperate fully with the City and act in the City's best interests. If this Contract is terminated for any reason, or if it is to expire on its own terms, Contractor must make every effort to assure an orderly transition to another provider of the services, if any, orderly demobilization of its own operations in connection with the services, uninterrupted provision of services during any transition period and must otherwise comply with the reasonable requests and requirements of the City in connection with the termination or expiration.

8. Joint and Several Liability: In the event that Contractor, or its successors or assigns, if any, is comprised of more than one individual or other legal entity (or a combination thereof), then and in that event, each and every obligation or undertaking herein stated to be fulfilled or performed by Contractor will be the joint and several obligation or undertaking of each such individual or other legal entity.

9. No Third-Party Beneficiaries: The parties agree that this Contract is solely for the benefit of the parties and Homeowners, and nothing herein is intended to create any third-party beneficiary rights for Subcontractors or other third parties.

B. Notices of Events of Default and Termination

1. Notices of events of default and termination pursuant to Part Two, Article XVII ("Events of Default and Termination") will be in writing and may be delivered personally or by placing in the United States mail, first class and certified, return receipt requested, with postage prepaid and addressed as follows:

a. If to the City:
Commissioner, Department of Aviation
10510 W. Zemke Road
PO Box 66142
Chicago, Illinois 60666-0517

With Copies to:
Chief Procurement Officer
121 N. LaSalle Street
City Hall Room 806
Chicago, Illinois 60602-1206

b. If to Contractor:
The address identified on its Bid
With Copies to:
The Surety

2. Notices delivered by mail will be deemed effective three Days after mailing in accordance with this section. Notices delivered personally will be deemed effective upon receipt. The addresses stated herein may be revised without need for modification or amendment of this Contract, provided written notification is given in accordance with this section.

C. Authority

Execution of this Contract by Contractor is authorized and signature(s) of each person signing on behalf of Contractor have been made with complete and full authority to commit Contractor to all terms and conditions of this Contract, including each and every representation, certification, and warranty contained herein, attached hereto and collectively incorporated by reference herein, or as may be required by the terms and conditions hereof. If other than a sole proprietorship, Contractor must provide satisfactory evidence that the execution of the Contract is authorized in accordance with the business entity's rules and procedures.

D. No Waiver of Legal Rights

1. Neither the acceptance of the City, or any representative of the City, nor any payment for or acceptance of the whole or any part of the Work, nor any extension of time, nor any possession taken by the City, will operate as a waiver by the City of any portion of the Contract, or of any power herein reserved or any right of the City to damages herein provided. A waiver of any breach of the Contract will not be a waiver of any other or subsequent breach.

2. A waiver of any breach of the Contract will not be held to be a waiver of any other or subsequent breach. Whenever under this Contract the City by a proper authority waives Contractor's performance in any respect or waives a requirement or condition to either the City's or Contractor's performance, the waiver so granted, whether expressed or implied, will only apply to the particular instance and will not be deemed a waiver forever or for subsequent instance of the performance, requirement, or condition. No such waiver will be construed as a modification of this Contract regardless of the number of times the City may have waived the performance, requirement, or condition.

3. No Federal Obligation to Third Parties. Contractor agrees that, absent the Federal Government's express written consent, the Federal Government will not be subject to any obligations or liabilities to any Contractor or any other person not a party to the grant Agreement or cooperation Agreement between the City and the Federal Government. Notwithstanding any concurrence provided by the Federal government in or approval or any solicitation Agreement, or Contract, the Federal Government continues to have no obligations to any party, including Contractor.

END OF XIX

CITY OF CHICAGO
DEPARTMENT OF AVIATION
CHICAGO O'HARE INTERNATIONAL AIRPORT
RESIDENTIAL SOUND INSULATION PROGRAM O'HARE PHASE 19A

PART THREE OF THREE
TECHNICAL SPECIFICATIONS
SPECIFICATION NUMBER: 1315458A

CDA PROJECT NUMBER: OH8057.20-19
AIP GRANT NUMBER: TBD

CITY OF CHICAGO
Brandon Johnson
Mayor

CHICAGO DEPARTMENT OF AVIATION
Michael J. McMurray
Commissioner

Issued by:

CHICAGO DEPARTMENT OF PROCUREMENT SERVICES
Sharla D. Roberts
Chief Procurement Officer

June 12, 2026
ISSUED FOR BID

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SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 01 40 00 "Quality Requirements".

1.3 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work.

1.4 PROCEDURES

A. Unit prices include all necessary labor, equipment, materials, permits, licenses, overhead, profit, insurance, and taxes.

B. List of Unit Prices: A schedule of unit prices is included in PART 3 - EXECUTION. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A1. STC 40 WINDOW – VINYL ACOUSTIC

Description A1: All labor, equipment and material to remove existing window and install new vinyl acoustic window into the existing window opening, with jamb extensions, hardware, wood blocking, interior/exterior stops, self-adhering flexible flashing (as necessary), insulation, backer rod as detailed, sealant and new exterior aluminum cladding up to 8-inches in width. Include cladding any existing lintel as necessary; within 1/4-inch of the front edge of the lintel and caulking the finished cladding edge, while not covering any weep system that sits on top of the lintel. Include clear or frosted glass as indicated.

Include temporary closures as necessary. Includes all primed painted exterior wood trim and/or brickmold that is to be covered in aluminum cladding.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 05 75 00 “Decorative Formed Metal,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants” and 08 53 13 “Vinyl Windows”.

Unit of Measurement: Each window unit, installed in place, based on type and size category. Determine size category by adding overall height plus overall width of the new window unit to obtain the united inches (U.I.).

A2. (NOT USED)

B1. STC 29 WINDOW – VINYL

Description B1: All labor, equipment and material to remove existing window and install new vinyl window into the existing window opening, with jamb extensions, hardware, wood blocking, interior/exterior stops, self-adhering flexible flashing (as necessary), insulation, backer rod as detailed, sealant and new exterior aluminum cladding up to 8-inches in width. Include cladding any existing lintel as necessary; within 1/4-inch of the front edge of the lintel and caulking the finished cladding edge, while not covering any weep system that sits on top of the lintel. Include clear or frosted glass as indicated. Include temporary closures as necessary. Includes all primed painted exterior wood trim and/or brickmold that is to be covered in aluminum cladding.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 05 75 00 “Decorative Formed Metal,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 53 13 “Vinyl Windows,” and 01 50 00 “Temporary Facilities and Controls”.

Unit of Measurement: Each window unit, installed in place, based on type and size category. Determine size category by adding overall height plus overall width of the new window unit to obtain the united inches (U.I.).

B2. (NOT USED)

C1. (NOT USED)

C2. (NOT USED)

C3. (NOT USED)

C4. (NOT USED)

C5. (NOT USED)

C6. (NOT USED)

C7. (NOT USED)

C8. (NOT USED)

C9. (NOT USED)

C10. (NOT USED)

C11. (NOT USED)

C12. (NOT USED)

C13. (NOT USED)

C14. (NOT USED)

C15. (NOT USED)

C16.1. WINDOW RESTRICTOR HARDWARE – DOUBLE-HUNG

Description C16.1: All labor, equipment and material to furnish and install child safety window restrictor hardware to limit the operable sash opening to less than 4-inches as required by applicable code.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 08 51 13 "Aluminum Windows," and 08 53 13 "Vinyl Windows".

Unit of Measurement: Each window restrictor hardware at each window, installed in place.

C16.2. WINDOW RESTRICTOR HARDWARE – CASEMENT/AWNING

Description C16.2: All labor, equipment and material to furnish and install child safety window restrictor hardware to limit the operable sash opening to less than 4-inches as required by applicable code.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 08 51 13 "Aluminum Windows," and 08 53 13 "Vinyl Windows".

Unit of Measurement: Each window restrictor hardware at each window, installed in place.

C16.3. WINDOW RESTRICTOR HARDWARE – SLIDER

Description C16.3: All labor, equipment and material to furnish and install child safety window restrictor hardware to limit the operable sash opening to less than 4-inches as required by applicable code.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 08 51 13 "Aluminum Windows," and 08 53 13 "Vinyl Windows".

Unit of Measurement: Each window restrictor hardware at each window, installed in place.

D. PREMIUM VINYL COLORS

Description D: All frame and trim materials shall be solid monolithic beige vinyl or a composite of brown vinyl color layer bonded to the white main vinyl extrusion. Painting of vinyl windows to obtain color is not acceptable.

Applicable specification sections include but are not limited to: 08 53 13 "Vinyl Windows".

Unit of Measurement: Additional cost for premium factory color only, per window unit, whenever the manufacturer includes an upcharge for color.

E. GLASS MODIFICATIONS

Description E.1 – E.6: All labor, equipment and material to provide the optional feature indicated in any one of the vinyl and aluminum window sashes contained in this contract, as follows:

E.1- (NOT USED)
E.2- (NOT USED)
E.3- (NOT USED)
E.4.1- Fully tempered clear glass (both lites) insulating glazing unit in lieu of that specified.
E.4.2- Fully tempered clear glass for storm window glazing in lieu of non-tempered glass.
E.5- "Colonial" style grille insert.
E.6- "Diamond" style grill insert.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities," 08 51 13 "Aluminum Windows, and 08 53 13 "Vinyl Windows".

Unit of Measurement: Each optional feature, per window sash unit.

E7. (NOT USED)

F1. EXTERIOR FIN MOUNTED METAL STORM WINDOW

Description F1: All labor, equipment and material to install new acoustical storm window unit on exterior side of existing window. Include cladding as needed.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Each storm window unit, installed in place, based on size category. Determine size category by adding overall height plus overall width of the window unit to obtain the united inches (U.I).

F2. EXTERIOR FLUSH MOUNT METAL STORM WINDOW

Description F2: All labor, equipment and material to install new acoustical flush mount metal storm window unit on exterior side of existing window. Include cladding as needed.

Applicable specification sections include but are not limited to: "Execution," 02 83 13 "Lead Hazard Control Activities," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Each storm window unit, installed in place, based on size category. Determine size category by adding overall height plus overall width of the window unit to obtain the united inches (U.I).

G. WINDOW MODIFICATIONS

1. ENLARGEMENT OF EXISTING WINDOW ROUGH OPENING FOR EGRESS WINDOWS

Description G1: : To be used when the existing framed rough opening is to be enlarged to the point that the exterior facade i.e., brick, siding, etc., is affected and needs to be removed or cut out to

accommodate a new window unit for emergency egress. When completed, the window will match all other windows in interior and exterior appearance and finish. Include all labor, equipment and materials to remove existing window in its' entirety, remove wall stud framing as necessary to enlarge the rough opening in width and/or height which will allow for the installation of a new window fully compliant with applicable building code for an egress/emergency escape window; size (width, height and area) and sill height above finished floor. Maintain existing header height. Include all framing, sheathing, weather barrier, interior gypsum board patching. Include finish painting of all walls within the affected room. Patch exterior and interior materials and finishes to match existing. For sided homes, include patching of exterior wall siding, including metal edge trims and flashings. For brick clad walls, salvage existing brick for reinstallation, as possible, or replace with new face brick matching existing to new finished opening. Do not include work identified in Unit Prices A, B, or C in this unit price. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 "Temporary Facilities and Controls," 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry" 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," and Division 8 Window specification sections.

Unit of Measurement: Per square foot for each rough opening, for each type of wall construction, frame or brick.

2. REMOVE THRU-WALL AIR CONDITIONER AND TRIM OUT FOR NEW WINDOW

Description G2: Remove and properly dispose of existing thru-wall air conditioning unit and treat the opening to accept new window unit. Convert existing 220v outlet to 110v outlet or terminate. Reestablishment or recapping of electrical circuit and removal of abandoned wiring will be incidental. Do not include work identified in Unit Prices A, B, or C in this unit price.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 13 "Aluminum Windows," 08 52 00 "Wood Windows" and 08 53 13 "Vinyl Windows".

Unit of Measurement: Each rough opening, based on size category. Determine size category by adding overall height plus overall width of rough opening to obtain the united inches (U.I.).

3. EXTERIOR TRIM AND MOLDING / WINDOWS

a. EXTERIOR TRIM / BRICKMOLD – EXISTING WINDOWS

Description G3a: All labor, equipment and material to replace existing molding wood trim around windows on houses.

Applicable specification sections include but are not limited to: 06 20 13 "Exterior Finish Carpentry" and 09 91 13 "Exterior Painting".

Unit of Measurement: Payment will be made at the linear foot unit price for molding installed and accepted by the Commissioner.

4. INTERIOR TRIM

a. INTERIOR TRIM – WINDOWS / UP TO 3.5-INCHES WIDE

Description G4a: All labor, equipment and materials to replace interior trim, up to 3.5-inches in width, around windows using colonial or ranch molding. The trim will be painted or stained and varnished as directed and included in the price.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry," 09 91 23 "Interior Painting" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made at the linear foot unit price for interior trim - windows installed, finished and accepted by the Commissioner.

b. INTERIOR TRIM – WINDOWS / GREATER THAN 3.5-INCHES WIDE

Description G4b: All labor, equipment and materials to replace interior trim, greater than 3.5 inches in width, around windows using colonial or ranch molding. The trim will be painted or stained and varnished as directed and included in the price.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry," 09 91 23 "Interior Painting" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made at the linear foot unit price for interior trim - windows installed, finished and accepted by the Commissioner.

c. INTERIOR TRIM – OTHER

Description G4c: All labor, equipment and materials to install interior trim around any other work in the contract using colonial or ranch molding. The trim will be painted or stained and varnished as directed and included in the price.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry," 09 91 23 "Interior Painting" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made at the linear foot unit price for interior trim – other installed, finished and accepted by the Commissioner.

d. INTERIOR TRIM – LATTICE

Description G4d: All labor, equipment and materials to install lattice trim on structural window mullions. The trim will be painted or stained and varnished as directed and included in the price.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry," 09 91 23 "Interior Painting" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made at the linear foot unit price for interior trim – lattice installed, finished and accepted by the Commissioner.

e. SECONDARY WINDOW TRIM

Description G4e: All labor, equipment and materials to install a secondary specialty casing such as a "hook strap" type (top edge rabbeted to allow a hanging hardware hook) or other available stock casing to windows. This casing is installed to make the window match the existing window trim throughout the house. The trim will be painted or stained and varnished to match the trim of the new window.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry" and 07 92 00 "Joint Sealants".

Unit of Measurement: Payment will be made at the linear foot unit price for secondary window trim installed, finished and accepted by the Commissioner.

5. INTERIOR/EXTERIOR ALUMINUM CLADDING – WINDOWS

a. ALUMINUM CLADDING UP TO 8-INCHES WIDE

Description G5a: All labor, equipment and materials to install aluminum cladding, up to 8 inches in width, around existing windows that are not replaced under this Program, including glass block windows, bathroom windows, etc.

Applicable specification sections include but are not limited to: 05 75 00 "Decorative Formed Metal" and 06 20 13 "Exterior Finish Carpentry".

Unit of Measurement: Payment will be made at the linear foot unit price for cladding installed and accepted by the Commissioner.

b. ALUMINUM CLADDING GREATER THAN 8-INCHES WIDE

Description G5b: All labor, equipment and materials to install aluminum cladding, greater than 8 inches in width, including around existing windows that are not replaced under this program and also new windows installed by the Program, including glass block windows, bathroom windows, etc.

Applicable specification sections include but are not limited to: 05 75 00 "Decorative Formed Metal" and 06 20 13 "Exterior Finish Carpentry".

Unit of Measurement: Payment will be made at the linear foot unit price for cladding installed and accepted by the Commissioner.

6. REPLACE ROTTED OR STRUCTURALLY UNSOUND WOOD FOR WINDOW FRAMES

Description G6: All labor, equipment and materials to remove all rotted or unsound wood frames, including mullions, and re-frame openings that are not sound enough to support new window installation. Whenever rotted or unsound windowsills are replaced, they will be replaced with primed sill stock or an approved "field-milled," primed sill to match the profile of existing windowsills. "Patching in" will not be permitted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 "Temporary Facilities and Controls," 01 73 00 "Execution," 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry" and 07 92 00 "Joint Sealants".

Unit of Measurement: Payment will be made at the linear foot unit price for rotted or unsound wood for window frames installed and accepted by the Commissioner.

7. REMOVE AND REPLACE AND/OR SUPPLEMENT FRAMING/STRUCTURE

a. WALLS/WINDOW OPENINGS

Description G7a: All labor, equipment and materials to replace wall studs, plates, and headers on walls that are not sound enough to support other items installed under this contract such as windows, doors and drywall. The Commissioner in writing will determine the extent of the work. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities” and 06 10 53 “Miscellaneous Rough Carpentry”.

Unit of Measurement: Payment will be made by the linear foot measurement of structural elements installed and accepted by the Commissioner.

b. CEILINGS

Description G7b: All labor, equipment and materials to remove and replace, and/or supplement joists, rafters and beams to support other items installed under this contract such as drywall and HVAC equipment. The Commissioner in writing will determine the extent of the work.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities” and 06 10 53 “Miscellaneous Rough Carpentry”.

Unit of Measurement: Payment will be made by the linear foot measurement of structural elements installed and accepted by the Commissioner.

8. REPLACEMENT FRAMING FOR METAL PAN WINDOWS

Description G8: All labor, equipment and material to remove existing metal framed window, saw cut and remove the existing metal frame, provide new 1” x 6” framing at header and jambs, provide new 2 x 8 inches sill from primed sill stock and install new interior trim either painted or stained and varnished. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry” and 07 92 00 “Joint Sealants”.

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside new window frame to obtain the united inches, which will identify the unit price category of each opening, installed and accepted by the Commissioner.

9. FACTORY MANUFACTURED FRAME FOR BOW OR BAY WINDOW

a. PREFABRICATED BAY OR BOW WINDOW FRAME

Description G9a: All labor, equipment and material to install a new frame for bow or bay window. The windows and the frame will be installed as an integrated, one-piece unit. The

interior surface of the seat, jambs and head will be cabinet grade plywood of either oak, birch or maple veneer, stained and varnished or painted as directed. Head and seat of assembly shall be insulated. Install new support brackets to match existing as necessary. Installation of new interior trim and cladding of new support brackets shall be incidental. Existing roof shall be reused. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 "Temporary Facilities and Controls," 01 73 00 "Execution," 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 53 13 "Vinyl Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment will be made for each factory manufactured bow or bay frame per each, installed, finished and accepted by the Commissioner.

b. BOW OR BAY WINDOW ROOF REPLACEMENT

Description G9b: All labor, equipment and material to install a new roof, including a new plywood deck and painted premanufactured standing seam sheet metal roof. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 "Temporary Facilities and Controls," 01 73 00 "Execution," 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 53 13 "Vinyl Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment will be made for each roof, installed, finished and accepted by the Commissioner.

10. EXTERIOR J-MOULDING TRIM AT WINDOWS AND DOORS

Description G10: All labor, equipment and material to install a new J-channel perimeter trim on houses with siding where a J-channel does not exist. This molding is installed to allow the window casing trim to be caulked at the opening perimeter and allow for control of water from the exterior siding cavity. Include wood trim or blocking as necessary to support the J-mold trim. Install J-molding with flexible flashing to control and weep water infiltration to the building exterior. J-molding color to match existing siding.

Applicable specification sections include but are not limited to: 06 20 13 "Exterior Finish Carpentry" and 09 91 13 "Exterior Painting".

Unit of Measurement: Payment will be made at the linear foot unit price for J-molding trim installed and accepted by the Commissioner.

11. ABANDONED WEIGHT POCKETS

Description G11: All labor, equipment and material to remove pulleys and weights and infill sash counterweight pockets of existing windows removed for replacement. The abandoned pocket cavity is to be filled fully with solid wood blocking and supplemented with either fiberglass or spray foam insulation; or fully with spray foam insulation. A pocket that services two windows will be considered one weight pocket.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities” and 06 10 53 “Miscellaneous Rough Carpentry”.

Unit of Measurement: Payment will be made for each abandoned weight pocket installed and accepted by the Commissioner.

H. SPECIAL WINDOWS

1. INTERIOR MOUNTED STORM WINDOW (SLIDING)

Description H1: All labor, equipment and material to install sliding interior storm window and windows at an existing garden window.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 51 69 “Metal Storm Windows” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside of the new window frame, which will identify the unit price for special windows installed and accepted by the Commissioner.

2. INTERIOR MOUNTED STORM WINDOW (FIXED)

Description H2: All labor, equipment and material to install interior fixed storm window on windows.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 51 69 “Metal Storm Windows” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside of the new window frame, which will identify the unit price for special windows installed and accepted by the Commissioner.

3. INTERIOR MOUNTED STORM WINDOW (OPERABLE)

Description H3: All labor, equipment and material to install an interior operable storm window on windows. Operable storm shall include either an integral insect screen section or removable glass section and screen panel insert.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 51 69 “Metal Storm Windows” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside of the new window frame, which will identify the unit price for special windows installed and accepted by the Commissioner.

4. EXTERIOR POLYGON FIN MOUNT METAL STORM WINDOW

Description H4: All labor, equipment and material to install a polygon metal storm window on existing polygon windows. Polygon windows will be defined as windows having corners not at right angles. Cladding, if needed, will be incidental to the work.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment for polygon metal storm window will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

5. EXTERIOR ARCH, ROUND, AND GOTHIC TOP FIN MOUNT METAL STORM WINDOW

Description H5: All labor, equipment and material to install an arch top, round top, or gothic top storm window on existing same style windows. Cladding, if needed, will be incidental to the work.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry, 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment for exterior arch top, round top, or gothic top fin mount metal storm windows will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

6. EXTERIOR POLYGON FLUSH MOUNT METAL STORM WINDOW

Description H6: All labor, equipment and material to install exterior polygon flush mount metal storm window on existing polygon windows. Polygon windows will be defined as windows having corners not at right angles. Cladding, if needed, will be incidental to the work.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment for exterior polygon flush mount metal storm windows will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

7. EXTERIOR ARCH, ROUND, AND GOTHIC TOP FLUSH MOUNT METAL STORM WINDOWS

Description H7: All labor, equipment and material to install exterior arch top, round top, or gothic top flush mount metal storm window on existing same style windows. Cladding, if needed, will be incidental to the work.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior

Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment for exterior arch top, round top, or gothic top flush mount metal storm windows will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

8. NEW INTERIOR MOUNTED SKYLIGHT STORM PANEL, HINGED

Description H8: All labor, equipment and material to install storm panels on skylights.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside of the new window frame, which will identify the unit price for special windows installed and accepted by the Commissioner.

9. NEW INTERIOR MOUNTED SKYLIGHT STORM PANEL, REMOVABLE

Description H9: All labor, equipment and material to install storm panels on skylights.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment will be made by measuring one height plus one width of the outside of the new window frame, which will identify the unit price for special windows installed and accepted by the Commissioner.

10. NEW INTERIOR MOUNTED STORM WINDOW (POLYGON METAL STORM WINDOW)

Description H10: All labor, equipment and material to install interior polygon metal storm window on windows.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 51 69 "Metal Storm Windows" and 08 80 00 "Glazing".

Unit of Measurement: Payment for interior polygon metal storm windows will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

11. NEW INTERIOR MOUNTED STORM WINDOW (ARCH, ROUND, AND GOTHIC TOP METAL STORM WINDOW)

Description H11: All labor, equipment and material to install an interior arch top, round top, or gothic top metal storm window on existing same style windows.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 51 69 “Metal Storm Windows” and 08 80 00 “Glazing”.

Unit of Measurement: Payment for interior arch top, round top, or gothic top metal storm windows will be at the square foot unit price in place based on maximum height and maximum width and accepted by the Commissioner.

I. DOORS EXTERIOR/INTERIOR

1. WOOD DOORS - PRIME, PRE-HUNG INCLUDING HARDWARE - STYLES P1 thru P10

Description I1 a. thru j.: All labor and materials to remove the existing prime door and install a new pre-hung door with panels, lights, hardware, locks, peepholes, finishes, numbering/lettering for identification purposes, frames, plants, thresholds (including ADA compliant thresholds when necessary, and wooden thresholds for interior applications), threshold extensions, threshold shimming, self-adhering flexible flashing (as necessary), any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door. Includes clear, frosted, or rain glass. Door pairs will include manufacturer’s standard astragals; flush bolts at top and bottom of fixed door with a finish to match the new hardware. Cladding is part of the Storm Door Line Item and not included here. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 14 16 “Flush Wood Doors,” 08 71 00 “Door Hardware,” 08 80 00 “Glazing,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting” and 09 93 00 “Staining and Transparent Finishing”.

Unit of Measurement: Payment will be made for each pre-hung door at the unit price, complete, in place and accepted by the Commissioner.

WOOD PRE-HUNG SIDELIGHTS – STYLES A, B, & C

Description I1 k., l., & m.: All labor, equipment and materials necessary to install a sidelight(s) with a storm panel on the exterior for doors having existing sidelights. Includes clear, frosted, or rain glass. Sidelights may be on one side, both sides and/or above the prime door and will be an integrated part of the overall entry system. Sidelight glass is to be tempered glass. Price will also include exterior and interior trim and exterior cladding. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 08 14 16 “Flush Wood Doors” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made at the per each line item price for prime doors with either one, two, or three sidelights, complete, in place and accepted by the Commissioner.

2. WOOD DOORS - PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE

Description I2: All labor and materials to remove the existing prime door and install a new wood fire-rated door assembly with all required code elements; including but not limited to, code compliant spring hinges, door closer, hardware, locks and frames. Door jambs may require assembly. These new doors will also include: peepholes, finishes, numbering/lettering for identification purposes, plants, thresholds (including ADA compliant thresholds when necessary), threshold extensions, and any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door. Price will also include interior unit trim and common hallway trim and can be wood or metal depending on the application. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted.

Description I2a: Flush Door Slab - Style P1-FR – 20 minute fire rating.
Description I2b: Flush Door Slab - Style P1-FR – 45 minute fire rating.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 12 13 “Hollow Metal Frames,” 08 14 16 “Flush Wood Doors,” 08 71 00 “Door Hardware,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting,” 09 93 00 “Staining and Transparent Finishing” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made for each pre-hung door at the unit price, complete, in place and accepted by the Commissioner.

3. FIBERGLASS DOORS - PRIME, PRE-HUNG INCLUDING HARDWARE - STYLES F1 thru F11

Description I3 a. thru k.: All labor and materials to remove the existing prime door and install a new fiberglass pre-hung door, including hardware, with panels, lights, hinges, peepholes, finishes, numbering/lettering for identification purposes, frames, plants, thresholds (including ADA compliant thresholds when necessary, and wooden thresholds for interior applications), threshold extensions, threshold shimming, self-adhering flexible flashing (as necessary), any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door. Includes clear, frosted, or rain glass. Includes grilles, as scheduled. Door pairs will include manufacturer’s standard astragals; flush bolts at top and bottom of fixed door with a finish to match the new hardware. Cladding is part of the Storm Door Unit Price and not included here. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 16 14 “Fiberglass Doors,” 08 71 00 “Door Hardware,” 08 80 00 “Glazing,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting” and 09 93 00 “Staining and Transparent Finishing”.

Unit of Measurement: Payment will be made for each pre-hung door at the unit price, complete, in place and accepted by the Commissioner.

FIBERGLASS PRE-HUNG SIDELIGHTS – STYLES A, B, & C

Description I3 l., m., & n.: All labor, equipment and materials necessary to install a sidelight(s) with a storm panel on the exterior for doors having existing sidelights. Includes clear, frosted, or rain glass. Includes grilles, as scheduled. Sidelights may be on one side, both sides and/or above the prime door and will be an integrated part of the overall entry system. Sidelight glass is to be tempered glass. Price will also include exterior and interior trim and exterior cladding. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 08 16 14 “Fiberglass Doors” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made at the per each line item price for prime doors with either one, two, or three sidelights, complete, in place and accepted by the Commissioner.

4. FIBERGLASS DOORS - PRIME, FIRE-RATED, PRE-HUNG INCLUDING HARDWARE/SLAB STYLE F1-FR, F2-FR, & F3-FR.

Description I4 a. thru c..: All labor and materials to remove the existing prime door and install a new fire-rated fiberglass door assembly with all required code elements; including but not limited to, code compliant spring hinges, door closer, hardware, locks and frames. Door jambs may require assembly. These new doors will also include: peepholes, finishes, numbering/lettering for identification purposes, plants, thresholds (including ADA compliant thresholds when necessary), threshold extensions, and any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door. Price will also include interior unit trim and common hallway trim and can be wood or metal depending on the application. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 12 13 “Hollow Metal Frames,” 08 16 14 “Fiberglass Doors,” 08 71 00 “Door Hardware,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting,” 09 93 00 “Staining and Transparent Finishing” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made for each pre-hung door at the unit price, complete, in place and accepted by the Commissioner.

5. (NOT USED)

6. (NOT USED

7. (NOT USED)

8. (NOT USED)

9. WEATHER-STRIPPING INSTALLATION TO EXISTING DOOR

Description I9: All labor, equipment and materials to replace or apply the weatherstripping on an existing door that is to remain in place. Maintain interior and exterior trim in place.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 06 20 13 “Exterior Finish Carpentry” and 08 71 00 “Door Hardware”.

Unit of Measurement: Payment will be made per each door opening, in place and accepted by the Commissioner.

10. (NOT USED)

11. (NOT USED)

12. (NOT USED)

13. DOORS - STORM DOORS

Description I13 a thru k.: All labor, equipment and materials to install a new storm door over either the existing or the new prime doors. Work shall include the removal of an existing storm door as occurs and the patching of frame/trim for abandoned screw holes. Work includes the replacement of any functioning doorbell control rendered unusable by the removal process, cladding, a keyed lock (where existing), and any build out of jamb to accommodate the storm frame.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 07 92 00 “Joint Sealants” and 08 11 69 “Metal Storm Doors and Frames”.

Unit of Measurement: Payment will be made at the per each price, complete, in place and accepted by the Commissioner.

14. (NOT USED)

15. SLIDING ALUMINUM-FRAMED GLASS DOORS – STYLES SL1 & SL2

Description I15 a. and b.: All labor and materials to remove the existing sliding glass door and install a new pre-finished sliding aluminum-framed glass door unit complete with hardware, locks, threshold, threshold extensions, threshold shimming, self-adhering flexible flashing (as necessary), any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door installation. Includes clear insulated glass. Exterior keyed lock shall be included, if existing. Cladding is part of this Line Item and is included here. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 32 13 “Sliding Aluminum-Framed Glass Doors,” 08 80 00 “Glazing,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting” and 09 93 00 “Staining and Transparent Finishing”.

Unit of Measurement: Payment will be made for each door at the unit price, complete, in place and accepted by the Commissioner.

16. SLIDING PLASTIC-FRAMED GLASS DOORS – STYLES SL1 & SL2

Description I16 a. and b.: All labor and materials to remove the existing sliding glass door and install a new pre-finished sliding plastic-framed glass door unit complete with hardware, locks, threshold, threshold extensions, threshold shimming, self-adhering flexible flashing (as necessary),

any structural reframing of the rough opening, labor, equipment and materials necessary to provide a complete door installation. Exterior keyed lock shall be included, if existing. Includes clear insulated glass. Cladding is part of this Line Item and is included here. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants,” 08 32 13 “Sliding Plastic-Framed Glass Doors,” 08 80 00 “Glazing,” 09 91 13 “Exterior Painting,” 09 91 23 “Interior Painting” and 09 93 00 “Staining and Transparent Finishing”.

Unit of Measurement: Payment will be made for each door at the unit price, complete, in place and accepted by the Commissioner.

17. TRANSOM LIGHT FOR SLIDING PLASTIC/ALUMINUM FRAMED GLASS DOOR

Description I17: All labor, equipment and materials necessary to install a transom light for new prime sliding door in place of an existing sliding door with transom light. Includes clear or frosted glass. Transom light will be supplied by the prime sliding glass door manufacturer and will be an integrated part of the overall door assembly. Transom light to match glass type of door. Price will also include exterior and interior trim and exterior cladding. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted. Include temporary closures as necessary.

Applicable specification sections include but are not limited to: 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry,” 08 32 13 “Sliding Aluminum-Framed Glass Doors,” 08 32 16 “Sliding Plastic-Framed Glass Doors” and 08 80 00 “Glazing”.

Unit of Measurement: Payment will be made at the per each line item price for prime sliding glass doors with one transom light, complete, in place and accepted by the Commissioner.

18. ADD FOR LARGER JAMB

Description I18: All labor, equipment and materials to add jamb extensions to pre-hung door jambs, fire-rated doors, sidelights and transoms per each where the wall at the door opening is greater than 5-1/2 inches deep. For wood jambs, wood jamb extensions will be shop attached. Metal fire-rated jambs may be installed in the field. Larger jamb price will also include all required additional appurtenances including threshold extensions.

Applicable specification sections include but are not limited to: 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry” and 06 20 23 “Interior Finish Carpentry”.

Unit of Measurement: Payment will be made at the line item unit price each for doorjamb extension, complete, in place and accepted by the Commissioner.

19. NEW MAILBOX (BLACK OR WHITE)

Description I19.: All labor, equipment and materials to install a new surface mounted mailbox on those houses where thru-door mail chute has been eliminated. Color to be chosen by Homeowner.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition” and 10 55 00 “Postal Specialties”.

Unit of Measurement: Payment will be made per each, installed and accepted by the Commissioner.

20. OTHER WORK

a. INSTALL SILL

Description I20a.: All labor, equipment and materials to install any door sill so as to raise exterior sill to same height as interior floor, and/or to replace existing rotted or damaged sill with new sill. Sill will be pressure treated lumber for exterior exposure or pine for interior exposure, extending the full length and depth of the threshold.

Applicable specification sections will include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities" and 07 92 00 "Joint Sealants".

Standard doorsill size will be determined as less than 60 inches. Any sill larger than the standard size will be billed at 1.5 times the standard rate.

Unit of Measurement: Payment will be made per each, in place and accepted by the Commissioner.

b. INSTALL APRON

Description I20b.: All labor, equipment and materials to remove existing rotted or damaged door apron and/or install new apron. Apron will be pressure treated lumber.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry" and 07 92 00 "Joint Sealants".

Standard door apron size will be determined as less than 60 inches. Any apron larger than the standard size will be billed at 1.5 times the standard rate.

Unit of Measurement: Payment will be made per each, in place and accepted by the Commissioner.

c. REMOVAL OF CONCRETE STOOP

Description I20c.: All labor, equipment and materials to remove a concrete stoop and replace with a stoop made with dimensional lumber.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition" and 07 92 00 "Joint Sealants".

Unit of Measurement: Payment will be made per each, regardless of size, complete, in place and accepted by the Commissioner.

d. REINSTALL EXISTING HARDWARE (CREDIT)

Description I20d.: All labor, equipment and materials to install the Homeowner's existing lockset and deadbolt hardware in a new door as shown on the construction modifications.

This item is a **credit** for not providing new hardware.

Unit of Measurement: Payment will be credited per each in place and accepted by the Commissioner.

e. EXTERIOR TRIM – DOORS

Description I20e: All labor, equipment and materials to install painted wood trim, or molding around newly installed storm doors on houses with siding, or brickmolding on houses with brick exterior.

Applicable specification sections include but are not limited to: 06 20 13 "Exterior Finish Carpentry" and 09 91 13 "Exterior Painting".

Unit of Measurement: Payment will be made at the linear foot unit price for trim or molding around doors installed, finished and accepted by the Commissioner.

f. SECONDARY DOOR TRIM

Description I20f.: All labor, equipment and materials to install a secondary "hook strap" type or other available stock casing to new doors. That casing is installed to make the door match the existing door trim throughout the house. The trim will be stained and varnished or painted to match the trim of the new door.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry," 07 92 00 "Joint Sealants," 08 14 16 "Flush Wood Doors," 08 71 00 "Door Hardware," 09 91 23 "Interior Painting" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made per linear foot, complete, in place and accepted by the Commissioner.

g. (NOT USED)

h. REINSTALLATION OF EXISTING STORM DOOR

Description I20h.: All labor, equipment, and materials to reinstall an existing storm door onto a new prime door. Any modifications to the storm door, new doorbell control button if needed or new cladding will be incidental.

Applicable specification sections include but are not limited to: 06 20 13 "Exterior Finish Carpentry".

Unit of Measurement: Payment will be made at the per each line item price for reinstalling existing storm door in place and accepted by the Commissioner.

i. REINSTALLATION OF EXISTING SECURITY STORM DOOR

Description I20i.: All labor, equipment, and materials to reinstall an existing security storm door onto a new prime door. Any modifications to the storm door, new doorbell control button, if needed or new cladding will be incidental.

Applicable specification sections include but are not limited to: 06 20 13 "Exterior Finish Carpentry".

Unit of Measurement: Payment will be made at the per each line item price for reinstalling existing security storm door in place and accepted by the Commissioner.

j. PATCH EXTERIOR SIDING

Description I20j.: All labor, equipment and materials to repair or patch vinyl, wood or aluminum siding when an electric meter has been relocated or when matching the siding exceeds the nominal opening for the removal of a thru-wall heater or air conditioner.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition” and 06 20 13 “Exterior Finish Carpentry”.

Unit of Measurement: Payment will be at the square foot price installed and accepted by the Commissioner.

k. PREMIUM COLOR FOR SLIDING PLASTIC-FRAMED GLASS DOORS

Description I20k.: All frame and trim materials shall be solid monolithic beige vinyl or a composite of brown vinyl color layer bonded to the white main vinyl extrusion. Painting of doors to obtain color is not acceptable.

Applicable specification sections include but are not limited to: 08 32 16 “Sliding Plastic-Framed Glass Doors”.

Unit of Measurement: Payment will be made on a per door basis whenever the manufacturer includes an upcharge for color. The unit price will be the additional cost associated with adding color to the door in place, and accepted by the Commissioner.

l. MASTER KEY LOCK

Description I20l.: Re-key new locks in multi-units if previous locks were on a Master Key.

Applicable specification sections include but are not limited to: 08 71 00 “Door Hardware”.

Unit of Measurement: Payment will be made on a per each door basis, and accepted by the Commisioner.

m. REPLACE THRESHOLD

Description I20m.: All labor, equipment and materials to remove any damaged door threshold and replace it with a new threshold. Threshold will be metal on exterior applications and metal or wood on interior applications.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” 06 20 23 “Interior Finish Carpentry” and 07 92 00 “Joint Sealants”.

Standard door threshold size will be determined as equal to or less than 36 inches. Any threshold larger than the standard size will be billed at 1.5 times the standard rate.

Unit of Measurement: Payment will be made per each, in place and accepted by the Commissioner.

n. REMOVAL AND REINSTALLATION/DISPOSAL OF AWNINGS

Description I20n.: All labor, equipment and materials to remove and reinstall/dispose existing window or door awnings where necessary to perform window, door, and storm door installation. Reinstall awnings or remove/dispose of as necessary.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities" and 06 20 13 "Exterior Finish Carpentry".

Unit of Measurement: Payment will be made per each, in place and accepted by the Commissioner.

o. TILE REPAIR

Description I20o.: All labor, equipment and materials to repair or replace existing wall or floor tile that was damaged during window and/or door removal or replacement and was not due to negligence by the Contractor. New tile to match existing in size, color and finish.

Applicable specification sections include but are not limited to: 01 73 00 "Execution" and 02 41 19 "Selective Demolition".

Unit of Measurement: Payment will be made per square foot of tile, in the place and accepted by the Commissioner.

21. HOURLY RATE FOR CARPENTER

Description I21: Hourly wage rate inclusive of all general conditions, overhead and profit. This price will be used to cover work items outside the scope of line item descriptions.

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X, "CHANGES IN THE WORK," Section C.

Unit of Measurement: Payment will be made at the hourly rate for a carpenter and accepted by the Commissioner.

22. HOURLY RATE FOR MASON

Description I22: Hourly wage rate inclusive of all general conditions, overhead and profit. This price will be used to cover work items outside the scope of line item descriptions.

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X, "CHANGES IN THE WORK," Section C.

Unit of Measurement: Payment will be made at the hourly rate for a mason and accepted by the Commissioner.

J. ACCESS OPENINGS

1. NEW PERIMETER GASKET

Description J1: All labor, equipment and materials to install an acoustic gasket around the perimeter of an existing access panel.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 20 23 “Interior Finish Carpentry” and 07 92 00 “Joint Sealants”.

Unit of Measurement: Payment will be made at the linear foot unit price for perimeter gasket in place and accepted by the Commissioner.

2. NEW CEILING ATTIC ACCESS OPENING

Description J2: All labor, equipment and materials, including plywood panel, gasket and trim, to cut and frame or enlarge an access opening to the existing attic.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 83 13 “Lead Hazard Control Activities,” 06 10 53 “Miscellaneous Rough Carpentry” and 06 20 23 “Interior Finish Carpentry”.

Unit of Measurement: Payment will be at the per square foot line item price for new attic access opening installed and accepted by the Commissioner.

3. NEW WALL ACCESS PANEL

Description J3: All labor, equipment and materials to fabricate and install a new plywood wall access panel including, cutting, surrounding supporting structural lumber, interior trim, hardware, perimeter gasket and painting or staining.

Applicable specification sections include but are not limited to: 02 83 13 “Lead Hazard Control Activities,” 06 20 23 “Interior Finish Carpentry,” 07 92 00 “Joint Sealants” and 08 71 00 “Door Hardware”.

Unit of Measurement: Payment will be made per square foot, in place and accepted by the Commissioner.

4. REPLACE PLYWOOD CEILING ACCESS PANEL

Description J4: All labor, equipment and materials to remove the existing access panel and install a new access panel including modifications to the opening to accept the new panel, perimeter gasket, finish trim and painting or staining and varnishing.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 02 83 13 “Lead Hazard Control Activities” and 06 20 23 “Interior Finish Carpentry”.

Unit of Measurement: Payment will be made at the per each unit price for replace plywood access panel in place, complete and accepted by the Commissioner.

5. ADD PANEL TO EXISTING PULL DOWN STAIR OPENING

Description J5: All labor, equipment and materials to install a new hinged 3/4 inch plywood panel with brass pull on new 2 x 10 inches frame, including modifications to the existing opening to accept the new panel and perimeter gasket. This item will also act as a barrier for attic insulation at the access opening and no additional barrier is required at the access opening.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities" and 06 20 23 "Interior Finish Carpentry".

Unit of Measurement: Payment will be made per each, in place, complete and accepted by the Commissioner.

6. NEW INTERIOR SOLID CORE DOOR

Description J6: All labor, equipment and materials to remove the existing door and replace it with a solid core door, including interior door hardware, acoustic caulking, perimeter gasket, new door jamb, threshold with any extensions, all required finish trim and door stops. The door will be painted, or stained and varnished. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry" and 08 14 16 "Flush Wood Doors".

Unit of Measurement: Payment will be made per each, installed complete and accepted by the Commissioner.

7. NEW INTERIOR LOUVERED DOOR

Description J7: All labor, equipment and materials to install a louvered door, including new jamb, interior door hardware, threshold with any extensions, all required finish trim and door stops. The door will be painted, or stained and varnished. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities," 06 20 23 "Interior Finish Carpentry" and 08 14 16 "Flush Wood Doors".

Unit of Measurement: Payment will be made at the per each unit price for new louvered doors installed complete and accepted by the Commissioner.

8. NEW INTERIOR BI-FOLD DOOR

Description J8: All labor, equipment and materials to install a complete bi-fold door at new or existing furnace/air handler room, including all hardware, door trim and, if necessary, a wooden threshold. The door will be painted, or stained and varnished. Interior trim will be oak if stained and varnished or clear #2 pine (or better) if painted.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 02 83 13 "Lead Hazard Control Activities" and 06 20 23 "Interior Finish Carpentry".

Unit of Measurement: Payment will be made at the per each unit price for new bi-fold doors installed complete and accepted by the Commissioner.

9. THREE-QUARTER INCH (3/4") PLYWOOD

Description J9: All labor, equipment and materials to install 3/4-inch plywood, BC grade or better, in attics, crawl spaces, as access panels in areas where a door will not operate, or other areas as shown on the construction modifications.

Applicable specification sections include but are not limited to: 06 10 53 "Miscellaneous Rough Carpentry".

Unit of Measurement: Payment will be made at the square foot unit price, in place and accepted by the Commissioner.

K. WALLS

1. DRYWALL - ONE LAYER 5/8"

Description K1: All labor, material and equipment to install one layer of drywall over existing interior walls or wall framing, acoustically caulk all edges, finish tape and sand smooth. Jamb extensions for new windows and doors will be included in the unit prices for WINDOWS and DOORS. Reuse and additional modification of existing baseboard and other molding is included in the price. Any reconnection of telephone, cable, computer, etc., connections or the remounting of related jacks when a utility box is not present will be incidental to this item. Any new moldings will be installed under item L.2., c. and d. Any new baseboard will be installed under item K.2.

Applicable specification sections include but are not limited to: 01 50 00 "Temporary Facilities and Controls," 01 73 00 "Execution," 02 41 19 "Selective Demolition" and 09 29 00 "Gypsum Board".

Unit of Measurement: Payment will be made at the square foot unit price for drywall in place, finished and accepted by the Commissioner.

2. NEW BASEBOARD

Description K2: All labor, equipment and material to install new baseboard trim where wall modifications make the existing baseboard unusable. Baseboard will be finished to match existing and if existing baseboard has shoe trim, the new baseboard will have shoe trim installed and will be incidental to the work.

Applicable specification sections include but are not limited to: 02 83 13 "Lead Hazard Control Activities" and 06 20 23 "Interior Finish Carpentry".

Unit of Measurement: Payment will be made at the linear foot unit price in place finished and accepted by the Commissioner.

3. DRYWALL SOFFITS INCLUDING FRAMING

Description K3: All labor, equipment and material to construct new soffits over new ductwork. All drywall, finish taped/sanded smooth, painting and framing is included under this item. Any soffits installed as "window seats" or running along floors will be made of 3/4-inch MDF painted and will be paid under this line item description. Removal and re-installation of existing battery-operated smoke/fire alarm will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition” and 06 10 53 “Miscellaneous Rough Carpentry”.

Unit of Measurement: Payment will be made at the square foot unit price, in place and accepted by the Commissioner.

4. EXISTING WALL DEMOLITION

Description K4: All labor, equipment and material to remove and dispose of existing wall construction, including but not limited to paneling, insulation etc.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution” and 02 41 19 “Selective Demolition”.

Unit of Measurement: Payment will be made at the square foot unit price, accepted by the Commissioner.

L. CEILINGS

1. ACOUSTICAL TILE

a. DEMOLITION OF EXISTING SUSPENDED OR GRID CEILING

Description L1a: All labor, equipment and material to remove and dispose of existing ceiling tile, grid and insulation.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution” and 02 41 19 “Selective Demolition”.

Unit of Measurement: Payment will be made at the square foot unit price, accepted by the Commissioner.

b. NEW GRID AND ACOUSTICAL CEILING TILE

Description L1b: All labor, equipment and material to install new grid and acoustic ceiling tile in its place.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 02 41 19 “Selective Demolition” and 09 51 13 “Acoustical Panel Ceilings”.

Unit of Measurement: Payment will be made at the square foot unit price, in place and accepted by the Commissioner.

2. DRYWALL

a. DEMOLITION OF EXISTING CEILING MATERIAL

Description L2a: All labor, equipment and materials to remove and dispose of existing ceiling material and insulation, if existing. Ceiling material includes drywall, plaster and lathe (wood or metal), paneling, etc., (anything other than a suspended or grid type system).

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls,” 01 73 00 “Execution” and 02 41 19 “Selective Demolition”.

Unit of Measurement: Payment will be made at the square foot unit price, accepted by the Commissioner.

b. ONE LAYER OF 5/8" DRYWALL

Description L2b: All labor, equipment and materials necessary to install one layer of 5/8" drywall over existing wall or framing, finish tape and sand smooth. Acoustical caulking will be incidental to this item. Ceilings will be any surfaces that are not vertical.

Applicable specification sections include but are not limited to: 09 29 00 "Gypsum Board".

Unit of Measurement: Payment will be made at the square foot unit price, in place and accepted by the Commissioner.

c. NEW CROWN MOLDING

Description L2c: All labor, equipment and materials to install new crown molding after drywall is installed. New crown molding will be installed if existing crown molding has been removed. The new molding size and profile is to match the existing. If existing crown molding is oak then oak will be reinstalled. The molding will be painted, or stained and varnished.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities" and 06 20 23 "Interior Finish Carpentry".

Unit of Measurement: Payment will be made at the linear foot price, in place and accepted by the Commissioner.

d. NEW COVE MOLDING

Description L2d: All labor, equipment and materials to install new cove molding after drywall is installed on ceilings or at the junction of unlike surfaces. The new molding size and profile is to match the existing. The molding will be painted, or stained and varnished.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 83 13 "Lead Hazard Control Activities" and 06 20 23 "Interior Finish Carpentry".

Unit of Measurement: Payment will be made at the linear foot price, in place and accepted by the Commissioner.

M. PAINTING - PRIME AND FINISH COATS

1. INTERIOR PAINTING – WALLS AND CEILINGS

Description M1: All labor, equipment and materials to paint new drywall and any adjacent surfaces affected by the installation of any new drywall with primer and a finish coat of paint.

Applicable specification sections include but are not limited to: 09 91 23 "Interior Painting".

Painting of existing millwork (doors, windows and trim) will be included in the square foot measurement for painting. Painting of new door and window trim will be incidental to doors and windows.

Unit of Measurement: Payment will be made at the square foot unit price, in place and accepted by the Commissioner.

N. INSULATION

1. WALLS

a. R-13 BATT (BLANKET) WALL INSULATION

Description N1a: All labor, equipment and materials to install Kraft paper faced batt (blanket) insulation in the exterior walls. Installed insulation will be rated R-13 or better. The removal of any deteriorated existing insulation will be incidental.

Applicable specification sections include but are not limited to: 01 50 00 “Temporary Facilities and Controls” and 07 21 00 “Thermal Insulation”.

Unit of Measurement: Payment will be at the square foot unit price, in place and accepted by the Commissioner.

b. R-13 BLOWN-IN LOOSE FILL WALL INSULATION

Description N1b: All labor, equipment and materials to install blown-in loose fill insulation in the exterior walls. Include application of vapor barrier interior primer sealer and finish painting of all insulated wall surfaces. Installed insulation will be rated R-13 or better.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition” and 07 21 00 “Thermal Insulation”.

Unit of Measurement: Payment will be at the square foot unit price, in place and accepted by the Commissioner.

2. ATTICS

a. R-49 BATT INSULATION FOR ATTIC SPACES

Description N2a: Shall include all labor, equipment and materials necessary to install unfaced batt insulation in depth to achieve R-49 value on or between attic floors joists. Includes all auxiliary materials, including insulation for miscellaneous voids, adhesive for bonding insulation, eave vent baffles, recessed light covers, airgap sealant, static roof vents as necessary for a building code compliant functional installation. Includes a 2 x 10 inches lumber barrier above any access opening or to separate areas in the attic, as required. The removal of any deteriorated existing insulation, provided it does not contain asbestos, shall be included. The removal of existing asbestos bearing insulation is under a separate unit price.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 06 10 53 “Miscellaneous Rough Carpentry” and 07 21 00 “Thermal Insulation”.

Payment will be at the square foot unit price in place and accepted by the Commissioner.

b. R-49 LOOSE FILL INSULATION FOR ATTIC SPACES

Description N2b: Shall include all labor, equipment and materials necessary to install loose-fill insulation in depth to achieve R-49 value on or between attic floors joists. Includes all

auxiliary materials, including insulation for miscellaneous voids, adhesive for bonding insulation, eave vent baffles, recessed light covers, airgap sealant, static roof vents as necessary for a building code compliant functional installation. Includes a 2 x 10 inches lumber barrier above any access opening or to separate areas in the attic, as required. The removal of any deteriorated existing insulation, provided it does not contain asbestos, shall be included. The removal of existing asbestos bearing insulation is under a separate unit price.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 06 10 53 "Miscellaneous Rough Carpentry" and 07 21 00 "Thermal Insulation".

Payment will be at the square foot unit price in place and accepted by the Commissioner.

c. SOFFIT INTAKE VENT

Description N2c: Shall include all labor, equipment and materials necessary to install a soffit intake vent. Includes ventilation calculations as required to determine quantity of intake vents, spacing and distribution. Includes prime and paint of soffit vent as scheduled.

Applicable specification sections include but are not limited to: 01 73 00 "Execution" and 07 21 00 "Thermal Insulation".

Payment will be at the per each unit price in place and accepted by the Commissioner.

d. ROOF EXHAUST VENT

Description N2d: Shall include all labor, equipment and materials necessary to install roof exhaust vent. Includes ventilation calculations as required to determine quantity of exhaust vents, spacing and distribution. Includes installation of new insulation baffle cover.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," and 07 21 00 "Thermal Insulation".

Payment will be at the per each unit price in place and accepted by the Commissioner.

O. VENTS/BAFFLES AND FENCES

1. REMOVE THRU-WALL AIR CONDITIONER

Description O1: All labor, equipment and materials to close the wall opening after removal of existing thru-wall air conditioner, close, insulate and finish the exterior opening. Reestablishment or recapping of electrical circuit and removal of abandoned wiring will be incidental. For frame homes, the finished closure will match the existing interior and exterior materials in color and drywall will be included. For masonry homes, the finished closure will consist of filling the cavity with masonry and finishing the interior wall surface. Match the brick exterior. Drywall will be included. Painting will be provided under Item M.1.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 06 20 13 "Exterior Finish Carpentry," 06 20 23 "Interior Finish Carpentry," 07 21 00 "Thermal Insulation," 09 91 13 "Exterior Painting," and 09 91 23 "Interior Painting".

Unit of Measurement: Payment will be made at the square foot price, using the interior square footage measurement, complete and accepted by the Commissioner.

2. NEW INTERIOR FIXED BAFFLE BOX AC COVER FOR EXISTING THRU-WALL A/C UNIT

Description O2: All labor, equipment and materials to install a complete new finished interior fixed acoustical cover to existing thru-wall air conditioning unit. Includes painting, installing required door hardware, and installing proper insulation around the existing A/C unit, as necessary.

Applicable specification sections include but are not limited to: 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Interior Finish Carpentry," 07 21 00 "Thermal Insulation," 09 91 23 "Interior Painting," 09 29 00 "Gypsum Board" and 09 93 00 "Staining and Transparent Finishing".

Unit of Measurement: Payment will be made at the per square foot (face of the baffle) price complete and accepted by the Commissioner.

3. NEW INTERIOR REMOVEABLE BAFFLE BOX AC COVER FOR EXISTING THRU-WALL A/C UNIT

Description O3: All labor, equipment and materials to install a complete new finished interior removable acoustical cover to existing thru-wall air conditioning unit. Includes painting, installing required clip mounting hardware, new wood trim around the perimeter of the AC, and installing proper insulation around the existing A/C unit, as necessary.

Applicable specification sections include but are not limited to: 06 20 23 "Interior Finish Carpentry," 07 21 00 "Thermal Insulation," and 09 91 23 "Interior Painting".

Unit of Measurement: Payment will be made at the per square foot (face of the baffle) price complete and accepted by the Commissioner.

4. SCREENING FENCE FOR AC CONDENSER – 1 SIDED

Description O4: All labor, equipment and materials to install a complete new exterior fence to screen air conditioning condenser units. Includes one fence side wall (up to 8-feet in length), posts, concrete pier foundations, painting or staining, Height, length, concrete foundations, anchors and accessory brackets are included.

Applicable specification sections include but are not limited to: 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Exterior Finish Carpentry," 09 91 13 "Exterior Painting," 09 93 00 "Staining and Transparent Finishing" and 32 13 13 "Site Concrete".

Unit of Measurement: Each complete fence assembly in place and accepted by the Commissioner.

5. SCREENING FENCE FOR AC CONDENSER – 2 SIDED

Description O5: All labor, equipment and materials to install a complete new exterior fence to screen air conditioning condenser units. Includes two fence side walls, posts, concrete pier foundations, painting or staining, height, length, concrete foundations, anchors and accessory brackets are included.

Applicable specification sections include but are not limited to: 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Exterior Finish Carpentry," 09 91 13 "Exterior Painting," 09 93 00 "Staining and Transparent Finishing" and 32 13 13 "Site Concrete".

Unit of Measurement: Each complete fence assembly in place and accepted by the Commissioner.

6. SCREENING FENCE FOR AC CONDENSER – 3 SIDED

Description O6: All labor, equipment and materials to install a complete new exterior fence to screen air conditioning condenser units. Includes three fence side walls, posts, concrete pier foundations, painting or staining, Height, length, concrete foundations, anchors and accessory brackets are included.

Applicable specification sections include but are not limited to: 06 10 53 "Miscellaneous Rough Carpentry," 06 20 23 "Exterior Finish Carpentry," 09 91 13 "Exterior Painting," 09 93 00 "Staining and Transparent Finishing" and 32 13 13 "Site Concrete".

Unit of Measurement: Each complete fence assembly in place and accepted by the Commissioner.

P. HVAC FOR AIR CONDITIONING SYSTEMS

1. CONDENSERS

Description P1: All labor, equipment and materials to install a new system of the size indicated in the approved HVAC submittal, comprised of a new "A" coil, a new condenser unit on a specified pad, refrigerant lines up to 50 linear feet, condensate pump with dedicated circuit, new programmable thermostat and electrical power for the new thermostat. All related work is incidental. All necessary 240 VAC (up to 35 linear feet) and/or 120 VAC (up to 25 linear feet) circuits as required from the service panel to newly installed equipment and/or existing furnace as needed are included in this line item. Any new disconnect switch, fused in-line disconnect for the condenser, circuits and breakers for AC, exterior GFI service outlet with weatherproof housing and in-use cover, conduit, cable or furnace control switch, are included in line item price.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 23 63 13 "Air-Cooled Refrigerant Condensers" and 26 27 26 "Wiring Devices".

Unit of Measurement: Payment will be made per each price complete in place and acceptable to the Commissioner.

2. FORCED AIR FURNACES

Description P2: All labor, equipment and materials to remove and dispose of the existing and install a new complete forced air heating system, canvas connection, and balancing of the system. New ductwork required for adjustments to existing plenums will be paid for under "Additional Ductwork" Unit cost line items. All related work is incidental. All necessary 240 VAC (up to 35 linear feet) and/or 120 VAC (up to 25 linear feet) circuits as required from the service panel to newly installed equipment are included in this line item. Any new circuits, breakers, conduit, cable, furnace control switch, service outlet and electrical hookup(s) are included in the line item price. Any gas line connection or re-piping up to 5 linear feet will be incidental.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 23 54 00 "Furnaces" and 26 27 26 "Wiring Devices".

Unit of Measurement: Payment will be made per each price, complete in place and acceptable to the Commissioner.

3. ADDITIONAL DUCTWORK

a. GALVANIZED DUCT IN UNFINISHED SPACE

Description P3a: All labor, equipment and materials to add, modify and/or extend ductwork as shown on the approved HVAC submittal Construction Modifications in an unfinished space. All grills, registers, diffusers, flexible duct, and accessories are included in this work. Relocation of battery powered smoke detectors and battery powered carbon monoxide detectors, if necessary, are included in this work. Demolition of existing ductwork shall be incidental. Any unused ductwork must be removed from the system. Any wall demolition is incidental.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 23 31 13 “Metal Ducts,” 23 33 00 “Air Duct Accessories” and 23 37 13 “Diffusers, Registers, and Grilles”.

Unit of Measurement: Payment will be made at the per pound price in place and calculated using the applicable QuoteSoft Software and accepted by the Commissioner.

b. GALVANIZED DUCT IN FINISHED SPACE

Description P3b: All labor, equipment and materials to add, modify and/or extend ductwork as shown on the approved HVAC submittal Construction Modifications in a finished space. All grills, registers, diffusers, flexible duct, and accessories are included in this work. Relocation of battery powered smoke detectors and battery powered carbon monoxide detectors, if necessary, are included in this work. Demolition of existing ductwork shall be incidental. All unused ductwork must be removed from the system. Any wall demolition is incidental.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 02 41 19 “Selective Demolition,” 23 31 13 “Metal Ducts,” 23 33 00 “Air Duct Accessories” and 23 37 13 “Diffusers, Registers, and Grilles”.

Unit of Measurement: Payment will be made at the per pound price in place and calculated using the applicable QuoteSoft Software and accepted by the Commissioner.

c. DUCT INSULATION

Description P3c: All labor, equipment and material to insulate all required duct work installed under this contract. Measurement will be the square foot area of the duct being insulated.

Applicable specification sections include but are not limited to: 07 21 00 “Thermal Insulation” and 23 31 13 “Metal Ducts”.

Unit of Measurement: Payment will be made at the square foot price and calculated using QuoteSoft Software and accepted by the Commissioner.

d. SAFETY PAN

Description P3d: All labor, equipment and material to install a safety drain pan, with drain, and wet switch, under air handling units installed in this contract in attics or areas where condensate pump failure could cause damage.

Applicable specification sections include but are not limited to: 23 54 00 “Furnaces” and 23 82 19 “Fan Coil Units”.

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

4. SPLIT DUCTLESS SYSTEMS – COOLING

Description P4: All labor, equipment and materials to install a new system of the size indicated in the approved HVAC submittal construction modifications comprised of an indoor wall mounted evaporator unit(s), an outdoor unit containing a condenser unit on a specified pad, controls and refrigerant lines up to 50 feet for each evaporator/unit. The 240 VAC (up to 35 linear feet) and/or 120 VAC (up to 25 linear feet) circuit(s) as required from the service panel to newly installed condenser, necessary electrical hookup(s) and exterior GFI service outlet(s) with weatherproof housing and in-use cover are included in this line item.

Additionally, the 240 VAC (up to 35 linear feet) and/or 120 VAC (up to 25 linear feet) power as required from the single condenser to each newly installed individual evaporator and evaporator disconnect switch(s) as required per code are included in this line item.

When multiple evaporators are run off a single condenser and the feeds to multiple evaporators are run in a single conduit from the condenser, the 240 VAC (up to 35 linear feet) and/or 120 VAC (up to 25 linear feet) will be calculated for one feed only from the condenser to the furthest evaporator installed. All other feeds run in that same conduit to the evaporators that are then closer to the condenser will be included in this line item and considered incidental. Condensate pump shall be incidental if required.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 23 81 26 “Split System Air-Conditioners” and 26 27 26 “Wiring Devices”.

Unit of Measurement: Payment will be made per each, complete in place and acceptable to the Commissioner.

5. FORCED AIR FAN COIL UNIT W/ CONDENSER

Description P5: All labor, equipment and materials to install a new system as determined by the mechanical Subcontractor and approved on the HVAC submittal, comprised at minimum of a new “A” coil, canvas connection, fan coil unit, a condenser unit on a specified pad, condensate pump with dedicated circuit, refrigerant lines up to 50 feet, electrical power for a new thermostat. All necessary 240 VAC (up to 35 linear feet based on raceway length) and/or 120 VAC (up to 25 linear feet based on raceway length) circuits as required from the service panel to the newly installed fan coil unit and condenser. Raceway lengths are to be calculated separately for each piece of equipment are included in this line item. Any new circuits, breakers, conduit, cable, electrical hookup(s), and exterior GFI service outlet with weatherproof housing and in-use cover are included in line-item price. All related work is incidental.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 23 63 13 “Air-Cooled Refrigerant Condensers” and 23 82 19 “Fan Coil Units”.

Unit of Measurement: Payment will be made per each price, complete in place and acceptable to the Commissioner.

6. ADDITIONAL COST OF REFRIGERANT PIPING, >50 FEET

Description P6: All labor, equipment and material to extend refrigerant piping beyond the 50 feet from condenser to fan coil, each evaporator or furnace. Up to 50 feet of refrigerant line is incidental and included in the installation of each evaporator/unit.

Applicable specification sections include but are not limited to: 23 11 20 “HVAC Piping”.

Unit of Measurement: Payment will be made per linear foot, complete in place and acceptable to the Commissioner.

Q. HVAC MODIFICATIONS

1. RELOCATE HOT WATER BASEBOARD/ FIN TUBE RADIATION

Description Q1: All labor, equipment and materials to relocate hot water baseboard or fin tube radiation. Work includes adjustment of piping and finishing of the wall or floor surface. All electrical work is incidental.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition” and 26 05 33 “Raceway and Boxes for Electrical Systems”.

Unit of Measurement: Payment will be at the linear foot price, installed and accepted by the Commissioner.

2. EXTEND HOT WATER BASEBOARD/FIN TUBE RADIATION

Description Q2: All labor, equipment and materials to extend hot water baseboard/fin tube radiator. Work includes adjustment of piping and finishing of the wall or floor surface. All electrical work is incidental.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition” and 26 05 33 “Raceway and Boxes for Electrical Systems”.

Unit of Measurement: Payment will be at the per linear foot price installed and accepted by the Commissioner.

3. INSTALL CHIMNEY LINER (25 FEET)

Description Q3: All labor, equipment and materials to install chimney liners with approved chimney caps in existing chimneys.

Applicable specification sections include but are not limited to: 23 51 00 “Breechings, Chimneys, and Stacks”.

Unit of Measurement: Payment will be at the per each price installed and accepted by the Commissioner.

4. NEW GAS VENT

a. NEW GAS VENT

Description Q4a: All labor material and equipment to install a new 5" gas vent chimney. Price will include roof jack, storm collar and/or flashing, chimney cap, tee, furnace connection and a five (5) foot section of pipe.

Applicable specification sections include but are not limited to: 23 51 00 "Breechings, Chimneys, and Stacks".

Unit of Measurement: Payment will be at the per each price installed and accepted by the Commissioner.

b. ADDITIONAL PIPE

Description Q4b: Any required additional pipe necessary to complete the installation of the new gas vent.

Applicable specification sections include but are not limited to: 23 51 00 "Breechings, Chimneys, and Stacks".

Unit of Measurement: Payment will be at the per linear foot price, installed and accepted by the Commissioner.

5. GAS LINE, > 5 FEET

Description Q5: All labor material and equipment to install a gas line where HVAC work is required > 5 linear feet.

Applicable specification sections include but are not limited to: 23 54 00 "Furnaces".

Unit of Measurement: Payment will be at the per linear foot price, installed and accepted by the Commissioner.

6. NEW HUMIDIFIER

Description Q6: All labor material and equipment to install a new humidifier in a new furnace when required by code or when the existing humidifier is removed with work under this program and cannot be re-installed.

Applicable specification sections include but are not limited to: 23 54 00 "Furnaces" and 23 82 19 "Fan Coil Units".

Unit of Measurement: Payment will be at the per each price installed and accepted by the Commissioner.

7. ALUMINUM COVER FOR HVAC LINES

Description Q7: All labor, equipment and materials to provide an aluminum cover for HVAC lines. Cover will be made from straight-legged aluminum gutter sections or aluminum cladding material formed on a brake for special application situations.

Applicable specification sections include but are not limited to: 05 75 00 “Decorative Formed Metal”.

Unit of Measurement: Payment will be made at the linear foot unit price installed, finished and accepted by the Commissioner.

8. HOURLY RATE FOR SHEET METAL WORKER

Description Q8: The base prevailing wage rate and the allowable markups and is to be calculated per the General Conditions. This price will be used to cover work items without line items.

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK,” Section C.

Unit of Measurement: Payment will be made at the hourly rate for a sheet metal worker accepted by the Commissioner.

9. ADD EXTERIOR SHEET METAL ACOUSTICAL BAFFLE PANEL

Description Q9: All labor, equipment and materials to fabricate and install a new exterior sheet metal acoustical baffle panel to the existing thru-wall heating/cooling unit. Work includes fabrication and attachment to existing conditions.

Applicable specification sections include but are not limited to: 05 75 00 “Decorative Formed Metal,” 06 10 53 “Miscellaneous Rough Carpentry,” 06 20 13 “Exterior Finish Carpentry,” and 07 92 00 “Joint Sealants”.

Unit of Measurement: Payment will be at the per baffle panel installed and accepted by the Commissioner.

R. ELECTRICAL

1. 200 AMP PANEL

a. REPLACE EXISTING 200 AMPS PANEL (UP TO 42 CIRCUITS)

Description R1a: All labor, equipment and materials to remove the existing electrical distribution panel and install a new 200 amp distribution panel with all existing circuits reestablished including new breakers as required. A surge protection device shall be furnished with and connected to the new panel. The new panel shall include a 2-pole circuit breaker for the surge protection device. The new panel will include four empty spaces for future expansion. Use of the existing electric service panel as a junction box so the finished work complies with any and all building codes will be incidental. Grounding system(s) and surge protection device will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition,” 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

b. UPGRADE PANEL TO 200 AMPS (UP TO 42 CIRCUITS)

Description R1b: All labor, equipment and materials to remove the existing electrical distribution panel and install a new 200 amp distribution panel with all existing circuits reestablished including new breakers as required. Installation of a separate junction box(es) to correct illegal wiring into the panel, will be incidental. A surge protection device shall be furnished with and connected to the new panel. The new panel shall include a 2-pole circuit breaker for the surge protection device. The new panel will include four empty spaces for future expansion. Any new riser up to 14 lf, meter box, with or without a disconnect switch, as required, are included in the line item price. Use of the existing electric service panel as a junction box so the finished work complies with any and all building codes will be incidental. Comply with ComEd Red Book Service Entrance Requirements. Grounding system(s) and surge protection device will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner.

c. NEW 200 AMP RISER

Description R1c: All labor, equipment and materials to install a new electrical riser up to 14 feet for 200 amp service with meter, weatherhead and supporting elements. This includes equipment service conduit from the panel to the meter. Comply with ComEd Red Book Service Entrance Requirements.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner. Pricing shall identify conduit length and shall be inclusive of all wiring of lengths, including loops, required to make connections inside meter boxes and at drip near weatherhead.

d. NEW RISER/EQUIPMENT SERVICE CONDUIT ADDITIONAL COST > 14 FEET

Description R1d: All labor, equipment and materials to extend new riser beyond 14 feet from panel to service head. This includes equipment service conduit from the panel to the meter.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the linear foot price, complete and accepted by the Commissioner. Pricing shall identify conduit length and shall be inclusive of all wiring of lengths, including loops, required to make connections inside meter boxes and at drip near weatherhead.

e. NEW 2-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER

Description R1e: All labor, equipment and materials to install a new 2-gang meter socket. This includes equipment service conduit from the additional panel to the meter. This will be the difference in price between installing a single-gang meter socket that is included in the new riser and installing a new 2-gang meter socket including all labor, equipment and materials.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

f. NEW 3-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER

Description R1f: All labor, equipment and materials to install a new 3-gang meter socket. This includes equipment service conduit from the additional panel to the meter. This will be the difference in price between installing a single-gang meter socket that is included in the new riser and installing a new 3-gang meter socket including all labor, equipment and materials.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

g. NEW 4-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER

Description R1g: All labor, equipment and materials to install a new 4-gang meter socket. This includes equipment service conduit from the additional panel to the meter. This will be the difference in price between installing a single-gang meter socket that is included in the new riser and installing a new 4-gang meter socket including all labor, equipment and materials.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

h. NEW METER SOCKET WITH INTEGRAL BREAKER

Description R1h: All labor, equipment and materials to install a new meter socket. This includes equipment service conduit from the panel to the meter. This will be the difference in price between installing a single-gang meter socket that is included in the new riser and furnishing an integral breaker, including all labor, equipment and materials.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

i. NEW 200 AMP UNDERGROUND SERVICE AND CUSTOMER POLE

Description R1i: All labor, equipment and materials to remove the existing overhead electrical service and all associated materials and install a new 200 amp underground electrical service (up to 50 feet) with new 25 foot CommonWealth Edison compliant customer utility pole, underground meter socket, weather head and supporting elements and connection to existing panel. Trenching and backfill are inclusive to this line item. The finished work shall comply with all CommonWealth Edison regulations and all local building codes. Coordination with CommonWealth Edison will be required. Grounding system(s) will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices," and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner.

j. NEW UNDERGROUND SERVICE CONDUIT ADDITIONAL COST > 50 FEET

Description R1j: All labor, equipment and materials to entend new underground service conduit beyond 50 feet from panel to weatherhead. Trenching and backfill are inclusive to this line item. The finished work shall comply with all CommonWealth Edison regulations and all local building codes.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the linear foot price, complete and accepted by the Commissioner. Pricing shall be inclusive of all wire lengths, including loops, required to make connections inside meter boxes and at drip near weatherhead.

2. 100 AMP PANEL

a. REPLACE EXISTING 100 AMPS PANEL (UP TO 32 CIRCUITS)

Description R2a: All labor, equipment and materials to remove the existing electrical distribution panel and install a new 100 amp distribution panel with 100 amp main breaker disconnects, and with all existing circuits reestablished including new breakers as required. Installation of a separate junction box(es) to correct illegal wiring into the panel, will be incidental. A surge protection device shall be furnished with and connected to the new panel. The new panel shall include a 2-pole circuit breaker for the surge protection device. The new panel will include four empty spaces for future expansion. Use of the existing electric service panel as a junction box so the finished work complies with any and all building codes will be incidental. Grounding system(s) and surge protection device will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

b. UPGRADE PANEL TO 100 AMPS (UP TO 32 CIRCUITS)

Description R2b: All labor, equipment and materials to remove the existing electrical distribution panel and install a new 100 amp distribution panel with all existing circuits reestablished including new breakers as required. A surge protection device shall be furnished with and connected to the new panel. The new panel shall include a 2-pole circuit breaker for the surge protection device. The new panel will include four empty spaces for future expansion. Any new riser up to 14 lf, meter box, with or without a disconnect switch, as required, are included in the line item price. Use of the existing electric service panel as a junction box so the finished work complies with any and all building codes will be incidental. Comply with CommonWealth Edison Red Book Service Entrance Requirements. Grounding system(s) and surge protection device will be incidental.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

c. NEW 100 AMP RISER

Description R2c: All labor, equipment and materials to install a new electrical riser up to 14 feet for 100 amp service with meter, weatherhead and supporting elements. This includes equipment service conduit from the panel to the meter. Comply with CommonWealth Edison Red Book Service Entrance Requirements.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner. Pricing shall identify conduit length and shall be inclusive of all wiring of lengths, including loops, required to make connections inside meter boxes and at drip near weatherhead.

d. NEW RISER/EQUIPMENT SERVICE CONDUIT ADDITIONAL COST > 14 FEET

Description R2d: All labor, equipment and materials to extend new 100 amp riser beyond 14 feet from panel to service head. This includes equipment service conduit from the panel back to the meter.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the linear foot price, complete and accepted by the Commissioner. Pricing shall identify conduit length and shall be inclusive of all wiring of lengths, including loops, required to make connections inside meter boxes and at drip near weatherhead.

e. NEW 2-GANG METER SOCKET IN LIEU OF ONE-GANG METER SOCKET IN NEW RISER

Description R2e: All labor, equipment and materials to install a new 2-gang meter socket. This includes equipment service conduit from the additional panel to the meter. This will be the difference in price between installing a single-gang meter socket that is included in the new riser and installing a new 2 gang meter socket including all labor, equipment and materials.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems" and 26 24 16 "Panelboards".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

f. NEW 100 AMPS PANEL (UP TO 16 CIRCUITS)

Description R2f: All labor, equipment and materials to install a new 100 amp distribution panel with 100 amp main breaker disconnects, and including new breakers as required. Removing circuits for common areas from existing panel(s) and re-installing in new panel to correct wiring not in compliance with building codes will be incidental. The new panel will include four empty spaces for future expansion. Use of the existing electric service panel as a junction box so the finished work complies with any and all building codes will be incidental. Grounding system(s) will be incidental. All new and existing circuits in panel shall be fed from the new public panel as to comply with local codes.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

3. NEW CIRCUIT IN EXISTING PANEL

a. NEW ADDITIONAL 240 VAC CIRCUIT UP TO 35 LINEAR FEET

Description R3a: All labor, equipment and material to install new circuit with appropriate breaker(s) in the electrical distribution panel for new construction modifications installed under this contract. The existing panel will contain at least four empty spaces for future expansion. Install a 240 VAC circuit up to 35 linear feet from the service panel to newly installed equipment. All necessary equipment and materials, as required, are included in the line item price.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner.

b. NEW ADDITIONAL 120 VAC CIRCUIT UP TO 25 LINEAR FEET

Description R3b: All labor, equipment and material to install new circuit with appropriate breaker(s) in the electrical distribution panel for new construction modifications installed under this contract. The existing panel will contain at least four empty spaces for future expansion. Install a 120 VAC circuit up to 25 linear feet from the service panel to newly installed equipment. All necessary equipment and materials, as required, are included in the line item price.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price in place and accepted by the Commissioner.

4. ADDITIONAL COST OF NEW CIRCUIT, 120 VAC > 25 FEET

Description R4: All labor, equipment and materials to extend a new circuit, 120 volt, beyond twenty-five feet from the distribution panel.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the linear foot price in place and accepted by the Commissioner.

5. ADDITIONAL COST OF NEW CIRCUIT 240 VAC, > 35 FEET

Description R5: All labor, equipment and materials to extend new circuits, 240 volt, beyond 35 feet from distribution panel.

Applicable specification sections include but are not limited to: 02 41 19 "Selective Demolition," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the linear foot price, in place and accepted by the Commissioner.

6. RE-ESTABLISH CIRCUIT

Description R6: All labor, equipment and materials to re-establish each circuit in conduit due to illegal wiring and existing conditions that are discovered when demolition of existing drywall, windows or doorways takes place. Conditions may also be discovered when opening spaces for running ductwork, insulation, etc., or when any electrical work within the scope of this program is required to meet local electrical code is discovered that has not been otherwise specified.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made per each in place and accepted by the Commissioner.

7. NEW RISER THROUGH ROOF

Description R7: Additional cost to install a new electrical riser through an existing roof. Include all labor, equipment and materials to install a new electrical riser through an existing roof. Penetration through the roof, waterproofing with an approved boot and all other required appurtenances are included.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 02 41 19 "Selective Demolition," 06 10 53 "Miscellaneous Rough Carpentry," 06 20 13 "Exterior Finish Carpentry," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price, complete and accepted by the Commissioner.

8. REROUTE CONDUIT

Description R8: All labor, equipment and materials to reroute a conduit and circuit exposed by the installation of egress windows, ductwork, soffits, window seats or other items installed under this contract.

Applicable specification sections include but are not limited to: 01 73 00 "Execution," 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made per each price in place and accepted by the Commissioner.

9. RELOCATE SERVICE PANEL TO CORRECT EXISTING CODE VIOLATIONS

Description R9: All labor, equipment and materials to relocate either a new or an existing electric service panel to a new code compliant location within the house.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per linear foot measured on a straight line from the existing panel location to the new location, in place and accepted by the Commissioner.

10. RELOCATE SERVICE HEAD TO CORRECT EXISTING CODE VIOLATIONS

Description R10: All labor, equipment and materials to relocate either a new or an existing electric head to a new code compliant location.

Applicable specification sections include but are not limited to: 26 05 33 "Raceway and Boxes for Electrical Systems," 26 24 16 "Panelboards," 26 27 26 "Wiring Devices" and 26 28 16 "Enclosed Switches and Circuit Breakers".

Unit of Measurement: Payment will be made at the per each price, in place and accepted by the Commissioner.

11. RELOCATE UTILITY BOX

Description R11: All labor, equipment and materials to relocate utility boxes such as cable, telephone or computer connections, etc., in walls or ceilings, regardless of the attachments to them as a result of other work associated with this contract such as drywall, soffits or ductwork. Extension of outlet box will be incidental.

Applicable specification sections include but are not limited to: 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made at the per each price, complete and accepted by the Commissioner.

12. REMOVE AND REINSTALL LIGHT FIXTURES (INCANDESCENT OR FLUORESCENT)

Description R12: All labor, equipment and materials to remove and replace existing incandescent light fixtures as a result of other work under this contract. Extension of electric outlet box will be incidental.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made at the per each price, complete and accepted by the Commissioner.

13. REMOVE AND REINSTALL CEILING FAN

Description R13: All labor, equipment and materials to remove and replace an existing ceiling fan as a result of other work under this contract. Extension of electric outlet box will be incidental.

Applicable specification sections include but are not limited to: 01 73 00 “Execution,” 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made at the per each price, complete and accepted by the Commissioner.

14. EXTEND WALL OR CEILING ELECTRICAL BOX

Description R14: All labor, equipment and materials to extend electrical boxes whether in walls or ceilings and regardless of the attachments to them as a result of other work associated with this contract such as drywall not otherwise specified.

Applicable specification sections include but are not limited to: 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made at the per each price complete and accepted by the Commissioner.

15. REMOVE/REPLACE ALUMINUM WIRES

Description R15: All labor, equipment and materials to remove existing aluminum wires and install new copper wires in an existing riser to panel, as required.

Applicable specification sections include but are not limited to: 26 05 33 “Raceway and Boxes for Electrical Systems,” 26 24 16 “Panelboards,” 26 27 26 “Wiring Devices” and 26 28 16 “Enclosed Switches and Circuit Breakers”.

Unit of Measurement: Payment will be made per each, complete and accepted by the Commissioner.

16. HOURLY RATE FOR ELECTRICIAN

Description R16: The base prevailing wage rate and the allowable markups and is to be calculated per the General Conditions. This price will be used to cover work items without line items.

Applicable sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK,” Section C.3.

Unit of Measurement: Payment will be made at the hourly rate for an electrician accepted by the Commissioner.

S. NEW CONCRETE SIDEWALK

Description S: All labor, equipment, temporary formwork and materials to install a new concrete sidewalk from the prime entry to the existing public right of way. New concrete sidewalks will be 4 inches thick except through driveways, which will be 6 inches thick in residential areas. This work will consist of constructing concrete sidewalk on a prepared base course; this work will encompass excavation to grade, excavation of unsuitable sub-grade materials, furnishing and placing backfill and bedding material, and removal of existing concrete/spoils located in the area of the new work. Winterization up-charge for concrete and excavation will be incidental. After the concrete has set and the forms removed, the excavated areas will be backfilled and seeded, this work is also incidental to this line item. Contractor will ensure completed concrete sidewalk installation complies with all local codes.

Applicable specification sections include but are not limited to: 02 41 19 “Selective Demolition” and 32 13 13 “Concrete Paving”.

Unit of Measurement: Payment will be made at the unit price per square foot, complete and accepted by the Commissioner.

T. ALLOWANCE FOR PAST PROGRAM REMEDIAL WORK

Description T: An Allowance for follow-up Work to be performed on a Home that had construction completed from a past program year or phase, and whose work requires additional maintenance or services.

Unit of Measurement: Payment will be made in accordance with PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK,” and accepted by the Commissioner.

U. ALLOWANCE FOR REIMBURSEMENT OF DISCONNECT/RECONNECT OF SECURITY SYSTEMS

Description U: The actual amount reimbursed to participants for the disconnection and reconnection of existing security systems**.**

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK,” Section C.2.h.

Unit of Measurement: Payment will be made for actual invoiced cost to participant complete and accepted by the Commissioner.

V. ALLOWANCE FOR PERMITS

Description V: The actual amount paid by the Contractor for construction permits, if required.

Unit of Measurement: Payment will be based on paid invoices as documented by receipts from the permitting entity, to which no markup will be allowed. Unused portion will be credited back to the City by a Contract Modification.

W. ALLOWANCE FOR ASBESTOS REMOVAL

Description W: The actual amount paid by the Contractor for the assessment, testing and remediation of existing materials containing asbestos, including but not limited to pipe and/or duct insulation, if required.

Applicable specification sections include but are not limited to: 02 82 33 “Removal and Disposal of Asbestos-Containing Materials”.

Unit of Measurement: Payment will be based on actual invoiced costs from the abatement subcontractor, paid invoices, and any permitting fees documented by receipts from the permitting entity, to which no markup will be allowed. Unused portion of allowance will be credited back to the City by a Contract Modification.

X. ALLOWANCE FOR REIMBURSEMENT OF UTILITY FEES

Description X: The actual amount reimbursed to participants or paid to Commonwealth Edison or other utility company for utility fees.

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK”.

Unit of Measurement: Payment will be made for actual invoiced cost to participant or utility company, complete and accepted by the Commissioner.

Y. ALLOWANCES - OTHER

1. UNFORSEEN CONDITIONS WORK

Description Y1: A distinct and separate allowance established to reimburse the Contractor for items not contemplated in the specifications, but are required to complete the home’s work scope. This may include concealed conditions not covered by other Unit Prices line items or added work needed in order to complete the option package selected by the Homeowner.

Applicable specification sections include but are not limited to: PART TWO OF THREE - GENERAL CONDITIONS, Article X “CHANGES IN THE WORK,” Section C.2.h.

Unit of Measurement: Payment will be made on a Proposal basis and charged to the allowance as accepted by the Commissioner. An administrative cost not to exceed ten percent (10%) of the total cost can be added to the cost.

2. MATERIAL ONLY

Description Y2: A distinct and separate allowance established to reimburse the Contractor for material costs of products refused by Homeowner(s) after the Homeowner(s) provides approval of all treatments at the completion of the Field Measurement appointment.

Applicable specification sections include but are not limited to: PART TWO OF THREE – GENERAL CONDITIONS, Article X "CHANGES IN THE WORK".

Unit of Measurement: Payment will be made on a Proposal basis and charged to the allowance as accepted by the Commissioner. No labor cost is to be included in the proposal. Applicable administrative costs may be added in accordance with PART TWO OF THREE – GENERAL CONDITIONS, Article X "CHANGES IN THE WORK," Section C.2.g.

Z. MOBILIZATION FEE

Description Z: Utilized to reimburse a portion of the start-up costs associated with the Contract prior to the start of field construction. Such costs may include bonding, insurance, administrative, warehousing, submittals, and associated Field Measurement appointment costs. Cost for this item is not to exceed three percent (3%) of the Group A Base Bid.

Unit of Measurement: Payments will be made in accordance with PART TWO OF THREE - GENERAL CONDITIONS, Article IX "PAYMENTS," Section D, and as accepted by the Commissioner.

AA. PAYMENT FOR CLOSE-OUT DOCUMENTATION

Description AA: A unit cost line item has been created for Close-out Documentation. A sum of $75,000 will be reserved until all permits, all warranties, all final waivers, the approved final sworn statement and affidavit, all final home invoices, all product replacement, and the first three manufacturer's quarterly logs are submitted and accepted by the Commissioner.

Unit of Measurement: Payments will be made in accordance with PART TWO OF THREE - GENERAL CONDITIONS, Article IX "PAYMENTS," Section B.3, and as accepted by the Commissioner.

END OF SECTION 01 22 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor that are not required in order to meet other Project requirements but may offer advantage to Contractor, the City, or Commissioner. Substitutions for Convenience are not allowed.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit one (1) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Contractor’s Substitution Request Form: Use form provided at the end of this Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    a. Statement indicating why specified product or fabrication or installation cannot be provided.
    b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by each Subcontractor that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Samples, where applicable or requested.
    f. Certificates and qualification data, where applicable or requested.

g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated. Refer to testing agency qualifications requirement in Section 01 40 00 “Quality Requirements”.

i. Evidence of compliance with building codes in effect for Project.

j. Detailed comparison of Contractor’s construction schedule using proposed substitution with schedule using products specified for the Work, including effect on the overall Master Schedule.

k. Contractor’s certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

l. Contractor’s waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

m. Designation of availability of maintenance services and sources of replacement materials.

B. Commissioner’s Action: If necessary, Commissioner shall request additional information or documentation for evaluation after receipt of a request for substitution. The Commissioner shall notify Contractor of acceptance or rejection of proposed substitution.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change.

1. Conditions: Commissioner shall consider Contractor’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Commissioner shall return request without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

b. Substitution request is fully documented and properly submitted.

c. Requested substitution has received necessary approvals of authorities having jurisdiction.

d. Requested substitution is compatible with other portions of the Work.

e. Requested substitution has been coordinated with other portions of the Work.

f. Requested substitution provides specified warranty.

g. If requested substitution involves Subcontractors, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to Subcontractors involved.

B. Substitutions for Convenience: Not Allowed.

PART 3 - EXECUTION

3.1 ATTACHMENTS

A. CONTRACTOR'S SUBSTITUTION REQUEST form

END OF SECTION 01 25 00

RESIDENTIAL SOUND INSULATION PROGRAM
Contractor's Substitution Request

Project Phase: _____ RSIP Project Manager: _____
Project No.: _____ Request No.: _____
Contract No.: _____ Date: _____
Specification No.:_____ Section Title: _____
Contractor: _____ Section No.: _____

Proposed Substitution: _____
Manufacturer: _____
Address: _____Phone: _____
Additional Information: _____
_____
Reason for Substitution (For Cause Only): _____
_____
_____
Material Substitution Request must be made in accordance with Part One, Part Two, and Part Three of the Contract Documents. Attached data includes product description, specifications, drawings, samples, reference standards, and performance and test data adequate for evaluation of the request *with applicable portions clearly identified*.
Include an itemized comparison of the proposed substitution with product specified and list significant variations.

The Contractor certifies:
The proposed substitution has been fully investigated and determined to be equal or superior in all respects to the specified products.
The same warranty will be furnished for proposed substitution as for specified product.
The proposed substitution will have no adverse effect on Subcontractor(s) and will not affect the timely completion of the Contract.

Submitted by: _____ Company:_____
Title: _____ Address: _____
Signature: _____ Phone: _____

SUPPORTING DATA ATTACHED:
☐ Drawings ☐ Product Data ☐ Samples
☐ Reference Standards ☐ Test Reports ☐ Other:

Commissioner's Review and Action:
☐ Substitution Approved – Make submittals in accordance with "PART TWO – GENERAL CONDITIONS" Article XI and Specification Section 01 33 00 "Submittal Procedures".
☐ Substitution Approved as Noted – Make submittals in accordance with "PART TWO – GENERAL CONDITIONS" Article XI and Specification Section 01 33 00 "Submittal Procedures".
☐ Substitution Rejected

Signed by: _____ Date: _____

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.
   1. Part One ("Instructions and Execution Documents")
   2. Part Two ("General Conditions")
   3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals. Additional requirements are contained in PART TWO OF THREE - GENERAL CONDITIONS, Article XI "SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES".

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals".

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Architect will indicate either approval or rejection of informational submittals. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals".

C. Portable Document Format (PDF): An open standard electronic file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

D. File Transfer Application: File transfer is the process of copying or moving a file from one computer to another over a network or Internet connection. It enables sharing, transferring, or transmitting a file between different users and/or computers both locally and remotely. This transfer of files is made over an application. The File Transfer Application will be provided by the Commissioner.

E. Master Submittal PDF: A single PDF document that is a submittal waiver for fenestration products that have been previously approved by the Architect. A Master Submittal PDF contains a Submittal Waiver signed by the Architect and the manufacturer, a Product Review Report, a Product Certification, and a full, Architect-approved submittal as required by the Technical Specifications and General Conditions. The Master Submittal PDF is password-protected and electronically signed by the Architect and the manufacturer. The Contractor shall submit a Master Submittal PDF as a record copy for each fenestration product for which the Architect granted a Submittal Waiver. The purpose of a Master Submittal PDF is to ensure that the Contractor has reviewed the approved product submittals, in addition to the Architect and the manufacturer.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Electronic Submittals: The Contractor will submit all the required submittals electronically, except for the samples, in a Portable Document Format (PDF). Verify each submittal is complete and accurate and combine submittals for each specification section into a single pdf document. For each Specification Section, all submittals required for that section shall be submitted at the same time, in a single pdf file. Incomplete submittals will not be reviewed and will be returned to the Contractor with no action taken. Identify and incorporate information in each electronic submittal as follows:

1. Name PDF file with Project number, Contract number, and Specification Section number, including revision identifier if applicable. Example: M8100.12-13_28260_079200_ Rev1.pdf.
2. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
3. Transmittal of Electronic Submittals: Use a File Transfer Application acceptable and provided by the Commissioner**.**

    a. Transmittal Form: Utilize electronic copy of Transmittal Form in this Section. Indicate the following on the form:

        1) Project title and Contract number.
        2) The names of:
            a) Contractor
            b) Subcontractor
            c) Supplier
            d) Manufacturer
            e) Separate details when pertinent
        3) Date and revision dates.
        4) Identification of product or material.
        5) Relation to adjacent structure or materials.
        6) Field dimensions clearly identified as such.
        7) Specification section number and paragraph.
        8) Applicable standards, such as ASTM number or Federal Specification.
        9) Identification of deviations from Contract Documents.
        10) Other data pertinent to the product or material.
        11) Contractor's stamp of Approval specified in Part Two, Article XI, Section B, ("Contractor's Responsibilities and Submittal Procedures"), paragraph 8.
        12) Installation location, where applicable.

    b. Submittal Log: Editable electronic file of Submittal Log with all form fields completed to date, on optical disc containing Electronic Submittal.

B. Processing Time: Allow time for submittal review, including time for resubmittals, as indicated in PART TWO OF THREE - GENERAL CONDITIONS, Article XI "SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES". No time extension will be authorized because of failure to transmit submittals far enough in advance of the Work to permit processing, including resubmittals.

C. Options: Identify options requiring selection by the Commissioner.

D. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

E. Resubmittals: Make resubmittals in same form as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they have received approval notation from Architect.

F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction and others as necessary for performance of construction activities. Show distribution on transmittal forms.

G. Use for Construction: Contractor will retain complete copies of submittals. Use only final action submittals that have received approval notation from Architect.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General: Conform to submittal requirements in this Specification Section and in PART TWO OF THREE - GENERAL CONDITIONS, Article XI "SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES".

1. Prepare submittals required by individual Specification Sections combined in a single pdf as indicated.

B. Product Data: Collect information into a complete submittal for each element of construction and type of product or equipment.

1. Identification: On cover page, affix Submittal Label.
2. Mark each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams showing factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Identification: On each sheet, affix Submittal Label.
2. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.

b. Identification of all components.
c. Detailed dimensions.
d. Component material thicknesses.
e. Materials of all components.
f. Schedules.
g. Compliance with specified standards.
h. Notation of coordination requirements.
i. Notation of dimensions established by field measurement.
j. Relationship and attachment to adjoining construction clearly indicated.
k. Seal and signature of professional engineer, if specified.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Identification: Affix Submittal Label on unexposed side of Samples.
2. Transmit Samples that contain multiple, related components, such as accessories, together in one submittal package.
3. Disposition: Contractor will maintain sets of approved Samples, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples will be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Commissioner's property, are the property of Contractor.

4. Samples for Verification: Submit Samples of size indicated, prepared from same material to be used for the Work, cured, and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Prepare and submit four (4) sets of Samples. One copy will be returned to the Contractor.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

E. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in PART TWO OF THREE - GENERAL CONDITIONS, Article XII "PROJECT RECORD DOCUMENTS AND PROJECT ACCOUNT RECORDS".

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified. Affix Submittal Label on cover sheet.

G. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents. Affix Submittal Label on cover sheet.

H. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of comprehensive tests performed by a qualified testing agency. Affix Submittal Label on cover sheet.

PART 3 - EXECUTION

3.1 CONTRACTOR'S SUBMISSION REQUIREMENTS

A. Comply with submission timeline requirements indicated.

B. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Commissioner.

3.2 ARCHITECT'S ACTION

A. Action and Informational Submittals: Architect will review each submittal, signify action taken in accordance with PART TWO - GENERAL CONDITIONS, Article XI "SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES," Paragraph C.3, along with additional comments as appropriate on Submittal Log to indicate corrections or revisions required, and return Submittal Log to Contractor. One copy of each submittal will be returned.

B. Incomplete or partial submittals are unacceptable and will be returned for resubmittal without review.

C. Partial submittals prepared for a portion of the Work will be reviewed only when use of partial submittals has received prior approval from Architect.

D. Submittals not required by the Contract Documents may be returned by the Architect without action.

3.3 SUBMITTAL LOG

A. Utilize Submittal Log at the end of this Section. Obtain Submittal Log in editable electronic form from the Commissioner. Maintain and update Submittal Log for the duration of the Project.

B. Transmit Submittal Log in and electronic form to the Commissioner with each submittal package. Complete all form fields with appropriate designation, date, and other information, as indicated. The Commissioner shall return Submittal Log with Architect's actions and comments notated.

3.4 ATTACHMENTS

A. SUBMITTAL LABEL sample label

B. SUBMITTAL TRANSMITTAL sample form

C. SUBMITTAL LOG sample form

END OF SECTION 01 33 00

SUBMITTAL LABEL

RESIDENTIAL SOUND INSULATION PROGRAM
RSIP PHASE ____

CDA PROJECT NO. _____ *CONTRACTOR'S NAME HERE*
CONTRACT NO. _____
SPECIFICATION NO. _____
DATE: _____
TRANSMITTAL NO. _____ *CONTRACTOR'S APPROVAL*
SUBMITTAL NO. _____ *& SIGNATURE*
DESCRIPTION: _____

FORMAT FOR SELF-ADHESIVE LABEL

Date:			
Transmittal No.:			
To:		CC:	
Attention:			

RSIP Phase:		RSIP Project Manager:	
Project No.:		Supplier:	
Contract No.:		Manufacturer:	
Specification No.:			
Contractor:			

Transmitted: ☐ USPS ☐ Carrier ☐ Messenger ☐ Email ☐ In person ☐ Other:

For Your: ☐ Approval ☐ Information ☐ Record ☐ Review ☐ Other:

Copies:	No.:	Spec Section(s): ☐ Full Submittal
	0 of 0	Revised Submittals:

Samples/ Other:

Copies:	No.:	Description:

Remarks:	

From:

Signature:

SUBMITTAL LOG

RSIP Project Phase: **RSIP - O'Hare, Phase 19A**

Date: **xxxxx**

RSIP Specification Number: **01 33 00**

Contractor: **XXXXXXX**

Architect: **Globetrotters Engineering Corporation**

Review In Progress

Resubmittal In

Further Submission Not Required

Noted Revision(s) and Resubmittal Required

☐ SECTION COMPLETION Incomplete

☑ SECTION COMPLETION Complete

ARCHITECT'S REVIEW ACTIONS (as noted in 'Architect's Review Action')

- **A** No Exceptions
- **B** Exceptions as Noted
- **C** Revise and Resubmit
- **D** Rejected
- **E** Refer to Consultant Review
- **N** No Action Taken

See the General Conditions of the Contract for definition of the above terms. Comments made on Submittals do not relieve the Contractor from compliance with the requirements of the Contract Documents. The Architect's review is for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor is solely responsible for: determining the accuracy and completeness of detail, such as dimensions and quantities, weights or gauges, fabrication processes. The Contractor is solely responsible for construction means and methods, the sequenced coordination of the work with other trades, and construction safety precautions. Approval of a specific item does not imply approval of the assembly of which the item is a component.

General Review Comments Legend (as noted in 'Review Comments')

- **GR-1** Submitted test report is expired. Provide updated test report as required by specifications.
- **GR-2** Submitted product was not produced by a specified manufacturer. Provide specified manf./product.
- **GR-3** Product does not comply with specified performance requirements. Provide compliant product.
- **GR-4** Provide better match for product finish.
- **GR-5** Required Test Report Missing.
- **GR-6** Submittal not required. Received for information only, not reviewed.
- **GR-7** Submittal requirement satisfied by submittal of similar performing product.
- **GR-8** Provide manufacturer's warranty that complies with the specifications.
- **GR-9** Product data is incomplete.
- **GR-10**

TRANSMITTAL LOG

(next worksheet)

Submittal Transmittal No:

Date Submitted:

Submittal content:

Architect Review by:

Comments:

Date:

Architect's MEP Consultant Review by:

Comments:

Contractor Review By:

Date:

Additional Comments:

SUBMITTAL LOG

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
01 35 43 ENVIRONMENTAL PROCEDURES											☐ SECTION COMPLETION		
01 35 43.01	Contractor/SubContractor Equipment Verification Report												Monthly to RSIP
01 35 43.02	Contractor Equipment Listing												Monthly to RSIP
01 35 43.03	Contractor Monthly Fuel Usage Summary Report												Monthly to RSIP
01 35 43.04	Contractor Annual Fuel Usage Summary												Monthly to RSIP
01 35 43.05	Equipment Tracking Form												Monthly to RSIP
01 40 00 QUALITY REQUIREMENTS											☐ SECTION COMPLETION		
01 40 00.01	Complete Project Warranty												
01 40 00.02	Contractor's Quality Control Plan												
01 40 00.03	Qualification Data												
01 40 00.04	Testing Agency Qualifications												
01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL											☐ SECTION COMPLETION		
01 74 19.01	Waste Management Plan												Monthly to RSIP
01 74 19.02	Waste Reduction Progress Reports												Monthly to RSIP
01 74 19.03	Waste Reduction Calculations												Monthly to RSIP
01 74 19.04	Records of Donations												Monthly to RSIP
01 74 19.05	Recycling and Processing Facility Records												Monthly to RSIP
01 74 19.06	Landfill and Incinerator Disposal Records												Monthly to RSIP
01 74 19.07	Qualification Data												Monthly to RSIP
01 74 19.08	Statement of Refrigerant Recovery												Monthly to RSIP
01 74 19.09	Construction and Demolition Debris Recycling Compliance Form												Monthly to RSIP
01 74 19.10	Salvage Progress Report												Monthly to RSIP
01 81 13 SUSTAINABLE DESIGN REQUIREMENTS											☐ SECTION COMPLETION		
01 81 13.01	Product Data for Low-Emitting Materials-Certified Wood												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
01 81 13.02	Product Data for Low-Emitting Materials-Adhesives and Sealants												
01 81 13.03	Product Data for Low-Emitting Materials-Paints and Coatings												
01 81 13.04	Product Data for Low-Emitting Materials-Vinyl Windows												
01 81 13.05	Product Data for Low-Emitting Materials-Sliding Plastic-Framed Glass Doors												
01 81 13.06	Regional Materials Pre-Construction Estimate												To RSIP
01 81 13.07	Regional Materials Final Construction Totals												To RSIP
01 81 13.08	Recycled Materials Pre-Construction Estimate												To RSIP
01 81 13.09	Recycled Materials Final Construction Totals												To RSIP
02 41 19 SELECTIVE DEMOLITION											☐	SECTION COMPLETION	
02 41 19.01	Cutting & Patching Proposal (Submit under 01 73 00 Execution)												To RSIP
02 41 19.02	Landfill Records												To RSIP
02 82 33 REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS											☐	SECTION COMPLETION	
02 82 33.01	Contractor's Licenses and EPA Certifications												
02 82 33.02	ACM Report including Waste Shipment Record												
02 83 13 LEAD HAZARD CONTROL ACTIVITIES											☐	SECTION COMPLETION	
02 83 13.01	Lead Paint Removal Licenses & U.S. EPA Certification												
02 83 13.02	Lead-Safe Documentation Including Homeowner Pamphlet Receipts												
02 83 13.03	Lead-Safe Practices Plan												
02 83 13.04	City of Chicago Department of Public Health (CDPH) Form LRPP												
02 83 13.05	Renovation Record-Keeping Checklist												
02 83 13.06	Training Log												
02 83 33.13 LEAD-BASED PAINT REMOVAL AND DISPOSAL											☐	SECTION COMPLETION	
02 83 33.13.01	Contractor's Licenses and EPA Certifications												
02 83 33.13.02	Lead-Safe Documentation including Homeowner Pamphlet Receipts												
05 75 00 DECORATIVE FORMED METAL											☐	SECTION COMPLETION	
05 75 00.01	Finishing Materials Product Data												
05 75 00.03	Color Samples for Verification												
05 75 00.05	Coordination Drawings for Formed Metal Elements												
06 10 53 MISCELLANEOUS ROUGH CARPENTRY											☐	SECTION COMPLETION	
06 10 53.01	Product Data for Wood-Preservative Treatment												
06 10 53.02	Product Data for Fire-Retardant Treatment												
06 10 53.03	Product Data for Low-Emitting Materials												
06 20 13 EXTERIOR FINISH CARPENTRY											☐	SECTION COMPLETION	
06 20 13.01	Product Data for Factory-Fabricated Products and Processes												
06 20 13.02	Paint and Stain Color Picket Samples for Verification												
06 20 13.03	Product Data for Low-Emitting Materials												
06 20 23 INTERIOR FINISH CARPENTRY											☐	SECTION COMPLETION	
06 20 23.01	Product Data for Factory-Fabricated Products and Processes												
06 20 23.02	Samples of each Molding Type												
06 20 23.06	Mockup of Interior Field Assembled Skylight Storm Window												
06 20 23.07	Product Data for Low-Emitting Materials												
07 21 00 THERMAL INSULATION											☐	SECTION COMPLETION	
07 21 00.01	Product Data for Glass-Fiber Board Insulation												
07 21 00.02	Product Data for Mineral Wool Board Insulation												
07 21 00.03	Product Data for Glass-Fiber Blanket Insulation												
07 21 00.04	Product Data for Mineral-Wool Blanket Insulation												
07 21 00.05	Product Data for Glass Fiber Perimeter Wrap Insulation												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
07 21 00.06	Product Data for Loose-Fill Insulation												
07 21 00.07	Product Data for Bonding Adhesive												
07 21 00.08	Product Data for Auxiliary Materials												
07 21 00.09	Attic Design												
07 21 00.10	Product Data for Low-Emitting Materials												
07 41 13.16 STANDING-SEAM METAL ROOF PANELS											☐	SECTION COMPLETION	
07 41 13.16.01	Product Data for Standing-Seam Metal Roof Panels												
07 41 13.16.02	Shop Drawings for Standing-Seam Metal Roof Panels												
07 41 13.16.03	Samples for Initial Selection for Metal Panels												
07 41 13.16.04	Samples for Verification for Metal Panels												
07 41 13.16.05	Product Test Reports for Standing-Seam Metal Roof Panels												
07 41 13.16.06	Field Quality-Control Reports for Standing Seam Metal Roof Panels												
07 41 13.16.07	Special Warranty for Components of Metal Panel Systems												
07 41 13.16.08	Special Warranty on Finishes for Metal Panels												
07 41 13.16.09	Special Weathertightness Warranty for Standing-Seam Metal Roof Panel Assemblies												
07 92 00 JOINT SEALANTS											☐	SECTION COMPLETION	
07 92 00.01	Product Data for Silicone Joint Sealants												
07 92 00.02	Product Data for Latex Joint Sealants												
07 92 00.03	Product Data for Acoustical Joint Sealants												
07 92 00.04	Product Data for Fire-Barrier Sealants												
07 92 00.05	Product Data for Concrete-Paving Joint Sealants												
07 92 00.06	Product Data for Joint Sealant Backer Rod												
07 92 00.07	Product Data for Concrete Paving Sealant Backer Rod												
07 92 00.08	Product Data for Bond-Breaker Tape												
07 92 00.09	Sample of Each Type of Sealant in Selected Colors												
07 92 00.10	Product Data for Low-Emitting Materials												
08 11 69 METAL STORM DOORS AND FRAMES											☐	SECTION COMPLETION	
08 11 69.01	Product Data of Glazing for Storm Doors												
08 11 69.02	Product Certification (PC) for Side-Hinged Storm Door (Half-Lite)												
08 11 69.03	Product Data for Side-Hinged Storm Door (Half-Lite)												
08 11 69.04	Shop Drawings for Side-Hinged Storm Door (Half-Lite)												
08 11 69.05	Sample of Each Color Specified for Side-Hinged Storm Door (Half-Lite)												
08 11 69.06	Test Report for Side-Hinged Storm Door (Half-Lite) AAMA/WDMA/CSA 101/I.S.2/A440												
08 11 69.07	Test Report for Side-Hinged Storm Door (Half-Lite) Acoustical Test												
08 11 69.08	Product Certification (PC) for Side-Hinged Storm Door (Full-Lite)												
08 11 69.09	Product Data for Side-Hinged Storm Door (Full-Lite)												
08 11 69.10	Shop Drawings for Side-Hinged Storm Door (Full-Lite)												
08 11 69.11	Sample of Each Color Specified for Side-Hinged Storm Door (Full-Lite)												
08 11 69.12	Test Report for Side-Hinged Storm Door (Full-Lite) AAMA/WDMA/CSA 101/I.S.2/A440												
08 11 69.13	Test Report for Side-Hinged Storm Door (Full-Lite) Acoustical Test												
08 11 69.14	Product Certification (PC) for Side-Hinged Storm Door (Self-Storing Full-Lite)												
08 11 69.15	Product Data for Side-Hinged Storm Door (Self-Storing Full-Lite)												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
08 11 69.16	Shop Drawings for Side-Hinged Storm Door (Self-Storing Full-Lite)												
08 11 69.17	Sample of Each Color Specified for Side-Hinged Storm Door (Self-Storing Full-Lite)												
08 11 69.18	Test Report for Side-Hinged Storm Door (Self-Storing Full-Lite) AAMA/WDMA/CSA 101/I.S.2/A440												
08 11 69.19	Test Report for Side-Hinged Storm Door (Self-Storing Full-Lite) Acoustical Test												
08 11 69.20	Product Certification (PC) for Side-Hinged Security Storm Door (Full-Lite)												
08 11 69.21	Product Data for Side-Hinged Security Storm Door (Full-Lite)												
08 11 69.22	Shop Drawings for Side-Hinged Security Storm Door (Full-Lite)												
08 11 69.23	Sample of Each Color Specified for Side-Hinged Security Storm Door (Full-Lite)												
08 11 69.24	Test Report for Side-Hinged Security Storm Door (Full-Lite) AAMA/WDMA/CSA 101/I.S.2/A440												
08 11 69.25	Test Report for Side-Hinged Security Storm Door (Full-Lite) Acoustical Test												
08 11 69.26	Test Report for Side-Hinged Security Storm Door (Full-Lite) Forced Entry Resistance												
08 11 69.27	Product Data for Integral Heavy-Duty Storm Door Hardware												
08 11 69.28	Product Certification (PC) for Sliding Storm Door												
08 11 69.29	Product Data for Sliding Storm Door												
08 11 69.30	Shop Drawings for Sliding Storm Door												
08 11 69.31	Sample of Each Color Specified for Sliding Storm Door												
08 11 69.32	Test Report for Sliding Storm Door AAMA/WDMA/CSA 101/I.S.2/A440												
08 11 69.33	Test Report for Sliding Storm Door Acoustical Test												
08 11 69.34	Qualification Data for Manufacturer												
08 11 69.35	Maintenance Data												
08 11 69.36	Installation Instructions for Each Product												
08 11 69.37	Sample Warranties												
08 11 69.38	Product Data for Low-Emitting Materials												
08 12 13 HOLLOW METAL FRAMES											☐	SECTION COMPLETION	
08 12 13.01	Product Data												
08 12 13.02	Shop Drawings												
08 12 13.03	Color Samples for Verification												
08 14 16 FLUSH WOOD DOORS											☐	SECTION COMPLETION	
08 14 16.01	Product Data for Glazing of Door Lites												
08 14 16.02	Finish Samples for Verification for Exterior Acoustic Doors and Frames												
08 14 16.03	Product Data for (Full Slab) Exterior Acoustic Doors and Frames												
08 14 16.04	Shop Drawings for (Full Slab) Exterior Acoustic Doors and Frames												
08 14 16.05	Product Data for (Half Lite) Exterior Acoustic Doors and Frames												
08 14 16.06	Shop Drawings for (Half Lite) Exterior Acoustic Doors and Frames												
08 14 16.07	Product Data for Interior Acoustic Doors and Frames												
08 14 16.08	Shop Drawings for Interior Acoustic Doors and Frames												
08 14 16.09	Finish Samples for Verification for Interior Acoustic Doors and Frames												
08 14 16.10	Product Data for Interior Fire-Rated Doors												
08 14 16.11	Shop Drawings for Interior Fire-Rated Doors												
08 14 16.12	Finish Samples for Verification for Interior Fire-Rated Doors												
08 14 16.13	Product Data for Low-Emitting Materials												
08 14 16.14	Installation Instructions for Each Product												
08 14 16.15	Qualification Data for Manufacturer												
08 14 16.16	Maintenance Data												
08 14 16.17	Sample Warranty												
08 16 13 FIBERGLASS DOORS											☐	SECTION COMPLETION	

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08 16 13.01	Product Data for Glazing of Door Lites												
08 16 13.02	Finish Samples for Verification for Exterior Acoustic Doors and Frames												
08 16 13.03	Product Certification (PC) for (Flush Opaque F1) Exterior Acoustic Doors and Frames												
08 16 13.04	Product Data for (Flush Opaque F1) Exterior Acoustic Doors and Frames												
08 16 13.05	Shop Drawings for (Flush Opaque F1) Exterior Acoustic Doors and Frames												
08 16 13.06	Product Certification (PC) for (Full Lite F9) Exterior Acoustic Doors and Frames												
08 16 13.07	Product Data for (Full Lite F9) Exterior Acoustic Doors and Frames												
08 16 13.08	Shop Drawings for (Full Lite F9) Exterior Acoustic Doors and Frames												
08 16 13.09	Test Report for (Full Lite F9) Exterior Acoustic Doors and Frames Thermal Test												
08 16 13.10	Product Certification (PC) for Interior Fire-Rated Doors												
08 16 13.11	Product Data for Interior Fire-Rated Doors												
08 16 13.12	Shop Drawings for Interior Fire-Rated Doors												
08 16 13.13	Finish Samples for Verification for Interior Fire-Rated Doors												
08 16 13.14	Product Certification (PC) for (Half Lite F6) Exterior Acoustic Doors and Frames												
08 16 13.15	Product Data for (Half Lite F6) Exterior Acoustic Doors and Frames												
08 16 13.16	Shop Drawings for (Half Lite F6) Exterior Acoustic Doors and Frames												
08 16 13.17	Installation Instructions for Each Product												
08 16 13.18	Qualification Data for Manufacturor												
08 16 13.19	Maintenance Data												
08 16 13.20	Sample Warranty												
08 16 13.21	Product Standards (Pictorial) for all Fiberglass Door Elevations												
08 16 13.22	Product Data for Low-Emitting Materials												
08 32 13 SLIDING ALUMINUM-FRAMED GLASS DOORS											☐	SECTION COMPLETION	
08 32 13.01	Product Data for Glazing of Sliding Glass Doors												
08 32 13.02	Product Certification (PC) for Sliding Aluminum-Framed Glass Doors												
08 32 13.03	Product Data for Sliding Aluminum-Framed Glass Doors												
08 32 13.04	Shop Drawings for Sliding Aluminum-Framed Glass Doors												
08 32 13.05	Finish Samples for Verification for Sliding Aluminum-Framed Glass Doors												
08 32 13.06	Test Report for Sliding Aluminum-Framed Glass Doors AAMA/WDMA/CSA 101/I.S.2/A440												
08 32 13.07	Test Report for Sliding Aluminum-Framed Glass Doors Acoustical Test												
08 32 13.08	Test Report for Sliding Aluminum-Framed Glass Doors Thermal Test												
08 32 13.09	Qualification Data for Manufacturer												
08 32 13.10	Installation Instructions for Each Product												
08 32 13.11	Maintenance Data												
08 32 13.12	Sample Warranties												
08 32 13.13	Product Data for Low-Emitting Materials												
08 32 16 SLIDING PLASTIC-FRAMED GLASS DOORS											☐	SECTION COMPLETION	
08 32 16.01	Product Data for Glazing of Sliding Glass Doors												
08 32 16.02	Product Certification (PC) for Sliding Plastic-Framed Glass Doors												
08 32 16.03	Product Data for Sliding Plastic-Framed Glass Doors												
08 32 16.04	Shop Drawings for Sliding Plastic-Framed Glass Doors												
08 32 16.05	Finish Samples for Verification for Sliding Plastic-Framed Glass Doors												
08 32 16.06	Test Report for Sliding Plastic-Framed Glass Doors AAMA/WDMA/CSA 101/I.S.2/A440												
08 32 16.07	Test Report for Sliding Plastic-Framed Glass Doors Acoustical Test												
08 32 16.08	Test Report for Sliding Plastic-Framed Glass Doors Thermal Test												
08 32 16.09	Qualification Data for Manufacturer												
08 32 16.10	Installation Instructions for Each Product												

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08 32 16.11	Maintenance Data												
08 32 16.12	Sample Warranties												
08 32 16.13	Product Data for Low-Emitting Materials												
08 51 13 ALUMINUM WINDOWS											☐	SECTION COMPLETION	
08 51 13.01	Product Data for Glazing of Windows												
08 51 13.02	Aluminum Windows Finish Samples												
08 51 13.03	Aluminum Windows Manufacturer Qualification Data												
08 51 13.04	Aluminum Window (Double-Hung - 29) Product Data												
08 51 13.05	Aluminum Window (Double-Hung - 29) Shop Drawings												
08 51 13.06	Aluminum Window (Double-Hung - 29) Acoustic Test Report												
08 51 13.07	Aluminum Window (Double-Hung - 29) Thermal Test Report												
08 51 13.08	Aluminum Window (Double-Hung - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.09	Aluminum Window (Double-Hung - 29) Product Certification												
08 51 13.10	Aluminum Window (Double-Hung - 40) Product Data												
08 51 13.11	Aluminum Window (Double-Hung - 40) Shop Drawings												
08 51 13.12	Aluminum Window (Double-Hung - 40) Acoustic Test Report												
08 51 13.13	Aluminum Window (Double-Hung - 40) Thermal Test Report												
08 51 13.14	Aluminum Window (Double-Hung - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.15	Aluminum Window (Double-Hung - 40) Product Certification												
08 51 13.16	Aluminum Window (Horiz. Slider - 29) Product Data												
08 51 13.17	Aluminum Window (Horiz. Slider - 29) Shop Drawings												
08 51 13.18	Aluminum Window (Horiz. Slider - 29) Acoustic Test Report												
08 51 13.19	Aluminum Window (Horiz. Slider - 29) Thermal Test Report												
08 51 13.20	Aluminum Window (Horiz. Slider - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.21	Aluminum Window (Horiz. Slider - 29) Product Certification												
08 51 13.22	Aluminum Window (Horiz. Slider - 40) Product Data												
08 51 13.23	Aluminum Window (Horiz. Slider - 40) Shop Drawings												
08 51 13.24	Aluminum Window (Horiz. Slider - 40) Acoustic Test Report												
08 51 13.25	Aluminum Window (Horiz. Slider - 40) Thermal Test Report												
08 51 13.26	Aluminum Window (Horiz. Slider - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.27	Aluminum Window (Horiz. Slider - 40) Product Certification												
08 51 13.28	Aluminum Window (Fixed - 29) Product Data												
08 51 13.29	Aluminum Window (Fixed - 29) Shop Drawings												
08 51 13.30	Aluminum Window (Fixed - 29) Acoustic Test Report												
08 51 13.31	Aluminum Window (Fixed - 29) Thermal Test Report												
08 51 13.32	Aluminum Window (Fixed - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.33	Aluminum Window (Fixed - 29) Product Certification												
08 51 13.34	Aluminum Window (Fixed - 40) Product Data												
08 51 13.35	Aluminum Window (Fixed - 40) Shop Drawings												
08 51 13.36	Aluminum Window (Fixed - 40) Acoustic Test Report												
08 51 13.37	Aluminum Window (Fixed - 40) Thermal Test Report												
08 51 13.38	Aluminum Window (Fixed - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.39	Aluminum Window (Fixed - 40) Product Certification												
08 51 13.40	Aluminum Window (Casement - 29) Product Data												
08 51 13.41	Aluminum Window (Casement - 29) Shop Drawings												
08 51 13.42	Aluminum Window (Casement - 29) Acoustic Test Report												
08 51 13.43	Aluminum Window (Casement - 29) Thermal Test Report												

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08 51 13.44	Aluminum Window (Casement - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.45	Aluminum Window (Casement - 29) Product Certification												
08 51 13.46	Aluminum Window (Casement - 40) Product Data												
08 51 13.47	Aluminum Window (Casement - 40) Shop Drawings												
08 51 13.48	Aluminum Window (Casement - 40) Acoustic Test Report												
08 51 13.49	Aluminum Window (Casement - 40) Thermal Test Report												
08 51 13.50	Aluminum Window (Casement - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.51	Aluminum Window (Casement - 40) Product Certification												
08 51 13.52	Aluminum Window (Awning - 29) Product Data												
08 51 13.53	Aluminum Window (Awning - 29) Shop Drawings												
08 51 13.54	Aluminum Window (Awning - 29) Acoustic Test Report												
08 51 13.55	Aluminum Window (Awning - 29) Thermal Test Report												
08 51 13.56	Aluminum Window (Awning - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.57	Aluminum Window (Awning - 29) Product Certification												
08 51 13.58	Aluminum Window (Awning - 40) Product Data												
08 51 13.59	Aluminum Window (Awning - 40) Shop Drawings												
08 51 13.60	Aluminum Window (Awning - 40) Acoustic Test Report												
08 51 13.61	Aluminum Window (Awning - 40) Thermal Test Report												
08 51 13.62	Aluminum Window (Awning - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.63	Aluminum Window (Awning - 40) Product Certification												
08 51 13.64	Aluminum Window (Hopper - 29) Product Data												
08 51 13.65	Aluminum Window (Hopper - 29) Shop Drawings												
08 51 13.66	Aluminum Window (Hopper - 29) Acoustic Test Report												
08 51 13.67	Aluminum Window (Hopper - 29) Thermal Test Report												
08 51 13.68	Aluminum Window (Hopper - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 13.69	Aluminum Window (Hopper - 29) Product Certification												
08 51 13.70	Aluminum Windows Installation Instructions												
08 51 13.71	Aluminum Windows Maintenance Data												
08 51 13.72a	Aluminum Windows Field Quality-Control Test Report (Uninstalled) Structural Performance/Air Infiltration												
08 51 13.72b	Aluminum Windows Field Quality-Control Test Report (Uninstalled) Thermal Performance												
08 51 13.72c	Aluminum Windows Field Quality-Control Test Report (Uninstalled) Acoustic Performance												
08 51 13.73a	Aluminum Windows Field Quality-Control Test Report (Installed) Air Infiltration												
08 51 13.73b	Aluminum Windows Field Quality-Control Test Report (Uninstalled) Acoustic												
08 51 13.74	Aluminum Windows Manufacturer's Sample Warranty												
08 51 13.75	Product Data for Low-Emitting Materials												
08 51 69 METAL STORM WINDOWS											☐	SECTION COMPLETION	
08 51 69.01	Product Data for Glazing of Windows												
08 51 69.02	Metal Storm Windows Finish Samples												
08 51 69.03	Metal Storm Windows Manufacturer Qualification Data												
08 51 69.04	Interior Metal Storm Window (Double-Hung) Product Data												
08 51 69.05	Interior Metal Storm Window (Double-Hung) Shop Drawings												
08 51 69.06	Interior Metal Storm Window (Double-Hung) Acoustical Test Report												
08 51 69.07	Interior Metal Storm Window (Double-Hung) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.08	Interior Metal Storm Window (Double-Hung) Product Certification												
08 51 69.09	Interior Metal Storm Window (Horiz. Slider) Product Data												
08 51 69.10	Interior Metal Storm Window (Horiz. Slider) Shop Drawings												
08 51 69.11	Interior Metal Storm Window (Horiz. Slider) Acoustical Test Report												

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08 51 69.12	Interior Metal Storm Window (Horiz. Slider) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.13	Interior Metal Storm Window (Horiz. Slider) Product Certification												
08 51 69.14	Interior Metal Storm Window (Side-Hinged) Product Data												
08 51 69.15	Interior Metal Storm Window (Side-Hinged) Shop Drawings												
08 51 69.16	Interior Metal Storm Window (Side-Hinged) Acoustical Test Report												
08 51 69.17	Interior Metal Storm Window (Side-Hinged) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.18	Interior Metal Storm Window (Side-Hinged) Product Certification												
08 51 69.19	Interior Metal Storm Window (Fixed) Product Data												
08 51 69.20	Interior Metal Storm Window (Fixed) Shop Drawings												
08 51 69.21	Interior Metal Storm Window (Fixed) Acoustical Test Report												
08 51 69.22	Interior Metal Storm Window (Fixed) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.23	Interior Metal Storm Window (Fixed) Product Certification												
08 51 69.24	Interior Metal Storm Window (Fixed) Product Certification												
08 51 69.25	Exterior Metal Storm Window (Double-Hung) Product Data												
08 51 69.26	Exterior Metal Storm Window (Double-Hung) Shop Drawings												
08 51 69.27	Exterior Metal Storm Window (Double-Hung) Acoustical Test Report												
08 51 69.28	Exterior Metal Storm Window (Double-Hung) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.29	Exterior Metal Storm Window (Double-Hung) Product Certification												
08 51 69.30	Exterior Metal Storm Window (Horiz. Slider) Product Data												
08 51 69.31	Exterior Metal Storm Window (Horiz. Slider) Shop Drawings												
08 51 69.32	Exterior Metal Storm Window (Horiz. Slider) Acoustical Test Report												
08 51 69.33	Exterior Metal Storm Window (Horiz. Slider) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.34	Exterior Metal Storm Window (Horiz. Slider) Product Certification												
08 51 69.35	Exterior Metal Storm Window (Side-Hinged) Product Data												
08 51 69.36	Exterior Metal Storm Window (Side-Hinged) Shop Drawings												
08 51 69.37	Exterior Metal Storm Window (Side-Hinged) Acoustical Test Report												
08 51 69.38	Exterior Metal Storm Window (Side-Hinged) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.39	Exterior Metal Storm Window (Side-Hinged) Product Certification												
08 51 69.40	Exterior Metal Storm Window (Fixed) Product Data												
08 51 69.41	Exterior Metal Storm Window (Fixed) Shop Drawings												
08 51 69.42	Exterior Metal Storm Window (Fixed) Acoustical Test Report												
08 51 69.43	Exterior Metal Storm Window (Fixed) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 51 69.44	Exterior Metal Storm Window (Fixed) Product Certification												
08 51 69.45	Exterior Metal Storm Window (Fixed) Product Certification												
08 51 69.46	Metal Storm Windows Installation Instructions												
08 51 69.47	Metal Storm Windows Maintenance Data												
08 51 69.48	Metal Storm Windows Manufacturer's Sample Warranties												
08 51 69.49	Product Data for Low-Emitting Materials												
08 53 13 VINYL WINDOWS											☐	SECTION COMPLETION	
08 53 13.01	Vinyl Window Product Data for Glazing												
08 53 13.02	Vinyl Windows Finish Samples												
08 53 13.03	Vinyl Windows Manufacturer Qualification Data												
08 53 13.04	Vinyl Window (Double-Hung - 29) Product Data												
08 53 13.05	Vinyl Window (Double-Hung - 29) Shop Drawings												
08 53 13.06	Vinyl Window (Double-Hung - 29) Acoustic Test Report												
08 53 13.07	Vinyl Window (Double-Hung - 29) Thermal Test Report												
08 53 13.08	Vinyl Window (Double-Hung - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												

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08 53 13.09	Vinyl Window (Double-Hung - 29) Product Certification												
08 53 13.10	Vinyl Window (Double-Hung - 40) Product Data												
08 53 13.11	Vinyl Window (Double-Hung - 40) Shop Drawings												
08 53 13.12	Vinyl Window (Double-Hung - 40) Acoustic Test Report												
08 53 13.13	Vinyl Window (Double-Hung - 40) Thermal Test Report												
08 53 13.14	Vinyl Window (Double-Hung - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.15	Vinyl Window (Double-Hung - 40) Product Certification												
08 53 13.16	Vinyl Window (Double-Hung - 44) Product Data												
08 53 13.17	Vinyl Window (Double-Hung - 44) Shop Drawings												
08 53 13.18	Vinyl Window (Double-Hung - 44) Acoustic Test Report												
08 53 13.19	Vinyl Window (Double-Hung - 44) Thermal Test Report												
08 53 13.20	Vinyl Window (Double-Hung - 44) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.21	Vinyl Window (Double-Hung - 44) Product Certification												
08 53 13.22	Vinyl Window (Horiz. Slider - 29) Product Data												
08 53 13.23	Vinyl Window (Horiz. Slider - 29) Shop Drawings												
08 53 13.24	Vinyl Window (Horiz. Slider - 29) Acoustic Test Report												
08 53 13.25	Vinyl Window (Horiz. Slider - 29) Thermal Test Report												
08 53 13.26	Vinyl Window (Horiz. Slider - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.27	Vinyl Window (Horiz. Slider - 29) Product Certification												
08 53 13.28	Vinyl Window (Horiz. Slider - 40) Product Data												
08 53 13.29	Vinyl Window (Horiz. Slider - 40) Shop Drawings												
08 53 13.30	Vinyl Window (Horiz. Slider - 40) Acoustic Test Report												
08 53 13.31	Vinyl Window (Horiz. Slider - 40) Thermal Test Report												
08 53 13.32	Vinyl Window (Horiz. Slider - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.33	Vinyl Window (Horiz. Slider - 40) Product Certification												
08 53 13.34	Vinyl Window (Horiz. Slider - 44) Product Data												
08 53 13.35	Vinyl Window (Horiz. Slider - 44) Shop Drawings												
08 53 13.36	Vinyl Window (Horiz. Slider - 44) Acoustic Test Report												
08 53 13.37	Vinyl Window (Horiz. Slider - 44) Thermal Test Report												
08 53 13.38	Vinyl Window (Horiz. Slider - 44) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.39	Vinyl Window (Horiz. Slider - 44) Product Certification												
08 53 13.40	Vinyl Window (Fixed - 29) Product Data												
08 53 13.41	Vinyl Window (Fixed - 29) Shop Drawings												
08 53 13.42	Vinyl Window (Fixed - 29) Acoustic Test Report												
08 53 13.43	Vinyl Window (Fixed - 29) Thermal Test Report												
08 53 13.44	Vinyl Window (Fixed - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.45	Vinyl Window (Fixed - 29) Product Certification												
08 53 13.46	Vinyl Window (Fixed - 40) Product Data												
08 53 13.47	Vinyl Window (Fixed - 40) Shop Drawings												
08 53 13.48	Vinyl Window (Fixed - 40) Acoustic Test Report												
08 53 13.49	Vinyl Window (Fixed - 40) Thermal Test Report												
08 53 13.50	Vinyl Window (Fixed - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.51	Vinyl Window (Fixed - 40) Product Certification												
08 53 13.52	Vinyl Window (Fixed - 44) Product Data												
08 53 13.53	Vinyl Window (Fixed - 44) Shop Drawings												
08 53 13.54	Vinyl Window (Fixed - 44) Acoustic Test Report												
08 53 13.55	Vinyl Window (Fixed - 44) Thermal Test Report												

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08 53 13.56	Vinyl Window (Fixed - 44) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.57	Vinyl Window (Fixed - 44) Product Certification												
08 53 13.58	Vinyl Window (Casement - 29) Product Data												
08 53 13.59	Vinyl Window (Casement - 29) Shop Drawings												
08 53 13.60	Vinyl Window (Casement - 29) Acoustic Test Report												
08 53 13.61	Vinyl Window (Casement - 29) Thermal Test Report												
08 53 13.62	Vinyl Window (Casement - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.63	Vinyl Window (Casement - 29) Product Certification												
08 53 13.64	Vinyl Window (Casement - 40) Product Data												
08 53 13.65	Vinyl Window (Casement - 40) Shop Drawings												
08 53 13.66	Vinyl Window (Casement - 40) Acoustic Test Report												
08 53 13.67	Vinyl Window (Casement - 40) Thermal Test Report												
08 53 13.68	Vinyl Window (Casement - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.69	Vinyl Window (Casement - 40) Product Certification												
08 53 13.70	Vinyl Window (Casement – 44) Product Data												
08 53 13.71	Vinyl Window (Casement – 44) Shop Drawings												
08 53 13.72	Vinyl Window (Casement - 44) Acoustic Test Report												
08 53 13.73	Vinyl Window (Casement – 44) Thermal Test Report												
08 53 13.74	Vinyl Window (Casement – 44) AAMA/WDMA/CSA101/I.S.2/A440 Test Report												
08 53 13.75	Vinyl Window (Casement – 44) Product Certification												
08 53 13.76	Vinyl Window (Awning - 29) Product Data												
08 53 13.77	Vinyl Window (Awning - 29) Shop Drawings												
08 53 13.78	Vinyl Window (Awning - 29) Acoustic Test Report												
08 53 13.79	Vinyl Window (Awning - 29) Thermal Test Report												
08 53 13.80	Vinyl Window (Awning - 29) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.81	Vinyl Window (Awning - 29) Product Certification												
08 53 13.82	Vinyl Window (Awning - 40) Product Data												
08 53 13.83	Vinyl Window (Awning - 40) Shop Drawings												
08 53 13.84	Vinyl Window (Awning - 40) Acoustic Test Report												
08 53 13.85	Vinyl Window (Awning - 40) Thermal Test Report												
08 53 13.86	Vinyl Window (Awning - 40) AAMA/WDMA/CSA 101/I.S.2/A440 Test Report												
08 53 13.87	Vinyl Window (Awning - 40) Product Certification												
08 53 13.88	Vinyl Window (Awning – 44) Product Data												
08 53 13.89	Vinyl Window (Awning – 44) Shop Drawings												
08 53 13.90	Vinyl Windows (Awning – 44) Acoustic Test Report												
08 53 13.91	Vinyl Windows (Awning – 44) Thermal Test Report												
08 53 13.92	Vinyl Windows (Awning – 44) AAMA/WDMA/CSA101/I.S.2/A440 Test Report												
08 53 13.93	Vinyl Windows (Awning – 44) Product Certification												
08 53 13.94	Vinyl Windows Installation Instructions												
08 53 13.95	Vinyl Windows Maintenance Data												
08 53 13.96a	Vinyl Windows Field Quality-Control Test Report (Uninstalled) Structural Performance/Air Infiltration												
08 53 13.96b	Vinyl Windows Field Quality-Control Test Report (Uninstalled) Thermal Performance												
08 53 13.96c	Vinyl Windows Field Quality-Control Test Report (Uninstalled) Acoustic Performance												
08 53 13.97a	Vinyl Windows Field Quality-Control Test Report (Installed) Air Infiltration												
08 53 13.97b	Vinyl Windows Field Quality-Control Test Report (Uninstalled) Acoustic												
08 53 13.98	Vinyl Windows Manufacturer's Sample Warranties												
08 53 13.99	Product Data for Low-Emitting Materials												

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08 71 00 DOOR HARDWARE											☐	SECTION COMPLETION	
08 71 00.01	Interior Door Hinge Product Data												
08 71 00.02	Exterior Door Hinge Product Data												
08 71 00.03	Anti-Friction Bearing Hinge Product Data												
08 71 00.04	Self-Closing Door Hinge Product Data												
08 71 00.05	Bored Lock Type A Product Data												
08 71 00.06	Bored Lock Type A Sample												
08 71 00.07	Bored Lock Type B Product Data												
08 71 00.08	Bored Lock Type B Sample												
08 71 00.09	Bored Auxiliary Lock Product Data												
08 71 00.10	Bored Auxiliary Lock Sample												
08 71 00.11	Surface Closer Product Data												
08 71 00.12	Surface Closer Sample												
08 71 00.13	Perimeter Gasketing, Kerf Type (New Doors) Product Data												
08 71 00.14	Perimeter Gasketing, Bulb Type (Existing Doors) Product Data												
08 71 00.15	Perimeter Gasketing, Folding Seal Type (Existing Doors) Product Data												
08 71 00.16	Door Bottom (New Doors) Product Data												
08 71 00.17	Door Bottom (Existing Doors) Product Data												
08 71 00.18	Door Bottom Sweep Product Data												
08 71 00.19	Automatic Door Bottom Product Data												
08 71 00.20	Adjustable Threshold Product Data												
08 71 00.21	Thermal Break Saddle Threshold (ADA Compliant) Product Data												
08 71 00.22	Level Saddle Threshold (Interior, ADA Compliant) Product Data												
08 71 00.23	Offset Saddle Threshold (Interior, ADA Compliant) Product Data												
08 71 00.24	Wood Saddle Threshold (Interior, ADA Compliant) Product Data												
08 71 00.25	Vinyl Top Saddle Threshold Product Data												
08 71 00.26	Door Viewer Product Data												
08 71 00.27	Door Viewer Sample												
08 71 00.28	Door Knocker with Viewer Product Data												
08 71 00.29	Door Knocker with Viewer Sample												
08 71 00.30	Rigid Door Stop Product Data												
08 71 00.31	Hinge Pin Stop Product Data												
08 71 00.32	House Numbers Product Data												
08 71 00.33	Product Data for Low-Emitting Materials												
08 80 00 GLAZING											☐	SECTION COMPLETION	
08 80 00.01	Primary Float Glass Product Data & Manufacturer's Warranty (Metal Storm Doors)												
08 80 00.02	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Metal Storm Doors)												
08 80 00.03	Laminated Glass Product Data & Manufacturer's Warranty (Metal Storm Doors)												
08 80 00.04	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Metal Storm Doors)												
08 80 00.05	Primary Float Glass Product Data & Manufacturer's Warranty (Wood Doors)												
08 80 00.06	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Wood Doors)												
08 80 00.07	Laminated Glass Product Data & Manufacturer's Warranty (Wood Doors)												
08 80 00.08	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Wood Doors)												
08 80 00.09	Primary Float Glass Product Data & Manufacturer's Warranty (Sliding Glass Doors)												
08 80 00.10	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Sliding Glass Doors)												
08 80 00.11	Laminated Glass Product Data & Manufacturer's Warranty (Sliding Glass Doors)												
08 80 00.12	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Sliding Glass Doors)												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
08 80 00.13	Insulating-Glass Units Product Data & Manufacturer's Warranty (Sliding Glass Doors)												
08 80 00.14	Primary Float Glass Product Data & Manufacturer's Warranty (Aluminum Windows)												
08 80 00.15	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Aluminum Windows)												
08 80 00.16	Laminated Glass Product Data & Manufacturer's Warranty (Aluminum Windows)												
08 80 00.17	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Aluminum Windows)												
08 80 00.18	Insulating-Glass Units Product Data & Manufacturer's Warranty (Aluminum Windows)												
08 80 00.19	Primary Float Glass Product Data & Manufacturer's Warranty (Metal Storm Windows)												
08 80 00.20	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Metal Storm Windows)												
08 80 00.21	Laminated Glass Product Data & Manufacturer's Warranty (Metal Storm Windows)												
08 80 00.22	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Metal Storm Windows)												
08 80 00.23	Primary Float Glass Product Data & Manufacturer's Warranty (Vinyl Windows)												
08 80 00.24	Heat Treated Float Glass Product Data & Manufacturer's Warranty (Vinyl Windows)												
08 80 00.25	Laminated Glass Product Data & Manufacturer's Warranty (Vinyl Windows)												
08 80 00.26	Sputter-Coated Float Glass Product Data & Manufacturer's Warranty (Vinyl Windows)												
08 80 00.27	Insulating-Glass Units Product Data & Manufacturer's Warranty (Vinyl Windows)												
08 80 00.28	Product Data for Low-Emitting Materials												
09 29 00 GYPSUM BOARD											☐	SECTION COMPLETION	
09 29 00.01	Gypsum Wallboard Product Data												
09 29 00.02	Trim Accessories Product Data												
09 29 00.03	Joint Compound & Tape Product Data												
09 29 00.04	Laminating Adhesive Product Data												
09 29 00.05	Fastening Adhesive for Wood Product Data												
09 51 13 ACOUSTICAL PANEL CEILINGS											☐	SECTION COMPLETION	
09 51 13.01	Acoustical Panel Ceiling (24x24) Product Data												
09 51 13.02	Acoustical Panel Ceiling (24x48) Product Data												
09 51 13.03	Metal Suspension System Product Data												
09 51 13.04	Metal Edge Moldings and Trim Product Data												
09 91 13 EXTERIOR PAINTING											☐	SECTION COMPLETION	
09 91 13.01	Primers/Sealers Product Data												
09 91 13.02	Metal Primers Product Data												
09 91 13.03	Wood Primers Product Data												
09 91 13.04	Water-Based Paints Product Data												
09 91 13.05	Solvent-Based Paints Product Data												
09 91 13.06	Product Data for Low-Emitting Materials												
09 91 23 INTERIOR PAINTING											☐	SECTION COMPLETION	
09 91 23.01	Primers/Sealers Product Data												
09 91 23.02	Primers/Sealers Samples												
09 91 23.03	Water-Based Paints Product Data												
09 91 23.04	Water-Based Paints Samples												
09 91 23.05	Product Data for Low-Emitting Materials												
09 93 00 STAINING AND TRANSPARENT FINISHING											☐	SECTION COMPLETION	
09 93 00.01	Wood Fillers Product Data												
09 93 00.02	Wood Fillers Samples												
09 93 00.03	Primers/Sealers Product Data												
09 93 00.04	Primers/Sealers Samples												
09 93 00.05	Stains Product Data												
09 93 00.06	Stains Samples												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
09 93 00.07	Water-Based Varnishes Product Data												
09 93 00.08	Water-Based Varnishes Samples												
09 93 00.09	Polyurethane Varnishes Product Data												
09 93 00.10	Polyurethane Varnishes Samples												
09 93 00.11	One Step Stain and Polyurethane Varnishes Product Data												
09 93 00.12	One Step Stain and Polyurethane Varnishes Samples												
09 93 00.13	Product Data for Low-Emitting Materials												
10 55 00 POSTAL SPECIALTIES											☐	SECTION COMPLETION	
10 55 00.01	Mailbox Product Data & Manufacturer's Warranty												
23 07 13 DUCT INSULATION											☐	SECTION COMPLETION	
23 07 13.01	Duct Insulation Product Data												
23 07 13.02	Duct Mastic Product Data												
23 07 13.03	Duct FSK Tape Product Data												
23 20 00 HVAC PIPING											☐	SECTION COMPLETION	
23 20 00.01	Natural Gas Pipes, Tubes and Fittings Product Data												
23 20 00.02	Manual Shut-Off Valves												
23 20 00.03	PVC Plastic Condensate Piping and Fittings Product Data												
23 20 00.04	Refrigerant Piping Product Data & Manufacturer's Warranty												
23 31 13 METAL DUCTS											☐	SECTION COMPLETION	
23 31 13.01	Rectangular Ducts and Fittings Product Data												
23 31 13.02	Round Ducts and Fittings Product Data												
23 31 13.03	Sealant and Gaskets Product Data												
23 31 13.04	Hangers and Supports Product Data												
23 33 00 AIR DUCT ACCESSORIES											☐	SECTION COMPLETION	
23 33 00.01	Volume Control Damper Product Data												
23 33 00.02	Flexible Duct Connector Product Data												
23 33 00.03	Flexible Duct Product Data												
23 37 13 DIFFUSERS, REGISTERS AND GRILLES											☐	SECTION COMPLETION	
23 37 13.01	Grilles and Registers Product Data												
23 51 00 BREECHINGS, CHIMNEYS AND STACKS											☐	SECTION COMPLETION	
23 51 00.01	Gas Vents, Non-Condensing Product Data												
23 51 00.02	Gas Vents, Condensing Product Data												
23 51 00.03	Furnace Flue Vent Product Data												
23 51 00.04	Chimney Liner Product Data												
23 54 00 FURNACES											☐	SECTION COMPLETION	
23 54 00.01	Non-Condensing Furnace Product Data & Manufacturer's Warranty												
23 54 00.02	Condensing Furnace Product Data & Manufacturer's Warranty												
23 54 00.03	Air Filter Product Data												
23 54 00.04	Noise and Vibration Control Devices Product Data												
23 54 00.05	Thermostats Product Data												
23 54 00.06	Condensate Pump Product Data												
23 54 00.07	Safety Pan Product Data												
23 54 00.08	Wet Switch Product Data												
23 54 00.09	Bypass Furnace Humidifier Product Data												
23 63 13 AIR-COOLED REFRIGERANT CONDENSERS											☐	SECTION COMPLETION	
23 63 13.01	Air-Cooled Condenser Product Data & Manufacturer's Warranty												
23 63 13.02	Fiberglass Pad Product Data												

Submittal Number	Submittal Description	Not Required (X)	Anticipated Submittal Date	Architect's Review							Architect's Review Action	Manufacturer / Product or Model #	Review Comments / General Review Comments as Indicated/ Notes
				Receipt from PM/CM	Due Date to PM/CM	Sent to MEP	Receipt from MEP	MEP Review Action	Review by	Return to PM/CM			
23 63 13.03	Noise and Vibration Control Devices Product Data												
23 81 26 SPLIT-SYSTEM AIR CONDITIONERS											☐	SECTION COMPLETION	
23 81 26.01	Ductless Split System Product Data & Manufacturer's Warranty												
23 81 26.02	Wireless Remote Controller Product Data												
23 81 26.03	Noise and Vibration Control Devices Product Data												
23 82 19 FAN COIL UNITS											☐	SECTION COMPLETION	
23 82 19.01	Forced Air Fan Coil Unit Product Data & Manufacturer's Warranty												
23 82 19.02	Air Filter Product Data												
23 82 19.03	Noise and Vibration Control Devices Product Data												
23 82 19.04	Thermostats Product Data												
23 82 19.05	Condensate Pump Product Data												
23 82 19.06	Safety Pan Product Data												
23 82 19.07	Wet Switch Product Data												
26 05 33 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS											☐	SECTION COMPLETION	
26.05.33.01	Electrical Box Product Data												
26.05.33.02	Electrical Metallic Tubing Product Data												
26.05.33.03	Rigid Metallic Conduit Product Data												
26.05.33.04	Intermediate Metallic Conduit Product Data												
26.05.33.05	Liquid-Tight Flexible Metallic Conduit Product Data												
26.05.33.06	Flexible Metal Conduit Product Data												
26 24 16 PANELBOARDS											☐	SECTION COMPLETION	
26.24.16.01	Service Entrance Load Centers 100A/12 Poles Product Data & Manufacturer's Warranty												
26.24.16.02	Service Entrance Load Centers 100A/30 Poles Product Data & Manufacturer's Warranty												
26.24.16.03	Service Entrance Load Centers 200A/40 Poles Product Data & Manufacturer's Warranty												
26.24.16.04	Service Entrance Conductors												
26 27 26 WIRING DEVICES											☐	SECTION COMPLETION	
26.27.26.01	Wiring and Cable Product Data & Manufacturer's Warranty												
26.27.26.02	Straight-Blade Receptacles Product Data & Manufacturer's Warranty												
26.27.26.03	GFCI Receptacles Product Data & Manufacturer's Warranty												
26.27.26.04	Toggle Switches Product Data												
26.27.26.05	Wall Plates Product Data												
26 28 16 ENCLOSED SWITCHES AND CIRCUIT BREAKERS											☐	SECTION COMPLETION	
26.28.16.01	Fusible Switch (30A with Lug Terminal Types) Product Data & Manufacturer's Warranty												
26.28.16.02	Fusible Switch (60A with Lug Terminal Types) Product Data & Manufacturer's Warranty												
26.28.16.03	Toggle Disconnect Switch Product Data & Manufacturer's Warranty												
32 13 13 SITE CONCRETE											☐	SECTION COMPLETION	
32.13.13.01	Design Mixtures												

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SECTION 01 35 43 - ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work in this section is subject to the requirements of the Contract Documents.
   1. Part One ("Instructions and Execution Documents")
   2. Part Two ("General Conditions")
   3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes selected requirements contained in the Chicago Department of Aviation Sustainable Airport Manual™ (SAM®) as periodically updated. A copy of the SAM is available at flychicago.com/SAM.

   1. Chapter 7.0 - CONSTRUCTION PRACTICES Section 7.1 "Prerequisite 1 - Clean Fuel Construction Equipment," containing requirements that a portion of the construction vehicle fleet be clean fuel vehicles and/or incorporate clean air technologies.
   2. The requirements of this Section meet and exceed the scope of Section 7.1 of SAM and will benefit the Chicagoland region by providing meaningful reductions in air emissions associated with construction activity.

1.3 MEASUREMENT AND PAYMENT

A. Measurement: Construction Air Quality and Diesel Vehicle Emissions Controls will not be measured separately for payment, but will be considered included in the overall Contract.

B. Payment: All costs associated with meeting these requirements are included in the overall Contract. No additional time or monies will be granted to the Contractor for compliance with these requirements and any associated regulations.

1.4 INFORMATIONAL SUBMITTALS

A. Reports: Written reports specified herein.

PART 2 - PRODUCTS

2.1 FUEL REQUIREMENTS

A. Applicability:

   1. All off-road construction vehicles over 50 horsepower utilized by Contractors, Subcontractors and Suppliers that are on the Project site for a minimum period of fourteen (14) consecutive calendar days.

2. All on-road construction vehicles over 50 horsepower utilized by Contractors, Subcontractors and Suppliers that transport materials regularly to and from the Project site that exceed five (5) calendar days per month accessing the Project site.

B. Requirements:Comply with the City of Chicago Code Section 2-92-595 – Clean Diesel Contracting and CDA Specification 01111 – Air Quality – Equipment Emissions. For Additional detail, refer to the City Municipal Code and CDA Specification 01111. A copy of the CDA Specification 01111 is available at flychicago.com/SAM. Ultra Low Sulfur Diesel (ULSD) fuel. ULSD fuel is readily available in the Chicagoland area. Requirements stated herein are compatible with, but in advance of, Federal requirements for the use of ULSD fuel for both on-road (2007) and off-road (2010) vehicles. Conform to ASTM D 975 with the following additional requirements:

1. ASTM D 5453 15 ppm Sulfur maximum.
2. ASTM D 6078 Lubricity (SBOCLE) 3100g minimum.
3. ASTM D 613 Cetane 45 minimum.

2.2 EMISSION CONTROL REQUIREMENTS

A. Applicability:

1. All off-road diesel-powered vehicles and equipment, both mobile and stationary, utilized by Contractors, Subcontractors and Suppliers that are on the Project site for a minimum period of fourteen (14) consecutive calendar days.
2. These requirements do not apply to on-road vehicles and equipment; however, Contractors, Subcontractors and Suppliers that transport materials regularly to and from the Project site are encouraged to follow these requirements to the best of their ability.
3. These requirements apply unless the vehicle or equipment is either EPA Tier 2 Rule compliant or meets the horsepower/model year defined in the table below:

Horsepower Range	Model Year (or newer)
50-99	2004
100-299	2003
300-599	2001
600-749	2002
750 and up	2006

B. Requirements:Vehicles and equipment installed and/or retrofitted with Emissions Control Devices that will reduce emissions prior to utilization of said equipment on the Project. The Retrofit Emission Control Devices will consist of diesel oxidation catalysts, diesel particulate filters or similar retrofit equipment control technology that:

1. Are included on the EPA Verified Retrofit Technology List found at www.epa.gov/cleandiesel/verification/verif-list.htm or verified by the California Air Resources Board (CARB) at www.arb.ca.gov/diesel/verdev/verdev.htm or
2. Are verified by EPA or represented by the manufacturer in writing to provide a minimum emissions reduction of 20% PM, 20% CO and 40% HC when used with ULSD fuel.

2.3 IDLING RESTRICTIONS

A. Applicability: Diesel powered vehicles and equipment.

B. Requirements:Do not allow engine to idle for more than five consecutive minutes in a 60-minute period when not in use, occupied by an operator, or otherwise in motion, except as follows:

1. When equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control.
2. When it is necessary to operate auxiliary systems installed on the equipment, but only when such system operation is necessary to accomplish the intended use of the equipment.
3. To bring the equipment to the manufacturers recommended operating temperature.
4. When the ambient temperature is below forty (40) degrees F or above eighty (80) degrees F.
5. When equipment is being repaired.

2.4 INTERPRETATION OF REQUIREMENTS

A. The interpretation of these requirements and any determination of lack of compliance with these requirements may be made the subject of a claim to the Commissioner. However, the Commissioner's decision shall be final. The Contractor may not file a dispute under Article XVI of PART TWO OF THREE - General Conditions.

PART 3 - EXECUTION

3.1 GENERAL

A. Throughout the Project, submit a certified monthly fuel report to the Commissioner which lists the supplier and the amount of fuel delivered to each piece of equipment and each vehicle used on the Project to which the fuel use requirements apply (refer to template "Contractor Monthly Fuel Usage Summary Report"). The Commissioner has the option, in addition to any other remedies available to the City, to withhold monthly progress payments until such time as the Contractor submits the required information.

B. All vehicles and equipment to which this requirement is applicable will be subject to random inspections to ensure full compliance with these requirements. If any equipment is found to be non-compliant, the Contractor, Subcontractor or Supplier will remove or retrofit this equipment or vehicle within 24 hours or be subject to possible impoundment by the Commissioner until that piece of equipment or vehicle is removed from Project.

C. Prior to the start of construction submit a list to the Commissioner of equipment and vehicles that will be utilized as part of the Project. A list of additional equipment and vehicles brought on-site over the course of the Project will be submitted on or before the date the equipment or vehicle is delivered to the site. The Commissioner has the option, in addition to any other remedies available to the City, to withhold monthly progress payments until such time as the Contractor submits the required information. Include the following information on the list:

1. Contractor/Subcontractor name.
2. Equipment number, type, make, model, year, horsepower rating, and VIN.
3. EPA tier-rule compliant level or the emission control device make, model and EPA or manufacturer verification letter.

D. Prior to mobilization of diesel vehicles to the Project site and in the course of construction work, submit to the Commissioner applicable and updated information required in the templates at the end of this Section.

E. Clean Buses/Light Duty Vehicles: Contractors are encouraged to identify and incorporate any other measures that may assist in reducing air quality emissions as a result of Project construction. For example,

many cleaner vehicle options now exist for employee shuttle buses and Light Duty Vehicles (LDVs) including compressed natural gas (CNG), hybrid (fuel/electric), flex fuel, and demand on displacement. The availability of cleaner vehicle options is anticipated to expand over time and over the course of the Project. Contractors working on the Project are strongly encouraged to consider these options when making purchase decisions.

3.2 ATTACHMENTS

A. Contractor/Subcontractor Equipment Verification Report.

B. Contractor Equipment Listing.

C. Contractor Monthly Fuel Usage Summary Report.

D. Contractor Annual Fuel Usage Summary.

E. Equipment Tracking Form.

3.3 END OF SECTION 01 35 43

(Contractor's Letterhead)

Residential Sound Insulation Program
Ultra Low Sulfur Diesel
CONTRACTOR/SUBCONTRACTOR EQUIPMENT VERIFICATION REPORT

Environmental Procedures
Section 01 35 43

								EPA Compliance				
Contractor or Subcontractor	**Equipment Number**	**Type**	**Make**	**Model**	**Year**	**HP**	**VIN**	**EPA Tier Rule Compliant Level**	**or**	**Make**	**Model**	**EPA or Manufacturers Verification Letter?**

In connection with the above captioned project: I, (name), (title) of (company name), do hereby state that the information as it is portrayed above on this Equipment Verification Report is a true and accurate account of all equipment that is currently scheduled to be utilized on this project.

Contract # _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

Machine #	Description	Unit #	Serial #	Year	Horsepower Rating	Tier	Date Retrofitted (if applicable)	Notes
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Certify the above information is accurate.

Contract No. _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

REVIEWED BY: _____

(Commissioner)

	Ma-chine #	1	2	3	4	5	6	7	8	9	10
Date Fueled	Day	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons
	Mon										
	Tues										
	Wed										
	Thurs										
	Fri										
	Sat										
	Sun	x	x	x	x	x	x	x	x	x	x
	Mon										
	Tues										
	Wed										
	Thurs										
	Fri										
	Sat										
	Sun	x	x	x	x	x	x	x	x	x	x
	Mon										
	Tues										
	Wed										
	Thurs										
	Fri										
	Sat										
	Sun	x	x	x	x	x	x	x	x	x	x
TOTAL		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Certify the above information is accurate.

Contract No. _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

REVIEWED BY: _____

(Commissioner)

Machine #	1	2	3	4	5	6	7	8	9	10

Month Fueled	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons	Gal-lons
January	x	x	x	x	x	x	x	x	x	x
February										
March										
April										
May										
June										
July										
August	x	x	x	x	x	x	x	x	x	x
September										
October										
November										
December										
TOTAL GALLONS USED:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Certify the above information is accurate.

Contract No. _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

REVIEWED BY: _____

(Commissioner)

Ma-chine #	Description	Unit #	Serial #	Arrival	Departure	Status	Fuel	Notes
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								

Certify the above information is accurate.

Contract No. _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

REVIEWED BY: _____

(Commissioner)

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SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work in this section is subject to the requirements of the Contract Documents.
   1. Part One ("Instructions and Execution Documents")
   2. Part Two ("General Conditions")
   3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Related Requirements:

   1. PART ONE OF THREE - INSTRUCTIONS AND EXECUTION DOCUMENTS, Section 8 "Ordering Procedures".

   2. Section 08 11 69 "Metal Storm Doors and Frames".

   3. Section 08 14 16 "Flush Wood Doors".

   4. Section 08 16 13 "Fiberglass Doors".

   5. Section 08 32 13 "Sliding Aluminum-Framed Glass Doors".

   6. Section 08 32 16 "Sliding Plastic-Framed Glass Doors".

   7. Section 08 51 13 "Aluminum Windows".

   8. Section 08 51 69 "Metal Storm Windows".

   9. Section 08 53 13 "Vinyl Windows".

C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

   1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.

   3. Requirements for Contractor to provide quality-assurance and control services required by Commissioner, the CM, or authorities having jurisdiction are not limited by provisions of this Section.

4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by the Commissioner.

C. Mock-ups: Full-size physical assemblies that are constructed on-site. Mock-ups are constructed to verify selections made under Sample submittals; to demonstrate that the Contractor's work is in conformance with the Contract Documents, demonstrate the proposed range of aesthetic effects and workmanship, and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mock-ups are not Samples. Unless otherwise indicated, approved mock-ups establish the standard by which the Work will be judged.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, or a testing agency that is accredited according to NVLAP, or qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

1. NRTL: A Nationally Recognized Testing Laboratory according to 29 CFR 1910.7.

2. NVLAP: National Voluntary Laboratory Accreditation Program, a part of the National Institute of Standards and Technology (NIST).

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory will mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to the Commissioner for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified will be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to the Commissioner for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality Assurance/Quality Control Plan: For quality assurance and quality control activities and responsibilities. Provide one plan that complies with BOTH the requirements of paragraph 1.6 of this Section and the Quality Assurance Guidelines of the Federal Aviation Administration. An incomplete Quality Assurance/Quality Control Plan will be returned to the Contractor until the Contractor incorporates all of the information specified.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.6 CONTRACTOR'S QUALITY ASSURANCE/QUALITY CONTROL PLAN

A. Quality Assurance/Quality Control Plan, General: Submit quality assurance/quality control plan within ten (10) days of Notice to Proceed. Submit in format acceptable to the Commissioner. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality assurance and quality control responsibilities. Coordinate with Contractor's construction schedule. The Quality Assurance/Quality Control Plan shall comply with the guidelines and requirements in PART TWO OF THREE - General Conditions, Article VI, Section J ("Contractor's Quality Assurance/Quality Control Plan")and at a minimum include the followings sections:

1. Project Information.
2. Contractor Quality Control Organization.
3. Subcontract Organizations.
4. Project Schedule.
5. Submittal Schedule.
6. Inspection Requirements.
7. Quality Control Testing Plan.
8. Documentation.
9. Corrective Active Requirements.

10. Noncompliance.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.

2. The Commissioner-performed tests and inspections indicated in the Contract Documents.

E. Compliance Criteria: All Work will be performed in compliance with all regulations, codes, and ordinances of authorities having jurisdiction that includes applicable accessibility design standards and requirements.

F. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mock-ups.

G. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work the Commissioner has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections, include the following:

1. Date of issue.

2. Project title and number.

3. Name, address, and telephone number of testing agency.

4. Dates and locations of samples and tests or inspections.

5. Names of individuals making tests and inspections.

6. Description of the Work and test and inspection method.

7. Identification of product and Specification Section.

8. Complete test or inspection data.

9. Test and inspection results and an interpretation of test results.

10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.

12. Name and signature of laboratory inspector.

13. Recommendations on retesting and re-inspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.

3. Statement that products at Project site comply with requirements.

4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement whether conditions, products, and installation will affect warranty.

7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections, include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.

2. Statement that equipment complies with requirements.

3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

4. Statement whether conditions, products, and installation will affect warranty.

5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For the Commissioner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities will be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and will be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction will supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, a laboratory accredited according to NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329 or ASTM E 548; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.

b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

c. Provide sizes and configurations of test assemblies, mock-ups, and laboratory mock-ups to adequately demonstrate capability of products to comply with performance requirements.

d. Build site-assembled test assemblies and mock-ups using installers who will perform same tasks for Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to the Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mock-ups: Before installing portions of the Work requiring mock-ups, build mock-ups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of the mock-ups will be for the Contractor to demonstrate that their work is in conformance with the Contract Documents. Mock-ups will be required for each type of treatment including but not limited to; installation of one type of vinyl window, one installation of bow or bay windows including interior and exterior trim as necessary, installation of interior or exterior storm windows, installation of either one exterior wood or fiberglass door including interior and exterior trim and hardware as necessary and the installation of HVAC equipment including electrical service, access panels and soffits as necessary.

1. The Commissioner will select five to ten homes that will be identified for incorporation of mock-ups. The Contractor will schedule the mock-up homes for the first three weeks of their Home Schedule. The work in the mock-ups will be inspected for conformance to the Contract documents by RSIP, Manufacturer's Representatives, Contractor, and the Architect/Engineer. A sign-off on the mock-up work will be required before the Contractor can proceed with the work in any additional homes that contain the mock-up treatment being evaluated. Any rework of the mock-ups will be the responsibility of the Contractor. No additional compensation or time extensions will be provided for mock-up rework.

2. See Part One, Section 10 ("Project Description and Special Procedures") for mock-up procedures and scheduling.

3. Mock-ups will be of a complete installation of the acoustical treatment including all ancillary work and cleanup.

4. Build mock-ups in location and of size to demonstrate each treatment or, as directed by the Commissioner.

5. Notify Commissioner seven days in advance of dates and times when mock-ups will be constructed.

6. Employ supervisory personnel who will oversee mock-up construction. Employ workers that will be employed during the construction at Project.

7. Demonstrate the proposed range of aesthetic effects and workmanship.

8. Obtain the Commissioner's approval of list of mock-ups homes before starting work, fabrication, or construction.

9. Demolish and remove mock-ups when directed, unless otherwise indicated. Approved mock-ups may remain as part of the completed work.

L. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such "product changes" will not affect the products ability to comply with the performance requirements identified in these specifications.

1.9 QUALITY CONTROL

A. Quality Control Plan: The Contractor shall prepare and submit a "Contractor's Project Quality Assurance/Quality Control Plan" with the content and in the format per the attached RSIP-provided form at the end of this section.

B. Contractor's Responsibilities: Tests and inspections are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

2. Engage and pay costs for a qualified testing agency to perform quality-control services.

a. Contractor shall furnish the Commissioner with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.

b. Contractor will not employ same entity engaged by the City, unless agreed to in writing by the Commissioner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

4. Submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures".

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

1. Cost for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

F. Testing Agency Responsibilities: Provide qualified personnel to perform required tests and inspections. Cooperate with the Commissioner in performance of duties.

1. Notify Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.

4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.

7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to the Commissioner**,** testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

A. As indicated in individual specification sections.

3.2 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.

2. Description of the Work tested or inspected.

3. Date test or inspection results were transmitted to Commissioner.

4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log and post changes and revisions as they occur. Provide access to test and inspection log for the Commissioner's reference during normal working hours.

3.3 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution".

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions for Project.

B. Review action "A" signifies "No Exceptions": Indicates final action and that no changes need to be made to the submittal. Contractor may proceed with the Work for that Submittal. Resubmittal is not required.

C. Review action "B" signifies "Exceptions as Noted": This indicates that the Submittal is accepted subject to corrections and/or comments noted. Contractor may proceed with the Work for that Submittal provided Contractor incorporates the reviewer's corrections and/or comments in the Work. Resubmittal is not required.

D. Review action "C" signifies "Revise and Resubmit": This indicates the Submittal was reviewed and does not meet all the requirements necessary to proceed with the Work associated with the Submittal. Contractor must resubmit in accordance with the reviewer's corrections, and/or comments made regarding the Submittal. Submittals marked in this manner must not be released for fabrication, delivery, or construction.

E. Review action "D" signifies "Rejected": This indicates that the Submittal does not meet requirements set forth in the Contract Documents. Contractor must resubmit this Work in accordance with the Contract requirements and any corrections, and/or comments made regarding the Submittal by the reviewer. Submittals marked in this manner will not be released for fabrication, delivery, or construction.

F. Review action "N" signifies "No Action Taken": This indicates that Contractor has met the contractual requirement for providing drawings and calculations for equipment, falsework, shoring, bracing, and other temporary structures, or temporary services required for the Work, designed, signed, and sealed by an Illinois licensed engineer employed by that Contractor. Contractor, and the licensed engineer employed by that Contractor will be solely responsible for, including, but not limited to; the proper implementation, execution, installation, operations, and/or construction procedure or method covered by this Submittal.

G. "Directed": A command or instruction by the Commissioner. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed".

H. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated".

I. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

J. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

K. "Incidental": Minor accessory work and/or materials, provided by the Contractor, necessary to complete the work for the intended use.

L. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

M. "Provide": Furnish and install, complete and ready for the intended use.

N. "Project Site": Space available for performing construction activities.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
ACI	American Concrete Institute (Formerly: ACI International) www.concrete.org	(248) 848-3700
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association	(202) 824-7000

	www.aga.org	
AHA	American Hardboard Association www.domensino.com/AHA/default.htm	(847) 934-8800
AHRI	Air-Conditioning, Heating, and Refrigeration Institute (The) www.ahrinet.org	(703) 524-8800
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
ARI	Air-Conditioning & Refrigeration Institute (See AHRI)	
ARI	American Refrigeration Institute (See AHRI)	
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers) www.asme.org	(800) 843-2763 (973) 882-1170
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWI/WS	AWI Woodwork Standard	
AWPA	American Wood Protection Association (Formerly: American Wood-Preservers' Association) www.awpa.com	(205) 733-4077
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122

CAN/CGSB	Canadian General Standards Board www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html	(800) 926-9105
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CPA	Composite Panel Association www.pbmdf.com	(703) 724-1128
CREL	Chronic Reference Exposure Level https://oehha.ca.gov	(610) 832-9500
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
FM Approvals	FM Approvals LLC www.fmglobal.com	(781) 762-4300
FM Global	FM Global (Formerly: FMG - FM Global) www.fmglobal.com	(401) 275-3000
FSC	Forest Stewardship Council U.S. www.fscus.org	(612) 353-4511
GA	Gypsum Association www.gypsum.org	(301) 277-8686
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GS	Green Seal www.greenseal.org	(202) 872-6400
HMMA	Hollow Metal Manufacturers Association (See NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
IAS	International Approval Services (See CSA)	
ICC	International Code Council	(888) 422-7233

	www.iccsafe.org	(202) 370-1800
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(613) 233-1510
IAS	International Accreditation Service, Inc. www.iasonline.org	(866) 427-4422
ISO	International Organization for Standardization www.iso.org	41 22 749 01 11
MMPA	Moulding & Millwork Producers Association (Formerly: Wood Moulding & Millwork Producers Association) www.wmmpa.com	(800) 550-7889 (530) 661-9591
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937 (604) 298-7578
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NHLA	National Hardwood Lumber Association www.nhla.com	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOMMA	National Ornamental & Miscellaneous Metals Association www.nomma.org	(888) 516-8585
NRTL	Nationally Recognized Testing Laboratory	

SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SMA	Screen Manufacturers Association www.smainfo.org	(773) 636-0672
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SPIB	Southern Pine Inspection Bureau www.spib.org	(850) 434-2611
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
USGBC	U.S. Green Building Council www.usgbc.org	(800) 795-1747
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802
WMMPA	Wood Moulding & Millwork Producers Association (See MMPA)	
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

DOB	City of Chicago Department of Buildings www.cityofchicago.org Chicago Building Code	(312) 743-3600
ICC	International Code Council www.iccsafe.org IBC-International Building Code IRC-International Residential Code IECC-International Energy Conservation Code IFC-International Fire Code IMC-International Mechanical Code IPC-International Plumbing Code	(888) 422-7233
ICC-ES	ICC Evaluation Service, LLC www.icc-es.org	(800) 423-6587 (562) 699-0543

NFPA-NEC	National Fire Protection Association-National Electrical Code www.nfpa.org>NEC	(800) 344-3555

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce National Institute of Standards and Technology www.nist.gov	(301) 975-4040
DOE	Department of Energy www.energy.gov	(202) 586-9220
FAA	Federal Aviation Administration www.faa.gov	(866) 835-5322
FG	Federal Government Publications www.gpo.gov	(202) 512-1800
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742
USDJ	Department of Justice Office of Justice Programs National Institute of Justice 2010 ADA Standards for Accessible Design www.ojp.usdoj.gov	(202) 307-0703
USEPA	United States Environmental Protection Agency www.epa.gov	(202) 272-0167
USP	U.S. Pharmacopeia www.usp.org	(800) 227-8772 (301) 881-0666
USPS	United States Postal Service www.usps.com	(202) 268-2000

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CFR	Code of Federal Regulations Available from Government Printing Office www.gpo.gov/fdsys	(866) 512-1800 (202) 512-1800
FED-STD	Federal Standard (See FS)	
FS	Federal Specification Available from General Services Administration www.gsa.gov	(215) 697-2664 (800) 488-3111 (202) 619-8925
USAB	United States Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080

E. Municipal and State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California Department of Consumer Affairs Bureau of Electronic Appliance and Repair, Home Furnishings and Thermal Insulation www.bearhfti.ca.gov	(800) 952-5210 (916) 574-2041
CCDEC	Cook County Department of Environmental Control www.cookcounty.gov	(312) 603-8200
CCR	California Code of Regulations Office of Administrative Law California Title 24 Energy Code www.calregs.com	(916) 323-6225
CDA	City of Chicago Department of Aviation www.cityofchicago.org Sustainable Airport Manual™ (SAM®)	(773) 686-2200
CDPH	California Department of Public Health Indoor Air Quality Program www.cal-iaq.org	(916) 558-1784
CPUC	California Public Utilities Commission www.cpuc.ca.gov	(800) 848-5580 (415) 703-2782
IDPH	Illinois Department of Public Health www.idph.state.il.us	(217) 782-3517
IEPA	Illinois Environmental Protection Agency www.epa.state.il.us	(217) 782-3397

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

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SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work in this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

A. General: Installation of, removal of and use charges for temporary facilities will be included in the Contract Sum unless otherwise indicated.

B. Water from Existing System: Water from Homeowner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Homeowner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 "Submittal Procedures" and Part Two, Article XI: ("Shop Drawings, Product Data, and Samples").

1.5 QUALITY ASSURANCE

A. Accessible Temporary Egress: Comply with applicable provisions in the latest edition of the Americans with Disabilities Act (Department of Justice, 2010 ADA Standards for Accessible Design) and the Architectural Barriers Act (ADA-ABA) and ICC/ANSI A117.1.

PART 2 - PRODUCTS

2.1 DUST CONTROL

A. Temporary Barricades: Furnish temporary barricades to control the spread of dust to Homeowner's person(s) and property. Provide semi-air tight separation, consisting of 6 mil or thicker polyethylene barrier

installed between work area and Homeowner's wall and floor coverings, hallways, adjacent rooms, existing furnishings and exterior surfaces such as driveway, sidewalks and lawns.

B. Manufacturers: Provide one of the following products:

1. "Curtain-Wall" temporary wall system as manufactured by, Curtain-Wall (1-800-424-8251).
2. "Zip Wall" barrier system as manufactured by ZipWall, LLC. (1-800-718-2255).
3. "Ready Guard" by Z Pro

2.2 TEMPORARY WINDOW AND DOOR OPENING CLOSURES

A. Provide temporary closure of window and/or door openings when the removal and installation of new window or door treatment cannot be completed within one work day period. Temporary windows and doors shall provide the full function, security, and weatherization of the original window or door.

1. For windows provide a temporary window of similar size, glass area, and ventilation.
2. For doors provide a temporary door and frame with all hardware and secure lockset.
3. Infill openings between temporary windows and doors and building rough opening with wood framing and plywood. Seal all gaps with sealant to provide a weather tight opening.

2.3 TEMPORARY FENCING

A. New materials or previously used materials in good, non-corroded condition.

B. Chain Link Fencing:

1. Posts: Galvanized steel pipe of diameter to provide rigidity and suitable for anchoring with base plates or inserting in precast concrete blocks.
2. Fabric: Woven galvanized steel wire mesh in continuous lengths, wire tied to fence posts or prefabricated into modular pipe-framed fence panels. Height as indicated or minimum of 48 inches.
3. Gates: Fabricate of same material as fencing.
    a. Vehicle gates: Minimum width of 20 feet, to allow access for emergency vehicles, and capable of manual operation by one person.

C. Plastic Mesh Fencing:

1. Plastic mesh fencing supported by galvanized steel posts set in precast concrete blocks.
2. Height: 36 inches minimum.
3. Mesh Color: Safety orange.

2.4 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Coordinate with Homeowner and the Commissioner for temporary fence type, layout and location of gates.
2. Temporary fencing is not required at single-family home sites, unless directed otherwise by the Commissioner.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Comply with local codes and ordinances. Obtain necessary permits from authorities having jurisdiction.

D. Comply with fire-safety and prevention requirements of NFPA 241 and authorities having jurisdiction.

3.2 TEMPORARY UTILITY INSTALLATION

A. Water Service: Connect to Homeowner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to the Commissioner. At Substantial Completion, restore these facilities to condition existing before initial use.

B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Portable toilet facilities may not be placed on Homeowner's property without the Homeowner's permission.
2. Use of Homeowner's existing toilet facilities is not permitted.

C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the Heating, Ventilating, and Air Conditioning (HVAC) system in area where work is to be performed.
2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
3. Perform daily construction cleanup and final cleanup using approved, High-Efficiency Particulate Air **(**HEPA) filter-equipped vacuum equipment.

D. Electric Power Service: Connect to Homeowner's existing electric power service. Maintain equipment in a condition acceptable to the Commissioner. The Contractor shall review the Homeowner's electrical service to ensure that the service will not be overloaded by the Contractor's equipment.

3.3 SUPPORT FACILITIES INSTALLATION

A. Parking: Use designated areas of Homeowner's existing parking areas for construction personnel.

B. Waste Disposal Facilities: Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal".

C. Existing Stair Usage: Use of Homeowner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to the Commissioner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect exterior stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and to minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Tree and Plant Protection: Install temporary fencing outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site work area except by entrance gates. Provide fencing as required by code authorities and agencies having jurisdiction and as follows:

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations and ensure the safety of Home occupants, workmen and the public, where applicable.
    a. Provide fencing, where the work being performed is more than eighteen (18) feet above grade.
    b. Provide fencing where the work area is ten (10) feet or less from a public way or pedestrian walkway.
    c. Provide fencing under other conditions and locations as directed by the Commissioner.
2. Site enclosure fence is not required at single-family home sites, unless directed by the Commissioner.

E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

F. Temporary Access and Egress: Maintain temporary access and egress from existing home or multi-unit building as required by authorities having jurisdiction. Provide temporary fencing and/or barricades that will allow the safe passage for homeowners entering or exiting the home or multi-unit building.

G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.

3.5 DUST CONTROL INSTALLATION

A. Dust Control Measures: Provide semi-airtight separation between work areas and Homeowner’s wall and floor-coverings, hallways, adjacent rooms, existing furnishings and exterior surfaces such as driveway, sidewalks and lawns. Prevent passage of dust, dirt, liquids and other construction materials or tools between the work area, including passageways to and from the work area, and the protected area.

B. Install dust control products per manufacturer’s instructions.

C. Establish, construct and maintain all interior and exterior dust control measures for the duration of the Work.

D. Establish schedule with Homeowner to erect temporary dust control measures during work operations. Remove temporary dust control measures at the completion of work operation unless written approval is granted from the Commissioner.

E. Remove dust control measures at the completion of each residence. Repair, clean, or replace, at the Contractor's sole cost and expense, all damaged or soiled finishes, materials and personal items of the Homeowner.

3.6 TEMPORARY FENCING INSTALLATION

A. Install where required for compliance with authorities having jurisdiction, or as required to provide visual warning and control.

B. Install temporary fencing so as not to deter or hinder access to existing hose connections and fire hydrants.

1. Maintain 3 feet diameter clear space around fire hydrants.
2. Provide access gate where fire hydrant or hose connection is blocked by temporary fencing.

C. Provide personnel and vehicle gates of the quantity and size indicated or required for functional access to site, delivery of materials and access by emergency vehicles.

D. Posts:

1. Chain link fencing: Space posts no more than 10 foot apart.
2. Plastic mesh fencing: Space posts to ensure mesh remains vertical and at proper height.

E. Gate posts: Use bracing or concrete footings to provide rigidity for accommodating size of gate.

F. Fabric: Securely attach to posts.

G. Gates: Install with required hardware.

3.7 MOISTURE AND MOLD CONTROL

A. Avoid trapping water in finished work.

B. Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.

C. After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace, or clean stored or installed material that begins to grow mold.

7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. After completing and sealing of the building enclosure, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
   a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction are considered defective.
   b. Remove defective materials immediately.

3.8 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Remove temporary fencing upon completion of the Work or when no longer required for security or control. Repair damage caused by installation of temporary fencing.
2. Materials and facilities that constitute temporary facilities are property of Contractor.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period.

END OF SECTION 01 50 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Installation of the Work.
2. Coordination of utility work.
3. Cutting and patching, including existing window modifications.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls".
2. Section 02 41 19 "Selective Demolition".
3. Section 02 83 13 "Lead Hazard Control Activities".

C. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements. Obtain approval before cutting and patching the following operating elements or safety related systems:

1. Structural Elements: When cutting and patching structural elements, notify the Commissioner of locations and details of cutting and await directions from the Commissioner before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational and Safety Elements: Do not cut and patch operating elements and safety related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational and safety elements include the following:
    a. Fire separation assemblies.
    b. Mechanical systems piping and ducts.
    c. Control systems.
    d. Communication systems.
    e. Fire-detection and alarm systems.
    f. Electrical wiring systems.
    g. Security systems.
    h.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
    a. Water, moisture, or vapor barriers.
    b. Membranes and flashings.
    c. Equipment supports.
    d. Piping, ductwork, vessels, and equipment.
    e.
4. Visual Elements: Do not cut and patch exposed construction in a manner that would, in the Commissioner's opinion, reduce existing aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual performance, equal or surpass the functional performance of in-place materials, and are acceptable to the Commissioner.

C. For replacement of work removed, comply with the Contract Documents for the type of Work to be done. If Contract Documents do not include instructions regarding specific materials to be repaired, comply with standards as determined by the Commissioner.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
4. Advise the Commissioner if unsafe or unsatisfactory conditions are encountered.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to the Commissioner.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated or required by authorities having jurisdiction.

B. All Work will be performed in compliance with all regulations, codes, and ordinances of authorities having jurisdiction that includes applicable accessibility design standards and requirements.

C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

F. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

G. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.

H. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

I. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the Commissioner.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

J. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

K. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 COORDINATION OF UTILITY WORK

A. General: The Contractor shall coordinate the Work with all utility companies for utility installations which are impacted in order to execute the Work. This would include, but not necessarily be limited to, the following:

1. Commonwealth Edison, gas, telephone, internet, cable TV, or other utility company as may occur.
2. Relocation or replacement of service equipment as necessary.
3. Patching of wall surfaces at abandoned locations.

4. Payment of fees to utility company. Refer to 01 22 00 “Unit Prices” for reimbursement of fees paid by the Contractor.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition and to ensure that the required sound insulation performance for newly installed items is achieved.

B. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties, unless prior approval is obtained from the Commissioner.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations. Provide security to the Homeowner’s property where access to the Home is exposed during the ongoing Work. Provide protection for appliances, wall fixtures, floor coverings and window coverings near the Work. Provide dust control measures as required in Section 01 50 00 “Temporary Facilities and Controls”.

E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer’s written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: To avoid marring in-place finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Comply with specified tolerances. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
   c.
3. Patched work will match existing adjacent work in texture and appearance so as to make patch or transition invisible to the eye at a distance of three feet or greater.
4. Floors and Walls: Where walls or partitions that are removed extend from one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
   b.
5. Where masonry, plaster, metal or other finished surface is cut in such a way that a smooth transition with new Work is not possible, terminate existing surface neatly along a straight and level line at a natural line of division and provide trim appropriate to finished surface.
6. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
7. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Approval by the Commissioner to proceed with cutting and patching does not waive the Commissioner's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

J. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls" and Section 01 74 19 "Construction Waste Management and Disposal".

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CUTTING AND PATCHING SCHEDULE

A. Comply with the following specific cutting and patching instructions:

1. Existing registers, grilles, diffusers in new walls/ceiling where a new wall or ceiling treatment is being constructed, remove existing floor, wall or ceiling registers, grilles, diffusers, etc., or any item required for the installation of the new work. Patch holes in existing floor to match existing floor thickness. Patch holes in existing ceiling and/or walls with gypsum board to match existing plaster or gypsum board thickness. Where finish is to be exposed, match existing finishes. Provide new openings where required. After installation of new acoustic wall or ceiling treatment, reinstall existing register, diffuser, etc., forward of wall or ceiling. Cut back and/or add new ductwork or pipe, etc., to match existing where required for a complete and operable installation. Provide new registers, diffusers or grilles to match existing where existing are damaged or unusable.
2. Existing electrical items – in new walls/ceilings where a new wall or ceiling treatment is being installed, extend forward and reinstall existing lights, fans, outlets, switches, plugs, telephone jacks,

cable jacks, thermostats, etc., or any other items affected by the installation of the new work, to accommodate the new wall or ceiling treatment. Provide new wiring, plug extensions, etc., as required for a complete and operable installation. Perform all work in accordance with all applicable codes. Patch all wall/ceiling finishes to match existing thickness before installation of new wall or ceiling modification.

3. Existing paneling/wainscoting – remove/reinstall remove existing wall paneling, knotty pine, wainscoting or other wall treatment and trim prior to modifying walls receiving acoustical treatment. After acoustical wall treatment is completed, unless noted otherwise, reinstall existing wall treatment and trim over new wall surfaces to restore the complete paneling and trim to match existing. Provide new wall finish and/or trim to match existing where required. Prime and finish paint white or stain new trim and/or wall finish. Remove and reinstall existing wall paneling, wainscoting or other wall treatment and trim on adjacent intersecting walls where required to access the modified wall. Where treatment is not being reinstalled, patch all holes and finish paint or stain per directions. Prime and paint white all new drywall. Provide trim and/or molding where any new wall finish meets existing wall finish that is of a different material.
4. Existing paneling/wainscoting – cut back adjacent where existing wall paneling, knotty pine, wainscoting or other wall treatment is to be removed for installation of new acoustical wall treatment, temporarily remove and reinstall, or if not possible, neatly cut back on adjacent intersecting walls before construction of new wall treatment and reinstallation of existing treatment and trim. Provide new wall finish and/or trim to match existing where required. Where reinstalled treatment is unable to butt squarely, provide 1/2 inch quarter round molding trim at all corners in the room from floor to ceiling (or to top of wainscoting) finished with prime and/or finish paint white or stain. Do not build new wall treatment against existing treatment or other existing wall or ceiling treatments. Where treatment or other finish is not being reinstalled, patch nail holes and finish paint or stain as directed. Prime and paint white all new drywall. Provide trim and/or molding where new finish meets existing wall finish that is of a different material.
5. Existing Paneling/wainscoting – molding reinstall/match where wall paneling, knotty pine or other wall treatment exists in spaces to receive new acoustical ceiling treatment, remove molding where exists and cut back wall paneling to accommodate new ceiling treatment. Reinstall existing molding. Where existing molding is unusable, provide new molding at all wall and ceiling intersections in the room. Finish all new molding with prime and finish paint white or stain. Do not build new ceiling treatment against existing paneling or other existing wall treatments. Where paneling or other finish is not being installed, patch nail holes and finish as directed.
6. Existing Shelving/Casework – remove/reinstall at wall, ceiling or other modifications with existing shelving, casework, or other finished item, remove and reinstall item to its original location unless otherwise noted. Provide new trim, where required.
7. Existing ceiling moldings – remove/reinstall new drywall surfaces in rooms with existing ceiling moldings will receive ceiling moldings to match; if room does not have ceiling molding, provide taped joint at ceiling. New drywall surfaces, installed with acoustical sealant at ceiling, will receive ceiling molding to match balance of room; if room does not have ceiling molding, provide new on all walls. Existing ceiling molding in good condition may be reused. Attach new or existing reinstalled moldings to walls; do not attach to ceiling. Prime and finish paint white or stain molding.
8. Existing synthetic brick/stucco – remove where synthetic brick, stucco or other applied finish exists on walls or ceilings designated to receive new acoustical wall or ceiling treatment, remove the material, adhesive or mortar completely down to the existing plaster, gypsum board or masonry finish ready for the new wall or ceiling treatment. Provide new 1 inch by 3 inch furring at 16 inches on center where required for installation of the new wall and/or ceiling modifications.
9. Existing radiators – remove/reinstall remove existing radiators and associated piping, valves, fittings, etc., where new acoustical wall treatment, chase, or other new item is being installed. Patch pipe holes in existing surfaces with compatible materials to match existing floor (or wall, ceiling, etc.) thickness and finish. After installation of new acoustical wall treatment, chase, or other new item, reinstall existing radiators and associated piping, valves, etc., forward, in front of the new wall modification, maintaining a minimum 1 inch clear dimension between the finish face of the wall and the back of the radiator. Cut back and/or extend and reroute existing piping, and where

necessary, provide new fittings, valves, piping or radiator, etc., to match existing, for a complete and operable installation.

10. Existing baseboard radiation – remove/install remove existing baseboard radiators and associated piping, fittings, etc., where new acoustical wall treatment, chase, or other new item is being installed. Patch pipe holes in existing floor (or wall, ceiling, etc.), with compatible materials to match existing thickness and finish. After installation of new acoustical wall treatment, chase, or other new item, reinstall existing baseboard radiator, and associated piping, fins, fittings, baseboard cover, etc., forward of wall. Cut back and/or extend and reroute existing piping, radiator and accessories as necessary for a complete and operable radiator installation. Where required, provide new piping, fittings, trim, etc., or baseboard radiator to match existing or a complete and operable installation.
11. Existing kitchen ceiling exhaust fans, ducted range hoods, whole-house fans remove existing kitchen exhaust fan and/or ducted range hood and associated ductwork above the line of the attic floor/truss chord. Frame and patch to fill exhaust fan hole or ducted range hood hole. Where ducted range hood is removed, fill hole with insulation, patch the interior surface with gypsum board and prime and/or finish paint white. For special finishes, match interior and exterior finishes if provided by Homeowner. If exterior finish is unusual and Homeowner does not have sufficient material to patch, seal existing exhaust cover. Install new acoustical baffle box over existing exhaust vent if ductwork is removed. Mount new ductless range hood if specified. For whole house-fans, remove associated fan unit. Frame and patch with gypsum board to fill whole-house fan opening and prime and/or finish paint white.
12. Existing grilles, registers, ducts – remove/reinstall remove existing forced hot air grille and/or registers, associated ductwork, fittings, etc., where new acoustical wall or ceiling treatment or chase is being installed. Patch duct holes in existing floor (or wall, ceiling, etc.) to match existing thickness where element is not to be reinstalled. Where new finish is exposed, match adjacent finishes. After installation of new acoustical wall treatment, chase or other new item, reinstall existing grilles, and/or registers and associated ductwork, fittings, cover or any other appurtenances forward of wall. Where required, provide new ductwork, fittings trim, register, grille, etc., to match existing for a complete and operable installation.
13. New ductwork penetrations repair wall and/or ceiling finishes affected by new floor, wall or ceiling ductwork openings to match existing. Provide new metal collars at floor and ceiling penetrations. Provide gypsum board enclosure where exposed to view. Where new ductwork passes through a closet space, cut back and adjusts existing shelves, brackets, etc., to accommodate new ductwork. Provide new shelves, brackets, etc., to match existing where required for a complete and safe installation. Prime and finish paint white or stain.
14. New ductwork – basement finish ceilings when a finished ceiling exists in a basement to receive new ductwork, carefully remove portion of ceiling necessary to accommodate new ductwork installation. Reinstall existing or new ceiling material to match existing. Extent of new or replacement ceiling will be determined by the Commissioner. Where required, provide new duct enclosure as detailed. Prime and finish paint white new duct enclosures.
15. New ductwork – rework finish ceilings remove, adjust, and reinstall existing ceilings as required for installation of new ductwork and/or duct enclosure, insulation, wall/ceiling modifications, or any work to be completed under the Contract. Where exists, adjust and refit ceiling grid and tiles or other ceiling material against new duct enclosure or wall/ceiling modifications. Provide new ceiling tiles, grid, components, etc., to match existing where required for a complete installation.
16. Existing lay-in ceiling tile at wall modifications in spaces with existing suspended ceiling, carefully remove and reinstall portions of existing ceiling and grid suspension system as required for installation of wall modification. Adjust, cut back and/or provide new tiles and/or grid components to match existing for a complete installation. Extend new wall modification to existing original finish ceiling or floor/ceiling structure, unless otherwise noted.
17. Existing adhered ceiling tile at wall modifications in spaces with existing ceiling finish, remove and reinstall portions of existing ceiling tiles, as required for installation of the new wall modification. Adjust, cut back and/or provide new ceiling components to match existing for a complete installation. Extend new wall modification up to existing original finish ceiling or floor/ceiling structure. Provide new floor and ceiling trim to match existing.

18. Existing firestops maintain all existing firestops at walls and/or floors and ceilings unless otherwise approved by the Commissioner. Repair firestops disturbed or damaged during the installation of the Work.
19. Existing ceiling false beams/trim where false beams or other similar decoration exists (i.e. paneling, trim, etc.), in a ceiling scheduled to receive a new ceiling modification (or, where abutting a wall modification), remove existing beams and associated trim, blocking, etc., before installation of new ceiling or wall treatment. Reinstall existing beams and associated blocking, trim, etc., or other similar decoration. Provide new to match existing where not salvageable. Prime and finish paint white or stain. Where structural beams exist, install new gypsum board between and against them. Provide new closure molding where required. Prime and finish paint white or stain moldings.
20. Existing attic access at installation of new attic access panel, wall or ceiling modification, etc., or other construction within a closet or other space, remove existing rod and shelving, etc., or any other obstruction required for installation of the new work. Adjust and reinstall existing items to the original location. Replace any item damaged during the course of removal with new to match existing. Prime and finish paint white or stain new items as indicated.
21. New duct work – soffit enclosure provide gypsum board soffit enclosure around new ductwork in finished spaces. Where a new vertical or horizontal duct or other type enclosure is scheduled to be installed adjacent to a wall or ceiling faced with paneling, wainscoting, knotty pine or other wall/ceiling treatment, cut back and remove existing wall/ceiling treatment and trim prior to construction of new enclosure. Adjust and reinstall wall/ceiling treatment and trim over new enclosure. Provide new to match existing. Provide new closure trim, both vertical and horizontal, where required. Prime and finish paint white or stain to match existing.
22. Existing abutting wall dimension match at wall treatments abutting existing walls lesser in dimension than wall treatment width, extend existing wall as required for full flush abutment of the new wall treatment and clearance of trim. Match new wall construction to existing. Where a door, frame, and/or shelving, etc., exists, remove, adjust, or provide new to match existing, and reinstall. Prime and finish white paint or stain.
23. New ductwork – ceiling tile accommodation where new insulation and/or ductwork, soffit, pipes, etc., are scheduled to be installed over or adjacent to an existing ceiling, remove and reinstall the existing ceiling tiles and/or grid suspension system required to accomplish the work unless indicated to provide new ceiling. Ensure that existing light fixtures are relocated to resemble original condition in the overall layout. (For example, center fixtures on walls, windows, grid or other relationship). Replace any material or components damaged during the course of the work with new to match existing construction. Adjust, cut back and/or provide new tiles and/or grid components to match for a complete installation.
24. Existing exterior siding – repair where an existing electric meter, storm window or door, etc., (or other appendage) is being removed or relocated, repair or replace exterior siding, shingles, trim, etc., affected by the new work to match existing conditions. Patch holes, nicks, etc., in wood, frames, trim, siding, etc., ready for new paint or stain. Prepare, putty, prime and apply two coats of paint to match existing, or apply one coat of stain and two coats of sealer (to match existing) to newly exposed exterior siding, shingles, trim, etc. Where vinyl or aluminum siding exists, provide new siding to match existing.
25. Existing exterior siding – patch matching where any new exterior work affects existing siding, shingles, clapboards, vinyl or aluminum siding etc., and/or trim, repair or replace material affected by the work with new to match existing for wood materials. Prepare, putty, prime and paint to match existing or apply one coat of stain and two coats of sealer to match existing. Where vinyl or aluminum siding exists, provide new siding to match existing.
26. Egress landing – minimum code dimension where new wall or door treatments are indicated in an area that is within the “means of egress” and/or “landing area” as defined by the code, no reduction in area that is less than code requirements, or less than existing area if currently below code requirements, will be allowed. Obtain Commissioner’s prior approval for any alteration or modification to designated wall or door treatments required to accomplish this directive.
27. Egress Windows where plans call for new egress windows that require modification of the existing opening, remove existing window, trim, sills, etc. Cut and remove siding, framing, masonry, etc.,

as required. Reframe and install new window complete with all wood blocking, insulation, caulking, backer rod, trim, and finish materials.

28. Stucco matching mix and apply exterior stucco to match existing texture, ready to receive finish paint. If the existing stucco is an integral color material, use stucco products with integral color to match.
29. Masonry matching match existing masonry units in size, texture and color. Tooth-in new masonry units and match bond and coursing pattern. Match existing mortar type, color, joint profile and width.
30. Windows/Doors – survey existing, measure, and tabulate all windows, sashes, and doors to be replaced. Indicate type, style, location, and sizes of each unit. Provide accurate measurements to ensure pre-assembled units fit existing openings properly.
31. Replace windows – wood blocking/new trim at new window installations, install window unit from the exterior unless directed otherwise by the Commissioner. Expose all voids between the existing window frame pocket and rough opening by removing trim from the side of installation. Cut back existing sheathing/drywall, as necessary, to expose voids. Provide new, solid wood blocking (or plywood) for voids 1/2 inch or larger (including weight pockets) up to 6 inches on both sides of opening. For voids less than 1/2 inch, shim at anchor points. Fill all voids with batt insulation and sealant with backer rod or fill voids with low-expansion window/door foam sealant. Install new trim, apron, molding as required, stool, etc., on side affected by work unless otherwise noted in the Construction Modification, and to cover all of the area previously covered by the existing trim, so that no additional work is required for a finished window installation. Install new head, sill and jamb extensions where required. Prime and finish paint white, or stain new interior work at window locations, as directed. Clad exterior window trim in one of three (3) colors as chosen by the Homeowner. If existing trim requires replacement on one window, replace trim on all windows within open sight of window trimmed.
32. Replace windows – existing metal pan type at new window installations, install window unit from the exterior unless directed otherwise by the Commissioner. Expose all voids between the existing window frame pocket and rough opening by removing trim from the side of installation. Cut back existing sheathing/drywall, as necessary, to expose voids. Provide new, solid wood blocking (or plywood) for voids 1/2 inch or larger (including weight pockets) up to 6 inches on both sides of opening. For voids less than 1/2 inch, shim at anchor points. Fill all voids with batt insulation and sealant with backer rod or fill voids with low-expansion window/door foam sealant. Install new trim, apron, molding as required, stool, etc., on side affected by work unless otherwise noted in the Construction Modification, and to cover all of the area previously covered by the existing trim, so that no additional work is required for a finished window installation. Install new head, sill and jamb extensions where required. Prime and finish paint white, or stain new interior work at window locations, as directed. Clad exterior window trim in one of three (3) colors as chosen by the Homeowner. If existing trim requires replacement on one window, replace trim on all windows within open sight of window trimmed.
33. Replace doors – wood blocking/new trim at new door installations, expose voids between the new pre-assembled, pre-hung door frame and existing rough opening by removing existing exterior and interior trim and cladding. Provide new, solid wood blocking for voids of 1/2 inch or larger. For voids less than 1/2 inch, shim at anchor points. Fill all voids with batt insulation and sealant with backer rod or fill voids with low-expansion window/door foam sealant. Install new exterior and interior trim. Install new weatherstripping and storm doors as indicated.
34. Replace window trim – make rust/rot free when replacing exterior window casing, prime all surfaces before installation. Secure with aluminum nails (color to match cladding) and provide new cladding in color as directed. Touch up paint nail heads as required. For materials other than wood, use rust resistant fasteners.
35. Replace door trim – make rust/rot free when replacing exterior door trim, casing, etc., prime all surfaces before installation except in the case of sills and aprons that are to be pressure treated lumber. Secure with aluminum nails (color to match cladding) and provide new cladding in color as directed. For materials other than wood, use rust resistant fasteners.
36. Existing Doors – weatherstripping where existing doors are scheduled to receive new weatherstripping, remove existing weatherstripping, fill holes and prepare surface for installation of

new weatherstripping in accordance with manufacturer's direction. – Seal bare wood prior to installation of new weatherstripping. See Section 08 71 00 "Door Hardware".

37. Windows/doors – trim installation install moldings, trims, jambs, sills and head extensions, etc., in accordance with accepted trade practices. Set nails; fill holes and sand smooth prior to application of prime coat or stain.
38. New Windows – verify frames new window frames shown on the detail drawings are for diagrammatic purposes only. Actual frame sections may vary. Refer to specifications for actual window construction requirements.
39. New windows/doors – verify frame installation window and door details are based on a standard residential frame profile. The actual existing jamb, head or sill profile may vary. Install new window or door to accommodate differential opening conditions. Field verify all conditions before fabrication of new windows or doors. Provide accurate measurements to manufacturer to ensure that pre-assembled windows/doors properly fit existing openings.
40. New pre-hung doors and frames remove existing door and frame and install new pre-assembled, pre-hung door and frame into existing opening. Install new hardware unless indicated to reuse existing hardware. Provide new wood blocking, insulation and joint sealants at all voids around new frame. Provide new threshold, sill, and apron at framed wood construction if existing sill is rotten or in poor condition. Do not install new wood sills onto existing stone sills if existing sill is not level or flush, or is worn down (1/4 inch minimum), or if sill piece is broken, loose or otherwise displaced. Provide new interior trim in finish as directed. Repair or replace exterior siding, shingles, etc., if affected by work. Replace exterior trim that is unsuitable for reuse with primed wood and clad in a one of three (3) colors as selected by Homeowner.
41. New windows/doors – reinstall shutters/planters/awnings where required for the installation of new windows and doors (or other work), remove existing shutters, planters, awnings, etc., or any other item (decorative or otherwise) that impedes the removal of the existing or installation of the new window, door, repair, weatherstripping installation, etc., of same. Reinstall the existing shutters, planters, etc., to the original locations with new galvanized fastening devices as required for a complete, secure and safe reinstallation. If damaged upon removal, install new, and finish to match existing.
42. Mechanical equipment support furnish and install all supplementary steel channels and other supports required for proper installation, mounting and support of all equipment. Firmly connect supports and plumb. Refer to Sections 23 54 00 "Furnaces," 23 81 26 "Split-System Air-Conditioners," and 23 63 13 "Air-Cooled Refrigerant Condenser".
43. Field verify all dimensions – First field verify all dimensions shown on the Construction Modifications. Engage window manufacturer's authorized representative to field verify dimensions for replacement windows. Do not order materials or start fabrication of any assembly until proper field measurements have been taken. No Change Orders will be considered for additional work or materials occasioned by the Contractor's failure to verify all dimensions prior to fabrication and installation. Note that code required dimensions for egress windows are based on minimum net clear opening.
44. Field verify all dimensions – do not scale drawing. Field verify all dimensions. Dimensions reported in the Construction Modifications are approximate.
45. Field verify extent of all detail work the Drawings show the design intent for the project. Install new window, door and other products correctly trimmed and finished to produce a finished product contextual to the Home, with all work done in a workmanlike manner. The Drawings may not show every piece of trim and detail required to produce a result consistent with the design intent. Review all general notes, modification notes and details for a complete scope of work to be performed. Submit a written request for information to the Commissioner at the earliest opportunity if there is any doubt about the meaning or intent of any part of the Construction Documents.
46. Balance air distribution system after completing installation per Contract Documents. Provide volume dampers or other approved balancing devices at duct branches, run outs, registers, grilles and diffuser necks and in supply and return ductwork whether shown or not.
47. Thermostat locations: Install new thermostats 56 inches above finished floor for new air comfort systems, or at existing location where noted. If location of existing thermostat cannot be used or

would poorly serve the new system, remove existing thermostat and patch/paint the wall to match existing wall finish.

48. New grilles/registers – field verify locations/coordination. Coordinate all new ducts, grilles and register locations with existing conditions and obtain approval of the Commissioner prior to commencement of work.
49. New duct – field verify clearances: Install new duct runs within the joist spaces to allow maximum clearance in basement and associated areas. Coordinate final location with the Commissioner. Use equivalent duct sizes to suit field conditions upon notification to, and approval from the Commissioner.
50. New grilles/registers – centerline placement. Install new ducts, grilles, diffusers, registers, exhaust fans, etc., at centerline of all existing windows, walls, gables, etc., as conditions allow. Coordinate all locations with the Commissioner.
51. New duct/pipes – field verify extent of all detail work. The Drawings are diagrammatic only. Determine exact locations of the systems and components in the field. Relocate existing work that interferes with the work of this Contract. The Drawings may not show every relevant detail required for the proper installation of new mechanical ducts, pipes, etc. Do not order materials or start fabrication until shop drawings have been approved by the Commissioner. Review all general notes, modification notes and details for a complete account of the work to be completed.
52. Existing heating – reactivate each night during heating season, reinstall and make operable altered heating systems at the end of each Workday. Provide alternative heating source, subject to approval of the Commissioner, if unable to reinstall the existing system at the end of a Workday.
53. Heating/cooling – test modifications. Upon completion of modifications to heating (or cooling) system, test modified system. Operate entire system at normal operating temperatures for a minimum of one hour and check all areas that have been altered or affected by alterations for leaks, proper operation, noise, etc. Correct any leaks, deficiencies or problems of any nature immediately.
54. Existing alarm systems in Homes with existing security alarm systems which are affected by the Work in this Contract, the Contractor will be responsible for any required relocations, adjustment, etc., or any other work required on the system to accommodate the new construction.
55. Asbestos removal – access where asbestos is scheduled to be removed, provide access as required for the Asbestos Contractor to complete the Work. Remove existing plywood or ceiling/wall finish as required to provide access. Reinstall or provide new ceiling/wall material to match existing for a complete installation. Prime and finish paint white or stain to match existing.
56. New ceiling – extend fixtures at ceiling modifications, extend existing ceiling lighting fixtures, smoke alarms or other items associated with wiring, etc., down to accommodate new ceiling modification. Perform all work in accordance with the National Electrical Code. Provide new junction boxes where none exist or relocate existing.
57. New cooling system – condenser pad at each air conditioner condensing unit, provide an approved pad on 4 inch compacted gravel on unstable surfaces. Confirm dimensions of slab to mechanical unit manufacturer's recommendations.
58. New Pipes/ducts comply with approved shop drawings for installation of all new pipes and/or ducts.
59. Insect infestation or dry rot: Immediately notify the CM where insect infestation or dry rot is found.

END OF SECTION 01 73 00

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SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste for reuse.
2. Salvaging nonhazardous demolition and construction waste for donation.
3. Recycling nonhazardous demolition and construction waste.
4. Disposing of nonhazardous demolition and construction waste.

B. Construction waste management operations shall be performed under the following order of priorities:

1. Priority Level One: Salvage materials for Homeowner's use.
2. Priority Level Two: Salvage for Reuse.
3. Priority Level Three: Salvage for Donation.
4. Priority Level Four: Recycle materials as possible.
5. Priority Level Five: Dispose of materials.

C. Related Requirements:

1. Section 02 41 19 "Selective Demolition".
2. Section 02 82 33 "Removal and Disposal of Asbestos-Containing Materials".
3. Section 02 83 33.13 "Lead-Based Paint Removal and Disposal".
4. Section 11-4-1905 "Construction or Demolition Site Waste Recycling" of the Chicago Municipal Code attached at the end of this Specification Section.
5. Section 13-32-125 "Construction Site Cleanliness" of the Chicago Municipal Code attached at the end of this Specification Section.
6. Sustainable Airport Manual™ (SAM®) as periodically updated. Reference can be found at flychicago.com/SAM.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

G. Salvage for Donation: Recovery of demolition waste and subsequent storage and delivery to Not-For-Profit Salvage Vendors.

H. Construction & Demolition Waste Reduction Progress Report:

1. Inert Material: Recyclable clean heavy debris including brick, concrete, masonry, cinder block, asphalt, screened 1" and under debris.
2. Wood Material: Non-hazardous painted, treated, dimensional lumber, trim and sheet materials.
3. Metal Material: All types of metal, ferrous and non-ferrous, recycled through local scrap metal processors.
4. OCC Material: Old cardboard containers, office papers, packing and shipping cartons and papers.
5. Non-Recycled Materials: Any materials not diverted from landfill disposal.

1.4 PERFORMANCE REQUIREMENTS

A. General: The Contractor will adhere to substantive requirements of Section 11-4-1905 of the City of Chicago Municipal Code with exceptions as noted in this specification section; reporting requirements are as indicated here. Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling, salvage of materials for reuse, and salvage of materials for donation, including the following:

1. Demolition Waste:

a. Concrete.
b. Concrete reinforcing steel.
c. Wood studs.
d. Plywood and oriented strand board.
e. Wood paneling.
f. Wood trim.
g. Insulation.
h. Doors and frames.
i. Door hardware.
j. Windows.
k. Glazing.
l. Metal studs.
m. Gypsum board.
n. Acoustical tile and panels.
o. Carpet.
p. Carpet pad.
q. Equipment.
r. Cabinets.
s. Supports and hangers.
t. Mechanical equipment.
u. Refrigerants.
v. Electrical conduit.
w. Copper wiring.
x. Lighting fixtures.
y. Lamps.
z. Ballasts.
aa. Electrical devices.
bb. Switchgear and panelboards.

2. Construction Waste:

a. Lumber.
b. Wood sheet materials.
c. Wood trim.
d. Metals.
e. Insulation.
f. Carpet and pad.
g. Gypsum board.
h. Piping.
i. Electrical conduit.
j. Packaging: Contractor will develop and implement a process for separating and keeping clean any packaging. Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Plastic pails.

1.5 INFORMATIONAL SUBMITTALS

A. Waste Management Plan: Submit documentation pursuant to 11-4-1905 of the code with the following additions:

1. Submit City of Chicago Construction and Demolition ("C&D") Debris Recycling Compliance Form (attached at the end of this Specification section) with the Contractor's Application for Payment and at the completion of the Project to the Commissioner.
2. Submit a Waste Management Plan and a preconstruction estimate of the C&D debris quantities to the Commissioner at least 30 days prior to the start of construction activities.
3. Submit a post-construction City of Chicago C&D Debris Recycling Compliance Form with the Contractor's Closeout Documentation.

B. Construction Waste Management Submittal Transmittal: When submitting documentation as required complete the Submittal Transmittal Cover Sheet attached at the end of this Section and attach with the appropriate submittal.

C. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit reports. Use Construction and Demolition Debris Recycling Compliance Form and Salvage Progress Report. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

D. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

E. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. Qualification Data: For waste management coordinator and refrigerant recovery technician.

I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 WASTE MANAGEMENT PLAN

A. General: Develop a Waste Management Plan according to ASTM E 1609 and requirements in this Section. Plan will consist of waste identification and Waste Reduction Work Plan. Indicate quantities by weight or volume, but use same units of measure throughout Waste Management Plan. The Plan will include at a minimum:

1. General: Provide an overall strategy for managing the C&D debris associated with the Project.
2. Waste Identification: Indicate anticipated types and quantities by weight of demolition and construction waste generated by the Project. Include estimated quantities by weight and assumptions for estimates.
3. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled or disposed of in a landfill or incinerator. Include points of waste generation, total weight of each type of waste, final disposition for each waste type and handling and transportation procedures.

    a. Salvaged Materials: For each type of material that is salvaged or recycled, describe the type of material, source, estimated quantity and receiving entity. Include names, addresses, and telephone numbers for the receiving individuals and/or organizations.
    b. Disposed Materials: Indicate how and where materials will be disposed of. Include names, addresses and telephone number of each landfill and incinerator facility.
    c. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including size of containers, container labeling, and designated location where material separation will be located.

4. Preconstruction C&D Quantities Estimate: For every material recycled, salvaged, or disposed, estimate the quantity of each that is anticipated to be reused on-site, recycled off-site, or disposed off-site. Use the City of Chicago C&D Debris Recycling Compliance Form as a template (attached at the end of this Specification section).

1.7 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements. Submit evidence of qualifications (e.g., project list, timeframe, amount of materials recycled, construction cost) upon request of the Commissioner.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction. In addition to City Ordinances regarding waste recycling described herein, comply with waste transportation and disposal regulations or authorities (e.g., state, local or federal) having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved Waste Management Plan as approved by the Commissioner. Provide means of handling, containers, storage, signage, transportation, and other items as required to implement Waste Management Plan during the entire duration of the Contract.

B. Waste Management Coordinator: Engage a waste management coordinator to be a single point of contact responsible for implementing, monitoring, and reporting status of Waste Management Plan. Identify the Waste Management Coordinator in Waste Management Plan. Coordinator will be present for the duration of the Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute Waste Management Plan to everyone concerned within three (3) days of submittal return.
2. Distribute Waste Management Plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and identify the site where the classification of materials to be salvaged, recycled, reused, sold, donated, or disposed of will occur.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Donation: Salvage items for donation and handle as follows:

1. Clean salvaged items.
2. Pack items after cleaning. Secure cardboard at all corners of units as well as between units.
3. Obtain portable storage unit for storage of salvaged items from Not-For-Profit Salvage Vendor.
4. Store items in locked portable storage unit. Maintain storage unit off site.
5. Deliver portable storage unit to Not-For-Profit Salvage Vendor.
6. Items to be donated include:

a. Windows without damaged frames, sashes, or broken glazing.
b. Solid Slab Doors in fair to good condition, including hardware and frames where possible.

7. Items not to be donated include, but are not limited to:

a. Hollow Core Doors.

b. Windows containing single glazing (non-insulated glass).
c. Windows with damaged frames, sashes or broken glazing.

C. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors. Where only door slabs are salvaged, protect doors with cardboard separation between units.

D. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. Recycling Receivers and Processors: List below is provided for information only; available recycling receivers and processors include, but are not limited to, the following:

1. Disposal Management Systems, Inc.; 420 Cutters Mill Lane, Schaumburg, IL 60194; (847) 640-9777.
2. Flood Brothers; 4827 W. Harrison Street, Chicago, IL 60644; (773) 626-5800.
3. Groot Industries; 1995 Powis Road, Chicago, IL 60185; (877) 775-1200.
4. Recycling Systems Inc. (RSI); 3152 S. California Avenue, Chicago, IL 60608; (773) 579-1999.
5. Waste Management (WM); 1411 Opus Drive, #400, Downers Grove, IL 60515; (800) 796-9696.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials will accrue to Contractor.

C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction Waste Management Plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

   a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Homeowner’s property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 1-1/2 inch size.

B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

C. Metals: Separate metals by type. Remove and dispose of bolts, nuts, washers, and other rough hardware.

D. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

E. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.

F. Metal Suspension System: Separate metal members including trim and other metals from acoustical panels and tile, and sort with other metals.

G. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

H. Carpet Tile: Remove debris, trash, and adhesive.

1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

I. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

J. Conduit: Reduce conduit to straight lengths, and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction. The disposal of waste generated by the Work pertaining to this contract will be in accordance with Section 11-4-1908 of the Chicago Municipal Code with exceptions as noted in this Specification.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. All trucks are to be tarped or covered at all times during transport en route to ultimate destination.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.7 MEASUREMENT

A. Construction waste management and disposal controls will not be measured separately for payment, but will be considered included in the overall contract.

3.8 BASIS OF PAYMENT

A. All costs associated with meeting these requirements are included in the overall Contract. No additional time or monies will be granted to the Contractor for compliance with these requirements and any associated regulations.

3.9 ATTACHMENTS

A. SUBMITTAL TRANSMITTAL COVER SHEET.

B. EXCERPT FROM CHICAGO MUNICIPAL CODE.

C. CONSTRUCTION & DEMOLITION DEBRIS RECYCLING COMPLIANCE FORM.

D. SALVAGE PROGRESS REPORT

END OF SECTION 01 74 19

CITY OF CHICAGO

RESIDENTIAL SOUND INSULATION PROGRAM
01 74 19 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
SUBMITTAL TRANSMITTAL COVER SHEET

Date: _____

Attention: RSIP Project Manager
To: Residential Sound Insulation Program
PO Box 66517
Chicago, Illinois 60666

The following form(s) are submitted to comply with the requirements of the
01 74 19 Construction Waste Management & Disposal Specification Section (Check one):

- ☐ Waste Management Plan and Pre-Construction C & D Debris Estimate
- ☐ Final C & D Debris Recycling Compliance Form
- ☐ Monthly C & D Debris Recycling Compliance Form

From:	
Company:	
Printed Name:	
Title:	
Signature:	
Date:	

Reviewed by:

Project Manager

Note: These submittal requirements are in addition to the requirements put forth by the City of Chicago as outlined in section 11-4-1905 of the Chicago Municipal Code.

CHAPTER 11-4
ENVIRONMENTAL PROTECTION AND CONTROL

ARTICLE XIV. REPROCESSABLE CONSTRUCTION/DEMOLITION MATERIAL

11-4-1905 Construction or demolition site waste recycling.

(1) For purposes of this section, the term(s):

(a) "Contractor" means general Contractor as defined in Section 4-36-010 and shall also include any person engaged in the demolition or wrecking of a structure for which a permit is required under Section 13-32-230.
(b) "Construction and demolition debris" has the meaning ascribed to the term in Section 11-4-120 of this code.
(c) "Recycle" has the meaning: ascribed to the term in Section 11-4-120 of this code.
(d) "Recycler" means a recycling facility, transfer station or other waste handling facility permitted pursuant to Section 11-4-250 of this code which accepts construction and demolition debris for recycling or for further transfer to a recycling facility.
(e) "Reuse" means (i) the on-site use of reprocessed construction and demolition debris if such on-site use is authorized in writing by the Commissioner pursuant to Section 11-4-1935 of this code; and (ii) the off-site redistribution of a material which would otherwise be disposed of, for use in the same or similar form as it was produced.

(2) Any project subject to this section shall be required to recycle or reuse construction or demolition debris produced on-site as part of construction or demolition activities by meeting the following requirements:

(a) The Contractor on a project that is issued a permit with an application date on or after January 1, 2006, but before January 1, 2007, shall cause to be recycled or reused at least 25 percent of construction and demolition debris, as measured by weight, produced on-site.
(b) The Contractor on a project that is issued a permit with an application date on or after January 1, 2007, shall cause to be recycled or reused at least 50 percent, as measured by weight, of the total amount of construction and demolition debris produced on-site that does not contain lead, asbestos or other hazardous materials in such a way as to render recycling of such material illegal or impossible.

(3) The following projects are subject to this section:

(a) Construction of a new residential building with four or more units.
(b) Construction of a new non-residential building, other than projects for which the total square footage is 4,000 square feet or less.
(c) Any rehabilitation of a building that will require a certificate of occupancy to issue from the department of buildings.
(d) Demolition of a residential building with four or more units that includes the demolition of at least one outside wall.
(e) Demolition of a non-residential building, other than projects for which the total square footage is 4,000 square feet or less.

A project is exempt from this section if only a plumbing permit, only an electrical permit or only a mechanical permit is required.

(4) Certification of Compliance and Enforcement.

(a) Within 30 days of completion of a project meeting the requirements of subsection (3) of this section, the Contractor shall submit documentation as described herein to report compliance with this section and regulations promulgated thereunder. The documentation required under this subsection (4) (a) shall be in a form prescribed by the commissioner of health and consist of notarized affidavits from the Contractor and the waste-hauler or recycler for the project certifying the extent to which the project complies with subsection (2).

(b) (i) The certificate of occupancy for a project subject to this section may be withheld until the applicant submits either (A) the required documentation, including, where applicable, proof that any fine due under subsection (6) of this section has been paid in full, or (B) proof of a written request for a hearing on the applicability of this section and/or the amount of fine due, which hearing shall be conducted in the department of administrative hearings.

(ii) Notwithstanding the foregoing subparagraph (i) if a Contractor is unavailable or refuses to provide the required documentation, property owner may obtain a certificate of occupancy by submitting a waiver application supported by an affidavit that the Contractor is unavailable or refuses to provide the required documentation.

(c) Reserved.

(d) The building commissioner shall not issue any new building or demolition permit to a Contractor who has failed to timely submit the required documentation with respect to any completed project, until the applicant either (A) submits the required documentation, including, where applicable, proof that any fine due under subsection (6) of this section has been paid in full. Or (B) submits proof of a written request for a hearing on the applicability of this section and/or the amount of fine due, which hearing shall be conducted in the department of administrative hearings.

(e) A Contractor must comply with all reasonable requests for information and documentation made by the commissioner of health pursuant to an audit to monitor compliance with this section. Documentation required by this section must be maintained for at least three years.

(f) Whenever any affiant knowingly and falsely states that a project has met the requirements of this section, or whenever any Contractor knowingly submits an affidavit with such a false statement, or whenever any person knowingly fails to comply with a reasonable request made pursuant to an audit under this section, such action will subject the person to a fine of $2,000 to $5,000, and will subject the person to additional penalties and fines pursuant to this code or state law including, but not limited to, the penalties specified in subsection (6) and the revocation or suspension of an affiant's or Contractor's general Contractor's license pursuant to Chapter 4-4. In the case of a Contractor, the executive director of construction and permits may, after a hearing resulting in a finding that the Contractor has committed any of the aforesaid violations, deny the Contractor's right to obtain building or demolition permits for a period of up to one year.

(5) The commissioner of health may promulgate such rules and regulations as necessary to implement the provisions of this section.

(6) In addition to any other penalty provided by law, Contractors who fail to meet the recycling percentages identified in subsection (2) shall be subject to the following fines:

For construction projects or demolitions involving 10,000 square feet or more of renovated, newly constructed, or demolished space	$1,000 for each percentage point of difference between the amount by this section to be recycled or reused and the amount actually recycled or reused
For construction projects or demolitions involving less than 10,000 square feet of renovated, newly constructed, or demolished space	$500 for each percentage point of difference between the amount required by this section to be recycled or reused and the amount actually recycled or reused

(7) *Violation – Penalty.* Except as otherwise provided in this section, and in addition to any other penalty provided by law, any person who violates any requirement of this section shall be subject to a fine of not less than $300.00 nor more than $1,000.00 for each offense. Each day that a violation continues shall constitute a separate and distinct offense to which a separate fine shall apply.

ARTICLE I. PERMIT REQUIREMENTS

13-32-125 Construction site cleanliness.

(1) As used in this section:

(a) "Construction and demolition debris" or "debris" has the meaning ascribed to the former term in Section 11-4-120 of this code.

(b) "Construction site" means any or all portion of the real property that is identified as the location of any excavation or of the erection, enlargement, alteration, repair, removal or demolition of any building, structure or structural part thereof within the city and that requires a permit under Chapter 13-32 of this code. However, for purposes of this section, "construction site" does not include a project location where all construction and/or demolition activity, including the staging of construction materials and storing of debris, is conducted within a completely enclosed structure; nor does it include any project location on any property that is, or hereafter becomes, part of Chicago-O'Hare International Airport or Chicago Midway International Airport. During the term of any concession and lease agreement between the City of Chicago and a private operator with respect to Chicago Midway International Airport, the words "or Chicago Midway International Airport" shall be deleted from this paragraph (1)(b).

(c) "Garbage" has the meaning ascribed to the term in Section 11-4-120 of this code.

(d) "General Contractor" has the meaning ascribed to the term in Section 4-36-010 of this code. "General Contractor" shall also include a subcontractor with respect to a violation of this section that is directly attributable to the subcontractor.

(e) "Litter" has the meaning ascribed to the term in Section 7-28-200 of this code.

(2) All construction sites shall be governed by the following standards:

(a) The general Contractor shall employ adequate wetting or other abatement measures to prevent the off-site dispersion of dust and debris from a construction site.

(b) All construction sites shall be enclosed and secured by a continuous chain link fence at least six feet in height which shall be anchored sufficient to resist wind loads of 30 pounds per square foot without deflection of more than three inches between top and bottom of fence. The general Contractor may allow one gate to remain open while construction workers are performing construction activities on the construction site. The gate shall be no larger than is reasonably necessary to provide for truck access.

(c) Fabric mesh shall be affixed to the construction site fence face.

(i) The fabric mesh shall allow the passage of air but shall contain dust and dirt.

(ii) Such mesh fabric shall be the full height of the fence and cover the entire length of the fence including any gated openings.

(iii) The fabric mesh and fence shall not contain any advertisements or graffiti.

(d) The construction site fence shall be placed at the perimeter of the property or, for work in an area substantially smaller than the entire property, around the site of construction large enough to ensure sufficient room for movement of tools and workers, storage of waste receptacles and other items, and the safety of the public.

(e) The general Contractor shall immediately repair any damage to the construction site fence or fence fabric and maintain the integrity and continuity of the fence for the duration of the project.

(f) All dumpsters and debris collection devices shall be stored behind the construction site fence unless specifically permitted for public way use, and shall be regularly serviced to avoid allowing the contents from extending past the top of the dumpster.

(g) All construction and demolition debris shall be removed through dust-tight chutes or by lowering it in buckets or containers, and no debris shall be dropped or thrown from any floor.

(h) Construction and demolition debris shall be separated from any garbage, litter or landscape wastes that shall be separately contained.

(i) Sealed trash containers for litter and garbage shall be provided throughout the site, with at least one container provided for every floor or 4,000 square feet of area, whichever is fewer. All litter and garbage shall be removed daily or more frequently as needed.

(j) Construction materials and construction and demolition debris shall be gathered daily and stored in a neat and orderly manner.

(k) The general Contractor shall take all necessary steps to ensure that dirt and debris from the construction site shall not be transmitted by vehicles leaving the site to the public way. Mitigation measures shall include, but not be limited to, stoning or paving of haul roads, wheel wash stations and street sweepers.

(l) For construction sites that are buildings or structures having four or more floors, the general Contractor shall enclose with fabric mesh the floor areas where the general Contractor is conducting construction activities, such as erecting, enlarging, altering, repairing, removing or demolishing on that floor.

(i) The fabric mesh shall allow the passage of air but shall contain dust and debris on the enclosed floors.
(ii) Fabric enclosures shall be adequately secured.
(iii) The fabric mesh shall be installed around the entire floor.
(iv) The fabric mesh shall not contain any advertisements or graffiti.

(m) For tuck pointing operations, the area of grinding shall be enclosed to contain dust and debris from grinding operations.

(n) Where materials are stored for use on floors above grade, they shall be secured to prevent loosening due to weather conditions or other phenomena.

(3) Any person violating any of the provisions of this section shall be fined not less than $200.00 or more than $500.00 for each offense. Each day such violation shall continue shall constitute a separate and distinct offense. Any owner, developer or general Contractor who is responsible for any construction site at which operations are conducted in violation of the provisions of this section shall be liable for the penalties provided by this section, and shall be jointly and severally liable for such penalties with any subcontractor to which a violation is directly attributable. The department of buildings, the department of health and the department of streets and sanitation shall each have the power to enforce the provisions of this section.

(4) In addition to any other available penalties and remedies provided for in the code, one or more citations for violation of any of the provisions of subsection (2) above on each of three or more separate days within a three month period at the same construction site may result in a stop work order issued by the department of buildings, the department of health or the department of streets and sanitation, directing that all activity cease for ten days. Any further citation for violation at the same construction site within six months after the initial stop work order may result in the issuance of another 10-day stop work order. The issuing department shall lift a 10-day stop work order only if sufficient evidence of compliance with this chapter is provided to the department.

(a) It shall be unlawful for any person to knowingly violate a stop work order, or to knowingly cause, permit, encourage, assist, aid, abet or direct another person to violate a stop work order, or to knowingly in any manner be a party to a violation of a stop work order.

Any person who violates this subsection upon conviction shall be punished, as follows:

(i) Incarceration for a term not less than three days, nor more than six months, under the procedures set forth in Section 1-2-1.1 of the Illinois Municipal Code, as amended, and the Illinois Code of Criminal Procedure of 1963, as amended; and
(ii) Community service of not less than 10 hours, nor more than 100 hours; and
(iii) A fine of $5,000.00.

(b) It shall be unlawful for any person to knowingly destroy, deface, remove, damage, impair, mar, cover or obstruct any stop work order that a city official has posted or affixed at a work site.

Any person who violates this subsection upon conviction shall be punished, as follows:

(i) Incarceration for a term not less than three days, nor more than six months, under the procedures set forth in Section 1-2-1.1 of the Illinois Municipal Code, as amended, and the Illinois Code of Criminal Procedure of 1963, as amended; and

(ii) Community service of not less than 10 hours, nor more than 100 hours; and

(iii) A fine not less than $200.00, nor more than $500.00.

Disclaimer:
This Code of Ordinances and/or any other documents that appear in this Section may not reflect the most current legislation adopted by the Municipality. These documents are provided for informational purposes only. These documents should not be relied upon as the definitive authority for local legislation. Additionally, the formatting and pagination of the documents varies from the formatting and pagination of the official copy. The official printed copy of a Code of Ordinances should be consulted prior to any action being taken.

End of Building Code and Related Excerpts of the Municipal Code of Chicago

CITY OF CHICAGO
CONSTRUCTION & DEMOLITION DEBRIS RECYCLING COMPLIANCE FORM

This is a ☐ construction project / ☐ demolition project. (Check one.)

(Please see the instructions on page 4.)

Contractor Information	**Construction/Demolition Site Information**
_____ Contractor Name	_____ Address of Project Site
_____ Contractor City License Number	_____ Building/Demolition Permit Number
_____ Street Address	_____ Project Completion Date
_____ City State Zip Code	_____ Size of Project (square feet of all floors)
_____ Telephone Number	_____ Project Manager's Name & Telephone Number
_____ Contact Name and Title	_____ Property Owner's Name & Telephone Number

Construction and Demolition Debris Information

C&D Debris Weight Information	**Recycled C&D Debris Information**
1) _____ Tons of all C&D debris produced on site **(This amount must match the total on page 2.)** *minus:*	4) _____ Tons of C&D debris recycled/reused off site **(Completed Waste Hauler/Recycler Affidavit(s) must be attached to account for all debris taken to a recycler.)** *plus:*
2) _____ Tons of contaminated C&D debris (with asbestos or other hazardous material) *equals:*	5) _____ Tons of on-site reprocessed C&D debris used on site **(Copy of DOE construction site reprocessing authorization must be attached if debris was crushed on site.)** *equals:*
3) _____ Total amount of recyclable C&D debris (List this amount on page 3, line "B.")	6) _____ Total amount of recycled/reused C&D debris (List this amount on page 3, line "A.")

NOTE: Pursuant to Section 11-4-1905(4) of the Chicago Municipal Code, all contractors are subject to audit to verify compliance. All documentation that supports this form (such as weight tickets and receipts) must be retained for no less than three years from the date that this form is filed.

CITY OF CHICAGO - C&D DEBRIS RECYCLING COMPLIANCE FORM

Breakdown of all C&D Debris Product on Site

C&D Debris Type	On site Reused (tons)*	Off Site Reused/Recycled (tons)*	Off Site Disposed (tons)*
Bricks			
Concrete			
Masonry materials (cinder blocks, mortar etc.)			
Rock, stone, gravel			
Soil, dirt			
Sand			
Reclaimed asphalt pavement	----------		
Wood	----------		
Ferrous metal (iron, steel etc.)	----------		
Nonferrous metal (copper wiring etc.)	----------		
Plaster	----------		
Gypsum drywall	----------		
Paint	----------		
Plumbing fixtures and piping	----------		
Carpet and Pad	----------		
Non-asbestos insulation	----------		
Roofing shingles & other roof coverings	----------		
Cardboard, paper, packaging	----------		
Plastics	----------		
Glass	----------		
Landscape debris	----------		
Hazardous materials (please specify):	----------	----------	
Other (please specify):			
Subtotals:	_____	_____	_____ **

Total of all C&D debris produced on site (sum of the above 3 columns): _____

***If weight measurements are not available, convert volume to weight and retain documentation to support the accuracy of the converted measurement.**

****Waste Hauler/Recycler affidavits must be attached to account for the amount of C&D debris recycled or disposed of off- site. To account for C&D debris reused on or off site, the contractor must provide supporting documentation upon request by the Dept. of Public Health.**

CITY OF CHICAGO - C&D DEBRIS RECYCLING COMPLIANCE FORM

Calculation of Recycling Percentage

A) Total amount of **Recycled/Reused** C&D debris ..... _____ tons (from line 6, page 1)

B) Total amount of **Recyclable** C&D debris ..... _____ tons (from line 3, page 1)

If Line B is zero, skip to Contractor Affidavit on page 4.

C) Percent of C&D debris Recycled ..... _____ percent (divide A by B and multiply by 100)

Example:
A. Total amount of Recycled/Reused C&D debris.... 2,025 tons
B. Total amount of Recyclable C&D debris ..... 5,700 tons

2,025 ÷ 5,700 = 0.36 (rounded to the nearest hundredth)
0.36 x 100 = 36

C. Percent of C&D debris Recycled ..... 36 percent

If Line C is 50% or greater, skip to Contractor Affidavit on page 4; if not, go to Line E.

D) Percent required to be recycled (for 2007) ..... 50 percent E) Line D

(50) minus line C (if less than 50)..... _____ percent

F) Multiply line E by:

$1,000 - if project space is 10,000 square feet or more

-or-

$500 - if project space is less than 10,000 square feet

Total penalty ..... _____ dollars

If a penalty is owed, make payment to: *City of Chicago Department of Finance*
(City Hall, 121 N. LaSalle, Room 107A)

**Staple original receipt here: .....
(Please keep a copy for your records.)

For Department of Finance use only:

Funds Code: **EB58 100-72-3035-2713 Ordinance 11-4-1905 Penalties**

Election Form And Contractor Affidavit

Select one option, then sign the affidavit below before a Notary Public.

☐ I have complied with the recycling requirements set forth in Section 11-4-1905 of The Chicago Environmental Protection and Control Ordinance; and all the information provided herein and attached hereto is correct.

Or

☐ I have paid the penalty calculated on page 3; all the information provided herein and attached hereto is correct; and I will not contest this penalty.

Or

☐ I have completed this form in full; all the information provided herein and attached hereto is correct; and I hereby request a hearing on the applicability of Section 11-4-1905 and/or the amount of penalty due. (You will receive a notice by mail, specifying the date, time, and location of the hearing).

_____ Signature

_____

Name Title

Date _____ _____

Notary Public

****

INSTRUCTIONS

1) Complete this 4-page compliance form and sign before a Notary Public.
2) Attach one or more signed and notarized Waste Hauler/Recycler Affidavits.
3) Attach a Construction Site Reprocessing Authorization letter from the Department of Public Health, if applicable.
4) Attach a receipt from the Department of Finance, if a penalty was paid.
5) Return forms to the environment desk at DOB, Room 906, City Hall, 121 N. LaSalle Street, within **30 days** from project completion or email forms to cdphpermits@cityofchicago.org

If you have any questions about this form, please call 312-745-7206.

Residential Sound Insulation Program
SALVAGE PROGRESS REPORT
Construction Waste Management & Disposal – Section 01 74 19

ITEMS	QUANTITY	CONDITION	SALVAGE VENDOR
TOTALS			

Certify the above information is accurate.

Contract # _____

Company _____

Print Name _____

Title _____

Signature _____

Date _____

REVIEWED BY: _____

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SECTION 01 81 13 - SUSTAINABLE DESIGN REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes use and tracking requirements and procedures for compliance with certain sustainable design guidelines based on City of Chicago Sustainable Airport Manual™ (SAM®). The SAM® can be found at flychicago.com/SAM.

1. This Section includes tracking forms necessary for compliance.

1.3 DEFINITIONS

A. Regional Materials: Materials that have been manufactured, extracted, harvested, or recovered within a radius of 500 miles of Project site. If only a fraction of a product or material is extracted / harvested / recovered and manufactured locally, then only that percentage (by weight) will contribute to the regional value.

1. Materials and products manufactured, extracted, harvested, or recovered beyond 500 miles from the Project location, but purchased within 500 miles of the Project site will not be considered a Regional Material.

B. Local Materials: Materials that have been manufactured, extracted, harvested, or recovered within a radius of 250 miles of the Project site. If only a fraction of a product or material is extracted, harvested, recovered, and manufactured locally, then only that percentage (by weight) will contribute to the local value.

1. Materials and products manufactured, extracted, harvested, or recovered beyond 250 miles from the Project location, but purchased within 250 miles of the Project site will not be considered a Local Material.

C. Manufacturing is defined as the final assembly of components into the building product that is installed at the Project site.

D. Extracted, harvested, or recovered materials include raw building materials that are not manufactured but used in their final form at the Project site. This includes, but is not limited to, wood products.

E. Recycled Materials: Materials that are manufactured, extracted, harvested, or recovered and contain some amount of post-consumer and/or pre-consumer recycled content.

1. Materials and products to be considered generally include Division 2 through 09 items. This includes, but is not limited to, steel and steel products, particle boards and other manufactured wood or fiber products, metal siding and roofing, tile, paneling, glazing and metal piping.
2. With the exception of metal piping (e.g., copper, cast iron, etc.), mechanical and electrical systems and components (Division 23 and 26 items) are to be excluded from the recycled content

calculations. Items that are not to be considered include, but are not limited to, pumps, fans, heaters, HVAC equipment, wiring, ductwork, lighting fixtures and controls.

F. Recycled Content: The recycled content value of a material assembly will be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

1. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
2. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

1.4 INFORMATIONAL SUBMITTALS

A. General: Submit sustainable design submittals required by other Specification Sections.

B. Sustainable Design Documentation Submittals:

1. Product Data: For each product and for each component of the product to be incorporated into the Work to demonstrate compliance with PART 2 – PRODUCTS of this Section for low-emitting materials specified. Include VOC content and emissions data. Documentation shall be provided in one of the following:
   a. Safety Data Sheet (SDS) (formerly known as MSDS)
   b. Test results from a qualified testing agency
   c. Green Globes or other recognized agency
   d. Manufacturer's product data
2. Sustainable design submittals are in addition to other submittals.
   a. If submitted item is identical to that submitted to comply with other requirements, include an additional copy with other submittal as a record copy of compliance with indicated requirements instead of separate sustainable design submittal. Mark additional copy "Sustainable design submittal".

PART 2 - PRODUCTS

2.1 CERTIFIED WOOD

A. Not less than 50 percent (by cost) of wood-based materials will be produced from wood obtained from forests certified by a Forest Stewardship Council (FSC) accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship".

1. Wood-based materials include, but are not limited to, the following material categories when made from wood, engineered wood products, or wood-based panel products:
   a. Rough carpentry.
   b. Miscellaneous carpentry.
   c. Finish carpentry.
   d. Architectural woodwork.

2.2 LOW-EMITTING MATERIALS

A. ADHESIVES AND SEALANTS: FOR FIELD APPLICATIONS THAT ARE INSIDE THE WEATHERPROOFING SYSTEM: Adhesives and sealants will comply with the following Volatile Organic Compounds (VOC) content limits of South Coast Air Quality Management District (SCAQMD) Rule No. 1168:

1. Wood Glues: 30 g/L.
2. Metal-to-Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Single-Ply Roof Membrane Adhesive: 250 g/L.
20. Special-Purpose Contact Adhesive (contact adhesive that is used to bond melamine-covered board, metal, unsupported vinyl, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
21. Top and Trim Adhesive: 250 g/L.
22. Plastic Cement Welding Compounds: 250 g/L.
23. ABS Welding Compounds: 325 g/L.
24. CPVC Welding Compounds: 490 g/L.
25. PVC Welding Compounds: 510 g/L.
26. Adhesive Primer for Plastic: 550 g/L.
27. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
30. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Nonmembrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

B. PAINTS AND COATINGS: FOR FIELD APPLICATIONS THAT ARE INSIDE THE WEATHERPROOFING SYSTEM: Paints and coatings will comply with the following VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule No. 1113:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC not more than 150 g/L.
3. Dry-Fog Coatings: VOC not more than 400 g/L.
4. Primers, Sealers, and Undercoaters: VOC not more than 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
7. Pretreatment Wash Primers: VOC not more than 420 g/L.
8. Clear Wood Finishes, Varnishes: VOC not more than 350 g/L.
9. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
10. Floor Coatings: VOC not more than 100 g/L.
11. Shellacs, Clear: VOC not more than 730 g/L.
12. Shellacs, Pigmented: VOC not more than 550 g/L.
13. Stains: VOC not more than 250 g/L.

C. Composite wood, agrifiber products, and adhesives will not contain urea-formaldehyde resin.

2.3 LOW-EMITTING MATERIALS – VINYL WINDOWS AND SLIDING PLASTIC-FRAMED GLASS DOORS

A. Manufactured products and assemblies specified in the following specification Sections are to comply with the protocols for Volatile Organic Compound (VOC) Emissions Requirements (Section 2.3.B) and Component Hot Odor Requirements (Section 2.3.C).

1. Section 08 32 16 “Sliding Plastic-Framed Glass Doors”.
2. Section 08 53 13 “Vinyl Windows”.

B. Volatile Organic Compound (VOC) Emissions Requirements Testing Protocol: For complete window or door assemblies, perform sampling and testing in conformance with “The Standard Method for Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2 (2017) (California Department of Public Health – Emissions Testing Method for California Specification 01350)”. Testing is required for each operating style and color combination. At least one full scale test of each operating style is required. A “screening test” is acceptable for remaining style/color combinations. A “screening test” is performed with the same testing and analysis parameters as CDPH 01350 v. 1.2 but with a 13-day conditioning period followed by a 24-hour chamber test with samples collected for formaldehyde and the Target CREL VOC list.

1. Results shall be in conformance with Section 4 of the referenced standard, Target Chemicals, Maximum Allowable Concentrations, and IAQ Concentration Modeling. Target CREL VOCs and their maximum allowable concentrations, measured in micrograms per cubic meter, shall be as follows:
    a. Acetaldehyde: 70.
    b. Benzene: 1.5.
    c. Carbon disulfide: 400.
    d. Carbon tetrachloride: 20.
    e. Chlorobenzene: 500.
    f. Chloroform: 150.
    g. Dichlorobenzene (1,4-): 400.

h. Dichloroethylene (1,1): 35.

i. Dimethylformamide (N,N-): 40.

j. Dioxane (1,4-): 1,500.

k. Epichlorohydrin: 1.5.

l. Ethylbenzene: 1,000.

m. Ethylene glycol:200.

n. Ethylene glycol monoethyl ether: 35.

o. Ethylene glycol monoethyl ether acetate: 150.

p. Ethylene glycol monomethyl ether: 30.

q. Ethylene glycol monomethyl ether acetate: 45.

r. Formaldehyde: 9.

s. Hexane (n-): 3,500.

t. Isophorone: 1,000.

u. Isopropanol: 3,500.

v. Methyl chloroform: 500.

w. Methylene chloride: 200.

x. Methyl *t*-butyl ether: 4,000.

y. Naphthalene: 4.5.

z. Phenol: 100.

aa. Propylene glycol monomethyl ether: 3,500.

bb. Styrene: 450.

cc. Tetrachloroethylene: 17.5.

dd. Toluene: 150.

ee. Trichloroethylene: 300.

ff. Vinyl acetate: 100.

gg. Xylenes, technical mixture (m-, o-, p-xylene combined): 350.

2. In addition to the specific requirements of the specified standard, the following summarizes specific requirements to be used for VOC testing and are to govern over the requirements of the standard (values given are in metric units):

   a. Testing shall be performed in full-scale chambers. In the event that a full-scale window cannot fit inside the chamber, a smaller chamber may be used. Smaller chamber tests should include sample cuts of a minimum size of 12-inches by 12-inches, include every component of the window assembly, and fit in one testing chamber. Testing shall be consistent with practices identified in ASTM D6670 for full-scale chamber testing, or ASTM D5116 for small-scale environmental chamber testing.

   b. Chamber tests will be conducted at a temperature of 35^{o}C +/- 1^{o}C and 50% Relative Humidity +/- 10%.

   c. A chamber Loading Factor (exposed surface area of tested material placed in test chamber divided by test chamber volume) of 0.3 to 1.0 m^2/m^3 +/- 0.3 to 1.0.

   d. Air change rate (chamber volume/air flow rate) 1.0/hour +/- 0.05.

   e. The Area Specific Flow Rate (Air change rates/Loading factor) shall be 1.5 m/h +/- 0.5.

f. Chamber time for testing shall be in conformance with Section 7 – Freestanding Furniture of the testing standard, primarily Par. 7.1.3 or 7.1.4

g. Collect and analyze chamber air samples for VOCs in accordance with U.S. EPA TO-15 & TO-17, ISO 16000-6, or equivalent; ensure all VOCs indicated in the standard are measured.

h. Collect and analyze chamber air sample for formaldehyde and acetaldehyde by ASTM D5197, ISO 16000-3, or equivalent.

i. Maximum acceptable reporting limits for VOCs shall be 2 $\mu g/m^3$.

3. Units:

a. °C – degrees Centigrade.

b. m – meter.

c. m^2 – square meter.

d. m^3 – cubic meter.

e. $\mu g/m^3$ – micrograms/cubic meter.

C. Component Odor Requirements Testing Protocol: For all material components of the window or door assembly (framing vinyl, sash vinyl, sealants/caulking, weatherstripping, screens, etc.), perform odor testing in accordance with SAEJ1351 – Hot Odor Test for Insulation Materials, except as modified below. Each component and each variation shall be tested separately. In general, the test protocol consists of placing a small material sample in a sealed jar and heating it to approximately 149 degrees F for one (1) hour. After heating, odor panel testers open the jar and smell air within the jar, rank it on an odor scale between 1 ("no noticeable odor") and 10 ("odor is painful"). Samples are re-heated between testers.

1. Components to be tested from windows and Sliding Plastic Framed Glass Doors, and Sliding Plastic-Framed Glass Doors, included in VOC testing (for each proposed manufacturer):

a. Vinyl framing.

b. Vinyl sash.

c. Brush-type weatherstripping.

d. Rubber (or other) bulb-type weatherstripping.

e. Rubber (or other) gasketing (such as around glass unit of primary and/or storm windows).

f. Sealants used as part of the window assembly (if any).

g. Screening.

h. Screen spline materials.

i. Any insulation-type materials used for insulating and/or acoustic performance (frame perimeter and/or within frame extrusions).

j. Sealant(s) used for insulated glazing units (IGUs).

2. Odor panel used for this evaluation will be trained and meet the requirements to comply with either ISO 16000-28 or ISO 12219-7.

3. Criteria: Average odor scale no more than "5" (per Table 1 in SAE-J1351).

PART 3 - EXECUTION

3.1 DOCUMENTATION TEMPLATE

A. Local/Regional Materials Pre-Construction Estimate: Use Template Form 01 81 13.01-3.1A at the end of this Section for completion of the Local/Regional Materials submittal requirements as outlined in Part 1 of this Section.

B. Local/Regional Materials Final Construction Total: Use Template Form 01 81 13.01-3.1B at the end of this Section for completion of the Local/Regional Materials submittal requirements as outlined in Part 1 of this Specification Section.

C. Recycled Materials Pre-Construction Estimate: Use Template Form 01 81 13.02-3.1C at the end of this Section for completion of the Recycled Materials submittal requirements as outlined in Part 1 of this Specification Section.

D. Recycled Materials Final Construction Total: Use Template Form 01 81 13.02-3.1D at the end of this Section for completion of the Recycled Materials submittal requirements as outlined in Part 1 of this Specification Section.

3.2 MEASUREMENT

A. Local/Regional Materials will not be measured separately for payment, but will be considered included in the overall Contract.

B. Recycled Materials will not be measured separately for payment, but will be considered included in the overall Contract.

3.3 PAYMENT

A. All costs associated with meeting these requirements are included in the overall Contract. No additional time or monies will be granted to the Contractor for compliance with these requirements and any associated regulations.

3.4 ATTACHMENTS

A. Local/Regional Materials Pre-Construction Estimate (01 81 13.01-3.1A).

B. Local/Regional Materials Final Construction Totals (01 81 13.01-3.1B).

C. Recycled Materials Pre-Construction Estimate (01 81 13.02-3.1C).

D. Recycled Materials Final Construction Totals (01 81 13.02-3.1D).

END OF SECTION 01 81 13

Local/Regional Materials Pre-Construction Estimate (01 81 13.01-3.1A)

Contractor: _____

Project Name: _____

Contract Number: _____

Description of Material Spec Section / Item	Source of Material/Location	Total Construction Cost [$]	-	Labor (Subtract from Total) [$]	-	Equipment (Subtract from Total) [$]	=	Total Material Cost Equipment) [$]	Local Materials within 250 miles (per 01 81 13-1.3B) [$]	Regional Materials within 500 miles (per 01 81 13-1.3A) [$]
			-		-		=	$ -		
			-		-		=	$ -		
			-		-		=	$ -		

Local/Regional Materials Final Construction Estimate (01 81 13.01-3.1B)

Contractor: _____

Project Name: _____

Contract Number: _____

Contractor Certification

I, _____ (Contractor), declare the building materials and products as indicated are manufactured, extracted, harvested, or recovered locally/regionally (within 250/500 mile radius of the Project site).

Description of Material Spec Section / Item	Source of Material/Location	Total Construction Cost [$]	-	Labor (Subtract from Total) [$]	-	Equipment (Subtract from Total) [$]	=	Total Material Cost (Less Labor & Equipment) [$]	Local Materials within 250 miles (per 01 81 13-1.3B) [$]	Regional Materials within 500 miles (per 01 81 13-1.3A) [$]
			-		-		=	$ -		
			-		-		=	$ -		
			-		-		=	$ -		

Recycled Content Pre-Construction Estimate (01 81 13.02-3.1C)

Contractor: _____

Project Name: _____

Contract Number: _____

Description of Material Spec Section / Item	Total Construction Cost [$]	-	Labor (Subtract from Total) [$]	-	Equipment (Subtract from Total) [$]	=	Total Material Cost (Less Labor & Equipment) [$]	Recycled Content (per 01 81 13-1.3E & 1.3F) Overall = Post-Consumer + 1/2 Pre-Consumer Post-Consumer [%]	Post-Industrial [%]	Overall [$]
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
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		-		-		=	$ -			$ -
	$ -	-	$ -	-	$ -	=	$ -			$ -
TOTAL RECYCLED CONTENT OF MATERIALS AS A PERCENT OF TOTAL MATERIAL COST										#DIV/0!

Company: _____

Printed Name: _____

Title: _____

Signature: _____

Date: _____

Recycled Content Final Construction Total (01 81 13.02-3.1D)

Contractor: _____

Project Name: _____

Contract Number: _____

Contractor Certification

I, _____ (Contractor), declare the building materials and products below have the following recycled content.

Description of Material Spec Section / Item	Total Construction Cost [$]	-	Labor (Subtract from Total) [$]	-	Equipment (Subtract from Total) [$]	=	Total Material Cost (Less Labor & Equipment) [$]	Recycled Content (per 01 81 13-1.3E & 1.3F) Overall = Post-Consumer + 1/2 Pre-Consumer Post-Consumer [%]	Post-Industrial [%]	Overall [$]
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
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		-		-		=	$ -			$ -
		-		-		=	$ -			$ -
	$ -	-	$ -	-	$ -	=	$ -			$ -
							TOTAL RECYCLED CONTENT OF MATERIALS AS A PERCENT OF TOTAL MATERIAL COST			#DIV/0!

Company: _____

Printed Name: _____

Title: _____

Signature: _____

Date: _____

Reviewed by: _____
(Resident Engineer)

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SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused, recycled, and donated.

B. Related Requirements:

1. PART TWO OF THREE - GENERAL CONDITIONS for restrictions on the use of the premises, Homeowner-occupancy requirements, and phasing requirements.
2. Section 01 73 00 “Execution”.
3. Section 01 50 00 “Temporary Facilities and Controls”.
4. Section 01 74 19 “Construction Waste Management and Disposal”.
5. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Materials”.
6. Section 02 83 13 “Lead Hazard Control Activities”.
7. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged, or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction in a manner to prevent damage, and store on-site as indicated.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 CLOSEOUT SUBMITTALS

A. Landfill Records: Provide submittal directly to client. Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 FIELD CONDITIONS

A. Occupancy: Homeowners will occupy their Homes during the entire construction period. Comply with Contract Document provisions for a "Room of Refuge" during demolition and construction activities.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: Hazardous materials may be present in homes to be selectively demolished. Comply with procedures for removal and disposal of hazardous materials in the Contract Documents.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

D. Utility Services: Maintain existing utilities in service and protect them against damage during demolition operations.

1.7 WARRANTIES

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 "Safety Requirements for Demolition Operations" and National Fire Protection Association (NFPA) 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations: Latest Edition".

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that affected utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate, and measure the nature and extent of conflict. Promptly submit a written report to the Commissioner.

D. Determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

E. Survey of Existing Conditions: Record existing conditions by use of photographs.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated to be removed.
    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Homeowner.
    f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR Part 82 and regulations of authorities having jurisdiction.

D. If unanticipated mechanical, electrical or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Commissioner in written, accurate detail. Pending receipt of directive from the Commissioner, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 01 50 00 “Temporary Facilities and Controls”.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Schedule with each Homeowner to erect temporary dust/dirt control screens and/or covers during the operations.
2. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
3. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
4. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
5. Cover and protect furniture, furnishings, and equipment that have not been removed.
6. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 00 “Temporary Facilities and Controls”.
7. Remove temporary dust/dirt protection devices at the end of each separate work operation unless directed otherwise in writing.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.
2. Cease operations and notify the Commissioner immediately if safety of structure appears to be endangered. Support structure until determination is made for continuing operations.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 74 19 “Construction Waste Management and Disposal”.

B. Removed Items:

1. Each Homeowner retains the right to claim removed items and materials.
2. Storage or sale of removed items on-site is not permitted.

C. Removed and Salvaged Items:

1. Designate items for donation and items for Homeowner’s use.
2. Protect items from damage during transport and storage.
3. Transport items for donation in accordance with requirements in Section 01 74 19 “Construction Waste Management and Disposal”.
4. Transport items for Homeowner’s use to on-site storage area designated by Homeowner.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Protect items from damage during demolition.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. Items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

1. Repair, clean or replace all finishes, materials and personal items owned by the Homeowner damaged or soiled during demolition activities.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts. Remove masonry exposed to view along horizontal and vertical joints between units to permit “toothing-in” of new masonry units where required.

B. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Homeowner's property, remove demolished materials from Project site and legally dispose of them in an EPA approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal".

B. Hazardous Materials: Comply with applicable regulations, laws and ordinances concerning removal, disposal, handling and protection against exposure or environmental pollution.

C. Burning: Do not burn demolished materials.

3.7 CLEANING AND REPAIR

A. Keep work area clean and free from debris during demolition operations to the greatest extent possible.

B. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Comply with cleaning requirements in Section 01 73 00 "Execution".

C. Return adjacent areas to condition existing before selective demolition operations began.

D. Use every precaution to protect existing work and equipment scheduled to remain in place or be reused during demolition. Restore damaged items to their original condition or replace such items at no cost to the Homeowner, including but not limited to the following:

1. Private and public roads and sidewalks.
2. Fences.
3. Lawn areas, trees and shrubs.
4. Poles and underground utilities.

END OF SECTION 02 41 19

SECTION 02 82 33 - REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.
   1. Part One ("Instructions and Execution Documents")
   2. Part Two ("General Conditions")
   3. Part Three ("Technical Specifications")

1.2 INTENT

A. It is not anticipated that removal of Asbestos-Containing Materials will be required for this project. However, if it is suspected that asbestos is present, or a material contains asbestos, this section applies.

1.3 SUMMARY

A. Section Includes:

   1. Illinois Department of Public Health (IDPH) Licensure of Contractors and certification of workers and inspection of asbestos abatements involving removal of asbestos from the homes, buildings and properties as per 77 Illinois Administrative Code 855.
   2. Notification procedures with Cook County Department of Environmental Control for removal and disposal of asbestos-containing materials.
   3. Proper handling, transportation, and disposal of asbestos waste.
   4. Procedures for review and approval of site safety and contingency plans for work on asbestos removal sites and outdoor asbestos remediation.
   5. Asbestos Hazard Emergency Response Act (ASHARA) Regulations 1992, USEPA 40 CFR Part 763, Subpart E, Appendix C.
   6. National Emission Standards for Hazardous Air Pollutants for Asbestos (NESHAP) Regulations – Section 112, Clean Air Act, USEPA 40 CFR Part 61, Subpart M.

B. Related Requirements:

   1. Section 01 50 00 "Temporary Facilities and Controls".
   2. Section 01 73 00 "Execution".
   3. Section 01 74 19 "Construction Waste Management and Disposal".
   4. Section 02 41 19 "Selective Demolition".
   5. Section 02 83 13 "Lead Hazard Control Activities".
   6. Section 02 83 33.13 "Lead-Based Paint Removal and Disposal".
   7. Section 06 10 53 "Miscellaneous Rough Carpentry".
   8. Section 06 20 13 "Exterior Finish Carpentry".
   9. Section 06 20 23 "Interior Finish Carpentry".

1.4 DEFINITIONS

A. Asbestos-Containing Material (ACM): Any material containing any form of friable and/or non-friable asbestos (any of several forms of magnesium silicate).

B. Dismantlement: Removal and associated disassembly of building components, including but not limited to: windows, doors, decorative trim, moldings, caulk, and glazing putty.

C. CCDEC: Cook County Department of Environmental Control.

D. IEPA: Illinois Environmental Protection Agency.

E. USEPA: United States Environmental Protection Agency.

F. IDPH: Illinois Department of Public Health.

G. OSHA: United States Department of Labor Occupational Safety and Health Administration.

H. Plastic: Six (6) mil polyethylene sheeting or bags.

I. Post-Replacement Cleaning: Those activities to be conducted by Contractor following dismantlement and component replacement.

J. RCRA: Resource Conservation and Recovery Act. This act gives the USEPA the authority to control hazardous waste.

K. Work Area Preparation: Those activities to be conducted by Contractor prior to dismantlement activities.

1.5 LIABILITIES

A. The Contractor will be responsible for any and all liabilities, damages and/or settlement of any type that may occur, related to the abatement, sealing, removal, containment, transportation, or disposal of ACM associated with this Contract.

1.6 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.7 INFORMATIONAL SUBMITTALS

A. Submit all applicable Contractors’ licenses and Environmental Protection Agencies’ certifications.

B. Provide to the Commissioner a complete detailed account of any and all areas, both in location and extent, where any ACM was disturbed, removed, disposed of or altered in any manner. A complete record of disposal of all ACM will be provided to the Commissioner by completing a “Waste Shipment Record”.

1.8 QUALITY CONTROL

A. The Contractor will provide, and be responsible for, the protection and repair of adjacent surfaces and areas that may be damaged as a result of this work, be responsible for the safety of all persons, and be responsible for the maintenance in good condition of all materials and equipment. Repair, replacement or restoration of any damaged areas or defective materials, equipment or work will be at no cost to the City.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. Furnish all labor, materials, equipment, abatement plans/specifications and services required for the abatement, sealing, containment, transportation, and disposal of ACM as noted in the Contract Documents, and as required to complete the modifications.

B. Field Measurements: The Contractor, after the award of the Contract, will check actual dimensions and quantities of each type of ACM and submit recorded measurements to the Commissioner.

C. No payment will be made for ACM removal and/or disposal until a completed Waste Shipment Record, provided by asbestos abatement Contractor, has been received by the Commissioner.

D. All ACM material must be properly disposed of off-site. All asbestos abatement work, transportation and disposal of ACM must be performed in compliance with City of Chicago and local jurisdictions, the Cook County Environmental Control Agency, State of Illinois, and Federal Regulations.

E. The inspection for all ACM shall be performed by an IDPH licensed inspector.

F. Properties and structures within Cook County must be inspected prior to renovation, remodeling, or demolition.

G. Residential properties containing four (4) or more dwelling units are regulated by USEPA/IEPA, except those within Cook County as noted in paragraph F.

3.2 HOMEOWNER NOTIFICATION

A. Homeowner and the Commissioner will be notified a minimum of one week prior to asbestos removal operations being undertaken within that Home.

3.3 GOVERNMENTAL NOTIFICATION

A. The Contractor will be responsible for notifying all local, state, and federal agencies as required for the type of asbestos abatement to be conducted at each individual Home. The Contractor shall submit all notifications necessary using required agency forms including, but not limited to, the City of Chicago asbestos abatement form.

3.4 REMOVAL AREA

A. The removal of ACM will be restricted to the actual areas required to accomplish the work specified in the Contract Documents. There will be no payment allowed for removal or containment of ACM beyond the minimum areas required.

3.5 CLEANING AND PROTECTION

A. The Contractor and any Subcontractor will protect all adjacent areas and keep the work area clean and free from debris. Upon completion of the work each day, remove all debris, unused materials, and equipment, and leave all areas in a clean condition acceptable to the Commissioner.

END OF SECTION 02 82 33

SECTION 02 83 13 - LEAD HAZARD CONTROL ACTIVITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)

2. Part Two (“General Conditions”)

3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes: This Section outlines window and door replacement procedures using lead-safe work practices.

B. Related Requirements: The following Sections contain requirements that relate to this Section:

1. Section 01 50 00 “Temporary Facilities and Controls”.

2. Section 01 73 00 “Execution”.

3. Section 01 74 19 “Construction Waste Management and Disposal”.

4. Section 02 41 19 “Selective Demolition”.

5. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Materials”.

6. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.

7. Section 06 10 53 “Miscellaneous Rough Carpentry”.

8. Section 06 20 13 “Exterior Finish Carpentry”.

9. Section 06 20 23 “Interior Finish Carpentry”.

10. Division 8 Sections for “Doors and Windows”.

1.3 DEFINITIONS

A. Dismantlement: Removal and associated disassembly of building components, including, but not limited to: windows, doors, decorative trim and moldings.

B. CCDEC: Cook County Department of Environmental Control.

C. IEPA: Illinois Environmental Protection Agency.

D. USEPA: United States Environmental Protection Agency.

E. IDPH: Illinois Department of Public Health.

F. Lead-Based Paint (LBP): Paint or other similar surface coating material that contains lead or lead compounds in excess of 0.5 percent of the weight of the total nonvolatile content of the paint or the weight of the dried paint film.

G. OSHA: United States Department of Labor Occupational Safety and Health Administration.

H. CDPH: Chicago Department of Public Health.

I. Post-Replacement Cleaning: Those activities to be conducted by Contractor following dismantlement and component replacement.

J. Plastic: Minimum of six (6) mil polyethylene sheeting or bags.

K. RCRA: Resource Conservation and Recovery Act. This act gives the USEPA the authority to control hazardous waste.

L. Work Area Preparation: Those activities to be conducted by certified firms using Certified Renovators and other trained workers prior to dismantlement activities.

M. Certified Renovator: A person who has successfully completed an EPA-accredited renovator course or a course accredited by an EPA-authorized State or Tribe and is responsible for ensuring overall compliance with Renovation, Repair and Painting (RRP) Program requirements for lead-safe work practices at renovations to which they are assigned.

N. Interior Containment: Containment practices that prevent dust and debris from escaping the interior work area. These practices will include but may not be limited to: isolating the work area, limiting access and posting signs, removing or covering belongings, covering floors, closing windows, closing and sealing doors and Heating, Ventilation, and Air-Conditioning (HVAC) system and constructing a work area entry doorway.

O. Exterior Containment:Containment practices that include but may not be limited to isolating the work area, close all windows and doors, establish as necessary, additional containment to prevent spread of dust to adjacent properties and erect vertical containment for any exterior renovations within 10 feet of the property line.

P. Personal Protective Equipment: Equipment worn by workers during RRP activities that will include but may not be limited to: a disposable painter's hat, disposable coveralls and disposable respirator (N-100, R-100 or P-100). OSHA may require more protection depending on work environment and work that is being performed.

Q. Cleaning Verification: A process performed by the Certified Renovator when all the cleaning is complete, and before the space is reoccupied, which includes but may not be limited to; a visual inspection looking for dust, debris or residue, wiping of horizontal surfaces including window sills, flooring or carpeting and comparing wipe to cleaning verification card. The cleaning verification procedure must be conducted to make sure leaded dust is not left behind. The cleaning must be repeated until the work area is free of dust, debris and residue.

1.4 LIABILITIES

A. The Contractor will be responsible for any and all liabilities, damages and/or settlement of any type that may occur, related to the abatement, sealing, removal, containment, transportation, or disposal of lead containing material associated with this Contract.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 INFORMATIONAL SUBMITTALS

A. Submit all applicable Contractors’ USEPA licenses, certifications, and training logs/records.

B. Submit documentation that lead-safe practices were followed, including pamphlet receipts and Renovation Record-keeping Checklist for each home. Contractor will maintain records and reports in accordance with USEPA requirements and for a period of not less than three (3) years.

C. Submit Lead-Safe Practices Plan.

D. Submit completed City of Chicago Department of Public Health (CDPH) form LRPP for each and every building address where lead-based paint removal and disposal work is being performed, including those with building permits and those where building permits are not required.

1. CDPH Form LRRP is attached at the end of this Section.

E. Submit Renovation Recordkeeping Checklist.

F. Submit Training Log.

1.7 QUALITY CONTROL

A. The Contractor will provide and be responsible for the protection and repair of adjacent surfaces and areas that may be damaged as a result of this work, be responsible for the safety of all persons, and be responsible for the maintenance in good condition of all materials and equipment. Repair, replacement or restoration of any damaged areas or defective materials, equipment or work will be at no cost to the City.

PART 2 - PRODUCTS

2.1 PLASTIC

A. Six (6) mil polyethylene film.

B. Signage.

PART 3 - EXECUTION

3.1 GENERAL

A. The Scope of Work involves the removal of building components for the intent of replacement and/or renovation. The work practices described herein are the minimum required methods Contractor will use to conduct component dismantlement.

B. The Scope of Work will be performed in accordance with all applicable Federal, State and local regulations, including, but not limited to:

1. The Chicago Department of Public Health.

2. The Cook County Department of Public Health.

3. "Small Entity Compliance Guide to Renovate Right – USEPA's Lead-Based Paint Renovation, Repair and Painting Program" USEPA-740-K-10-003 published by the U.S. Environmental Protection Agency.

4. USEPA, 40 CFR Part 745, "Lead; Renovation, Repair and Painting Rule; Lead Hazard Information Pamphlet; Notice of Availability; Final Rule*"* as amended by USEPA.

5. OSHA, www.osha.gov/SLTC/lead/index.html.

C. The Contractor will assume that all windows and doors that are to be replaced contain LBP. All LBP removal will be performed in accordance with Section 02 83 33.13 "Lead-Based Paint Removal and Disposal".

D. The Contractor will employ lead-safe work practices in all Homes or portions thereof.

1. These procedures include, but are not limited to: all cutting and patching, selective demolition, dust control, rough carpentry and finish carpentry, window and door replacement.

E. The Contractor is responsible for disposal of the wastes generated during the dismantlement effort. To be disposed per USEPA RRP Guidelines.

3.2 GOVERNMENTAL NOTIFICATION

A. The Contractor will be responsible for notifying all local, state and federal agencies as required for all lead-based paint removal and/or treatment to be conducted at each individual Home.

B. The Contractor shall submit, in an agency acceptable form, a statement to the Chicago Department of Health swearing that workers, firms, and renovators are properly trained in accordance with 40 CFR Part 745, Subpart E, and that the work practices contained in 40 CFR 745.85 will be followed.

3.3 WINDOW AND DOOR REPLACEMENT USING LEAD-SAFE WORK PRACTICES

A. Preparation: The Contractor will perform all required preparation, including, but not limited to:

1. Notification:

a. The Contractor will inform the Homeowner and provide pamphlet "Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools" available on the USEPA website.

b. The Contractor will provide the Homeowner and the RSIP with a copy of the records demonstrating compliance with the training and work practice requirements of the USEPA Renovation, Repair and Painting Program.

c. Provide area of refuge for Homeowner/Resident away from work area.

d. Post OSHA-compliant warning signs on all entrances to the work area in Homeowner's/Resident's native language.

2. Personal Protection:

a. Use OSHA-compliant disposable/recyclable coveralls, as required.

b. Use OSHA-compliant respirator that it is in compliance with OSHA 1910.134 (c) Respiratory Protection Program.

c. Use protective eye wear.

d. Use work shoes with disposable covers and disposable work gloves.

e. Painter's hat.

f. Disposable Non-Latex gloves.

g. No eating, drinking or smoking allowed in the work area.

3. Isolate Work Area:

a. The work area consists of the entire room that the work is being performed in.

b. The work area shall be isolated by one of the following methods:

1) Isolate a smaller area within the room with the installation of a temporary vertical dust proof barrier providing a semi air tight separation consisting of 6 mil or thicker polyethylene barrier. The vertical barrier must be done in accordance with section 01 50 00-2 Temporary Facilities and Controls 2.1 Dust Protection. Cover floor area by taping six (6) mil polyethylene film.

2) Close off the entire work area by taping six (6) mil polyethylene film over all doors, windows and floor area.

c. Shut off forced air HVAC systems.

d. Seal HVAC vents within the work area with six (6) mil polyethylene film and tape.

4. Remove/Protect Resident Belongings:

a. Remove as much furniture as you can from the room.

b. Cover remaining furniture with six (6) mil polyethylene film and secure with tape.

c. Close off the work area by taping six (6) mil polyethylene film over all doors, windows and floor.

5. Exterior Containment:

a. One lead-safe entry way should be made available to residents at all times.

b. Cover ground with six (6) mil polyethylene film at least 10 feet in all directions from the house in the area that the work is being performed in.

c. Vertical containment is required if 10 feet of ground cover cannot be achieved.

d. Close off work area with barrier tape.

B. Remove/Replace Window/Door:

1. Remove, package in plastic (within containment area) and dispose of entire window or door unit and trim.

2. Install new window or door unit immediately after removal of debris and cleaning. For each opening, when new window or door installation does not proceed immediately after debris removal, apply new six (6) mil polyethylene film to opening with fully taped perimeter to isolate the opening work area from the interior room of the Home.

3. After installation of each new window or door, clean and inspect rooms and exterior areas for residual debris. Remove any residual debris and clean affected areas.

4. After the installation of all windows and doors, inspect all work areas for the presence of debris. Remove, dispose of debris and perform final cleaning.

C. Cleanup:

1. All cleaning to follow all USEPA RRP guidelines.

2. Place debris in polyethylene bag.

3. Wet wipe tools.

4. Mist debris on work area polyethylene.

5. Remove disposable clothing and place in polyethylene bag or recyclable type in laundry bag.

6. Fold polyethylene film “dirty side in,” place in polyethylene bag and label according to OSHA/USEPA regulations.

7. HEPA (high efficiency particulate air) filter vacuum work area.

8. Clean using 3-bucket system (cleaner, wringer, clean rinse).

9. HEPA vacuum work area.

10. Remove all materials, tools and bagged debris from work area and residence.

11. Seal disposal bag using “goose-neck seal” technique.

12. Properly dispose of bagged debris.

D. Cleaning Verification by Certified Renovator:

1. Cleaning Verification to be performed by a USEPA Certified Renovator following the USEPA Cleaning Verification guidelines including:

a. Visual inspection to identify presence of dust or debris.

b. Wipe all surfaces with a wet cleaning cloth.

c. After wiping surfaces compare wet cleaning cloth to the cleaning verification card. Re-clean area if wet cleaning cloth is darker than the cleaning verification card.

d. Reposition and restore the Homeowner's furniture and furnishings to their original positions.

3.4 ATTACHMENTS

A. Lead-Based Paint Renovation, Repair and Painting Program Form

END OF SECTION 02 83 13

DEPARTMENT OF PUBLIC HEALTH
POLLUTION PREVENTION UNIT
333 SOUTH STATE STREET, ROOM 200
CHICAGO, IL 60604

CITY OF CHICAGO **BUILDING PERMIT #**_____

LEAD-BASED PAINT RENOVATION, REPAIR AND PAINTING PROGRAM
FORM LRRP

APPLICABILITY

Under Municipal Code §11-4-2170(h), this form must be submitted before work starts on renovation projects that are regulated under the federal Renovation, Repair and Painting (RRP) Rule. For more information, see the Guide to Filing Form LRRP.

PROJECT INFORMATION

BUILDING ADDRESS:

BUILDING TYPE: ☐ RESIDENTIAL BUILT BEFORE 1978 ☐ OTHER: _____
☐ CHILD–OCCUPIED FACILITY* BUILT BEFORE 1978

PROJECT DATES:_____ TO _____ WORK HOURS: _____ AM TO _____ PM

NATURE OF WORK: (check all that apply) ☐ REMODELING AND REPAIR/MAINTENANCE ☐ WINDOW REPLACEMENT
☐ PAINTING PREPARATION ☐ ELECTRICAL OR PLUMBING
☐ OTHER (DESCRIBE):_____

OWNER INFORMATION

NAME:			
ADDRESS:			
CITY:	STATE:	ZIP:	PHONE:

CONTRACTOR INFORMATION

NAME:			
ADDRESS:			
CITY:	STATE:	ZIP:	PHONE:

Continued on reverse side

COMPLIANCE QUESTIONS

1) DID YOU OR WILL YOU DISTRIBUTE THE EPA'S LEAD PAMPHLET AND PROVIDE OTHER REQUIRED NOTIFICATIONS, IN ACCORDANCE WITH 40 CFR PART 745, SUBPART E, BEFORE STARTING RENOVATION WORK?

☐ YES ☐ NO

2) ARE INDIVIDUALS PERFORMING THE RENOVATION PROPERLY TRAINED IN ACCORDANCE WITH THE FEDERAL RENOVATION, REPAIR & PAINTING RULE (40 CFR PART 745, SUBPART E)?

☐ YES ☐ NO

3) ARE RENOVATORS AND FIRMS PERFORMING THE RENOVATIONS CERTIFIED IN ACCORDANCE WITH 40 CFR PART 745, SUBPART E?

☐ YES ☐ NO

4) WILL THE WORK PRACTICES IN THE FEDERAL RENOVATION, REPAIR & PAINTING RULE (40 CFR PART 745, SUBPART E) BE FOLLOWED DURING SUCH PERMITTED WORK?

☐ YES ☐ NO

SWORN STATEMENT

By signing this form, the undersigned attests that all the information contained herein is accurate and agrees to follow lead-safe work practices and comply with all of the requirements of City Code 11-4-2170(h).

The undersigned further makes this sworn statement under penalty of perjury that all the information provided herein is true, knowing that willingly providing false or misleading information could result in a fine of $5,000 - $10,000, pursuant to section 11-4-2200 of the City Code.

Signed: _____ Date: _____

Print Name: _____ Title: _____

Firm Certification # _____

* Child-occupied facility means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms. Child-occupied facilities may be located in target housing or in public or commercial buildings. With respect to common areas in public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only those common areas that are routinely used by children under age 6, such as restrooms and cafeterias. Common areas that children under age 6 only pass through, such as hallways, stairways, and garages are not included. In addition, with respect to exteriors of public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only the exterior sides of the building that are immediately adjacent to the child-occupied facility or the common areas routinely used by children under age 6.

Resources:

For additional information on how to comply with the lead-safe renovation, repair and painting program, visit the USEPA website at: http://epa.gov/lead/brochure.html. For information about filing this form, visit www.cityofchicago.org/health, or call (312) 745-7206.

For official use only

APPROVED BY: _____
SIGNATURE

PRINT NAME: _____ DATE: _____

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SECTION 02 83 33.13 - LEAD-BASED PAINT REMOVAL AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes: The scope of Work involves the removal of lead-based paint (LBP).

B. Related Requirements: The following Sections contain requirements that relate to this Section:

1. Section 01 50 00 “Temporary Facilities and Controls”.
2. Section 01 73 00 “Execution”.
3. Section 01 74 19 “Construction Waste Management and Disposal”.
4. Section 02 41 19 “Selective Demolition”.
5. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Materials”.
6. Section 02 83 13 “Lead Hazard Control Activities”.
7. Section 06 10 53 “Miscellaneous Rough Carpentry”.
8. Section 06 20 13 “Exterior Finish Carpentry”.
9. Section 06 20 23 “Interior Finish Carpentry”.
10. Division 8 Sections for “Doors and Windows”.

1.3 DEFINITIONS

A. Dismantlement: Removal and associated disassembly of building components, including, but not limited to: windows, doors, decorative trim and moldings.

B. CCDEC: Cook County Department of Environmental Control.

C. IEPA: Illinois Environmental Protection Agency.

D. USEPA: United States Environmental Protection Agency.

E. IDPH: Illinois Department of Public Health.

F. Lead-Based Paint (LBP): Paint or other similar surface coating material that contains lead or lead compounds in excess of 0.5 percent of the weight of the total nonvolatile content of the paint or the weight of the dried paint film.

G. OSHA: United States Department of Labor Occupational Safety and Health Administration.

H. Post-Replacement Cleaning: Those activities to be conducted by Contractor following dismantlement and component replacement.

I. Plastic: Means six (6) mil polyethylene sheeting or bags.

J. RCRA: Resource Conservation and Recovery Act. This act gives the USEPA the authority to control hazardous waste.

K. Work Area Preparation: Those activities to be conducted by Contractor prior to dismantlement activities.

1.4 LIABILITIES

A. The Contractor will be responsible for any and all liabilities, damages and/or settlement of any type that may occur, related to the abatement, sealing, removal, containment, transportation, or disposal of lead containing material associated with this Contract.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 INFORMATIONAL SUBMITTALS

A. Submit all applicable Contractors’ licenses and USEPA certifications for all workers who disturb painted surfaces containing LBP.

B. Submit documentation that lead-safe practices were followed, including homeowner pamphlet receipts. Contractor will maintain records and reports in accordance with USEPA requirements and for a period of not less than three (3) years.

1.7 QUALITY CONTROL

A. The Contractor will provide and be responsible for the protection and repair of adjacent surfaces and areas that may be damaged as a result of this work, be responsible for the safety of all persons, and be responsible for the maintenance in good condition of all materials and equipment. Repair, replacement or restoration of any damaged areas or defective materials, equipment or work will be at no cost to the City.

PART 2 - PRODUCTS

2.1 FLOOR PROTECTION

A. The Contractor will utilize impermeable plastic sheeting on the floor prior to dismantlement activities. This floor protection will extend 6 feet from the wall(s) or will cover floors in their entirety in the event activities include ceiling areas. Permanent fixtures will be covered with plastic. The exterior ground will also be covered with floor protection in case of activities involving window components or other exterior components.

2.2 DISPOSABLE CONTAINERS

A. The Contractor will use OSHA/USEPA approved covered containers and labels for waste generated during this project.

PART 3 - EXECUTION

3.1 GENERAL

A. If the Contractor discovers LBP, the Contractor will obtain direction from the Commissioner on how to proceed by field order. The Work, if any, directed by the Commissioner, will comply with the work practices described herein as the minimum required methods Contractor will use to conduct component dismantlement. These specifications are intended to facilitate compliance with OSHA and USEPA regulations.

1. The scope of Work includes, but is not limited to, air monitoring. The Contractor will conduct initial air monitoring to provide site-specific initial assessments that will document the safety and regulatory compliance of these work practices. OSHA/USEPA compliance of these work practices and OSHA/USEPA exposure monitoring compliance is the responsibility of the Contractor.
2. The Contractor is responsible for disposal of the wastes generated during the dismantlement effort. Additionally, the Contractor is responsible for coordinating placement of disposal containers (drums and waste boxes) and arrangements for the transportation and acceptance of wastes. Disposal of waste will comply with Federal, State and local regulations and requirements.
3. The Contractor is responsible for notifying Homeowners of the scheduled work activities in accordance with OSHA Hazard Communication Standards and USEPA regulations prior to commencement of field activities.

B. The scope of Work will include the generation of small quantities of ancillary LBP waste (plastic sheeting, scrapings, dust and water) that will be collected at the end of each day by Contractor and disposed of appropriately in accordance with Federal (USEPA, RCRA), State and local regulations.

C. The scope of Work will be performed in accordance with all applicable Federal, State and local regulations, including, but not limited to:

1. The Chicago Department of Public Health.
2. OSHA Regulation, 29 CFR 1926.62.
3. RCRA.
4. U.S. Department of Transportation; CFR, Title 49, “Transportation”.
5. USEPA, 40 CFR Part 745, Subpart E; and “Small Entity Compliance Guide to Renovate Right – USEPA’s Lead-Based Paint Renovation, Repair and Painting Program” USEPA-740-K-10-003 published by the USEPA.
6. USEPA, 40 CFR Part 745, Lead; Renovation, Repair and Painting Rule; “Lead Hazard Information Pamphlet; Notice of Availability; Final Rule” as amended by USEPA.

D. All Work will be conducted by a licensed lead removal Contractor.

3.2 GOVERNMENTAL NOTIFICATION

A. The Contractor will be responsible for notifying all local, state and federal agencies as required for all lead-based paint removal and/or treatment to be conducted at each individual Home.

B. The Contractor shall submit, in an agency acceptable form, a statement to the Chicago Department of Health swearing that workers, firms, and renovators are properly trained in accordance with 40 CFR Part 745, Subpart E, and that the work practices contained in 40 CFR 745.85 will be followed.

3.3 ENVIRONMENTAL MONITORING

A. Air Monitoring:

1. The Contractor will provide initial environmental air monitoring during dismantlement activities. This monitoring will involve sampling air for lead dust concentrations in Work Areas and immediately adjacent areas to document that dismantlement activities are not producing airborne lead levels exceeding the current OSHA Action Level of 30 micrograms per cubic meter of air.
2. The initial air monitoring will be conducted for a representative period. In the event analytical data indicates airborne lead dust concentrations exceeding the Action Level, the Contractor will notify the Commissioner of such levels.
3. The Contractor will then modify Work practices to ensure ambient lead dust levels are within the Action Level. It is the Contractor's responsibility to maintain work practices and ensure that ambient airborne lead dust concentrations are below the OSHA Action Level.

B. Surface Wipe Sampling:

1. The Contractor will collect representative surface wipe samples after final cleanup following the replacement of components to ensure that the lead dust levels in the Work Areas do not exceed the Illinois Department of Public Health (IDPH) recommended level of 200 micrograms per square foot (200 $\mu g/ft^2$) for non-walking surfaces, and 40 $\mu g/ft^2$ for walking surfaces.

3.4 WORK AREA PROTECTION

A. The Contractor will remove all furniture and non-permanent fixtures from the Work Area. All items removed will be staged in a location coordinated with the Homeowner.

B. The Contractor will place floor protection in front of the component(s) to be dismantled. If components are overhead (ceiling-mounted skylights), the entire floor will be covered. Permanent fixtures/furniture will be covered with plastic.

C. The room or Work Area will be isolated with barrier tape and signage indicating that construction Work is in progress. Entry to the Work Area will be restricted exclusively to the Contractor and the Commissioner.

D. All HVAC vents (supply, return) will be sealed with plastic taped at the edges to render airtight.

E. Following dismantlement activities, the Contractor will wet wipe all floor protection materials. Contractor may additionally utilize a vacuum to remove visible debris. Vacuum will be of the High Efficiency Particulate Air Filtration (HEPA) type. Wet wiping will be conducted with rags or mops. The Contractor will then containerize all waste/debris generated during dismantlement activities.

F. All waste/debris will be transferred at the conclusion of each day to an approved container.

G. The Contractor will ensure that transport from the Work Area(s) to the disposal container does not track debris throughout the site. In the event of such tracking of dirt, dust or debris, the Contractor will wet wipe all impacted areas.

H. The Contractor will ensure that exterior areas are protected to prevent paint chips and dust from falling on unprotected ground.

3.5 EXECUTION

A. If necessary, the Contractor will conduct light misting of the Work Area and building components, to minimize generation of airborne dust.

B. Dismantled components will be placed into plastic bags or wrapped in plastic prior to transfer to waste container.

C. Components will be transferred at the conclusion of the day, using a mobile plastic waste dumpster or dolly protected with plastic.

D. If components are removed and transported from the exterior of the building, the underlying grounds will be protected with plastic sheeting extending a minimum of 10 feet from the building. Transfer will then be conducted using a mobile waste dumpster or dolly protected with plastic. A restricted Work Area of 15 feet radius around the waste dumpster will be established and maintained with barrier tape and construction signage.

E. Work Area access will remain restricted until replacement activities and post replacement cleaning is completed. Following replacement of the building component(s) and completion of renovation activities, the Contractor will perform post-replacement cleaning. This cleaning will consist of removal of all floor protection and HVAC vent seals, wet wiping of the entire floor within the Work Area and similar cleaning of traffic areas. Wet wiping will always be with the use of non-trisodium phosphate (TSP) detergent solutions.

F. Following post-replacement cleaning, the Contractor will conduct representative surface wipe sampling in the Work Areas. If the surface wipe sample results do not exceed 200 μg/ft² for non-walking surfaces, and 40 μg/ft² for walking surfaces, the Contractor will replace staged furniture and non-permanent fixtures. If the results exceed 200 μg/ft² for non-walking surfaces, and 40 μg/ft² for walking surfaces, the Contractor will repeat the post-replacement cleaning cycle.

G. The Commissioner shall verify that dismantlement activities, Work Area preparation and post-abatement cleaning have not damaged the Work Area.

H. The Contractor will repair, replace and/or repaint items listed by the Commissioner as damaged or lost as a result of dismantlement activities.

3.6 DISPOSAL PROCEDURES

A. All debris, plastic and components will be transported from the Work Area into a dumpster. The Contractor will coordinate delivery and placement of dumpsters.

B. Waste/debris will be disposed as construction debris.

C. Provide copy of waste manifest to the Homeowner, and the Commissioner.

3.7 CLEANING AND PROTECTION

A. The Contractor and his/her Subcontractors will protect all adjacent areas and keep the work area clean and free from debris. Upon completion of the work each day, remove all debris, unused materials and equipment, and leave all areas in a clean condition acceptable to the Commissioner.

END OF SECTION 02 83 33.13

SECTION 05 75 00 - DECORATIVE FORMED METAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Window and door metal trim cladding.
2. Covers for Heating, Ventilating, and Air Conditioning (HVAC) lines.
3. Exterior sheet metal acoustical baffle panels.

B. Related Requirements:

1. Section 06 20 13 “Exterior Finish Carpentry”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1. Include finishing materials.

B. Shop Drawings: Show fabrication and installation details for exterior sheet metal acoustical baffle panels.

1. Include plans, elevations, component details, and attachments to other work.
2. Indicate materials and profiles of each formed metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.
3. For each size and mounting condition indicated.

C. Samples for Initial Selection: For products involving selection of color, texture, or design, including mechanical finishes.

1. Colors: Manufacturers standard colors for window and door metal trim cladding in white, beige, brown, and black colors.

D. Samples for Verification: For each type of exposed finish required, prepared on 6 inch square samples of metal of same thickness and material indicated for the Work.

1. Colors as selected to match white, beige, brown, and black window or door units.

E. Delegated-Design Submittal: For exterior sheet metal acoustical baffle panels to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Structural calculations and anchorage details for the largest baffle size utilized in the Project.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: For decorative formed metal elements that house items specified in other Sections. Show dimensions of housed items, including locations of housing penetrations and attachments, and necessary clearances.

B. Qualification Data: For qualified fabricator and professional engineer.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing decorative formed metal similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockups for the following types of decorative formed metal:

a) Exterior sheet metal trim and cladding as part of the installation of windows.
b) Exterior sheet metal acoustical baffle panel.

2. Approved mockups may become part of the completed Work as directed by the Commissioner.

C. Pre-installation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver decorative formed metal products wrapped in protective coverings and strapped together in suitable packs or in heavy-duty cartons. Remove protective coverings before they stain or bond to finished surfaces.

B. Store products on elevated platforms in a dry location.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls, openings, and other construction contiguous with decorative formed metal by field measurements before fabrication and indicate measurements on Shop Drawings.

1.9 COORDINATION

A. Coordinate installation of anchorages for decorative formed metal items. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Coordinate installation of decorative formed metal with adjacent construction to ensure that wall assemblies, flashings, trim, and joint sealants, are protected against damage from the effects of weather, age, corrosion, and other causes.

PART 2 - PRODUCTS

2.1 SHEET METAL

A. General: Provide sheet metal without pitting, seam marks, roller marks, stains, discolorations, or other imperfections where exposed to view on finished units.

B. Aluminum Sheet: Flat sheet complying with ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of Alloy 5005-H32.

C. Galvanized-Steel Sheet: ASTM A 653/A 653M, G90 coating, either commercial steel or forming steel.

D. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, stretcher-leveled standard of flatness.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design exterior decorative formed metal items, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance: Decorative formed metal items, including anchors and connections, will withstand the effects of gravity loads and the following loads and stresses without exceeding the allowable design working stress of materials involved and without exhibiting permanent deformation in any components:

1. Wind Loads on exterior items: 30 lbf/sq. ft.
2. Live Loads on exterior sheet metal acoustical baffle panels: 100 lbf/sq. ft. or a concentrated load of 300 lbf on an area of 4 sq. in., whichever produces the greater stress.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 degrees F, ambient; 180 degrees F, material surfaces.

D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

2.3 MISCELLANEOUS MATERIALS

A. Gaskets: As required to seal joints in decorative formed metal and remain weathertight; as recommended in writing by decorative formed metal fabricator.

1. Closed-cell polyurethane foam, adhesive on two sides, release paper protected.

B. Sealants, Exterior: ASTM C 920; elastomeric silicone sealant; Type S, Grade NS, Class 50, as required to seal joints in decorative formed metal and remain weathertight; or as recommended in writing by decorative formed metal fabricator.

C. Filler Metal and Electrodes: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded or brazed and as necessary for strength, corrosion resistance, and compatibility in fabricated items.

1. Use filler metals that will match the color of metal being joined and will not cause discoloration.

D. Fasteners: Fabricated from same basic metal and alloy as fastened metal unless otherwise indicated. Do not use metals that are incompatible with materials joined.

1. Provide concealed fasteners for interconnecting decorative formed metal items and for attaching them to other work unless exposed fasteners are unavoidable or are the indicated fastening method.
2. Provide tamper-resistant flat-head machine screws for exposed fasteners, unless otherwise indicated.

E. Fasteners for metal trim cladding: Prefinished aluminum nails matching metal trim cladding where face fastening is required.

1. Galvanized narrow crown staples with painted crowns may be used for attachment of metal trim cladding.
2. Countersink nails and fill surface where face nailing is unavoidable.

F. Structural Anchors: For applications indicated to comply with certain design loads, provide torque-controlled expansion anchors with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

G. Nonstructural Anchors: For applications not indicated to comply with design loads, provide metal expansion sleeve anchors of type, size, and material necessary for type of load and installation indicated, as recommended by fabricator, unless otherwise indicated.

H. Anchor Materials:

1. Material for exterior locations and where stainless steel is indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.4 FABRICATION, GENERAL

A. Shop Assembly: Preassemble decorative formed metal items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Coordinate dimensions and attachment methods of decorative formed metal items with those of adjoining construction to produce integrated assemblies with closely fitting joints and with edges and surfaces aligned, unless otherwise indicated.

C. Form metal to profiles indicated, in maximum lengths to minimize joints. Produce flat, flush surfaces without cracking or grain separation at bends. Fold back exposed edges of unsupported sheet metal to form a 1/2-inch wide hem on the concealed side, or ease edges to a radius of approximately 1/32-inch and support with concealed stiffeners.

D. Increase metal thickness or reinforce with concealed stiffeners, backing materials, or both, as needed to provide surface flatness equivalent to stretcher-leveled standard of flatness and sufficient strength for indicated use.

1. Support joints with concealed stiffeners as needed to hold exposed faces of adjoining sheets in flush alignment.

E. Build in straps, plates, and brackets as needed to support and anchor fabricated items to adjoining construction. Reinforce decorative formed metal items as needed to attach and support other construction.

F. Provide support framing, mounting and attachment clips, splice sleeves, fasteners, and accessories needed to install decorative formed metal items.

G. Where welding or brazing is indicated, weld or braze joints and seams continuously. Grind, fill, and dress to produce smooth, flush, exposed surfaces in which joints are not visible after finishing is completed.

1. Use welding and brazing procedures that will blend with and not cause discoloration of metal being joined.

2.5 WINDOW AND DOOR METAL TRIM CLADDING

A. Form window and door metal trim cladding from metal of type and thickness indicated below. Fabricate to fit tightly to adjoining construction.

1. Aluminum Sheet: 0.019-inch.

a) Finish: Baked enamel or powder coat.

B. Aluminum sheet formed and bent to conform to exterior wood trim at window and door locations indicated. Corners to be folded over, sealed, and made watertight.

C. Color: Match window color or storm sash color as selected by Homeowner.

1. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5-mil.

2.6 COVERS FOR HVAC LINES

A. Form covers for HVAC lines from metal of type and thickness indicated below. Coordinate size of covers, location of cutouts for piping, and method of attachment to adjoining construction. Fabricate to fit tightly to adjoining construction.

1. Aluminum Sheet: 0.019-inch.

    a. Finish: Baked enamel or powder coat siliconized polyester in color as selected.

2. Fabricate from prefinished metal sheet.

B. Conceal fasteners where possible; otherwise, locate where they are as inconspicuous as possible. Size fasteners to support closures and trim, with fasteners spaced to prevent buckling or waviness in finished surfaces.

C. Drill and tap holes needed for securing closures and trim to other surfaces.

D. Miter or cope trim members at corners and reinforce with bent metal splice plates to form tight joints.

2.7 EXTERIOR SHEET METAL ACOUSTICAL BAFFLE PANEL

A. Fabricate heating-cooling unit enclosures from metal of type and thickness indicated below:

1. Stainless-Steel Sheet: 0.050-inch or as indicated.

    a) Finish: No. 4 or as indicated.

B. Weld seams and connections unless otherwise indicated or unless other methods are necessary for access to heating and cooling equipment.

C. Incorporate stiffeners or laminated backing using noncombustible materials as needed for strength and rigidity.

D. Provide louvers, grilles, and perforated panels of size, type, and materials indicated.

1. Fabricate removable components to precise tolerances to produce well-fitted assemblies free of warp or rattle.

E. Coordinate construction, configuration, and dimensions of enclosures with those of heating-cooling units.

2.8 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Complete mechanical finishes of flat sheet metal surfaces before fabrication where possible. After fabrication, finish all joints, bends, abrasions, and other surface blemishes to match sheet finish.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

D. Apply organic finishes to formed metal after fabrication, unless otherwise indicated.

E. Appearance of Finished Work: Noticeable variations in the same or adjacent pieces are not acceptable.

2.9 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Color and Gloss: Match Architect's sample for white, beige, brown, and black colors.

2.10 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

1. Run grain of directional finishes with long dimension of each piece.

C. Directional Satin Finish: No. 4.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative formed metal.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Locate and place decorative formed metal items level and plumb and in alignment with adjacent construction. Perform cutting, drilling, and fitting required to install decorative formed metal.

1. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where needed to protect metal surfaces and to make a weather-tight connection.

C. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers as indicated.

D. Install concealed gaskets, joint fillers, insulation, sealants, and flashings, as the Work progresses, to make exterior decorative formed metal items weather-proof.

E. Corrosion Protection: Apply bituminous paint or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate materials that are incompatible or could result in corrosion or deterioration of either material or finish.

3.3 ADJUSTING AND CLEANING

A. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum 2.0 mil dry film thickness.

C. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units.

3.4 PROTECTION

A. Protect finishes of decorative formed metal items from damage during construction period. Remove temporary protective coverings at time of Substantial Completion.

END OF SECTION 05 75 00

SECTION 06 10 53 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Wood blocking and nailers.
3. Wood furring.
4. Plywood backing panels.
5. Plywood construction panels.
6. Flexible flashing installation at window and door openings.
7. Carpentry work not specified elsewhere and not exposed to view.

B. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 02 83 13 “Lead Hazard Control Activities”.
3. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
4. Section 06 20 13 “Exterior Finish Carpentry”.
5. Section 06 20 23 “Interior Finish Carpentry”.

1.3 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. ALSC: American Lumber Standard Committee.
2. APA: APA - The Engineered Wood Association.
3. AWPA: American Wood Protection Association.
4. DOC: Department of Commerce.
5. NeLMA: Northeastern Lumber Manufacturers’ Association.
6. NLGA: National Lumber Grades Authority.
7. SPIB: The Southern Pine Inspection Bureau.
8. WCLIB: West Coast Lumber Inspection Bureau.
9. WWPA: Western Wood Products Association.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Field-verify existing conditions and dimensions prior to submittal.

B. Product Data: For each type of process and product to be installed in the project.

1. Lumber data, indicating species and grade.
2. Submit chemical treatment manufacturer’s instructions for handling, storing, installation, and finishing of treated material.
3. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
4. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

B. Source Limitations:

1. Within each Home or multi-unit building provide fire-retardant-treated wood products from single source.
2. Within each Home or multi-unit building provide preservative-treated wood products from single source.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Protect against contact with damp or wet surfaces. Provide for air circulation around stacks and under coverings.

1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC Product Standard (PS) 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Grade and trademarks will not be required if each shipment is accompanied by certificate of inspection issued by respective inspection agencies.
3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
4. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.
2. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
3. Wood framing members that are less than 18 inches above the ground in basements, crawl spaces or unexcavated areas.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.

2. Interior Type A: Treated materials will have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity.
3. Design Value Adjustment Factors: Treated lumber will be tested according ASTM D 5664, and design value adjustment factors will be calculated according to ASTM D 6841.

C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

E. Application: Where indicated.

2.4 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions and Non-structural Framing: Construction or No. 2 grade of any species.

B. Structural Framing: Construction or No. 2 grade and the following species:

1. Southern pine; SPIB.
2. Douglas fir-larch; WCLIB or WWPA.

C. For structural light framing, 2 to 4 inches thick, 2 to 4 inches wide: No. 2 grade and any species.

2.5 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber of any species.

B. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.
2. Hem-fir or hem-fir (north), Standard or No. 3 Common grade; NLGA, WCLIB, or WWPA.
3. Eastern softwoods, No. 2 Common grade; NeLMA.
4. Northern species, No. 2 Common grade; NLGA.

C. For blocking not used for attachment of other construction, provide lumber with 19 percent maximum moisture content and any of the following species and grades:

1. Hem-fir or hem-fir (north), Utility grade or better.

D. For blocking not used for attachment of other construction, select and cut lumber to eliminate defects that will interfere with its attachment and purpose. Exterior grade plywood of similar grade may be substituted for use where a thickness less than 3/4-inch is necessary. Minimum plywood thickness for this use is 1/4-inch. Match thickness of opening where possible for snug fit, allow clearance for insulation if so detailed.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

F. For furring where shown or required, provide Construction grade lumber.

G. For furring strips used for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling. Furring will be 1 inch by 3 inch Douglas Fir, Spruce, Hemlock, or Pine, utility grade.

2.6 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

1. Plywood will comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers".

2.7 CONSTRUCTION PANELS, GENERAL

A. Construction Panel Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood construction panels and for products not manufactured under PS 1 provisions, with APA Performance Rated Panels (PRP)-108.

B. Trademark: Furnish construction panels that are each factory-marked with APA trademark evidencing compliance with grade requirements.

2.8 CONCEALED PERFORMANCE-RATED CONSTRUCTION PANELS

A. General: Where construction panels are indicated for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements designated under each application for grade designation, span rating, exposure durability classification and thickness.

1. Sub-flooring (infill): APA RATED SHEATHING.
    1. Exposure Durability Classification: EXTERIOR.
    2. Exposure Durability Classification: EXPOSURE 1.
    3. Span Rating: As required to suit existing joists spacing or detailed application.
    4. Thickness: As required to match existing floor elevation or as indicated on the Drawings.
2. Wall Sheathing (infill): APA RATED SHEATHING.
    1. Exposure Durability Classification: EXTERIOR.
    2. Exposure Durability Classification: EXPOSURE 1.
    3. Span Rating: As required to suit existing stud spacing or as indicated on the Drawings.
    4. Thickness: As required to match existing adjacent sheathing thickness or as indicated.

2.9 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or of Type 304 stainless steel.

B. Joist hangers, cross bridging, framing anchors, header hangers, post straps, and other miscellaneous connectors and supports: Fabricated from 16 or 18 gauge galvanized steel and as manufactured by Heckman, Silver Metal Products, Teco, or Simpson.

C. Nails, Brads, and Staples: ASTM F 1667.

D. Power-Driven Fasteners: National Evaluation Services National Evaluation Report (NES NER)-272.

E. Wood Screws: ASME B18.6.1.

F. Lag Bolts: ASME B18.2.1.

G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six (6) times the load imposed when installed in unit masonry assemblies and equal to four (4) times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.10 MISCELLANEOUS MATERIALS

A. Low-Expansion Spray Polyurethane Foam Insulation/Sealant: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84 for use in filling the void space of abandoned counterweight pockets of double-hung windows and filling voids between window frame and surrounding rough opening. Subject to compliance with requirements, provide one of the following products:

1. DAP: No Warp Window and Door Sealant.
2. DOW: Great Stuff Window and Door Spray Foam Insulation.
3. DuPont: Great Stuff Window and Door Insulating Sealant.
4. OSI (Henkel Corporation): QUAD Foam Window & Door Foam
5. Premier Building Solutions: XtraFoam Minimal Expanding Foam Sealant.
6. Touch’n Foam: Window & Door Polyurethane Foam Sealant.

B. Adhesives for Gluing to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

1. Adhesives will have a Volatile Organic Compound (VOC) content of 70 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).

C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025-inch.

1. Products: Subject to compliance with requirements, provide one of the following:
    1. DuPont (E. I. du Pont de Nemours and Company); DuPont Flashing Tape.
    2. Raven Industries Inc.; Fortress Flashshield.
    3. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Vycor Plus Self-Adhered Flashing ,Vycor V40 Self-Adhered Flashing.
    4. MFM Building Products Corp.; Window Wrap, FutureFlash.
    5. Polyguard Products, Inc.; Polyguard JT-30 Tape.

D. Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for substrate.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with American Forest & Paper Association (AF&PA) Wood Construction Data (WCD) 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

D. Remove rough framing and sheathing found to be rotted or inadequate and replace with new to match existing construction, framing, and code requirements. Do not partially replace wood member; replace entire length.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches on-center.

G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities, as indicated.

H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items that are not continuously protected from liquid water.

I. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

J. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
3. Table R602.3 (1), "Fastener Schedule for Structural Members," and Table R602.3 (2), "Alternate Attachments," in ICC's International Residential Code for One and Two-Family Dwellings.
4. "Recommended Nailing Schedule" of referenced framing standard and with NFPA "National Design Specifications for Wood Construction".
5. Recommended nailing schedule of the building code having jurisdiction.

K. Do not use power driven fasteners for attaching door thresholds or any attachment into stone products.

L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

A. Install where indicated and where required for support or attaching of other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 WOOD FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

3.4 STUD INFILL FRAMING

A. General: Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel. Install single bottom plates and double top plate using 2 inch thick members whose widths equal that of studs. Single top plate may be used for non-load-bearing partitions. Nail or anchor plates to supporting construction.

1. For exterior walls, install 2 inch studs matching existing stud width, spaced 16 inches on-center (o.c.).
2. At new framing for interior wall modifications, install a single bottom plate and a single top plate using 2 inch thick studs matching existing stud width, and spaced 16 inches o.c.

B. Frame new openings with multiple studs and headers. Install nailed header members of thickness equal to width of studs. Set headers on edge and support on jack studs.

1. Install new headers at door and window openings where indicated, and wall access panels of size indicated on Drawings.

C. Where framing is not detailed, provide 2 inches by depth required, spaced 16 inches o.c. Secure with specified fasteners or special connections where required or indicated.

3.5 CEILING JOIST FRAMING

A. Ceiling Joists: Install ceiling joists with crown up. Face nail to ends of parallel rafters.

1. Install new headers at ceiling access panels where indicated to be altered.

B. Where required for secure and level installation of new gypsum board ceiling where indicated, provide new ceiling joists and/or furring, spaced 16 inches o.c. maximum.

3.6 EXISTING WINDOW AND DOOR OPENINGS

A. Fill all voids greater than 1/2-inch in width between new window and door units and existing rough openings with solid wood blocking. Cut back existing sheathing as necessary to expose voids. Install new sheathing flush with existing, as required.

B. Where an existing window frame is being removed for installation of a new window, a new window frame of the same size (except enlarged rough openings) and thickness will be installed in the existing rough opening before installation of the new window.

C. Where existing window sills are removed, new wood sills will be provided and field milled, prime painted and fit and to match existing sills in all aspects. Prime paint cut surfaces.

D. Install new rough framing where window opening will be enlarged to meet egress requirements.

E. Do not piece in new framing, sills, or headers; replace in full length components.

F. Abandoned counterweight pockets of double-hung windows are to be filled fully by one of the following methods:

1. Fill the cavity with solid wood blocking and supplemented with fiberglass batt insulation to fill any remaining gaps and voids.
2. Fill the cavity with solid wood blocking and supplemented with spray foam insulation to fill any remaining gaps and voids.
3. Fill the cavity fully with spray foam insulation.

3.7 CONSTRUCTION PANEL INSTALLATION

A. General: Comply with applicable recommendations contained in Form No. E30, "APA Design/Construction Guide – Residential & Commercial" for types of construction panels and applications indicated.

3.8 FLEXIBLE FLASHING INSTALLATION AT OPENINGS

A. Apply flexible flashing where indicated. Comply with manufacturer's written instructions.

1. Apply approved primer to substrates as recommended by manufacturer.
2. Install sill flashing at sliding glass door openings and window openings where the entire existing window unit, sash and frame, are removed. Extend up jambs at least 4 inches.
3. Lap flashings over existing flashing or building paper/wrap at bottom and sides of openings. Lap seams and junctures with other materials at least 4 inches.
4. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

3.9 PROTECTION

A. Protect miscellaneous rough carpentry from weather.

END OF SECTION 06 10 53

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SECTION 06 20 13 - EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Exterior wood trim.
2. Replacement and repair of existing exterior trim.
3. Exterior thresholds and threshold extensions.
4. Removal and replacement of wood window sills.
5. Exterior fences used for AC condenser screening.

B. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 02 83 13 “Lead Hazard Control Activities”.
3. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
4. Section 05 75 00 “Decorative Formed Metal”.
5. Section 06 10 53 “Miscellaneous Rough Carpentry”.
6. Section 06 20 23 “Interior Finish Carpentry”.
7. Section 08 14 16 “Flush Wood Doors”.
8. Section 08 16 13 “Fiberglass Doors”.
9. Section 08 53 13 “Vinyl Windows”.
10. Section 07 92 00 “Joint Sealants”.
11. Section 09 91 13 “Exterior Painting”.
12. Section 32 13 13 “Concrete Paving”.

1.3 DEFINITIONS

A. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. ALSC: American Lumber Standard Committee.
2. AWI: American Woodwork Institute.
3. AWPA: American Wood Protection Association.
4. DOC: Department of Commerce.
5. NeLMA: Northeastern Lumber Manufacturers’ Association.
6. NHLA: National Hardwood Lumber Association.
7. NLGA: National Lumber Grades Authority.
8. SPIB: The Southern Pine Inspection Bureau.
9. WCLIB: West Coast Lumber Inspection Bureau.

10. WWPA: Western Wood Products Association.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Samples: For each type of finish product where exposed to view. Indicate-materials, dimensions, profiles, textures, and colors.

1. Wood: For each species, grade and cut of lumber and panel products, 24 inches long for lumber and 12 inches square for panels.
2. Fence Paint and Stain Finishes: For each specified color applied to 12 inch long section of fence picket material.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Arrange for installation of architectural woodwork by a firm that can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this Project.

B. Quality Standard: Unless otherwise indicated, comply with the “Architectural Woodwork Standards” for grades of exterior woodwork indicated for construction, finishes, installation, and other requirements.

C. Mock-ups:

1. Mock-ups shall be provided for each type of treatment including, but not limited to; exterior window and door trim as part of the installation of windows and doors, new bow or bay roof, and infill of existing window weight pockets.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Protect against contact with damp or wet surfaces. Provide for air circulation around stacks and under coverings.

1.9 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain,

snow, or dampness. Install in compliance with manufacturer's recommendations and when substrate is completely dry.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 EXTERIOR TRIM

A. Quality Standard: Comply with requirements of Architectural Woodwork Institute (AWI) Section 300 "Standing and Running Trim" for Premium Grade.

B. Lumber Trim for Transparent or Opaque Finish: Solid Lumber stock.

1. Species and Grade: Eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods Soft Pine or Better (opaque finish); D Select (Quality) NeLMA, NLGA, WCLIB, or WWPA or SPIB.
2. Species and Grade: Softwood matching existing – (transparent finish); Match existing grade NeLMA.
3. Texture: Surfaced (smooth).
4. Maximum Moisture Content: 19 percent.
5. Finger Jointing: Not allowed.
6. Face Surface: Surfaced (smooth).
7. Factory Priming: Factory coated on faces and edges with exterior primer compatible with topcoats specified.

2.2 EXTERIOR FENCES

A. Fence Posts and Brackets: Manufacturer's standard duty G90 galvanized (zinc) coated steel posts and accessory brackets as necessary for a complete installation of fence framing and finish boards. Provide products form one of the following:

1. Gregory Corporation: Standard C 1.875" x 1.625" x 0.121".
2. Master Halco: Postmaster

B. Fence Pickets and Trim

1. Species and Grade: Western red cedar, #3 and better grade, tight knotted siding.
2. Size and Style: 1x4 dog-eared shadow style.
3. Texture: Rough-sawn.
4. Maximum Moisture Content: 19 percent.
5. Checks: Small surface.
6. Skips: very light on back.
7. Splits: Not allowed.
8. Torn Grain: Light.
9. Warp: Use only material free of warp or very light warp.

10. Knots: Sound tight; star checking and/or slight chipping permitted.
11. Spike Knots: Use materials free of spike knots.
12. Finishes: Provide field applied painted opaque or stained finish, as scheduled.

    a. Stained Finishes: Selections for each color shall match the PPG Timeless Solid Color Stain designation listed below.
        1) Cedar Tone: Cedar TSC-2.
        2) Red Tone: Navajo Red TSC-4.
        3) Brown Tone: Chestnut Brown TSC-3.
        4) Gray Tone: Heritage Gray TSC-44.
        5) White: White TSC-53.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners for exterior finish carpentry: Provide stainless steel, non-corrosive aluminum or hot-dip galvanized nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.

1. For applications not otherwise indicated, provide stainless-steel, hot-dip galvanized-steel or aluminum fasteners.

B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.

C. Sealants: Comply with requirements of Section 07 92 00 “Joint Sealants” for materials required for sealing trim work.

2.4 FABRICATION

A. Back out or kerf backs of standing and running trim wider than 5 inches, except members with ends exposed in finished work.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Field measure prior to fabrication to verify size and style of all doors, windows, frames and trim.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Prime lumber and moldings to be covered with metal trim cladding, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 09 91 13 “Exterior Painting”.

3.3 INSTALLATION

A. Quality Standard: Comply with requirements of AWI Section 1700 “Installation of Woodwork” for “Premium Grade”.

B. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.
2. Replace rotted wood substrates and blocking where encountered.

C. Replace existing wood trim that is rotted, damaged, unsound, or unusable. Do not partially replace component; replace entire length.

D. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Install to tolerance of 1/8-inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
3. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

E. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.

F. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.4 EXTERIOR TRIM INSTALLATION

A. Install new primed and clad trim as follows, unless indicated otherwise:

1. Window replacement from the interior: Provide new exterior trim over gaps 3/16-inch or greater where the new window frame meets the exterior trim or casing. Seal gaps before installing new exterior trim. Remove existing cladding and clad all components together. Prime all exposed wood on existing and new trim or use pre-primed materials before installing new metal trim cladding.
2. Window replacement from the exterior: Remove existing exterior trim as required and replace with new metal trim cladding. Replace deteriorated wood trim with new primed trim before installing new metal trim cladding. Do not piece in new trim; replace in full length components.
3. Door and Frame Replacement: Replace existing exterior door trim with new primed and clad trim to match existing profile and dimension.

B. Replace existing wood door sills with new pressure treated sills. Do not install metal trim cladding.

1. Wood sill widths will be sufficient to accommodate both the prime door and the storm door. New sill will extend beyond the exterior casing. Provide new wood apron when required.
2. Provide continuous sealant bed for a weather-tight installation.

3.5 METAL TRIM CLADDING INSTALLATION

A. Install window and door metal trim cladding at openings to receive new windows and doors and openings not receiving new windows that are within line of sight of new windows.

B. Clad exterior wood trim with metal trim cladding. Do not install new metal trim cladding over existing metal or vinyl cladding. Install as follows:

1. Prime paint trim on all surfaces and ends before installation of cladding.
2. Clad entire exterior window trim, including existing wood trim to remain.
3. Do not install metal trim cladding over steel, stone or brick lintels.

C. Fasten metal trim cladding securely with aluminum fasteners that match color of cladding. Do not face nail unless unavoidable. Ensure that cladding is securely fastened to substrate.

D. Seal metal trim cladding at edges, corners, and intersections.

E. Replace cladding that is damaged or dented upon installation.

3.6 ADJUSTING, CLEANING, AND PROTECTION

A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

B. Clean exterior finish carpentry on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

C. Protect installed products from damage from weather and other causes during construction.

D. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

END OF SECTION 06 20 13

SECTION 06 20 23 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Interior trim, including but not limited to moldings, baseboards, chair rails, sills and window/door casings, including head, jamb, and sill extenders.
2. Interior window frames and sash for basement and secondary glazing units.
3. Removal, adjustment, and reinstallation or replacement of existing wood veneer and solid wood paneling, casework, shelving, closet shelving and rods, and other millwork.
4. Wall access panels.
5. Interior Fixed Baffle Box AC Covers.
6. Interior Removable Baffle Box AC Covers.
7. Interior Field Assembled Skylight Storm Window.

B. Related Requirements:

1. Section 01 73 00 “Execution.”
2. Section 01 81 13 “Sustainable Design Requirements”
3. Section 06 10 53 “Miscellaneous Rough Carpentry.”
4. Section 06 20 13 “Exterior Finish Carpentry.”
5. Section 07 92 00 “Joint Sealants.”
6. Section 08 14 16 “Flush Wood Doors.”
7. Section 08 16 13 “Fiberglass Doors.”
8. Section 08 53 13 “Vinyl Windows.”

1.3 DEFINITIONS

A. MDF: Medium-density fiberboard.

B. MDO: Plywood with a medium-density overlay on the face.

C. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. ALSC: American Lumber Standard Committee.
2. AWPA: American Wood Protection Association.
3. DOC: Department of Commerce.
4. MMPA: Moulding and Millwork Producers Association.
5. NeLMA: Northeastern Lumber Manufacturers’ Association.
6. NHLA: National Hardwood Lumber Association.
7. NLGA: National Lumber Grades Authority.
8. SPIB: The Southern Pine Inspection Bureau.
9. WCLIB: West Coast Lumber Inspection Bureau.

10. WWPA: Western Wood Products Association.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each manufactured item used in mockups.

B. Shop Drawings: Detailing of interior baffle box AC cover. Include details of wood frame, acoustical panels, clearances, and details of attachments and acoustical seals.

C. Samples for Verification:

1. Provide samples a minimum of 6 inches in length, for each type of interior molding, including cove and crown moldings.

D. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. A Complete Wall Access Panel: Pre-assembled and finished, to be used after acceptance for comparative purposes to those installed in the field. The panel is to be from one of the last houses scheduled to be sound insulated. It will be removed from the Central Field Office and installed in its designated home per the schedule. Retain first subparagraph below and indicate on Drawings portion of paneling represented by mockup or draw mockup as separate element; otherwise, insert a description of the items to be mocked up.
2. Wall Access Panel.
3. Interior Fixed Baffle Box AC Cover.
4. Interior Removeable Baffle Box AC Cover.
5. Interior Field Assembled Skylight Storm Window.
6. Subject to compliance with requirements, approved mockups may become part of the completed Work.

1.6 INFORMATIONAL SUBMITTALS

A. Safety Data Sheet (SDS): Submit a SDS (formerly known as MSDS) for each product to be incorporated into the Work. Include VOC content and emissions data to demonstrate compliance with PART 2 – PRODUCTS of this Section and requirements for low-emitting materials specified in Section 01 81 13 “Sustainable Design Requirements.”

B. Wood materials certificates indicating compliance with sustainable design requirements.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm experienced in successfully producing architectural woodwork similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.

B. Installer Qualifications: Arrange for installation of architectural woodwork by a firm that can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this Project.

C. Quality Standard: Unless otherwise indicated, comply with AWI "Architectural Woodwork Standards" for grades of interior woodwork indicated for construction, finishes, installation, and other requirements.

D. Mockups:

1. Mockups shall be provided for each type of treatment including, but not limited to; interior window and door trim as part of the installation of windows and doors.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Protect against contact with damp or wet surfaces. Provide for air circulation around stacks and under coverings.

B. Deliver interior finish carpentry materials only when environmental conditions meet requirements specified for installation areas. If interior finish carpentry materials will be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.9 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet work in space is completed and nominally dry, and Heating, Ventilation and Air Conditioning (HVAC) system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. General: Provide materials that comply with "Premium Grade" requirements of the AWI woodworking standard for each type of woodwork.

B. Not less than 50 percent (by cost) of wood-based materials will be produced from wood obtained from forests certified by a Forest Stewardship Council (FSC) accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

1. Wood-based materials include, but are not limited to, the following material categories when made from wood, engineered wood products, or wood-based panel products:

a. Rough carpentry.
b. Miscellaneous carpentry.
c. Finish carpentry.
d. Architectural woodwork.

C. Lumber: DOC Product Standard (PS) 20 and the following grading rules:

1. NeLMA: "Standard Grading Rules for Northeastern Lumber."
2. NHLA: "Rules for the Measurement and Inspection of Hardwood and Cypress."
3. NLGA: "Standard Grading Rules for Canadian Lumber."
4. SPIB: "Standard Grading Rules for Southern Pine Lumber."

D. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

E. Hardwood Veneer Plywood: Hardwood plywood panels complying with HPVA HP-1, made without urea-formaldehyde adhesive.

1. Face Veneer Species and Cut: Rotary-cut white birch and plain-sliced red oak.
2. Veneer Matching: Random match.
3. Backing Veneer Species: Same species as face veneer.
4. Construction: Lumber core.
5. Thickness: 3/4-inch.
6. Glue Bond: Type II (interior).

F. Softwood Plywood: DOC PS 1.

G. Hardboard: American Hardboard Association (AHA) A135.4.

H. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

I. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea-formaldehyde resin.

J. VOC Emissions Requirements: All products shall comply with VOC emissions limits for Target CREL VOCs and their maximum allowable concentrations when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2, 2017." Results shall be in accordance with Section 4 of the referenced standard.

2.2 INTERIOR TRIM

A. Provide materials that comply with requirements of referenced quality standard for each type of ornamental woodwork and quality grade specified, unless otherwise indicated.

1. AWI Section 300 "Standing and Running Trim" for "Premium Grade."

B. Softwood Lumber Trim for Transparent Finish:

1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3 inches wide.
2. Species and Grade: Unless otherwise indicated, soft pine or better.
3. Maximum Moisture Content: 19 percent.
4. Finger Jointing: Not allowed.
5. Face Surface: Surfaced (smooth).

C. Hardwood Lumber Trim for Transparent Finish:

1. Species and Grade: Unless otherwise indicated, red oak.
2. Maximum Moisture Content: 13 percent.
3. Finger Jointing: Not allowed.
4. Gluing for Width: Use for lumber trim wider than 6 inches.
5. Veneered Material: Not allowed.
6. Face Surface: Surfaced (smooth).

7. Matching: Selected for compatible grain and color.

D. Lumber Trim for Opaque Finish:

1. Species and Grade: Birch or yellow poplar; A Finish; NHLA.
2. Maximum Moisture Content: 15 percent.
3. Finger Jointing: Not allowed.
4. Face Surface: Surfaced (smooth).

E. Softwood Moldings for Transparent Finish: MMPA Wood Moulding (WM) 4, N-grade wood moldings. Made to patterns included in MMPA WM 12.

1. Species: Unless otherwise indicated, soft pine or better.
2. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
3. Finger Jointing: Not allowed.
4. Matching: Selected for compatible grain and color.
5. Base Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles.
6. Shoe-Mold Pattern: Match existing shoe molding.
7. Door and Window Casing Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles, minimum 2-1/2 inches wide.
8. Stool and Apron Pattern: Match existing.

F. Hardwood Moldings for Transparent Finish: MMPA Hardwood Moldings (HWM) 2, N-grade wood moldings made to patterns included in MMPA HWM 1.

1. Species: Unless otherwise indicated, red oak.
2. Species: Match existing with like species when replacing components that have been damaged.
   a. Matching: Selected for compatible grain and color.
3. Maximum Moisture Content: 9 percent.
4. Finger Jointing: Not allowed.
5. Base Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles.
6. Shoe-Mold Pattern: Match existing shoe molding.
7. Door and Window Casing Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles, minimum 2-1/2 inches wide.
8. Stool and Apron Pattern: Match existing.

G. Moldings for Opaque Finish: Made to patterns included in MMPA WM 12.

1. Softwood Moldings: MMPA WM 4, P grade.
   a. Species: Soft Pine or Better.
   b. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.
2. Hardwood Moldings: MMPA HWM 2, P-grade.
   a. Species: Aspen, basswood, cottonwood, gum, magnolia, soft maple, tupelo, or yellow poplar.
   b. Maximum Moisture Content: 9 percent.
3. Finger Jointing: Not allowed.
4. Base Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles.
5. Shoe-Mold Pattern: Match existing shoe molding.
6. Door and Window Casing Pattern: Unless otherwise indicated, “Colonial” and “Ranch” profiles, minimum 2-1/2 inches wide.
7. Stool and Apron Pattern: Match existing.

H. Plastic Simulated Wood Trim: Vinyl or closed cell PVC trims and boards for applications/installations within wet areas, such as bathroom showers and bathtubs.

1. Manufacturers:

   a. AIC Millworks.
   b. Royal Building Products: Royal-Mouldings.
   c. Versatex.

2. Match existing profiles to the greatest extent possible.
3. Provide moldings and trims for the following:

   a. Window Casing: Unless otherwise indicated, “Colonial” and “Ranch” profiles, minimum 2-1/4 inches wide.
   b. Sill/Stool Board: Nominal ¾” thickness x depth to match existing.
   c. Trim Stop: Nominal 3/8” x 3/4" with radius edge.

4. Finish: Prefinished white.

   a. Nail holes shall be caulked flush with trim surface in color to match trim.
   b. Field paint to match beige or brown window finish where scheduled.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners for interior finish carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

1. Countersink nails, fill surface flush, and sand where face nailing is unavoidable.
2. Where finish carpentry materials are exposed in areas of high humidity, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A 153.

B. Adhesives: Comply with manufacturer’s recommendations for adhesives applied to trim in such a manner as to avoid any connection of walls and ceilings where new trim is being applied over new wall modification and/or ceiling modification. Apply adhesives to wall only.

1. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

   a. Wood glue will have a Volatile Organic Compound (VOC) content of 30 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2. Paneling Adhesive: Comply with paneling manufacturer's written recommendations.

   a. Adhesive will have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.

   a. Adhesive will have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.4 FABRICATION

A. Back out or kerf backs of the following members except those with ends exposed in finished work:

1. Interior standing and running trim except shoe and crown molds.

B. Unless otherwise indicated, ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

C. Wood Moisture Content: Comply with requirements of specified inspection agencies and manufacturer's recommendations for moisture content of finish carpentry in relation to relative humidity conditions existing during time of fabrication and in installation areas. Provide finish carpentry with moisture content that is compatible with AWI Section 1700.

D. Fabricate finish carpentry to dimensions, profiles and details indicated.

2.5 WALL ACCESS PANELS

A. Shop, fabricate and finish to match existing trim.

B. Construction:

1. Panel: 3/4-inch hardwood plywood panel.
2. Frame: Rabbeted edges, 1-1/4 inch wide with 1/2-inch kerfed stop at the entire perimeter. Minimum size is 22 inches x 30 inches unless otherwise directed.
3. Hinges: Concealed Euro-Hinge and baseplate.
4. Gasket: Perimeter gasket will be Schlegel Q-Lon weather-strip or Draft Seal Kerf-Inserted weather-strip.
5. Pull: BP813wd Amerock Hardwood Knob or Rockler Woodworking Classic Wood Knob.
6. Catch: Magnetic by Amerock or EPCO.

C. Finish: Transparent or opaque finish as indicated. Use oak veneer plywood and oak trim for transparent finish and birch veneer plywood and pine trim for opaque finish.

2.6 INTERIOR FIXED BAFFLE BOX AC (AIR CONDITIONER) COVERS

A. Shop, fabricate and finished to match existing trim.

B. Construction:

1. Panel: 3/4-inch hardwood plywood panel.
2. Fixed Frames: Rabbeted edges. Sized to fit opening unless otherwise directed.
3. Opening Frames: Reinforced, mitered corners and eased edges. Sized to fit opening unless otherwise directed.
4. Magnetic Pressure Latch: Provide magnetic push-button-release type pressure latches as required to secure cover to frame; minimum four (4) per cover.
5. Hinges: Polished brass or brushed nickel continuous heavy-duty piano hinge. Hinge to open 180 degrees. Finish to be as selected by Homeowner.
6. Perimeter Gasket: Schlegel Q-Lon weather-strip or Draft Seal Kerf-Inserted weather-strip.
7. Insulation: Minimum 1 inch rigid insulation applied to back side of panel with contact cement. Finish edge of insulation as required to prevent fraying.
8. Safety Latch: Latching device will be low-profile security-type, cam lock action, die-cast polished brass or brushed nickel finish. Finish to be as selected by Homeowner.
9. Recessed Pull: Die-cast recessed pull with concealed fasteners, polished brass or brushed nickel finish as selected by the Homeowner.
10. Trim: 3/4-inch trim at all sides of enclosure, with mitered corners. "Colonial" or "Ranch" style trim to match existing.

C. Finish: Transparent or opaque finish as indicated. Use oak veneer plywood and oak trim for transparent finish and birch veneer plywood and pine trim for opaque finish.

2.7 INTERIOR REMOVABLE BAFFLE BOX AC (AIR CONDITIONER) COVERS

A. Shop fabricated five-sided, air conditioner removeable box cover composed primarily of solid wood stile and rail framed wood panel faces, backed with sound absorptive materials, cleat-mounted to wall or wood trim surround as occurs.

B. Construction:

1. Front, Side, Top, and Bottom Panel Faces: Solid lumber frame, reinforced mitered corners with eased edges, with 1/4" plywood inset panel.
2. Latches: Provide a double-hung window type cam lock action sash lock with keeper at each top, bottom, and side face to secure baffle box in place. Finish to either white, polished brass, or satin nickel as selected by Homeowner. Acceptable products include the following:
    a. Prime-Line:
        1) White: F 2618.
        2) Polished Brass: F 2527.
        3) Satin Nickel: F 2713.
    b. Truth Hardware:
        1) All Finishes: 17 Series Trimline Cam Lock or 9200 Series Sash Lock
3. Recessed Pull: Recessed flush cabinet pull, nominally 4” long x 1 1/2" high, in polished brass or brushed nickel finish as selected by the Homeowner. Provide pulls manufactured by Hafele: 151.12.606 Satin Nickel, 151.12.802 Polished Brass or Sugatsune: 3922038/SN Satin Nickel, 3922038/G Polished Brass, or an equivalent product from one of the following:
    a. Ives.
    b. Richelieu Hardware.
    c. Schwinn.
4. Mass Loaded Vinyl Barrier, secured to wood panel and trim with a quick-drying polyurethane construction adhesive: 1/8” thick sheet – 1 lb. per sq. ft. density. Provide one of the following products:
    a. Acoustical Solutions: Audioseal Sound Barrier.
    b. Acoustical Surfaces Inc.: Noise S.T.O.P.
    c. Acoustimac: Soundlock Mass Loaded Vinyl.
    d. Sound Proof Cow: Quiet Barrier MD.
    e. Sound Away: SoundAway MLV Barrier Roll.
5. Acoustical Cotton Sound Absorptive Blanket, secured with a quick-drying polyurethane adhesive to wood trim: 1” thickness. Provide one of the following:
    a. Acoustical Surfaces Inc.: Echo Eliminator Bonded Acoustical Cotton.
    b. Acoustimac: Eco-Core Insulation.
    c. Sound Proof Cow: Echo Absorber Acoustic Cotton.
    d. Sound Away: UltraLiner Sound Blanket.

C. Finish: Transparent or opaque finish as indicated. Use oak veneer plywood and oak trim for transparent finish and birch veneer plywood and poplar trim for opaque finish.

2.8 INTERIOR FIELD ASSEMBLED SKYLIGHT STORM WINDOW

A. Fabricate and finished free of visual distortions and defects.

B. Construction:

1. Perimeter Channel Frame with Bulb Seal: Steel prime painted housing and manufacturer's standard silicone, vinyl, or neoprene bulb seal. Miter corners with hairline joints and all gaps sealed with clear silicone sealant. Sized to fit opening. Contractor to pre-finish paint white. Subject to compliance with requirements, provide products by one of the following:

    a. Zero International; Model 770SP.
    b. National Guard Products, Inc.
    c. Pemko Manufacturing Co.;

2. Glazing Frame: Extruded or molded neoprene or rubber with a gap thickness of 3/16 inch. PVC materials are not allowed. Subject to compliance with requirements, provide products by one of the following:

    a. Zero International; Model 2070N.
    b. McMaster-Carr; Model EPDM Rubber Trim
    c. Tremco; Model C1013.

3. Lexan Polycarbonate Sheeting: Provide 3/16-inch lexan polycarbonate sheeting.
4. Perimeter sealant: Provide continuous sealant at interior perimeter of new interior skylight window. Sealant will conform to requirements of Section 07 92 00, "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Field measure prior to fabrication to verify size and style of all doors/windows, access panels, air conditioner openings, frames, and trim.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours.

3.3 INSTALLATION

A. Quality Standard: Comply with requirements of AWI Section 1700 "Installation of Woodwork" for "Premium Grade."

B. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, too small to fabricate with proper jointing arrangements, or with defective surfaces, sizes, or patterns.

1. Do not re-use or attach to existing rotted or inadequate substrate. Replace rotted or inadequate materials where encountered.

C. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment. Before making cutouts, drill pilot holes at corners.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
3. Install to tolerance of 1/8-inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
4. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

D. Distribute defects allowed in the quality grade specified to the best overall advantage when installing job assembled woodwork items.

E. Existing interior window trim will be replaced as follows:

1. If new windows are installed from the interior of the house, remove existing interior trim as necessary, and install new trim. New trim will be of sufficient width to cover all of the area previously covered by the existing trim.
2. If new windows are installed from the exterior of the house, install new interior trim where gaps of 1/16-inch or more exist between the new window frame and existing interior trim/casing. Caulk gaps before installing new interior molding.

F. If rough opening and window dimensions are altered to meet egress requirements, all interior and exterior trim components will be replaced at the affected window, and all interior trim components will be replaced at all other adjacent windows in the room where the affected window is located. Piecing in for rotted or deteriorated wood trim will not be allowed.

G. Interior Field assembled Skylight Storm Windows shall be installed level and plumb, without distortion, anchored securely in place to structure.

3.4 INTERIOR TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Install trim in single piece lengths unless greater than 12 feet long. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.

1. Match color and grain pattern of trim for transparent finish across joints.
2. Install trim after gypsum-board joint finishing operations are completed.
3. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes.
4. Rabbet new sill and head extensions into jamb extensions at window and doors.

B. Provide miscellaneous trim, matching existing profiles, as scheduled or as determined at time of Field Measurements. Trims include, but are not limited to, corner “hookstrap” moldings.

C. Install casings wider than 2-1/2 inches as scheduled or as required to cover existing paint lines.

D. Do not re-use existing trim unless directed otherwise; replace with new. Match existing trim details such as mitered corners, rosettes, etc. in each area of work.

E. At non-acoustically treated walls receiving new windows where the interior face of the new window frame is greater than 1/8-inch beyond the face of the existing plaster, gypsum board, or other wall finish, remove the existing interior window trim and install new finish grade wood blocking. Provide new trim over new wood blocking.

3.5 ADJUSTING, CLEANING, AND PROTECTION

A. Replace, at no cost to the City, interior finish carpentry that is damaged or does not comply with requirements. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

B. Replace existing trim that is damaged during construction activities. Match existing species, finish, and profile.

C. Clean interior finish carpentry on exposed and semi-exposed surfaces. Restore damaged or soiled areas and touch up factory-applied finishes, if any.

D. Protect installed products from damage from weather and other causes during construction.

E. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

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SECTION 07 21 00 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Insulation and accessories for walls and ceilings.

B. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 01 81 13 “Sustainable Design Requirements”.
3. Section 02 83 13 “Lead Hazard Control Activities”.
4. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
5. Section 02 82 33 “Removal and Disposal of Asbestos-Containing Materials”.
6. Section 06 10 53 “Miscellaneous Rough Carpentry”.

1.3 DEFINITIONS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ASTM	ASTM International (American Society for Testing and Materials International)	(610) 832-9500
CREL	Chronic Reference Exposure Level https://oehha.ca.gov	(916) 324-7572

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated including R-values for required thickness.

B. Attic Design: Provide a design submittal including a plan drawing and calculations per article 3.7.

1.6 INFORMATIONAL SUBMITTALS

A. Safety Data Sheet (SDS): Submit a SDS (formerly known as MSDS) for each product to be incorporated into the Work. Include VOC content and emissions data to demonstrate compliance with PART 2 – PERFORMANCE REQUIREMENTS of this Section and requirements for low-emitting materials specified in Section 01 81 13 “Sustainable Design Requirements”.

1.7 QUALITY ASSURANCE

A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

B. Source Limitations: Each Home and multi-unit building will receive products of each type from single source from single manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation and ventilation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer’s written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. VOC Emissions Requirements: All products shall comply with VOC emissions limits for Target CREL VOCs and their maximum allowable concentrations when tested according to the California Department of Public Health’s “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2, 2017”. Results shall be in accordance with Section 4 of the referenced standard.

2.2 GLASS-FIBER BOARD INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Insulation.
4. Owens Corning.

B. Unfaced, Glass-Fiber Board Insulation: ASTM C 612, Type IA or Types IA and IB; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84**,** passing ASTM E 136 for combustion characteristics.

1. Nominal density of 3 lb./cu. ft., thermal resistivity of 4.3 degrees F x h x sq. ft./Btu x in. at 75 degrees F.

2.3 MINERAL-WOOL BOARD INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:

1. Fibrex Insulations Inc.

2. Isolatek International.
3. Owens Corning.
4. Roxul Inc.
5. Thermafiber.

B. Unfaced, Mineral-Wool Board Insulation: ASTM C 612; with maximum flame-spread and smoke-developed indexes of 15 and zero, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

1. Nominal density of 4 lb./cu. ft., Types IA and IB, thermal resistivity of 4 degrees F x h x sq. ft./Btu x in. at 75 degrees F.

C. Sustainability Requirements: Provide glass-fiber board insulation compliant with one of the following:

1. Free of Formaldehyde: Insulation manufactured with 100 percent acrylic binders and no formaldehyde.
2. Low Emitting: Insulation tested according to ASTM D 5116 and shown to emit less than 0.05-ppm formaldehyde.

2.4 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Kraft-Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type II (non-reflective faced), Class C (faced surface not rated for flame propagation); Category 1 (membrane is a vapor barrier).

2.5 MINERAL-WOOL BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:

1. Fibrex Insulations Inc.
2. Owens Corning.
3. Roxul Inc.
4. Thermafiber.
5. United States Fireproofing.

B. Unfaced, Mineral-Wool Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Reinforced-Foil-Faced, Mineral-Wool Blanket Insulation: ASTM C 665, Type III (reflective faced), Class A (faced surface with a flame-spread index of 25 or less per ASTM E 84); Category 1 (membrane is a vapor barrier), faced with foil scrim, foil-scrim kraft, or foil-scrim polyethylene.

2.6 GLASS FIBER PERIMETER WRAP INSULATION

A. Window and Door Perimeter Wrap: Unfaced glass fiber insulation in rolls; 0.75 lb. /cu. Ft; nominal 1 inch thick by width to match window or door frame depth. Subject to compliance with requirements, provide one of the following products:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.; Sill Sealer
3. Johns Manville; Model Microlite.
4. Knauf; Model Sill Sealer.
5. Owens Corning; Multipurpose Insulation.

2.7 LOOSE-FILL INSULATION

A. Mineral-Fiber Loose-Fill Insulation: ASTM C 764, Type 1 for pneumatic application or Type II for poured application; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.

B. Cellulosic-Fiber Loose-Fill Insulation: ASTM C 739, chemically treated for flame-resistance, processing, and handling characteristics.

C. Glass-Fiber Loose-Fill Insulation ASTM C 764, Type I for pneumatic application or Type II for poured application; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.

2.8 AUXILIARY MATERIALS

A. Insulation for Miscellaneous Voids:

1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
    a. The use of glass-fiber insulation is limited to applications where it is installed in conjunction with a separate backer rod and sealant to air and weather seal a joint or void.
2. Low-Expansion Spray Polyurethane Foam Insulation/Sealant: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84 for use in filling the void space of abandoned counterweight pockets of double-hung windows and filling voids between window frame and surrounding rough opening. Subject to compliance with requirements, provide one of the following products:
    a. DAP: No Warp Window and Door Sealant.
    b. DOW: Great Stuff Window and Door Spray Foam Insulation.
    c. DuPont: Great Stuff Window and Door Insulating Sealant.
    d. OSI (Henkel Corporation): QUAD Foam Window & Door Foam.
    e. Premier Building Solutions: XtraFoam Minimal Expanding Foam Sealant.
    f. Touch’n Foam: Window & Door Polyurethane Foam Sealant.

B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

C. Eave Ventilation Baffles: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

D. Recessed Light Cover: Prefabricated, fire-rated covers for installation over light fixtures that do not have an IC rating for use in holding insulation away from light fixture housing:

1. Insulation Solutions Inc. / ISI Building Products: Insullite 12.5” x 12.5” x 14”, vented.
2. Owens Corning: SmartCap.
3. Tenmat Inc.; FF109-350.

E. Air Gap Sealant: Sealant to seal penetrations and joints in the building envelope, to reduce air infiltration. Products include:

1. Boss Products: 136 Fireblock Draftstop Sealant.
2. Knauf Insulation: ECOSEAL Plus.
3. Owens Corning: EnergyComplete Sealant.

F. Static Roof Vents: Aluminum square or round vents approximately 12” x 12” with insect screen and an approximate net free area of not less than 50 square inches.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements of the Section in which substrates and related Work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections that interfere with insulation attachment.

B. Examine existing insulation in walls to receive new insulation. Remove and dispose of insulation that is damp, wet, or otherwise deteriorated.

3.3 INSULATION INSTALLATION, GENERAL

A. Comply with insulation manufacturer’s instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer’s technical representative for specific recommendations before proceeding with installation.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer’s standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

E. Prior to the installation of attic insulation, baffles, and venting, remove and dispose of all attic insulation to allow for proper air sealing and installation of vapor barrier faced insulation where scheduled.

1. Where removal of existing attic insulation is not feasible, install unfaced insulation and application of a vapor barrier primer sealer, with a perm rating of 0.6 or less, and an additional coat of finish paint to the entire ceiling below all insulated spaces.

F. Where indicated exterior walls and/or ceiling/attic floor spaces shall be insulated to achieve the following R-values:

1. Exterior walls:
   a. R-13 at 4 inch stud walls.
   b. R-19 at 6 inch stud walls.

2. Ceilings with attic spaces:
   a. R-49, but can be reduced to R-38 when a full height of uncompressed R-38 insulation extends over the wall top plate at the eaves.

3.4 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Install Recessed Light Covers to maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. Attics: Install eave ventilation baffles between roof framing members in insulated attic spaces at vented eaves.
5. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:
   a. With faced blankets having stapling flanges, secure insulation by inset, stapling flanges to sides of framing members.
6. Kraft-Faced Blankets: Tape joints and ruptures in vapor-retarder facings and seal each continuous area of insulation to ensure airtight installation.
   a. Exterior Walls: Set units with facing placed toward interior of construction.

C. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).
2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

D. Loose-Fill Insulation: Apply according to ASTM C 1015 and manufacturer's written instructions. Level horizontal applications to uniform thickness as indicated, lightly settle to uniform density, but do not compact excessively.

1. For cellulosic-fiber loose-fill insulation, comply with CIMA's Bulletin #2, "Standard Practice for Installing Cellulose Insulation".

3.5 INSTALLATION OF GLASS-FIBER INSULATION AT WINDOWS AND DOORS

A. Follow manufacturer's written instructions and precautions. Fill all voids and cavities around windows and doors. Do not apply to cavities greater than 1/2-inch wide.

3.6 INSTALLATION OF LOOSE-FILL INSULATION IN WALLS

A. The installation of insulation within an existing wall shall performed only with the subsequent application of a vapor barrier primer sealer, with a perm rating of 0.6 or less, and an additional finish paint coating matching the existing wall color.

B. Apply loose-fill insulation according to ASTM C 1015 and manufacturer's written instructions.

C. Install loose-fill insulation in walls from the interior side of the wall.

1. For interior installation, seal around outlets and other wall penetrations to prevent air leakage. Insulate above door openings and above and below window openings. Patch and paint plugged holes to match existing wall finish following insulation installation. Do not insulate from the interior if interior walls are paneled or have applied wallcovering.

D. Existing loose-fill and un-faced insulation that is dry and free of deterioration may be used as part of insulation requirement. Ensure that insulation completely fills all voids and spaces.

3.7 INSTALLATION OF INSULATION IN ATTICS

A. Insulation installation of attic spaces is to be performed only under the following conditions:

1. The Contractor has field verified the attic square foot area; location, size, and distribution of air relief vents, including vent types, and net free area for each type.
2. The Contractor has submitted a drawing with calculations to demonstrate compliance with the Design Requirements and Criteria within this article.

B. Design Requirements and Criteria

1. Attic Ventilation: The Contractor shall evaluate the existing attic ventilation and submit a design proposal compliant with the Design Requirements and Criteria here-in. Attic ventilation shall allow the free passage of air to vent the attic of moisture vapor infiltration. Contractor shall determine which of the following Conditions to apply to the design.
    a. Condition 1: Total free area requirement to be a minimum of 1/300th of the attic floor area provided that 50% of the required area is located at of low to the eave with the remaining 50% located in the upper portion of the attic. Vents may be a combination of eave vents – continuous perforated or individual rafter space drilled vents, mushroom gravity vents, a continuous ridge, or end gable vents.
    b. Condition 2: Total free area requirement to be a minimum of 1/150th of the attic floor area regardless of vent location.
    c. When existing conditions do not satisfy the ventilation criteria of either Condition 1 or Condition 2, the Contractor shall install additional Static Roof Vents in sufficient size, quantity and locations to satisfy compliance with the minimum design criteria.
2. Vapor Barrier: A vapor barrier shall be provided by one of the following means:
    a. Installation of Kraft-faced batt insulation.
    b. Application of a vapor barrier interior primer sealer, with a perm rating of 0.6 or less, and an additional finish paint coating to the ceiling spaces below, matching the existing ceiling color.
3. Air Sealing: Air seal the exposed ceiling, with Air Gap Sealant, from above prior to the installation of insulation.
    a. Seal joint of ceiling to top wall plate at eave perimeter.
    b. Seal all penetrations of the ceiling, including piping/conduits, electrical junction boxes and wiring.

4. Install Eave Ventilation Baffles at each rafter space to provide an insulation stop and maintain free air path at eaves.

3.8 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 21 00

SECTION 07 41 13.16 – STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.
   1. Part One ("Instructions and Execution Documents")
   2. Part Two ("General Conditions")
   3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section Includes: Standing-seam metal roof panels.

1.3 ACTION SUBMITTALS

A. Product Data: For standing-seam metal roof panels. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

   1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
   2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

C. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.

   1. Include similar Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

   1. Metal Panels: 12 inches (305 mm) long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For standing-seam metal roof panels, for tests performed by a qualified testing agency.

B. Field quality-control reports.

C. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal panels during installation.

1.7 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.8 COORDINATION

A. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures including rupturing, cracking, or puncturing.
    b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: 2 years from date of Final Completion.

3. Manufacturer's Inspection: Provide manufacturer's inspection as needed to maintain warranty.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period. Manufacturer's warranty begins after Contractor's warranty expires.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Final Completion.

C. Special Weathertightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period. Manufacturer's warranty begins after Contractor's warranty expires.

1. Warranty Period: 20 years from date of Final Completion.

D. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of new metal panel systems in a manner that will preserve the manufacturer's warranty as well as other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace metal panel systems and associated installation materials that are defective in materials or workmanship related to installation of the metal panels for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
3. Warranty period: One (1) year from date of Final Completion of the Home.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Energy Performance:

1. Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for low steep - slope roof products.
2. Provide roof panels according to one of the following when tested according to CRRC-1:

a. Three-year, aged solar reflectance of not less than 0.55 and emissivity of not less than 0.75.
b. Three-year, aged Solar Reflectance Index of not less than 64 when calculated in accordance with ASTM E1980.

C. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

1. Wind Loads: As required by code.
2. Other Design Loads: As indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

D. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E1680 or ASTM E283 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).

E. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646 or ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: 2.86 lbf/sq. ft. (137 Pa).

F. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E2140.

G. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 30.

2.2 STANDING-SEAM METAL ROOF PANELS

A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips inside laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.

1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1514.
2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1637.

B. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced a flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.

1. Manufacturers: Subject to compliance with requirements, provide products indicated on drawings.
2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Nominal Thickness: 0.022 inch (0.56 mm)
    b. Exterior Finish: Two-coat fluoropolymer.
    c. Color: As selected by Architect from manufacturer’s full range.

3. Aluminum Sheet: Coil-coated sheet, ASTM B209 (ASTM B209M), alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

    a. Thickness: 0.032 inch (0.81 mm).
    b. Surface: Smooth, flat finish.
    c. Exterior Finish: Two-coat fluoropolymer.
    d. Color: As selected by Architect from manufacturer’s full range.

4. Clips: One-piece fixed to accommodate thermal movement.

a. 0.028-inch- (0.71-mm-) nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
b. 0.0250-inch- (0.635-mm-) thick, stainless-steel sheet.

5. Panel Coverage: 10 inches (254 mm).
6. Panel Height: 1.0 inch (25 mm).

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils (1.016 mm) thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: Stable after testing at 240 deg F (116 deg C); ASTM D1970.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D1970.
3. Manufacturers and products: Subject to compliance with requirements and indicated on the drawings.

B. Felt Underlayment: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felts.

C. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.4 MISCELLANEOUS MATERIALS

A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels, unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1 inch (25 mm) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

C. Panel Fasteners: Self-tapping screws designed to withstand design loads.

D. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.

3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.5 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating

to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.

2. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
3. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
4. Metallic Fluoropolymer: AAMA 621. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
5. FEVE Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether (FEVE) resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
6. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
7. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

D. Aluminum Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
2. Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
3. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
4. Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
5. FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether (FEVE) resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
6. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
7. Exposed Anodized Finish:

    a. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
    b. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking, and that installation is within flatness tolerances required by metal roof panel manufacturer.

    a. Verify that air or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer’s written recommendations.

3.3 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated below, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.

1. Apply over the entire roof surface.
2. Apply over the roof area indicated below:

    a. Roof perimeter for a distance up from eaves of 24 inches (610 mm) beyond interior wall line.
    b. Valleys, from lowest point to highest point, for a distance on each side of 18 inches (460 mm) Overlap ends of sheets not less than 6 inches (152 mm).
    c. Rake edges for a distance of 18 inches (460 mm).
    d. Hips and ridges for a distance on each side of 12 inches (305 mm).
    e. Roof-to-wall intersections for a distance from wall of 18 inches (460 mm).
    f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of 18 inches (460 mm).

B. Felt Underlayment: Apply at locations indicated below, in shingle fashion to shed water, and with lapped joints of not less than 2 inches (50 mm).

1. Apply over the entire roof surface.

2. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than 3 inches (75 mm), in shingle fashion to shed water.

C. Slip Sheet: Apply slip sheet over underlayment before installing metal roof panels.

D. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 07 62 00 “Sheet Metal Flashing and Trim”.

3.4 INSTALLATION OF STANDING-SEAM METAL ROOF PANELS

A. Install metal panels according to manufacturer’s written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports, unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
2. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
3. Copper Panels: Use copper, stainless steel, or hardware-bronze fasteners.
4. Stainless Steel Panels: Use stainless steel fasteners.

C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer’s approved fasteners according to manufacturers’ written instructions.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Install pressure plates at locations indicated in manufacturer’s written installation instructions.
3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
4. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
5. Watertight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.
b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
c. At panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with sealant and fastened together by interlocking clamping plates.

F. Clipless Metal Panel Installation: Fasten metal panels to supports with screw fasteners at each lapped joint at location and spacing recommended by manufacturer.

G. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.

H. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual". Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

I. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches (914 mm) o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

J. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1-inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1524 mm) o.c. in between.

1. Provide elbows at base of downspouts to direct water away from building.
2. Connect downspouts to underground drainage system indicated.

K. Roof Curbs: Install flashing around bases where they meet metal roof panels.

L. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

A. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.

B. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

C. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 41 13.16

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SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1) Part One (“Instructions and Execution Documents”)
2) Part Two (“General Conditions”)
3) Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants for exterior joints between existing materials and new materials, door and window frames, and infill construction.

2. Latex joint sealants for interior joints between new and existing materials and in the following locations:

   a. Perimeter joints between interior wall surfaces and frames of interior doors and windows.

   b. Perimeter joints between new or existing wall surfaces, trim and new duct or pipe penetration.

   c. Perimeter joints between interior wall surfaces and new gable vents.

   d. Perimeter joints between layers of gypsum wall board at window and door openings.

   e. Perimeter joints and joints around wall penetrations when wall cavity is receiving blown in insulation.

3. Acoustical joint sealants where indicated.

4. Fire barrier sealant for penetrations in fire-resistance-rated walls.

5. Concrete paving joint sealants.

B. Related Requirements:

1. Section 01 73 00 “Execution”.

2. Section 01 81 13 “Sustainable Design Requirements”.

3. Section 08 11 69 “Metal Storm Doors and Frames”.

4. Section 08 12 13 “Hollow Metal Frames”.

5. Section 08 14 16 “Flush Wood Doors”.

6. Section 08 16 13 “Fiberglass Doors”.

7. Section 08 32 13 “Sliding Aluminum-Framed Glass Doors”.

8. Section 08 32 16 “Sliding Plastic-Framed Glass Doors”.

9. Section 08 53 13 “Vinyl Windows”,

10. Section 08 80 00 “Glazing”.

11. Section 09 29 00 “Gypsum Board”.

12. Section 32 13 13 “Concrete Paving”.

1.3 DEFINITIONS

A. Metal Storm Doors and Frames are specified to meet the specific sound transmission and performance requirements for this Project.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AAMA	American Architectural Manufacturers Association www.aamanet.org (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ASTM	ASTM International (American Society for Testing and Materials International)	(610) 832-9500
CAN/CGSB	Canadian General Standards Board www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html	(800) 926-9105
IBC	International Building Code www.iccsafe.org	(888) 422-7233
IFC	International Fire Code www.iccsafe.org	(888) 422-7233
IMC	International Mechanical Code www.iccsafe.org	(888) 422-7233
IPC	International Plumbing Code www.iccsafe.org	(888) 422-7233
IRC	International Residential Code www.iccsafe.org	(888) 422-7233
NEC	National Electrical Code www.nfpa.org	(617) 770-3000
NFPA	National Fire Protection Agency www.nfpa.org	(617) 770-3000

1.4 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide the lowest available modulus of elasticity that is consistent with exposure to weathering, indentation, vandalism, abrasion, support of loading, and other requirements.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

B. action submittals

C. Product Data: For each sealant and backer material to be used in the project.

D. Samples for Verification: For each kind and color of joint sealant as required to match Architect’s samples, provide samples with joint sealants in 1/2-inch wide joints formed between two 6 inch long strips of decorative formed metal trim cladding.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Source Limitations: Each Home and multi-unit building will receive joint sealants from single source from single manufacturer.

B. Mock-ups:

1. Mock-ups shall be provided for each type of treatment including, but not limited to; exterior and interior joint sealants as part of the installation of the windows and doors.

2. See Section 01 40 00 “Quality Requirements” for additional information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instruction for multi-component materials.

B. Store and handle materials in compliance with manufacturer’s recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.9 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.

2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. For each application, provide the grade of sealant (non-sag, self-leveling, no track, knife-grade, preformed, etc.), as recommended by the manufacturer for the particular condition of installation (location, joint shape, ambient temperature, and similar conditions), to achieve the best possible overall performance. Grades specified herein are for normal condition of installation.

B. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

C. Volatile Organic Compound (VOC) Content of Interior Sealants: Sealants shall comply with requirements and limits established in specification Section 01 81 13 “Sustainable Design Requirements”, Article 2.2 – Low-Emitting Materials.

D. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

E. Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

F. Colors of Exposed Joint Sealants: Match Architect’s samples. For concealed materials, provide the natural color that has the best overall performance characteristics.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Non-sag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, T, M, G, O. TT-S-00230C, Type II, Class A; CAN/CGSB-19.13-M87, AAMA802.3 Type II, AAMA 803.3, AAMA 805.2, AAMA 808.3

1. Products: Subject to compliance with requirements, provide products by one of the following manufacturers:

a. Dow Corning Corporation.

b. GE Advanced Materials - Silicones.

c. Novagard.

d. Pecora Corporation

e. Polymeric Systems, Inc.

f. Sika Corporation.

g. Tremco Incorporated.

2.3 LATEX JOINT SEALANTS

A. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, provide products by one of the following manufacturers:

a. BASF Building Systems.

b. Bostik, Inc.

c. DAP.

d. Pecora Corporation.

e. Tremco Incorporated.

2.4 ACOUSTICAL JOINT SEALANTS

A. Manufacturer's standard non-sag, paintable, non-staining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction.

1. Products: Subject to compliance with requirements, provide products by one of the following manufacturers:

a. Owens/Corning.

b. Pecora Corporation.

c. USG Corporation.

2.5 FIRE BARRIER SEALANT

A. Single-component, ready-to-use, latex-based, intumescent firestop sealant capable of expanding a minimum of three times its dried volume when exposed to temperatures above 1000 degrees F (538 degrees C). Sealant will be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems, ASTM E 1966 (UL 2079) Standard Test Method for Fire Resistive Joint Systems and meet the requirements of the IBC, IRC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70) and NFPA 101.

1. Products: Subject to compliance with requirements, provide products by one of the following manufacturers:

    a. 3M Company.

    b. Hilti.

    c. Nelson Firestop Products.

    d. Tremco Incorporated.

    e. USG Corporation.

2.6 CONCRETE PAVING JOINT SEALANTS

A. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL.

1. Products: Subject to compliance with requirements, provide one of the following products:

    a. Crafco Inc.; RoadSaver Silicone SL.

    b. Dow Corning Corporation; 890-SL.

    c. Pecora Corporation; 300 SL.

2.7 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Round Backer Rods for Concrete Paving Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.8 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.

    b. Masonry.

    c. Unglazed surfaces of ceramic tile.

    d. Exterior insulation and finish systems.

3. Remove laitance and form-release agents from concrete.

4. Clean ferrous metals of all rust, mill scale, and coatings by wire brush, or grinding. Remove oil, grease, and protective coatings with solvent based materials.

5. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

a. Metal.

b. Glass.

c. Porcelain enamel.

d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

4. Install sealants at the same time sealant backings are installed.

G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00

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SECTION 08 11 69 - METAL STORM DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes side-hinged metal storm doors and frames in styles approved for RSIP, side-hinged security doors and frames, and sliding metal storm doors and frames fabricated to meet specific performance requirements.

B. Related Requirements:

1. Section 01 50 00 “Temporary Facilities and Controls”.
2. Section 01 73 00 “Execution”.
3. Section 01 81 13 “Sustainable Design Requirements”.
4. Section 02 83 13 “Lead Hazard Control Activities”.
5. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
6. Section 05 75 00 “Decorative Formed Metal”.
7. Section 06 10 53 “Miscellaneous Rough Carpentry”.
8. Section 06 20 13 “Exterior Finish Carpentry”.
9. Section 06 20 23 “Interior Finish Carpentry”.
10. Section 07 21 00 “Thermal Insulation”.
11. Section 07 92 00 “Joint Sealants”.
12. Section 08 71 00 “Door Hardware”.
13. Section 08 80 00 “Glazing”.

1.3 DEFINITIONS

A. Metal Storm Doors and Frames are specified to meet the specific sound transmission and performance requirements for this Project.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association www.aluminum.org	(703) 358-2960
AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020

ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWS	Architectural Woodwork Standard by AWI	
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
CSA	Canadian Standards Association	(613) 238-3222
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-9591
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SMA	Screen Manufacturers Association www.smainfo.org	(773) 636-0672
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all metal storm door and frame units and verify all requirements of the Construction Modification, including but not limited to:

a. Storm door type and color by review with the Homeowner.

b. Correct door swing or sliding configuration.

c. Storm door quantities and locations.

d. Safety glazing and egress requirements in compliance with the governing code or Authority.

2. Review, discuss, and coordinate the interrelationship of metal storm doors and frames with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.
3. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 "Submittal Procedures" and Part Two, Article XI: ("Shop Drawings, Product Data, and Samples").

B. Product Submittal Waiver: The Commissioner may waive, at his or her discretion, the Submittal requirements specified in the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles, provided the following conditions are met.

1. The manufacturer has made an independent master submittal, in triplicate, directly to the Commissioner and has obtained review and written approval of same from the Commissioner. Only after such approval, will a manufacturer and Contractor be relieved of the submittal requirements of the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles of this Specification Section and be granted a submittal waiver.
2. The master submittal will include all materials and information as required by these Articles; including, but not limited to Product Data, Product Certification Drawings, Test Reports, Product Certifications, Samples, and additional materials as may be required by PART TWO - GENERAL CONDITIONS, Article XI, Shop Drawings, Product Data and Samples.
3. The manufacturer will notify the Commissioner and provide new submittal materials for all product changes and/or in the event of product test report expiration.

C. Submission requirements for each construction contract will not be waived for the following:

1. Product Certifications.
2. Master Submittal PDF, for record.
3. Product Certification Drawings (PCD), unless the PCD was submitted as part of product testing and the performance compliant test report includes verification by the testing agency that the PCD matches the tested specimen.
4. Warranties.
5. Samples.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of storm door required to be incorporated into the Work. Include information not fully detailed in manufacturer's standard product data.

1. Product Certification Drawings (PCD): PCD will be required as a part of all submittals to demonstrate compliance with specified performance requirements. Provide a separate PCD for each product type and variation that the manufacturer provides to RSIP.
    a. The PCD will include the following:
        1) Manufacturer name, address, and contact information.
        2) Product type and model number.
        3) Product Classification and Performance Grade.
        4) Minimum and maximum size limitations.

5) Finish and Color options.

6) Fabrication methods and standard construction details including joinery, profiles, reinforcement and dimensions of individual components.

7) Details of installation, including anchor, flashing and sealant installation.

8) Data on type and model number for operating hardware.

9) Flashing and drainage system, including weep size and location.

10) Location and style of all weatherstripping.

11) Type and size of all mechanical fasteners.

12) Location of sealant and gaskets.

13) Data on screen material and mesh type including vinyl spline, if applicable.

14) Glass and Glazing data:

a) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions if applicable).

b) Setting method and materials for all glazing.

15) Other information, as necessary, to demonstrate compliance with the specified performance requirements.

b. A new PCD will be required for all testing conducted if any of the following apply:

1) Manufacturer changes the design or manufacturing of a product, unless the changes are of a minor or cosmetic nature, in which case the manufacturer will notify the Commissioner and provide a statement stating the nature of the change and affirming that the change will not detrimentally affect the performance of the product indicated in the test report.

2) Upon expiration of test reports.

c. Certification: The PCD will be certified by the testing agency/laboratory as matching the tested product specimen. Such certification will be included in the test report.

2. Include submittal of Product Data for glazing as specified in Section 08 80 00 “Glazing” as part of the submittal package of this Section.

B. Product data for integral heavy-duty storm door hardware.

C. Shop Drawings: Details of installation not fully shown in manufacturer’s standard Product Data. Include details of attachment, clearances, and details of flashing and sealant installation.

D. Samples: For each exposed product and for each color specified provide material samples approximately 2 by 4 inches. Colors for Sliding and Side-Hinged Storm Doors and Frames and for Side-Hinged Security Doors and Frames are as follows:

1. All Door styles S1-S9, S11: White, beige, or brown as selected by the Homeowner.
2. Door style S10: White or black as selected by the Homeowner.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Test Reports: For each type of metal storm door and frame, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS articles of this Specification Section.
2. Each test report dated more than four years from the Notice To Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract NTP, the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:
    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty-five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

D. Product Certification: The Contractor will submit a “Product Certification” (PC) executed by the manufacturer/supplier and Contractor, certifying that all products supplied under this Contract will be furnished in compliance with all performance and other specification requirements of this Section. A separate PC will be provided for each product type and variation. A sample of the PC is included at the end of this Section.

1. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such “product changes” will not affect the product’s ability to comply with the performance requirements identified in these specifications.

E. Installation Instructions: Manufacturer’s installation instructions for specified products.

F. Maintenance Data: For finishes, weatherstripping, operable panels, and operating hardware to include in maintenance manuals.

G. Sample Warranties: For manufacturer’s warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating metal storm doors and frames that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to metal storm door and frame manufacturer for installation of units required for this Project.

C. Certification Labels: Provide storm doors with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization’s referenced standards. Labels will include the following:

1. Structural Performance.
2. Thermal Performance.
3. Acoustical Performance.
4. Other Performance values as required by Industry Organization standards.

D. Safety Glass: Category II materials complying with testing requirements in 16 CFR Part 1201.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction.

E. Mock-ups:

1. Mock-ups shall be provided for each type of treatment including, but not limited to; installation of one storm door and frame, including perimeter joint sealants.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect storm door and frame during transit, storage, and handling to prevent damage, soiling, and deterioration.

1. Package storm doors and frames individually in protective wrapping sufficient to protect product during transport and handling prior to installation.
2. Transport, handle and store storm doors and frames right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver storm door and frame shop finished in accordance with manufacturer’s recommendations.

B. Store storm doors in compliance with manufacturer’s recommendations. Store in a manner such that the manufacturer’s identification marks are clearly visible.

C. Do not slide metal storm doors and frames against one another. Do not roll metal storm doors and frames onto corners or in any manner that would damage the storm door and frame.

1.10 PROJECT CONDITIONS

A. Provide custom-sized storm doors and frames for each opening. Size each storm door and frame unit to fit prime door opening.

1.11 WARRANTIES

A. Manufacturer’s Warranty: Provide manufacturer’s written and signed warranty where-in the manufacturer agrees to provide all materials and labor required at each Home to repair and/or replace metal storm doors and frames that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
    a. Failure to meet performance requirements.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Faulty operation of movable parts and hardware.
    d. Deterioration of materials and finishes beyond normal weathering.
    e. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of storm doors and frames to meet generally recognized performance standards and specified installation requirements.
3. Warranties on materials not manufactured by the manufacturer but required to be furnished as part of the metal storm door and frame unit will be included in the manufacturer's warranty. These items may include, but are not necessarily limited to sheet glass, insulated panels, caulking, screen cloth, and weatherstripping. Such items will be noted as included on the manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.
4. Warranty Period:
    a. Metal storm doors and frames: Ten (10) years from date of Final Completion of the Home.
    b. Glazing Units: Ten (10) years from date of Final Completion of the Home.
    c. Metal Finish: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new metal storm doors and frames in a manner that will preserve the manufacturer's warranty as well as the storm door's acoustical and other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace metal storm doors and frames and associated installation materials that are defective in materials or workmanship related to installation of the metal storm doors and frames for a period of one (1) year from the Date of Final Completion of the Home.
1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
3. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the metal storm door and frame unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:
1. Side-Hinged Metal Storm Doors and Frames, including Security Doors and Frames:
    a. Larson Doors, (888-483-3768).
    b. Mon-Ray, Inc. (800-544-3646).
2. Sliding Metal Storm Doors and Frames:
    a. Mon-Ray, Inc. (800-544-3646).

B. Source Limitations: Each Home and multi-unit building will receive metal storm doors and frames from single source from single manufacturer except in the case where S1 and S2 units are also being provided. For homes and multi-unit buildings designated to receive S1 and/or S2 units, the S1 and S2 units may be from a different manufacturer, as Larson Doors does not manufacture S1 or S2 units.

2.2 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent and/or other requirements are indicated.

1. Storm Door Certification: AAMA/WDMA/CSA and/or NFRC certified with label attached to each door.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: R.
2. Minimum Performance Grade: 15.

C. Thermal Movements: Provide metal storm doors and frames, including anchorage, that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 degrees F (67 degrees C), ambient; 180 degrees F (100 degrees C) material surfaces.

D. Forced-Entry Resistance: All side-hinged security storm doors will conform to SPPS E-079901 Level 5.

E. Acoustical Performance Requirements:

1. Sound Transmission Class (STC): Tested according to ASTM E 90, “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Buildings Partitions and Elements,” and classified by ASTM E 413, “Classification for Rating Sound Insulation”.
2. Outdoor-Indoor Transmission Class (OITC): Tested according to ASTM E 90, and classified by ASTM E 1332, “Standard Classification for Rating Outdoor-Indoor Sound Attenuation”.
3. Provide side-hinged and security storm doors with an STC rating of 30 and OITC rating of 25.
4. Provide sliding storm doors with an STC rating of 32 and OITC rating of 27.

F. Sustainable Design Requirements: Refer to specification Section 01 81 13 “Sustainable Design Requirements”, Article 2.2 Low-Emitting Materials.

2.3 TESTING REQUIREMENTS

A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440; NFRC and ASTM referenced Standards/Specifications for definitions and minimum standards of performance testing protocols and procedures, unless more stringent and/or other requirements are indicated.

1. Test reports demonstrating compliance with requirements will not be invalidated due to the date of the test.
2. Submit test reports for (S1) and (S5) door styles and acoustical test reports for other door types indicated elsewhere.

B. In the event of discrepancies between these specification requirements and current adopted standards and requirements published in referenced standards, the current standard’s requirements will be considered and, if so determined by the Architect, will be acceptable.

C. Glazing Requirements for Testing: To the greatest extent possible, furnish all testing reports based upon the exact storm door unit composition utilized to demonstrate STC and OITC compliance.

1. For STC, OITC, Thermal Transmittance, Condensation Resistance, and Operational Force tests, the storm door model and glazing assemblies will be identical.
2. For the following tests and to demonstrate compliance with the associated performance criteria only, alternate glass types will be allowed in storm doors using identical sash, frame and glazing seals to the STC and OITC tested storm door construction. Actual glass and glazing used in furnished storm doors will be the same as the STC and OITC tested product.
    a. Air Leakage Resistance.
    b. Water Penetration Resistance.
    c. Uniform Load Deflection.
    d. Uniform Load Structural.
    e. Forced Entry Resistance.

D. Minimum Test Size: Comply with requirements contained within referenced AAMA, NFRC and/or ASTM Standards/Specifications for each associated testing requirement.

1. The minimum specimen size for STC and OITC testing of metal storm doors will be as specified in ASTM E 1425, "Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems".
2. When test reports complying with the ASTM sizes cannot be provided, reports may be submitted using a minimum sample size of 36 by 80 inches.

E. All test reports submitted will have the storm door model numbers specified which correspond to the model numbers shown on the submitted shop drawings and catalog cuts.

F. Acoustical Testing Requirements:

1. The manufacturer will submit STC test reports, conducted in accordance with ASTM E 90 and Classified by ASTM E 413, as well as OITC test reports conducted in accordance with ASTM E 90 and classified by ASTM E 1332 from an approved acoustical testing laboratory for a half-light storm door (S1, S2, S3 or S4), a full-view storm door (S5), a self-storing storm door (S6), a sliding storm door (S8). Storm Door model numbers and glazing thickness specified in the STC and OITC reports will correspond to the model numbers and glazing thickness shown on the submitted shop drawings and catalog cuts.
2. The STC and OITC tests will be conducted with solo door in a typical weatherstripped and closed position. The use of caulking to seal off the door from the doorframe will not be permitted as part of the installation method prior to conducting the STC and OITC tests. Tests conducted in tandem with prime and storm doors will not be accepted.
3. The ambient room and specimen temperatures for all STC and OITC testing will be as stated in ASTM E 90.
4. Provide STC and OITC test reports from a qualified acoustical testing laboratory that is certified under the NIST and NVLAP for conducting precision acoustical testing in accordance with ASTM E 90. Approved acoustical testing laboratories include, but are not limited to, the following:
    a. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
    b. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
    c. ETS Lindgren (Acoustic Research Laboratory), 1301 Arrow Point Drive, Cedar Park, TX 78613-6936, (512) 531-6400.
    d. Riverbank Acoustical Laboratories, Inc., 1512 Batavia Avenue, Geneva, IL 60134, (630) 232-0104.

e. Western Electro-Acoustic Laboratories, Inc. (WEAL), 25132 Rye Canyon Loop, Santa Clarita, CA 91355, (661) 775-3741.

G. Non-Acoustical Testing Requirements: For all testing, other than STC and OITC testing, submit test reports from a qualified testing agency that is accredited by the specified referenced AAMA, ASTM and/or NFRC standard to perform the specific test protocol required. Approved testing agencies include, but are not limited to the following:

1. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
2. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
3. National Certified testing Laboratories, Inc., 5 Leigh Drive, York, PA 17402, (717) 846-1200.
4. Quast Consulting and Testing Inc., 1055 Indianhead Drive, Mosinee, WI 54455 (715) 693-8378.

H. For Security Storm Door (S10), submit Forced Entry Resistance Test Reports from a qualified testing laboratory. The test specification submitted to show product acceptance as a security door will meet or exceed the test method and specification requirements of SPPS E-079901 Level 5. In addition, submit test reports that identify and evaluate other security characteristics of the product that may not be required by this Specification, but which enhance the security function of the door.

2.4 METAL STORM DOORS AND FRAMES

A. Operating Types: Provide the following operating types where indicated:

1. Side-Hinged Metal Storm Doors and Frames.
2. Side-Hinged Security Storm Doors and Frames.
3. Sliding Metal Storm Doors and Frames:
   a. Double panel units with one (1) fixed panel types XO and OX.
   b. Triple panel units with one (1) operable and two (2) fixed panels, types XOX, XXO, and OXX.

B. The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Side-Hinged Metal Storm Doors and Frames:
   a. Larson Doors: 730 Series
   b. Mon-Ray, Inc.; 802/803/804 Acoustical.
2. Side-Hinged Security Storm Doors and Frames:
   a. Mon-Ray, Inc.; Model 802-L.
3. Sliding Metal Storm Doors and Frames:
   a. Mon-Ray, Inc.; 805 PSD.

C. Aluminum Extrusions: Alloy and temper recommended by manufacturer for strength, corrosion resistance and application of required finish, but not less than 22,000 psi ultimate tensile strength, a yield of 16,000 psi. Comply with ASTM B 221.

1. All side-hinged metal storm doors will consist of a hollow extruded smooth surface master frame and hollow extruded smooth surface horizontal mullion bars for partial glazing style.
2. The core substrate will be the type and thickness required to meet the performance requirements.

D. Fasteners: Aluminum, stainless steel or other materials warranted by manufacturer to be non-corrosive and compatible with metal storm door members, hardware, and other components of the storm door.

E. Identification: Each metal storm door and frame unit will be clearly identified by manufacturer showing residence and location number.

F. Side-Hinged Metal storm doors and frames will comply with the egress requirements of the governing code or Authority.

G. Anchors, Clips and Accessories: Fabricate anchors, clips, and sliding glass door accessories of aluminum, non-magnetic stainless steel or hot-dip zinc coated steel complying with requirements of ASTM A 123; provide strength sufficient to withstand design pressure indicated.

2.5 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, laminated glass, and glazing requirements applicable to glazed metal framed glass doors.

B. Performance: Provide glazing units of type, thickness, and composition to meet the specified performance requirements.

C. Glazing configuration: Removable panel or self-storing sash in full glass and partial glass configuration. Design and manufacture door for easy replacement of all parts, hardware and weatherstripping.

1. Removable panels will be securely held in place by manufacturer's standard metal turn buttons.
2. Self-storing doors will have a two-track, self-storing sash, and screen. Provide spring loaded pin-lock system for securing operating sash in partially open or closed positions at predetermined intervals. Provide secure, non-ratcheted holes in fully open and closed positions.
3. Fixed glass door will have a removable glass insert.

D. Glass Type: Clear, fully tempered or laminated types. Comply with safety glazing requirements.

2.6 HARDWARE

A. General: Provide manufacturer's standard hardware, fabricated from a corrosion-resistant material compatible with aluminum complying with AAMA 907 and designed to smoothly operate, tightly close, and securely lock sliding plastic-framed glass doors. Do not use aluminum in frictional contact with other metals. Where exposed, provide extruded, cast, or wrought aluminum, die-cast zinc with special coating finish or nonmagnetic stainless steel.

1. Side-Hinged Metal Door Hardware: Heavy-duty spring-loaded latch bolt operated by an exterior thumb-piece and paddle pneumatic door closer, check chain with spring safety cushion, and constructed with heavy-duty hinges.
    a. Doors will be provided with the manufacturer's standard hinge configuration, with a minimum of three per jamb required.
    b. Lever handle lockset may be used in place of thumb piece and paddle-type hardware.
    c. Provide locking button at interior paddle or lever.
    d. Storm door hardware shall be configured to not interfere with the prime door hardware, both prime and storm doors shall close and latch properly.
    e. Closer will be adjustable, pneumatic type with hold-open feature.
    f. Pair doors will include flush bolts at top and bottom, edge mounted astragal on fixed door and factory furnished locking assembly and mounting hardware.

2. Sliding Metal Storm Doors and Frames: Heavy-duty flush-mounted hardware necessary to properly operate and tightly close doors. Do not use aluminum in frictional contact with other metals. Where exposed, provide non-magnetic stainless steel of non-corrosive material that is compatible with aluminum. Wrought alloy or plastic is not acceptable.

   a. Roller Assemblies: Provide movable panels with rollers and roller assemblies that conform to requirements of AAMA 906.3.

B. Finish: Lockset and Lever finish for all door types to match door frame color and finish, or finish of prime door lockset, as selected by Homeowner. Other hardware will be manufacturer's standard finish.

C. Key Locks: Provide key locks at all Security Storm Doors and Storm Doors replacing existing storm doors with key locks. Proper operation and installation of the security storm door locks shall not require alteration of the prime door frame in any way.

D. Weatherstripping: The head and side Z-bars will be designed to receive a vinyl plastic or wool pile weatherstrip. The bottom of the door will have an exterior expander channel with extrusions to accept one T-shaped non-hardening rubber or extruded vinyl plastic door sweep.

1. Compression Weather-stripping: Provide the manufacturer's standard compressible weatherstripping of molded PVC gaskets complying with ASTM D 2287 or molded expanded EPDM or neoprene gaskets complying with ASTM C 509, Grade 4, designed for permanent resilient sealing under bumper or wiper action, concealed when door is closed.
2. Sliding Weatherstripping; Provide woven pile weatherstripping of wool, polypropylene or nylon pile with resin-impregnated fabric and aluminum backing strip; comply with AAMA 701.2.

2.7 INSECT SCREENS

A. Insect Screen Frames: Manufacturer's standard, aluminum alloy complying with SMA 1004 or SMA 1201 extruded-aluminum or formed-tubular-aluminum members, with mitered or coped joints, concealed fasteners, and removable polyvinyl chloride (PVC) or polyethylene (PE) spline/anchor concealing edge of mesh.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
2. Finish for Screen Frame: Matching color and finish of door and frame members.

B. Screening Fabric: 18 by 16 count per sq. in. window screening wire fabric with approximately 0.011-inch diameter, painted/coated strands; PVC-containing paints/coatings are not permitted.

1. Screening Fabric Finish: Charcoal gray.

C. Hardware: Manufacturer's standard pull and keyless locking device on each screen panel, lockable from inside only. Screen panels will remove easily from the interior without special tools.

D. All storm doors with movable sashes must have self-storing screens.

2.8 FABRICATION

A. General: Except to the extent that more stringent requirements are indicated, provide metal storm door and frame units that have been fabricated by the manufacturer's standard methods and that comply with indicated standards. Include a complete system for assembly of components and anchorage of units.

1. Provide units that are re-glazable without dismantling panel framing.

B. Assembly: Assemble components into complete weather-tight units with flush, rigid hairline joints. Mill, cope, butt and miter necessary joints; secure by mechanical devices or by other means to ensure

permanently water-tight joints. Provide at least two (2) corrosion resistant, pre-lubricated or self-lubricating rollers for each sliding panel, of sufficient capacity to assure easy, quiet and smooth operation.

C. Weatherstripping: Provide operable panels with double row of sliding weatherstripping in horizontal rails and single or double-row weatherstripping in meeting or jamb stiles as required to meet specified performance requirements. Provide compression type weatherstripping at the perimeter of each movable panel where sliding type weatherstripping is not appropriate.

1. Provide weatherstripping locked-in to extruded grooves in the panels.

D. Pre-glazed Fabrication: Pre-glaze metal storm door and frame units at the factory for the applications indicated. Comply with requirements of Section 08 80 00 “Glazing” and AAMA 101.

2.9 FINISHES

A. Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.10 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Paint Finish: Provide manufacturer’s standard paint finish meeting or exceeding AAMA 2603.

1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer’s written instructions for cleaning, conversion coating, and applying and baking finish.
2. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2604 and containing not less than 50 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers’ written instructions.
3. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers’ written instructions.

C. Paint Colors: Manufacturer’s standard white, beige, and brown, unless otherwise indicated. Provide finish and color as selected by the Homeowner and scheduled for each Home. Note that a separate color selection will be made for each Home in the Contract.

1. Color match door hardware and screen frame to main frame and sash color.
2. Security Door and Frame (S10) will be black or white color as selected by Homeowner.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor will make a detailed inspection to verify storm door unit dimensions for storm doors to be replaced with new storm doors.

B. Field Measurements: Check actual storm door openings by accurate field measurement before fabrication. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1. Confirm new storm door style, operation, and color with Homeowner at the time of Field Measurements, prior to fabrication.

C. Existing materials will be carefully removed so that firm, sound structural surfaces are exposed that are adequate for the installation of a new storm door assembly. Protect adjacent finishes. Repair adjacent finishes as required.

1. Remove existing sash, fixed glazing, frames and other accessories.
2. Remove other existing work as required for the proper installation and operation of the new units.

D. Examine openings, substrates, structural support, anchorage, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
3. Do not remove existing door until new door is available and ready for immediate installation. Do not leave any openings uncovered at end of working day.
4. Remove existing work carefully; avoid damage to existing work to remain.

E. Verify rough opening dimensions, levelness of threshold substrate, and operational clearances.

F. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather-tight metal storm door installation.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: The manufacturer will provide training for the installer and General Contractor in the proper installation procedures, sequences, and techniques, measuring, sizes and limitations.

1. As requested by the Commissioner, the manufacturer will provide on-site inspections for each Home to verify the storm doors are being properly installed and the acoustical performance is not compromised by improper installation methods. On-site inspections will be repeated until the manufacturer is satisfied that the storm doors are installed in the correct, as designed manner.

B. Comply with manufacturer’s written instructions for installing storm doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer’s written instructions, comply with installation requirements in ASTM E 2112.

C. Comply with Drawings, Shop Drawings, and manufacturer’s written instructions for installing doors, hardware, accessories, and other components.

D. Set units plumb, level and true to line without warp or rack of frames and panels. Provide proper support and anchor frames securely in place.

E. Install doors and frames level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weather-tight construction. Ensure that sufficient clearance exists between prime and storm door hardware.

F. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

G. Side-Hinged Metal Storm Doors and Frames:

1. Work includes minor build-out of jamb as required for actual conditions.
2. Modify existing conditions where necessary for the proper installation of new storm doors.
3. After removal of existing storm door(s) for installation of new storm door(s), prime new trim and clad in color specified. See Section 06 20 13 “Exterior Finish Carpentry”.

H. Sliding Metal Storm Doors and Frames:

1. Provide and install additional exterior sill and framing, including all flashing, sealing, etc., as shown on the detail drawing, where required for the installation of the secondary sliding glass door unit.
    a. Gaps between the aluminum sliding glass door frame and the wall structure will be continuously filled with solid blocking and insulation materials. Voids between the sliding metal storm door frame and the wall structure are not allowed even if finish trim will cover such voids.
    b. All exterior trim and molding materials will be clad in such a way as to provide a completely waterproof barrier. See Section 06 20 13 “Exterior Finish Carpentry”.
2. Set sill members and other frame members in bed of compound or with joint fillers or gaskets to provide for weather-tight construction. Coordinate installation with wall flashing and other components described on the Detail Drawings.
    a. Refer to Section 07 92 00 “Joint Sealants” for compounds, fillers and gaskets to be installed concurrently with, and after sliding glass door units are installed.
    b. Modify existing sill or threshold as required by new door installation. Provide continuous support framing below threshold.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating panels and screens to provide a tight fit at contact points and weather stripping for smooth operation, without binding, and a weather-tight closure.

B. Adjust hardware for proper alignment, smooth operation, and proper latching without unnecessary force or excessive clearance. Lubricate hardware and moving parts.

C. Clean glass and aluminum surfaces immediately after installing storm doors. Comply with manufacturer’s written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

D. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

E. Promptly remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

F. Protect storm door surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact door surfaces, remove contaminants immediately according to manufacturer's written instructions. Initiate and maintain protection and other precautions required through the remainder of the construction period to ensure that, except for normal weathering, sliding glass door units will be free of damage or deterioration at the time of Final Completion of the Home.

G. Refinish or replace metal storm doors and frames with damaged finishes.

H. Replace damaged components.

I. Remove from site and legally dispose of all removed materials, debris, packaging, banding and all other surplus materials and equipment.

3.4 ATTACHMENTS

A. PRODUCT CERTIFICATION sample form.

END OF SECTION 08 11 69

RESIDENTIAL SOUND INSULATION PROGRAM
PRODUCT CERTIFICATION (PC)

Product:	Metal Storm Door S700 (S6 self-storing)	Date: 01/25/2013	

☒ Submitted out of contract, complete this column only. ☐ Submitted within a contract, complete both columns.

Manufacturer:	ABC Windows & Doors, Inc.	Project Phase:	
Section Title:	Metal Storm Doors and Frames	Project No.:	
Section No.:	08 11 69	Contract No.:	
Specification No.:	516830	Contractor:	

MANUFACTURER	SUPPLIED PRODUCT
ABC Windows & Doors, Inc.	Product type: Metal storm door (S6 self-storing) AAMA Performance Class and Grade: R-15 Model number: S700 Color options: White, Beige, or Brown Glazing: 1/8" low e: (SB60/outside surface)

LABORATORY TESTING SUMMARY	
Acoustical Test Report ASTM E 90 (ASTM E 413 & ASTM E 133)	
Testing Lab/Report Number/Date	Intertek / Report # 123456789-00 / Date 4/12/2013
Glazing Description	1/8" Low e: (SB60/outside surface)
Test Specimen Size	36" x 80"
STC/OITC	30/2
AAMA/WDMA/CSA 101/I.S.2/A440 Test Report	
Testing Lab/Report Number/Date	Element / Report # 123456789-11 / Date 08/21/2010
Glazing Description	1/8" Low e: (SB60/outside surface)
Test Specimen Size	36" x 80"
Air Infiltration	0.3 cfm/sf at 1.6 psf
Water Penetration Resistance	No leakage at 4.6 psf
Uniform Load Deflection	'+ 0.18"/- 0.01" at 30.09 psf (L/175=0.2")
Uniform Load Structural	+/- 0.01 at 45.14 psf (0.4% = 0.14")
Operating Force (Type: SSP-SGD)	To initiate: 38.5 lbf / to maintain: 34.0 lbf
Forced Entry Resistance (Type: SSP-SSD)	Grade: 10 No entry
Deglazing	N/A
VOC and Hot Odor Results	
VOC Results	Passed
Hot Odor – average odor scale rating	4

SAMPLE

CERTIFICATION: (*Check one)*

☒ **Certification for Products <u>without</u> an approved submittal waiver:** ABC Windows & Doors, Inc. here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications 516830 and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

This certification statement is accompanied by a formal submittal of all materials and information as required by the RSIP Technical Specifications for review, approval and consideration for a product submittal waiver. This submittal includes, but is not limited to, product data, samples, test reports, product certification drawings and shop drawings.

☐ **Certification for Products <u>with</u> an approved submittal waiver:** Manufacturer's Name here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications Number and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

We further state the following:

- The product to be furnished will be identical to the Master Submittal PDF including any applicable addenda on file with the RSIP and approved by the Program Architect on Date.

☐ No changes have been made to the product previously submitted and approved.

(check appropriate selection above or below)

☐ Changes have been made to the approved product and we have attached all associated submittals for review, approval and update to the Master Submittal PDF.

- The submittal waiver for this product was initially granted after verifying compliance with RSIP Technical Specifications Number. Understanding that the RSIP Technical Specifications receive frequent updates, Manufacturer's Name acknowledges that they have reviewed the current RSIP Technical Specifications Number and here-by certifies that the referenced product remains fully compliant.

Manufacturer's Authorized Signature: *John Smith* Date: 01/25/2013

Name & Title (Printed) John Smith, Sales Manager, ABC Windows & Doors, Inc.

SAMPLE

SECTION 08 12 13 - HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes fire-rated hollow-metal frames.

B. Related Requirements:

1. Section 01 40 00 "Quality Requirements".
2. Section 07 92 00 "Joint Sealant".
3. Section 08 14 00 "Flush Wood Doors".
4. Section 08 16 13 "Fiberglass Doors".
5. Section 08 71 00 "Door Hardware ".

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
HMMA	Hollow Metal Manufacturers Association www.hollowmetal.org	(630) 942-6591
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-9591
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
SDI	Steel Door Institute https://steeldoor.org	(440) 899-0010
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:

1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
2. Locations of reinforcement and preparations for hardware.
3. Details of each different wall opening condition.
4. Details of anchorages, joints, field splices, and connections.
5. Details of moldings, removable stops, and glazing.

C. Samples for Verification: Prepare Samples to demonstrate compliance with requirements for quality of materials and construction. Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.

D. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

E. Product Test Reports: For each type of frame assembly, for fire-protection rating tests performed by a qualified testing agency

1.7 INFORMATIONAL SUBMITTALS

A. Completed Fire-rated door inspection report.

1.8 QUALITY ASSURANCE

A. Mockups shall be provided for each type of treatment including, but not limited to; installation of a complete door opening, including frame, door, all hardware and door seals and trim.

B. See Section 01 40 00 “Quality Requirements” for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

B. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4 inch high wood blocking. Provide minimum 1/4-inch space between each unit to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide one of the following products:

1. Dunbarton Corporation;RediFrame FX Series
2. International Door Products; NK2A Series
3. Mesker Door; FR Series Remodel Frame
4. Timely Industries; Adjustable Frame

B. Source Limitations: Each Home and multi-unit building will receive hollow-metal work from single source from single manufacturer.

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction (AHJ) for fire-protection ratings and temperature-rise limits indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

B. Smoke and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

1. Provide smoke control listed and labeled frames for multi-unit residential corridor tenant doors and doors to exit stairs.

C. Post-Installation Inspection: Upon completion of newly installed fire-rated doors, each door and frame shall be inspected and the installed conditions verified in accordance with NFPA 80 and NFPA 105, including a record of all inspections and a minimum of all items in NFPA 80, 5.2.2.4 and of all items in NFPA 80, 5.2.3.5.

1. The Contractor shall perform the inspection, complete an inspection form to be provided by the Commissioner, and record all inspection observations. Acceptance review and inspection of fire-rated door assemblies shall be performed by a qualified person with the knowledge and understanding of the operating components of the type of assembly being subject to inspection. The inspection form shall be signed by the Contractor's Inspector and copies distributed as follows:

a. The Contractor shall distribute the completed form to the AHJ prior to the AHJ final inspection.
b. One copy to the Commissioner.

c. The original signed form shall be delivered to the Homeowner as part of the Homeowner's Warranty package. Records of acceptance tests shall be retained for the life of the assembly by the Homeowner.

2.3 INTERIOR FRAMES

A. General:Frame will be adjustable-throat, pre-finished, fire-rated and include flat c-shaped or colonial steel casing trims in finish to match frame.

B. Construct interior frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

C. Hollow-Metal Frames: NAAMM-HMMA 860. At locations indicated.

1. Materials: Metallic coated steel sheet, minimum thickness of 0.042-inch.
2. Construction: Adjustable throat, knocked down.
3. Exposed Finish: Factory.
4. Fire-Rating: 45 minutes, unless otherwise indicated.

2.4 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.5 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Provide countersunk, flat or oval-head exposed screws and bolts for exposed fasteners, unless otherwise indicated.
2. Jamb Anchors: Provide number and spacing of anchors as follows:

a. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

3. Door Silencers: Except on weatherstripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

C. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce frames to receive nontemplated, mortised, and surface-mounted hardware.
2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

2.6 STEEL FINISHES

A. Factory Finish: Clean, pretreat, and apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, complying with SDI A250.3.

1. Color: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Drill and tap frames to receive non-templated, mortised, and surface-mounted hardware.

3.3 INSTALLATION

A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.

B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

    a. At fire-rated openings, install frames according to NFPA 80. Frame and fire-rated doors must meet the NFPA 80 required clearances listed in 4.8.4 and 6.3.1.7.
    b. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    c. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

2. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16-inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16-inch, measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16-inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16-inch, measured at jambs at floor.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

END OF SECTION 08 12 13

SECTION 08 14 16 – FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes:

1. Exterior flush solid core wood doors.
2. Interior flush solid core wood doors.
3. Interior fire-rated solid core wood doors.
4. Machining and pre-hanging of wood doors.
5. Finishing flush wood doors.

B. Related Requirements:

1. Section 01 50 00 “Temporary Facilities and Controls.”
2. Section 01 73 00 “Execution.”
3. Section 02 83 13 “Lead Hazard Control Activities.”
4. Section 05 75 00 “Decorative Formed Metal.”
5. Section 06 10 53 “Miscellaneous Rough Carpentry.”
6. Section 06 20 13 “Exterior Finish Carpentry.”
7. Section 06 20 23 “Interior Finish Carpentry.”
8. Section 07 21 00 “Thermal Insulation.”
9. Section 07 92 00 “Joint Sealants.”
10. Section 08 12 13 “Hollow Metal Frames.”
11. Section 08 71 00 “Door Hardware.”
12. Section 08 80 00 “Glazing.”
13. Section 09 91 00 “Exterior Painting.”
14. Section 09 91 23 “Interior Painting.”
15. Section 09 93 00 “Staining and Transparent Finishing.”

1.3 DEFINITIONS

A. Manufacturer: Entity which manufactures door leafs or slabs. The manufacturer may also provide some or all fabrication services.

B. Fabricator: Entity which pre-hangs doors by machining doors for hardware, and fitting doors into an assembly including a frame, hardware, and threshold.

C. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

D.

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWI	AWI Architectural Woodwork Standards	
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
CFR	Code of Federal Regulations	
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

E. Rough Opening-Total Removal of Existing Door: The opening in a wall or framework of a home, remaining after the removal of the entire existing door unit including frame and sill, into which a new replacement door unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all doors and verify all requirements of the Construction Modification, including but not limited to:

   a. Door type, color, and finish options by review with the Homeowner.
   b. Door quantities and locations.
   c. Safety glazing and egress requirements in compliance with the governing Code or Authority.

2. Review, discuss, and coordinate the interrelationship of doors with other exterior wall components. Include provisions for anchoring, flashing, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.
3. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 ACTION SUBMITTALS

A. Product Data and Shop Drawings: For each type of wood door required to be incorporated into the Work. Include information not fully detailed in manufacturer’s standard product data.

1. Provide door corner samples of all finish options being furnished under the contract.
2. The Contractor and/or fabricator shall provide a submittal of all components comprising the door opening, including the following:

    a. Door core materials and construction.
    b. Door edge construction.
    c. Door face type and characteristics.
    d. Finish and Color options, including factory finish specifications.
    e. Door trim for openings.
    f. Details of door frame including dimensions and profile.
    g. Door elevations, dimension and locations of hardware, and lite cutouts.
    h. Location, product, and style of all weatherstripping.
    i. Door threshold and door bottom seal.
    j. Fire protection ratings for fire-rated doors.
    k. Glass and Glazing data:

        1) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions, if applicable).
        2) Type and locations for low-E coatings.
        3) Type of gas fills for insulated units.
        4) Type of spacer for insulated units.
        5) Setting method and materials for all glazing.

B. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish**.** For each wood species and transparent finish, provide set of three (4) Samples showing typical range of color and grain to be expected in finished Work.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator to demonstrate compliance with paragraph 1.8, B.

B. Product Test Reports: For each type of wood door, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 – PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS articles of this Specification Section.

2. Each test report dated more than four years from the Notice to Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract Notice To Proceed (NTP), the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:

    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty-five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Sample Warranties: For manufacturer's warranties.

D. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 "Sustainable Design Requirements" Articles 1.4-B and 2.2.

E. Completed Fire-Rated door inspection report.

1.8 QUALITY ASSURANCE

A. Comply with Architectural Woodwork Institute (AWI) standards. Unless otherwise indicated, comply with AWI custom grade of interior architectural woodwork, construction, finishes, and other requirements.

B. Fabricator Qualifications: A firm which has successfully manufactured products similar in material and design to those used in this Project which have been used in a minimum of 5 previous projects with a record of in-service performance; is familiar with the special requirements indicated; and has sufficient production capacity to produce required units.

C. Certification Labels: Provide doors with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Fire-resistance label, for fire-rated doors.

D. Mock-ups

1. Mock-ups shall be provided for each type of treatment including, but not limited to; installation of a door opening complete with frame, door, all hardware, trim, insulation and seals, including joint sealant.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect door during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standards and recommendations of WDMA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.

1. Package doors to protect product against damage during transport and handling prior to installation.
2. Transport, handle, and store doors right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver doors (and frames) shop finished in accordance with manufacturer's recommendations.

B. Store doors in compliance with manufacturer's recommendations. Store in a manner such that the manufacturer's identification marks are clearly visible.

C. Do not slide doors against one another. Do not roll doors onto corners or in any manner that would damage the door.

D. Mark each door on bottom rail and/or unexposed frame face with opening number used on Construction Modification.

1.10 PROJECT CONDITIONS

A. Provide custom-sized doors for each opening. Size each door unit to fit existing opening without the use of head expanders. Provide door units no more than 1/2-inch smaller in width and in height than the rough opening size. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

B. Environmental Limitations: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized.

1. Reference AWI quality standard including Section 100-S-3 "Moisture Content."

C. Field Measurements: Check actual door openings by accurate Field Measurement to verify pre-hung wood door requirements, including swing, before installation.

1. Record Homeowner's selections for trim profiles and finishes at the time of measurement.

1.11 WARRANTIES

A. Manufacturer's Warranty: Provide manufacturer's written warranty signed by manufacturer, installer and Contractor agreeing to provide all materials and labor required at each Home to repair and/or replace wood doors which fail in materials or workmanship within specified warranty period. The warranty will further state that the parts used in the manufacture of the door, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:

    a. Failure to meet performance requirements, including tolerance limitations of referenced standards.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Warping (bow, cup or twist) more than 1/4-inch in a 42 by 84 inch section.
    d. Telegraphing of core construction in face veneers exceeding 0.01-inch in a 3 inch span.
    e. Faulty operation of hardware.
    f. Deterioration of materials and finishes beyond normal weathering.
    g. Failure of insulating glass: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior glass surface.
    h. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. Warranty will also include installation and finishing that may be required due to repair or replacement of defective doors.
3. Warranty will not include a statement that the defective door needs to transgress one climatic heating/cooling cycle before a warping issue can be resolved.
4. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of door to meet generally recognized performance standards and specified installation requirements.

5. Warranties on materials not manufactured by the wood door manufacturer but required to be furnished as part of the door unit will be included in the wood door manufacturer's warranty. These items may include, but are not necessarily limited to thermal breaks, sheet glass, insulated panels, sealant, and weatherstripping. Such items will be noted as included on the wood door manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.

    a. All sealed insulating glass units will carry a ten (10) year non-prorated warranty by the glass manufacturer against obstruction of vision as a result of interior fogging on the interior glass surfaces due to defects in materials or workmanship.

6. Warranty Period:

    a. Solid-Core Exterior Doors: Two (2) years from date of Final Completion of the Home.
    b. Solid-Core Fire-Rated Interior Doors: Ten (10) years from date of Final Completion of the Home.
    c. Glazing Units: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new wood doors in a manner that will preserve the manufacturer's warranty as well as the wood door assembly's performance properties. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace wood doors and associated installation materials that are defective in materials or workmanship related to installation of the wood doors for a period of one (1) year from the date of Final Completion of the Home.

1. The warranty will cover the installation of the doors, frames, thresholds, weatherstripping, hardware and other related items.
2. The warranty will also include replacement and/or refinishing of the door where the Contractor's Work contributed to rejection of the door, or the voiding of the manufacturer's warranty.
3. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
4. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
5. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the wood door unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Door Manufacturers: Subject to compliance with requirements, the Pre-Hung Door Fabricator will provide door products by one of the following:

1. Eggers Industries.
2. Lynden Door.
3. Masonite.
4. Vancouver Door Company.
5. VT Industries, Inc.

B. Source Limitations: Each Home and multi-unit building will receive wood doors and frames for each type from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Thermal Transmittance: Provide products tested/evaluated in accordance with NFRC by NFRC 100 Procedure for Determining Fenestration Product U-factors or AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.

1. Maximum whole-unit U-factor of 0.30 Btu/sq. ft. x h x deg F.

B. VOC Emissions Requirements: All products shall comply with VOC emissions limits for Target CREL VOCs and their maximum allowable concentrations when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2, 2017." Results shall be in accordance with Section 4 of the referenced standard.

2.3 WOOD DOORS

A. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Standards."

1. Provide AWI Quality Certification Labels indicating that doors comply with requirements of grades specified.

B. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

2.4 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Exterior Solid-Core Doors: Provide doors with a minimum density of 5 lbs./sq.ft. and as follows:

1. Grade: AWI Custom, with Grade A faces.

2. Species: Red Oak.

3. Cut: Plain sliced (flat sliced).

4. Match between Veneer Leaves: Book match.

5. Assembly of Veneer Leaves on Door Faces: Running match.

6. Exposed Vertical Edges: Same species as faces or a compatible species - edge Type A.

7. Core: Structural composite lumber WDMA I.S.10, or particle board ANSI A208.1, Grade LD-1, made with binder containing no urea-formaldehyde.

8. Construction: Five plies. Stiles and rails are bonded to core, and then entire unit is abrasive planed before veneering.

9.

10. Adhesives: Type I per WDMA T.M.-6.

11. WDMA I.S.1-A Performance Grade: Heavy Duty.

12.

13. Applied Trim (Plant-ons for door styles as scheduled): Solid Red Oak.

B. Interior Solid-Core Doors: Provide doors with a minimum density of 5 lbs./sq.ft. and as follows:

1. Grade: AWI Custom, with Grade A faces.

2. Species: Red Oak.

3. Cut: Plain sliced (flat sliced).

4. Match between Veneer Leaves: Book match.

5. Assembly of Veneer Leaves on Door Faces: Running match.

6. Room Match: Provide door faces of compatible color and grain within each separate room or area of building. Corridor-door faces do not need to match where they are separated by 10 feet or more.

7. Exposed Vertical Edges: Same species as faces or a compatible species - edge Type A.

8. Core: Structural composite lumber WDMA I.S.10, or particle board ANSI A208.1, Grade LD-2, made with binder containing no urea-formaldehyde, or mineral core as required to achieve fire rating.
9.
10. Construction: Five plies. Stiles and rails are bonded to core, and then entire unit is abrasive planed before veneering.

11. WDMA I.S.1-A Performance Grade: Heavy Duty.
12.
13. Applied Trim (Plant-ons for door styles as scheduled): Solid Red Oak.

2.5 DOORS FOR OPAQUE FINISH

A. Exterior Solid-Core Doors: Provide doors with a minimum density of 5 lbs./sq.ft. and as follows:

1. Grade: AWI Custom.

2. Faces: Medium Density Overlay (MDO) or any closed-grain hardwood of mill option.

   a. Apply MDO to standard-thickness, closed-grain, hardwood face veneers or directly to high-density hardboard cross bands.

3. Exposed Vertical Edges: Any closed-grain hardwood.

4. Core: Structural composite lumber WDMA I.S.10, or particle board ANSI A208.1, Grade LD-2, made with binder containing no urea-formaldehyde.

5. Construction: Manufacturer’s standard five or seven plies.
6.
7. Adhesives: Type I per WDMA T.M.-6.

8. WDMA I.S.1-A Performance Grade: Heavy Duty.
9.
10. Applied Trim (Plant-ons for door styles as scheduled): Any closed-grain hardwood.

B. Interior Solid-Core Doors: Provide doors with a minimum density of 5 lbs./sq.ft. and as follows:

1. Grade: AWI Custom.

2. Faces: MDO or any closed-grain hardwood of mill option.

a. Apply MDO to standard-thickness, closed-grain, hardwood face veneers or directly to high-density hardboard cross bands.
b. Hardboard Faces: ANSI A135.4, Class 1 (tempered) or Class 2 (standard).
c. Medium Density Fiberboard (MDF) Faces: ANSI A208.2, Grade 150 or Grade 160.

3. Exposed Vertical Edges: Any closed-grain hardwood.

4. Core: Structural composite lumber WDMA I.S.10, or particle board ANSI A208.1, Grade LD-2, made with binder containing no urea-formaldehyde, or mineral core as required to achieve fire-rating.
5.
6. Construction: Manufacturer's standard five or seven plies.
7.
8. Adhesives: Manufacturer's standard.

9. WDMA I.S.1-A Performance Grade: Heavy Duty.
10.
11. Applied Trim (Plant-ons for door styles as scheduled): Any closed-grain hardwood.

2.6 DOOR FRAMES AND MOLDING TRIM

A. Quality Standard: Comply with AWI Custom Grade.

B. Door and Door Light Frames: Provide single-rabbet frame, 1 5/16 inch, by wall thickness.

1. Exterior door frame widths will be sufficient to accommodate both the prime door and the storm door described in the Specifications.
2. All frames will be shop assembled and finished.
3. Exterior frames will be treated with a moisture repellent preservative at the factory after manufacturing has been complete which will not affect the final finish.
4. Reinforce frame at deadbolt engagement. Provide steel plate approximately 3 x 6 x 16 inches gauge secured to back of frame with wood screws with cut-out opening to engage the deadbolt.

C. Molding Trim: Provide door casing and associated miscellaneous trims which comply with the requirements of Section 06 20 23 "Interior Finish Carpentry."

D. Wood Species and Finish:

1. Transparent Finish: Solid lumber of select clear pine or uniform color birch stained and finished to match door or trim finish as selected by the Homeowner.
2. Opaque Finish: Any closed-grain hardwood or select clear pine.
3. Split-Finish Frames: Where frames are scheduled to receive both transparent and paint finishes, the frame will be stained to match the door from the interior surface to rabbet, and painted on the exterior side of the rabbet.

2.7 FIRE-RATED DOORS

A. Fire-Rated Door Rating Requirements for Multi-Unit Buildings: Provide fire-rated door, frame, and smoke control assemblies for all individual unit entries as follows:

1. Existing Fire-Labeled Doors: Provide doors with a fire-rating that meets the current local building code requirements.
2. For Buildings Containing 4 Stories or Less:

a. Existing Doors Without Identification Labels:

1) Provide 20 minute fire-rated doors for tenant apartment entry doors to internal corridor leading to enclosed exit stairwells.
2) Provide 45 minute fire-rated doors for tenant apartment with unit entry door directly from exit stairwell.

3. For Buildings Greater Than 4 Stories:

1) Provide 45 minute fire-rated doors for tenant apartment entry doors to internal corridor leading to enclosed exit stairwells.

B. Core for Fire-Rated Doors: Solid core structural composite lumber or particle board as required to achieve fire-protection rating scheduled.

C. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

D. Edge Construction: Provide edge construction matching door face finish. At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges. Provide new fire rated doors with unit labels.

E. Blocking: Provide composite wood blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.

F. Smoke and Draft-Control Door Assemblies: Listed and labeled 'S' for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

a. Provide smoke control listed doors for multi-unit residential corridor tenant doors and doors to exit stairs. Gasketing shall be approved for category 'H.'

G. Post-Installation Inspection: Upon completion of newly installed Fire Doors, each door and frame shall be inspected and the installed conditions verified in accordance with NFPA 80 and NFPA 105, including a record of all inspections and a minimum of all items in NFPA 80, 5.2.2.4 and of all items in NFPA 80, 5.2.3.5.

1. The Contractor shall perform the inspection, complete an inspection form to be provided by the Commissioner, and record all inspection observations. Acceptance review and inspection of fire door assemblies shall be performed by a qualified person with the knowledge and understanding of the operating components of the type of assembly being subject to inspection. The inspection form shall be signed by the Contractor's Inspector and copies distributed as follows:

a. The Contractor shall distribute the completed form to the Authority Having Jurisdiction prior to the AHJ final inspection.
b. One copy to the Commissioner.
c. The original signed form shall be delivered to the homeowner as part of the Homeowner's Warranty package. Records of acceptance tests shall be retained for the life of the assembly by the Homeowner.

2.8 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed wood doors.

B. Glass Types: Clear, frosted, or rain glass as scheduled, fully tempered and laminated types, as required.

1. For door styles P3, P4, P5, P6, P7, P8, and P9, provide 1-inch insulated clear, frosted, or rain glass units with low-e coating, consisting of 1/4-inch laminated inner lite, 1/2-inch spacer, and 1/4-inch laminated outer lite.
2. For door style P2, provide 1/2-inch insulated clear, frosted, or rain glass units with low-e coating, consisting of 1/8-inch inner lite, 1/4-inch spacer, and 1/8-inch outer lite .
3. Glazing interspace gas shall be argon or air.

2.9 LIGHT FRAMES AND LOUVERS

A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's standard shape.

B. Wood Louvers: Door manufacturer's standard solid-wood louvers, unless otherwise indicated.

1. Wood Species: Same species as door faces.

2.10 HARDWARE

A. Hardware and Gasketing: As required in Section 08 71 00 "Door Hardware."

B. Wood Threshold: For interior non-rated doors, provide solid oak, nominal five (5) inch wide, 3/4-inch thickness, with five (5) degree slope and horns which extend underneath casing.

C. Threshold: As required in Section 08 71 00 "Door Hardware" for type scheduled.

D. Door Viewer-Knocker: Where an existing viewer-knocker is removed, provide integral door viewer-knocker with engraved unit number in finish to match door lockset. Viewers in fire-rated doors must be rated for use in fire rated doors.

E. Door Signage: For primary and secondary entrance doors provide identification signage to match existing removed door messaging, including, but not limited to unit numbers. Signage attached to Fire Doors by use of adhesive only, mechanical attachments such as screws or nails shall not be permitted, per latest edition of NFPA 80, Section 4.1.4.2.

2.11 FABRICATION

A. Fabricate and pre-assemble wood doors and frames complying with following requirements:

1. Provide accurate measurements to manufacturer so that door and frame units fit existing openings properly.
2. All doors and frames will be pre-assembled and prepared (pre-bored) for hardware at the fabricator's shop. Cutting and installation of all light openings, face trim patterns, and kerfing will take place at the fabricator's shop.
3. All doors will be shipped to the Contractor's warehouse completely finished and assembled, including all weatherstripping (with kerf), peepholes and door sweeps (with kerf). Apply sealants to all mortises and holes before shipping. Field finishing of pre-hung doors will not be accepted.
4. Fitting clearance: Coordinate clearance for threshold and door bottom seal.
5. Cut and trim openings through doors to comply with door elevation type indicated in door schedule on Drawings.
6. Light Openings: Trim openings full perimeter with hardwood lip moldings (interior and exterior face) of material matching door veneer species and quality, and profile indicated in details on Drawings.

7. For door styles with decorative face trim: Decorative face trim will appear on exterior and interior faces.
8. No cutting, shaving or planing of any kind is permitted on finished pre-hung doors.

B. Door pairs will include manufacturer's standard astragals; flush bolts at top and bottom of fixed door with a finish to match the hardware specified in Section 08 71 00 "Door Hardware."

C. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.

D. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI Wood Door Hardware Standards DHI-WDHS-3, "Recommended Locations for Architectural Hardware for Flush Wood Doors". Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

E. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, glazing, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.

1. Fabricate door and transom panels with full-width, solid-lumber, rabbeted, meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.

F. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.

2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08 80 00 "Glazing." Glazing options for doors and sidelights will include clear, frosted, and rain glass.
3. Louvers: Factory louvers in prepared openings.

G. Applied Trim (Plant-ons): Where door styles indicate moldings to be surface-applied to the face of the door, install moldings on both faces in fabrication shop. Field application is not permitted.

H. Exterior Doors: Treat exterior doors with water repellent after fabrication has been completed but before factory finishing. Seal all cut edges, machined and drilled openings for hardware preparation.

2.12 FINISHES

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces and all four edges. Edges of cutouts and mortises shall be sealed. Finish frames, stops and casing trim. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.

B. Factory finish doors, frames, stops and trim.

1. Opaque Finished Doors: Doors will be opaque finished all faces. Frames and stops will be painted to match door face. Casing trim style and finish will be as scheduled and/or selected by the Homeowner.
2. Transparent Finished Doors:

a. Transparent Finished Door and Trim: Provide split finished frames; white opaque exterior finish with transparent interior finish matching the door.

1) Transition between finishes will occur at the stop so that finish on opposite side is not visible when door is in the closed position. Fill grain of open grain wood frames on portion of frame to receive opaque finish.

b. Transparent Finished Door with Opaque Finished Trim: Provide opaque finished frame to match the interior trim finish.

c. Casing trim style and finish will be as scheduled and/or selected by the Homeowner.

C. Transparent Finish:

1. Grade: Custom.
2. Finish: Manufacturer's standard finish system.
3. Staining: Match Architect's samples.

a. Interior Door Stain Options:

1) Clear finish (no stain).
2) Brown-tone stain finishes: light, medium, and dark.
3) Red tone stain finishes: Cherry.

b. Exterior Door Stain Options:

1) Clear finish (no stain).
2) Brown-tone stain finishes: light, medium, and dark.
3) Red-tone stain finishes: Cherry.

4. Effect: Semi-filled finish, produced by applying an additional finish coat to partially fill the wood pores.

5. Sheen: Semi-Gloss.

D. Opaque Finish:

1. Grade: Custom.
2. Finish: Manufacturer's standard paint finish.
3. Color: Match Architect's samples.

a. Interior Door Color Options: white, beige, and brown.
b. Exterior Door Color Options: white, beige, and brown.

4. Sheen: Semi-Gloss.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine pre-assembled pre-hung and job-fitted door units prior to installing:

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics during field measurements and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

B. Carefully remove existing doors and frames so that firm, sound surfaces are exposed for adequate anchoring of the new pre-hung doors and frames. Salvage existing finish hardware for re-use only if requested by the Homeowner. Install new pre-hung doors as described in Section 06 10 53 “Miscellaneous Rough Carpentry,” Section 06 20 13 “Exterior Finish Carpentry,” and Section 06 20 23 “Interior Finish Carpentry.”

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Section 08 71 00 “Door Hardware.”

B. Installation Instructions: Install doors to comply with manufacturer’s written instructions and referenced quality standard, as indicated.

1. Install fire-rated doors according to NFPA 80.

C. Field-Finished Doors: No field finishing will be accepted.

D. Provide wood blocking in voids of 1/2-inch or greater around perimeter of frame. For voids of 1/2-inch or less, provide batt insulation, joint sealant and backing.

E. Thresholds: Provide threshold that complies with Section 08 71 00 “Door Hardware.”

F. Provide interior and exterior trim and exterior cladding at each door location.

1. For existing doors receiving weather-stripping and thresholds, see Section 08 71 00 “Door Hardware.”

G. Verify swing of door noted at Field Measurement.

H. Work includes jamb extensions for door and sidelight frames as required for actual conditions.

I. Fire Rating Labels: Do not remove, cover, or paint over Fire Rating Labels.

J. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8-inch at heads, jambs, and between pairs of doors. Provide 1/8-inch from bottom of door to top of decorative floor finish or covering, unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4-inch from bottom of door to top of threshold unless otherwise indicated.

a. Comply with NFPA 80 for fire-rated doors.

2. Bevel fire-rated doors 1/8-inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.

K. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust doors and hardware for a tight fit at contact points and weatherstripping for smooth operation and weather tight closure. Lubricate hardware and other moving parts.

B. Operation: Rehang or replace doors that do not swing or operate freely. Cut and finish transition carpet where required for free operation of door.

C. Clean exposed surfaces immediately after installing doors. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

D. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

E. Protect doors as recommended by door manufacturer to ensure that door and frames will be without damage or deterioration at time of Final Completion of the Home. No installed door will be left unprotected. If necessary, cover with a temporary storm door.

F. Remove from site and legally dispose of all removed materials, debris, packaging, banding, and all other surplus materials and equipment.

G. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08 14 16

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SECTION 08 16 13 - FIBERGLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes:

1. Pre-hung Fiberglass Doors, including frames, thresholds, hinges, weatherstripping and glazing. Doors are to be prepared for lockset installation as scheduled.
2. Interior fire-rated fiberglass doors.

B. Related Requirements:

1. Section 01 40 00 “Quality Requirements.”
2. Section 01 50 00 “Temporary Facilities and Controls.”
3. Section 01 73 00 “Execution.”
4. Section 01 81 13 “Sustainable Design Requirements.”
5. Section 02 83 13 “Lead Hazard Control Activities.”
6. Section 05 75 00 “Decorative Formed Metal.”
7. Section 06 10 53 “Miscellaneous Rough Carpentry.”
8. Section 06 20 13 “Exterior Finish Carpentry.”
9. Section 06 20 23 “Interior Finish Carpentry.”
10. Section 07 21 00 “Thermal Insulation.”
11. Section 07 92 00 “Joint Sealants.”
12. Section 08 11 69 “Metal Storm Doors and Frames.”
13. Section 08 12 13 “Hollow Metal Frames.”
14. Section 08 71 00 “Door Hardware.”
15. Section 08 80 00 “Glazing.”

1.3 DEFINITIONS

A. Manufacturer: Entity which manufactures door leafs or slabs. The manufacturer may also provide some or all fabrication services.

B. Fabricator: Entity which pre-hangs doors by machining doors for hardware, and fitting doors into an assembly including a frame, hardware, and threshold.

C. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International	(610) 832-9500

	(American Society for Testing and Materials International) www.astm.org	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWI	AWI Architectural Woodwork Standards	
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
CFR	Code of Federal Regulations	
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

D. Rough Opening-Total Removal of Existing Door: The opening in a wall or framework of a Home, remaining after the removal of the entire existing door unit including frame and sill, into which a new replacement door unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all doors and verify all requirements of the Construction Modification, including but not limited to:
    a. Door type, color, and finish options by review with the Homeowner.
    b. Door quantities and locations.
    c. Safety glazing and egress requirements in compliance with the governing Code or Authority.
2. Review, discuss, and coordinate the interrelationship of doors with other exterior wall components. Include provisions for anchoring, flashing, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.
3. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 ACTION SUBMITTALS

A. Product Data: For each type of fiberglass door required to be incorporated into the Work, include information not fully detailed in manufacturer’s standard product data.

1. The Contractor and/or fabricator shall provide a submittal of all components comprising the door opening, including the following:
    a. Door core materials and construction.
    b. Door edge construction.
    c. Door face type and characteristics.
    d. Finish and Color options, including factory finish specifications.
    e. Door trim for openings.
    f. Details of door frame including dimensions and profile.
    g. Door elevations, dimension and locations of hardware, and lite cutouts.
    h. Location, product, and style of all weather-stripping.
    i. Door threshold and door bottom seal.
    j. Fire protection ratings for fire-rated doors.
    k. Glass and Glazing data:
        1) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions, if applicable).
        2) Type and locations for low-E coatings.
        3) Type of gas fills for insulated units.
        4) Type of spacer for insulated units.
        5) Setting method and materials for all glazing.

B. Shop Drawings: Indicate elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Doors to be factory finished and finish requirements.
2. Fire-protection ratings for fire-rated doors.

C. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish**.** For each wood grain pattern and transparent finish, provide set of four (4) Samples showing typical range of color and grain to be expected in finished Work.
2. Samples for grilles in manufacturer’s standard colors.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator to demonstrate compliance with paragraph 1.8, C.

B. Product Test Reports: For each type of fiberglass door, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS articles of this Specification Section.

2. Each test report dated more than four years from the Notice to Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract Notice To Proceed (NTP), the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:
    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty-five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 "Sustainable Design Requirements" Articles 1.4-B and 2.2.

D. Sample Warranties: For manufacturer's warranties.

E. Completed Fire-Rated door inspection report.

1.8 QUALITY ASSURANCE

A. Comply with Architectural Woodwork Institute (AWI) Architectural Woodwork Standards. Unless otherwise indicated, comply with AWI custom grade of interior architectural woodwork, construction, finishes, and other requirements.

B. Installer Qualifications: An installer acceptable to wood door manufacturer for installation of units required for this Project.

C. Fabricator Qualifications: A firm which has successfully manufactured products similar in material and design to those used in this Project which have been used in a minimum of 5 previous projects with a record of in-service performance; is familiar with the special requirements indicated; and has sufficient production capacity to produce required units.

D. Certification Labels: Provide doors with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Fire-resistance label, for fire-rated doors.

E. Mock-ups

1. Mock-ups shall be provided for each type of treatment including, but not limited to; installation of a door opening complete with frame, door, all hardware, trim, insulation and seals, including joint sealant.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect door during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standards and recommendations of WDMA pamphlet "How to Store, Handle, Finish, Install, and Maintain Fiberglass Doors," as well as with manufacturer's instructions.

1. Package doors to protect product against damage during transport and handling prior to installation.

2. Transport, handle, and store doors right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver doors (and frames) shop finished in accordance with manufacturer's recommendations.

B. Store doors in compliance with manufacturer's recommendations. Store in a manner such that the manufacturer's identification marks are clearly visible.

C. Do not slide doors against one another. Do not roll doors onto corners or in any manner that would damage the door.

D. Mark each door on bottom rail and/or unexposed frame face with opening number used on Construction Modification.

1.10 PROJECT CONDITIONS

A. Provide manufacturer's standard sized doors and frame to fit within each existing door rough opening as scheduled.

1. Exterior fiberglass doors may be installed with an applied exterior storm door per specification Section 08 11 69 "Metal Storm Doors and Frames." Provide threshold in depth that allows for installation of the metal storm door.
    a. The installation of the storm door shall be noted and accepted by the fiberglass door manufacturer in their warranty.

2. Door sizes shall include door widths of 30", 34", and 36" and heights of 80", 84", and 96" as scheduled.
3. Provide manufacturer's standard frame depth closely matching the existing wall thickness. The Contractor shall provide supplemental trim as necessary to complete the door installation.
4. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

B. Environmental Limitations: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized.

C. Field Measurements: Check actual door openings by accurate Field Measurement to verify pre-hung fiberglass door requirements, including swing, before installation.

1. Record Homeowner's selections for trim profiles and finishes at the time of measurement.

1.11 WARRANTIES

A. Manufacturer's Warranty: Provide manufacturer's written warranty signed by manufacturer, installer and Contractor agreeing to provide all materials and labor required at each Home to repair and/or replace fiberglass doors which fail in materials or workmanship within specified warranty period. The warranty will further state that the parts used in the manufacture of the door, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:
    a. Failure to meet performance requirements, including tolerance limitations of referenced standards.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Warping (bow, cup or twist) more than 1/4-inch in a 42 by 84-inch section.
    d. Faulty operation of hardware.
    e. Deterioration of materials and finishes beyond normal weathering.
    f. Failure of insulating glass: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior glass surface.

g. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. Warranty will also include installation and finishing that may be required due to repair or replacement of defective doors.
3. Warranty will not include a statement that the defective door needs to transgress one climatic heating/cooling cycle before a warping issue can be resolved.
4. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of door to meet generally recognized performance standards and specified installation requirements.
5. Warranties on materials not manufactured by the fiberglass door manufacturer but required to be furnished as part of the door unit will be included in the fiberglass door manufacturer's warranty. These items may include, but are not necessarily limited to thermal breaks, sheet glass, insulated panels, sealant, weather-stripping, and paint or stain finishes applied by the manufacturer's authorized installer. Such items will be noted as included on the fiberglass door manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.
   a. All sealed insulating glass units will carry a ten (10) year non-prorated warranty by the glass manufacturer against obstruction of vision as a result of interior fogging on the interior glass surfaces due to defects in materials or workmanship.

6. Warranty Period:
   a. Exterior Doors: Two (2) years from date of Final Completion of the Home.
   b. Fire-Rated Interior Doors: Two (2) years from date of Final Completion of the Home.
   c. Door Finishes: One (1) years from date of Final Completion of the Home.
   d. Insulated Glazing Units: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new fiberglass doors in a manner that will preserve the manufacturer's warranty as well as the fiberglass door assembly's performance properties. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace fiberglass doors and associated installation materials that are defective in materials or workmanship, related to installation of the fiberglass doors, for a period of one (1) year from the date of Final Completion of the Home.

1. The warranty will cover the provision and installation of the doors, frames, thresholds, weatherstripping, hardware and other related items.
2. The warranty will also include replacement and/or refinishing of the door where the Contractor's Work contributed to rejection of the door, or the voiding of the manufacturer's warranty.
3. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City or their Representatives.
4. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
5. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the fiberglass door unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers and Products: Subject to compliance with requirements, available Manufacturers and their product lines that may be incorporated into the Work are the following:

1. PlastPro:
    a. Stained Doors: Oak Grain Series
    b. Painted Doors: Smooth Skin Series

2. Therma-Tru Doors:
    a. Stained Doors: Fiber Classic Series
    b. Painted Doors: Smooth Star Series

3. Masonite:
    a. Stained Doors: Barrington, Belleville, and Oakcraft Series
    b. Painted Doors: Belleville and VistaGrande Series

B. Source Limitations: Each Home and multi-unit building will receive fiberglass doors and frames for each type from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Thermal Transmittance: Provide products tested/evaluated in accordance with NFRC by NFRC 100 Procedure for Determining Fenestration Product U-factors or AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.

1. Maximum, full lite, whole-unit U-factor of 0.30 Btu/sq. ft. x h x degrees F.

B. Sustainable Design Requirements: Refer to specification Section 01 81 13 “Sustainable Design Requirements” / Low-Emitting Materials – Manufactured Fenestration Product Assemblies for VOC and Component Odor emissions requirements.

2.3 FIBERGLASS DOORS

A. Quality Standard: In addition to requirements specified, comply with AWI’s “Architectural Woodwork Standards.”

B. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

C. Fire-Rated Fiberglass Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

2.4 WOOD GRAIN FIBERGLASS DOORS FOR TRANSPARENT FINISH

A. Construction:

1. Panel Thickness: 1 11/16 inches minimum.
2. Door Skins: High impact compression molded fiberglass reinforced material.
3. Rails and Stiles: Solid wood or composite top and stile rails. Engineered wood is acceptable. Wood composite bottom rail accepts door sweeps.
4. Core: CFC-free polyurethane
5. Lockblock: Solid wood, 12-inches or greater.
6. Fiberglass grain: Oak.
7. Wood Grain Pattern/Simulated Joints: The wood grain pattern direction and simulated joint locations shall match the requirements established in AWI North American Architectural Woodwork Standards for wood stile and rail doors.

2.5 SMOOTH FIBERGLASS DOORS FOR OPAQUE FINISH

A. Construction:

1. Panel Thickness: 1 11/16 inches minimum.
2. Door Skins: High impact compression molded fiberglass reinforced material.
3. Rails and Stiles: Solid wood or composite top and stile rails. Engineered Wood is acceptable Wood composite bottom rail accepts door sweeps.
4. Core: CFC-free polyurethane
5. Lockblock: Solid wood, 12-inches or greater.
6. Fiberglass grain: smooth.

2.6 DOOR FRAMES AND MOLDING TRIM

A. Quality Standard: Comply with AWI Custom Grade.

B. Door and Door Light Frames: Provide single-rabbet frame, 1 5/16 inch, by wall thickness.

1. Exterior door frame widths will be sufficient to accommodate both the prime door and the storm door described in the Specifications.
2. All frames will be shop assembled and finished.
3. Composite frames with a 10-year warranty are acceptable.
4. Reinforce frame as necessary to comply with forced entry performance requirements. At deadbolt engagement, provide steel plate approximately 3 x 6 x 16 inches gauge secured to back of frame with wood screws with cut-out opening to engage the deadbolt.

C. Molding Trim: Provide door casing and associated miscellaneous trims which comply with the requirements of Section 06 20 23 “Interior Finish Carpentry.”

D. Wood Species and Finish:

1. Transparent Finish: Solid lumber of select clear pine or uniform color birch stained and finished to match door or trim finish as selected by the Homeowner.
2. Opaque Finish: Any closed-grain hardwood, select clear pine, or composite.
3. Split-Finish Frames: Where frames are scheduled to receive both transparent and paint finishes, the frame will be stained to match the door from the interior surface to rabbet and painted on the exterior side of the rabbet.

2.7 FIRE-RATED DOORS

A. Provide core specified or core with labeled door frame as required to meet the current local building code.

B. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 degrees F (250 degrees C) above ambient after 30 minutes of standard fire-test exposure.

C. Edge Construction: Provide edge construction matching door face finish. At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges. Provide new fire rated doors with unit labels.

D. Blocking: Provide composite wood blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.

E. Post-Installation Inspection: Upon completion of newly installed Fire Doors, each door and frame shall be inspected and the installed conditions verified in accordance with NFPA 80 and NFPA 105, including a record of all inspections and a minimum of all items in NFPA 80, 5.2.2.4 and of all items in NFPA 80, 5.2.3.5.

1. The Contractor shall perform the inspection, complete an inspection form to be provided by the Commissioner, and record all inspection observations. Acceptance review and inspection of fire door assemblies shall be performed by a qualified person with the knowledge and understanding of the operating components of the type of assembly being subject to inspection. The inspection form shall be signed by the Contractor's Inspector and copies distributed as follows:
    a. The Contractor shall distribute the completed form to the Authority Having Jurisdiction prior to the AHJ final inspection.
    b. One copy to the Commissioner.
    c. The original signed form shall be delivered to the Homeowner as part of the Homeowner's Warranty package. Records of acceptance tests shall be retained for the life of the assembly by the Homeowner.

2.8 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed wood doors.

B. Glass Types: Clear or obscure (frosted, etched, or rain glass) as scheduled, fully tempered and laminated types as required.

1. For door styles F2, F3, F4, F5, F6, F7, F8, and F9, provide 1-inch insulated clear, or obscure glass units with low-e coating, consisting of 1/4-inch inner lite, 1/2-inch spacer, and 1/4-inch outer lite Obscure glass, when required, shall be inner lite.
2. Glazing interspace gas shall be argon or air.
3. Obscure glass: Frosted, etched or rain glass as selected from manufacturer's standard available options.

2.9 LIGHT FRAMES AND LOUVERS

A. Beads for Light Openings in Doors: Provide fiberglass beads. Match wood grain pattern

1. Profile: Manufacturer's standard shape.

2.10 ACCESSORIES

A. Grilles (False Muntins): Provide divider grilles in designs indicated for each door light.

1. Quantity and Type: Manufacturer's standard permanently located at exterior light or permanently located between insulating-glass lights.
2. Material: Manufacturer's standard.
3. Pattern: As indicated on Drawings.
4. Profile: Manufacturer's standard.
5. Color: As selected by homeowner from manufacturer's standard colors.

2.11 HARDWARE

A. Hardware and Gasketing: As required in Section 08 71 00 "Door Hardware or manufacturer's standard required to meet the performance requirements of this specification section."

B. Door Viewer-Knocker: Where an existing viewer-knocker is removed, provide integral door viewer-knocker with engraved unit number in finish to match door lockset. Viewers installed in fire-rated doors shall be labeled for use in fire rated door assemblies.

C. Door Signage: For primary and secondary entrance doors provide identification signage to match existing removed door messaging, including, but not limited to unit numbers. Signage attached to Fire Doors by use

of adhesive only, mechanical attachments such screws or nails shall not be permitted, per latest edition of NFPA 80, Section 4.1.4.2.

D. Hardware: Threshold: As required in Section 08 71 00 “Door Hardware” for type scheduled.

2.12 FABRICATION

A. Fabricate and pre-assemble fiberglass doors and frames complying with following requirements:

1. Provide accurate measurements to manufacturer so that door and frame units fit existing openings properly.
2. All doors and frames will be pre-assembled and prepared (pre-bored) for hardware at the fabricator’s shop. Cutting and installation of all light openings, face trim patterns, and kerfing will take place at the fabricator’s shop.
3. All doors will be shipped to the Contractor’s warehouse completely finished and assembled, including all weatherstripping (with kerf), peepholes and door sweeps (with kerf). Apply sealants to all mortises and holes before shipping. Field finishing of pre-hung doors will not be accepted.
4. Fitting clearance: Coordinate clearance for threshold and door bottom seal.
5. Cut and trim openings through doors to comply with door elevation type indicated in door schedule on Drawings.
6. Light Openings: Trim openings full perimeter (interior and exterior face) of material matching door, and profile indicated in details on Drawings.
7. No cutting, shaving or planing of any kind is permitted on finished pre-hung doors.

B. Door pairs will include manufacturer’s standard astragals; flush bolts at top and bottom of fixed door with a finish to match the hardware specified in Section 08 71 00 “Door Hardware.”

C. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.

D. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI Wood Door Hardware Standards DHI-WDHS-3, “Recommended Locations for Architectural Hardware for Flush Wood Doors”. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

E. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, glazing, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.

1. Fabricate door and transom panels with full-width, solid-lumber, rabbeted, meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.

F. Openings: Factory cut and trim openings through doors.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 08 80 00 “Glazing.” Glazing options for doors and sidelights will include clear and manufacturer’s standard frosted glass.

G. Exterior Doors: Treat exterior doors with water repellent after fabrication has been completed but before factory finishing. Seal all cut edges, machined and drilled openings for hardware preparation.

H. Hardware: Hinges: As required in Section 08 71 00 “Door Hardware” for type scheduled. Hinges and fiberglass doors selection must maintain the warranty.

2.13 FINISHES

A. General: Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces and all four edges. Edges of cutouts and mortises shall be sealed. Finish frames, stops and casing trim. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.

B. Factory or shop finish doors, frames, stops and trim. Field finishing is not permitted.

1. Opaque Finished Doors: Doors will be opaque finished all faces. Frames and stops will be painted to match door face. Casing trim style and finish will be as scheduled and/or selected by the Homeowner. See below for required opaque finish colors.
2. Transparent Finished Doors:
    a. Transparent Finished Door and Trim: Provide split finished frames; white opaque exterior finish with transparent interior finish matching the door. See below for transparent finish colors.
        1) Transition between finishes will occur at the stop so that finish on opposite side is not visible when door is in the closed position. Fill grain of open grain wood frames on portion of frame to receive opaque finish.
    b. Transparent Finished Door with Opaque Finished Trim: Provide opaque finished frame to match the interior trim finish.
    c. Casing trim style and finish will be as scheduled and/or selected by the Homeowner.

C. Opaque Finish:

1. Grade: Custom.
2. Finish: Manufacturer’s standard paint finish.
3. Color: Match Architect's sample.
4. Sheen: Semi-Gloss.
5. Colors: Colors will be selected from the manufacturer’s full range of available options for each of the following general finish colors. Colors are to be verified at the Field Measurements appointment.
    a. All Homes: White, beige, and brown.

D. Transparent Finish:

1. Grade: Custom.
2. Finish: Manufacturer’s standard finish system.
3. Effect: Semi-filled finish
4. Colors: Colors will be selected from the manufacturer’s full range of available options for each of the following general finish colors. Colors are to be verified at the Field Measurements appointment.
    a. All Homes: Light oak, medium oak, dark oak, and cherry.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine pre-assembled pre-hung and job-fitted door units prior to installing:

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics during Field Measurements and have been installed with level heads and plumb jambs.
2. Reject doors with defects.

B. Carefully remove existing doors and frames so that firm, sound surfaces are exposed for adequate anchoring of the new pre-hung doors and frames. Salvage existing finish hardware for re-use only if requested by the Homeowner. Install new pre-hung doors as described in Section 06 10 53 “Miscellaneous Rough

Carpentry," Section 06 20 13 "Exterior Finish Carpentry," and Section 06 20 23 "Interior Finish Carpentry."

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Exterior fiberglass doors, specified here-in are to be installed to accept the installation of a metal framed storm door. Coordinate all trims and door sill to allow the integration of the storm door installation.

B. Hardware: For installation, see Section 08 71 00 "Door Hardware."

C. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1. Install fire-rated doors according to NFPA 80.

D. Field-Finished Doors: No field finishing will be accepted.

E. Provide wood blocking in voids of 1/2-inch or greater around perimeter of frame. For voids of 1/2-inch or less, provide batt insulation, joint sealant and backing.

F. Thresholds: Provide threshold that complies with Section 08 71 00 "Door Hardware."

G. Provide interior and exterior trim and exterior cladding at each door location.

1. For existing doors receiving weatherstripping and thresholds, see Section 08 71 00 "Door Hardware."

H. Verify swing of door noted at Field Measurement.

I. Work includes jamb extensions for door and sidelight frames as required for actual conditions.

J. Fire Rating Labels: Do not remove, cover, or paint over Fire Rating Labels.

K. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8-inch from bottom of door to top of decorative floor finish or covering, unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold, unless otherwise indicated.
    a. Comply with NFPA 80 for fire-rated doors.

2. Bevel fire-rated doors 1/8-inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.

L. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust doors and hardware for a tight fit at contact points and weatherstripping for smooth operation and weather tight closure. Lubricate hardware and other moving parts.

B. Operation: Rehang or replace doors that do not swing or operate freely. Cut and finish transition carpet where required for free operation of door.

C. Clean exposed surfaces immediately after installing doors. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

D. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

E. Protect doors as recommended by door manufacturer to ensure that door and frames will be without damage or deterioration at time of Final Completion of the Home. No installed door will be left unprotected. If necessary, cover with a temporary storm door.

F. Remove from site and legally dispose of all removed materials, debris, packaging, banding, and all other surplus materials and equipment.

G. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

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SECTION 08 32 13 - SLIDING ALUMINUM-FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes thermally broken sliding aluminum-framed glass door units fabricated from specially designed sections to satisfy specific performance requirements.

B. Related Requirements:

1. Section 01 40 00 “Quality Requirements”.
2. Section 01 50 00 “Temporary Facilities and Controls”.
3. Section 01 73 00 “Execution”.
4. Section 01 81 13 “Sustainable Design Requirements”.
5. Section 02 83 13 “Lead Hazard Control Activities”.
6. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
7. Section 05 75 00 “Decorative Formed Metal”.
8. Section 06 10 53 “Miscellaneous Rough Carpentry”.
9. Section 06 20 13 “Exterior Finish Carpentry”.
10. Section 06 20 23 “Interior Finish Carpentry”.
11. Section 07 21 00 “Thermal Insulation”.
12. Section 07 92 00 “Joint Sealants”.
13. Section 08 80 00 “Glazing”.

1.3 DEFINITIONS

A. Sliding aluminum-framed glass doors are specified to meet the specific sound transmission and performance requirements for this Project. References to sliding glass door units or doors will be interchangeable with sliding aluminum-framed glass door units included within this Section and on Drawings.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association www.aluminum.org	(703) 358-2960
AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute	(202) 293-8020

	www.ansi.org	
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWS	AWI Architectural Woodwork Standard	
BHMA	Builders Hardware Manufacturers Association www.buildershardware,com	(212) 297-2122
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6597
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

C. Rough Opening-Total Removal of Existing Door: The opening in a wall or framework of a Home, remaining after the removal of the entire existing door unit including frame and sill, into which a new replacement door unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all sliding glass doors and verify all requirements of the Construction Modification, including but not limited to:

a. Sliding glass door type and color options by review with the Homeowner.
b. Sliding glass door quantities and locations.
c. Safety glazing and egress requirements in compliance with the governing code or Authority.
d. Direction of the operable panels, before installation.

2. Record Homeowner's selections for trim profiles and finishes at the time of measurement.
3. Review, discuss, and coordinate the interrelationship of sliding aluminum-framed glass doors with other exterior and interior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.

    a. Review and coordinate new sliding glass door installation with interior finishes and any existing window treatments, including blinds, shades and/or curtains. To the greatest extent possible, existing window treatments are to remain in place or be salvaged and reinstalled. The Contractor shall notify the Homeowner and Project Manager in the event that the window treatments cannot be retained or reinstalled.

4. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 "Submittal Procedures" and Part Two, Article XI: ("Shop Drawings, Product Data, and Samples").

B. Product Submittal Waiver: The Commissioner may waive, at his or her discretion, the Submittal requirements specified in the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles, provided the following conditions are met.

1. The manufacturer has made an independent master submittal, in triplicate, directly to the Commissioner and has obtained review and written approval of same from the Commissioner. Only after such approval, will a manufacturer and Contractor be relieved of the submittal requirements of the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles of this Specification Section and be granted a submittal waiver.
2. The master submittal will include all materials and information as required by these Articles; including, but not limited to Product Data, Product Certification Drawings, Test Reports, Product Certifications, Samples, and additional materials as may be required by PART TWO - GENERAL CONDITIONS, Article XI, Shop Drawings, Product Data and Samples.
3. The manufacturer will notify the Commissioner and provide new submittal materials for all product changes and/or in the event of product test report expiration.

C. Submission requirements for each construction contract will not be waived for the following:

1. Product Certifications.
2. Master Submittal PDF, for record.
3. Product Certification Drawings (PCD), unless the PCD was submitted as part of product testing and the performance compliant test report includes verification by the testing agency that the PCD matches the tested specimen.
4. Warranties.
5. Samples.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of sliding glass door required to be incorporated into the Work. Include information not fully detailed in manufacturer's standard product data.

1. Product Certification Drawings (PCD): PCD will be required as a part of all submittals to demonstrate compliance with specified performance requirements. Provide a separate PCD for each product type and variation that the manufacturer provides to RSIP.

a. The PCD will include the following:

1) Manufacturer name, address, and contact information.
2) Product type and model number.
3) Product Classification and Performance Grade.
4) Minimum and maximum size limitations.
5) Finish and Color options.
6) Fabrication methods and standard construction details including joinery, profiles, reinforcement and dimensions of individual components.
7) Thermal break type and location.
8) Details of installation, including anchor, flashing and sealant installation.
9) Data on type and model number for operating hardware.
10) Flashing and drainage system, including weep size and location.
11) Location and style of all weather-stripping.
12) Type and size of all mechanical fasteners.
13) Location of any caulking or seals.
14) Data on screen material and mesh type including vinyl spline, if applicable.
15) Glass and Glazing data:

a) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions if applicable).
b) Type and locations for low-E coatings.
c) Type of gas fill for insulated units.
d) Type of spacer for insulated units.
e) Setting method and materials for all glazing.

16) Other information, as necessary, to demonstrate compliance with the specified performance requirements.

b. A new PCD will be required for all testing conducted if any of the following apply:

1) Manufacturer changes the design or manufacturing of a product, unless the changes are of a minor or cosmetic nature, in which case the manufacturer will notify the Commissioner and provide a statement stating the nature of the change and affirming that the change will not detrimentally affect the performance of the product indicated in the test report.
2) Upon expiration of test reports.

c. Certification: The PCD will be certified by the testing agency/laboratory as matching the tested product specimen. Such certification will be included in the test report.

2. Include submittal of Product Data for glazing of sliding glass door as specified in Section 08 80 00 "Glazing" as part of the submittal package of this Section.

B. Shop Drawings: Details of installation not fully shown in manufacturer's standard Product Data. Include details of attachment, clearances, and details of flashing and sealant installation.

C. Samples: For each exposed product and for each color specified provide material samples approximately 2 inches by 4 inches, of sliding aluminum-framed glass doors framing members, showing manufacturer's white, beige, and brown colors.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Test Reports: For each type of sliding aluminum-framed glass door, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS Articles of this Specification Section.
2. Each test report dated more than four years from the Contract Notice To Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the NTP, the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:

    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 "Sustainable Design Requirements" Articles 1.4-B and 2.2.

D. Product Certification: The Contractor will submit a "Product Certification" (PC) executed by the manufacturer/supplier and Contractor, certifying that all products supplied under this Contract will be furnished in compliance with all performance and other specification requirements of this Section. A separate PC will be provided for each product type and variation. A sample of the PC is included at the end of this Section.

1. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such "product changes" will not affect the product's ability to comply with the performance requirements identified in these specifications.

E. Installation Instructions: Manufacturer's installation instructions for specified products.

F. Maintenance Data: For finishes, weatherstripping, operable panels, and operating hardware to include in maintenance manuals.

G. Sample Warranties: For manufacturer's warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating sliding aluminum-framed glass doors that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to sliding aluminum-framed glass door manufacturer for installation of units required for this Project.

C. Certification Labels: Provide sliding glass doors with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Structural Performance.
2. Thermal Performance.
3. Acoustical Performance.
4. Other Performance values as required by Industry Organization standards.

D. Mockups

1. Mockups shall be provided for each type of treatment including, but not limited to; installation of a door opening complete with frame, door, all hardware, trim, insulation and seals, including joint sealant.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect sliding glass door during transit, storage and handling to prevent damage, soiling and deterioration.

1. Package sliding glass doors individually in protective wrapping sufficient to protect product during transport and handling prior to installation.
2. Transport, handle, and store sliding glass doors right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver sliding glass doors shop finished in accordance with manufacturer's recommendations.

B. Store sliding glass doors in compliance with manufacturer's recommendations. Store in a manner such that the manufacturer's identification marks are clearly visible.

C. Do not slide sliding glass doors against one another. Do not roll sliding glass doors onto corners or in any manner that would damage the sliding glass door.

1.10 PROJECT CONDITIONS

A. Provide custom-sized sliding glass doors for each opening. Size each sliding glass door unit to fit existing opening without the use of head expanders. Provide sliding glass door units with no more than 1/2-inch smaller in width and in height than the rough opening size. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

1.11 WARRANTIES

A. Manufacturer's Warranty: Provide manufacturer's written and signed warranty where-in the manufacturer agrees to provide all materials and labor required at each Home to repair and/or replace sliding doors which fail in materials or workmanship within specified warranty period. The warranty will further state that the parts used in the manufacture of the sliding door, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:

    a. Failure to meet performance requirements.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Faulty operation of movable sash and hardware.
    d. Deterioration of materials and finishes beyond normal weathering.
    e. Failure of insulating glass: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior glass surface.
    f. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of sliding glass door to meet generally recognized performance standards and specified installation requirements.
3. Warranties on materials not manufactured by the manufacturer but required to be furnished as part of the sliding door unit will be included in the manufacturer's warranty. These items may include, but are not necessarily limited to thermal breaks, sheet glass, insulated panels, caulking, screen cloth, and weatherstripping. Such items will be noted as included on the manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.

    a. All sealed insulating glass units will carry a ten (10) year non-prorated warranty by the glass manufacturer against obstruction of vision as a result of interior fogging on the interior glass surfaces due to defects in materials or workmanship.

4. Warranty Period:

    a. Sliding Door: Three (3) years from date of Final Completion of the Home.
    b. Glazing Units: Ten (10) years from date of Final Completion of the Home.
    c. Metal Finish: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new sliding aluminum-framed glass doors in a manner that will preserve the manufacturer's warranty as well as the door's acoustical and other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace sliding doors and associated installation materials that are defective in materials or workmanship related to installation of the sliding doors for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
3. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the sliding aluminum-framed glass door unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Torrance Aluminum (800) 433-5648
2. TRACO – a division of Kawneer North America; an Alcoa company (877) 767-9107
3. St. Cloud Window (800)383-9311 (5 stories or more).

B. Source Limitations: Each Home and multi-unit building will receive sliding aluminum-framed glass doors from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent and/or other requirements are indicated.

1. Sliding Glass Door Certification: AAMA/WDMA/CSA and/or NFRC certified with label attached to each door.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: LC.
2. Minimum Performance Grade: 30.

C. Thermal Transmittance: Provide products tested/evaluated in accordance with NFRC 100 "Procedure for Determining Fenestration Product U-factors or AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Section".

1. Buildings four (4) stories or less in height:

a. All Fenestration: 0.30 Btu/sq. ft. x h x degrees F.

2. Buildings five (5) stories or more in height:

a. Operable Fenestration: 0.45 Btu/sq. ft. x h x degrees F.

D. Solar Heat-Gain Coefficient (SHGC): For buildings five (5) stories or more in height, provide sliding aluminum-framed glass doors with a whole-fenestration product SHGC maximum of 0.40 determined according to NFRC 200.

E. Condensation Resistance: Provide sliding aluminum-framed glass doors with a minimum CRF (Condensation Resistance Factor) of 48 when tested according to AAMA 1503 or a CR (Condensation Resistance) of 40 determined according to NFRC 500.

F. Acoustical Performance Requirements:

1. Sound Transmission Class (STC): Tested according to ASTM E 90, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Buildings Partitions and Elements," and classified by ASTM E 413, "Classification for Rating Sound Insulation".
2. Outdoor-Indoor Transmission Class (OITC): Tested according to ASTM E 90, and classified by ASTM E 1332, "Standard Classification for Rating Outdoor-Indoor Sound Attenuation".
3. Provide sliding aluminum-framed glass doors with an STC rating of 38 and OITC rating of 29.

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; material surfaces.

H. Provide units which have "lift-out" feature permitting easy removal of the panel from the inside without special tools.

I. Sustainable Design Requirements: Refer to specification Section 01 81 13 "Sustainable Design Requirements", Article 2.2 Low-Emitting Materials.

2.3 TESTING REQUIREMENTS

A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440; NFRC and ASTM referenced standards/ specifications for definitions and minimum standards of performance testing protocols and procedures, unless more stringent and/or other requirements are indicated.

1. Test reports demonstrating compliance with requirements will not be invalidated due to the date of the test.

B. In the event of discrepancies between these specification requirements and current adopted standards and requirements published in referenced standards, the current standard's requirements will be considered and, if so determined by the Architect, will be acceptable.

C. Glazing Requirements for Testing: To the greatest extent possible, furnish all testing reports based upon the exact sliding glass door unit composition utilized to demonstrate STC and OITC compliance.

1. For STC, OITC, Thermal Transmittance, Condensation Resistance, and Operational Force tests, the sliding glass door model and glazing assemblies will be identical.
2. For the following tests and to demonstrate compliance with the associated performance criteria only, alternate glass types will be allowed in sliding glass doors using identical sash, frame and glazing seals to the STC and OITC tested sliding glass door construction. Actual glass and glazing used in furnished sliding glass doors will be the same as the STC and OITC tested product.

    a. Air Leakage Resistance.
    b. Water Penetration Resistance.
    c. Uniform Load Deflection.
    d. Uniform Load Structural.
    e. Forced Entry Resistance.

3. To the greatest extent possible, all sliding glass doors will be designed to comply with stated STC, OITC, Thermal Transmittance, and Condensation Resistance values utilizing air as the only inter-space content for insulated glass units. If an alternate inter-space material, such as argon gas, is needed to demonstrate compliance with one or more of the four (4) above mentioned tests, all four

(4) tests will be conducted with the exact glazing configuration / thickness and inter-space content. The actual inter-space filling used in furnished sliding glass doors will match that utilized in test reports demonstrating compliance with STC, OITC, Thermal Transmittance, and Condensation Resistance performance requirements.

D. Minimum Test Size: Comply with requirements contained within referenced AAMA, NFRC and/or ASTM Standards/Specifications for each associated testing requirement.

1. The minimum specimen size for STC and OITC testing of sliding glass doors will be as specified in ASTM E 1425, 'Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems".
2. The minimum specimen size may be reduced provided that the face area is at least 90 percent of the face area of the specified specimen size.

E. All test reports submitted will have the sliding glass door model numbers specified which correspond to the model numbers shown on the submitted shop drawings and catalog cuts.

F. Acoustical Testing Requirements:

1. The manufacturer will submit STC test reports, conducted in accordance with ASTM E 90 and Classified by ASTM E 413, as well as OITC test reports conducted in accordance with ASTM E 90 and classified by ASTM E 1332 from an approved acoustical testing laboratory for a stand-alone door. Sliding glass door model numbers and glazing thickness specified in the STC and OITC reports will correspond to the model numbers and glazing thickness shown on the submitted shop drawings and catalog cuts.
2. The STC and OITC tests will be conducted with solo door in a typical weather-stripped and closed position. The use of caulking to seal off the door from the doorframe will not be permitted as part of the installation method prior to conducting the Sound Transmission Loss Tests. Tests conducted in tandem with prime and storm units will not be accepted. The ambient room and specimen temperatures for all STC and OITC testing will be as stated in ASTM E 90.
3. Provide STC and OITC test reports from a qualified acoustical testing laboratory that is certified under NIST and NVLAP for conducting precision acoustical testing in accordance with ASTM E 90. Approved acoustical testing laboratories include, but are not limited to, the following:

    a. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
    b. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
    c. ETS Lindgren (Acoustic Research Laboratory), 1301 Arrow Point Drive, Cedar Park, TX 78613-6936, (512) 531-6400.
    d. Riverbank Acoustical Laboratories, Inc., 1512 Batavia Avenue, Geneva, IL 60134, (630) 232-0104.
    e. Western Electro-Acoustic Laboratories, Inc. (WEAL), 25132 Rye Canyon Loop, Santa Clarita, CA 91355, (661) 775-3741.

G. Non-Acoustical Testing Requirements: For all testing, other than STC and OITC testing, submit test reports from a qualified testing agency that is accredited by the specified referenced AAMA, ASTM and/or NFRC standard to perform the specific test protocol required. Approved testing agencies include, but are not limited to the following:

1. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
2. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
3. National Certified Testing Laboratories, Inc., 5 Leigh Drive, York, PA 17402, (717) 846-1200.

4. Quast Consulting and Testing Inc., 1055 Indianhead Drive, Mosinee, WI 54455, (715) 693-8378.

2.4 SLIDING ALUMINUM-FRAMED GLASS DOORS

A. Operating Types: Provide the following operating types where indicated:

1. Double panel units with one (1) fixed panel, types XO and OX.
2. Triple panel units with one (1) operable and two (2) fixed panels, types XOX, XXO, and OXX.

B. The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Torrance Aluminum - 7100 Series.
2. TRACO – a division of Kawneer North America; an Alcoa company - NX-840 Series.
3. St. Cloud Window – SCW 5000 Series

C. Aluminum Extrusions: Provide alloy and temper recommended by sliding aluminum-framed glass door manufacturer for strength, corrosion resistance, and application of required finish. Comply with AAMA/WDMA/CSA 101/I.S.2/A440.

D. Reinforcing Members: Provide aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel reinforcing members that are noncorrosive comply with ASTM B633for SC 3 severe service conditions and comply with AAMA/WDMA/CSA 101/I.S.2/A440; provide sufficient strength to withstand design pressure indicated.

E. Sealant: For sealants required within fabricated sliding doors, provide sliding aluminum-framed glass door manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

2.5 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed sliding aluminum-framed glass doors.

B. Performance: Provide glazing units of type, thickness and composition to meet the specified performance requirements.

C. Glass Type: Clear, fully tempered and laminated types as required.

2.6 HARDWARE

A. Provide manufacturer's standard hardware, fabricated from a corrosion-resistant material compatible with aluminum complying with AAMA 907 and designed to smoothly operate, tightly close, and securely lock sliding aluminum-framed glass doors. Do not use aluminum in frictional contact with other metals. Where exposed, provide extruded, cast, or wrought aluminum, die-cast zinc with special coating finish or nonmagnetic stainless steel.

1. Hardware Finish: Manufacturers standard.
2. All steel components will be stainless steel.
3. All aluminum components will be 6063-T5 or 6063-T6.

B. Roller Assemblies: Provide movable panels with adjustable-height roller assemblies, complying with AAMA 906, consisting of self-lubricating, dual tandem manufacturer's standard nylon or steel ball bearing rollers; with two roller assemblies per panel.

C. Threshold and Sill Cap/Track: Provide manufacturer's standard extruded-aluminum threshold and track of thickness, and profile; designed to comply with performance requirements indicated and to drain to the exterior; with manufacturer's standard finish.

D. Compression-Type Weatherstripping: Provide compressible weatherstripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when sliding aluminum-framed glass door is closed.

1. Weatherstripping Material: Manufacturer's standard system and materials complying with AAMA/WDMA/CSA 101/I.S.2/A440.

E. Sliding-Type Weatherstripping: Provide woven-pile weatherstripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701.

1. Weather Seals: Provide weatherstripping with integral barrier fin or fins of semi rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 702.

F. Fasteners: Provide fasteners of aluminum, nonmagnetic stainless steel, or other materials warranted by manufacturer to be noncorrosive for SC 3 severe service conditions and compatible with members, trim, hardware, anchors, and other components of sliding aluminum-framed glass doors. Comply with AAMA/WDMA/CSA 101/I.S.2/A440.

1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.

G. Door Pulls: Provide manufacturer's standard extruded-aluminum pull grips.

H. Locks: Install manufacturer's standard pull and keyless locking device on each movable panel, lockable from the inside only. Adjust locking device to allow unobstructed movement of the panel across adjacent panel, in the direction indicated. Provide keyed lock if existing door has keyed lock and/or if it is used as prime entry door.

2.7 ACCESSORIES

A. Aluminum Exterior Subframe: Constructed of extruded aluminum, (6063-T5 or 6063-T6 alloy) free of defects. Subframe will include head, jamb and sill components, flat casing, and cap trim profiles.

B. Anchors, Clips, and Accessories: Provide anchors, clips, and accessories of aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron for sliding aluminum-framed glass doors, complying with ASTM B 456 or ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

2.8 INSECT SCREENS

A. General: Design sliding aluminum-framed glass doors and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens

to fully integrate with door frame. Locate screens on the outside of door and provide for each operable door panel. Screen wickets are not permitted.

B. Screening Fabric: 18-by-16 count per sq. in. window screening wire fabric with approximately 0.011-inch diameter, painted/coated strands; PVC-containing paints/coatings are not permitted.

1. Screening Finish: Charcoal gray.

C. Screen Hardware: Manufacturer's standard pull and keyless locking device on each movable panel, lockable from inside only. Adjust locking device to allow unobstructed movement of panel across adjacent panel in direction indicated.

2.9 FABRICATION

A. Fabricate sliding aluminum-framed glass doors in sizes indicated. Include a complete system for assembling components and anchoring doors.

B. Fabricate sliding aluminum-framed glass doors that are re-glazable without dismantling panel framing.

C. Frame: Mitered corners and mechanically fastened and sealed with gasket joints.

D. Panels: Manufacturers standard mechanically fastened corners.

E. Thermally Improved Construction: Fabricate sliding aluminum-framed glass doors with an integral, concealed, low-conductance thermal barrier; locate between exterior materials and door members exposed on interior side, and in a manner that eliminates direct metal-to-metal contact.

F. Weatherstripping: Provide operable panels with a double row of sliding weatherstripping in horizontal rails and single- or double-row weatherstripping in meeting or jamb stiles. Provide compression-type weatherstripping at the perimeter of each movable panel where sliding-type weatherstripping is not appropriate.

1. Provide weatherstripping locked into extruded grooves in door panels or frames.

G. Weep Holes: Provide weep holes and internal drainage passages to conduct infiltrating water to exterior. Provide open cell foam backing or other means, as determined by the manufacturer, to allow water drainage while restricting insect infiltration.

H. Factory-Glazed Fabrication: Glaze sliding aluminum-framed glass doors in the factory where practical and possible for applications indicated. Comply with requirements in Section 08 80 00 "Glazing" and with AAMA/WDMA/CSA 101/I.S.2/A440.

I. Glazing Stops: Provide Snap-On glazing stops coordinated with Section 08 80 00 "Glazing" and with glazing system indicated. Provide glazing stops to match panel frames.

J. All sliding doors will have a permanent factory-applied label in full view without dismantling assembly indicating scheduled door unit number, size, model number, STC and OITC ratings, thermal performance rating ("U" or "R" value), type of glazing, date of manufacture, and name and location of manufacturer. A removable adhesive label will be located on the glazing surface that will prominently indicate the STC and OITC ratings, as well as the following: "Do not remove before inspection". Other manufacturer information may be included on this label.

2.10 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.11 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Paint Finish: Provide manufacturer's standard paint finish meeting or exceeding AAMA 2603.

1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
2. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2604 and containing not less than 50 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
3. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

C. Paint Colors: Manufacturer's standard white, beige and brown. Provide finish and color as selected by the Homeowner and scheduled for each Home. Note that a separate color selection will be made for each Home in the Contract.

D. Color match screen frame to main frame and sash color.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor will make a detailed inspection to verify sliding glass door unit dimensions for sliding glass doors to be replaced with new sliding glass doors.

B. Field Measurements: Check actual sliding glass door openings by accurate field measurement before fabrication. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1. Confirm new sliding glass door style and color with Homeowner at the time of measure, before fabrication.
2. Verify rough opening dimensions, levelness of threshold substrate, and operational clearances.

C. Existing materials will be carefully removed so that firm, sound structural surfaces are exposed that are adequate for the installation of a new sliding glass door assembly. Protect adjacent finishes. Repair adjacent finishes, as required.

D. Examine openings, substrates, structural support, anchorage, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of Work.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
3. Do not remove existing door until new door is available and ready for immediate installation. Do not leave any openings uncovered at end of working day.
4. Remove existing work carefully; avoid damage to existing work to remain.

E. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather-tight sliding aluminum-framed glass door installation.

F. Door Replacement Requirements:

1. Work Included: Provide labor, materials, and equipment necessary to complete the work and without limiting the generality thereof include:

a. Removal of existing sash, fixed glazing, frames and other accessories as required by the proposed replacement system.
b. Removal of other existing work as required for the proper installation and operation of the new units.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. The Contractor will not start any work on a given day in a Home until all the new sliding doors for that Home have been received from the manufacturer.

B. General: The manufacturer will provide training for the installer and Contractor in the proper installation procedures, sequences, and techniques, measuring, sizes and limitations.

1. As requested by the Commissioner, the manufacturer will provide on-site inspections for each Home to verify the sliding doors are being properly installed and the acoustical performance is not compromised by improper installation methods. On-site inspections will be repeated until the manufacturer is satisfied that the sliding glass doors are installed in the correct, as designed manner.

C. Comply with manufacturer's written instructions for installing sliding glass doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

D. Provide and install additional exterior sill and framing, including all flashing, sealing, etc., as shown on the detail drawing, where required for the installation of the sliding glass door unit.

1. Voids between the sliding glass doorframe and the wall structure are not allowed even if finish trim will cover such voids. For voids 1/2-inch or greater, provide wood blocking. For voids smaller than 1/2-inch, provide batt insulation, joint sealant, and backing.

2. Exterior trim and molding materials will be installed in such a way as to provide a completely waterproof barrier, and to match as closely as possible, the previously existing trim and molding materials. All exterior trim will be clad in color specified.

E. Install sliding aluminum-framed glass doors level, plumb, square, true to line, without distortion, warp or rack of frames and panels, or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing, vapor retarders, air barriers, water/weather barriers, and other adjacent construction.

F. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather-tight construction. Coordinate installation with wall flashing and other components described on the Drawings.

1. Refer to Section 07 92 00 "Joint Sealants" for compounds, fillers and gaskets to be installed concurrently with, and after sliding glass door units are installed.
2. Modify existing sill or threshold as required by new door installation. Provide continuous support framing below threshold.

G. Install sliding aluminum-framed glass doors and components to drain condensation, water penetrating joints, and moisture migrating within doors to the exterior.

H. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials according to ASTM E 2112, Section 5.12 "Dissimilar Materials".

I. Provide and install new clad exterior trim and new interior trim at all new sliding glass doors.

J. Provide insulated panels and frames integral with and matching sliding door construction and performance as required in selected transoms and other locations as scheduled.

K. Provide primed wood blocking, fillers and nailers as required for secure installation. Provide preservative treated wood blocking for sill conditions. Contractor will be responsible for providing new blocking for portions of head, jamb, and sills that are deteriorated.

L. Provide insulation between door frames and adjacent construction.

M. Provide sealing of all joints within each sliding glass door assembly.

N. Install sealant around of entire exterior perimeter of door units after installation.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating panels and screens to provide a tight fit at contact points and weatherstripping for smooth operation, without binding, and a weather-tight closure.

B. Adjust hardware for proper alignment, smooth operation, and proper latching without unnecessary force or excessive clearance. Lubricate hardware and moving parts.

C. Clean glass and aluminum surfaces immediately after installing sliding doors. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

D. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

E. Promptly remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

F. Protect sliding door surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact door surfaces, remove contaminants immediately according to manufacturer's written instructions. Initiate and maintain protection and other precautions required through the remainder of the construction period to ensure that, except for normal weathering, sliding glass door units will be free of damage or deterioration at the time of Final Completion of the Home.

G. Remove from site and legally dispose of all removed materials, debris, packaging, banding and all other surplus materials and equipment.

H. Refinish or replace sliding aluminum-framed glass doors with damaged finishes.

I. Replace damaged components.

3.4 ATTACHMENTS

A. PRODUCT CERTIFICATION sample form.

END OF SECTION 08 32 13

RESIDENTIAL SOUND INSULATION PROGRAM
PRODUCT CERTIFICATION (PC)

Product:	Sliding Aluminum Glass Door (SL1)	Date: 01/25/2013	

☒ Submitted out of contract, complete this column only. ☐ Submitted within a contract, complete both columns.

Manufacturer:	ABC Windows & Doors, Inc.	Project Phase:	
Section Title:	Sliding Aluminum-Framed Glass Doors	Project No.:	
Section No.:	08 32 13	Contract No.:	
Specification No.:	516830	Contractor:	

MANUFACTURER	SUPPLIED PRODUCT
ABC Windows & Doors, Inc.	Product type: Sliding Aluminum-Framed Glass Door (SL1) AAMA Performance Class and Grade: LC-PG30 Model number: SL-3000 (SL1) Color options: White, Bronze, Brown Glazing: ¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)

LABORATORY TESTING SUMMARY	
Acoustical Test Report ASTM E 90 (ASTM E 413 / ASTM E 1332)	
Testing Lab/Report Number/Date	Intertek Report # 123456789-00 / Date 02/12/2011
Glazing Description	¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
STC/OITC	32/29
Thermal Test Report by AAMA 1503	
Testing Lab/Report Number/Date	Element / Report # 123456789-11 / Date 01/31/2009
Glazing Description	¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
Thermal U-Value	0.32
Condensation Resistance Factor (CRF)	74
Solar Heat Gain Coefficient (SHGC)	0.35
Thermal Test Report by NFRC 100 / 200 /500	
Testing Lab/Report Number/Date	Not used
Glazing Description	Not used
Test Specimen Size	Not used
Thermal U-Value	Not used
Condensation Resistance Factor (CR)	Not used
Solar Heat Gain Coefficient (SHGC)	Not used
AAMA/WDMA/CSA 101/I.S.2/A440 Test Report	
Testing Lab/Report Number/Date	Element / Report # 123456789-22 / Date 12/01/2012
Glazing Description	¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
Air Infiltration	.21 cfm/sf at 1.6 psf

SAMPLE

Water Penetration Resistance	No Leakage at 4.6 psf
Uniform Load Deflection	'+0.18" / 0.01" at 30.09 psf (L/175=0.2")
Uniform Load Structural	'+/- 0.01 at 45.14 psf (0.4%=0.14")
Operating Force	To initiate: 38.5 lbf / to maintain: 34.0 lbf
Forced Entry Resistance	Grade: 10 No entry
Deglazing	Pass
VOC and Hot Odor Results	
VOC Results	Passed
Hot Odor – average odor scale rating	4

CERTIFICATION: (*Check one)*

☒ **Certification for Products without an approved submittal waiver:** ABC Windows & Doors, Inc. here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications 51-830 and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

This certification statement is accompanied by a formal submittal of all materials and information as required by the RSIP Technical Specifications for review, approval and consideration for a product submittal waiver. This submittal includes, but is not limited to, product data, samples, test reports, product certification drawings and shop drawings.

☐ **Certification for Products with an approved submittal waiver:** Manufacturer's Name here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications Number and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

We further state the following:

The product to be furnished will be identical to the Master Submittal PDF including any applicable addenda on file with the RSIP and approved by the Program Architect on Date.

☐ No changes have been made to the product previously submitted and approved.

(check appropriate selection above or below)

☐ Changes have been made to the approved product and we have attached all associated submittals for review, approval and update to the Master Submittal PDF.

- The submittal waiver for this product was initially granted after verifying compliance with RSIP Technical Specifications Number. Understanding that the RSIP Technical Specifications receive frequent updates, Manufacturer's Name acknowledges that they have reviewed the current RSIP Technical Specifications Number and here-by certifies that the referenced product remains fully compliant.

Manufacturer's Authorized Signature: *John Smith* Date: 01/25/2013

Name & Title (Printed) John Smith, Sales Manager, ABC Windows & Doors, Inc.

SAMPLE

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SECTION 08 32 16 - SLIDING PLASTIC-FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes sliding plastic-framed glass door units fabricated from specially designed sections to satisfy specific performance requirements.

B. Related Requirements:

1. Section 01 40 00 “Quality Requirements”.
2. Section 01 50 00 “Temporary Facilities and Controls”.
3. Section 01 73 00 “Execution”.
4. Section 01 81 13 “Sustainable Design Requirements”.
5. Section 02 83 13 “Lead Hazard Control Activities”.
6. Section 02 83 33.13 “Lead-Based Paint Removal and Disposal”.
7. Section 05 75 00 “Decorative Formed Metal”.
8. Section 06 10 53 “Miscellaneous Rough Carpentry”.
9. Section 06 20 13 “Exterior Finish Carpentry”.
10. Section 06 20 23 “Interior Finish Carpentry”.
11. Section 07 21 00 “Thermal Insulation”.
12. Section 07 92 00 “Joint Sealants”.
13. Section 08 80 00 “Glazing”.

1.3 DEFINITIONS

A. Sliding plastic-framed glass doors are specified to meet the specific sound transmission and performance requirements for this Project. References to sliding glass door units or doors will be interchangeable with sliding plastic-framed glass door units included within this Section and on Drawings.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International (American Society for Testing and Materials International)	(610) 832-9500

	www.astm.org	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWS	AWI Architectural Woodwork Standard	
BHMA	Builders Hardware Manufacturers Association www.buildershardware,com	(212) 297-2122
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
CSA	Canadian Standards Association	(613) 238-3222
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ISO	International Organization for Standardization www.iso.org	(202) 293-8020
NAAMM	National Association of Architectural Metal Manufac-turers www.naamm.org	(630) 942-6597
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SAE	SAE International (Society of Automotive Engineers) www.sae.org	(877) 606-7323
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

C. Rough Opening-Total Removal of Existing Door: The opening in a wall or framework of a Home, remaining after the removal of the entire existing door unit including frame and sill, into which a new replacement door unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all sliding glass doors and verify all requirements of the Construction Modification, including but not limited to:
    a. Sliding glass door type and color options by review with the Homeowner.

b. Sliding glass door quantities and locations.

c. Safety glazing and egress door requirements in compliance with the governing code or Authority.

d. Direction of the operable panels, before installation.

2. Record Homeowner's selections for trim profiles and finishes at the time of measurement.

3. Review, discuss, and coordinate the interrelationship of sliding plastic-framed glass doors with other exterior and interior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.

a. Review and coordinate new sliding glass door installation with interior finishes and any existing window treatments, including blinds, shades and/or curtains. To the greatest extent possible, existing window treatments are to remain in place or be salvaged and reinstalled. The Contractor shall notify the Homeowner and Project Manager in the event that the window treatments cannot be retained or reinstalled.

4. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 "Submittal Procedures" and Part Two, Article XI: ("Shop Drawings, Product Data, and Samples").

B. Product Submittal Waiver: The Commissioner may waive, at his or her discretion, the Submittal requirements specified in the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles, provided the following conditions are met.

1. The manufacturer has made an independent master submittal, in triplicate, directly to the Commissioner and has obtained review and written approval of same from the Commissioner. Only after such approval, will a manufacturer and Contractor be relieved of the submittal requirements of the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles of this Specification Section and be granted a submittal waiver.

2. The master submittal will include all materials and information as required by these Articles; including, but not limited to Product Data, Product Certification Drawings, Test Reports, Product Certifications, Samples, and additional materials as may be required by PART TWO OF THREE - GENERAL CONDITIONS, Article XI, Shop Drawings, Product Data and Samples.

3. The manufacturer will notify the Commissioner and provide new submittal materials for all product changes and/or in the event of product test report expiration.

C. Submission requirements for each construction contract will not be waived for the following:

1. Product Certifications.

2. Master Submittal PDF, for record.

3. Product Certification Drawings (PCD), unless the PCD was submitted as part of product testing and the performance compliant test report includes verification by the testing agency that the PCD matches the tested specimen.

4. Warranties.

5. Samples.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of sliding glass door required to be incorporated into the Work. Include information not fully detailed in manufacturer's standard product data.

1. Product Certification Drawings (PCD): PCD will be required as a part of all submittals to demonstrate compliance with specified performance requirements. Provide a separate PCD for each product type and variation that the manufacturer provides to RSIP.
    a. The PCD will include the following:
        1) Manufacturer name, address, and contact information.
        2) Product type and model number.
        3) Product Classification and Performance Grade.
        4) Minimum and maximum size limitations.
        5) Finish and Color options.
        6) Fabrication methods and standard construction details including joinery, profiles, reinforcement and dimensions of individual components.
        7) Details of installation, including anchor, flashing and sealant installation.
        8) Data on type and model number for operating hardware.
        9) Flashing and drainage system, including weep size and location.
        10) Location and style of all weather-stripping.
        11) Type and size of all mechanical fasteners.
        12) Location of any caulking or seals.
        13) Data on screen material and mesh type including vinyl spline, if applicable.
        14) Glass and Glazing data:
            a) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions if applicable).
            b) Type and locations for low-E coatings.
            c) Type of gas fill for insulated units.
            d) Type of spacer for insulated units.
            e) Setting method and materials for all glazing.
        15) Other information, as necessary, to demonstrate compliance with the specified performance requirements.
    b. A new PCD will be required for all testing conducted if any of the following apply:
        1) Manufacturer changes the design or manufacturing of a product, unless the changes are of a minor or cosmetic nature, in which case the manufacturer will notify the Commissioner and provide a statement stating the nature of the change and affirming that the change will not detrimentally affect the performance of the product indicated in the test report.
        2) Upon expiration of test reports.
    c. Certification: The PCD will be certified by the testing agency/laboratory as matching the tested product specimen. Such certification will be included in the test report.
2. Include submittal of Product Data for glazing of sliding glass door as specified in Section 08 80 00 “Glazing” as part of the submittal package of this Section.

B. Shop Drawings: Details of installation not fully shown in manufacturer’s standard Product Data. Include details of attachment, clearances, and details of flashing and sealant installation.

C. Samples: For each exposed product and for each color specified provide material samples approximately 2 inches by 4 inches, of sliding plastic-framed glass doors framing members, showing manufacturer's white, beige, and brown colors.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Test Reports: For each type of sliding plastic-framed glass door, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS Articles of this Specification Section.
2. Each test report dated more than four years from the Notice To Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract NTP, the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:
    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Product Certification: The Contractor will submit a "Product Certification" (PC) executed by the manufacturer/supplier and Contractor, certifying that all products supplied under this Contract will be furnished in compliance with all performance and other specification requirements of this Section. A separate PC will be provided for each product type and variation. A sample of the PC is included at the end of this Section.

1. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such "product changes" will not affect the product's ability to comply with the performance requirements identified in these specifications.

D. Installation Instructions: Manufacturer's installation instructions for specified products.

E. Maintenance Data: For finishes, weatherstripping, cleaning, operable panels, and operating hardware to include in maintenance manuals.

F. Sample Warranties: For manufacturer's warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating sliding plastic-framed glass doors that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to sliding plastic-framed door manufacturer for installation of units required for this Project.

C. Certification Labels: Provide sliding glass doors with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Structural Performance.
2. Thermal Performance.
3. Acoustical Performance.
4. Other Performance values as required by Industry Organization standards.

D. Mock-ups

1. Mock-ups shall be provided for each type of treatment including, but not limited to, installation of a door opening complete with frame, door, all hardware, trim, insulation and seals, including joint sealant.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect sliding glass door during transit, storage and handling to prevent damage, soiling and deterioration.

1. Package sliding glass doors individually in protective wrapping sufficient to protect product during transport and handling prior to installation.
2. Transport, handle and store sliding glass doors right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver sliding glass doors shop finished in accordance with manufacturer's recommendations.

B. Store sliding glass doors in compliance with manufacturer's recommendations. Store in a manner such that the manufacturer's identification marks are clearly visible.

C. Do not slide sliding glass doors against one another. Do not roll sliding glass doors onto corners or in any manner that would damage the sliding glass door.

1.10 PROJECT CONDITIONS

A. Provide custom-sized sliding glass doors for each opening. Size each sliding glass door unit to fit existing opening without the use of head expanders. Provide sliding glass door units no more than 1/2-inch smaller in width and in height than the rough opening size. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

1.11 WARRANTIES

A. Manufacturer's Warranty: Provide manufacturer's written and signed warranty where-in the manufacturer agrees to provide all materials and labor required at each Home to repair and/or replace sliding doors which fail in materials or workmanship within specified warranty period. The warranty will further state that the parts used in the manufacture of the sliding door, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:
    a. Failure to meet performance requirements.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Faulty operation of movable sash and hardware.
    d. Deterioration of materials and finishes beyond normal weathering.

e. Failure of insulating glass: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior glass surface.

f. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of sliding glass door to meet generally recognized performance standards and specified installation requirements.

3. Warranties on materials not manufactured by the manufacturer but required to be furnished as part of the sliding door unit will be included in the manufacturer's warranty. These items may include, but are not necessarily limited to thermal breaks, sheet glass, insulated panels, caulking, screen cloth, and weatherstripping. Such items will be noted as included on the manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.

a. All sealed insulating glass units will carry a ten (10) year non-prorated warranty by the glass manufacturer against obstruction of vision as a result of interior fogging on the interior glass surfaces due to defects in materials or workmanship.

4. Warranty Period:

a. Sliding Door: Three (3) years from date of Final Completion of the Home.

b. Glazing: Ten (10) years from date of Final Completion of the Home.

c. Vinyl Finish: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new sliding plastic-framed glass doors in a manner that will preserve the manufacturer's warranty as well as the window's acoustical and other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace sliding doors and associated installation materials that are defective in materials or workmanship related to installation of the sliding doors for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.

2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.

3. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the sliding plastic-framed glass door unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Stergis Windows and Doors, Sonic Division (508-455-0661)
2. REHAU Window and Door Design - Contact – Ralph Childs - 951-675-1007

B. Source Limitations: Each Home and multi-unit building will receive sliding plastic-framed glass doors from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent and/or other requirements are indicated.

1. Sliding Glass Door Certification: AAMA/WDMA/CSA and/or NFRC certified with label attached to each door.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: LC.
2. Minimum Performance Grade: 30.

C. Thermal Transmittance: Provide products tested/evaluated in accordance with NFRC 100 "Procedure for Determining Fenestration Product U-factors" or AAMA 1503 "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections".

1. Maximum whole-sliding glass door U-Factor: 0.30 Btu/sq. ft. x h x deg F.

D. Solar Heat Gain Coefficient (SHGC): For buildings five (5) stories or more in height, provide sliding plastic-framed glass doors with a whole-fenestration product SHGC maximum of 0.38 determined according to NFRC 200.

E. Condensation Resistance: Provide sliding plastic-framed glass doors with a minimum CRF of 55 when tested according to AAMA 1503 or a CR of 51 determined according to NFRC 500.

F. Acoustical Performance Requirements:

1. Sound Transmission Class (STC): Tested according to ASTM E 90, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Buildings Partitions and Elements," and classified by ASTM E 413, "Classification for Rating Sound Insulation".
2. Outdoor-Indoor Transmission Class (OITC): Tested according to ASTM E 90, and classified by ASTM E 1332, "Standard Classification for Rating Outdoor-Indoor Sound Attenuation".
3. Provide sliding plastic-framed glass doors with an STC rating of 38 and OITC rating of 32.

G. Sustainable Design Requirements: Refer to specification Section 01 81 13 "Sustainable Design Requirements", Article 2.3 - Low-Emitting Materials – Vinyl Windows and Sliding Plastic-Framed Doors.

H. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

Differential values in subparagraph below (for aluminum in particular) are suitable for most of the U.S.

1. Temperature Change (Range): 120 degrees F (67 degrees C), ambient; material surfaces.

I. Provide units which have "lift-out" feature permitting easy removal of the panel from the inside without special tools.

2.3 TESTING REQUIREMENTS

A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440; NFRC and ASTM referenced Standards/ Specifications for definitions and minimum standards of performance testing protocols and procedures, unless more stringent and/or other requirements are indicated.

1. Test reports demonstrating compliance with requirements will not be invalidated due to the date of the test.

B. In the event of discrepancies between these specification requirements and current adopted standards and requirements published in referenced standards, the current standard's requirements will be considered and, if so determined by the Architect, will be acceptable.

C. Glazing Requirements for Testing: To the greatest extent possible, furnish all testing reports based upon the exact sliding glass door unit composition utilized to demonstrate STC and OITC compliance.

1. For STC, OITC, Thermal Transmittance, Condensation Resistance, and Operational Force tests, the sliding glass door model and glazing assemblies will be identical.
2. For the following tests and to demonstrate compliance with the associated performance criteria only, alternate glass types will be allowed in sliding glass doors using identical sash, frame and glazing seals to the STC and OITC tested sliding glass door construction. Actual glass and glazing used in furnished sliding glass doors will be the same as the STC and OITC tested product.
    a. Air Leakage Resistance.
    b. Water Penetration Resistance.
    c. Uniform Load Deflection.
    d. Uniform Load Structural.
    e. Forced Entry Resistance.
3. To the greatest extent possible, all sliding glass doors will be designed to comply with stated STC, OITC, Thermal Transmittance, and Condensation Resistance values utilizing air as the only inter-space content for insulated glass units. If an alternate inter-space material, such as argon gas, is needed to demonstrate compliance with one or more of the four (4) above mentioned tests, all four (4) tests will be conducted with the exact glazing configuration / thickness and inter-space content. The actual inter-space filling used in furnished sliding glass doors will match that utilized in test reports demonstrating compliance with STC, OITC, Thermal Transmittance, and Condensation Resistance performance requirements.

D. Minimum Test Size: Comply with requirements contained within referenced AAMA, NFRC and/or ASTM Standards/Specifications for each associated testing requirement.

1. The minimum specimen size for STC and OITC testing of sliding glass doors will be as specified in ASTM E 1425, "Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems".
2. The minimum specimen size may be reduced provided that the face area is at least 90 percent of the face area of the specified specimen size.

E. All test reports submitted will have the sliding glass door model numbers specified which correspond to the model numbers shown on the submitted shop drawings and catalog cuts.

F. Acoustical Testing Requirements:

1. The manufacturer will submit STC test reports, conducted in accordance with ASTM E 90 and classified by ASTM E 413, as well as OITC test reports conducted in accordance with ASTM E 90 and classified by ASTM E 1332 from an approved acoustical testing laboratory for a stand-alone door. Sliding glass door model numbers and glazing thickness specified in the STC and OITC reports will correspond to the model numbers and glazing thickness shown on the submitted shop drawings and catalog cuts.
2. The STC and OITC tests will be conducted with solo door in a typical weather-stripped and closed position. The use of caulking to seal off the door from the doorframe will not be permitted as part of the installation method prior to conducting the Sound Transmission Loss Tests. Tests conducted in tandem with prime and storm units will not be accepted. The ambient room and specimen temperatures for all STC and OITC testing will be as stated in ASTM E 90.

3. Provide STC and OITC test reports from a qualified acoustical testing laboratory that is certified under NIST and NVLAP for conducting precision acoustical testing in accordance with ASTM E 90. Approved acoustical testing laboratories include, but are not limited to, the following:
    a. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
    b. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
    c. ETS Lindgren (Acoustic Research Laboratory), 1301 Arrow Point Drive, Cedar Park, TX 78613-6936, (512) 531-6400.
    d. Riverbank Acoustical Laboratories, Inc., 1512 Batavia Avenue, Geneva, IL 60134, (630) 232-0104.
    e. Western Electro-Acoustic Laboratories, Inc. (WEAL), 25132 Rye Canyon Loop, Santa Clarita, CA 91355, (661) 775-3741.

G. Non-Acoustical Testing Requirements: For all testing, other than STC and OITC testing, submit test reports from a qualified testing agency that is accredited by the specified referenced AAMA, ASTM and/or NFRC standard to perform the specific test protocol required. Approved testing agencies include, but are not limited to the following:

1. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
2. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
3. National Certified Testing Laboratories, Inc., 5 Leigh Drive, York, PA 17402, (717) 846-1200.
4. Quast Consulting and Testing Inc., 1055 Indianhead Drive, Mosinee, WI 54455, (715) 693-8378.

2.4 SLIDING PLASTIC-FRAMED GLASS DOORS

A. Operating Types: Provide the following operating types where indicated:

1. Double panel units with one (1) fixed panel, types XO and OX.
2. Triple panel units with one (1) operable and two (2) fixed panels, types XOX, XXO, and OXX.

B. The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Stergis Windows and Doors, Sonic Division, 1110 Series Patio Door
2. Rehau Windows and Doors, System 2200 Sliding Door

C. Vinyl Extrusions: Integral color polyvinyl chloride (PVC) compound containing impact-resistant solid plasticizer, titanium UV inhibitor, and surface and color stabilizers produced from virgin vinyl conforming to AAMA 303; free from defects impairing strength and durability. Wall thickness will be a minimum of 0.080-inches.

D. Reinforcing Members: Provide aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel reinforcing members that are noncorrosive comply with ASTM B633for SC 3 severe service conditions and comply with AAMA/WDMA/CSA 101/I.S.2/A440; provide sufficient strength to withstand design pressure indicated.

E. Sealant: For sealants required within fabricated sliding doors, provide sliding plastic-framed glass door manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

2.5 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed sliding plastic-framed glass doors.

B. Performance: Provide glazing units of type, thickness and composition to meet the specified performance requirements.

C. Glass Type: Clear, fully tempered and laminated types as required.

2.6 HARDWARE

A. Provide manufacturer's standard hardware, fabricated from a corrosion-resistant material compatible with door frame and designed to smoothly operate, tightly close, and securely lock sliding plastic-framed glass doors.

1. Hardware Finish: Manufacturers standard.
2. All aluminum components will be 6063-T5 or 6063-T6.

B. Roller Assemblies: Provide movable panels with adjustable-height roller assemblies, complying with AAMA 906, consisting of self-lubricating, dual tandem manufacturer's standard nylon or steel ball-bearing rollers; with two roller assemblies per panel.

C. Threshold and Sill Cap/Track: Provide manufacturer's standard extruded-aluminum threshold and track of thickness, and profile; designed to comply with performance requirements indicated and to drain to the exterior; with manufacturer's standard finish.

D. Compression-Type Weatherstripping: Provide compressible weatherstripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when sliding plastic-framed glass door is closed.

1. Weatherstripping Material: Manufacturer's standard system and materials complying with AAMA/WDMA/CSA 101/I.S.2/A440.

E. Sliding-Type Weatherstripping: Provide woven-pile weatherstripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701.

1. Weather Seals: Provide weatherstripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 702.

F. Fasteners: Provide fasteners of aluminum, nonmagnetic stainless steel, or other materials warranted by manufacturer to be noncorrosive for SC 3 and compatible with members, trim, hardware, anchors, and other components of sliding plastic-framed glass doors. Comply with AAMA/WDMA/CSA 101/I.S.2/A440.

1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.

G. Door Pulls: Provide manufacturer's standard extruded-aluminum pull grips.

H. Locks: Install manufacturer's standard pull and keyless locking device on each movable panel, lockable from the inside only. Adjust locking device to allow unobstructed movement of the panel across adjacent panel, in the direction indicated. Provide keyed lock if existing door has keyed lock and/or if it is used as prime entry door.

2.7 ACCESSORIES

A. Aluminum Exterior Subframe: Constructed of extruded aluminum, (6063-T5 or 6063-T6 alloy) free of defects. Sub-frame will include head, jamb and sill components, flat casing, and cap trim profiles.

B. Anchors, Clips, and Accessories: Provide anchors, clips, and accessories of aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron for sliding plastic-framed glass doors, complying with ASTM B 456 or ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

2.8 INSECT SCREENS

A. General: Design sliding plastic-framed glass doors and hardware to accommodate screens in a tight fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens to fully integrate with door frame. Locate screens on the outside of door and provide for each operable door panel. Screen wickets are not permitted.

B. Insect Screen Frames: Manufacturer's standard, aluminum alloy complying with Screen Manufacturers Association (SMA) 1004 or SMA 1201 extruded-aluminum or formed-tubular-aluminum members, with mitered or coped joints, concealed fasteners, adjustable rollers, and removable polyethylene (PE) spline/anchor concealing edge of mesh.

1. Finish: Baked-on organic coating in manufacturer's standard color matching sliding door frame.

C. Screening Fabric: 18 by 16 window screening wire fabric with approximately 0.011 inch diameter, painted/coated strands; PVC-containing paints/coatings are not permitted.

1. Screening Finish: Charcoal gray.

D. Screen Hardware: Manufacturer's standard pull and keyless locking device on each movable panel, lockable from inside only. Adjust locking device to allow unobstructed movement of panel across adjacent panel in direction indicated.

2.9 FABRICATION

A. Fabricate sliding plastic-framed glass doors in sizes indicated. Include a complete system for assembling components and anchoring doors.

B. Fabricate sliding plastic-framed glass doors that are reglazable without dismantling panel framing.

C. Frame: Mitered corners and mechanically fastened and sealed with gasket joints.

D. Panels: Mitered corners and fully welded joints.

E. Weatherstripping: Provide operable panels with a double row of sliding weatherstripping in horizontal rails and double-row weatherstripping in meeting or jamb stiles. Provide compression-type weatherstripping at the perimeter of each movable panel where sliding-type weatherstripping is not appropriate.

1. Provide weatherstripping locked into extruded grooves in door panels or frames.

F. Weep Holes: Provide weep holes and internal drainage passages to conduct infiltrating water to exterior. Provide open cell foam backing or other means, as determined by the manufacturer, to allow water drainage while restricting insect infiltration.

G. Factory-Glazed Fabrication: Glaze sliding plastic-framed glass doors in the factory where practical and possible for applications indicated. Comply with requirements in Section 08 80 00 “Glazing” and with AAMA/WDMA/CSA 101/I.S.2/A440.

H. Glazing Stops: Provide Snap-On glazing stops coordinated with Section 08 80 00 “Glazing” and with glazing system indicated. Provide glazing stops to match panel frames.

I. All sliding doors will have a permanent factory-applied label in full view without dismantling assembly indicating scheduled door unit number, size, model number, STC and OITC ratings, thermal performance rating (“U” or “R” value), type of glazing, date of manufacture, and name and location of manufacturer. A removable adhesive label will be located on the glazing surface that will prominently indicate the STC and OITC ratings, as well as the following: “Do not remove before inspection”. Other manufacturer information may be included on this label.

2.10 FINISHES

A. Vinyl Finish: Manufacturer’s standard white, beige and, brown. Provide finish and color as selected by the Homeowner and scheduled for each Home. Note that a separate color selection will be made for each Home in the Contract. Available interior/exterior finish combinations are listed in the following table.

Opaque Vinyl Finishes						
Common offerings among manufacturers	All Homes					
Manf. / Finishes	White		Beige		Brown	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
Stergis Windows and Doors	White	White	Beige	Beige	White	Brown
Rehau Windows and Doors	White	White	Beige	Beige	White	Brown

B. All frame and trim materials shall be solid monolithic vinyl or a composite of vinyl color layer bonded to the main vinyl extrusion.

1. Painted vinyl members are not allowed.

C. Color match screen frame to main frame and sash color.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor will make a detailed inspection to verify sliding glass door unit dimensions for sliding glass doors to be replaced with new sliding glass doors.

B. Field Measurements: Check actual sliding glass door openings by accurate field measurement before fabrication. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1. Confirm new sliding glass door style and color with Homeowner at the time of measure, before fabrication.
2. Verify rough opening dimensions, levelness of threshold substrate, and operational clearances.

C. Existing materials will be carefully removed so that firm, sound structural surfaces are exposed that are adequate for the installation of a new sliding glass door assembly. Protect adjacent finishes. Repair adjacent finishes, as required.

D. Examine openings, substrates, structural support, anchorage, and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of Work.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within three (3) inches of opening.
3. Do not remove existing door until new door is available and ready for immediate installation. Do not leave any openings uncovered at end of working day.
4. Remove existing work carefully; avoid damage to existing work to remain.

E. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather-tight sliding plastic-framed glass door installation.

F. Door Replacement Requirements:

1. Work Included: Provide labor, materials, and equipment necessary to complete the work and without limiting the generality thereof include:
    a. Removal of existing sash, fixed glazing, frames and other accessories as required by the proposed replacement system.
    b. Removal of other existing work as required for the proper installation and operation of the new units.

G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. The Contractor will not start any work on a given day in a Home until all the new sliding doors for that Home have been received from the manufacturer.

B. General: The manufacturer will provide training for the installer and Contractor in the proper installation procedures, sequences, and techniques, measuring, sizes and limitations.

1. As requested by the Commissioner, the manufacturer will provide on-site inspections for each Home to verify the sliding doors are being properly installed and the acoustical performance is not

compromised by improper installation methods. On-site inspections will be repeated until the manufacturer is satisfied that the sliding glass doors are installed in the correct, as designed manner.

C. Comply with manufacturer's written instructions for installing sliding glass doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

D. Provide and install additional exterior sill and framing, including all flashing, sealing, etc., as shown on the detail drawing, where required for the installation of the sliding glass door unit.

1. Voids between the sliding glass doorframe and the wall structure are not allowed even if finish trim will cover such voids. For voids ½ inch or greater, provide wood blocking. For voids smaller than ½ inch, provide batt insulation, joint sealant and backing.
2. Exterior trim and molding materials will be installed in such a way as to provide a completely waterproof barrier, and to match as closely as possible, the previously existing trim and molding materials. All exterior trim will be clad in color specified.

E. Install sliding plastic-framed glass doors level, plumb, square, true to line, without distortion, warp or rack of frames and panels, or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing, vapor retarders, air barriers, water/weather barriers, and other adjacent construction. All units shall be installed with shims at all fastener locations, and all other locations required by the door manufacturer, as well as additional locations to ensure racking or other movement of the door assembly does not occur over the life of the door. Remove and replace/reinstall interior and exterior trim as required to install shims from the interior and exterior to ensure proper and complete support across the entire door frame depth.

F. Set sill members in bed of sealant or with gaskets, as indicated, to provide weather-tight construction. Coordinate installation with wall flashing and other components described on the Drawings.

1. Refer to Section 07 92 00 "Joint Sealants" for compounds, fillers and gaskets to be installed concurrently with, and after sliding glass door units are installed.
2. Modify existing sill or threshold as required by new door installation. Provide continuous support framing below threshold.

G. Install sliding plastic-framed glass doors and components to drain condensation, water penetrating joints, and moisture migrating within doors to the exterior.

H. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials according to ASTM E 2112, Section 5.12 "Dissimilar Materials".

I. Provide and install new clad exterior trim and new interior trim at all new sliding glass doors.

J. Provide insulated panels and frames integral with and matching sliding door construction and performance as required in selected transoms and other locations as scheduled.

K. Provide primed wood blocking, fillers and nailers as required for secure installation. Provide preservative-treated wood blocking for sill conditions. Contractor will be responsible for providing new blocking for portions of head, jamb, and sills that are deteriorated.

L. Provide insulation between door frames and adjacent Construction.

M. Provide sealing of all joints within each sliding glass door assembly.

N. Install sealant around of entire exterior perimeter of door units after installation.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating panels and screens to provide a tight fit at contact points and weatherstripping for smooth operation, without binding, and a weather-tight closure.

B. Adjust hardware for proper alignment, smooth operation, and proper latching without unnecessary force or excessive clearance. Lubricate hardware and moving parts.

C. Clean glass and vinyl surfaces immediately after installing sliding doors. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

D. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

E. Promptly remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

F. Protect sliding door surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact door surfaces, remove contaminants immediately according to manufacturer's written instructions. Initiate and maintain protection and other precautions required through the remainder of the construction period to ensure that, except for normal weathering, sliding glass door units will be free of damage or deterioration at the time of Final Completion of the Home.

G. Remove from site and legally dispose of all removed materials, debris, packaging, banding and all other surplus materials and equipment.

H. Refinish or replace sliding plastic-framed glass doors with damaged finishes.

I. Replace damaged components.

3.4 ATTACHMENTS

A. PRODUCT CERTIFICATION sample form

END OF SECTION 08 32 16

RESIDENTIAL SOUND INSULATION PROGRAM
PRODUCT CERTIFICATION (PC)

Product:	Sliding Vinyl Glass Door (SL1)	Date: 01/25/2013	

☒ Submitted out of contract, complete this column only.		☐ Submitted within a contract, complete both columns.	
Manufacturer:	ABC Windows & Doors, Inc.	Project Phase:	
Section Title:	Sliding Plastic-Framed Glass Doors	Project No.:	
Section No.:	08 32 16	Contract No.:	
Specification No.:	516830	Contractor:	

MANUFACTURER	SUPPLIED PRODUCT
ABC Windows & Doors, Inc.	Product type: Sliding Vinyl Glass Door (SL1) AAMA Performance Class and Grade: LC-30 Model number: SV-3000 (SL1) Color options: White, Beige, Brown Glazing: ¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)

LABORATORY TESTING SUMMARY	
Acoustical Test Report ASTM E 90 (ASTM E 413 & ASTM E 1332)	
Testing Lab/Report Number/Date	Intertek / Report # 123456789-00 / Date 0[illegible]/2011
Glazing Description	¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
STC/OITC	38/29
Thermal Test Report by AAMA 1503	
Testing Lab/Report Number/Date	Element / Report # 12345[illegible]89-11 / [illegible]e 01/31/2009
Glazing Description	¼" Laminated, [illegible]ir space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
Thermal U-Value	0.32
Condensation Resistance Factor (CRF)	74
Solar Heat Gain Coefficient (SHGC)	0.35
Thermal Test Report by NFRC 100 / 200 / 500	
Testing Lab/Report Number/Date	Not used
Glazing Description	Not used
Test Specimen Size	Not used
Thermal U-Value	Not used
Condensation Resistance Factor (CRF)	Not used
Solar Heat Gain Coefficient (SHGC)	Not used
AAMA/WDMA/CSA 101/I.S.2/A440 Test Report	
Testing Lab/Report Number	Element / Report # 123456789-22 / Date 12/01/2012
Glazing Description	¼" Laminated, ½" air space, ¼" Laminated (low e SB60 L3)
Test Specimen Size	72" x 80"
Air Infiltration	.21 cfm/sf at 1.6 psf
Water Penetration Resistance	No Leakage at 4.6 psf
Uniform Load Deflection	'+0.18" / 0.01" at 30.09 psf (L/175=0.2")
Uniform Load Structural	'+/- 0.01 at 45.14 psf (0.4%=0.14")
Operating Force	To initiate: 38.5 lbf / to maintain: 34.0 lbf
Forced Entry Resistance	Grade: 10 No entry
Thermoplastic Corner Weld	Pass

SAMPLE

Deglazing	Pass
VOC and Hot Odor Results	
VOC Results	Passed
Hot Odor – average odor scale rating	4

CERTIFICATION: (*Check one)*

☒ **Certification for Products without an approved submittal waiver:** ABC Windows & Doors, Inc. here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications 516830 and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

This certification statement is accompanied by a formal submittal of all materials and information as required by the RSIP Technical Specifications for review, approval and consideration for a product submittal waiver. This submittal includes, but is not limited to, product data, samples, test reports, product certifications, drawings and shop drawings.

☐ **Certification for Products with an approved submittal waiver:** Manufacturer's Name here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications Number and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

We further state the following:

- The product to be furnished will be identical to the Master Submittal PDF including any applicable addenda on file with the RSIP and approved by the Program Architect on Date.

☐ No changes have been made to the product previously submitted and approved.

(check appropriate selection above or below)

☐ Changes have been made to the approved product and we have attached all associated submittals for review, approval and update to the Master Submittal PDF.

- The submittal waiver for this product was initially granted after verifying compliance with RSIP Technical Specifications Number. Understanding that the RSIP Technical Specifications receive frequent updates, Manufacturer's Name acknowledges that they have reviewed the current RSIP Technical Specifications Number and here-by certifies that the referenced product remains fully compliant.

Manufacturer's Authorized Signature: *John Smith* Date: 01/25/2013

Name & Title (Printed) John Smith, Sales Manager, ABC Windows & Doors, Inc.

SAMPLE

SECTION 08 51 69 - METAL STORM WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes metal storm window units fabricated from specially designed sections to satisfy specific performance requirements.

1. Interior storm windows.
2. Exterior fin-mounted storm windows.
3. Interior mounted hinged skylight storm windows.

B. Related Requirements:

1. Section 01 40 00 "Quality Requirements".
2. Section 01 50 00 "Temporary Facilities and Controls".
3. Section 01 73 00 "Execution".
4. Section 02 83 13 "Lead Hazard Control Activities".
5. Section 02 83 33.13 "Lead-Based Paint Removal and Disposal".
6. Section 05 75 00 "Decorative Formed Metal".
7. Section 06 10 53 "Miscellaneous Rough Carpentry".
8. Section 06 20 13 "Exterior Finish Carpentry".
9. Section 06 20 23 "Interior Finish Carpentry".
10. Section 07 21 00 "Thermal Insulation".
11. Section 07 62 00 "Sheet metal Flashing and Trim".
12. Section 07 92 00 "Joint Sealants".
13. Section 08 80 00 "Glazing".

1.3 DEFINITIONS

A. Metal storm windows are specified to meet the specific sound transmission and performance requirements for this Project.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association www.aluminum.org	(703) 358-2960

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWS	Architectural Woodwork Standard by AWI	
BHMA	Builders Hardware Manufacturers Association www.buildershardware,com	(212) 297-2122
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all storm window units and verify all requirements of the Construction Modification, including but not limited to:

a. Storm Window type and color options by review with the Homeowner.
b. Storm Window quantities and locations.

c. Safety glazing and egress window requirements in compliance with the governing code or Authority.

2. Provide field measurement services by manufacturer, or authorized representative, to verify size and style of metal storm window unit prior to fabrication.
3. Review, discuss, and coordinate the interrelationship of metal storm windows with other exterior and interior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes. Verify installation material requirements, including trim and sheet metal capping.

   a. Review and coordinate new interior storm window installation with interior finishes and any existing window treatments, including blinds, shades and/or curtains. To the greatest extent possible, existing window treatments are to remain in place or be salvaged and reinstalled. The Contractor shall notify the Homeowner and Project Manager in the event that the window treatments cannot be retained or reinstalled.

4. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

B. Product Submittal Waiver: The Commissioner may waive, at his or her discretion, the Submittal requirements specified in the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles, provided the following conditions are met.

1. The manufacturer has made an independent master submittal, in triplicate, directly to the Commissioner and has obtained review and written approval of same from the Commissioner. Only after such approval, will a manufacturer and Contractor be relieved of the submittal requirements of the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles of this Specification Section and be granted a Submittal Waiver.
2. The master submittal will include all materials and information as required by these Articles; including, but not limited to Product Data, Product Certification Drawings, Test Reports, Product Certifications, Samples, and additional materials as may be required by PART TWO OF THREE - GENERAL CONDITIONS, Article XI, Shop Drawings, Product Data and Samples.
3. The manufacturer will notify the Commissioner and provide new submittal materials for all product changes and/or in the event of product test report expiration.

C. Submission requirements for each construction contract will not be waived for the following:

1. Product Certifications.
2. Master Submittal PDF, for record.
3. Product Certification Drawings (PCD), unless the PCD was submitted as part of product testing and the performance compliant test report includes verification by the testing agency that the PCD matches the tested specimen.
4. Warranties.
5. Samples.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of storm window required to be incorporated into the Work. Include information not fully detailed in manufacturer's standard product data.

1. Product Certification Drawings (PCD): PCD will be required as a part of all submittals to demonstrate compliance with specified performance requirements. Provide a separate PCD for each product type and variation that the manufacturer provides to RSIP.

a. The PCD will include the following:

1) Manufacturer name, address, and contact information.
2) Product type and model number.
3) Product Classification and Performance Grade.
4) Minimum and maximum size limitations.
5) Finish and Color options.
6) Fabrication methods and standard construction details including joinery, profiles, reinforcement, and dimensions of individual components.
7) Details of installation, including anchor, flashing, and sealant installation.
8) Data on type and model number for operating hardware.
9) Location and style of all weather-stripping.
10) Type and size of all mechanical fasteners.
11) Location of any caulking or seals.
12) Data on screen material and mesh type including vinyl spline, if applicable.
13) Glass and Glazing data:

a) Glass composition including thickness of each light (tempered and/or laminated glass will be noted as such including interlayer dimensions if applicable).
b) Setting method and materials for all glazing.

14) Other information, as necessary, to demonstrate compliance with the specified performance requirements.

b. A new PCD will be required for all testing conducted if any of the following apply:

1) Manufacturer changes the design or manufacturing of a product, unless the changes are of a minor or cosmetic nature, in which case the manufacturer will notify the Commissioner and provide a statement stating the nature of the change and affirming that the change will not detrimentally affect the performance of the product indicated in the test report.
2) Upon expiration of test reports.

c. Certification: The PCD will be certified by the testing agency/laboratory as matching the tested product specimen. Such certification will be included in the test report.

2. Include submittal of Product Data for glazing of windows as specified in Section 08 80 00 "Glazing" as part of the submittal package of this Section.

B. Shop Drawings: Details of installation not fully shown in manufacturer's standard Product Data. Include details of attachment, clearances, and details of flashing and sealant installation.

C. Samples: For each exposed product and for each color specified provide material samples approximately 2 x 4 inches, of storm window framing members:

1. For interior and fin mount storm windows, provide samples showing white, beige, and brown colors to match Commissioner samples.
2. For flush mount storm windows, provide samples for each color of manufacturer's full range of standard colors.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Test Reports: For each type of metal storm window, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS articles of this Specification Section.
2. Each test report dated more than four years from the Notice To Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract NTP, the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:

    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty-five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 "Sustainable Design Requirements" Articles 1.4-B and 2.2.

D. Product Certification: The Contractor will submit a "Product Certification" (PC) executed by the manufacturer/supplier and Contractor, certifying that all products supplied under this Contract will be furnished in compliance with all performance and other specification requirements of this Section. A separate PC will be provided for each product type and variation. A sample of the PC is included at the end of this Section.

1. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such "product changes" will not affect the product's ability to comply with the performance requirements identified in these specifications.

E. Installation Instructions: Manufacturer's installation instructions for specified products.

F. Maintenance Data: For operable sash, operating hardware, weatherstripping, finishes, and cleaning.

G. Sample Warranties: For manufacturer's warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating metal storm windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to metal storm window manufacturer for installation of units required for this Project.

C. Certification Labels: Provide storm windows with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Structural Performance.
2. Thermal Performance.
3. Acoustical Performance.
4. Other Performance values as required by Industry Organization standards.

D. Mock-ups

1. Mock-ups shall be provided for each type of treatment including, but not limited to; installation of one type of metal storm window complete with all hardware, trim and seals.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect storm window during transit, storage, and handling to prevent damage, soiling, and deterioration.

1. Package storm windows individually in protective wrapping sufficient to protect product during transport and handling prior to installation.
2. Transport, handle, and store storm windows right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver storm window shop finished in accordance with manufacturer's recommendations.

B. Store storm windows in compliance with manufacturer's recommendations. Store in a manner such that the manufacturer's identification marks are clearly visible.

C. Do not slide storm windows against one another. Do not roll storm windows onto corners or in any manner that would damage the window.

1.10 PROJECT CONDITIONS

A. Provide custom-sized storm windows for each opening. Size each window unit to fit existing finished opening without the use of head expanders. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

1.11 WARRANTIES

A. Manufacturer's Warranty: Provide manufacturer's written and signed warranty wherein the manufacturer agrees to provide all materials and labor required at each Home to repair and/or replace metal storm windows which fail in materials or workmanship within specified warranty period. The warranty will

further state that the parts used in the manufacture of the storm window, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:

    a. Failure to meet performance requirements.
    b. Structural failures including excessive deflection, water leakage, and air infiltration.
    c. Faulty operation of movable sash and hardware.
    d. Deterioration of materials and finishes beyond normal weathering.
    e. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of storm window to meet generally recognized performance standards and specified installation requirements.
3. Warranties on materials not manufactured by the manufacturer but required to be furnished as part of the storm window unit will be included in the manufacturer's warranty. These items may include, but are not necessarily limited to thermal breaks, sheet glass, caulking, screen cloth, and weatherstripping. Such items will be noted as included on the manufacturer's warranty, and the warranty will be submitted to the Commissioner.

4. Warranty Period:

    a. Storm Window: Ten (10) years from date of Final Completion of the Home.
    b. Storm Window Finishes: Ten (10) years from date of Final Completion of the Home.
    c. Glazing Units: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new metal storm windows in a manner that will preserve the manufacturer's warranty as well as the storm window's acoustical and other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace metal storm windows and associated installation materials that are defective in materials or workmanship related to installation of the metal storm windows for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
3. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the metal storm window unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Window, Inc.
2. Mon-Ray, Inc.
3. Soundproof Windows, Inc.

B. Source Limitations: Each Home and multi-unit building will receive metal storm windows from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent and/or other requirements are indicated.

1. Window Certification: AAMA/WDMA/CSA and/or NFRC certified with label attached to each storm window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: R.
2. Minimum Performance Grade: 25.

C. Thermal Movements: Provide storm windows, including anchorage, that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 degrees F (67 degrees C), ambient; 180 degrees F (100 degrees C) material surfaces.

D. Acoustical Performance Requirements:

1. Sound Transmission Class (STC): Tested according to ASTM E 90, “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Buildings Partitions and Elements,” and classified by ASTM E 413, “Classification for Rating Sound Insulation”.
2. Outdoor-Indoor Transmission Class (OITC): Tested according to ASTM E 90 and classified by ASTM E 1332, “Standard Classification for Rating Outdoor-Indoor Sound Attenuation”.
3. Provide metal storm windows with an STC rating of 30 and OITC rating of 24.

E. Sustainable Design Requirements: Refer to specification Section 01 81 13 “Sustainable Design Requirements” / Low-Emitting Materials – Manufactured Fenestration Product Assemblies for VOC and Component Odor emissions requirements.

F. Emergency Escape and Rescue Windows: Provide storm windows that comply with the life safety and egress requirements of the governing code or Authority. All operable hardware, including limit devices, will be easily operated and/or releasable without the use of special knowledge or tools.

G. Performance requirements will apply to all storm windows whether installed on the interior or exterior.

2.3 TESTING REQUIREMENTS

A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440; NFRC and ASTM referenced Standards and Specifications for definitions and minimum standards of performance testing protocols and procedures, unless more stringent and/or other requirements are indicated.

1. Test reports demonstrating compliance with requirements will not be invalidated due to the date of the test.

B. In the event of discrepancies between these specification requirements and current adopted standards and requirements published in referenced standards, the current standard's requirements will be considered and, if so determined by the Architect, will be acceptable.

C. Glazing Requirements for Testing: To the greatest extent possible, furnish all testing reports based upon the exact storm window unit composition utilized to demonstrate STC and OITC compliance.

1. For STC, OITC, Thermal Transmittance, Condensation Resistance, and Operational Force tests, the storm window model and glazing assemblies will be identical.
2. For the following tests and to demonstrate compliance with the associated performance criteria only, alternate glass types will be allowed in storm windows using identical sash, frame, and glazing seals to the STC and OITC tested storm window construction. Actual glass and glazing used in furnished storm windows will be the same as the STC and OITC tested product.

    a. Air Leakage Resistance.
    b. Water Penetration Resistance.
    c. Uniform Load Deflection.
    d. Uniform Load Structural.
    e. Operating Force.

D. Minimum Test Size: Comply with requirements contained within referenced AAMA, NFRC and/or ASTM Standards/Specifications for each associated testing requirement.

1. The minimum specimen size for STC and OITC testing of storm windows will be as specified in ASTM E 1425, "Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems".
2. When test reports complying with the ASTM sizes cannot be provided, reports may be submitted using a different sample size as long as it is no smaller than the following minimum united inch values (DH, SL = 75 UI and FXD = 90 UI).

E. All test reports submitted will have the storm window model numbers specified which correspond to the model numbers shown on the submitted shop drawings and catalog cuts.

F. Acoustical Testing Requirements:

1. The manufacturer will submit STC test reports, conducted in accordance with ASTM E 90 and classified by ASTM E 413, as well as OITC test reports conducted in accordance with ASTM E 90 and classified by ASTM E 1332 from an approved acoustical testing laboratory for each proposed storm window style, operational characteristic, STC and OITC rating. Storm window model numbers and glazing thickness specified in the STC and OITC reports will correspond to the model numbers and glazing thickness shown on the submitted shop drawings and catalog cuts.
2. The STC and OITC tests will be conducted with a storm window in a typical weather-stripped and closed position. Tests conducted in tandem with prime and storm window units will not be accepted. The ambient room and specimen temperatures for all STC and OITC testing will be as stated in ASTM E 90.

3. Provide STC and OITC test reports from a qualified acoustical testing laboratory that is certified under NIST and NVLAP for conducting precision acoustical testing in accordance with ASTM E 90. Approved acoustical testing laboratories include, but are not limited to, the following:

    a. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
    b. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
    c. ETS Lindgren (Acoustic Research Laboratory), 1301 Arrow Point Drive, Cedar Park, TX 78613-6936, (512) 531-6400.
    d. Riverbank Acoustical Laboratories, Inc., 1512 Batavia Avenue, Geneva, IL 60134, (630) 232-0104.
    e. Western Electro-Acoustic Laboratories, Inc. (WEAL), 25132 Rye Canyon Loop, Santa Clarita, CA 91355, (661) 775-3741.

G. Non-Acoustical Testing Requirements: For all testing, other than STC and OITC testing, submit test reports from a qualified testing agency that is accredited by the specified referenced AAMA, ASTM and/or NFRC standard to perform the specific test protocol required. Approved testing agencies include, but are not limited to the following:

1. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
2. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353
3. National Certified testing Laboratories, Inc., 5 Leigh Drive, York, PA 17402, (717) 846-1200.
4. Quast Consulting and Testing Inc., 1055 Indianhead Drive, Mosinee, WI 54455, (715) 693-8378.

2.4 METAL STORM WINDOWS

A. General: All storm window units will be of fixed or operable sash as indicated. The storm window unit will be constructed in a manner that will allow easy replacement of defective or damaged parts without the need for specialized or proprietary tools.

B. Interior storm windows: The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Double-Hung Sash: Spring-loaded latch, two (2) per sash.

    a. Allied Window, Inc.; Operating Magnetic One Lite “MOL-OP”
    b. Mon-Ray, Inc.; Model 504.
    c. Soundproof Windows, Inc.; Single Hung Model.

2. Horizontal-sliding Sash: Spring-loaded, snap-type lock at jambs, designed to allow unobstructed movement of the sash across adjacent sash. Provide low friction roller or glide for sash and half sized sash.

    a. Allied Window, Inc.; Slide-A-Way “SAW”.
    b. Mon-Ray, Inc.; Model 505.
    c. Soundproof Windows, Inc.; Slider Model.

3. Side-hinged Sash: Manufacturer’s standard continuous hinge and sash latch hardware.

    a. Mon-Ray, Inc.; Model 503.
    b. Soundproof Windows, Inc.; Casement Model.

4. Fixed Sash: Turn-clips or pin lock to secure removable sash panel.

    a. Allied Window, Inc.; Magnetic One Lite “MOL”
    b. Mon-Ray, Inc.; Model P150 Series.
    c. Soundproof Windows, Inc.; One Lite Model.

C. Exterior fin mount storm windows: The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Double-Hung Sash: Spring-loaded latch, two (2) per sash. Provide half-size screen sash.

    a. Mon-Ray, Inc.; Model 604.
    b. Allied Window, Inc.; Operable Historic One Lite “HOL-OP”
    c.

2. Horizontal-sliding Sash: Spring-loaded, snap-type lock at jambs, designed to allow unobstructed movement of the sash across adjacent sash. Provide low friction roller or glide for sash and half sized sash.

    a. Mon-Ray, Inc.; Model 605.
    b.

3. Fixed Sash: Turn-clips to secure removable sash panel.

    a. Mon-Ray, Inc.; Model 603.
    b. Allied Window, Inc.; (1) Panel with Invisible Clips (AOL-A)

D. Provide factory pre-glazed, assembled storm window units which fit existing window openings and do not require cutting the master frame other than shimming which will be less than 1/8- inch of the nominal opening length and width dimensions.

E. Aluminum Extrusions: All storm window jambs, sashes, mullions, meeting rails, sills, and headpieces will be extruded aluminum 6063-T5 alloy, 0.050-inch minimum thickness.

1. Wood or PVC materials will not be acceptable for use in the construction of window component elements.
2. A permanent watertight joint will be made at the junction of sill and frame members. All openings in frame members will be back sealed to prevent air infiltration. Sealant used will meet the requirements of AAMA 800 “Voluntary Specifications and Test Methods for Sealants”.
3. All operating sash surfaces will be completely protected from metal-to-metal contact. All operable sash assemblies will be removable from the inside of the dwelling. All assemblies will be of appropriate capacity to hold each sash stationary and permit it to operate freely.

    a. The meeting rail of both interior and exterior sash will interlock when in a closed position.

4. All vertically moveable sashes will be provided with means to automatically lock the sash in a closed position and to have at least three open ventilation positions. Pins will be operated by grips on each side of the inside of the sash.

    a. Bottom of sash mechanism will operate from the interior only by means of finger tabs.

F. Provide storm windows that comply with the egress requirements of authorities having jurisdiction.

2.5 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed vinyl windows.

B. Performance: Provide glazing units of type, thickness, and composition to meet the specified performance requirements.

C. Glass Type: Provide clear annealed float glass, except at locations requiring safety glazing.

1. At locations requiring safety glazing, provide fully tempered or fully tempered and laminated clear glass. Comply with safety glazing requirements and requirements of Section 08 80 00 "Glazing".

2.6 HARDWARE

A. Hardware: Hardware for storm window fabrication and installation will be of a non-corrosive material that is compatible with aluminum. Plastics or wrought alloy are not acceptable.

1. Storm windows shall be operable without the use of special tools.

2.7 INSECT SCREENS

A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable storm window. Screen wickets are not permitted.

B. Insect Screen Frames: Manufacturer's standard, aluminum alloy complying with SMA 1004 or SMA 120,1 extruded-aluminum or formed-tubular-aluminum members, with mitered or coped joints, concealed fasteners, and removable polyvinyl chloride (PVC) or polyethylene (PE) spline/anchor concealing edge of mesh.

1. Finish: Baked-on organic coating in manufacturer's standard color matching window frame.

C. Screening Fabric: 18 by 16 count per sq. in. window screening wire fabric with approximately 0.011-inch diameter, painted/coated strands; PVC-containing paints/coatings are not permitted.

1. Screening Finish: Charcoal gray.

D. Screen Hardware: The screen will be removable from the window interior and held in place by manufacturer's standard mounting system complying with performance requirements.

2.8 FABRICATION

A. Fasteners: Screws for window fabrication and installation will be of a non-corrosive metal that is compatible with aluminum. Do not use exposed fasteners except where unavoidable for application of hardware. Match finish of adjoining metal.

B. Weatherstripping: Weatherstripping will conform to AAMA 701.2 "Voluntary Specification for Pile Weatherstrip" and will be either pile weatherstrip or center fin weatherstrip.

1. All weatherstripping will be installed in specially extruded ports and secured to prevent shrinkage, movement or loss when removing sash for cleaning or glass replacement.
2. Any points in the sash perimeter that are not fully sealed with double weatherstripping will be sealed with additional weatherstripping material. This weatherstripping will be installed in a manner that will prevent movement or loss when operating or removing the sash.
3. Weatherstripping for Interior Storm Application: Provide additional acoustical seals and weatherstripping as described in the Drawings.

C. Sealants: Unless otherwise indicated for sealants required within fabricated storm window units, provide type recommended by the manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Sealant color will match frame color.

2.9 FINISHES

A. Comply with the National Association of Architectural Metal Manufacturers' (NAAMM) "Metal Finishes Manual" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.10 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Paint Finish: Provide manufacturer's standard paint finish meeting or exceeding AAMA 2603.

1. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.

    a. Organic Coating: Thermosetting, modified-acrylic or polyester enamel primer/topcoat system complying with AAMA 2603, except with a minimum dry film thickness of 1.5 mils (0.04 mm), medium gloss.

2. Paint Colors: Storm window colors shall be as selected by the Homeowner from the full range of colors as listed in the following table and approved by the Commissioner.

OPAQUE (PAINT) FINISH OPTIONS			
Common offerings among manufacturers	All Homes		
Manf. / Finishes	White	Beige	Brown

2.11

Allied Window	White	Beige	Brown
Mon-Ray	White	Beige	Brown
Soundproof Windows	White	Beige	Brown

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine existing conditions in which storm windows are to be installed to ensure that storm windows can be accurately set in position.

B. Clean and prepare existing window area so that firm, sound structural surfaces are exposed that are adequate for the attachment of interior or exterior storm windows. Damage to adjacent wall surfaces will be minimal and existing trim materials will be salvaged for reuse if removal is required.

C. Make a detailed survey of each residence to verify window unit dimensions for windows to be replaced or installed.

1. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
2. All window openings will be measured by the Contractor or authorized representatives for the proper sizing and fabrication of each storm window unit. Size units to be within 1/8 inch of the nominal opening length and width dimensions, including sill expanders required for operating hardware clearance.
3. Provide units with flanges or trim matching storm window frame color to exactly fit the existing windows, including openings that are out of square.

D. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Storm windows will be installed in the existing openings in strict accordance with the manufacturer's detailed specifications and shop drawings, complete with finish trim and casing materials, where required, that closely match the existing materials. Patching of exterior stucco, plaster, masonry, wood, vinyl and aluminum siding will match existing and will not reduce the sound insulation performance of the metal storm window installation.

B. The Contractor shall coordinate with the prime window and storm window manufacturers to ensure that the meeting rails of prime and storm products line up.

C. Skylight storm window frames shall be expandable to be able to cover openings that are out of square. Any trim utilized to accommodate opening irregularities shall not interfere with the operation of the window.

D. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weather-tight construction.

E. Provide 2 inch minimum to 4 inch maximum air space between glazing of interior metal storm window and primary window, unless noted otherwise.

F. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

G. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

H. All assembled metal storm window materials will be properly back-sealed and fastened before installation. The Commissioner shall reserve the right to determine whether the materials are satisfactorily sealed before installation. Voids between the metal storm window frame and the wall structure (at exterior), exterior clad window trim or interior window trim (for interior applications) are not allowed. All exposed wood will be clad in the color specified and verified with the Homeowner by the Contractor at the time of inspection.

I. All joints will have proper sealant backup. Sealant will contact the panning materials and the brick or concrete exterior masonry at the exterior face of head, jambs, and sills. All sealant joints will be in accordance with the sealant manufacturer's written recommendations. Sealant will conform to requirements of Section 07 92 00, "Joint Sealants".

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weatherstripping for smooth operation and weather-tight closure.

B. Clean all facing glass surfaces prior to the installation of new storm windows.

C. Clean exposed surfaces immediately after installing windows. Comply with requirements of Section 08 80 00 "Glazing" for cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Lubricate hardware and other moving parts.

1. Keep protective films and coverings in place. Do not remove STC Identification Label from the glazing surface until final cleaning.

D. Promptly remove and replace glass which is broken, chipped, cracked, or damaged during the construction period, including by natural causes, accidents, and vandalism.

E. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions. Initiate and maintain protection and other precautions required through the remainder of the construction period to ensure that window units will be free of damage or deterioration at the time of Final Completion of the Home.

F. Remove from site and legally dispose of all removed materials, debris, packaging, banding, and all other surplus materials and equipment.

G. Refinish or replace storm windows with damaged finishes.

H. Replace damaged components.

3.4 ATTACHMENTS

A. PRODUCT CERTIFICATION sample form.

END OF SECTION 08 51 69

RESIDENTIAL SOUND INSULATION PROGRAM
PRODUCT CERTIFICATION (PC)

Product: Aluminum Storm Window (DH) Date: 01/25/2013

☒ Submitted out of contract, complete this column only. ☐ Submitted within a contract, complete both columns.

Manufacturer:	ABC Windows & Doors, Inc.	Project Phase:	
Section Title:	Metal Storm Windows	Project No.:	
Section No.:	08 51 69	Contract No.:	
Specification No.:	516830	Contractor:	

MANUFACTURER	SUPPLIED PRODUCT
ABC Windows & Doors, Inc.	Product type: Aluminum Storm Window (DH) AAMA Performance Class and Grade: R Model number: S700 Color options: White, Beige, Brown Glazing: 1/8" low e: (SB60/outside surface)

LABORATORY TESTING SUMMARY	
Acoustical Test Report ASTM E 90 (ASTM E 413 & ASTM E 1332)	
Testing Lab/Report Number/Date	Intertek / Report #123456789-00 / Date 2/12/2011
Glazing Description	1/8" low e: (SB60/outside surface)
Test Specimen Size	47" x 59"
STC/OITC	30/26
AAMA/WDMA/CSA 101/I.S.2/A440 Test Report	
Testing Lab/Report Number/Date	Intertek / Report #123456789-11 / Date 08/21/2010
Glazing Description	1/8" low e: (SB60/outside surface)
Test Specimen Size	47" x 59"
Air Infiltration	0.2 cfm/sf at 1.6 psf
Water Penetration Resistance (Types: SSP-CSW, SSP-FEW, SSP-HWE & SSP-VWE)	No leakage at 4.6 psf
Uniform Load Deflection	'+ 0.18"/- 0.01" at 30.09 psf (L/175=0.2")
Uniform Load Structural	'+/- 0.01 at 45.14 psf (0.4% = 0.14")
Operating Force	To initiate: 38.5 lbf / to maintain: 34.0 lbf
Deglazing	Pass
Safety Drop Test (Types: SSP-CSW, SSP-VWE & SSP-VWI)	Pass
VOC and Hot Odor Results	
VOC Results	Passed
Hot Odor – average odor scale rating	4

SAMPLE

CERTIFICATION: (*Check one)*

☒ **Certification for Products without an approved submittal waiver:** ABC Windows & Doors, Inc. here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications 516830 and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

This certification statement is accompanied by a formal submittal of all materials and information as required by the RSIP Technical Specifications for review, approval and consideration for a product submittal waiver. This submittal includes, but is not limited to, product data, samples, test reports, product certification drawings and shop drawings.

☐ **Certification for Products with an approved submittal waiver:** Manufacturer's Name here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications Number and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

We further state the following:

- The product to be furnished will be identical to the Master Submittal PDF including any applicable addenda on file with the RSIP and approved by the Program Architect on Date.

☐ No changes have been made to the product previously submitted and approved.

(check appropriate selection above / below)

☐ Changes have been made to the approved product and we have attached all associated submittals for review, approval and update to the Master Submittal PDF.

- The submittal waiver for this product was initially granted after verifying compliance with RSIP Technical Specifications Number. Understanding that the RSIP Technical Specifications receive frequent updates, Manufacturer's Name acknowledges that they have reviewed the current RSIP Technical Specifications Number and here-by certifies that the referenced product remains fully compliant.

SAMPLE

Manufacturer's Authorized Signature: *John Smith* Date: 01/25/2013

Name & Title (Printed) John Smith, Sales Manager, ABC Windows & Doors, Inc.

SECTION 08 53 13 - VINYL WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes vinyl-framed window units fabricated from specially designed sections to satisfy specific performance requirements.

B. Related Requirements:

1. Section 01 40 00 "Quality Requirements".
2. Section 01 50 00 "Temporary Facilities and Controls".
3. Section 01 73 00 "Execution".
4. Section 01 81 13 "Sustainable Design Requirements".
5. Section 02 83 13 "Lead Hazard Control Activities".
6. Section 02 83 33.13 "Lead-Based Paint Removal and Disposal".
7. Section 05 75 00 "Decorative Formed Metal".
8. Section 06 10 53 "Miscellaneous Rough Carpentry".
9. Section 06 20 13 "Exterior Finish Carpentry".
10. Section 06 20 23 "Interior Finish Carpentry".
11. Section 07 21 00 "Thermal Insulation".
12. Section 07 92 00 "Joint Sealants".
13. Section 08 80 00 "Glazing".

1.3 DEFINITIONS

A. Vinyl windows are specified to meet the specific sound transmission and performance requirements for this Project. References to acoustical window units will be interchangeable with vinyl window units included within Sections and on Drawings.

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities in the following list. Names, telephone numbers, and websites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AAMA	American Architectural Manufacturers Association (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International (American Society for Testing and Materials International)	(610) 832-9500

	www.astm.org	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWS	Architectural Woodwork Standard by AWI	
BHMA	Builders Hardware Manufacturers Association www.buildershardware,com	(212) 297-2122
CPSC	Consumer Product Safety Commission www.cpsc.gov	(301) 504-7923
CSA	Canadian Standards Association	(613) 238-3222
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
FGIA	Fenestration & Glazing Industry Alliance www.fgiaonline.org	(847) 303-5664
GANA	Glazing Association of North America www.glasswebsite.com	(785) 271-0208
IGMA	Insulating Glass Manufacturers Alliance (AAMA and IGMA have merged to become FGIA)	(847) 303-5664
ISO	International Organization of Standardization www.iso.org	(202) 293-8020
NFPA	National Fire Protection Agency www.nfpa.org	(647) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
NVLAP	National Voluntary Laboratory Accreditation Program www.nist.gov/nvlap/	(301) 975-4016
SAE	SAE International (Society of Automotive Engineers) www.sae.org	(877) 606-7323
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SMA	Screen Manufacturers Association www.smainfo.org	(773) 636-0672
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802

C. Rough Opening-Partial Removal of Existing Window: The opening in a wall or framework of a home, remaining after the removal of the sash and parting stops of existing window, into which a new pocket type window unit is to be installed.

D. Rough Opening-Total Removal of Existing Window: The opening in a wall or framework of a home, remaining after the removal of the entire existing window including frame and sill, into which a new replacement window unit is to be installed. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

E. Rough Opening-Expanded Opening for New Egress Window: The opening in a wall or framework of a home as required accommodating the installation of an egress window and as necessary to comply with the local building code. This opening includes the removal of the entire existing window, demolition of a portion of the building wall, jamb framing and/or sill framing to expand the opening to the required size and location. The existing header height shall be maintained; however, a new header lintel shall be installed when the existing opening is made wider. Modifications will include all framing, new header (if required),

insulation and wall finishes repair to match existing conditions. Openings are larger than the size of the unit to allow room for insulation and to shim the unit square.

F. Sleeping Unit / Sleeping Room: A room or space in which people sleep.

G. Egress Window: A window used as a component of emergency escape and rescue to comply with International Building Code and/or International Residential Code requirements for sleeping rooms below the fourth floor and basements.

1. Minimum Size and Dimensions:

a. Minimum net clear opening: Minimum of 5.7 square feet.
b. Minimum net clear height: 24-inches.
c. Minimum net clear width: 20-inches.
d. Minimum height from floor: Bottom of clear opening not more than 44-inches above finish floor.

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Measure all window units and verify all requirements of the Construction Modification, including but not limited to:

a. Window type, color, and grille options by review with the Homeowner.
b. Grilles:

1) Window grille layout shall match existing if possible, unless otherwise selected by the Homeowner. Should matching the existing layout not be possible due to the manufacturers' style and size limitations, the grille pattern shall be reviewed and decided at the time of Field Measurements.
2) It shall be the Contractor's responsibility to ensure that the window grille layout conforms to the manufacturer's grille layout diagram, and that the window grille spacing is consistent for all windows of similar type and size.
3) Multi-unit Buildings and Multi-Building Complexes: Window grille layouts, for each window size, type, and configuration, shall be consistent within a building and within a complex of matching buildings.

c. Window quantities and locations.
d. Safety glazing and egress window requirements in compliance with the governing code or Authority.

1) Determine window locations which require tempered safety glazing.
2) Determine window locations which require opening restrictors to limit the clear sash opening to less than four inches. All restrictor hardware will be releasable without the use of tools or special knowledge. All casements, including multiple-lite casements will have quick release hardware that meets egress requirements and be manufactured to achieve a 90-degree opening.

2. Review, discuss, and coordinate the interrelationship of vinyl windows with other exterior and interior wall components. Include provisions for anchoring, flashing, weeping, sealants, and

protecting finishes. Verify installation material requirements, including trim and sheet metal capping.

a. Review and coordinate new window installation with interior finishes and any existing window treatments, including blinds, shades and/or curtains. To the greatest extent possible, existing window treatments are to remain in place or be salvaged and reinstalled. The Contractor shall notify the Homeowner and Project Manager in the event that the window treatments cannot be retained or reinstalled.

3. Review and discuss the sequence of work required to construct a weather-tight exterior building envelope.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

B. Product Submittal Waiver: The Commissioner may waive, at his or her discretion, the Submittal requirements specified in the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles, provided the following conditions are met.

1. The manufacturer has made an independent master submittal, in triplicate, directly to the Commissioner and has obtained review and written approval of same from the Commissioner. Only after such approval, will a manufacturer and Contractor be relieved of the submittal requirements of the ACTION SUBMITTALS and INFORMATIONAL SUBMITTALS Articles of this Specification Section and be granted a submittal waiver.
2. The master submittal will include all materials and information as required by these Articles; including, but not limited to Product Data, Product Certification Drawings, Test Reports, Product Certifications, Samples, and additional materials as may be required by PART TWO OF THREE - GENERAL CONDITIONS, Article XI, Shop Drawings, Product Data and Samples.
3. The manufacturer will notify the Commissioner and provide new submittal materials for all product changes and/or in the event of product test report expiration.

C. Submission requirements for each construction contract will not be waived for the following:

1. Product Certifications.
2. Master Submittal PDF, for record.
3. Product Certification Drawings (PCD), unless the PCD was submitted as part of product testing and the performance compliant test report includes verification by the testing agency that the PCD matches the tested specimen.
4. Field quality control and on-site testing and reports.
5. Warranties.
6. Samples.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of window required to be incorporated into the Work. Include information not fully detailed in manufacturer’s standard product data.

1. Product Certification Drawings (PCD): PCD will be required as a part of all submittals to demonstrate compliance with specified performance requirements. Provide a separate PCD for each product type and variation that the manufacturer provides to RSIP.

a. The PCD will include the following:

1) Manufacturer name, address, and contact information.
2) Product type and model number.
3) Product Classification and Performance Grade.
4) Minimum and maximum size limitations.
5) Presence, or lack thereof, of storm window.
6) Finish and Color options.
7) Grille (false muntin) style options.
8) Fabrication methods and standard construction details including joinery, profiles, reinforcement, and dimensions of individual components.
9) Details of installation, including anchor, flashing, and sealant installation.
10) Data on type and model number for operating hardware.
11) Flashing and drainage system, including weep size and location.
12) Location and style of all weatherstripping.
13) Type and size of all mechanical fasteners.
14) Location of any caulking or seals.
15) Data on screen material and mesh type including vinyl spline, if applicable.
16) Glass and Glazing data:

a) Glass composition including thickness of each lite (tempered and/or laminated glass will be noted as such including interlayer dimensions if applicable).
b) Type and locations for low-E coatings.
c) Type of gas fill for insulated units.
d) Type of spacer for insulated units.
e) Setting method and materials for all glazing.

17) Other information, as necessary, to demonstrate compliance with the specified performance requirements.

b. A new PCD will be required for all testing conducted if any of the following apply:

1) Manufacturer changes the design or manufacturing of a product, unless the changes are of a minor or cosmetic nature, in which case the manufacturer will notify the Commissioner and provide a statement stating the nature of the change and affirming that the change will not detrimentally affect the performance of the product indicated in the test report.
2) Upon expiration of test reports.

c. Certification: The PCD will be certified by the testing agency/laboratory as matching the tested product specimen. Such certification will be included in the test report.

2. Include submittal of Product Data for glazing of windows as specified in Section 08 80 00 “Glazing” as part of the submittal package of this Section.

B. Shop Drawings: Details of installation not fully shown in manufacturer’s standard Product Data. Include details of attachment, clearances, and details of flashing and sealant installation.

C. Samples: For each exposed product and for each color specified provide material samples approximately 2 by 4 inches of window framing members, showing manufacturer’s white, beige, and brown colors.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Product Test Reports: For each type of vinyl window, for tests performed by a qualified testing agency.

1. Testing will demonstrate compliance with PART 2 - PERFORMANCE REQUIREMENTS and TESTING REQUIREMENTS articles of this Specification Section.
2. Each test report dated more than four years from the Notice To Proceed (NTP) shall be accompanied by a letter from the manufacturer stating that the current product is identical to the test sample used in such test.
3. When compliant test reports are unavailable at the time of the Contract NTP, the Contractor and manufacturer will submit new test reports to the extent necessary to demonstrate full compliance with the performance requirements as follows:

    a. Within five (5) days of the NTP, the Contractor and manufacturer will submit a written statement identifying and committing to all required testing, including a schedule for testing by a qualified testing agency.
    b. The Contractor will submit, for review and acceptance, fully compliant test reports within forty five (45) days of the NTP.
    c. The Contractor will be responsible for all testing and associated costs to obtain compliant test reports.

C. Product Certification: The Contractor will submit a "Product Certification" (PC) executed by the manufacturer/supplier and Contractor, certifying that all products supplied under this Contract will be furnished in compliance with all performance and other specification requirements of this Section. A separate PC will be provided for each product type and variation. A sample of the PC is included at the end of this Section.

1. Manufacturer will identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Manufacturer will further provide written certification that such "product changes" will not affect the product's ability to comply with the performance requirements identified in these specifications.

D. Installation Instructions: Manufacturer's installation instructions for specified products.

E. Maintenance Data: For operable sash, operating hardware, weatherstripping, finishes, and cleaning.

F. Field quality-control reports: Provide on-site test reports from a qualified independent testing laboratory, certifying performance of installed window units, as indicated in Article 3.3 "Field Quality Control".

G. Sample Warranties: For manufacturer's warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to vinyl window manufacturer for installation of units required for this Project.

C. Certification Labels: Provide windows with temporary and permanent labels certifying product meets specified performance requirements, including Industry Organization's referenced standards. Labels will include the following:

1. Structural Performance.
2. Thermal Performance.

3. Acoustical Performance.
4. Other Performance values as required by Industry Organization standards.

D. Mock-ups:

1. Mock-ups shall be provided for each type of treatment including, but not limited to; installation of one window type, including one bow or bay window, new bow or bay roof, infill of existing window weight pockets, interior and exterior trim, sheet metal cladding, shimming and void space insulation and all sealant joints.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect window during transit, storage, and handling to prevent damage, soiling, and deterioration.

1. Package windows individually in protective wrapping sufficient to protect product during transport and handling prior to installation.
2. Transport, handle, and store windows right-side-up at all times to avoid damage to operating mechanisms.
3. Deliver window shop finished in accordance with manufacturer’s recommendations.

B. Store windows in compliance with manufacturer’s recommendations. Store in a manner such that the manufacturer’s identification marks are clearly visible.

C. Do not slide windows against one another. Do not roll windows onto corners or in any manner that would damage the window.

1.10 PROJECT CONDITIONS

A. Provide custom-sized windows for each opening. Size each window unit to fit existing opening without the use of head expanders. Provide window units no more than 1/2-inch smaller in width and in height than the rough opening size. For openings out of square or plumb, the opening size is the largest level and plumb rectangle that is able to fit within the actual opening.

1.11 WARRANTIES

A. Manufacturer’s Warranty: Provide manufacturer’s written and signed warranty where-in the manufacturer agrees to provide all materials and labor required at each Home to repair and/or replace vinyl windows which fail in materials or workmanship within specified warranty period. The warranty will further state that the parts used in the manufacture of the window, or suitable replacements, will be available throughout the warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior glass surface.
f. Laminated Glass: Edge separation, delamination that materially obstructs vision through glass and blemishes exceeding those allowed by referenced laminated glass standard.

2. The warranty will cover collateral damages to windows, walls, or other dwelling elements resulting from failure of window to meet generally recognized performance standards and specified installation requirements.
3. Warranties on materials not manufactured by the manufacturer but required to be furnished as part of the window unit will be included in the manufacturer's warranty. These items may include, but are not necessarily limited to balances, thermal breaks, sheet glass, insulated panels, caulking, screen cloth, and weatherstripping. Such items will be noted as included on the manufacturer's warranty, and the warranty, if any, will be submitted to the Commissioner.

    a. All sealed insulating glass units will carry a ten (10) year non-prorated warranty by the glass manufacturer against obstruction of vision as a result of interior fogging on the interior glass surfaces due to defects in materials or workmanship.

4. Warranty Period:

    a. Window: Ten (10) years from date of Final Completion of the Home.
    b. Glazing: Ten (10) years from date of Final Completion of the Home.
    c. Window Finish: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Installation Warranty: The Contractor is responsible for the complete installation of the new vinyl windows in a manner that will preserve the manufacturer's warranty as well as the window's acoustical and other specified performance properties. The Contractor will submit a written and signed warranty, in which the Contractor agrees to repair or replace vinyl windows and associated installation materials that are defective in materials or workmanship related to installation of the vinyl windows for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, City, or their Representatives.
2. The warranty will further state that if the cause of damages or non-performance is indeterminable or in the event of a disagreement between the Contractor and the manufacturer, the Contractor will hire an independent testing laboratory approved by the Architect to determine cause. The responsible party will pay for damages in addition to the cost of the independent testing laboratory.
3. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear, and tear after acceptance of the Work by the City, will be the responsibility of the Homeowner in whose Home the vinyl window unit is installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Stergis Windows and Doors, Sonic Division (508-455-0661)

B. Source Limitations: Each Home and/or multi-unit building will receive vinyl windows from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent and/or other requirements are indicated.

1. Window Certification: AAMA/WDMA/CSA and/or NFRC certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. For all windows:

a. Minimum Performance Class: R.
b. Minimum Performance Grade: 30.

C. Thermal Transmittance: Provide products tested/evaluated in accordance with NFRC 100 “Procedure for Determining Fenestration Product U-factors or AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections".

1. Maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x degrees F.

D. Solar Heat-Gain Coefficient (SHGC): For buildings five (5) stories or more in height, provide vinyl windows with a whole-fenestration product SHGC maximum of 0.38 determined according to NFRC 200.

E. Condensation Resistance: Reported value tested in accordance with NFRC 500 or AAMA 1503.

F. Acoustical Performance Requirements:

1. Sound Transmission Class (STC): Tested according to ASTM E 90, “Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Buildings Partitions and Elements,” and classified by ASTM E 413, “Classification for Rating Sound Insulation”.
2. Outdoor-Indoor Transmission Class (OITC): Tested according to ASTM E 90, and classified by ASTM E 1332, “Standard Classification for Rating Outdoor-Indoor Sound Attenuation”.
3. At Habitable Rooms (i.e. bedrooms, living rooms, kitchens, dining rooms, family rooms) a window with minimum STC and OITC ratings, which may include a storm window assembly, will be as follows:

a. Chicago O’Hare International Airport: STC 40 and OITC 27.
b. Chicago Midway International Airport: STC 44 and OITC 32.

4. At Non-Habitable Rooms (i.e. unfinished attic, bathrooms, closets), a window with minimum STC and OITC ratings, will be as follows:

a. Chicago O’Hare International Airport: STC 29 and OITC 23.
b. Chicago Midway International Airport: STC 40 and OITC 27.
c. Window units for non-habitable rooms will match the construction of other windows of the same style as specified herein, and be of comparable fabrication and quality to the higher STC and OITC rated product.

G. Sustainable Design Requirements: Refer to specification Section 01 81 13 “Sustainable Design Requirements”, Article 2.3 - Low-Emitting Materials – Vinyl Windows and Sliding Plastic-Framed Doors.

H. Operable windows: Provide sash that allows cleaning of exterior surfaces from the inside except in bedrooms receiving casement windows equipped with egress hardware.

I. Egress Windows: The Contractor will be responsible for providing windows that comply with the life safety and egress requirements for replacement windows of the governing code or Authority. All operable hardware, including limit devices, will be easily operated and/or releasable without the use of special knowledge or tools. In municipalities requiring egress windows, provide an egress window in all sleeping rooms (bedrooms) on all floors including basement.

J. Dual Windows: If an exterior or interior secondary storm window attachment is incorporated in the window design which meets all of the following criteria listed below, it will be considered a dual window and will be required to pass all required tests outlined in the AAMA/WDMA/CSA 101/I.S.2/A440 for that type of window.

1. The window unit will fall under one of the three dual window configurations listed in section 4.5 - Dual Windows of the AAMA/WDMA/CSA 101/I.S.2/A440.
2. The secondary window attachment was added in tandem with the primary window for the purpose of energy conservation or acoustical enhancement.
3. The primary and secondary sashes will operate completely independent of each other.
4. The window will be a factory pre-assembled or integral unit.

2.3 TESTING REQUIREMENTS

A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440; NFRC and ASTM referenced Standards/Specifications for definitions and minimum standards of performance testing protocols and procedures, unless more stringent and/or other requirements are indicated.

1. Test reports demonstrating compliance with requirements will not be invalidated due to the date of the test.

B. In the event of discrepancies between these specification requirements and current adopted standards and requirements published in referenced standards, the current standard's requirements will be considered and, if so determined by the Architect, will be acceptable.

C. Glazing Requirements for Testing: To the greatest extent possible, furnish all testing reports based upon the exact window unit composition utilized to demonstrate STC and OITC compliance.

1. For STC, OITC, Thermal Transmittance, Condensation Resistance, and Operational Force tests, the window model and glazing assemblies will be identical.
2. For the following tests and to demonstrate compliance with the associated performance criteria only, alternate glass types will be allowed in windows using identical sash, frame, and glazing seals to the STC and OITC tested window construction. Actual glass and glazing used in furnished windows will be the same as the STC and OITC tested product.

    a. Air Leakage Resistance.
    b. Water Penetration Resistance.
    c. Uniform Load Deflection.
    d. Uniform Load Structural.
    e. Forced Entry Resistance.

3. To the greatest extent possible, all windows will be designed to comply with stated STC, OITC, Thermal Transmittance, and Condensation Resistance values utilizing air as the only inter-space content for insulated glass units. If an alternate inter-space material such as argon gas is needed to demonstrate compliance with one or more of the four (4) above mentioned tests, all four (4) tests

will be conducted with the exact glazing configuration / thickness and inter-space content. The actual inter-space filling used in furnished windows will match that utilized in test reports demonstrating compliance with STC, OITC, Thermal Transmittance, and Condensation Resistance performance requirements.

D. Minimum Test Size: Comply with requirements contained within referenced AAMA, NFRC and/or ASTM Standards/Specifications for each associated testing requirement.

1. The minimum specimen size for STC and OITC testing of vinyl windows will be as specified in ASTM E 1425, "Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems".
2. When test reports complying with the ASTM sizes cannot be provided, reports may be submitted using a different sample size as long as it is no smaller than the following minimum united inch values (DH, SL and CSMT = 75 UI and FXD = 90 UI).

E. All test reports submitted will have the window model numbers specified which correspond to the model numbers shown on the submitted shop drawings and catalog cuts.

F. Acoustical Testing Requirements:

1. The manufacturer will submit STC test reports, conducted in accordance with ASTM E 90 and Classified by ASTM E 413, as well as OITC test reports conducted in accordance with ASTM E 90 and classified by ASTM E 1332 from an approved acoustical testing laboratory for each proposed window style, operational characteristic, STC and OITC rating. Window model numbers and glazing thickness specified in the STC and OITC reports will correspond to the model numbers and glazing thickness shown on the submitted shop drawings and catalog cuts.
2. An STC and OITC test report will also be required for window combinations that utilize a field applied mullion system. An STC and OITC test report will be submitted, as described in the paragraph above, for a dual unit consisting of two casement windows with the same STC and OITC rating mulled using manufacturer's desired mullion system. The STC and OITC test reports will detail the construction of the mullion system as well as any materials used to fill the gap between the two window units. An STC and OITC test report will be submitted for each proposed mullion system. The manufacturer's mullion system will be approved for use if the results indicate that the STC and OITC ratings of the mullion system is within two (2) STC and OITC points of the single number STC and OITC ratings of the individual window units tested.
3. The STC and OITC tests will be conducted with the sashes in the fully closed and locked position as would occur in normal operating conditions. The use of caulking to seal off the void between the top sash and head, bottom sash and sill, side sashes and jambs, and the meeting rails or stiles will not be permitted as part of the window installation method prior to conducting the Sound Transmission Loss Tests. The ambient room and specimen temperatures for all STC and OITC testing will be as stated in ASTM E 90.
4. Provide STC and OITC test reports from a qualified acoustical testing laboratory that is certified under NIST and NVLAP for conducting precision acoustical testing in accordance with ASTM E 90. Approved acoustical testing laboratories include, but are not limited to, the following:

    a. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
    b. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
    c. ETS Lindgren (Acoustic Research Laboratory), 1301 Arrow Point Drive, Cedar Park, TX 78613-6936, (512) 531-6400.
    d. Riverbank Acoustical Laboratories, Inc., 1512 Batavia Avenue, Geneva, IL 60134, (630) 232-0104.
    e. Western Electro-Acoustic Laboratories, Inc. (WEAL), 25132 Rye Canyon Loop, Santa Clarita, CA 91355, (661) 775-3741.

G. Non-Acoustical Testing Requirements: For all testing, other than STC and OITC testing, submit test reports from a qualified testing agency that is accredited by the specified referenced AAMA, ASTM and/or NFRC standard to perform the specific test protocol required. Approved testing agencies include, but are not limited to the following:

1. Intertek Group plc., (formerly Architectural Testing Inc.), 130 Derry Court, York, PA 17402-9405, (717) 764-7700.
2. Element Materials Technology, 662 Cromwell Avenue, St. Paul, MN 55114, (651) 659-7353.
3. National Certified testing Laboratories, Inc., 5 Leigh Drive, York, PA 17402, (717) 846-1200.
4. Quast Consulting and Testing Inc., 1055 Indianhead Drive, Mosinee, WI 54455, (715) 693-8378.

2.4 VINYL WINDOWS

A. Operating Types: Provide the following operating types where indicated:

1. Double-Hung windows (DH).
2. Horizontal sliding windows (SL), including fixed-horizontal sliding window combinations.
3. Fixed windows (FXD), including existing bay or bow window in-fills.
4. Casement windows (CSMT), including multiple unit casements: Project out.
5. Awning windows (AWN), hinged at head: Project out.

B. Configuration: All windows shall have the following configurations:

1. Storm Window: If storm windows are required for acoustic performance, the storm window shall be located on the exterior side of the primary window for hung and slider windows.
2. Screens:

   a. Double-Hung and Slider Windows: Outboard. If storm windows are required for acoustic performance, screens shall be located outboard of the storm window.
   b. Casement and Awning (project-out) Windows: Screens shall be located inboard of the primary window.

C. The manufacturers listed collectively represent the acceptable products, based on selected series and/or approved and tested assemblies.

1. Double-Hung Windows:

   a. Stergis Windows and Doors, Sonic Division: 7000 Vinyl Double Hung.

2. Horizontal Sliding Windows:

   a. Stergis Windows and Doors, Sonic Division: 7020 Vinyl Horizontal Slider.

3. Fixed Picture Windows:

   a. Stergis Windows and Doors, Sonic Division: 7030 Vinyl Fixed Picture.
   b.

4. Casement Windows:

   a. Stergis Windows and Doors, Sonic Division: 7030 Vinyl Casement.

5. Awning Windows:

a. Stergis Windows and Doors, Sonic Division: 7040 Vinyl Awning.

6. Windows in Combination: All adjacent windows within an opening will be of the same series and profile. Provide fixed windows with sub frame sash as required matching operable sash and achieving uniform aesthetics and glass sight-lines.

D. Frames and Sashes: Impact-resistant, UV-stabilized polyvinyl chloride (PVC) or PVC fused with a high-density composite vinyl/wood base material with pre-consumer recycled content complying with AAMA/WDMA/CSA 101/I.S.2/A440.

1. The sash bottom rails will be fabricated with weep holes for water drainage to minimize sealant failure.
2. The sash will be re-glazable in the field without the use of beads or glazing compounds.
3. If the sashes are factory sealed units, manufacturer will replace entire sash assembly for warranty claims.

2.5 GLAZING

A. Glass and Glazing System: Provide manufacturer's standard factory-glazing system which complies with Section 08 80 00 "Glazing" for safety glass, insulating-glass units, laminated glass, and glazing requirements applicable to glazed vinyl windows.

B. Performance: Provide glazing units of type, thickness, and composition to meet the specified performance requirements.

C. Glass Type: Clear or frosted glass as scheduled, fully tempered and laminated types, as required.

2.6 HARDWARE

A. Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or carbon steel complying with AAMA 907 or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As indicated by manufacturer's designations to match window sash color.

B. Projected Window Hardware:

1. Gear-Type Rotary Operators: Complying with AAMA 901 when tested according to ASTM E 405, Method A. Provide operators that function without requiring the removal of interior screens or using screen wickets.

a. Type and Style: As selected by Architect from manufacturer's full range of types and styles.

2. Hinges: Manufacturer's standard type for sash weight and size indicated.
3. All casement windows in bedrooms shall be equipped with egress hardware to achieve a 90-degree opening without the sash encroaching into the window opening. The 90-degree opening may be achieved with or without quick release hardware. The quick release hardware will be easily operable by hand and without the use of tools.
4. Single-Handle Locking System: Operates positive-acting arms that pull sash into locked position. Provide one arm on sashes up to 29 inches (735 mm) tall and two arms on taller sashes.

C. Hung Window Hardware:

1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.

D. Horizontal-Sliding Window Hardware:

1. Sill Cap/Track: Manufacturer's standard of dimensions and profile indicated; designed to comply with performance.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Roller Assemblies: Low-friction design.

E. Limit Devices: Provide limit devices for all operable sash in life safety windows. For casement windows, provide concealed friction adjuster, adjustable stay bar or concealed support arms with adjustable, limited, hold-open or other manufacturer's standard limit devices designed to restrict sash opening. For hung and sliding windows, provide recessed type limit device clearly visible on sash.

1. Limit clear opening to 4 inches for ventilation. For egress windows, the limit device release will not require special knowledge or tools.
2. Exposed limit device finish shall match frame member finish, white, beige, or brown as applicable.
3. Provide identification by red dot or other as required by code authorities having jurisdiction.
4. Where limit devices cannot be feasibly provided or installed, the Contractor shall provide a painted metal window guard compliant with building code, screw applied, to the interior of the window opening jambs.

F. Weather-Stripping: Provide full-perimeter weatherstripping for each operable sash.

G. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Avoid the use of exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.7 ACCESSORIES

A. Grilles: Provide divider grilles in designs indicated for each sash lite.

1. Quantity and Type: Grilles shall be manufacturer's standard installed in the air space of the insulated glass lite.
2. Material: Manufacturer's standard.
3. Pattern: As indicated on Drawings.
4. Profile: Manufacturer's standard.
5. Color: To match window sash members.

2.8 INSECT SCREENS

A. General: Design vinyl windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens to fully integrate with window frame. Provide screen for each operable window. Screen wickets are not permitted.

1. Type and Location: Full - inside for Casement and Awning (project-out), Half, at a minimum, outside for Double-Hung and Horizontal Sliding windows. Reference Paragraph 2.4.B above for additional information.

B. Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201 extruded-aluminum or formed-tubular-aluminum members, with mitered or coped joints, concealed fasteners, and removable polyethylene spline/anchor concealing edge of mesh.

1. Finish: Baked-on organic coating in manufacturer's standard color matching window frame.

C. Screening Fabric: 18 by 16 window screening wire fabric with approximately 0.011-inch diameter, painted/coated strands; PVC-containing paints/coatings are not permitted.

1. Screening Finish: Charcoal gray.

D. Screen Hardware: The screen will be removable from the window interior and held in place by manufacturer's standard mounting system complying with performance requirements.

2.9 FABRICATION

A. Fabricate vinyl windows in sizes required. Include a complete system for assembling components and anchoring windows.

B. Windows will be assembled in a uniform and workmanlike manner to ensure performances as herein specified and to assure neat, secure and weather tight construction.

C. Glaze vinyl windows in the factory.

D. Weatherstrip each operable sash to provide weather-tight installation.

E. Weep Holes: Provide weep holes and internal drainage passages to conduct infiltrating water to exterior. Provide open cell foam backing or other means, as determined by the manufacturer, to allow water drainage while restricting insect infiltration.

F. Mullions: Provide mullions and cover plates, compatible with window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units. Provide manufacturer's standard finish to match window units.

G. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

H. Bow and Bay Window Assemblies: Provide operating and fixed units in configuration indicated. Bow and bay windows shall not exceed existing bow and bay window projections. Provide window frames, sashes, hardware, and other trim and components necessary for a complete, secure, and weather-tight installation, including the following:

1. Angled mullion posts with interior and exterior trim.
2. Angled interior and exterior extension and trim.
3. Oak, clear pine or clear birch head and seat boards.
4. Top and bottom plywood platforms.
5. Head and seat of bow/bay assembly shall be insulated.
6. Exterior head and sill casings and trim.
7. Support brackets.

I. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

J. All window units will have a permanent factory-applied label indicating scheduled window unit number, size, model number, STC and OITC ratings, date of manufacture, and name and location of manufacturer. A removable adhesive NFRC Certified Label will be located on the glazing surface that will prominently indicate the energy performance ratings, as well as the following: “Do not remove before inspection”. Other manufacturer information may be included on this label.

2.10 FINISHES

A. Vinyl Finish: Manufacturer’s standard white, beige, and brown. Provide finish and color as selected by the Homeowner and scheduled for each Home. Note that a separate color selection will be made for each Home in the Contract. Available interior/exterior finish combinations are listed in the following table.

Opaque Vinyl Finishes						
Common offerings among manufacturers	All Homes					
Manf. / Finishes	White		Beige		Brown	
	Int.	Ext.	Int.	Ext.	Int.	Ext.
Stergis Windows and Doors	White	White	Beige	Beige	White	Brown

B. All white and beige frame and trim materials shall be solid monolithic vinyl. All brown frame and trim materials shall be a composite of vinyl color layer bonded to the main vinyl extrusion. Painted vinyl members are not allowed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor will make a detailed inspection to verify window unit dimensions for windows to be replaced with new windows.

B. Field Measurements: Check actual window openings by accurate field measurement before fabrication. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1. Confirm new window style, color, and grille pattern (if applicable) with Homeowner at the time of measure before fabrication.

C. Existing window units to be replaced will be carefully removed so that firm, sound structural surfaces are exposed that are adequate for the attachment of the new vinyl windows. The Contractor will remove the window from exterior unless directed otherwise by the Commissioner. Remove all existing sash weight(s) and associated hardware and roping. Minimize damage to adjacent wall surfaces.

D. Where emergency egress windows are required, enlarge existing window opening, as necessary, to provide for the installation of the new window in compliance with requirements of the governing code or Authority. Re-frame and trim opening to match existing aesthetic conditions.

E. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

F. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

G. Examine wall flashings, vapor retarders, water, and weather barriers, and other built-in components to ensure weather-tight window installation.

H. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. The Contractor will not schedule any Work on a given day in a Home until all the new windows for that Home have been received from the manufacturer.

B. General: The manufacturer will provide training for the Window Installer and General Contractor in the proper installation procedures, sequences, and techniques, measuring, sizes, and limitations.

1. As requested by the Commissioner, the manufacturer will provide on-site inspections for each Home to verify the vinyl window units are being properly installed and the acoustical performance is not compromised by improper installation methods. On-site inspections will be repeated until the manufacturer is satisfied that the windows are installed in the correct, as designed manner.

C. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

D. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weather tight construction. All window units shall be installed with shims at all fastener locations, and all other locations required by the window manufacturer, as well as additional locations to ensure racking or other movement of the window assembly does not occur over the life of the window. Remove and replace/reinstall interior and exterior trim as required to install shims from the interior and exterior to ensure proper and complete support across the entire window frame depth.

E. Windows will be installed in the existing openings that are plumb, level, true, and straight in strict accordance with the manufacturer's detailed specifications and shop drawings, complete with exterior finish trim, casing materials, and interior stops (where required) that closely match the previously existing materials. See Drawings for typical installation details. Patching of exterior stucco, plaster, masonry,

wood, and siding will match existing and will not reduce the sound insulation performance of the vinyl window installation.

F. Windows will be installed from the exterior unless directed otherwise by the Commissioner. Where new windows are being installed within existing frames, rotted or inadequate frame(s) will be removed and new frames installed to match existing. Provide new wood blocking in voids of 1/2 inch or greater around perimeter of new or existing frame (including weight pockets) up to 6 inches on both sides of opening. Voids of less than 1/2 inch will be filled with insulation and sealed with joint sealant and backing. Prior to installing new window, apply insulation around perimeter of new window frame. The strip of insulation will be of sufficient thickness to fill the gap between the new window frame and the existing window frame and will be held in place by spray adhesive. Install joint sealant backing rod (where applicable) at perimeter of window and where it abuts existing window frame. For trim and cladding requirements, see Sections 06 20 13 “Exterior Finish Carpentry” and 06 20 23 “Interior Finish Carpentry”.

G. At side by side multiple window installations, the Contractor will install each window unit into the existing window framework. Provide new or retain existing framework as required. Where no framework exists, the Contractor will provide a framing/mullion system approved for use and capable of withstanding design loads of window units. At Contractor’s option, provide a solid 2 by 4 inch wood mullion frame with jamb, head, and sill framework and a mullion cap extruded from the same material as the windows, and matching the color of the windows, for a complete finished window installation.

H. At double (or multiple) side-by-side window units, upon removal, fill voids with solid wood blocking. Provide new wood framework and interior and exterior trim as selected by Homeowner from available choices.

I. Where an existing bow or bay window is scheduled for replacement with a new vinyl window, the Contractor will field install each individual bow or bay section into the existing window framework. Repair existing framework, as required. Provide new framework if scheduled. The number, type, and style of windows will be as scheduled. Install new sill, jambs, seat, and head for the bay or bow window. All new wood detailing will match existing. Provide new support brackets as detailed. At the interior, all new wood will be primed, painted, and finished with two (2) coats of paint or stain and sealed in color as chosen by the Homeowner.

J. All assembled vinyl window materials will be properly back-sealed and fastened before final assembly is done. The Commissioner shall reserve the right to determine whether the materials are satisfactorily sealed before installation.

K. Provide continuous sealant (and backer rod where required) at interior and exterior perimeters of new windows. Seal all screw holes. Where sealant joint is greater than 3/16-inch, provide new interior molding and/or new exterior weatherstop at entire perimeter; conditions will vary with the method of installation. Apply sealant before installing new molding and/or weatherstop. All joints are to be mitered. Apply prime and two (2) coats of paint or stain to new interior molding from available choices. Clad new weatherstops with existing/new trim in one of the three available colors as chosen by the Homeowner. See related sections for trim and cladding requirements.

L. Coordinate installation to allow for timely placement of initial sealants prior to installation of window units.

M. All exterior joints will have proper sealant backup. The sealant will contact the cladding materials, and the brick or concrete exterior masonry, at the exterior face of head, jambs, and sill. All sealant joints will be in accordance with the sealant manufacturer’s written instructions and as described in Section 07 92 00, “Joint Sealants”.

N. Seal and cap all unused installation holes in frame. Finish color to match frame.

O. Contractor to verify existing field conditions regarding the installation of the existing window(s). All new windows are to be installed into the existing framework unless otherwise noted.

P. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests.

1. Field-testing will be conducted by an approved testing agency as required by Article 2.3 – TESTING REQUIREMENTS. The Contractor, the Architect, and the Commissioner will be present during all installed window testing.
2. The Contractor is responsible for all testing, shipping, replacement, removal, and reinstallation costs.
3. The testing agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing of windows will take place as follows:

1. Uninstalled Window Tests: Testing procedure will be according to Article 2.2, "Performance Requirements" of this Specification Section.

a. Two (2) windows shall be tested per construction contract as follows:

1) The Commissioner shall randomly select a vinyl window at time of delivery and submit it for testing to verify compliance with Article 2.2, Performance Requirements of this Specification Section.
2) The Contractor shall furnish a second window of type as selected by the Commissioner, and meeting the sizing requirements of ASTM E1425

b. The Contractor will be responsible for packing and delivery of the windows to a qualified testing agency.
c. The Contractor shall furnish the testing agency with copies of the shop drawings for both windows and verify that both window samples match the description and construction indicated in the drawings.
d. The manufacturer will correct any deficiency discovered by this testing and will apply the same corrective measures without cost to the Homeowner, City, or their representatives, to all similar models or types incorporated into the Work.
e. Corrected windows will be re-tested at the Contractor's expense, and copies of retest reports, fully describing corrective measures, will be furnished to the Commissioner.
f. The Contractor will be responsible for all testing and product replacement costs, including costs that may result from having to replace a series of windows or window parts due to deficiencies identified through testing.

2. Installed Window Tests:

a. The Commissioner shall designate the following for testing installed vinyl windows at separate residences, selected at random by the Commissioner, prior to final acceptance of the Work:

1) For contracts including 25 or fewer homes: One (1) window at 50% of construction completion.

2) For contracts including 26 to 100 homes: Two (2) windows at 50% of construction completion.
3) For contracts including 101 to 300 homes: One (1) window at 10% and one (1) window at 90% of construction completion.
4) For contracts including 301 or more homes: One (1) window at 10%, one (1) window at 50%, and one (1) window at 90% of construction completion.
5) Allow a minimum of (4) hours per test. Consult testing agency for the required test duration if more than (4) hours is anticipated.
6) The goal, whenever possible, is to test two (2) or more different types of window per contract.
7) The Contractor shall determine, and include in the Master Schedule, dates for the installed window tests at 10%, 50%, and 90% stages of construction completion.

b. Testing Methodology:

1) Testing of windows for air infiltration will be performed according to AAMA 502.
2) Testing will specifically include air infiltration, sound transmission loss, and may also include verification of metal temper, thermal separation between frames, non-magnetic screws and fasteners, and operating force.
3) Windows will be tested after perimeter sealants have cured.

c. Air-Infiltration Testing:

1) Test Pressure: That required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance class indicated.
2) Allowable Air-Leakage Rate: 1.0 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for product type and performance class.

d. Acoustical Testing:

1) Outdoor-Indoor Transmission Loss (OITL): The sound transmission loss properties in one-third octave bands from 125 to 4000 Hz will be measured with an amplified loudspeaker in accordance with ASTM E 966, "Standard Guide for Field Measurements of Airborne Sound Attenuation of Building Façades and façade elements".

a) The Field Sound Transmission Class (FSTC) rating, or Apparent Sound Transmission Class (ASTC) rating if a flanking test is not conducted, of the window will be calculated using values of field transmission loss in accordance with ASTM E 413.
b) The Field Outdoor-Indoor Transmission Class (FOITC) rating, or Apparent Outdoor-Indoor Transmission Class (AOITC) rating if a flanking test is not conducted, of the window will be calculated using values of field transmission loss in accordance with ASTM E 1332.
c) The window will be deemed to have passed the Sound Transmission Loss testing provided the uncertainty and confidence limits of the FSTC and FOITC ratings are not more than three (3) FSTC / FOITC points off the laboratory rating, when tested in accordance with ASTM E 90.
d) If preliminary numbers are indicating failure, a flanking test, as described in Annex A1 of ASTM E 966, will be performed to identify any possible flanking paths.

C. Test Reports: Prepare test reports according to AAMA 502 and ASTM E 966.

1. Submit all test reports not later than four (4) weeks after the test date.

D. Remove and replace noncomplying windows at Contractor's expense. Additional testing at Contractor's expense will be performed to determine compliance of replaced or additional Work with specified requirements and retest, as specified above.

1. Each failure will also require testing of one additional similar window in this Contract (randomly selected) to the satisfaction of the Commissioner.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weatherstripping for smooth operation and weather tight closure. Lubricate hardware and other moving parts.

B. Clean glass and vinyl surfaces immediately after installation. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess sealants, glazing materials, dirt, and other substances. Avoid damaging protective coatings and finishes.

1. Do not remove certification labels until after inspection by the Commissioner and local building inspector or other authority having jurisdiction.

C. Final Cleaning: Remove protective films, nonpermanent labels, and clean surfaces, on both faces, not more than four (4) days prior to the date scheduled for final inspection.

D. Promptly remove and replace sash if glass has been broken, chipped, cracked, abraded, or damaged during the construction period.

E. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions. Initiate and maintain protection and other precautions required through the remainder of the construction period to ensure that, except for normal weathering, window units will be free of damage or deterioration at the time of Final Completion of the Home.

F. Remove from site and legally dispose of all removed materials, debris, packaging, banding, and all other surplus materials and equipment.

G. Refinish or replace vinyl windows with damaged finishes.

H. Replace damaged components.

3.5 ATTACHMENTS

A. PRODUCT CERTIFICATION sample form.

END OF SECTION 08 53 13

RESIDENTIAL SOUND INSULATION PROGRAM
PRODUCT CERTIFICATION (PC)

Product: Vinyl Window – Casement – STC 40 / OITC 27 Date: 01/25/2013

☒ Submitted out of contract, complete this column only. ☐ Submitted within a contract, complete both columns.

Manufacturer:	ABC Windows & Doors, Inc.	Project Phase:	
Section Title:	Vinyl Windows	Project No.:	
Section No.:	08 53 13	Contract No.:	
Specification No.:	516830	Contractor:	

MANUFACTURER	SUPPLIED PRODUCT
ABC Windows & Doors, Inc.	Product type: Vinyl Windows – Casement – STC 40 / OITC 27 AAMA Performance Class and Grade: LC-PG30 Model number: V4000 Co\lor options: White, Beige, Brown Glazing: 7/8" IG (1/4", 1/2" Air, 1/8") 1/8" storm, Low E SB60 L-3

LABORATORY TESTING SUMMARY	
Acoustical Test Report ASTM E 90 (ASTM E 413 & ASTM E 1332)	
Testing Lab/Report Number/Date	Intertek / Report # 123456789-00 / Date 04/12/20
Glazing Description	7/8" IG (1/4", 1/2" Air, 1/8") 1/8" storm; Low E SB
Test Specimen Size	24" x 59"
STC/OITC	40/27
Thermal Test Report by AAMA 1503	
Testing Lab/Report Number/Date	Element / Report # 45678 -11 / Date 24/2009
Glazing Description	7/8" IG (1/4 1/2" Air 8") 1/8" storm; Low E SB60 L-3
Test Specimen Size	24" x 59"
Thermal U-Value	0.28
Condensation Resistance Factor (CRF)	Frame 80 / Glass 7
Solar Heat Gain Coefficient (SHGC)	
Thermal Test Report by NFRC 100 / 200 /500	
Testing Lab/Report Number/Date	Not used
Glazing Description	Not used
Test Specimen Size	Not used
Thermal U-Value	Not used
Condensation Resistance Factor (CR)	Not used
Solar Heat Gain Coefficient (SHGC)	Not used
AAMA/WDMA/CSA Performance Test Report	
Testing Lab/Report Number/Date	Element / Report # 123456789-22 / Date 12/01/2012
Glazing Description	7/8" IG (1/4", 1/2" Air, 1/8") 1/8" storm; Low E SB60 L-3
Test Specimen Size	24" x 59"
Air Infiltration	.01 cfm/sf at 1.6 psf
Water Penetration Resistance	No Leakage at 4.6 psf
Uniform Load Deflection	'+0.18" / 0.01" at 30.09 psf (L/175=0.2")
Uniform Load Structural	'+/- 0.01 at 45.14 psf (0.4%=0.14")

SAMPLE

Operating Force	To initiate: 38.5 lbf / to maintain: 34.0 lbf
Forced Entry Resistance	Grade: 10 No entry
Thermoplastic Corner Weld	Compliant
Projected Hardware Load (Type-AP)	Pass
Deglazing (Types-H & HS)	Pass
Sash Vertical Deflection (Type-C)	0.03" at 60 lbs.
VOC and Hot Odor Results	
VOC Results	Passed
Hot Odor – average odor scale rating	4

CERTIFICATION: (*Check one)*

☒ **Certification for Products without an approved submittal waiver:** ABC Windows & Doors, Inc. here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications 516830 and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

This certification statement is accompanied by a formal submittal of all materials and information as required by the RSIP Technical Specifications for review, approval and consideration for a product submittal waiver. This submittal includes, but is not limited to, product data, samples, test reports, product certification drawings and shop drawings.

☐ **Certification for Products with an approved submittal waiver:** Manufacturer's Name here-by certifies that the referenced product is fully compliant with the RSIP Technical Specifications Number and further that the product description, performance and testing summary data indicated are current and represent valid confirmation of compliance under the referenced standards.

We further state the following:

- The product to be furnished will be identical to the Master Submittal PDF including any applicable addenda on file with the RSIP and approved by the Program Architect on Date.

☐ No changes have been made to the product previously submitted and approved.

(Check appropriate selection above or below)

☐ Changes have been made to the approved product and we have attached all associated submittals for review, approval and update to the Master Submittal PDF.

- The submittal waiver for this product was initially granted after verifying compliance with RSIP Technical Specifications Number. Understanding that the RSIP Technical Specifications receive frequent updates, Manufacturer's Name acknowledges that they have reviewed the current RSIP Technical Specifications Number and here-by certifies that the referenced product remains fully compliant.

Manufacturer's Authorized Signature: *John Smith* Date: 01/25/2013

Name & Title (Printed) John Smith, Sales Manager, ABC Windows & Doors, Inc.

SAMPLE

INTENTIONALLY LEFT BLANK

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes: Mechanical and auxiliary door hardware for swinging doors.

B. Related Requirements:

1. Section 01 73 00 "Execution."
2. Section 06 20 13 "Exterior Finish Carpentry."
3. Section 06 20 23 "Interior Finish Carpentry."
4. Section 08 14 16 "Flush Wood Doors."
5. Section 08 16 13 "Fiberglass Doors."

1.3 DEFINITIONS

A. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they will mean the recognized name of the entities indicated in Section 01 42 00 "References," in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (202) 370-1800
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577
WDMA	Window & Door Manufacturers Association	(800) 223-2301

1.4 PREINSTALLATION CRITERIA AND MEETINGS

A. At the time of Field Measurements, the Contractor shall conduct conference at Project site with the RSIP Project Manager (PM). The Contractor shall be responsible for verifying all requirements of the Construction Modification and recording all decisions, selections, and directives as may be issued by the PM. The conference shall include the following:

1. Coordinate all hardware with the door supplier and verify the requirements of the Construction Modification, including but not limited to:

   a. Verify hardware quantities, functions and door swing.
   b. Accessory requirements, such as extended lip strikes, door stop type, door viewer and/or door knocker with viewer.
   c. Verify hardware finish as selected by Homeowner.

2. Inspect and discuss preparatory work performed by other trades.

1.5 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. The Contractor shall furnish a lockset and deadbolt sample mounted in a corner door sample for each lockset type and each finish being furnished under the contract. It shall be the Contractor’s responsibility to furnish, deliver, and install in the Program showroom full size operational products of each style of lockset model being furnished.

C. Samples for Verification: For exposed door hardware of each type required, in each finish specified, prepared on Samples of size indicated below. Tag Samples with full description for coordination with the door hardware schedule. Submit Samples before, or concurrent with, submission of door hardware schedule.

1. Sample Size: Full-size units or a minimum of 2 x 4 inch samples for sheet and 4 inch long samples for other products.

   a. Mechanical Locks, Latches and Deadbolts.
   b. Surface Closers.
   c. Mechanical Stops.
   d. Weatherstripping and Seals.
   e. Auxiliary Door Hardware.

1.7 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of manufacturer's warranty specified in this Section.

B. Maintenance Data: For each type of door hardware, finishes, and cleaning.

1.8 QUALITY ASSURANCE

A. Supplier Qualifications: A recognized architectural door hardware supplier who has a record of successful in-service performance for supplying door hardware similar in quantity, type and quality to that indicated for this Project and that employs an experienced Architectural Hardware Consultant (AHC) who is available to the Commissioner and the Contractor at reasonable times during the course of the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.

B. Source Limitations: Each Home and multi-unit building will receive each type of door hardware from a single manufacturer.

C. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.

D. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design" ICC A117.1, the Illinois Accessibility Code latest edition, and local code amendments.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
    b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
    c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2-inch (13 mm) high and 3/4-inch (19 mm) high for exterior sliding doors.
4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

F. Mockups

1. Provide hardware for incorporation into door mockups required by other specification sections.
2. See Section 01 40 00 "Quality Requirements" for additional Information.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to Homeowner.

1.10 COORDINATION

A. Door hardware supplier's responsibilities will be as follows:

1. Submittals: Submit through the Contractor required product data, final hardware schedule and samples as specified in this Section, unless otherwise indicated.
2. Construction Schedule: Inform the Contractor promptly of estimated times and dates that will be required to process submittals, to furnish templates, to deliver hardware and to perform other Work associated with furnishing door hardware for purposes of including this data in construction schedule. Comply with this schedule.

B. The Contractor's responsibilities will be as follows:

1. Submittals: Coordinate and process submittals for door hardware in same manner as submittals for other work.
2. Construction Schedule: Cooperate with door hardware supplier in establishing scheduled dates for submittals and delivery of templates and door hardware. Incorporate in construction schedule the times and dates related to furnishing hardware by door hardware supplier.
3. Coordination: Coordinate door hardware with other Work. Furnish hardware supplier or manufacturer with shop drawings of other Work where required or requested. Verify completeness and suitability of hardware with supplier.

C. Door Hardware Schedule: A Hardware schedule, in outline form, is included in Part 3 of this specification section. Prepare a detailed schedule by or under the supervision of supplier to schedule the hardware to be provided to each Home. Coordinate Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand function, and finish of door hardware.

1. Organization: Organize into door hardware sets indicating designations of items required for each opening. Include the following information:

    a. Type, style, function, size, label, hand, and finish.
    b. Manufacturer.
    c. Fastenings and other pertinent information.
    d. Door and frame sizes and materials.

D. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1. Coordinate mounting heights of door hardware with mounting heights of screen door hardware specified in Section 08 11 69 "Metal Storm Doors and Frames."

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.11 WARRANTIES

A. Manufacturer's Warranty: Manufacturer's standard form, in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: One (1) year from date of Final Completion of the Home, unless otherwise indicated.

a. Manual Closers: Ten (10) years from date of Final Completion of the Home.

B. Contractor's Warranty: The Contractor will submit a written warranty against defects in workmanship and materials related to installation of the Door Hardware.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, the City, or their Representatives.
2. Warranty Period: One (1) year from date of Final Completion of the Home.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. VOC Emissions Requirements: All products shall comply with VOC emissions limits for Target CREL VOCs and their maximum allowable concentrations when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2, 2017." Results shall be in accordance with Section 4 of the referenced standard.

2.2 SCHEDULED DOOR HARDWARE

A. Provide door hardware for each door as scheduled to comply with requirements in this Section.

1. Manufacturers and Products: Subject to compliance with requirements, provide named manufacturers' products as listed in this Section.
2. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.

2.3 HINGES

A. Hinges: Provide sizes and types indicated in this Article, unless otherwise indicated in the schedules at the end of this Section. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.

1. Hinge Sizes:

a. Doors 1-3/8 inches thick: 3-1/2 by 3-1/2 inches.
b. Doors 1-3/4 inches thick (non-fire-rated assemblies): 4 x 4 inches.
c. Doors 1-3/4 inches thick (fire-rated assemblies): 4-1/2 x 4-1/2 inches.

B. Door Hinges: BHMA A156.1, ANSI A8133, full mortise, standard weight, plain bearing, five knuckle, steel base material, steel pin, and flat button tip. Finishes as scheduled. Provide one of the following:

1. Bommer Industries, Inc.; Series 5000, 5070, or 5080.
2. Hager Companies; Model 1279.
3. IVES Hardware; Model 5PB1.
4. McKinney Products Company; Model T2714.
5. PBB, Inc.; Model RP81.
6. Stanley Commercial Hardware; Model F179.
7. Therma-Tru

C. Anti-friction Bearing Hinges: BHMA A156.1, ANSI A8112, full mortise, standard weight, ball bearing, five knuckle, steel base material, steel pin, and flat button tip. Finishes as scheduled. Provide one of the following:

1. Bommer Industries, Inc.; Model BB5000 or BB5070.
2. Hager Companies; Model BB1279.
3. IVES Hardware; Model 5BB1.
4. McKinney Products Company; Model TA2714.
5. PBB, Inc.; Model BB81.
6. Stanley Commercial Hardware; Model FBB179.
7. Therma-Tru

D. Self-Closing Door Hinges: BHMA A156.17, ANSI A81071F, full mortise, standard weight, and single-acting spring hinge, steel base material. Finishes as scheduled. Provide one of the following:

1. Bommer Industries, Inc.; Model LB4310C, LB4311C or LB4312C.
2. Hager Companies; Model 1250.
3. IVES Hardware; Model 3SP1.
4. McKinney Products Company; Model 1502.
5. PBB, Inc.; Model RS81or SP81.
6. Stanley Commercial Hardware; Model 2060R, RD2060R or RD2068R.
7. Therma-Tru

E. Shimming: When Fire Doors require the shimming of hinges, only the use of steel shims shall be permitted.

2.4 FASTENERS FOR WOOD DOORS

A. Fasteners for Wood Doors: Phillips flat-head threaded-to-the-head wood screws, with finish to match surface of hinges.

1. Provide two screws of sufficient length to penetrate through the door frame with a minimum of 3/4-inch embedment into wood stud framing in each of the top two hinges.
2. Provide fasteners in meeting NFPA 80 requirements for attaching hinges to doors for fire-rated door applications.

2.5 MECHANICAL LOCKS, LATCHES AND DEADBOLTS

A. Bored Locks Type A: BHMA A156.2; Grade 2; Series 4000, cylindrical, with wrought rose and cast lever complying with ANSI A117.1 and UL labeled. Provide entry function ANSI F81 and passage function ANSI F75 locks as scheduled. Provide one of the following:

1. Advantage by Philadelphia Hardware Group; Model 500HV-MD Madison lever.
2. Arrow USA; Model ML11-VR, Ventura Lever.
3. Corbin Russwin Architectural Hardware; Model CL3851-AZD; Armstrong Lever.
4. DORMA Door Controls; Model CL753-LG, LG Lever.
5. Kwickset; Kingston Series Model 756KNL or Delta 405DL.
6. Lawrence Hardware; Model LH5304, Lever Type R.
7. SARGENT Manufacturing Company; Model 7G05, B Lever.
8. Schlage Residential Lock Division; Model F5A ACC or F51, Elan Lever or S51PD, Jupiter Lever.
9. Yale Security Inc.; Model 4300 LN or 4600LN Series, Monroe Lever.

B. Bored Locks Type B: BHMA A156.2; Grade 2; Series 4000, cylindrical, with wrought rose and cast lever complying with ANSI A117.1 and UL labeled. Provide entry function ANSI F81 and passage function ANSI F75 locks as scheduled. Provide one of the following:

1. Advantage by Philadelphia Hardware Group; Model 500HV-CT, Charlotte lever.
2. Arrow USA; Model ML11-SR, Sierra Lever.
3. Corbin Russwin Architectural Hardware; Model CL3851-NZD; Newport Lever.
4. DORMA Door Controls; Model CL753-LR, LR Lever.
5. Falcon Lock; Model W711, Dane Lever.
6. Hager Companies; Model 2500 Series, Withnell Lever.
7. K2 Commercial Hardware; Model QCL 250-PNN, Pinnacle Lever.
8. Kwickset; Kingston Series Model 756KNL.
9. Lawrence Hardware; Model LH5304, Lever Type L.
10. SARGENT Manufacturing Company; Model 7G05, L Lever.
11. Schlage Residential Lock Division; Model F51A, Elan Lever or S51PD-SAT, Saturn Lever.
12. Yale Security Inc.; Model 4307LN or 4600LN Series, Augusta Lever.

C. Bored Auxiliary Locks: BHMA A156.5, Grade 2, UL labeled, deadlocking single-cylinder latch bolt, operated by key outside and thumb turn inside, ANSI E0152. Provide one of the following:

1. Advantage by Philadelphia Hardware Group; Model BP-200LU.
2. Arrow USA; Model E60 Series.
3. Corbin Russwin Architectural Hardware; Model DL2217.
4. DORMA Door Controls; Model DB600.
5. Falcon Lock; Model D241.
6. Hager Companies; Model 3215.
7. Stanley, K2 Commercial Hardware; Model QDB 280.
8. Kwickset; Model 780.
9. SARGENT Manufacturing Company; Model 470 Series.
10. Schlage Residential Lock Division; Model B60N.
11. Yale Security Inc.; Model D212.

D. Keying:

1. Five-pin cylinder with manufacturer’s standard keyway.
2. Key locks alike within each Home. Match existing keys, if possible.
3. Key locks separately and unique for units in multi-unit buildings.
4. Provide master key(s) for multi-unit buildings per local building code(s).
5. Keys: Nickel silver. Provide two keys per lock.

E. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Bored Locks: Minimum 1/2-inch latch bolt throw.
2. Deadbolts: Minimum 1 1/4-inch bolt throw.

F. Lock Backset: 2-3/4 inches, unless otherwise indicated.

G. Strikes: Provide manufacturer's standard strike for each lock bolt or latch bolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

2.6 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
b. Burns Manufacturing Incorporated.
c. Don-Jo Mfg., Inc.
d. Door Controls International, Inc.
e. Hiawatha, Inc.
f. IVES Hardware; an Ingersoll-Rand company.
g. Trimco.

2.7 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4, rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated.

1. Comply with accessibility requirements.
2. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force. Comply with the following maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
c. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers will not require more than 30 lbf to set door in motion and not more than 15 lbf to open door to minimum required width.

3. Manufacturers and Products: Subject to compliance with requirements, provide products by one of the following:

a. Corbin Russwin Architectural Hardware, an ASSA ABLOY Group company; DC3000 Series.
b. DORMA Architectural Hardware, Member of The DORMA Group North America; 8900 Series.

c. LCN Closers, an Ingersoll-Rand company; 4000 Series.
d. Stanley; QDC 100 Series.
e. Norton 8000 Series

2.8 WEATHER-STRIPPING AND SEALS

A. General: Provide continuous weather-stripping on all new prime doors. Provide non-corrosive fasteners for exterior applications and elsewhere.

B. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.

C. Perimeter Gasketing, Kerf Type (New Doors): Kerf frame mounted Z-shaped polyethylene clad foam core seal with coextruded kerf tab. Provide the following colors: white, black, grey, beige, and brown (if available). Provide one of the following:

1. Holm Industries; Model JF-65.
2. M-D Building Products; Model 91868 (white), 87767 (bronze), or 91800 (beige).
3. National Guard Products, Inc.; Q-Lon Foam Seal, Model 284Q.
4. Pemko Manufacturing Co.; Model Q102 or Q103.
5. Schlegel Corporation; Q-Lon, Model QDS-650 or QEBD-650.
6. UltraFab, Inc.; Pro-Lon, Model F650.
7. Visco Weather Seal Products; Q-Lon Door Seal, Model QDS-650 or QEBD-650.
8. Zero International; Model 8053Q.

D. Perimeter Gasketing, Bulb Type (Existing Doors): Surface applied extruded aluminum housing with nominal 5/16-inch neoprene, polyurethane, or silicone bulb seal. Provide the following colors: white, black, grey, beige, and brown (if available). Provide one of the following:

1. Hager Companies; Model 891S (aluminum or dark bronze).
2. M-D Building Products; Model 01438 (aluminum), 01677 (bronze), or 87635 (white).
3. National Guard Products, Inc.; Model 135NA, 160U, or 160S.
4. Pemko Manufacturing Co.; Model 303_PK, 303_S, or 303_V.
5. Reese Enterprises Inc.; Model 678 or 769.
6. Visco Weather Seal Products; Model DS075-AL-N or DS075-(AL/BR/WH)-V.
7. Zero International; Model 8303AA.

E. Perimeter Gasketing Folding Seal Type (Existing Doors): Surface mounted extruded aluminum housing with Z-shaped polyethylene clad foam core seal, with coextruded kerf tab. Provide the following colors: white, black, grey, beige, and brown (if available). Provide one of the following:

1. M-D Building Products; Model 91850 (white) or 87783 (bronze).
2. National Guard Products, Inc.; Q-Lon Foam Seal Model 184QA.
3. Pemko Manufacturing Co.; Model 306Q.
4. Visco Weather Seal Products; Model DS050.

2.9 DOOR BOTTOM SEALS

A. Door Bottom (New Doors): Door shoe or kerf-mounted units with extruded non-vinyl thermoplastic multiple-fin or fin and bulb elastomer seal for use in conjunction with threshold units. Install hardware prior to shipping to job site. Provide one of the following:

1. Endura Products. Inc.; Model DBU-H or DBK-R.

2. M-D Building Products; Model 05991.
3. Pemko Manufacturing Co.; Model 2170_V

B. Door Bottom (Existing Doors): Surface mounted, heavy-duty neoprene bulb or five-finger extrusion used in conjunction with threshold units. Provide products by one of the manufacturers listed for Door Bottom for New Doors.

C. Door Bottom Sweep: Aluminum-housed, fixed elastomeric sweep. Provide one of the following:

1. Hager Companies; Model 756S.
2. M-D Building Products; Model 05629.
3. National Guard Products, Inc.; Model 97V.
4. Pemko Manufacturing Co.; Model 307AV.
5. Reese Enterprises, Inc.; Model 806A.
6. Zero International; Model 339AA.

D. Automatic Door Bottom: Mortised, extruded aluminum housing with thermoplastic drop seal. Use non-corrosive tamper-proof fasteners for all applications. Provide accessory end plates for wood frames. Provide one of the following:

1. Hager Companies; Model 730S.
2. National Guard Products; Model 225 N.
3. Pemko Manufacturing Co.; Model 411APKL.
4. Zero International; Model 350A.

E. Astragals and other weather-stripping: Manufacturer's standard or as indicated on Drawings.

2.10 THRESHOLDS

A. Adjustable Threshold: Mill finished aluminum threshold with adjustable oak top and elastomeric seal between base and adjustable top, fabricated to full length of opening. Provide units 1-1/8 inch high x 5 1/2 to 8 inch nominal width so as to be inclusive of storm door. Width requirements are to be coordinated with field conditions at time of field measurements. Provide one of the following:

1. M-D Building Products; Model 43822.
2. Pemko Manufacturing Co.; Model 95518A36.5 and 95518AW36.5.
3. Endura Products, Inc.; Model AI7815O, or ZA1562FN.

B. Thermal Break Saddle Threshold (Exterior, ADA Compliant, and Uniform Level): Mill finished, extruded aluminum threshold, with thermal break and complying with ANSI A117.1 for accessibility requirements. Provide units 1/2-inch high x 7-inch nominal width so as to be inclusive of storm door. Provide one of the following:

1. Endura Products, Inc.; Model ZHCIT6562 or HCIT7565.
2. Hager Companies; Model 423S.
3. National Guard Products, Inc.; Model 8427.
4. Pemko Manufacturing Co.; Model 254X4 AFG.
5. Reese Enterprises, Inc.; Model F-S475A.
6. Zero International; Model 6570A with thermal break.

C. Level Saddle Threshold (Interior, ADA Compliant): Mill finished, extruded aluminum threshold complying with ANSI A117.1 for accessibility requirements. Provide units 1/2-inch high x 5-inch minimum nominal width. Provide one of the following:

1. Hager Companies; Model 412S.
2. M-D Building Products; Model 11924.
3. National Guard Products, Inc.; Model 424 or 425.
4. Pemko Manufacturing Co.; Model 171A.
5. Reese Enterprises, Inc.; Model S105A.
6. Zero International; Model 653A.

D. Offset Saddle Threshold (Interior, ADA Compliant): Mill finished, extruded aluminum threshold complying with ANSI A117.1 for accessibility requirements. Provide units 3/4-inch maximum height x 5 inch nominal width, with vertical offset to accommodate actual conditions encountered in the Home. Provide units from one of the following. Adjust model selection as necessary to provide products appropriate for each Home condition, as occurs:

1. Hager Companies; Model 438S.
2. National Guard Products, Inc.; Model 457.
3. Pemko Manufacturing Co.; Model 157A.
4. Reese Enterprises, Inc.; Model S512A.
5. Zero International; Model 654A/B or 164A/B.

E. Wood Saddle Threshold (Interior): Solid oak threshold with beveled edges. Provide units 3/4-inch maximum height x 3-1/2 inch nominal width. Provide one of the following:

1. Frost King; Model WAT36H.
2. M-D Building Products; Model 11742.
3. Pemko Manufacturing Co.; Model 218OAK.

F. Wood Saddle Threshold (Interior, ADA Compliant): Oak threshold complying with ANSI A117.1 for accessibility requirements. Provide units 1/2-inch maximum height x 3 1/2- inch nominal width. Provide one of the following:

1. Frost King; Model WAT250.
2. M-D Building Products; Model 11924.
3. Pemko Manufacturing Co.; Model 2500W36.

G. Vinyl Top Saddle Threshold: Mill finished, extruded aluminum threshold with thermoplastic seal insert. Provide units 3/4-inch maximum height x 3-1/2 inch nominal width. Provide one of the following:

1. M-D Building Products; Model 08748.
2. National Guard Products, Inc.; Model 405.
3. Pemko Manufacturing Co.; Model 206AV.
4. Reese Enterprises, Inc.; Model V300A.

2.11 AUXILIARY DOOR HARDWARE

A. Door Viewer: Solid brass, with optical glass lenses; adjustable to door thickness, and permitting one-way observation with minimum 160-degree viewing angle. Provide UL listed viewers for all fire-rated door installations. Provide one of the following:

1. Hager; Model 1756.
2. Howard Berger Company; Ultra Hardware Model 94014, 94031, 94002, or 60914.
3. Ives; Model U698.
4. Rockwood Manufacturing Company; Model 622.
5. Stanley; Model 803968/9.

B. Door Knocker with Viewer: Wrought solid brass or nickel finished knocker and wide-angle viewer, with optical glass lenses; adjustable to door thickness, and permitting one-way observation with minimum 160-degree viewing angle. For multi-unit buildings, provide paint-filled engraved unit number on knocker face. Provide for all doors where the existing door has a door knocker/viewer. Provide UL listed viewers for all fire-rated door installations. Provide one of the following:

1. Hager; Model 322V.
2. Ives; Model 02-31251U.
3. Rockwood Manufacturing Company; Model 614V.
4. Stanley; Model 804099.

C. Door Stop: Provide one of the following:

1. Hinge Pin Stop: Wrought steel with bumpers, adjustable hinge pin mounted. Provide where installation of rigid door stop is not possible or as scheduled with the Homeowner.

a. Hager; Model 301D.
b. Ives; Model 73.
c. Rockwood Manufacturing Company; Model 528.

D. House Numbers:

1. Apartment unit applications: Replace or install new house numbers, letters, and symbols. Match lockset finish.
2. Non-apartment unit applications: Where door numbers are present on existing door, remove and reinstall on new door or install new on new door.

2.12 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:

1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
2) Strike plates to frames.
3) Closers to doors and frames.

3. Fasteners for Wood Doors: Comply with requirements in the Door Hardware Institute Wood Door Hardware Standard DHI WDHS.2, "Recommended Fasteners for Wood Doors."
4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere, as indicated.

2.13 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated.

B. Appearance of Finished Work: Noticeable variations in the same piece or adjacent piece are not acceptable.

C. Finish Selection:

1. Provide polished brass or satin nickel finishes for hardware as selected by the Homeowner and approved by the Commissioner.
2. Where hardware availability would adversely affect the construction schedule, the Contractor may, upon approval of the Commissioner, substitute Satin Chromium Plated or Satin Stainless Steel for the specified Satin Nickel Plated finish.
3. For multi-unit buildings, provide finishes matching existing building standard hardware.

D. Provide one of the following standard finishes on hinges, locksets and other hardware, unless otherwise scheduled. For each door, provide hardware with matched finish plating.

1. Exterior Hinges: Finishes acceptable for use on exterior doors:

a. BHMA 605: Bright brass, clear coated, over brass base metal.
b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.
c. BHMA 626: Satin Chromium Plated, over brass or bronze base material.
d. BHMA 630: Satin Stainless Steel, over stainless-steel base metal.

2. Door Hinges: Finishes acceptable for use on interior doors.

a. BHMA 632: Bright brass, clear coated, over steel base metal.
b. BHMA 646: Satin Nickel Plated, Clear Coated over steel base material.
c. BHMA 652: Satin Chromium Plated, over steel base material.
d. BHMA 654: Satin Stainless Steel, over steel base material.

3. Lockset: Finishes acceptable for use on locksets and deadbolts:

a. BHMA 605: Bright brass, clear coated, over brass base metal.
b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.
c. BHMA 626: Satin Chromium Plated, over brass or bronze base material.
d. BHMA 630: Satin Stainless Steel, over brass or bronze base material.

4. Manual Flush Bolts: Finishes acceptable for use on Manual Flush Bolts:

a. BHMA 605: Bright brass, clear coated, over brass base metal.

b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.

5. Surface Closer: Finishes acceptable for use on surface closers:

a. BHMA 689: Aluminum Painted, over any base material.
b. BHMA 695: Dark Bronze Painted, over any base material.

6. Weatherstripping and Seals: Finishes acceptable for use on metal parts:

a. BHMA 605: Bright brass, clear coated, over brass base metal.
b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.
c. BHMA 628: Satin aluminum, clear anodized.

7. Door bottom Seals: Finishes acceptable for use on metal parts:

a. BHMA 605: Bright brass, clear coated, over brass base metal.
b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.
c. BHMA 628: Satin aluminum, clear anodized.

8. Thresholds: Finishes acceptable for use on metal parts of Thresholds:

a. BHMA 628: Satin aluminum, clear anodized.
b. BHMA 667: Satin brass plated, clear coated.

9. Auxiliary Hardware: Finishes acceptable for use on Auxiliary Hardware:

a. BHMA 605: Bright brass, clear coated, over brass base metal.
b. BHMA 619: Satin Nickel Plated, Clear Coated, over brass or bronze base material.

10. Fasteners: Provide mounting fasteners matching hardware finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of door hardware.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Wood Doors: Comply with ANSI/DHI A115.IG Installation Guide for Doors and Hardware, and DHI WDHS.3 Recommended Locations for Architectural Hardware for Wood Flush Doors.

B. Comply with DHI WDHS.5 “Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors.”

3.3 INSTALLATION

A. Field Fitting: Use jigs to accurately prepare hardware cutouts. Apply two coats sealer or primer at cut outs prior to installation of hardware.

B. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

C. Door Viewer: Maximum 5 feet Above Finished Floor (AFF). Verify mounting height with Homeowner.

D. Trim and install gasketing and thresholds carefully to eliminate gaps. Verify tightness by checking for light leaks at entire door perimeter. Adjust or replace as required.

E. Door Shoes:

1. Cut to door width with seal removed.
2. Trim seal to leave 1/16-inch overhang at each end.

F. Thresholds:

1. Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 07 92 00 “Joint Sealants.”
2. Cope to fit tightly within frame opening with gasket removed.
3. Trim seal 1/16-inch longer than threshold at each end.
4. Clearance between threshold and door: 1/8-inch.

G. Weather-stripping and Seals: Comply with manufacturer’s instructions and recommendations.

H. For Existing Prime Doors: Where cutting and fitting is required to install hardware, do not install items until sealers and finishes have been applied on the newly exposed substrates. Seal alterations made to the door as recommended by the manufacturer.

I. For New Pre-assembled Pre-Hung Door Units: Install weatherstripping, thresholds and door bottoms prior to shipping to the site. No cutting, shaving or planing of any kind is permitted on finished pre-hung door units.

J. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

K. For existing prime doors drill and countersink doors for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

L. Apply all weatherstripping to clean dry surfaces.

M. Existing Doors: Where existing doors are scheduled to remain, provide limited hardware as scheduled and/or outlined as follows:

1. Provide new interior perimeter gasketing at door head and jambs.
2. Inspect condition of existing sill weatherstripping. Replace worn seals, in kind, and adjust door bottom seal to fit in contact with threshold without gaps.

N. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

O. Hinges: Install types and in quantities indicated but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

P. Stops: Install door stops only as approved by the Homeowner. Where possible provide baseboard-mounted wall stop. Install floor stops where wall stop cannot be installed. Do not mount floor stops where they will impede traffic.

Q. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame. Lubricate surface of polyurethane covered foam gaskets with silicone lubricant as recommended by the manufacturer.

R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Clean, repair and touch-up adjacent surfaces soiled by hardware installation.

B. Clean operating items and lubricate as necessary to restore proper function and finish.

C. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate, as intended.

1. Adjust seals mounted to existing prime doors to provide tight fit where seals meet door, frame and threshold.
2. Ensure continuity of acoustical seals and weather-stripping at entire perimeter by use of a light source to check for openings and gaps.
3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 DOOR HARDWARE SCHEDULE

A. SET NO. 1: Entry Door, exterior to interior, in-swinging.

Qty.	Item	Finish
3	Door Hinges	BHMA 605 or 619
1	Bored Lock Type A – Entry function	BHMA 605 or 619
1	Bored Auxiliary Lock	BHMA 605 or 619
1	Door Stop (field verify type	BHMA 605, 613 or 619
1	Adjustable Threshold	
1 set	Perimeter Gasketing – Kerf type	
1	Door Bottom	
1	Door Viewer (where requested)	BHMA 605 or 619

B. SET NO. 1A: Accessible Entry Door, exterior to interior, in-swinging.

Qty.	Item	Finish
3	Door Hinges	BHMA 605 or 619
1	Bored Lock Type B – Entry function	BHMA 605 or 619
1	Bored Auxiliary Lock	BHMA 605 or 619

1	Door Stop (field verify type)	BHMA 605, 613 or 619
1	Thermal Break Saddle Threshold	
1 set	Perimeter Gasketing – Kerf type	
1	Door Bottom	
1	Door Viewer (where requested)	BHMA 605 or 619

C. SET NO. 1E: Existing Entry Door to remain, exterior to interior, in-swinging.

Qty.	Item	Finish
1 set	Perimeter Gasketing – Surface Mounted Bulb or Folding seal type	
1	Replacement gasket or new Door Bottom (where necessary)	

D. SET NO. 1MU-20: Multi-Unit Building Entry Door, interior corridor to unit, in-swinging. UL 20 minute fire-rating. (Note: Finishes to be verified).

Qty.	Item	Finish
1	Anti-friction Bearing Hinges	BHMA 605 or 619
2	Self-Closing Door Hinges	BHMA 605 or 619
1	Bored Lock Type B – Entry function	BHMA 605 or 619
1	Bored Auxiliary Lock	BHMA 605 or 619
1	Door Stop (field verify type)	BHMA 605, 613 or 619
1	Level or Offset Saddle Threshold (field verify type)	
1 set	Perimeter Gasketing – Kerf type	
1	Automatic Door Bottom	
1	Door Knocker with Viewer	BHMA 605 or 619

E. SET NO. 1MUA-20: Multi-Unit Building Accessible Entry Door, interior corridor to unit, in-swinging. UL 20 minute fire-rating. (Note: Finishes to be verified).

Qty.	Item	Finish
3	Anti-friction Bearing Hinges	BHMA 605 or 619
1	Surface Closer	BHMA 689 or 695
1	Bored Lock Type B– Entry function	BHMA 605 or 619
1	Bored Auxiliary Lock	BHMA 605 or 619
1	Door Stop (field verify type)	BHMA 605 or 619
1	Level or Offset Saddle Threshold (field verify type)	
1 set	Perimeter Gasketing – Kerf type	
1	Automatic Door Bottom	
1	Door Knocker with Viewer	BHMA 605 or 619

F. SET NO. 1MU-45: Multi-Unit Building Stair Door, interior corridor to exit stairwell, in-swinging. UL 45 minute fire-rating. (Note: Finishes to be verified).

Qty.	Item	Finish
3	Anti-friction Bearing Hinges	BHMA 605 or 619
1	Surface Closer	BHMA 689 or 695
1	Bored Lock Type B – Passage function	BHMA 605 or 619
1	Bored Auxiliary Lock	BHMA 605 or 619
1	Door Stop (field verify type)	BHMA 605, 613 or 619
1	Level or Offset metal Saddle Threshold (field verify type)	
1 set	Perimeter Gasketing – Kerf type	
1	Automatic Door Bottom	
1	Door Knocker with Viewer	BHMA 605 or 619

G. SET NO. 2: Interior utility closet door, out-swinging.

Qty.	Item	Finish
3	Door Hinges	BHMA 632 or 646
1	Bored Lock Type A – Passage function	BHMA 605 or 619
1	Door Stop (field verify type)	BHMA 605 or 619
1	Wood Saddle Threshold	Oak

H. SET NO. 3: Exterior utility closet door (existing doors, lockset and hinges to remain).

Qty.	Item	Finish
1 set	Perimeter Gasketing – Bulb type	
1	Saddle Threshold (Vinyl Top or Level type, field verify type) Existing threshold to remain where occurs.	
1	Door Bottom Sweep	

END OF SECTION 08 71 00

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Primary Windows.
2. Secondary Windows (storm windows).
3. Primary Doors.
4. Secondary Doors (storm doors).
5. Sidelights.

B. Related Requirements:

1. Section 08 11 69 “Metal Storm Doors and Frames”.
2. Section 08 14 16 “Flush Wood Doors”.
3. Section 08 16 13 “Fiberglass Doors”.
4. Section 08 32 13 “Sliding Aluminum-Framed Glass Doors”.
5. Section 08 32 16 “Sliding Plastic-Framed Glass Doors”.
6. Section 08 51 13 “Aluminum Windows”.
7. Section 08 51 69 “Metal Storm Windows”.
8. Section 08 53 13 “Vinyl Windows”.

1.3 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. Interspace: Space between lights of an insulating-glass unit.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each glass product and glazing material, indicating coatings, tints, thickness and assemblies. Submit concurrently with product data for manufactured items which reference this Section.

1.6 INFORMATIONAL SUBMITTALS

A. Warranties: Submit warranties concurrently with product warranties provided by fenestration product manufacturers referenced in this Section.

B. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Source Limitations for Glass: For each Home or building, obtain coated float glass, laminated glass, and insulating-glass from single source from single manufacturer for each glass type.

B. Source Limitations for Glazing Accessories: For each Home or building, provide products from single source from single manufacturer.

C. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA’s “Laminated Glazing Reference Manual” and GANA’s “Glazing Manual”.
2. AAMA Publications: AAMA GDSG-1, “Glass Design for Sloped Glazing,” and AAMA TIR-A7, “Sloped Glazing Guidelines”.
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, “Guidelines for Sloped Glazing”.
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, “North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use”.

D. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or the manufacturer. Label will indicate manufacturer’s name, type of glass, thickness, and safety glazing standard with which glass complies.

E. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the following inspecting and testing agency:

1. Insulating Glass Certification Council (IGCC).
2. Associated Laboratories, Inc.
3. National Accreditation and Management Institute.

1.8 WARRANTY

A. Warranties specified in this Article will not deprive the City of other rights the City may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Manufacturer’s Special Warranty for Coated-Glass Products: Manufacturer’s standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer’s written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: Manufacturer's standard but not less than ten (10) years from date of Final Completion of the Home.

C. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: Manufacturer's standard but not less than ten (10) years from date of Final Completion of the Home.

D. Manufacturer's Special Warranty on Insulating-Glass: Manufacturer's standard form in which insulating glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating-glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating-glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: Manufacturer's standard but not less than ten (10) years from date of Final Completion of the Home.

E. Contractor's Warranty: Submit a written warranty against defects in workmanship and materials related to installation of glazing.

1. Warranty Period: One (1) year from the date of Final Completion of the Home.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

A. General: Provide glazing assemblies consisting of glass types, coatings, unit thickness, and lite thickness to meet performance requirements and minimum requirements indicated for fenestration products specified in other Sections.

B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.

C. Thermal and Optical Performance Properties: Provide glass with performance properties to meet specified requirements, as indicated in manufacturer's published test data, based on procedures indicated below:

1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x degrees F.
2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.

2.2 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems will withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Acoustical Performance: When glazed products are specified to comply with specific acoustical performance, provide glass in thickness and assemblies identical to those used in certified laboratory tests.

C. Glass Design: Analyze project loads and in-service conditions. Provide glass lights in thicknesses and strengths required to meet those conditions, and to meet specified performance requirements. Design glass according to ASTM E 1300 and in compliance with ICC's 2006 International Building Code and Chicago Building Code.

1. Glass Thickness: Select minimum glass thickness to comply with ASTM E 1300, for design wind loads of 30, but not less than wind loads applicable to Project as required by ASCE 7 "Minimum Design Loads for Buildings and Other Structures" Section 6.0 Wind Loads.
2. Where performance requirements result in different glass thicknesses, provide glass thickness and unit composition to meet each performance requirement specified.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components. Base engineering calculation on surface temperature of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 degrees F, ambient; 180 degrees F, material surfaces.

E. VOC Emissions Requirements: All products shall comply with VOC emissions limits for Target CREL VOCs and their maximum allowable concentrations when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.2, 2017". Results shall be in accordance with Section 4 of the referenced standard.

2.3 GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality-Q3 (glazing select), and Class I (clear) unless otherwise indicated.

B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent glass, flat), Quality-Q3 (glazing select); Class I (clear) unless otherwise indicated; of kind and condition indicated.

1. Provide Kind FT (fully tempered) float glass where safety glass is indicated.

C. Patterned Glass: ASTM C 1036, Type II, Class 1 (clear), Form 3; Quality-Q6, Finish F1 (patterned one side).

1. Provide Kind FT (fully tempered) float glass where safety glass is indicated.

D. Reflective-Coated Vision Glass: ASTM C 1376, Low-E coated by pyrolytic process or vacuum deposition (sputter-coating) process, and complying with other requirements specified.

1. Kind: Low-E
2. Glass: Clear float.

2.4 LAMINATED GLASS

A. Laminated Glass: ASTM C 1172 and complying with testing requirements in 16 CFR Part 1201 for Category II materials and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer or cast-in-place and cured transparent-resin interlayer to comply with interlayer manufacturer's written recommendations.
2. Interlayer Thickness: Provide thickness as needed to comply with performance requirements specified for fenestration products specified in other Sections.
3. Interlayer Color: Clear.

B. Glass: Comply with applicable requirements in “Glass Products” Article as indicated by designations in “Laminated-Glass Types” Article.

2.5 INSULATING-GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lights of glass separated by a dehydrated interspace, qualified according to ASTM E 2190, and complying with requirements specified for fenestration products specified in other Sections.

1. Sealing System: Manufacturer’s Standard sealant system.
2. Spacer: Manufacturer’s standard warm-edge technology spacer material with desiccant, and construction as required to meet performance requirements.

    a. Provide spacer with a minimum NFRC Condensation Resistance (CR) value of 30.

3. Interspace Content: Air or argon gas as necessary to comply with performance requirements specified for fenestration products specified in other Sections.

B. Glass: Comply with applicable requirements in “Glass Products” Article and in “Laminated Glass” Article as indicated by designations in “Insulating-Glass Types” Article and in “Insulating-Laminated-Glass Types” Article.

2.6 SAFETY GLASS

A. Safety Glass: Category II materials complying with testing requirements in 16 CFR Part 1201. Comply with ANSI Z97.1 for safety glass in fire-rated doors. Where permitted by 16 CFR Part 1201, safety glass may be Category I materials.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

B. Provide safety glass on doors. Where indicated on drawings or schedules, provide safety glass for window units.

C. Where a product is indicated to have safety glass, provide safety glass for each lite within the indicated opening; including both lights of insulated glass and dual sash; secondary sash and other multiple lite conditions.

2.7 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of manufacturer’s standard material, complying with applicable standards, of profile and hardness required to maintain watertight seal, and compatible with glazing sealants and other materials used in glazing assemblies and made from one of the following:

1. Neoprene complying with ASTM C 864.
2. EPDM complying with ASTM C 864.
3. Silicone complying with ASTM C 1115.
4. Thermoplastic polyolefin rubber complying with ASTM C 1115.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, silicone, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.

1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.

2.8 GLAZING SEALANTS

A. General:

1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Sealants used inside the weatherproofing system, will have a VOC content of not more than 250 g/L when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).
4. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920.

2.9 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; non-staining and non-migrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800.

B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800.

2.10 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lights in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that will leave visible marks in the completed work.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lights.

F. Provide spacers for glass lights where length plus width is larger than 50 inches.

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

G. Provide edge blocking where indicated or needed to prevent glass lights from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

H. Set glass lights in each series with uniform pattern, draw, bow, and similar characteristics.

I. Set glass lights with proper orientation so that coatings face exterior or interior, as specified.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 CLEANING AND PROTECTION

A. Protect exterior glass from damage. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

C. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Final Completion of the Home. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION 08 80 00

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Texture finishes.

B. Related Requirements:

1. Section 01 50 00 “Temporary Facilities and Controls”.
2. Section 01 73 00 “Execution”.
3. Section 07 92 00 “Joint Sealants”.
4. Section 07 21 00 “Thermal Insulation”.
5. Section 09 91 23 “Interior Painting”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

C. Handle gypsum board to prevent damage to edges, ends and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Minimum Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 degrees F. For adhesive attachment and finishing of gypsum board maintain not less than 50 degrees F for 48 hours prior to application and continuously thereafter until drying is complete.

D. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

E. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Manufacturers: Provide products manufactured by one of the following:

1. American Gypsum.
2. CertainTeed Corp.
3. Georgia-Pacific Gypsum LLC.
4. Lafarge North America Inc.
5. National Gypsum Company.
6. PABCO Gypsum.
7. Temple-Inland.
8. USG Corporation.

B. Source Limitations: Each Home and multi-unit building will receive each type of gypsum board and related joint treatment materials from a single source and single manufacturer.

C. Gypsum Wallboard: Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end joints. Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board and whichever is more stringent.

1. Type: Type X.
2. Thickness: 5/8-inch unless otherwise indicated.
3. Long Edges: Tapered.

D. Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture and mold-resistant core and paper surfaces.

1. Type: Type X.
2. Thickness: 5/8-inch, unless otherwise indicated.
3. Long Edges: Tapered.
4. Mold resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 TILE BACKING PANELS

A. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges.

1. Type: Type X.
2. Thickness: 5/8-inch, unless otherwise indicated.
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Paper-faced galvanized steel sheet.
2. Shapes:
    a. Cornerbead.
    b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    c. L-Bead: L-shaped; exposed long flange receives joint compound.
    d. Expansion (control) joint.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape: Paper-reinforcing tape, unless otherwise indicated.

1. Use pressure sensitive or staple-attached open-weave glass fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Pre-filling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound specifically formulated to reduce airborne dust.

a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound specifically formulated to reduce airborne dust.
4. Finish Coat: For third coat, use drying-type, all-purpose compound specifically formulated to reduce airborne dust.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound specifically formulated to reduce airborne dust.

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Laminating adhesive will have a Volatile Organic Compounds (VOC) content of 50 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).

C. Fastening Adhesive for Wood: ASTM C 557.

D. Gypsum Board Screws: ASTM C 1002.

1. Gypsum drywall to wood framing – Type W.
2. Gypsum drywall to gypsum drywall – Type G.

E. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

F. Acoustical Joint Sealant: Comply with requirements in Section 07 92 00 "Joint Sealants".

G. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation".

H. Vapor Retarder: As specified in Section 07 21 00 "Thermal Insulation".

2.8 TEXTURE FINISHES

A. Primer: As recommended by textured finish manufacturer.

B. Match existing texture incorporating products best suited for application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance. Examine substrates to which drywall construction attaches or abuts, reset hollow metal frames, cast-in-anchors and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Verify that existing substrate and structure will bear the increased weight of new drywall construction. If existing conditions are not adequate for installation, notify the Commissioner immediately.

B. Before installation of new wall or ceiling modifications, patch holes or voids in existing plaster and/or gypsum walls or ceilings, including holes from blown-in insulation, prior to installation of the new wall modification.

C. Install thermal insulation at locations indicated and in thicknesses and type indicated in the Construction Modifications and as specified in Section 07 21 00 “Thermal Insulation”.

D. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840. Do not mix joint compounds except as specifically recommended by the manufacturer.

B. Locate exposed end-but joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.

C. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels’ not less than one framing member.

D. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16-inch of open space between panels. Do not force into place.

E. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

F. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

G. Space fasteners in gypsum boards by referenced gypsum board application and finishing standard and manufacturer’s recommendations.

H. Form control and expansion joints with space between edges of adjoining gypsum panels.

I. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4 to 3/8 inch wide joints to install sealant.

J. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4 to 1/2 inch wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

K. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Type X: Vertical and ceiling surfaces unless otherwise indicated.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.

C. Fastening Methods: Apply gypsum panels to studs and furring supports with steel drill screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.4 APPLYING TILE BACKING PANELS

A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at showers and tubs. Install with 1/4 inch (6.4 mm) gap where panels abut other construction or penetrations.

B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated on Drawings.

C. Interior Trim: Install in the following locations:

1. Install J-type trim where edge is exposed, revealed, gasketed or sealant-filled.
2. Cornerbead: Use at outside corners .
3. LC-Bead: Use at exposed panel edges.

3.6 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Tape and finish joints in accordance with the manufacturer's instructions for compound used, using proper hand tools designed for the purpose.

1. Avoid raising nap of face paper when sanding. Carefully sponge down any areas roughened by sanding process.

D. Gypsum Board Finish Levels: Finish panels to Level 5 according to ASTM C 840.

1. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting".

E. Penetrations: Fill cut-outs and openings around fixtures and penetrations with joint compound.

3.7 APPLYING TEXTURE FINISHES

A. Apply texture finish at ceilings where existing ceiling surfaces have textured finish. Match pattern, profile and technique to the greatest extent possible.

B. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.

C. Texture Finish Application: Mix and apply finish to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

D. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.8 CLEANING AND PROTECTION

A. Protect adjacent surfaces from drywall compound. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

D. Promptly remove any residual gypsum drywall materials from adjacent or adjoining surfaces, leaving spaces ready for subsequent finishing operations and decorating.

END OF SECTION 09 29 00

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SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for ceilings.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 QUALITY ASSURANCE

A. Manufacturer: A company that has regularly specialized in the manufacture of such products and has sufficient experience on projects of comparable scope and value.

B. Identify all variations in product manufacture which differ from products for which testing is available and has been submitted. Provide written certification that product changes will not affect the products ability to comply with the performance requirements identified in these specifications.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes. Promptly remove and dispose of damaged materials.

B. Before installing acoustical panels, permit them to reach room temperature and stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTIES

A. Acoustical Ceiling Manufacturer's Warranty: Provide manufacturer's standard residential ceiling panel one (1) year limited warranty.

B. Contractor's Warranty: The Contractor will submit a written warranty against defects in workmanship and materials for a period of one (1) year from the date of Final Completion of the Home for the Work performed.

1. This warranty is intended to ensure that the acoustic ceiling panel installation meets the standards contained in these specifications for the one (1) year period.
2. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner or the Commissioner.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Acoustical ceiling will withstand the effects of earthquake motions determined according to ASCE/SEI 7.

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
2. Smoke-Developed Index: 50 or less.

2.2 ACOUSTICAL PANELS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.; Model 574 (24" x 24") and Model 533 (24" x 48").
2. CertainTeed Corp.: Model HHF-457 HNRC (24" x 24") and Model HHF-497 HNRC (24" x 48").
3. USG Interiors, Inc.; Subsidiary of USG Corporation: Model 76575 (24" x 24") and Model 78575 (24" x 48").

B. Source Limitations: Each Home and multi-unit building will receive each type of acoustical panel from single source from single manufacturer.

C. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:

1. Type and Form: Type III, mineral base with painted finish.

D. Characteristics:

1. Color: White.
2. LR: Not less than 0.80.
3. NRC: Not less than 0.70.
4. CAC: Not less than 35.
5. Edge/Joint Detail: Square.
6. Texture: Stucco (fine texture).
7. Thickness: 1/2-inch minimum.
8. Modular Size: 24 by 24 inches and 24 by 48 inches.

E. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.

B. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

C. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch-diameter wire.

D. Additional ceiling grid reinforcement: Acoustical Ceiling Tile manufacturer's standard.

2.4 METAL SUSPENSION SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:

1. Armstrong World Industries, Inc.
2. CertainTeed Corp.
3. Chicago Metallic Corporation.
4. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; pre-painted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 15/16-inch wide metal caps on flanges.

1. Structural Classification: Medium-duty system.
2. End Condition of Cross Runners: butt-edge type.

3. Face Design: Flat, flush.
4. Cap Material: Steel cold-rolled sheet.

5. Cap Finish: Painted white.

C. Source Limitations: Each Home and multi-unit building will receive each type of metal suspension system from single source from single manufacturer.

2.5 METAL EDGE MOLDINGS AND TRIM

A. Manufacturers: Subject to compliance with requirements, provide products by the same manufacturer as suspension system.

B. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.
2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Notify Commissioner of all structural inadequacies or other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders.

3.3 INSTALLATION

A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook".

B. Coordinate layout and installation of lay-in ceiling with other Work supported by or penetrating through ceilings, including light fixtures, HVAC equipment and partition systems.

C. Relocate existing light fixtures, if required, so that new locations accord with new soffits or other work-lights will be placed in an orderly fashion with respect to the largest area of the grid. Center light arrays and space them evenly whenever possible. Install new light fixtures if existing fixtures cannot be incorporated into the system.

D. Remove existing lay-in ceiling panels as indicated on the Drawings.

E. Install acoustical ceiling panels in accordance with manufacturer's instructions, fire resistance-rating requirements as indicated, industry standards applicable to the Work and the Specification. The most stringent requirements will apply. Do not begin installation until residual moisture from plaster, concrete or other Work has dissipated. Do not install acoustical ceiling until all dust-generating activities have terminated and HVAC and overhead work is completed, tested and approved.

F. Install main tees on 24 inch centers and cross tees on 24 inch or 48 inch centers as indicated. Intersect cross tees with main tees and positively lock together. Lock main tees together end to end with galvanized splices.

G. Suspend ceiling hangers from building's structural members and as follows:

1. Space hangers, main tees and cross tees to support the design ceiling load, and to prevent deflection in excess of 1/360 of the span of the main tee or cross tee. Provide additional hangers as required for light fixtures if required.
2. Do not attach hangers to roof deck, ductwork, piping or other suspended items.
3. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
4. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
5. Where width of ducts and other construction within ceiling plenum produces hanger spacing's that interfere with location of hangers at spacing's required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
6. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
7. Space hangers not more than 48 inches along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
8. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

H. Cope exposed flanges of intersecting suspension system members so that flange faces will be flush (cope flange of member supported by other member).

I. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Install perimeter moldings at all building walls, properly aligned so that tile will be resting fully on the flange and be free of twisting or distortion; do not deform moldings to compensate for surfaces that are not straight. Use maximum practical length sections.

2. Screw attach moldings to substrate at intervals not more than 16 inches apart and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8-inch in 12 feet. Miter corners accurately and connect securely.

3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

J. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

K. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

1. Install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.

L. Furnish extra materials to Homeowner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Panels: Four full-size panels.

3.4 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

B. Keep work areas and the adjacent areas clear and free from all debris. Upon completion, remove all debris, unused materials and equipment, and leave the work area in a clean, acceptable condition.

END OF SECTION 09 51 13

SECTION 09 91 13 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on exterior substrates.

B. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts and labels.

C. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 01 81 13 “Sustainable Design Requirements”.
3. Section 06 20 13 “Exterior Finish Carpentry”.
4. Section 09 91 23 “Interior Painting”.
5. Section 09 93 00 “Staining and Transparent Finishing”.

1.3 DEFINITIONS

A. Paint: Includes coating systems materials, primers, emulsions, enamels, sealers and filler, and other applied materials whether used as prime, intermediate or finish coats.

B. MPI: “MPI Architectural Painting Specification Manual”.

C. MPI Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

F. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

G. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

H. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

I. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS - GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Current Master Painters Institute (MPI) “Approved Products List” for each product category specified in Part 2, indicating the product proposed for use.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Manufacturer’s Qualifications: Provide products manufactured by a company that has experience on projects of comparable scope and value.

B. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated that have resulted in a construction record of successful in-service performance.

C. Single-Source Responsibility: Each Home and multi-unit building will receive products from a single source. Provide undercoat paint produced by the same manufacturer as the finish coats.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Commissioner of problems anticipated using the materials specified.

E. Mockups

1. Provide paint finishes for mockups required by other specification sections.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site in the manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer’s stock number and date of manufacture.

4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.
3. Keep storage area neat and orderly.
4. Take necessary precautions to ensure that workers and Work areas are protected from fire and health hazards resulting from handling, mixing and application.

1.9 PROJECT CONDITIONS

A. Apply paints only when temperature, of surfaces to be painted and ambient air temperature, are within manufacturer's recommended range of temperatures for application.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent, at ambient temperatures outside of the manufacturer's recommended range of temperatures for application or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List".

B. Material Compatibility:

1. Provide fillers, primers, finish coat materials, sealers and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the Manufacturer based on testing and field experience.
2. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
3. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content Requirements: Provide materials that comply with VOC limits specified in Section 01 81 13 "Sustainable Design Requirements".

D. Colors:

1. Provide white, beige and brown colors to match vinyl and aluminum window and door finish.

E. Color Pigments: Pure, non-fading, applicable types to suit substrates, as specified.

2.2 PRIMERS/SEALERS

A. Primer, Alkali Resistant, Water Based: MPI #3.

B. Primer, Bonding, Solvent Based: MPI #69.

C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.

2.3 METAL PRIMERS

A. Primer, Alkyd, Quick Dry, for Metal: MPI #76.

2.4 WOOD PRIMERS

A. Primer, Alkyd for Exterior Wood: MPI #5.

2.5 WATER-BASED PAINTS

A. Latex, Exterior Flat (Gloss Level 1): MPI #10.

B. Latex, Exterior Low Sheen (Gloss Level 3-4): MPI #15.

C. Latex, Exterior Semi-Gloss (Gloss Level 5): MPI #11.

D. Latex, Exterior, Gloss (Gloss Level 6: MPI #119.

2.6 SOLVENT-BASED PAINTS

A. Alkyd, Exterior Flat (Gloss Level 1): MPI #8.

B. Alkyd, Exterior, Semi-Gloss (Gloss Level 5): MPI #94.

C. Alkyd, Exterior Gloss (Gloss Level 6): MPI #9.

D. Alkyd, Quick Dry, Semi-Gloss (Gloss Level 5): MPI #81.

E. Alkyd, Quick Dry, Gloss (Gloss Level 7): MPI #96.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Portland Cement Plaster: 12 percent.
5. Gypsum Board: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Protect all surfaces and areas not affected by Work.

C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet or newly painted surfaces.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

E. Material Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
3. Use only thinners approved by the paint manufacturer and only within recommended limits.

F. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

G. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions. Fill cracks and irregularities with Portland cement grout to provide uniform surface textures.

H. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

I. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

J. Aluminum Substrates: Remove loose surface oxidation.

K. Wood Substrates:

1. Clean surfaces of dirt, oil and other foreign substances with scrapers, mineral spirits and sandpaper as required.
2. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
3. Sand surfaces that will be exposed to view, and dust off.
4. Prime or seal wood to be painted immediately upon delivery.
5. Prime edges, ends, faces, undersides, and backsides of wood.
6. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler suitable for exterior application. Fill holes and imperfections in existing trim to be reused or reinstalled. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

1. Do not paint pre-finished items, concealed surfaces or operating parts.
2. Use applicators and techniques suited for paint and substrate indicated.
3. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

D. Wood Doors, Frame and Trim

1. Touch-up paint in field for prefinished doors, frame and shop finished trim.

E. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

F. Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Provide “Wet Paint” signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their Work after completing painting operations.

D. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by the Commissioner, and leave in an undamaged condition. Remove temporary protective wrappings provided by others to protect their Work after completing painting operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System:
   a. Prime Coat: Primer, alkali resistant, water based, MPI #3.
   b. Intermediate Coat: Latex, exterior, matching topcoat.
   c. Topcoat: Latex, exterior flat (Gloss Level 1), MPI #10.
   d. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), MPI #15.
   e. Topcoat: Latex, exterior semi-gloss (Gloss Level 5), MPI #11.

B. Clay-Masonry Substrates:

1. Latex System:
   a. Prime Coat: Latex, exterior, matching topcoat.
   b. Intermediate Coat: Latex, exterior, matching topcoat.
   c. Topcoat: Latex, exterior flat (Gloss Level 1), MPI #10.
   d. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), MPI #15.
   e. Topcoat: Latex, exterior semi-gloss (Gloss Level 5), MPI #11.
   f. Select Topcoat to match existing Gloss Level of adjacent similar surfaces.

C. CMU Substrates:

1. Latex System:
   a. Prime Coat: Block filler, latex, interior/exterior, MPI #4.
   b. Intermediate Coat: Latex, exterior, matching topcoat.
   c. Topcoat: Latex, exterior flat (Gloss Level 1), MPI #10.
   d. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), MPI #15.
   e. Topcoat: Latex, exterior semi-gloss (Gloss Level 5), MPI #11.
   f. Select Topcoat to match existing Gloss Level of adjacent similar surfaces.

D. Steel Substrates:

1. Quick-Drying Enamel System:
   a. Prime Coat: Primer, alkyd, quick dry, for metal, MPI #76.
   b. Intermediate Coat: Alkyd, quick dry, matching topcoat.
   c. Topcoat: Alkyd, quick dry, semi-gloss (Gloss Level 5), MPI #81.

E. Galvanized-Metal Substrates:

1. Alkyd System:
   a. Prime Coat: Primer, galvanized metal, as recommended in writing by topcoat manufacturer for exterior use on galvanized-metal substrates with topcoat indicated.

b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
c. Topcoat: Alkyd, exterior, flat (Gloss Level 5), MPI #8.
d. Topcoat: Alkyd, exterior, semi-gloss (Gloss Level 5), MPI #94.

F. Wood Substrates: Including wood trim, wood siding, and wood-based panel products.

1. Latex over Alkyd Primer System:
a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior flat (Gloss Level 1), MPI #10.
d. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), MPI #15.
e. Topcoat: Latex, exterior semi-gloss (Gloss Level 5), MPI #11.
f. Select Topcoat to match existing Gloss Level of adjacent similar surfaces.

END OF SECTION 09 91 13

SECTION 09 91 23 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates.

1. Unpainted wood window and door trim, and previously painted wood trim that has been re-installed.
2. New walls and ceiling surfaces, and existing walls and ceilings affected by construction activity.
3. Miscellaneous items as directed.

B. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts and labels.

C. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 01 81 13 “Sustainable Design Requirements”.
3. Section 06 20 13 “Interior Finish Carpentry”.
4. Section 09 29 00 “Gypsum Board”.
5. Section 09 91 13 “Exterior Painting”.
6. Section 09 93 00 “Staining and Transparent Finishing”.

1.3 DEFINITIONS

A. Paint: Includes coating systems materials, primers, emulsions, enamels, sealers and filler, and other applied materials whether used as prime, intermediate or finish coats.

B. MPI: “MPI Architectural Painting Specification Manual”.

C. MPI Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

F. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

G. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

H. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

I. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit sample on 12 inch by 12 inch material matching that to which actual paint finish will be applied.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Current Master Painters Institute (MPI) “Approved Products List” for each product category specified in Part 2, indicating the product proposed for use.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Manufacturer’s Qualifications: Provide products manufactured by a company that has experience on projects of comparable scope and value.

B. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated that have resulted in a construction record of successful in-service performance.

C. Source Limitations: Each Home and multi-unit building will receive products from a single source. Provide undercoat paint produced by the same manufacturer as the finish coats.

D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Commissioner of problems anticipated using the materials specified.

E. Mockups

1. Provide paint finishes for mockups required by other specification sections.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site in the manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer’s stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.
3. Keep storage area neat and orderly.
4. Take necessary precautions to ensure that workers and Work areas are protected from fire and health hazards resulting from handling, mixing and application.

1.9 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 degrees F and 95 degrees F. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F and 95 degrees F.

B. Do not apply paints when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.

C. Protect all surfaces and areas not affected by Work.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its “MPI Approved Products List”.

B. Material Compatibility:

1. Provide fillers, primers, finish coat materials, sealers and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the Manufacturer based on testing and field experience.
2. Use only thinners approved by the paint manufacturer and use only within recommended limits.
3. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
4. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content Requirements: Provide materials that comply with VOC limits specified in Section 01 81 13 "Sustainable Design Requirements".

D. Colors: Provide white, beige, and brown colors to match vinyl and aluminum window finish.

E. Color Pigments: Pure, non-fading, applicable types to suit substrates as specified.

2.2 PRIMERS/SEALERS

A. Primer Sealer, Latex, Interior: MPI #50.

B. Primer, Latex, for Interior Wood: MPI #39.

2.3 WATER-BASED PAINTS

A. Latex, Interior, Flat, (Gloss Level 1): MPI #53.

B. Latex, Interior, (Gloss Level 2): MPI #44.

C. Latex, Interior, (Gloss Level 3): MPI #52.

D. Latex, Interior, (Gloss Level 4): MPI #43.

E. Latex, Interior, Semi-Gloss, (Gloss Level 5): MPI #54.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.

4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Plaster Substrates: Verify that plaster is fully cured.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Protect all surfaces and areas not affected by Work.

C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet or newly painted surfaces.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

E. Material Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

F. Wood Substrates:

1. Clean surfaces of dirt, oil and other foreign substances with scrapers, mineral spirits and sandpaper as required.
2. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for interior use in paint system indicated
3. Sand surfaces that will be exposed to view, and dust off.
4. Seal tops, bottoms and cutouts of unprimed wood doors.

5. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler suitable for interior application. Fill holes and imperfections in existing trim to be reused or reinstalled. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Architectural Painting Specification Manual".

1. Do not paint pre-finished items, concealed surfaces or operating parts and labels.
2. Use applicators and techniques suited for paint and substrate indicated.
3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
4. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

D. Wood Doors, Frame and Trim.

1. Touch-up paint in field for prefinished doors, frame and shop finished trim.

E. Paint new drywall, casework affected by construction activities, unpainted and relocated or reworked wood trim and related items. Paint affected areas of all walls and ceilings that have received any type of modification. Color to be white or prime paint only, as directed.

F. Doors: Shop finish wood doors.

G. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

H. Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Provide “Wet Paint” signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their Work after completing painting operations.

D. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by the Commissioner, and leave in an undamaged condition. Remove temporary protective wrappings provided by others to protect their Work after completing painting operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Latex over Alkyd Primer System:
   a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79 or primer, alkyd, quick dry, for metal, MPI #76.
   b. Prime Coat: Shop primer specified in Section where substrate is specified.
   c. Intermediate Coat: Latex, interior, matching topcoat.
   d. Topcoat: Latex, interior, (Gloss Level 2), MPI #44.

B. Galvanized-Metal Substrates:

1. Latex over Waterborne Primer System:
   a. Prime Coat: Primer, galvanized, water based, MPI #134.
   b. Intermediate Coat: Latex, interior, matching topcoat.
   c. Topcoat: Latex, interior, (Gloss Level 2), MPI #44.

C. Aluminum (Not Anodized or Otherwise Coated) Substrates:

1. Latex System:
   a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.
   b. Intermediate Coat: Latex, interior, matching topcoat.
   c. Topcoat: Latex, interior, (Gloss Level 2), MPI #44.

D. Wood Substrates:

1. Latex System:
   a. Prime Coat: Primer, latex, for interior wood, MPI #39.
   b. Intermediate Coat: Latex, interior, matching topcoat.
   c. Topcoat: Latex, interior, (Gloss Level 3), MPI #52.
   d. Topcoat: Latex, interior, (Gloss Level 4), MPI #43.
   e. Topcoat: Latex, interior, semi-gloss, (Gloss Level 5), MPI #54.
   f. Select Topcoat to match existing Gloss Level of adjacent similar surfaces.

E. Gypsum Board Substrates:

1. Latex System:
   a. Prime Coat: Primer sealer, latex, interior, MPI #50.

b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, flat, (Gloss Level 1), MPI #53.
d. Topcoat: Latex, interior, (Gloss Level 2), MPI #44.
e. Topcoat: Latex, interior, (Gloss Level 3), MPI #52.
f. Topcoat: Latex, interior, (Gloss Level 4), MPI #43.
g. Topcoat: Latex, interior, semi-gloss, (Gloss Level 5), MPI #54.

END OF SECTION 09 91 23

SECTION 09 93 00 - STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes surface preparation and application of wood finishes on the following substrates:

1. Exterior Substrates:
   a. Dressed lumber (finish carpentry).
2. Interior Substrates:
   a. Dressed lumber (finish carpentry).

B. Related Requirements:

1. Section 01 73 00 “Execution”.
2. Section 01 81 13 “Sustainable Design Requirements”.
3. Section 06 20 13 “Exterior Finish Carpentry”.
4. Section 06 20 23 “Interior Finish Carpentry”.
5. Section 09 91 13 “Exterior Painting”.
6. Section 09 91 23 “Interior Painting”.

1.3 DEFINITIONS

A. MPI: “MPI Architectural Painting Specification Manual”.

B. MPI Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MP Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

F. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

H. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Verification: For each type of finish system and each color and gloss of topcoat.

1. Submit sample on 12 inch by 12 inch material matching that to which actual transparent finish will be applied.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.

C. Product List: For each product indicated, include the following:

1. Cross-reference to finish system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Current Master Painters Institute (MPI) “Approved Products List” for each product category specified in Part 2, indicating the product proposed for use, where specified by MPI number.
3. VOC content.

1.6 INFORMATIONAL SUBMITTALS

A. Sustainable Design Submittals: Provide Volatile Organic Compound (VOC) submittals in accordance with and to demonstrate compliance with requirements specified in Section 01 81 13 “Sustainable Design Requirements” Articles 1.4-B and 2.2.

1.7 QUALITY ASSURANCE

A. Manufacturer’s Qualifications: Provide products manufactured by a company that has experience on projects of comparable scope and value.

B. Applicator Qualifications: Engage an experienced applicator who has completed transparent finish system applications similar in material and extent to those indicated that have resulted in a construction record of successful in-service performance.

C. Single-Source Responsibility: Each Home and multi-unit building will receive products from a single source from single manufacturer.

D. Mock-ups

1. Provide staining and transparent finishes for mock-ups required by other specification sections.
2. See Section 01 40 00 “Quality Requirements” for additional Information.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer’s original, unopened packages and containers bearing manufacturer’s name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.
3. Keep storage area neat and orderly.
4. Take necessary precautions to ensure that workers and Work areas are protected from fire and health hazards resulting from handling, mixing and application.

1.9 PROJECT CONDITIONS

A. Apply finishes only when temperature of surfaces to be finished and ambient air temperatures are between 50 and 95 degrees F.

B. Do not apply finishes when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.

C. Do not apply exterior finishes in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed or referenced by MPI designation for the paint category indicated in this Section.

2.2 MATERIALS, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List".

B. Material Compatibility:

1. Provide materials for use within each finish system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a finish system, provide products recommended in writing by manufacturers of topcoat for use in finish system and on substrate indicated.

C. VOC Content Requirements: Provide materials that comply with VOC limits specified in Section 01 81 13 "Sustainable Design Requirements".

D. Stain Colors: Match approved samples for clear, light, medium, dark, and cherry colors.

2.3 WOOD FILLERS

A. Wood Filler Paste: MPI #91.

2.4 PRIMERS/SEALERS

A. Primer, Alkyd for Exterior Wood: MPI #5.

B. Alkyd, Sanding Sealer, Clear: MPI #102.

C. Sealer, For Knots: MPI #36.

2.5 STAINS

A. Stain, Exterior, Solvent Based, Solid Hide: MPI #14.

B. Stain, Exterior, Solvent Based, Semi-Transparent: MPI #13.

C. Stain, Semi-Transparent, for Interior Wood: MPI #90.

2.6 WATER-BASED VARNISHES

A. Varnish, Water Based, Clear, Satin (Gloss Level 4): MPI #128.

B. Varnish, Water Based, Clear, Semi-Gloss (Gloss Level 5): MPI #129.

2.7 POLYURETHANE VARNISHES

A. Varnish, with UV Inhibitor, Exterior, Gloss (Gloss Level 6): MPI #29.

B. Varnish, Interior, Polyurethane, Oil-Modified, Satin (Gloss Level 4): MPI #57.

C. Varnish, Interior, Polyurethane, Oil-Modified, Gloss (Gloss Level 6): MPI #56.

2.8 ONE STEP STAIN AND POLYURETHANE VARNISHES

A. Manufacturers: Provide one of the following products.

1. Minwax Company: Polyshades.
2. RustOleum Corporation: Varathane One Step Stain & Polyurethane.
3. United Gilsonite Laboratories: Ultra ZAR Plus.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Exterior Wood Substrates: 15 percent, when measured with an electronic moisture meter.

C. Maximum Moisture Content of Interior Wood Substrates: 13 percent, when measured with an electronic moisture meter.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Proceed with finish application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Protect all surfaces and areas not affected by Work.

C. Remove hardware, covers, plates, and similar items already in place that are removable. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.

1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

D. Clean and prepare surfaces to be finished according to manufacturer's written instructions for each particular substrate condition and as specified.

1. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
2. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.

E. Exterior Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Prime edges, ends, faces, undersides, and backsides of wood.
    a. For solid hide stained wood, stain edges and ends after priming.
    b. For varnish coated stained wood, stain edges and ends and prime with varnish. Prime undersides and backsides with varnish.
3. Countersink steel nails, if used, and fill with putty or plastic wood filler tinted to final color. Sand smooth when dried.

F. Interior Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Apply wood filler paste to open-grain woods, as defined in "MPI Architectural Painting Specification Manual," to produce smooth, glasslike finish.
3. Sand surfaces that will be exposed to view and dust off.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply finishes according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

1. Use applicators and techniques suited for finish and substrate indicated.
2. Finish surfaces behind movable equipment and furniture same as similar exposed surfaces.
3. Do not apply finishes over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

B. Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

C. Match stain finish of existing trim and surfaces as directed. Mix colors and tints to match each condition.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing finish application, clean spattered surfaces. Remove spattered materials by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Provide "Wet Paint" signs to protect newly stained finishes. Remove temporary protective wrappings provided by others to protect their Work after completing staining operations.

D. Protect work of other trades against damage from stain application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by the Commissioner, and leave in an undamaged condition. Remove temporary protective wrappings provided by others to protect their Work after completing staining operations.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

3.5 EXTERIOR WOOD FINISH SYSTEM SCHEDULE

A. Wood substrates, nontraffic surfaces, including wood trim.

1. Solid Hide, Solvent-Based Stain System:
   a. Prime Coat: Primer, alkyd for exterior wood, MPI #5.
   b. Intermediate Coat: Stain, exterior, solvent based, solid hide, matching topcoat.
   c. Topcoat: Stain, exterior, solvent based, solid hide, MPI #14.
2. Semitransparent Stain System:
   a. Prime Coat: Stain, exterior, solvent based, semi-transparent, matching topcoat.
   b. Topcoat: Stain, exterior, solvent based, semi-transparent, MPI #13.

3.6 INTERIOR WOOD FINISH SYSTEM SCHEDULE

A. Wood substrates, nontraffic surfaces, including wood trim.

1. Water-Based Varnish over Stain System:
   a. Stain Coat: Stain, semi-transparent, for interior wood, MPI #90.
   b. Intermediate Coat: Water-based varnish matching topcoat.
   c. Topcoat: One of the following to match existing.
      1) Gloss Level 4, MPI #128: Varnish, water based, clear, satin.
      2) Gloss Level 5, MPI #129: Varnish, water based, clear, semi-gloss.
2. Water-Based Varnish System:
   a. Prime Coat: Water-based varnish matching topcoat.
   b. Topcoat: One of the following to match existing.
      1) Gloss Level 4, MPI #128: Varnish, water based, clear, satin.
      2) Gloss Level 5, MPI #129: Varnish, water based, clear, semi-gloss.
3. One Step Stain and Polyurethane Finish System:
   a. Sanding Sealer for Soft Woods: As recommended by topcoat manufacturer.
   b. Prime Coat: Varnish, interior, one step stain and polyurethane, oil-modified, matching topcoat.
   c. Topcoat: Matching prime coat in gloss level to match existing.
4. Polyurethane Varnish over Stain System:
   a. Stain Coat: Stain, semi-transparent, for interior wood, MPI #90.
   b. Intermediate Coat: Polyurethane varnish matching topcoat.
   c. Topcoat: One of the following to match existing.
      1) Gloss Level 4 (MPI #57): Varnish, interior, polyurethane, oil-modified, satin.
      2) Gloss Level 6 (MPI #56): Varnish, interior, polyurethane, oil-modified, gloss.
      3) Custom Gloss Level: Select topcoat to match adjacent existing surfaces.
5. Polyurethane Varnish System:
   a. Prime Coat: Polyurethane varnish matching topcoat.
   b. Topcoat: One of the following to match existing.
      1) Gloss Level 4 (MPI #57): Varnish, interior, polyurethane, oil-modified, satin.
      2) Gloss Level 6 (MPI #56): Varnish, interior, polyurethane, oil-modified, gloss.
      3) Custom Gloss Level: Select topcoat to match adjacent existing surfaces.

END OF SECTION 09 93 00

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SECTION 10 55 00 - POSTAL SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Wall mounted mailboxes.

B. Related Requirements:

1. Section 01 73 00 “Execution”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of postal specialty.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages or containers bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes.

1.6 COORDINATION

A. Coordinate installation of mailboxes and attachments to structure with other construction in the vicinity of mailboxes, including light fixtures.

B. Coordinate layout and installation of mailboxes with wall construction.

1.7 WARRANTIES

A. Manufacturer's Warranty: Provide Manufacturer's standard written warranty against defects in materials and workmanship. Contractor will not void warranty by installation not in accordance with the manufacturer written instructions.

B. Contractor's Warranty: The Contractor will submit a written warranty against defects in workmanship and materials related to installation of the Postal Specialties for a period of one (1) year from the Date of Final Completion of each Home.

1. This warranty is intended to ensure that the Postal Specialties installation meets the standards contained in these Specifications for the one (1) year period.
2. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Mailbox: Horizontal Style, wall mounted, approximately 17 inches long by 8 inches high, with painted finish. Provide one of the following:

1. Special Lite Products Company Inc.; Horizon Series.
2. Solar Group, Inc.; Woodland Series.
3. Postmaster: Fairview Mailbox.

B. Color: Black or white as selected by Homeowner.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for clearances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install mailboxes level and plumb, according to manufacturer's written instructions.

1. Where dissimilar metals will be in permanent contact with each other, protect against galvanic action by painting contact surfaces with bituminous coating or by applying other permanent separation as recommended by manufacturer for this purpose.
2. Where aluminum will contact grout, concrete, masonry, or wood, protect against corrosion by painting contact surfaces with bituminous coating.

B. Mailboxes: Install wall mounted mailboxes using stainless steel fasteners. Drill anchors where mounting to masonry. Provide minimum number of fasteners as recommended by manufacturer.

1. Ensure mounting height and location is in compliance with local postal regulations.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, at Substantial Completion, unless otherwise indicated.

B. Replace mailboxes that have been damaged or scratched.

C. On completion of mailbox installation, clean interior and exterior surfaces as recommended by manufacturer.

END OF SECTION 10 55 00

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SECTION 23 00 00 - GENERAL PROVISIONS FOR MECHANICAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes design criteria and sequences of operation for HVAC equipment.

B. Related Requirements:

1. Section 23 07 13 “Duct Insulation”.
2. Section 23 20 00 “HVAC Piping”.
3. Section 23 31 13 “Metal Ducts”.
4. Section 23 33 00 “Air Duct Accessories”.
5. Section 23 37 13 “Diffuser, Register and Grilles”.
6. Section 23 51 00 “Breeching, Chimneys and Stacks”.
7. Section 23 54 00 “Furnaces”.
8. Section 23 63 13 “Air-Cooled Refrigerant Condensers”.
9. Section 23 81 26 “Split Systems Air-Conditioners”.
10. Section 23 82 19 “Fan Coil Units”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Submit the following in accordance with the conditions of the Contract Documents for review by the Commissioner.

1. Proposed Design drawing for each Home showing all new equipment, piping (including condensate, refrigerant and gas), ductwork, and air devices and thermostat location to be installed; and existing sections of visible ductwork, with sizes, to remain. On the new ductwork plan, specify the area in square inches for each section of new ductwork. Field conditions will dictate actual duct dimensions that may be determined while maintaining the specified area. Aspect ratios will not exceed 3:1. For each room, indicate supply air quantity in Cubic Feet per Minute (CFM). Ensure that the air quantities listed on the drawing do not exceed the performance capacity of the air handling unit selected.
2. Catalog cuts and equipment specifications for all proposed controls, relays, thermostats, furnaces, air-cooling equipment, condensing units, control dampers, actuators, flexible connections,

combustion air systems, ducts, and piping specialties to be incorporated in the work. Include equipment ratings for heating, cooling, and fan CFM and static pressure.

3. Plan drawing of each Home will include dimensions of each room and overall dimensions of the Home. Plan will also specify the dimensions of each fenestration.
4. Heating and/or cooling worksheets completed for each Home utilizing QuoteSoft software. No other program will be accepted.

B. The Contractor is required to comply with all state and local building codes including the International Energy Conservation Code (current edition) with amendments as adopted by the State of Illinois, in order to obtain final approval from code officials for each Home.

1.5 DEFINITIONS

A. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other supports and accessories related to such piping.

B. "Ductwork" includes, in addition to ducts, all fittings, transitions, dampers, hangers and other supports and accessories related to such ductwork.

C. "Concealed" means hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces or buried.

D. "Exposed" means not installed underground or "concealed", as defined above.

1.6 QUALITY ASSURANCE

A. Mockups

1. Provide mockups of each HVAC and Electrical equipment specified in all Division 23 and Division 26 specification sections, including, but not limited to the installation of furnaces, condensers, fan coil units, ductwork, insulation, diffusers, grilles, electrical service, and panelboards.
2. See Section 01 40 00 "Quality Requirements" for additional Information.
3. All equipment provided under Division 23 to perform with the least possible noise and vibration consistent with its duty. Quietness of operation of all equipment is a requirement.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION

3.1 GENERAL

A. Design and install new cooling system (central forced air and ductless) while retaining existing heating system.

1. If the home has a central air system serving the majority of home, (greater than 75% based on total, conditioned floor area) and individual window units are installed in the remaining areas of the home, the Contractor will replace the central system with one designed for the whole house and current load requirements. Contractor to provide new ductwork, equipment and/or coils and accessories as

required to update the cooling system to meet current load requirements. All new cooling equipment units to be rated in accordance with the latest edition of AHRI Standard 210.

2. Existing heating equipment to remain as is where possible.

B. General Design Conditions:

1. Outside Air Dry-bulb degrees Fahrenheit (°F): Heating = -10.0 degrees F DB
2. Outside Air Dry-bulb degrees Fahrenheit (°F): Cooling = 91.9 degrees F DB/74.6 WB
3. Inside Air Dry-bulb degrees Fahrenheit (°F): Heating = 70.0 degrees F
4. Inside Air Dry-bulb degrees Fahrenheit (°F): Cooling = 75.0 degrees F

3.2 EXAMINATION

A. The Contractor will be responsible for inspecting and modifying the existing Heating, Venting and Air Conditioning (HVAC) system in each Home so that upon completion of the Work in this section, each Home will have a complete and functional central or unitary (as designed) forced-air cooling system. The existing heating system and controls shall remain as-is without any modifications, unless pre-approved by the Commissioner.

B. Electrical and HVAC Contractors are required to be in person at both the Field Measurements and the HVAC Walk-Thru. There is no exception to both Contractors attending the Field Measurements and the HVAC Walk-Thru, without pre-approval by the Commissioner.

3.3 DESIGN REQUIREMENTS

A. Cooling and heating load calculations will be performed for all areas of the house where cooling/heating is to be provided. Calculations will be performed utilizing the Right-J program by Wrightsoft Corporation, latest edition. No other programs will be accepted.

B. After contract award and prior to submittal of shop drawings, Contractor will meet, in the office of RSIP to review and interpret the required output of the Right-J program. The Contractor will be proficient in the use of the program prior to this meeting. This meeting is not a training session for the use of the software program. This meeting is at no cost to the Contractor and contact information will be provided at the pre-construction meeting.

C. Provide equipment with heating and/or cooling capacity equal to or greater than the calculated load and as required to meet performance requirements.

D. The air distribution design will be based on Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) design standards for Residential Construction. Contractor will ensure that fan is selected to satisfy the static pressure requirements of the air distribution system.

E. Prepare drawings showing all components to be removed under this scope of work, including equipment, air devices and ductwork. Submittals must be approved by RSIP Engineer, and the proposed Work must be agreed to by the Homeowner. Separate and/or extensive demolition drawings are not required.

F. Prepare drawing of new system including equipment, ductwork, air devices, and piping. Include on this drawing components from the existing system that are to remain. Show condensate drain pipe routing and refrigerant pipe routing. Indicate provisions for appliance venting and combustion air.

G. Addition of insulation to ductwork and hydronic piping to conform to locally enforced Energy Efficiency Code.

H. Provide new programmable temperature control thermostats for any new cooling system.

I. Remove, extend forward, and reinstall existing radiators, baseboard, diffusers, registers, thermostats, or any mechanical item(s) at new wall and ceiling modifications.

J. Reroute existing piping to avoid interference with new ductwork, combustion air intake, piping, and duct enclosures.

K. Drain, adjust, and recharge heating and/or cooling systems as necessary to accomplish the Work and provide uninterrupted heating to the Homeowner during cold month construction.

L. Heating systems will be reinstalled and operable at the end of each workday, providing non-interrupted heating to the Homeowner for the project duration.

M. Existing chimneys that are having an existing non-condensing gas-fired furnace removed from it and replaced by either a condensing or non-condensing gas-fired furnace because of the RSIP program, shall be visually examined and calculations performed to ensure there is adequate draft to exhaust the resulting flue gases out the chimney.

1. The Contractor shall determine the dimensions of appliance outlets that are connected to the existing masonry chimney, and determine the dimensions of the existing chimney flue. The latter will require observation of the chimney flue from the top of the chimney.
2. With that data, the Contractor shall determine whether the existing chimney flue is the correct size for the number of appliances attached to the chimney after the HVAC furnace modification are completed. The Contractor shall use the guidance from the International Fuel Gas Code 2018 Edition for the methodology of the calculations which can be found in Section 23 51 00 Breeching, Chimneys and Stacks, paragraph 3.2.F.
3. The Contractor shall include the above dimensions and calculations on the Mechanical Section of the Home Proposal. If there is no heating work in the scope of work, then the chimney evaluation and calculations are not required.

3.4 DESIGN CRITERIA

A. Heating System Performance:

1. At an outdoor temperature of minus (-) 10 degrees F and above, the heating system will maintain 70 degrees F at the thermostat and temperatures throughout heated spaces of the house will be between plus or minus (-) 5 degrees F of thermostat set point. Exception: 2nd Floor areas above the location of the thermostat may be plus (+) 10ºF of the thermostat set point.
2. The air temperature rise through the furnace will comply with manufacturer's published ratings.

B. Cooling System Performance:

1. At an outdoor temperature of 91.9 DB/74.6 WB degrees F and below, the cooling system will maintain a 20 degrees F temperature difference between outdoor air and air at the thermostat.
2. 2nd floor areas above the 1st floor level where thermostat is located; will not be greater than 5 degrees F above air temperature at thermostat.

C. Noise Criteria:

1. Discharge sound and radiated sound of new equipment will not exceed equipment sound levels existing in-house before new equipment is installed. Discharge sound is airborne sound, which is transmitted through ductwork from a noise source. Radiated sound is sound which travels from the source to the observer in a direct path outside ductwork.

D. Unconditioned Spaces.

1. All ductwork located within an unconditioned space (attic, basement, or crawlspace) is to include duct loads calculated by the Wrightsoft program in accordance with ASHRAE design recommendations.

E. Furnace with Condensing Unit:

1. Room thermostat switch in the *Cool* position with the fan switch in the *Auto* position: On a rise in room temperature, the room thermostat will energize the supply air fan and the condensing unit (compressor and fan), and cycle to maintain the desired set point.
2. Room thermostat switch in the *Heat* position with the fan switch in the *Auto* position: On a drop in room temperature, the room thermostat will energize the burner and the supply air fan and cycle to maintain the desired set point.
3. Fan switch in the *On* position: Fan will run continuously.
4. A new thermostat will replace the existing, and will be installed at the existing location where practical.

F. Existing Boiler, new Fan-Coil Unit and Condensing Unit:

1. Room thermostat switch in the *Cool* position with the fan switch in the *Auto* position: On a rise in room temperature, the room thermostat will energize the supply air fan and the condensing unit (compressor and fan), and cycle to maintain the desired set point.

G. Existing Heating and New Air Conditioning System:

1. With thermostat switch in the *Cool* position and the fan switch in the *Auto* position, upon a rise in the room temperature, the room thermostat will energize the supply air fan and the condensing unit, (compressor and fan) and cycle to maintain the desired set point.

H. Split System Air Conditioner:

1. With remote controller in the *Cool* position and the fan switch in the *Auto* position, upon a rise in room temperature, the room thermostat will energize the evaporator, (indoor) and condenser, (outdoor) fans and compressor, position the reversing valve for cooling mode operation and cycle to maintain the desired set-point.

END OF SECTION 23 00 00

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SECTION 23 07 13 - DUCT INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Insulation Materials:

a. Mineral or glass fiber.

2. Mastics.
3. Sealants.
4. Field-applied jackets.
5. Tapes.

B. Related Requirements:

1. Section 23 00 00 “General Provisions for Mechanical Work”.
2. Section 23 31 13 “Metal Ducts”.
3. Section 23 33 00 “Air Duct Accessories”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 WARRANTIES

A. Contractor’s Warranty: The Contractor is responsible for the complete installation of the new metal duct insulation in a manner that will preserve the manufacturer’s warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the metal duct insulation and associated

installation materials that are defective in materials or workmanship related to installation of the metal duct insulation for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

B. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. CertainTeed Corp.
2. Johns Manville.
3. Knauf Insulation.
4. Manson Insulation Inc.
5. Owens Corning.

B. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type III.

C. FSK Jacket: Aluminum-foil-face, fiberglass-reinforced scrim with kraft-paper backing. Comply with ASTM C 921, Type I, unless otherwise indicated. Field-applied jackets shall be provided on all piping below 8 ft. height.

1. Concealed, Supply-Air Duct and Plenum Insulation: Mineral-fiber blanket, 2 inches thick and 1.5-lb/cu. ft. nominal density.
2. Insulation should have an R-value of 8 or higher for ducts installed in uninsulated spaces or enclosed exterior spaces.
3. Insulation, for condensation control, shall have a nominal thickness of 1/2-inch for ducts installed in basements where high humidity or dampness are present.

2.2 MASTICS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Childers Products, Division of ITW.
2. Foster Products Corporation, H. B. Fuller Company.
3. ITW TACC, Division of Illinois Tool Works.
4. Marathon Industries, Inc.
5. Mon-Eco Industries, Inc.
6. Vimasco Corporation.

B. Vapor-Barrier Mastic: Water based; suitable for indoor and outdoor use on below ambient services.

1. Materials will be compatible with insulation materials, jackets, and substrates; comply with MIL-C-19565C, Type II.
2. Water-Vapor Permeance: ASTM E 96, Procedure B, 0.013 perm (0.009 metric perm) at 43-mil (1.09-mm) dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 degrees F (Minus 29 to plus 82 degrees C).
4. Solids Content: ASTM D 1644, 59 percent by volume and 71 percent by weight.
5. Color: White.

2.3 FSK TAPES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Avery Dennison Corporation, Specialty Tapes Division.
2. Compac Corp.
3. Ideal Tape Co., Inc., an American Biltrite Company.
4. Venture Tape.

B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.

1. Width: 3 inches (75 mm).
2. Thickness: 6.5 mils (0.16 mm).
3. Adhesion: 90 ounces force/inch (1.0 N/mm) in width.
4. Elongation: 2 percent.
5. Tensile Strength: 40 lbf/inch (7.2 N/mm) in width.
6. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Ducts shall be insulated to a minimum R-8. Insulation is required for:

1. New ducts routed through un-insulated or enclosed exterior spaces or areas of the home. These spaces include, but are not limited to the following: attics, unheated basements, crawl spaces, chases, or un-insulated common areas.
2. New ducts installed in basements where conditions of high humidity or dampness exist. New ductwork in these areas shall be insulated with a vapor barrier faced insulation.
3. Other locations as scheduled on the Construction Modification.
4. New ducts where the insulation is provided for sound attenuation.
5. Consult with RSIP Project Manager where water piping, subject to freezing, is encountered.

B. All flexible ductwork to be insulated continuously in all locations.

C. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment, ducts and fittings, and piping including fittings, valves, and specialties.

D. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment, duct system, and pipe system as specified in insulation system schedules.

E. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

F. Install insulation with longitudinal seams at top and bottom of horizontal runs.

G. Install multiple layers of insulation with longitudinal and end seams staggered.

H. Keep insulation materials dry during application and finishing.

I. Install insulation with least number of joints practical.

J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

K. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

L. For horizontal discharge air handling units, including furnaces and fan coil units, do not use any fibrous interior duct liner for a minimum duct length of 18 inches from the unit and flexible connection. Install discharge duct in a manner to drain positively back to the furnace or fan coil unit.

M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches (100 mm) beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.3 PENETRATIONS

A. Insulation Installation at Interior Wall and Partition Penetrations: Install insulation continuously through walls and partitions.

B. Insulation Installation at Floor Penetrations:

1. Duct: Install insulation continuously through floor or ceiling penetrations. Duct insulation should extend at least 6 inches into the conditioned space for those locations between uninsulated and insulated zones. Seal end of duct insulation directly to sheet metal duct. Terminate insulation flush to the unfinished side of the drywall at finished faces.

3.4 MINERAL-FIBER INSULATION INSTALLATION

A. Blanket Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.

1. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
2. Install either capacitor-discharge-weld pins and speed washers or cupped-head, capacitor-discharge-weld pins on sides and bottom of horizontal ducts and sides of vertical ducts as follows:

a. On duct sides with dimensions 18 inches (450 mm) and smaller, place pins along longitudinal centerline of duct. Space 3 inches (75 mm) maximum from insulation end joints, and 16 inches (400 mm) o.c.
b. On duct sides with dimensions larger than 18 inches (450 mm), place pins 16 inches (400 mm) o.c. each way, and 3 inches (75 mm) maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
d. Do not over compress insulation during installation.
e. Impale insulation over pins and attach speed washers.
f. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.

3. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches (50 mm) from 1 edge and 1 end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch (13-mm) outward-clinching staples, 1 inch (25 mm) o.c. Install vapor barrier consisting of factory or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.

   a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
   b. Install vapor stops for ductwork and plenums operating below 50 degrees F (10 degrees C) at 18 foot (5.5-m) intervals. Vapor stops will consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to 2 times the insulation thickness but not less than 3 inches (75 mm).

4. Overlap unfaced blankets a minimum of 2 inches (50 mm) on longitudinal seams and end joints. At end joints, secure with steel bands spaced a maximum of 18 inches (450 mm) o.c.
5. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
6. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch (150-mm) wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches (150 mm) o.c.

3.5 REFRIGERANT PIPING

1. Insulate refrigerant suction piping and fittings with 1 inch thick, foamed elastomeric plastic pipe insulation.

3.6 FIELD-APPLIED JACKET INSTALLATION

A. Where FSK jackets are indicated, install as follows:

1. Draw jacket material smooth and tight.
2. Install lap or joint strips with same material as jacket. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches (50 mm) from 1 edge and 1 end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch (13-mm) outward-clinching staples, 1 inch (25 mm) o.c.
3. Secure jacket to insulation with manufacturer’s recommended adhesive.

4. Install jacket with 1-1/2-inch (38-mm) laps at longitudinal seams and 3-inch (75-mm) wide joint strips at end joints.
5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor barrier mastic.

3.7 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 07 13

SECTION 23 20 00 - HVAC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Natural Gas Piping and fittings used for furnace applications.
2. Condensate Piping and fittings used for air-conditioning applications.
3. Refrigerant piping used for air-conditioning applications.

B. Related Sections:

1. Section 23 00 00 “General Provisions for Mechanical Work”.
2. Section 23 54 00 “Furnaces”.
3. Section 23 63 13 “Air-Cooled Refrigerant Condensers”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of piping, tubing, and fittings indicated.

1.5 WARRANTIES

A. Manufacturer’s Warranty: Provide the manufacturer’s standard written warranty against defects in materials and workmanship. Do not void manufacturer’s warranty by installation practices unacceptable to the manufacturer.

B. Contractor’s Warranty: The Contractor is responsible for the complete installation of the new refrigerant line sets in a manner that will preserve the manufacturer’s warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the refrigerant line sets and associated installation materials that are defective in materials or workmanship related to installation of the refrigerant line set for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 NATURAL PIPES, TUBES, AND FITTINGS

A. Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.

1. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.
2. Wrought-Steel Welding Fittings: ASTM A 234/A 234M for butt welding and socket welding.
3. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.

2.2 MANUAL GAS SHUTOFF VALVES

A. General Requirements for Metallic Valves, NPS 2 and Smaller: Comply with ASME B16.33.

1. CWP Rating: 600 psig.
2. Threaded Ends: Comply with ASME B1.20.1.
3. Dryseal Threads on Flare Ends: Comply with ASME B1.20.3.
4. Body: Bronze, complying with ASTM B 584.
5. Ball: Chrome-plated brass.
6. Stem: Bronze; blowout proof.
7. Seats: Reinforced TFE; blowout proof.
8. Packing: Separate packnut with adjustable-stem packing threaded ends.

2.3 PVC PLASTIC CONDENSATE PIPING AND FITTINGS:

A. PVC Plastic Pipe: Schedule 40, complying with ASTM D 1785.

B. PVC Plastic Fittings: Schedule 40, complying with ASTM D 2466, socket type.

C. PVC Solvent Cement: ASTM D 2564.

1. PVC solvent cement will have a VOC content of 510 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).
2. Adhesive primer will have a VOC content of 550 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).

D. All condensate piping in uninsulated interior spaces will be insulated with 1/2-inch thick closed cell rubberized foam insulation.

2.4 REFRIGERANT PIPING

A. General Requirements for refrigerant piping: Factory assembled, piped, wired, and tested; complying with ANSI Z21.47/CSA 2.3, "Gas-Fired Central Furnaces," and with NFPA 54. Copper Tube: ASTM B 88, Type K or ASTM B 280, Type ACR.

B. Self-contained, packaged, factory assembled, pre-wired unit consisting of casing, supply fan, heat exchanger, burner or heater, controls, air filter, refrigerant cooling coil, auxiliary contacts, and vent damper. Flexible Connectors:

1. Body: Tin-bronze bellows with woven, flexible, tinned-bronze-wire-reinforced protective jacket.
2. End Connections: Socket ends. Meet ASME B16.22.
3. Offset Performance: Capable of minimum 3/4-inch misalignment in minimum 7 inch long assembly.
4. Pressure Rating: Factory test at minimum 500 psig, Comply with manufacturer's minimum pressure rating as necessary.
5. Maximum Operating Temperature: 250 deg F.

C. Service Valves:

1. Body: Forged brass with brass cap including key end to remove core. Meet ASME B16.22.
2. Core: Removable ball-type check valve with stainless-steel spring. Meet ASME B16.22.
3. Seat: Polytetrafluoroethylene.
4. End Connections: Copper spring.
5. Working Pressure Rating: Should be 1.3 to 1.5 X maximum operating pressure as per equipment selection.

D. All refrigerant piping will be insulated with 1/2-inch Rubatex type R-180-FS insulation. Refrigerant piping will also have metallic jacket cover.

1. Refrigerant piping jacket to match window flashing material and color. Provide a metallic jacket for exterior piping.

E. Install safety relief valves where required by ASME Boiler and Pressure Vessel Code. Pipe safety-relief valve discharge line to outside according to ASHRAE 15.

1. Provide safety relief valve for piping condenser applications over 5000 btu/h.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of air-cooled refrigerant condensers.

B. Examine roughing-in for refrigerant piping systems to verify actual locations of piping connections before equipment installation.

3.2 INDOOR PIPING INSTALLATION

A. Comply with NFPA 54 and the City of Chicago Building Code for installation and purging of natural-gas piping.

B. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction, to allow for mechanical installations.

C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Locate valves for easy access.

G. All low temperature steam and hot water piping of 2 inch diameter and smaller will be provided with 1 inch thick insulation. All such piping larger than 2 inch diameter will be provided with 1-1/2 inch thick insulation. Contractor is only required to provide new insulation for piping insulation that has been damaged during the course of work for this project. Piping less than 55 degrees is also to be insulated.

H. Install natural-gas piping at uniform grade of 2 percent down toward drip and sediment traps.

I. Install piping free of sags and bends.

J. Install fittings for changes in direction and branch connections.

K. Comply with requirements in Sections specifying gas-fired appliances and equipment for roughing-in requirements.

L. Drips and Sediment Traps: Install drips at points where condensate may collect, including service-meter outlets. Locate where accessible to permit cleaning and emptying. Do not install where condensate is subject to freezing.

1. Construct drips and sediment traps using tee fitting with bottom outlet plugged or capped. Use nipple a minimum length of 3 pipe diameters, but not less than 3 inches long and same size as connected pipe. Install with space below bottom of drip to remove plug or cap.

M. Conceal pipe installations in walls, pipe spaces, utility spaces, above ceilings, below grade or floors, and in floor channels unless indicated to be exposed to view.

N. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.

O. Connect branch piping from top or side of horizontal piping.

P. Install unions in pipes NPS 2 and smaller, adjacent to each valve, at final connection to each piece of equipment.

Q. Do not use natural-gas piping as grounding electrode.

R. Install sleeves for piping penetrations of walls, ceilings, and floors.

S. Install escutcheons for piping penetrations of walls, ceilings, and floors.

3.3 PIPING JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Natural Gas Threaded Piping:

1. Thread pipe with tapered pipe threads complying with ASME B1.20.1.
2. Cut threads full and clean using sharp dies.
3. Ream threaded pipe ends to remove burrs and restore full inside diameter of pipe.
4. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
5. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

D. Condensate Piping: Connect plastic piping vent material to furnace connections and extend outdoors. Terminate vent outdoors with manufacturer's standard cap and in an arrangement that will protect against entry of birds, insects, and dirt.

1. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
2. In interior drain locations, condensate may only be routed to open site floor drains. Any other locations must be approved by the Commissioner prior to development of the shop drawing submittals.
3. In exterior drain designs, condensate may only be routed to new exterior french drains. The French drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior condensate be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.
4. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

    a. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
    b. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.

E. Refrigerant Line Sets: Install refrigerant and condensate lines to conserve building space and not interfere with use of space. Route piping in orderly and unobtrusive manner, with plumbing parallel to building structure, and maintain gradient. Group piping whenever practical at common elevations and locations. Slope refrigerant piping one percent in direction of oil return. Slope condensate line a minimum of 1/8-inch per foot in the direction of discharge.

1. Provide non-conducting dielectric connections when joining dissimilar metals.
2. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Provide clearance for installation of insulation and access to valves and fittings.
3. Locate expansion valve sensing bulb immediately downstream of evaporator on suction line. Provide external equalizer piping on expansion valves with refrigerant distributor connected to evaporator.
4. Pressure test system with dry nitrogen in accordance with manufacturer's recommendations and applicable codes to R-454B/R-32 Perform final tests at 27 inches vacuum and 200 psig using electronic leak detector. Test to no leakage.
5. Charge system with refrigerant and put into operation: Test equipment performance. Provide cooling season startup, and winter season shutdown for first year of operation.
6. New penetrations of the exterior walls and roof will be provided with flashing and sealants so that the Work is completely waterproof.
7. Reroute oil fillers and vents as required.
8. Provide line size strainer upstream of each automatic valve. Where multiple expansion valves with integral strainers are used, install single main liquid line strainer.
9. Provide shut-off valve on each strainer.

10. Provide permanent filter-dryers in liquid line adjacent to receivers in systems utilizing hermetic compressors.

3.4 CONNECTIONS

A. Connect to utility's gas main according to utility's procedures and requirements.

B. Install natural-gas piping electrically continuous, and bonded to gas appliance equipment grounding conductor of the circuit powering the appliance according to NFPA 70.

C. Install piping adjacent to appliances to allow service and maintenance of appliances.

D. Connect piping to appliances using manual gas shutoff valves and unions. Install valve within 72 inches of each gas-fired appliance and equipment. Install union between valve and appliances or equipment.

E. Sediment Traps: Install tee fitting with capped nipple in bottom to form drip, as close as practical to inlet of each appliance.

3.5 CLEANING

A. The Contractor will keep his Work and the adjacent areas affected**,** clear and free of all debris. Upon completion of the Work each day, remove all debris, unused materials, and equipment, and leave Work in a clean, acceptable condition.

END OF SECTION 23 20 00

SECTION 23 31 13 - METAL DUCTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Rectangular ducts and fittings.
2. Round ducts and fittings.
3. Sheet metal materials.
4. Sealants and gaskets.
5. Duct testing.

B. Related Requirements:

1. Section 23 00 00 “General Provisions for Mechanical Work”.
2. Section 23 07 13 “Duct Insulation”.
3. Section 23 33 00 “Air Duct Accessories”.
4. Section 23 37 13 “Diffuser, Registers and Grilles”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1. Provide duct manufacturer's product data including construction standards, as well as installation standards. Where no manufacturer construction standard is available, comply with SMACNA standards for construction.

1.5 WARRANTIES

A. Contractor's Warranty: The Contractor is responsible for the complete installation of the new metal ducts in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the metal ducts and associated installation materials that are defective in materials or workmanship related to installation of the metal ducts for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.

2. Warranty period: One (1) year from Final Completion of the Home.

B. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. National Excelsior Co.

2. Imperial Manufacturing Group.

3. Seal-Tite, LLC.

4. Southwark Metal Mfg. Co.

5. Self-performed: Contractor fabricated materials complying with SMACNA and specified requirements.

2.2 RECTANGULAR DUCTS AND FITTINGS

A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," based on ½ inch w.g. static-pressure class unless otherwise indicated.

B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for 1/2-inch w.g. static pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure

class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

2.3 ROUND DUCTS AND FITTINGS

A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on +2 inch w.g. static-pressure class unless otherwise indicated.

B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-1, "Round Duct Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-2, "Round Duct Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

D. Tees and Laterals: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible".

2.4 SHEET METAL MATERIALS

A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials will be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.

1. Galvanized Coating Designation: G90 (Z275).

2. Finishes for Surfaces Exposed to View: Mill phosphatized.

C. Aluminum Sheets: Comply with ASTM B 209 (ASTM B 209M) Alloy 3003, H14 temper; with mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.

D. Reinforcement Shapes and Plates: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

1. Where black- and galvanized-steel shapes and plates are used to reinforce aluminum ducts, isolate the different metals with butyl rubber, neoprene, or Ethylene Propylene Diene Monomer (M-class) rubber (EPDM) gasket materials.

E. Flexible ductwork:

1. Allowable only at ends of secondary duct runs which are installed perpendicular to existing floor joists and only in lengths not to exceed 24 inches.

2.5 SEALANT AND GASKETS

A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets will be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested according to UL 723.

B. Water-Based Joint and Seam Sealant:

1. Application Method: Brush on.

2. Solids Content: Minimum 65 percent.

3. Shore A Hardness: Minimum 20.

4. Water resistant.

5. Mold and mildew resistant.

6. Volatile Organic Compound (VOC): Maximum 75 g/L (less water).

7. Maximum Static-Pressure Class: 10 inch wg (2500 Pa), positive and negative.

8. Service: Indoor or outdoor.

9. Substrate: Compatible with galvanized sheet steel or aluminum sheets.

2.6 HANGERS AND SUPPORTS

A. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 4-1 (Table 4-1M), "Rectangular Duct Hangers Minimum Size," and Table 4-2, "Minimum Hanger Sizes for Round Duct".

2.7 OTHER MATERIALS

A. Provide other materials and appurtenances, not specifically described but required for a complete and proper installation, as designed and selected by the Contractor subject to the approval of the Commissioner.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction

loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings.

B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.

C. Install flexible duct connections specified between fan sections of the furnace, and return and supply ductwork. Flexible connectors will not be in tension while running.

D. Prevent passage of unfiltered air around filters with felt, rubber, or neoprene gaskets.

E. New duct runs should be installed within the joist spaces to allow maximum clearance in basement and associated areas. All locations will be coordinated and approved by the Commissioner. Heating, Ventilation, and Air Conditioning (HVAC) Contractor may use equivalent duct sizes to suit field conditions. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities. Changes in duct type, size, and location will be coordinated on Contractor's drawings and approved by the Commissioner.

F. If new ductwork is to be installed outside of joist spaces, the Contractor is required to make the necessary adjustments in size and/or position of the duct to limit impact on the finish size and depth of soffits or chases. Contractor to revise duct dimensions and aspect ratio to limit impact of soffit or chase size to prevent interference with existing conditions, architectural features, symmetry, and lighting. Coordinate any final outside dimension of soffits and chases with Commissioner in the field prior to preparation of Modification shop drawings.

G. Panning of existing floor joists or roof rafters with sheet metal is not allowed without the approval of the Commissioner prior to the shop drawing review period. Submittals prepared with panning indicated, but not approved, will be rejected as non-compliant with the Project Specifications.

H. Plenum return of returned air not allowed.

I. All new supply grilles and registers will be oriented and located for horizontal discharge into the space only, except for locations directly above windows. Grilles or registers above windows will be installed at center line of all existing windows with vertically-oriented discharge, as conditions allow.

J. Connect register boots directly to low pressure ductwork.

K. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering the ductwork system.

L. During construction, provide temporary plywood covers on all floor, wall, or ceiling openings, securely attached to the floor, wall, or ceiling until new registers, grilles, and ductwork are installed.

M. Check location of air outlets and inlets and make necessary adjustments in size and/or position to conform to existing conditions, architectural features, symmetry, and lighting arrangement. Coordinate any adjustments with Commissioner.

N. Provide balancing dampers on duct take-off to grilles and registers, regardless of whether dampers are specified as part of the grille or register assembly. Dampers will be accessible in the finished work for adjustment. Provide metal access hatches at all damper locations.

1. Dampers are not required where a take-off is within two feet of a grill or register.

O. Provide registers for all supply outlets and grilles for all return outlets.

P. Ductwork Insulation (for existing and new ductwork):

1. Provide vapor barrier/jacket insulation with a minimum installed R-Value as indicated in Section 23 07 13 “Duct Insulation” on all ductwork in crawlspaces, attic spaces, and other unconditioned spaces. Insulation will be installed on all new supply ducts and existing, exposed, un-insulated supply ducts in conditioned areas.

2. Insulation will be installed in accordance with manufacturer’s published installation instructions.

Q. Provide all required duct risers, elbows, hangers, support, and associated fittings to complete the air distribution system and provide maximum head room.

R. Tape all transverse joints in new supply and return ductwork.

S. Cover corners of ductwork with foam rubber if installation is 6 foot 4 inches or less above the floor (or dimension as determined by the local building code), and/or in other hazardous installations as determined by the Commissioner.

3.2 CONNECTIONS

A. Comply with SMACNA’s “HVAC Duct Construction Standards - Metal and Flexible” for branch, outlet and inlet, and terminal unit connections.

3.3 TESTING AND ADJUSTING

A. Measure air at outlets including grilles and registers without making adjustments.

1. Measure terminal outlets using a direct-reading hood or outlet manufacturer’s written instructions and calculating factors.

2. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows within design values indicated in submittals.

3. Re-measure each submain and branch duct after all have been adjusted. Continue to adjust submain and branch ducts to indicated airflows within design values indicated in submittals.

4. Provide written report for the as-built air volume at each outlet.

B. All ductwork and mechanical equipment is to be tested in accordance with Illinois Energy Conservation Code (current edition). Total duct leakage shall be in accordance with prescriptive limits stipulated within the code. A written report of the results shall be signed by the party conducting the test/s and provided to the code official and RSIP Project Manager.

1. Air duct leakage test shall not be required where the ducts and air handlers are located within the building thermal envelope.

3.4 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 31 13

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SECTION 23 33 00 - AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Manual volume dampers.
2. Flexible connectors.
3. Flexible ducts.

B. Related Requirements:

1. Section 23 00 10 “General Provisions for Mechanical Work”.
2. Section 23 31 13 “Metal Ducts”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of damper and air duct accessory indicated.

1.5 WARRANTIES

A. Contractor’s Warranty: The Contractor is responsible for the complete installation of the air duct accessories in a manner that will preserve the manufacturer’s warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the air duct accessories and associated installation materials that are defective in materials or workmanship related to installation of the air duct accessories for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.

2. Warranty period: One (1) year from Final Completion of the Home.

B. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. National Excelsior Co.

2. Imperial Manufacturing Group.

3. Seal-Tite, LLC.

4. Southwark Metal Mfg. Co.

5. Self-performed: Contractor fabricated materials complying with SMACNA and specified requirements

B. Fabricate in accordance with SMACNA "HVAC Duct Construction Standards - Metal and flexible" and by Contractor's design on approved drawings.

2.2 VOLUME CONTROL DAMPERS

A. Standard, Steel, Manual Volume Dampers:

1. Fabricate splitter dampers of same material and gauge as duct in either direction (up to 24 inches in size, and two gauges heavier for larger sizes), secured with continuous hinge or rod, and operated with minimum 1/4-inch diameter rod.

2. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.

a. Galvanized Coating Designation: G90 (Z275).

b. Exposed-Surface Finish: Mill phosphatized.

3. Fabricate single blade dampers for duct sizes to 6 inch by 8 inch, and fabricate multi-blade damper of opposed blade pattern for larger duct. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.

4. Except in round ductwork 12 inches in diameter and smaller, provide end bearings.

5. Locate dampers in accessible areas.

2.3 FLEXIBLE DUCT CONNECTIONS

A. UL listed, fire-retardant, neoprene-coated woven glass fiber fabric in compliance with the requirements of NFPA 90B; approximately three inches wide, crimped into metal edging strip. Temperature range will be (-40 to 200) degrees F, abrasion resistance will be 600 cycles (min). Tear Strength will be 12/12.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cain Neoflex, Inc.

2. Ductmate Industries, Inc.

3. Duro Dyne Inc.

4. Ventfabrics, Inc.

5. Hart & Cooley, Inc.

C. Materials: Flame-retardant or noncombustible fabrics.

D. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches attached to two strips of 2-3/4-inches wide, 0.028-inch thick, galvanized sheet steel or 0.032-inch thick aluminum sheets. Provide metal compatible with connected ducts.

E. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.

1. Minimum Weight: 26 oz./sq. yd.

2. Tensile Strength: 480 lbf/inch in the warp and 360 lbf/inch in the filling.

3. Service Temperature: Minus 40 to plus 200 degrees F.

2.4 FLEXIBLE DUCTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Flexmaster U.S.A., Inc.

2. McGill AirFlow LLC.

3. Hart & Cooley, Inc.

4. Seal-Tite, LLC.

B. Insulated, Flexible Duct: UL 181, Class 1, 2-ply vinyl film supported by helically wound, spring-steel wire; fibrous-glass insulation; polyethylene vapor-barrier film.

1. Pressure Rating per UL 181: 12 inch W.C. positive and 0.75-inch W.C. negative.

2. Maximum Air Velocity: 5000 fpm.

3. Temperature Range: Minus 10 to plus 160 degrees F.

4. Insulation Minimum R-Value: R-8.0.

C. Flexible Duct Connectors:

1. Clamps: Nylon band with ratcheting grip lock, to suit duct size.

2. Non-Clamp Connectors Adhesive plus sheet metal screws.

2.5 OTHER MATERIALS

A. Provide other materials and appurtenances, not specifically described but required for a complete and proper installation, as designed and selected by the Contractor subject to the approval of the Commissioner.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with Contractor's design drawings approved by the Commissioner and manufacturer's instructions.

B. Install flexible duct connections specified between fan sections of furnace, and return and supply ductwork. Flexible connectors will not be in tension while running.

C. Provide balancing dampers on duct take-off to grilles and registers, regardless of whether dampers are specified as part of the grille or register assembly.

D. Flexible ducts are limited to 24 inches in length or less.

3.2 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 33 00

SECTION 23 37 13 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. This section includes selection and installation of diffusers, boots, plenums, registers, louvers, and grilles required to meet the design and performance criteria of Section 23 54 00 “Furnaces” and 23 82 19 “Fan Coil Units”.

1. Fixed Face Grilles and Registers.

B. Related Requirements:

1. Section 23 54 00 “Furnaces”.
2. Section 23 82 19 “Fan Coil Units”.

C. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two (General Conditions”), Article XI: SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include pressure drop based on manufacturer’s test data.

1.4 WARRANTIES

A. Contractor’s Warranty: The Contractor is responsible for the complete installation of the new diffusers, registers, and grilles in a manner that will preserve the manufacturer’s warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the diffusers, registers, grilles and associated installation materials that are defective in materials or workmanship related to installation of the diffusers, registers, and grilles for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

B. Homeowner’s Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with Contract requirements, provide products by one of the following:

1. Price.
2. Continental Register.
3. Dayus Register & Grille Inc.
4. Hart & Cooley Inc.
5. Nailor Industries Inc.
6. Price Industries.
7. Titus.
8. US Aire.

2.2 AIR DEVICES

A. Diffusers and Registers: Round or rectangular, aluminum, with fixed blades, opposed blade dampers, and factory applied enamel finish, for wall/ceiling installation. Style and color to match existing or adjacent finishes (verify in field).

B. Floor registers will comply with NFPA 90B 2-3, 5.2 and will be of all-steel construction.

C. Grilles: Match supply, but have no opposed blade dampers.

1. Floor-mounted return grilles will be of all-steel construction and will be fastened to the floor from the following acceptable manufacturers:

a. Price: Model 91.
b. Continental Register Co.: Model F25.
c. US Aire: Model 1530.
d. Hart & Cooley Register: Model 265.

2. All return grilles will be screw attached to floor, or wall. Screw to match grille color.
3. Floor grilles to be brown or white, unless alternate color to be approved by the Commissioner.

D. Seals: Provide sponge-rubber under all flanges.

E. Accessories: Provide installation frames and fastening hardware, as required.

2.3 OTHER MATERIALS

A. Provide other materials and appurtenances, not specifically described but required for a complete and proper installation, as designed and selected by the Contractor subject to the approval of the Commissioner.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with Contractor's design drawings approved by the Commissioner and manufacturer's instructions.

B. Connect register boots directly to low pressure ductwork.

C. All new supply grilles and registers will be oriented and located for horizontal discharge into the space only, except for locations directly above windows. Grilles or registers above windows will be installed at center line of all existing windows with vertically-oriented discharge, as conditions allow.

D. Patch and repair adjacent existing surfaces damaged during installation of products indicated.

3.2 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 37 13

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SECTION 23 51 00 - BREECHINGS, CHIMNEYS, AND STACKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes the selection and installation of new breechings, vents, and stacks in existing construction.

B. Related Requirements:

1. Section 23 54 00 “Furnaces”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For vents, breechings, chimneys, and stacks. Include plans, details, and attachments to other work.

PART 2 - PRODUCTS

2.1 GAS VENTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. M&G Duravent Co.
2. Selkirk Metalbest Co.
3. Metal-Fab Inc.
4. American Metal Products Co.

B. Non Condensing:

1. Description: Double-wall metal vents tested according to UL 441 and rated for 480 degrees F continuously for Type B, or 550 degrees F continuously for Type BW; with neutral or negative flue pressure complying with NFPA 54 and NFPA 211 and the City of Chicago.
2. Construction: Inner shell and outer jacket separated by at least 1-inch airspace.
3. Inner Shell: ASTM B 209, Type 3003 aluminum.
4. Outer Jacket: G-90 Galvanized steel.
5. Accessories: Tees, elbows, increasers, draft-hood connectors, terminations, adjustable roof flashings, storm collars, support assemblies, thimbles, fire stop spacers, and fasteners; fabricated from similar materials and designs as vent-pipe straight sections; all listed for same assembly.

    a. Termination: Stack cap designed to exclude minimum 90 percent of rainfall.
    b. Termination: Round chimney top designed to exclude minimum 98 percent of rainfall.
    c. Termination: Exit cone with drain section incorporated into riser.
    d. Termination: Antibackdraft.

C. Condensing:

1. Vent material will be Schedule 40 Polyvinyl Chloride (PVC).

2.2 FURNACE FLUE VENTING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. M&G Duravent Co.
2. Selkirk Metalbest Co.
3. Metal-Fab Inc.
4. American Metal Products Co.

B. Provide furnace flue vents complying with local code requirements and labeled for application by an independent testing agency such as UL.

2.3 CHIMNEY LINER

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Deflect-o, Ltd.
2. Novaflex, Co.
3. Selkirk Metalbest Co.
4. American Metal Products Co.

B. Description: Corrugated, single-wall chimney liner tested according to UL 1777 and rated for 1000 degrees F continuously, or 2100 degrees F for 10 minutes; with negative or positive flue pressure complying with NFPA 211.

C. Corrugated Liner Materials: ASTM A 240/A 240M, Type 321 stainless steel. Aluminum is acceptable for non-condensing applications.

D. Accessories:

1. Fittings: Tees, elbows, increasers, draft-hood connectors, metal caps with bird barriers, adjustable roof flashings, storm collars, support assemblies, thimbles, fire stop spacers, and fasteners; fabricated from similar or compatible materials and designs.

2. Sealant: Manufacturer's standard high-temperature sealant.
3. Insulating Fill: Manufacturer's standard high-temperature insulation fill material in annular space surrounding chimney liner including high-temperature, ceramic-fiber insulation required to seal chimney at top and bottom.

E. For all non-condensing applications where exhaust is connected to existing masonry chimney, provide aluminum flue liner that complies with local code requirements and is labeled by an independent testing agency such as UL and complies with National Fuel Gas Code and NFPA 54.

F. For all condensing applications, install PVC piping in compliance with the requirements of the equipment manufacturer.

PART 3 - EXECUTION

3.1 APPLICATION

A. Listed Chimney Liners: High-efficiency boiler or furnace vents in masonry chimney.

B. Listed Type B Vents: Vents for certified gas appliances.

3.2 INSTALLATION

A. Coordinate removal and reinstallation to avoid multiple system shutdowns. Altered heating systems will be reinstalled and operable at the end of each Workday.

1. The entire chimney assembly will be supported at its base by an interlocking 18 gauge galvanized sheet steel support plate. The chimney will further be horizontally supported at each 10 feet of vertical rise. The chimney will penetrate the roof using either an adjustable flashing for pitched roofs, or a tall cone flashing for flat roofs. The top of the assembly will terminate with a bird proof and UL approved gas vent, as manufactured by the chimney manufacturer.
2. Connectors from all gas fired appliance draft diverters will have a minimum vertical rise of 18 inches before entering into any fitting or bottom of the chimney. Connection to the base of the chimney will be done using a factory fabricated transition fitting for connecting single wall flue piping to double wall chimney pipe. All breeching or single wall flue pipe and their fittings will be constructed from 26 gauge galvanized steel ducts having a diameter equal to or greater than the outlet diameter of the appliance.
3. Final connections at all single walled fittings and pipe will be held in place using steel "tek" screws at 90 degrees around the perimeter of the fitting or pipe. Connections will overlap a minimum of 1-1/2 inches into the adjoining pipe or the full length of the crimped end. Do not use duct tape or other mastics or tapes to seal the connection.
4. Installation of all Class "B" gas vents will be made with a minimum clearance of 1-1/2 inches to all combustible materials.
5. All gas vents extending above the roof more than 5 feet must be securely guyed or braced.

B. Locate to comply with minimum clearances from combustibles and minimum termination heights, according to product listing or NFPA 211, whichever is most stringent.

C. Slope breechings and vents down in direction of appliance where applicable, with condensate drain connection at lowest point piped to nearest drain.

D. Install vent damper and interconnecting vent piping complying with local code requirements for furnace vents.

E. Install chimney flue liner, vent damper, and interconnecting vent piping complying with local code requirements for furnace venting.

F. Where an existing chimney vents one or more gas-fired appliances, the International Fuel Code shall be used to determine if the existing chimney flue is sized for the new connected loads to the chimney. If there is no Furnace Scope of work at a home, then these calculations are not required for that home. Otherwise the dimensions and calculation must be shown on Mechanical Section of the individual Home Proposal prepared by the Contractor. Additional information concerning this point can be found in Section 23 00 00 paragraph 3.3.M.

1. International Mechanical Code paragraph 503.5.5.2 Size of Chimney

    a. For sizing an individual chimney venting system for a single appliance (i.e. water heater only) with a draft hood, the effective areas of the vent connector and the chimney flue shall not be LESS than the area of the appliance flue collar or draft hood outlet, NOR GREATER THAN seven (7) times the draft hood outlet area.

2. International Mechanical Code paragraph 503.5.5.3 Size of Chimney.

    a. For sizing a chimney venting system connect to two appliances (water heater and non condensing gas-fired furnace) with draft hoods, the effective areas of the chimney flue shall be not LESS than the area of the larger draft hood outlet PLUS 50% of the area of the smaller draft hood outlet, NOR GREATER than seven (7) times the smallest draft hood outlet area.

G. Install outlets for condensing furnaces vents in a location that meets the following:

1. In exterior vent outlets, vents and terminations may only be routed to new exterior french drains below the termination. The french drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior vent be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.

3.3 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 51 00

SECTION 23 54 00 - FURNACES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes the following:

1. Gas-fired, non-condensing, and Gas-fired, condensing furnaces and accessories complete with controls.
2. Air filters.
3. Thermostat.
4. Humidifiers.

B. Related Requirements:

1. Section 23 00 00 “General Provisions for Mechanical Work”.
2. Section 23 20 00 “HVAC Piping”.
3. Section 23 63 13 “Air-Cooled Refrigerant Condensers”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For furnaces: Include plans and relevant attachments to other work.

1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances for components.
2. Include diagrams for power, signal, and control wiring.

C. Heating and/or cooling worksheets completed for each Home utilizing Wrightsoft’s Right-J program.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70 and the City of Chicago Building Code, by a qualified testing agency, and marked for intended location and application.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace the following components of furnaces that fail in materials or workmanship within specified warranty period:

1. Warranty Period, Commencing on Final Completion of the Home:

a. Furnace Heat Exchanger: Ten (10) years.
b. Furnace Parts: Five (5) years.

C. Contractor's Warranty: The Contractor is responsible for the complete installation of the new furnace in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the furnace and associated installation materials that are defective in materials or workmanship related to installation of the furnace for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

D. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Corporation; Div. of United Technologies Corp.
2. Lennox Industries Inc.
3. Luxaire Corporation; a division of Unitary Products Group.
4. Rheem Manufacturing Company; Air Conditioning Division.
5. Trane; a business of American Standard Companies.

B. Source Limitations: Each Home and multi-unit building will receive furnaces from single source from single manufacturer.

2.2 NON-CONDENSING, FORCED AIR, NATURAL GAS FURNACES

A. General requirements for gas-fired, non-condensing furnaces: Factory assembled, piped, pre-wired, and tested; complying with American National Standards Institute (ANSI) Z21.47/CSA 2.3, "Gas-Fired Central Furnaces," and with National Fire Protection Association (NFPA) Standard 54.

B. Cabinet: Steel.

1. Cabinet interior around heat exchanger will be factory-installed insulation.
2. Lift-out panels will expose burners and all other items requiring access for maintenance.
3. Factory paint external cabinets in manufacturer's standard color.

C. Fan: Centrifugal, factory balanced, resiliently mounted, direct drive.

1. Fan Motors: Premium efficiency, and with internal thermal protection and permanent lubrication.

D. Type of Gas: Natural.

E. Heat Exchanger: Aluminized steel.

F. Combustion Chamber: Welded stainless steel.

G. Burner:

1. Gas Valve: 100 percent safety one-stage main gas ball valve, main shutoff valve, pressure regulator, safety pilot with electronic flame sensor, limit control, transformer, and combination ignition/fan timer control board.
2. Ignition: Electric pilot ignition, with hot-surface igniter or electric spark ignition.
3. Minimum Efficiency Annual Fuel Utilization Efficiency (AFUE): 80 percent.

H. Gas-Burner Safety Controls:

1. Electronic Flame Sensor: Prevents gas valve from opening until pilot flame is proven; stops gas flow on ignition failure.
2. Flame Rollout Switch: Installed on burner box; prevents burner operation.
3. Limit Control: Fixed stop at maximum permissible setting; de-energizes burner on excessive bonnet temperature; manual reset.

I. Combustion-Air Inducer: Centrifugal fan with thermally protected motor and sleeve bearings prepurges heat exchanger and vents combustion products; pressure switch prevents furnace operation if combustion-air inlet or flue outlet is blocked.

J. Furnace Controls: Solid-state board integrates ignition, heat and cooling; adjustable fan-on and fan-off timing; terminals for connection to accessories.

K. Vent Materials: Comply with requirements in Section 23 51 00 "Breechings, Chimneys, and Stacks" for Type B metal vents.

L. Characteristics:

1. Airflow Configuration: Upflow, Counterflow, or Horizontal.

M. Non-condensing units will be used in Homes where the installation of a condensing unit would not comply with municipal code regulations, or the installation of a condensing unit would require work that is outside the scope of the Program.

N. Refrigerant Piping: Comply with requirements in Section 23 20 00 “HVAC Piping”.

1. Connections: Only one (1) liquid line, one (1) suction line, one (1) condensate drain line, control wiring and one (1) power supply connection will be required for each unit.

O. Casing: Constructed of sheet metal with steel framing and painted with an enamel coating. Casing will include filter assembly.

P. Evaporator Coil: Copper tube aluminum fin coil assembly with galvanized drain pan, drain connection, refrigerant piping connections.

2.3 CONDENSING, FORCED AIR, NATURAL GAS FURNACES

A. General Requirements for Gas-Fired, Condensing Furnaces: Factory assembled, piped, pre-wired, and tested; complying with ANSI Z21.47/CSA 2.3, “Gas-Fired Central Furnaces,” and with NFPA 54.

B. Heat Exchanger:

1. Primary: Three pass 20 gauge corrosion resistant aluminized steel of fold and crimp sectional design. Exchanger will operate under negative pressure.
2. Secondary: Polyethylene-coated steel.

C. Fan: Centrifugal, factory balanced, resiliently mounted, direct drive.

1. Fan Motors: Premium efficiency, and with internal thermal protection and permanent lubrication.

D. Burner:

1. Gas Valve: 100 percent safety one-stage main gas ball valve, main shutoff valve, pressure regulator, safety pilot with electronic flame sensor, limit control, transformer, and combination ignition/fan timer control board.
2. Ignition: Electric pilot ignition, with hot-surface igniter or electric spark ignition.
3. Minimum Efficiency Annual Fuel Utilization Efficiency (AFUE): 90 percent.

E. Gas-Burner Safety Controls:

1. Electronic Flame Sensor: Prevents gas valve from opening until pilot flame is proven; stops gas flow on ignition failure.
2. Flame Rollout Switch: Installed on burner box; prevents burner operation.
3. Limit Control: Fixed stop at maximum permissible setting; de-energizes burner on excessive bonnet temperature; automatic reset.

F. Combustion-Air Inducer: Centrifugal fan with thermally protected motor and sleeve bearings pre-purges heat exchanger and vents combustion products; pressure switch prevents furnace operation if combustion-air inlet or flue outlet is blocked.

G. Furnace Controls: Solid-state board integrates ignition, heat and cooling, adjustable fan-on and fan-off timing; terminals for connection to accessories; diagnostic light with viewport.

H. Accessories:

1. Combination Combustion-Air Intake and Vent: Polyvinyl Chloride (PVC) plastic fitting to combine combustion-air inlet and vent through outside wall or roof.
2. Chlorinated Polyvinyl Chloride (CPVC) Plastic Vent Materials.

    a. CPVC Plastic Pipe: Schedule 40, complying with ASTM F 441/F 441M.
    b. CPVC Plastic Fittings: Schedule 40, complying with ASTM F 438, socket type.
    c. CPVC Solvent Cement: ASTM F 493.

        1) CPVC solvent cement will have a VOC content of 490 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).
        2) Adhesive primer will have a VOC content of 550 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).

3. PVC Plastic Vent Materials:

    a. PVC Plastic Pipe: Schedule 40, complying with ASTM D 1785.
    b. PVC Plastic Fittings: Schedule 40, complying with ASTM D 2466, socket type.
    c. PVC Solvent Cement: ASTM D 2564.

        1) PVC solvent cement will have a VOC content of 510 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).
        2) Adhesive primer will have a VOC content of 550 g/L or less when calculated according to 40 CFR Part 59, Subpart D (EPA Method 24).

I. Characteristics:

1. Airflow Configuration: Upflow, Counterflow or Horizontal.
2. Gas:

    a. Type: Natural.
    b. Venting Type: Power venter with combustion-air intake.
    c. Minimum Efficiency AFUE: 90 percent.
    d. Vent Material: CPVC.

J. Refrigerant Piping: Comply with requirements in Section 23 11 20 “HVAC Piping”.

1. Connections: Only one (1) liquid line, one (1) suction line, one (1) condensate drain line, control wiring and one (1) power supply connection will be required for each unit.

K. Casing: Constructed of 0.030-inch thickness minimum, pre-painted galvanized steel lined with foil faced insulation. Casing will include filter rack for 1-inch thick filter.

L. Inducer Motor: Soft mounted to reduce vibration transmission.

M. Controls: Microprocessor based integrated electronic control board with service troubleshooting codes displayed via diagnostic flashing Light Emitting Diode (LED) light. Controller will have the ability to store fault codes and check all major functions of the furnace. Controller will be provided with fused protection. Cooling airflow will be selectable between 350 to 400 CFM per ton of cooling capacity.

N. Venting: Units will be direct venting utilizing manufacturer’s concentric vent kit.

O. Provide manufacturer’s condensate neutralizer kit.

2.4 FILTRATION

A. Filters: Minimum arrestance and a Minimum Efficiency Reporting Value (MERV) according to ASHRAE 52.2 and all addendums.

1. MERV Rating: Five (5) when tested according to ASHRAE 52.2.
2. Glass Fiber Treated with Adhesive: 80 percent arrestance.

2.5 NOISE AND VIBRATION CONTROL

A. Provide noise and vibration control devices for all new Heating, Venting, and Air Conditioning (HVAC) mechanical equipment to minimize noise generated by the equipment within the dwelling and to prevent exterior noise from being transmitted inside the dwelling via refrigerant or condensate piping or other external devices or connections serving the HVAC mechanical equipment.

B. All new fans and compressor units will be provided with rubber-in-shear vibration isolators. Mount equipment on grade**,** on approved equipment pads, to minimize vibrational input to lightweight building frame construction members.

C. Provide flexible connections where ductwork is connected to fans or air handlers.

2.6 THERMOSTATS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Honeywell.
2. Trane.
3. Rite Temp.

B. Automatic, programmable thermostat for single stage heating and cooling with HEAT-OFF-COOL-AUTO. Low voltage (24v). Liquid Crystal Display (LCD) display to continuously indicate time-of-day, day of week, current program period and temperature. Separate programmability for weekdays and weekends, with a minimum of two (2) time periods for each day. Include mounting wall plate and batteries.

C. Changeover: Manual heating to cooling changeover.

D. At least one (1) programmable thermostat will be provided for each new heating and cooling system.

2.7 CONDENSATE PUMPS

A. For each evaporator coil where condensate cannot drain by gravity to code acceptable locations, provide a UL listed, low profile condensate pump of plastic and stainless steel construction. The pump will be complete with a sump pan having a minimum capacity of one quart. The motor will operate on 115 VAC, have a float actuated switch, be capable of moving 1/3 GPM against a head of 10 feet, and be able to be floor or wall mounted.

1. The condensate discharge will be fitted with a check valve.
2. Contractor will provide pump with head greater than 10 feet when required by evaporator coil and drain locations.

3. In interior drain locations, condensate may only be routed to open site floor drains. Any other locations must be approved by the Commissioner prior to development of the shop drawing submittals.
4. In exterior drain designs, condensate may only be routed to new exterior french drains. The French drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior condensate be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.
5. Piping will be 3/4-inch, Sch. 40 PVC. Provide insulation and metallic cover for piping routed outside of the building envelope to match exterior refrigerant line-set covering.

B. Safety Pan: Galvanized sheet metal pan or plastic pan under unit with a separate drain line.

1. Provide wet switch in auxiliary drain pan. Activation of the switch will deactivate both the air handling unit fan and the furnace and compressor unit.

a. Wet switch to have polymeric fiber capillary pad with stainless steel sensors and solid state electronic control.

2.8 BYPASS TYPE FURNACE HUMIDIFIER

A. Manufacturers:

1. General Aire.
2. Carrier.
3. Aprilaire.

B. Type:

1. Bypass Airflow
2. Drain through Water flow

C. Water Usage: Minimum of 9 GPD per 1000 Sq. Ft. of residence.

D. Electrical Connections: 24 Volt – 60 Hertz with a 24 VAC solenoid valve.

E. Water Connections:

1. 1/4-inch minimum copper tubing water inlet.
2. 1/2- inch minimum inside diameter drain hose.

F. Controls: Humidistat automatic control.

G. Quick-release cover for evaporator pad replacement and maintenance.

H. New humidifier to be installed only when existing humidifier is removed or when required by local code.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Heating systems will be reinstalled and operable at the end of each workday, providing non-interrupted heating to the Homeowner for the project duration.

B. Coordinate removal and reinstallation to avoid multiple system shutdowns. Altered heating systems will be reinstalled and operable at the end of each Workday.

C. Install gas-fired furnaces and associated fuel and vent features and systems according to NFPA 54.

D. Suspended Units: Suspend from structure using threaded rods, spring hangers, and building attachments. Secure rods to unit hanger attachments. Adjust hangers so unit is level and plumb.

E. Base-Mounted Units: Secure units to substrate. Provide optional bottom closure base if required by installation conditions.

F. Controls: Install thermostats at mounting height of 48 inches above floor.

1. Mount new thermostats adjacent to existing locations, where possible.

G. Wiring Method: Install control wiring in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal control wiring except in unfinished spaces.

H. Install equipment in accordance with Contractor's design drawings approved by the Commissioner and manufacturer's instructions. Furnish steel channels and other supports as required for proper installation, mounting, and support of all equipment.

I. Mount counterflow furnaces installed on combustible floors, on an elevated, structural base.

J. Install chimney flue liner, vent damper, and interconnecting vent piping complying with local code requirements for furnace venting.

K. Install air coils in ducts and casings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

L. Install duct insulation to comply with Section 23 07 13 "Duct Insulation".

M. Provide drain pan connection for cooling coils. For cooling coils located in an attic space or above a ceiling, which require an auxiliary drain pan, route the secondary drain line to discharge in an observable location. Additionally, provide a wet switch located in the overflow pan. Activation of the switch will deactivate both the air handling unit fan and the compressor.

N. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Provide clearance for installation of insulation and access to valves and fittings.

O. Charge system with refrigerant and put into operation: Test equipment performance.

P. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.

Q. Where a wall treatment occurs, a minimum clearance as required by code will be maintained between steam radiator(s) and the new wall surface.

R. Install condensing equipment in compliance with manufacturer's requirements. Utilize direct venting in all possible installations. Route vent pipes to building exterior in the most direct routing possible utilizing the manufacturer's concentric vent kit.

S. Install neutralizing cartridge in the vent pipe condensate drain line and route drain to discharge in nearest floor drain or other approved disposal location.

T. On all circulating hot water systems, provide an automatic or easily accessible manual switch to shut down the circulating pump when the system is not in use.

U. Do not remove any supplemental air conditioning until new cooling system is installed and operational.

3.2 CONNECTIONS

A. Gas piping installation: Connect gas piping with union or flange and appliance connector valve. See Section 23 11 20 "HVAC Piping".

B. Install piping adjacent to equipment to allow service and maintenance.

C. Water piping installation drawings indicate general arrangement of piping, fittings, and specialties. Connect water piping with union and ball valve.

D. Vent connection, non-condensing, gas-fired furnaces: Connect Type B vents to furnace vent connection and extend outdoors. Type B vents and their installation requirements are specified in Section 23 51 00 "Breechings, Chimneys, and Stacks".

E. Vent and outside-air connection, condensing, gas-fired furnaces: Connect plastic piping vent material to furnace connections and extend outdoors. Terminate vent outdoors with a cap and in an arrangement that will protect against entry of birds, insects, and dirt. Condensing vents and their installation requirements are specified in Section 23 51 00 "Breechings, Chimneys, and Stacks".

1. Install vent damper and interconnecting vent piping complying with local code requirements for furnace vents.
2. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
3. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
4. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

    a. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
    b. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
    c. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.

5. Slope pipe vent back to furnace or to outside terminal.

F. Connect ducts to furnace with flexible connector. Comply with requirements in Section 23 33 00 "Air Duct Accessories".

G. Comply with requirements in Section 23 20 00 “HVAC Piping” for installation and joint construction of refrigerant piping.

H. Complete installation and startup checks and start units according to manufacturer’s written instructions.

I. Adjust airflow and initial temperature and humidity set points.

J. Set controls, burner, and other adjustments for optimum heating performance and efficiency. Adjust heat-distribution features, including shutters, dampers, and relays, to provide optimum heating performance and system efficiency.

K. After completing installation, clean furnaces internally according to manufacturer’s written instructions.

L. Install new filters in each furnace at Substantial Completion.

3.3 TESTING AND ADJUSTING

A. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Complete manufacturer’s starting checklist.

B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Provide cooling season system start up and tests in the first year of operation for systems installed in heating season. Provide winter season shut-down for first year of operation. Verify dates and times of start-up tests with Commissioner prior to Final Completion of the Home.

D. Eliminate noise and vibration and assure proper function of all controls, maintenance of temperature, and proper operation.

E. Final Testing:

1. Upon completion of modifications or upgrades to any heating (or cooling) system, a test of the system will be required. The entire system will be operated at normal operating temperatures for a minimum of 1/2 hour and all areas that have been altered or affected by alterations will be checked for leaks, proper operations, noise, etc., Repair leaks and retest until leaks have been minimized or eliminated. Any leaks, deficiencies, or problems of any nature will be corrected. For sizable leaks in ductwork concealed behind walls, repair will be discussed at Field Measurements.
2. Contractor will provide a sign-off sheet describing tests performed, deficiencies identified during the tests and corrective actions taken to eliminate the deficiencies identified.

    a. Sign-off sheet to be signed by Contractor.

3.4 DEMONSTRATION

A. Upon completion of this portion of the Work, and prior to acceptance by the Commissioner, fully instruct the Homeowner in the proper operation and maintenance of the items provided under this section.

1. Provide final setup of programming of thermostat with input from the Homeowner for all temperature and schedule settings.

3.5 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 54 00

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SECTION 23 63 13 - AIR-COOLED REFRIGERANT CONDENSERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes self-contained and packaged condenser; pre-wired and tested, designed for outdoor use, consisting of condenser coil; condenser fan, compressor, casing, and controls mounted on a pad.

B. Related Requirements:

1. Section 23 00 10 “General Provisions for Mechanical Work”.
2. Section 23 11 20 “HVAC Piping”.
3. Section 23 54 00 “Furnaces”.
4. Section 23 82 19 “Fan Coil Units”.
5. Section 26 28 16 “Enclosed Switches and Circuit Breakers”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

1. Provide sound power rating for unit as tested according to ANSI/AHRI Standard ARI 270.

B. Shop Drawings: For air-cooled refrigerant condensers. Include plans and relevant attachments to other work.

1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances for components.
2. Wiring Diagrams: For power, signal, and control wiring.

C. Heating and/or cooling worksheets completed for each Home utilizing Wrightsoft’s Right-J program.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled by a qualified testing agency, and marked for intended location and application.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

1. Provide five (5) year warranty on compressor including parts and labor.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new air-cooled condenser in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the air-cooled condenser and associated installation materials that are defective in materials or workmanship related to installation of the air-cooled condenser for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Corporation; Div. of United Technologies Corp.
2. Lennox Industries Inc.
3. Luxaire Corporation; a division of Unitary Products Group.
4. Rheem Manufacturing Company; Air Conditioning Division.
5. Trane; a business of American Standard Companies.

B. Source Limitations: Each Home and multi-unit building will receive air-cooled condensing units from single source from single manufacturer.

2.2 AIR-COOLED CONDENSING UNIT

A. Description: Factory assembled and tested; consisting of casing, condenser coils, condenser fans and motors, and unit controls. Unit will be rated in accordance with the latest edition of AHRI Standard 210.

B. Refrigerant: R-32 and R-454B

C. SEER: 14.0, minimum.

D. Condenser Coil: Contractor shall verify factory test pressure values in accordance with the specific manufacturer/ model number and the refrigerant (R454B or R-32).

1. Tube: 3/8-inch diameter seamless copper.
2. Coil Fin: Aluminum.
3. Coating: Thermoplastic vinyl.
4. Circuit: To match compressors.

E. Condenser Fans: Propeller fans with galvanized-steel fan blades, for vertical air discharge; directly driven with permanently lubricated ball-bearing motors with integral current-overload and thermal-overload protection. Fan openings to be equipped with steel wire safety guards.

F. Condenser Motor: Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors.

1. Enclosure Type: Totally enclosed, fan cooled.
2. Mount unit-mounted disconnect switches on exterior of unit.

G. Compressor: Scroll compressor with serviceable hermetic design with vibration isolators.

1. Contractor to provide low-ambient pressure switch.
2. A crankcase heater and discharge temperature protection to be included as required by manufacturers.

H. Operating and Safety Controls: Include condenser fan motor thermal and overload cutouts; 115-V control transformer, if required; magnetic contactors for condenser fan motors and a non-fused factory-mounted and factory-wired disconnect switch for single external electrical power connection.

I. Casing: Fully weatherproof for outdoor installation. Casing will be of galvanized steel, provided with a layer of zinc phosphate and finished with a polyester powder coating; designed for outdoor installation with weather protection for components and controls, and with the following:

1. Removable panels for access to controls, condenser fans, motors, and drives.
2. Plated-steel fan guards.
3. Lifting eyes.
4. Removable legs.

J. Connections: One (1) liquid line, one (1) suction line, control wiring and one (1) power supply connection will be required for each unit. Comply with manufacturer and model specifications. Comply with requirements in Section 23 11 20 “HVAC Piping”.

K. Fiberglass Pad: Length and width dimensions as recommended by condenser unit manufacturer on 4 inch compacted gravel base, or pre-existing concrete or asphaltic paved areas, if existing in the location approved by the Commissioner.

1. Where homes are located within a flood plain, provide additional 12-inch solid concrete masonry blocks at each condenser support corner to raise condenser 12-inches above fiberglass pad.

2.3 NOISE AND VIBRATION CONTROL

A. Provide noise and vibration control devices for all new HVAC mechanical equipment to minimize noise generated by the equipment within the dwelling and to prevent exterior noise from being transmitted inside the dwelling via refrigerant or condensate piping or other external devices or connections serving the HVAC mechanical equipment.

B. All new exterior located condensing units will have a sound rating in accordance with ANSI/AHRI Standard ARI 270.

1. All new exterior located condensing units will have an A-weighted Sound Power Level, or dB(A), to comply with local code requirements or no more than 55 dB(A) when measured at the property line, whichever is less.

C. All new fans and compressor units will be provided with rubber-in-shear vibration isolators. Mount equipment on grade**,** on approved equipment pads, to minimize vibrational input to lightweight building frame construction members.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of air-cooled refrigerant condensers.

B. Examine roughing-in for refrigerant piping systems to verify actual locations of piping connections before equipment installation.

C. Examine roofs for suitable conditions where air-cooled condensers will be installed, if required.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Coordinate removal and reinstallation to avoid multiple system shutdowns. Altered heating systems will be reinstalled and operable at the end of each workday.

B. Reroute existing piping to avoid interference with new ductwork, combustion air intake, piping, and duct enclosures. Re-insulate piping as required.

C. Drain, adjust, and recharge heating and/or cooling systems as necessary to accomplish the Work and provide uninterrupted heating to the Homeowner during cold month construction.

D. Install equipment in accordance with Contractor’s approved shop drawings and manufacturer’s instructions. Furnish steel channels and other supports as required for proper installation, mounting, and support of all equipment.

E. Mount air cooled condensing unit on leveled exterior pad.

F. Install refrigerant lines to conserve building space and not interfere with use of space. Route piping in orderly and unobtrusive manner, with plumbing parallel to building structure, and maintain gradient. Group piping whenever practical at common elevations and locations. Slope refrigerant piping one percent in direction of oil return. Slope condensate line a minimum of 1/8-inch per foot in the direction of discharge. Refrigerant piping and specialties are specified in Section 23 11 20 “HVAC Piping”.

G. Provide non-conducting dielectric connections when joining dissimilar metals.

H. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Provide clearance for installation of insulation and access to valves and fittings.

I. Pressure test system with dry nitrogen in accordance with manufacturer's recommendations and applicable codes to R-454B/R-32.

J. Touch-up marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer.

K. Where a wall treatment occurs, a minimum clearance as required by code will be maintained between steam radiator(s) and the new wall surface.

L. Do not remove any Homeowner-installed, or existing, air conditioning equipment until new cooling system is installed and operational during cooling season.

M. Provide cooling season system start up and tests in the first year of operation for systems installed in heating season. Verify dates and times of start-up tests with Commissioner prior to Final Completion of the Home.

3.3 TESTING AND ADJUSTING

A. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Complete manufacturer’s starting checklist.

B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Eliminate noise and vibration and assure proper function of all controls, maintenance of temperature, and proper operation.

D. Final Testing:

1. Upon completion of modifications or upgrades to any heating (or cooling) system, a test of the system will be required. The entire system will be operated at normal operating temperatures for a minimum of 1/2 hour and all areas that have been altered or affected by alterations will be checked for leaks, proper operations, noise, etc., Repair leaks and retest until no leaks exist. Any leaks, deficiencies, or problems of any nature will be corrected.
2. Contractor will provide a sign-off sheet describing tests performed, deficiencies identified during the tests and corrective actions taken to eliminate the deficiencies identified.

    a. Sign-off sheet to be signed by Contractor.

3.4 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 63 13

SECTION 23 81 26 - SPLIT-SYSTEM AIR-CONDITIONERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes split-system air-conditioning units consisting of separate evaporator-fan and compressor-condenser components.

B. Related Requirements:

1. Section 23 00 10 “General Provisions for Mechanical Work”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

1. Provide sound power rating for unit as tested according to ANSI/AHRI Standard ARI 270.

B. Shop Drawings: For Split-System Air-Conditioners: Include plans, elevations, details, and attachments to other work.

1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Include diagrams for power, signal, and control wiring.

C. Heating and/or cooling worksheets completed for each Home utilizing Wrightsoft’s Right-J program.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled by a qualified testing agency, and marked for intended location and application.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

1. Warranty Period:

a. For Compressor: seven (7) years from Final Completion of the Home.
b. For Parts: five (5) years from Final Completion of the Home.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new split system air-conditioner units in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the split system air conditioner units and associated installation materials that are defective in materials or workmanship related to installation of the split system air-conditioner units for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Air Conditioning; Div. of Carrier Corp.
2. Mitsubishi Electronics America, Inc.; HVAC Division.
3. Panasonic (U.S.A.) Corp.
4. LG (U.S.A.) Corp.

2.2 DUCTLESS SPLIT SYSTEM - COOLING ONLY

A. Wall-Mounted, Evaporator-Fan Components:

1. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and thermal-expansion valve. Comply with AHRI Standard 1230.
2. Insulation: Faced, glass-fiber duct liner.
3. Chassis: Galvanized steel with flanged edges, removable panels for servicing, and insulation on back of panel.

4. Filters: Permanent, cleanable.
5. Fan: Forward-curved, double-width wheel of galvanized steel; directly connected to motor.
6. Fan Motors:

    a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements.
    b. Multi-tapped, multispeed with internal thermal protection and permanent lubrication.
    c. Wiring Terminations: Connect motor to chassis wiring with plug connection.

B. Air Filtration Section:

1. General Requirements for Air Filtration Section:

    a. Comply with NFPA 90A.
    b. Minimum Arrestance: According to ASHRAE 52.1 and Minimum Efficiency Reporting Value (MERV) according to ASHRAE 52.2.
    c. Filter-Holding Frames: Arranged for flat or angular orientation, with access doors on both sides of unit. Filters will be removable from one side or lifted out from access plenum.

C. Controls: Wireless system controller will be capable of being wall mounted remotely from the indoor unit and will feature temperature, fan speed, night set-back and time control. System will be totally independent of existing cooling system.

2.3 OUTDOOR UNITS

A. Air-Cooled, Compressor-Condenser Components:

1. Casing: Steel, finished with baked enamel in color selected by Architect, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
2. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation device. Compressor motor will have thermal and current-sensitive overload devices, start capacitor, relay, and contactor.

    a. Compressor Type: Scroll.
    b. Two-speed compressor motor with manual-reset high-pressure switch and automatic-reset low-pressure switch.
    c. Refrigerant Charge: R-32 and R-454B
    d. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and liquid sub-cooler. Comply with AHRI Standard 1230.
    e. SEER; 14.0 Minimum.

3. Fan: Aluminum-propeller type directly connected to motor.
4. Motor: Permanently lubricated, with integral thermal-overload protection.
5. Low Ambient Kit: Permits operation down to 45 degrees F.
6. Mounting Base: Polyethylene.

2.4 ACCESSORIES

A. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

1. Comply with requirements in Section 23 23 00 “Refrigerant Piping” for installation and joint construction of refrigerant piping.

2.5 NOISE AND VIBRATION CONTROL

A. Provide noise and vibration control devices for all new HVAC mechanical equipment to minimize noise generated by the equipment within the dwelling and to prevent exterior noise from being transmitted inside the dwelling via refrigerant or condensate piping or other external devices or connections serving the HVAC mechanical equipment.

B. All new exterior located condensing units will have a sound rating in accordance with ANSI/AHRI Standard ARI 270.

1. All new exterior located condensing units will have an A-weighted Sound Power Level, or dB(A), to comply with local code requirements or no more than 55 dB(A) when measured at the property line, whichever is less.

C. All new fans and compressor units will be provided with rubber-in-shear vibration isolators. Mount equipment on grade, on approved equipment pads, to minimize vibrational input to lightweight building frame construction members.

2.6 CONDENSATE PUMPS

A. For each evaporator coil where condensate cannot drain by gravity to code acceptable locations, provide a UL listed, low profile condensate pump of plastic and stainless steel construction. The Contractor shall use the manufacturer’s condensate pump if available. If not, the Contractor will provide a third-party condensate pump. The pump will be complete with a sump pan having a minimum capacity of one quart. The motor will operate on 115 VAC, have a float actuated switch, be capable of moving 1/3 GPM against a head of 10 feet, and be able to be floor or wall mounted.

1. The condensate discharge will be fitted with a check valve.
2. Contractor will provide pump with head greater than 10 feet when required by evaporator coil and drain locations.
3. In interior drain locations, condensate may only be routed to open site floor drains. Any other locations must be approved by the Commissioner prior to development of the shop drawing submittals.
4. In exterior drain designs, condensate may only be routed to new exterior french drains. The French drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior condensate be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.
5. Piping will be 3/4-inch, Sch. 40 Polyvinyl Chloride (PVC). Provide insulation and metallic cover for piping routed outside of the building envelope to match exterior refrigerant line-set covering.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate removal and reinstallation to avoid multiple system shutdowns. Altered heating systems will be reinstalled and operable at the end of each Workday.

B. Install equipment in accordance with Contractor's design drawings approved by the Commissioner and manufacturer's instructions. Furnish steel channels and other supports as required for proper installation, mounting and support of all equipment.

C. Install units' level and plumb.

D. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

E. Install ground-mounted, compressor-condenser components on polyethylene mounting base.

F. Install refrigerant and condensate lines to conserve building space and not interfere with use of space. Route piping in orderly and unobtrusive manner, with plumbing parallel to building structure, and maintain gradient. Group piping whenever practical at common elevations and locations. Slope refrigerant piping one percent in direction of oil return. Slope condensate line a minimum of 1/8-inch per foot in the direction of discharge.

G. Pipe drain pan condensate piping with positive drainage to nearest approved floor drain or to nearest outside drain point. Install a condensate pump where required to provide positive drainage. Route the secondary drain line to discharge in an observable location for the Homeowner. Flexible drain lines may be used to minimize soffits around the evaporator.

1. In interior drain locations, condensate may only be routed to open site floor drains. Any other locations must be approved by the Commissioner prior to development of the shop drawing submittals.
2. In exterior drain designs, condensate may only be routed to new exterior french drains. The French drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior condensate be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.
3. Piping will be 3/4-inch, Sch. 40 PVC. Provide insulation and metallic cover for piping routed outside of the building envelope to match exterior refrigerant line-set covering.

H. Provide cooling season system start up and tests in the first year of operation for systems installed in heating season. Verify dates and times of start-up tests with Commissioner prior to Final Completion of the Home.

3.2 TESTING AND ADJUSTING

A. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Complete manufacturer's starting checklist.

B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Eliminate noise and vibration and assure proper function of all controls, maintenance of temperature, and proper operation.

D. Final Testing:

1. Upon completion of modifications or upgrades to any heating (or cooling) system, a test of the system will be required. The entire system will be operated at normal operating temperatures for a minimum of 1/2-hour, and all areas that have been altered or affected by alterations will be checked for leaks, proper operations, noise, etc., Repair leaks and retest until no leaks exist. Any leaks, deficiencies, or problems of any nature will be corrected.

2. Contractor will provide a sign-off sheet describing tests performed, deficiencies identified during the tests and corrective actions taken to eliminate the deficiencies identified.

    a. Sign-off sheet to be signed by Contractor.

3.3 DEMONSTRATION

A. Upon completion of this portion of the Work, and prior to acceptance by the Commissioner, fully instruct the Homeowner in the proper operation and maintenance of the items provided under this section.

1. Provide final setup of programming of thermostat with input from the Homeowner for all temperature and schedule settings.

3.4 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 81 26

SECTION 23 82 19 - FAN COIL UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes fan coil units with direct expansion coils and accessories.

B. Related Requirements:

1. Section 23 00 00 “General Provisions for Mechanical Work”.
2. Section 23 11 20 “HVAC Piping”.
3. Section 23 63 13 “Air-Cooled Refrigerant Condensers”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For fan coil units: Include plans, elevations, sections, details, and attachments to other work.

1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Include diagrams for power, signal, and control wiring.

C. Heating and/or cooling worksheets completed for each Home utilizing Wrightsoft’s Right-J program.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

1. Provide five (5) year warranty on compressor including parts and labor.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new fan coil units in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the fan coil units and associated installation materials that are defective in materials or workmanship related to installation of the fan coil units for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Corporation; Div. of United Technologies Corp.
2. Lennox Industries Inc.
3. Luxaire Corporation; a division of Unitary Products Group.
4. Rheem Manufacturing Company; Air Conditioning Division.
5. Trane; a business of American Standard Companies.

B. Source Limitations: Each Home and multi-unit building will receive fan coil units from single source from single manufacturer.

2.2 FORCED AIR FAN COIL UNIT

A. Fan Coil Unit Configurations: Self-contained, packaged, factory assembled, pre-wired, direct expansion unit consisting of cooling coil. Unit will be rated in accordance with the latest edition of AHRI Standard 210.

B. Refrigerant: R-32 and R-454B

C. Refrigerant Coil: Copper tubes mechanically expanded into aluminum fins. Comply with AHRI 210, "Unitary Air-Conditioning and Air-Source Heat Pump Equipment". Include condensate drain pan with accessible drain outlet.

1. Refrigerant Coil Enclosure: Steel, matching furnace and evaporator coil with access panel and flanges for integral mounting at or on furnace cabinet and galvanized sheet metal drain pan coated with black asphaltic base paint.

D. Chassis: Galvanized steel where exposed to moisture, with baked-enamel finish and removable access panel. Floor-mounting units will have leveling screws.

E. Cabinet: Steel with baked-enamel finish.

1. Vertical Unit Front Panels: Removable, steel, with integral stamped discharge grille and channel formed edges, cam fasteners, and insulation on back of panel.
2. Horizontal Unit Bottom Panels: Fastened to unit with cam fasteners and hinge and attached with safety chain; with integral stamped discharge grilles.
3. Stack Unit Discharge and Return Grille: Aluminum, double-deflection discharge grille, and louvered or panel-type return grille. Return grille will provide maintenance access to fan coil unit.
4. Steel recessing flanges for recessing fan coil units into ceiling or wall.

F. Fan and Motor Board: Removable.

1. Fan: Forward curved, double width, centrifugal; directly connected to motor. Thermoplastic or painted-steel wheels, and aluminum, painted-steel or galvanized-steel fan scrolls.
2. Motor: Permanently lubricated, multispeed; resiliently mounted on motor board.
3. Wiring Termination: Connect motor to chassis wiring with plug connection.

G. Refrigerant Piping: Comply with requirements in Section 23 11 20 “HVAC Piping”.

1. Connections: Only one (1) liquid line, one (1) suction line, one (1) condensate drain line, control wiring and one (1) power supply connection will be required for each unit. Comply with manufacturer and model specifications.

2.3 FILTRATION

A. Filters: Minimum arrestance and a Minimum Efficiency Reporting Value (MERV) according to ASHRAE 52.2 and all addendums.

1. MERV Rating: Five (5) when tested according to ASHRAE 52.2.
2. Glass Fiber Treated with Adhesive: 80 percent arrestance.

2.4 NOISE AND VIBRATION CONTROL

A. Provide noise and vibration control devices for all new Heating, Venting, and Air Conditioning (HVAC) mechanical equipment to minimize noise generated by the equipment within the dwelling and to prevent exterior noise from being transmitted inside the dwelling via exterior duct openings or refrigerant piping serving the HVAC mechanical equipment.

B. All new fans and compressor units will be provided with rubber-in-shear vibration isolators. Mount equipment on grade**,** on approved equipment pads, to minimize vibrational input to lightweight building frame construction members.

C. Provide flexible connections where ductwork is connected to fans or air handlers.

2.5 THERMOSTATS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Honeywell.

2. Trane.
3. Rite Temp.

B. Automatic, programmable thermostat for single stage cooling with COOL-OFF-AUTO. Low voltage (24v). Liquid Crystal Display (LCD) display to continuously indicate time-of-day, day of week, current program period and temperature. Separate programmability for weekdays and weekends, with a minimum of two (2) time periods for each day. Include mounting wall plate and batteries.

C. At least one (1) programmable thermostat will be provided for each new cooling system.

2.6 CONDENSATE PUMPS

A. For each evaporator coil where condensate cannot drain by gravity to code acceptable locations, provide a UL listed, low profile condensate pump of plastic and stainless steel construction. The pump will be complete with a sump pan having a minimum capacity of one quart. The motor will operate on 115 VAC, have a float actuated switch, be capable of moving 1/3 GPM against a head of 10 feet, and be able to be floor or wall mounted.

1. The condensate discharge will be fitted with a check valve.
2. Contractor will provide pump with head greater than 10 feet when required by evaporator coil and drain locations.
3. In interior drain locations, condensate may only be routed to open site floor drains. Any other locations must be approved by the Commissioner prior to development of the shop drawing submittals.
4. In exterior drain designs, condensate may only be routed to new exterior french drains. The French drains will be a minimum of one square foot in area and include 12 inches of washed gravel in an excavated hole. Under no circumstances can exterior condensate be routed to an area where condensate liquid will cross, deposit or collect on any hardscape surface including, but not limited to, sidewalks, walkways, patios, or driveways.
5. Piping will be 3/4-inch, Sch. 40 Polyvinyl Chloride (PVC). Provide insulation and metallic cover for piping routed outside of the building envelope to match exterior refrigerant line-set covering.

B. Safety Pan: Galvanized sheet metal pan or plastic pan under unit with a separate drain line.

1. Provide wet switch in auxiliary drain pan. Activation of the switch will deactivate both the air handling unit fan and the compressor and fan coil unit.

    a. Wet switch to have polymeric fiber capillary pad with stainless steel sensors and solid state electronic control.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate removal and reinstallation to avoid multiple system shutdowns. Altered heating systems will be reinstalled and operable at the end of each Workday.

B. Do not remove any supplemental air conditioning until new cooling system is installed and operational.

C. Remove, extend forward, and reinstall existing radiators, baseboard, diffusers, registers, thermostats, or any mechanical item(s) at new wall and ceiling modifications.

D. Reroute existing piping to avoid interference with new ductwork, combustion air intake, piping, and duct enclosures.

E. Drain, adjust, and recharge heating and/or cooling systems as necessary to accomplish the Work and provide uninterrupted heating to the Homeowner during cold month construction.

F. Controls: Install thermostats at mounting height of 48 inches above floor.

1. Mount new thermostats at existing locations, where possible.
2. The existing heating system shall be wired to the new thermostat.

G. Install fan coil units level and plumb.

H. Install fan coil units to comply with NFPA 90A.

I. Mount counterflow furnaces installed on combustible floors, on an elevated, structural base.

J. Pipe drain pan condensate piping to nearest approved floor drain or to nearest outside drain point using a condensate pump.

1. Provide a wet switch located in the overflow pan.

K. Install refrigerant and condensate lines to conserve building space and not interfere with use of space. Route piping in orderly and unobtrusive manner, with plumbing parallel to building structure, and maintain gradient. Group piping whenever practical at common elevations and locations. Slope refrigerant piping one percent in direction of oil return. Slope condensate line a minimum of 1/8-inch per foot in the direction of discharge.

1. Comply with requirements in Section 23 11 20 “HVAC Piping” for installation and joint construction of refrigerant piping.

L. Install new filters in each fan coil unit at Substantial Completion.

M. Do not remove any Homeowner-installed, or existing, air conditioning equipment until new cooling system is installed and operational during cooling season.

N. Provide cooling season system start up and tests in the first year of operation for systems installed in heating season. Verify dates and times of start-up tests with Commissioner prior to Final Completion of the Home.

3.2 TESTING AND ADJUSTING

A. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Complete manufacturer’s starting checklist.

B. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Eliminate noise and vibration and assure proper function of all controls, maintenance of temperature, and proper operation.

D. Final Testing:

1. Upon completion of modifications or upgrades to any heating (or cooling) system, a test of the system will be required. The entire system will be operated at normal operating temperatures for a minimum of 1/2 hour and all areas that have been altered or affected by alterations will be checked

for leaks, proper operations, noise, etc., Repair leaks and retest until no leaks exist. Any leaks, deficiencies, or problems of any nature will be corrected.

2. Contractor will provide a sign-off sheet describing tests performed, deficiencies identified during the tests and corrective actions taken to eliminate the deficiencies identified.

    a. Sign-off sheet to be signed by Contractor.

3.3 DEMONSTRATION

A. Upon completion of this portion of the Work, and prior to acceptance by the Commissioner, fully instruct the Homeowner in the proper operation and maintenance of the items provided under this section.

    1. Provide final setup of programming of thermostat with input from the Homeowner for all temperature and schedule settings.

3.4 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 23 82 19

SECTION 26 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Metal conduits, tubing, and fittings.
2. Non-metal conduits, tubing, and fittings.
3. Boxes, enclosures, and cabinets.
4. Metal wireways and auxiliary gutters.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. For each existing residence submitted, the Contractor will provide the following data.

1. Existing service voltage, main breaker size, number of existing circuits.
2. Work to be done at the residence with reference line items.
3. Description and justification for work over and above the addition of an air conditioner circuit will be included.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings. Conduit routing plans, drawn to scale on which the following items are shown and coordinated with each other using input from installer of items involved.

1. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

2. Structural members in paths of conduit groups with common supports.

1.6 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined by a qualified testing agency, and marked for intended location and application.

B. Comply with NEMA PB 1.

C. Comply with NFPA 70, as applicable.

D. Comply with ComEd Red Book Service Entrance Requirements.

E. Comply with City of Chicago Building Code, as applicable.

1.7 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new raceway and boxes in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the raceway and boxes and associated installation materials that are defective in materials or workmanship related to installation of the raceway and boxes for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alflex.
2. Cooper Crouse-Hinds.
3. Republic Conduit.
4. Southwire.
5. Thomas & Betts Corporation.
6. Wheatland Tube Co.

2.2 ELECTRICAL BOXES

A. Boxes:

1. Interior and Dry Locations: NEMA OS 1; galvanized steel.
2. Exterior and Wet Locations: Cast ferroalloy or cast aluminum, deep type, NEMA 3R, gasketed cover, threaded hubs.

2.3 RACEWAY SYSTEM

A. Conduit will be metallic electric tubing unless prohibited by local codes or unless noted otherwise.

1. EMT: Electrical Metallic Tubing. Comply with ANSI C80.3 and UL 797.
2. RMC: Rigid Metallic Conduit. Comply with NEMA TC 2 and UL 651.
3. IMC: Intermediate Metallic Conduit. Comply with ANSI C80.6 and UL 1242.
4. LFMC: Liquid-Tight Flexible Metallic Conduit with PVC jacket. Comply with UL 360.
5. FMC: Flexible Metal Conduit. Comply with UL 1; Zinc-coated steel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Field Measurements: Verify the location of all electrical panel, outlets, switches, lights, and fans.

3.2 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

3.3 INSTALLATION

A. Work includes but is not limited to:

1. Conduit, wiring materials, and electrical devices that are not part of the HVAC equipment manufactured item.
2. Sleeves, cutting, and patching required for passage of pipes and conduits and for installation of electrical outlets and switches to include those devices relocated as part of the drywall installation modifications.
3. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping
4. At modified walls, extend receptacles to conform to present electrical code’s minimum requirements.
5. Comply with requirements in Division 26 Section “Hangers and Supports for Electrical Systems” for hangers and supports.
6. Support conduit within 12 inches of enclosures to which attached.
7. Extend forward, and/or reinstall existing electrical outlets, switches, receptacles, fans, lights, or any electrical item(s), exclusive of security alarm systems, at new wall and/or ceiling modifications conforming to the most current edition of the code authority having jurisdiction.

The above electrical item reference also includes telephone, fire alarm, coaxial, communication, internet, video, and/or audio cables. Wiring will not be pulled or stretched to reach their new location.

8. Removal, relocation, and reinstallation of existing wiring, junction boxes, lighting fixtures, etc., as required for installation of the new ductwork.
9. Do not rely on locknuts to penetrate non-conductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
10. Add grounding rods and/or water pipe grounding with water meter jumpers where required.
11. Final test for operations.

B. Install new materials in accordance with local building codes.

C. New panels and services will be grounded in accordance local building codes.

D. Connect all switches and outlets relocated as part of the drywall installation modifications described in Section 09 29 00 “Gypsum Drywall”.

E. Provide insulating cover gaskets at each switch or receptacle located on modified exterior walls.

3.4 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 26 05 33

SECTION 26 24 16 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section includes:

1. Panelboards.
2. Service Entrance Load Centers.
3. Service Entrance Conductors.
4. Surge Protection Device (SPD).

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1. Detail enclosure types and details for types other than NEMA 250, Type 1.
2. Detail bus configuration, current, and voltage ratings.
3. Short-circuit current rating of panelboards and overcurrent protective devices.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, and details. Show tabulations of installed devices, equipment features, and ratings.

C. Panelboard schedules: For installation in panelboards. Submit final versions after load balancing. Update directory.

1.5 INFORMATIONAL SUBMITTALS

A. Product Data: For each existing residence submitted, provide the following:

1. Existing service voltage, main breaker size, number, quantity, and amperage of existing circuits.
2. Work to be done at the residence with reference line items.
3. Description and justification for work over and above the addition of an air conditioner circuit will be included.

1.6 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled by a qualified testing agency, and marked for intended location and application.

B. Comply with NEMA PB 1.

C. Comply with NFPA 70, as applicable.

D. Comply with City of Chicago Building Code, as applicable.

1.7 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in material and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new load center in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the load center and associated installation materials that are defective in material or workmanship related to installation of the load center for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from date of Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

1.8 DELIVERY STORAGE AND HANDLING.

A. Remove loose packing and flammable materials from inside panelboards;

B. Handle and prepare panelboards for installation according to NECA 407 or NEMA PB1.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. ABB GroupSiemens Energy & Automation, Inc.

3. Square D; a brand of Schneider Electric.

2.2 PERFORMANCE REQUIREMENTS

A. Enclosures: Flush-mounted or surface-mounted cabinets as determined by field conditions.

1. Rated for environmental conditions at installed location.

a. Indoor Dry and Clean Locations: NEMA 250, Type 1
b. Kitchen. and Wash-Down Areas: NEMA 250, Type 4X stainless steel
c. Outdoor locations: NEMA 250, Type 3R
d. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
4. Directory Card: Inside panelboard door, mounted in transparent card holder per NEC 110-22.

B. Incoming Mains Location: Convertible.

1. Factory Installed Main Circuit Breaker.
2. Single pole and two pole branch breakers of rating as required to connect new and existing loads. Do not use half size circuit breakers.

C. Phase, Neutral, and Ground Buses: Tin-plated Copper.

2.3 SERVICE ENTRANCE LOAD CENTERS

A. Capacity: 120/240 Volts AC, Single phase, three wires, as verified for field conditions.

B. Load Center ratings will be as follows:

1. 100 Ampere bus rating, 14 full size poles minimum, 100A/2 Pole Main Breaker:

a. Cutler-Hammer; Model No. CH14B100BP.
b. Siemens; Model No. P1624B1100CU.
c. Square D Co.; Model No. QO116M100P.
d. ABB Group: Model No. PCM1610.

2. 100 Ampere bus rating, 30 full size poles minimum, 100A/2 Pole Main Breaker:

a. Cutler-Hammer; Model No. CH30B100D.

b. ABB Group; Model No. PCM3010.

c. Siemens; Model No. P3030B1100CU.

d. Square D Co.; Model No. QO132M100.

3. 200 Ampere bus rating, 40 full size poles minimum, 200A/2 Pole Main Breaker:

a. Cutler-Hammer; Model No. CH42B200K.
b. Siemens; Model No. G4242B1225CU.
c. Square D Co.; Model No. QO142M200P.
d. ABB Group; Model No. PCM4020.

C. Load Centers: Comply with UL 67.

D. Branch Overcurrent Protective Devices: Plug-in circuit breakers, replaceable without disturbing adjacent units.

E. Each new Load Center panel to be provided complete with Main and branch circuit breakers of quantity as required to reestablish existing circuits plus new Heating, Ventilating and Air Conditioning (HVAC) load and will have a minimum of four (4) spaces for future use.

F. Factory-installed filler plates to remain in unused spaces.

G. Conductor Connectors: Mechanical type for main, neutral, and ground lugs and buses.

2.4 SURGE PROTECTION DEVICE

A. Surge Protection Device:

1. Non-modular, Type 2 SPD, UL 1449 Third Edition.
2. LED indicator lights for power and protection status.

3. Fuses, rated at 200-kA interrupting capacity.
4. Fabrication using bolted compression lugs for internal wiring.

5. Integral disconnect switch.
6. Redundant suppression circuits.
7. Arrangement with wire connections to phase buses, neutral bus, and ground bus.
8. LED indicator lights for power and protection status.
9. Provide factory-mounted and wired surge suppression device as part of new manufacturer's electrical panel.

B. Nominal Discharge Current (I_N) 20 kA.

C. Surge Current Capacity 108 kA.

D. Voltage Protection Ratings (VPR) and UL 1449 Third Edition for 240/120-V, single-phase, 3-wire circuits shall be as follows:

1. Line to Neutral/Ground: 600 V.
2. Line to Line: 1,200 V.

2.5 SERVICE ENTRANCE CONDUCTORS

A. Service entrance conductors from the weatherheads to the load centers will be 98% copper with 600 volt insulation type XHHW-2, rated for either a 100 Ampere or 200 Ampere service, matching the rating of the load center.

B. Provide new service conductors directly from meter to new panel without splice.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Field Measurements: Verify the location of all electrical panels, outlets, switches, lights, fans, and related components.

B. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.

C. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Disconnect and remove existing incoming service: Service conductors and conduit, weatherheads, meters and panels. Provide new incoming service, weatherheads, conduit, copper conductors and load centers. Replace all existing 60 amp services with a new 100 amp, 120/240V service. Provide a 200 amp, 120/240V service only where required to meet existing load and new HVAC load.

B. Add grounding rods and/or water pipe grounding with water meter jumpers where required.

C. Install new materials according to local building Codes.

D. Install panelboards and accessories according to NECA 407 or NEMA PB 1.1.

E. All new panels and services will be grounded according to local building Codes.

F. Use minimum wire size No. 12 AWG for 20-amp circuit breaker and minimum wire size No. 14 AWG for 15-amp circuit breaker. Wire size will be identical to existing when extending circuits.

1. Use 10 AWG conductors for 20-amp, 120 volt branch circuit homeruns longer than 75 ft.

G. Neatly train and secure wiring inside boxes, equipment, and panelboards.

H. Protect exposed cables.

I. Make splices, taps, and terminations to carry full amperage of conductors without perceptible temperature rise. No splices will be allowed inside the electrical panels.

J. Test and inspect all electrical Work for proper operation, continuity, and grounding.

K. Connect units and components to wiring systems and to ground as indicated and instructed by manufacturer. Tighten connectors and terminals, including screws and bolts, according to equipment manufacturer's published torque-tightening values for equipment connectors. Where manufacturer's torqueing requirements are not indicated, tighten connectors and terminals according to tightening requirements specified in UL 486A.

L. Splicing of conductors within the new Load Center Panelboards will not be accepted.

M. For the conversion of the existing service panel to a junction box, the Contractor will remove the bus, neutral bus, main and branch circuit breaker etc., from the panel. Provide and install a new blank metal plate to cover all openings left after the removal of main and branch circuit breaker. This box will be used for splicing/termination of branch circuits only. The new main service entrance conductor will not enter into nor splice in this converted junction box.

N. Surge Protection Device

1. Install SPD at service entrance on load side, with ground lead bonded to service entrance ground.
2. SPD shall be installed in accordance with the manufacturer's instructions.
3. Install SPD with conductors between SPD and points of attachment as short and straight as possible. Do not exceed manufacturer's recommended lead length. Do not bond neutral and ground.

    a. Provide 2-pole, 30-A circuit breakers as a dedicated disconnecting means for the SPD.

3.3 IDENTIFICATION

A. Create a directory to indicate installed circuit loads and incorporating Homeowner's final room designations. Obtain approval before installing. Provide legible directory.

3.4 FIELD QUALITY CONTROL

A. Final Testing:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.
3. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

B. Panelboards will be considered defective if they do not pass tests and inspections.

3.5 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 26 24 16

SECTION 26 27 26 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Wire and cable.
2. Receptacles, receptacles with integral Ground Fault Circuit Interrupter (GFCI), and associated device plates.
3. Wall-switches.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 QUALITY ASSURANCE

A. Wiring Devices, Components, and Accessories: Listed and labeled by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70, as applicable.

C. Comply with City of Chicago Building Code, as applicable.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Subject to compliance with requirements, devices that are manufactured for use with modular plug-in connectors may be used.

1. Connectors will comply with UL 2459 and will be made with stranding building wire.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the wiring devices in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace wiring devices and associated installation materials that are defective in materials or workmanship related to installation of the wiring devices for a period of one (1) year from the Date of Final Completion of the Home.

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Bryant.
2. Cerrowire.
3. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
4. Eagle Electric.
5. General Cable Technologies Corporations.
6. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
7. Leviton Mfg. Company Inc. (Leviton).
8. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).
9. Southwire.

B. Source Limitations: Each Home and multi-unit building will receive each type of product from single source from single manufacturer.

2.2 WIRE AND CABLE

A. Building Wire:

1. Feeders and Branch Circuits larger than No. 6 AWG: Copper, stranded conductor, 600 volt insulation, XHHW-2.
2. Feeders and Branch Circuits No. 6 AWG and Smaller: Copper conductor, 600 volt insulation, THHN/THWN, 6 and 8 AWG, stranded conductor.
3. Control Circuits: Copper, No. 14 AWG stranded conductors, 600 volt insulation, type THHN.
4. Branch Circuit Wiring: Minimum wire size will be No. 14 AWG on 15A Circuits. No. 12 AWG will be used on 20A Circuits.

2.3 STRAIGHT-BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 6 (Dimensions for Wiring Devices) Configuration 5-20R, UL 498, and Federal Specification (FS) W-C-596 (Connector, Electrical, Power, General Specification).

1. Type 5-15R will be used on 15A circuits.
2. Color and style as selected to match existing in room or adjacent space.

2.4 GFCI RECEPTACLES

A. General Description:

1. Straight blade, non-feed-through type.
2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A.
3. Include indicator light that shows when the Ground Fault Circuit Interrupter has malfunctioned and no longer provides proper GFCI protection.

B. Duplex GFCI Convenience Receptacles, 125 V, 20 A.

2.5 TOGGLE SWITCHES

A. Comply with NEMA WD 1, UL 20, and FS W-S-896.

1. 120/277 V, 20 A.
2. Plastic toggle handle, color and style as selected to match existing in room or adjacent space.

2.6 WALL PLATES

A. Single and combination types will match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces: Match existing.
3. Color: Match device and existing in room or adjacent space.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Furnish all labor, materials, equipment, and services required to complete, connect, and place in operation the Heating, Ventilating and Air Conditioning (HVAC) system, electrical outlets, switches, exhaust fan, electric heating coil, and load centers when specified.

B. Use minimum wire size No. 12 AWG for 20 amp circuit breaker and minimum wire No. 14 AWG for 15 amp circuit breaker. Wire size will be identical to existing when extending circuits.

1. Use No. 10 AWG conductor for 20-amp, 120 volt branch circuit homeruns longer than 75 ft.

C. Coordination with Other Trades:

1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

D. Conductors:

1. Do not strip insulation from conductors prior to splicing or terminating on devices.
2. Strip insulation evenly around the conductor using specialty designed tools for this purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices will meet provisions of NFPA 70, Article 300 and the City of Chicago Building Code, without pigtails.
4. Existing Conductors:

    a. Cut back and pigtail, or replace all damaged conductors.
    b. Straighten conductors that remain and remove corrosion and foreign matter.
    c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.

E. Device Installation:

1. Replace devices in temporary use during construction or installed before completion of building finishing operations.
2. Keep wiring devices in original packaging or otherwise protected until connected to conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until Substantial Completion.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. Use side wiring with binding-head screw terminals, if possible. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.

F. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

G. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.

I. Adjust locations of service poles to suit arrangement of partitions and furnishings.

J. Connect all switches and outlets relocated as part of drywall installation modifications.

K. Provide insulating cover gaskets at each switch or receptacle located on modified exterior walls.

L. The Contractor will provide and be responsible for protection and repair of adjacent surfaces and areas which may become damaged as a result of this Work and provide for the safety and good condition of all materials and equipment. Repair or replace all damaged or defective material, equipment, or Work at no cost to the Commissioner.

M. Test and inspect all electrical Work for proper operation, continuity, and grounding.

3.2 GFCI RECEPTACLES

A. Install feed-through-type GFCI receptacles where protection of downstream receptacles is required.

3.3 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 26 27 26

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SECTION 26 28 16 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One (“Instructions and Execution Documents”)
2. Part Two (“General Conditions”)
3. Part Three (“Technical Specifications”)

1.2 SUMMARY

A. Section Includes:

1. Non-Fusible switches.
2. Disconnect switches.

B. Related Requirements:

1. Section 23 54 00 “Furnaces”.
2. Section 23 63 13 “Air-Cooled Refrigerant Condensers”.
3. Section 23 81 26 “Split-System Air-Conditioners”.

1.3 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 “Submittal Procedures” and Part Two, Article XI: (“Shop Drawings, Product Data, and Samples”).

1.4 ACTION SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated.

B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, details, and attachments to other work.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70, as applicable.

C. Testing Agency Qualification: Member company of NETA or an NRTL.

D. Comply with the City of Chicago Building Code, as applicable.

1.6 WARRANTIES

A. Manufacturer's Warranty: Provide the manufacturer's standard written warranty against defects in materials and workmanship. Do not void manufacturer's warranty by installation practices unacceptable to the manufacturer.

B. Contractor's Warranty: The Contractor is responsible for the complete installation of the new safety switches in a manner that will preserve the manufacturer's warranty. The Contractor will submit a written and signed warranty, in which Contractor agrees to repair or replace the safety switches and associated installation materials that are defective in materials or workmanship related to installation of the safety switches for a period of one (1) year from the Date of Final Completion of the Home

1. Any corrective work to maintain the performance in this warranty will be carried out by the Contractor at no cost to the Homeowner, Commissioner or their Representatives.
2. Warranty period: One (1) year from Final Completion of the Home.

C. Homeowner's Responsibility: Parts and labor to repair and/or replace items damaged by abuse, negligence, accident, Act of God, or normal wear and tear after acceptance of the Work by the Commissioner, will be the responsibility of the Homeowner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
3. Square D; a brand of Schneider Electric.

2.2 NON-FUSIBLE SWITCHES

A. Provide wiring for air-cooling and refrigeration equipment in accordance with Article 440-11 of the National Electrical Code and the City of Chicago Building Code. Provide disconnecting means in accordance with manufacturer's installation instruction at each Condensing Unit.

B. Type GD, General Duty, Single Throw, 240-V ac: UL E2875 and NEMA 3R, horsepower rated, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

1. 30 A with lug terminal types:

   a. Cutler-Hammer: DG221URB.
   b. General Electric: TGN3321R.
   c. Square D Co.: DU321RB.

2. 60 A with lug terminal types:

   a. Cutler-Hammer: DG222URB.
   b. General Electric: TG3322R.
   c. Square D Co.: DU332RB.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Factory-installed Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.

2.3 DISCONNECT SWITCHES

A. Provide toggle disconnect switch for each newly installed or existing furnace or air handling units, that are modified for Project.

B. Manufacturers of general purpose, indoor type, disconnecting means: (Re-established existing furnace circuit). Provide product by one of the following:

1. Hubbell.
2. Leviton.
3. Pass & Seymour.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install individual wall-mounted switches and circuit breakers with tops at uniform height.

B. Comply with NECA 1.

C. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

D. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.

3.2 CLEANING

A. Keep work area and the adjacent areas clear and free of all debris, unused materials and equipment, and leave Work in a condition acceptable to the Commissioner.

END OF SECTION 26 28 16

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SECTION 32 13 13 – SITE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All work under this section is subject to the requirements of the Contract Documents.

1. Part One ("Instructions and Execution Documents")
2. Part Two ("General Conditions")
3. Part Three ("Technical Specifications")

1.2 SUMMARY

A. Section includes:

1. Concrete walks.
2. Concrete for fence foundations.

B. Related Requirements:

1. Section 06 20 13 "Exterior Finish Carpentry" for fence posts anchored in concrete pier foundations.
2. Section 07 92 00 "Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS, GENERAL

A. Make all Submittals in accordance with Section 01 33 00 "Submittal Procedures" and Part Two, Article XI: ("Shop Drawings, Product Data, and Samples").

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified ready-mix concrete manufacturer.

B. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Joint fillers.

C. Material Test Reports: For each of the following:

1. Aggregates.

D. Field quality-control reports.

1.7 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. American Concrete Institute (ACI) Publications: Comply with ACI 301, unless otherwise indicated.

C. Preinstallation Conference: Conduct conference at Project site(s).

1. Review methods and procedures related to concrete paving, including but not limited to, the following:

a. Concrete mixture design.
b. Quality control of concrete materials and concrete paving construction practices.

1.8 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces. Round sonotube forms for pier foundations.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.
2. Use forms made of wood at least 1-1/2 inches in thickness or steel of equal rigidity. The height of the forms will be the same thickness of the concrete sidewalk.
3. Hold forms securely in place by stakes or braces, in such a manner to keep form top edge true to line and grade.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Recycled Content: Post-consumer recycled content plus one-half of pre-consumer recycled content not less than 25 percent.

B. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.

C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

D. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

E. Deformed-Steel Wire: ASTM A 496/A 496M.

F. Tie Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.3 CONCRETE MATERIALS

A. Cementitious Material: For each Home and multi-unit building provide the following cementitious materials, of same type, brand, and source:

1. Portland Cement: ASTM C 150, gray portland cement Type I.
2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C 33, uniformly graded. For each Home and multi-unit building provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 3/4-inches nominal.

2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

2.4 CURING MATERIALS

A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry or cotton mats

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

2.5 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

B. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces, of class suitable for application temperature, of grade complying with requirements.

2.6 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.

1. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that meet or exceed requirements.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): 3500 psi.

2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.40.
3. Slump Limit: 3 inches, plus or minus 1 inch.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content: 5 percent plus or minus 1.5 percent for 3/4-inch nominal maximum aggregate size.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Pozzolan: 15 percent.
2. Ground Granulated Blast-Furnace Slag: 30 percent.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI “Manual of Standard Practice” for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2 inch overlap of adjacent mats.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of paving strips, unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.

3. Butt Joints: Use epoxy bonding adhesive at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, where indicated.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas, as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

H. Screed paving surface with a straightedge and strike off.

I. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in design mixtures.

J. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 degrees F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Finish surface to match existing adjacent surfaces.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb./sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by curing compound as follows:

1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 3/4-inch.
2. Thickness: Plus 3/8-inch, minus 1/4-inch.
3. Surface: Gap below 10 foot long, unleveled straightedge not to exceed 1/2-inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2-inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4-inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4-inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4-inch, no minus.
10. Joint Width: Plus 1/8-inch no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 will be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 degrees F and below and when it is 80 degrees F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test will be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results will be reported in writing to Commissioner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests will contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7 and 28-day tests.

E. Additional Tests: Testing and inspecting agency will make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Commissioner.

F. Concrete paving will be considered defective if it does not pass tests and inspections.

G. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

H. Prepare test and inspection reports.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Commissioner.

B. Drill test cores, where directed by Commissioner, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Final Completion inspections.

3.12 BACKFILL AND SEEDING

A. After removal of formwork, backfill areas adjacent to new concrete sidewalk with new topsoil sloped to match existing adjacent landscape.

B. Provide new grass seed to match existing adjacent grass.

END OF SECTION 32 13 13

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ABBREVIATIONS / SYMBOLS

WINDOWS/DOORS

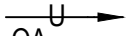
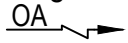
AL	Aluminum
ARCH	Arch-Top (Storm Window)
Assoc.	Associated
AT ST	Atrium Storm (Door)
AWN	Awning (Window)
COL	Colonial Grille
CSMT	Casement (Window)
3CSMT	Triple Casement (Window)
DB CSMT	Double Casement (Window)
DH	Double Hung (Window)
HP	Hopper (Window)
DIA	Diamond Grille
EXIST	Existing
FXD	Fixed (Window)
HC	Hollow Core (Door)
HM	Hollow Metal (Door)
HW	Hardware
P	Prime (Door)
RO	Rough Opening
RP	Raised Panel (Door)
SC	Solid Core (Door)
SL	Sliding (Door or Window)
3SL	Three Lite Slider (Window)
SL ST	Sliding Glass Storm (Door)
GL BLK	Glass Block (Window)
JLS	Jalousie (Window)
--A	Door w/ one Sidelight
--B	Door w/ two Sidelights
--C	Door w/ two Sidelights and One Toplight
S	Storm (Door)
STORM	Storm (Window)
GRDN	Garden (Storm Window)
POLY	Polygon (Storm Window)
SKL	Skylight (Storm Window)
FR	French Door

WALLS/CEILINGS/FLOORS

ACT	Acoustical Ceiling (Panel) Tile
ALS	Aluminum Siding
CMU	Concrete Masonry Unit
CONC	Concrete
CPT	Carpet
CT	Ceramic Tile
GB	Gypsum (Wall) Board
PLYWD	Plywood
PNL	Panel, or Paneling
PNT	Paint
P.T.	Pressure Treated
R.O.	Rough Opening
UNFIN	Unfinished, Exposed Structure
UNPNT	Unpainted Plaster or Wallboard
VCT	Vinyl Composition Tile
VIN	Sheet Vinyl or Vinyl Siding
V.I.F.	Verify in Field
W/	With

ABBREVIATIONS / SYMBOLS

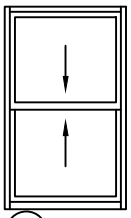
MECHANICAL/ELECTRICAL

AC	Air Condensing Unit
BOIL	Boiler
CB	Capacity Breaker
CCT	Circuit
CFM	Cubic Feet Per Minute
EF	Exhaust Fan
EXH	Exhaust
FURN	Furnace
FHA	Forced Hot Air
FHAF	Forced Hot Air Furnace
FHAFC	Forced Hot Air Furnace w/ Cooling Coil
FHW	Forced Hot Water
LRA	Locked Rotor Ampere
PV	Plumbing Vent
RA	Rated Ampere
T	New Thermostat
VD	Volume Damper
WAC	Wall Mounted Air Cooled Unit
WACC	Air Cooling Condenser for WAC
WEF	Whole House Exhaust Fan
	Duplex Outlet (Existing)
$/$$	Single / Multiple Switches
∅	Diameter
	Existing / New Electrical Panel
	Undercut Door
	Outside Air
	Return Air
	Supply Air
	Safety Switch
	Home Run

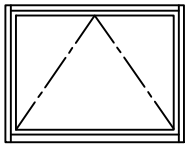
MISCELLANEOUS

AFF	Above Finish Floor
AP	Access Panel
BGE	Beige
BOT	Bottom
BRN	Brown
BSMT	Basement
CLG	Ceiling
CONT	Continuous
D	Dryer
DV	Dryer Vent
FS	Face of Stud
FT	Foot (Feet)
GV	Gable End Vent
IN	Inch (Inches)
MAX	Maximum
MFR	Manufacturer
MTL	Metal
MIN	Minimum
NO WK	No Work
NTS	Not to Scale
NVA	Net Ventilating Area
OC	On-Center
PT	Pressure Treated
R	Reuse
REC	Recommended
RV	Roof Vent
RIV	Ridge Vent
SIM	Similar
ST	Stain
STC	Sound Transmission Class
SV	Soffit Vent
TYP	Typical
WD	Wood
WHT	White
N	New
Y	Yes

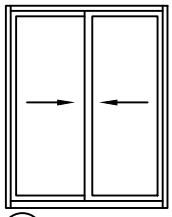
WINDOW ELEVATIONS



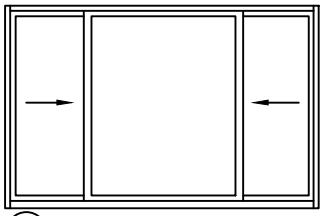
DH DOUBLE HUNG
(ACOUSTIC)



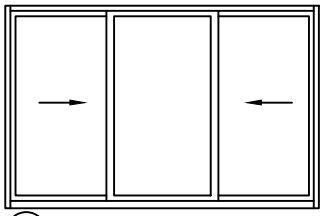
AWN AWNING
(ACOUSTIC)



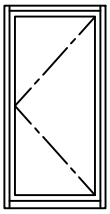
SL SLIDER
(ACOUSTIC)



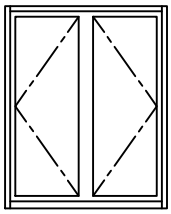
3SL 3-LIGHT SLIDER (1:2:1)
(ACOUSTIC)



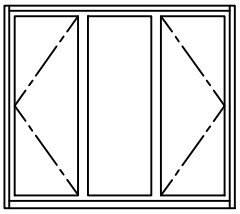
3SL 3-LIGHT SLIDER(1:1:1)
(ACOUSTIC)



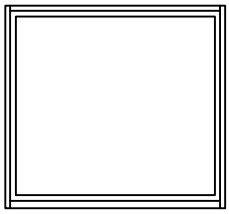
CSMT SINGLE CASEMENT
(ACOUSTIC)



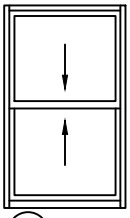
DB CSMT DOUBLE CASEMENT
(ACOUSTIC)



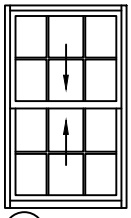
3 CSMT 3-LIGHT CASEMENT
(ACOUSTIC)



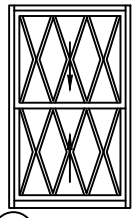
FXD FIXED
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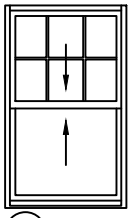
NO NO GRILLE



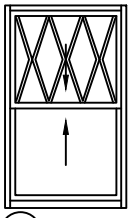
COL COLONIAL



DIA DIAMOND



COL COLONIAL
TOP SASH ONLY



DIA DIAMOND
TOP SASH ONLY

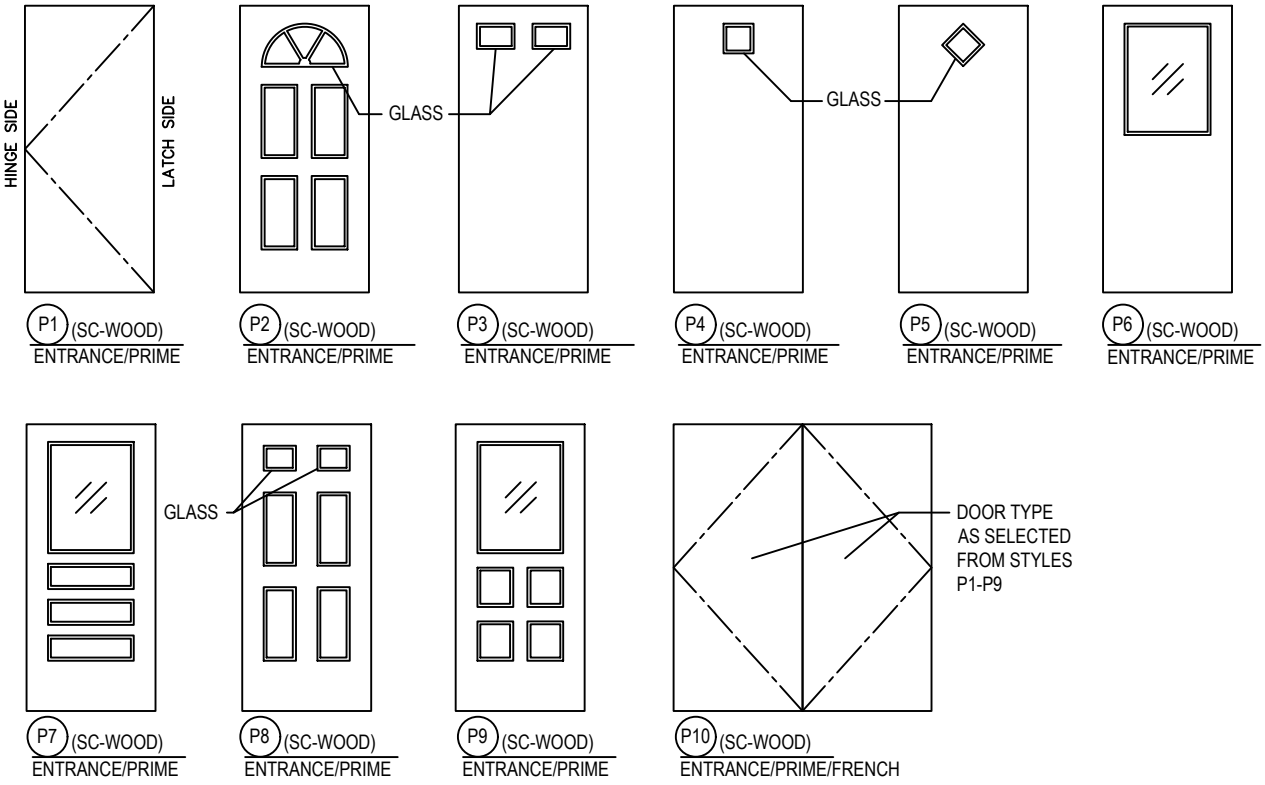
NOTES:

- GRILLE PATTERNS WILL VARY UPON THE SIZE OF WINDOW.
- ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
- VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.
- ALL WINDOWS AVAILABLE WITH FROSTED GLASS.
- NON-ACOUSTIC WINDOW ELEVATIONS SIMILAR.

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WOOD PRIME DOOR ELEVATIONS



P1 (SC-WOOD) ENTRANCE/PRIME

P2 (SC-WOOD) ENTRANCE/PRIME

P3 (SC-WOOD) ENTRANCE/PRIME

P4 (SC-WOOD) ENTRANCE/PRIME

P5 (SC-WOOD) ENTRANCE/PRIME

P6 (SC-WOOD) ENTRANCE/PRIME

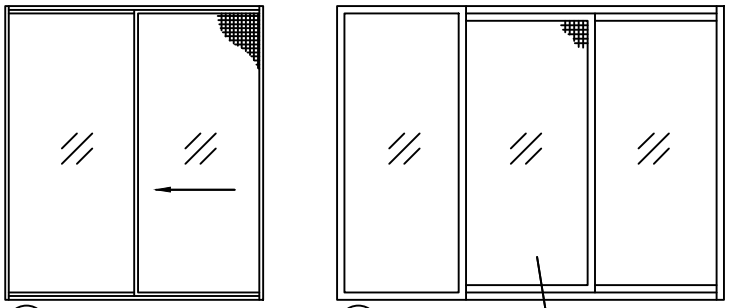
P7 (SC-WOOD) ENTRANCE/PRIME

P8 (SC-WOOD) ENTRANCE/PRIME

P9 (SC-WOOD) ENTRANCE/PRIME

P10 (SC-WOOD) ENTRANCE/PRIME/FRENCH

SLIDING PRIME DOOR ELEVATIONS



SL1 (SC-AL or VINYL) SLIDING GLASS/PRIME

SL2 (SC-AL or VINYL) SLIDING GLASS/PRIME

KEYED DEADBOLT AVAILABLE, IF EXISTING. ONLY CLEAR GLASS IS AVAILABLE FOR SLIDING PRIME DOORS.

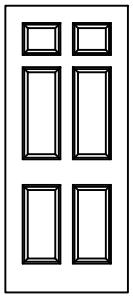
NOTES:
1. ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
2. PEEPHOLES AVAILABLE FOR MOST STYLES.
3. DOOR STYLES SHOWN WITH MOULDINGS ARE WOOD TRIMS APPLIED TO A FLUSH DOOR.
4. VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.

GLAZING OPTIONS FOR WOOD PRIME DOORS:
1. CLEAR GLASS
2. FROSTED GLASS
3. RAIN GLASS

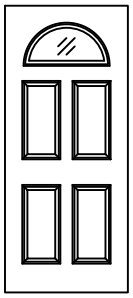
LEGEND:
DENOTES GLASS/ GLAZED PANEL
DENOTES SCREEN

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Chicago, IL 60606

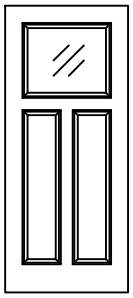
FIBERGLASS PRIME DOOR ELEVATIONS



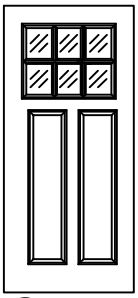
F1 (FIBERGLASS)
ENTRANCE/PRIME



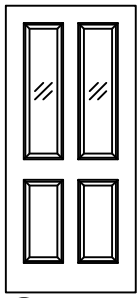
F2 (FIBERGLASS)
ENTRANCE/PRIME



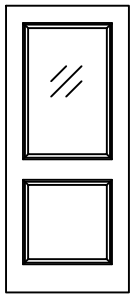
F3 (FIBERGLASS)
ENTRANCE/PRIME



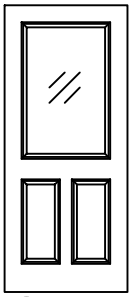
F4 (FIBERGLASS)
ENTRANCE/PRIME



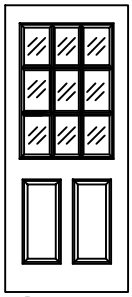
F5 (FIBERGLASS)
ENTRANCE/PRIME



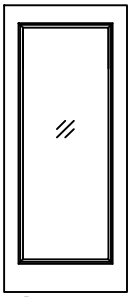
F6 (FIBERGLASS)
ENTRANCE/PRIME



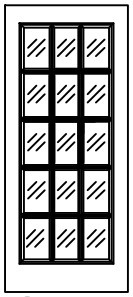
F7 (FIBERGLASS)
ENTRANCE/PRIME



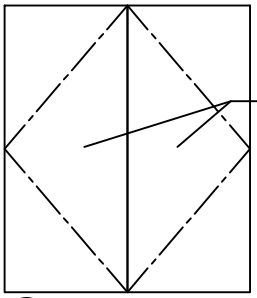
F8 (FIBERGLASS)
ENTRANCE/PRIME



F9 (FIBERGLASS)
ENTRANCE/PRIME



F10 (FIBERGLASS)
ENTRANCE/PRIME



F11 (FIBERGLASS)
ENTRANCE/PRIME/FRENCH

NOTES:
- ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
- PEEPHOLES AVAILABLE FOR MOST STYLES.
- VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.

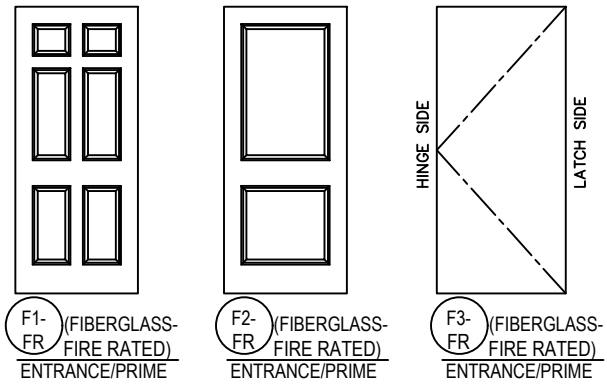
GLAZING OPTIONS:
1. CLEAR GLASS
2. FROSTED GLASS
3. RAIN GLASS

LEGEND:
DENOTES GLASS/ GLAZED PANEL

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FIBERGLASS FIRE-RATED PRIME DOOR ELEVATIONS

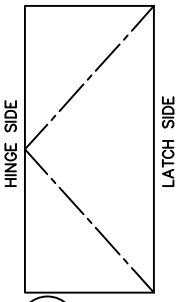


F1-FR (FIBERGLASS-FIRE RATED)
ENTRANCE/PRIME

F2-FR (FIBERGLASS-FIRE RATED)
ENTRANCE/PRIME

F3-FR (FIBERGLASS-FIRE RATED)
ENTRANCE/PRIME

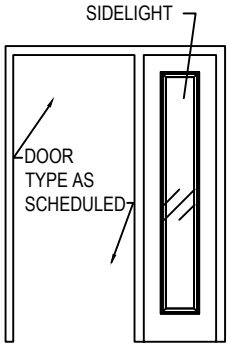
WOOD FIRE-RATED PRIME DOOR ELEVATIONS



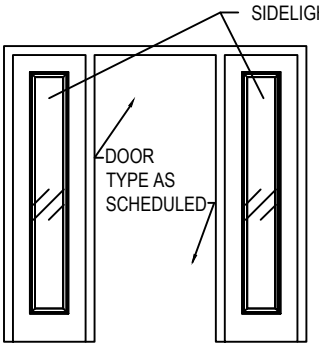
P1-FR (WOOD-FIRE RATED)
ENTRANCE/PRIME

NOTES:
1. ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
2. PEEPHOLES AVAILABLE FOR ALL STYLES.
3. VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.

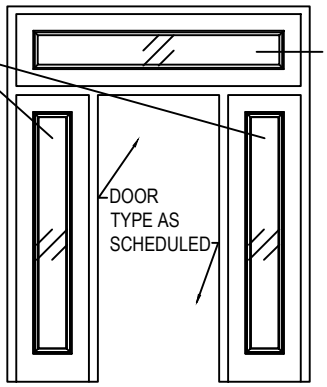
PRIME DOOR WITH SIDELIGHTS - FRAME ELEVATIONS



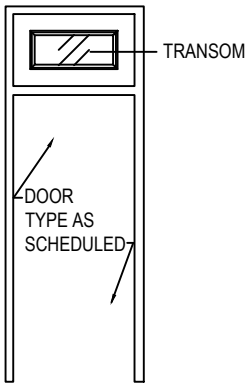
A-DOOR w/ONE SIDELIGHT
LEFT OR RIGHT-HAND SIDELIGHT



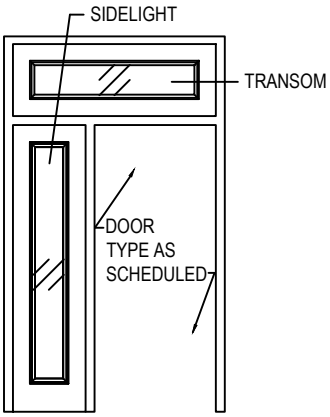
B-DOOR w/TWO SIDELIGHTS



C- DOOR w/TWO SIDELIGHTS & TRANSOM



A-DOOR w/TRANSOM



B-DOOR w/ONE SIDELIGHT & TRANSOM
LEFT OR RIGHT-HAND SIDELIGHT

SIDELIGHT AND TOPLIGHT ABBREVIATIONS

(A,B,C) - represents the number of sidelights and/or transoms associated with a prime door
(T) - represents a transom above a prime door
(L) - represents a sidelight to the left of a prime door as viewed from the interior
(R) - represents a sidelight to the right of a prime door as viewed from the interior
(H) - represents a sidelight with half glass
(F) - represents a sidelight with full glass
(N) - represents a sidelight with no glass

NOTES:
- ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
- VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.
- SIDELIGHTS AND TRANSOM TO MATCH EXISTING OR AS SELECTED BY HOMEOWNER. FULL, HALF OR NO GLASS OPTIONS AVAILABLE.

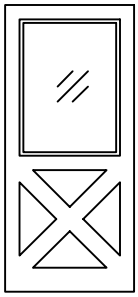
GLAZING OPTIONS:
1. CLEAR GLASS
2. FROSTED GLASS
3. RAIN GLASS

LEGEND:
DENOTES GLASS/ GLAZED PANEL

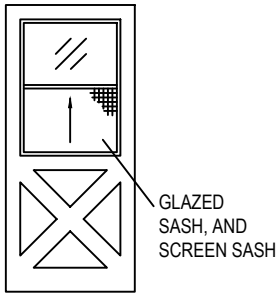
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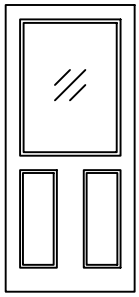
STORM DOOR ELEVATIONS



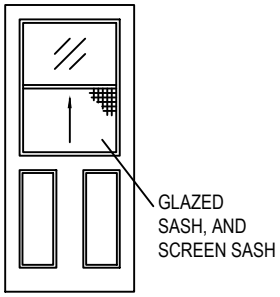
S1 (SC-AL CLAD)
STORM



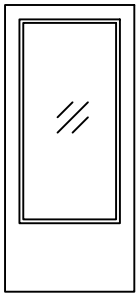
S2 (SC-AL CLAD)
STORM W/ SCREEN



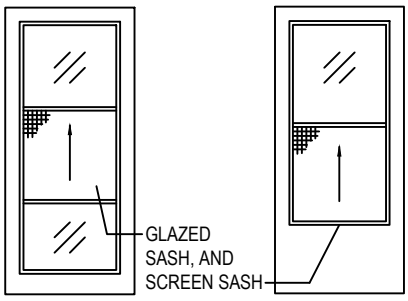
S3 (SC-AL CLAD)
STORM



S4 (SC-AL CLAD)
STORM W/ SCREEN



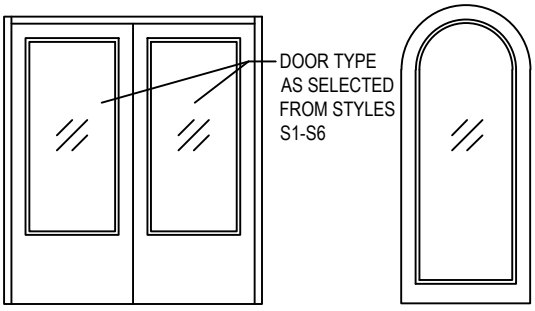
S5 (SC-AL CLAD)
STORM



S6 (SC-AL CLAD)

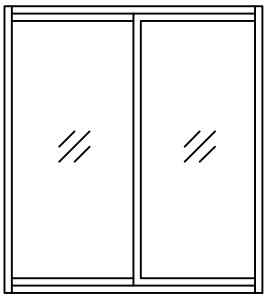
S6 (SC-AL CLAD)

STORM W/ SCREEN -- TWO STYLE VERSIONS
NO CHOICE AVAILABLE BETWEEN THESE TWO VERSIONS
CONTRACTORS DETERMINE WHICH VERSION IS AVAILABLE

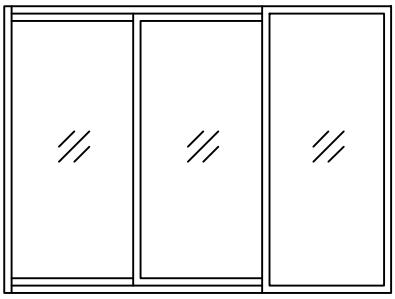


S7 (SC-AL CLAD)
ATRIUM FRENCH STORM

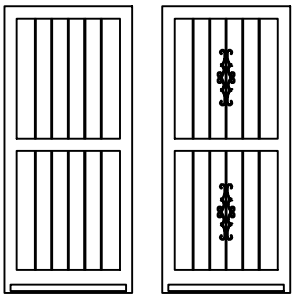
S11 (ALUMINUM)
STORM



S8 (ALUMINUM)
SLIDING GLASS STORM



S9 (ALUMINUM)
THREE LIGHT SLIDING GLASS
STORM



S10 (ALUMINUM)
SECURITY STORM DOOR -- TWO STYLE VERSIONS
ONLY AVAILABLE IF A SECURITY STORM EXISTS
NO CHOICE AVAILABLE BETWEEN THESE TWO VERSIONS
CONTRACTORS DETERMINE WHICH VERSION IS AVAILABLE
STYLE MAY VARY

NOTES:

- ALL DRAWINGS AND PROPORTIONS ARE APPROXIMATE. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS.
- SEE SPECIFICATIONS FOR GLAZING REQUIREMENTS.
- VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.

LEGEND:

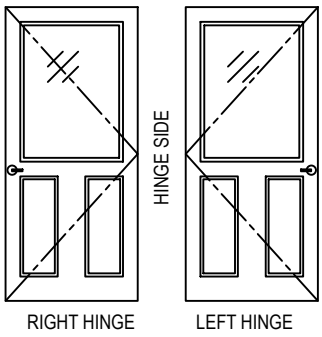
DENOTES GLASS/ GLAZED PANEL

DENOTES SCREEN

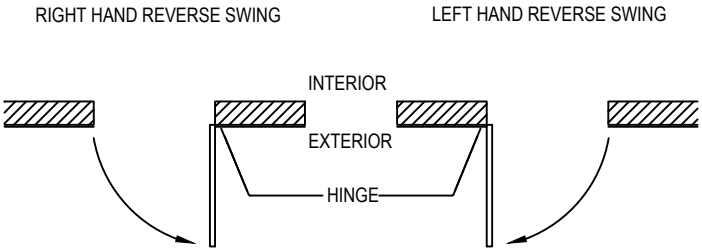
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Chicago, IL 60606

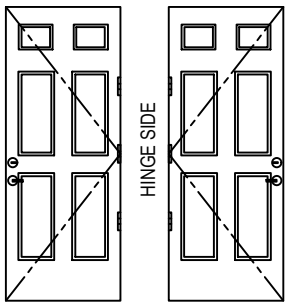
HANDING/SWING CONVENTIONS TO BE USED BY ALL CONTRACTORS FOR WINDOWS AND DOORS



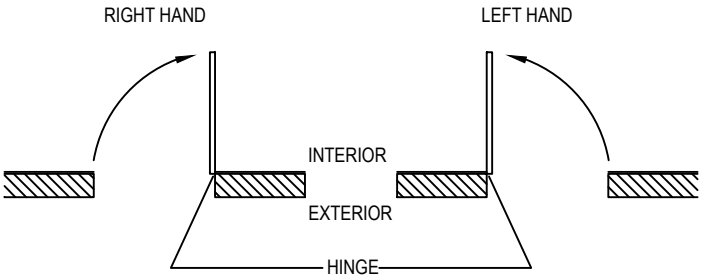
EXTERIOR VIEW OF STORM DOOR



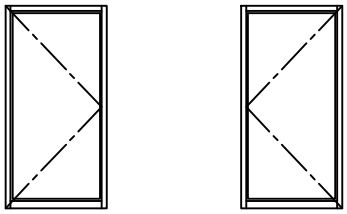
PLAN VIEW OF STORM DOOR



EXTERIOR VIEW OF PRIME DOOR



PLAN VIEW OF PRIME DOOR



SINGLE CASEMENT
RIGHT HINGE

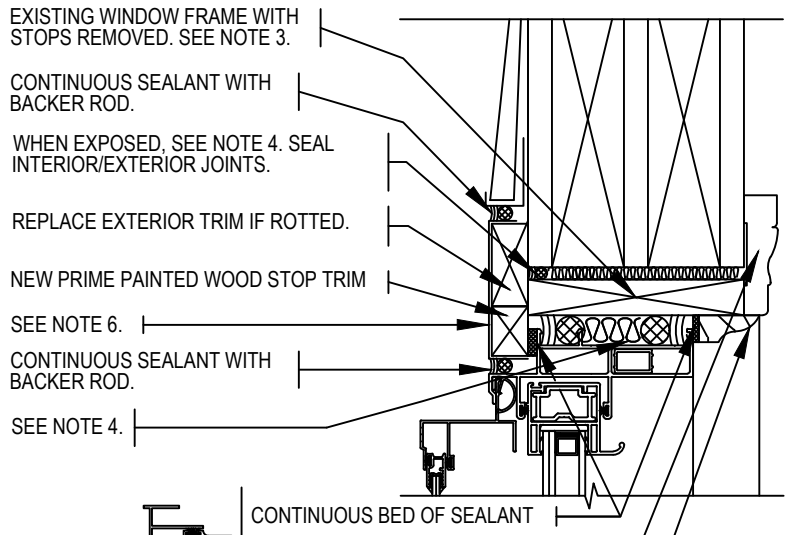
SINGLE CASEMENT
LEFT HINGE

EXTERIOR VIEW OF CASEMENT WINDOW

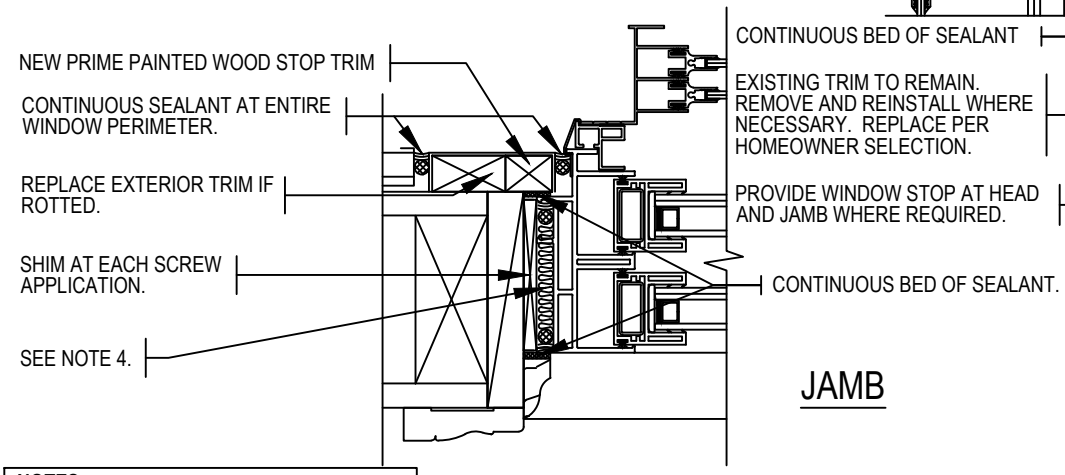
NOTES:
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2. VISIT THE RSIP SHOWROOM DURING NORMAL WEEKDAY BUSINESS HOURS TO VIEW COLOR AND STYLE DETAILS.

LEGEND:
DENOTES GLASS/ GLAZED PANEL

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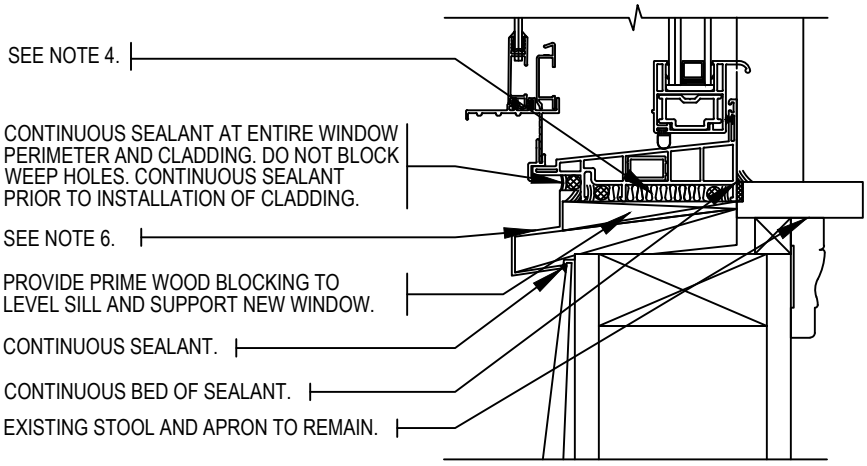
HEAD



JAMB

NOTES:

1. TYPICAL EXTERIOR INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP.).
3. REPLACE EXISTING WOOD FRAME AND TRIM IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS. SEE SPECIFICATION SECTION 06 10 53 FOR ADDITIONAL INFORMATION.
6. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.



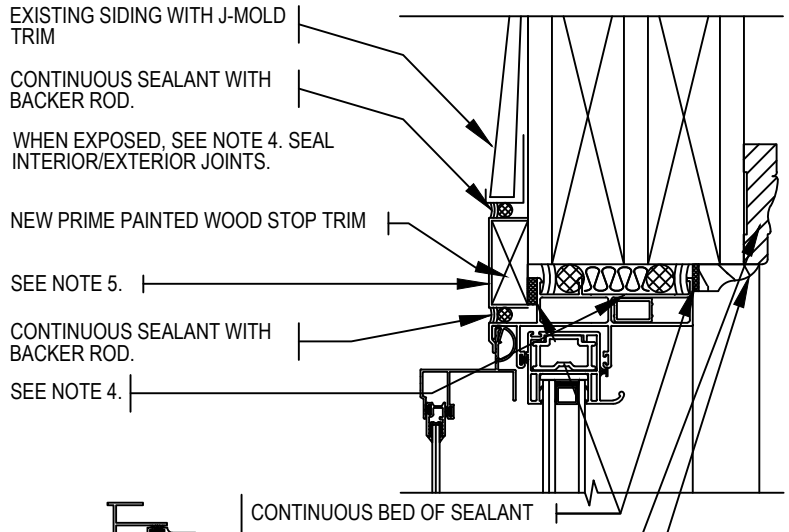
SILL

W1P

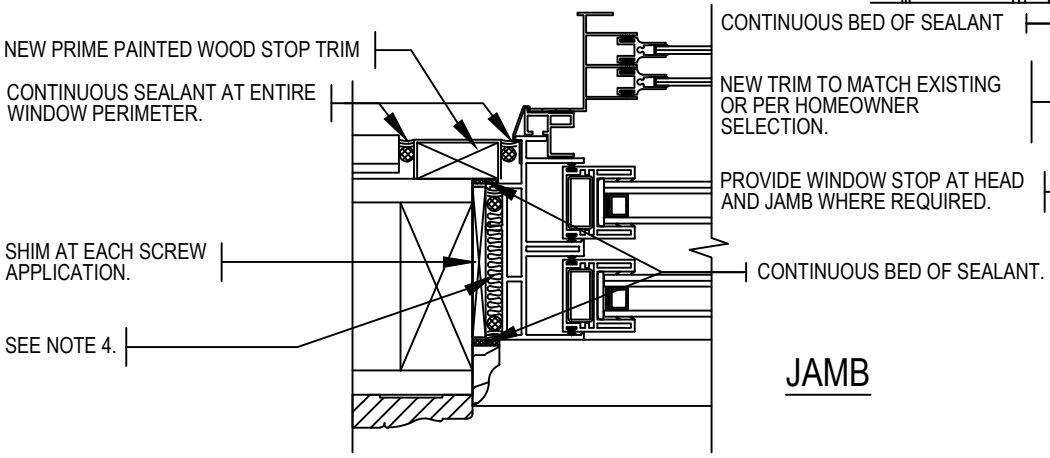
SCALE: 3" = 1'-0"

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VINYL POCKET WINDOW - FRAME CONSTRUCTION - EXTERIOR INSTALLATION
PAGE 13
RESIDENTIAL SOUND INSULATION PROGRAM



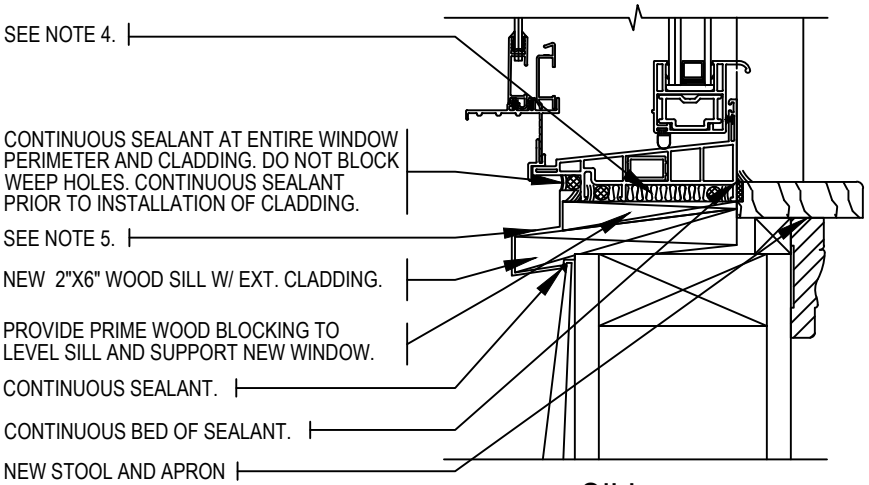
HEAD



JAMB

NOTES:

1. TYPICAL EXTERIOR INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. FULLY REMOVE EXISTING WINDOW INCLUDING FRAME AND SILL BACK TO ROUGH OPENING.
3. REPLACE EXISTING WOOD FRAME AND TRIM IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.



SILL

W1F

SCALE: 3" = 1'-0"

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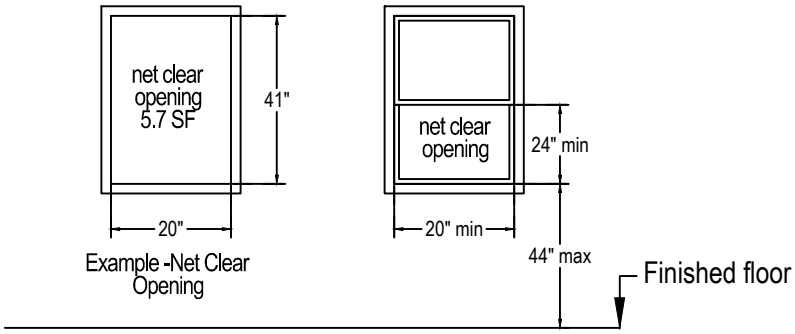
FULL VINYL WINDOW REPLACEMENT- FRAME CONSTRUCTION

RESIDENTIAL SOUND INSULATION PROGRAM

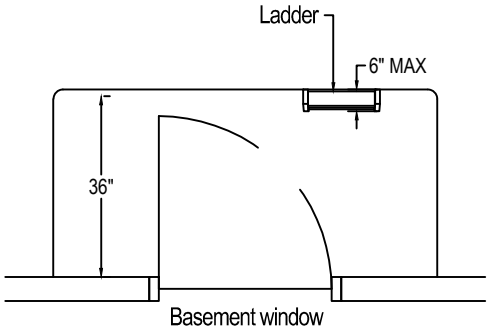
EMERGENCY EGRESS / RESCUE WINDOW REQUIREMENTS

1. Provide code compliant windows in the following communities and as may be scheduled in the construction modifications:
   A. Rosemont
   B. Unicorporated DuPage County
   C. Unicorporated Cook County

2. Enlarge existing window rough opening as necessary to allow the installation of a new egress / escape window to meet the requirements show here-in.
3. Refer to drawings W1E.2 and W1E.3 for additional information.



Minimum opening area: All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 sf. (820 sq in). EXCEPTION: Grade floor openings shall have a minimum net clear opening of 5.0 sf. (720 sq in) in IRC jurisdictions only



WINDOW WELLS - Existing Only

Emergency Escape and Rescue Window must open to their full net clear opening within an exiting window well..

Bedroom Window Egress: Min Height and Width Requirements for 5.0 Sq.ft. (in inches)

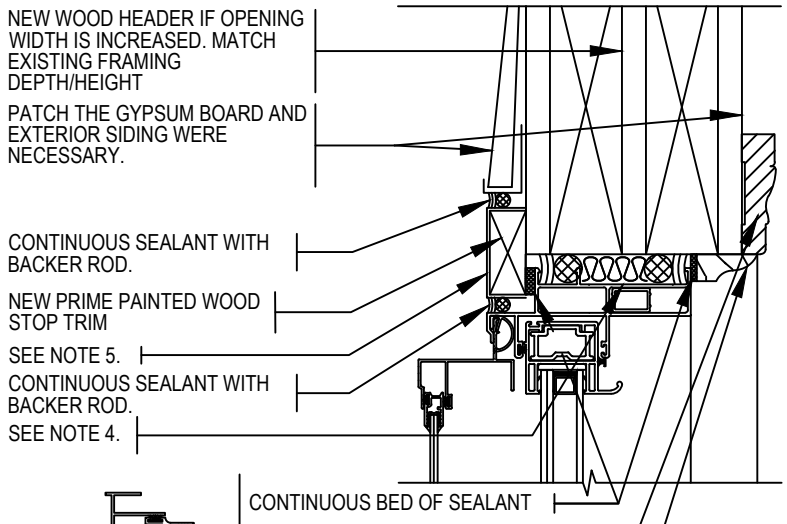
Width	Height
30	24
29.5	24.5
29	25
28.5	25.5
28	26
27.5	26.5
27	27
26.5	27.5
26	28
25.5	28.5
25	29
24.5	29.5
24	30
23.5	31
23	31.5
22.5	32
22	33
21.5	33.5
21	34.5
20.5	35
20	36

Bedroom Window Egress: Min Height and Width Requirements for 5.7 Sq.ft. (in inches)

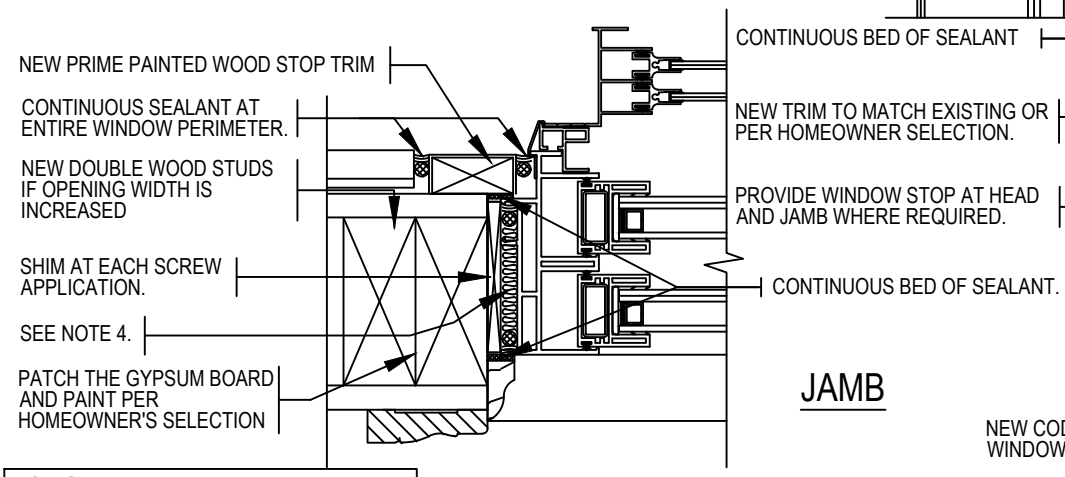
Width	Height
34	24
33.5	24.5
33	25
32.5	25.5
32	25.5
31.5	26.5
31	26.5
30.5	27
30	27.5
29.5	28
29	28.5
28.5	29
28	29.5
27.5	30
27	30.5
26.5	31
26	31.5
25.5	32.5
25	33
24.5	33.5
24	34.5
23.5	35
23	35.5
22.5	36.5
22	37.5
21.5	38.5
21	39.5
20.5	40
20	41

TABLES FOR REFERENCE ONLY

W1E.1



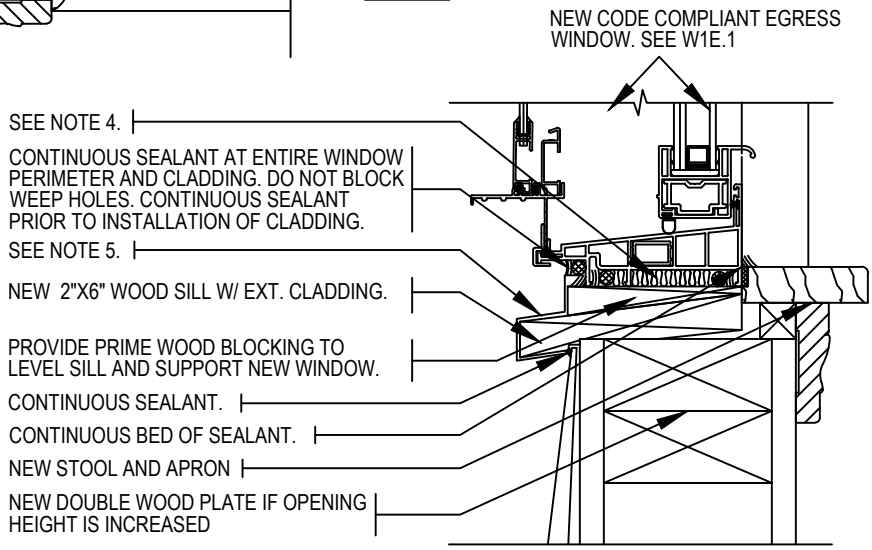
HEAD



JAMB

NOTES:

1. EGRESS WINDOW INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. FULLY REMOVE EXISTING WINDOW. MODIFY AND REFRAME ROUGH OPENING AS REQUIRED FOR EGRESS/ESCAPE WINDOW SIZE.
3. REPLACE EXISTING WOOD FRAME AND TRIM IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.



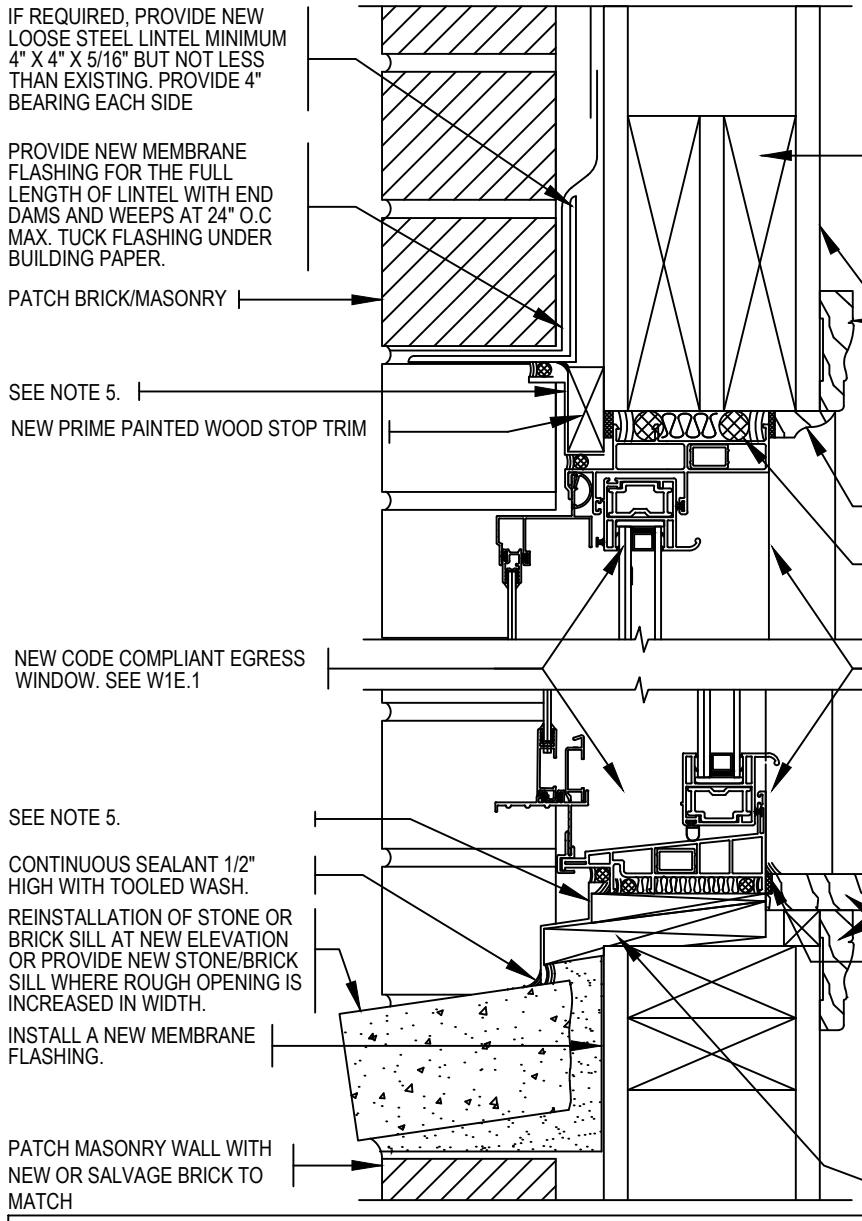
SILL W1E.2

SCALE: 3" = 1'-0"

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EMERGENCY EGRESS VINYL WINDOW INSTALLATION- FRAME CONSTRUCTION ENLARGEMENT OF EXISTING WINDOW ROUGH OPENING

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

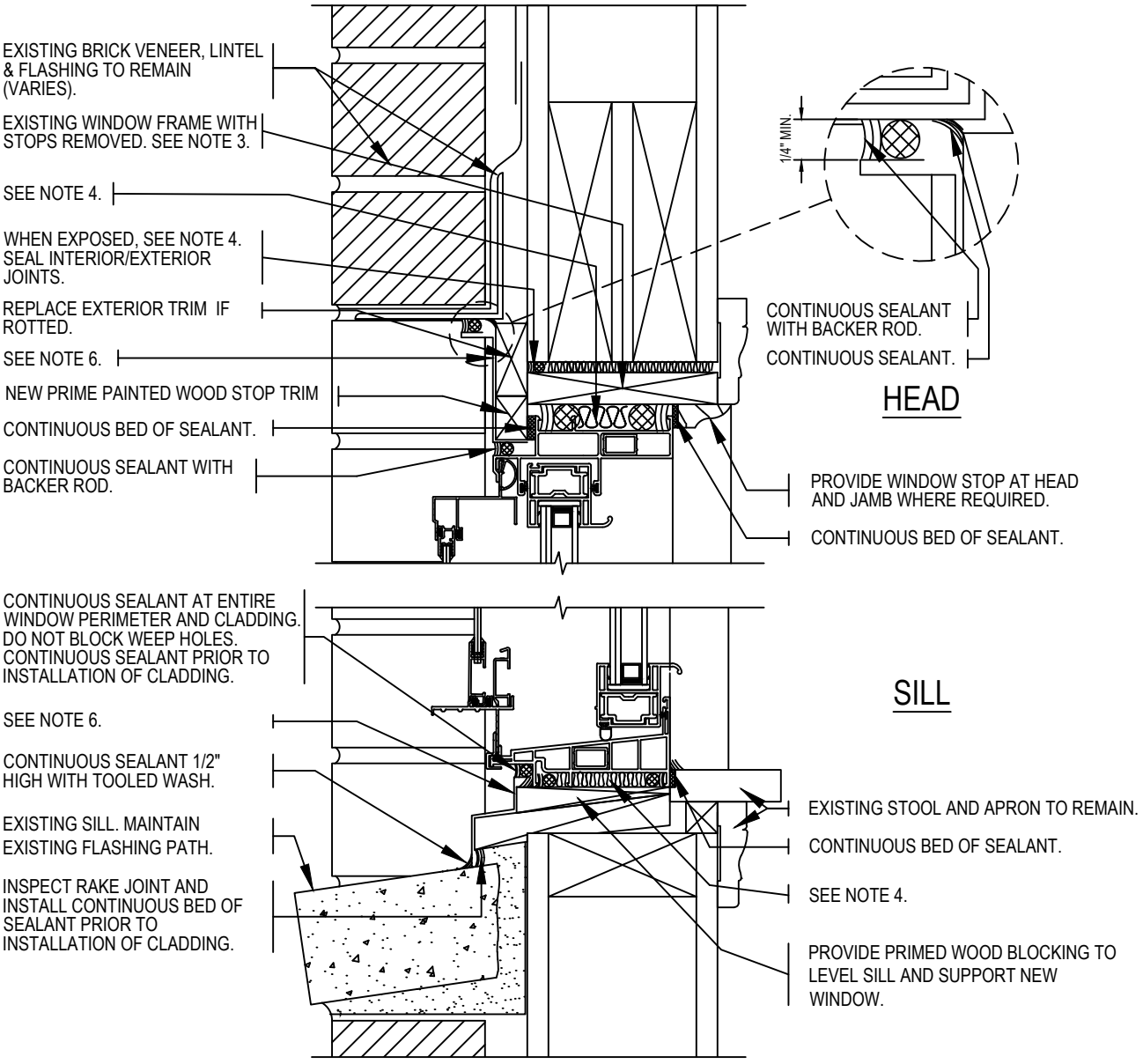
1. EGRESS WINDOW INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. FULLY REMOVE EXISTING WINDOW. MODIFY AND REFRAME ROUGH OPENING AS REQUIRED FOR EGRESS/ESCAPE WINDOW SIZE.
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

W1E.3

SCALE: 3" = 1'-0"

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EMERGENCY EGRESS VINYL WINDOW INSTALLATION- BRICK VENEER CONSTRUCTION ENLARGEMENT OF EXISTING WINDOW ROUGH OPENING



NOTES:

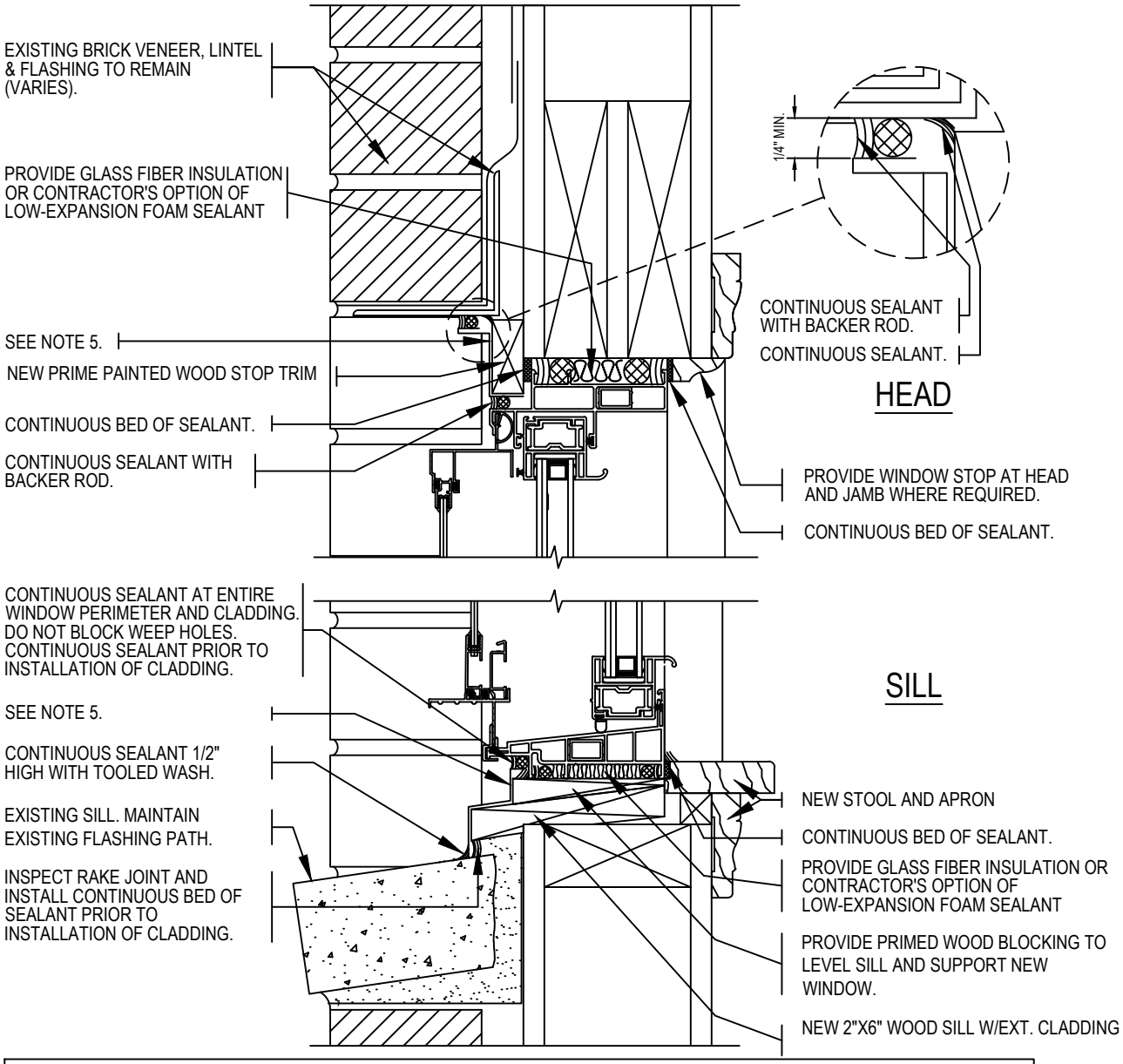
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2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP).
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH SOLID WOOD BLOCKING.
6. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

W2P

SCALE: 3" = 1'-0"

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VINYL POCKET WINDOW - BRICK VENEER CONSTRUCTION - EXTERIOR INSTALLATION



NOTES:

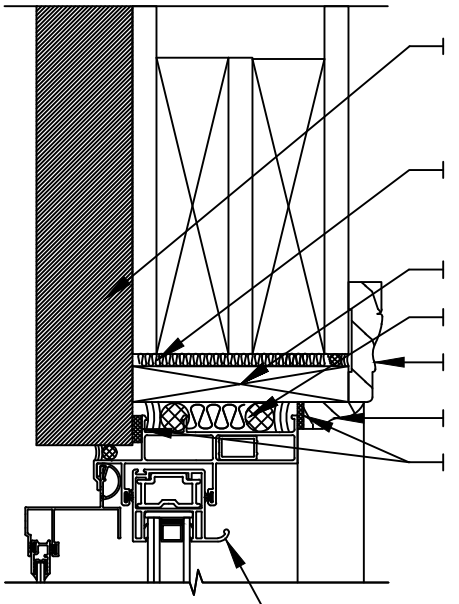
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2. FULLY REMOVE EXISTING WINDOW INCLUDING FRAME AND SILL BACK TO ROUGH OPENING.
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

W2F

SCALE: 3" = 1'-0"

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FULL VINYL WINDOW REPLACEMENT- BRICK VENEER CONSTRUCTION



EXISTING EXTERIOR WALL/ VENEER TO REMAIN.

FILL ANY GAPS WITH PERIMETER WRAP INSULATION AND SEAL AT WALL FACE WITH SEALANT AND BACKER ROD PRIOR TO CUTTING NEW WOOD TRIM.

EXISTING WOOD FRAMING TO REMAIN. SEE NOTE 3.

SEE NOTE 4.

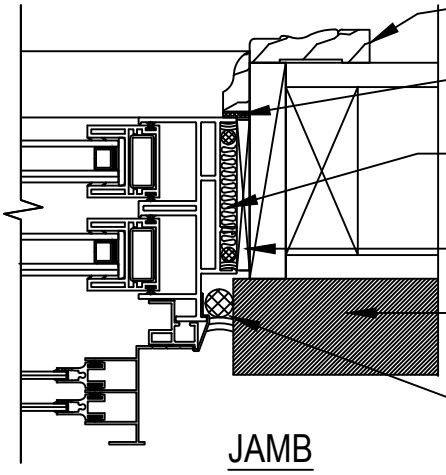
REPLACE EXISTING TRIM PER HOMEOWNER SELECTION.

PROVIDE WINDOW STOP AT HEAD, JAMB AND SILL.

CONTINUOUS BEAD OF SEALANT.

HEAD

NEW ACOUSTIC WINDOW.



REPLACE EXISTING TRIM PER HOMEOWNER SELECTION.

CONTINUOUS BED OF SEALANT.

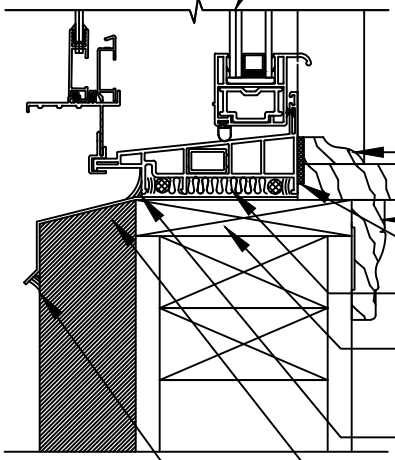
SEE NOTE 4.

SHIM AT EACH SCREW APPLICATION.

EXISTING EXTERIOR WALL/ VENEER TO REMAIN.

CONTINUOUS SEALANT AT ENTIRE WINDOW PERIMETER.

JAMB



PROVIDE NEW WOOD TRIM TO MATCH EXISTING.

REPLACE STOOL AND APRON.

CONTINUOUS BED OF SEALANT.

SEE NOTE 4.

PROVIDE PRIME WOOD BLOCKING TO LEVEL SILL AND SUPPORT NEW WINDOW.

CONTINUOUS SEALANT AT ENTIRE WINDOW PERIMETER AND CLADDING. DO NOT BLOCK WEEP HOLES. CONTINUE SEALANT PRIOR TO INSTALLATION OF CLADDING.

EXISTING SHEET METAL FLASHING AS OCCURS. REPLACE WITH NEW SHEET METAL CLADDING AS NECESSARY.

SILL

CONTINUOUS SEALANT.

NOTES:

1. TYPICAL INTERIOR INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. REMOVE EXISTING WINDOW UNIT.
3. REPLACE EXISTING WOOD IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH

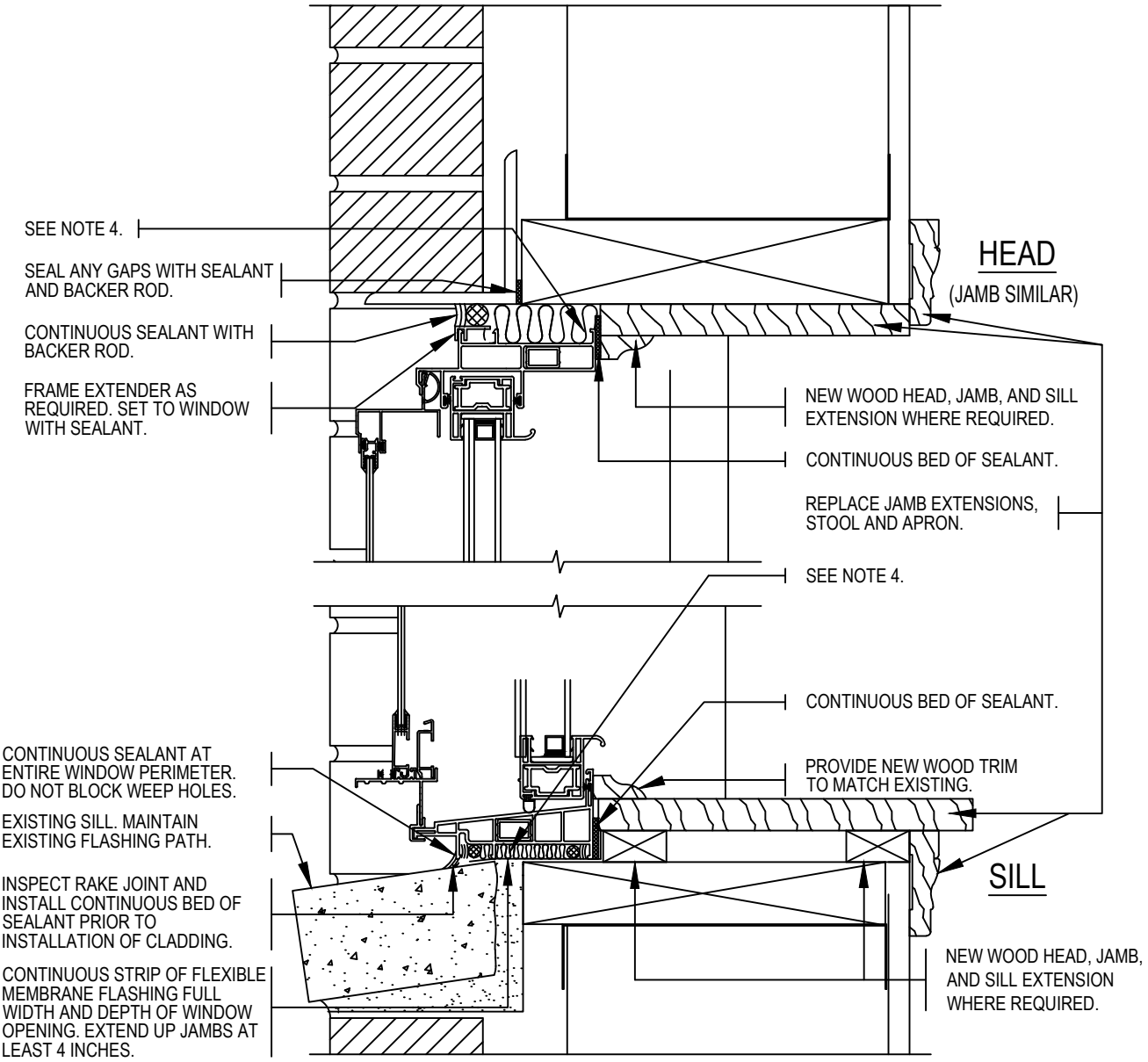
W3

SCALE: 3" = 1'-0"

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VINYL WINDOW - FRAME CONSTRUCTION - INTERIOR INSTALLATION



NOTES:

1. TYPICAL EXTERIOR INSTALLATION IN A NON-ACOUSTICALLY TREATED WALL.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP).
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH SOLID WOOD BLOCKING.

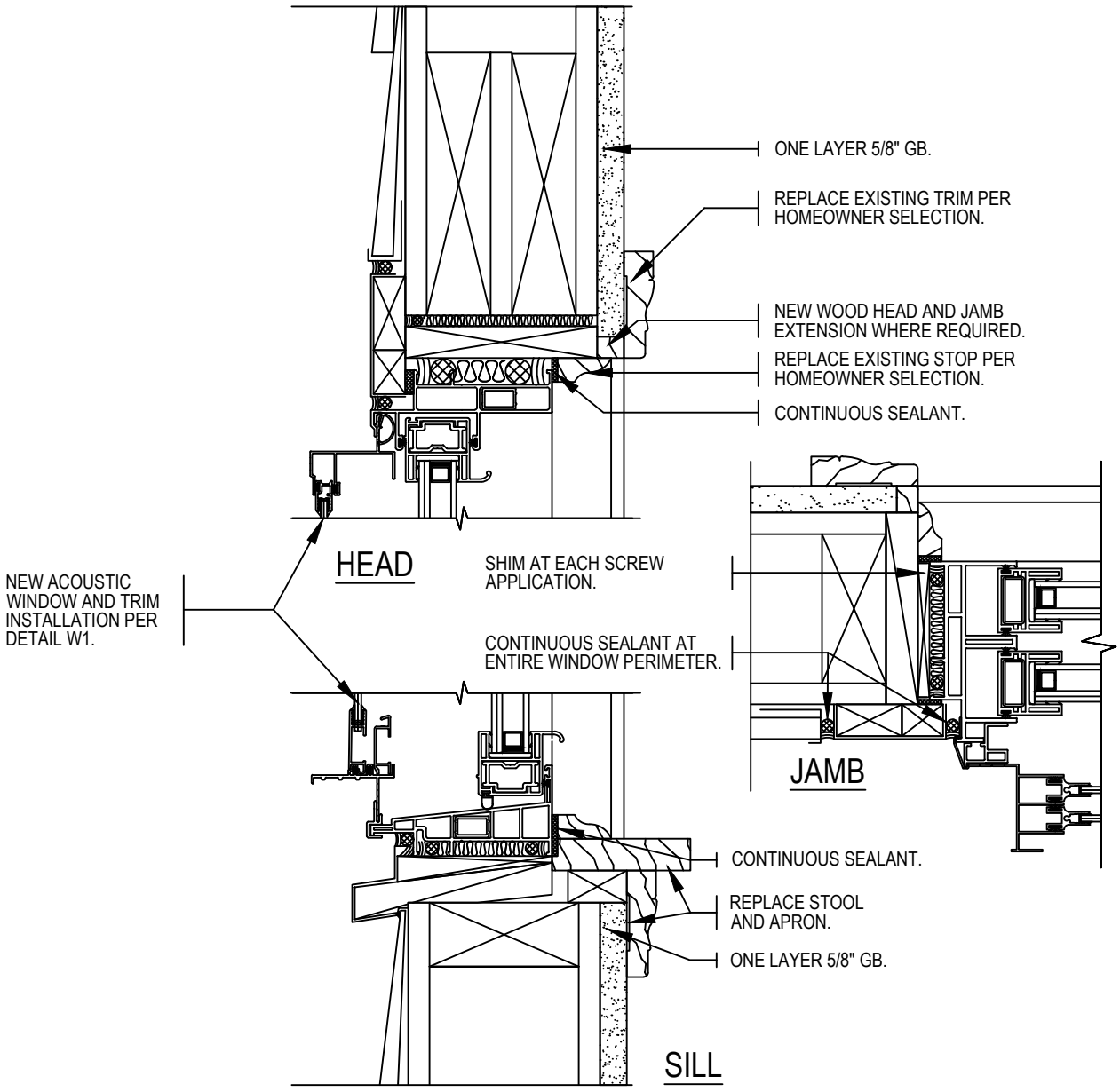
W4

SCALE: 3" = 1'-0"

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VINYL WINDOW - BRICK TO BRICK INSTALLATION

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. TYPICAL INSTALLATION IN AN ACOUSTICALLY TREATED WALL WITH ONE LAYER OF GYPSUM BOARD.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOCIATED HARDWARE (TYP).
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH SOLID WOOD BLOCKING.
6. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

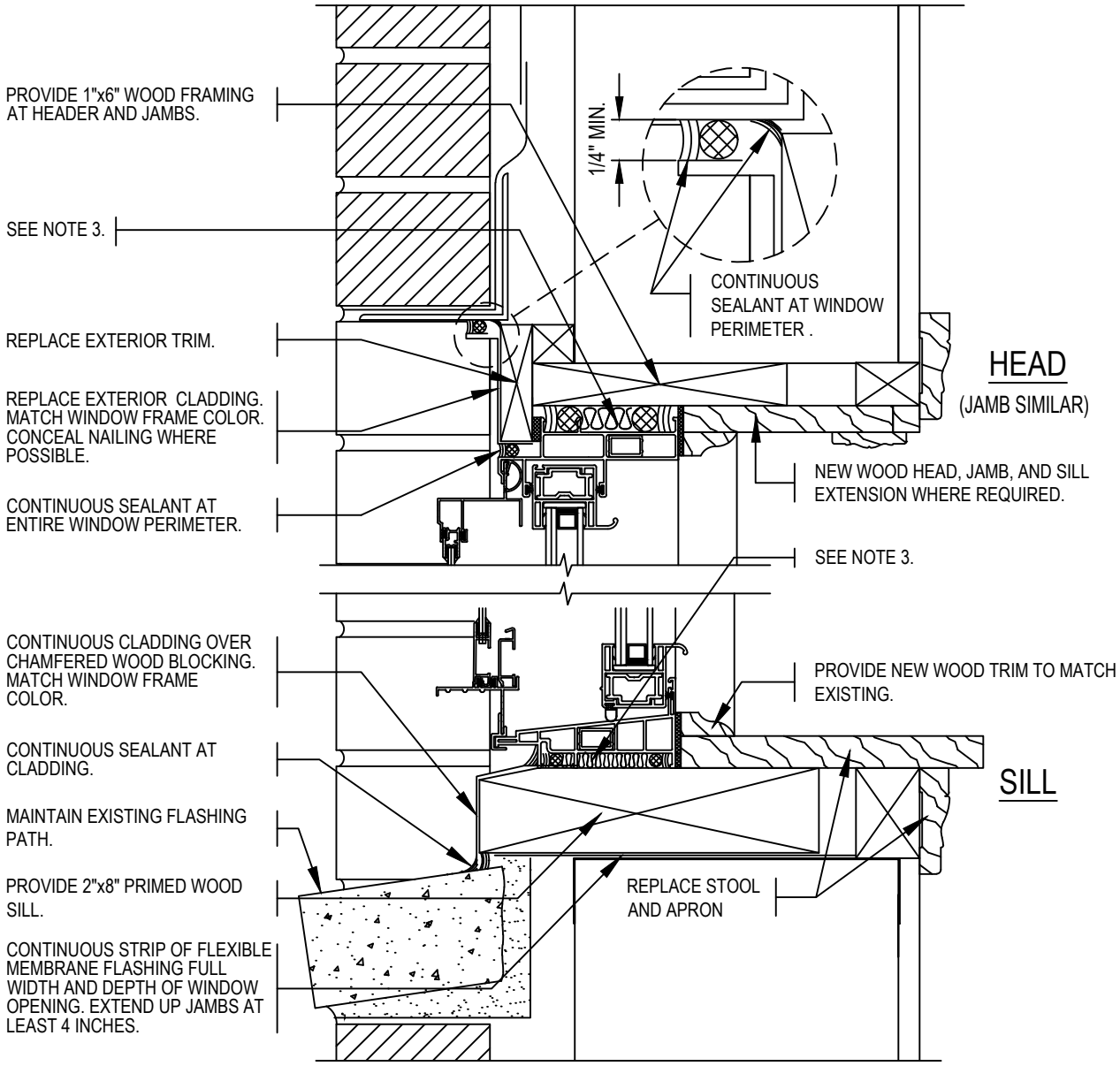
W5

SCALE: 3" = 1'-0"

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VINYL WINDOW - FRAME W/ NEW GYPSUM BOARD

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. THIS DETAIL IS FOR INSTALLATION OF NEW WINDOW IN EXISTING OPENING WHEN WINDOW FRAME AND SASHES, INCLUDING METAL PAN WINDOWS, ARE REMOVED AND NEW WOOD SUBFRAME IS TO BE INSTALLED.

2. REMOVE EXISTING WINDOW FRAME AND SASHES.

3. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER TOD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.

4. INSTALL NEW EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

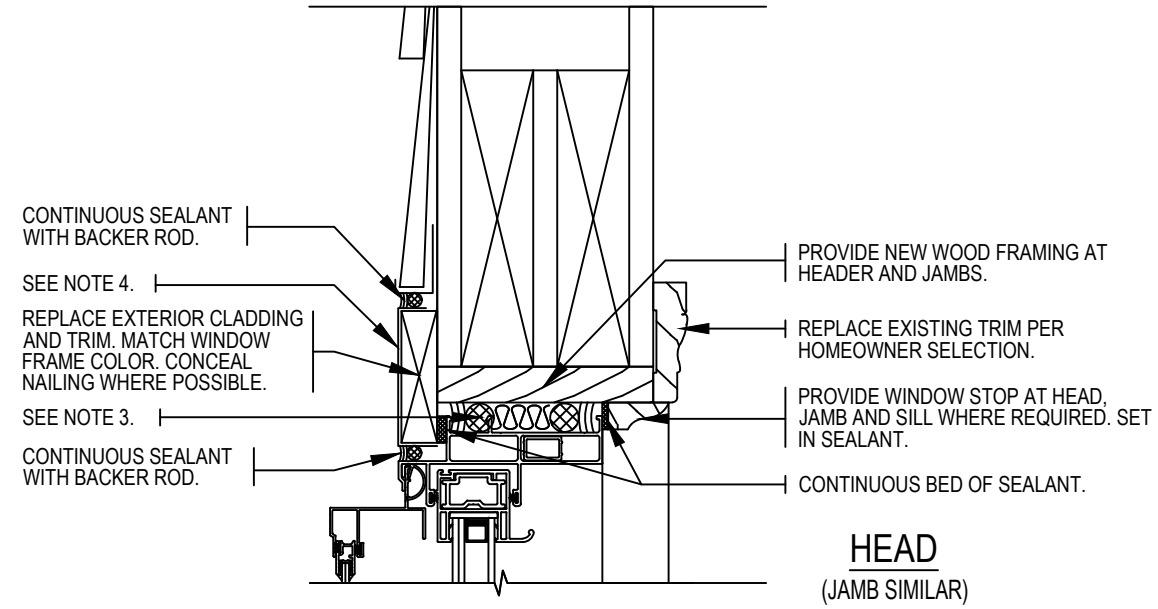
5. FILL ALL THE WEIGHT POCKETS UP TO 6" ON EITHER SIDE OF JAMBS WITH SOLID WOOD BLOCKING.

W6

SCALE: 3" = 1'-0"

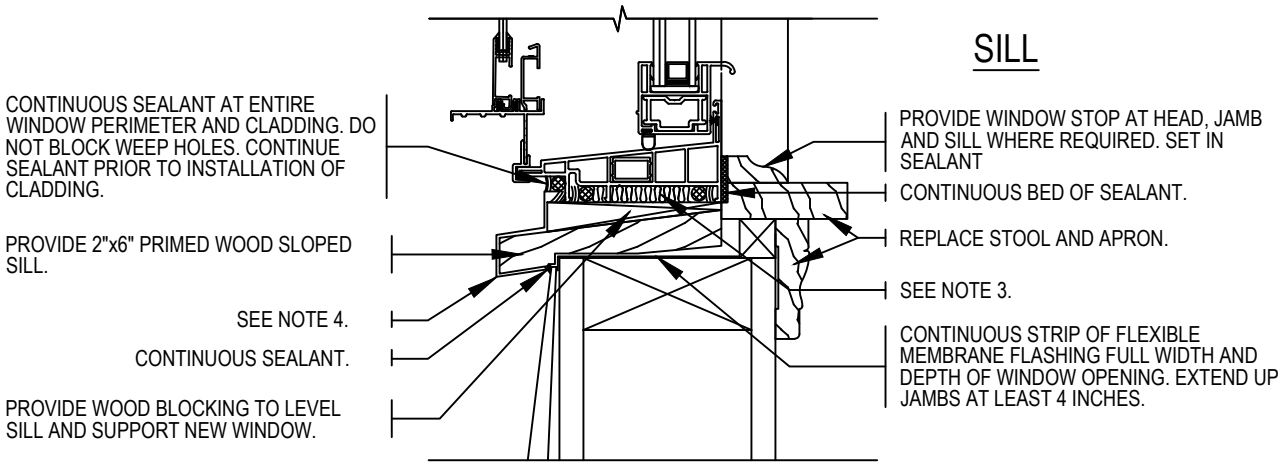
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VINYL WINDOW / MODIFIED OPENING - BRICK VENEER CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM



HEAD

(JAMB SIMILAR)



SILL

NOTES:

1. THIS DETAIL IS FOR INSTALLATION OF NEW WINDOW IN EXISTING OPENING WHEN WINDOW FRAME AND SASHES, INCLUDING METAL PAN WINDOWS, ARE REMOVED AND NEW WOOD SUBFRAME IS TO BE INSTALLED.
2. REMOVE EXISTING WINDOW FRAME AND SASHES.
3. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
4. INSTALL NEW EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.
5. FILL ALL THE WEIGHT POCKETS UP TO 6" ON EITHER SIDE OF JAMBS WITH SOLID WOOD BLOCKING.
6. PROVIDE SCREW FASTENERS AND SHIMS IN LOCATIONS REQUIRED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS.

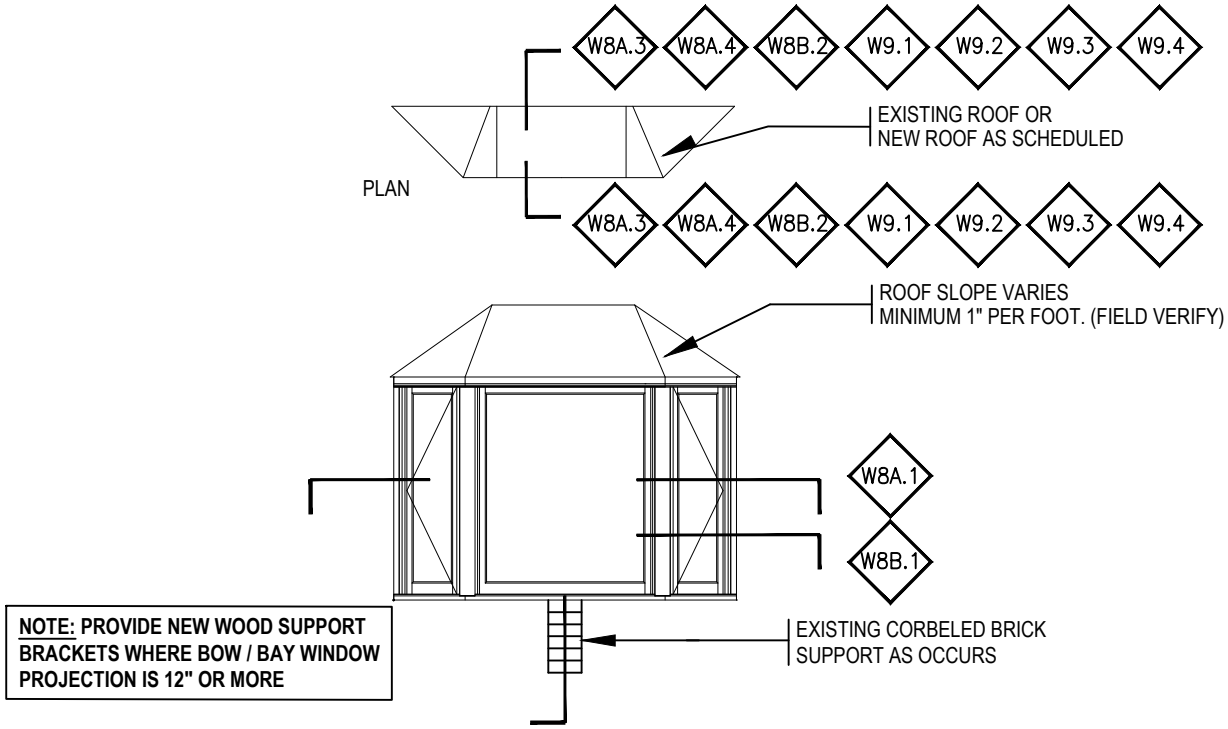
W7

SCALE: 3" = 1'-0"

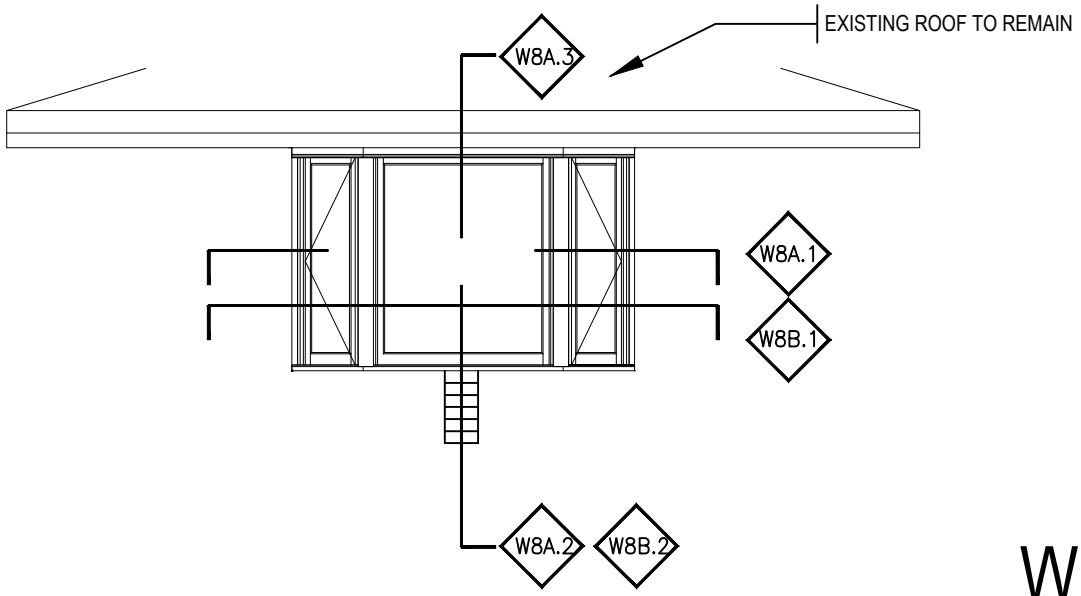
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VINYL WINDOW / MODIFIED OPENING - FRAME CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM

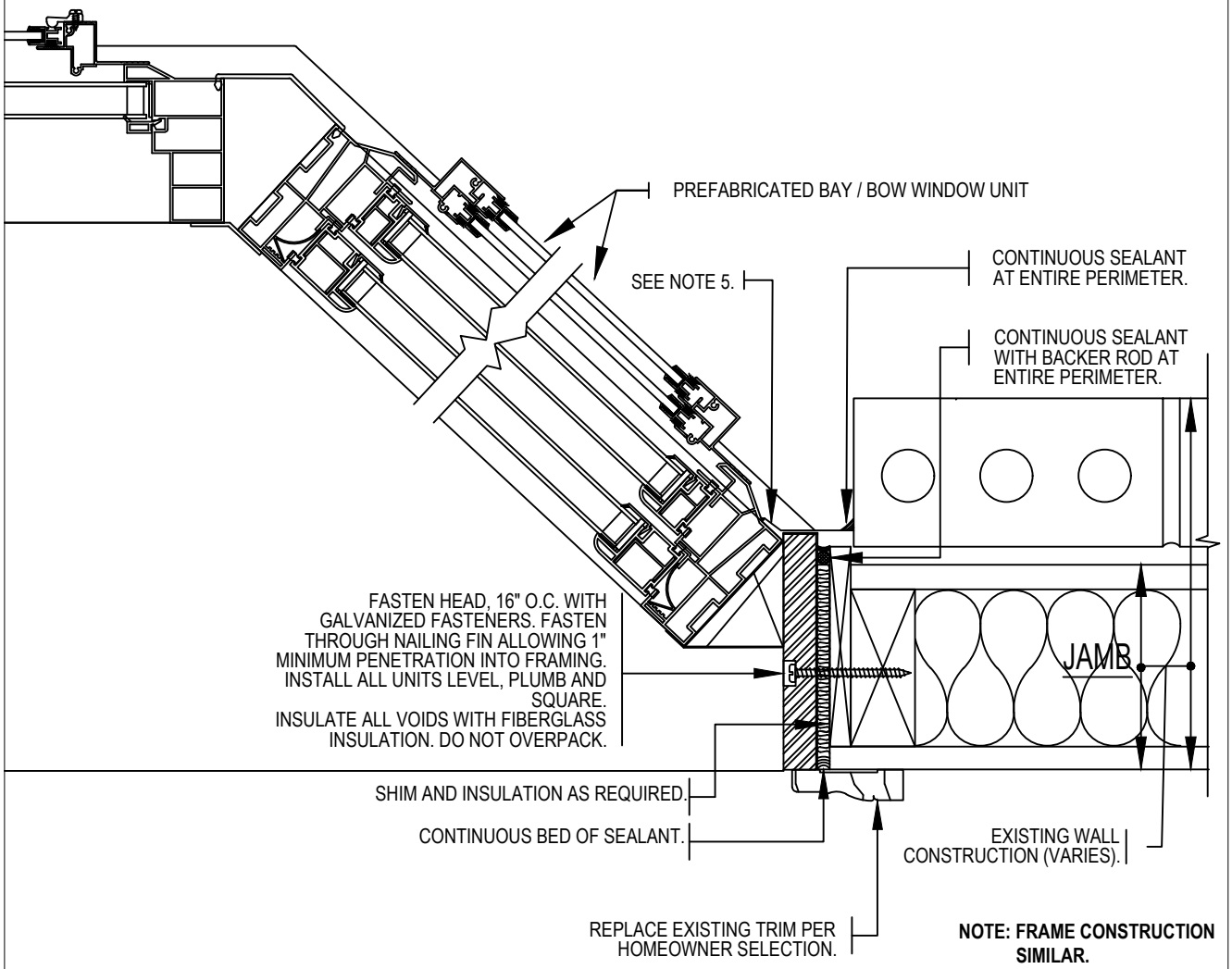


2. EXTERIOR ELEVATION - BAY / BOW WINDOW STAND ALONE



1. EXTERIOR ELEVATION - BAY / BOW WINDOW UNDER ROOF EAVE

W8



NOTE: FRAME CONSTRUCTION SIMILAR.

NOTES:

1. TYPICAL INSTALLATION OF A PREFABRICATED ANGLE BAY WINDOW IN AN EXISTING WALL.
2. REMOVE EXISTING WINDOW.
3. INSTALL WINDOWS AND FRAME AS AN INTEGRATED, ONE-PIECE UNIT.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2"PROVIDE GLASS FIBER INSULATION OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. PROVIDE EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

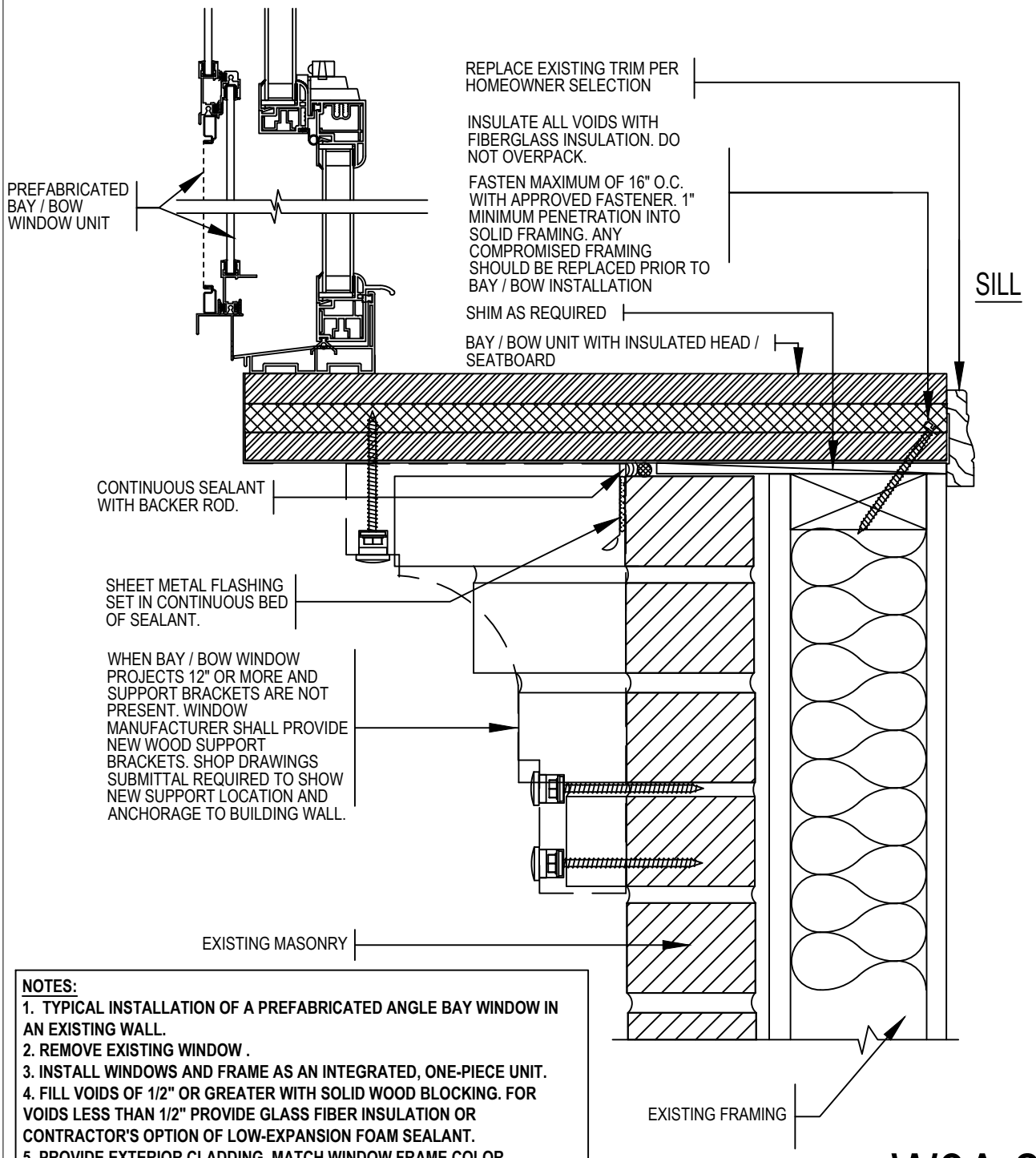
W8A.1

SCALE: 3" = 1'-0"

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PREFABRICATED BAY / BOW WINDOW UNIT
JAMB DETAIL - BRICK VENEER CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. TYPICAL INSTALLATION OF A PREFABRICATED ANGLE BAY WINDOW IN AN EXISTING WALL.
2. REMOVE EXISTING WINDOW .
3. INSTALL WINDOWS AND FRAME AS AN INTEGRATED, ONE-PIECE UNIT.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. PROVIDE EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

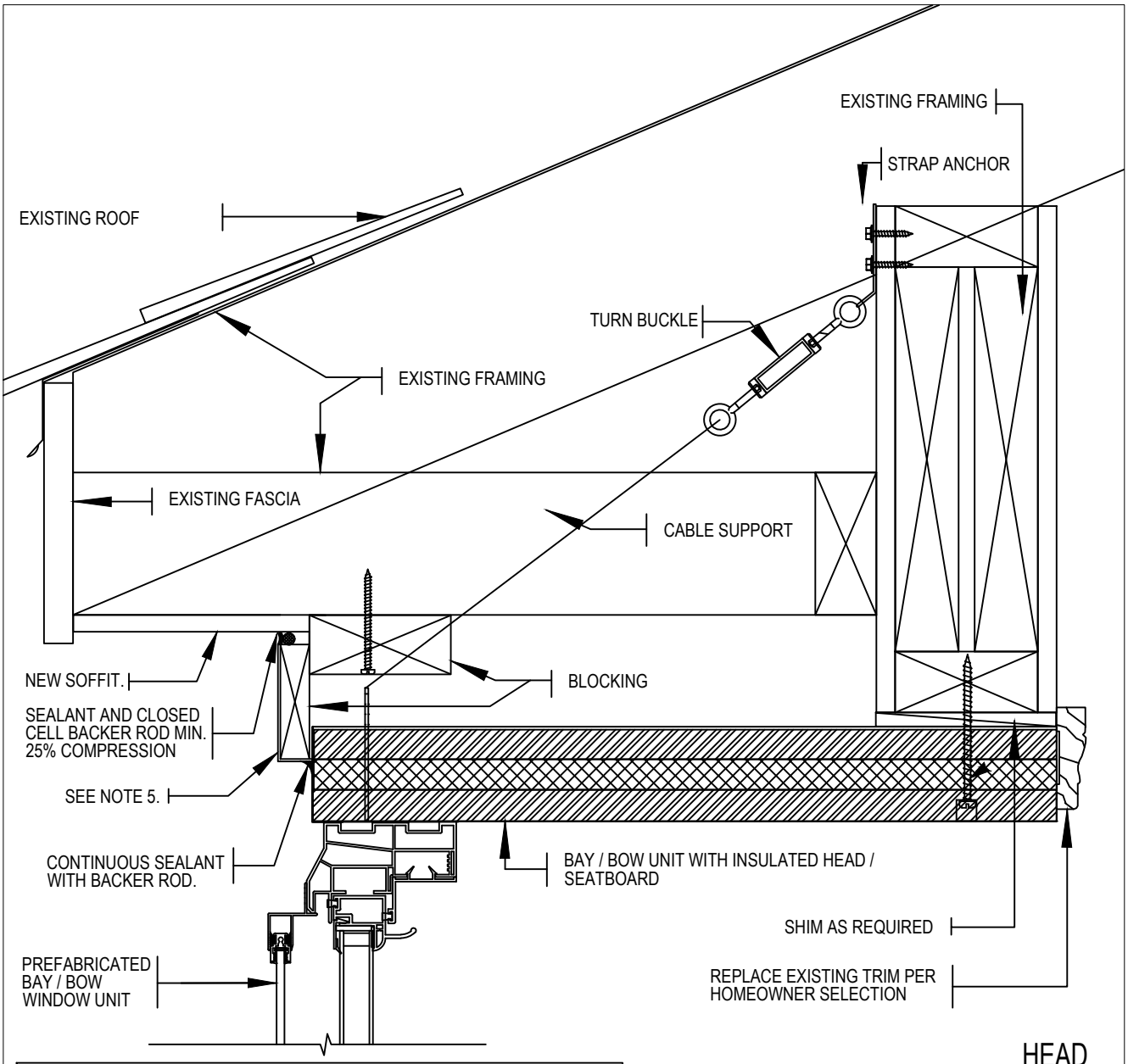
W8A.2

SCALE: 3" = 1'-0"

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PREFABRICATED BAY / BOW WINDOW UNIT
SILL DETAIL - BRICK VENEER CONSTRUCTION

RESIDENTIAL SOUND INSULATION PROGRAM



HEAD

NOTES:

1. TYPICAL INSTALLATION OF A PREFABRICATED ANGLE BAY WINDOW IN AN EXISTING WALL.
2. REMOVE EXISTING WINDOW.
3. INSTALL WINDOWS AND FRAME AS AN INTEGRATED, ONE-PIECE UNIT.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. PROVIDE EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

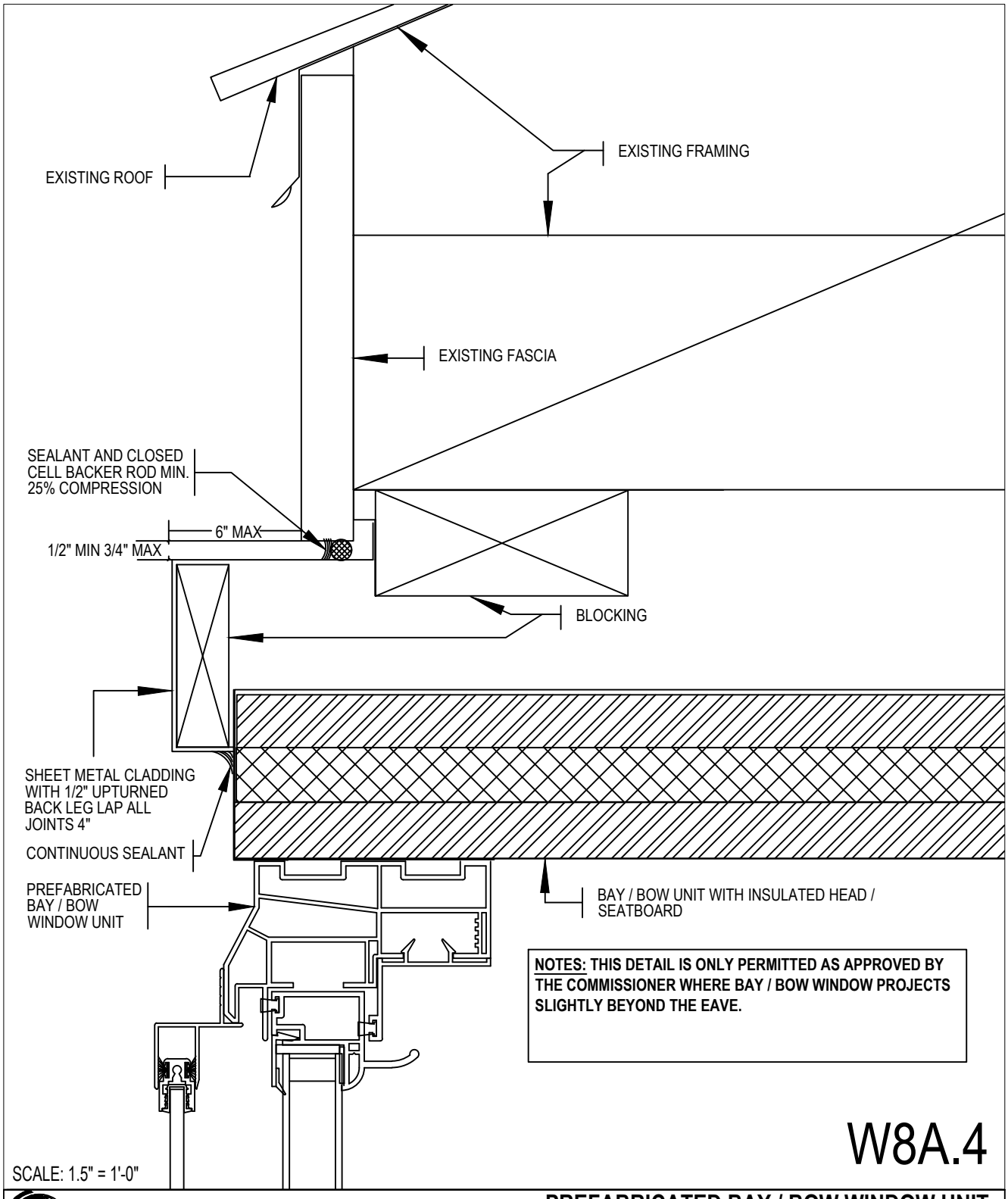
NOTE: FRAME CONSTRUCTION SIMILAR.

W8A.3

SCALE: 3" = 1'-0"

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PREFABRICATED BAY / BOW WINDOW UNIT
UNDER ROOF EAVE - BRICK VENEER CONSTRUCTION
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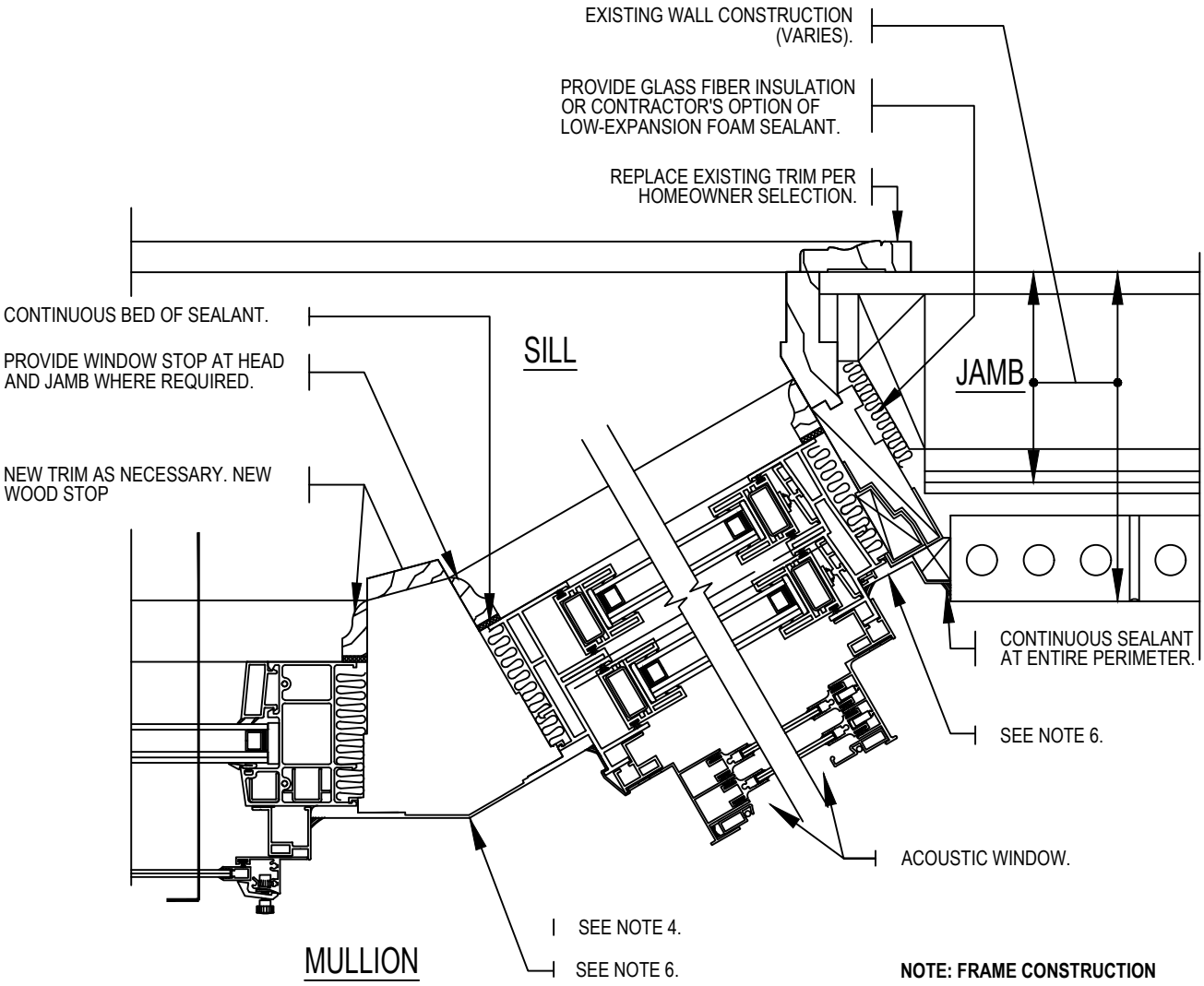
NOTES: THIS DETAIL IS ONLY PERMITTED AS APPROVED BY THE COMMISSIONER WHERE BAY / BOW WINDOW PROJECTS SLIGHTLY BEYOND THE EAVE.

W8A.4

SCALE: 1.5" = 1'-0"

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PREFABRICATED BAY / BOW WINDOW UNIT UNDER ROOF EAVE
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NOTE: FRAME CONSTRUCTION SIMILAR.

NOTES:

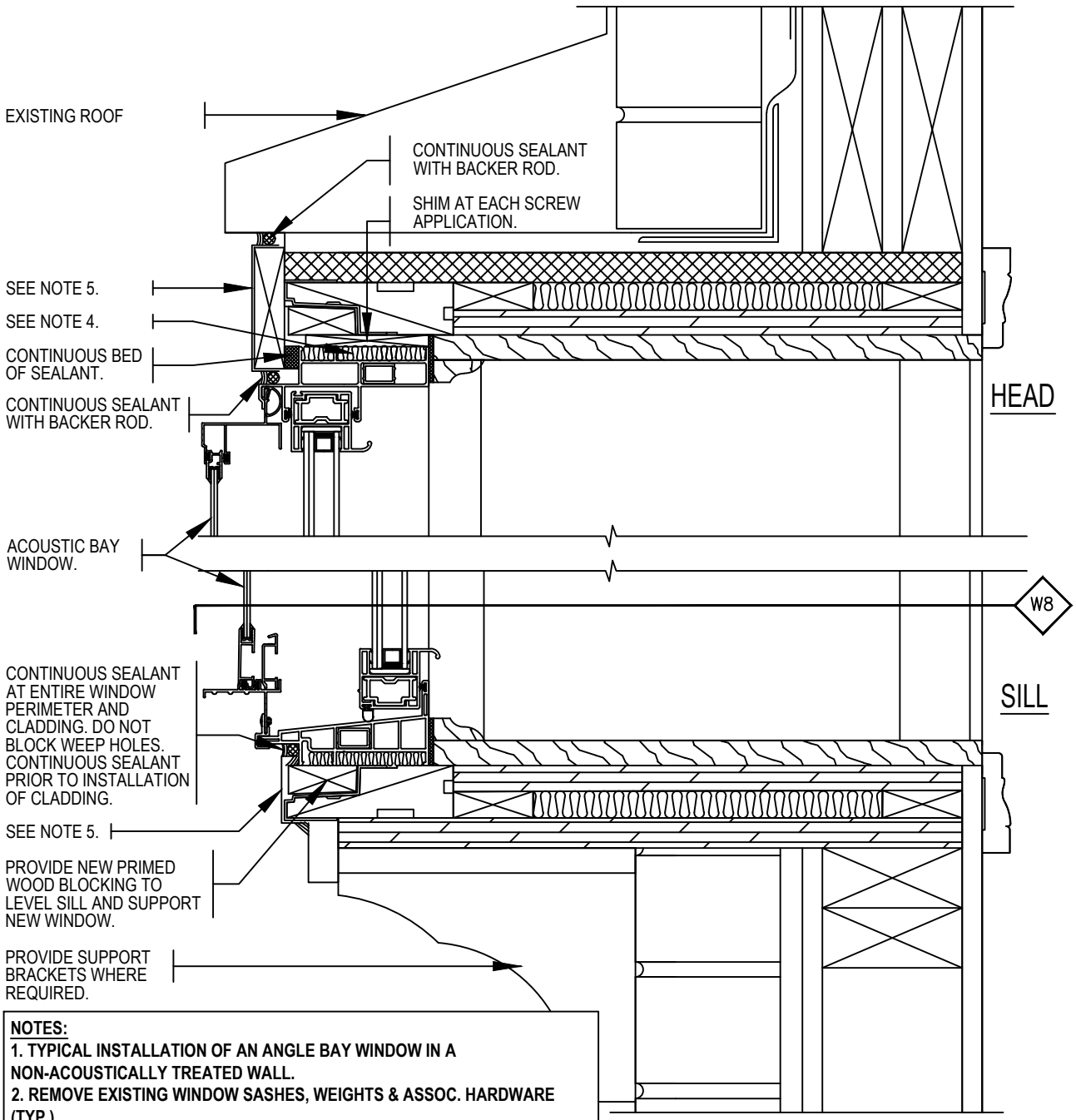
1. TYPICAL INSTALLATION OF AN ANGLE BAY WINDOW IN A NON-ACOUSTICALLY TREATED WALL.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP.).
3. INSTALL WINDOWS AND FRAME AS AN INTEGRATED, ONE-PIECE UNIT.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2"PROVIDE GLASS FIBER INSULATION OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH SOLID WOOD BLOCKING.
6. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

W8B.1

SCALE: 3" = 1'-0"

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POCKET WINDOW INSTALLATION AT EXISTING BAY / BOW
FRAME JAMB DETAIL - BRICK VENEER CONSTRUCTION



NOTES:

1. TYPICAL INSTALLATION OF AN ANGLE BAY WINDOW IN A NON-ACOUSTICALLY TREATED WALL.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP.).
3. INSTALL WINDOWS AND FRAME AS AN INTEGRATED, ONE-PIECE UNIT.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. REPLACE ALL EXTERIOR CLADDING. MATCH WINDOW FRAME COLOR.

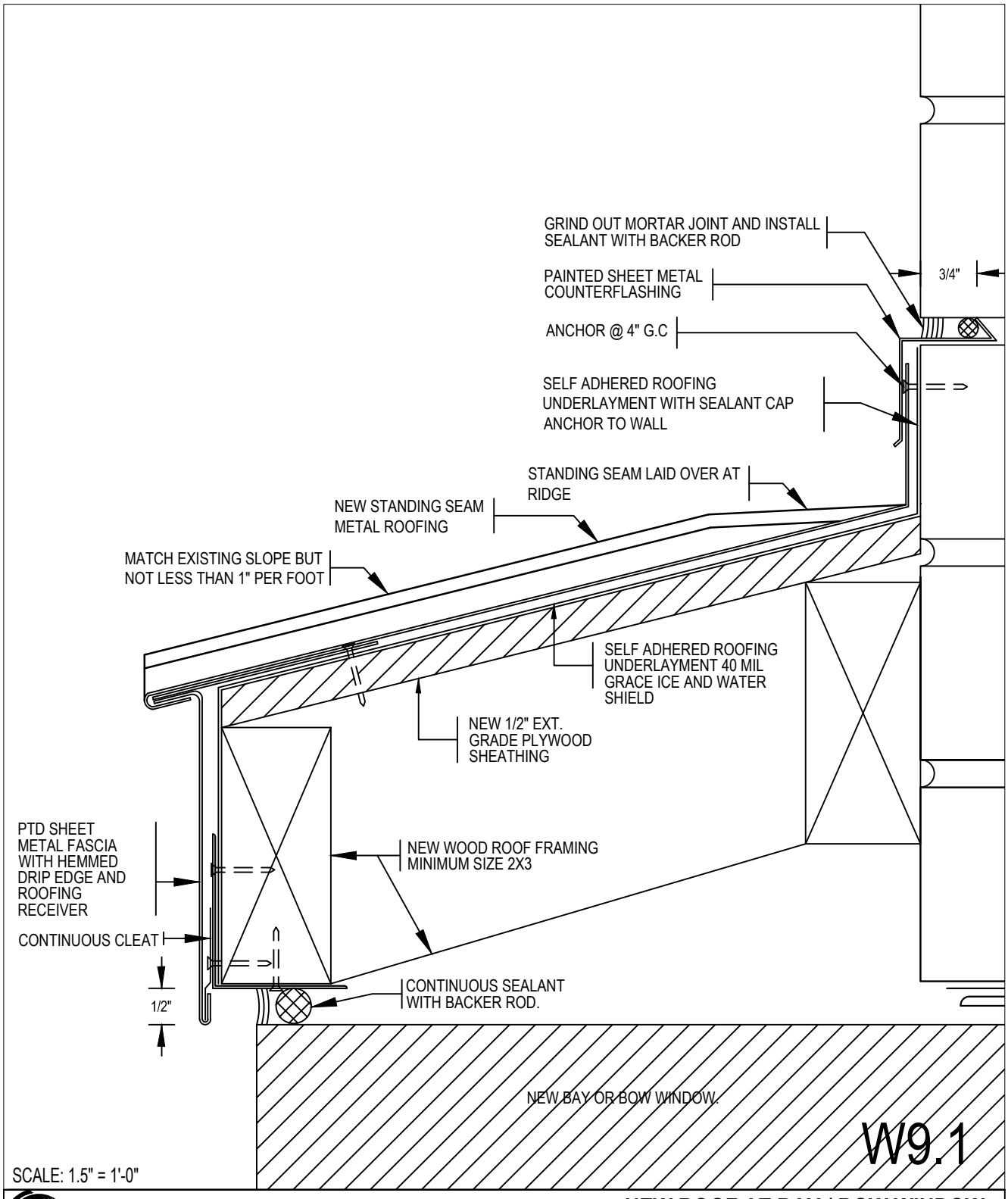
NOTE: FRAME CONSTRUCTION SIMILAR.

W8B.2

SCALE: 3" = 1'-0"

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POCKET WINDOW INSTALLATION AT EXISTING BAY / BOW FRAME
SECTION DETAIL - BRICK VENEER CONSTRUCTION
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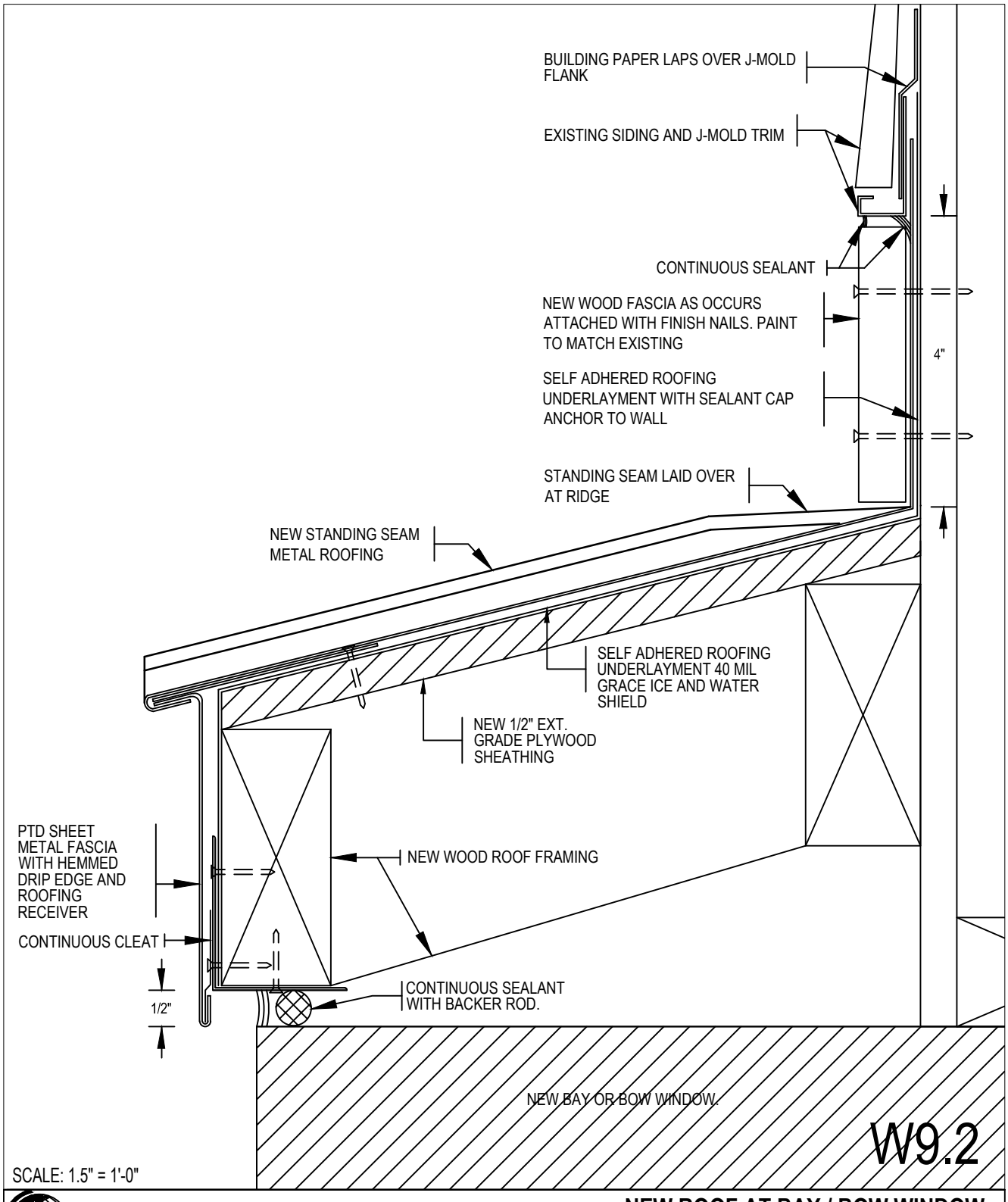
W9.1

SCALE: 1.5" = 1'-0"

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NEW ROOF AT BAY / BOW WINDOW
EAVE AND RIDGE DETAIL - BRICK VENEER CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM



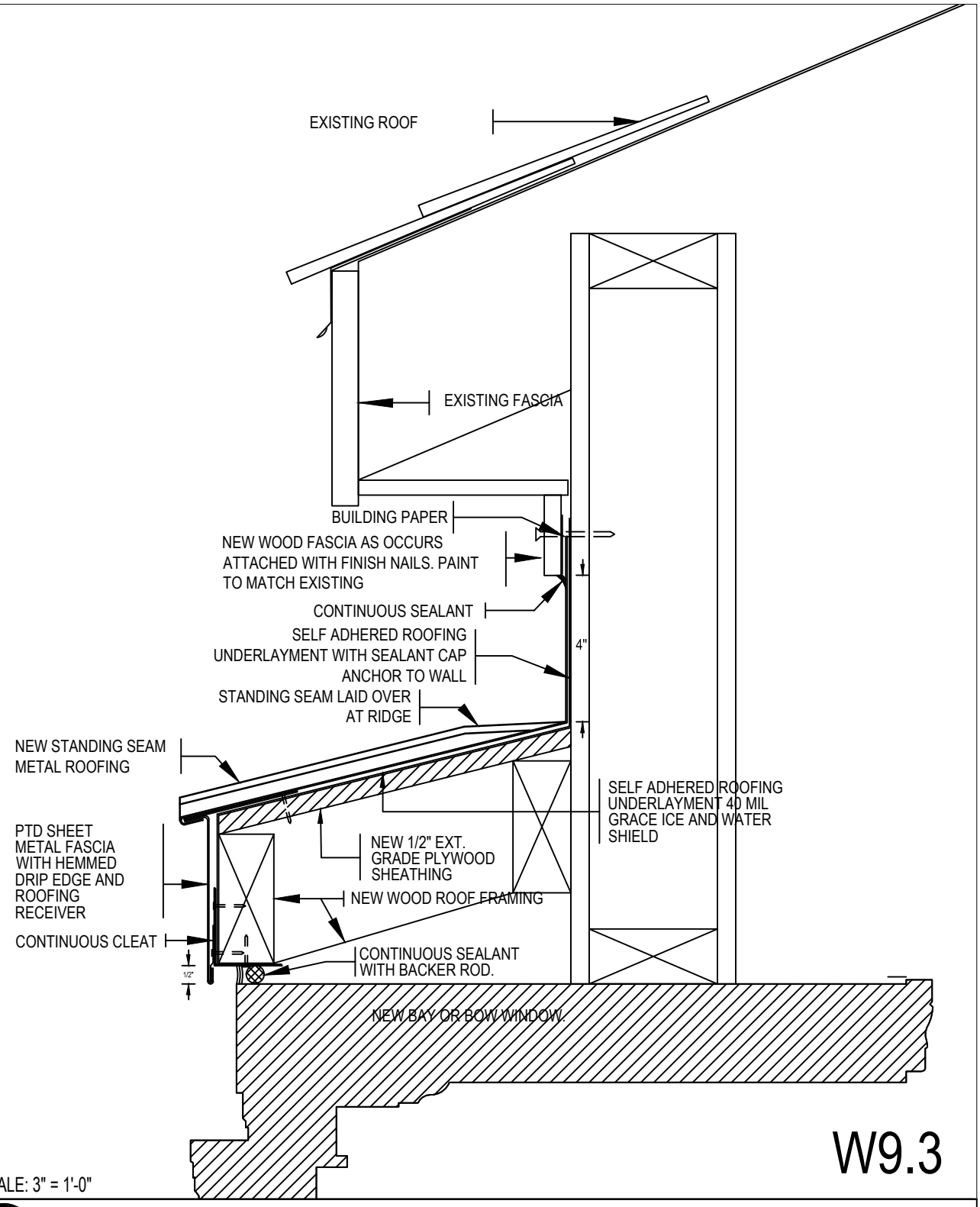
W9.2

SCALE: 1.5" = 1'-0"

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NEW ROOF AT BAY / BOW WINDOW
EAVE AND RIDGE DETAIL - FRAME CONSTRUCTION
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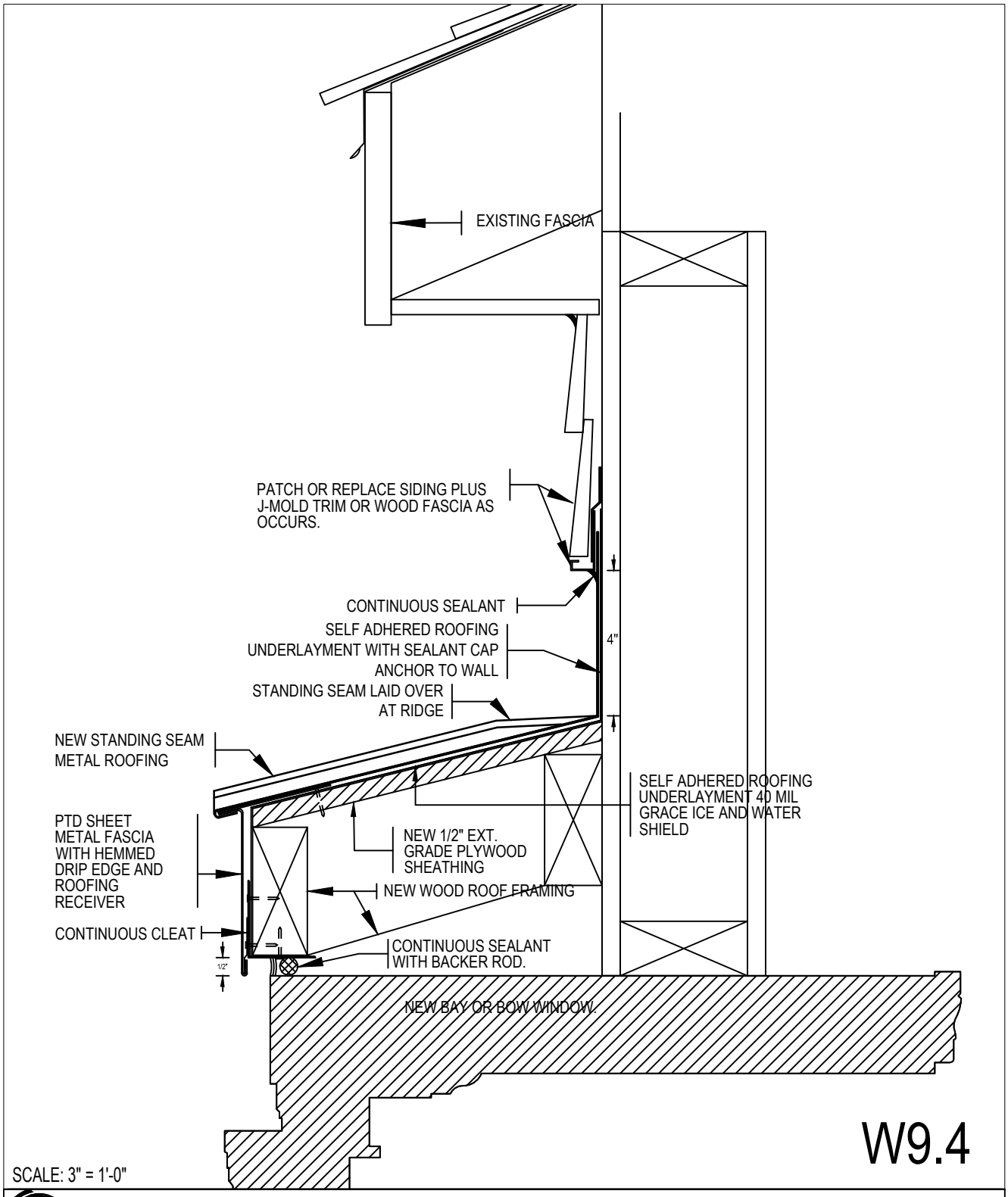
W9.3

SCALE: 3" = 1'-0"

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NEW ROOF AT BAY / BOW WINDOW
WALL DETAIL OPTION 1
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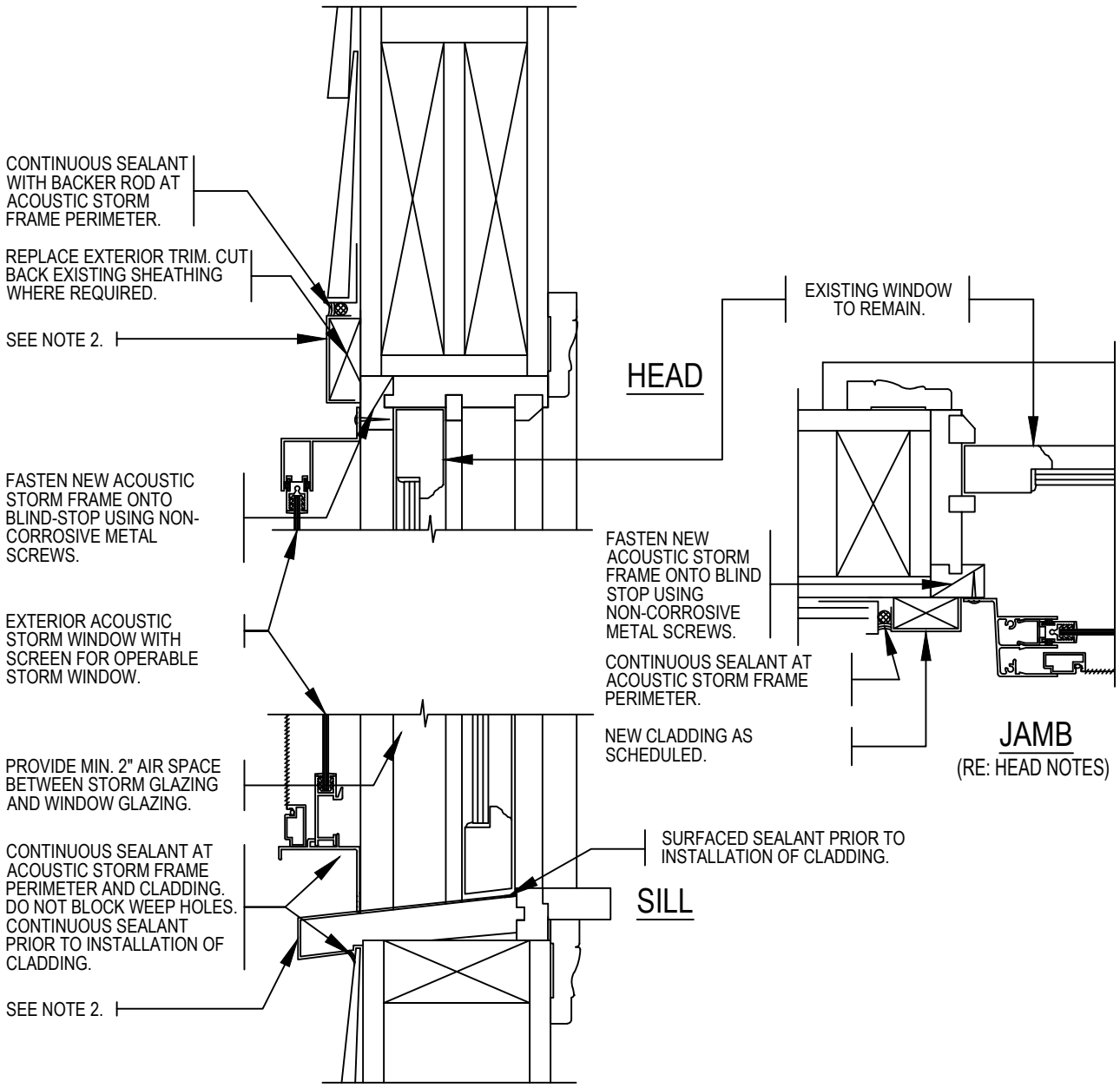
W9.4

SCALE: 3" = 1'-0"

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NEW ROOF AT BAY / BOW WINDOW
WALL DETAIL OPTION 2
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. TYPICAL INSTALLATION OF AN EXTERIOR ACOUSTIC STORM WINDOW.
2. NEW CLADDING AS SCHEDULED.
3. APPLY CONTINUOUS SEALANT TO ACOUSTIC STORM FRAME PERIMETER.

W10

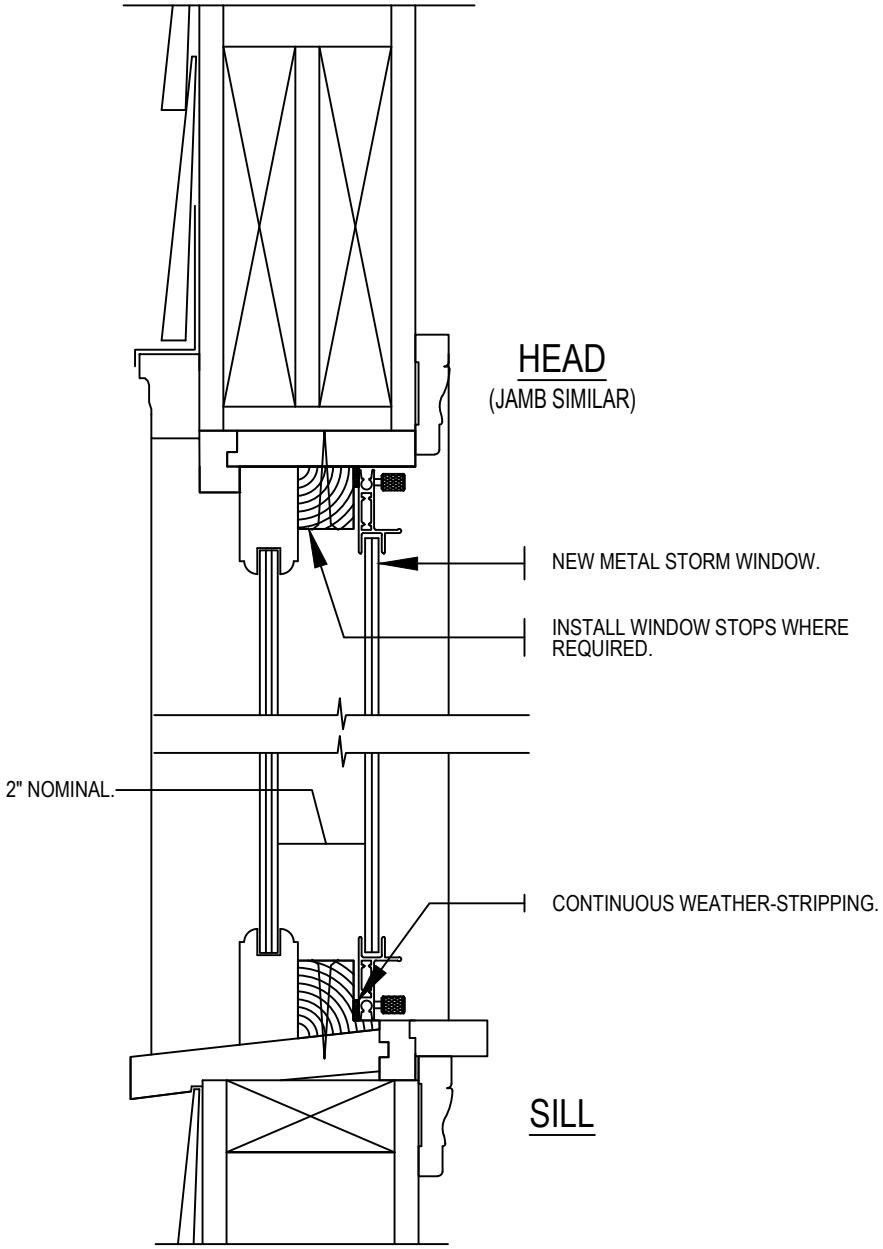
SCALE: 3" = 1'-0"

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EXTERIOR METAL STORM WINDOW
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RESIDENTIAL SOUND INSULATION PROGRAM



W11

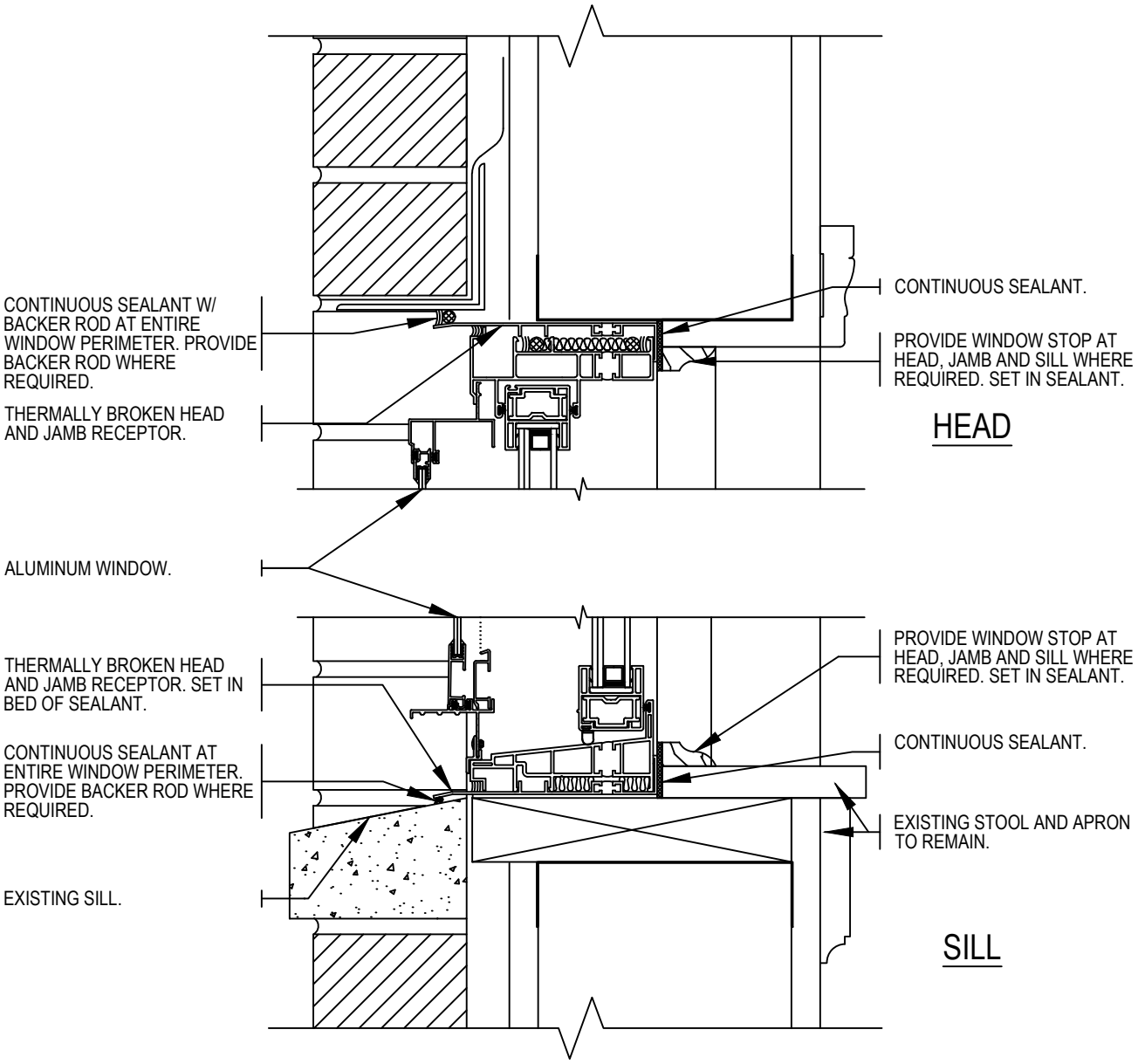
SCALE: 3" = 1'-0"

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INTERIOR METAL STORM WINDOW
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. TYPICAL EXTERIOR INSTALLATION IN A NON-ACOUSTICALLY TREATED BRICK- VENEER WALL.
2. REMOVE EXISTING WINDOW SASHES, WEIGHTS & ASSOC. HARDWARE (TYP.).
3. REPLACE EXISTING WOOD FRAME IF ROTTEN OR DAMAGED. INSTALL WOOD HEAD AND JAMB EXTENSIONS WHERE REQUIRED.
4. FILL VOIDS OF 1/2" OR GREATER WITH SOLID WOOD BLOCKING. FOR VOIDS LESS THAN 1/2" PROVIDE GLASS FIBER INSULATION WITH SEALANT AND BACKER ROD AT EACH FACE FULL PERIMETER OR CONTRACTOR'S OPTION OF LOW-EXPANSION FOAM SEALANT.
5. FILL ALL WEIGHT POCKETS UP TO SIX INCHES ON EITHER SIDE OF JAMB WITH SOLID WOOD BLOCKING.
6. REPLACE ALL EXTERIOR CLADDING WHERE REQUIRED. MATCH WINDOW FRAME COLOR.

W12

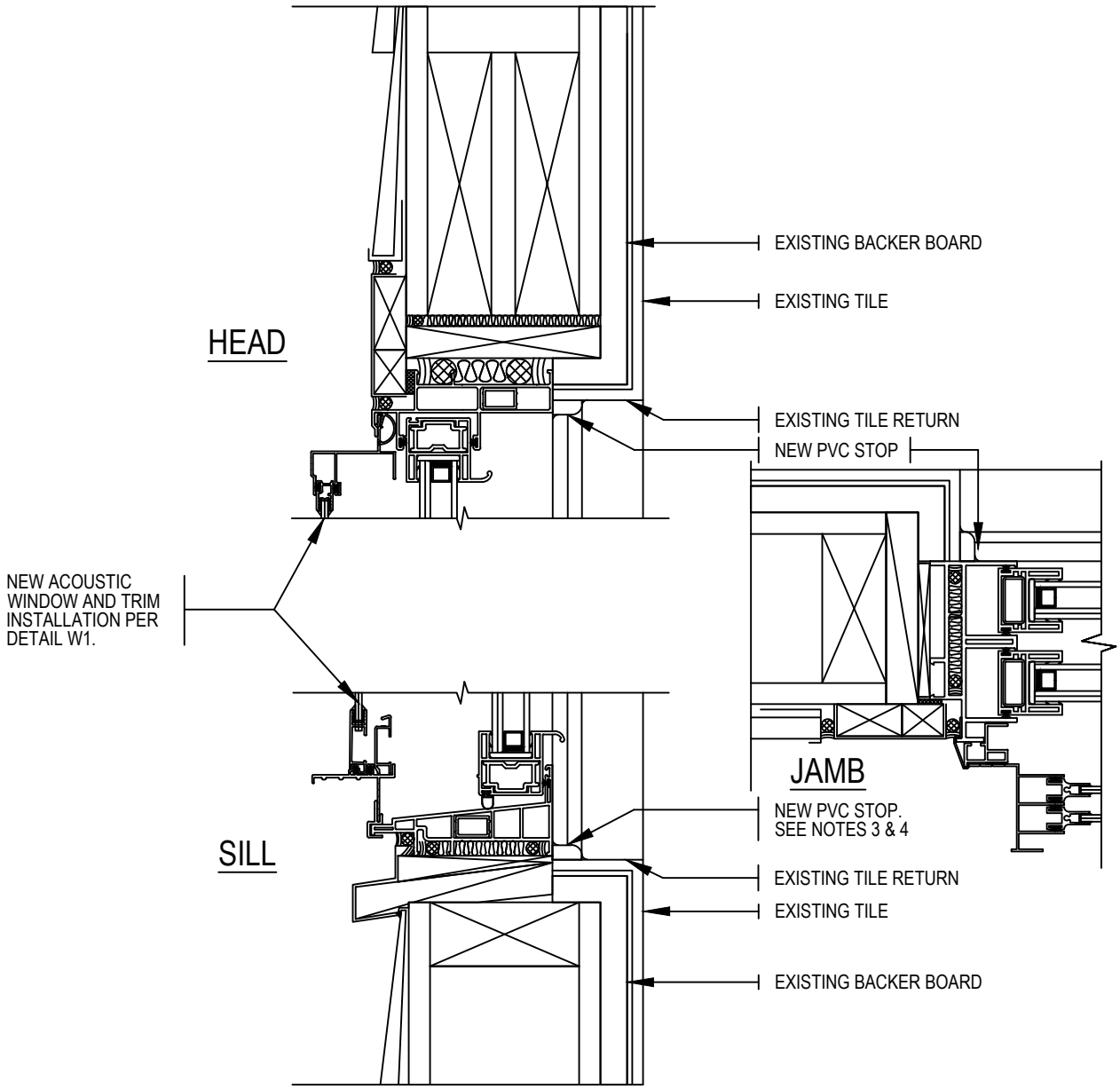
SCALE: 3" = 1'-0"

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ALUMINUM WINDOW - BRICK CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

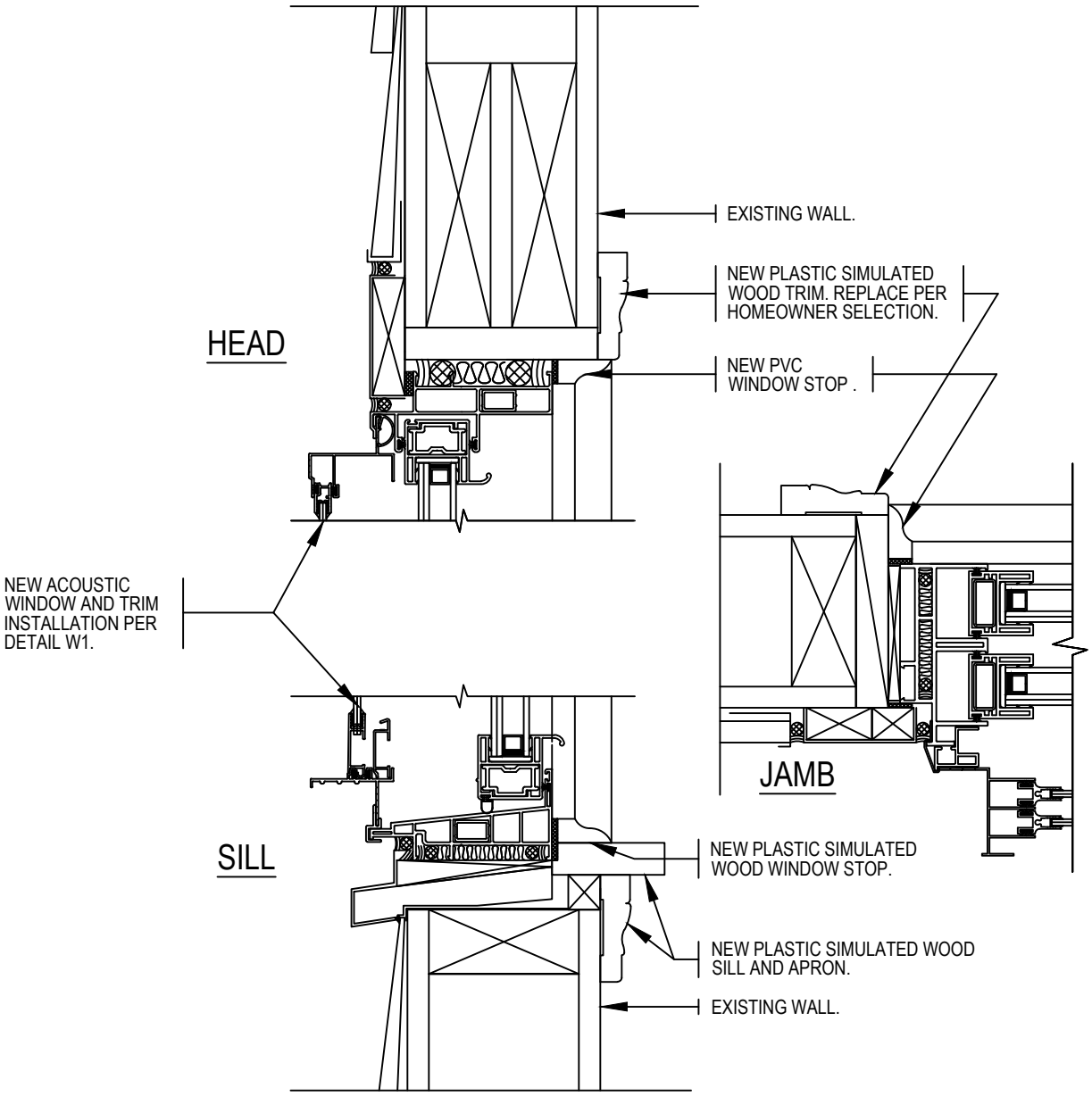
1. **REFER TO DETAIL W1 FOR BASIC WINDOW INSTALLATION.**
2. **THIS DETAIL IS FOR WET LOCATION INSTALLATIONS AND CONDITIONS WITH TILE WALL AND RETURN SURFACES.**
3. **CONTINUOUS SEALANT MAY BE INSTALLED WHERE GAP FROM TILE TO NEW WINDOW FRAME IS 1/4" OR LESS.**
4. **INSTALL NEW PRE-FINISHED WHITE PVC MOULDING (11/32" x 11/16") SET IN PLACE WITH SEALANT WHERE GAP TO FRAME EXCEEDS 1/4".**

W13

SCALE: 3" = 1'-0"

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VINYL WINDOW - BATHROOM & WET LOCATIONS WITH TILE RETURN



NOTES:

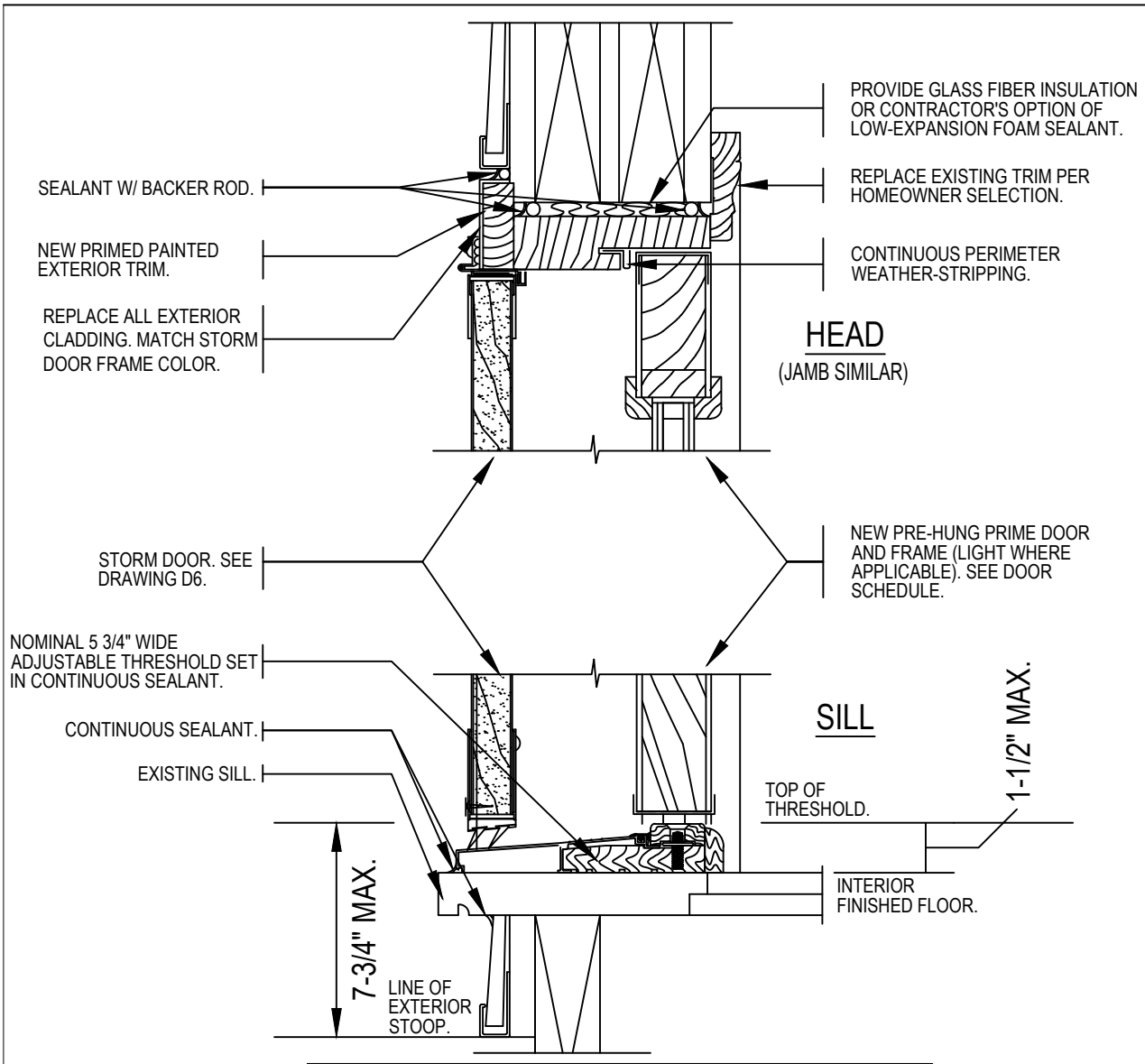
1. REFER TO DETAIL W1 FOR BASIC WINDOW INSTALLATION.
2. THIS DETAIL IS FOR WET LOCATION INSTALLATIONS AND CONDITIONS WITH CASED OPENING CONDITION.
3. CONTINUOUS SEALANT MAY BE INSTALLED WHERE GAP FROM TILE TO NEW WINDOW FRAME IS 1/4" OR LESS.
4. PRE-FINISHED PLASTIC SIMULATED WOOD MOLDING SET IN PLACE WITH SEALANT WHERE GAP TO FRAME EXCEEDS 1/4". REPLACE COLOR PER HOMEOWNER SELECTION. PAINT AS NECESSARY IF COLOR NOT AVAILABLE.

W14

SCALE: 3" = 1'-0"

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VINYL WINDOW - BATHROOM & WET LOCATIONS WITH CASED OPENING
PAGE 40
RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. **REFER TO DOOR ELEVATIONS FOR VARIOUS LITE CONFIGURATIONS.**
2. **THRESHOLD WIDTH TO BE FIELD-VERIFIED IN ORDER TO PROVIDE PROPER PRIME AND STORM-DOOR SEALS.**
3. **PROVIDE NEW HARDWARE. SEE CONSTRUCTION MODIFICATIONS.**
4. **INSTALL ADA THRESHOLD WHERE REQUIRED. SEE SPECIFICATIONS AND DRAWING D3.**

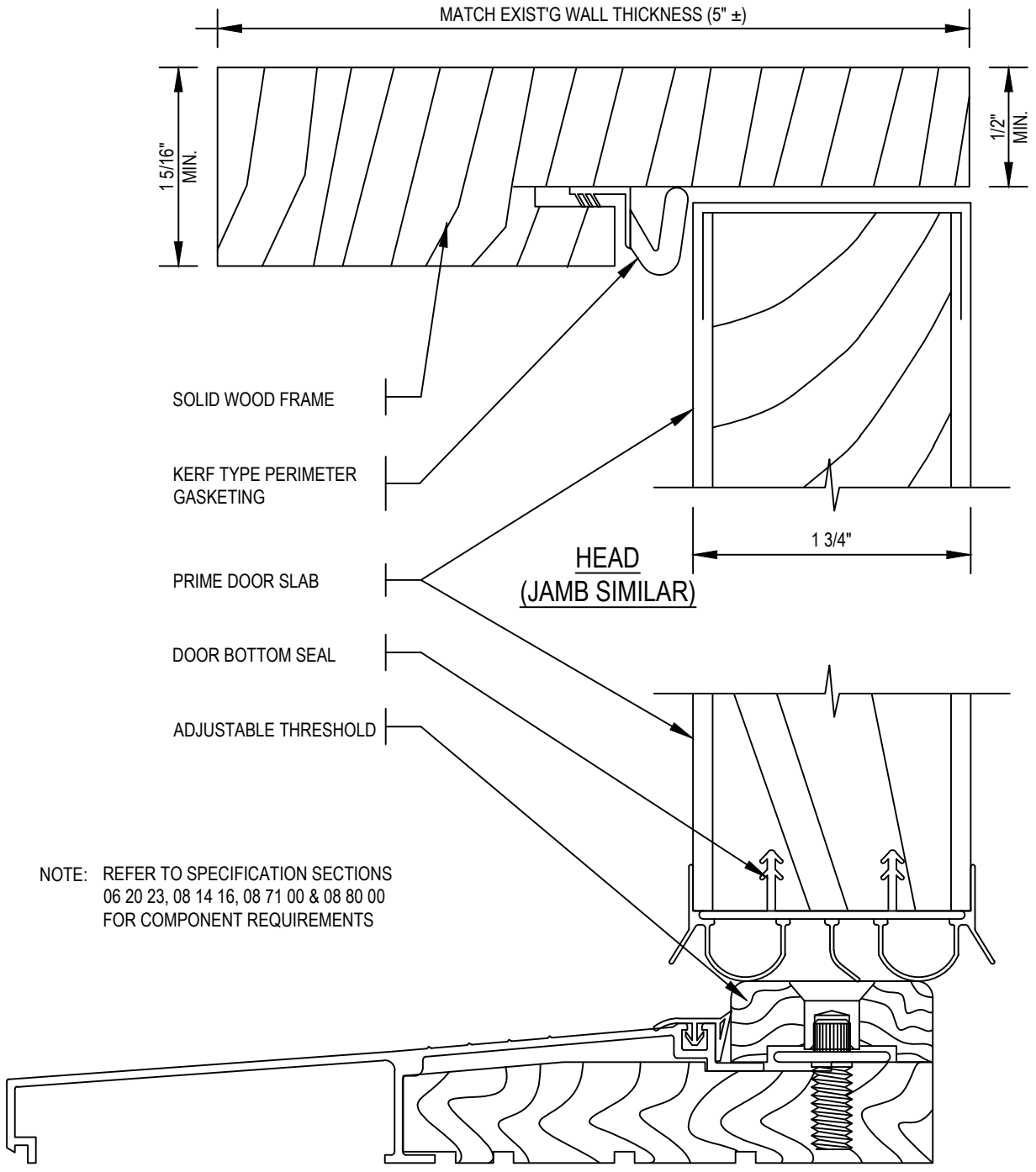
D1

SCALE: 3" = 1'-0"

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NEW ENTRY DOOR - FRAME CONSTRUCTION



NOTE: REFER TO SPECIFICATION SECTIONS 06 20 23, 08 14 16, 08 71 00 & 08 80 00 FOR COMPONENT REQUIREMENTS

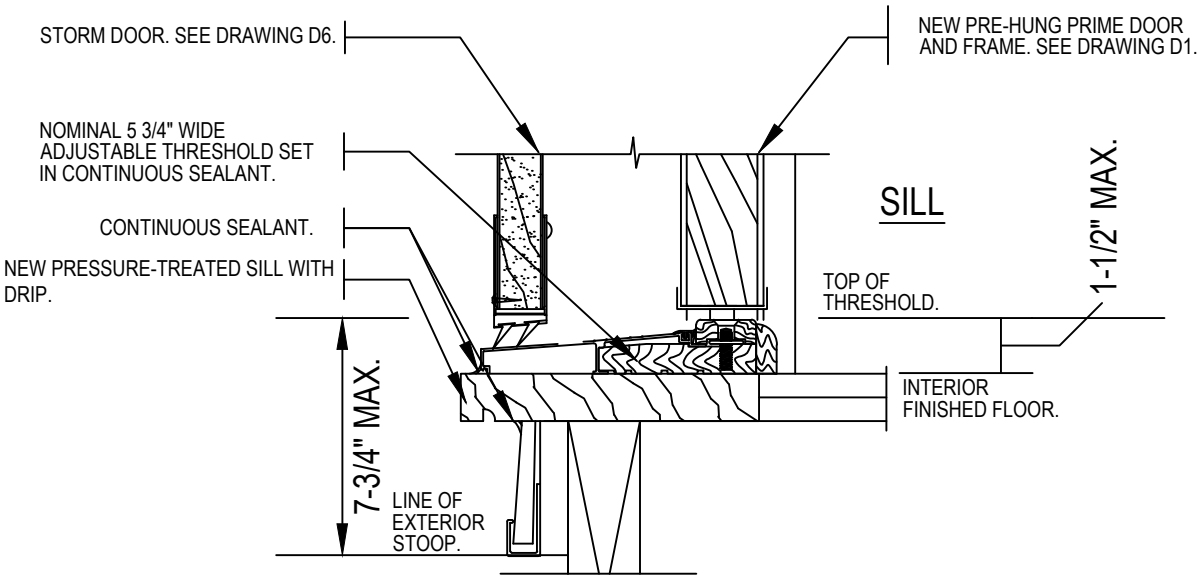
D1.1

SCALE: 1'-0" = 1'-0"

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DOOR ASSEMBLY - COMPONENT PARTS

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

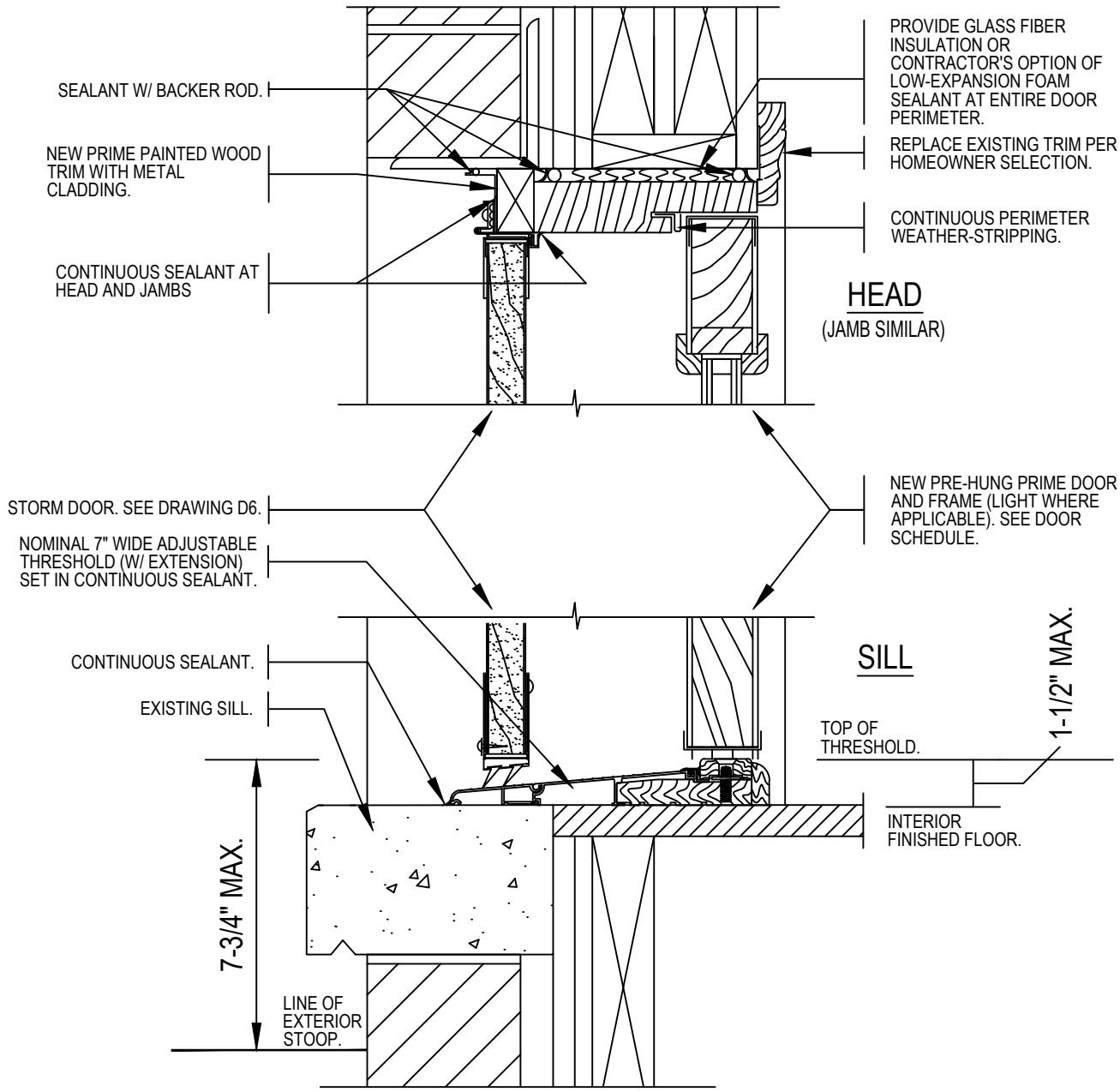
1. **TYPICAL INSTALLATION OF NEW WOOD SUBSILL AND THRESHOLD TO MATCH INTERIOR FLOOR-FINISH ELEVATION IN FRAME CONSTRUCTION.**
2. **RAISE EXTERIOR SILL TO BE FLUSHED WITH INTERIOR FLOOR FINISH BY USING PRESSURE TREATED LUMBER.**
3. **LENGTH AND DEPTH OF WOOD SUBSILL WILL VARY TO ACCOMMODATE NEW DOOR FRAME.**
4. **ANY ADDITIONAL LUMBER ABOVE THE EXISTING SILL WILL VARY TO ACCOMMODATE THE EXISTING INTERIOR FLOORING ELEVATION AND EXISTING STONE SILL LENGTH.**
5. **SEE DETAIL D2a FOR DETAIL AT CONCRETE OR STONE SILL CONDITIONS.**
6. **INSTALL ADA THRESHOLD WHERE REQUIRED. SEE SPECIFICATIONS AND DRAWING D3.**

D1a

SCALE: 3" = 1'-0"

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DOOR THRESHOLD WITH NEW SUBSILL - FRAME CONSTRUCTION



NOTES:

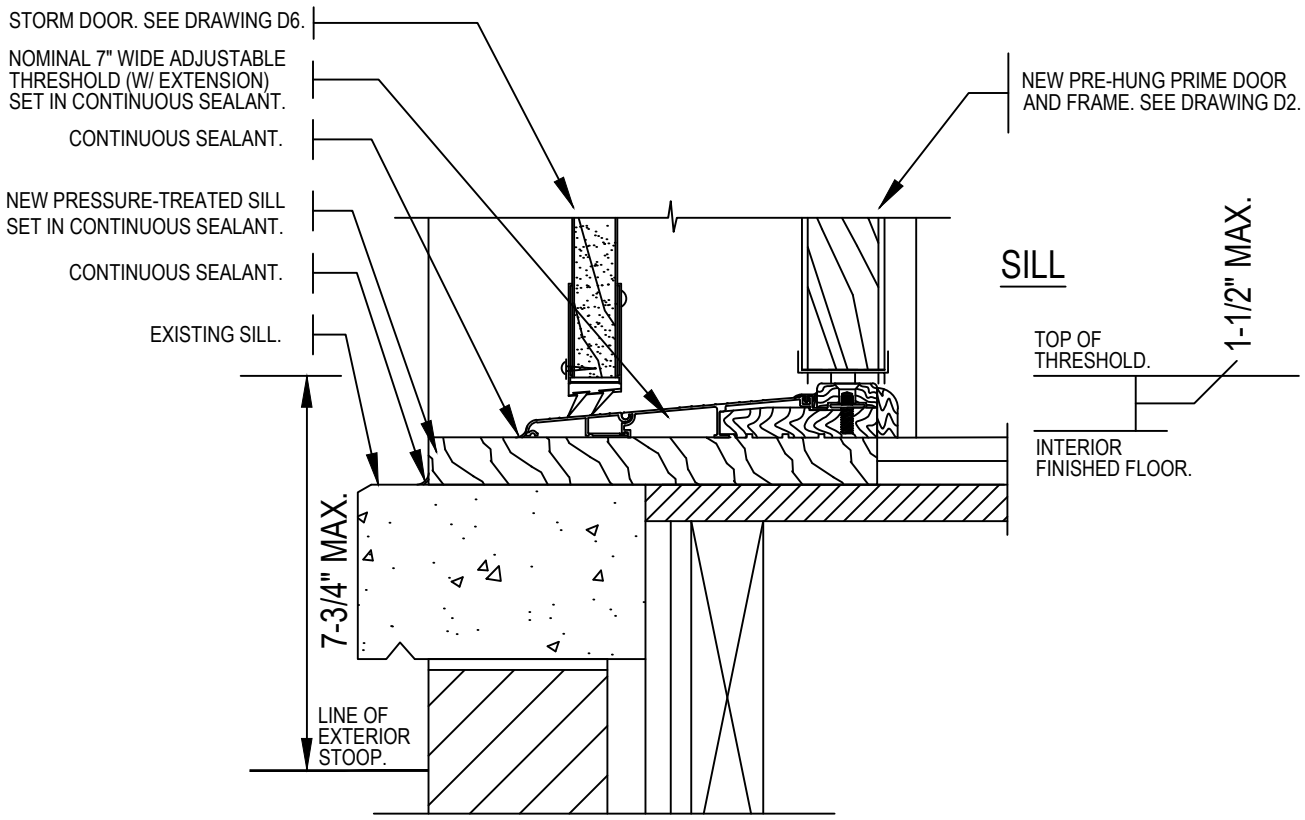
1. **REFER TO DOOR ELEVATIONS FOR VARIOUS LITE CONFIGURATIONS.**
2. **THRESHOLD WIDTH TO BE FIELD-VERIFIED IN ORDER TO PROVIDE PROPER PRIME AND STORM-DOOR SEALS.**
3. **PROVIDE NEW HARDWARE. SEE CONSTRUCTION MODIFICATIONS.**
4. **INSTALL ADA THRESHOLD WHERE REQUIRED. SEE SPECIFICATIONS AND DRAWING D3.**

D2

SCALE: 3" = 1'-0"

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NEW ENTRY DOOR - BRICK VENEER CONSTRUCTION



NOTES:

1. **TYPICAL INSTALLATION OF NEW WOOD SUBSILL AND THRESHOLD TO MATCH INTERIOR FLOOR-FINISH ELEVATION IN FRAME CONSTRUCTION.**
2. **RAISE EXTERIOR SILL TO BE FLUSHED WITH INTERIOR FLOOR FINISH BY USING PRESSURE TREATED LUMBER.**
3. **LENGTH AND DEPTH OF WOOD SUBSILL WILL VARY TO ACCOMMODATE NEW DOOR FRAME.**
4. **ANY ADDITIONAL LUMBER ABOVE THE EXISTING SILL WILL VARY TO ACCOMMODATE THE EXISTING INTERIOR FLOORING ELEVATION AND EXISTING STONE SILL LENGTH.**
5. **SEE DETAIL D1a FOR DETAIL AT FRAME CONSTRUCTION SILL CONDITIONS.**
6. **INSTALL ADA THRESHOLD WHERE REQUIRED. SEE SPECIFICATIONS AND DRAWING D3.**

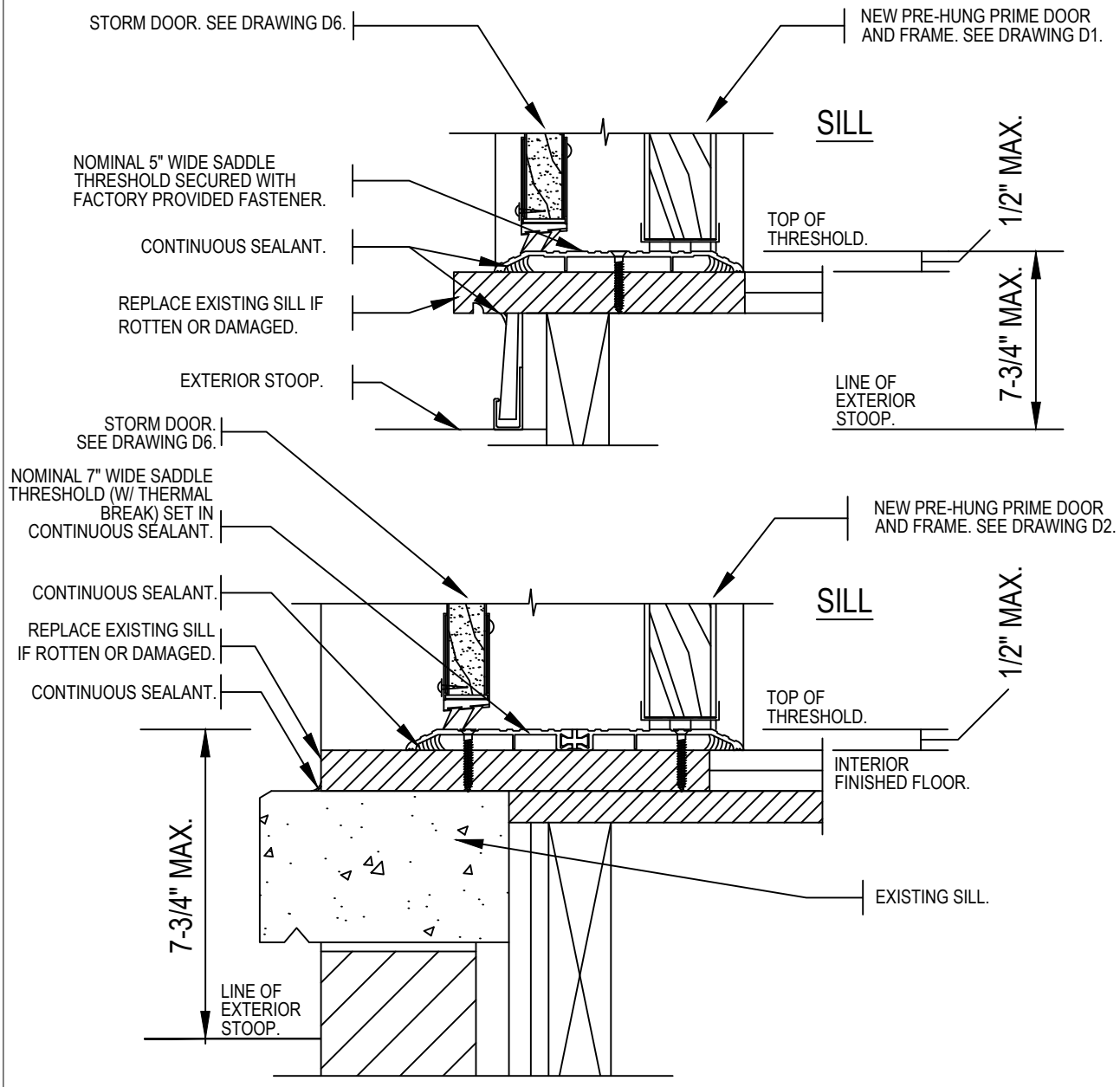
D2a

SCALE: 3" = 1'-0"

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DOOR THRESHOLD WITH NEW SUBSILL - BRICK VENEER CONSTRUCTION

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. **WEATHER-STRIPPING AND GASKETING SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.**
2. **INSTALL WEATHER-STRIPPING AND GASKETING WITH CONTINUOUS CONTACT TO FRAME SURFACES IN THE CLOSED POSITION.**

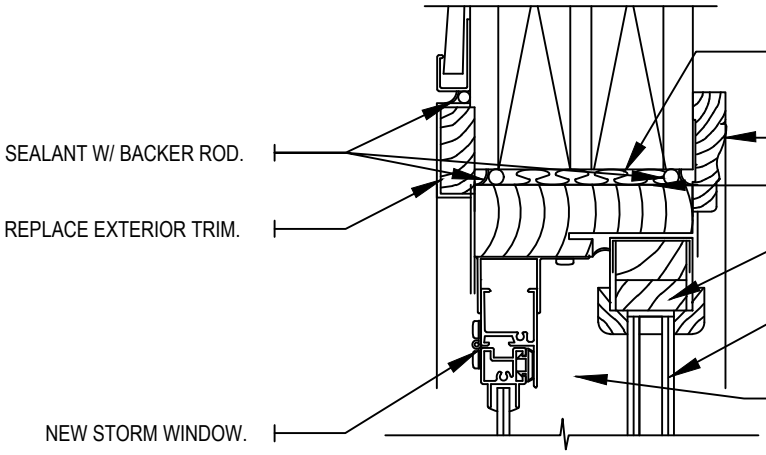
D3

SCALE: 3" = 1'-0"

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Chicago, IL 60606

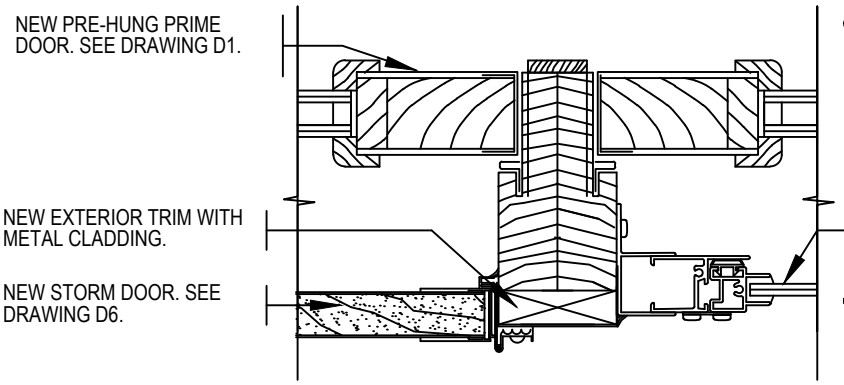
NEW ENTRY DOOR - ADA COMPLIANT THRESHOLDS

RESIDENTIAL SOUND INSULATION PROGRAM



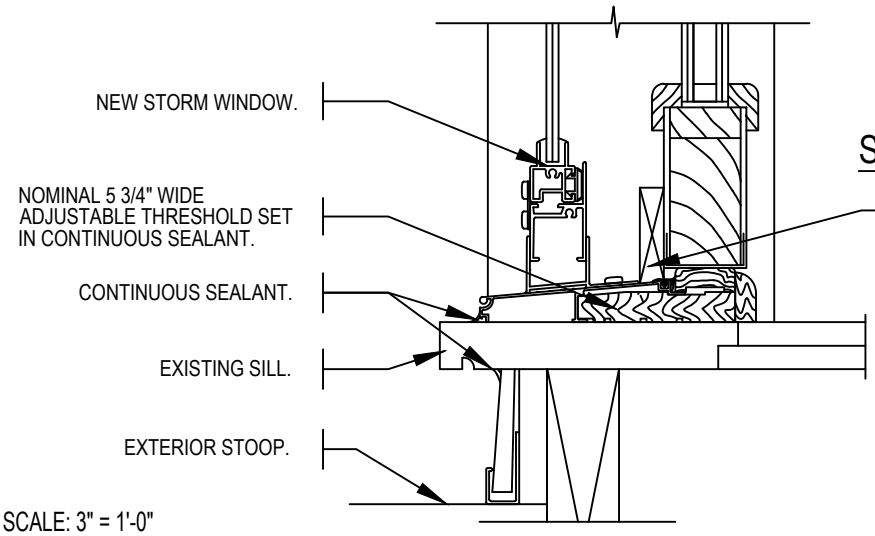
HEAD

AT SIDELIGHT (SIMILAR TO JAMB)



JAMB

AT SIDELIGHT AND DOOR



SILL

NEW WOOD STOP SET IN CONTINUOUS SEALANT.

NOTES:

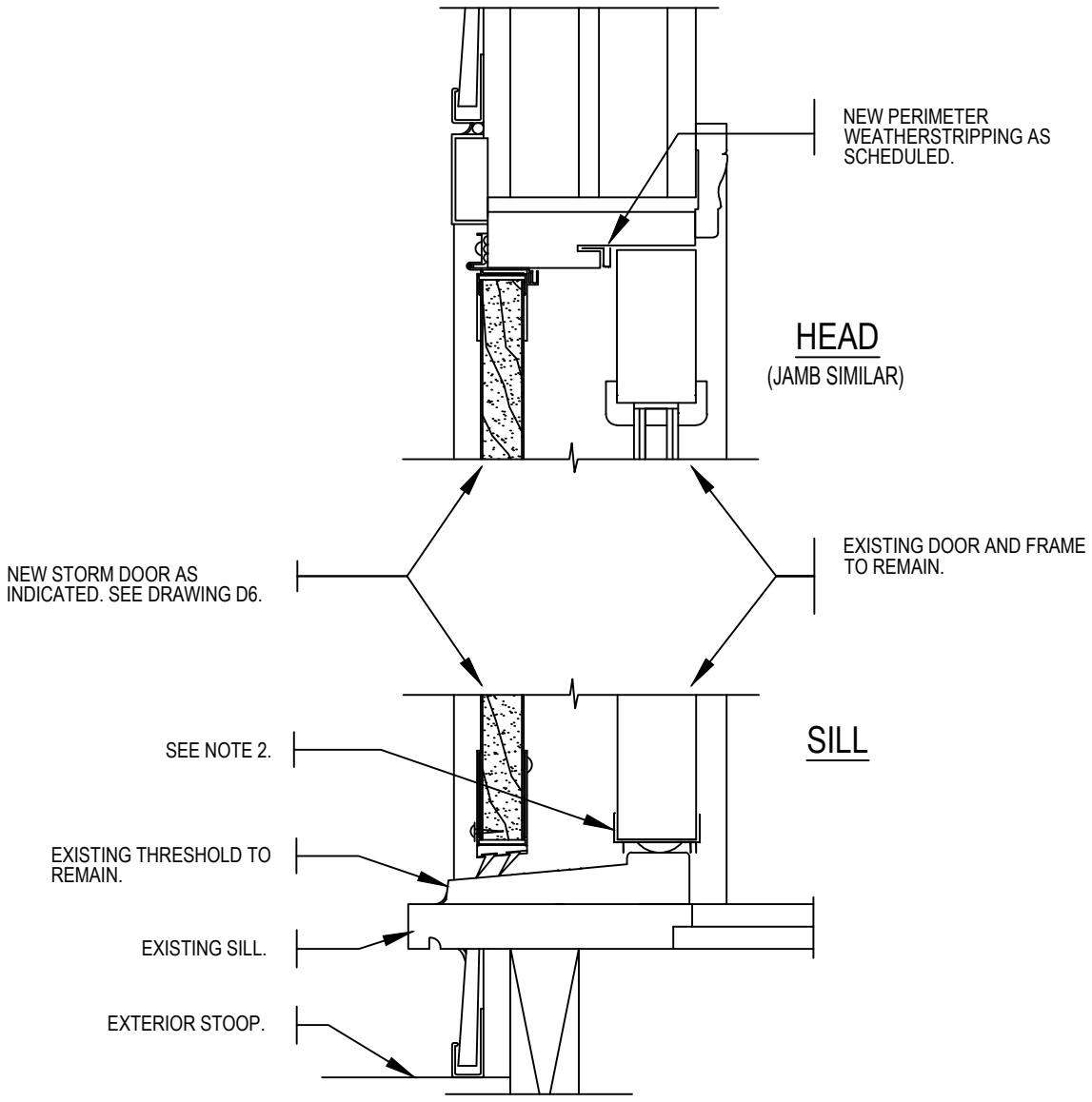
1. **TYPICAL INSTALLATION OF SIDELIGHT.**
2. **REFER TO DOOR SCHEDULE FOR SIDELIGHT DIMENSIONS.**
3. **PROVIDE GLAZED PANEL OR PROVIDE 1-3/4" SLAB.**

D4

SCALE: 3" = 1'-0"

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NEW ENTRY DOOR - GLASS SIDELIGHT



NOTES:

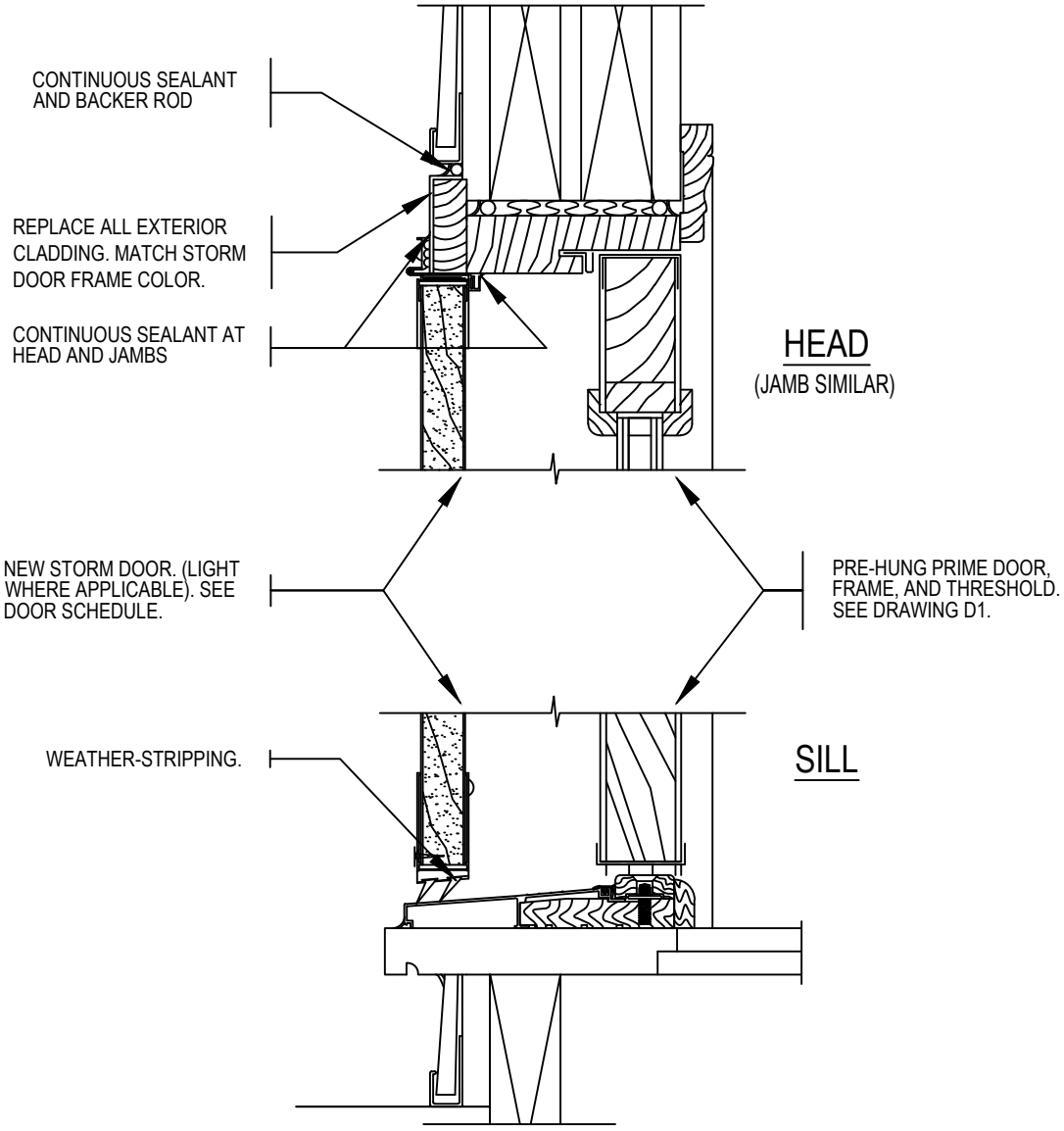
1. **PROVIDE NEW WEATHER-STRIPPING HARDWARE ONLY. SEE CONSTRUCTION MODIFICATIONS.**
2. **INSPECT EXISTING DOOR BOTTOM SEAL FOR FULL CONTACT TO EXISTING THRESHOLD. REPLACE WORN GASKET SEALS WITH TYPE-IN-KIND. PROVIDE NEW DOOR BOTTOM AND/OR SWEEP AS NECESSARY.**

D5

SCALE: 3" = 1'-0"

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EXISTING ENTRY DOOR - NEW WEATHERSTRIPPING



NOTES:

1. PROVIDE NEW HARDWARE. SEE CONSTRUCTION MODIFICATIONS.

2. INSTALL ADA THRESHOLD WHERE REQUIRED. SEE SPECIFICATIONS AND DRAWING D3.

D6

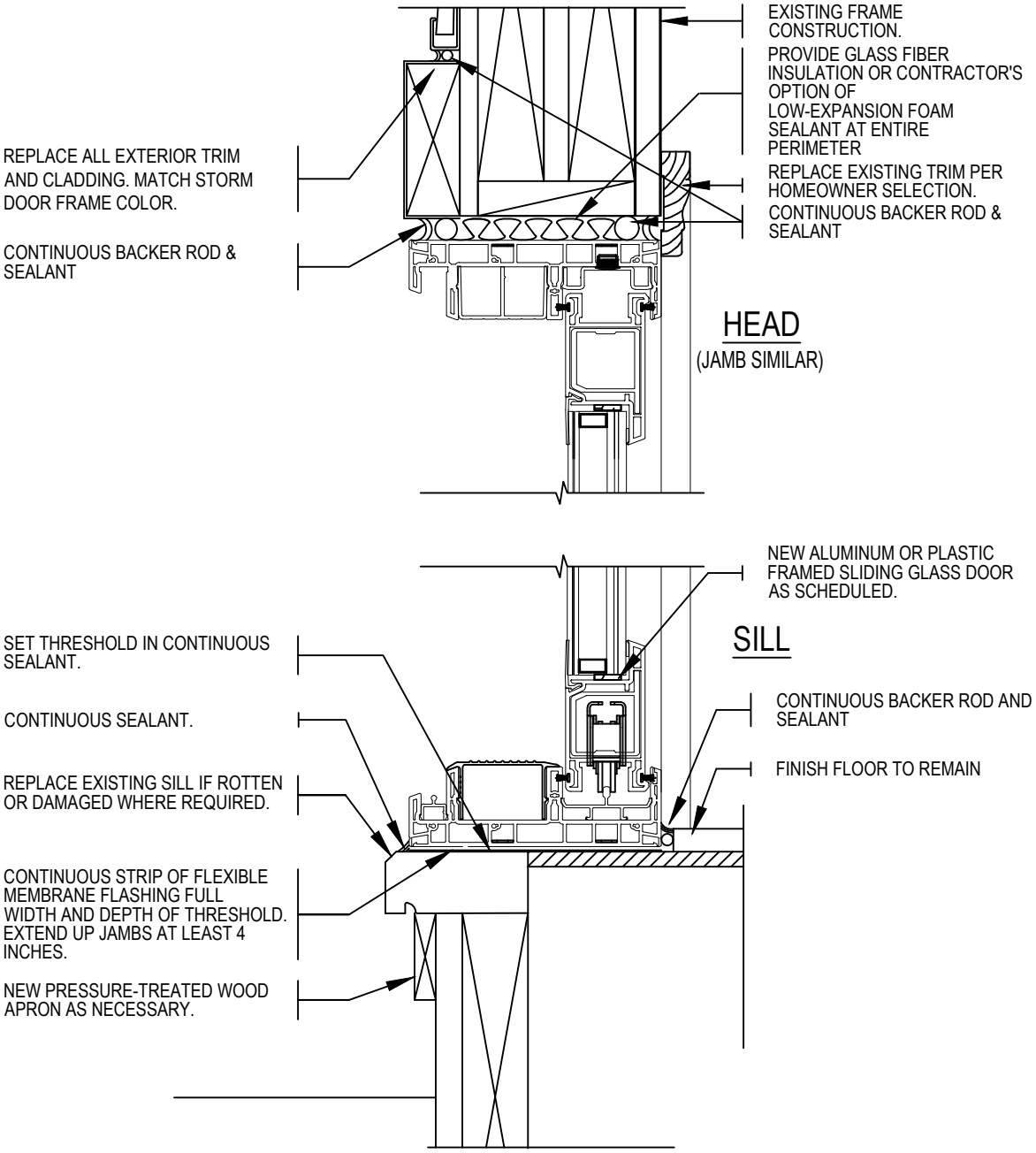
SCALE: 3" = 1'-0"

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NEW STORM DOOR
PAGE 49

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. TYPICAL INSTALLATION OF PRIME SLIDING DOOR IN FRAME CONSTRUCTION.
2. MATCH MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.

D7

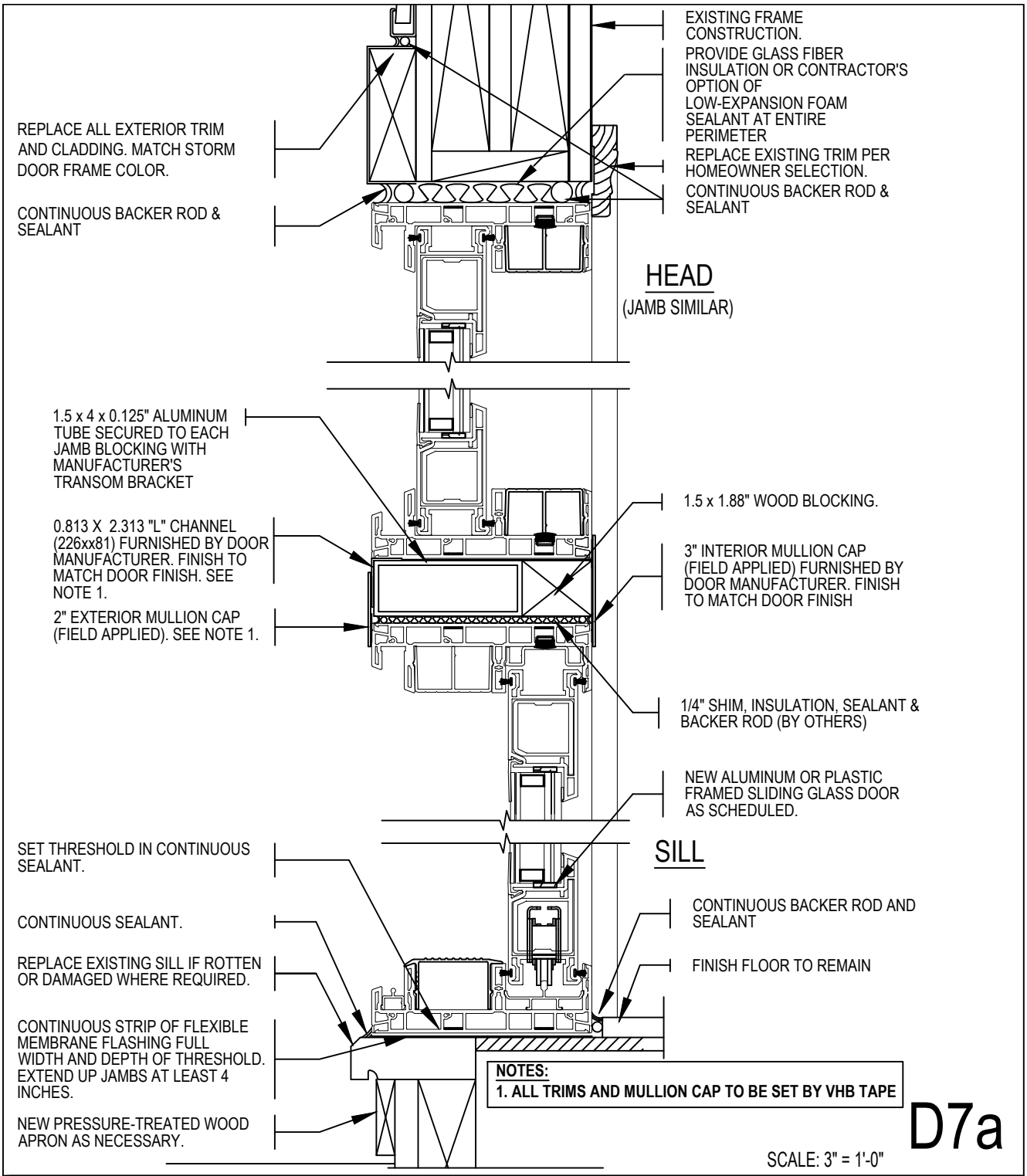
SCALE: 3" = 1'-0"

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NEW SLIDING GLASS DOOR - FRAME CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. ALL TRIMS AND MULLION CAP TO BE SET BY VHB TAPE

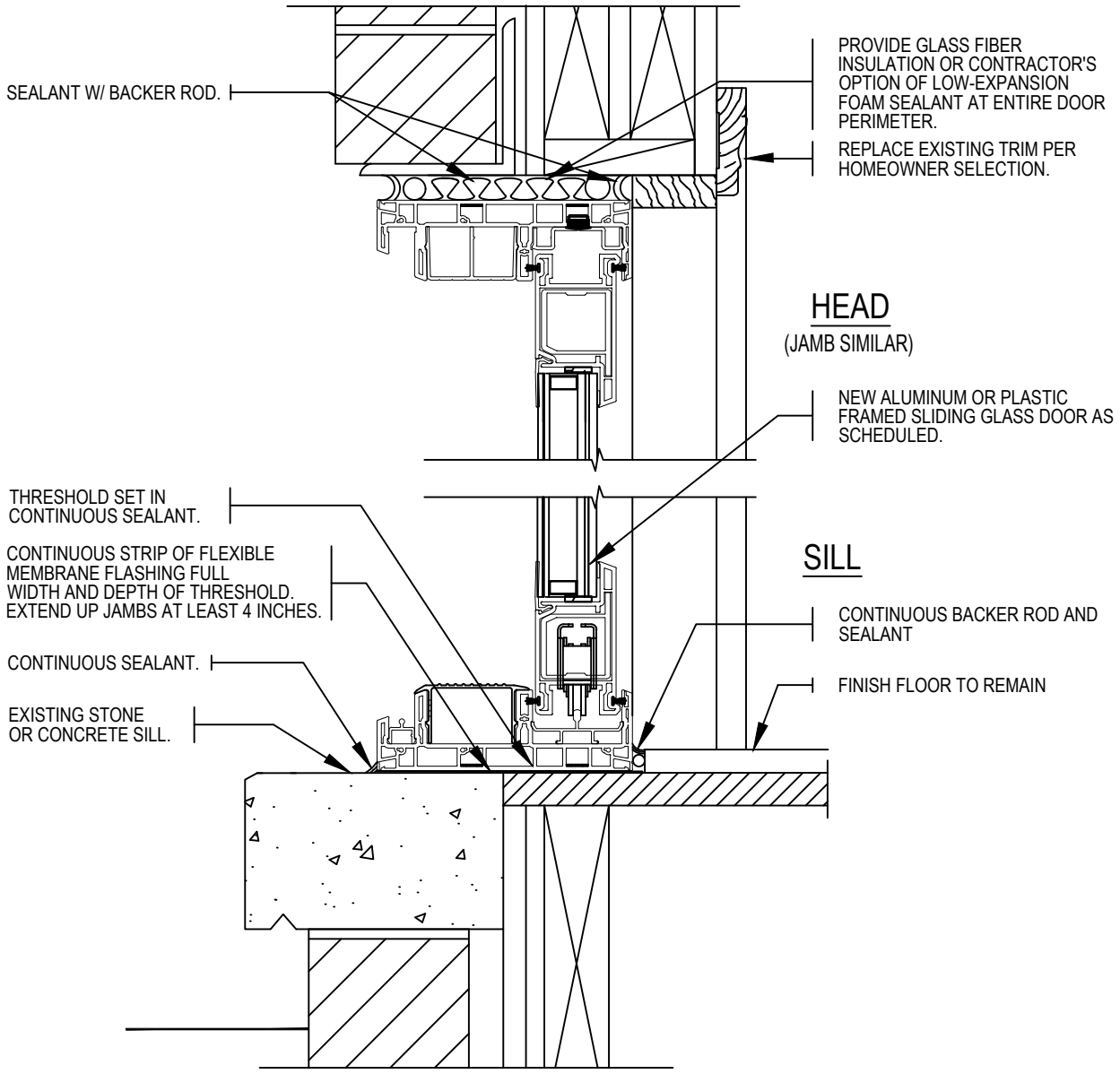
D7a

SCALE: 3" = 1'-0"

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NEW SLIDING GLASS DOOR - FRAME CONSTRUCTION - WITH TRANSOM



NOTES:

1. **TYPICAL INSTALLATION OF PRIME SLIDING DOOR IN BRICK CONSTRUCTION.**
2. **CLEAN RUST FROM LINTEL AND PRIME PRIOR TO SEALANT APPLICATION.**
3. **MATCH MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.**

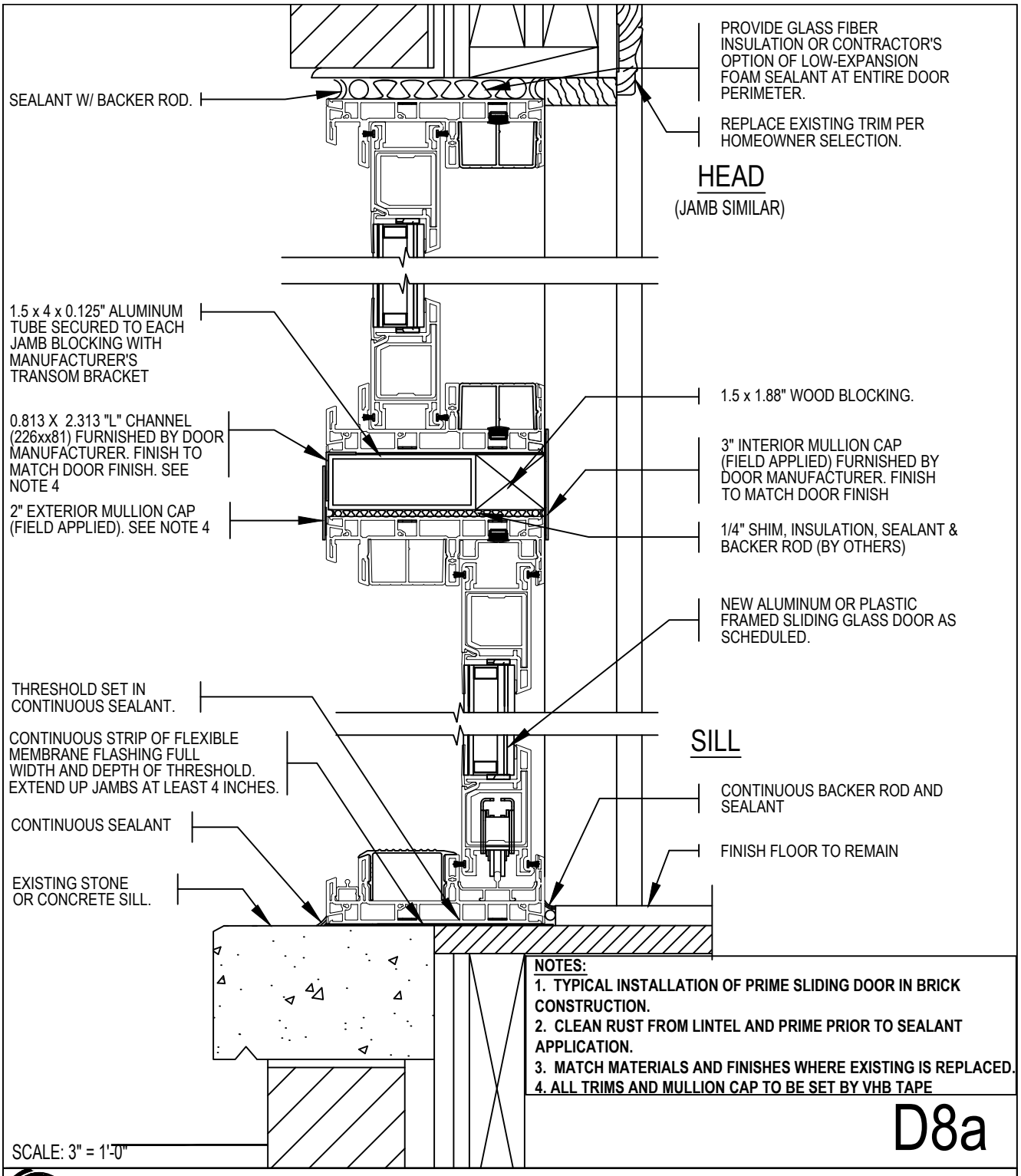
D8

SCALE: 3" = 1'-0"

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NEW SLIDING GLASS DOOR - BRICK VENEER CONSTRUCTION



NOTES:

1. TYPICAL INSTALLATION OF PRIME SLIDING DOOR IN BRICK CONSTRUCTION.

2. CLEAN RUST FROM LINTEL AND PRIME PRIOR TO SEALANT APPLICATION.

3. MATCH MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.

4. ALL TRIMS AND MULLION CAP TO BE SET BY VHB TAPE

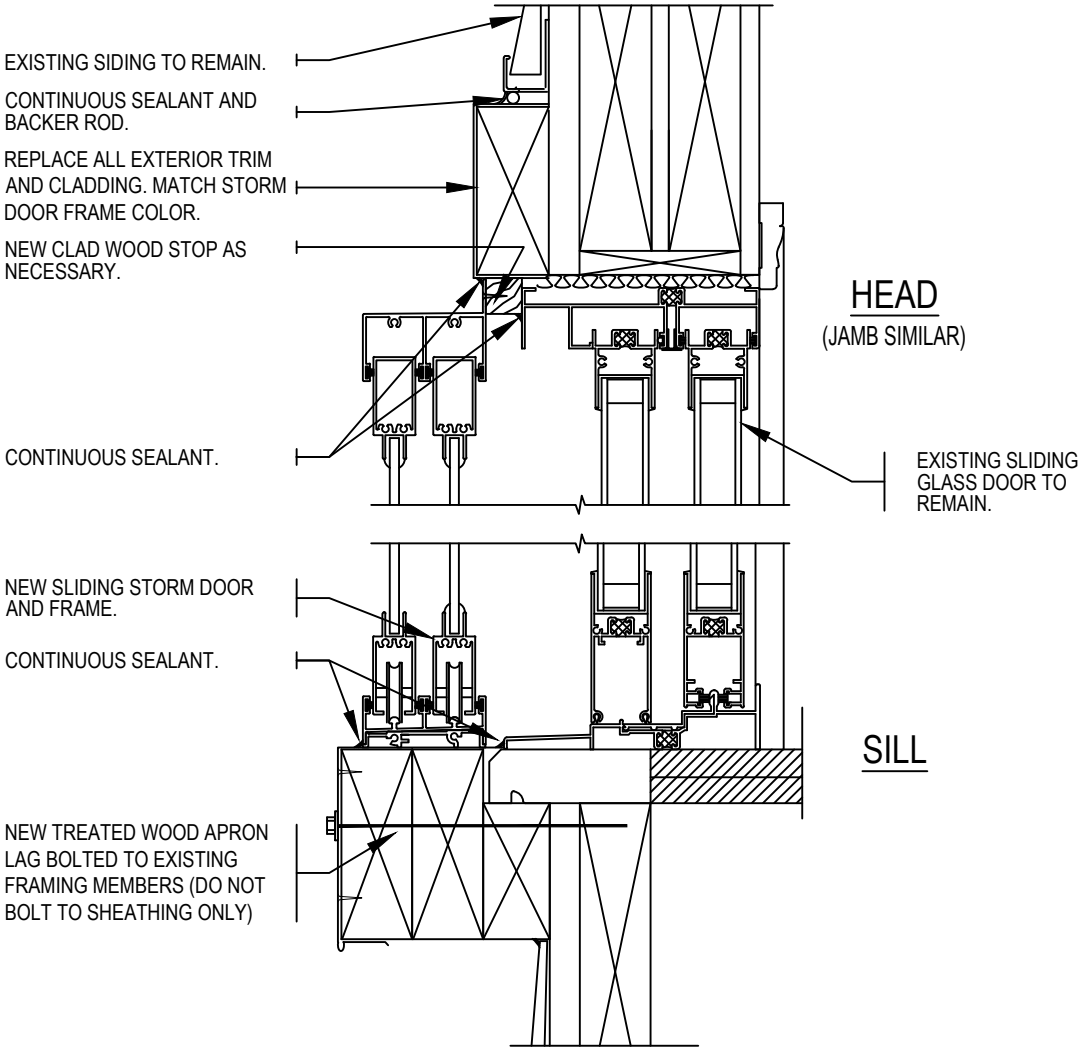
SCALE: 3" = 1'-0"

D8a

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NEW SLIDING GLASS DOOR - BRICK VENEER CONSTRUCTION - WITH TRANSOM



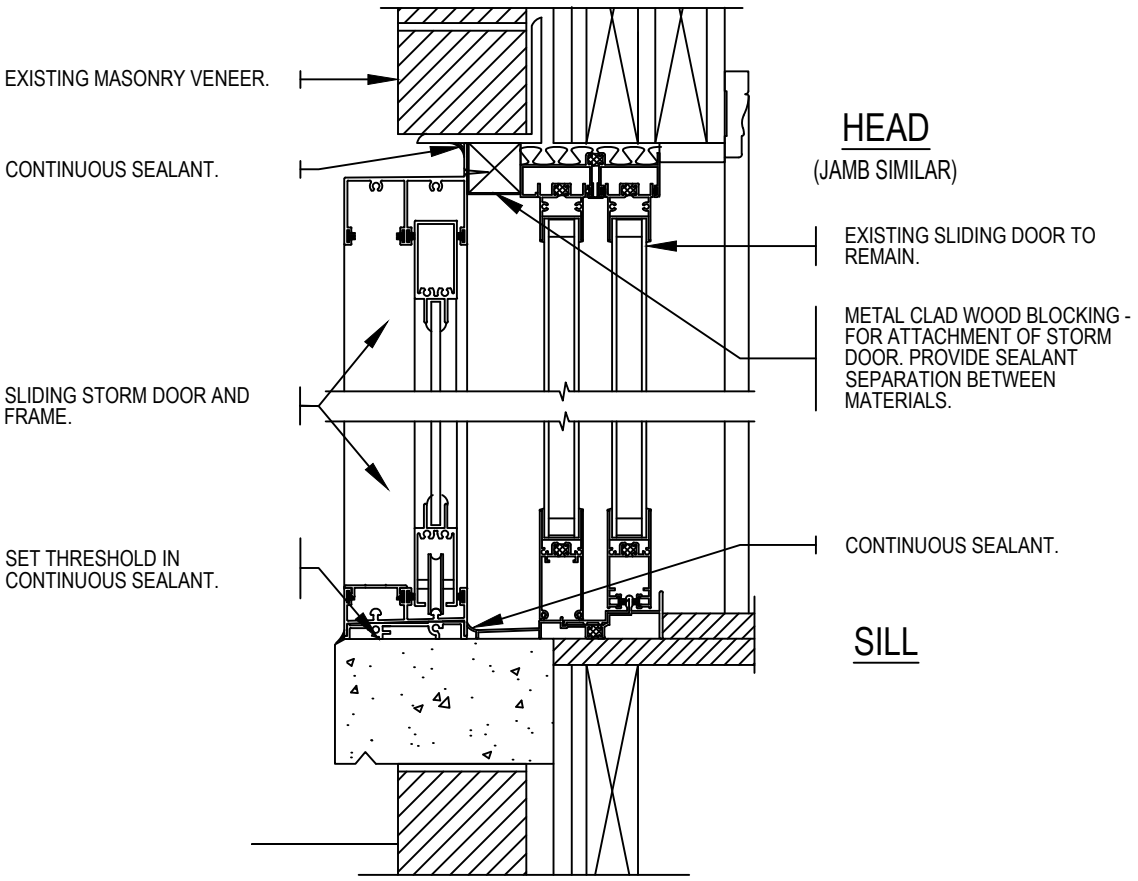
NOTES:
1. TYPICAL INSTALLATION OF SLIDING STORM DOOR IN FRAME CONSTRUCTION.
2. MATCH MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.

D9

SCALE: 3" = 1'-0"

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NEW SLIDING METAL STORM DOOR - FRAME CONSTRUCTION



NOTES:

1. **TYPICAL INSTALLATION OF SLIDING STORM DOOR IN BRICK VENEER CONSTRUCTION.**
2. **MATCH MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.**
3. **CLEAN RUST FROM LINTEL, PRIME AND FINISH PAINT PRIOR TO SEALANT APPLICATION.**

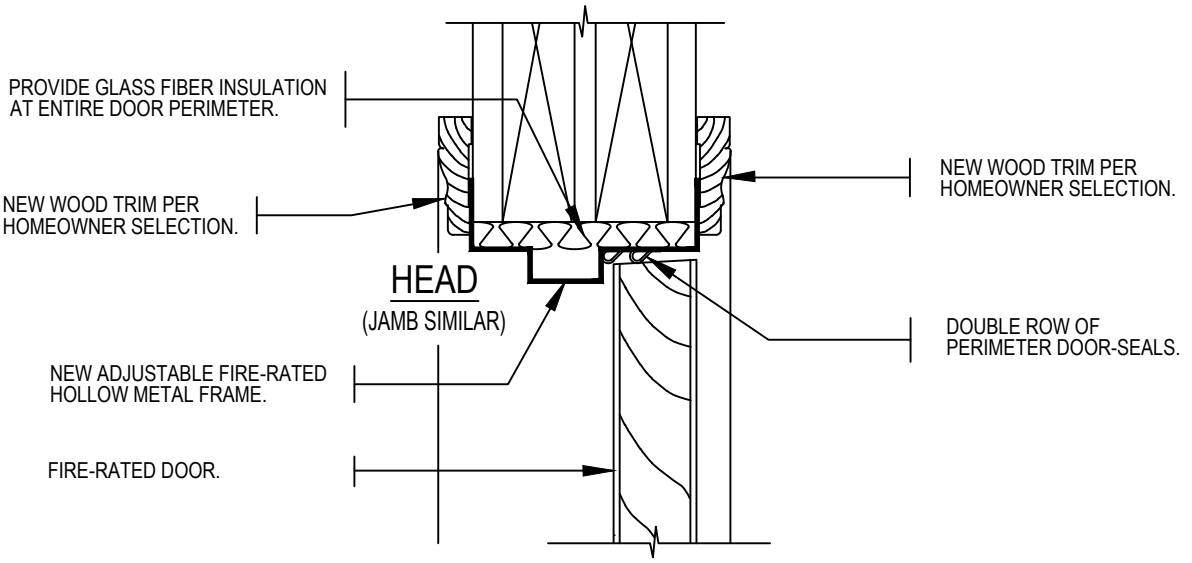
D10

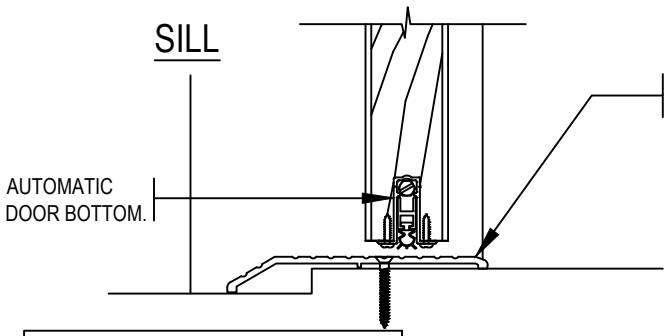
SCALE: 3" = 1'-0"

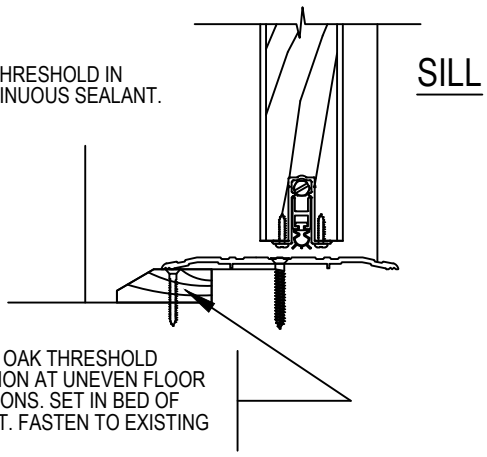
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NEW SLIDING METAL STORM DOOR
- BRICK VENEER CONSTRUCTION
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RESIDENTIAL SOUND INSULATION PROGRAM

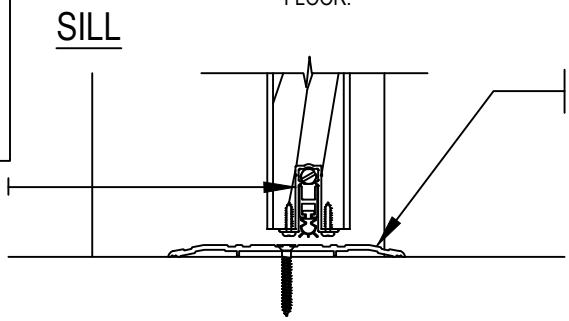






NOTES:

1. **TYPICAL INSTALLATION OF FIRE-RATED DOOR.**
2. **THRESHOLD WIDTH TO BE FIELD-VERIFIED.**
3. **DETAIL INDICATED GENERAL INTENT OF INSTALLATION. ACTUAL FRAME, SEAL AND THRESHOLD PROFILES AND FINISHES TO BE DETERMINED AT FIELD MEASUREMENTS.**



D11a - 20 MIN. FIRE RATING
D11b - 45 MIN. FIRE RATING

D11a & b

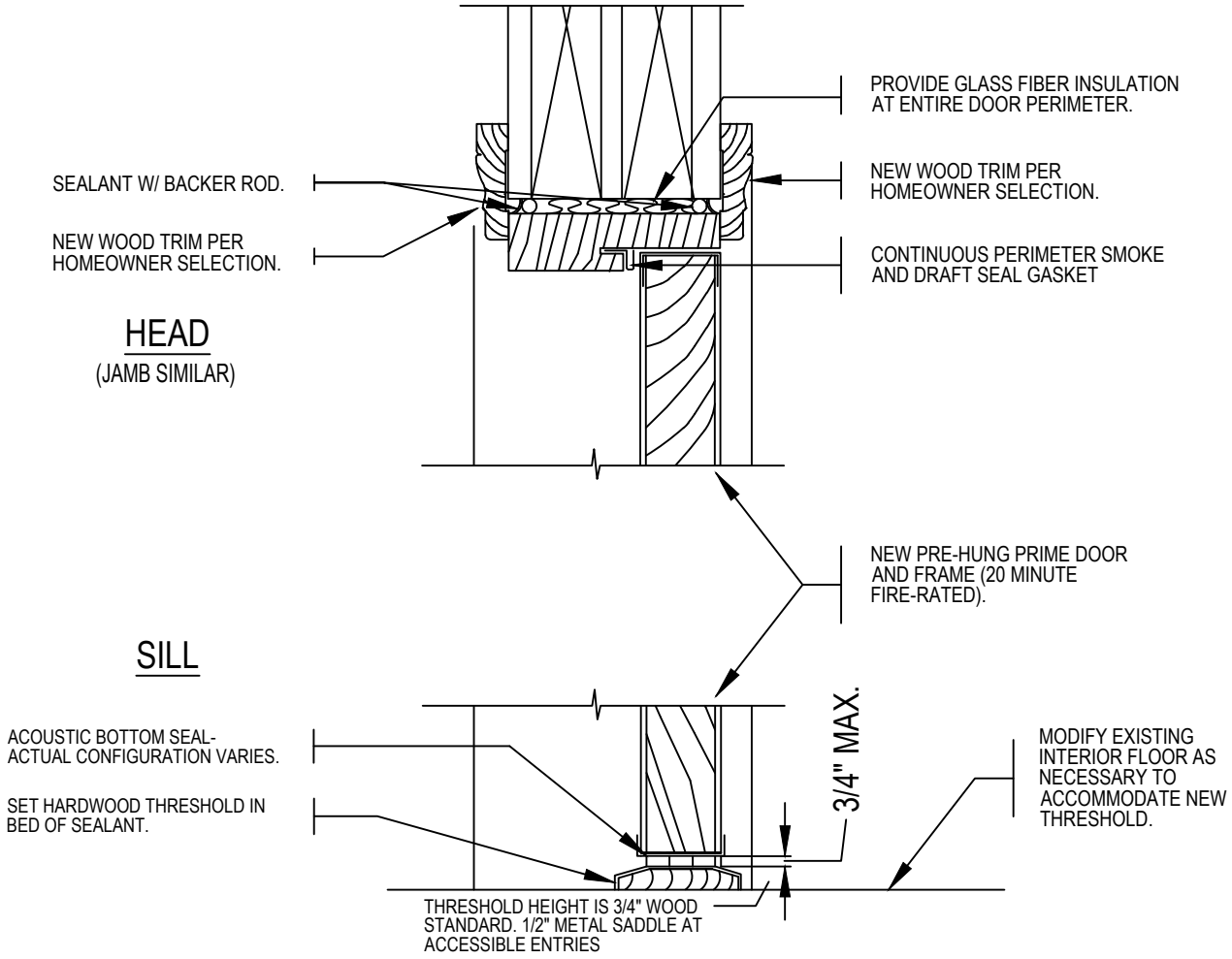
SCALE: 3" = 1'-0"

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NEW INTERIOR ENTRY FIRE-RATED DOOR WITH H.M. FRAME
PAGE 56

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. **TYPICAL INSTALLATION OF PRE-HUNG DOOR WEATHER-STRIPPING.**
2. **WEATHER-STRIPPING AND GASKETING SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.**
3. **WEATHER-STRIPPING AND GASKETING SHALL HAVE CONTINUOUS CONTACT WITH FRAME SURFACES WHEN IN CLOSED POSITION.**

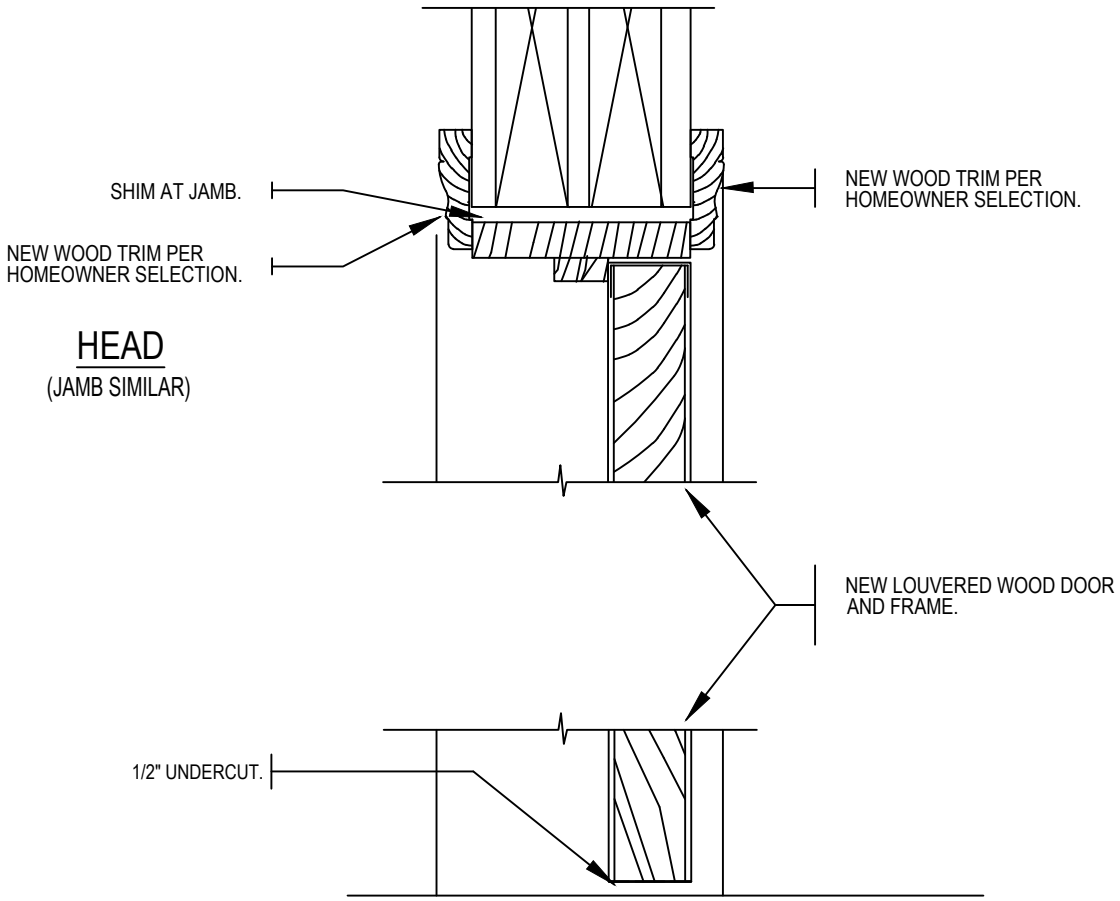
D12

SCALE: 3" = 1'-0"

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NEW INTERIOR ENTRY FIRE-RATED DOOR WITH WOOD FRAME



D13

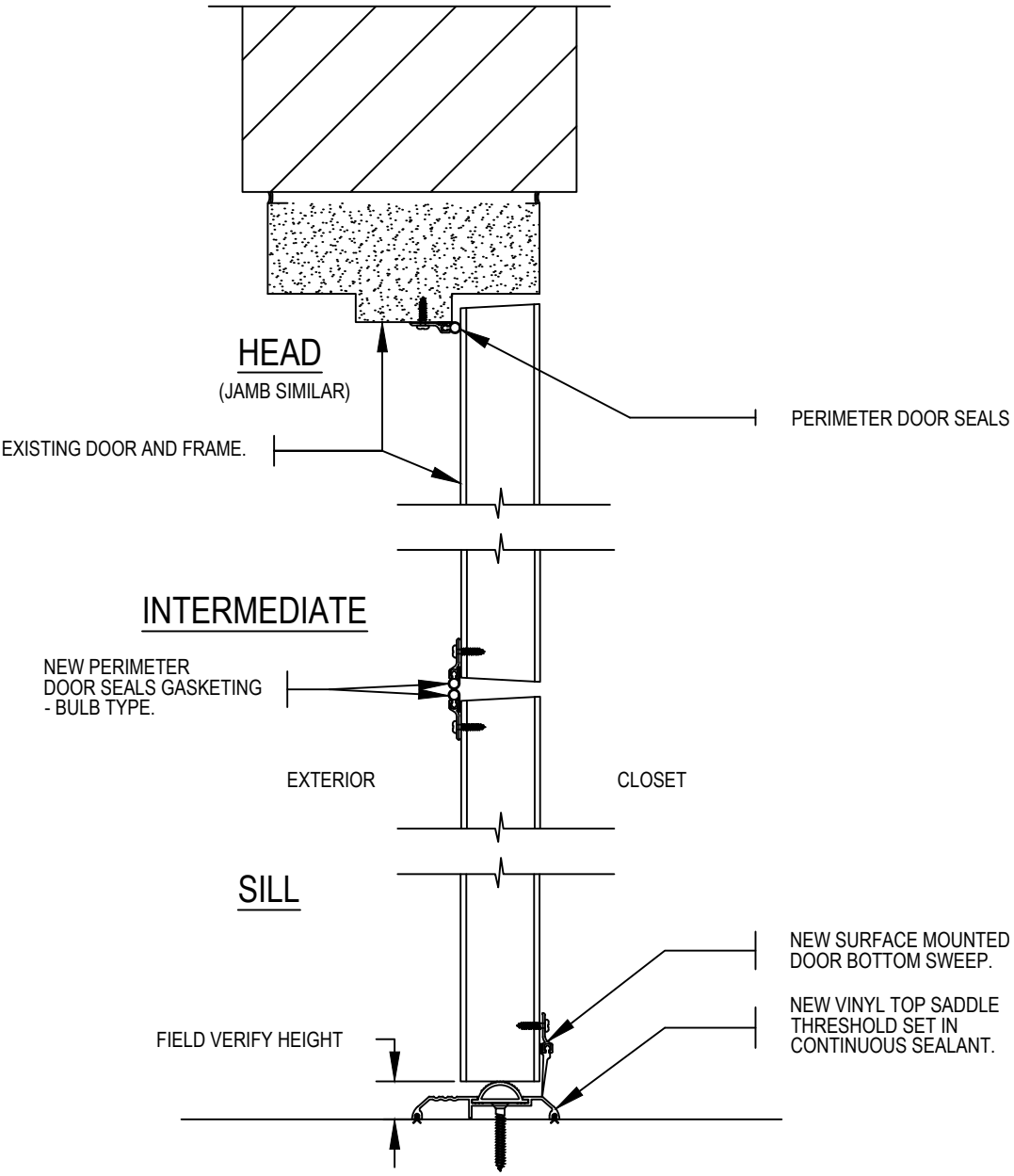
SCALE: 3" = 1'-0"

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NEW INTERIOR UTILITY CLOSET DOOR
PAGE 58

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. **THRESHOLD WIDTH AND HEIGHT TO BE FIELD VERIFIED TO COVER EXISTING FLOORING TRANSITION WHERE REQUIRED.**
2. **DETAIL INDICATES GENERAL INTENT OF INSTALLATION. ACTUAL SEAL AND THRESHOLD HEIGHT AND FINISHES TO BE DETERMINED BY FIELD CONDITIONS.**

D14

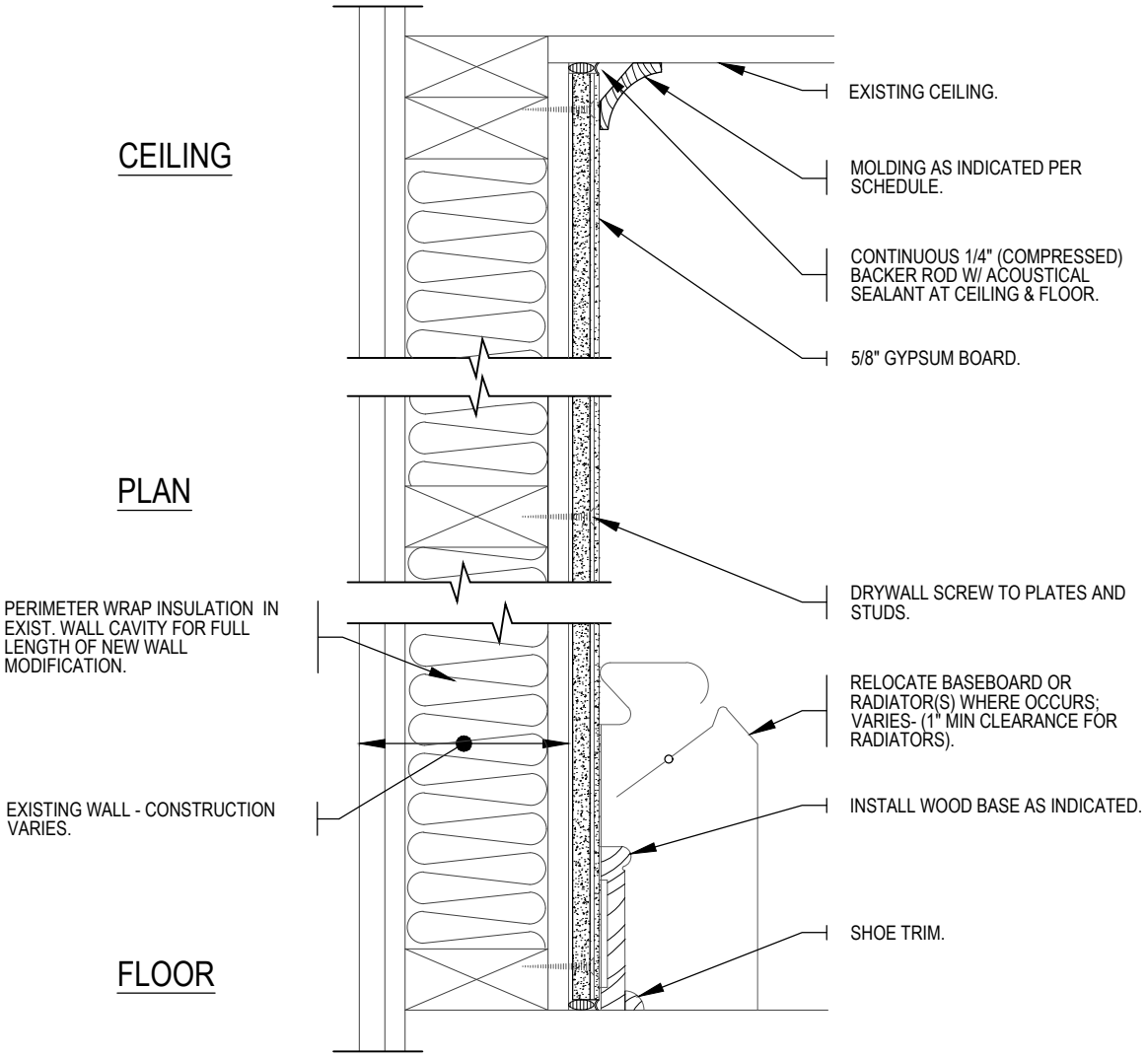
SCALE: 3" = 1'-0"

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EXTERIOR UTILITY CLOSET DOOR
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. **CONTRACTOR RESPONSIBLE FOR RETRIMMING WINDOWS, DOORS, ETC., AND ADDING HEAD, SILL AND JAMB EXTENSIONS AS REQUIRED. WHERE EXISTS, CUT CARPETING, REMOVE TACK STRIP AND REINSTALL SAME.**
2. **CONTRACTOR TO EXTEND FORWARD ANY OUTLETS, SWITCHES, LIGHTS, ETC., AND REWIRE AS REQUIRED.**
3. **RELOCATED BASEBOARD RADIATOR OR STEAM PIPING SHALL PENETRATE THROUGH FLOOR AND NOT BE EXTENDED THROUGH WALL UNLESS NOTED OTHERWISE.**
4. **REFER TO THE NOTES ON THE CONSTRUCTION MODIFICATIONS.**
5. **TYPICAL INSTALLATION OF 1 LAYER OF GYPSUM BOARD**

WA1

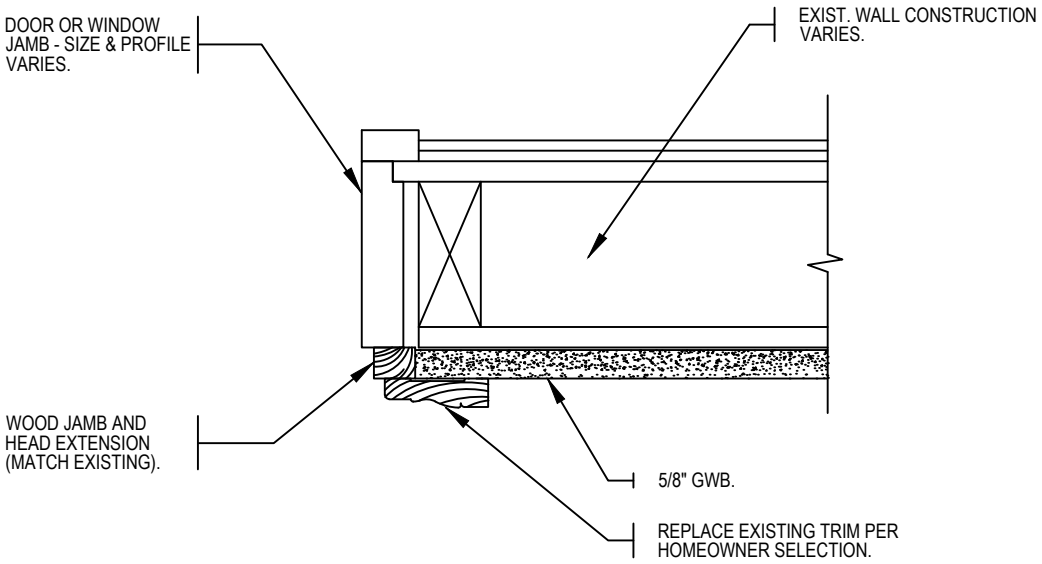
SCALE: 3" = 1'-0"

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GYPSUM BOARD WALL DETAIL
PAGE 60

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. SEE CONSTRUCTION MODIFICATIONS FOR SCOPE OF WORK.

WA2

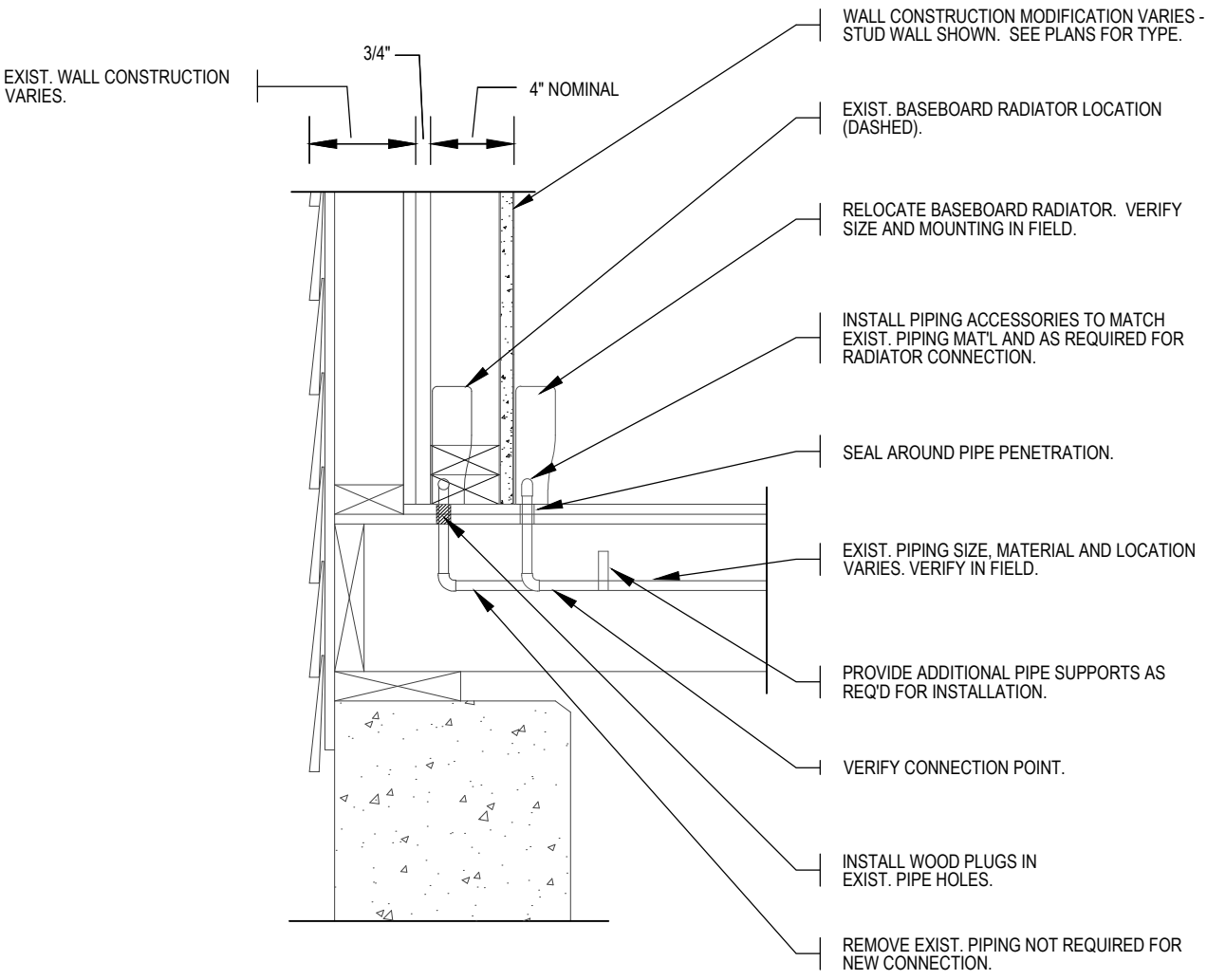
SCALE: 3" = 1'-0"

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JAMB AT ADDITIONAL GYPSUM BOARD LAYER
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RESIDENTIAL SOUND INSULATION PROGRAM



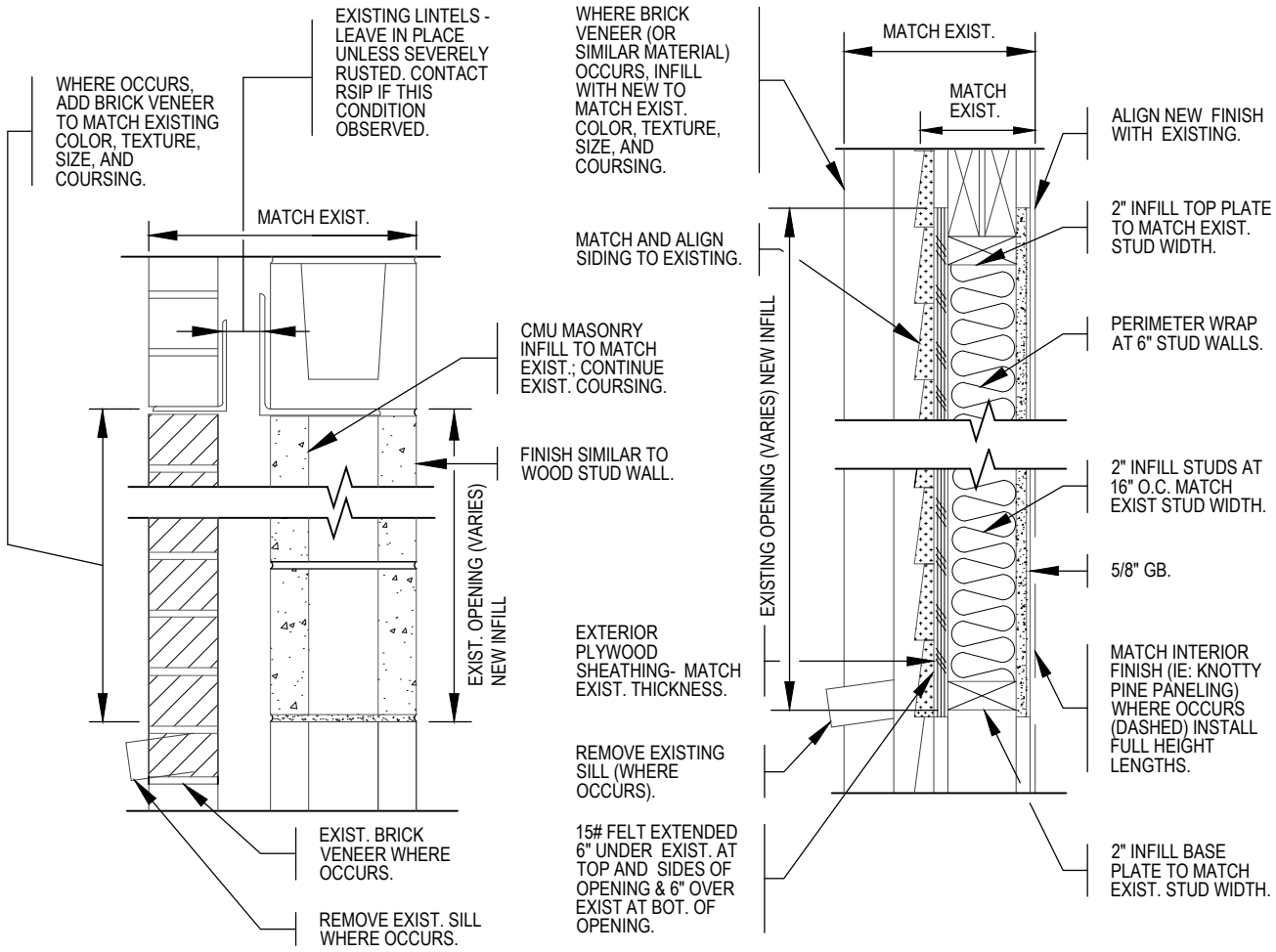
NOTES:
1. SEE CONSTRUCTION MODIFICATION FOR SCOPE OF WORK.

WA3

NOT TO SCALE

RADIATOR RELOCATION AT NEW WALL

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SECTION AT MASONRY WALL

SECTION AT WOOD STUD WALL

NOTES:

1. TYPICAL INSTALLATION OF WALL INFILL AT EXISTING OPENINGS.

2. CEILING INFILL - MATCH AND ALIGN EXISTING MATERIALS AND FINISHES.

3. SEE CONSTRUCTION MODIFICATIONS FOR SCOPE OF WORK.

WA4

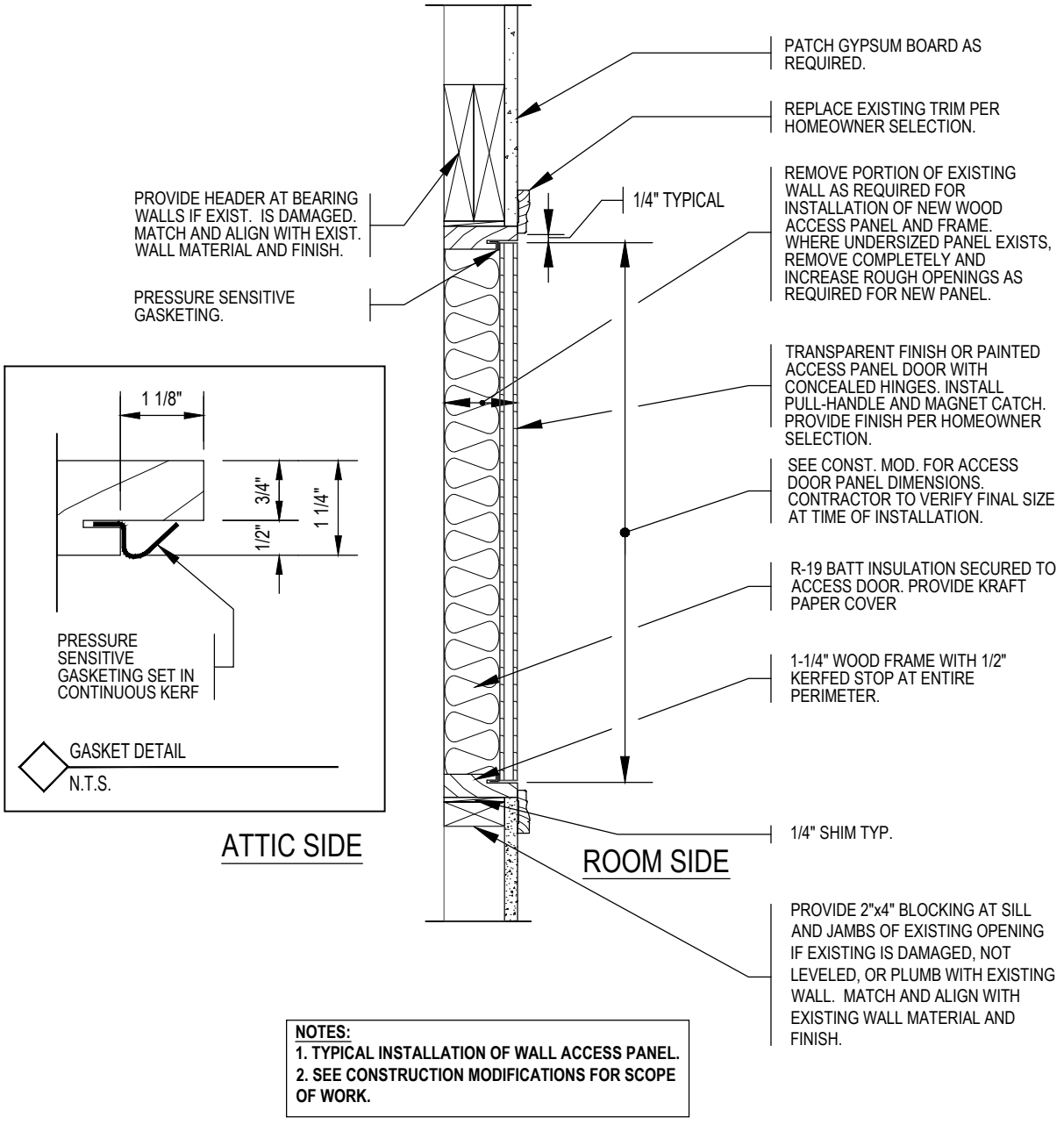
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WALL INFILL AT EXISTING OPENING
PAGE 63

RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. TYPICAL INSTALLATION OF WALL ACCESS PANEL.
2. SEE CONSTRUCTION MODIFICATIONS FOR SCOPE OF WORK.

WA5

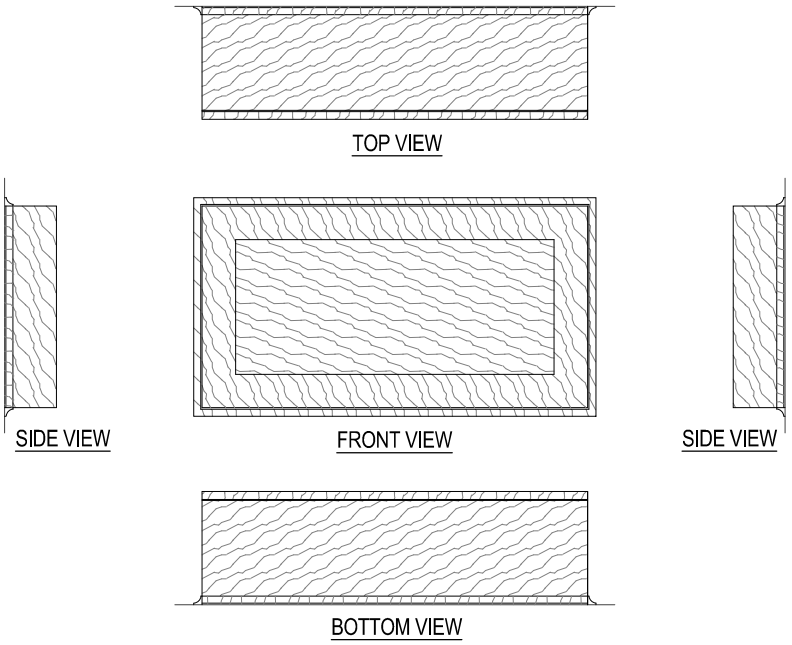
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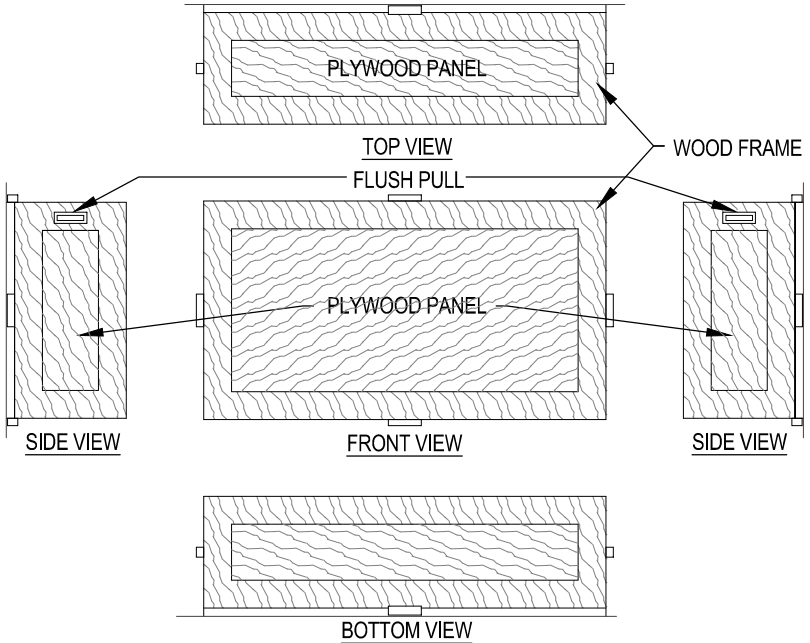
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WALL ACCESS PANEL
PAGE 64

RESIDENTIAL SOUND INSULATION PROGRAM



TYPE 1 - INTERIOR FIXED BAFFLE BOX AC COVER - SEE WA6A SERIES DETAILS



NOT TO SCALE

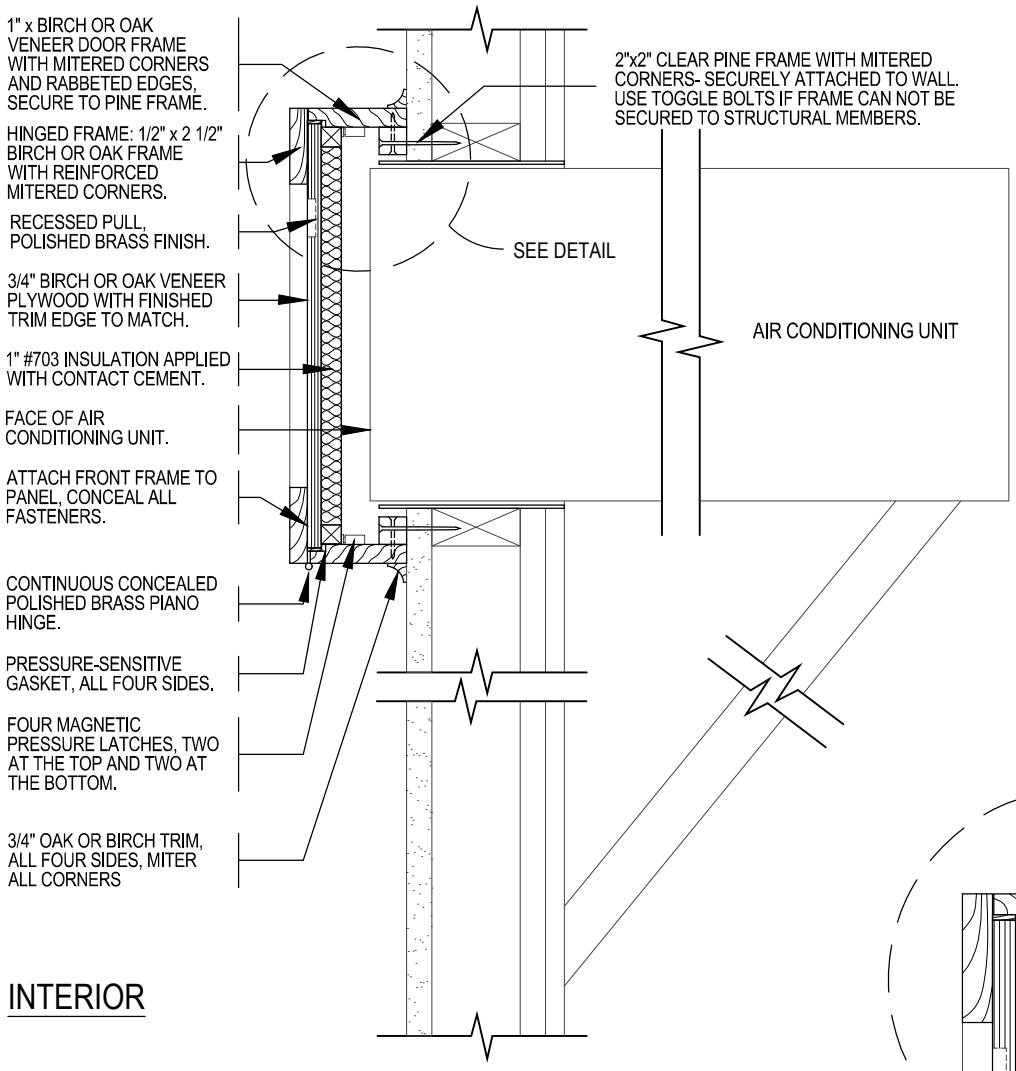
TYPE 2 - INTERIOR REMOVABLE BAFFLE BOX AC COVER - SEE WA7A DETAIL

WA6

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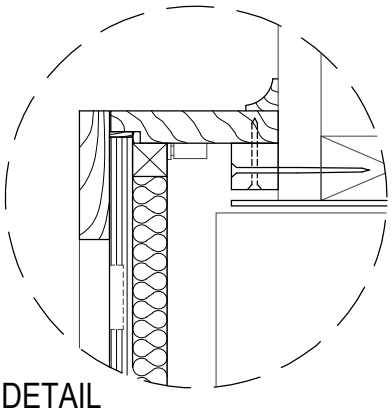
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INTERIOR BAFFLE BOX AC (AIR CONDITIONER) COVER ELEVATIONS
PAGE 65
RESIDENTIAL SOUND INSULATION PROGRAM



INTERIOR

FOR HINGED TOP OPTION
SEE DETAIL WA6c



DETAIL

NOTES:

1. **MINIMUM 1/2" GAP REQUIRED BETWEEN COVER AND EXISTING AIR CONDITIONER.**
2. **ALL SURFACES OF NEW COVER AND FRAME SHALL BE STAINED AND VARNISHED OR PRIMED AND PAINTED TO MATCH ADJACENT WALL OR DOOR, AS APPROVED BY HOMEOWNER.**
3. **PROVIDE TWO (2) POLISHED BRASS WINDOW CAM LOCKS, ONE ON EACH SIDE OF FRAME, OR TWO AT TOP, AS REQUIRED BY FIELD CONDITIONS.**
4. **PROVIDE NOTCH AND NEOPRENE GASKET IN FRAME TO ACCOMMODATE ELECTRICAL CORD.**
5. **REMOVE EXISTING WOOD TRIM AS REQUIRED TO FIT NEW FRAME AND TRIM.**

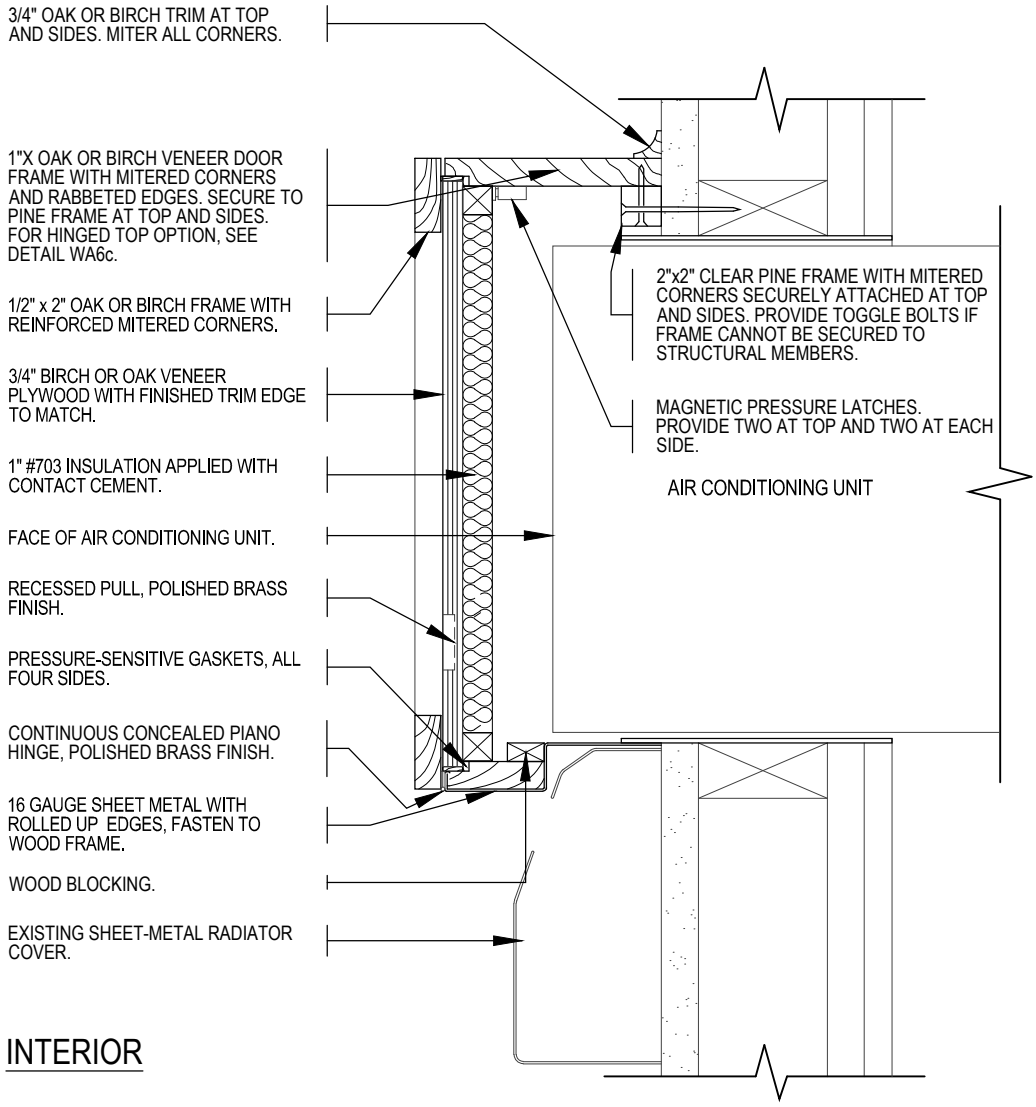
WA6A1

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FIXED INTERIOR BAFFLE BOX AIR CONDITIONER COVER
STYLE 1A
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RESIDENTIAL SOUND INSULATION PROGRAM



INTERIOR

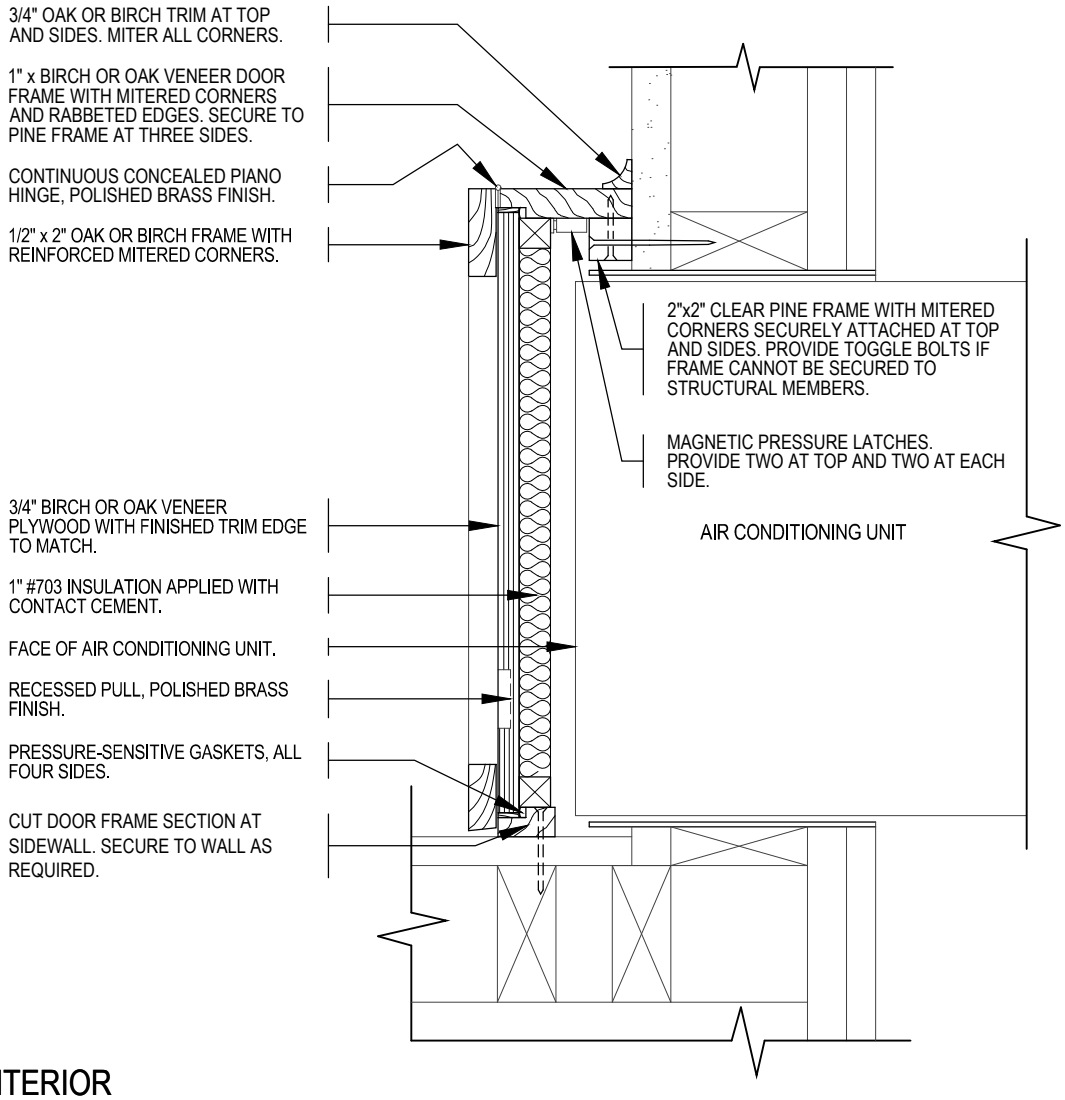
NOTES:
1. MINIMUM 1/2" GAP REQUIRED BETWEEN COVER AND EXISTING AIR CONDITIONER.
2. ALL SURFACES OF NEW COVER AND FRAME SHALL BE STAINED AND VARNISHED OR PRIMED AND PAINTED TO MATCH ADJACENT WALL OR DOOR, AS APPROVED BY HOMEOWNER.
3. PROVIDE TWO (2) POLISHED BRASS WINDOW CAM LOCKS, ONE ON EACH SIDE OF FRAME, OR TWO AT TOP, AS REQUIRED BY FIELD CONDITIONS.
4. PROVIDE NOTCH AND NEOPRENE GASKET IN FRAME TO ACCOMMODATE ELECTRICAL CORD.
5. REMOVE EXISTING WOOD TRIM AS REQUIRED TO FIT NEW FRAME AND TRIM.

WA6A2

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FIXED INTERIOR BAFFLE BOX AIR CONDITIONER COVER - ZERO CLEARANCE CONDITION
PAGE 67
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INTERIOR

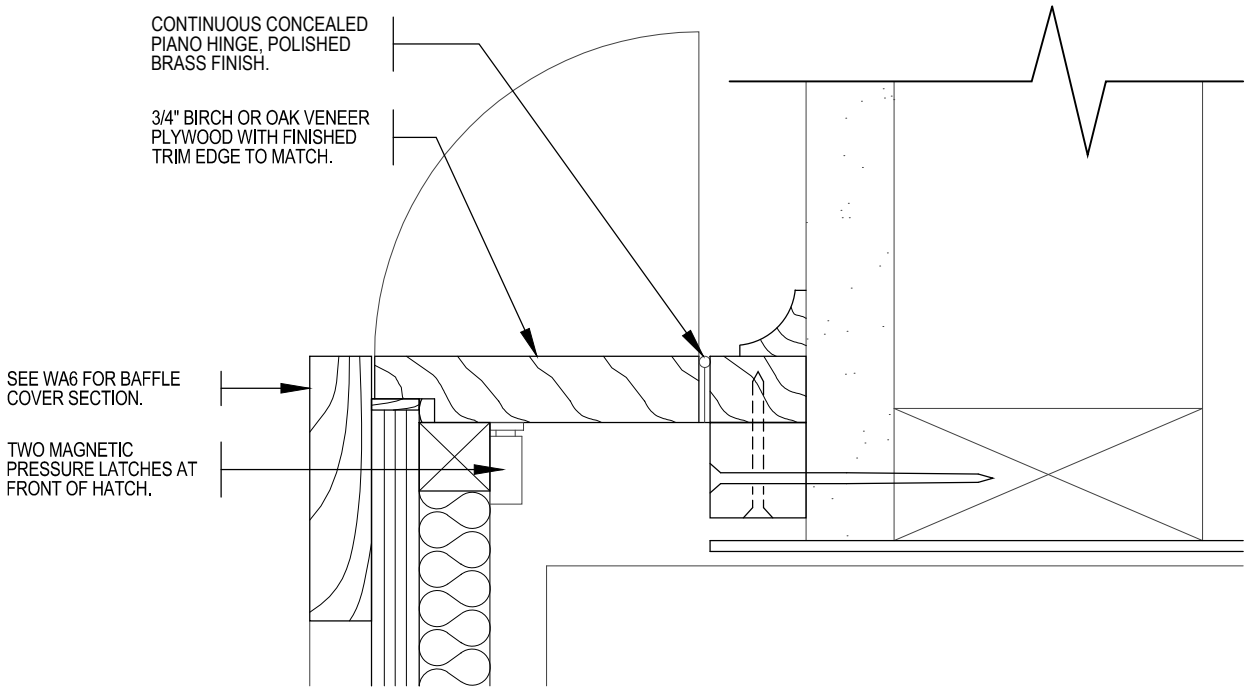
NOTES:
1. MINIMUM 1/2" GAP REQUIRED BETWEEN COVER AND EXISTING AIR CONDITIONER.
2. ALL SURFACES OF NEW COVER AND FRAME SHALL BE STAINED AND VARNISHED OR PRIMED AND PAINTED TO MATCH ADJACENT WALL OR DOOR, AS APPROVED BY HOMEOWNER.
3. PROVIDE TWO (2) POLISHED BRASS WINDOW CAM LOCKS, ONE ON EACH SIDE OF FRAME, OR TWO AT TOP, AS REQUIRED BY FIELD CONDITIONS.
4. PROVIDE NOTCH AND NEOPRENE GASKET IN FRAME TO ACCOMMODATE ELECTRICAL CORD.
5. REMOVE EXISTING WOOD TRIM AS REQUIRED TO FIT NEW FRAME AND TRIM.

WA6A3

NOT TO SCALE

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FIXED INTERIOR BAFFLE BOX AIR CONDITIONER COVER - CORNER CONDITION
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NOTES:

1. HATCH MAY BE REQUIRED AT SIDE OF BAFFLE BOX OR AT TOP FOR EITHER AIR CONDITIONER FILTER ACCESS, AIR SUPPLY VENT, OR BOTH. THIS IS TO BE DETERMINED AT TIME OF FIELD INSTALLATION.

2. FIELD MEASURE AIR CONDITIONER FILTER OR AIR SUPPLY VENT OPENING AND SIZE WOOD HATCH 1/4" LARGER ON ALL SIDES.

3. PROVIDE CONCEALED ROLLER CATCH AT SIDE HATCH LOCATION.

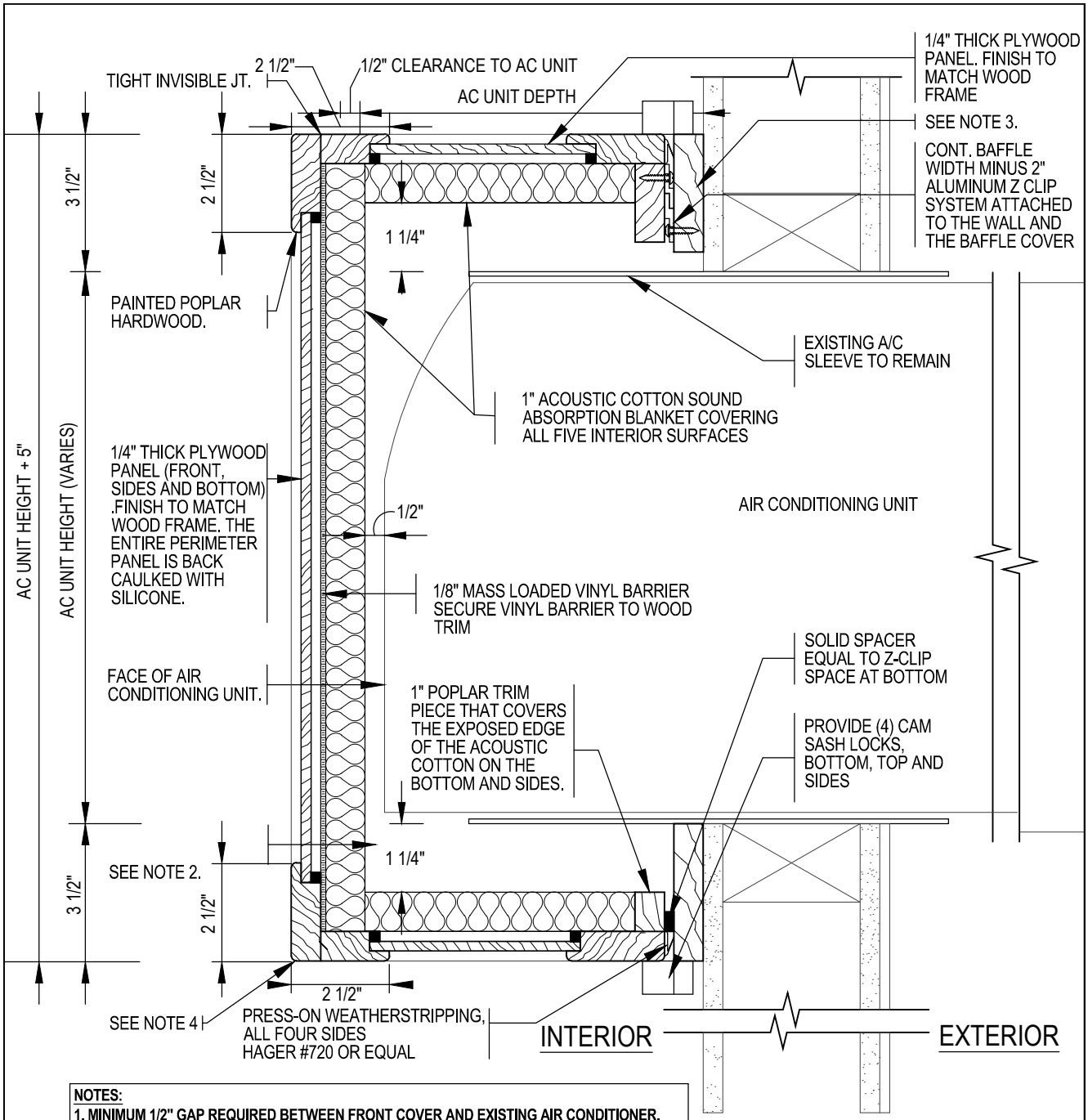
WA6A4

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FIXED INTERIOR BAFFLE BOX AIR CONDITIONER COVER - OPTIONAL HATCH - DETAIL VIEW



NOTES:

1. **MINIMUM 1/2" GAP REQUIRED BETWEEN FRONT COVER AND EXISTING AIR CONDITIONER.**
2. **1 1/4" GAP REQUIRED BETWEEN SIDES OF EXISTING AIR CONDITIONER AND COVER.**
3. **REMOVE EXISTING WOOD TRIM AS REQUIRED AND INSTALL A FLAT 3/4" x 2 1/2" MIN. TRIM WITH NEW COVER ATTACHED TO IT.**
4. **ALL EXPOSED WOOD EDGES TO BE ROUTED WITH 1/8" RADIUS.**
5. **SEE DETAIL DRAWING WA6 FOR COVER ELEVATIONS.**

WA7A

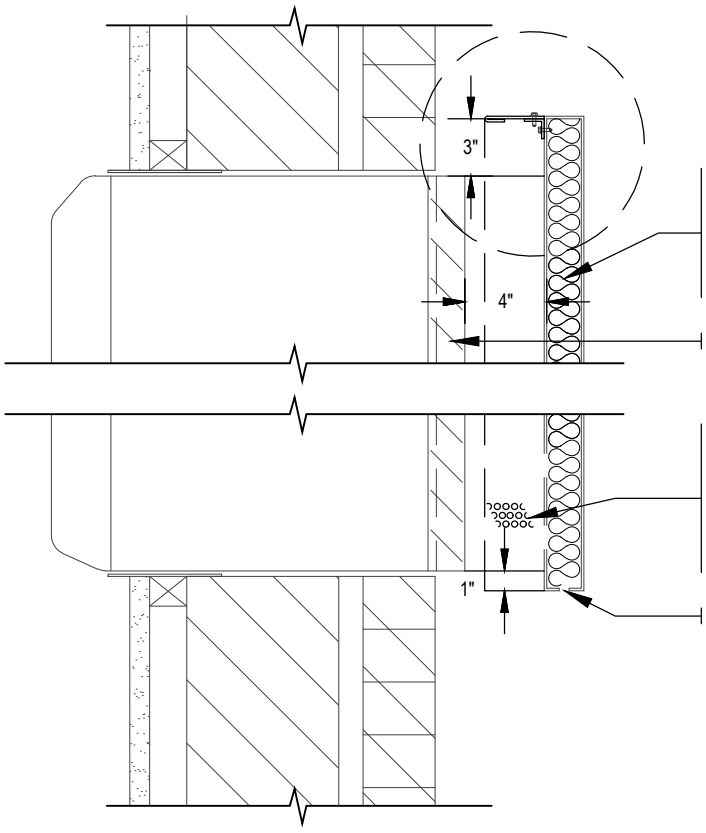
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REMOVABLE INTERIOR BAFFLE BOX AC (AIR CONDITIONER) COVER

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RESIDENTIAL SOUND INSULATION PROGRAM



- 3" THICK ACOUSTICAL BAFFLE PANEL: 18 GAGE PAINTED SHEET METAL OUTER PANEL.
- ACOUSTICAL LINING.
- 22 GAGE PERFORATED INNER PANEL.
- MINIMUM STC 37 AND NRC .95.

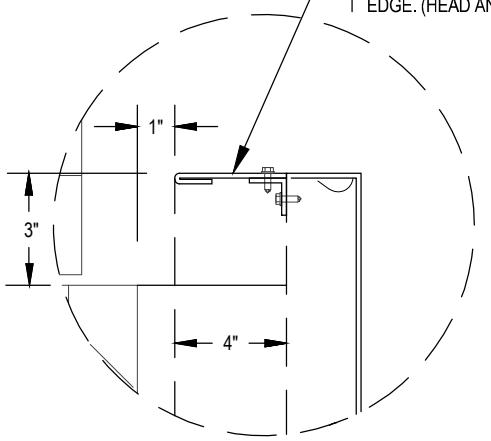
EXISTING LOUVER.

(2) 14 GAGE PAINTED C CHANNEL BRACKETS:
- MATCH HEIGHT OF EXISTING LOUVER.
- ATTACH BRACKETS DIRECTLY TO EXISTING EXTERIOR WALL.
- BRACKETS TO BE PERFORATED METAL (SEE NOTE 2).

WEEPS (3/PANEL)

INTERIOR SECTION EXTERIOR

SHEET METAL SHROUD WITH HEMMED RETURN EDGE. (HEAD AND SIDES)



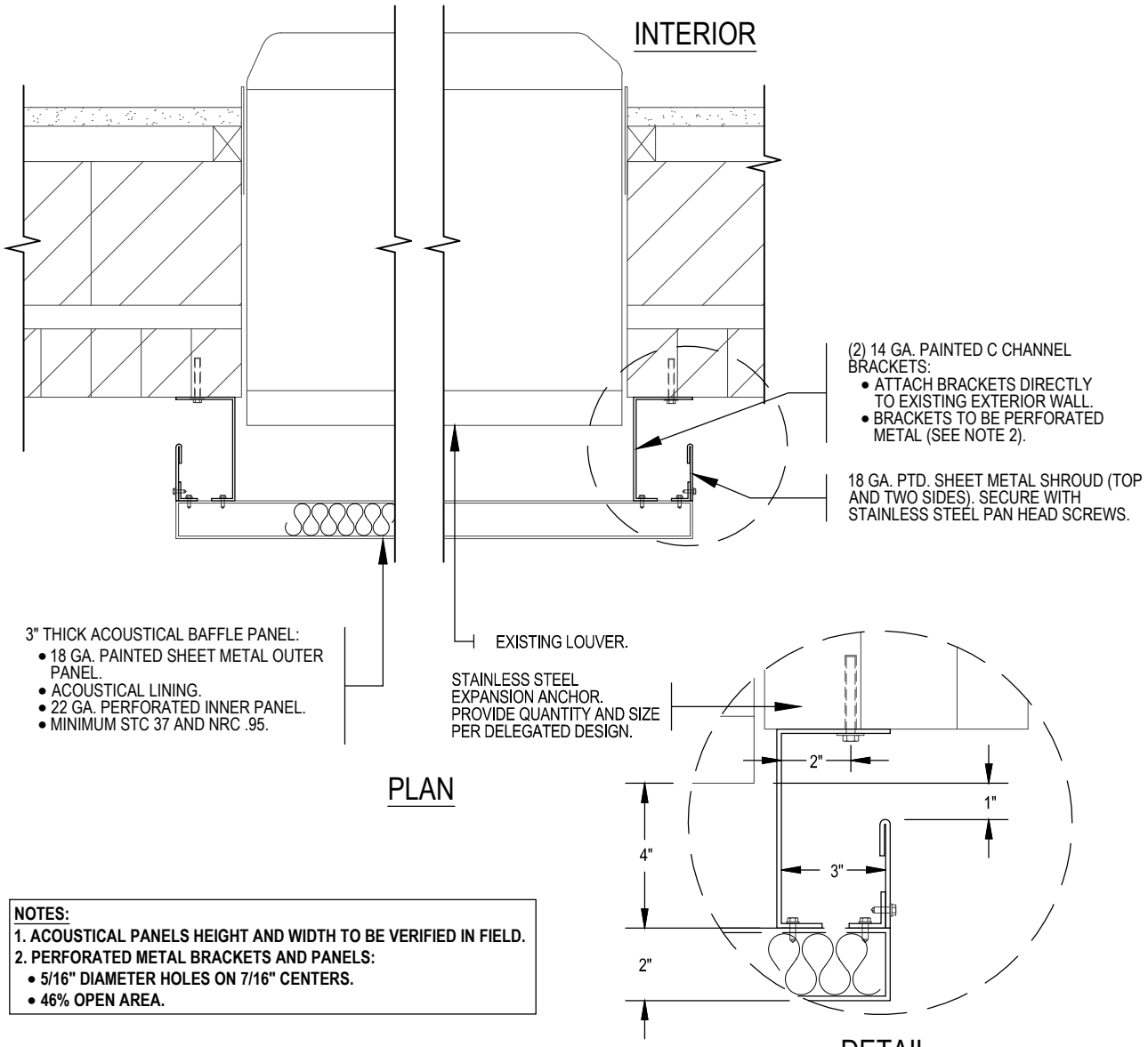
DETAIL

NOTES:
1. **ACOUSTICAL PANELS HEIGHT AND WIDTH TO BE VERIFIED IN FIELD.**
2. **PERFORATED METAL BRACKETS AND PANELS:**
   - **5/16" DIAMETER HOLES ON 7/16" CENTERS.**
   - **46% OPEN AREA.**

NOT TO SCALE

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MECHANICAL UNIT EXTERIOR BAFFLE - MASONRY CONSTRUCTION
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NOTES:

1. ACOUSTICAL PANELS HEIGHT AND WIDTH TO BE VERIFIED IN FIELD.

2. PERFORATED METAL BRACKETS AND PANELS:

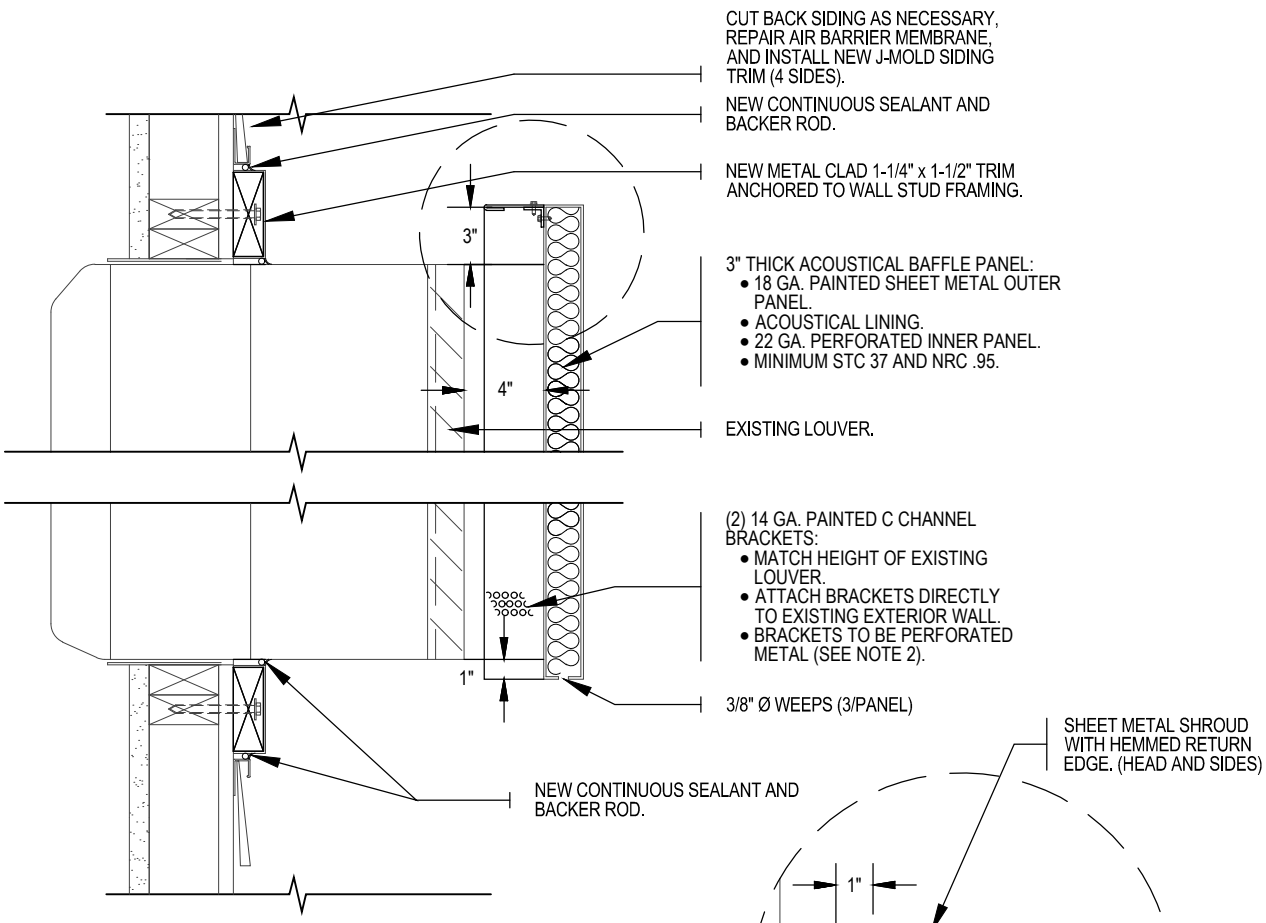
- **5/16" DIAMETER HOLES ON 7/16" CENTERS.**
- **46% OPEN AREA.**

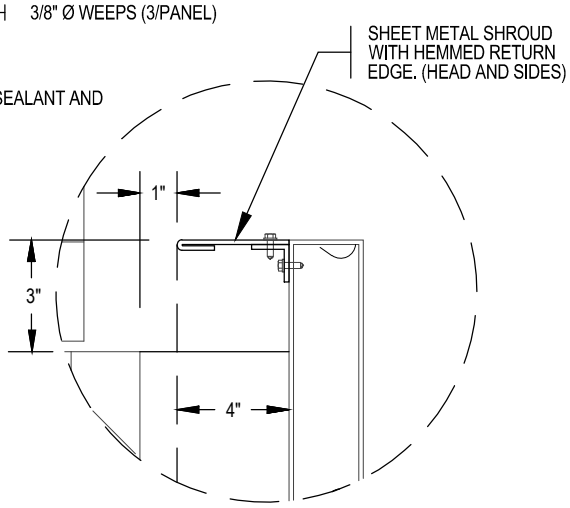
NOT TO SCALE

WA8B

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MECHANICAL UNIT EXTERIOR BAFFLE - MASONRY CONSTRUCTION
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DETAIL

NOTES:
1. ACOUSTICAL PANELS HEIGHT AND WIDTH TO BE VERIFIED IN FIELD.
2. PERFORATED METAL BRACKETS AND PANELS:
   - 5/16" DIAMETER HOLES ON 7/16" CENTERS.
   - 46% OPEN AREA.

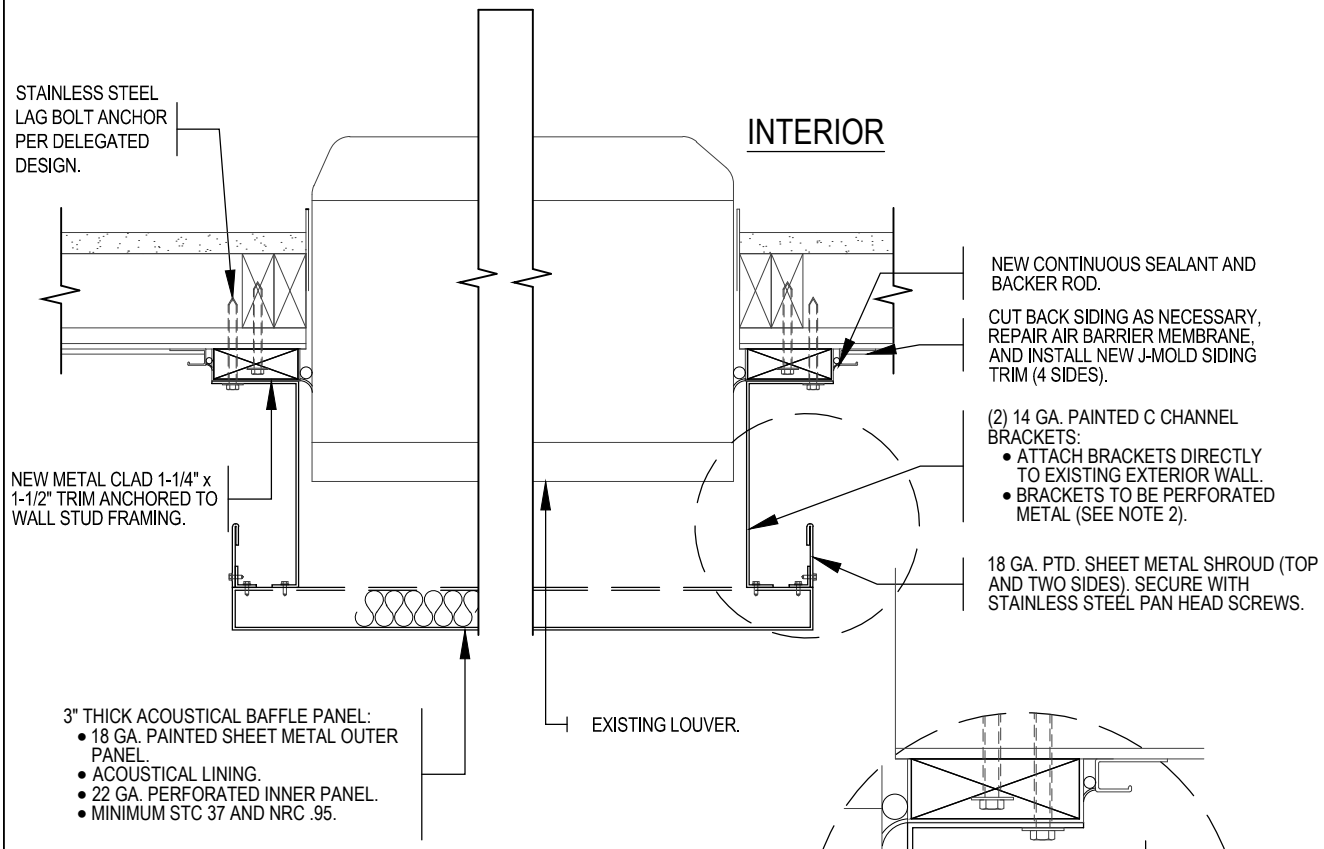
NOT TO SCALE

WA9A

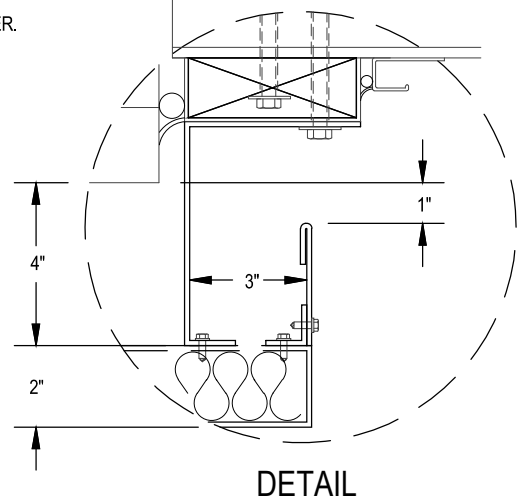
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MECHANICAL UNIT EXTERIOR BAFFLE - FRAME CONSTRUCTION

RESIDENTIAL SOUND INSULATION PROGRAM



PLAN



DETAIL

NOTES:
1. **ACOUSTICAL PANELS HEIGHT AND WIDTH TO BE VERIFIED IN FIELD.**
2. **PERFORATED METAL BRACKETS AND PANELS:**
   - **5/16" DIAMETER HOLES ON 7/16" CENTERS.**
   - **46% OPEN AREA.**

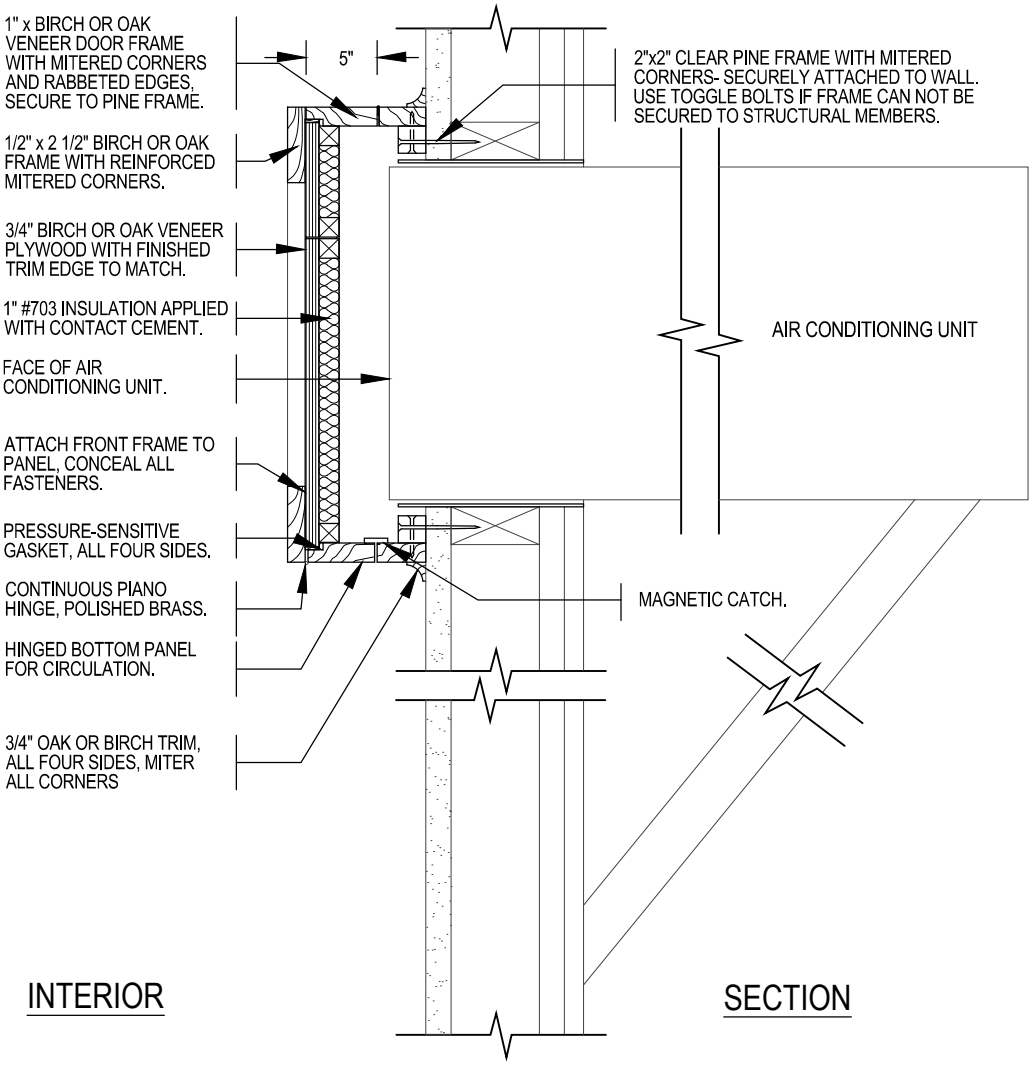
NOT TO SCALE

WA9B

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MECHANICAL UNIT EXTERIOR BAFFLE - FRAME CONSTRUCTION

RESIDENTIAL SOUND INSULATION PROGRAM



INTERIOR SECTION

NOTES:

1. MINIMUM 1/2" GAP REQUIRED BETWEEN COVER AND EXISTING AIR CONDITIONER.
2. ALL SURFACES OF NEW COVER AND FRAME SHALL BE STAINED AND VARNISHED OR PRIMED AND PAINTED TO MATCH ADJACENT WALL OR DOOR, AS APPROVED BY HOMEOWNER.
3. PROVIDE NOTCH AND NEOPRENE GASKET IN FRAME TO ACCOMMODATE ELECTRICAL CORD.
4. REMOVE EXISTING WOOD TRIM AS REQUIRED TO FIT NEW FRAME AND TRIM.

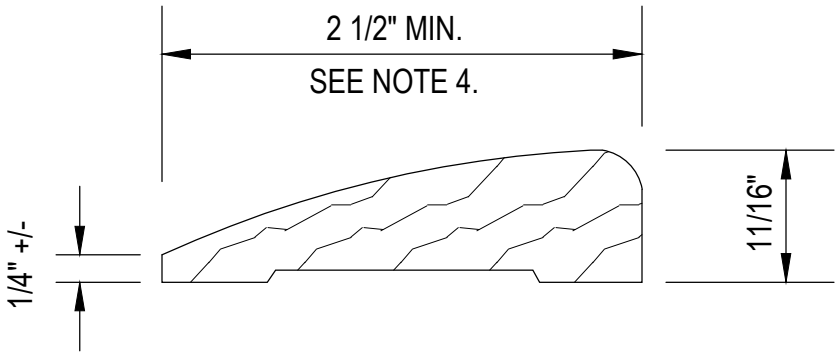
WA10

NOT TO SCALE

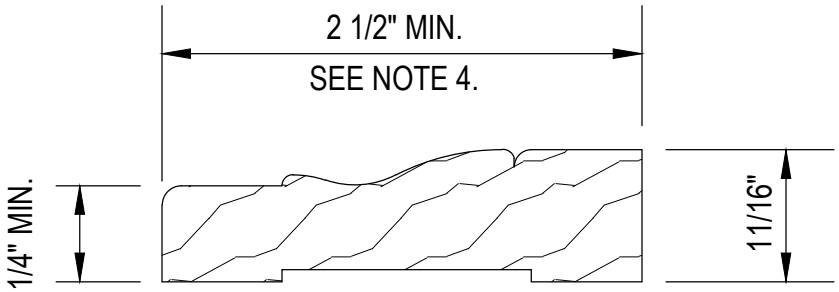
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MECHANICAL UNIT INTERIOR BAFFLE
PAGE 75

RESIDENTIAL SOUND INSULATION PROGRAM



RANCH TRIM PROFILE



COLONIAL TRIM PROFILE

NOTES:

1. ALL TRIM PROFILES, DIMENSIONS, THICKNESS AND FINISH ARE TO MATCH EXISTING AS DISCOVERED IN EACH HOME. THE TRIM PROFILES SHOWN ARE FOR GENERAL INFORMATION FOR STYLES AND MINIMUM DIMENSIONS TO BE PROVIDED.
2. PROVIDE OAK AND PAINT GRADE TRIMS IN ACCORDANCE WITH SPECIFICATIONS AND DIMENSIONS AS DETAILED HERE-IN.
3. 1/2-INCH THICK TRIMS ARE NOT ACCEPTABLE.
4. PROVIDE WIDER TRIMS AS NEEDED TO COVER EXISTING PAINT LINES.

WA11

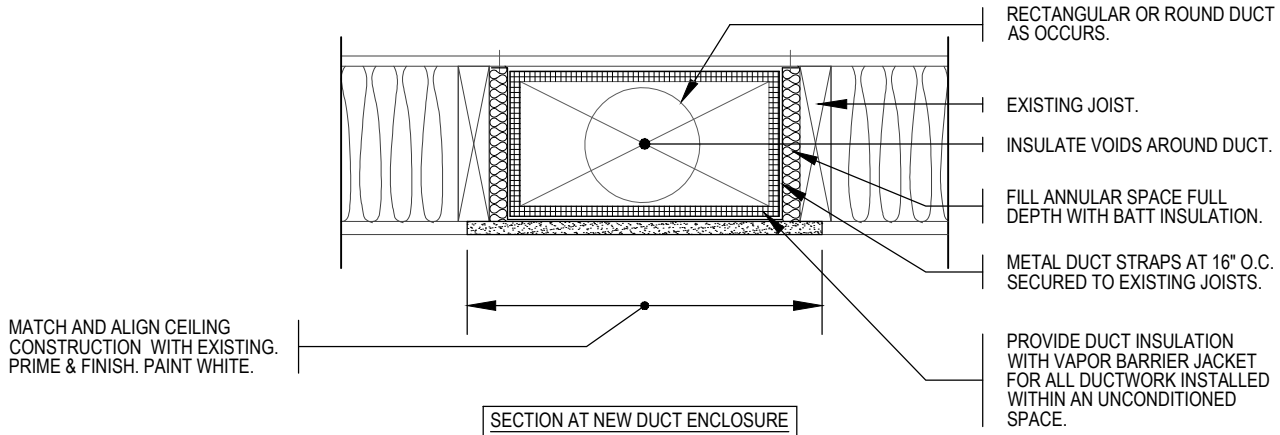
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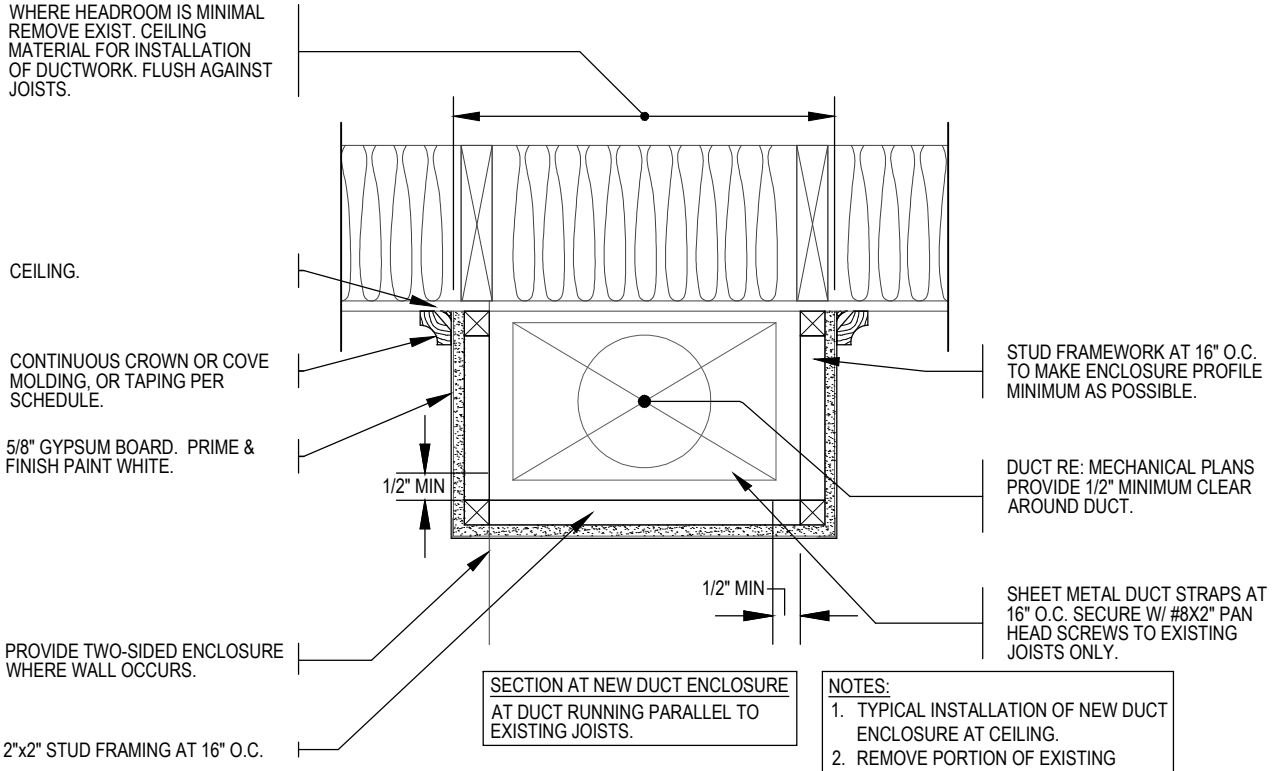
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WINDOW AND DOOR TRIM PROFILES
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RESIDENTIAL SOUND INSULATION PROGRAM



SECTION AT NEW DUCT ENCLOSURE
AT DUCT RUNNING PARALLEL TO EXISTING JOISTS.



SECTION AT NEW DUCT ENCLOSURE
AT DUCT RUNNING PARALLEL TO EXISTING JOISTS.

NOTES:
1. TYPICAL INSTALLATION OF NEW DUCT ENCLOSURE AT CEILING.
2. REMOVE PORTION OF EXISTING CEILING AS REQUIRED FOR INSTALLATION OF NEW DUCT AND ENCLOSURE.
3. ALL SUPPLY AND RETURN AIR SHALL BE IN METAL DUCTS. STUD AND/OR JOIST CAVITIES SHALL NOT BE USED AS A PLENUM FOR AIR SUPPLY OR RETURN.

C1

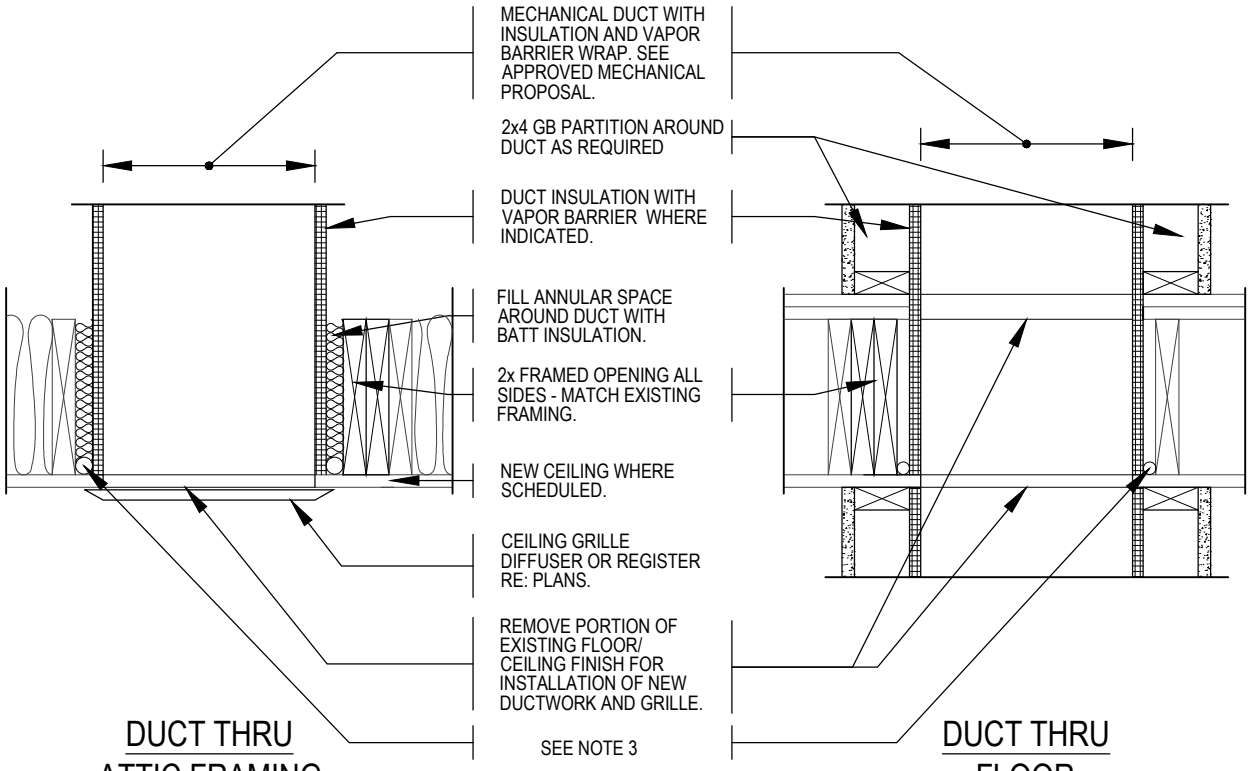
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NEW DUCT ENCLOSURE AT CEILING
PAGE 77

RESIDENTIAL SOUND INSULATION PROGRAM



NOTE:
1.TYPICAL OPENING FOR MECHANICAL DUCT.
2.MATCH EXISTING MATERIALS AND FINISHES WHERE EXISTING IS REPLACED.
3.SEAL DUCT PENETRATION TO SUBFLOOR AND/OR CEILING AT ALL FLOOR AND CEILING PENETRATIONS

C2

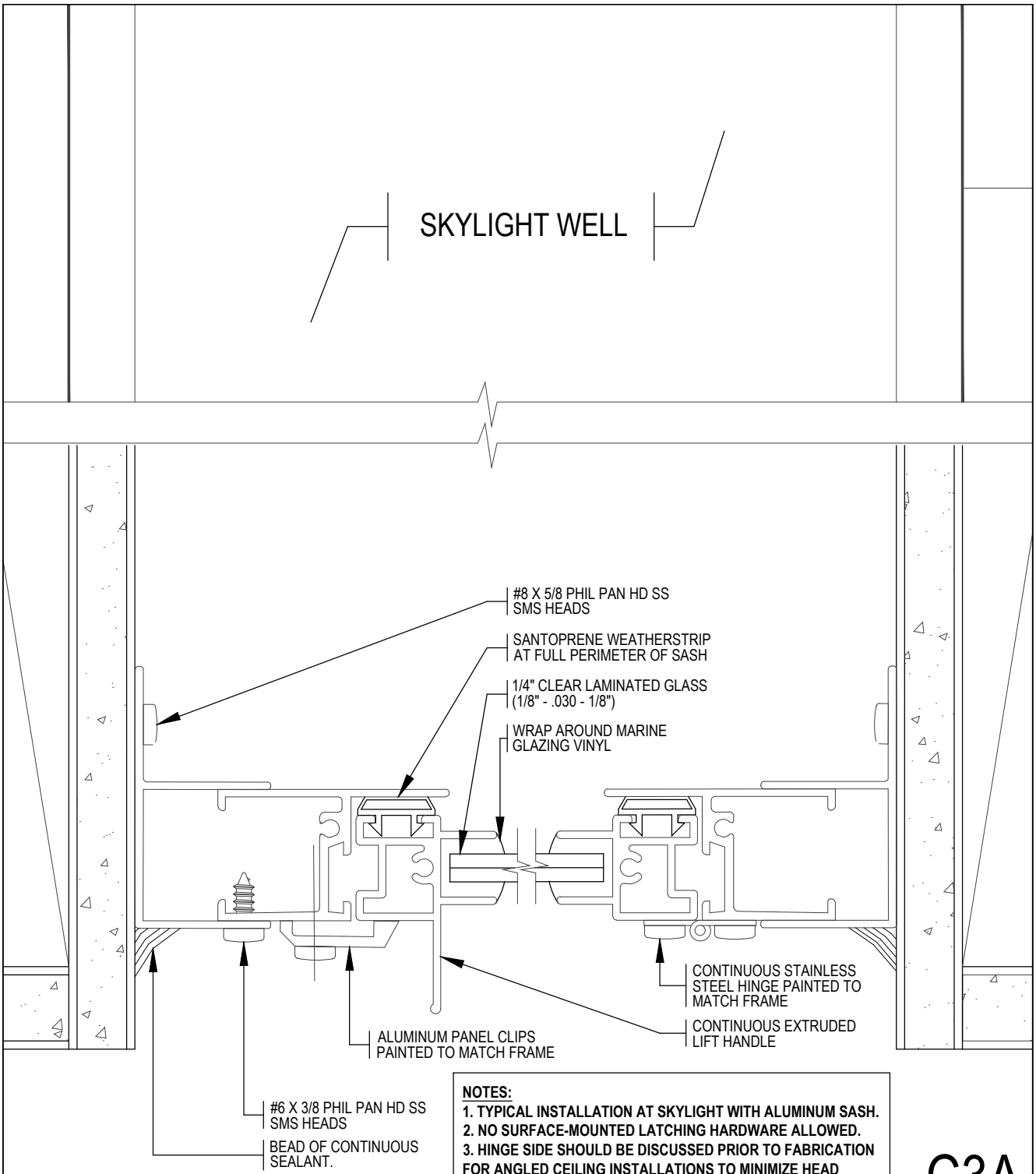
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OPENING FOR MECHANICAL DUCT
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:
1. TYPICAL INSTALLATION AT SKYLIGHT WITH ALUMINUM SASH.
2. NO SURFACE-MOUNTED LATCHING HARDWARE ALLOWED.
3. HINGE SIDE SHOULD BE DISCUSSED PRIOR TO FABRICATION FOR ANGLED CEILING INSTALLATIONS TO MINIMIZE HEAD ROOM INTRUSION WHEN OPEN.

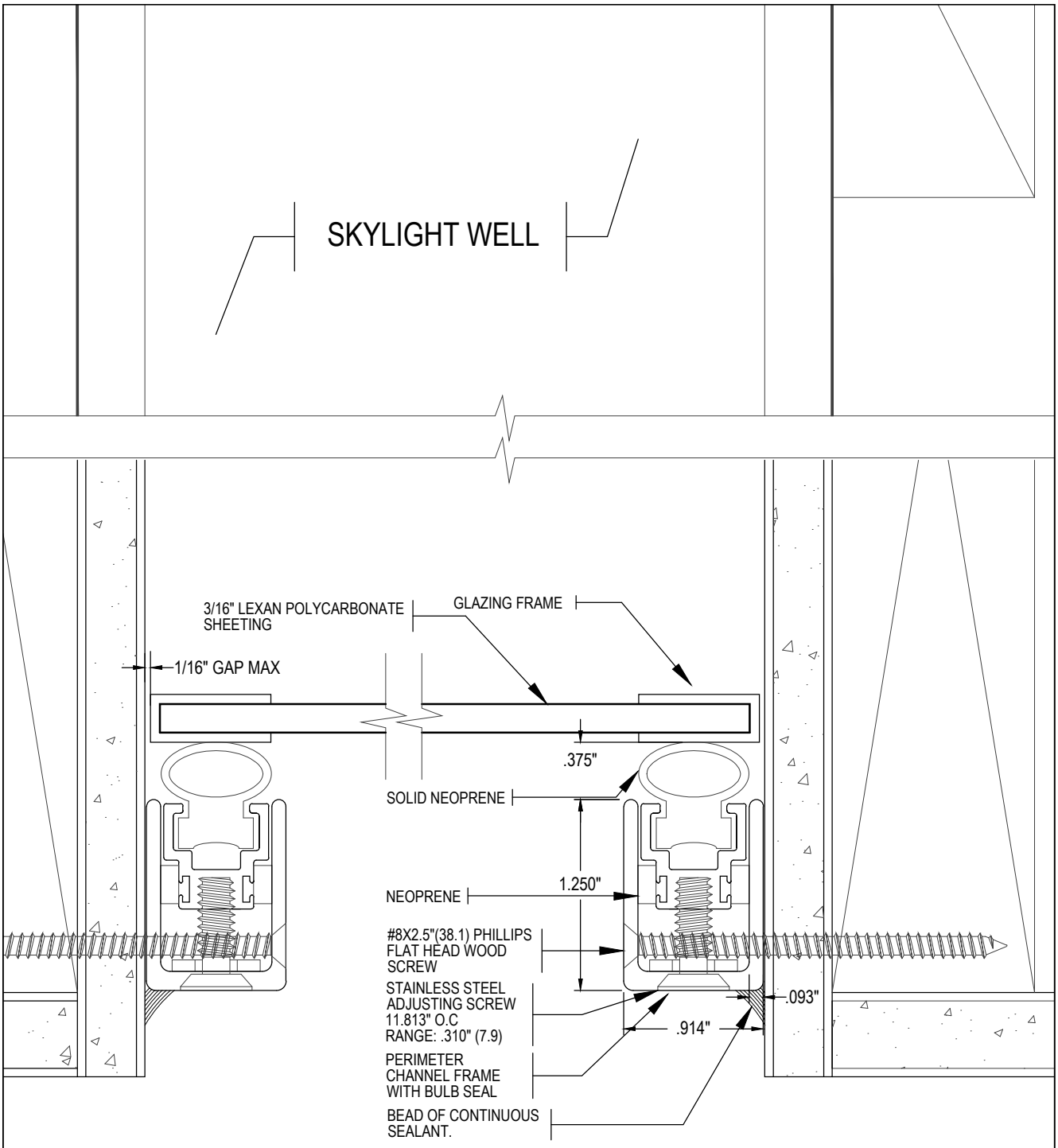
C3A

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INTERIOR MOUNTED SKYLIGHT STORM PANEL (HINGED)



NOTE:

1. THE DISTANCE BETWEEN THE EXISTING SKYLIGHT AND THE NEW INTERIOR FIELD ASSEMBLED SKYLIGHT STORM WINDOW SHOULD BE ENOUGH FOR THE HOMEOWNER TO BE ABLE TO REMOVE THE LEXAN.

C3B

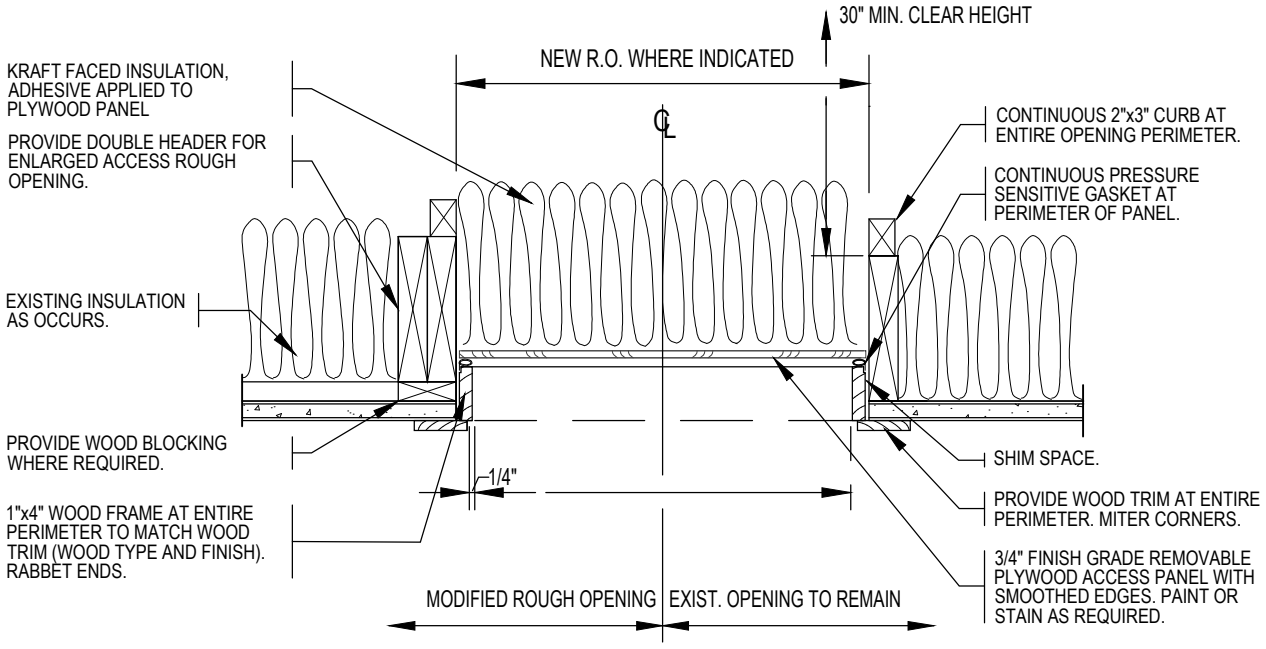
SCALE: 1" = 1'-0"

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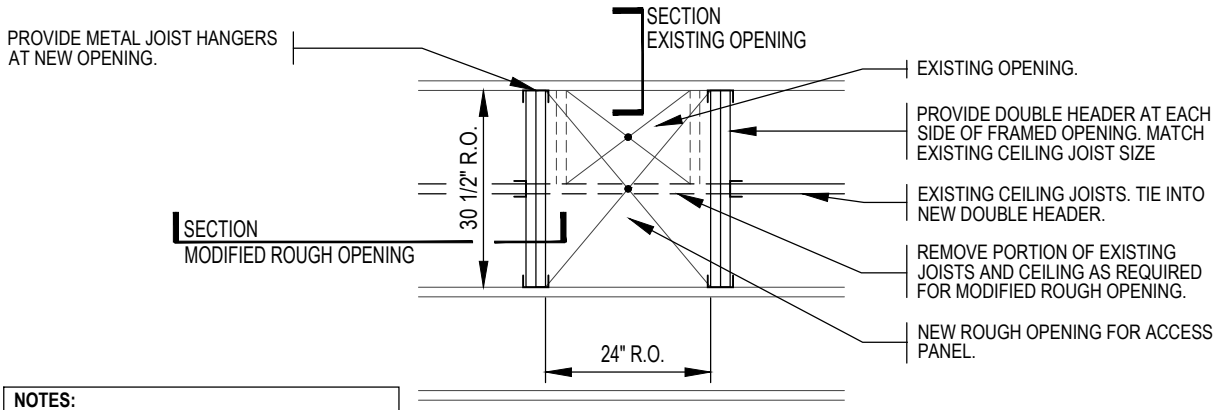
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INTERIOR FIELD ASSEMBLED SKYLIGHT STORM WINDOW
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RESIDENTIAL SOUND INSULATION PROGRAM



SECTION: NEW ACCESS PANEL AND OPENING
SCALE: NTS



PLAN: NEW ROUGH OPENING
SCALE: NTS

NOTES:

1. **TYPICAL INSTALLATION OF ATTIC ACCESS CEILING PANEL.**
2. **REMOVE UNDERSIZED PANEL AND ASSOCIATED HARDWARE WHEN INDICATED. PROVIDE ENLARGED ROUGH OPENING.**
3. **FIELD VERIFY ACCESS PANEL DIMENSIONS. CONTRACTOR SHALL VERIFY DIMENSIONS AT TIME OF FIELD MEASUREMENTS.**

C4

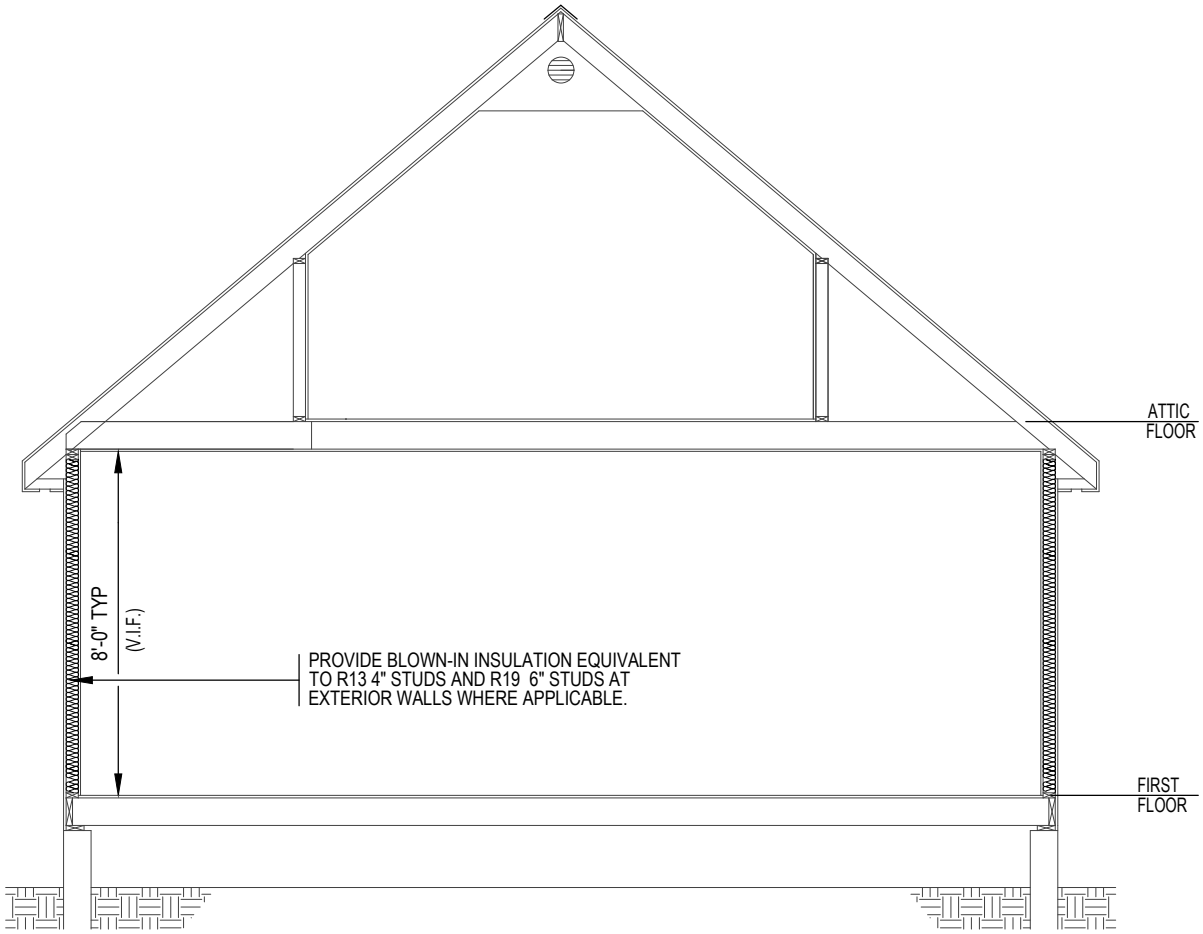
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ATTIC ACCESS CEILING PANEL
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RESIDENTIAL SOUND INSULATION PROGRAM



NOTES:

1. **TYPICAL INSTALLATION OF ACOUSTICAL INSULATION (TYP. HOME).**
2. **DIMENSIONS NOTED ARE FOR ESTIMATING PURPOSES ONLY. CONTRACTORS ARE TO VERIFY ACTUAL DIMENSIONS.**
3. **VERIFY IF R-VALUE OF EXISTING INSULATION IS EQUIVALENT TO R-VALUE OF THE SPECIFIED AREA OF HOUSE. IF INSULATION IS NOT ADEQUATE, PROVIDE ADDITIONAL INSULATION.**
4. **PATCH AND FINISH ALL FINISHED SURFACES DAMAGED BY INSTALLATION OF INSULATION. MATCH EXISTING FINISHES.**
5. **SEE KEYNOTE FLOOR PLANS FOR LOCATIONS OF NEW INSULATION.**

C5

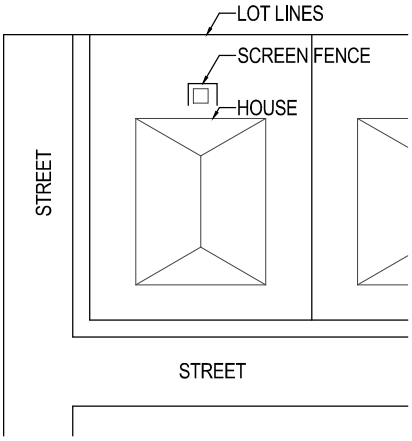
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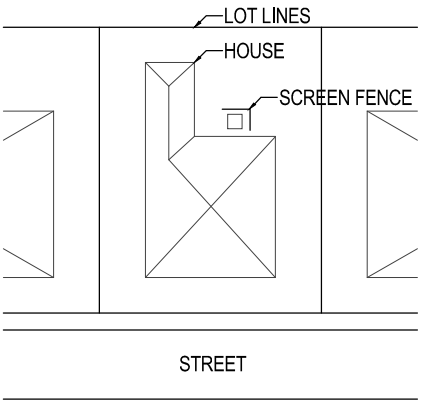
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ACOUSTICAL WALL INSULATION FOR TYPICAL HOME
PAGE 82

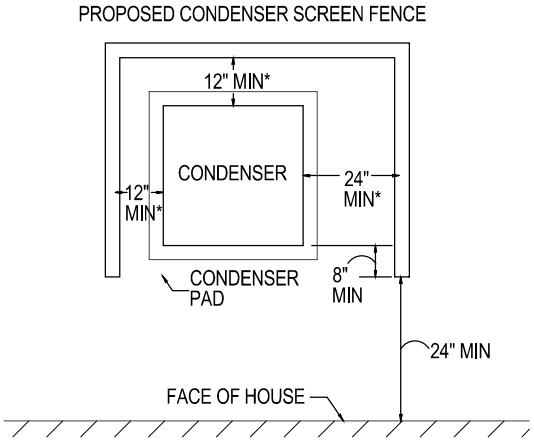
RESIDENTIAL SOUND INSULATION PROGRAM



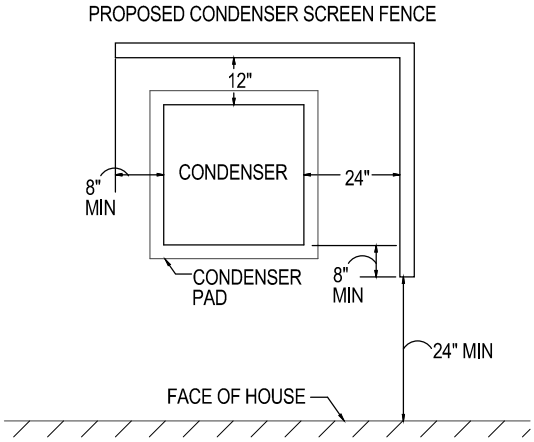
3-SIDED CONDENSER SCREEN FENCE
NTS



2-SIDED CONDENSER SCREEN FENCE
NTS



3-SIDED CONDENSER PLAN
SCALE: 1/4"=1'



2-SIDED CONDENSER PLAN
SCALE: 1/4"=1'

* DIMENSION CLEARANCES TO BE VERIFIED WITH CONDENSER MANUFACTURER

NOTES:
1) CONTRACTOR TO LOCATE HVAC CONDENSER UNITS IN ACCORDANCE WITH ALL LOCAL CODES AND ZONING ORDINANCES.
2) CONTRACTOR TO PROVIDE MINIMUM CLEARANCES BETWEEN CONDENSER UNIT AND SCREENING AS REQUIRED BY MANUFACTURER.
3) CONTRACTOR TO CONTACT JULIE PRIOR TO ANY EXCAVATION.
4) EXPOSED CONCRETE PIERS SHALL BE TROWELLED SMOOTH WITH DOME WASH.
5) ALL FENCE WOOD PICKETS & FRAMING TO BE NO.1 GRADE SMOOTH WESTERN RED CEDAR.
6) ALL FASTENERS TO BE STAINLESS STEEL SCREWS AND NON-CORROSIVE COATED NAILS.
7) FENCE TO BE STAINED WITH 2 COATS OF SOLID WOOD STAIN IN COLOR AS SELECTED BY HOMEOWNER. FENCE MATERIALS SHALL BE STAINED IN THE SHOP WITH TOUCH-UPS IN THE FIELD.

FENCE FINISH OPTION TO BE SELECTED BY HOMEOWNER

SOLID COLOR STAIN: PPG TIMELESS SOLID COLOR.

1)	CEDAR TONE:	CEDAR TSC-2
2)	RED TONE:	NAVAJO RED TSC-4
3)	BROWN TONE:	CHESTNUT BROWNTSC-3
4)	GRAY TONE:	HERITAGE GRAY TSC-44
5)	WHITE:	WHITE TSC-53

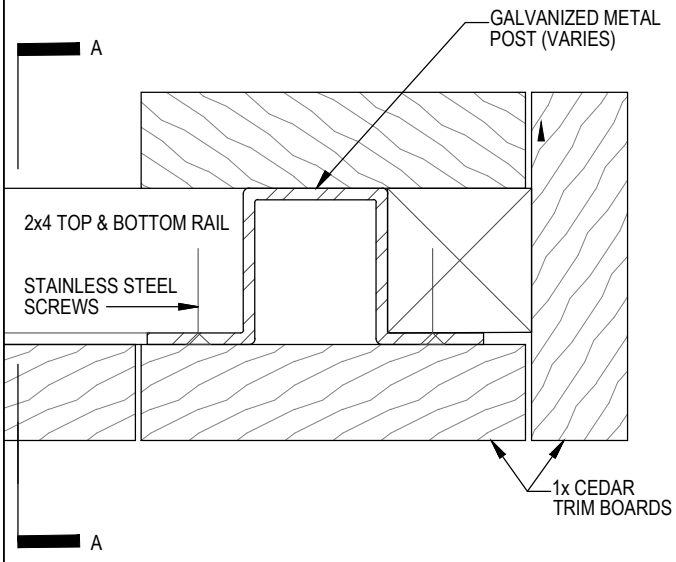
M1

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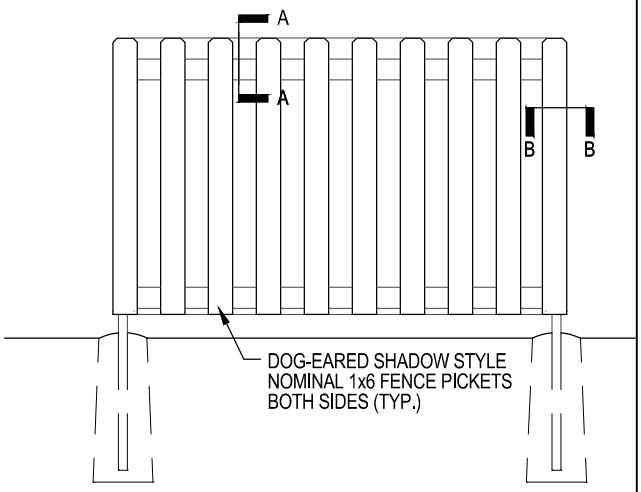
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CONDENSER SCREEN FENCE DIAGRAMS
PAGE 83

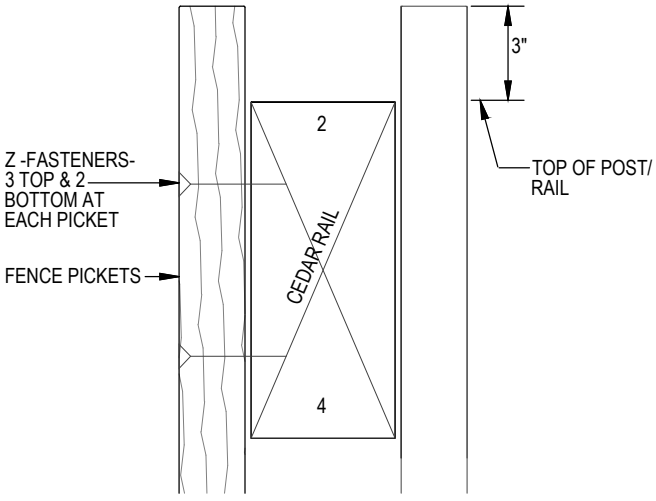
RESIDENTIAL SOUND INSULATION PROGRAM



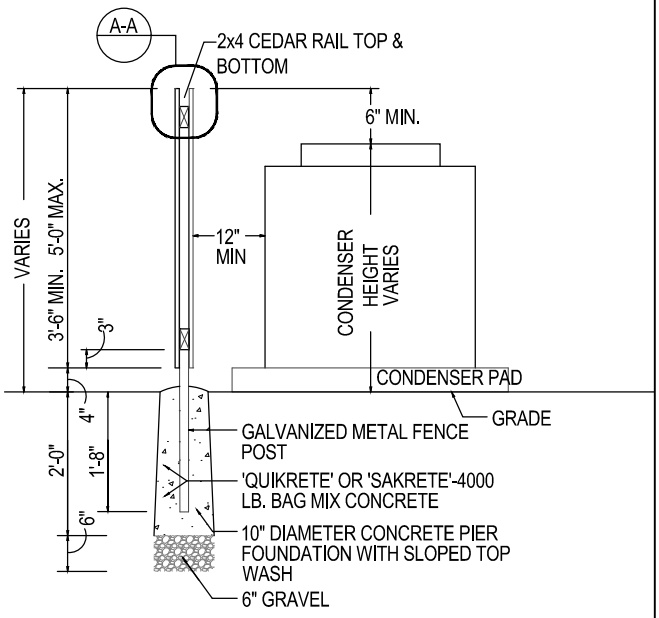
DETAIL B-B: END POST JAMB
SCALE:6"=1-0"'



TYPICAL ELEVATION
SCALE: 6"=1'-0"



DETAIL A-A: FENCE TOP
SCALE: 6"=1'



FENCE SECTION
SCALE: 3/8"=1'

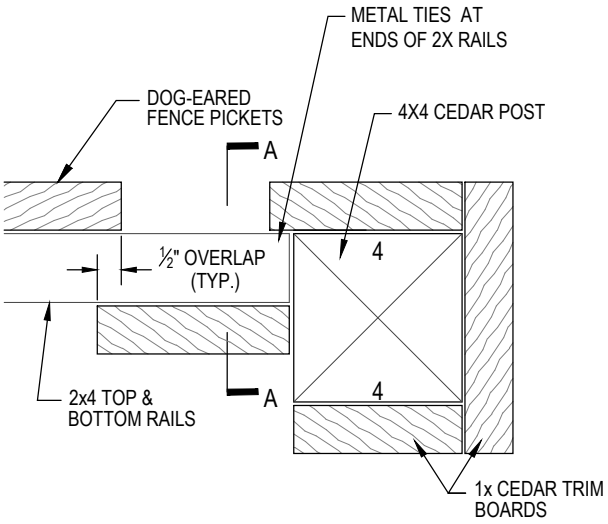
M2

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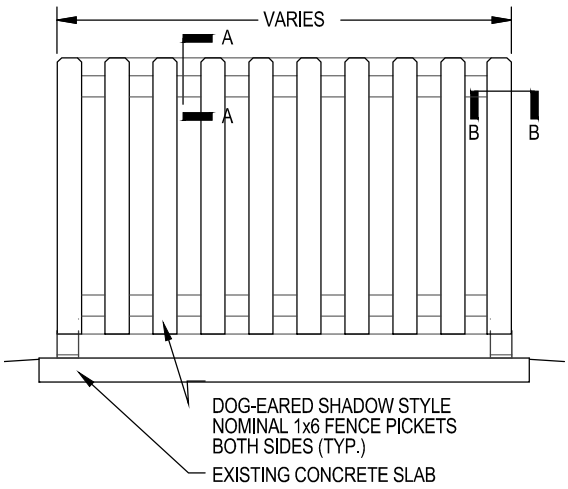
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CONDENSER SCREEN FENCE IN GROUND DETAILS
PAGE 84

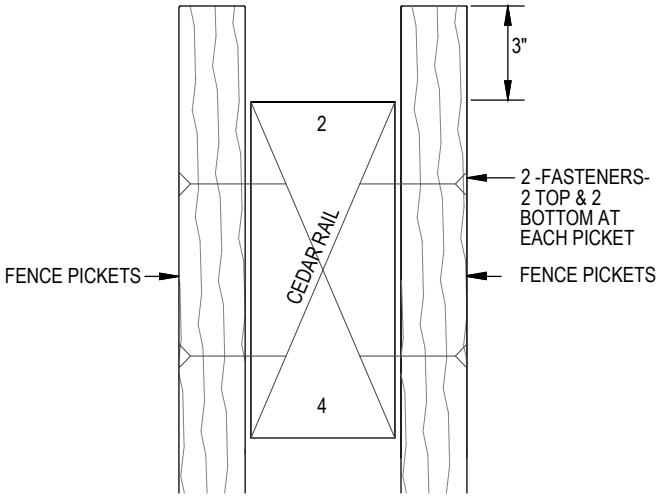
RESIDENTIAL SOUND INSULATION PROGRAM



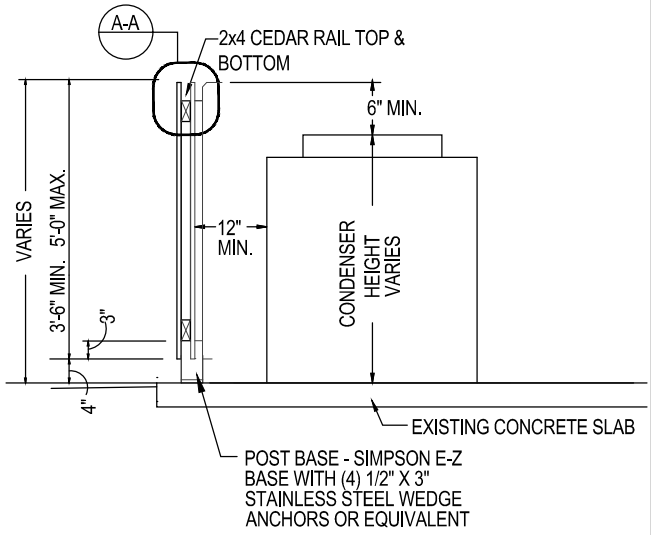
DETAIL B-B: END POST JAMB
SCALE: 1-1/2"=1-0"'



TYPICAL ELEVATION
SCALE: 1/4"=1'-0"



DETAIL A-A: FENCE TOP
SCALE: 6"=1'



FENCE SECTION
SCALE: 3/8"=1'

M3

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CONDENSER SCREEN FENCE SLAB-MOUNT DETAILS
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RESIDENTIAL SOUND INSULATION PROGRAM

12-11-15
C7951
PAGE 1 OF 1

NEW STANDARD

APPROVED FOR PUBLIC DISTRIBUTION

12-11-15
C7951
PAGE 1 OF 1

CUSTOMER CABLE POLE TO OVHD SVC DROP

NOTES:

APPLICATION

* THIS STANDARD DESCRIBES THE REQUIREMENTS FOR INSTALLATION OF A CUSTOMER'S CABLE POLE WITH AN UNDERGROUND SECONDARY SERVICE CONNECTION TO A ComEd OVERHEAD SECONDARY SERVICE CONNECTION (SERVICE DROP).

INFORMATION

1 CUSTOMER FURNISHES, INSTALLS, AND MAINTAINS THE FOLLOWING EQUIPMENT IN ACCORDANCE WITH ComEd SPECIFICATIONS:

A– TREATED POLE. (MINIMUM REQUIREMENTS – CLASS #7; LENGTH, 25 FEET). CUSTOMER SHALL CONSULT ANSI 05.1 MINIMUM SETTING DEPTH FOR CLASS AND LENGTH OF POLE INSTALLED. REFER TO ITEM "L" FOR MAXIMUM HEIGHT RESTRICTION.

B– GALVANIZED RIGID METAL CONDUIT (ELBOW AND ONE 10-FOOT SECTION). THE CUSTOMER SHALL SPECIFY THE QUADRANT OF THE POLE IN WHICH THE CONDUIT SHALL BE INSTALLED.

C– CONDUIT BUSHING (IF BURIED PORTION OF CABLE IS NOT IN DUCT).

D– GALVANIZED CONDUIT STRAPS AND/OR LAG SCREWS AS REQUIRED.

E– GROUND ROD, CONDUCTOR AND CLAMPS FOR GROUNDING METALLIC CONDUIT ON POLE.

F– OUTDOOR ADAPTER COUPLING FOR METALLIC TO NONMETALLIC CONDUIT.

G– NONMETALLIC RIGID CONDUIT.

H– CABLE SUPPORT FOR CABLE LARGER THAN #4/0.

J– CABLE, AND CONDUIT (IF INSTALLED). CABLE TO EXTEND FIVE FEET BEYOND CONDUIT RISER ON POLE. CUSTOMER TO NOTIFY ComEd OF CABLE SIZE.

K– SEALING COMPOUND. IF DUCT OR CONDUIT ENTERS BUILDING, SPACE BETWEEN THE CABLE AND CONDUIT SHALL BE SEALED.

L– SERVICE HEAD. ALL NEW SERVICE HEADS SHALL BE LOCATED NO MORE THAN 25' ABOVE THE GROUND, AND MUST BE POSITIONED SO THAT THE SERVICE WIRE INSTALLATION HAS SAFE ACCESS FROM AN EXTENSION LADDER.

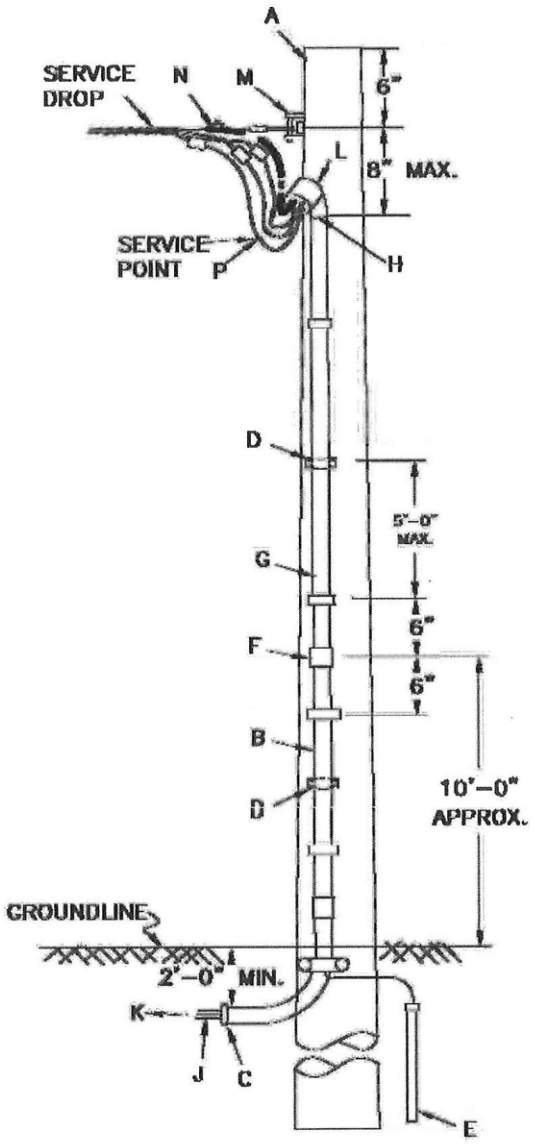
M– FORK BOLT.

2 ComEd FURNISHES, INSTALLS, AND MAINTAINS THE FOLLOWING EQUIPMENT:

N– SERVICE DROP HEAD-END.

P– CONNECTORS FOR CONNECTING CUSTOMER'S CABLE SERVICE DROP (SERVICE POINT).

Notice: The information contained on this page is the sole property of ComEd and is to be used only in conjunction with electric service provided by ComEd.



NOT TO SCALE

CP1

June 29, 2026

ADDENDUM NO. 1

FOR
Residential Sound Insulation Program Phase 19A
SPECIFICATION NO. 1315458A RFQ 69303

For which bids are scheduled to open in the Bid & Bond Room 103, City Hall, 121 N. LaSalle Street Chicago, Illinois 60602, at 11:00 a.m., on **June 29,2026.**

The following additions, changes and revisions are incorporated into the above-referenced Specification (the "Contract Documents") as noted. All other provisions and requirements as originally set forth, except as amended by previous addenda, remain in full force and are binding. Any additional work required by this Addendum shall conform to the applicable provisions of the original Contract Documents. Any and all addenda must be acknowledged by the vendor electronically or on the Execution Page by Addendum number. Failure on behalf of the vendor may be cause for rejection of bid.

BIDDERS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ELECTRONICALLY OR IN THE SPACE PROVIDED ON THE BID EXECUTION PAGE

SECTION 1. NOTICE OF REVISIONS/CHANGES/CLARIFICATIONS

REVISION	DESCRIPTIONS
1.	The Bid Funding strip has been changed from 751-HG24B71E to 2026-0751-085-4971-9071-HG26A71E.

ALL REVISIONS INSCRIBED HEREIN WILL BE INCORPORATED INTO THE BID SPECIFICATION PER ADDENDUM NO. 1

END OF ADDENDUM NO. __1__

CITY OF CHICAGO
DEPARTMENT OF PROCUREMENT SERVICES

SHARLA D. ROBERTS
CHIEF PROCUREMENT OFFICER