US Army Corps of Engineers ®
New York District

# Times Square Video Display Upgrade

# Manhattan, NY

Ready-to-Advertise Submission: Corrected Final D-B RFP

Contract No. **W912DS21D0002**
Project No. **W912DS25F0040**
22 December 2025

WITH 25% CONCEPT DESIGN

TETRA TECH

Mason&Hanger
A Day & Zimmermann Company

Joint Venture

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**Preface**

This Design-Build Request for Proposal (RFP) consists of six parts.

Part 1 contains typical contractual forms, procedures, bidding instructions, bond information, clauses and wage decisions.

Part 2 contains general contract administrative and execution requirements including, but not limited to safety, design criteria & process, quality control, security, schedule, invoicing, temporary facilities, and design and construction oversight processes.

Part 3 lists the project requirements, specific scope items, and expected quality level above and beyond those outlined in Part 4.

Part 4 contains Performance Specifications and minimum quality requirements.

Part 5, prescriptive specifications, contains necessary edited UFGS. Typically the scheduling, ECMS, Sustainability and safety spec are included here.

Part 6 contains background project information, references, and other project-specific requirements.

# PART 1 PROPOSAL FORMS AND DOCUMENTS

## 1.0 SECTION 00 70 00 – CONDITIONS OF THE CONTRACT

### 1.1 CLAUSES INCORPORATED BY REFERENCE.

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| 52.202-1 | Definitions | NOV 2013 |
| 52.203-3 | Gratuities | APR 1984 |
| 52.203-5 | Covenant Against Contingent Fees | MAY 2014 |
| 52.203-6 | Restrictions On Subcontractor Sales To The Government | SEP 2006 |
| 52.203-7 | Anti-Kickback Procedures | MAY 2014 |
| 52.203-8 | Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity | MAY 2014 |
| 52.203-10 | Price Or Fee Adjustment For Illegal Or Improper Activity | MAY 2014 |
| 52.203-12 | Limitation On Payments To Influence Certain Federal Transactions | OCT 2010 |
| 52.203-13 | Contractor Code of Business Ethics and Conduct | OCT 2015 |
| 52.204-4 | Printed or Copied Double-Sided on Postconsumer Fiber Content Paper | MAY 2011 |
| 52.204-9 | Personal Identity Verification of Contractor Personnel | JAN 2011 |
| 52.204-10 | Reporting Executive Compensation and First-Tier Subcontract Awards | OCT 2018 |
| 52.204-13 | System for Award Management Maintenance | OCT 2018 |
| 52.204-23 | Prohibition on Contracting for Hardware, Software, and Services Developed or Provided by Kaspersky Lab and Other Covered Entities. | JUL 2018 |
| 52.204-25 | Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment. | AUG 2020 |
| 52.209-6 | Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment | OCT 2015 |
| 52.209-9 | Updates of Publicly Available Information Regarding Responsibility Matters | OCT 2018 |
| 52.209-10 | Prohibition on Contracting With Inverted Domestic Corporations | NOV 2015 |
| 52.210-1 | Market Research | APR 2011 |
| 52.211-15 | Defense Priority And Allocation Requirements | APR 2008 |
| 52.215-2 | Audit and Records--Negotiation | OCT 2010 |
| 52.215-11 | Price Reduction for Defective Certified Cost or Pricing Data--Modifications | AUG 2011 |
| 52.215-13 (Dev) | Subcontractor Certified Cost or Pricing Data - Modifications (Deviation 2018-O0015) | JUL 2018 |
| 52.215-17 | Waiver of Facilities Capital Cost of Money | OCT 1997 |
| 52.215-19 | Notification of Ownership Changes | OCT 1997 |
| 52.215-21 | Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data -- Modifications | OCT 2010 |
| 52.219-4 (Dev) | Notice of Price Evaluation Preference for HUBZone Small Business Concerns (DEVIATION 2019-O0003). | JAN 2019 |
| 52.219-8 | Utilization of Small Business Concerns | OCT 2018 |
| 52.219-9 (Dev) | Small Business Subcontracting Plan (Deviation 2018-O0018) | AUG 2018 |
| 52.219-16 | Liquidated Damages-Subcontracting Plan | JAN 1999 |
| 52.222-3 | Convict Labor | JUN 2003 |
| 52.222-4 | Contract Work Hours and Safety Standards - Overtime Compensation | MAY 2018 |
| 52.222-6 | Construction Wage Rate Requirements | AUG 2018 |

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| 52.222-7 | Withholding of Funds | MAY 2014 |
| 52.222-8 | Payrolls and Basic Records | AUG 2018 |
| 52.222-9 | Apprentices and Trainees | JUL 2005 |
| 52.222-10 | Compliance with Copeland Act Requirements | FEB 1988 |
| 52.222-11 | Subcontracts (Labor Standards) | MAY 2014 |
| 52.222-12 | Contract Termination-Debarment | MAY 2014 |
| 52.222-13 | Compliance With Construction Wage Rate Requirements and Related Regulations | MAY 2014 |
| 52.222-14 | Disputes Concerning Labor Standards | FEB 1988 |
| 52.222-15 | Certification of Eligibility | MAY 2014 |
| 52.222-21 | Prohibition Of Segregated Facilities | APR 2015 |
| 52.222-26 | Equal Opportunity | SEP 2016 |
| 52.222-27 | Affirmative Action Compliance Requirements for Construction | APR 2015 |
| 52.222-37 | Employment Reports on Veterans | FEB 2016 |
| 52.222-40 | Notification of Employee Rights Under the National Labor Relations Act | DEC 2010 |
| 52.222-50 | Combating Trafficking in Persons | JAN 2019 |
| 52.222-54 | Employment Eligibility Verification | OCT 2015 |
| 52.222-55 | Minimum Wages Under Executive Order 13658 | DEC 2015 |
| 52.222-62 | Paid Sick Leave Under Executive Order 13706 | JAN 2017 |
| 52.223-2 | Affirmative Procurement of Biobased Products Under Service and Construction Contracts | SEP 2013 |
| 52.223-5 | Pollution Prevention and Right-to-Know Information | MAY 2011 |
| 52.223-6 | Drug-Free Workplace | MAY 2001 |
| 52.223-17 | Affirmative Procurement of EPA-Designated Items in Service and Construction Contracts | AUG 2018 |
| 52.223-18 | Encouraging Contractor Policies To Ban Text Messaging While Driving | AUG 2011 |
| 52.223-20 | Aerosols | JUN 2016 |
| 52.223-21 | Foams | JUN 2016 |
| 52.225-13 | Restrictions on Certain Foreign Purchases | JUN 2008 |
| 52.227-1 | Authorization and Consent | DEC 2007 |
| 52.227-2 | Notice And Assistance Regarding Patent And Copyright Infringement | DEC 2007 |
| 52.227-4 | Patent Indemnity-Construction Contracts | DEC 2007 |
| 52.228-2 | Additional Bond Security | OCT 1997 |
| 52.228-5 | Insurance - Work On A Government Installation | JAN 1997 |
| 52.228-11 | Pledges Of Assets | AUG 2018 |
| 52.228-12 | Prospective Subcontractor Requests for Bonds | MAY 2014 |
| 52.228-15 | Performance and Payment Bonds--Construction | OCT 2010 |
| 52.229-3 | Federal, State And Local Taxes | FEB 2013 |
| 52.232-5 | Payments under Fixed-Price Construction Contracts | MAY 2014 |
| 52.232-17 | Interest | MAY 2014 |
| 52.232-18 | Availability Of Funds | APR 1984 |
| 52.232-23 | Assignment Of Claims | MAY 2014 |
| 52.232-27 | Prompt Payment for Construction Contracts | JAN 2017 |
| 52.232-33 | Payment by Electronic Funds Transfer--System for Award Management | OCT 2018 |
| 52.232-39 | Unenforceability of Unauthorized Obligations | JUN 2013 |
| 52.232-40 | Providing Accelerated Payments to Small Business Subcontractors | DEC 2013 |
| 52.233-1 | Disputes | MAY 2014 |
| 52.233-3 | Protest After Award | AUG 1996 |
| 52.233-4 | Applicable Law for Breach of Contract Claim | OCT 2004 |
| 52.236-2 | Differing Site Conditions | APR 1984 |

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| 52.236-3 | Site Investigation and Conditions Affecting the Work | APR 1984 |
| 52.236-5 | Material and Workmanship | APR 1984 |
| 52.236-6 | Superintendence by the Contractor | APR 1984 |
| 52.236-7 | Permits and Responsibilities | NOV 1991 |
| 52.236-8 | Other Contracts | APR 1984 |
| 52.236-9 | Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements | APR 1984 |
| 52.236-10 | Operations and Storage Areas | APR 1984 |
| 52.236-11 | Use and Possession Prior to Completion | APR 1984 |
| 52.236-12 | Cleaning Up | APR 1984 |
| 52.236-13 Alt I | Accident Prevention (Nov 1991) - Alternate I | NOV 1991 |
| 52.236-15 | Schedules for Construction Contracts | APR 1984 |
| 52.236-16 | Quantity Surveys | APR 1984 |
| 52.236-17 | Layout of Work | APR 1984 |
| 52.236-21 Alt I | Specifications and Drawings for Construction (Feb 1997) - Alternate I | APR 1984 |
| 52.236-25 | Requirements for Registration of Designers | JUN 2003 |
| 52.236-26 | Preconstruction Conference | FEB 1995 |
| 52.242-5 | Payments to Small Business Subcontractors | JAN 2017 |
| 52.242-13 | Bankruptcy | JUL 1995 |
| 52.242-14 | Suspension of Work | APR 1984 |
| 52.243-4 | Changes | JUN 2007 |
| 52.244-6 | Subcontracts for Commercial Items | AUG 2019 |
| 52.246-12 | Inspection of Construction | AUG 1996 |
| 52.246-21 | Warranty of Construction | MAR 1994 |
| 52.248-3 | Value Engineering-Construction | OCT 2015 |
| 52.249-2 Alt I | Termination for Convenience of the Government (Fixed-Price) (Apr 2012) - Alternate I | SEP 1996 |
| 52.249-10 | Default (Fixed-Price Construction) | APR 1984 |
| 52.253-1 | Computer Generated Forms | JAN 1991 |
| 252.201-7000 | Contracting Officer's Representative | DEC 1991 |
| 252.203-7000 | Requirements Relating to Compensation of Former DoD Officials | SEP 2011 |
| 252.203-7001 | Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies | DEC 2008 |
| 252.203-7002 | Requirement to Inform Employees of Whistleblower Rights | SEP 2013 |
| 252.203-7003 | Agency Office of the Inspector General | AUG 2019 |
| 252.203-7004 | Display of Hotline Posters | AUG 2019 |
| 252.204-7003 | Control Of Government Personnel Work Product | APR 1992 |
| 252.204-7004 | Antiterrorism Awareness Training for Contractors. | FEB 2019 |
| 252.204-7012 | Safeguarding Covered Defense Information and Cyber Incident Reporting | DEC 2019 |
| 252.204-7015 | Notice of Authorized Disclosure of Information for Litigation Support | MAY 2016 |
| 252.205-7000 | Provision Of Information To Cooperative Agreement Holders | DEC 1991 |
| 252.209-7004 | Subcontracting With Firms That Are Owned or Controlled By The Government of a Country that is a State Sponsor of Terrorism | MAY 2019 |
| 252.219-7003 | Small Business Subcontracting Plan (DOD Contracts) | DEC 2019 |
| 252.222-7006 | Restrictions on the Use of Mandatory Arbitration Agreements | DEC 2010 |
| 252.223-7004 | Drug Free Work Force | SEP 1988 |
| 252.223-7006 | Prohibition On Storage, Treatment, and Disposal of Toxic or Hazardous Materials | SEP 2014 |
| 252.223-7008 | Prohibition of Hexavalent Chromium | JUN 2013 |

## 1.2 CLAUSES INCORPORATED BY FULL TEXT

52.204-21 BASIC SAFEGUARDING OF COVERED CONTRACTOR INFORMATION SYSTEMS (JUN 2016)

(a) Definitions. As used in this clause--

Covered contractor information system means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.

Federal contract information means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government, but not including information provided by the Government to the public (such as on public Web sites) or simple transactional information, such as necessary to process payments.

Information means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).

Information system means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).

Safeguarding means measures or controls that are prescribed to protect information systems.

(b) Safeguarding requirements and procedures.

(1) The Contractor shall apply the following basic safeguarding requirements and procedures to protect covered contractor information systems. Requirements and procedures for basic safeguarding of covered contractor information systems shall include, at a minimum, the following security controls:

(i) Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).

(ii) Limit information system access to the types of transactions and functions that authorized users are permitted to execute.

## PART 2 GENERAL REQUIREMENTS

# DIVISION 01 – To be submitted as a separate package.

# PART 3 STATEMENT OF WORK

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A20 Basement Construction – Not Used
B10 Superstructure
B20 Exterior Closure
B30 Roofing
C10 Interior Construction – Not Used
C20 Stairs – Not Used
C30 Interior Finishes – Not Used
D10 LED Video Display System
D20 Plumbing – Not Used
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E10 Equipment
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## 1.0 PROJECT DESCRIPTION

This project involves the design, fabrication, and installation of a new video display upgrade for the Armed Forces Recruiting Station, a one-story facility located in Times Square, New York City, with an approximate gross square footage of 535 square feet. The intended occupancy includes military recruitment personnel and the general public. The building is constructed of structural steel framing with stainless steel and storefront exterior walls, adhering to applicable building code construction types as specified by the Department of Defense. The project will include the installation of a new state-of-the-art digital video display, weighing approximately 28,000 lbs, and will be executed with minimal disruption to the high volume of pedestrians and local businesses. Information provided is preliminary and for solicitation purposes only. The Contractor is responsible for all D-B RFP document review and future design development necessary to complete the work. A structural assessment is available for reference; however, that assessment does not include analysis for the South side. This project includes Bid Option #1 for the South side (4th display). The Contractor shall perform the South side structural assessment and provide all

resulting structural design, calculations, drawings, and professional seals necessary to support the South side display. All structural design, permitting, construction, testing, and warranty obligations for the South side display shall be the Contractor's responsibility.

# 2.0 PROJECT OBJECTIVES

Design and construction shall comply with the requirements contained in this Request for Proposals (RFP). The design and technical criteria cited in this RFP and the Unified Facilities Guide Specifications (UFGS) establish minimum standards for design and construction quality. The Designers of Record shall use the UFGS and the requirements contained in this RFP to fully develop the technical specifications and construction drawings. The objective of this project is to enhance the visibility and functionality of the Times Square Armed Forces Recruiting Station through the installation of a state-of-the-art video display system that meets operational needs while adhering to safety and aesthetic standards.

The building and site drawings included in this RFP illustrate the conceptual design of the project. The site and floor plans provided shall be followed by the Design/Build Contractor to comply with the operational needs of the Armed Forces Recruiting personnel and the general public. The building elevation provided shall be further developed to achieve architectural compatibility with the iconic environment of Times Square. No structural system is selected or recommended by the government; therefore, the structural design is the Contractor's responsibility. The Design-Build Contractor assumes full responsibility for design, permitting, construction, and compliance with all applicable codes and standards.

The contract base bid includes design and construction for the LED video display upgrade on the North, East, and West sides, plus all supporting interior, site work, and utilities, including IT, network telecommunications, and electrical systems. It also includes selective demolition of existing site features as required. The Contractor shall obtain all necessary New York City permits for the installation and associated work.

The contract also includes the following bid options:

Bid Option #1 - Design and construction of an additional digital display on the South side (4th display) to enhance visibility and engagement. The Contractor shall perform and submit a comprehensive structural assessment and provide all resulting structural design, calculations, drawings, and Professional Engineer seals necessary to support the South side display, including identification of required reinforcement, new supports, anchors, or foundation work. Structural deliverables shall address applicable load cases and shall be prepared and stamped by a New York State licensed Professional Engineer (Structural). The Contractor assumes responsibility for design, permitting, construction, testing, and warranty of all structural work associated with Bid Option #1, and shall include the cost of the assessment and any remedial work in the Bid Option #1 price.

# 2.1 APPLICABLE CODES AND STANDARDS

In addition to the codes and standards listed in Part 2: General Requirements and Part 4, the design and construction must be in accordance with the latest revision/edition of all applicable codes and standards relevant to the project scope and requirements. The term "Latest Revision/Edition" is defined as the version as of the project award date. It is the responsibility of the Design-Build Contractor to ensure compliance with all codes, standards, permits, and regulatory requirements applicable to their design, construction, and installation activities.

1. Unified Facilities Criteria

a. UFC 1-200-01 UFC 1-200-01 DoD Building Code, with Change 4 — 09/01/2022 (Change Date: 12/17/2024)
b. UFC 3-101-01 Architecture, with Change 4 — 12/16/2020 (Change Date: 01/08/2024)
c. UFC 3-120-10 Interior Design, with Change 3 — 05/16/2018 (Change Date: 05/22/2025)
d. UFC 3-501-01 Electrical Engineering — 11/27/2024
e. UFC 3-520-01 Interior Electrical Systems — 01/16/2025
f. UFC 3-530-01 Interior and Exterior Lighting Systems, with Change 1 — 02/09/2023 (Change Date: 12/15/2023)
g. UFC 3-550-01 Exterior Electrical Power Distribution, with Change 3 — 09/01/2016 (Change Date: 11/01/2019)
h. UFC 3-560-01 Operation and Maintenance: Electrical Safety, with Change 3 — 07/24/2017 (Change Date: 05/15/2023)
i. UFC 3-560-01 Operation and Maintenance: Electrical Safety, with Change 3 — 07/24/2017 (Change Date: 05/15/2023)
j. UFC 3-580-01 Telecommunications Interior Infrastructure Planning and Design — 11/21/2024

2. Regional Standard: New York City Building Code (NYCBC) - This code governs construction practices, structural integrity, and safety standards for buildings and structures within New York City.

3. State Standard: New York State Uniform Fire Prevention and Building Code (NYS UFPC) - This code establishes regulations for fire safety, building construction, and occupancy standards throughout New York State.

4. National Electrical Code (NEC): NFPA 70 - This standard provides guidelines for safe electrical design, installation, and inspection of electrical systems, including those necessary for video displays.

5. Underwriters Laboratories (UL) Standards: UL 60950-1 - Standard for Safety of Information Technology Equipment, including requirements for electronic displays.

6. Institute of Electrical and Electronics Engineers (IEEE) Standards: IEEE 802.3 - Standards for Ethernet and networking communications relevant to the installation of digital video displays.

7. EM 385-1-1 Safety and Occupational Health (SOH) Requirements

8. Structural design and analysis for the South side display shall comply with the applicable editions of the International Building Code (IBC), ASCE 7 (Minimum Design Loads), the New York City Building Code (NYCBC), UFC 3-301-01, and other referenced standards. Structural calculations shall use the load combinations and analysis methods required by those codes.

## 2.2 SUSTAINABLE DESIGN

Unified Facilities Criteria (UFC) 1-200-02 (Change 02, 01 June 2022) High Performance and Sustainable Building Requirements have been considered during concept design. Sustainable design practices and LEED Silver Certification are not required for buildings under 10,000 gross square feet (GSF).

## 2.3 STORMWATER MANAGMENT - LOW IMPACT DEVELOPMENT (LID)

Based on the preliminary concept design, Stormwater Management (LID) is not required for this project. However, provide a design that incorporates low-impact development strategies complying with UFC 3-210-10, *Low Impact Development,* as applicable. Major renovation projects are defined as having a stormwater component and exceeding $5 million, and major construction projects are defined as exceeding $750,000.

These policies are in addition to State or Local stormwater management program permit requirements. The DOR must balance all applicable requirements, Federal, State, and Local, and the above-stated policies and acquire required regulatory permits when managing stormwater generated.

## 2.4 CYBERSECURITY

The LED video display system is expected to include an IT control system rack and an associated content management system.

All control systems (including systems separate from an energy management control system) must be designed, acquired, and executed in accordance with DoD Instruction 8500.01, DoD Instruction 8510.01, and as required by individual Facilities Engineering Command (FEC) or installation implementation policy.

The Contractor shall ensure that the IT control system and network interfaces incorporate Industrial Control System (ICS) Security Controls located in NIST 800-82, Appendix G, Table G-1, to safeguard the system's integrity and remote accessibility over the existing DoD communication network.

## 2.5 PERMITS

The list of permits provided herein is not exhaustive. The Contractor shall be responsible for identifying, obtaining, and complying with all licenses, permits, and approvals required for the execution and completion of the work, including those mandated by local, state, and federal authorities throughout the project. This includes, but is not limited to, the following:

- **NYC Department of Transportation (DOT):** Obtain permits for all lane and sidewalk closures to ensure safe traffic management.
- **NYC Department of Buildings (DOB):** Secure a Building and Site Safety Plan Permit for construction, alteration, or demolition activities, including submitting a Site Safety Plan.
- **NYC Department of Environmental Protection (DEP):** If applicable, obtain a Construction Noise Permit detailing expected noise levels and mitigation steps.
- **Landmarks Preservation Commission (LPC):** Since the project is within a historic district, obtain LPC permits for all exterior work; designs must be reviewed and approved by LPC to meet preservation standards.
- **Con Edison:** Coordinate construction efforts related to electrical service needs.
- **NYC Fire Department (FDNY):** Obtain fire safety permits for any required fire protection measures.
- **Metropolitan Transportation Authority (MTA):** Coordinate with MTA/NYC Transit via the External Partner Program (EPP) for work near transit facilities and to keep emergency exits clear.
- **Times Square Alliance:** Engage with the Alliance to ensure compliance with local goals and regulations.

The Contractor must pay all related fees and ensure temporary overhead protection for bike lanes and sidewalks complies with NYC Building Code Chapter 33 (Safeguards During Construction or Demolition).

Refer to the Engineering Considerations and Instructions for Field Personnel (ECIFP) Report for detailed utility and permit contacts.

# 3.0 SITE ANALYSIS

The U.S. Armed Forces Recruitment Station, originally constructed in 1998 and renovated in 2018, is strategically located on "Military Island" in the heart of Times Square, New York City. This single-story building encompasses approximately 535 square feet and is uniquely positioned above an existing subterranean ventilation, MTA, vault for the Broadway Avenue subway. The architectural features include a modern glass curtain wall system on the north, east, and west facades, which enhances visibility and engagement with the high volume of pedestrian traffic in Times Square. The south face is stud-framed, featuring stainless steel panels and aluminum grating, contributing to the building's contemporary aesthetic. The roof is an insulated membrane with walk pads and stainless-steel coping, with a Unistrut system that includes NYPD roof-mounted cameras.

Structurally, the original floor consists of a 3-inch metal deck and plywood supported by steel channel purlins spaced approximately 6'-9" on center, spanning in the east-west direction. These channels are anchored to a W18x65 edge beam along the east and west sides, which is supported by three bearing points anchored to concrete ribs below with ¾ inch expansion anchors. Vertical HSS 8x4 columns, also spaced at 6'-9", extend from the edge beams to support the roof structure, which is similarly constructed with a 3-inch metal deck and HSS 8x4 bent beam purlins. This robust structural framework ensures the building's integrity while accommodating the dynamic environment of Times Square.

# 3.1 EXISTING SITE CONDITIONS

The Armed Forces Recruiting Station is a one-story, approximately 535 gross square foot facility constructed of structural steel framing with stainless steel and storefront exterior walls. The self-contained six-sided assembly is situated on top of a New York Metropolitan Transit Authority (MTA) tunnel grate and is skirted with a horizontal louver that transitions from the surrounding grade slope to the bottom of the building envelope to create an enclosed finish at the building base. The exterior storefront walls are glazed with ballistic glazing. The East and West elevations feature LED-lit American flag video displays that are located on the interior side of the glazing. The exterior entrance passage door located on the North-East elevation is a stainless-steel door with a full vision panel of ballistic glazing. The NE elevation also features a large-format electronic video display screen above the main entrance. The South-West elevation is a stainless steel panel and a stainless steel grating, featuring logos for four branches of the military, as well as prominent identification signage. The roof assembly is an insulated membrane roofing system with walk pads and stainless-steel coping flashing. There are a number of roof-mounted cameras, owned by NYPD, that extend beyond the top of the recessed roof well.

# 3.2 SITE DEVELOPMENT

The contractor may utilize the potential staging area as shown on CS-101 Site Logistics Plan, which is located at the plaza next to the Times Square Army Recruiting Station. The staging areas can be accessed via West 43rd St.

The contractor shall coordinate with City of New York and Times Square Alliance to temporarily remove the calpipe security bollards. The project area will be required to be fenced and gated. The contractor may use a 20' x 8' container for temporary facilities equipment or material storage.

Any damages to the existing features, such as the sidewalk, pavement, bollards, pavers and benches during construction, must be repaired or replaced.

The contractor must coordinate with MTA/NYC Transit through the External Partner Program (EPP) as soon as possible, prior to commencement of the project and to obtain access to the MTA ventilation vault located under the Recruitment Center. The contractor must stay away from the existing MTA emergency exit. Coordination with Con Edison will be required to locate the existing Con Edison electric manhole at the sidewalk.

Temporary overhead protection for bike lane and pedestrian sidewalk must be in accordance with New York City Building Code Chapter (NYCBC) 33 – Safeguards During Construction or Demolition. The contractor is responsible for obtaining all lane/sidewalk closures permits through NYC DOT Office of Construction Mitigation and Coordination (OCMC).

For site maintenance during construction, the contractor must ensure the construction site is secure, in safe condition to protect workers and the public, debris is managed and that the structural integrity of both the new and existing portions of the building is upheld. This shall be in accordance with 2022 New York City General Administrative Provision for Construction Codes, Chapter 3 Maintenance of Buildings and NYCBC 3303: Safeguards and Maintenance of Site.

# 4.0 BUILDING REQUIREMENTS

Not Used.

# 5.0 ROOM REQUIREMENTS

Not used.

# 6.0 ENGINEERING SYSTEMS REQUIREMENTS (ESR)

A10 Foundations – Not Used
A20 Basement Construction – Not Used
B10 Superstructure
B20 Exterior Closure
B30 Roofing
C10 Interior Construction
C20 Stairs – Not Used
C30 Interior Finishes – Not Used
D10 Video Display System
D20 Plumbing – Not Used
D30 HVAC
D40 Fire Protection Systems
D50 Electrical Power
E10 Equipment
E20 Furnishings – Not Used
F10 Special Construction – Not used
F20 Selective Building Demolition
G10 Site Preparations
G20 Site Improvements

G30 Site Mechanical Utilities – Not Used
G40 Site Electrical Utilities

# A10 FOUNDATION

Not used.

# A20 BASEMENT CONSTRUCTION

Not used.

# B10 SUPERSTRUCTURE

The Contractor shall ensure that the existing structure is evaluated per Section 805.2 of the IEBC.

Bid Option #1: The South side structural assessment shall evaluate local attachment capacity, connection detailing, and member strength for the proposed display, including pull-out/pull-through calculations for anchors and fasteners. Structural calculations and drawings required for attachments, reinforcement, or new framing shall be sealed by a New York State licensed Professional Engineer (Structural). Where anchors are specified, the Contractor shall specify proof-test requirements and acceptance criteria in the submittal.

The structural system must be designed using the following parameters:

**Risk Category**: II.

**Live loads**: In accordance with UFC 3-301-01, *Structural Engineering*. Roof LL: 20 PSF; Office Use LL: 50 psf.

**Wind loads**: Basic design wind speed: 117 mph; Exposure Category C; Building Enclosure Classification: Enclosed; Internal Pressure Coefficient: 0.85; Topographic Factor: 1.0.

**Snow loads**: Ground snow load: 46.0 psf; Roof exposure: Partially exposed; Exposure Factor: 1.0; Load Importance Factor: 1.0; Thermal Factor: 1.149.

**Earthquake loads**: Importance Factor: 1.0; Site Class: D (assumed); Mapped seismic acceleration parameters: SS:0.28; S1:0.05; Seismic Design Category: B.

# B20 EXTERIOR ENCLOSURE

## B2010 EXTERIOR WALLS

The primary existing exterior material of the building is stainless-steel panels, aluminum grated panels and storefront insulated laminated glass. Modification to the existing exterior walls is not anticipated, if required for the installation of the new AV systems, repairs and replacements shall be in-kind and the finishes shall be installed without interruption and seamlessly to the adjacent materials.

**Vapor Retarder, Air Barrier and Insulation**
Given the scale of the project, which involves a small building, it has been determined that only an inspection of the vapor retarder and air barrier will be necessary, rather than extensive testing.

The contractor shall provide a vapor retarder and air barrier at all new penetrations to the building envelope, including structural supports and any other new openings. These installations must exceed the requirements set forth in UFC 3-101-01 Architecture and ASHRAE 90.1 to meet the project's energy savings objectives.

Additionally, the contractor must confirm air barrier compliance through inspection, in accordance with the air barrier performance standards described in RFP Part 4.

**Exterior Coatings**
Provide field applied exterior coatings for all items that are not prefinished, and to prefinished items when required to provide a color other than a standard prefinished color. All paint must be in accordance with the Master Painter Institute (MPI) standards for the exterior architectural surface being finished.

**Joint Sealants**
Provide exterior application of joint sealants to seal joints and prepare for finish material installation.

**Screen Wall**
Provide screen walls where required to screen mechanical units. Screen walls must be compatible with the building architecture. Rooftop mechanical screens must be designed to minimize roofing penetrations.

## B2020 EXTERIOR WINDOWS

Not used.

## B2030 EXTERIOR DOORS

Not used.

# B30 ROOFING

The contractor shall provide new flashing at all new roof penetrations, including structural supports for the new LED Video Display System, roof penetrations for cables, and other components associated with the LED Display system. The flashing installation shall encompass all necessary ancillary and incidental work required to ensure a complete, watertight roofing system. The existing roofing assembly consists of an insulated membrane roofing system, equipped with walk pads and stainless-steel coping flashing. Additionally, the design accommodates several roof-mounted cameras that extend above the top of the recessed roof well, ensuring proper integration with the overall roofing configuration. See Part 6: Attachment D for Roof Manufacture Warranty Guarantee Information.

## B3010 ROOF COVERINGS

Remove all existing roofing and flashing down to the deck as required for installation of the new AV system. Properly dispose of the demolished materials in a landfill not on the military installation. The existing roof deck is metal with a vapor barrier on exterior gypsum wallboard, an insulation base, a high-density polyiso cover board, and a fully adhered PVC membrane roofing

system. A wood curb with stainless steel coping flashing at the perimeter will be provided at areas damaged, demolished, or impacted by installation for the new AV system, including all new insulation, roof membrane, membrane flashing, sheet metal flashing materials, and accessories necessary for a complete roof system installation.

Exposed sheet metal items must be of the same material. Consider the following as exposed sheet metal: fascias, edge flashings, and related accessories.

Edge flashing and fascias on low slope single-ply roofs less than 2:12 in slope shall conform to the requirements of ANSI/SPRI ES-1. T

## B3020 PERFORMANCE REQUIREMENTS

The repairs and modifications to the installed roof system must be watertight; free of defects in materials and workmanship; free of damage, including blisters, delamination's, cuts, scratches, abrasions, and patchwork; provide for positive drainage of the roof surface area; and suitable for the climatic and service conditions of the installation.

## B3030 WIND UPLIFT AND FIRE RESISTANCE REQUIREMENTS

Sheet metal perimeter and flashing components must be designed, attached, and installed to provide for wind resistance equivalent to or greater than that required for the roof membrane system, and in accordance with FM, NRCA, or other applicable industry standard recommendations. Edge flashing and fascia on low slope b single-ply roofs less than 2:12 in slope must conform to the requirements of ANSI/SPRI ES-1.

The roof system must provide Class A or Class B fire resistance, as tested by standard ASTM, FM, or UL procedures.

## B3040 ROOF WARRANTY

To ensure that the roof workmanship warranty remains valid during the installation of the video display, the Contractor shall coordinate with the roof manufacturer prior to any installation work. The Contractor must consult with the roof manufacturer to confirm that the proposed installation methods for the video display will not void the existing roof warranty. If possible, the contractor shall obtain written approval from the roof manufacturer for the installation of the video display, including any modifications to the roof structure. The Contractor shall maintain detailed records of the installation process, including any communications with the roof manufacturer, to ensure transparency and facilitate any future warranty claims. See Part 6: Attachment D for Roof Manufacture Warranty Guarantee Information.

The Contractor shall provide a manufacturer's no-dollar-limit 20-year watertightness warranty for the total roof system, including flashings, in accordance with the referenced requirements of Standard Design-Build Template PTS B30.

The manufacturer's warranty must provide for full removal and replacement of failed, defective, and damaged roof system materials or installation workmanship in the event of water intrusion into or through the roof system and repair of defects such as blistering, delamination, open seams, cracking, splitting, and excessive weathering. The warranty for corrective action must not be limited in dollar value.

Provide a minimum two-year contractor warranty against defects in installation workmanship in accordance with the referenced requirements of Standard Design-Build Template PTS B30.

Contractor warranty must provide for full removal and replacement of failed or defective workmanship and damaged materials, including sheet metal flashings.

## B3050 ROOF SPECIFICATION AND DETAILING

All work, materials, installation and details must be in accordance with Standard Design-Build Template PTS B30 and comply with all applicable Unified Facilities Guide Specification (UFGS) materials and installation requirements. UFGS's are referenced in PTS B30 and are available at www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs . Provide for complete rough carpentry, roof insulation, roof covering, sheet metal flashing, and other components necessary to complete the installation.

Utilize the applicable UFGS for development of the roof membrane specification. Edit for application to the specific project and compliance with the RFP. Provide complete rough carpentry, roof insulation, and sheet metal flashing specification sections coordinated and compatible with the membrane specification.

All details must be in accordance with recommendations and guidelines of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual and Construction Details and as required by the RFP.

The roof system must comply with the applicable requirements of the International Building Code. Refer to UFC 3-110-03, *Roofing*, and UFC 3-101-01, *Architecture* for additional technical requirements for the roof system to be installed.

## B3060 ROOF DESIGNER REQUIREMENTS

Provide materials specification, installation requirements, and system detailing, including all flashings, penetrations, closures, corners, intersections, terminations, transitions, interfaces, joint, and lap conditions, to ensure a watertight installation.

## B3070 QUALITY CONTROL PROGRAM

The contractor must establish a quality control program to assure adherence to the RFP design and construction requirements and report on the installation quality.

# C10 INTERIOR CONSTRUCTION

## C1010 PARTITIONS

Not used.

## C1020 INTERIOR DOORS

Not used.

## C1030 SPECIALTIES

The Contractor shall furnish and install all modifications to the existing casework in the open office area affected by the electrical equipment reconfiguration at the existing electrical cabinets. All newly reconfigured casework shall match the adjacent wood paneling in material, color, grain, finish, and hardware to ensure a seamless integration with the existing casework. The work shall be executed in accordance with applicable quality standards and the manufacturer's recommendations.

## C30 INTERIOR FINISHES

Not used.

## C3010 WALL FINISHES

Not used.

## C3020 FLOOR FINISHES

Not used.

## C3030 CEILING FINISHES

Not used.

## C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Not used.

# D10 LED VIDEO DISPLAY SYSTEM

The Contractor shall provide and install a complete turnkey LED Video Display system as specified in this Request for Proposal (RFP) and 25% Concept Drawings. The video display upgrade includes a four-sided display, with the West, North, and East displays being the base requirement. The South LED display will be considered Option 1. For Bid Option #1, the Contractor shall obtain and include LED manufacturer load and attachment data, and coordinate those requirements with the Contractor's structural design. Manufacturer data and shop drawings shall be included with the structural submittal and shall not relieve the Contractor of structural liability.

- The exterior LED system shall consist of IP65-rated LED cabinets, along with the necessary secondary and primary structural supports, and integration with the base building structure.
- The proposal must include all engineering services, delivery, installation, and acquisition of all necessary city approvals.
- The LED electrical work shall encompass all connections, conduit, and cables required to power the displays from existing house panels.
- The LED data infrastructure shall include conduit, data cables, and connections that pass through the building envelope.
- The LED Content Management System will be housed within the building envelope and must be accessible remotely by the Owner. It shall support a framerate capability of 60 frames per second to accommodate video, photos, and text content.

- Content can be uploaded either remotely or on-site through a secure system, allowing for effective management of the displays. The four screens will be designed for scalability, enabling them to display individual content or work together to form a cohesive single piece of content, such as anamorphic visuals.
- All building envelope penetrations, including those for structural, electrical, and data connections, will require proper waterproofing to maintain the integrity of the building and the performance of the LED system.

# D20 PLUMBING

## D2010 PLUMBING FIXTURES

Not used.

## D2020 DOMESTIC WATER DISTRIBUTION

Not used.

## D2030 SANITARY WASTE

Not used.

## D2040 RAIN WATER DRAINAGE

Not used.

# D30 HVAC

Upon completion of the video display equipment installation, the contractor shall provide a complete assessment and analysis of the existing HVAC system.

During the initial 25% Concept Design analysis, it was determined that the existing Rooftop Packaged HVAC unit is anticipated to be adequate for handling the additional cooling load estimated at 2,000 BTU/hour generated by the video display IT rack associated with the new video display.

**HVAC System Requirements**

The Contractor is required to verify the BTU/hour equipment load with the video display vendor to ensure accuracy in the HVAC system’s capacity. This verification is critical to confirm whether the existing HVAC unit can adequately support the additional cooling requirements without compromising performance or reliability.

Should the existing system prove insufficient, the Contractor will be responsible for adding, changing, or replacing the air conditioning system as necessary to accommodate the new LED Screen Equipment System while maintaining the facility's full operational functionality without degradation after installation.

It is strongly recommended that the new video display cabinet be equipped with thermostatically controlled internal fans to facilitate effective heat extraction from the adjacent space. This will help

maintain optimal operating conditions for the video display and ensure the reliability and efficiency of the HVAC system

All work and documentation shall comply with applicable federal standards and local codes..

### D3010 ENERGY SUPPLY

Not used.

### D3020 HEAT GENERATING SYSTEMS

Not used.

### D3040 DISTRIBUTION SYSTEMS

Not used.

### D3050 TERMINAL & PACKAGE UNITS

Not used.

### D3060 CONTROLS AND INSTRUMENTATION

Not Used.

### D3070 SYSTEMS TESTING AND BALANCING

Not Used.

## D40 FIRE PROTECTION SYSTEMS

The existing fire and life safety systems for the building are deemed satisfactory in their current configuration. No upgrades to these systems will be required as part of the video display upgrade project. The building is not equipped with a sprinkler or fire suppression system.

The existing fire alarm system consists of a Notifier NFW2-100 panel, which reports to a central station and includes features such as smoke detectors, duct smoke detection, manual pull stations, occupant notification systems, and a remote annunciator panel. Additionally, the building's exit routes are adequate, providing multiple pathways directly to the street for safe egress.

For further details on additional fire protection systems, please refer to the as-built drawings.

### D4010 FIRE ALARM AND DETECTION SYSTEMS

Not used.

### D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

Not used.

### D4040 SPRINKLERS

Not used.

# D50 ELECTRICAL

The electrical design must comply with the design criteria specified in UFC 3-501-01, *Electrical Engineering*, and its referenced documents. Additionally, the design must adhere to the applicable New York City electrical codes to ensure compliance with local regulations. Coordination with Con Edison (CI-1140858/MC-839555) is essential to facilitate the integration of the new electrical systems, ensuring that all requirements for service connections, load calculations, and safety standards are met. This comprehensive approach will guarantee that the electrical systems are not only functional but also fully compliant with both federal and local standards.

## D5010 ELECTRICAL SERVICE & DISTRIBUTION

This section addresses electrical service and distribution related to the LED video display system and associated utility coordination.

The building receives power service from Con Edison Electrical Company. The service is metered and rated 200 amperes, 208Y/120v, 3-phase, 4-wire + ground. Preliminary concept design coordination with Con Edison was conducted. The Contractor shall continue to coordinate with Con Edison and MTA regarding the construction efforts necessary for the installation of electrical services for this project. The Contractor is responsible for design, installation, testing, and commissioning of all electrical service upgrades in accordance with Con Edison's determinations regarding electrical service requirements.

The existing 200A meter will be decommissioned and replaced by a new 600A Metered Panel within the Electrical Closet. The Contractor must ensure safe decommissioning and compliance with all relevant New York City codes, regulations, and standards, coordinating with Con Edison to disconnect existing service and facilitate installation.

The Contractor shall evaluate the adjacent closet space and assess the potential for expanding the Electrical Closet to the right, where the paper goods storage is currently housed. If the available space does not accommodate both the new 600A Metered Panel and the electrical shade controllers, the Contractor shall relocate the electrical shade controllers and, if necessary, decommission them to facilitate the installation of the panel as planned.

It is critical that the 600A Metered Panel installation remains within the Electrical Closet to meet project requirements. The panel is essential for powering the advanced digital video display system, enhancing the Armed Forces Recruiting Booth's operational requirements.

The Contractor is responsible for including any necessary general construction work required for the expansion of the Electrical Closet in their bid, ensuring that there is adequate space for both the 600A Metered Panel and the relocated electrical shade controllers. All assessments and adjustments must be coordinated effectively as part of the proposal.

The Contractor is responsible for the installation of two (2) 200A NEMA 3R electrical panels and three (3) 200A disconnect switches on the roof to support the LED video display system. While the existing Unistrut support system hosts electrical and other equipment, evaluation, coordination, and configuration to avoid conflicts with existing equipment are the sole responsibility of the Contractor.

All electrical installations shall comply with applicable codes, including the provision of an insulated equipment grounding conductor in all raceways for systems operating at greater than 50 volts to ensure safety and compliance with electrical standards. Additionally, raceways shall be provided

with expansion, expansion-deflection, or deflection fittings where necessary to compensate for thermal expansion, deflection, and contraction. This approach will ensure the integrity and reliability of the electrical system throughout the project's lifecycle, accommodating any movement due to temperature changes or structural shifts.

## D5020 BRANCH WIRING

The LED Video Display's electrical panel loads are estimated as follows:

Base Bid: West (D1), North (D2), East (D3) is 79kW

Option 1: South (D4) is an additional 15kW

The Contractor shall coordinate with the Video Display vendor to determine all associated power requirements of the LED video display system. This includes furnishing and installing two (2) 200A NEMA 3R electrical panels, three (3) 200A disconnect switches, and branch circuit wiring in rigid galvanized steel (RGS) conduit to the backend of the new outdoor LED panels. Additionally, furnish and install two (2) 30 amp locking type receptacles at the video wall equipment control rack.

The two 54-pole panelboards and three disconnect switches will be installed on the roof. The Contractor shall be responsible for evaluating available space and capacity on the existing Unistrut support system and configuring the installation to integrate with existing equipment, with full responsibility for avoiding conflicts. The exact placement of the backbox behind the LED panels must be coordinated with the video display vendor to ensure proper alignment and functionality.

The quantity and size of tie conduits from the outdoor LED panels to the new panels shall be determined based on the LED video display system design specifications. All exterior conduit pathways shall be constructed from rigid galvanized steel conduit and threaded to provide environmental protection, durability, and compliance with applicable local codes. Each conduit shall be equipped with two (2) pull cords to facilitate future wiring installation and maintenance.

The Contractor shall also coordinate with the Video Display vendor to determine power requirements for any UPS or PDU equipment integrated into the video wall control equipment rack. The vendor shall provide detailed information on the number of circuits, breaker sizes, and plug types (e.g., standard, twist-lock). The Contractor will evaluate existing spare circuits in current or newly installed electrical panels. It is recommended to use 10-gauge wire for all IT-related circuits, supporting up to 220 volts and 30 amps if required.

The Electrical Contractor shall furnish and install all necessary components—including conduit, wiring, back boxes, breakers, and related equipment—to fully comply with the specified power requirements. The Contractor is responsible for clearly labeling all circuits with the associated panel and circuit numbers to ensure ease of identification, maintenance, and troubleshooting throughout the system’s lifecycle.

Furthermore, all raceways shall include expansion, expansion-deflection, or deflection fittings where necessary to accommodate thermal expansion, deflection, and contraction. This will ensure the integrity and reliability of the electrical system throughout the project, accounting for movement due to temperature changes or structural shifts.

## D5030 COMMUNICATIONS & SECURITY

**Telecommunications Systems**

The existing low-voltage IT cabinet located above the bathroom, which serves the space's current IT needs, shall remain in its current vicinity. Any relocation of the existing IT cabinet must be carefully evaluated and executed by the Contractor to ensure sufficient cable slack is maintained.

The Contractor is responsible for performing a thorough evaluation of the bathroom ceiling's structural capacity prior to the installation of the new IT rack and spare parts box, as shown in the drawings and described in this Statement of Work. The Contractor shall verify that the ceiling can safely support the proposed loads and provide any additional structural support or reinforcement necessary for installation. This RFP has not evaluated interior structural components, and the weights of the new IT equipment rack and spare parts box are not provided. The Contractor's bid shall fully incorporate all findings from this evaluation and include all associated costs and contingencies for structural assessment and any required remedial work.

The new IT rack cabinet shall be installed adjacent to the existing cabinet (on the left side), which may require slight repositioning to accommodate the new equipment. Space shall be allocated for a new locked cabinet measuring 24" W x 24" D x 36" H, supplied by the LED vendor. The Contractor shall provide all required power distribution units (PDU) and internal thermostatically controlled fans within the cabinet to ensure adequate heat extraction.

The Contractor shall furnish and install two (2) hard-wired CAT 6A network cables from the existing network switch to the new cabinet to support monitoring and remote management functions. All CAT 6A station cabling, patch panels, and patch cords shall meet CAT 6A standards, and all network certification testing shall comply with these standards.

The Contractor shall provide a minimum 1" telecommunications conduit or larger as a cable raceway from the new cabinet to the backend of the new outdoor LED panel. Coordination of the exact location of the backbox behind the LED panel will be required with the LED vendor. The number of tie conduits from the outdoor LED panels to the new cabinet shall be determined based on the LED video display system design. All exterior conduit pathways shall be rigid galvanized steel and threaded to ensure environmental protection, and each conduit shall be equipped with two (2) pull cords (see Sheet E-101).

Coordinate with local activity authorities and building users for specific requirements as may be directed by the Contracting Officer.

**Security Systems**

Coordinate with local activity authorities and building users for existing security system requirements.

## D5090 OTHER ELECTRICAL SERVICES

Not Used.

# E10 EQUIPMENT

## E1010 COMMERCIAL EQUIPMENT

The Contractor must engage the services of a reputable [Min. 10 years exterior Large-Format LED Display experience] LED Display Vendor capable of designing, engineering and manufacturing

large-format LED display technology together with a compatible content management system & all associated media equipment for smooth video content playback. The LED Vendor must also be capable of designing, engineering, fabricating, and installing Large-format LED display base building, primary and secondary structural frames, electrical and data wiring to an existing building structure and infrastructure, and make all connections/attachments necessary to bring the LED displays to full working order. Lastly, the LED Display Vendor must provide a 2-year on and off-site labor and parts no-deductible warranty commencing upon final acceptance of the installation by the Owner.

The Contractor is responsible for coordinating LED Video Display System equipment design requirements with the end user and IT personnel, providing detailed equipment and manufacturer specifications, and overseeing the procurement and installation of the equipment using Best Value practices. As required, the contractor shall obtain the services of an LED Video Display Vendor or Specialist to specify the LED Video Display System. This includes ensuring that all equipment is compatible with existing systems and meets the facility's operational needs.

The Contractor must ensure that all installations comply with relevant NYC, safety, and regulatory standards, maintaining the integrity of the building and the functionality of the video display system.

### E1020 INSTITUTIONAL EQUIPMENT

Not used.

### E1030 VEHICULAR EQUIPMENT

Not used.

### E1040 GOVERNMENT FURNISHED EQUIPMENT

There is no Government Furnished equipment in this project.

### E1090 OTHER EQUIPMENT

Not used.

## E20 FURNISHINGS

Not used

### E2010 FIXED FURNISHINGS

Not used.

### E2020 MOVABLE FURNISHINGS

Not used.

# F10 SPECIAL CONSTRUCTION

## F1010 SPECIAL STRUCTURES: PRE-ENGINEERED METAL BUILDINGS

Not used.

# F20 SELECTIVE BUILDING DEMOLITION

Remove the existing video display on the north side of the building and dispose of it properly.

## F2020 HAZARDOUS COMPONENT ABATEMENT

# G10 SITE PREPARATION

No site investigation, site clearing, or earthwork is required for this project.

## G1010 SITE CLEARING

Not used.

## G1020 SITE DEMOLITION & RELOCATIONS

Not used.

## G1030 SITE EARTHWORK

Not used.

## G1040 HAZARDOUS WASTE REMEDIATION

Not used.

# G20 SITE IMPROVEMENTS

Provide accessibility in conformance with applicable requirements of UFC 1-200-01 , *General Building Requirements*.

## G2010 ROADWAYS

Not used.

## G2020 PARKING LOTS

Not used.

## G2030 PEDESTRIAN PAVING

Not used.

## G2040 SITE DEVELOPMENT

The Contractor shall ensure that all site development requirements are according to New York City Building/Construction Codes. Coordination with the Times Square Alliance will be required.

A project information panel constructed of durable, weatherproof, flame retardant material such as vinyl, plastic, or aluminum, is required at 4 feet above grade on each fence perimeter fronting a public thoroughfare

Fence installation may be of solid material such as wood, corrugated metal, or other suitably rigid and strong materials. Chain link materials, where allowed, must be made of new materials or materials in good condition, galvanized steel mesh and posts, and the installed fence and gates covered with opaque, sturdy cloth. All solid fence installations shall be painted Hunter green.

Posts (including concrete encasement of posts), frames, braces, and rods erected at design intervals to resist the effects of wind and secure the entire length of fence.

Gates are installed only where required for access to the site. The street facing portion of the solid fence may have openings with gates of the same solid materials as the fence and installed as sliding or in-swinging gates.

Secure the site using at least an 8-foot-high chain link security fence. Provide two swing gates for vehicle access. Provide at least an 8-foot-high wooden fence for pedestrian traffic around existing sidewalks.

Provide trash receptacles or a dumpster if required.

## G2050 LANDSCAPING

Not used.

## G205005 PLANTINGS

Not used.

# G30 SITE CIVIL/MECHANICAL UTILITIES

## G3010 WATER SUPPLY

Not used.

### G3020 SANITARY SEWER

Not used.

### G3030 STORM SEWER

Not used.

## G40 SITE ELECTRICAL UTILITIES

### G4010 ELECTRICAL DISTRIBUTION

The electrical design must comply with the design criteria specified in UFC 3-501-01, *Electrical Engineering*.

The building receives power service from Con Edison Electrical Company. The service is metered and rated 200 amperes, 208Y/120v, 3-phase, 4-wire + ground. Preliminary concept design coordination with Con Edison was conducted. The Contractor shall continue to coordinate with Con Edison (CI-1140858/MC-839555) and MTA regarding the construction efforts necessary for the installation of electrical services for this project. The Contractor is responsible for design, installation, testing, and commissioning of all electrical service upgrades in accordance with Con Edison's determinations regarding electrical service requirements.

The Contractor shall coordinate with Con Edison and MTA regarding utility access and the construction efforts necessary for the installation of electrical services for this project. The Contractor is also responsible for construction in accordance with Con Edison's determinations regarding electrical service requirements. See paragraphs D5010, D5020, and D5030.

### G4020 EXTERIOR LIGHTING FIXTURES AND CONTROLS

Not used.

### G4030 SITE COMMUNICATION & SECURITY

The contractor is responsible for evaluating existing communication and security systems prior to installing the new LED Video Display System. The Contractor must avoid existing systems during the installation of the new video display system. The project does not expect modifications or relocations. If existing systems interfere with the new video display design or installation, coordination with the COR or contracting officer may be required.

# PART 4 MINIMUM MATERIALS, ENGINEERING AND CONSTRUCTION REQUIREMENTS

## 1.0 GENERAL REQUIREMENTS

The requirements indicated here are minimum performance requirements. More specific project functional and performance requirements, scope items and expected quality levels over and above the standards in Part 4 are identified in Part 3 of the Request for Proposal or Basic Ordering Agreement. The Contractor is encouraged to exceed the minimum requirements. The Contractor's performance evaluation will be based in part on enhancements to materials, engineering, design and construction provided for the contract that exceed minimum requirements.

Part 4 is a general section. Not all items in Part 4 will be required for this project. See Part 3 for project-specific requirements. See "Contract and Order of Precedence" paragraph in Part 2 for relationships between all parts of the RFP.

In general, unless otherwise indicated, provide all labor, equipment and materials necessary to complete the work required for the contract. All work must be in conformance with all applicable referenced criteria, construction standards, laws and regulations, including applicable building fire and life safety codes.

**Recycled Materials Considerations:**

An Affirmative Procurement Program has been established within the Federal government to promote the purchase of products containing recovered materials. This program promotes the purchase of products containing materials recovered from the solid waste stream. The intent is to conserve resources and reduce solid waste by developing markets for recycled products and encouraging manufacturers to produce quality recycled content products. Use products that meet or exceed the EPA guideline standards for recovered content as required by the Federal Acquisition Regulations (FAR). Availability lists of manufacturers and EPA research on product usage are on the Construction Criteria Base (CCB) at www.wbdg.org/ccb/ccb.php under Documents Library, NAVFAC Criteria. A partial list of products containing recycled materials for possible use is as follows:

- Rock Wool Insulation
- Fiberglass Insulation
- Cellulose Insulation
- Structural Fiberboard and Laminated Paperboard
- Cement and Concrete - Coal Fly Ash
- Carpet including backings and cushions
- Floor Tiles
- Reprocessed and Consolidated Latex Paint
- Crushed Concrete Aggregate for new asphalt, concrete or subgrade
- Recycled glass for terrazzo aggregate

- Acoustical Ceiling Tile
- Gypsum Wallboard
- Steel wall studs
- Cellulose spray applied fireproofing
- HDPE Toilet Partitions

## 1.1 MATERIALS AND METHODS OF CONSTRUCTION

Only new materials and equipment are to be installed in the work. All materials, equipment and appliances must be of the current manufacturers' products. Do not use obsolete or discontinued materials, equipment and appliances, except that construction materials containing recycled content as described in Paragraph 1 of this Part that completely comply with all materials specifications found elsewhere in this Part may be used.

## 1.2 APPLICABLE CODES AND STANDARDS

The design and construction must be in accordance with established construction practices, and the latest revision/edition of the following referenced codes and standards. The term "Latest Revision/Edition" is defined as the version as of the project award date. References are available at www.wbdg.org/ndbm/ . The advisory provisions of all codes and standards is mandatory, as though the word "must" had been substituted for "should" wherever it appears. Reference to the "authority having jurisdiction" is to be construed to mean "Contracting Officer". Comply with the required and advisory portions of the current edition of the standard at the time of contract award. All work must comply with UFC 1-200-01, *General Building Requirements*, and IBC 2009 or later edition as modified by applicable NFPA Standard as well as codes and standards listed in RFP Part 2.

## 1.3 LOCATION-SPECIFIC CODES AND STANDARDS

See Part 3.

## 1.4 DISCREPANCIES

When discrepancies in the referenced standards and the contract requirements occur, the more stringent requirements govern. The word "should" in all NFPA publications is to be interpreted as a requirement. The Authority Having Jurisdiction in the interpretation of the codes and standards, and approving the exceptions allowed in the referenced standards, is the Contracting Officer, and the parties designated by the Contracting Officer.

## 2.0 PERFORMANCE TECHNICAL SPECIFICATIONS

Note: The paragraph numbers used correspond with the numbers used in UNIFORMAT II/Work Breakdown Structures (WBS) as listed in the Whole Building Design Guide, Navy Design Build Master, accessible at this website: www.wbdg.org/ndbm .

# SECTION A. SUBSTRUCTURE

## A10 FOUNDATION

Foundations must be reinforced concrete slabs-on-grade with continuous strip footings or isolated spread footings. Concrete slabs must not be less than 4 inches in thickness and footings must not be less than 18 inches below the lowest adjacent grade. Design and construct foundations of reinforced concrete. Comply with IBC, applicable UFGS and with applicable requirements in Section B Shell. For the purposes of interpreting IBC Chapter 18, the "Owner" and "Building Official" is interpreted to mean the "Government", and the "Applicant" is interpreted to mean the "Contractor/Designer of Record".

1. **Contractor-Foundation Design**: The Designer of Record must evaluate the RFP data, and obtain and evaluate all additional data as required to support the design and construction.

2. **Geotechnical Site Data required in Design Drawings**: The Contractor's final design drawings must include:
   a. Notes identifying the soil allowable bearing capacity used in design.
   b. Subsurface soil information, be it Government provided or Contractor obtained, that represents subsurface conditions existing on the project site (such as boring logs, test pits, laboratory test results and groundwater observations). The locations of all borings must be indicated on the drawings.

3. **Performance Verification and Acceptance Testing**: Verification of satisfactory construction and system performance is required to be via Performance Verification Testing, as detailed in this part of the RFP.
   a. **Earthwork:** Perform quality assurance for earthwork in accordance with IBC Chapter 17 and applicable UFGS. See Section G1030.

## A20 BASEMENT CONSTRUCTION

[Provide basement construction in accordance with UFC 3-301-01, *Structural Engineering*. Basement walls include exterior walls below the ground floor level of the building, including walls that are below grade, elevator pits and other pits. Provide basement walls constructed of [cast-in-place concrete] [precast concrete] [or] [masonry]. Provide waterproofing [and insulation] of basement walls.] If basement construction is required in Part 3, refer to Standard Design-Build template PTS Section A20 BASEMENT CONSTRUCTION.

# SECTION B. SHELL

## B10 SUPERSTRUCTURES

Superstructure work includes structural frames, bearing walls, floors, roofs, roof canopies, and balcony construction. Unless otherwise specified in Part 3, superstructures may be designed and constructed using any materials or combination of different materials allowed by applicable codes and standards. Comply with IBC and applicable UFGS. Special inspection, testing, approvals, certifications, observations and quality assurance plans as prescribed in Chapter 17 of the IBC are required.

1. **Concrete**: All concrete must be constructed in accordance with ACI 301. Concrete must have a 28-day minimum compressive strength of 3,000 psi. Slump must be between 2 and 4 inches in accordance with ASTM C143. Provide joints as required to minimize cracking. All concrete must be reinforced. Provide joints as required by applicable ACI standards. Unless otherwise specified in Part 3 or as indicated by the contracting officer, provide steel trowel finish for all exposed floor surfaces. Exterior surfaces must be a broom finish.

2. **Masonry**:
   a. All concrete masonry must be constructed in accordance with ACI 530.1. Concrete masonry must have a minimum 28-day compressive strength of 1500 psi. Concrete masonry units must conform to ASTM C90, grade A1. Broken blocks are not allowed. Use only standard size and shape blocks. Block may be cut when necessary. Mortar must be Type S.
   b. When used, brick must conform to ASTM C216. In exposed construction, broken brick is not be allowed. Standard size brick may be cut to fit job condition. Use Type S mortar.
   c. Provide metal anchors for masonry and brick, including veneer construction as required by IBC.

3. **Structural Steel**: Structural steel exposed to weathering must be adequately protected to prevent corrosion.

4. **Steel deck**: Steel form deck must have a G90 galvanized finish, and must have a minimum 26-gage thickness. All other steel deck must have a G90 galvanized finish, and must have a minimum 20-gage thickness.

5. **Cold-formed metal framing**: Cold-formed steel studs, joists and track must be galvanized with a minimum thickness of 20-gage.

6. **Wood framing**: Wood framing members must be new lumber, unless otherwise allowed by Part 3. Timber can be Douglas Fir, Douglas Fir-Larch, Hem-Fir, Southern Pine or other structurally competent species allowed by applicable codes and standards. Wood framing must meet the following minimum grading requirements:
   a. Studs - #2
   b. Joists and rafters- #2
   c. Beams, 4x and larger - #1
   d. Posts, 4x and larger - #1
   e. Blocking - #3
   f. Fascia, trim - #1
   g. Wood Structural Panel Sheathing (Exterior Glue)
   h. Roof - APA rated with span index of 24/0 - minimum thickness 1/2 inch
   i. Walls - APA rated with span index of 32/16 - minimum thickness 1/2 inch
   j. Flooring- APA rated with span index of 48/24 - minimum thickness 3/4 inch

# B20 EXTERIOR ENCLOSURE

## B2010 EXTERIOR WALLS

1. **Exterior Wall Performance**:
   a. **Vapor Transmission Analysis:** Perform a job specific vapor transmission analysis in accordance with ASHRAE 90.1 or WUFI. The conclusion of the analysis must indicate the appropriate locations of needed vapor retarders, air barriers, and anticipated dew-point locations in the exterior enclosure during different critical times of the year.
   b. **Maximum Air Infiltration:** The air leak flow rate must not exceed 0.25 CFM at 75 Pa per square foot (0.076 cm 75 Pa per square meter) of building envelope area including roof or ceiling, walls and floor as provided by the DOR.

      Where required in RFP Part 3, provide air barrier testing. Perform testing as required by UFGS 01 91 19 *Buiding Enclosure Commissioning*and UFGS 07 27 10.00 10 *Building Air Barrier System*. DOR must edit this section and incorporate into the project specification. Repair leaks and repeat testing until prescribed maximum air leak flow rate is achieved. Provide intermediate and final reports.
   c. **Wind Loads:** Provide wind load calculations for exterior cladding in accordance with ASCE-7 with comparative analysis of the cladding system to be provided.
   d. **Water Penetration:** No water penetration is acceptable at a pressure of 39 Kg/m2 (8 psf) of fixed area when tested in accordance with ASTM E 331.
   e. **Insulating Value:** Provide complete thermal envelope in accordance with ASHRAE 90.1, Chapter 5 with improvements required to meet project energy goals.

      Where required in RFP Part 3, provide infrared thermal envelope performance testing. Test the building envelope using Infrared Thermography in accordance with the requirements of ASTM C1060 (latest edition) and ISO 6781. The Contracting Officer will witness the testing. Provide thermography test report including thermographs in color and a color temperature scale to define the temperature indicated by the various colors. The report must identify the high temperature reading, the outdoor air temperature, the building indoor air temperature, and the wind speed and direction. Report to note any areas of compromise in the building envelope, and note all actions required and taken to correct those areas. Repair and repeat testing until discrepancies are demonstrated to be resolved.

2. **Masonry Veneer Exterior Wall Closure Components**: Masonry veneer includes load bearing and non-load bearing exterior walls of the structure, and must include colored mortar, special shapes such as sills, headers, trim units and copings of brick masonry, precast concrete, concrete masonry units, or other approved material. Utilize BIA Technical Notes to design, detail, and construct brick masonry walls. Substitute directive language in the place of BIA suggestive language. The results of these wording substitutions change this document to required procedures. Tie the veneer to the backup wall system with a system that allows the veneer to move independently of the backup wall system, while being structurally supported. The masonry veneer must allow for expansion and contraction of the veneer without cracking the exterior material.
   a. **Masonry Veneer Installation:** Conform to ACI 530.1 for masonry veneer installation, including cold weather construction. Antifreeze admixtures are not to be used.
   b. **Mortar:** Provide factory-tinted colored mortar conforming to ASTM C270, unless DOR directs otherwise.
   c. **Expansion/Control Joints:** Locate expansion/control joints and seal with proper backing material and ASTM C 920 polyurethane sealant, or preformed foam or rubberized expansion joint closure. Conform to UFC 3-101-01, *Architecture* and BIA Technotes 18, 18A.
   d. **Brick:** Meet ASTM C216, Grade SW, type FBS, or type FBX for detail work. ASTM C67 test rating shall be "Not effloresced". Use FBA brick only for special

architectural effects requiring a non-uniform size.

e. **Split Faced or Ground Faced Masonry:** ASTM C 90

f. **Cast Stone Trim Units:** Cast Stone must meet or exceed the requirements of ASTM C 1364.

g. **Wall Cavity:** shall Comply with the and BIA Technical Notes 21A, 21B, 21C, 28B

h. **Through-Wall Flashing Components:** Through-wall flashing with weep holes must be incorporated in cavity wall construction. Flashing must be 7 ounce copper flashing with a 3 ounce bituminous coating on each side or a fiberglass fabric bonded on each side of the copper sheet; 16-ounce uncoated copper, 28 gauge Type 302 or 304 stainless steel is also acceptable. 'Flexible membrane flashing, plastic or PVC-based membrane flashing is prohibited.

i. **Reinforcing in Veneer Layer:** Reinforcing in the veneer layer must be galvanized in accordance with ASTM A 123/A123M, ASTM A153/A153M, or ASTM A653/A653M, Z275 (G90) coating, and be of sufficient size to eliminate damage to the veneer layer from wind and other live and dead loads imposed on the veneer layer.

j. **Masonry Cleaning:** Clean the masonry in accordance with manufacturer's instructions and BIA Technote 20.

3. **Metal Wall Panel Exterior Closure**: Panels must have factory applied, baked coating to the exterior and interior of metal wall panels and metal accessories. Exterior finish topcoat must be of 70 percent polyvinylidene fluoride (PVDF) resin with not less than 0.8 mil dry film thickness (DFT). Exterior primer must be standard with panel manufacturer with not less than 0.8 mil dry film thickness (DFT).

Wall system and attachments must resist wind loads as determined by ASCE 7, with a factor of safety appropriate for the material holding the anchor. Maximum deflection due to wind on aluminum wall panels must be 1/60. Maximum deflection due to wind on steel wall panels and girts behind aluminum or steel wall panels must be limited to 1/120 of their respective spans, except that when interior finishes are used the maximum allowable deflection must be limited to 1/180 of their respective spans.

Conformations - Non-insulated steel or aluminum wall panels must have configurations for overlapping adjacent sheets or interlocking ribs for securing adjacent sheets and must be fastened to framework using concealed fasteners, or choose the option for exposed fasteners when exposed fasteners are acceptable at the installation. Length of sheets must be sufficient to cover the entire height of any unbroken wall surface.

a. **Steel Wall Panels**:

1) Material and Coating: Form sheets from steel conforming to ASTM A 653/A 653M, Structural Grade 40, galvanized coating conforming to ASTM A 924/A 924M, Class G-90; aluminum-coated steel conforming to SAE AMS 5036; or steel-coated with aluminum-zinc alloy conforming to ASTM A 792/A 792M, except that coating chemical composition must be approximately 55 percent aluminum, 1.6 percent silicon, and 43.4 percent zinc with minimum coating weight of 0.5 ounce per square foot.

2) Gage: Minimum 22 U.S. Standard Gage for wall panels, but in no case lighter than required to meet maximum deflection requirements specified.

b. **Aluminum Wall Panels**:

1) Material and Coating - Form sheets of Alloy 3004 or Alclad 3004 conforming to ASTM B 209 having proper temper to suit respective forming operations.

2) Thickness - Minimum 0.81 mm (0.032 inch) nominal, but in no case thinner than that required to meet maximum deflection requirements specified.

c. **Insulated Aluminum or Steel Wall Panels**: Insulated wall panels must be steel or aluminum factory-fabricated units with insulating core between metal face

sheets securely fastened together and uniformly separated with rigid spacers. Panels must have a factory color finish. Wall panels must have edge configurations with interlocking ribs for securing adjacent panels. System must utilize factory fabricated corners and trim pieces at intersections with other materials. Insulated wall panels must be fastened to framework using concealed fasteners.

1) Insulated Steel Panels - Zinc-coated steel conforming to ASTM A 653/A 653M; or Aluminum-zinc alloy coated steel conforming to ASTM A 792/A 792M, AZ 55 coating. Uncoated wall panels must be 0.61 mm (0.024 inch) thick minimum.

2) Insulated Aluminum Panels - Alloy conforming to ASTM B209, temper as required for the forming operation, minimum 0.81 mm (0.032 inch) thick.

4. **Stucco Exterior Wall Closure**
   a. **Portland Cement Plaster:** ASTM C150, gray Portland cement Type II with 13 mm (1/2 inch) maximum chopped alkali resistant fiberglass strands, minimum 1.5 percent by weight to cement; .68 kg (1 1/2 pounds) per sack of cement. Lime must conform to ASTM C206, Type S. System must utilize stainless steel or zinc corner beads, J-beads and other accessories. Unless specifically deleted, the system must utilize an acrylic admixture or coating to give additional moisture suppression to control fungus growth.
   b. **Exterior Insulation and Finish System (EIFS):** EIMA TM 101 and 01 EIMA TM 101.86. EIFS must be used as the non-primary or the primary exterior finish material only for projects where it is necessary to match existing EIFS.

5. **Precast Concrete Wall Panels**: ACI 211.1 and ACI 301. PCI MNL-116 or PCI MNL-117. Concrete must have a minimum 28-day compressive strength of 281 Kg/cm2 (4000 psi). Joints must include properly sized and placed backing material and fully loaded and tooled sealant joint of no less than 1/4 inch sealant material thickness.

6. **Other Wall Finish Systems**
   a. **Horizontal Wood Siding:** Horizontal Wood Siding: DOC PS 20, exterior, lap type, 6 inches wide, maximum practicable lengths, 11 mm (7/16 inch) thick, smooth face. All surfaces of wood siding and trim must be shop coated with an alkyd primer.

      Species and Grades 1. Grade 1 Common spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA. 2. Grade Prime or D finish, pressure-preservative-treated hem-fir; NLGA, WCLIB, or WWPA.; 3. Grade D Select (Quality) eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods; NELMA, NLGA, WCLIB, or WWPA. 4. Grade D Select northern white cedar; NELMA or NLGA. 5. Grade B & B, pressure-preservative-treated southern pine; SPIB.
   b. **Vinyl Siding System:** Integrally colored, vinyl siding complying with ASTM D 3679.
   c. **Manufactured Faced Panels Systems Exterior Wall Siding:** Glass Fiber Reinforced Cementitious Panels System: Siding made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; horizontal or vertical pattern in plain or beaded-edge style. Texture: Rough sawn or smooth, factory primed.

7. **Exterior Wall Backup Construction**
   a. **Concrete Unit Masonry:** Provide concrete unit masonry to comply with ACI 530.1. Load-bearing units: ASTM C90, Non-load bearing- units: ASTM C129,

Type I or II. Provide ground face units, split-faced units, ground-faced units, or split-ribbed units for exposed exterior walls. Provide water repellent admixture to masonry units where the exterior face of the units will not receive a waterproof coating such as paint.

b. **Dampproofing:** Dampproof the cavity-facing wythe of the backup masonry using asphaltic primer according to ASTM D 41, if dampproofing is not provided by a sprayed on foam or other DOR-approved membrane insulation system.

8. **Load-Bearing Metal Framing System**: If permitted, provide load-bearing metal framing including top and bottom tracks, bracing, fastenings, and other accessories necessary for complete installation. Framing members must have the structural properties indicated. Where physical structural properties are not indicated, they must be as necessary to withstand all imposed loads. Design framing in accordance with AISI SG-673. Install in accordance with DOR-approved shop drawings and manufacturer's installation instructions.

9. **Exterior Studs**:

| Max. Deflection Criteria | Exterior Finish |
|---|---|
| L/360 | Cement Plaster, Wood Veneer, Synthetic Plaster, Metal Panels |
| L/600 | Brick Veneer, Stone Panels |

Wall deflections must be computed on the basis that studs withstand all lateral forces independent of any composite action from sheathing materials. Studs abutting windows or louvers must also be designed not to exceed 1/4-inch maximum deflection and as required in UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings.

1. Studs - ASTM A 1003/ASTM A 1003M, Structural Grade 50, Type H minimum; provide Z180 (G60) galvanized coating in accordance with ASTM A 653/ASTM A 653M. Do not expose studs to direct moisture contact
2. Bracing - Provide horizontal bracing in accordance with design calculations and AISI SG-673, consisting of, as a minimum, runner channel cut to fit between and welded to the studs.
3. Sheathing - Provide sheathing to withstand structural loads imposed on the wall structure. Cover sheathing with either a 15 pound asphalt-impregnated building paper, or air barrier as required by the wall moisture analysis. Sheathing must be one of the following:

a. Plywood: C-D Grade, Exposure 1;
b. Structural-Use and OSB Panels;
c. Gypsum: ASTM C 79/C 79M and ASTM C 1177/C 1177M, 13 mm (1/2 inch) thick fire retardant (Type X) 15 mm (5/8 inch) thick; 1.2 meters (4 feet) wide with square edge for supports 400 mm (16 inches) o.c. with or without corner bracing of framing. Gypsum sheathing must be faced with materials capable of resisting six months of weathering exposure without degradation of the covering or the gypsum. Seal all joints as recommended by the manufacturer.

13. **Wood Framing System**: All materials shall be kiln-dried lumber complying with DOC PS 20. Installation must be in accordance with AF&PA T11. Use preservative pressure treated lumber at sill plates and other members in contact with concrete and masonry surfaces.

a. **Species and Grades**: Provide species and grades listed: 1) Grade 2 Common spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA: 2) Grade 2 Common, hem-fir; Douglas-fir; NLGA, WCLIB, or WWPA; 3) Grade 2 Common, southern pine; SPIB.
b. **Sheathing**: Sheathing must withstand structural loads imposed on the wall structure. Cover sheathing with either a 15 pound asphalt-impregnated building paper, or air barrier as required by the wall moisture analysis. Sheathing must be as for Metal Studs.

14. **Cast-in-place Concrete System**: Concrete construction must be in accordance with ACI 301.

15. **Insulation and Vapor Retarder**: Insulation, Vapor Retarders, and Air Barrier Systems in or on Exterior Enclosure must include: insulation, liquid, sheet or continuous film materials installed separately in or on wall assemblies to provide resistance to heat loss/gain, and vapor penetration.
    a. **Vapor retarder:** Comply with ASTM C755. Incorporate in the exterior wall system where required by vapor transmission calculations or dew point analysis indicates the need or in conditions of high moisture exposure.
    b. **Bituminous Dampproofing:** Bituminous Dampproofing must be ASTM D449, Type I or Type II bituminous dampproofing on the exterior surface of the interior wythe of masonry in a cavity wall (back-up wall for masonry veneer).
    c. **Building Paper:** FS UU-B-790, Type I, Grade D, Style 1.
    d. **Air Barrier:** Building wrap consisting of air barrier sheeting complying with ASTM E 1677, Type 1, not less than 3 mils thick with a permeance of not less than 575 ng/Pa x s x sq.m. (10 perms). Building wrap must have a flame spread index of less than 25 in accordance with ASTM E 84. Provide building wrap over sheathing of wood or metal framed construction to reduce air penetration and airborne vapor penetration. Provide building wrap tape as recommended by the manufacturer for sealing all joints in the building wrap. Install in accordance with manufacturer's instructions. Air barrier installation at windows must be in accordance with ASTM E 2112.
    e. **Insulation Systems:** Vertical and horizontal polystyrene insulation conforming to ASTM C578 or rigid polyisocyanurate board wall insulating products conforming to ASTM C591 or mineral-fiber blanket insulation conforming to ASTM C 665 must be provided.

16. **Parapets**: Avoid parapets when possible, but when necessary, provide parapets with the same materials as the exterior wall construction. Provide scuppers and wall edge according to SMACNA.

17. **Exterior Louvers and Screens**: If required, provide louvers for Screened Equipment Enclosure or as louvers for exterior doors.

    Storm shutters must comply with ASTM E 1996-03.

18. **Balcony Walls and Handrails**: Balcony walls to match exterior construction. Handrails to comply with the IBC and OSHA.

19. **Exterior Soffits**: Exterior soffit system.

20. **Exterior Painting and Special Finishes**; All painting and coating materials must be low VOC. Painting practices must comply with applicable federal, state and local laws

enacted to insure compliance with Federal Clean Air Standards. Apply coating materials in accordance with SSPC PA 1. SSPC PA 1 methods are applicable to all substrates.

All paint must be in accordance with the Master Painters Institute (MPI) standards for the exterior architectural surface being finished. The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of contract award, will be used to determine compliance with the submittal requirements of this specification. Provide paint systems tested to "Detailed Performance Level" standard as defined by MPI.

21. **Exterior Joint Sealant**: Sealant joint design, priming, tooling, masking, cleaning and application must be in accordance with the general requirements of Sealants: A Professionals' Guide from the Sealant, Waterproofing & Restoration Institute (SWRI). All sealant must conform to ASTM C 920.

22. **Sun Control Devices**: Sun control devices must be manufactured devices to provide sun control on exterior windows and storefronts. Sun control devices must be designed and installed to withstand the wind loads prevailing at the project site.

## B2020 EXTERIOR WINDOWS

All windows and doors in new or existing buildings, which are subject to Anti-terrorism Standards, must be blast-resistant as prescribed in UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.

Unless otherwise allowed by Part 3, windows for new facilities must be aluminum. In building additions or renovations windows must match existing window materials, except when all windows are to be replaced. If all windows are to be replaced, they shall be aluminum. Exterior windows design, dimension, and construction must meet or exceed the requirements for Anti Terrorism Force Protection requirements. In addition, exterior windows must meet or exceed Energy Star requirements. The design and placement of exterior windows must take into considerations view, natural light, privacy, and protection for the occupants of the facilities. Provide operable hardware and insect screen for exterior windows. Windows must be fabricated by manufacturers normally involved in the manufacturing of windows and be of the current make and model. Do not use obsolete or discontinued windows. Provide weather stripping, STC and IIC rating, commensurate with the intended use of the facility. Submit catalog information and manufacturer's specifications for approval by Contracting Officer prior to purchase of windows.

All window assemblies must meet performance grade CW 60 minimum tested in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-08 or most current edition of this standard.

Where windows separate conditioned spaces from non-conditioned spaces, provide windows bearing NFRC energy label indicating window exceeds current EnergyStar criteria. For storefront or curtainwall systems, provide thermally broken framing and insulating glazing with whole-assembly U-value of 0.40 or less. Provide windows exceeding requirements of ASHRAE 90.1, Table 5.5 for project climate zone.

Windows must consist of fixed and operable sash used singly and in multiples. Provide operable sash in spaces occupied by people as a minimum. Include operating hardware, non-corroding framed metal screens for operable sash, integrated blinds set between glass panels and security grilles. Provide jamb support for larger windows where recommended by manufacturer.

1. **Metal Windows**: All windows must conform to ANSI/AAMA/WDMA 101. Metal

windows with insulating glass must have thermally broken frames and sash. Factory finish aluminum windows and provide with aluminum frame screens with aluminum mesh at operable sash, hardware and locks, and tinted glazing. Aluminum screens must comply with ANSI/SMA 1004.

2. **Wood Windows**: Clad wood and wood windows must consist of complete units including sash, glass, frame, weatherstripping, insect screen, and hardware. Window units must meet the requirements of AAMA 101, except maximum air infiltration shall not exceed 0.30 CFM per linear foot of sash crack when tested under uniform static air pressure difference of 7.66 Kg/m2 (1.57 psf).

3. **Storefronts**: Provide one-story storefront system fabricated from formed and extruded aluminum and glass components for exterior use. Utilize the specific section of the Standard Design-Build Performance Technical Specifications Section B202002 for the storefront to be provided. Storefront framing must meet or exceed the structural requirements, as measured in accordance with ANSI/ASTM E330: Design system to withstand this as a minimum and comply with design pressure established within the required ASCE 7-05 Wind Speed Calculations determined by the overall average opening within the project.

4. **Glazing**: All exterior glazing must be insulating glass.
   a. Clear Glass - Type I, Class 1 (clear), Quality q4 (A);
   b. Heat-Absorbing Glass - ASTM 1036, Type I, Class 2 Quality q3 (select) ray frames;
   c. Wire Glass - Type II, Class 1, Form 1, Quality q8 Mesh m1 or Form 2, Quality q7;
   d. Laminated Glass - ASTM 1172, total thickness shall be nominally 6 mm (1/4 inch);
   e. Insulating Glass Units - Typically ASTM C 1036, Type I, Class 1, Quality q4, minimum 6 mm;
   f. Tempered Glass - ASTM C 1048, Kind FT (fully tempered);
   g. Patterned Glass - ASTM 1036, Type II, Class 1 (translucent), Form 3 (patterned), Quality q7 (decorative), Finish f1 (patterned one side), Pattern p2 (geometric) 5.55 mm (7/32 inch) thick.

## B2030 EXTERIOR DOORS

Exterior doors must be heavy duty insulated steel doors and frames for service access. Provide door frames with welded corners. Use heavy-duty overhead holder and closer to protect doors from wind damage. Steel must have G60 galvanized coating in accordance with ASTM A 924/A 924M and ASTM A 653/A 653M when the job site is located within 300 feet from a body of salt water. Provide commercial quality, coating Class A zinc coating in accordance with ASTM A591 for other steel or steel skin hollow metal doors at other locations. Provide kickplates on the inside face of all exterior doors. Weather-protect all exterior doors and related construction with low infiltration weatherstripping and sealants. Provide threshold with offset to stop water penetration while maintaining accessibility compliance. Conform to the design criteria of ASCE 7. See the hardware schedule for door hardware requirements.

Where doors separate conditioned spaces from non-conditioned spaces, provide doors exceeding current EnergyStar criteria. For storefront entrances, provide thermally broken door framing and insulating glazing with whole-assembly U-value of 0.67 or less. Provide doors exceeding requirements of ASHRAE 90.1, Table 5.5 for project climate zone.

1. **Steel Doors**: Exterior doors must comply with ANSI A250.8-1998 (SDI-100). Hardware preparation must be in accordance with ANSI A250.6. Doors must be hung in accordance with ANSI A115.16.
   a. Doors Required:

1) Standard Duty Doors - Level 1, MSG # 20 (IP 0.032", 0.8 mm), physical performance Level C, Model 1 or 2.2) Heavy Duty Doors - MSG # 18 (IP 0,042", 1 mm), physical performance Level B, Model 1 or 2.3) Extra Heavy Duty Doors - Level 3, MSG #16, (0.053", 1.3 mm) physical performance Level A, Model 1, 2, or 3.4) Maximum Duty Doors - Level 4 (IP 0.067", 1.6 mm), physical performance Level A, Model 1 or 2.
   b. Insulated steel doors and frames are required for entrances to dwelling units, and may also be specified as a Contractor's option to Level 1 standard hollow metal doors. Do not use wood doors for exterior doors, unless they are fully protected from the elements, an exterior grade species, and specially finished. If wood doors are used, provide in accordance with Standard Design-Build Performance Technical Specification Paragraph B203001 2.

2. **Standard Steel Frames**: ANSI A 250.8. Form frames with welded corners for installation in exterior walls. Form stops and beads of 20 gage steel. Frames must be set in accordance with ASTM A250.11. Anchor all frames with a minimum of three jamb anchors and base steel anchors per frame, zinc-coated or painted with rust-inhibitive paint, not lighter than 18 gage. Mortar infill frames in masonry walls, and infill with gypsum board compound at each jamb anchor in metal frame walls. Only use surface exposed bolted anchors in concrete walls.

3. **Door and Frame Finishes**: a) Exterior Doors, Factory-Primed and Field Painted Finish - Doors and frames must be factory primed with a rust inhibitive coating as specified in ANSI A250.8. Factory prime doors on six sides of the door; b) Exterior Doors Galvanized Finish -- Must be Commercial Quality, Coating Class A, zinc coating in accordance with ASTM A 591 when facility is located further than 91 meters (300 feet) from the ocean. When facility is located within 91 meters (300 feet) of the ocean, provide G60 galvanized coating in accordance with ASTM A 924/A 924M and ASTM A 653/A 653M.

4. **Upward Acting Doors**: Upward acting doors must be capable of withstanding the design wind loading of ASCE 7. Provide galvanized steel tracks not lighter than 14 gage for 50 mm (2 inch) tracks and not lighter than 12 gage for 75 mm (3 inch) track. Provide a positive locking device and cylinder lock with two keys on manually operated doors.

5. **Overhead and Roll-up Doors**: Large exterior overhead and roll-up doors system must consist of manual or automatic exterior doors and door assemblies.

6. **Rolling Service Doors and Grilles**: Coiling overhead doors must have minimum 22 gage thermal insulated slats. Electric operators must have three-button switches conforming to NEMA MG 1, NEMA ICS 1, and NEMA ICS 2, and auxiliary hand chain operation, weather-stripping and wind-locks. Doors must be capable of withstanding the design wind loading of ASCE 7 and still operate normally. Finish of the door must be hot-dipped galvanized with a painted finish.

7. **Sectional Overhead Doors**: Sectional overhead doors must conform to NAGDM 102, Residential or Commercial or Industrial door standards. If doors are electrically operated, pushbuttons must be full-guarded to prevent accidental operation, and include

limit switches to automatically stop doors at the fully open and closed positions. Limit switch positions must be readily adjustable.

8. **Hardware**: Provide the services of a Certified Door Hardware Consultant to prepare the door hardware schedule.

   Provide all new hardware with satin chrome finish throughout. Hardware must be commercial grade, suitable for the operational requirements and in compliance with life safety code and handicapped accessibility requirements, similar in quality to the hardware shown in C1020 Interior Doors and Hardware below.

   Coordination: Provide a master keying system compatible with the existing base system. Provide an emergency access key box for exterior door fireman key access. Coordinate with the local authority and the Contracting Officer to determine the local requirements for hardware, keying and master keying.

# B30 ROOFING

For repair of existing roofing, the cutting of the existing roof shall be kept to a minimum and, where necessary, must be made in a clean and orderly manner to prevent the appearance of a patch.

Repair all damage to existing and new roofing caused by the work of this Contract at no additional cost to the Government. The work must be executed in such a manner as to maintain the integrity of the existing roofing manufacturer's warranty.

1. **Pre-Roofing Conference**: Prior to beginning roofing work, hold a Pre-Roofing Conference with the personnel directly responsible for the roofing systems work, as well as the roofing manufacturer's technical representative.

2. **Roof Design Assurance**: If the roofing project is significant (Significant Roof - A single or group of buildings greater than 1,400 $m^2$ (15,000 sf)), or where extenuating circumstances of the roof project such as building use, content, safety, or visibility require a roofing consultant, provide the services of a Registered Roof Consultant (RRC) certified by the Roof Consultant Institute, or a Registered Professional architect or Engineer who specializes in roofing, to approve the roof design. The roof consultant must be engaged in roofing design and roofing construction as his primary endeavor. The roof consultant must verify in writing that the design for the project is in accordance with the current edition of *NRCA Roofing and Waterproofing Manual*, UFC's, and RFP, and standard industry practices and building codes.

   If a Roof Design Assurance Consultant is needed, consider using a Registered Roof Observer as a QC specialist.

## B3010 ROOF COVERINGS

Roof coverings and procedures must comply with the requirements of UFC 3-110-03, *Roofing*, and NRCA, *Roofing and Waterproofing Manual* found at http://www.nrca.net/rp/technical/manual/manual.aspx as the primary NAVFAC roofing criteria. Roof selection must comply with UFC 3-110-03, *Roofing*. Determine wind uplift using wind speed in accordance with ASCE-7.

1. **STEEP SLOPE ROOF SYSTEMS**: Steep slope systems bare roofs with a pitch greater than 3 in 12. Steep Slope Systems are slate roofing, Asphalt Shingles, Roof Tiles, Foam Set Tiles, Metal Roof Panels (Architectural Standing Seam Metal Roofs on supported substrate), and Structural Standing Seam Metal Roof (SSSMR). Asphalt shingles can only be used for residential construction and light commercial construction.

2. **LOW SLOPE ROOF SYSTEMS**: Low slope systems are roofs with a pitch 3 in 12 or less. Low slope roofing systems must be built-up asphalt roofing (aggregate surfaced, with modified bituminous components), modified bituminous membrane roofing of a minimum of 3 plies with aggregate surface or granular surface modified bitumen cap sheet, or structural standing seam metal roofing. Use EPDM systems only to match existing construction.

3. **ROOF COMPONENTS**:
   a. **Insulation:** For existing structures, provide insulation in accordance with ASHRAE 90.1. For new construction, provide R-30 insulation in the ceilings, attic spaces and soffit areas for interior spaces. Injected polyurethane and Urea Formaldehyde Foam field applied is not permitted. Provide acoustical insulation above walls separating bathroom/restrooms and corridor and adjacent occupied spaces, and between offices and corridors. Insulation must have a minimum sound attenuation rating of STC-55.

      Insulation must be Polyisocyanurate Rigid Board Insulation, Mineral Fiber Blanket Insulation to conform to ASTM C 991, with Glass Mat Gypsum Roof Board for use above the deck or insulation conforming to ASTM C 1177/C 1177M, where necessary.

      Only on portions of the roof where the sloping of structure does not allow the minimum slopes, provide a factory tapered roof insulation system to provide positive drainage of roof system, and to include drainage around curbs, penetrations, and projections through the roof plane.

      Provide Glass Mat Protection Board meeting ASTM C 1177 for use as a thermal barrier (underlayment) or protection board for hot-mopped applications.
   b. **Vapor Retarder:** Determine the need and location in the roof assembly for a vapor retarder. Where the mean January temperature is 40 degrees Fahrenheit or less, and the expected interior relative humidity is 45% or greater, use a vapor retarder. Otherwise, use ASHRAE 90.1 for the determination.

      1) Vapor Retarders as Integral Facing - Alloy conforming to ASTM B 209, or Vapor Retarders Separate from Insulation - Vapor retarder material must be 10 mil polyethylene sheeting conforming to ASTM D 4397.

      2) A slip sheet is required to separate the roofing panels from the insulation facing where the facing would be in direct contact with the roofing panels. If a slip sheet is necessary for use with a vapor retarder, use a 5 lb. per 100 square feet rosin-sized, unsaturated building paper.
   c. **EPDM Rubber Boots:** Flashing devices around pipe penetrations& must be flexible, one-piece devices molded from weather-resistant EPDM rubber.
   d. **Prefabricated Curbs and Equipment Support:** Provide Prefabricated curbs and equipment supports of structural quality, hot-dipped galvanized or galvanized sheet steel, factory primed and prepared for painting with mitered and welded joints. Provide integral base plates and water diverter crickets. Minimum height of curb must be 8 inches above finish roof.
   e. **Fasteners:** Provide fasteners that meet all requirements of the NRCA and

Factory Mutual.

f. **Wood Nailers:** Wood nailers shall be pressure-preservative-treated in accordance with AWPA M2 Standards, permanently marked or branded, and installed flush with the top of the adjacent insulation board.

g. **Flashing and Sheet Metal:** Provide flashing and sheet metal work including scuppers, splash pans, and sheet metal roofing. Flashing and sheet metal must be provided in accordance with roof manufacturer's printed installation instructions and in compliance with NRCA and SMACNA recommendations. Fabricate Flashing and sheet metal components from Copper, Lead-Coated Copper sheet, Steel Sheet, Zinc-Coated (Galvanized) - ASTM A 653/ A 653M, Stainless Steel - ASTM A 167, Type 302 or 304, 2D finish, or Pre-Finished Aluminum.

h. **Gutters and Downspouts:** Provide gutters and downspouts compatible with roofing material and finish. Concealed (interior) gutters and downspouts are prohibited. Provide splash guards at points of discharge.

i. **Roof Openings and Supports:** Provide flashings for roof openings and supports as recommended by the NRCA. Assure all penetration flashings extend minimum 200 mm (8 inches) above the finished roof surface.

j. **Roof Hatches:** Provide roof hatch where required by OSHA, and as access to roof when roof mounted equipment is used or other routine roof maintenance is required.

k. **Glazed Roof Openings:** Skylights and other glazed roof openings shall be used only to supplement interior lighting levels (generally in steep slope or vertical applications), and otherwise, are discouraged from use.

l. **Guards:** Provide rails or guards as required by the OSHA, the International Building Code or other applicable safety standards.

m. **Traffic Pads:** Provide on roof system to protect roof from foot traffic. Provide traffic pads around roof mounted mechanical equipment and underneath removable mechanical equipment access panels. Traffic pads must be of compatible material to roof.

4. **OTHER ROOFING**

a. **Lightning Protection:** Lightning protection component penetrations and attachments must be sealed and flashed and anchored in a permanent manner and in a manner to avoid the degradation of the watertight integrity of the roof system.

b. **Roof Drains (Existing):** Where existing roof drains are to be reused in roof replacement construction, the contractor must provide new, compatible flashing materials, a new drain clamping ring and new bolts for anchorage. Reuse of existing clamping ring and bolts is unacceptable.

# SECTION C. INTERIORS

# C10 INTERIOR CONSTRUCTION

## C1010 PARTITIONS

1. **Fixed Partitions**: wood frame; light gage steel frame; concrete masonry complying with ACI 530.1/ASCE 6/TMS 602 and associated ASTM Standards; or cast-in-place concrete complying with UFC 1-200-01, *General Building Requirements*, ACI 117 and ACI

301/301M. In addition, interior partitions must comply with tables for sound isolation and noise reduction in Chapter 1, "Architectural Graphic Standards". Include a statement of adherence to the applicable criteria.

Gypsum board/stud partitions may be standard gypsum board, moisture resistant, or impact resistant. Use cement board in showers and other wet areas. Reinforce points where doorknobs can strike a wall and anchorage points for wall mounted equipment.

2. **Demountable or Removable Partitions**: Must be of materials allowed by code and shall be anchored firmly to the structure to carry their own weight as well as impact forces and seismic lateral forces. Sound Transmission Class (STC) rating and Impact Isolation Class (IIC) rating shall be in accordance with ASTM E 90 or ASTM E 413 for frequency data, and shall meet the requirements of the intended use in Part 3. The majority of the components and hardware must be provided by a single manufacturer and on the manufacturer's current GSA price list. The product must be included on the NAVFAC Selection Tool for Movable Walls.

3. **Glazed Partitions and Interior Windows**: Must be of the materials allowed by IBC, and must comply with fire and smoke separation requirements. Provide safety glazing and fire resistant rating where they are required.

## C1020 INTERIOR DOORS

1. **Wood Doors**: Stile and rail wood doors must be WDMA I.S.6A-01, premium or custom grade, heavy duty or extra heavy duty. Flush wood doors must be WDMA I.S.1A-04, premium or custom grade, heavy duty or extra heavy duty; or WDMA I.S.-97 (PC-5 5-ply particleboard core or SCLC-5 5-ply structural composite lumber core). Doors adjacent to paneling or millwork must comply with corresponding AWI millwork grade. Provide interior fire doors in rated walls.

2. **Steel doors**: Must be ANSI A 250.8, Level 1, (occasional use, low abuse types such as closet doors without locks); Level 2, (low use, moderate abuse types such as office/storeroom doors); Level 3, (moderate use, high abuse types such as BEQ sleeping room doors); Level 4, (high use, high abuse types such as corridors, stairways, assembly spaces, and main entry doors), with a physical performance level of 'A'. Maximum door undercut must not exceed 19 mm (3/4 inch).

3. **Sound Insulated Doors and Frames**: Utilize Sound Insulated Doors and Frames with sound control weatherstripping in rooms requiring wall assemblies to be sound insulated with a Sound Transmission Class (STC) rating as required. The STC rating for the door and frame assembly must be not less than the wall assembly STC rating.

4. **Aluminum Doors and Frames**: Provide swing-type aluminum doors and frames complete with framing members, transoms, side-lites, and accessories. Fabricate of ASTM B 221, Alloy 6063-TS for extrusions.

5. **Steel Door Frames**: ANSI A 250.8. Form frames with welded corners for installation in masonry partitions and knock-down field assembled corners for installation in metal stud and GWB partitions. Install frames in accordance with SDI 105. Form stops and beads

with 20 gauge steel.

Provide a minimum of three jamb anchors and base steel anchors per frame, zinc-coated or painted with rust-inhibitive paint, not lighter the 18 gauge. Secure frames to previously installed concrete or masonry with expansion bolts in accordance with SDI 11-F. Provide mortar infill of frames in masonry walls, and gypsum board compound infill at each jamb anchor in metal frame walls.

6. **Fire doors**: Provide in conformance with NFPA 80 an NFPA 105. Fire doors and frames must bear the label of UL, FM or WHI attesting to the rating required. Door and frame assemblies must be tested for conformance per NFPA 252 or UL 10B (for neutral pressure) or UL 10C (for positive pressure). Wood fire doors must also comply with ASTM E 152.

   Provide stainless steel astragals complying with NFPA 80 for fire-rated assemblies and NFPA 105 for smoke control assemblies.

7. **Interior Door Hardware**: Provide the services of a certified door hardware consultant to prepare the door hardware schedule. Unless otherwise noted, interior doors include latch, hinges, door stops and door silencers. Provide closers and kick plates for fire-rated, corridor, stairway and high-use non-residential doors.
   a. **Hinges** - BHMA A156.1, Grade 1, 108 x 108 mm (4 1/2 x 4 1/2 inches) with non-removable pin or anti-friction bearing hinges.
   b. **Locks and Latches** - For non-residential buildings use Series 1000, Operational Grade 1, Security Grade 2 for stairways, building entrances, corridors, assembly spaces, and other high use interior doors. Use Series 4000, Grade 1 for non-residential locations not using Series 1000 hardware. For residential buildings use Series 4000, Grade 2 for interior doors. a) Mortise Locks and Latches - BHMA A 156.13, Series 1000, Operation Grade 1, Security Grade 2. b) Bored Locks and Latches - BHMA A 156.2, Series 4000, Grade 1, or Grade 2.
   c. **Exit Devices** - BHMA A 156.3, Grade 1. Provide touch bars in lieu of conventional crossbars and arms. Use manufacturer's integral touch bars in aluminum storefront doors.
   d. **Card Key Access** - Provide card key type access units for specialized entries. Provide lithium battery powered, magnetic stripe keycard locksets that are ANSI/BHMA A156.13, Series 1000, Grade 1, mortise or ANSI/BHMA A156.2, Series 4000, Grade 1, cylindrical locks, tamper resistant, UL listed with 25 mm (1 inch) throw deadbolt, 19 mm (3/4-inch) throw latch bolt, auxiliary dead-locking latch, and 68.75 mm (2-3/4 inch) backset.

      Provide hardware keying compatible with the existing base-wide keying system. Replacement interchangeable cores must be compatible with the Best Lock system.
   e. **Key Cabinet**: Provide a Key Cabinet with 30% over capacity.

## C1030 SPECIALTIES

1. **Compartments, Cubicles, & Toilet Partitions**: FS A-A-60003. Provide toilet compartments at multi-fixture toilet rooms of Type I, Style B-Ceiling Hung, C-Overhead Braced, or F-Overhead braced-alcove. Reinforce panels to receive partition-mounted accessories. Urinal screens must be FS A-A-60003. Type III, Style A, floor supported and wall hung or Style D, wall hung. Wall hung urinal screens must be secured with

continuous flanges to urinal screen and wall. Steel and Plastic toilet partitions must have a recovered materials content of 20 to 30 percent. Chrome-plated or stainless steel door latches and coat hooks. Provide one coat hook per compartment door. Latches and hinges for handicapped compartments must comply with ABA Accessibility Standards.

2. **Toilet and Bath Accessories**: Provide toilet and bath accessories and install per ABA Accessibility Standards and manufacturers' requirements.

3. **Marker Boards and Tack Boards**: Provide porcelain enamel marker boards fused to a nominal 28 gauge steel sheet and tack boards of cork, with a tensile strength of at least 40 psi when tested according to ASTM F 152, with woven or vinyl covering.

4. **Signage**: All doors must have an identifying device. All handicap accessible facilities must utilize signage which meets current ABA Accessubility Standards requirements with regard to Braille, raised characters, finishes (contrast), size and mounting height. If room names are subject to frequent change, provide an interchangeable strip to be utilized to facilitate removal and replacement.

5. **Lockers**: Provide lockers to meet FS AA-L-00486 (Rev J), enameled steel with special bases.

6. **Shelving**: Provide steel shelving.

7. **Counters**: Provide solid plastic or plastic laminate counter tops and back splashes, AWI Custom grade.

8. **Cabinets**: Provide cabinetry and millwork items with associated accessories and hardware. Cabinetry must be AWI premium or custom grade and have concealed hinges with adjustable standards for shelves.

9. **Casework**: Provide all built-in premanufactured metal cabinetry for specialized functions such as laboratories, libraries, medical and dental facilities. Casework must comply with Mil Std 1691.

10. **Closets**: Provide premanufactured or millwork closets or prefabricated coat closets.

11. **Fire Extinguisher Cabinets**: Provide fire extinguisher cabinets. Size and locate fire extinguisher cabinets to encase extinguisher as required by NFPA 10 & 101. Fire extinguishers will be provided by the Customer.

12. **Firestopping Penetrations**: Provide all sleeves, caulking, and flashing for firestopping penetrations.

13. **Entrance Floor Grilles and Mats**: Provide recessed pan or surface floor mats at main entrance only or all building entrances.

14. **Ornamental Metal Work**: Provide ornamental metalwork.

15. **Other Interior Specialties**: Motorized projection screen must be wall or ceiling or above-ceiling mounting. Pull-down projection screens must be provided in lieu of motorized projection screens as approved by the Activity.

# C20 STAIR CONSTRUCTION

Provide interior and exterior stair construction. Stair design, materials and construction muost comply with IBC, and applicable codes and standards, including NFPA 101. Provide refuge area at top of stair in accordance with applicable Americans with Disability Act Design Guide requirements.

# C30 INTERIOR FINISHES

## C3010 WALL FINISHES

Unless otherwise noted in the RFP, primary wall finish is painted gypsum wall board. Provide fire resistive construction and finishes for fire separation between areas of the building in accordance with the latest adopted version of the IBC, and NFPA 101. Provide water resistant cementitious board at floors and walls of tubs and showers.

1. **Ceramic Tile**: Provide ceramic tile wall systems as defined in the Tile Council of America (TCA) handbook for ceramic tile installation and materials for the service requirements listed. Provide installation and materials in accordance with ANSI A108/A118 series standards, except do not use organic adhesives. Provide manufacturer's full range of colors and styles. Tile must be a minimum of one grade above base grade. Coordinate with ceramic bath accessories for modularity. Include all trim pieces, caps, stops, and returns to complete installation.

2. **Wallcovering**: Vinyl wallcovering must conform to ASTM F793, Category V Type II, 371 g to 624 g (13.1 to 22 ounces) total weight per square yard and width of 1370 mm (54 inches). Provide ASTM F793, Category VI, Type III, 624 g (22 ounces) and above to cover rough textured walls such as masonry. High performance fabric wallcovering must be woven or non-woven Class A, fire resistive material, a minimum of 1219 mm (48 inches) wide, with a soil repellent finish and a minimum of 340 g (12 ounces) per square yard exclusive of backing. "Tackable" wall covering must be "self-healing" from tack penetration through the covering into the substrate. Acoustical wallcovering must be textured, woven or non-woven, Class A fire resistive material with an acrylic backing, a minimum of 1219 mm (48 inches) wide and a minimum of 454 g (16 ounces) per square yard. The material must have an NRC rating of .15 on gypsum board in accordance with ASTM C423. Do not install wall covering on interior face of exterior walls.

## C3020 FLOOR FINISHES

Provide new flooring materials as required. All flooring materials, adhesives, finish coats, sealers and mortar materials must meet or exceed EPA requirements for toxic substance content restrictions and air quality requirements; and meet or exceed fire protection requirements, such as smoke and flame spread requirements. When laying broadloom carpets and resilient flooring, use the widest sheet materials available to avoid or minimize the number and extent of seams. When

seams are required, locate seams at infrequent traffic areas. Contractor is required to submit seam layout to Contracting Officer for approval prior to installation.

1. **Ceramic Tile**: Provide ceramic tile floor systems as defined in the Tile Council of America (TCA) handbook for ceramic tile installation and materials for the service requirements listed. Provide installation and materials in accordance with ANSI A108/A118 series standards, except do not use organic adhesives. Provide manufacturer's full range of colors and styles. Tile must be a minimum of one grade above base grade.Provide ceramic or porcelain tile with a minimum breaking strength of 202kg (300 pounds), ASTM C648, and a maximum absorption rate of 0.5%, ASTM C373. Tile must have a minimum coefficient of friction (wet and dry) of 0.6, ASTM C1028.

2. **Resilient Flooring**: Meet or exceed applicable ABA Accessibility Standards horizontal requirements. Install flooring per manufacturer's recommended methods and adhesives. Provide manufacturers full line of color and pattern selections, including multi-color patterns. Linoleum Sheet or Tile Flooring must be 2.5 mm (0.10 inch) gage; minimum 250 psi static load limit, ASTM F970; and with multi-color pattern and color extending throughout thickness, ASTM F2034, Type I. Resilient homogeneous vinyl sheet flooring must be commercial quality, 2.0 mm (0.080 inch) overall gage, with minimum 1.6 mm (.066 inch) thick wear layer, protective urethane finish, ASTM F1303, Type II, Grade 1, Class A. Resilient vinyl composition tile must be commercial grade, 3 mm (.125 inch) gage, ASTM F1066, Comp. 1, Class 2, through pattern.

3. **Carpet**: Carpet manufacturer and installer must be experienced, established and in good standing with the industry. Carpet, broadloom or tile must be installed per the Carpet & Rug Institute's recommendations. Carpet must be tufted, textured loop, cut/loop or tip sheared, a minimum of 26 oz. face weight, minimum density of 6600, 100% premium branded yarn- or solution-dyed, Type 6 or 6.6 continuous hollow filament nylon. Carpet must be multi-color and patterned for soil and wear hiding properties. Carpet must have high performance backing warranted against zippering, edge raveling and delamination, be anti-static and anti-microbial. Carpet must meet Flammability ratings; generate less than a 450 rating, ASTM E662; meet the Critical Radiant Flux Classification of not less than 0.45 W/sq. cm., ASTM E648. Where indicated in the room requirements, provide attached polyurethane cushion or separate polyurethane cushion for double stick pad installations, ASTM 1667 and ASTM 3676.

4. **Wall Base**: Provide porcelain or ceramic tile base for porcelain or ceramic tile floor. Provide solid, through color preformed rubber or vinyl base for carpeted/resilient flooring areas. Provide a sealant between base and floor finish in all wet areas.

## C3030 CEILING FINISHES

Unless otherwise noted in the room requirements, acoustical ceiling panels must be 24 inch by 24 inch, with a minimum light reflectance of .75, Class A, flame spread 25 or less and smoke development of 50 or less, ASTM E84. Acoustical ceiling panels must have minimum 60% recycled content and conform to ASTM E1264. Panels must have a factory-applied standard washable painted finish or Type IV with factory-applied plastic membrane-faced vinyl, Form: 1, 2 or 3. Provide square edge except as noted.

Unless otherwise noted in the room requirements for entrance lobby, restrooms and showers, provide a painted, suspended gypsum board ceiling. Exposed structural systems shall be painted.

## C3040 PAINTING

All painting and coating materials must be low VOC, comply with local air quality control laws and, regulations; and conform to the Master's Painters Institute's (MPI) *Architectural, Interior Systems Manual* and the MPI's *Maintenance and Repainting Manual* recommendations for paint systems, surface preparation and applications.

Provide minimum of one prime coat and two finish coats. The prime coat must not be combined with texture or other coatings. Seal and prime all surfaces to cover underlying stains or discoloration that may affect finish paint. Finish coats must provide full coverage of undercoats and substrates. All walls and ceilings in wet area must have semi-gloss paint. All wood or metal cased openings, door trims and casings, window trims and casing, and other finish trim must have semi-gloss paint. All interior walls and ceilings must have satin or eggshell finish. For previously painted surfaces, prime all surfaces to ensure compatibility of finish coats. Do not paint prefinished surfaces except as noted.

Provide Institutional Low Odor/Low VOC Latex paint or High Performance Architectural Latex systems as defined and approved by the MPI Systems Manual for the various substrates required to be painted.

**Paint/Color Selection**: Provide paint systems tested to "Detailed Performance Level" standard as defined by MPI. Paints must be readily available for purchase in standard colors.

# SECTION D. SERVICES

## D10 LED Video Display System

**See Part 3 Statement of Work and Concept Drawings for Specifications.**

## D20 PLUMBING

Provide plumbing fixtures, appliances, and equipment complete and usable as required by Part 3. All plumbing fixtures, appliances and equipment, piping, valves, accessories, and appurtenances must comply with International Plumbing Code (IPC) and all other applicable codes and standards, including energy, water conservation, and local activity regulations and standards. Provide all plumbing fixtures to meet current criteria of EPA Watersense program http://www.epa.gov/watersense

1. **Domestic Water**: Provide ASTM B 88 Type K or L copper tubing and fittings for pipe sizes 4 inches or smaller. Provide Type L tubing above ground with solder fittings. For buried piping, use Type K tubing with solder fittings, or Chlorinated polyvinyl chloride (CPVC) Plastic pipe, fittings, and solvent cement per ASTM D 2846/D 2846M for sizes 4 inches and smaller.

   Provide mineral fiber insulation with vapor barrier on domestic water (hot and cold) supply and recirculation piping. Provide re-circulating pumps or instantaneous water heaters for hot water systems with fixtures greater than 100 ft from hot water source. Provide water hammer arrestors per PDI STD WH-210 as required for rapid water shut off scenarios. All water valves except for fixture shut off valves must be ANSI B16.18 brass, full port ball type. All plumbing fixtures must have separate shut off valves. All piping must be concealed in walls, attic spaces, or in crawl spaces under floors. Provide access panels for valves behind walls. No under slab water piping is allowed. Fittings

for annealed copper tubing must conform to ANSI Bl6.22. Solder and flux must be lead free. Exposed exterior piping is prohibited unless otherwise not practical. Provide identification for piping and equipment.

2. **Wall Penetrations**: Piping which penetrates fire rated walls must be completely sealed to maintain fire resistance integrity as required by Code. Penetrations through walls that are not fire rated must be adequately supported and sealed. Pipe penetrations through exterior walls must be sleeved, caulked with weatherproof sealant and provided with finish trim.

## D2010 PLUMBING FIXTURES

Provide fixtures complete with fittings, and chromium-plated, or nickel-plated brass (polished bright or satin surface) trim. All fixtures, fittings, and trim, must be from the same manufacturer and must have the same finish. Access panels must be provided for all bathtubs and showers, except at exterior and party walls and where tub or showers are back to back. Provide cleanouts in accordance with the plumbing code. Rotate or extend cleanouts required to facilitate maintenance and clearing of blockage in waste piping.

1. **Faucets**: All faucets must be brass construction, washerless type, with seals and seats combined in one replaceable ceramic disk valve cartridge designed to be interchangeable with all lavatories, bathtubs and kitchen sinks, or having replaceable seals and seats removable either as a seat insert or as a part of a replaceable valve unit. Faucets provided must be of the same type and manufacturer throughout the facility, unless otherwise noted. Lavatory faucets must be U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled bathroom sink faucets.

2. **Water Closets**: Water closets must be in accordance with ANSI A112.19.2, with trim conforming to A112.19.5. Water closets must be vitreous china and have an elongated bowl with trip lever, unlined tank, close coupled siphon jet, floor outlet with wax gasket, flange and an anti-siphon float valve. Provide white closed front seat and cover for private toilets and open front seat cover for public facilities. Water consumption must be no greater than 1.6 gallon maximum per complete flushing cycle. Provide self-closing metering type flush valve on flush valve type water closets, unless electronic control is specified in Part 3. Maximum flush volume must not exceed 1.28 gallon per flush (GPF) (4.8 Liter per flush (LPF)) for single function flush valves. Dual function flush valves must provide a flush of 0.8 to 1.6 GPF (3.0 to 6.0 LPF) or 1.28 GPF (4.8 LPF) average for 2 low volume flushes and one high volume flush. Tank type water closets must be U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled toilets.

3. **Urinals**: Provide U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled ceramic-type urinals.

   Non Water Use Urinals: ASME A112.19.2, white vitreous china, wall-mounted, wall outlet, non-water using, integral drain line connection, with sealed replaceable cartridge or integral liquid seal trap insert. The urinal and trap assembly must maintain a sufficient barrier of a biodegradable immiscible liquid to provide the trap seal and inhibit the backflow of sewer gases. For urinals that use a replaceable cartridge, provide four additional cartridges for each urinal installed. Provide an additional quart of biodegradable liquid for each urinal installed. Provide ASME A112.6.1M concealed chair carriers. Installation and testing must be in accordance with the manufacturers'

recommendations. Drain lines that connect to the urinal outlet must not be made of copper tube or pipe. Urinal design and installation must be ABA Accessibility Standards compliant. Slope the sanitary sewer branch line for non-water use urinals a minimum of 1/4-inch per foot. Manufacturer ust provide an operating manual and on-site training for the proper care and maintenance of the urinal.

4. **Lavatories**: Unless otherwise specified by Part 3, lavatories must be integral to the vanity countertops. Each lavatory must be provided with hot and cold water tempered by means of a mixing valve or combination faucet.

5. **Sinks**: ASME/ANSI A112.19.3M sink, 20 gage stainless steel with integral mounting rim, minimum dimensions of 840 mm (33 inches) wide for two compartment or 560 mm (21 inches) wide for one compartment by 560 mm (21 inches) front to rear, with ledge back and undersides coated with sound dampening material.

6. **Water Coolers**: ARI 1010, wall-mounted, bubbler style, air-cooled condensing unit, 4.20 mL per second (4.0 gph) minimum capacity, stainless steel splash receptor, double wall heat exchanger, and all stainless steel cabinet. Install in accordance with the manufacturers instructions.

7. **Showers**: Provide U.S. Environmental Protection Agency (EPA) WatersenseÂ® certified and labeled showerheads connected to concealed pipe connected to copper alloy single control type mixing valve with front access integral screwdriver stops. Anchor the mixing valves and the pipe to each showerhead in wall to prevent movement. Unless otherwise specified by Part 3, showers must be supplied with water at a temperature no more than 110Â°F by means of a pressure balance, tempering or mixing valve.

8. **Service sinks**: ASME A112.19.1M, white enameled cast-iron or ASME A112.19.2M white vitreous china, wall mounted and floor supported by wall outlet cast-iron P-trap, minimum dimensions of 560 mm (22 inches) wide by 457 mm (18 inches) front to rear with 230 mm (9 inch) splashback, and stainless steel rim guard. Provide ASME A112.18.1M copper alloy back-mounted combination faucets with vacuum breaker and 20 mm (0.75 inch) external hose threads

9. **Mop Sinks**: Pre-cast terrazzo or ASME A112.19.2M white vitreous china floor-mounted mop sink, 914 mm x 914 mm x 305 mm (36 inches x 36 inches x 12 inches). Terrazzo must be made of marble chips cast in white Portland cement to a compressive strength of not less than 25 mPa (3625 PSI) 7 days after casting. Provide brass body drains with nickel bronze strainers cast integral with mop sink. Provide stainless steel rim guard for mop sink. Provide chrome-plated exposed hot and cold water faucets ASME A112.15.M wall-mounted copper alloy faucets swing spout with 20 mm (3/4 inch) hose connection, vacuum breaker, and pail hook. Provide mop hanger on wall above sink suitable for four mops.

10. **Laundry Sinks**: ANSI Z124.1, plastic, two compartment, minimum dimensions of 1016 mm wide by 533 mm (40 inches wide by 21 inches) front to rear, with floor-supported steel mounting frame secured to wall. Provide ASME A112.18.1M copper alloy centerset faucets, swing spout with aerator, and stainless steel drain outlets with cup strainers, and 40 mm (1.5 inch) adjustable P-trap with drain piping to vertical vent stack.

11. **Emergency Eyewash**: ANSI Z358.1, wall-mounted self-cleaning, non-clogging eye and face wash with quick opening, full-flow valves, stainless steel eye and face wash receptor. Provide copper alloy control valves. Pressure-compensated tempering valve is required for emergency fixtures, with leaving water temperature setpoint adjustable throughout the range 15.5 and 35 degrees C (60 to 95 degrees F) unless cold water supply meets temperature criteria.

## D2020 DOMESTIC WATER DISTRIBUTION

1. **Natural Gas or Propane Fired Storage Water Heaters**: Provide high efficiency storage type natural gas or propane fired water heaters per ANSI Z21.10.1 or ANSI Z21.10.3 meeting AGA requirements. For California, unit efficiency must meet or exceed that listed in the Title-24 Standards. Equipment efficiency must be in accordance with Energy Star or FEMP designated products list, http://energy.gov/eere/femp/find?product?categories?coveredefficiency?programs For gas water heaters use Energy Star labeled products. For products not listed by Energy Star or FEMP provide products with efficiency rated in the top 25% of available products.Water heaters must be equipped with glass-lined steel tanks, minimum R-15 polyurethane foam insulation, replaceable anodes, and adjustable range thermostat to allow hot water settings between 43 and 71 degrees C (110 and 160 degrees F). Water heater warranty must be a minimum of 10 years. Provide vent in accordance with NFPA 54. Provide low NOx burners that meet SCAQMD requirements. Install in accordance with manufacturer's instructions and the code. Where earthquake loads are applicable, water heater supports must be designed and installed for seismic forces in accordance with the International Building Code.

2. **Electric Water Heaters**: Provide electric water heaters with double heating element per UL 174. Unit efficiency must meet or exceed that listed for FEMP or ENERGYSTAR, or as listed in ASHRAE 90.1, whichever is greatest. Water heaters must be equipped with glass-lined steel tanks, high efficiency type, insulated with polyurethane foam insulation, replaceable anodes, and adjustable range thermostat to allow hot water settings between 43 and 71 degrees C.

3. **Domestic Water Boilers**: Boilers must be designed, tested, and installed per ASME CSD-1 (Controls and Safety Devices) and ASME BPVC (Boiler and Pressure Vessel Code). The boiler must meet the requirements of the UL 795, NFPA 85, ANSI Z83.3, and ASME CSD. Boilers must be certified by Naval Personnel or a contractor approved by the Contracting Officer.

## D2030 SANITARY WASTE & VENT

All new sewers below concrete slab must be solid core, minimum schedule 40 (DWV Type), ABS in accordance with ASTM 2661. New waste and vent piping above floor must be Schedule 40 PVC (DWV Type) ASTM 2665 or ABS ASTM 2661. Use of ABS plastic pipe must conform to the IBC and IPC. Provide pipe sizing, configurations, and cleanouts as required by the IPC. Cellular core plastic pipe is not allowed. SOVENT systems are not allowed.

## D2040 RAINWATER DRAINAGE

Below concrete slab must be solid core, minimum schedule 40 (DWV Type), ABS in accordance with ASTM 2661. Above floor must be cast iron hubless, or hub and spigot, or Schedule 40 PVC (DWV Type) ASTM 2665 or ABS ASTM 2661 as indicated in Part 3. Pipe materials must conform to the IBC and IPC. Provide pipe sizing, configurations, and cleanouts as required by applicable codes and standards.

## D2090 OTHER PLUMBING SYSTEMS

**Natural Gas Piping Systems:** Exterior above grade natural gas piping must be schedule 40 galvanized steel pipe with threaded fittings and joints. Underground exterior gas piping must be polyethylene pipe that satisfies the requirements of NFPA 54, ASTM D2513-01, and ASME B31-8. Provide warning tape at 12 inches below grade directly above buried gas pipes. Below grade metal gas piping is prohibited. Interior gas piping must be ASTM A 53, schedule 40 black steel with ASME B16.3 threaded fittings and joints. The use of semi-rigid tubing and flexible connectors for gas equipment and appliances is prohibited except for final connections to the equipment and appliances where they must be provided. Provide flexible gas connections in accordance with ANSI Z21.45 and not more than 40 inches long. Provide accessible gas service with shutoff valve for all equipment. Gas piping must conform to NFPA 54 and must be pressure tested in accordance therewith. Gas piping is considered a fragile utility in the content of UFC 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*.

## D30 HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEMS

The HVAC systems must comply with the latest edition of the International Mechanical Code, International Plumbing Code, ASHRAE Standards, National Electrical Code, National Fire Protection Association Publications, International Building Code, and California Title 24 or ASHRAE 90.1 energy efficiency standards (the more stringent of the two) unless otherwise specified in Part 3. All equipment, appliances, ductwork and accessories must comply with applicable codes and standards. For projects located in California, also comply with California Energy Commission (CEC) efficiency rating requirements as stated in Ca. AB 970 Title 24. The Contractor must certify that the installation is in conformance with the applicable codes and standards at the completion of the contract, prior to final invoice being processed and final acceptance. Provide Energy Star rated equipment where available. Provide equipment with performance in excess of Energy Star requirements where specified.

1. **Equipment Clearance**: Provide working space around all equipment. Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the manufacturer's recommendations. Where the word "should" is used in manufacturer's instructions, substitute the word "shall".

2. **Material and Equipment Qualifications**: All materials and equipment must have been in satisfactory commercial or industrial use for 2 years prior to the bid opening. The 2-year use must include applications of equipment and materials under similar circumstances and of similar size. The product must have been for sale on the commercial market through advertisements, manufacturer's catalogs, or brochures during the 2-year period.

3. **Motors**: Single-phase fractional-horsepower alternating-current motors must be high efficiency types corresponding to the applications listed in NEMA MG 11. Select

polyphase motors based on high efficiency characteristics relative to the applications as listed in NEMA MG 10. Additionally, all polyphase squirrel-cage medium induction motors with continuous ratings must meet or exceed energy efficient ratings per Table 12-10 of NEMA MG 1.& Provide controllers for 3-phase motors rated 0.75 kW (1 hp) and above with phase voltage monitors designed to protect motors from phase loss and over/under-voltage. Provide means to prevent automatic restart by a time adjustable restart relay. For packaged equipment, the manufacturer must provide controllers including the required monitors and timed restart. Provide reduced voltage starters for all motors 25 hp and larger.

4. **Equipment Support**: Provide housekeeping pads and vibration isolators under all floor-mounted equipment.

5. **Coatings**: When required in Part 3, provide chiller and air handler coils with copper tube/copper fin coil construction or immersion applied, baked phenolic or other approved coating.& Field applied coatings are not acceptable. Mechanical equipment casings must have painted finishes that pass a salt-spray test conducted per ASTM B117 for duration of at least 500 hours.

6. **Equipment Insulation**: Provide insulation on all chilled water equipment. Insulate hot and chilled water pumps and equipment as suitable for the temperature and service in rigid block, semi-rigid board, or flexible unicellular insulation to fit as closely as possible to equipment. Provide vapor retarder for chilled water applications.

7. **Acoustical considerations**: Noise levels in all areas served (supply, return, and exhaust) by a mechanical system must comply with ASHRAE Design Guidelines for HVAC related background sound in rooms as indicated in the lasted ASHRAE Fundamentals Handbook. The RC-rating method must be utilized.

## D3020 HEAT GENERATING SYSTEMS

1. **Boilers**: Boilers must be designed, tested, and installed per ASME CSD-1 (Controls and Safety Devices) and ASME BPVC (Boiler and Pressure Vessel Code). The boiler must meet the requirements of the UL 795, NFPA 85, ANSI Z83.3, and ASME CSD. Do not provide watertube boiler(s) for hydronic heating when size permits otherwise. Provide insulated boiler stack in accordance with manufacturer's recommendations and conform to NFPA 211 or provide pre-manufactured, multi-wall stacks complying with NFPA 54 or NFPA 58 and UL-listed. Low pressure boilers must be equipped with one or more pressure relieving devices, adjusted and sealed to discharge at a pressure not to exceed the maximum allowable working pressure of the boiler. The combined capacity of these devices must be such that with the fuel burning equipment installed and operating at maximum capacity, the pressure cannot rise more than 5 psi for steam boilers or 10% for water boilers above the maximum allowable working pressure of the boiler. Pressure relieving devices must be installed as required by the referenced code, be ASME stamped and rated, and must be installed with the valve spindle in the vertical position. Provide with manual lifting device for periodic testing. Boilers must comply with the local air quality regulations. Boilers must be equipped with pressure and temperature gauges as required for proper maintenance and operation. Thermometers must also be provided at the inlet and exit of the boiler, and be visible to the operator from the operating area.

2. **Furnaces**: UL-listed, factory assembled, self contained, forced circulation, furnace. Provide electronic ignition system. Unit must be design certified by AGA, GAMA efficiency rating certified, for gas furnaces and NFPA 31 for oil furnaces. Provide with cooling coil as necessary. Furnaces must comply with the local air quality regulations.

## D3030 COOLING GENERATING SYSTEMS

1. **Chillers**: Air-cooled chillers must be type indicated in Part 3 and meet the requirements of ARI 550/590-98. Provide control panel with the manufacturers' standard controls and protection circuits. If DDC system is required in project, provide a control interface for remote monitoring of the chiller's operating parameters, functions and alarms from the DDC control system central workstation. Provide complete start-up and operational testing of chiller equipment.

2. **Direct expansion systems**: Provide units factory assembled, designed, tested, with ducted air distribution and rated in accordance with ARI 210/240 or ARI 340/360. Refrigerant piping size must be per the manufacturer's recommendations. Insulate refrigerant piping suction lines and condensate drain.

3. **Refrigerants**: The use of Ozone Depleting Substances (ODS) as well as the qualifications and credentials of personnel servicing equipment that contains ODS is restricted. Refrigerants must have an Ozone Depletion Potential (ODP) of 0.0 with exception to R-123. The ODP must be in accordance with the "Montreal Protocol on Substances That Deplete the Ozone Layer", September 1987, as amended through 2000, sponsored by the United Nations Environment Programme.

4. **Coils**: If coatings are indicated in Part 3, provide with copper tube/copper fin construction or immersion applied, baked phenolic or other approved coating that passes the 3000 hour salt spray resistance test using ASTM B117 procedure. Field applied coatings are not acceptable.

5. **Variable Refrigerant Flow (VRF) systems**: The system must consist of VRF heat pump units, branch circuit controllers, VRF fan coil units, and associated controls. The system must be designed to provide the facility with simultaneous heating and cooling utilizing hot gas refrigerant or sub-cooled liquid. Provide system with heat recovery. The heat pump units must be inverter driven and must utilize R410A refrigerant. Total capacity of the branch controllers must be between 50% and 150% of the rated capacity. All refrigerant piping must be sized and installed in strict compliance with the manufacturer’s requirements. Refrigerant piping& must be clean, dry, and leak free. Prior to installation all refrigerant pipes must remain sealed. During installation and prior to filling, nitrogen must be used to maintain cleanliness and prevent oxidation and scaling while brazing.

## D3040 DISTRIBUTION SYSTEMS

1. **Ductwork**: All ductwork must be provided in accordance with the latest SMACNA

guidelines. Flexible duct lengths must not exceed 5 feet. Provide galvanized sheet metal ducts except for special exhaust systems and the following:

a. For fume hood exhaust, kitchen hood exhaust, and dishwasher exhaust, provide stainless steel ductwork.
b. For shower area exhausts, provide aluminum or stainless steel ductwork and sloped to drain provisions. After the shower exhaust is mixed with a volume of general exhaust air equal to 200% of the shower exhaust rate, standard galvanized construction may be used.
c. Internal insulation-lined ductwork is prohibited in all areas. For ductwork located exterior to the building, provide externally insulated systems with sheet metal cladding. Provide external thermal insulation for all ductwork. Insulate ductwork in concealed spaces with blanket flexible mineral fiber. Insulate ductwork in Mechanical Rooms and exposed locations with rigid mineral fiber insulation. Provide insulation with factory applied all-purpose jacket with integral vapor retarder. In exposed locations, provide a jacket with white surface suitable for painting. Flame spread/smoke developed rating for all insulation shall not exceed 25/50. Minimum insulation thickness must be the minimum thickness required by ASHRAE 90.1. Insulate the backs of all supply air diffusers with blanket flexible mineral fiber insulation.
d. The ductwork must be sealed with an approved duct sealer and in accordance with SMACNA standards. If leakage testing is indicated in part 3, the duct leakage must not exceed 2%.
e. Provide manual volume dampers in each branch take-off from the main duct to control air quantity. Dampers must conform to SMACNA DCS. Dampers must be installed in accessible locations.

2. **Fire Dampers**: Fire dampers must be rated per UL 555. Fire dampers must be dynamic type rated for closure against a moving airstream. Provide fire dampers that do not intrude into the air stream when in the open position.

3. **Piping**:
a. Provide insulated, steel piping for sizes 4 inches and larger and insulated copper piping for sizes less than 4 inches for water supply and return piping to serve the HVAC equipment throughout the facility.
b. Provide system flushing and start-up for water systems.
c. Oil piping: ANSI/ASTM A53 or A106 piping with associated ASME fittings or ASTM B88, type L or M copper tubing with ASME B16.26 flared fittings or compression type fittings.

4. **Exhaust Fans And Ducts**:
a. **General:** Exhaust fans must be sized to move the volume of air required to comply with International Mechanical Code for the areas requiring exhaust.
b. **Bathroom, restrooms and Utility Room Exhaust Fans:** Exhaust fans must be sized to give not less than 10 air changes per hour in the space to be ventilated. Fans must have a maximum sound level of 3 sones and be separately switched from light.
c. **Flues:** When required, provide new Type B, U.L. listed, double wall flues. Flue installation must be in accordance with the International Mechanical Code.

5. **Air handling units**: Modular construction, double wall air handling units with minimum of 25 mm (1 inch) casing insulation. Provide ARI 430 certified fans and ARI certified coils. Provide stainless steel, positive draining condensate drain pan. For 100% outside air units provide capability for cooling, heating, dehumidification and reheat.

## D3050 TERMINAL AND PACKAGE UNITS

1. **Unit ventilators**: Unit must be factory assembled unit ventilator capable of up to 100% outdoor air ventilation and UL-listed.

2. **Unit heaters**: ANSI Z83.8 and AGA label. Equip each heater with individually adjustable package discharge louver. Provide with thermostat.

3. **Fan coil units**: UL-Listed, factory assembled and tested fan coils, ARI 440 and ARI certified.

4. **Packaged units**:

   Factory packaged rooftop units in accordance with ARI 430 and suitable for outdoor installation. Provide with manufacturer's roof curb.

   Packaged through wall units must be factory assembled air conditioner or heat pump and rated in accordance with ARI 310 or ARI 380 and ARI certified. Unit must include heat and operate under the standard unit controls. Units must be designed to allow ease of maintenance by use of a wall sleeve. Units must have internal condensate removal (condensate must not be externally drained).

## D3060 CONTROLS AND INSTRUMENTATION

1. **General**: Provide stand-alone or distributed direct digital controls, as required in Part 3.

2. **Distributed Direct Digital Controls (DDC)**: DDC hardware must be UL-916 rated. Use controllers in a distributed control manner. Controllers must be stand alone with an internal clock and modem. The total number of I/O hardware points shall not exceed 48 in any controller. Provide sufficient memory for each controller to support required control, communication, trends, alarms, and messages. Provide communications ports for controller to controller interface and on-site interface. When providing a partial DDC system or connecting to an existing DDC system, provide a laptop computer with all necessary software for user interface.

## D3070 SYSTEMS TESTING AND BALANCING

All HVAC water and air systems, both new and retrofit, must be TABed in accordance with NEBB or AABC standards. As part of any TAB air balancing effort, acceptable air quantity variations must be 0 to -10% for exhaust systems and 0 to +10% for supply air systems.

# D40 FIRE PROTECTION

Provide new or extend existing Automatic Fire Sprinkler systems, Smoke and Heat detection

systems, Fire Alarm and Mass Notification systems as required. The work for fire sprinklers, fire alarm, smoke detection, and heat detection must be provided by contractors licensed to perform such work.

**Project Requirements:** Prior to the start of design, the Designer of Record must meet with the Government's Fire Protection Engineer to determine the extent and types of fire protection required**.**

## D4010 FIRE ALARM AND DETECTION

Fire alarm system includes manual stations, system smoke detectors, duct smoke detectors, heat detectors, audio/visual alarms, connection to basewide fire alarm monitoring, electrical supervision of fire pump controllers, and electrical supervision of all sprinkler system alarm and supervisory devices as required.

## D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

The water supply information is provided for bidding purposes. The design point of connection to existing water supply will require the approval of the Contracting Officer. The FPE DOR must conduct additional flow tests after contract award prior to any design submissions. Tests must be coordinated through the Contracting Officer.

## D4040 SPRINKLERS

Areas subject to freezing must be provided with a dry pipe system.

# D50 ELECTRICAL

## D5010 ELECTRICAL SERVICE & DISTRIBUTION

Provide interior electrical wiring, fixtures, switches, outlets, and apparatus in accordance with applicable codes and standards. The electrical system must conform to NFPA 70. Power and lighting circuits must be separate.

1. **Wiring**: All wiring must be in electrical metal conduits and must be concealed except in the industrial spaces and at locations indicated in Part 3. No conductors are permitted to be smaller than No. 12 AWG, copper wires. Wiring below slab or underground must be in Schedule 40 PVC with ground wire. Exposed conduits on the exterior of the building are prohibited. Provide a ground conductor for each circuit; conduits must not be used as the sole means of grounding. Cable assemblies Types AC, MC, or MI and flat conductors may only be used in locations allowed by UFC 3-520-01. Circuit breakers must be bolt-on type. Series rated circuit breakers and fusible panelboards must not be used.

2. **Outlet Circuits** Lighting and convenience outlets must be on separate circuits. Install GFI protected receptacles at all wet or damp areas. Location of outlets must be as required by applicable codes and standards. Provide extra outlets for maintenance and service staffs in spaces such as corridors, hallways and other public spaces as identified below. All exterior outlets must be on separate circuits, be GFI protected, and equipped with a cover to prevent accidental water infiltration into the devices.

In addition to the location requirements specified by NFPA 70, locate general purpose and dedicated outlets in accordance with the following:

a. Mechanical equipment: Provide receptacle within 7.6 m (25 ft) of mechanical equipment on the interior and exterior of buildings.

b. Office, staff support spaces, and other workstation locations: One receptacle for each workstation with a minimum of one for every 3050 mm (10 ft) of wall space. When less than 3500 mm (10 ft) of wall at the floor line, provide a minimum of two receptacles spaced appropriately to anticipate furniture relocations. Limit loads to a maximum of four workstations per 20 amp circuit. See Appendix C, Table C1 for workstation load data.

c. Conference rooms and training rooms: One for every 3.6 m (12 ft) of wall space at the floor line. Ensure one receptacle is located next to each voice/data outlet. Provide one receptacle above the ceiling to support video projection device. Extend circuit to wall location for connection to motorized screen. When it is expected that a conference room table will be specifically dedicated to floor space in a conference room, locate a floor-mounted receptacle under the table. This receptacle may be part of combination power/communications outlet.

d. Provide power outlets throughout the building to serve all proposed equipment, including government furnished equipment, and allow for future reconfiguration of equipment layout. Provide power connections to all ancillary office equipment such as printers, faxes, plotters, and shredders. Provide dedicated circuits where warranted.

e. In each telecommunications room provide a dedicated 20 amp circuit with a receptacle adjacent to each rack or backboard for each of the following:

    1) CCTV for training systems

    2) CCSTV for security systems

    3) CATV

    4) Voice systems

    5) Data systems.

f. Provide dedicated receptacles as required throughout the facility for television monitors. These outlets will typically be located at the ceiling level for wall mounted television monitors.

g. Provide dedicated receptacles as required throughout the facility for tape players and disc players.

h. Corridors: One every 15 m (50 ft) maximum with a minimum of one per corridor.

i. Janitor's closet and toilet rooms: One GFI receptacle per closet. Provide GFI receptacles at counter height for each counter in toilets such that there is a minimum of one outlet for each two sinks.

j. Space with counter tops: One for every 1.200 m (4 ft) of countertop, with a minimum of one outlet. Provide GFI protection of outlets when located within 1.8 m (6 ft) of plumbing fixtures.

k. Building exterior: One for each wall, GFI protected and weatherproof.

l. Kitchen non-residential: One for each 3.05 m (10 ft) of wall space at the floor line. Provide GFI protection when located within 1.8 m (6 ft) of plumbing fixture.

m. Child occupied spaces (including toilets): One for every 3.6 m (12 ft) of wall space. Use child safety type such as those that require rotating an integral surface cover plate to access current. Removable caps and plugs are not acceptable.

n. All other rooms: One for every 7.6 m (25 ft) of wall space at the floor line. When 7.6 m (25 ft) or less of wall at the floor line exists in a room, provide a minimum of two receptacles spaced appropriately to anticipate furniture relocations.

o. Special purpose receptacles: Designer of Record must coordinate with the user to provide any special purpose outlets required. Provide outlets to allow connection of equipment in special use rooms.

3. **Service Entrance Equipment**: When a switchboard or switchgear is required, the Designer of Record must utilize UFGS Section 26 23 00, *Low Voltage Switchgear or UFGS 26 24 13 Switchboards*, for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

## D5020 BRANCH WIRING

1. **Lighting Fixtures**: All lighting fixtures must be energy conservation compact fluorescent or Light Emitting Diode (LED)except where indicated by Part 3.
   a. **Fixtures for Administrative and Commercial Spaces**: For offices, commercial and administrative spaces and facilities provide high efficiency ballast, and instant or rapid start recessed fluorescent fixtures or LED fixtures.
   b. **Three-Way and Four-Way Switches**: Provide three-way or four-way switching of light fixtures as necessary to facilitate movement between adjacent spaces to allow efficient energy management.

2. **Exterior Lighting Fixtures for Large Open Areas**: Exterior lighting fixtures for large open areas such as parking lots, streets and playgrounds must be energy efficient High-Intensity Discharge (HID) or compact fluorescent fixtures and must comply with local regulations regarding low lighting levels to avoid light pollution.
   a. Photocell Overriding Switch: Provide photocell-overriding switch for all outdoor light fixtures.

## D5030 COMMUNICATIONS & SECURITY

1. **Telecommunications Systems**: Provide a horizontal distribution system including, but not necessarily limited to, all wiring, pathway systems, connector blocks, protectors for all copper service entrance pairs, terminators for all fiber optic cables, outlet boxes, telephone jacks, and data jacks cover plates in accordance with EIA/TIA standards. Provide Category 6 UTP telephone premise wiring where telephones are required.

2. **Public Address Systems**: Provide a Public Address system with speakers in all locations identified in Part 3.

3. **Intercommunications Systems**: Provide an Intercommunication System to allow two-way communications between all locations identified in Part 3.

4. **Television Systems**: Provide television systems to the extent specified in Part 3. Coordinate with the local Cable Company, Local users and Local Authority at the Activity for other specific requirements. The interior cable outlets and wiring must be complete and ready for use. Wiring must not be run exposed on any surface of the building.

5. **Security Systems**: Provide an Intrusion Detection System (IDS) to sense all perimeter doors and windows and the interior volume in at least two locations. System must have a minimum 90-minute battery back-up and annunciate both locally and at the Base Security Office via a telephone dialer. System must have entry/exit timer. Provide wall mounted keypad control at two locations.

## D5090 OTHER ELECTRICAL SERVICES

1. **Surge Protective Device (SPD)**: Provide SPD in accordance with UFC 3-501-01, *Electrical Engineering*.

2. **Variable Frequency Drives**: When variable frequency drives are required, the Designer of Record must utilize UFGS Section 26 29 23 for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

3. **Emergency Generators**: When an emergency generator is required, the Designer of Record must utilize UFGS Section 26 32 15.00 for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

4. **Automatic Transfer and Bypass/Isolation Switches**: When an Automatic Transfer Switch is required, the Designer of Record must utilize UFGS Section 26 36 23 for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

5. **Uninterruptible Power Supply (UPS) System:** When a UPS system is required, the Designer of Record must utilize UFGS Section 26 33 53 and must submit the edited specification section as a part of the design submittal for the project.

6. **400 Hertz Systems**: The Designer of Record must utilize UFGS Section 26 35 43 for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

7. **Lightning Protection**: When lightning protection is required, the Designer of Record must utilize UFGS Section 26 41 00 for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

8. **Building Photovoltaic System:** When a PV system is required, the Designer of Record must utilize UFGS Section 26 31 00 for the project specification, and must submit the edited specification section as part of the design submittal for the project.

# SECTION E. EQUIPMENT AND FURNISHINGS

## E10 EQUIPMENT

**Equipment and Appliances:** Provide appliances and equipment to fulfill the work for Part 3.

Whenever possible, all appliances and equipment provided for the facilities in the contract must be by the same manufacturer and must be the current model available at the time of proposals. Discontinued makes and models are prohibited. All appliances and equipment must comply with applicable Energy Star efficiency rating requirements and must be rated as high efficiency models. Appliances and equipment on California projects must comply with California Title 24 and be rated as high efficiency. All appliances must be of the same manufacturer and shall be the same, or similar in color. Submit catalog information for approval by the Contracting Officer prior to purchasing, delivery and installation of the appliances at the job site. Equipment and appliances such as dishwashers, ice machines with drains, garbage disposers, and ovens/ranges are not considered FF&E.

# E20 FURNISHINGS

## E20 1.1 FURNISHINGS

The Contractor must have an Interior Designer, certified by the National Council for Interior Design Qualification (NCIDQ) or a state and/or jurisdiction Certified, Registered, or Licensed Interior Designer prepare both the FF&E and the SID Package and participate in any design charettes to develop the building floor plan. As required, the Contractor must obtain services of equipment specialists to specify the audiovisual, shop, or specialty equipment. The Interior Designer and any specialists must not be affiliated with any furniture dealership/vendor or manufacturer. The Government Interior Designer reserves the right to approve/disapprove the qualifications of the Contractor's Interior Designer.

Systems furnishings installers must be the systems furniture manufacturer's approved dealer of record. In addition, installation dealers must be located within a 100 mile radius of the project site unless approved by the government Interior Designer.

For renovation projects, contractor to re-purpose/recycle existing furniture if not relocated by the government. Contractor to provide verification that the existing furniture was not disposed of at the landfill.

**WINDOW TREATMENTS**

Provide interior window coverings, associated hardware and controls at each exterior window and at any interior view window where privacy may be required. Refer to the Project Program for size, pattern and style of window treatments. At a minimum, functional window coverings are required on all projects.

Provide energy efficient solar shading systems for exterior windows. The system shall maintain visibility while reducing glare, solar heat gain during the summer and heat loss during the winter. Openness configuration shall be no more than 5% for most areas. The system fabrics and components must be dimensionally stable and must be manufactured to withstand fading, fire, mildew, and soiling. Product must have a minimum 10 year commercial warranty.

**AUDITORIUM, LECTURE AND CLASSROOM SEATING**

The system must permit the standards to be installed on radial lines from a common center for which concentric circles are determined with each row of units utilizing common middle standards. Standards in each row must be placed laterally so the aisle-end standards will be in alignment as indicated on seating layout drawing. The angle of inclination of backs must be adjusted for variations in sightlines. Mechanical attachment of components must be of sufficient flexibility so that when permanently assembled they will compensate for the changing dimensions laterally between standards caused by convergence toward the center. Seat and back attachments must

absorb inaccuracies in lateral spacing of standards at point of attachment caused by unevenness of floor. Varying lateral dimensions of backs and seats must be in accordance with approved seating layout. Minimum width of seating unit must be 20 inches and may be used only to complete a specific row dimension.

**TABLES FOR AUDITORIUM, LECTURE AND CLASSROOMS**

Provide worksurfaces mounted to floor standards of tubular steel, sheet steel, or cast iron. The standards must be formed to fit the floor incline so that the standards will be vertical. The feet must be formed to eliminate tripping hazards and must have holes for bolt attachment to the floor. Provide riser standards, cantilevered standards and aisle and end standards as required. Provide communications, data and power routing as required. Provide a high-pressure plastic laminate over medium density particleboard for the worksurfaces with coordinating vinyl or resin edge detail.

**MOVABLE FURNISHINGS**

Furnishings, Fixtures, and Equipment (FF&E) includes furniture, shop equipment, audiovisual equipment, and specialty equipment. Weapon racks, drying cages, and lockers are not considered FF&E. FF&E must be fully integrated with the building systems and finishes. FF&E may also include specialty items for which the customer activity will be responsible for specifying.

Design and provide as required FF&E for all areas as developed during client programming. Design an FF&E package and prepare supporting plans and procurement data in accordance with the general interior design requirements in UFC 3-120-10.

**FF&E PACKAGE**

Design and provide a fully usable and complete facility to include a FF&E movable furnishings package from Government supply sources according to Federal Acquisition Regulations The FF&E will include, but not limited to, systems and modular furniture, training and conference furniture, seating, tables, artwork, decorative window covering, specialty furniture and equipment, dormitory room furnishings, and accessories. NAVSUP Blanket Purchase Agreements (BPA) must be used. The government will provide separate funding for the FF&E package. Construction funds will not be used. The FF&E Package must include shipping, freight, handling, installation and the HAR percentage as applied to the final FF&E total cost.

**Authorization**

When the purchase of the FF&E is an upfront requirement as an option to award at a later date, the government will provide separate funding for procurement of the FF&E package. Upon receipt of required funding, the Contractor must be authorized by the Contracting Officer as a planned line item modification to procure all FF&E using predominately negotiated price schedules from GSA or other Federal contracts. The amount of the modification will be the actual cost of these items from the Federal price schedules or NAVSUP BPAs, including any freight and installation charges from the furniture supplier as well as the contractor's FF&E Handling and Administration Rate (HAR). The HAR includes all of the prime contractor's effort related to storage, project management, handling, administration of subcontractors, and all other associated costs and profit for the procurement of FF&E. The prime contractor will propose in the contract/task order solicitation the FF&E HAR. The contractor's proposed HAR may not exceed 5% of the total FF&E costs, as noted on the bid schedule. No other charges, expenses, fees, or markups will be authorized.

The government Interior Designer will approve the final FF&E submittal. The FF&E

package will be presented to the Contracting Officer and the Contractor must provide the FF&E exactly as specified and approved.

The Contractor will receive a letter of authorization from the Contracting Officer citing the name of the furniture dealer and other information to use when accessing the government supply sources. FF&E items are subject to the Trade Agreement Act and Buy American Act.

**PURCHASE AND INSTALLATION**

The Contractor must coordinate the building completion date with the installation dealer specified in the FF&E Package. The Contractor or contractor's representative is responsible for the following: issuing purchase orders, receiving acknowledgements, sending copies of purchase orders to the installation dealer(s) specified in the FF&E package, and providing necessary deposits to furniture manufacturers.

The FF&E installation dealer(s) is responsible for the following: Receiving and installing all FF&E specified in the FF&E package, coordinating delivery and installation with the Contractor, inspecting for damage, providing delivery receipts to the Contractor, filing necessary freight claims, hanging artwork, bulletin boards, etc., removing packaging material, cleaning up the site upon completion, and adhering to Contractor's safety requirements.

**Use of GSA Schedules and Blanket Purchase Agreements (BPAs)**

The prime contractor or FF&E dealer will be authorized to purchase supplies or services from the Navy Furniture BPAs for FF&E requirements under the terms of the contract. The Contractor will receive a letter of authorization from the contracting officer citing the name of the furniture dealer and other information to use when accessing the government supply sources or BPAs.

**Deposits**

The Contractor should anticipate providing a deposit of between 30% to 50% of the furniture costs when placing their order.

The Contractor must also anticipate possible manufacturer price increases. Recommend ordering FF&E product once funds are received to avoid incurring additional costs. Delayed production and delivery dates can be noted at the time of order placement to coincide with building completion dates. Any costs incurred due to manufacturer price increases will be the burden of the contractor.

**Davis Bacon Wages**

Davis Bacon Wages do not apply to the FF&E installer from the government supply sources. The workforce for the FF&E installation and delivery shall be separate and distinct from the labor workforce performing under the construction contract.

**Sales Tax**

Exemptions for certain State or Local taxes may be available to the contractor and/or its subcontractors. The contractor must take maximum advantage of all exemptions, including obtaining a resale permit, from State and Local taxation authorities whether available to it directly or available to the contractor based on an exemption afforded the government. The responsibility for paying applicable taxes rests with the contractor. State

and local taxes applicable to the FF&E line will be included with the subcontractor's quote, if applicable. Any items purchased as building materials such as carpet are taxable.

**Bonds**

FF&E line item is not considered construction and the prime contractor shall not be required to secure any additional bond for the award of the FF&E line item unless otherwise indicated in the RFP. If any additional bond is required for the FF&E line item it is to be included in the prime contractor's FF&E HAR.

Unique item identification and valuation is a system of marking and valuing items delivered to DoD that enhances logistics, contracting, and financial business transactions. The IUID policy is mandatory for all DoD contracts that require the delivery of items. An item is a single article or a single unit formed by a grouping of subassemblies, components or constituent parts The contractor must provide DoD Unique item identification, valuation and delivery of data for all required FF&E items for which the government's unit acquisition cost is $5,000 or more.

**Buy American and Trade Agreement Acts**

All supplies under the FF&E line item are subject to the Buy American Act and Trade Agreement Act as indicated in the project contract. The GSA contracts and NAVSUP Blanket Purchase Agreements are required to comply with the Buy American Act and Trade Agreement Act

**Small Business Requirements**

The FF&E is subject to the Contractor's Small Business Goals however the government requires the furniture be purchased from NAVSUP Blanket Purchase Agreements (BPA). Most manufacturers on the Office Furniture BPA are large business and most manufacturers on the Dorm and Quarters BPA are small business. Installation dealers are small business. Under the terms of the BPA, the FF&E must be ordered directly through the GSA manufacturer. Using pass-through companies to achieve Small Business Goals will not provide the Contractor credit unless they manufacturer 20% or provide 50% of the service purchased. The government will not incur additional costs to use small business.

**Installation**

The FF&E package includes the installation of all furniture and furnishings as specified in the FF&E package. The installation dealer specified in the FF&E package will receive, store, if required, transport to the project site, off load, inside deliver, unpack, assemble, place/install, clean, if required, and dispose of all the trash for all furniture and furnishings. The Contractor's Interior Designer will be responsible for specifying installation services and warehousing, as required, for all collateral equipment. It is the Contractor's responsibility to coordinate the building completion, occupancy, and furniture installation dates with the installation dealer specified in the FF&E package. Any costs associated with storing or delaying furniture shipments is the responsibility of the construction contractor.

**Installation Warranty**

All movable furnishings must be installed in accordance with the manufacturer's instructions and warranty requirements. All movable furnishings must be level and aligned and all doors, drawers and accessories must be level and aligned to open, close and otherwise operate smoothly and securely. All systems furniture must be installed by the

systems furniture manufacturer's dealer of record and not the general Contractor. The Contractor must repair, to the customer's satisfaction, any/all damage to any facility finish that is a result of the furniture installation and correct all punch list items for the furniture/furnishings.

**Ordering Documentation**

Two copies of all ordering documentation must be provided to the contracting officer including Factory Order number (FO) and warranty information.

**Post Award Changes**

After award of the FF&E line item modification, any request to change the FF&E items must be submitted on the Contracting Officer. The FF&E modification has been accepted, priced, and negotiated based on specific line items as detailed in the final package. Those items have been agreed to considering color, specific type and quality of material, price, sustainability, life cycle, and dealership service. The Government will expect and require the contractor to provide exactly those items. Should changes become necessary, careful consideration is required to ensure that equivalent quality, price and other aspects of the item is maintained. Otherwise, price adjustments must be negotiated. The Contracting Officer will obtain approval from the Government Interior Designer/Collateral Equipment Manager in consultation with the client for any changes to the FF&E.

Post award FF&E manufacturer's price increases are the responsibility of the Contractor and must not be transferred to the government. Recommend ordering FF&E product once funds are received to avoid incurring additional costs. Delayed production and delivery dates can be noted at the time of order placement to coincide with building completion dates.

**BEST VALUE DETERMINATION**

A best value determination (BVD) is required by FAR 8.404 when placing orders against Federal Supply Schedules for the selection of furniture and furnishings. A BVD must also be provided for FF&E installation services. Best Value is defined in FAR 2.101 as ensuring that the order to be placed under a Federal Supply Schedule results in the lowest overall cost alternative (considering price, special features, administrative costs and client’s needs) to meet the government's needs.

The Contractor's Interior Designer is responsible for the following written BVD justifications:

$3,000 or less: For any procurement in the FF&E package with a value of $3,000 or less, the interior designer may utilize any BPA holder. If the BPA holders cannot supply the item, then any other manufacturer may be utilized.

Greater than $3,000 and $150,000 or less: for any procurement in the FF&E package with a value greater than $3,000 and $150,000 or less, the contractor's interior designer shall always review pricing from at least three manufacturers as well as UNICOR. In addition to the review of published list prices, the contractor's interior designer must confirm the pricing with the vendor. Manufacturer's quotes are NOT required. The BVD form must be completed and submitted for all FF&E procurements greater than $3,000 and $150,000 or less.

Greater than $150,000: The contractor's interior designer shall solicit proposals from all BPA holders under the applicable group for FF&E procurements greater than $150,000. UNICOR must always be solicited. The contractor's interior designer shall develop performance criteria and project requirements based on a generic design for the BPA holders and UNICOR to develop a

price and performance proposal. The BVD form must be completed and submitted for all FF&E procurements greater than $150,000 and manufacturer's quotes and a summary of all proposals must be attached.

Federal Prison Industries (UNICOR) must be considered as part of all BVDs. This must be done by sending an email with the requirements and evaluation criteria if they are not comparable in one or more areas of price, quality, and time of delivery, the designer can specify product under NAVSUP BPA or GSA schedule.

The best value determination must address issues such as space planning; human factors data related to anthropometrics (reach, clearance, adjustability), space, and acoustics; ergonomics; product quality (including construction and materials); sustainability features, product warranties; history of the product and/or manufacturer; ability to service products through dealers or others within a certain geographical range of the project; price (including freight); aesthetics; appropriateness; and lighting, power and telecommunications systems management and/or coordination as related to the facility (when applicable); and other project specific factors as identified and/or required. Emphasis must be to create a fully integrated design solution by providing quality products to meet the functional needs of the customer. Customer preferences must be considered. The focus must be on the best overall value. Use the GSA Best Value Determination forms provided in Part 6 of this RFP as guidelines for information to be provided.

# SECTION F. SPECIAL CONSTRUCTION AND DEMOLITION

# F10 SPECIAL CONSTRUCTION AND DEMOLITION

## F1010 SPECIAL STRUCTURES

1. Pre-Engineered Buildings

Provide the design and installation in accordance with the UFC 3-101-01, *Architecture* and UFC 3-301-01, *Structural Engineering.*

a. **Design Requirements -** The metal building manufacturer must be accredited by the International Accreditation Services (IAS) AC472. The Metal Building System design must be in accordance with the Metal Building Manufacturers Association (MBMA) *Metal Building SystemsManual*. All structural design must comply with the provisions of Section B10, "Superstructures", above.

b. **Additional Roof Design Requirements -** Roof Decking - In addition to any other load requirements, roof decking must be designed to support a 91 kg (200-pound) concentrated load at mid-span on a 300 mm (12-inch) wide section of deck.

c. **Deflection -** the maximum deflection for -

1) Structural Members - main framing members must be L/240.

2) Purlins and Roof Panels: The deflection due to live, snow, or wind must not exceed L/180.

3) For buildings with masonry infill, limit frame sway to L/600th of building eave height.

4) Wall Panels - Maximum deflection of wall panels due to wind loads must be limited to L/120th of their respective spans except that when interior finishes are

used the maximum allowable deflection must be limited to L/180th of their respective spans.

d. **Wall and Roof materials -**

1) Alum/Zinc-Coated Steel Sheet: ASTM A792/ A792M, AZ 55.

2) Aluminum Sheet: Alloy 3004 Alclad conforming to ASTM B209.

3) Framing and Structural Members - Steel - ASTM A992 / A992M, ASTM A529/ A529M, ASTM A572/ A572M, or ASTM A588/ A588M.

4) Framing and Structural Members, Aluminum: ASTM B221 or ASTM C308

e. **Structural Tube:** ASTM A500 or ASTM B221.

f. **Fasteners -** Must be compatible with the materials they are fastening to, be gasketed when exposed to weather to prevent leaks, and provide both shear and tensile strengths not less than 3,336 N (750 pounds) per fastener. The main fastening system must use concealed fasteners, however, when exposed fasteners are needed, color fasteners must be color coated to match wall/roof panels.

g. **Light Transmitting Roof Panels (Non-Insulated):** ASTM D3841, Type II, Grade 1.

h. **Insulation:** Blanket-type fiberglass insulation with a factory applied facing on one side and having a permeance rating of 0.05 or less in accordance with ASTM E96. Flame Spread Rating 75 or less, and a Smoke Developed Rating of 150 or less when tested in accordance with ASTM E84.

i. **Panel Finish -** Factory Color Finish - Provide factory applied baked coatings to the exterior and interior of metal wall panels and metal accessories. Provide exterior primer standard with panel manufacturer but not less than 0.8 mil dry film thickness (DFT). Provide PVDF exterior finish top coat of 70 percent inorganic pigments with 0.8 mil DFT. Provide factory-applied clear finish over the color topcoat and edge coating for projects within 91 meters of a water shoreline or industrial environments. Field apply 70 percent PVDF clear coat to unfinished panel edges or field cut panels. Interior finish exposed to sun or rain must be the same coating and DFT as the exterior coating. Interior finish protected from sun or rain exposure must receive 1.0 mil DFT coating of siliconized polyester (SMP) resin coating with organic or blended pigments and manufacturer's standard primer.

# F20 SELECTIVE BUILDING DEMOLITION

In general terms, demolition work vmust include the removal and effective management and disposition of existing construction and or structures. Take care to prevent damage to existing utilities and construction that are not scheduled for demolition. If damage occurs, make repairs to the satisfaction of the Contracting Officer and at no cost to the Government. Comply with local Activity and Installation local requirements regarding demolition and removal. Unless otherwise specified in Part 3, all demolished materials and equipment must be removed from government property in accordance with applicable laws and regulations, including local Activity or Installation regulations. Selling of demolished or salvaged materials and equipment on government properties is prohibited.

**Demolition Plan**: No demolition work is permitted to take place until a Demolition Plan has been submitted to, and approved by, the Contracting Officer. The Plans must take into consideration, and indicate method of removal, disposition, and abatement of environmentally hazardous materials. Demolition, disposition, and abatement of hazardous materials must comply with all applicable Local, State, and Federal regulations and laws. If destructive investigation is to occur,

the Contracting Officer shall approve a Destructive Investigation Plan.

When hazardous materials such as asbestos, lead paint, PCB and other hazardous materials are involved in the performance of the work, the contractor must abate, remove and manage the hazardous materials in construction and finish materials such as insulation, flooring, wall materials, ceiling materials, roofing materials, heating, plumbing, ventilation, air conditioning equipment and installations in accordance with National as well as local Environmental Protection Laws and Regulations.

# F2020 HAZARDOUS COMPONENT ABATEMENT

1. Asbestos in Schools and Child Occupied Facilities: For projects that require removal or disturbance of asbestos containing materials within schools and child occupied facilities, perform work in accordance with the edited UFGS 02 82 00, Asbestos Remediation.

2. Asbestos Materials: Asbestos must be removed, transported and managed in accordance with the edited UFGS 02 82 00, Asbestos Remediation.

3. Lead Based Paint in Target Housing and Child Occupied Facilities: Perform work for projects that require removal or disturbance of painted surfaces within target housing and a child occupied facilities in accordance with the edited UFGS 02 83 00, Lead Remediation.

4. Paint Related Work: Perform work which requires the disturbance of paint that have been determined to contain all or any of the following: lead, cadmium and chromium in accordance with the edited UFGS 02 83 00, Lead Remediation.

5. LLR Components: Perform work which requires removal of mercury and LLR components in accordance with the edited UFGS 01 57 19, Temporary Environmental Controls.

6. PCBs: Perform work which requires removal of PCB containing components or materials in accordance with the edited UFGS 02 84 33, Removal and Disposal of Polychlorinated Biphenyls (PCBs).]

7. Animal Droppings: Perform work which requires removal of animal droppings in accordance with the edit UFGS 01 57 19, Temporary Environmental Controls.

8. Mold and Spores: Perform work which requires removal, disposal and remediation of mold contaminated areas in accordance with the edit UFGS 02 85 00, Mold Remediation.

9. Radon: Perform work which involves implementation of a radon mitigation system in accordance with the edited UFGS 31 21 13, Radon Mitigation.

10. Mercury: Perform work which requires the removal of mercury containing equipment in accordance with the edited UFGS 02 84 16, Handling of Lighting Ballasts and Lamps Containing PCBs and Mercury.

11. Hazardous Materials Reporting:
    a. Daily Report: Notify the Contracting Officer of work involving hazardous materials abatement and removal, including the quantities involved, on daily reports.
    b. Hazardous Material Inventory Report: The Contractor must provide a list of all hazardous materials used on the site.

# SECTION G. BUILDING SITEWORK

# G10 SITE PREPARATIONS

1. **General Requirements**: Building site work includes site preparation, site improvements, site civil/mechanical utilities, site electrical utilities, exterior furnishings, landscaping, and irrigation. Provide site work in accordance with UFC 3-201-01, *Civil Engineering*.

2. **Project Limitations**: Prior to the start of design, determine the exact limit-of-work line for the project periphery, considering items such as, but not limited to, utility work, landscape re-vegetation of disturbed areas, and lay down areas. The Civil Engineer of Record in coordination with other design team disciplines must determine limit-of-work lines. Minimize the impact of construction activity on operations and neighboring facilities.

3. **Geotechnical Data**: A geotechnical engineer must conduct the subsurface exploration, investigation/evaluation, testing, and analysis that the Designer of Record deems necessary for the design and construction of the proposed facilities, including building pad, structure, pavement sections, repairs, overlays, stormwater management facilities, utility structure foundations, septic systems, and other features requiring soil support.

3. **Temporary Erosion & Sediment Control:** Develop and implement temporary erosion and sediment control measures and other Best Management Practices (BMPs) prior to or in conjunction with commencement of earthwork in accordance with the state Erosion and Sediment Control Laws and Regulations. Remove all non-permanent erosion control measures after vegetation is fully established. Maintain temporary erosion control measures in accordance with state Erosion and Sediment Control Laws and Regulations throughout the project until areas are fully stabilized.

## G1010 SITE CLEARING

1. **Existing Utilities**: When the Contractor is to work at a site that has existing utilities, the contractor is responsible for coordination with Contracting Officer and utility companies for staking out, capping, connection and relocation of any existing utility systems or traffic interruption. Notify utility locator service for area where Project is located before site clearing.

2. **Interruption**: All interruption to the existing utilities and traffic must be coordinated with and approved by the Contracting Officer not less than 14 calendar days in advance of such interruption.

## G1020 SITE DEMOLITION & RELOCATIONS

Abandon utility systems in-place conforming to applicable codes and regulations, removing their presence from the ground surface and clearly indicating that they have been abandoned. Remove utilities underneath or within 3.0 m (10 feet) of any new facilities. Fill abandoned gravity systems with flowable fill. Fill abandoned utility system piping under pavements subject to potential vehicle loading with flowable fill.

Remove existing utility structures to 900 mm (3 feet) below existing or new adjacent grade, whichever is greater.& Break up bases to permit drainage. Fill with clean sand.

Comply with the requirements of the utility provider concerning utility relocation.

## G1030 SITE EARTHWORK

The DOR must utilize UFGS Section 31 23 00.00 20 for the project specification and must submit the edited section as a part of the design submittal. Perform quality assurance for earthwork in accordance with UFGS Section 31 23 00.00 20. If sheeting/shoring or dewatering is required, the Contractor must provide a registered Professional Engineer to provide excavation, sheeting, shoring, and dewatering plans and inspection of excavations and soil/groundwater conditions throughout construction. The Engineer must be responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the contractor and the Contracting Officer, must update the excavation, sheeting, shoring, and dewatering plans as construction progresses to reflect actual site conditions and must submit the updated plan and a written report (with professional seal) at least monthly informing the Contractor and the Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer must be available to meet with the Contracting Officer at any time throughout the contract duration.

# G20 SITE IMPROVEMENTS

Provide site improvements as required to make a useable facility that meets functional and operational requirements, incorporates all applicable anti-terrorism, force protection and physical security requirements and blends into the existing environment.

Provide site improvements in conformance with applicable requirements of the Uniform Federal Accessibility Standards.

1. **Pavements**: For work in and adjacent to existing pavements, the Contractor is required to match the existing adjacent finish elevation, materials, paving section and texture, and pavement markings, unless otherwise indicated in Part 3 or directed by the Contracting Officer.

   Provide pavement design and pavement section materials in accordance with UFC 3-201-01, *Civil Engineering*. Provide pavement markings in accordance with the SHS. Design materials for life expectancy of at least 3 years under an average daily traffic count per lane of approximately 9000 vehicles. Water based paints must have durability rating of at least 4 when determined in the wheel path area. Provide a half-rate initial marking application on bituminous pavements. Provide the remaining application at the end of the normal curing period.

2. **Traffic Control**: If the site work involves interference with normal vehicular and or pedestrian traffic, the Contractor must coordinate with the authority having jurisdiction, propose and obtain approval for traffic control measures that may be required in performance of the work required by the contract.

3. **Performance Verification And Acceptance Testing**:
   a. **Subgrade Preparation:** If required by the Designer of Record, perform proof rolling. Proof rolling must be performed in the presence of the Contracting Officer. Rutting or pumping of material must be undercut as directed by the Contracting Officer and replaced with satisfactory soil materials as defined by the Geotechnical Engineer.
   b. **Base Course Performance Verification**: At a minimum, Contractor must perform visual performance verification. Surface must be smooth with no ruts, sloped or crowned to not pond water.
   c. **Bituminous Concrete Pavement Performance Verification**: At a minimum, Contractor must perform visual performance verification. Finished surface must be uniform in texture and appearance, free of defects such as cracks and creases, and be sloped or crowned so as to not pond water.
   d. **Portland Cement Concrete Pavement Performance Verification**: At a minimum, Contractor must perform visual performance verification. Finished surface must be uniform in texture and appearance, free of defects such as cracks and spalls, and be sloped or crowned so as to not pond water.
   e. **Concrete Joint Performance Verification**: Joint sealer that fails to cure properly, or fails to bond to joint walls, or reverts to uncured state or fails in cohesion, or shows excessive air voids, blisters, or has surface defects, swells, or other deficiencies, or is not recessed within indicated tolerances will be rejected. Remove rejected sealer, re-clean and reseal joints.

4. **Bases and Subbases:**
   a. Prepare subgrade in accordance with Section G10, *Site Preparation*. Geotextiles may be used for separation or reinforcement in accordance with manufacturer's instructions. Provide base course under paved areas in accordance with the State Highway specifications (SHS) in the state where the project is located.
   b. Place base course in accordance with the SHS for that particular base course and in layers of equal thickness with no compacted layer more than 6 inches (150 mm) thick. Compact base course at optimum moisture content to 100 percent ASTM D 1557 maximum dry density.
   c. Where SHS are not available or applicable, the Designer of Record must utilize the applicable UFGS Specification Sections referenced under paragraph 1.1.2 entitled "Government Standards" for the project specification. Submit these specifications in edited form as a part of the design submittal for the project.

5. **Curbs and Gutters:** Provide concrete curbs and gutters in accordance with the SHS and standards or as specified in UFC 3-201-01, *Civil Engineering*, whichever is more stringent. Where the SHS do not include concrete materials for curbs and gutters, provide concrete in accordance with the applicable standard mix of the SHS for a minimum compressive strength at 28 days of 3500 psi (25 MPa) concrete.

6. **Paved Surfaces:** Where SHS are not available or applicable, the Designer of Record must utilize the applicable UFGS Specification Sections for the project specification. Submit these specifications in edited form as a part of the design submittal for the project.

7. **Pavement Mix:**
   a. **Bituminous Concrete Pavement:** Provide bituminous concrete pavement in accordance with the applicable standard mix of the SHS based on the pavement design and vehicle loading indicated in this RFP.
   b. **Bituminous Concrete Placement:** Provide bituminous concrete placement, including minimum temperature during placement, joints, and maximum lift thickness in accordance with the SHS. Compact bituminous concrete in accordance with the SHS, modified to 96 percent of maximum laboratory density.
   c. **Portland Cement Concrete Pavement:** If reinforced, provide the welded wire fabric in conformance to ASTM A185. Provide bar reinforcement in conformance to ASTM A615/A615M, Grade 400 (Grade 60). Provide concrete in accordance with the applicable standard mix of the SHS for the design strength required by UFC 3-201-01, *Civil Engineering*, plus any allowable deviations. Unless noted otherwise in Part 3 or Part 6, provide a minimum compressive strength at 28 days of 3500 psi (25 MPa) concrete. If required for applicable sustainability goal, provide Portland cement concrete pavement with a Solar Reflectance Index (SRI) greater than or equal to 29.

8. **Joints for Portland Cement Concrete Pavement:** Provide joints in accordance with SHS and the applicable portions of UFC 3-250-01, *Pavement Design for Roads and Parking Areas*. Install joints in a manner and at such time to prevent random or uncontrolled cracking. Joints must form a regular rectangular pattern. Wherever curved pavement edges occur, make joints to intersect tangents to curve at right angles.
   a. **Expansion Joints:** Provide thickened edge expansion joints at the intersection of two rigid pavements. Use preformed joint filler, ASTM D1751. Filler must be compatible with joint sealer material. Securely hold preformed joint filler in position during concreting operations.
   b. **Isolation Joints:** Provide thickened edge isolation joints by placing a 1/2-inch (12 mm) preformed joint filler (ASTM D 1751) around each structure that extends into or through the pavement before concrete is placed at that location.
   c. **Contraction Joints:** Saw joint lines within specified tolerance, straight, and extend for width of transverse joint, and for entire length of longitudinal joint.
   d. **Construction Joints:** If an emergency stop occurs remove the concrete back to location of transverse joint and install a construction joint.
   e. **Joint Sealants:** ASTM D5893/D5893M; provide single component cold-applied silicone. Silicone sealant must be self-leveling and non-acid curing.
   f. **Preformed Compression Seals:** Use preformed compression seals in areas where silicone joint sealant does not perform, such as areas subject to water inundation, blasts, or constant/repeated fuel spillage. ASTM D 2628. ASTM D 2835, for lubricant.

9. **Prime Coat:** Use prime coat in accordance with the SHS. Prime coat must be emulsified asphalt materials.

10. **Tack Coat:** Tack coat is required for bituminous pavement overlays and on vertical cut faces of pavement patches. Provide tack coat in accordance with the SHS.

11. **Pavement Patches:** Provide pavement patches for existing pavements where required for installation of utility trenches. Sawcut 12 inches beyond edge of trench. Provide thicknesses of pavement materials equal to or greater than the existing pavement section. For spalls or repairs of existing concrete pavement, perform repairs in conformance with UFC 3-270-03, *Concrete Crack and Partial Depth Spall Repair*, and UFC 3-270-04, *Concrete Repair*. Spall repair materials must be either Rapid Setting Cementitious Concrete (RSCC), epoxy concrete, or polymer-modified Portland Cement (non-sag mortar) products specially formulated for spall repairs, with a proven record (in

service at least three years) of satisfactory use under loading and environmental conditions similar to those at the location of intended use. Provide a manufacturer's data sheet and certificate supporting the satisfactory use to the Contracting Officer with the design. A product manufacturer's representative is required to be present during the initial two days of product application to verify that manufacturer's instructions for use are adhered to by the contractor. Give the Contracting Officer 7 days notice prior to the initial application in order to be present.

12. **Markings and Signage:** Provide pavement markings in accordance with the SHS. Design materials for life expectancy of at least 3 years under an average daily traffic count per lane of approximately 9000 vehicles. Water based paints must have durability rating of at least 4 when determined in the wheel path area. Provide a half-rate initial marking application on bituminous pavements. Provide the remaining application at the end of the normal curing period. Provide signage in accordance with the MUTCD.

13. **Guardrails and Barriers:** Provide guard (guide) rails in accordance with the SHS. Where the SHS do not include materials for guardrails, provide guardrails in accordance with the applicable portions of the *AASHTO Roadside Design Guide*.

14. **Bollards:** For bollards to prevent damage, provide minimum 4 feet height, 4 inch diameter steel pipe filled with concrete, painted, and embedded in a portland cement concrete foundation. For bollards located at building entries or other high-visibility areas provide decorative bollards matching the design of the facility or consistent with the Base Exterior Architecture Plan (BEAP) and the Installation Appearance Plan.

15. **Resurfacing:** Adjust rims of existing utility structures to match proposed grades after resurfacing.
    a. **Slurry Seal:** ASTM D 3910 and in accordance with the SHS.
    b. **Bituminous Concrete Overlay:** Remove old pavement by cold milling to depths required to provide new surface and leave underlying materials intact. Clean the pavement of excessive dirt, clay or other foreign matter with power brooms and hand brooms immediately prior to the milling operation. Repair or replace damaged utility structures, valve boxes, or pavement that is torn, cracked, gouged, rutted, broken or undercut at no addition expense to the government. Provide bituminous concrete overlay produced from hot or cold recycling of the milled material or from virgin materials in accordance with the applicable provisions of UFC 3-201-01, *Civil Engineering*, and the standard mix of the SHS based on the pavement design and vehicle loading as indicated in this RFP.
    c. **Crack Sealing:** Use fiber reinforced crack sealer for sealing cracks in asphalt pavement after milling and prior to resurfacing. Provide crack sealing conforming to the following requirements in UFC 3-270-01, *Asphalt Maintenance and Repair*, and UFC 3-270-02, *Asphalt Crack Repair*.

16. **Parking Lots:** Refer to Pavements above.

17. **Permeable Pavements:** Provide permeable concrete pavers of solid interlocking paving units complying with ASTM C936, resistant to freezing and thawing when tested according to ASTM C67, and made from normal-weight aggregates. If required for applicable sustainability goal, provide permeable concrete pavers with a Solar Reflectance Index (SRI) greater than or equal to 29. Provide pervious concrete in accordance with UFGS Specification Section 32 13 43, *Pervious Concrete Paving*. Do not use asphalt-surfaced porous pavement.
    a. **Bases and Subbases:** Refer to Bases and Subbases paragraph above.

b. **Curbs and Gutters:** Refer to Curbs and Gutters paragraph above**.**
c. **Paved Surfaces:** Refer to Paved Surfaces paragraph above**.**
d. **Markings and Signage:** Refer to Markings and Signage paragraph above. Provide water-based paints only.& Mark neatly to denote traffic lanes and parking spaces; mark in accordance with the requirements of UFC 3-201-01, *Civil Engineering*.
e. **Guardrails and Barriers:** Refer to Guardrails and Barriers paragraph above**.**
f. **Wheelstops:** Provide precast concrete wheelstops.

18. **Pedestrian Paving:** Locate new sidewalks such that they maintain continuity of pedestrian traffic to and from the existing sidewalks adjacent to the site(s).
a. **Bases & Subbases:** Provide as required by local standards or geotechnical report; refer to Bases and Subbases paragraph above.
b. **Paved Surfaces:**
c. **Concrete Sidewalks:** Provide sidewalks of Portland cement concrete pavement with 4 inches (100 mm) thick minimum or permeable pavement. Provide concrete and permeable pavement in accordance with Section G201003 and G2020, respectively. For PCC sidewalks, provide a broomed finish. Provide sidewalks of at least 5 feet (1.5 meters) wide, except that sidewalks connecting entry points of housing units to the housing unit's parking are required to be at least 36 inches (900 mm) wide. In housing areas, offset sidewalks paralleling streets to maintain a minimum grassed separation of 5 feet (1.5 meters) from the back face of the curb to the closest edge of the sidewalk Unless indicated otherwise, provide a transverse slope of 1/48. Limit variation in cross section to 0.25 inch in 5 feet (6 mm in 1.50 m). Submit samples boards per ESR G2050 and PTS G2050 and finish schedule on final plans. Provide contraction joints spaced at intervals equivalent to the width of the sidewalk. Provide 0.5 inch (13 mm) thick transverse expansion joints at changes in direction where sidewalk abuts curb, steps, rigid pavement, or other similar structures; space expansion joints every 50 feet (15 m) maximum. Provide isolation joints by placing a 1/2-inch (12 mm) preformed expansion joint filler around each structure that extends into or through the sidewalk before concrete is placed at that location.
d. **Concrete Pavers as Sidewalk:** Concrete pavers shall meet ASTM C936. Install in accordance with manufacturers recommendations.

19. **Chain Link Fencing and Gates:** Chain link fence fabric must be at least 9 gauge (3 mm) steel wire mesh material (before any coating) with mesh openings not larger than 2 inches (51 mm). Do not use aluminum fabric, posts or accessories. Install fence in accordance with ASTM F567 and the manufacturer's written installation instructions. Provide rails in accordance with FS RR-F-191/3, Class 1, steel pipe, Grade A. Provide gates in accordance with FS RR-F-191/2 with posts and fabric as specified for fence. Provide posts and braces in accordance with FS RR-F-191/3, Class 1, steel pipe, Grade A. Each gate, terminal and end post will be braced with truss rods. Provide fencing accessories in accordance with FS RR-F-191/4. If PVC coating is required, provide accessories with PVC color coating similar to that specified for chain-link fabric or framework.

20. **Security Fencing:** Provide security fencing systems in accordance with UFC 4-022-03, *Security Fences and Gates*, and this RFP. Provide chain link fence in accordance with paragraphs above, except as noted otherwise. Ensure that the fabric has twisted and barbed selvage at the top and bottom. Do not provide top rails. Locate all posts and structural supports on the inner side of the fencing. Install outriggers facing outward except when the fence must be mounted directly on the property line. Provide signage at a minimum of 200 foot (61 m) intervals along the entire perimeter. Provide protective measures to prevent access through culverts, storm drains, sewers, air intakes, exhaust

tunnels and utility openings or across drainage ditches or swales as required in UFC 4-022-03. Do not cover, block or lace openings in perimeter fencing and security fencing with material which would prevent a clear view of personnel, vehicles or material in the outer or inner vicinity of the fence line.

21. **Fence Grounding:** Grounding and bonding of the fencing must be in accordance with the National Electric Safety Code (NESC) - IEEE C2 and UFC 4-022-03. Ground fencing on either side of every gate and at other locations when the fencing is near and parallel to high tension power lines. Grounding is also required at intervals of 1000 feet (305 meters) to 1500 feet (457 meters) when the fencing runs through isolated areas and at lesser distances depending on the proximity of the fencing to public roads, highways and buildings where the fencing is around or within any explosive storage, production, operating or handling areas.

22. **Enclosures for Utility Equipment:** Where fencing is used to provide an enclosure for utility equipment, ensure a minimum clearance is provided no less than 3 feet (900 mm) around the equipment to permit maintenance access and ventilation. Provide stone, gravel or concrete paving within the enclosure.

## G2040 EXTERIOR FURNISHINGS

All site furnishings must be permanently attached to concrete pads. Site furnishings must conform to the Base Exterior Architecture Plan (BEAP) or Installation Appearance Plan (IAP) for each Activity. If no product guidance is given, coordinate material, finish and color with architecture (fiberglass and aluminum are not acceptable) and provide to the greatest extent possible, materials with industrial recycled content, preferably from regionally local manufacturers. At a minimum, provide a trash and ash receptacle at each entry and gathering/smoking area.

## G2050 LANDSCAPING

# G30 SITE CIVIL/MECHANICAL UTILITIES

Develop the site to provide water, fire protection, sanitary sewer, storm drainage, heating, cooling and fuel distribution services that meet the requirements of each utility provider and each applicable regulatory agency that governs and issues permits for the construction and operation of these systems. Site design must also comply with Department of Defense requirements concerning Low Impact Development (LID) per UFC 3-210-10, *Low Impact Development*, as well as state or local stormwater management regulations, and applicable project sustainability goals. Submit sealed calculations with narrative to the Government for civil and environmental review documenting all assumptions and which criteria governs the design.

Coordinate with the local utility providers and pay any fees or charges required to connect to their utility. Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. Coordinate all reports, submittals, and permit applications through the Contracting Officer. Perform work in accordance with the obtained permits.

Provide all required fittings, connections and accessories required for a complete and usable system. All equipment must be installed per the criteria indicated in this RFP and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

# G3010 WATER SUPPLY

1. **Water System Design and Construction**: Provide the new water system and connections to the existing water system in accordance with UFC 3-230-01, *Water Storage, Distribution, and Transmission*; the utility provider's requirements; or the state waterworks' regulations; whichever is more stringent.

2. **Notifications**: Notify the utility provider of the additional demand generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government's Civil/Mechanical Reviewer.

3. **Performance Verification And Acceptance Testing**: Provide testing on water mains and service lines in accordance with the state waterworks' regulations and the following:
   a. Ductile iron and other materials: AWWA C600.
   b. PVC: AWWA C605.

   Whichever is more stringent. Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete.

4. **Disinfection:** Disinfect new water piping and existing water piping affected by Contractor's operations in accordance with the state waterworks' regulations and AWWA C651.

5. **Water Distribution Mains:** For underground applications, water mains 12 inches (300 mm) in diameter and less must be ductile iron or PVC. Water mains deeper than 10 feet (3.0 m) or larger than 12 inches (300 mm) in diameter must be ductile iron. For aboveground applications, water mains shall be flanged ductile iron pipe.
   a. Ductile Iron Pressure Pipe:
      1) Pipe: AWWA C151, Pressure Class 350.
      2) Fittings: AWWA C110 or AWWA C153.
      3) Interior Lining: AWWA C104.
      4) Exterior Protection (if required): AWWA C105, polyethylene encasement.
   b. PVC Pressure Pipe:
      1) Pipe: AWWA C900, Pressure Class 150.
      2) Fittings: Ductile Iron (AWWA C110 or AWWA C153).
   c. Flanged Ductile Iron Pipe:
      1) Pipe: AWWA C115 and its appendices.
      2) Fittings: AWWA C110 or AWWA C153.
      3) Lining: AWWA C104.

6. **Installation of Water Distribution Mains:**
   a. Ductile Iron: AWWA C600.
   b. PVC: AWWA C605.
   c. Provide nondetectable warning tape and a continuous length of tracer wire for the full length of each run of nonmetallic piping below grade. Warning tape to be color coded with warning and identification of utility type imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (utility type) LINE BELOW" or similar wording. Color to be blue for potable water systems and purple for nonpotable, reclaimed water, and irrigation lines. Terminate tracer wire above grade at valve boxes and at exterior of building.

7. **Connections to Existing Water Lines:** Make connections to existing water lines after approval from the system owner is obtained and with a minimum interruption of service on the existing line. Make connections to existing lines under pressure in accordance with the recommended procedures of the manufacturer of the pipe being tapped.

8. **Water Service Lines:** Water service lines less than 4 inches (100 mm) in diameter must be copper tubing or PVC. Water service lines 4 inches (100 mm) and 6 inches (150 mm) in diameter must be ductile iron pipe and PVC pressure pipe; see paragraph "Water Distribution Mains" for additional requirements for ductile iron and PVC piping.
   a. Copper Tubing
      1) Pipe: ASTM B 88/B 88M, Type K.
      2) Fittings for Solder-Type Joint: ANSI B16.8 or ASME B16.22.
      3) Fittings for Compression-Type Joint: ASME B16.26, flared tube type.
   b. PVC Pressure Pipe
      1) Pipe: ASTM D1785, Schedule 40 or ASTM D 2241, with SDR rating for 160 psi (1.1 MPa) pressure rating.
      2) Fittings: ASTM D 2466.
      3) Joints: Elastomeric gaskets for pressure rating; solvent cement joints, ASTM D 2564.
   c. Service Connections: Connect service lines 2-inch (50 mm) diameter or less to the main by a corporation stop and install a gate valve on service line below the frostline.
      1) Ductile-iron water mains: AWWA C600.
      2) PVC water mains: UBPPA UNI-PUB-8 and the recommendations of AWWA M23, Chapter 9, "Service Connections."

9. **Installation of Water Service Lines:** Install pipe, fittings and accessories in accordance with manufacturer's instructions.
   a. Metallic Piping: applicable requirements of AWWA C600.
   b. PVC: ASTM D 2774 and ASTM D 2855.

10. **Corrosion Protection:** Provide insulating joints to prevent contact between dissimilar metals at the joint between adjacent sections of piping in accordance with the pipe manufacturer's recommendations. Ensure that there is no metal-to-metal contact between dissimilar metals after the joint has been assembled. To prevent the possibility of bi-metallic corrosion, service lines of dissimilar metal to the water mains and the attendant corporation stops must be wrapped with polyethylene or suitable dielectric tape for a minimum clear distance of 3 feet (900 mm) from the main.

11. **Valves:** Install valves with the same diameter and have the same joint ends as the mains to which they are installed. Each type of valve must be of one manufacturer.
   a. **Gate Valves:** Install valves at all new points of connection. At a minimum, locate valves to ensure that no more than two fire hydrants will be out of service in the event of a single break in a water main. Locate valves outside of pavement and heavy traffic areas whenever possible.
   b. **Gate Valves 3-inch (75 mm) and Larger in Diameter:**
      1) Valves (20-inch and smaller in diameter): AWWA C509 or AWWA C515, nonrising stem and of one manufacturer.
      2) Valves (greater than 20-inch in diameter): AWWA C500.
      3) Valves for Indicator Post: AWWA C509 or AWWA C500, as indicated above, with indicator post flange in accordance with applicable requirements of UL 262.
      4) Interior Coating: AWWA C550.
   c. **Gate Valves Smaller than 3-inch (75 mm) in Diameter:** MSS SP-80, Class 150, solid wedge. Provide valves with flanged or threaded end connections,

with unions on both sides of the valve and a handwheel operator.

d. **Valve Box:** Provide a cast iron, adjustable, valve box for each gate valve on buried piping. Provide valve boxes of a size suitable for the valve on which it is to be used with a minimum diameter of 5-1/4 inches (130 mm). Provide a round head and cast the word "WATER" on the lid.

e. **Check Valves:** Provide check valves sized 2-inches (50 mm) to 24-inches (600 mm) as swing-check type (AWWA C508) and with a protective epoxy interior coating conforming to AWWA C550. For underground applications, provide check valve in a valve vault.

f. **Air Release, Air/Vacuum, and Combination Air Valves:** AWWA C512 and AWWA M51.

g. **Corporation Stops:** If service lines 2-inch diameter or less are tapping water mains, provide corporation stops. The corporation stops must be ground key type, bronze, ASTM B61 or ASTM B62.

h. **Installation of Valves:** Make and assemble joints to valves as specified for making and assembling the same type of joints between pipe and fittings.

12. **Water Meters:** Provide water meter and remote reading as required by the utility provider and in accordance with AWWA standards.

13. **Backflow Prevention:** Provide backflow prevention and cross connection control in accordance with AWWA M-14 and governing local/state plumbing codes and waterworks' regulations.

14. **Fire Hydrants:** Fire hydrants must be of one manufacturer and in accordance with UFC 3-600-01, *Fire Protection Engineering*. Coordinate with the project's fire protection designer of record. Provide protection for fire hydrants located in areas subject to vehicle damage. Fire hydrants must have National Standard threads on hose and pumper connections. Provide a 6 inch (150 mm) inlet, two 2.5 inch (62 mm) hose connections and one pumper connection sized to accommodate local fire department equipment requirements. Paint hydrants with at least one coat of primer and two coats of enamel paint. Barrel and bonnet colors shall be in accordance with UFC 3-600-01. Stencil hydrant number and main size on the hydrant barrel using black stencil paint.

a. Dry Barrel Fire Hydrants: AWWA C502 with frangible sections.

b. Wet Barrel Fire Hydrants AWWA C503 or UL 246, "Wet Barrel" design, with breakable features.

c. Installation: Install hydrants with the pumper connection facing the adjacent paved surface. If there are two, paved adjacent surfaces, contact the Contracting Officer for further direction.

15. **Thrust Restraint:** Provide thrust restraint for all piping, valves, fittings, and other appurtenances of the water distribution system. Provide thrust restraint using restrained joints in accordance with pipe manufacturer's recommendations, AWWA C600 and if for fire service main, NFPA 24.

16. **Fire Protection Water Distribution:** Refer to applicable portions of this Section and Section D40, *Fire Protection Systems*. Water main piping, service lines, fittings, valves, accessories and all other materials must meet the American Water Works Association (AWWA) standards for a minimum system working pressure of 200 psi (1380 kPa).

a. **Detector Checks:** UL 312; detector check includes bypass meter, piping, gate valves, check valve and connections to detector check valve. Set valve to allow minimal water flow through bypass meter when major water flow is required.

b. **Fire Department Connections:** UL 405.

c. **Indicator Posts:** UL 789.

# G3020 SANITARY SEWER

1. **Sanitary System Design and Construction:** Provide the new sanitary sewer system and connections to the existing sanitary sewer collection system in accordance with UFC 3-240-01, *Wastewater Collection*; the utility provider's requirements; or the state sewerage regulations; whichever is more stringent.

2. **Notifications:** Notify the utility provider of the additional wastewater flow generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government Civil Reviewer.

3. **Wastewater Pump Station:** Where required, provide a duplex, grinder pump station in accordance with the utility provider's requirements. Provide pump station wet well of fiberglass construction. Provide adjacent valve vault of precast concrete construction.

   Provide automatic control to start and stop the pump system. Provide automatic level control by floats in accordance with the preferences of the system owner to fill and prevent overflow of the wet well. Provide an emergency pump connection.

   Provide a telephone dialer in the control panel capable of accepting up to 8 telephone numbers. At the control panel provide an alarm horn and light with battery backup. Alarms shall include high liquid wet well level; loss of main power; no flow as sensed by current sensor; and pump failure via overload or motor heat sensor trip. Provide seal failure indicator lights and elapsed time meters.

   Provide electrical connections for a portable emergency generator hook-up sized to start up and maintain the total rated running capacity of the station, including the pumps, controls, lighting, and other auxiliary equipment.

4. **Performance Verification And Acceptance Testing:**
   a. Sanitary Sewer Distribution System Performance Verification: Provide testing on sewer mains and laterals in accordance with the state sewerage regulations. At a minimum, perform the following:
   1. Visual Test: Remove manhole covers and conducts a visual inspection as follows:
   a. Inspect for visible leaks in lines or manholes.
   b. Inspect condition of grout in the interior joints of the manholes.
   c. Inspect manhole frames and covers for proper type and installation.
   d. Inspect to see if lines are free of debris.
   e. Inspect manhole benches and inverts.
   f. Check alignment and grade of gravity lines by laser or by introducing sufficient water into the line to verify the absence of sags, as directed by the Contracting Officer.
   g. Mirror test: Check each straight run of pipeline for gross deficiencies by holding a light in a manhole; it shall show a full circle of light through the pipeline when viewed from the adjoining end of line.

   2. Leakage Tests: Test lines for leakage by either infiltration tests or exfiltration tests, or by low-pressure air tests in accordance with the following:
   a. Exfiltration Tests: ASTM C 969M (ASTM C 969) and perform calculations in accordance with its Appendix.

b. Low-pressure Air Tests: Pipelines: ASTM C 924M (ASTM C 924) and perform calculations in accordance with its Appendix. PVC plastic pipelines: UBPPA UNI-B-6 and perform calculations in accordance with its Appendix.

12. Cross Connection Tests: Cross connection tests must be observed by the Contracting Officer and the utility provider's inspector.

a. Perform a tracer study from the project sewer connection to the first manhole downstream on the active sewer system. Use a nontoxic, non-staining sewer tracing dye. Testing must continue until the dye visually confirms the design connection is appropriate. During the test, the contractor must monitor the storm drainage system (structures and outfalls) downstream from the project for any sign of cross connection.

b. Perform a smoke test on the project sewer to verify that project storm drainage inlets or drains have not been connected to the sanitary sewer.

p. Sanitary Sewer Manholes Verification Testing: Provide testing on sanitary sewer manholes in accordance with the state sewerage regulations. At minimum, perform hydraulic testing in accordance with ASTM C 969M (ASTM C 969).

q. Wastewater Pump Station Verification Testing: Test the wastewater pump station in accordance with the state sewerage regulations. Conduct testing on discharge piping and force main in accordance with tests for water distribution mains; see G30, paragraph 1.3.2. Test pumps, controls, and alarms, in operation, under design conditions to ensure proper operation of all equipment.

r. TV Inspection for Sanitary Sewer: Post-installation TV inspection will be performed on all segments of the installed system when the total footage of sanitary sewer mains installed in the contract is in excess of 300 feet. Complete the post-installation TV inspection to confirm that the completed lines are free of defects. For video recordings include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected. The minimum information to be included is the pipe material, pipe size, starting and stopping manholes and descriptions of any features as they occur. Video recording playback must be at the same speed that it was recorded. Permanently label CDs / DVDs according to their contents; CDs / DVDs will become the property of the Government. Provide all TV inspections of sanitary sewer mains in accordance with the Pipeline Assessment and Certification Program as sponsored by the National Association of Sewer Service Companies (NASSCO). Prior to initiating CCTV inspection, provide copies of PACP Certification of the operators that will be performing the work. Complete pipe segments and manhole work, including pipe penetrations, manhole benches, main line and manhole visual inspection, pressure testing, deflection and leakage tests on a section of line (manhole to manhole) prior to performing TV. Complete post-installation TV inspection in the presence of the Contracting Officer or his designated representative. The importance of accurate measurements is emphasized. The meter device must be accurate to one tenth of a foot. Utilize the full capabilities of the camera equipment to document the completion and the conformance of the work to the Contract Documents. Provide a full 360Ã‚Â° view of the pipe, joints and service connections. Move the camera through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. The maximum speed must be no greater than 30 feet per minute. Use manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with the proper documentation of the sewer conditions to move the camera through the sewer line. Once video recording has commenced, the recording must be continuous, without interruption, until the termination manhole is reached. Provide a color video showing the completed

work. Prepare and submit Television Inspection Logs providing location of service connections along with the location of any discrepancies. Keep computer printed location records (Television Inspection Logs) and clearly show the location and orientation in relation to an adjacent manhole for each point observed during the TV inspection. Record features of significance such as locations and orientations of service connections, pipe deflections, leaks, rolled or dislodged gaskets, sags or bellies in the line, or wide joints. Document noted defects and lateral connections as color digital files and color hard copy prints. Photo logs must accompany each photo submitted. Prior to submission of the TV inspection video, Television Inspection Logs, and digital photographs to the Contracting Officer, review the submittal items to ensure that they meet the quality criteria set forth in this specification. A copy of such video along with the Television Inspection Logs and Digital photographs must be supplied to the Contracting Officer within five (5) business days of completion of the video-inspection. In the event that the video, Television Inspection Logs or digital photographs are deemed of poor quality or substandard by the Contracting Officer, the videos, and / or Television Logs, or digital photographs will be returned and a re-inspection provided by the Contractor, at no additional cost to the Government.

7. **Gravity Sewer Piping:** Gravity sanitary sewer mains and laterals must be Ductile Iron, PVC or Polypropylene sewer pipe and fittings. Use Ductile Iron under roadways or at depths greater than 10 feet (3.0 m). PVC and Polypropylene may only be used under roadways or at depths greater than 10 feet (3.0 m) when written approval is received by the Government's Civil Reviewer or indicated in another part of the RFP.
   a. PVC Gravity Sewer Pipe
      1) Piping and Fittings: ASTM D3034 or ASTM F679, SDR 35.
      2) Joints: ASTM D3212 and ASTM F477.
   b. Ductile Iron Gravity Sewer Pipe
      1) Piping: ASTM A746. Provide required Thickness Class based on design information and methods in ASTM A746.
      2) Fittings: AWWA C110 or AWWA C153.
      3) Joints: AWWA C111.
      4) Interior Coating: AWWA C104.
      5) Exterior Protection (if required): AWWA C105, polyethylene encasement.
   c. Dual Wall and Triple Wall Polypropylene Sewer Pipe 12" to 60"
      1) Piping and Fittings: ASTM F2736 and ASTMF2764/F2764M.
      2) Joints: ASTM D3212 and ASTM F477.

8. **Connections to Existing Lines:** Obtain approval from the Contracting Officer before making a connection to an existing line. Conduct work so that there is minimum interruption of service on existing line and provide a new manhole at the connection point.

9. **Gravity Sewer Installation:** Install pipe, fittings and accessories in accordance with manufacturer's instructions.
   a. PVC and Dual and Triple Wall Polypropylene: ASTM D2321. Do not use ASTM D2321 Class IV or V materials for bedding, haunching or initial backfill materials.
   b. Ductile Iron: AWWA C600.
   c. Provide nondetectable warning tape and a continuous length of tracer wire for the full length of each run of nonmetallic piping below grade. Warning tape to be color coded with warning and identification of utility type imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (utility type) LINE BELOW" or similar wording. Color to be green for sewer systems. Terminate tracer wire above grade at valve boxes

and at exterior of building.

10. **Piping for Gravity Sewer Cleanouts:** Install cast iron pipe and fittings in accordance with the recommendations of the pipe manufacturer.
    a. Cast-Iron Soil Pipe for Cleanouts
        1) Pipe: ASTM A 74, service.
        2) Joints: ASTM C 564 compression-type rubber gaskets.
        3) Exterior Protection (if required): AWWA C105, polyethylene encasement.

11. **Sanitary Sewer Manholes and Cleanouts:** Provide all materials, equipment, labor, testing, and miscellaneous related items for the sanitary manholes in accordance with the following:
    a. Set manhole rim elevations flush with finished surface of paved areas or 1 inch (25 mm) above finished grade in unpaved areas.
    b. Resilient connectors for making joints between manhole and pipes entering manhole must conform to ASTM C 923/C 923M.
    c. Provide drop manholes when a gravity sewer pipe enters a manhole at an elevation of 24 inches (610 mm) or more above the manhole invert.
    d. Precast Concrete Manholes: ASTM C 478/C 478M; base and first riser must be monolithic. Precast manhole sections must have:
        1) ASTM C 990/C 990M butyl gaskets;
        2) ASTM C 443/C 443M rubber O-ring joints; or
        3) ASTM C 443, Type B gaskets.
    e. Cast-in-Place Concrete Manholes: Reinforced concrete; designed according to ASTM C 890 for A-16 (AASHTO HS20-44), heavy-traffic, structural loading. Provide concrete work in accordance with ACI 301/301M and ACI 350-01; provide a minimum compressive strength of 4000 psi (28 MPa).
    f. Manhole Frames and Covers: Frame and cover must be cast gray iron, ASTM A48/A48M, Class 35B, cast ductile iron, ASTM A536, Grade 65-45-12, or reinforced concrete, ASTM C478 ASTM C478M. Frame and cover must be designed to accommodate the imposed live load. Stamp or cast the words "Sanitary Sewer" into covers so that it is plainly visible.
    g. Manhole Steps:
        1) Zinc-coated steel: 29 CFR 1910.27.
        2) Plastic or rubber coating pressure molded to steel: ASTM D 4101, copolymer polypropylene; or ASTM C 443/C 443M, except shore A durometer hardness must be 70 plus or minus 5.
        3) Aluminum steps or rungs will not be permitted. Steps are not required in manholes less than 4 feet (1.2 m) deep.

12. **Manhole Construction:** Where a new manhole is constructed on an existing line, remove existing pipe as necessary to construct the manhole. Cut existing pipe so that pipe ends are approximately flush with the interior face of manhole wall, but not protruding into the manhole. For changes in direction of the sewer and entering branches into the manhole, make a circular curve in the manhole invert of as large a radius as manhole size will permit. For cast-in-place concrete, no parging will be permitted on interior manhole walls.

13. **Connections to Existing Manholes:** Center pipe connections to existing manholes on the manhole. Holes for the new pipe must be of sufficient diameter to allow packing cement mortar around the entire periphery of the pipe but no larger than 1.5 times the diameter of the pipe. Cut the manhole in a manner that will cause the least damage to the walls.

14. **Cleanouts:** Construct cleanouts of cast iron soil pipe and fittings; see paragraph, "Piping

for Gravity Sewer Cleanouts" above.

15. **Lift Stations and Pumping Stations:** If a pump station is allowed, provide all materials, equipment, labor, testing and miscellaneous related items for a packaged lift or pump station system for the facility in compliance with the UFC 3-240-01, *Wastewater Collection*; the state sewerage regulations; and the utility provider's requirements.
    a. **Submersible Pumps:** Provide pumps capable of handling raw wastewater and passing spheres of at least 3 inches (75 mm) in diameter. The pump's suction and discharge openings must be at least 4 inches (100 mm) in diameter. Provide submersible type sewage pumps, with guide rail system. Include ASTM A48/A48M, Class 25, nonclog, cast-iron impeller; and hermetically sealed motor with moisture-sensing probe, mechanical seals, and waterproof power cable. Construct the guide rail system of stainless steel. Provide a stainless steel lifting chain for raising and lowering the pump in the basin.
    b. **Grinder Pumps:** Provide grinder-type sewage pumps, with guide rail system. Include stainless steel or bronze impeller and hermetically sealed motor with moisture-sensing probe, mechanical seals, and waterproof power cable. Construct the guide rail system of stainless steel. Provide a stainless steel lifting chain for raising and lowering the pump in the basin.
    c. **Suction Lift Pumps:** Provide pumps capable of handling raw wastewater and passing spheres of at least 3 inches (75 mm) in diameter. The pump's suction and discharge openings must be at least 4 inches (100 mm) in diameter. Provide dry-chamber-mounting, vacuum-primed, nonclog sewage pumps located in dry compartment above wet pit. Include ASTM A48/A48M, Class 25, nonclog, cast iron impeller; mechanical or stuffing box seals; pedestal mounted motor; and suction piping extending to bottom of wet pit. Provide suction-lift pumps capable of automatic rapid self priming and re-priming at the "lead pump on" elevation. Suction piping must not exceed 25 feet (7.6 meters) in total length. Priming lift at the "lead pump on" elevation must include a safety factor of at least 4 feet (1.2 meters) from the maximum allowable priming lift for the specific equipment at design operating conditions. The combined total of dynamic suction-lift at the "pump off" elevation and the required net positive suction head at design operating conditions must not exceed 22 feet (6.7 meters).
    d. **Pump Motors:** Provide pump motor sized to accommodate pump operation along the entire impeller curve.
    e. **Station Piping Within Wet Well and Valve Vault:**
    **Piping Less than 4-Inch (100 mm) in Diameter**
        1) PVC Pressure Pipe

a. Pipe: ASTM D 1785, Schedule 80.b. Fittings: Schedule 80 socket fittings, ASTM D 2467; Schedule 80 threaded fittings, ASTM D 2464.**Piping 4 inch (100 mm) Diameter and Larger**
    2) Flanged Ductile Iron Pipe

a. Pipe: AWWA C115 and its appendices.
b. Fittings:AWWA C110 or AWWA C153.
c. Lining: AWWA C104.

16. **Force Mains:**
    a. **Force Mains for Submersible and Suction Lift Pumps:** Force mains must be at least 4 inches (100 mm) in diameter and must be either ductile iron or PVC pressure pipe.
        1) Ductile Iron Pressure Pipe

a. Pipe: AWWA C151, Pressure Class 350.b. Fittings: AWWA C110 or AWWA C153.c.

Interior Lining: AWWA C104.d. Exterior Protection (if required): AWWA C105, polyethylene encasement.2) PVC Pressure Pipe

a. Pipe: AWWA C900, Pressure Class 150. AWWA C905.b. Fittings: Ductile Iron (AWWA C110 or AWWA C153).
b. **Force Mains for Grinder Pumps:** Force mains less than 4 inches (100 mm) in diameter must be PVC pressure pipe:
1) PVC Pressure Pipe

a. Pipe: ASTM D 1785, Schedule 40 or ASTM D 2241, with SDR rating for 160 psi (1.1 MPa) pressure rating.
b. Fittings: ASTM D 2466.
c. Joints: Elastomeric gaskets for pressure rating; solvent cement joints, ASTM D 2564.

17. **Piping Accessories:**
a. **Insulating Joints:** Provide between pipes of dissimilar metals a rubber gasket or other approved type of insulating joint or dielectric coupling to effectively prevent metal-to-metal contact between adjacent sections of piping.
b. **Accessories:** Provide flanges, connecting pieces, transition glands, transition sleeves, and other adapters as required.
c. **Flexible Flanged Coupling:** Provide flexible flanged coupling applicable for sewage as indicated. Use flexible flanged coupling designed for a working pressure of 350 psi (2400 kPa).

18. **Valves:** Provide suitable shutoff and check valves on the discharge line of each pump. Locate the check valve between the shutoff valve and the pump. Locate valves in accordance with state sewerage regulations. Check valves must be suitable for the material being handled and placed on the horizontal portion of the discharge piping except for ball check valves, which may be placed in the vertical run. Provide valves capable of withstanding normal pressure and water hammer. Use valves from one manufacturer.
a. **Shut Off Valves**
**Shut Off Valves Less than 4 Inch (100 mm) in Diameter**
PVC ball valves.
**1) Shut Off Valves 4 Inch (100 mm) and Larger in Diameter**
AWWA C509 or AWWA C515, nonrising stem, and flanged. Provide valves with handwheels that open by counterclockwise rotation of the valve stem. Provide epoxy coating in accordance with AWWA C550.
b. **Check Valves**
**1) Check Valves Less than 4-Inch (100 mm) in Diameter**
Neoprene ball check valve with integral hydraulic sealing flange, designed for a hydraulic working pressure of 175 psi (1200 kPa).

**Check Valves 4-Inch (100 mm) and Larger in Diameter**
AWWA C508, flanged. Provide a nonclog, swing check valve rated for not less than 175 psig (1200 kPa) working pressure capable of passing 3-inch (75 mm) diameter solids.

**2) Air Relief Valves:** Provide air relief valves at high points in the force main to prevent air locking in accordance with AWWA M51. Provide vacuum relief valves, where required, to relieve negative pressures on force mains.

19. **Identification Tags and Plates:** Provide valves with tags or plates numbered and stamped for their usage. Use plates and tags of brass or nonferrous material and mounted or attached to the valve.

20. **Thrust Restraint:** Provide thrust restraint for force mains, valves and other features of the wastewater distribution system. Provide thrust restraint using restrained joints in accordance with pipe manufacturer's recommendations, AWWA C600 and if for fire service main, NFPA 24.

21. **Station Control System:** Provide alarms for all pumping and lift stations; at minimum provide alarms for high level, power failure, pump failure, unauthorized entry or any cause of station malfunction. Provide alarms as required by the pump manufacturer to obtain warranty. If required, provide a telemetry system in accordance with state sewer collection and treatment regulations and system owner's requirements to relay alarms to a facility that is manned 24 hours a day.

22. **Station Accessories:**
    a. **Ventilation:** Provide covered wet wells with provisions for air displacement venting to the outside. Provide galvanized ASTM A 53/A 53M pipe with insect screening. Provide adequate ventilation for all pump stations.
    b. **Metering:** Provide devices for measuring wastewater flow at all pumping stations. Provide indicating, totalizing and recording flow measurement at pumping stations with a 1200 gpm (76 l/s) or greater design peak hourly flow. For smaller stations, provide elapsed time meters in conjunction with pumping rate tests.
    c. **Pipe and Valve Supports:** Use schedule 40 galvanized steel piping conforming to ASTM A 53/A 53M for pipe and valve supports. Provide either ANSI B16.3 or ANSI B16.11 galvanized threaded fittings.
    d. **Miscellaneous Metals:** Use stainless steel bolts, nuts, washers, anchors, and supports for installation of equipment.

## G3030 STORM SEWER

1. **Storm System Design and Construction**: Provide the new storm sewer system and connections to the existing storm sewer system in accordance with UFC 3-201-01, *Civil Engineering*; the utility provider's requirements; UFC 3-210-10, *Low Impact Development*; the state stormwater management laws and regulations; and applicable sustainability requirements; whichever is more stringent.

   The Contractor must make necessary adjustments to the drainage design in order to avoid disruption to existing utilities and to protect existing trees to remain.

   Confirm that the existing receiving system has adequate capacity to receive the additional stormwater flow generated by the project.

2. **Storm Sewer System Performance Verification**: At a minimum, perform the following:
    a. Visual Test: Remove drainage structure covers and conduct a visual inspection as follows:

1) Inspect for visible leaks in lines or structures.2) Inspect condition of grout in the interior joints of the structures.3) Inspect structure frames and covers for proper type and installation.4) Inspect to see if lines are free of debris.5) Inspect structure inverts.6) Check alignment and grade of gravity lines by laser or by introducing sufficient water into the line to verify the absence of sags, as directed by the Contracting Officer.7) Mirror test: Check each

straight run of pipeline for gross deficiencies by holding a light in a structure; it must show a full circle of light through the pipeline when viewed from the adjoining end of the line.8) TV Inspection for Storm Sewer Under Pavements: Post-installation TV inspection will be performed on all segments of the installed system when the total footage of storm sewer lines installed in the contract is in excess of 300 feet. Complete the post-installation TV inspection to confirm that the completed lines are free of defects. For video recordings include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected. The minimum information to be included is the pipe material, pipe size, starting and stopping manholes and descriptions of any features as they occur. Video recording playback must be at the same speed that it was recorded. Permanently label CDs / DVDs according to their contents; CDs / DVDs will become the property of the Government. Provide all TV inspections of storm sewer lines in accordance with the Pipeline Assessment and Certification Program as sponsored by the National Association of Sewer Service Companies (NASSCO). Prior to initiating CCTV inspection, provide copies of PACP Certification of the operators that will be performing the work. Complete pipe segments and manhole work, including pipe penetrations, manhole benches, main line and manhole visual inspection, pressure testing, and deflection test on a section of line (manhole to manhole) prior to performing TV. Complete post-installation TV inspection in the presence of the Contracting Officer or his designated representative. The importance of accurate measurements is emphasized. The meter device must be accurate to one tenth of a foot. Utilize the full capabilities of the camera equipment to document the completion and the conformance of the work to the Contract Documents. Provide a full 360Ã‚Â° view of the pipe, joints and service connections. Move the camera through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. The maximum speed must be no greater than 30 feet per minute. Use manual wenches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with the proper documentation of the sewer conditions to move the camera through the sewer line. Once video recording has commenced, the recording must be continuous, without interruption, until the termination manhole is reached. Provide a color video showing the completed work. Prepare and submit Television Inspection Logs providing location of service connections along with the location of any discrepancies. Keep computer printed location records (Television Inspection Logs) and clearly show the location and orientation in relation to an adjacent manhole for each point observed during the TV inspection. Record features of significance such as locations and orientations of service connections, pipe deflections, leaks, rolled or dislodged gaskets, sags or bellies in the line, or wide joints. Document noted defects and lateral connections as color digital files and color hard copy prints. Photo logs must accompany each photo submitted. Prior to submission of the TV inspection video, Television Inspection Logs, and digital photographs to the Contracting Officer, review the submittal items to insure that they meet the quality criteria set forth in this specification. A copy of such video along with the Television Inspection Logs and Digital photographs must be supplied to the Contracting Officer within five (5) business days of completion of the video -inspection. In the event that the video, Television Inspection Logs or digital photographs are deemed of poor quality or substandard by the Contracting Officer, the videos, and / or Television Logs, or digital photographs will be returned and a re-inspection provided by the Contractor, at no additional cost to the Government.

3. **Piping:** Storm sewer piping 12 inches (300 mm) and larger in diameter shall be reinforced concrete, dutile iron or corrugated steel; PVC, corrugated aluminum, polyethylene and polypropylene pipe may only be used when written approval is received by the Government's Civil Reviewer or indicated in another part of the RFP. Subsurface drainage piping shall be perforated PVC or HDPE.

4. **Piping Materials:**

a. PVC Pipe
   1) Piping and Fittings: ASTM D3034, SDR 35.
   2) Joints: ASTM D3212 and ASTM F477.

b. Ductile Iron Pipe
   1) Piping: ASTM A746. Provide required Thickness Class based on design information and methods in ASTM A746.
   2) Fittings: AWWA C110 or AWWA C153.
   3) Joints: AWWA C111.
   4) Interior Coating: AWWA C104.
   5) Exterior Protection (if required): AWWA C105, polyethylene encasement.

c. Reinforced Concrete Pipe:
   1) Circular Pipe: ASTM C76/C76M. Provide required Class based on design information and methods in ASTM C76/C76M. Class III minimum.
   2) Elliptical Pipe: ASTM C507/C507M. Provide required Class based on design information and methods in ASTM C76/C76M.
   3) Joints:

a) ASTM C990/C990M butyl gaskets; b) ASTM C 443/C 443M rubber O-ring joints; or c) AASHTO M 198, Type B preformed plastic gaskets.

d. Corrugated Aluminum Pipe:
   1) Piping: ASTM B745/B745M.
   2) Joints: Coupling bands conforming to ASTM B745/B745M.
   3) Coating: Fully bituminous coated for all applications in accordance with ASTM A849. For applications where piping is part of a piped storm sewer system (not a culvert), provide pipe fully bituminous coated, invert (half) paved with concrete lining in accordance with ASTM A849.

e. Corrugated Steel Pipe:
   1) Piping: ASTM A760/A760M.
   2) Joints: Coupling bands conforming to ASTM A760/A760M.
   3) Coating: Fully bituminous coated for all applications in accordance with ASTM A849. For applications where piping is part of a piped storm sewer system (not a culvert), provide pipe fully bituminous coated, invert (half) paved with concrete lining in accordance with ASTM A849.

f. Polyetheylene (PE) Pipe
   1) Piping 12" to 60" and Fittings: ASTM 2648/F2648M and AASHTO M 294 Type S, corrugated.
   2) Joints: ASTM F477 and ASTM D3212

g. Dual and Triple Wall Polypropylene (PP) Pipe
   1) Piping 12" to 60" and Fittings: ASTM F2736, ASTM F2764/F2764M, ASTM F2881 and AASHTO M 330 Type S or D
   2) Joints: ASTM F477 and ASTM D3212

h. Perforated PVC Pipe: ASTM D 2729.

i. Perforated PE Pipe
   1) Piping and Fittings: AASHTO M 294, Type SP, corrugated.
   2) Joints: AASHTO M 294, Soiltight.

5. **Installation:** Install piping in accordance with manufacturer's recommendations and the following standards:
   a. PVC, PE and Dual and Triple Wall PP: ASTM D 2321. Do not use ASTM D 2321 Class IV or V materials for bedding, haunching or initial backfill materials.
   b. Ductile Iron: AWWA C600.
   c. Reinforced Concrete: ACPA 01-102 and 01-103.
   d. Corrugated Aluminum: ASTM B 788/B 788M.
   e. Corrugated Steel: ASTM A 798/A 798M.
   f. Perforated PVC and Perforated PE: ASTM D 2321. Do not use ASTM D 2321 Class IV or V materials for bedding, haunching or initial backfill materials.

   Provide nondetectable warning tape and a continuous length of tracer wire for

the full length of each run of nonmetallic piping below grade. Warning tape to be color coded with warning and identification of utility type imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (utility type) LINE BELOW" or similar wording. Color to be green for sewer systems. Terminate tracer wire above grade at valve boxes and at exterior of building.

6. **Piping for Cleanouts: Materials**
   a. Cast-Iron Soil Pipe for Cleanouts
      1) Pipe: ASTM A 74, service.
      2) Joints: ASTM C 564 compression-type rubber gaskets.
      3) Exterior Protection (if required): AWWA C105, polyethylene encasement.
   b. Installation: Install cast iron pipe and fittings in accordance with the recommendations of the pipe manufacturer.

7. **Storm Sewer Structures:** Provide all materials, equipment, labor, testing, and miscellaneous related items for the drainage structures in accordance with the following:
   a. Set structure rim elevations flush with finished surface of paved areas or 1 inch (25 mm) above finished grade in unpaved areas.
   b. Provide resilient connectors for making joints between manhole and pipes entering manhole in conformance with ASTM C 923/C 923M.
   c. Provide precast or cast-in-place concrete drainage structures, except cast-in-place concrete is required for airfield drainage structures, headwalls and gutters.

8. **Precast Concrete Inlets:** Provide work and materials in accordance with applicable requirements of the State Highway Specifications (SHS) and standards where the project is located.

9. **Cast-In-Place Concrete Drainage Structures:** Provide work and materials in accordance with drainage structures indicated in the State Highway Specifications (SHS) and standards where the project is located. For airfield drainage structures, provide work and materials in accordance with FAA ACA 150/5370-10B.

10. **Drainage Structure Frames And Covers:** Frame and cover for gratings shall be cast gray iron, ASTM A48/A48M, Class 35B; cast ductile iron, ASTM A536, Grade 65-45-12; or cast aluminum, ASTM B26/B26M, Alloy 356.OT6. Frame and cover must be designed to accommodate the imposed live loads. Stamp or cast the words "Storm Sewer" into covers so that it is plainly visible. For airfield drainage structures, fabricate frames and covers of standard commercial grade steel welded by qualified welders in accordance with AWS D1.1/D1.1M. Provide covers of rolled steel floor plate having an approved anti-slip surface. Steel frames and covers must be hot dipped galvanized after fabrication. At the contractor's option, ductile iron covers and frames may be used for airfield drainage structures if designed for a minimum proof load of 100,000 pounds (45,000 kg) in lieu of the steel frames and covers. Covers must be of the same material as the frames (i.e. ductile iron frame with ductile iron cover, galvanized steel frame with galvanized steel cover). Perform proof loading in accordance with ASTM A 48/A 48M. Physically stamp proof loads into the cover. Provide the Contracting Officer copies of previous proof load test results performed on the same frames and covers as proposed for this contract. Modify the top of the structure to accept the ductile iron structure in lieu of the steel structure indicated. The finished structure must be level and non-rocking, with the top flush with the surrounding pavement.

11. **Drainage Structure Steps:**
   a. Zinc-coated steel: 29 CFR 1910.27.

b. Plastic or rubber coating pressure molded to steel: ASTM D 4101, copolymer polypropylene; or ASTM C 443/C 443M, except shore A durometer hardness shall be 70 plus or minus 5.
c. Aluminum steps or rungs will not be permitted. Steps are not required in structures less than 4 feet (1.2 m) deep.

12. **Drainage Structure Construction:** Where a new structure is constructed on an existing line, remove existing pipe as necessary to construct the structure. Cut existing pipe so that pipe ends are approximately flush with the interior face of structure wall, but not protruding into the structure.

13. **Connections to Existing Structures:** Center pipe connections to existing structures on the structure. Holes for the new pipe must be of sufficient diameter to allow packing cement mortar around the entire periphery of the pipe but no larger than 1.5 times the diameter of the pipe. Cut the structure in a manner that will cause the least damage to the walls.

14. **Cleanouts:** Construct cleanouts of cast iron soil pipe and fittings; see paragraph 6 above.

15. **Lift Stations:** A stormwater pump station(s) will not be allowed.

16. **Culverts:** Culverts 12 inches (300 mm) and larger in diameter shall be reinforced concrete or corrugated steel; PVC, corrugated aluminum, polyethylene and polypropylene pipe may only be used when written approval is received by the Government's Civil Reviewer or indicated in another part of the RFP. See G303001, paragraphs above for material and installation requirements. Flared end sections must be the same material as pipe material. Provide erosion control in accordance with the State Erosion and Sedimentation Control Standards or EPA guidance where State Standards are unavailable.

17. **Headwalls:** Provide cast-in-place concrete headwalls in accordance with the State Highway Specification (SHS) and standards where the project is located.

18. **Erosion & Sediment Control Measures:** Refer to Section G10.

19. **Stormwater Management:**
a. **Stormwater Collection And Storage:** Provide permanent stormwater management (i.e., detention and retention ponds, LID and other drainage features) to control stormwater runoff in accordance with UFC 3-201-01, *Civil Engineering*, UFC 3-210-10, *Low Impact Development*, FC 1-300-09N Navy and Marine Corps Design Procedures, State and local stormwater management Laws and Regulations and applicable project sustainability goals. Integrate permanent stormwater management features into the site design in accordance with UFC 3-201-01, *Civil Engineering*. Parking areas, roads, walks, courtyards, training areas and similar site features may not be used to detain or retain stormwater. Manage stormwater within detention or retention ponds and the LID features indicated in Part 3 of this RFP. Prevent upstream and downstream property damage.

20. **OIL/WATER SEPARATOR:** Provide an oil/water separator to remove free oil from oil-in-water mixtures originating from proposed facility operations. Provide grit protection

upstream of the oil/water separator. Provide an oil/water separator utilizing coalescing media and conforming to the applicable guidelines of the American Petroleum Institute (API). Provide materials or a coating system which will protect the separator from the oil-in-water mixture, atmosphere, and in-situ soil conditions. Use a separator with a completely removable cover.

## G3060 FUEL DISTRIBUTION

**Gas Distribution System**: Refer to Section D20 for requirements.

# G40 SITE ELECTRICAL UTILITIES

## G4010 ELECTRICAL DISTRIBUTION

1. **Electrical Utilities Design and Construction**: Site electrical utilities include all exterior electrical work, including the connection to the primary distribution system. This also includes telephone and cable television supplies.

   Provide electrical overhead and underground, distribution systems in accordance with IEEE C2 (National Electrical Safety Code), NFPA 70, local utilities company requirements, and local Activity guidelines.

2. **Coordination With Local Utilities Company and Local Activity**: Service meters for electrical services must be provided and installed in conformance with the local utilities company requirements and local activity guidelines.

3. **Substations**: When secondary unit substations are required, the Designer of Record must utilize UFGS Section 26 11 16, *Secondary Unit Substations*, and UFGS Section 26 23 00, *Low-Voltage Switchgear*, or UFGS 26 24 13, *Switchboards*, for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

4. **Transformers**: When transformers are required, the Designer of Record must utilize UFGS Section 26 12 19.10, *Three-Phase, Liquid-Filled Pad-Mounted Transformers*, UFGS Section 26 12 21, *Single-Phase Pad-Mounted Transformers*, or UFGS Section 33 71 01, *Overhead Transmission and Distribution*, for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

5. **Switches, Controls and Devices**: When switches or control devices are required, the Designer of Record must utilize UFGS Section 26 13 00, *SF6/High-Firepoint Fluids Insulated Pad-Mounted Switchgear*, or UFGS Section 33 71 01, *Overhead Transmission and Distribution*, for the project specification, and must submit the edited specification section as a part of the design submittal for the project.

## G4020 EXTERIOR LIGHTING FIXTURES AND CONTROLS

1. Exterior lighting, including fixtures, controls is not required as part of the LED video display upgrade project scope. No installation, modification, or replacement of exterior lighting systems shall be performed under this contract.

2. Any lighting existing on site will remain as is, and no new lighting shall be installed for the video display system or otherwise. Coordination with landscape designers or other disciplines regarding lighting is outside the scope of this project.

## G4030 SITE COMMUNICATION & SECURITY

1. This project does not include installation, upgrade, or modification of general telephone distribution, cable television systems, or other communications infrastructure beyond the telecommunications systems required specifically for the LED video display system.

2. The Contractor shall coordinate with existing communication and security systems to avoid interference or conflicts during installation of the LED video display system equipment.

# PART 5 PRESCRIPTIVE SPECIFICATIONS

## Included in Part 2 General Requirements. To be submitted as a separate package.

# PART 6 ATTACHMENTS

**Attachment A – 25% Concept Drawings**
**Attachment B – As-Built Drawings – FOR REFERENCE ONLY**
**Attachment C – Structural Report – FOR REFERENCE ONLY**
**Attachment D – Field Investigation Report – FOR REFERENCE ONLY**
**Attachment E – Roofing Systems Guarantee – FOR REFERENCE ONLY**

# Attachment A – 25% Concept Drawings

US Army Corps
of Engineers ®
NEW YORK DISTRICT

TETRA TECH

Mason&Hanger
A Day & Zimmermann Company

Joint Venture

# MANHATTAN, NEW YORK
# TIMES SQUARE VIDEO DISPLAY UPGRADE

## PROJECT # 461269

SOLICITATION NO.: TBD
CONTRACT NO.: TBD
ISSUE DATE: AUGUST 2025
VOLUME:

## SHEET LIST

| SHEET | SHEET NAME |
|---|---|
| GENERAL | |
| G-001 | COVER SHEET |
| G-002 | PROJECT NOTES AND ASSET OPTIONS |
| CIVIL | |
| CS-101 | SITE LOGISTICS PLAN |
| STRUCTURAL | |
| S-001 | STRUCTURAL GENERAL NOTES |
| S-101 | STRUCTURAL PLANS AND SECTIONS |
| ARCHITECTURE | |
| A-100 | EXISTING FLOOR PLAN |
| A-101 | PLAN WITH LED OVERLAY |
| A-102 | ROOF PLAN |
| A-201 | ELEVATIONS |
| A-301 | SECTIONS |
| A-302 | SECTIONS |
| A-901 | EXISTING CONDITIONS |
| A-902 | D2 AND D3 LED OVERLAY |
| A-903 | D3 AND D4 LED OVERLAY |
| ELECTRICAL | |
| E-101 | ELECTRICAL POWER PLAN - LEVEL 1 |
| E-102 | ELECTRICAL POWER PLAN - ROOF |
| E-201 | ELECTRICAL RISER AND SCHEDULES |
| COMMUNICATIONS | |
| T-101 | COMMUNICATIONS PLAN - LEVEL 1 |

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. CONES
SUBMITTED BY: U. REYES
SIZE: ANSI D
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER
JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

COVER SHEET

SHEET ID
G-001

RTA SUBMISSION

# PROJECT NOTES: MINIMUM SPECIFICATIONS AND REQUIREMENTS

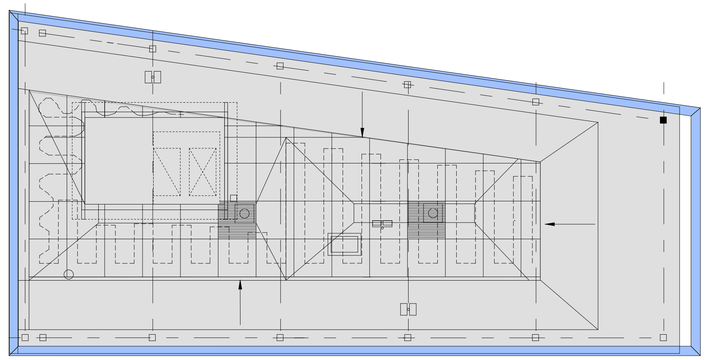
| | |
|---|---|
| PIXEL PITCH: | 6- 6.67MM EXTERIOR |
| LED CONFIGURATION: | SURFACE MOUNT DEVICE |
| LED PIXEL RESOLUTION: | TBD [SEE DRAWINGS] |
| BRIGHTNESS: | 7000 NITS MINIMUM |
| BIT DIMMING: | 11- 14 NITS |
| COLORS: | 281 TRILLION MINIMUM |
| CONTRAST RATIO: | 2,000 TO 1 |
| DIMMING: | 100 LEVELS MINIMUM<br>AUTO OR MANUAL |
| DISPLAY VIEW ANGLES: | 150º HORIZONTAL<br>-70º VERTICAL |
| REFRESH RATE: | 3,840 HZ MINIMUM |
| CONTINUOUS WORK TIME: | 24 HOURS, 365 DAYS |
| LIFETIME: | 100,000 HOURS |
| SERVICE AREA: | FRONT AND REAR [TBD] |
| OPERATING TEMPERATURE: | -20C TO 60C |
| OPERATING HUMIDITY: | 10% TO 95% RH |
| CONTENT FORMAT: | TEXT, ANIMATION, GRAPHIC, & MOTION VIDEO |
| POWER PER SQ.FT.: | 20W AVERAGE<br>60W MAXIMUM |
| WEATHER PROTECTION: | IP 65 FRONT<br>IP 54 REAR |
| CERTIFIED STANDARD: | UL/FCC |
| CONTENT MANAGEMENT: | NOVASTAR & SENSORS [NOVASTAR BASIS OF DESIGN] |
| MODULES FOR MAIN: | 2% SPARES |
| MODULES FOR CUSTOM: | ±10% SPARES |
| WARRANTY: | 2 YEARS PARTS AND LABOR ON THE SYSTEM |

# LED VENDOR REQUIREMENTS

1. VENDOR TO PROVIDE AN OUTLINE OF THE SCHEDULE TIMELINE, DETAILING WHEN ALL PROCESSES ARE EXPECTED TO BE COMPLETED.
2. IN THE SCHEDULE, PROVIDE TASKS, STATUS, START DATE, END DATE, DURATION, AND ANY PROJECT-SPECIFIC ITEMS REQUIRED BY THE LED VENDOR TO ACCOMPLISH THE WORK.
3. PROVIDE LEAD TIMES, PROCUREMENT, FABRICATION, SHIPPING, AND OTHER DETAILS FOR ALL MATERIAL AND COLOR SAMPLES TO BE SUBMITTED FOR REVIEW, AS WELL AS FOR ALL PRODUCTS REQUIRED TO COMPLETE THE WORK.
4. ROVIDE THE PDR, CDR, FACTORY ACCEPTANCE TEST (FAT), AND ALL SHOP DRAWING DELIVERY DATES. FACTOR A 5-DAY REVIEW PERIOD INTO THE SCHEDULE.
5. VERIFY THAT THE CORRECT ARCHITECTURAL BACKGROUNDS (DESIGN INTENT) ARE USED AS THE BASIS FOR THE SHOP DRAWINGS. THE LED VENDOR MUST VERIFY ALL PHYSICAL SITE CONDITIONS BEFORE WORK.
6. PROVIDE SPECIFIATIONS FOR EACH MATERIAL REQUIRED TO COMPLETE THE WORK, WITH COLOR SAMPLES FOR APPROVAL. PAINT FIISHES ARE TO BE SATIN UNLESS OTHERWISE NOTED.
7. PROVIDE A FULL RANGE OF THE MANUFACTURER'S COLOR AND MATERIALS PALETTE. THE DIFFERENT COLOR SYSTEMS, SUCH AS PANTONE, RAL, SHERWIN-WILLIAMS, AND NAPA, DO NOT USE THE SAME NAMING AND NUMBERING SYSTEMS. SPECIFICATIONS, PHYSICAL PAINT, AND MATERIAL SAMPLES ARE REQUIRED.
8. PROVIDE [2] MATERIAL SAMPLES FOR EACH MATERIAL AND COLOR PAINT. A PAINT SAMPLE WILL BE APPLIED TO THE MATERIAL USED IN THE PROJECT. PROVIDE PAINT FOR EACH MATERIAL
SED TO ACCOMPLISH THE WORK. PROVIDE 6"X6" SAMPLES UNLESS OTHERWISE NOTED. PROVIDE A LABEL ON THE REVERSE OF EACH SAMPLE INDICATING THE MATERIAL, COLOR, AND PRODUCT NAME.
9. PROVIDE 1/8" THICK ALUMINUM PANELS IN THE SPECIFIED COLOR(S). PROVIDE MATERIALS THAT ARE THICK AND RIGID ENOUGH TO PREVENT VISUAL DISTORTIONS. PREVENT ANY BUCKLING OR WARPING OF THE METAL PANELS. TORQUE ALL FASTENERS TO THE CORRECT LEVEL TO PREVENT BUCKLING, WARPING, AND OIL-CANNING.
10. USE HIDDEN FASTENERS -OR- COUNTERSINK ALL VISIBLE SCREWS AND FASTENERS IN PREDRILLED HOLES.
11. ALL VISIBLE FASTENERS FINISH TO MATCH THE PANEL TO WHICH THEY ARE ATTACHED.
12. ALL PERFORATION PATTERNS ARE TO BE CUSTOM AND APPROVED BY THE OWNER'S TEAM.
13. ALL PERFORATED PANELS ARE TO HAVE SOLID EDGE MARGINS OF 1". COORDINATE WITH DESIGN INTENT DRAWINGS.
14. PROVIDE DRAWINGS AND SPECIFICATIONS FOR THE MATERIAL THICKNESS, PERFORATION OPENNESS, AND MATERIAL COMPOSITION.
15. THE VENDOR MUST VERIFY THE REQUIRED PERFORATION OPENNESS TO MEET THE VENTILATION REQUIREMENTS OF THE LEDS. ALL PERFORATED PANELS WILL HAVE CUSTOM PERFORATION PATTERNS. [D2] LED WILL REQUIRE PERFORATED CLADDING FOR VENTILATION AT THE BOTTOM AND THE SIDES.
16. THE VENDOR WILL PROVIDE AN EFFECTIVE SOLUTION FOR THE COFIDENCE CAMERAS.
17. PROVIDE SPECIFICATIONS FOR EACH CAMERA TYPE USED IN THE PROJECT. IF A PTZ CAMERA TYPE IS USED, ENSURE THAT THE VIEW POSITION AND ANGLE COMPLETELY COVER THE LED FACES, TAKING OBSTRUCTIONS INTO ACCOUNT.
18. PROVIDE THE CONTENT MANAGEMENT SYSTEM RACK WITH A COFIDENCE CAMERA CONDUIT AND CABLE PLAN EARLY IN THE WORK. INSTALL THE CAMERAS BEFORE THE DISPLAY(S). COFIDENCE CAMERAS MAY HAVE POWER AT THE SOURCE AND DATA RELAYED BACK TO THE RACK WITHOUT A DATA CABLE.
19. PROVIDE A MONITORING SYSTEM THAT DELIVERS CLEAR VIEWS OF THE DISPLAYS TO THE MANAGEMENT TEAM AT A FRAME RATE THAT ALLOWS REAL-TIME OBSERVATIONS OF THE DISPLAYS 24 HOURS A DAY.
20. PROVIDE DETAILED DRAWINGS FOR APPROVAL THAT CALCULATE THE ASSET'S WEIGHT AND THE FASTENING POINTS TO THE BUILDING'S CONNECTIONS, CONSIDERING LIVE AND DEAD LOADS. PROVIDE DRAWINGS FOR ALL REQUIRED STRUCTURES TO SUPPORT THE ASSET IN THE LOCATION, ENSURING COMPLIANCE WITH SEISMIC, WIND, AND ALL APPLICABLE LOCAL CODES.
21. THE DESIGN INTENT DRAWINGS DO NOT SHOW LATERAL BRACING, BUT WILL BE REQUIRED BY THE LED VENDOR.
22. VERIFY THAT THE DISPLAY ASSEMBLY DEPTH MEETS THE DESIGN INTENT. ASSEMBLY DEPTH REQUIRES DISPLAY, PRIMARY, AND SECONDARY STRUCTURE.
23. FOR PRELIMINARY DESIGN REVIEW [PDR], PROVIDE BASIC DRAWINGS WITH ENOUGH DETAIL TO DEFINE THE SIZE, WEIGHT, AND POWER TO A LEVEL THAT ALLOWS ALL DISCIPLINES, SUCH AS ARCHITECTURAL, STRUCTURAL, ELECTRICAL, DATA, AND MECHANICAL, TO REFINE THEIR PREVIOUS DIAGRAMMATIC WORK ASSUMPTIONS.
24. FOR PDR, PROVIDE A DEAD LOAD CALCULATION FOR THE DISPLAY ASSEMBLY. [EX: L/250]
25. FOR PDR, PROVIDE A BUILDING PLAN DRAWING SHOWING DATA PATHS AND DISTANCES.
26. FOR PDR, THE LED CORNER GAPS BETWEEN LEDS MUST BE A MAXIMUM OF 1/8".
27. FOR THE CRITICAL DESIGN REVIEW [CDR] PROVIDE DETAILED DRAWINGS WITH A HIGH LEVEL OF DETAIL THAT ALLOWS FOR A COMPLETE, DEEP UNDERSTANDING OF WHAT WILL BE REQUIRED TO CONNECT AND PLACE THE SYSTEM INTO ITS ENVIRONMENT.
28. FOR THE CDR, PROVIDE A COMPREHENSIVE DESIGN FOR THE DIGITAL SYSTEMS ROOM, INCLUDING THE LOCATION OF CONTROL RACKS AND THE ROUTING OF ELECTRICAL AND DATA CONDUITS.
29. A COMPATIBLE CONTENT MANAGEMENT SYSTEM [CMS] IS REQUIRED FOR SMOOTH VIDEO PLAYBACK OF THE LEDS.
30. FOR CDR, PROVIDE A SPARE PARTS LIST THAT INCLUDES THE QUANTITY AND PERCENTAGE OF SPARE PARTS, TAKING INTO ACCOUNT ANY CUSTOM COMPONENTS.
31. FOR CDR, LIST THE TOOLS PROVIDED AND REQUIRED TO BE ON SITE FOR FUTURE REPAIRS.
32. FOR CDR, PROVIDE THE REQUIRED NUMBER AND SIZE OF RACKS WITH THE EQUIPMENT LAYOUT.
33. FOR CDR, PROVIDE AN ANALYSIS OF THE SUPPORT STRUCTURE SHOWING LATERAL BRACING.
34. FOR CDR, SPECIFICATIONS FOR ALL FASTENERS MUST BE PROVIDED.
35. FOR CDR, PROVIDE LOAD TABLES FOR THE ENGINEER OF RECORD TO REVIEW.
36. FOR CDR, PROVIDE ALL LANE CLOSURES, PERMIT REQUIREMENTS, AND A SCHEDULE OF ALL INSPECTIONS REQUIRED.
37. FOR CDR, PROVIDE DETAILS ON THE COORDINATION MEANS AND METHODS FOR THE STRUCTURAL ASSEMBLY LOGIC.
38. FOR CDR, SHOW THE DISPLAY LAYOUT AND ON-SITEASSEMBLY IN A PLAN DRAWING.
39. PROVIDE FULLY WORKING DISPLAYS FOR THE FACTORY ACCEPTANCE TEST [FAT] APPROVAL. THE OWNER'S REPRESENTATIVE WILL PROVIDE A PDF INDICATING THE REQUIRED SECTIONS OF THE DISPLAYS FOR TESTING.
40. THE OWNER'S REPRESENTATIVE IS TO PROVIDE A PDF OF THE FAT EXPECTATIONS.
41. PROVIDE FIELD REPORTS DAILY FROM INITIAL CONSTRUCTION TO FINAL ACCEPTANCE. FIELD REPORTS EXPRESS WEATHER, FIELD CONDITIONS, AND CONSTRUCTION PROGRESS.
42. PROVIDE A SHOP DRAWING OF THE SPECIFIC SPACE, IDENTIFYING THE LOCATION OF THE RACK(S).
43. PROVIDE CLEANING FOR FINAL COMPLETION.
44. PROVIDE ANNUAL CLEANING AND A SCHEDULE.
45. PROVIDE SPECIFICATIONS AND PROCEDURES FOR CLEANING AND MAINTAINING THE DISPLAY.
46. PROVIDE PROTECTIVE COVERINGS FOR DISPLAY AND EQUIPMENT WHEN OTHER WORK IS PRESENT, SUCH AS PAINTING OR WELDING.
47. THE VENDOR WILL PROVIDE A TIMELINE AND PLAN FOR REPAIRING AND RETURNING THE DAMAGED MODULES TO SERVICE.
48. A FINE-WEAVE BIRD NETTING WILL BE REQUIRED FOR THE BACK OF THE LED CABINETS.
49. A BIRD DETERRENT IS REQUIRED AT THE TOP OF THE LED CABINET TO REDUCE THE NEED FOR FREQUENT LED CLEANINGS.
50. ALL EXPOSED LED EDGES ARE TO BE CLAD. THE [D2] LED WILL HAVE EXPOSED SIDES THAT WILL REQUIRE CLADDING.
51. A 6" CLEAR GAP BETWEEN THE BOTTOM OF THE LEDS AND THE TOP OF THE FINISHED PARAPET IS REQUIRED. THIS INCLUDES ALL EDGE CLADDING SYSTEMS.
52. THE LED VENDOR CONTRACTOR MUST ENGAGE THE SERVICES OF A REPUTABLE [MINIMUM 10 YEARS' EXPERIENCE] LED DISPLAY CONTRACTOR MUST DESIGN, ENGINEER, FABRICATE, AND INSTALL A LARGE-FORMAT LED DISPLAY BASE, INCLUDING PRIMARY AND SECONDARY STRUCTURAL FRAMES, ELECTRICAL AND DATA WIRING TO THE EXISTING BUILDING STRUCTURE AND INFRASTRUCTURE, AND MAKE ALL NECESSARY CONNECTIONS AND ATTACHMENTS TO BRING THE LED DISPLAYS TO A COMPLETE WORKING ORDER.
53. THE LED VENDOR IS TO PROVIDE CONTENT CREATION GUIDES FOR EACH DISPLAY, D1, D2, D3, AND D4 [AN ADD-ON OPTION IS INCLUDED].
54. VENDOR TO PROVIDE CONTENT CREATION GUIDE EARLY IN THE PROCESS TO ENSURE CONTENT CREATORS HAVE GUIDANCE.
55. VENDOR TO PROVIDE FULL COMMISSIONING, ENSURING FULL MOTION, REPAIRED PIXEL OUTAGES, HOT SEAMS, COLD SEAMS, COLORS, BRIGHTNESS, NIT LEVELS, AND VISUAL FAULTLESSNESS. ENSURE A FULLY FUNCTIONING, FAULTLESS SYSTEM.

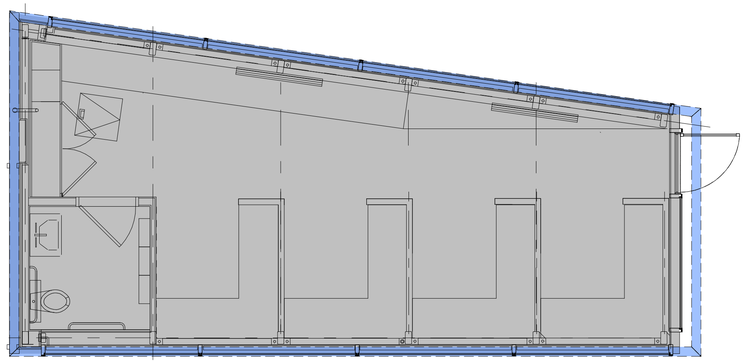
# ASSET OPTIONS

| LED ASSET CODE AND LOCATION | TYPE | LED DISPLAY SIZE WIDTH | LED DISPLAY SIZE HEIGHT | TOTAL AREA | WEIGHT | AVERAGE POWER | MAXIMUM POWER | MAXIMUM HEAT LOAD | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| D1: WEST: BASE | 6mm to 6.67mm EXTERIOR LED | (± 37.0 ft) 11,278 mm | (± 10.0 ft) 3,048 mm | (± 370.0 sf) 34.37 m2 | (± 5,550 lb) ± 2,517 kg | ± 11,840 W | ± 29,230 W | (± 99,737 Btu/h) ± 105,228 kJ/h | |
| D2: NORTH: BASE | 6mm to 6.67mm EXTERIOR LED | (± 13,250 ft) 4,039 mm | (± 20.0 ft) 6,096 mm | (± 265.0 sf) 24.62 m2 | (± 3,975 lb) ± 1,803 kg | ± 8,480 W | ± 20,935 W | (± 71,433 Btu/h) ± 75,366 kJ/h | BASE [D1,D2, D3]: |
| D3: EAST: BASE | 6mm to 6.67mm EXTERIOR LED | (± 36.50 ft) 11,125 mm | (± 10.0 ft) 3,048 mm | (± 365.0 sf) 33.91 m2 | (± 5,475 lb) ± 2,483 kg | ± 11,680 W | ± 28,835 W | (± 98,389 Btu/h) ± 103,806 kJ/h | Total Area: 1000sft |
| D4: SOUTH: BID OPTION 1 | 6mm to 6.67mm EXTERIOR LED | (± 18.0 ft) 5,486 mm | (± 10.0 ft) 3,048 mm | (± 180.0 sf) 16.72 m2 | (± 2,700 lb) ± 1,225 kg | ± 5,760 W | ± 14,220 W | (± 48,521 Btu/h) ± 51,192 kJ/h | With [D4] Option 1: 1180sf |
| C1: WEST: | CONFIDENCE CAMERA | +EACH LED FACES TO BE MONITORED WITH A CONFIDENCE CAMERA IN ORDER FOR ANY POTENTIAL DOWN TIME OF THE DISPLAY TO BE AT A MINIMUM. | | | | | | | |
| C2: NORTH: | CONFIDENCE CAMERA | +THE LOCATION OF THE CAMERAS TO BE DETERMINED BY SITE CONDITIONS. | | | | | | | |
| C3: EAST: | CONFIDENCE CAMERA | | | | | | | | |
| C4: SOUTH: | CONFIDENCE CAMERA | | | | | | | | |



## ROOF PLAN WITH BID OPTION 1

PLAN NORTH



## FIRST FLOOR PLAN WITH BID OPTION 1

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. COMES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

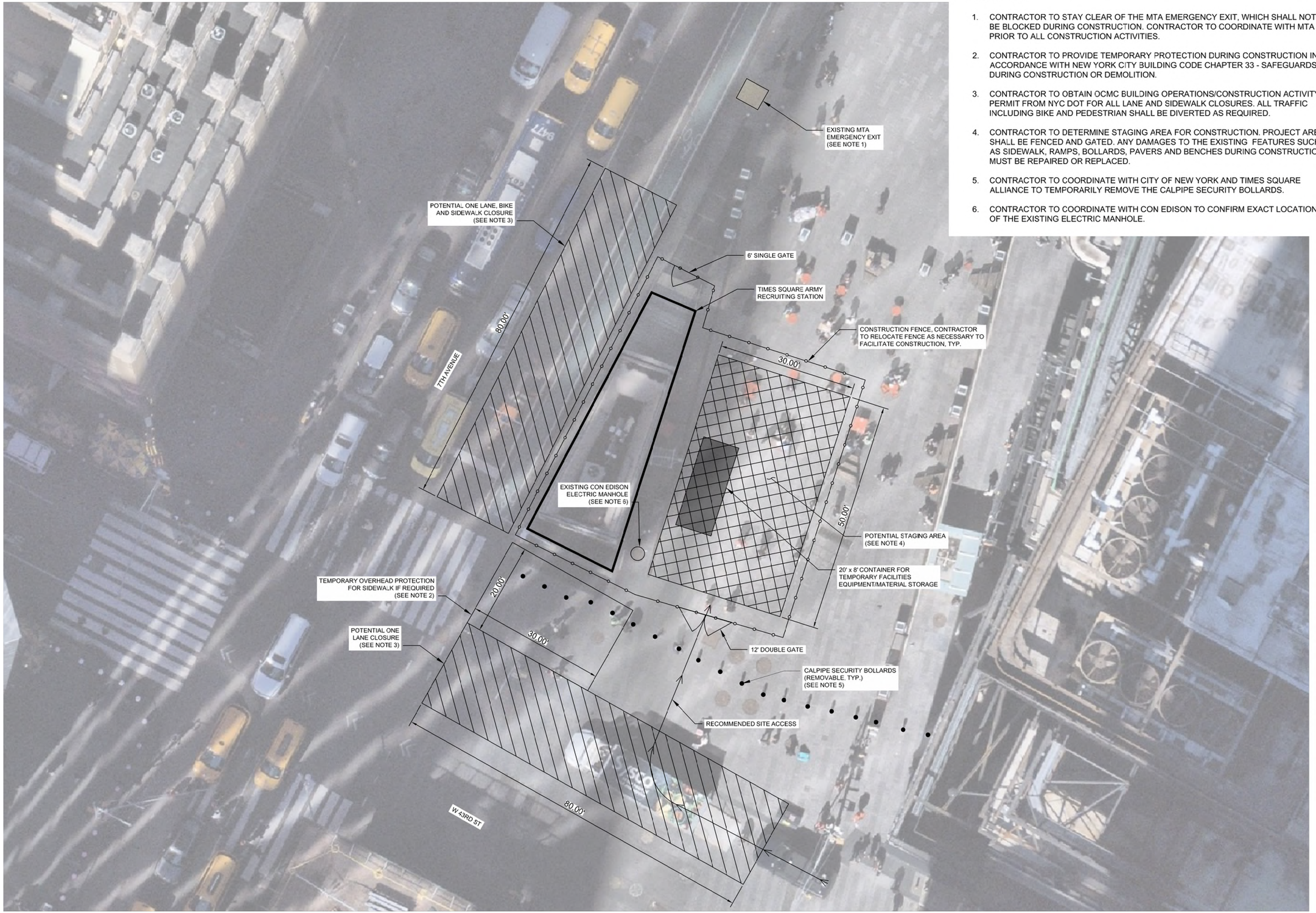
TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

PROJECT NOTES AND ASSET OPTIONS

SHEET ID
G-002

RTA SUBMISSION




## NOTES:

1. CONTRACTOR TO STAY CLEAR OF THE MTA EMERGENCY EXIT, WHICH SHALL NOT BE BLOCKED DURING CONSTRUCTION. CONTRACTOR TO COORDINATE WITH MTA PRIOR TO ALL CONSTRUCTION ACTIVITIES.
2. CONTRACTOR TO PROVIDE TEMPORARY PROTECTION DURING CONSTRUCTION IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE CHAPTER 33 - SAFEGUARDS DURING CONSTRUCTION OR DEMOLITION.
3. CONTRACTOR TO OBTAIN OCMC BUILDING OPERATIONS/CONSTRUCTION ACTIVITY PERMIT FROM NYC DOT FOR ALL LANE AND SIDEWALK CLOSURES. ALL TRAFFIC INCLUDING BIKE AND PEDESTRIAN SHALL BE DIVERTED AS REQUIRED.
4. CONTRACTOR TO DETERMINE STAGING AREA FOR CONSTRUCTION. PROJECT AREA SHALL BE FENCED AND GATED. ANY DAMAGES TO THE EXISTING FEATURES SUCH AS SIDEWALK, RAMPS, BOLLARDS, PAVERS AND BENCHES DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED.
5. CONTRACTOR TO COORDINATE WITH CITY OF NEW YORK AND TIMES SQUARE ALLIANCE TO TEMPORARILY REMOVE THE CALPIPE SECURITY BOLLARDS.
6. CONTRACTOR TO COORDINATE WITH CON EDISON TO CONFIRM EXACT LOCATION OF THE EXISTING ELECTRIC MANHOLE.

PLAN NORTH

0 5' 10' 20'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

DESIGNED BY: A. BATHAN
DRAWN BY: T. CHEN
CHECKED BY: J. LEITENBERGER
SUBMITTED BY: J. JONES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MANSON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT #461269

# SITE LOGISTICS PLAN

SHEET ID

CS-101

RTA SUBMISSION

# STRUCTURAL GENERAL NOTES

1. REFER TO THE FOLLOWING DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING THE EXISTING STRUCTURE, CURRENT CONDITIONS AND PRELIMINARY MODIFICATIONS ASSOCIATED WITH THE PROPOSED WORK:
   - A. EXISTING AS-BUILT DRAWINGS, BY PARSONS BRINCKERHOFF, DATED 06-02-1998.
   - B. EXISTING AS-BUILT DRAWINGS, BY GOSHOWARCHITECTS, DATED 03-02-2018
   - C. STRUCTURAL ASSESSMENT REPORT, BY QPK DESIGN, DATED 08-09-2024.
2. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE.
3. ALL REFERENCED STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE IN PROJECT SPECIFICATIONS OR ON THE DRAWING.
4. ALL ELEVATIONS ARE REFERENCED TO THE EXISTING FIRST FLOOR EL. 0'-0". ELEVATIONS SHOWN ON DRAWINGS ARE REFERENCED TO THIS DATUM UNLESS NOTED OTHERWISE.
5. ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
6. ALL NEW WORK SHOWN IS FOR D-B RFP PURPOSES ONLY. D-B CONTRACTOR MAY UTILIZE ALTERNATIVE METHODS TO ACCOMPLISH THE OVERALL STRUCTURAL GOALS OF THIS PROJECT. D-B CONTRACTOR TO SUBMIT ALTERNATIVE METHODS FOR CLIENT REVIEW.
7. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED IN PROJECT SPECIFICATIONS.
8. ABBREVIATIONS:

| | | | | | |
|---|---|---|---|---|---|
| ADD'L | ADDITIONAL | EJ | EXPANSION JOINT | PL | PLATE |
| AISC | AMERICAN INSTITUTE OF STEEL CONSTRUCTION | EL / ELEV. | ELEVATION | PLF | POUNDS PER LINEAR FOOT |
| | | ENGR | ENGINEER | PSF | POUNDS PER SQUARE FOOT |
| ARCH. | ARCHITECT(URAL) | EQ | EQUAL | PSI | POUNDS PER SQUARE INCH |
| B.O.S. | BOTTOM OF STEEL | EX | EXISTING | QTY | QUANTITY |
| BOT. | BOTTOM | FLR | FLOOR | REQ/REQ'D | REQUIRED |
| CL | CENTER LINE | FRMG | FRAMING | REV | REVISION |
| CLR | CLEAR | FT | FOOT | SF | SQUARE FOOT |
| COL | COLUMN | GA | GAGE, GAUGE | SIM. | SIMILAR |
| CONC | CONCRETE | GALV | GALVANIZED | SPEC | SPECIFICATIONS |
| CONT | CONTINUOUS | GR. | GRADE | SQ | SQUARE |
| COORD | COORDINATE | IN. | INCH | SS | STAINLESS STEEL |
| CTR | CENTER | LLH | LONG LEG HORIZONTAL | STL | STEEL |
| D-B | DESIGN-BUILD | LLV | LONG LEG VERTICAL | STRUCT | STRUCTURE(AL) |
| DEMO | DEMOLISH | MAX | MAXIMUM | T/ | TOP OF |
| DIA | DIAMETER | MFR | MANUFACTURER | THK | THICKNESS |
| DTL. | DETAIL | MIN | MINIMUM, MINUTE | TYP | TYPICAL |
| DWG(S) | DRAWING(S) | MISC. | MISCELLANEOUS | UNO | UNLESS NOTED OTHERWISE |
| E/EX/EXIST. | EXISTING | N.T.S. | NOT TO SCALE | V.I.F. | VERIFY IN FIELD |
| EA | EACH | NO | NUMBER | W/ | WITH |
| EF | EACH FACE | O.C. | ON CENTER | W/O | WITHOUT |
| | | OPNG | OPENING | | |

# COMPONENTS & CLADDING WIND PRESSURES ASCE 7-22

FACTORED (ULTIMATE) COMPONENTS & CLADDING WIND PRESSURES (PSF)

**ALL ROOFS 0 TO 10 DEGREES AND h > 60 FT**

| ROOF ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 50 SF | 100 SF |
| NEGATIVE ZONE 1 | -50.5 | -42.8 | -39.5 |
| NEGATIVE ZONE 1' | -29.0 | -29.0 | -29.0 |
| NEGATIVE ZONE 2 | -66.7 | -56.7 | -52.4 |
| NEGATIVE ZONE 3 | -66.7 | -56.7 | -52.4 |
| POSITIVE ALL ZONES | 16.0 | 16.0 | 16.0 |

**WALLS**

| WALL ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 100 SF | 500 SF |
| NEGATIVE ZONE 4 | -31.5 | -27.2 | -24.2 |
| NEGATIVE ZONE 5 | -38.7 | -30.2 | -24.2 |
| POSITIVE ZONE 4 & 5 | 29.0 | 24.8 | 21.8 |

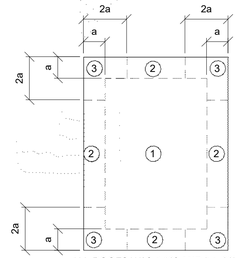
**PARAPETS**

| PARAPET ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 100 SF | 500 SF |
| NEGATIVE ZONE 4p | -55.2 | -45.9 | -39.4 |
| NEGATIVE ZONE 5p | -63.1 | -49.2 | -39.4 |
| POSITIVE ZONE 4p & 5p | 93.5 | 73.3 | 59.3 |

NOTES:

1. EDGE DISTANCE : 'a' = 3'-0"
2. * EFFECTIVE TRIBUTARY AREA: SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN 1/3 THE SPAN LENGTH
3. NEGATIVE VALUE DENOTES PRESSURE ACTING AWAY FROM THE SURFACE
4. UNFACTORED (NOMINAL) COMPONENTS AND CLADDING PRESSURES MAY BE OBTAINED BY MULTIPLYING THE VALUES IN THE TABLE BY 0.60

LOCATION OF WIND PRESSURE ZONES




ALL ROOFS W/ θ ≤ 10° **AND** h > 60'

WALLS

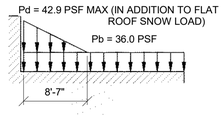
# DESIGN CRITERIA

1. REFERENCES:
   - A. UFC 3-301-01 - STRUCTURAL DESIGN FOR BUILDINGS, WITH CHANGE 3, 3 FEBRUARY 2025
   - B. UFC 4-010-01 - MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS, WITH CHANGE 3, 24 MAY 2024
   - C. ICC INTERNATIONAL BUILDING CODE, 2024 EDITION, RISK CATEGORY II IN ACCORDANCE WITH TABLE 1604.5
   - D. ICC INTERNATIONAL EXISTING BUILDING CODE, 2024 EDITION
   - E. NEW YORK CITY BUILDING CODE, 2022
   - F. STATE BUILDING CODE: NEW YORK, 2020
   - G. ASCE/SEI 7-22 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
2. DEAD LOADS:

| | |
|---|---|
| DEAD LOAD AVAILABLE TO RESIST UPLIFT | = SELF WEIGHT OF STRUCTURAL FRAMING ONLY |
| ROOF | = 10 PSF |
| GROUND FLOOR | = 5 PSF |
| STEEL FRAMING | = SELF WEIGHT |

3. LIVE LOADS (U.N.O.):

| | |
|---|---|
| ROOF | = 20 PSF |
| TYPICAL GROUND FLOORS (OFFICE USE) | = 50 PSF |




SNOW DRIFT DIAGRAM AT DISPLAY

4. ROOF SNOW LOAD:

| | | |
|---|---|---|
| GROUND SNOW LOAD, Pg | = 46.0 PSF | |
| BALANCED SNOW LOAD, Pb | = 36.0 PSF | (Pf OR Ps) |
| MINIMUM SNOW LOAD, Pm | = 30.0 PSF | (LOW SLOPE ROOFS) |
| UNIFORM ROOF DESIGN SNOW LOAD | = 36.0 PSF | |
| SNOW EXPOSURE FACTOR, Ce | = 1.0 | |
| SNOW LOAD IMPORTANCE FACTOR, I | = 1.0 | |
| THERMAL FACTOR, Ct | = 1.149 | |

5. WIND LOAD:

| | |
|---|---|
| BASIC DESIGN WIND SPEED, V | = 117 MPH |
| NOMINAL DESIGN WIND SPEED, Vasd | = 90.6 (Vult*√0.6) MPH |
| RISK CATEGORY | = II |
| WIND EXPOSURE CATEGORY | = C |
| DIRECTIONALITY FACTOR, Kd | = 0.85 |
| TOPOGRAPHIC FACTOR, Kzt | = 1.0 |
| INTERNAL PRESSURE COEFFICIENT, GCpi | = ± 0.18 |
| BUILDING ENCLOSURE CLASSIFICATION | = ENCLOSED |
| WIND PRESSURE ON SOLID SIGNS | = 44.4 PSF |

6. SEISMIC DESIGN DATA:

| | |
|---|---|
| RISK CATEGORY | = II |
| SEISMIC IMPORTANCE FACTOR, Ie | = 1.00 |
| SDS | = 0.120 |
| SD1 | = 0.073 |
| SS | = 0.28 |
| S1 | = 0.05 |
| SITE CLASS | = D (ASSUMED) |
| SEISMIC DESIGN CATEGORY | = B |
| RESPONSE MODIFICATION FACTOR, R | = 3 |
| BASIC SEISMIC FORCE RESISTING SYSTEM | = STRUCTURAL STEEL SYSTEM NOT SPECIFICALLY DETAIL FOR SEISMIC RESISTANCE |
| SEISMIC RESPONSE COEFFICIENT, Cs | = 0.101 |
| ANALYSIS PROCEDURE: | = EQUIVALENT LATERAL FORCE |

7. AT/FP (UFC 4-010-01):

   PER THE REQUIREMENTS OF UFC 4-010-01, WITH CHANGE 3, 24 MAY 2024, HARDENING OF THE BUILDING STRUCTURE IS NOT REQUIRED, INCLUDING AROUND GLAZED WINDOWS AND DOORS, AS THE EXISTING ARMY RECRUITMENT STATION IS CONSIDERED A LOW OCCUPANCY BUILDING AND IS THEREFORE EXEMPT FROM ALL PROVISIONS OF THE STANDARD.

# STRUCTURAL STEEL

1. REFERENCES
   - A. AISC STEEL CONSTRUCTION MANUAL, 16TH EDITION
   - B. AWS D1.1 STRUCTURAL WELDING CODE - STEEL
2. MATERIALS
   - A. GRADE STEEL

| | |
|---|---|
| WIDE FLANGES | ASTM A992, GRADE 50 |
| CHANNELS, ANGLES, AND PLATES | ASTM A572 |
| SHEAR CONNECTOR PLATES | ASTM A572, GRADE 50 |
| STRUCTURAL PIPE | ASTM A53, GRADE B, Fy=35 KSI |
| ROUND HSS | ASTM A500, GRADE C, Fy=50 KSI |
| SQUARE OR RECTANGLE HSS | ASTM A500, GRADE C, Fy=50 KSI |

   - B. ANCHOR BOLTS: ASTM F1554, GRADE 55, WELDABLE.
   - C. STRUCTURAL BOLTS: ASTM A325-N
   - D. WELDS: E70XX ELECTRODES
3. CONNECTIONS
   - A. AISC MANUAL STANDARD CONNECTIONS UNLESS NOTED OTHERWISE. HIGH-STRENGTH BOLTS: ASTM A325-N, 3/4" UNLESS NOTED OTHERWISE. BEARING TYPE INSTALLED IN CONFORMANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS. UNLESS NOTED OTHERWISE, STANDARD AISC "USUAL GAGE" DIMENSIONS SHALL BE USED FOR LOCATING HOLES FOR BOLTS, EXPANSION ANCHORS, ETC. IN ALL ANGLES, BEAM FLANGES, ETC.
   - B. THE ASSEMBLY SURFACE, INCLUDING THOSE ADJACENT TO THE WASHER, SHALL BE FREE OF MILL SCALE, OIL, PAINT OR OTHER COATINGS.
   - C. ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THAT SPECIFIED IN THE AISC MANUAL. FULL TENSIONING SHALL BE BY THE TURN OF NUT METHOD, BY A DIRECT TENSION INDICATOR, OR BY PROPERLY CALIBRATED WRENCHES. PROVIDE HARDENED WASHERS UNDER THE NUT OR BOLT HEAD, WHICHEVER IS THE ELEMENT TURNED IN TIGHTENING.
   - D. WELDING - PERFORM ALL WELDING IN ACCORDANCE WITH AWS D1.1 CODE, LATEST EDITION, WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY AWS IN PERFORMING THE TYPE OF WORK INDICATED.
   - E. ALL BEAMS SHALL HAVE SIMPLE SHEAR CONNECTIONS DESIGNED TO SUPPORT AT LEAST 1/2 THE TOTAL UNIFORM LOAD LISTED IN THE AISC MANUAL OF STEEL CONSTRUCTION.
4. TOLERANCES: AISC CODE OF STANDARD PRACTICE (LATEST EDITION)
5. SHOP DRAWINGS
   - A. SUBMIT ERECTION AND FABRICATION SHOP DRAWINGS FOR A/E APPROVAL PRIOR TO CONSTRUCTION.
   - B. SUBMIT ERECTION PROCEDURES AND TEMPORARY BRACING PLAN FOR A/E REVIEW PRIOR TO CONSTRUCTION.
   - C. SUBMIT CONNECTION CALCULATIONS FOR A/E APPROVAL PRIOR TO CONSTRUCTION.
   - D. SHOP DRAWINGS AND CALCULATIONS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE STRUCTURAL STEEL WILL BE INSTALLED.

# CONCRETE POST-INSTALLED ANCHORS

1. ADHESIVE ANCHORS
   - A. APPROVED SYSTEMS INCLUDE HILTI HIT-RE 500 V3 (ICC ESR 3814) OR HILTI HIT-HY 200 ADHESIVE WITH HAS/HIT-V THREADED ROD WITH SAFESET TECHNOLOGY (ICC ESR 3187) OR EQUAL CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OR COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER ACI 308. CURRENT ICC-ESR SHALL BE SUBMITTED.
   - B. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST.
   - C. HOLE SIZES AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)
   - D. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH SHALL BE BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO WATER SATURATED HOLES DRILLED USING A CARBIDE DRILL BIT INTO CONCRETE THAT HAS BEEN CURED FOR AT LEAST 21 DAYS.
   - E. FILL IN ALL ABANDONED HOLES WITHIN 2" OF NEW ANCHOR LOCATIONS.
   - F. WHERE REQUIRED, A PROGRAM FOR ON-SITE PROOF LOADING, THAT IS, PROOF LOADING PROGRAM, TO BE CONDUCTED AS PART OF THE SPECIAL INSPECTION AND SHALL BE ESTABLISHED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD AND SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS:
     - a. FREQUENCY OF PROOF LOADING BASED ON ANCHOR TYPE, DIAMETER, AND EMBEDMENT.
     - b. PROOF LOADS BY ANCHOR TYPE, DIAMETER, EMBEDMENT, AND LOCATION.
     - c. ACCEPTABLE DISPLACEMENTS AT PROOF LOAD.
     - d. REMEDIAL ACTION IN THE EVENT OF FAILURE TO ACHIEVE PROOF LOAD OR EXCESSIVE DISPLACEMENT.

     UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD, PROOF LOADS SHALL BE APPLIED AS CONFINED TENSION TESTS (4.7.2.3). PROOF LOADS LEVELS SHALL NOT EXCEED THE LESSER OF 50 PERCENT OF THE EXPECTED PEAK LOAD BASED ON ADHESIVE BOND STRENGTH, OR 80 PERCENT OF THE ANCHOR YIELD STRENGTH. MAINTAIN THE PROOF LOAD AT THE REQUIRED LOAD LEVEL FOR A MINIMUM OF 10 SECONDS.
2. EQUIPMENT ANCHORS:
   - A. SIZE, LENGTH, AND LOCATION OF EQUIPMENT ANCHORS SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: J. THOMAS
DRAWN BY: J. THOMAS
CHECKED BY: A. COATS
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

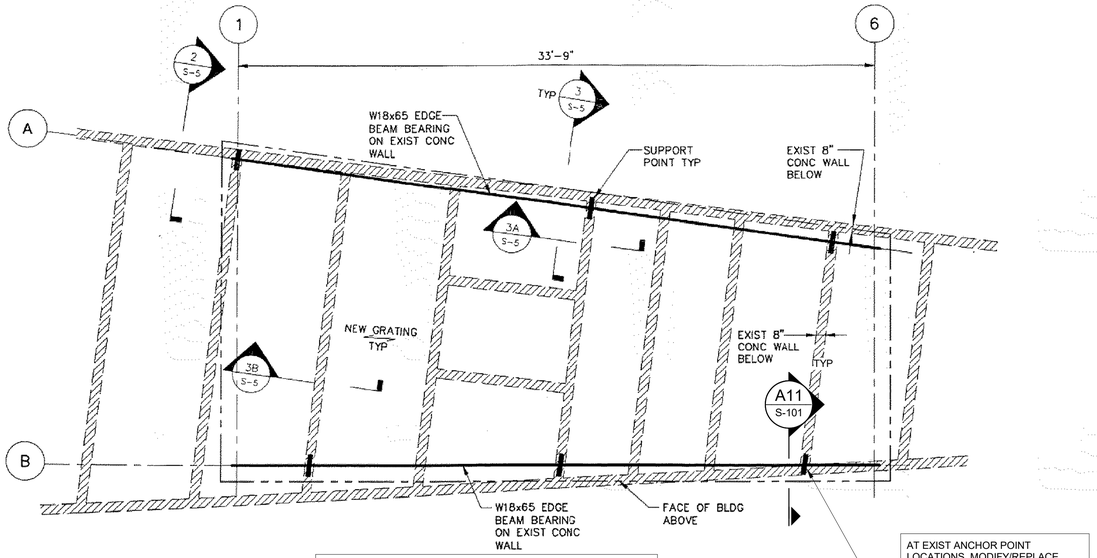
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
J. JONES

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

STRUCTURAL GENERAL NOTES

SHEET ID
S-001

RTA SUBMISSION

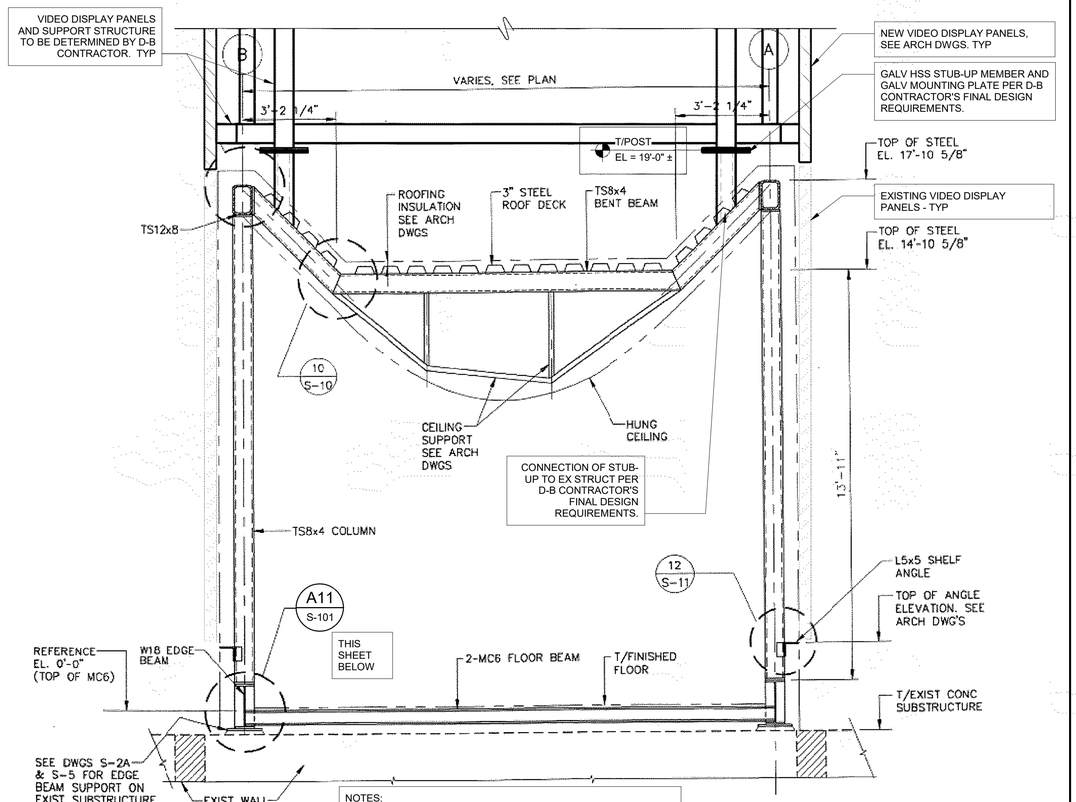



NOTES:

1. EXIST STRUCTURE SUPPORT PLAN IS COPIED FROM RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## J1 EX STRUCTURE SUPPORT PLAN/ NEW WORK

SCALE: NTS

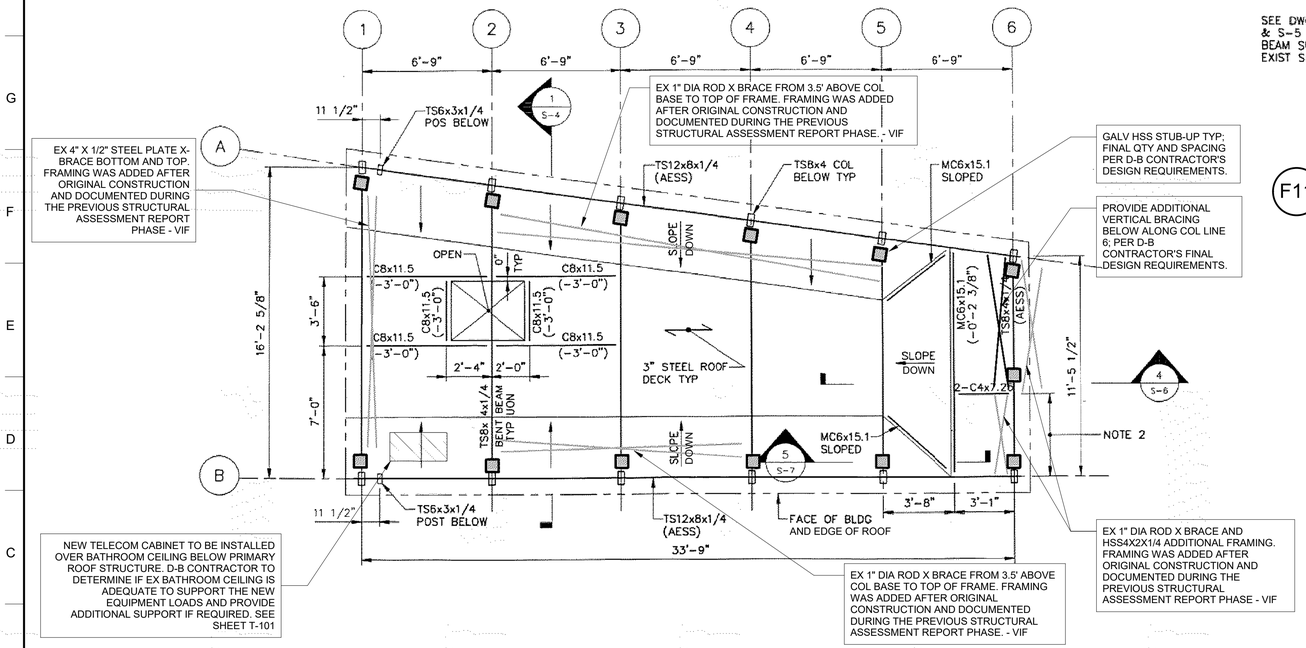



NOTES:

1. EXIST FRAME ELEVATIONIS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## F11 TYP EX FRAME ELEVATION/ NEW WORK

SCALE: NTS



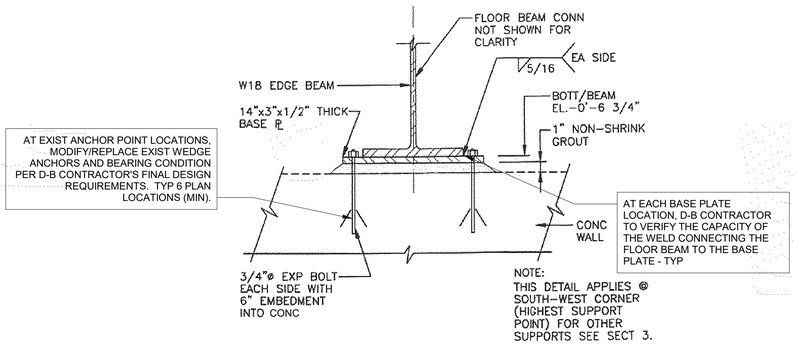

NOTES:

1. EXIST ROOF FRAMING PLAN IS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## A1 EX ROOF FRAMING PLAN/ NEW WORK

SCALE: NTS

PLAN NORTH




NOTES:

1. EXIST ANCHORAGE DETAIL IS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## A11 TYP EX ANCHORAGE DETAIL/ NEW WORK

SCALE: NTS

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
DESIGNED BY: A. COATS
DRAWN BY: J. THOMAS
CHECKED BY: J. JONES
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

STRUCTURAL PLANS AND SECTIONS

SHEET ID

S-101

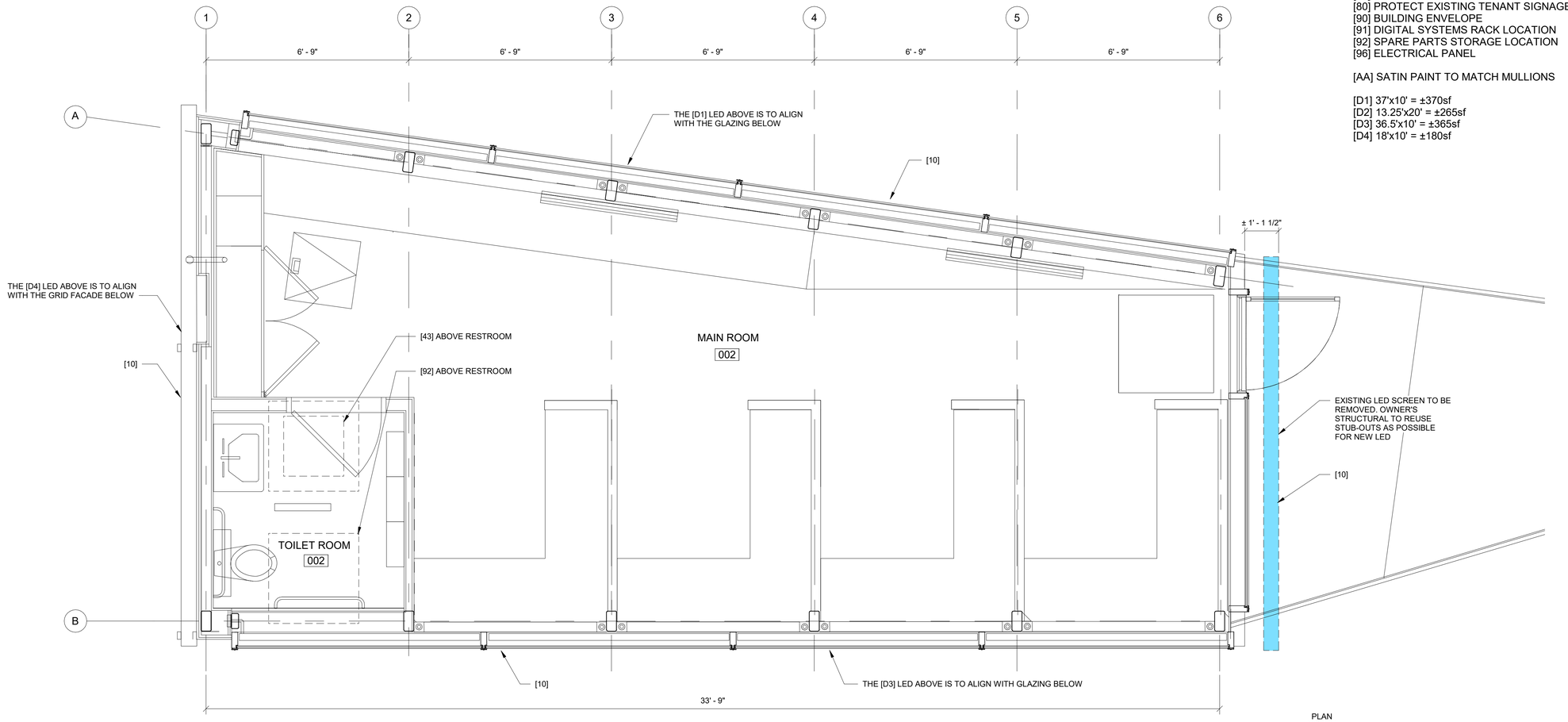
RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
[24] BASE BUILDING STRUCTURE
[30] ELECTRICAL CONDUIT, CABLE, JUNCTION BOX, AND DISTRIBUTION
[32] CABLE MANAGEMENT SYSTEM
[40] DATA CABLE
[41] DATA CONDUIT AND JUNCTION BOX
[43] CONTROL EQUIPMENT RACK
[50] WATERPROOFED BUILDING PENETRATIONS, TYPICAL OF ALL
[60] DISPLAY ENCLOSURE PANELS
[70] CONFIDENCE CAMERA
[80] PROTECT EXISTING TENANT SIGNAGE
[90] BUILDING ENVELOPE
[91] DIGITAL SYSTEMS RACK LOCATION
[92] SPARE PARTS STORAGE LOCATION
[96] ELECTRICAL PANEL

[AA] SATIN PAINT TO MATCH MULLIONS

[D1] 37'x10' = ±370sf
[D2] 13.25'x20' = ±265sf
[D3] 36.5'x10' = ±365sf
[D4] 18'x10' = ±180sf




## FIRST FLOOR PLAN - EXISTING

SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

EXISTING FLOOR PLAN

SHEET ID

A-100

RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
[24] BASE BUILDING STRUCTURE
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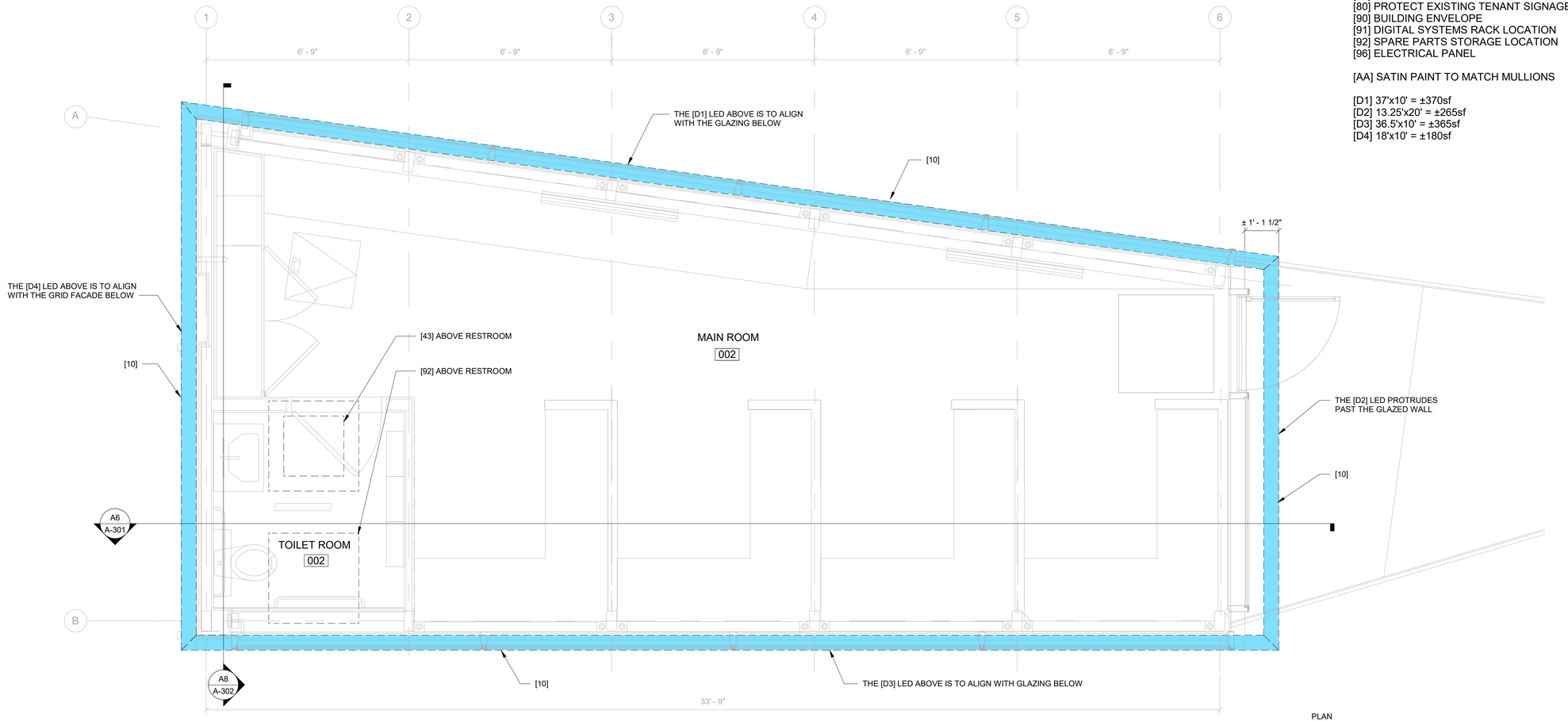



## CLERESTORY PLAN

SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

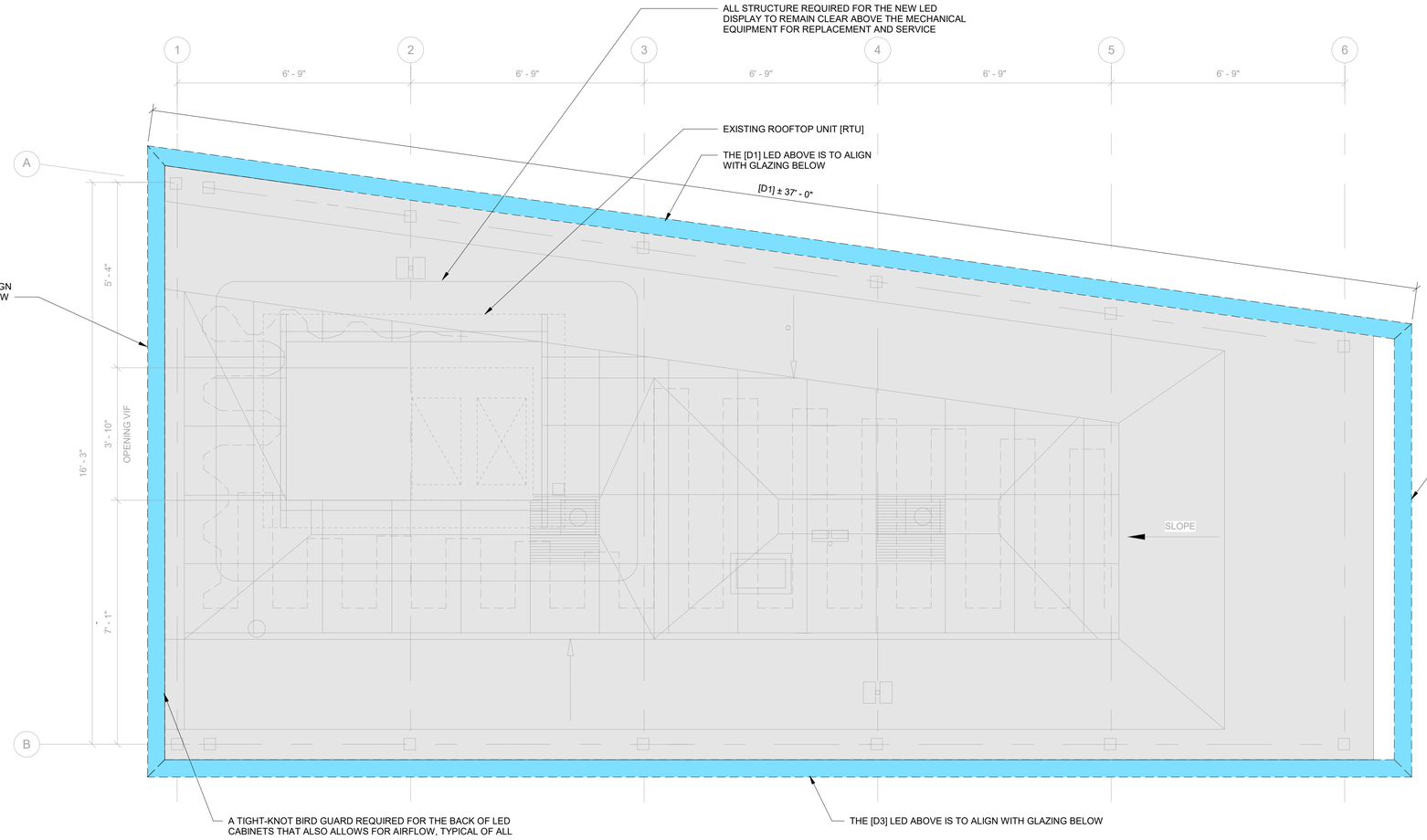
MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

PLAN WITH LED OVERLAY

SHEET ID

A-101

RTA SUBMISSION




## ROOF PLAN

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
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[80] PROTECT EXISTING TENANT SIGNAGE
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[D4] 18'x10' = ±180sf

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ROOF PLAN

SHEET ID

A-102

RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
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[23] BASE BUILDING MATCH-PLATE
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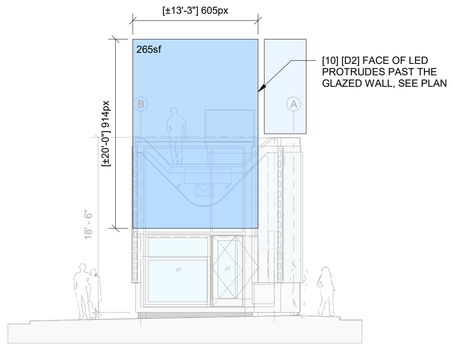
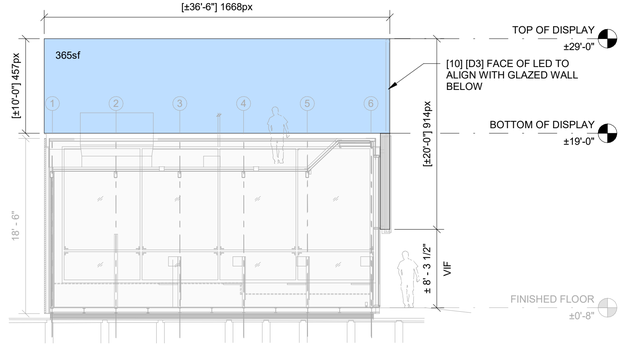
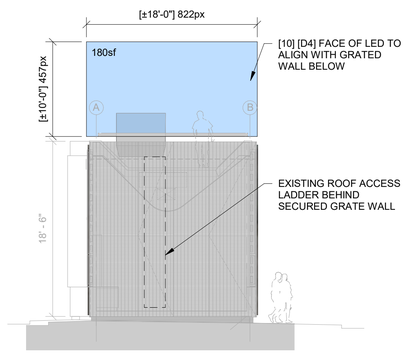


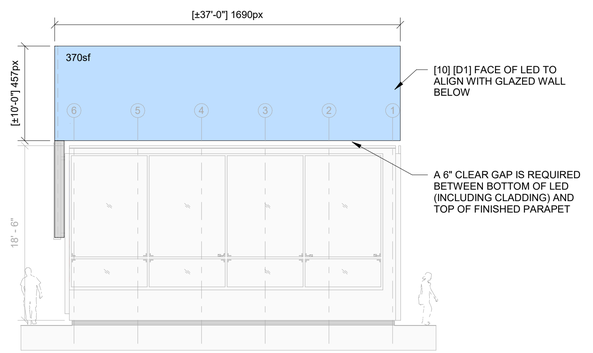

G5 NORTH ELEVATION - D2 LED
SCALE: 1/8" = 1'-0"




G11 EAST ELEVATION - D3 LED
SCALE: 1/8" = 1'-0"

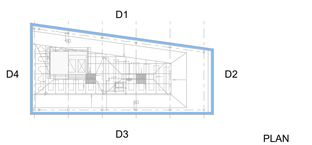



B5 SOUTH ELEVATION - D4 LED
SCALE: 1/8" = 1'-0"




B11 WEST ELEVATION - D1 LED
SCALE: 1/8" = 1'-0"

0 4' 8' 16'




KEY PLAN

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: O. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELEVATIONS

SHEET ID
A-201

RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
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[70] CONFIDENCE CAMERA
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[91] DIGITAL SYSTEMS RACK LOCATION
[92] SPARE PARTS STORAGE LOCATION
[96] ELECTRICAL PANEL

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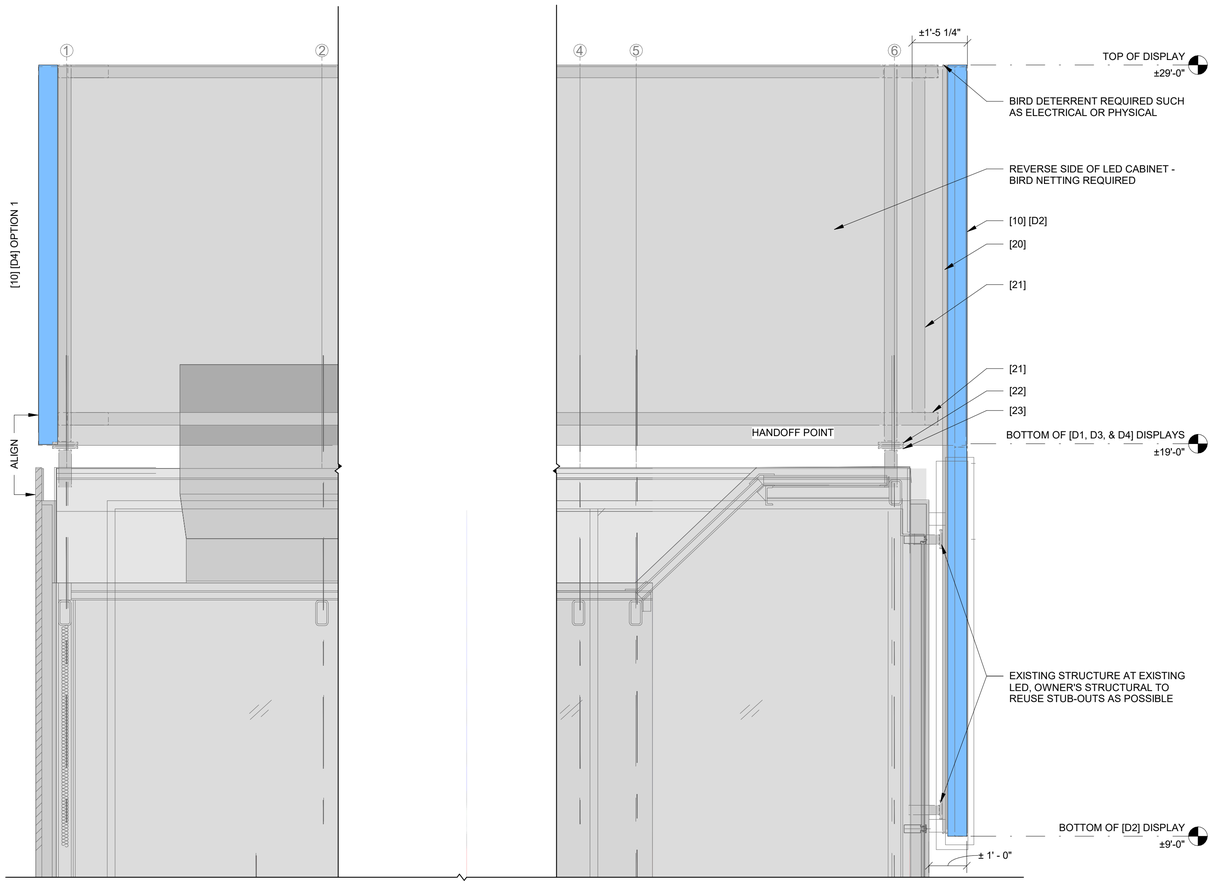


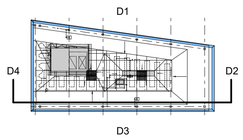


KEY PLAN

PLAN NORTH

A6 SECTION DIAGRAM - EAST
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. LOWES
SUBMITTED BY: U. REYES
SIZE: ANSI D
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALE DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

SECTIONS

SHEET ID
A-301

RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
[24] BASE BUILDING STRUCTURE
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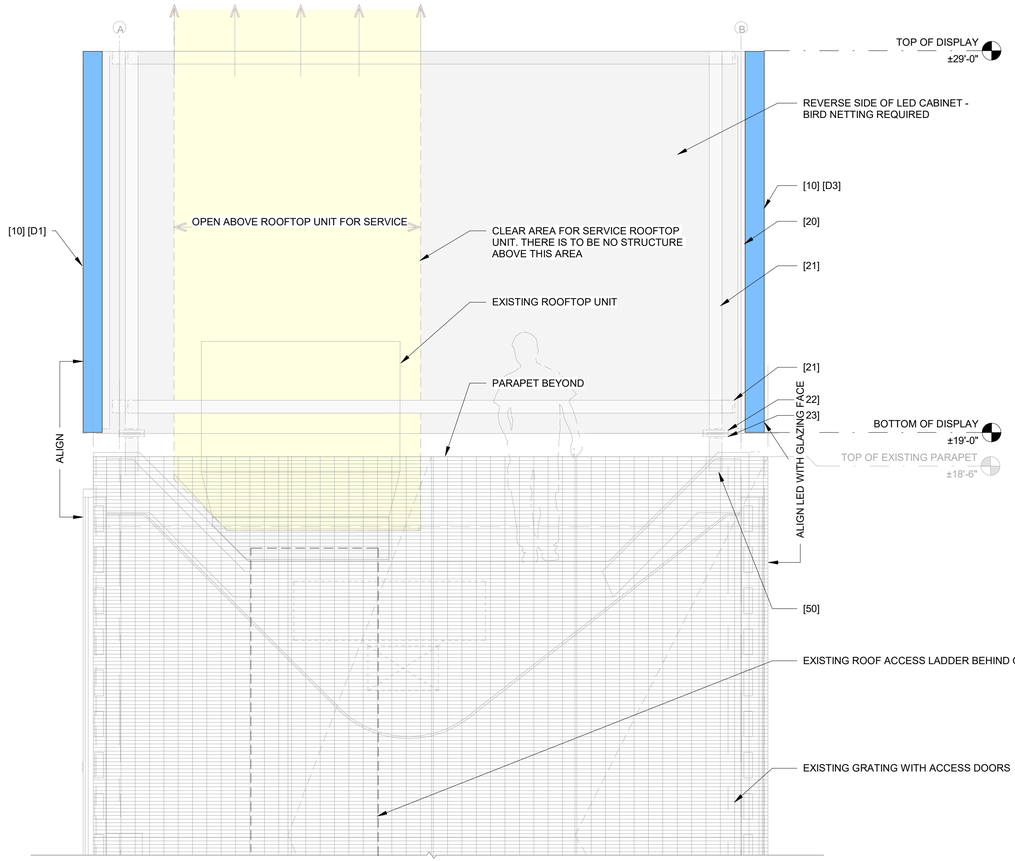


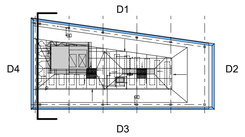


KEY PLAN

PLAN NORTH

A8 SECTION DIAGRAM - SOUTH
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

SECTIONS

SHEET ID
A-302

RTA SUBMISSION

EXISTING CONDITIONS

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

EXISTING CONDITIONS

SHEET ID
A-901

RTA SUBMISSION

D2 AND D3 LED OVERLAY

## KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
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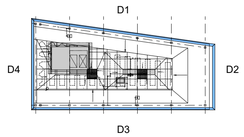


KEY PLAN

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | ISSUE DATE: |
| Q. BIAGI | AUGUST 2025 |
| DRAWN BY: | SOLICITATION NO.: |
| T. HOURIGAN | TBD |
| CHECKED BY: | CONTRACT NO.: |
| J. JONES | TBD |
| SUBMITTED BY: | OPTION TITLE 1 |
| U. REYES | OPTION TITLE 2 |
| SIZE: ANSI D | |

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER
JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

D2 AND D3 LED OVERLAY

SHEET ID

A-902

RTA SUBMISSION

D3 AND D4 LED OVERLAY

## KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
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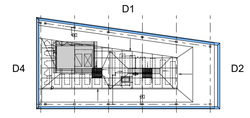



KEY PLAN

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | Q. BIAGI |
| DRAWN BY: | T. HOURIGAN |
| CHECKED BY: | J. JONES |
| SUBMITTED BY: | U. REYES |
| SIZE: | ANSI D |
| ISSUE DATE: | AUGUST 2025 |
| SOLICITATION NO.: | TBD |
| CONTRACT NO.: | TBD |
| OPTION TITLE 1 | |
| OPTION TITLE 2 | |

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER
JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

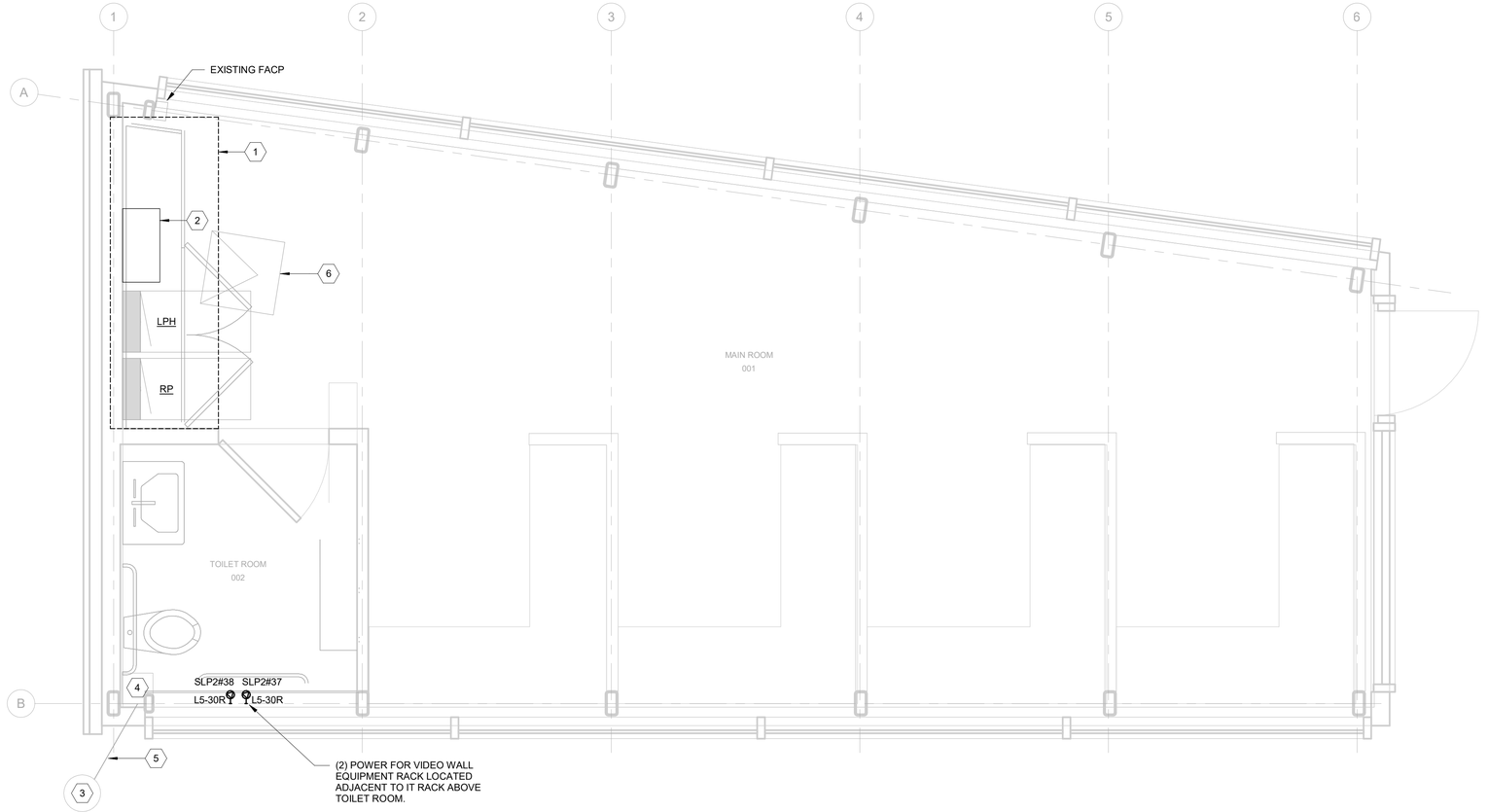
MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

D3 AND D4 LED OVERLAY

SHEET ID

A-903

RTA SUBMISSION




## ELECTRICAL POWER PLAN - LEVEL 1

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

## KEYED NOTES

1 THE CONTRACTOR SHALL EVALUATE THE ADJACENT CLOSET SPACE AND ASSESS THE POTENTIAL FOR EXPANDING THE ELECTRICAL CLOSET TO THE RIGHT, WHERE THE PAPER GOODS STORAGE IS CURRENTLY HOUSED. IF THE AVAILABLE SPACE DOES NOT ACCOMMODATE BOTH THE NEW 600A METERED PANEL AND THE ELECTRICAL SHADE CONTROLLERS, THE CONTRACTOR SHALL RELOCATE THE ELECTRICAL SHADE CONTROLLERS AND, IF NECESSARY, DECOMMISSION THEM TO FACILITATE THE INSTALLATION OF THE PANEL AS PLANNED.

IT IS IMPERATIVE THAT THE INSTALLATION OF THE 600A METERED PANEL REMAINS WITHIN THE ELECTRICAL CLOSET TO COMPLY WITH PROJECT REQUIREMENTS, AS THIS PANEL IS CRITICAL FOR POWERING THE STATE-OF-THE-ART DIGITAL VIDEO DISPLAY SYSTEM.

THE CONTRACTOR IS RESPONSIBLE FOR INCLUDING ANY NECESSARY GENERAL CONSTRUCTION WORK REQUIRED FOR THE EXPANSION OF THE ELECTRICAL CLOSET AND MAINTAIN THE VISUAL AESTHETIC AND MATERIALITY OF THE ADJACENT CASEWORK, ENSURING THAT THERE IS ADEQUATE SPACE FOR BOTH THE 600A METERED PANEL AND THE RELOCATED ELECTRICAL SHADE CONTROLLERS.

2 NEW CON ED 600 AMP COMBO DISCONNECT TRANS S CABINET/CON ED METER.

3. EXISTING CON ED ELECTRIC MANHOLE IN SIDEWALK - APPROXETMETLY 5'-0" FROM BUILDING. (EXACT LOCATION TO BE CONFIRMED BY CON ED).

4. EXISTING SERVICE END BOX LOCATED UNDER RECRUITMENT CENTER AND WITHIN MTA VENTILATION VAULT

NOTE MTA VENTILATION VAULT IS APPROXIMATELY 20'FT DEEP AND LOCATED UNDER RECRUITMENT CENTER. CURRENTLY THERE IS NO SCAFFOLDING OR PLATFORM TO ACCESS THE VAULT

5. EXISTING SERVICE: 4#2/0 IN CONDUIT. WIRE SIZE TO BE VERIFIED BY CON ED.

6. EXISTING FLOOR HATCH TO MTA VENTILATION VAULT BELOW - POINT OF VISUAL OBSERVATION OF SERVICE CONDUIT AND SEB.

## GENERAL NOTES

1. ALL WIRING TO BE IN CONDUIT.
2. ALL CONDUIT SHALL BE EMT INTERIOR, RGS (RIGID STEEL) EXTERIOR OR UP TO 10' ABOVE FINISHED FLOOR WITH RISK OF DAMAGE FROM EXPOSURE.
3. GROUND PER CODE.
4. COORDINATE AND SCHEDULE SHUTDOWNS WITH OWNER 2-WEEKS IN ADVANCE PRIOR TO WORK.
5. COORDINATE ROUTING OF EMPTY RACEWAYS FOR LOW VOLTAGE WIRING TO VIDEO WALL WITH ELECTRICAL POWER RACEWAYS.
6. COORDINATE NEW ELECTRICAL WORK WITH MTA AND CON EDISON. REQUEST APPROVAL FROM MTA, DOT AND OTHER AHJS.
7. DURING CONSTRUCTION PROVIDE SCAFFOLDING /PLATFORM TO PERFORM WORK WITHIN MTA VAULT
8. RACEWAYS SHALL BE PROVIDED WITH EXPANSION, EXPANSION-DEFLECTION, OR DEFLECTION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION, DEFLECTION, AND CONTRACTION.
9. CONTRACTOR IS TO PROVIDE LABELS FOR ALL RECEPTACLES DENOTING PANEL AND CIRCUIT NUMBER.

## ELECTRICAL SYMBOLS

- WP — WALL MOUNTED NEMA 3R JUNCTION BOX. (COORDINATE QUANTITY AND LOCATION WITH VIDEO DISPLAY VENDER SHOP DRAWINGS)
- L5-30R — SPECIAL PURPOSE RECETACLE
- UTILITY METER
- FUSE
- DISCONNECT
- DISCONNECT

## ABBREVATIONS

| | |
|---|---|
| A | AMPS |
| C | CONDUIT |
| G | GROUND |
| MCB | MAIN CIRCUIT BREAKER |
| V | VOLTAGE |
| VA | VOLT AMPS |
| WP | WATERPROOF |

## COORDINATION NOTES:

1. CONTRACTOR TO COORDINATE NEW ELECTRICAL SERVICE WITH CON EDISON.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL PERMIT FEES AND CONSTRUCTION COST.
3. CON EDISON CASE NUMBER MC-839555.

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: JS
DRAWN BY: CBM
CHECKED BY: JS
SUBMITTED BY: UR
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TERTA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

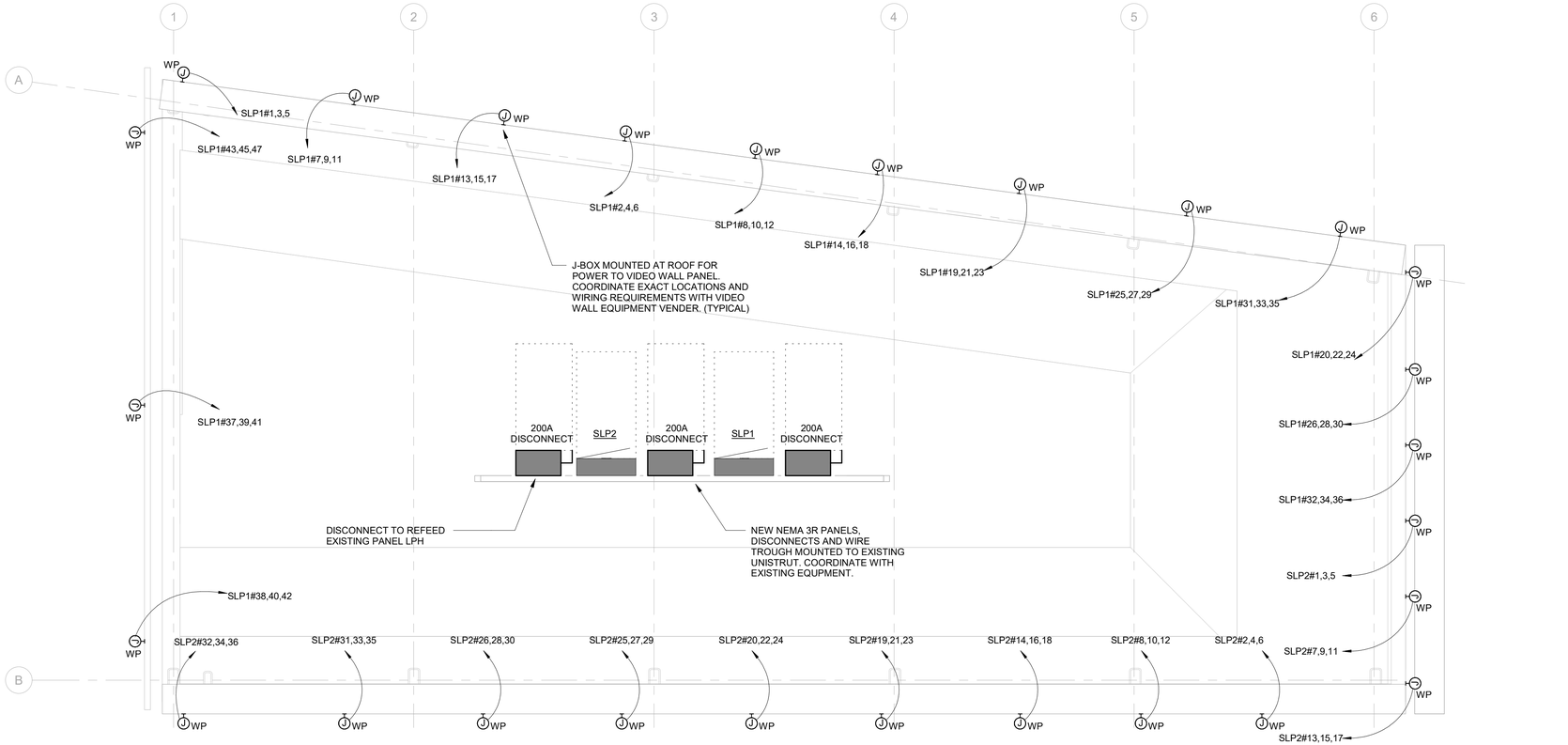
ELECTRICAL POWER PLAN - LEVEL 1

SHEET ID

E-101

RTA SUBMISSION

CUI




## ELECTRICAL POWER PLAN - ROOF

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: JS
DRAWN BY: CBM
CHECKED BY: JS
SUBMITTED BY:
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TERTA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELECTRICAL POWER PLAN - ROOF

SHEET ID

E-102

RTA SUBMISSION

CUI

## Branch Panel: SLP1

**Location:** | **Supply From:** | **Mounting:** SURFACE | **Enclosure:** Type 1

**Volts:** 120/208 Wye | **Phases:** 3 | **Wires:** 4

**A.I.C. Rating:** 65,000 | **Mains Type:** M.C.B | **Mains Rating:** 200 A | **MCB Rating:** 200 A

**Notes:**

| CKT | Circuit Description | Trip | Poles | A | | B | | C | | Poles | Trip | Circuit Description | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 2 |
| 3 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 4 |
| 5 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 6 |
| 7 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 8 |
| 9 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 12 |
| 13 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 14 |
| 15 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 16 |
| 17 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 18 |
| 19 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 20 |
| 21 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 22 |
| 23 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 24 |
| 25 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 26 |
| 27 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 28 |
| 29 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 30 |
| 31 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 32 |
| 33 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 34 |
| 35 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 36 |
| 37 | SIGN MODULE - D4 (OPTION 1) | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D4 (OPTION 1) | 38 |
| 39 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 40 |
| 41 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 42 |
| 43 | SIGN MODULE - D4 (OPTION 1) | 20 A | 3 | 1400 | 0 | | | | | 1 | 20 A | Spare | 44 |
| 45 | -- | -- | -- | | | 1400 | 0 | | | 1 | 20 A | Spare | 46 |
| 47 | -- | -- | -- | | | | | 1400 | 0 | 1 | 20 A | Spare | 48 |
| 49 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 50 |
| 51 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 52 |
| 53 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 54 |
| | | **Total Load:** | | 21000 VA | | 21000 VA | | 21000 VA | | | | | |
| | | **Total Amps:** | | 175 A | | 175 A | | 175 A | | | | | |

**Legend:**

| Load Classification | Connected Load | Demand Factor | Estimated Demand | Panel Totals | |
|---|---|---|---|---|---|
| Other | 63000 VA | 100.00% | 63000 VA | | |
| | | | | **Total Conn. Load:** | 63000 VA |
| | | | | **Total Est. Demand:** | 63000 VA |
| | | | | **Total Conn. Current:** | 175 A |
| | | | | **Total Est. Demand...** | 175 A |

## Branch Panel: SLP2

**Location:** | **Supply From:** | **Mounting:** SURFACE | **Enclosure:** Type 1

**Volts:** 120/208 Wye | **Phases:** 3 | **Wires:** 4

**A.I.C. Rating:** 65,000 | **Mains Type:** M.C.B | **Mains Rating:** 200 A | **MCB Rating:** 200 A

**Notes:**

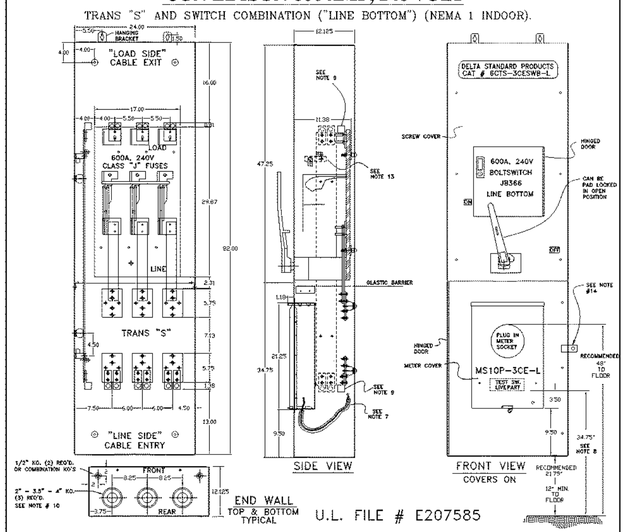
| CKT | Circuit Description | Trip | Poles | A | | B | | C | | Poles | Trip | Circuit Description | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 2 |
| 3 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 4 |
| 5 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 6 |
| 7 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 8 |
| 9 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 12 |
| 13 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 14 |
| 15 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 16 |
| 17 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 18 |
| 19 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 20 |
| 21 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 22 |
| 23 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 24 |
| 25 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 26 |
| 27 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 28 |
| 29 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 30 |
| 31 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 32 |
| 33 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 34 |
| 35 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 36 |
| 37 | VIDEO CONTROL EQUIP. RACK | 30 A | 1 | 1200 | 1200 | | | | | 1 | 30 A | VIDEO CONTROL EQUIP. RACK | 38 |
| 39 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 40 |
| 41 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 42 |
| 43 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 44 |
| 45 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 46 |
| 47 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 48 |
| 49 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 50 |
| 51 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 52 |
| 53 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 54 |
| | | **Total Load:** | | 19200 VA | | 16800 VA | | 16800 VA | | | | | |
| | | **Total Amps:** | | 160 A | | 140 A | | 140 A | | | | | |

**Legend:**

| Load Classification | Connected Load | Demand Factor | Estimated Demand | Panel Totals | |
|---|---|---|---|---|---|
| Other | 50400 VA | 100.00% | 50400 VA | | |
| R | 2400 VA | 100.00% | 2400 VA | **Total Conn. Load:** | 52800 VA |
| | | | | **Total Est. Demand:** | 52800 VA |
| | | | | **Total Conn. Current:** | 147 A |
| | | | | **Total Est. Demand...** | 147 A |

## CON EDISON 600 AMP, 240 VOLT

TRANS "S" AND SWITCH COMBINATION ("LINE BOTTOM") (NEMA 1 INDOOR).

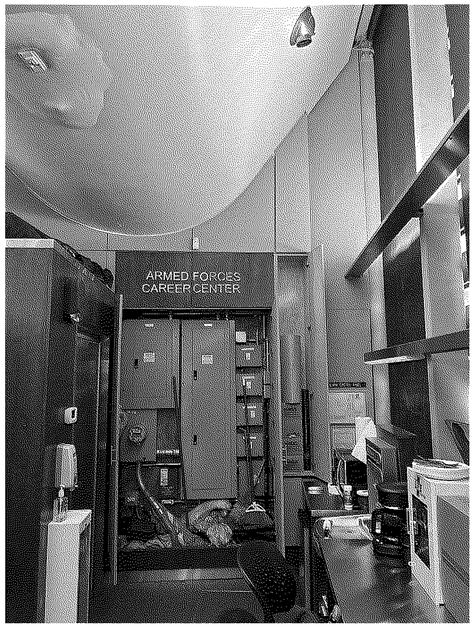



U.L. FILE # E207585

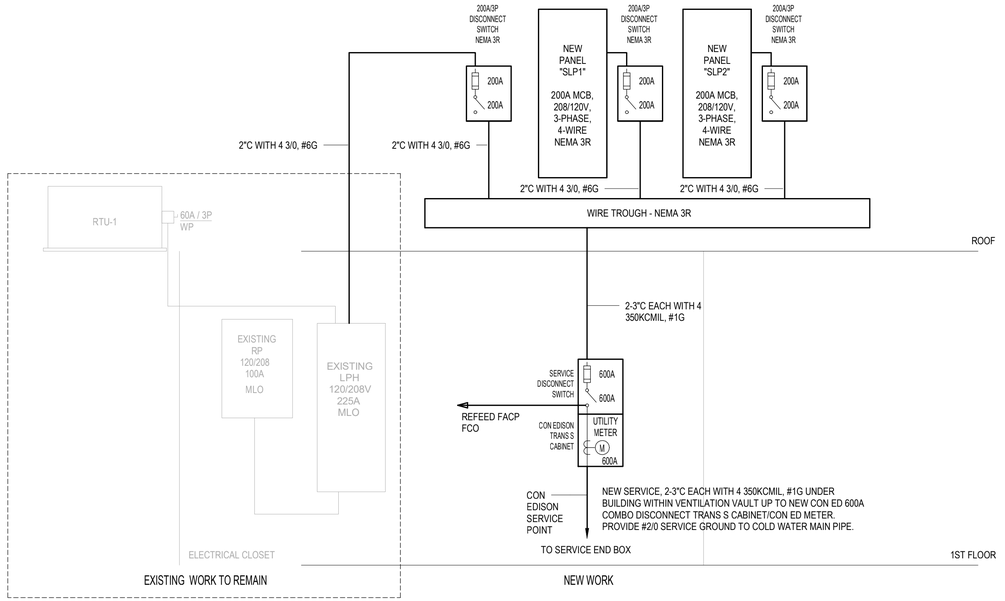
1. CABINET SHALL BE RATED NEMA 1 ( INDOOR ONLY ) AND SHALL BE CONSTRUCTED FROM CODE GAUGE GALVANIZED OR GALVANNEALED STEEL.
2. BUS BAR SHALL BE SILVER OR TIN PLATED AND SHALL BE SIZED PER THE NEC.
3. BUS BAR SHALL BE MOUNTED IN THE CABINET BY MEANS OF STANDOFF INSULATORS OR INSULATED MOUNTING BRACKETS. INSULATING MATERIAL SHALL CONFORM TO THE APPLICABLE SECTIONS OF UL 746 AND UL 94. THE CABINET SHALL BE UL, CON EDISON AND NYC ADVISORY BOARD APPROVED.
4. THE CABINET IS INTENDED FOR CABLE ENTRY THROUGH BOTTOM AND EXIT THROUGH THE TOP ONLY.
5. THE SHORT CIRCUIT WITHSTAND CAPABILITY OF THE CABINET ASSEMBLY SHALL BE RATED AT 200,000 RMS SYMMETRICAL AMPERES WITH CLASS "J" FUSES.
6. THE ENCLOSED SWITCH REQUIRES 600AMP, 250V, CLASS "J" FUSES – NOT PROVIDED.
7. INSULATED SLEEVING SHALL BE PROVIDED WHERE MULTICONDUCTOR BUNDLE PASSES UNDER NEUTRAL BAR. WIRE MOUNTS ARE RIVETED IN PLACE.
8. THE RECOMMENDED MOUNTING HEIGHT TO THE FLOOR IS 21.75". THE MINIMUM MOUNTING HEIGHT TO THE FLOOR IS 12" WHERE FIELD CONDITIONS DO NOT PERMIT THE RECOMMENDED HEIGHT TO BE USED.
9. USE ONLY MANUFACTURER'S APPROVED LUGS PROVIDED. EACH SINGLE LUG ON CT SIDE IS RATED FOR (1) 600MCM – #4. DOUBLE LUGS ON SWITCH SIDE IS RATED FOR (2) 600MCM – #4 CABLE.
10. **ONLY FACTORY PREFABRICATED KNOCKOUTS ON THE ENCLOSURE SHALL BE USED.**
11. PROVIDE PREWIRED TRANS "S" UNIT WITH #12 AWG STRANDED (19/25) THHN COPPER COLOR CODED WIRE FROM THE TEST SWITCH TO THE SOCKET ASSEMBLY AND FROM THE TEST SWITCH METERING COMPARTMENT INTO THE CT COMPARTMENT. LEAVE 7 FT. OF WIRE FOR FUTURE CONNECTION TO THE CURRENT TRANSFORMERS. USE EITHER HOOK OR RING TYPE TINNED COPPER LUGS FOR TERMINATIONS. ALL WIRING IN ACCORDANCE WITH CON EDISON MES #195, EXCEPT AS NOTED IN MES #751 FOR FORM 9S METER SOCKET.
12. THE UNIT IS MARKED "SUITABLE FOR USE AS SERVICE EQUIPMENT".
13. THE UNIT IS SHIPPED WITH AN "INSULATED NEUTRAL" AND A BOUNDING KIT ("BBK") PROVIDED WITH INSTRUCTION (FOR INSTALLATION AS REQUIRED BY CONTRACTOR).
14. PROVISIONS FOR MOUNTING SECURITY HARDWARE IN CT CABINET DOOR AND METER COVER (HARDWARE NOT PROVIDED).

**CAT.# 6CTS-3CESWB-L**

| | |
|---|---|
| **SUPERIOR ELECTRICAL ENCLOSURE INC.**<br>**DBA: Delta Standard Products**<br>16 SPENCER ST. BROOKLYN, N.Y. 11205<br>PHONE: 718-797-9090 FAX: 718-797-9099<br>**e-mail: Info@SuperiorEE.com** | TITLE: CON EDISON (LINE-BOT)<br>600 AMP, 240 VOLT<br>DWG. NO.: 4/30/12<br>SPEC. NO.: FL-300A0160-SEE |




2 EXISTING ELECTRICAL CABINET
SCALE: NTS




1 ELECTRICAL RISER DIAGRAM
SCALE: NTS

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

DESIGNED BY: JS
DRAWN BY: CBM
CHECKED BY: JS
SUBMITTED BY: UR
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

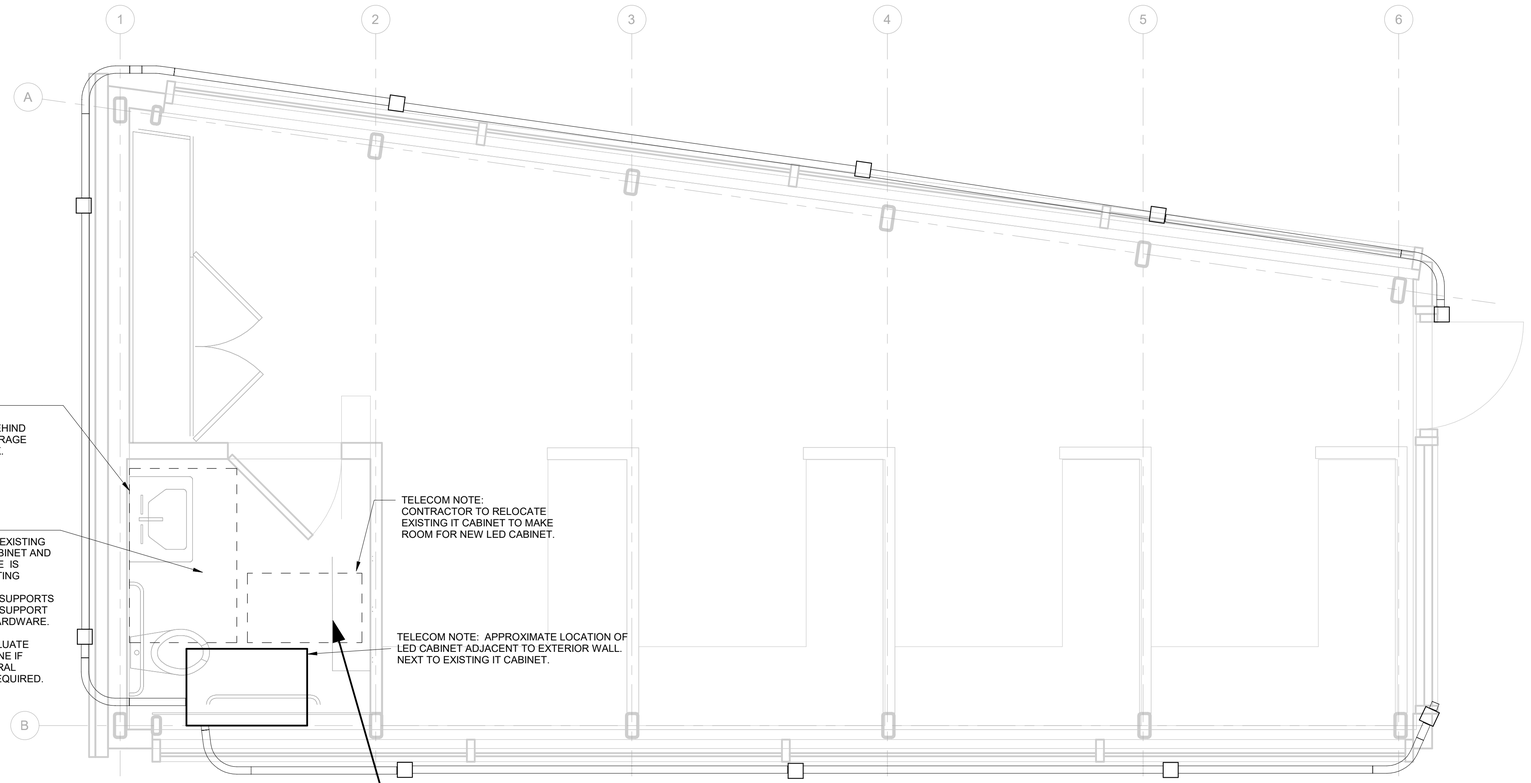
TERTA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELECTRICAL RISER AND SCHEDULES

SHEET ID
E-201

RTA SUBMISSION




## COMMUNICATIONS PLAN - LEVEL 1

SCALE: 1/2" = 1'-0"

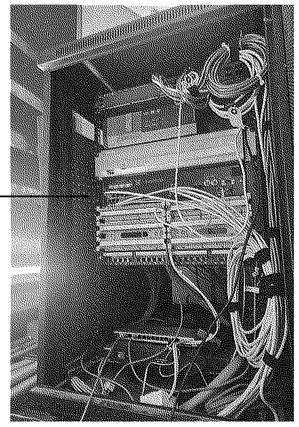
## TELECOM NOTES

1. CONTRACTOR TO PROVIDE GROUNDING BAR NEARBY NEW LED CABINET, GROUNDED TO BUILDING STEEL.

2. ALL LOW VOLTAGE CABLING ASSOCIATED WITH LED SCOPE TO BE PROVIDED BY LED VENDOR.

3. LED VENDOR TO PROVIDE ALL PATCH CORDS TO NETWORK SWITCH AS REQUIRED.

EXISTING TELECOM CABINET ABOVE BATHROOM THAT NEEDS TO BE MOVED RIGHT TO MAKE ROOM FOR NEW LED CABINET



INSIDE EXISTING TELECOM CABINET ABOVE BATHROOM

0 1'-0" 2'-0" 4'-0"
SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: PK
DRAWN BY: KG
CHECKED BY: JA
SUBMITTED BY: U REYES
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TERTA TECH / MASON HANGER
JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN
ARBOR, MICHIGAN 48103

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

COMMUNICATIONS PLAN - LEVEL 1

SHEET ID

T-101

RTA SUBMISSION

# Attachment B – As-Built Drawings

## FOR REFERENCE ONLY

# TIMES SQUARE
# RECRUITING STATION RENOVATION

## TIMES SQUARE, NEW YORK, NY 10036

**FOR REFERENCE ONLY**

## DRAWING LIST

| DRAWING NUMBER / NAME | | SHEET NUMBER/TOTAL SHEETS |
|---|---|---|
| GENERAL | | |
| T-001 | TITLE SHEET | 1 OF 44 |
| G-001 | GENERAL NOTES & SYMBOLS | 2 OF 44 |
| STRUCTURAL | | |
| S-101 | GENERAL NOTES, FRAMING PLANS, AND SECTIONS | 3 OF 44 |
| ARCHITECTURAL | | |
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| AD-101 | FIRST FLOOR DEMOLITION PLAN | 5 OF 44 |
| AD-102 | ROOF DEMOLITION PLAN | 6 OF 44 |
| AD-201 | DEMOLITION ELEVATIONS | 7 OF 44 |
| AD-501 | DEMOLITION DETAILS | 8 OF 44 |
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| A-111 | FIRST FLOOR REFLECTED CEILING PLAN | 11 OF 44 |
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| FA-101 | FIRE ALARM LAYOUT | 44 OF 44 |

# AS BUILT DRAWINGS
# DATE: 03-02-2018

AS BUILT DRAWING
DATE - 03-02-2018

US Army Corps of Engineers®

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EYP Architecture & Engineering
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Albany, NY 12203-3927
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EYP/

DATE: 3/2/2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-11-D-0001
DWN BY: SP
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ISSUE DATE:
FILE NUMBER:
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U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
TITLE SHEET

SHEET IDENTIFICATION
T-001
SHEET 1 OF 44

## GENERAL SYMBOLS

## ABBREVIATIONS

A
AB - ABOVE
AC - AIR CONDITIONER
ACP - ACCOUSTICAL CEILING PANELS
AD - ACCESS DOOR
ADJ - ADJACENT
AFF - ABOVE FINISHED FLOOR
AFG - ABOVE FINISHED GRADE
ALUM - ALUMINUM
APPD - APPROVED
APPROX - APPROXIMATELY
ARCH - ARCHITECT
ASPH - ASPHALT

B
BD - BOARD

C
CLG/CEILG - CEILING
COL - COLUMN
CORR - CORRIDOR
CONT/CONTIN - CONTINUOUS
CONC - CONCRETE
CT - CERAMIC TILE

D
DBL - DOUBLE
DIA - DIAMETER
DIM - DIMENSION
DN - DOWN
DTL/DET - DETAIL
DWG/DRAWG - DRAWING

E
EL/ELEV - ELEVATION
ELEC - ELECTRIC
ENCL - ENCLOSURE
ENT - ENTRANCE
EQ - EQUAL
EQUIP - EQUIPMENT
EXP - EXPANSION
EXIST/EXG - EXISTING

F
F - FIXED
FD/FLDR - FLOOR DRAIN
FF - FINISH FLOOR
FIN - FINISH
FIXT - FIXTURE
FL/FLR - FLOOR
FLASH - FLASHING
FP - FIREPROOF/FIREPROOFING
FPSC - FIREPROOF-SELF CLOSING
FR - FRAME

G
GA - GAUGE
GALV - GALVANIZED
GC - GENERAL CONTRACTOR
GL - GLASS
GR - GRILLE
GYPBD/GWB - GYPSUM WALL BOARD

H
HC - HUNG CEILING
HGT - HEIGHT
HORIZ - HORIZONTAL

I
ID - INSIDE DIAMETER
INSUL - INSULATION

J

K

## ABBREVIATIONS (CONT.)

L
L - LEADER
LF - LINEAR FEET
LT - LIGHT

M
MTL - METAL
MAT - MATERIAL
MAX - MAXIMUM
MECH - MECHANICAL
MER - MECHANICAL EQUIPMENT ROOM
MIN - MINIMUM
MO - MASONRY OPENING

N
ND - NOMINAL DIAMETER
NIC - NOT IN CONTRACT
NO/ # - NUMBER
NOM - NOMINAL
NTS - NOT TO SCALE

O
OAI - OUTSIDE AIR INTAKE
OC - ON CENTER
OD - OUTSIDE DIAMETER
OFC - OFFICE
OPG/OPENG - OPENING

P
PART - PARTITION
PNT - PAINT
PT - PRESSURE TREATED
PT CB - PAINTED CONCRETE BLOCK
PTD - PAINTED
± - PLUS OR MINUS

R
r - RADIUS
RCP - REFLECTED CEILING PLAN
REFL - REFLECTED
REINF - REINFORCING
REQD - REQUIRED
REV - REVEAL
RM - ROOM
RO - ROUGH OPENING

S
SAC - SUSPENDED ACOUSTICAL CEILING
SCHED - SCHEDULE
SECT - SECTION
SGT - STRUCTURAL GLAZED TILE
SHT - SHEET
SIM - SIMILAR
SL - SLEEVE
SP - SPACE
SPEC - SPECIFICATION
SPK - SPEAKER
SQFT/SF - SQUARE FEET
SS - STAINLESS STEEL
STD - STANDARD
STL - STEEL
STPL - STEEL PLATE
STRUCT - STRUCTURAL
SY - SQUARE YARD
SUBST - SUBSTRATE

T
T&B - TOP AND BOTTOM
TOC - TOP OF COPING
TOD - TOP OF DRAIN
TH - THICKNESS
TOFF - TOP OF FINISH FLOOR
TOS - TOP OF SLAB
TOSS - TOP OF STRUCTURAL SLAB
TW/TOW - TOP OF WALL
TWR - TOWER
TYP - TYPICAL

U UNLESS OTHERWISE NOTED
UON -

V
V/VIN - VINYL COMPOSITION TILE
VCT -
VERT - VERTICAL
VIF - VERIFY IN FIELD
VTR - VENT THROUGH ROOF

W
W/ - WITH
WD - WOOD
WI - WROUGHT IRON
WP - WATERPROOFING
WT - WEIGHT
WWF - WELDED WIRE FABRIC

Z

SYMBOLS
& - AND
@ - AT
x° - DEGREE(S)
/ - DIVIDE BY, PER
$ - DOLLAR (USD)
= - EQUALS, EQUAL TO
' - FOOT, FEET
> - GREATER THAN
" - INCH(ES)
< - LESS THAN
\- - MINUS
X - MULTIPLY BY, BY
# - NUMBER, POUND
% - PERCENT
\+ - PLUS
+/- - PLUS OR MINUS

## GENERAL NOTES

1. WORK SHALL BE IN CONFORMANCE WITH APPLICABLE REQUIREMENTS OF THE FOLLOWING: NYC BC 2014, NEC 2014, UFC 1-200-01, UFC 3-600-01, NFPA 101, NFPA 13, ADA 2010, ANSI 117.1, ARMY REGULATION 870-20, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
2. TO THE BEST OF THE UNDERWRITTEN ARCHITECT'S KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, ALL NEW WORK DESCRIBED IN THESE CONSTRUCTION DOCUMENTS CONFORM WITH THE LATEST VERSION OF THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE.
3. CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER OF ANY PORTIONS OF THE WORK, IN THE CONTRACT DOCUMENTS THAT ARE AT VARIANCE WITH THE ABOVE.
4. PERMITS REQUIRED FOR THE WORK ARE LISTED IN THE SPECIFICATIONS.
5. ELECTRICAL, HVAC AND OTHER SUBCONTRACT WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN REQUIRED INSPECTIONS AND SIGNOFFS.
6. DRAWINGS ARE NOT TO BE SCALED. USE DIMENSIONS ONLY. ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS MUST BE VERIFIED AT THE SITE BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK. WHERE DISCREPANCIES OCCUR AND/OR WHERE THERE ARE CONFLICTS OR OMISSIONS IN THE DRAWINGS, SPECIFICATIONS AND APPLICATIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY AND REFRAIN FROM STARTING AND COMPLETING SUCH WORK, OR DEPENDENT WORK, UNTIL DIRECTED BY ARCHITECT TO PROCEED. NO CHANGE IN DRAWINGS OR SPECIFICATIONS IS PERMISSIBLE WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT.
7. INTERIOR DIMENSIONS ARE TO THE FINISHED SURFACE.
8. MECHANICAL AND ELECTRICAL INDICATIONS ON ARCHITECTURAL DRAWINGS ARE FOR LOCATION PURPOSES ONLY.
9. ADDITIONAL NOTES APPLICABLE TO THIS PROJECT MAY BE FOUND THROUGHOUT THE CONSTRUCTION DOCUMENTS.
10. WHERE MANUFACTURER'S NAMES AND PRODUCT NUMBERS ARE INDICATED ON THE DRAWINGS IT SHALL BE CONSTRUED TO MEAN THE ESTABLISHING OF QUALITY AND PERFORMANCE STANDARDS OF SUCH ITEMS. ALL PRODUCTS MUST BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL BEFORE THEY SHALL BE DEEMED EQUAL.
11. ELEVATIONS GIVEN FOR EXISTING BUILDINGS ARE TO FINISHED FLOOR. THE CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS FOR EXISTING STRUCTURES PRIOR TO THE COMMENCEMENT OF WORK.
12. THE TERM "FINISH FLOOR" SHALL REFER TO THE NORMAL FINISHED SURFACE OF THE FLOOR LEVEL.
13. THE TERM "CONTRACTOR" SHALL REFER TO THE GENERAL CONTRACTOR, UNLESS OTHERWISE STATED.
14. THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL NEW ITEM(S) AND/OR SYSTEM(S).
15. CONTRACTOR SHALL PROPERLY PROTECT AND MAKE SAFE ADJACENT PROPERTY AS JOB CONDITIONS REQUIRE.
16. UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS, CONTRACTOR SHALL REMOVE DEBRIS FROM THE CONSTRUCTION SITE AND DISPOSE OF DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM ALL CONSTRUCTION AND DEMOLITION OPERATIONS.
17. EXISTING AND NEWLY CONSTRUCTED SURFACES SHALL BE PROTECTED FROM DEMOLITION / CONSTRUCTION ACTIVITIES. WHERE EXISTING FINISHES ARE TO BE CUT OR ALTERED, THEY SHALL BE MODIFIED IN SUCH A MANNER THAT AFTER ASSEMBLY THEY WILL PROVIDE A COMPLETE CONTINUOUS FINISHED CONDITION. WHERE ACCESSORIES, EQUIPMENT, AND PARTITIONS ARE TO BE REMOVED, ALTERED, ETC., PROVIDE FOR THE PATCHING AND REFINISHING OF MOUNTING POINTS IN THE EXISTING FINISH.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING WORK AGAINST DAMAGE, BREAKAGE, COLLAPSE, DISTORTIONS, AND OFF ALIGNMENTS ACCORDING TO CODES AND STANDARDS OF GOOD PRACTICE.
19. CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES.
20. CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING REQUIRED TO COMPLETE THE WORK OR TO MAKE ITS PARTS FIT TOGETHER PROPERLY WITH ADJACENT CONSTRUCTION WITHOUT COMPROMISING THE QUALITY OF THE WORK.
21. CONTRACTOR SHALL PATCH AND REPAIR FIREPROOFING/FIRESTOPPING DAMAGE INCURRED DURING DEMOLITION AND/OR CONSTRUCTION. FIREPROOF/FIRESTOP AS REQUIRED BY CODE ALL PENETRATIONS GENERATED BY THE WORK DESCRIBED IN THESE DOCUMENTS AND ALL EXISTING PENETRATIONS UNCOVERED DURING WORK.
22. CONTRACTOR SHALL RELOCATE/MODIFY AND PATCH ANY EXISTING ARCHITECTURAL AND MEP COMPONENTS INTERFERING WITH THE INSTALLATION OF NEW WORK WHETHER SHOWN OR NOT SHOWN ON THESE DRAWINGS.
23. WORK SHALL BE INSTALLED SO THAT ALL PARTS REQUIRED ARE READILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND

## GENERAL NOTES (CONT.)

REPAIR. PROVIDE ACCESS DOORS AT POINTS WHERE MEP CONTROLS ARE INSTALLED. SEE ARCHITECTURAL AND MEP DRAWINGS.

24. NEW CONSTRUCTION, PATCHED WORK, AND AREAS AFFECTED BY CONSTRUCTION SHALL BE PAINTED. PAINTING SHALL COVER THE ENTIRE AFFECTED HORIZONTAL OR VERTICAL SURFACE TO THE CLOSEST CORNER IN ALL FOUR DIRECTIONS. COLOR TO MATCH EXISTING CONDITIONS. WHERE AFFECTED SURFACES ARE MORE THAN 2/3 OF THE TOTAL PAINTABLE SURFACE AREA WITHIN A ROOM, PAINT ALL PAINTABLE SURFACES.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ASPECTS OF WORK UNDER THIS CONTRACT IN ORDER TO ENSURE THE QUALITY AND TIMELY COMPLETION OF THE WORK.
26. CONTRACTOR SHALL GUARANTEE MATERIALS AND WORKMANSHIP IN THIS CONTRACT FOR A MIN PERIOD OF 1 (ONE) YEAR U.O.N. FOLLOWING ARCHITECT'S CERTIFICATION OF SUBSTANTIAL COMPLETION, AND SHALL REMEDY ANY DEFECTS IN SUCH WORK THAT ARISE DURING THAT TIME AT NO COST TO THE OWNER.

## PROVISIONS

THE FOLLOWING ITEMS ARE TO BE INCLUDED IN THE BID. THE QUANTITIES PROVIDED ARE IN ADDITION TO THOSE INDICATED ELSEWHERE IN THE DOCUMENTS. INCLUDE THE COST OF ALL MEANS TO INSTALL THE WORK AT VARIOUS LOCATIONS THROUGHOUT THE BUILDING.

ANY QUANTITY MORE OR LESS WILL BE AN EXTRA/CREDIT TO THE AUTHORITY. PROVIDE PRODUCT DATA FOR APPROVAL AS DIRECTED BY THE ARCHITECT OF RECORD, PRIOR TO PROCEEDING WITH WORK.

1. 2X4 WOOD SLEEPER REMOVALS: 30 LF
2. 2X4 WOOD SLEEPER INSTALLATION: 30 LF
3. PRESSURE-TREATED WOOD BLOCKING/SLEEPERS: 200 BOARD FT
4. GYP BD CEILING TO BE PATCHED/PAINTED: 10 SF
5. ROOF CONDUITS TO BE RELOCATED AND PENETRATIONS SEALED: SIX (6)

AS BUILT DRAWING
DATE - 03-02-2018


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GOSHOW PROJECT # 201530
GENERAL NOTES & SYMBOLS

SHEET
IDENTIFICATION
G-001
SHEET 2 OF 44

DESIGN CRITERIA

BUILDING CODE
INTERNATIONAL BUILDING CODE, 2012 EDITION

| LIVE LOADS | |
|---|---|
| FIRST FLOOR | 50 psf |
| ROOF | 20 psf |

| ROOF SNOW LOAD | |
|---|---|
| GROUND SNOW LOAD, Pg | 25 psf |
| FLAT ROOF SNOW LOAD, Pf | 20 psf |
| SNOW EXPOSURE FACTOR, Ce | 1.0 |
| SNOW LOAD IMPORTANCE FACTOR, Is | 1.1 |
| THERMAL FACTOR, Ct | 1.0 |

| WIND LOAD | |
|---|---|
| BASIC WIND SPEED (3 SECOND GUST), Vult | 130 mph (FACTORED) |
| BASIC WIND SPEED (3 SECOND GUST), Vult | 101 mph (UNFACTORED) |
| RISK CATEGORY | III |
| WIND IMPORTANCE FACTOR, Iw | 1.0 |
| WIND EXPOSURE | B |
| INTERNAL PRESSURE COEFFICIENT, Gcpi | ±0.18 |
| COMPONENTS AND CLADDING, P (UNFACTORED) | |
| ROOF SURFACE (ZONE 1) | -31.4 psf |
| ROOF EDGE (ZONE 2) | -49.4 psf |
| ROOF CORNER (ZONE 3) | -67.3 psf |
| WALL SURFACE (ZONE 4) | +21.5 / -21.5 psf |
| WALL CORNER (ZONE 5) | +21.5 / -39.4 psf |

| EARTHQUAKE DESIGN DATA | |
|---|---|
| RISK CATEGORY | III |
| SEISMIC IMPORTANCE FACTOR, Ie | 1.25 |
| SPECTRAL RESPONSE COEFFICIENT, SS | 0.280 (ASSUMED) |
| SPECTRAL RESPONSE COEFFICIENT, S1 | 0.072 (ASSUMED) |
| SITE CLASS | D (ASSUMED) |
| SEISMIC RESPONSE COEFFICIENT, Sds | 0.294 |
| SEISMIC RESPONSE COEFFICIENT, Sd1 | 0.115 |
| SEISMIC DESIGN CATEGORY | B |
| BASIC SEISMIC-FORCE-RESISTING SYSTEM | EXISTING ECCENTRICALLY BRACED STEEL FRAMES |
| DESIGN BASE SHEAR | 10 kips |
| SEISMIC RESPONSE COEFFICIENT, Cs | 0.123 |
| RESPONSE MODIFICATION FACTOR, R | 3 |
| ANALYSIS PROCEDURE: | EQUIVALENT LATERAL FORCE METHOD |

MISCELLANEOUS NOTES

M1 MEMBER SIZES AND BUILDING DIMENSIONS WERE TAKEN FROM RECORD DRAWINGS AND WERE NOT VERIFIED. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING WORK.

M2 CONSULT THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION AND SIZE OF OPENINGS, SLEEVES, AND OTHER PROJECT REQUIREMENTS.

M3 ALL ELEVATIONS ARE REFERENCED TO DATUM ELEVATION 0'-0" = TOP OF EXISTING FINISHED FLOOR.

STEEL NOTES

S1 A QUALITY CONTROL PROGRAM OF SHOP AND FIELD TESTING AND INSPECTION WILL BE PERFORMED ON STEEL FABRICATION, ERECTION, AND CONNECTIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED.

S2 SUBMIT THE FOLLOWING TO THE ARCHITECT/ENGINEER FOR REVIEW:
A. SHOP DRAWINGS, SHOWING FABRICATION OF STEEL COMPONENTS
B. WELDING CERTIFICATES
C. MILL TEST REPORTS FOR STEEL COMPONENTS
D. SOURCE QUALITY-CONTROL REPORTS
E. FIELD QUALITY-CONTROL REPORTS; CONTRACTOR SHALL ENGAGE A TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.

S3 DETAIL, FABRICATE AND ERECT STEEL IN CONFORMANCE WITH THE LATEST EDITIONS OF AISC SPECIFICATIONS AND CODES.

S4 PERFORM ALL WELDING USING CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.1, "STRUCTURAL WELDING CODE - STEEL."

S5 VISUALLY INSPECT ALL WELDED CONNECTIONS IN ACCORDANCE WITH AWS D1.1 AND THE FOLLOWING INSPECTION PROCEDURES, AT TESTING AGENCY'S OPTION:
A. LIQUID PENETRANT INSPECTION IN ACCORDANCE WITH ASTM E165.
B. MAGNETIC PARTICLE INSPECTION IN ACCORDANCE WITH ASTM E709, CRACKS OR ZONES OF INCOMPLETE FUSION OR PENETRATION ARE NOT ACCEPTED.
C. ULTRASONIC INSPECTION IN ACCORDANCE WITH ASTM E164.

S6 FABRICATE ALL MEMBERS WITH THE NATURAL CAMBER UP.

S7 AFTER FABRICATION, CLEAN STEEL OF ALL RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE OR OTHER FOREIGN MATERIALS.

S8 DO NOT FIELD CUT ANY STEEL FRAMING WITHOUT THE PRIOR REVIEW AND ACCEPTANCE OF THE ARCHITECT/ENGINEER.

S9 ERECTION PROCEDURES, SEQUENCES AND COORDINATION OF WORK WITH OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ANY ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES AT NO COST TO THE OWNER. REMOVE THIS ADDITIONAL STEEL UNLESS DIRECTED OTHERWISE BY THE OWNER IN WRITING.

S10 PROVIDE NEW MATERIAL CONFORMING TO THE FOLLOWING REQUIREMENTS FOR ALL STEEL:

| MEMBER | GRADE |
|---|---|
| PLATE, ANGLES | ASTM A36 |
| PIPES | ASTM A53, GRADE B |
| HOLLOW STRUCTURAL SHAPES | ASTM A500, GRADE B |
| WELDING ELECTRODE | E70XX |

2 ROOF FRAMING PLAN
S-101 SCALE: 1/4" = 1'-0"

NOTES:
1. DIMENSIONS = 7'-6"L x 4'-6"W x 3'-6"H. WEIGHT = 700 lbs.
2. INSTALL RTU-1 ON NEW CONVERTER ROOF CURB. EXIST HSS CURB SUPPORT TO REMAIN. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. PIPE2XS w/ 1/4" CAP PLATE; COORDINATE FINAL LOCATION OF POLE w/ ARCHITECTURAL AND ELECTRICAL DRAWINGS.
4. UTILITY CHASE HOUSING; COORDINATE FINAL SIZE AND LOCATION w/ ARCHITECTURAL AND ELECTRICAL DRAWINGS.
5. HSS8x4x1/4 FRAME AROUND UTILITY CHASE HOUSING.

1 FLOOR FRAMING PLAN
S-101 SCALE: 1/4" = 1'-0"
NOTES: ROD X-BRACING NOT SHOWN FOR CLARITY.

WELDING DETAILS AT END

DETAIL E

SECTION G-G

5 SECTION @ ROOF BEAM
S-101 SCALE: 3/4" = 1'-0"

4 SECTION @ UTILITY POLE
S-101 SCALE: 3/4" = 1'-0"

3B SECTION @ NORTH WINDOW SILL
S-101 SCALE: 3/4" = 1'-0"

3A SECTION @ EAST & WEST WINDOW SILL
S-101 SCALE: 3/4" = 1'-0"

NOTE: VERIFY CONSTRUCTION IN FIELD. IF L5x5 SILL ANGLE IS REINFORCED w/ L3x2x3/8, REINFORCE WELDS AS SHOWN. IF L5x5 SILL ANGLE IS NOT REINFORCED, INSTALL NEW L3x2x3/8 AS SHOWN.

8 DOOR FRAMING CONNECTION DETAIL
S-101 SCALE: 3/4" = 1'-0"

A-A VIEW

7 ANCHOR DETAIL 1
S-101 SCALE: 3/4" = 1'-0"

B-B VIEW

6 ANCHOR DETAIL 2
S-101 SCALE: 3/4" = 1'-0"

AS BUILT DRAWING
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GENERAL NOTES, FRAMING PLANS, AND SECTIONS

SHEET IDENTIFICATION
S-101
SHEET 3 OF 44

2 LOCATION PLAN
A-001 NOT TO SCALE

N

3 NYC DEPARTMENT OF FINANCE TAX MAP
A-001 NOT TO SCALE

N

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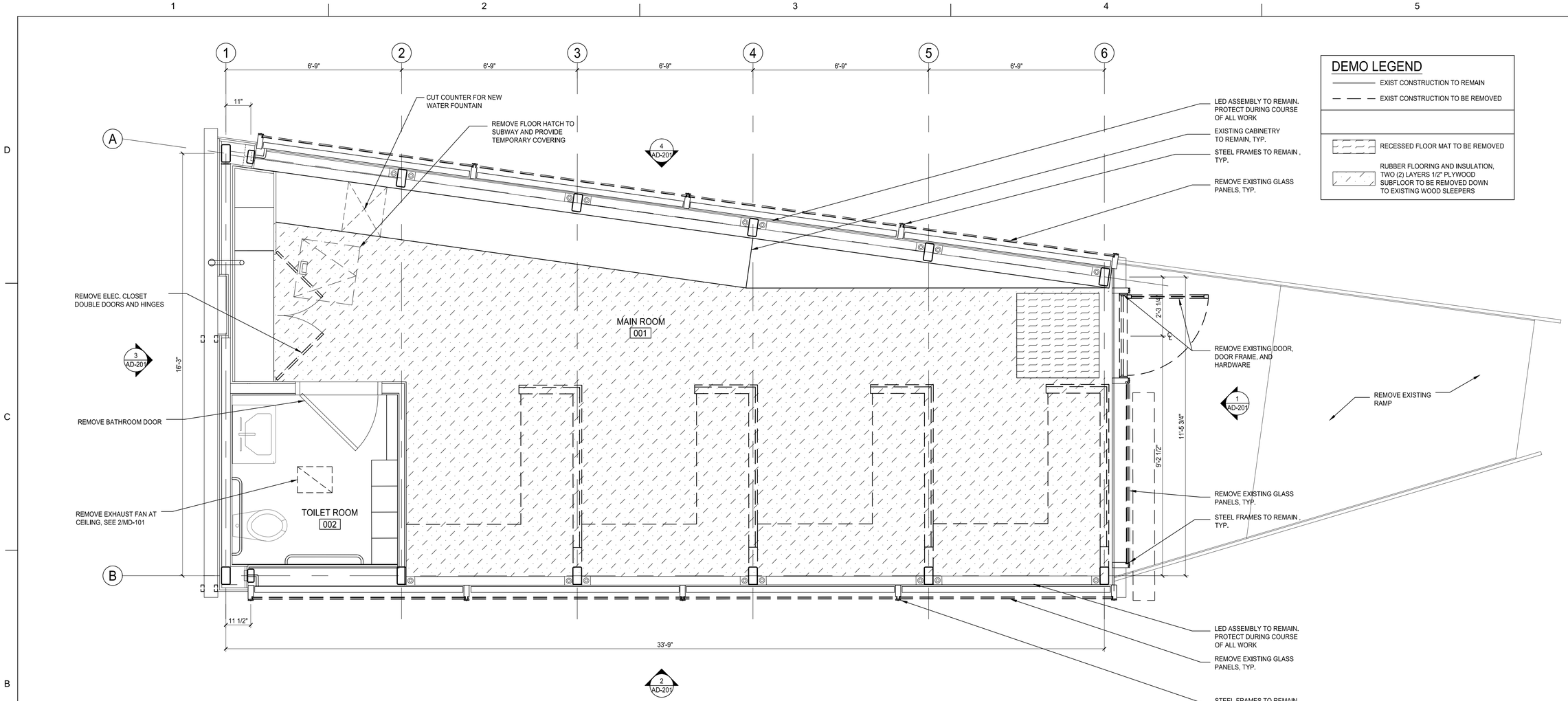
ARCHITECTURAL SITE PLAN

SHEET IDENTIFICATION
A-001
SHEET 4 OF 44




1 AD-101 FIRST FLOOR DEMOLITION PLAN

SCALE: 1/2" = 1'-0"

NOTE: SEE AD-201 FOR EXTERIOR REMOVALS.

0 1" 2" 4"

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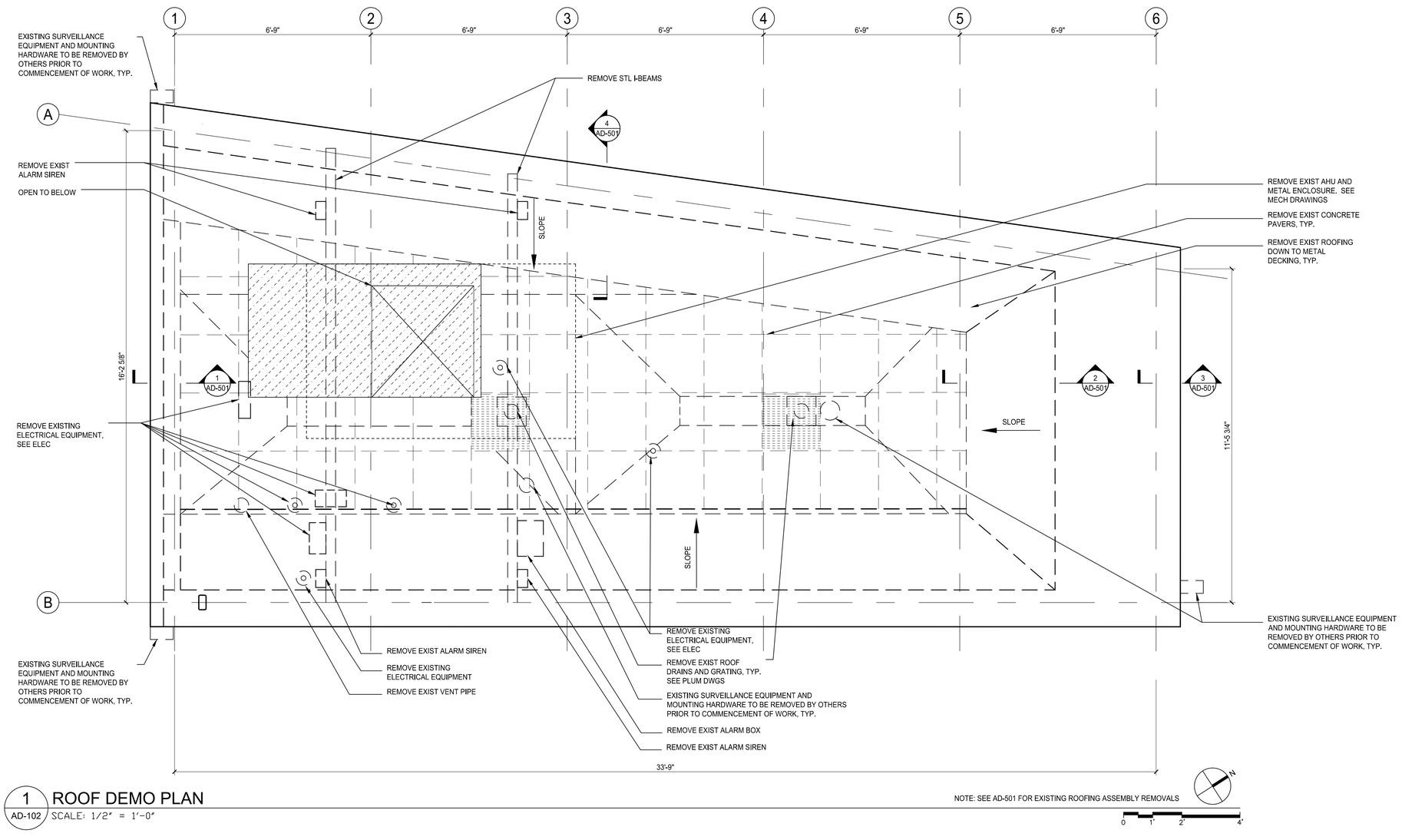
GOSHOW PROJECT # 201530
FIRST FLOOR DEMOLITION PLAN

SHEET IDENTIFICATION
AD-101
SHEET 5 OF 44




## DEMO LEGEND

- EXIST CONSTRUCTION TO REMAIN
- EXIST CONSTRUCTION TO BE REMOVED
- HVAC ENCLOSURE ABOVE CURB
- ROOF CURB TO BE REMOVED

## 1 ROOF DEMO PLAN

AD-102 SCALE: 1/2" = 1'-0"

NOTE: SEE AD-501 FOR EXISTING ROOFING ASSEMBLY REMOVALS

## GENERAL NOTES:

1. NYPD TO REMOVE ALL ROOF-MOUNTED SURVEILLANCE EQUIPMENT PRIOR TO COMMENCEMENT OF WORK

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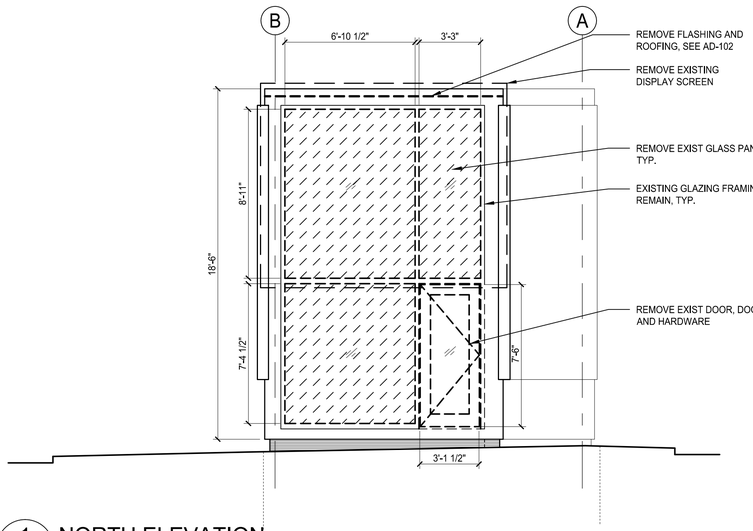
| CONTRACT NO.: | W912DS-11-D-0001 |
| FILE NUMBER: | |
| DWN BY: | SP |
| CKD BY: | CG |
| SUBMITTED BY: | ICE |
| ISSUE DATE: | |
| PLOT SCALE: | AS NOTED |
| SIZE: | ANSI_D |
| FILE NAME: | |

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
ROOF DEMOLITION PLAN

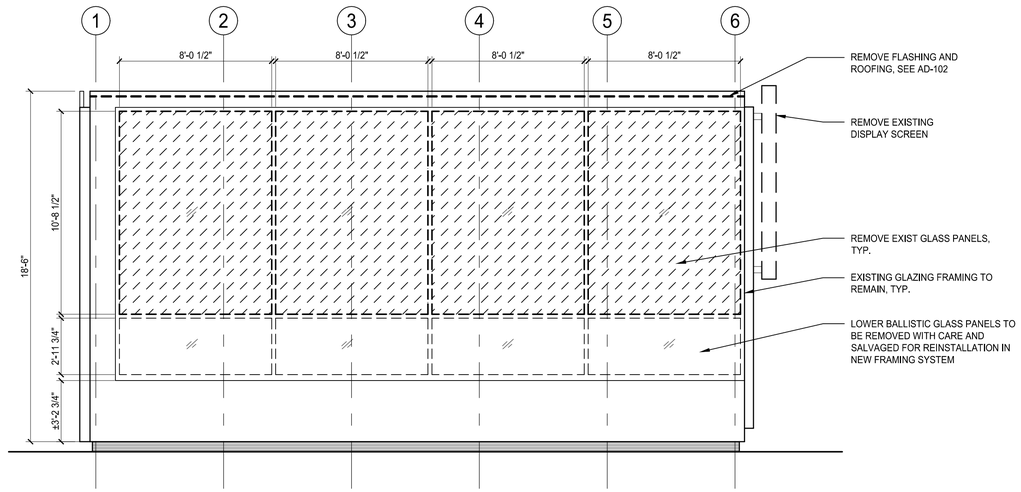
SHEET IDENTIFICATION
AD-102
SHEET 6 OF 44




1 AD-201 NORTH ELEVATION

SCALE: 1/4" = 1'-0"

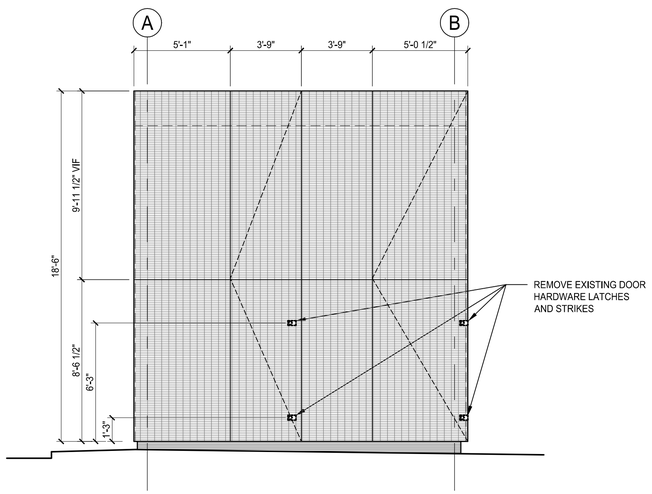
0 2' 4' 8'




2 AD-201 EAST ELEVATION

SCALE: 1/4" = 1'-0"

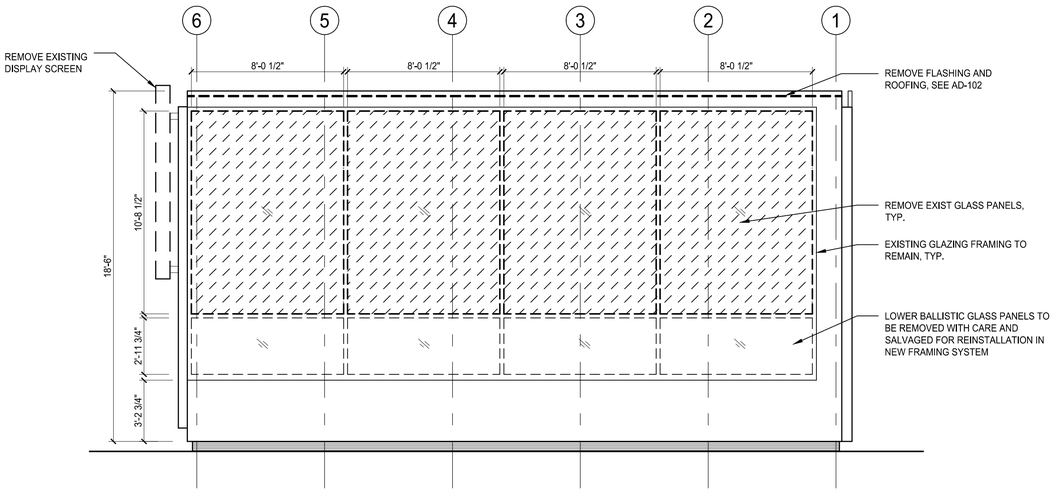
0 2' 4' 8'




3 AD-201 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'




4 AD-201 WEST ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

## GENERAL NOTES:

1. ALL EXISTING GLASS PANELS TO BE REMOVED WITH CARE. LOWER GLASS PANELS TO BE SALVAGED OFF-SITE FOR REINSTALLATION IN NEW FRAMING SYSTEM
2. PROTECT EXISTING LED ASSEMBLIES THROUGHOUT COURSE OF ALL WORK

AS BUILT DRAWING
DATE - 03-02-2018

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TIMES SQUARE
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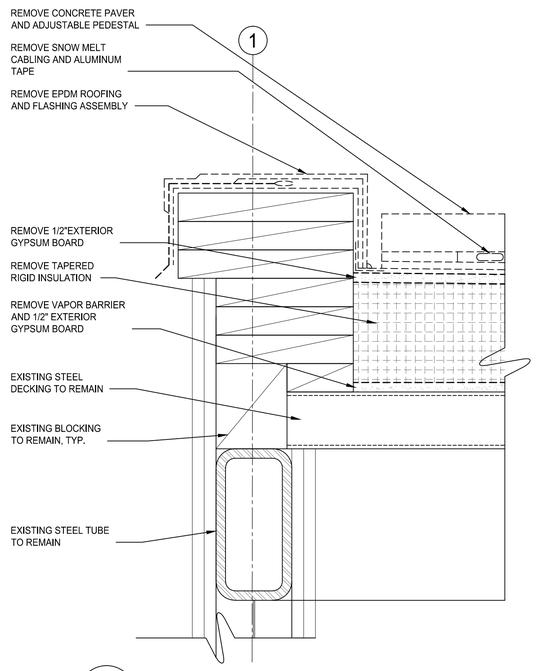
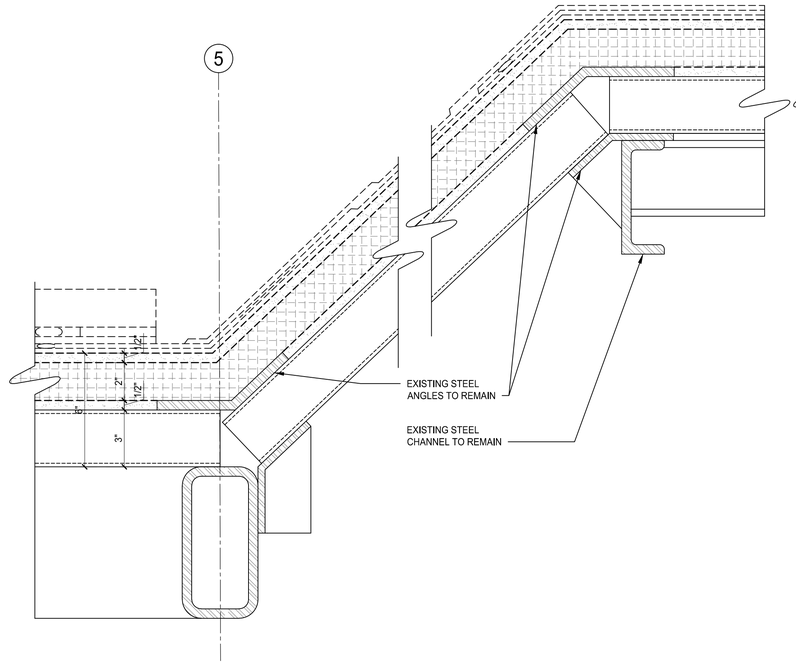
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
DEMOLITION ELEVATIONS

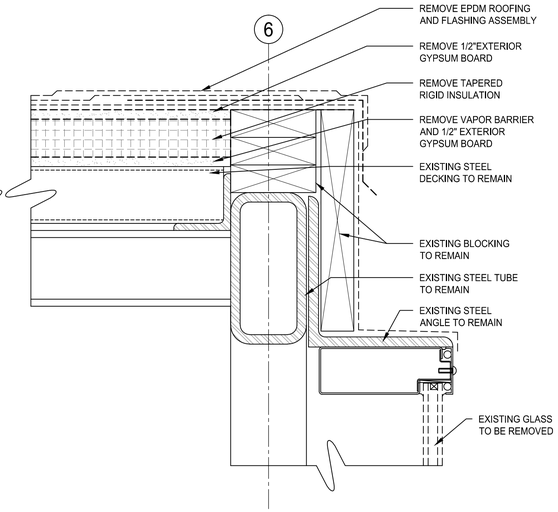
SHEET IDENTIFICATION
AD-201
SHEET 7 OF 44



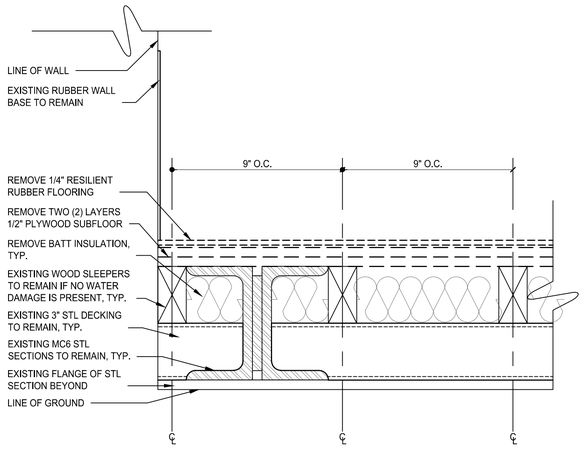

1 AD-501 SOUTH CURB DEMOLITION DETAIL
SCALE: 3" = 1'-0"




2 AD-501 NORTH CURB DEMOLITION DETAIL
SCALE: 3" = 1'-0"

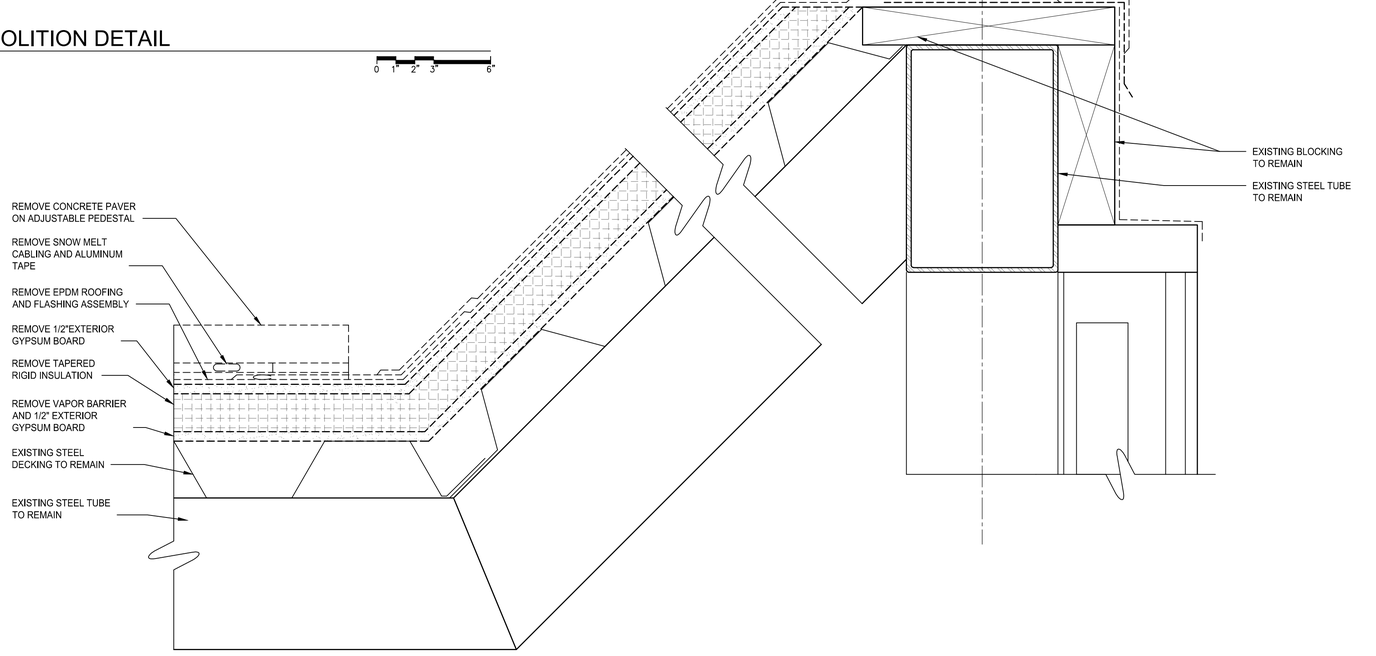



3 AD-501 NORTH CURB DEMOLITION DETAIL
SCALE: 3" = 1'-0"




5 AD-501 RESILIENT FLOORING DEMO DETAIL
SCALE: 3" = 1'-0"

NOTE: WOOD SLEEPERS TO BE REMOVED IF WATER DAMAGE VISIBLE. ASSUME ALLOWANCE OF 30 L.F. OF REMOVALS.




4 AD-501 EAST CURB DEMOLITION DETAILS
SCALE: 3" = 1'-0"

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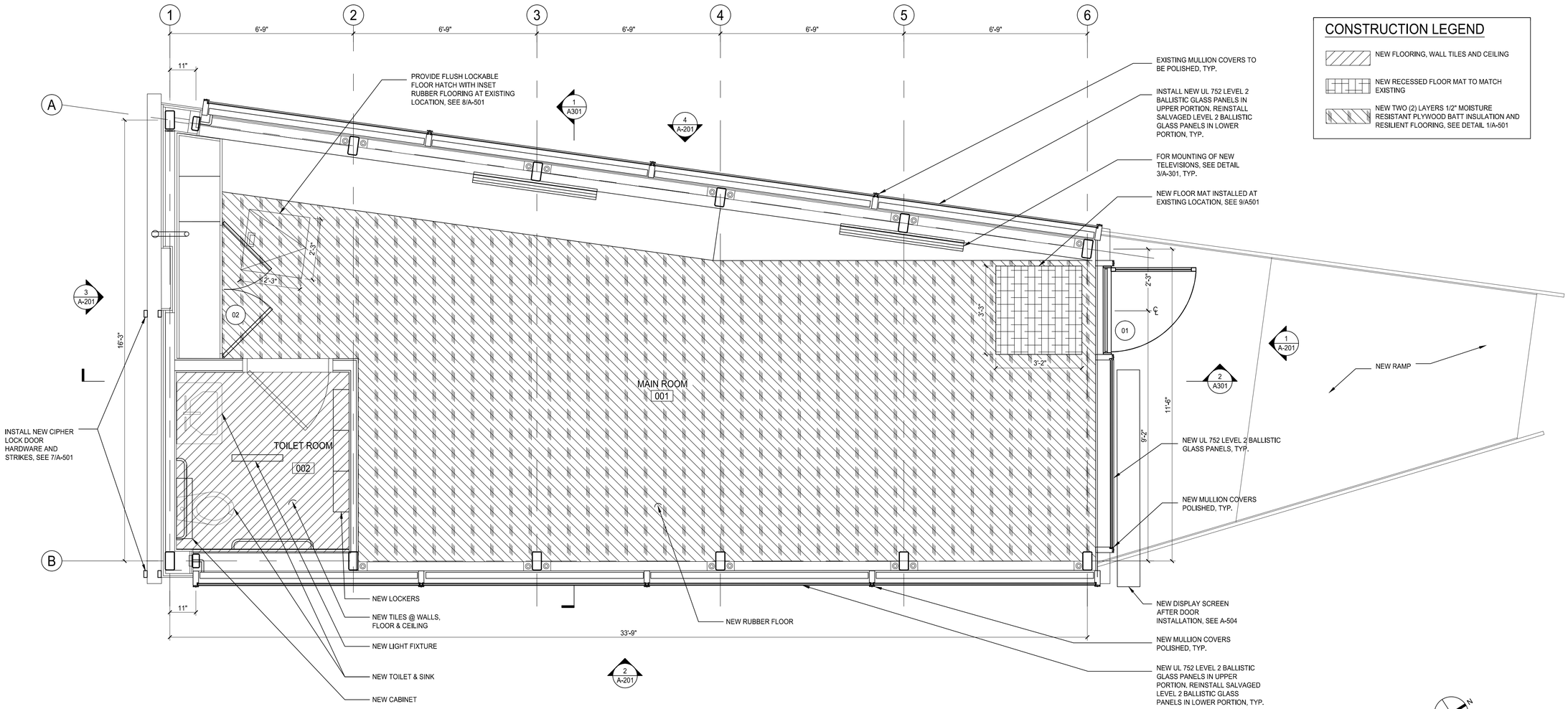
GOSHOW PROJECT # 201530
DEMOLITION DETAILS

SHEET IDENTIFICATION
AD-501
SHEET 8 OF 44




## 1 FIRST FLOOR CONSTRUCTION PLAN

A-101 SCALE: 1/2" = 1'-0"

FINISH SCHEDULE

BATHROOM

FLOOR - DALE TILE COLOR COAL TN99

WALL - FIRST 4' CLOUD TH 95 BULLNOSE COAL TN 99
2' UP TO CEILING BRINO TN 98

CEILING - CLOUD TN 95

MAIN ROOM

FLOOR - RUBBER TILE
JOHNSONITE 2' X 2' STYLE: FLAGSTONE COLOR: #20 CHARCOAL

CEILING - SW CEILING PROMAR WHITE PAINT,

WALL - SWEATSHIRT GRAY 2126-40 FLAT AND
STEEL EPOXY SWEATSHIRT GRAY 2126-40

## GENERAL NOTES:

1. DISPLAY SCREEN REINSTALLATION TO BE PER ORIGINAL MANUFACTURER'S INSTRUCTIONS AT USACE REQUEST, SEE A-504. MANUFACTURER'S TECHNICAL CONSULTANT TO BE ON SITE DURING REINSTALLATION.
2. THOROUGHLY CLEAN AND POLISH ALL EXPOSED STEEL FRAMING AND PANELLING ON BUILDING EXTERIOR.

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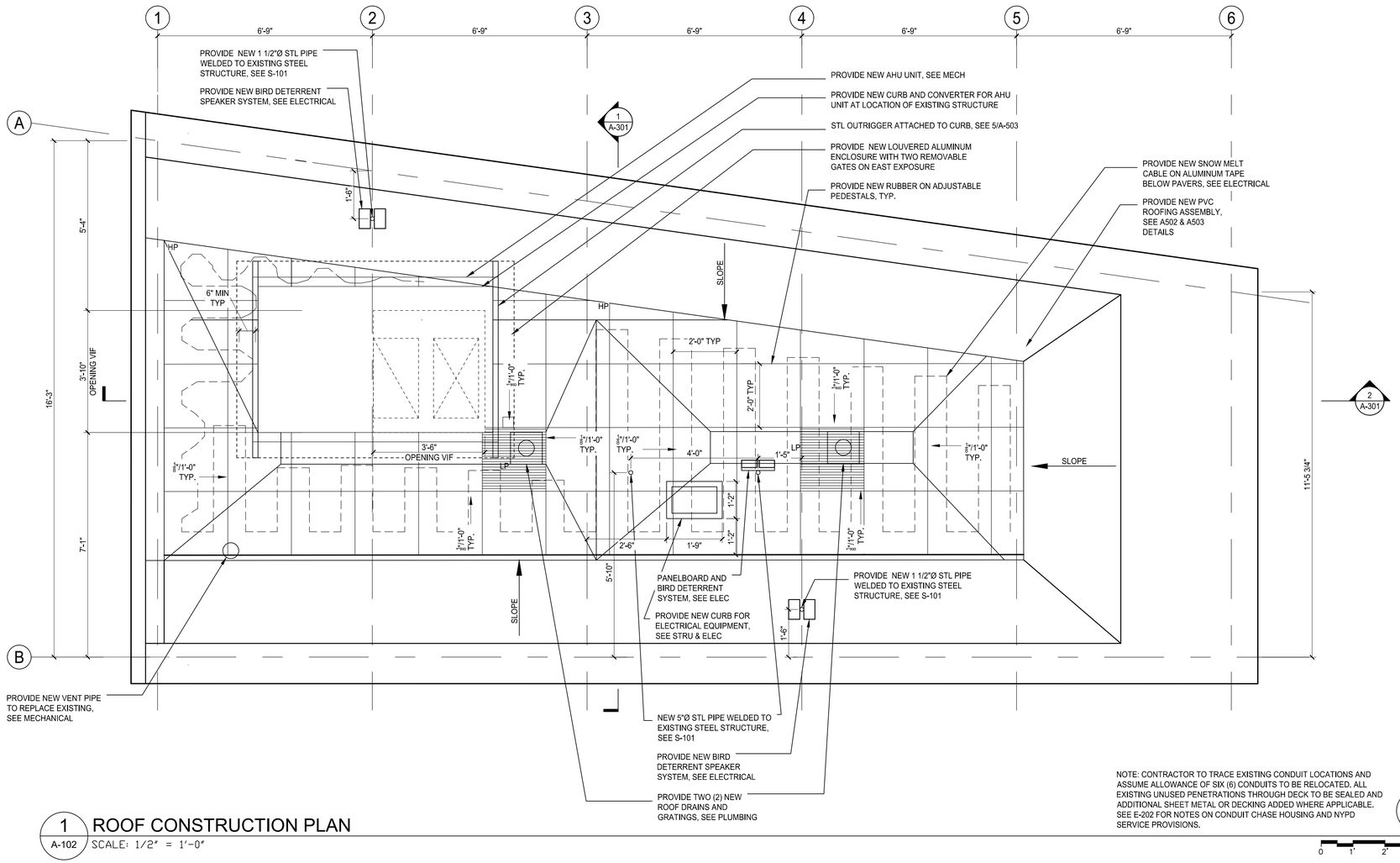
GOSHOW PROJECT # 201530
FIRST FLOOR CONSTRUCTION PLAN

SHEET IDENTIFICATION
A-101
SHEET 9 OF 44




1 ROOF CONSTRUCTION PLAN
A-102 SCALE: 1/2" = 1'-0"

NOTE: CONTRACTOR TO TRACE EXISTING CONDUIT LOCATIONS AND ASSUME ALLOWANCE OF SIX (6) CONDUITS TO BE RELOCATED. ALL EXISTING UNUSED PENETRATIONS THROUGH DECK TO BE SEALED AND ADDITIONAL SHEET METAL OR DECKING ADDED WHERE APPLICABLE. SEE E-202 FOR NOTES ON CONDUIT CHASE HOUSING AND NYPD SERVICE PROVISIONS.

0 1' 2' 4'

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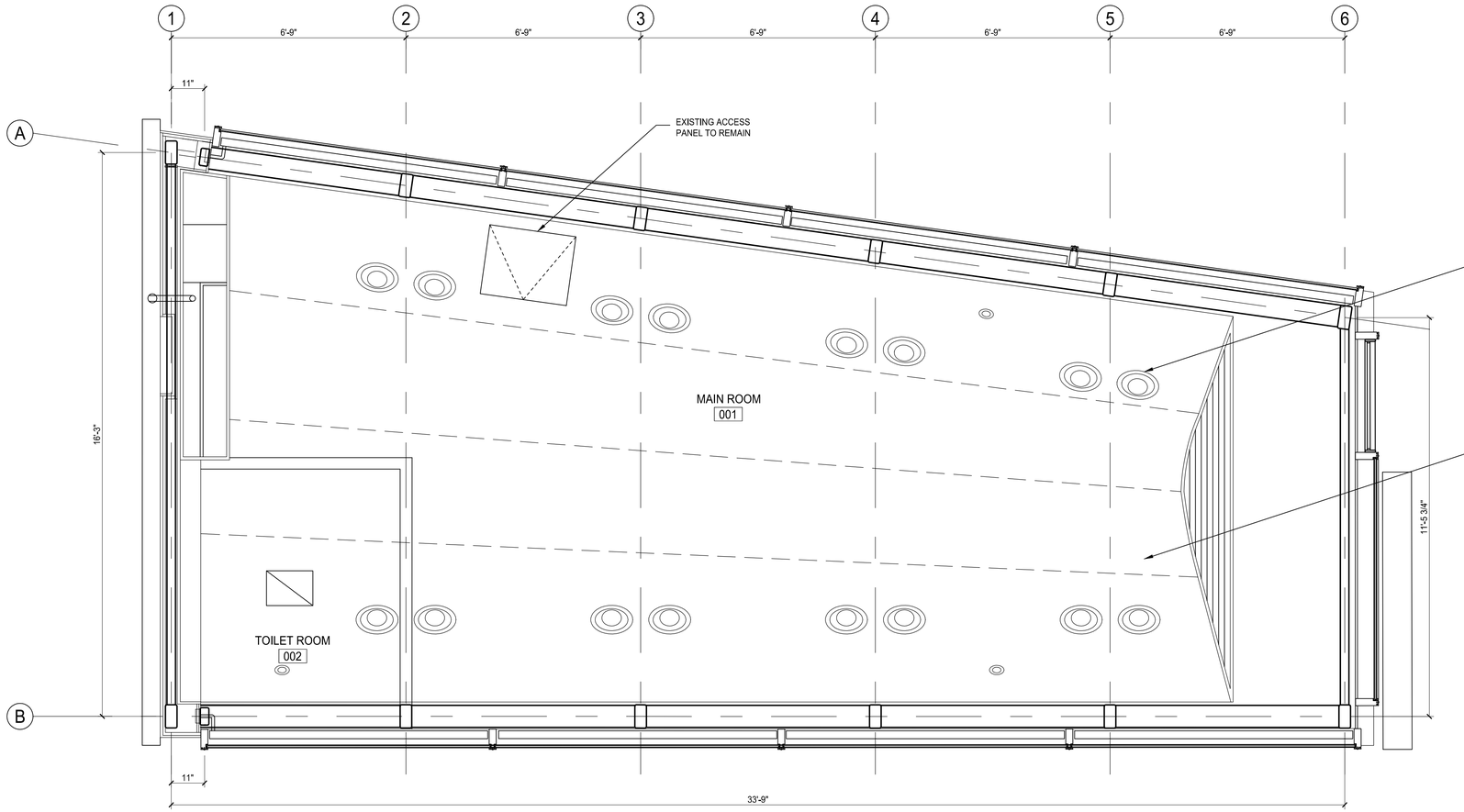
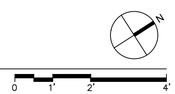
GOSHOW PROJECT # 201530
ROOF CONSTRUCTION PLAN

SHEET IDENTIFICATION
A-102
SHEET 10 OF 44




1 A-111 FIRST FLOOR REFLECTED CEILING PLAN

SCALE: 1/2" = 1'-0"




## GENERAL NOTES:

1. THOROUGHLY CLEAN AND POLISH ALL EXPOSED STEEL FRAMING AND PANELING ON BUILDING EXTERIOR.

AS BUILT DRAWING
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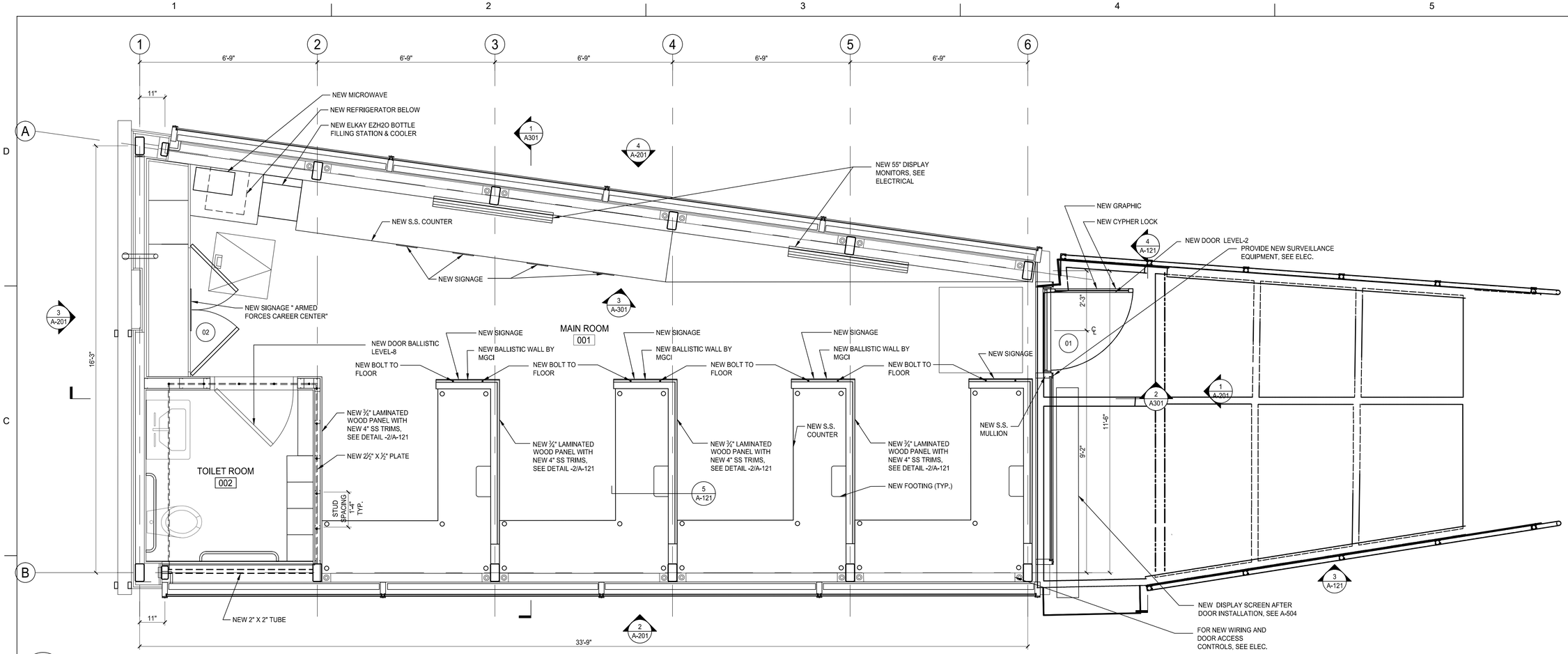
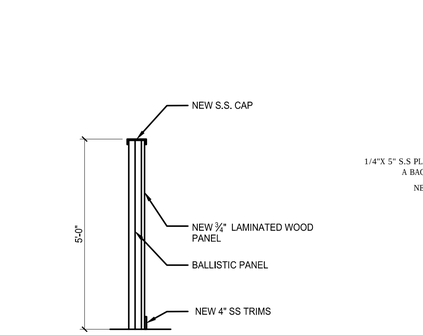
GOSHOW PROJECT # 201530
REFLECTED CEILING PLAN

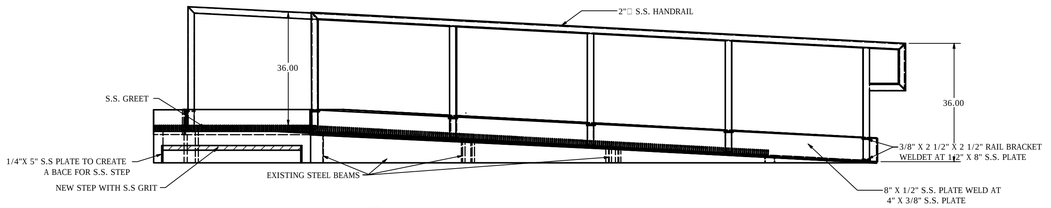
SHEET IDENTIFICATION
A-111
SHEET 11 OF 44



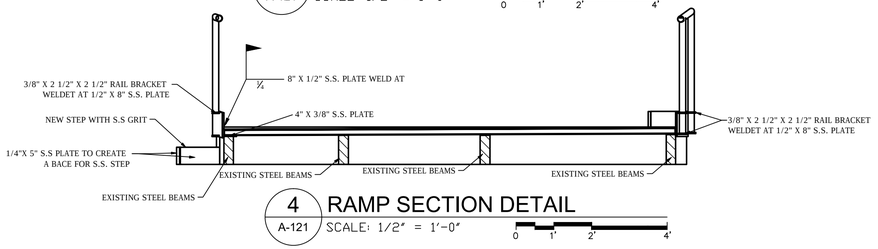

## 1 FIRST FLOOR FURNITURE PLAN
A-121 SCALE: 1/2" = 1'-0"



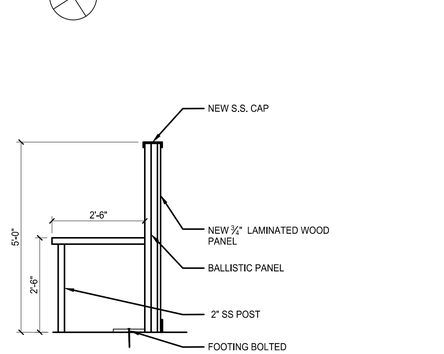

## 2 PARTITION DETAIL
A-121 SCALE: 1/2" = 1'-0"




## 3 RAMP DETAIL
A-121 SCALE: 1/2" = 1'-0"




## 4 RAMP SECTION DETAIL
A-121 SCALE: 1/2" = 1'-0"




## 5 COUNTER DETAIL
A-121 SCALE: 1/2" = 1'-0"

## GENERAL NOTES:

1. DISPLAY SCREEN REINSTALLATION TO BE PER ORIGINAL MANUFACTURER'S INSTRUCTIONS AT USACE REQUEST. MANUFACTURER'S TECHNICAL CONSULTANT TO BE ON SITE DURING REINSTALLATION

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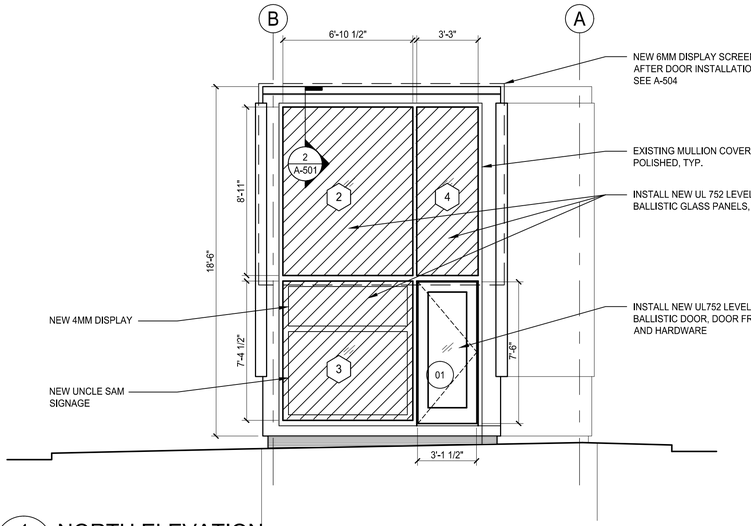
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
FIRST FLOOR FURNITURE PLAN

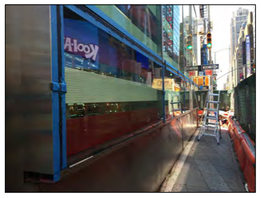
SHEET IDENTIFICATION
A-121
SHEET 12 OF 44

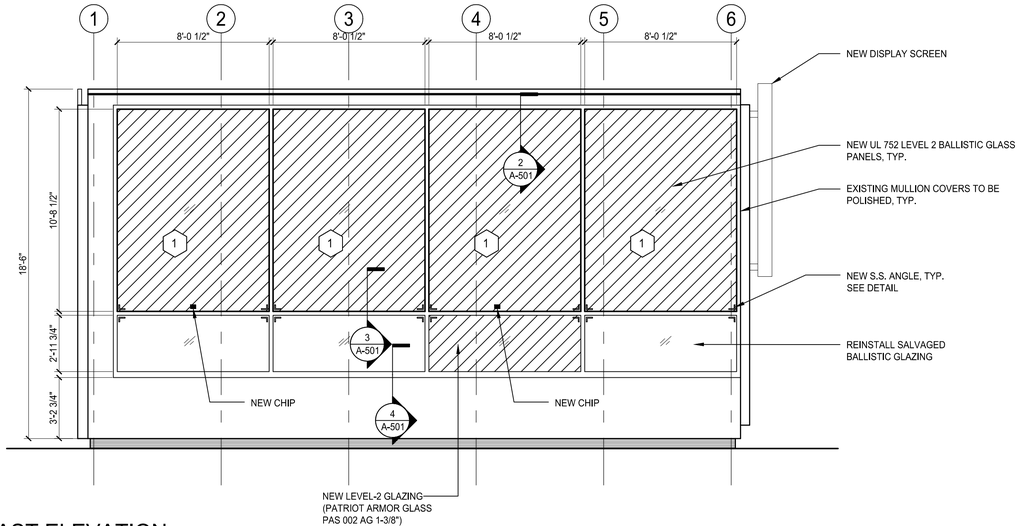



1 A-201 NORTH ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

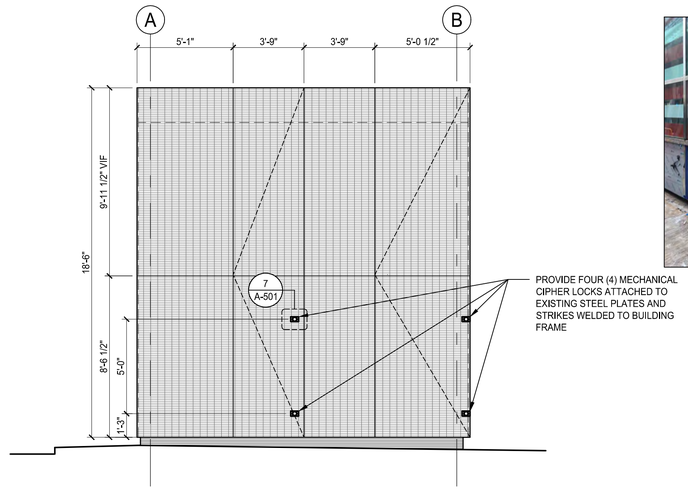





2 A-201 EAST ELEVATION

SCALE: 1/4" = 1'-0"

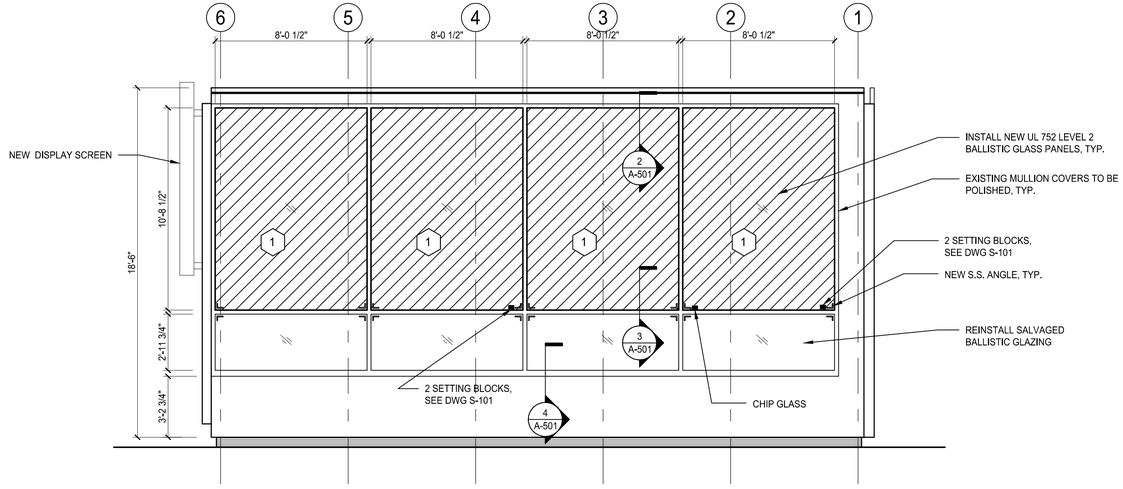
0 2' 4' 8'




3 A-201 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'




4 A-201 WEST ELEVATION

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

## GENERAL NOTES:

1. DISPLAY SCREEN INSTALLATION TO BE PER ORIGINAL MANUFACTURER'S INSTRUCTIONS AT USACE REQUEST, SEE A-504. MANUFACTURER'S TECHNICAL CONSULTANT TO BE ON SITE DURING REINSTALLATION.
2. CONTRACTOR TO CONFIRM MULLION FRAMING CONSTRUCTION AND CAPACITY OF FRAMING TO ACCEPT NEW GLAZING. MULLION FACE PLATE FASTENING NOT TO OVERSTRESS GLAZING.
3. THOROUGHLY CLEAN AND POLISH ALL EXPOSED STEEL FRAMING AND PANELING ON BUILDING EXTERIOR.
4. SETTING BLOCKS USED FOR ALL NEW PANELS. REFER TO SHEET S-101 FOR DETAILS.

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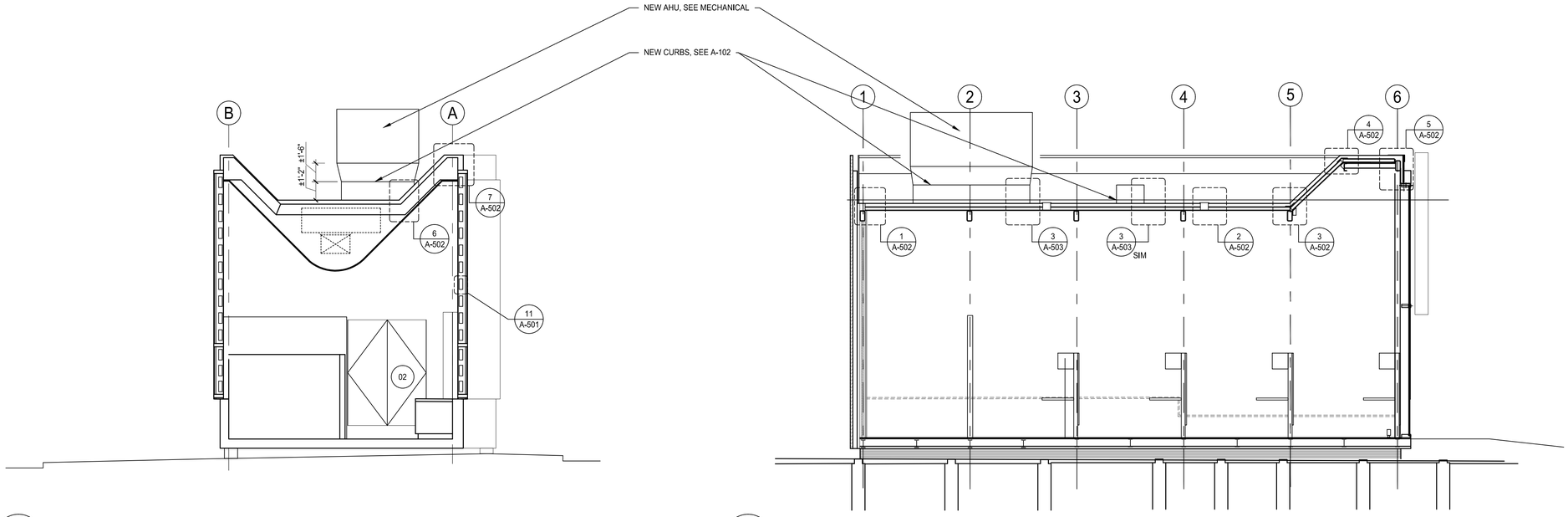
TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
ELEVATIONS

SHEET IDENTIFICATION
A-201
SHEET 13 OF 44

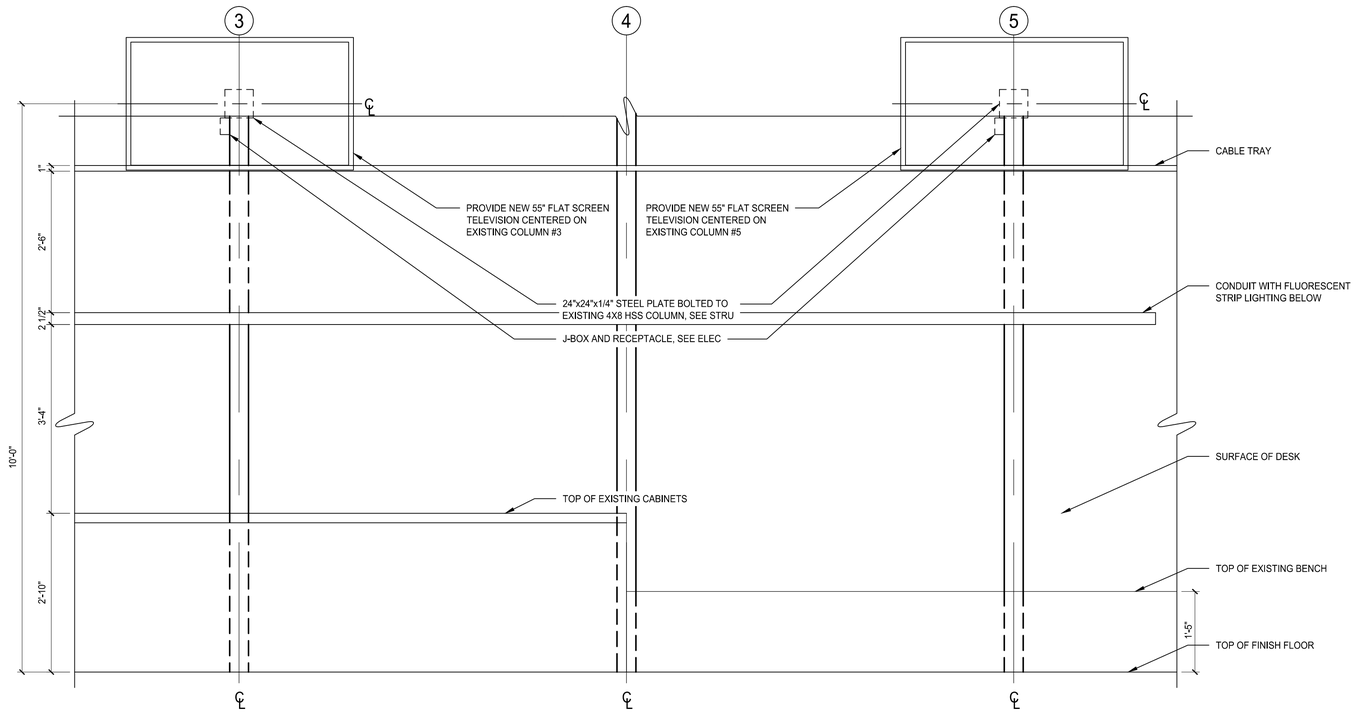



1 A-301 EAST WEST SECTION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

2 A-301 NORTH SOUTH SECTION
SCALE: 1/4" = 1'-0"

0 2' 4' 8'




3 A-301 INTERIOR EAST WALL ELEVATION
SCALE: 3/4" = 1'-0"

NOTE: MOUNT TELEVISIONS BETWEEN STRIP LIGHTING AND CABLE TRAY

0 6" 1' 2'

AS BUILT DRAWING
DATE - 03-02-2018

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DATE: 3/22/2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-11-D-0001
DWN BY: SP
CKD BY: CG
SUBMITTED BY: ICE
PLOT SCALE: AS NOTED
ISSUE DATE:
FILE NUMBER:
SIZE: ANSI_D
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
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GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
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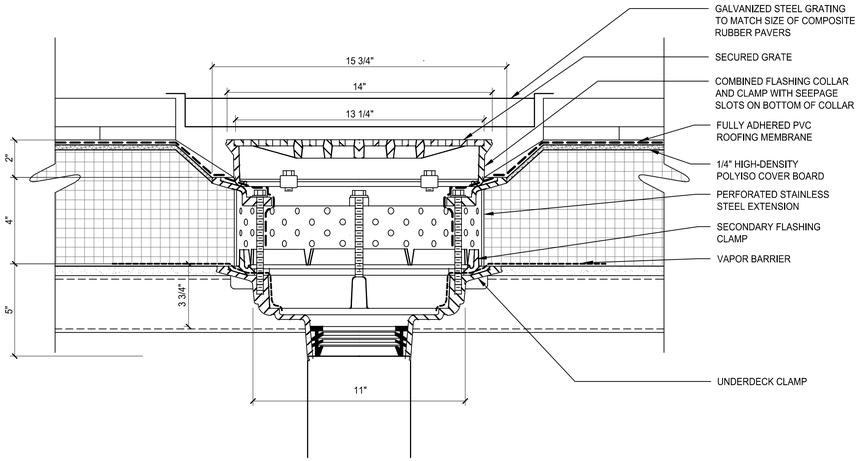
TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
SECTIONS

SHEET IDENTIFICATION
A-301
SHEET 14 OF 44

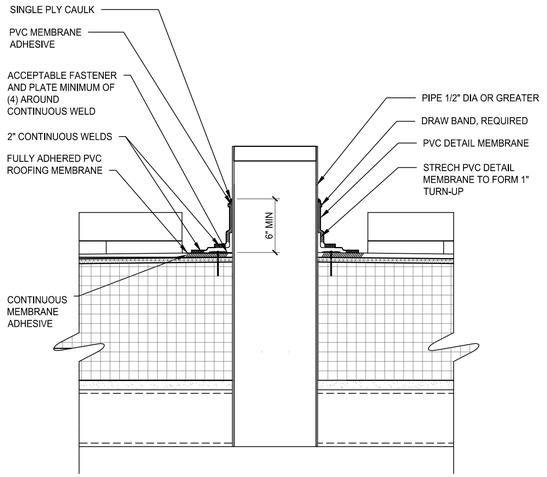



1 A-503 TYPICAL ROOF DRAIN SECTION

SCALE: 3" = 1'-0"

NOTE: SEE PLUMBING FOR MORE INFORMATION

0 1" 2" 3" 6"

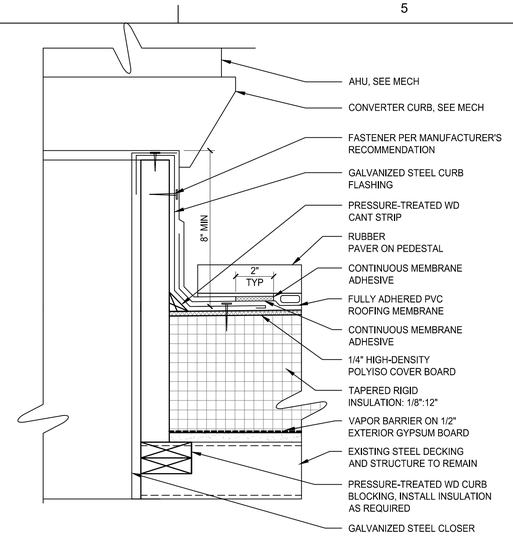



2 A-503 TYPICAL PENETRATION

SCALE: 3" = 1'-0"

NOTE: PIPE/VENT PIPE PENETRATIONS

0 1" 2" 3" 6"

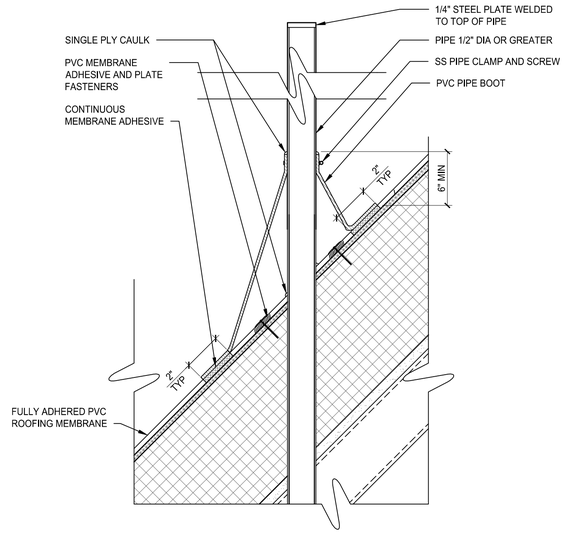



3 A-503 ROOF SECTION THROUGH AHU CURB

SCALE: 3" = 1'-0"

NOTE: AHU TO MOUNT TO CURB USING CURB CONVERTER PER MANUFACTURER INSTRUCTION

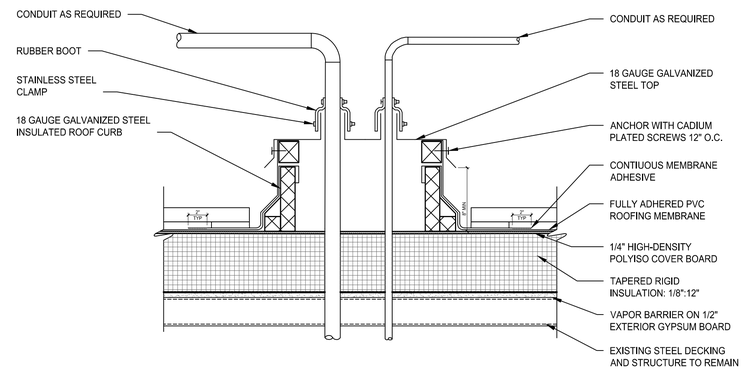
0 1" 2" 3" 6"




4 A-503 TYPICAL PIPE PENETRATION ON SLOPED ROOFING

SCALE: 3" = 1'-0"

0 1" 2" 3" 6"




6 A-503 PIPE PENETRATION ROOF CURB DETAIL

SCALE: 1 1/2" = 1'-0"

0 3" 6" 1'

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DWN BY: SP
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SUBMITTED BY: ICE
FILE NUMBER:
PLOT SCALE: AS NOTED
ISSUE DATE:
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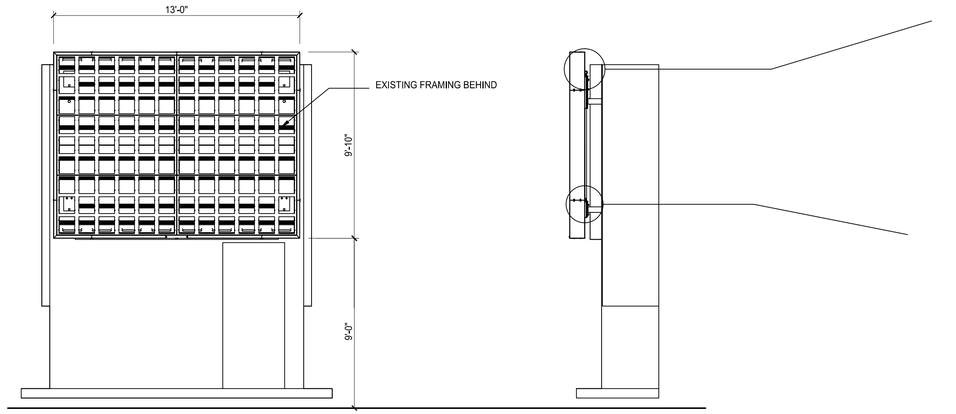
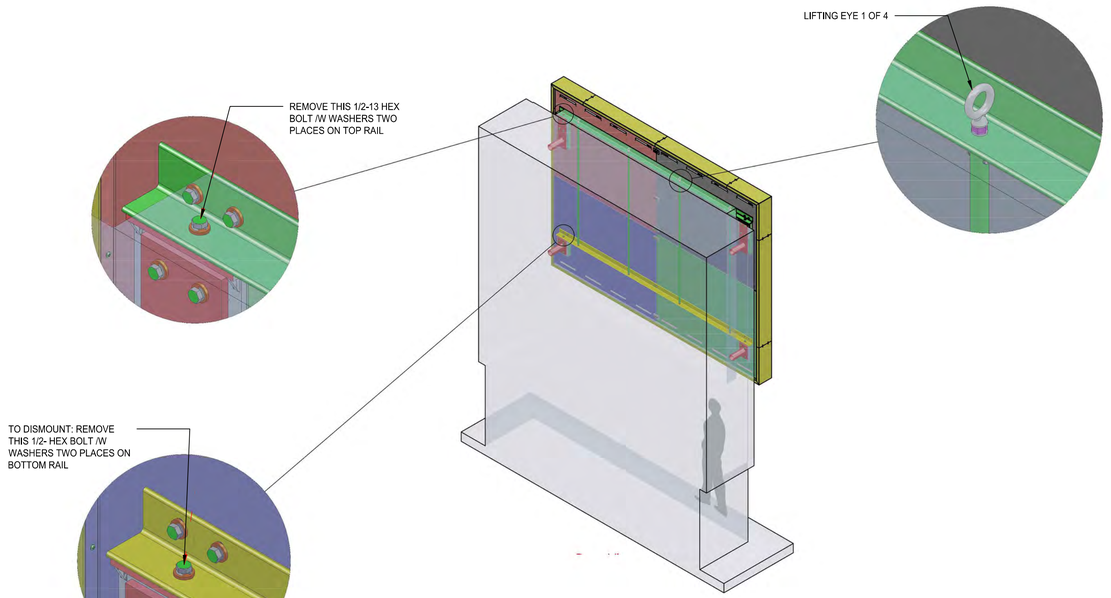
GOSHOW PROJECT # 201530
ROOFING DETAILS

SHEET IDENTIFICATION
A-503
SHEET 17 OF 44




1 A-504 NEW LED SCREEN D3 (MANUF.)
SCALE: 1/4" = 1'-0"
0 2" 4" 8"

2 A-504 EXISTING DISPLAY SCREEN REMOVAL DETAILS
FULL SCALE
0 1" 2"




3 A-504 EXISTING DISPLAY SCREEN REMOVAL DETAILS
FULL SCALE
0 1" 2"

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DATE: 3/2/2018
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CONTRACT NO.: W912DS-11-D-3001
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FILE NUMBER:
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TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
DISPLAY SCREEN REMOVAL AND REINSTALLATION DETAILS

SHEET IDENTIFICATION
A-504
SHEET 18 OF 44

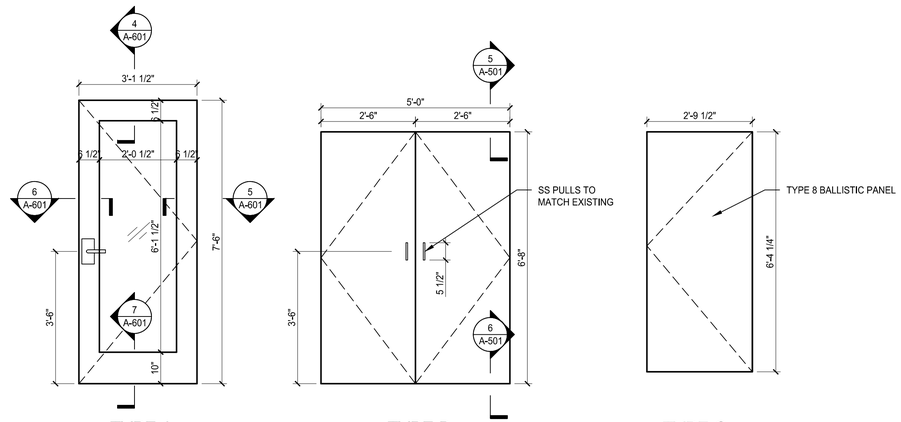
## DOOR SCHEDULE

| DOOR NUMBER | DOOR LOCATION AND DESCRIPTION | DOOR | | | | | | | | FRAME | | JAM | HEAD | SADDLE | HARDWARE SET | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TYPE | MATERIAL | RATING | SIZE | THICK | STC | FINISH | | FINISH | | | | | | |
| | | | | | | | | EXT | INT | EXT | INT | | | | | |
| 01 | ENTRY DOOR AT NORTH FACADE | A | SS / GLAZED | - | 7'-6" x 3'-1 1/2" | 2-3/4" | - | GLAZED | GLAZED | SS | SS | SS | SS | MTL, SEE DETAIL 4/A601 | 1 | DOOR AND FRAME TO BE REPLACED WITH A UL 752 LEVEL 2 BALLISTIC RTG |
| 02 | DOUBLE DOOR LOCATED AT SOUTH ELECTRICAL CLOSET | B | WD | - | 6'-8" x 5'-0" | 1-3/8" | - | PTD | PTD | PTD | PTD | - | - | - | 2 | PAINT COLOR TO MATCH SURROUNDING CABINETRY |
| 03 | BATHROOM | C | SS / BALLISTIC | - | 6'-4¼" x 2'-9 1/2" | 2-3/4" | - | SS | SS | SS | SS | SS | SS | MTL, SEE DETAIL 4/A601 | 1 | DOOR AND FRAME TO BE REPLACED WITH A UL 752 LEVEL 8 BALLISTIC RTG |

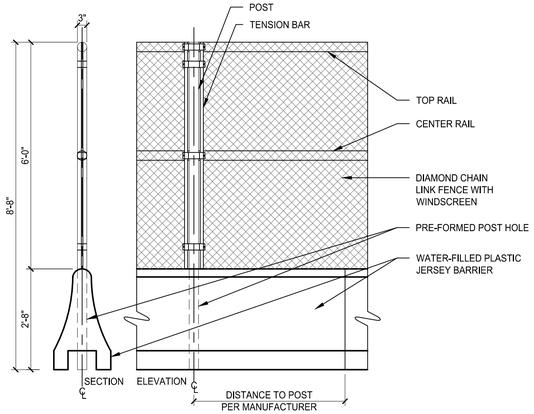
PTD: PAINTED; SS: STAINLESS STEEL; MTL: METAL; WD: WOOD

## GLAZING SCHEDULE

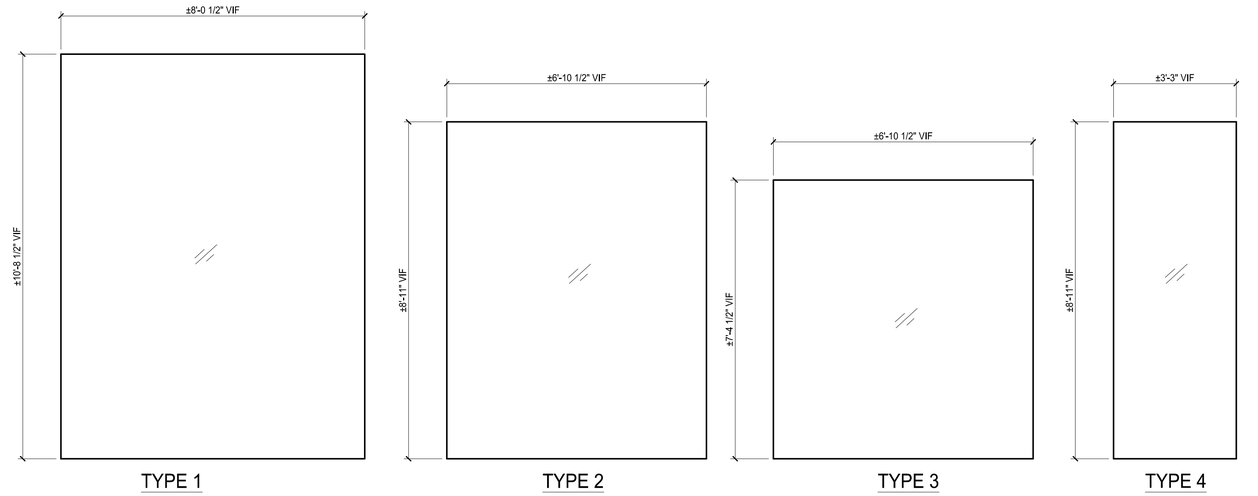
| GLAZING TYPE | SIZE | RATING | COUNT | COMMENTS |
|---|---|---|---|---|
| 1 | ±8'-0 1/2" X ±10'-8 1/2" | UL 752 LEVEL 2 BALLISTIC | 8 | CONTRACTOR TO VERIFY GLASS MEASUREMENTS IN FIELD |
| 2 | ±6'-10 1/2" X ±8'-11" | UL 752 LEVEL 2 BALLISTIC | 1 | CONTRACTOR TO VERIFY GLASS MEASUREMENTS IN FIELD |
| 3 | ±6'-10 1/2" X ±7'-4 1/2" | UL 752 LEVEL 2 BALLISTIC | 1 | CONTRACTOR TO VERIFY GLASS MEASUREMENTS IN FIELD |
| 4 | ±3'-3" X ±8'-11" | UL 752 LEVEL 2 BALLISTIC | 1 | CONTRACTOR TO VERIFY GLASS MEASUREMENTS IN FIELD |



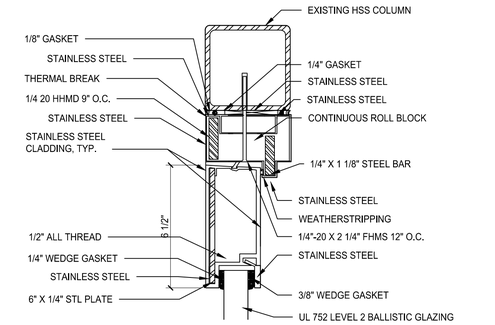

1 DOOR TYPES
A-601 SCALE: 1/2" = 1'-0"



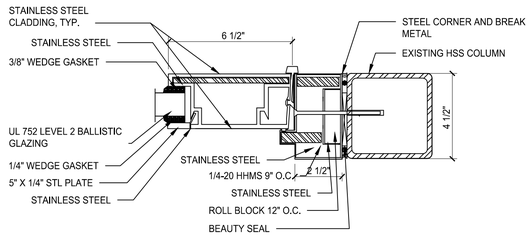

3 TEMPORARY SITE PARTITION
A-601 SCALE: 1/2" = 1'-0"



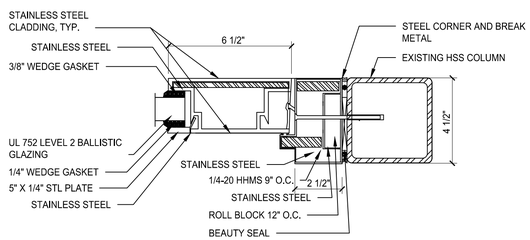

2 BALLISTIC GLAZING TYPES
A-601 SCALE: 1/2" = 1'-0"



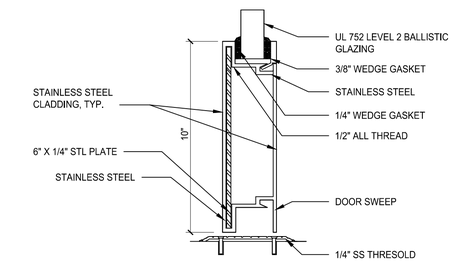

4 VERTICAL DOOR SECTION - TYPE A
A-601 SCALE: 3" = 1'-0"




5 HORIZONTAL HINGE SECTION - TYPE A
A-601 SCALE: 3" = 1'-0"




6 HORIZONTAL LATCH SECTION - TYPE A
A-601 SCALE: 3" = 1'-0"




7 METAL SADDLE DETAIL - TYPE A
A-601 SCALE: 3" = 1'-0"

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GOSHOW PROJECT NO: 201530
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CKD BY: CG
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ISSUE DATE:
FILE NAME:
PLOT SCALE: AS NOTED
SIZE: ANSI_D

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GOSHOW PROJECT # 201530
DOOR & GLAZING SCHEDULE

SHEET IDENTIFICATION
A-601
SHEET 19 OF 44

## 1 | ABBREVIATIONS

NO-SCALE

| ABBREVIATION | DESCRIPTION |
|---|---|
| ACU | AIR CONDITIONING UNIT |
| ACC | AIR-COOLED CONDENSER |
| ACCU | AIR-COOLED CONDENSING UNIT |
| ACRCU | AIR-COOLED RECIPROCATING CHILLER |
| AD | ACCESS DOOR |
| AF | AIR FILTER |
| AFD | ADJUSTABLE FREQUENCY DRIVE |
| AFF | ABOVE FINISHED FLOOR |
| AFM | AIR FLOW MEASURING DEVICE |
| AHU | AIR HANDLING UNIT |
| APD | AIR PRESSURE DROP |
| B | BOILER |
| BAS | BUILDING AUTOMATIC SYSTEM |
| BDD | BACKDRAFT DAMPER |
| BFP | BACKFLOW PREVENTER |
| BHP | BRAKE HORSE POWER, BOILER HORSE POWER |
| BI | BACKWARD INCLINE |
| BR | BOTTOM REGISTER (WALL TYPE) LOW |
| BTUH | BRITISH THERMAL UNITS PER HOUR |
| ÅC | DEGREES CELSIUS, CENTIGRADE |
| CA | COMPRESSED AIR |
| CC | COOLING COIL |
| CD | CEILING DIFFUSER |
| CEF | CEILING EXHAUST FAN |
| CFM | CUBIC FEET PER MINUTE |
| CH | CABINET HEATER |
| CLG | COOLING |
| CO | CLEAN OUT |
| CP | CONDENSATE PUMP |
| CR | CONDENSER WATER RETURN |
| CS | CONDENSER WATER SUPPLY |
| CT | COOLING TOWER |
| CU | CONDENSING UNIT |
| CV | CONSTANT VOLUME, CONVECTOR |
| CCE | CLOSED CIRCUIT EVAPORATIVE COOLER |
| CWR | CHILLED WATER RETURN |
| CWS | CHILLED WATER SUPPLY |
| CW | COLD WATER |
| D | DROP |
| DB | DECIBELS |
| DBT | DRY BULB TEMPERATURE |
| DC | DRY COOLER |
| DD | DIRECT DRIVE |
| DDC | DIRECT DIGITAL CONTROL |
| DIA | DIAMETER |
| DN | DOWN |
| DPT | DEW POINT TEMPERATURE |
| DS | DUCT SILENCER |
| DWG | DRAWING |
| DX | DIRECT EXPANSION |
| EA | EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EDR | EQUIVALENT DIRECT RADIATOR |
| EF | EXHAUST FAN |
| EFC | EVAPORATIVE FLUID COOLER |
| EFF | EFFICIENCY |
| EFT | ENTERING FLUID TEMPERATURE |
| EHC | ELECTRIC HEATING COIL |
| EL | ELEVATION |
| ER | EXHAUST REGISTER |
| ERC | ENERGY RECOVERY COIL, ELECTRIC REHEAT COIL |
| ERP | ELECTRIC RADIANT PANEL |
| ES | EQUAL SPLIT |
| ESP | EXTERNAL STATIC PRESSURE |
| ET | EXPANSION TANK |
| EWT | ENTERING WATER TEMPERATURE |
| EX | EXISTING |
| ETR | EXISTING TO REMAIN |
| ÅF | DEGREES, FAHRENHEIT |
| FA | FACE AREA |
| FC | FLEX CONNECTION, FORWARD CURVED |
| FCU | FAN COIL UNIT |
| FCV | FLOW CONTROL VALVE |
| FD | FIRE DAMPER |
| FD/SD | COMBINATION FIRE/SMOKE DAMPER |
| FL | FLOOR |
| FLA | FULL LOAD AMPS |
| FLD | FLOOR DRAIN |
| FO | OVAL/FLAT OVAL |
| FOT | FLAT ON TOP |
| FOB | FLAT ON BOTTOM |
| FPM | FEET PER MINUTE |
| FPS | FEET PER SECOND |
| FR | FINNED TUBE RADIATION |
| FS | FLOW SWITCH |
| FT | FEET |
| FV | FACE VELOCITY |
| G | GAS |
| GAL | GALLONS |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GR | GRAINS (OF MOISTURE) |
| GRV | GRAVITY ROOF VENTILATOR |
| GSR | GLYCOL SOLUTION RETURN |
| GSS | GLYCOL SOLUTION SUPPLY |
| H | HUMIDIFIER |
| HC | HEATING COIL |
| HD | HEAD |
| HE | HEAT EXCHANGER |
| HGB | HOT GAS BYPASS |
| HGT | HEIGHT |
| HOA | HAND OFF AUTO |

| ABBREVIATION | DESCRIPTION |
|---|---|
| HORIZ. | HORIZONTAL |
| HP | HORSEPOWER, HEAT PUMP |
| HPC | HIGH PRESSURE STEAM CONDENSATE RETURN |
| HPS | HIGH PRESSURE STEAM (60 PSIG AND ABOVE) |
| HTG | HEATING |
| HV | HEATING AND VENTILATING UNIT |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| HZ | HERTZ |
| ID | INSIDE DIAMETER |
| IN | INCHES |
| INWC | INCHES WATER COLUMN |
| KW | KILOWATT |
| LAT | LEAVING AIR TEMPERATURE |
| LBS | POUNDS |
| LBS/HR | POUNDS PER HOUR |
| LD | LINEAR DIFFUSER |
| LF | LINEAR FOOT |
| LFT | LEAVING FLUID TEMPERATURE |
| LPC | LOW PRESSURE CONDENSATE RETURN |
| LPS | LOW PRESSURE STEAM (15 PSIG AND BELOW) |
| LSD | LINEAR SLOT DIFFUSER |
| LRA | LOCKED ROTOR AMPS |
| LWT | LEAVING WATER TEMPERATURE |
| MAX | MAXIMUM |
| MBH | |
| MCC | MOTOR CONTROL CENTER |
| MCP | MECHANICAL CONTROL PANEL |
| MD | MOTORIZED DAMPER |
| MHP | MOTOR HORSE POWER |
| MIN | MINIMUM |
| MISC. | MISCELLANEOUS |
| MPC | MEDIUM PRESSURE CONDENSATE RETURN |
| MPS | MEDIUM PRESSURE STEAM (16-59 PSIG) |
| MS | MOTOR STARTER |
| N/A | NOT APPLICABLE |
| NC | NOISE CRITERIA |
| N.C. | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| NK | NECK |
| N.O. | NORMALLY OPEN |
| NO | NUMBER |
| NOM | NOMINAL |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OAI | OUTSIDE AIR INTAKE |
| OBD | OPPOSED BLADE DAMPER |
| OD | OUTSIDE DIAMETER |
| OED | OPEN ENDED DUCT |
| OS&Y | OUTSIDE SCREW AND YOKE |
| OV | OUTLET VELOCITY |
| P | PUMP |
| PC | PUMPED CONDENSATE |
| PD | PRESSURE DROP |
| PDS | PRESSURE DIFFERENTIAL SWITCH |
| PF | PREFILTER |
| PFHX | PLATE FRAME HEAT EXCHANGER |
| PH | PHASE |
| PHC | PREHEAT COIL |
| PNEU | PNEUMATIC |
| PRV | PRESSURE REDUCING VALVE |
| PSIG | POUNDS PER SQUARE INCH WATER GAUGE |
| PVC | POLYVINYL CHLORIDE |
| R | RISE |
| RA | RETURN AIR |
| RAD | RADIATOR |
| REFG | REFRIGERAT(ANT, ATION) |
| RF | RETURN AIR FAN |
| RG | RETURN GRILLE |
| RH | RELATIVE HUMIDITY |
| RHC | REHEAT COIL |
| RLA | RATED LOAD AMPS |
| RM | ROOM, REFRIGERATION MACHINE |
| RPM | REVOLUTIONS PER MINUTE |
| RR | RETURN REGISTER |
| RTU | ROOFTOP UNIT |
| RV | RELIEF VALVE |
| SA | SUPPLY AIR |
| SD | SMOKE DAMPER |
| SF | SUPPLY AIR FAN |
| SHR | SENSIBLE HEAT RATIO |
| SG | SPECIFIC GRAVITY |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATIONS |
| SPS | STATIC PRESSURE SENSOR |
| SR | SUPPLY REGISTER |
| SUCT | SUCTION |
| TCP | TEMPERATURE CONTROL PANEL, |
| TD | TEMPERATURE DIFFERENCE |
| TEMP | TEMPERATURE |
| TG | TOP GRILLE (WALL TYPE) HIGH |
| TO | TRANSFER OPENING |
| TR | TOP REGISTER (WALL TYPE) HIGH |
| TSTAT | THERMOSTAT |
| TWU | THRU-THE-WALL UNIT |
| TWAC | THRU-THE-WINDOW A/C UNIT |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| UNO | UNLESS NOTED OTHERWISE |
| V | VOLT, VALVE |
| VAV | VARIABLE AIR VOLUME |
| VCC | VOLUMETRIC CONTROL CENTER |

| ABBREVIATION | DESCRIPTION |
|---|---|
| VD | VOLUME DAMPER (MANUAL OPPOSED BLADE) |
| VEL | VELOCITY |
| VENT | VENTILATION; VENT |
| VERT | VERTICAL |
| VIV | VARIABLE INLET VANE |
| VP | VACUUM PUMP |
| VR | VACUUM STEAM CONDENSATE RETURN |
| VSD | VARIABLE SPEED DRIVE |
| VTR | VENT THROUGH ROOF |
| W/ | WITH |
| W | WATT |
| WBT | WET BULB TEMPERATURE |
| WEF | WALL TYPE EXHAUST FAN |
| WFM | WATER FLOW MEASURING STATION |
| WG | WATER GAUGE |
| WMS | WIRE MESH SCREEN |
| WPD | WATER PRESSURE DROP |

CONNECT TO EXISTING

POINT OF DISCONNECTION

## 2 | FITTINGS

NO SCALE

RS — REFRIGERANT SUCTION
RL — REFRIGERANT LIQUID
G — NATURAL GAS

90 DEGREE ELBOW (SIDE)

BLIND FLANGE

CAP

CO — CLEANOUT WITH PLUG

ELBOW TURNED DOWN

ELBOW TURNED UP

FLANGE

HOSE END CONNECTION

PIPE CONNECTION TO UNIT

PIPE CONTINUES

RISE OR DROP IN PIPE

TEE (SIDE)

TEE TURNED DOWN

TEE TURNED UP

UNION

## 3 | CONTROLS

NO SCALE

BGS — BREAKGLASS STATION

FS — FLOW SWITCH

H — HUMIDISTAT OR HUMIDITY SENSOR

M C C — MOTOR CONTROL CENTER

MOTORIZED DAMPER (WITH ACCESS DOOR)

MS — MOTOR STARTER

S — SMOKE DETECTOR

SP — STATIC PRESSURE SENSOR

T — THERMOSTAT OR TEMPERATURE SENSOR
MOUNT 48" A.F.F. UNLESS OTHERWISE NOTED

AIR QUALITY VACUUM LINE ROOM SENSOR-TO-AIR QUALITY CENTRAL SENSOR AIR DATA ROUTER

St — AIR QUALITY ROOM SENSOR

## 4 | SHEET METAL

NO SCALE

SUPPLY DUCT RISER IN PLAN

RETURN EXHAUST DUCT RISER IN PLAN

10x8 — RECTANGULAR DUCTWORK (WIDTH x DEPTH)

10x8 FO — FLAT OVAL DUCTWORK

8 Ī — ROUND DUCTWORK (SIZE, DIAMETER)

FLEXIBLE DUCTWORK (MAX. OVERALL LENGTH 3'-0")

ACOUSTICALLY LINED DUCTWORK

SQUARE-THROATED ELBOW W/TURNING VANES

RADIUS ELBOW

NK= — RADIUS TEE

NK= — SQUARE-THROATED TEE

R/D — CHANGE IN ELEVATION WITH RELATION TO AIR FLOW

VOLUME DAMPER

TRANSITION WITH FLAT SIDE

TRANSITION ON CENTER

RECTANGULAR-TO-ROUND TRANSITION

TAKE-OFF TAP TO RECTANGULAR DUCT AND VOLUME DAMPER

CONICAL TAP TO RECTANGULAR DUCT AND VOLUME DAMPER

FD SD FD/SD — FIRE DAMPER (FD)/SMOKE DAMPER (SD) OR COMBINATION FIRE SMOKE DAMPER (FD/SD)

FLEXIBLE CONNECTOR

EXISTING DUCTWORK

EXISTING DUCTWORK TO BE REMOVED

SHEETMETAL TRANSFER ASSEMBLY WITH ACOUSTIC LINING (REFER TO PLANS FOR SIZES)

ACCESS DOOR

SIDE WALL REGISTER/GRILLE

RETURN GRILLE WITH ACOUSTICALLY LINED BOOT

CD-1, 8 Ī
200 CFM — SUPPLY DIFFUSER WITH TAG (TAG INCLUDES DIFFUSER TYPE, NECK SIZE AND CFM)

ER-1, 8x8
200 CFM — RETURN REGISTER OR EXHAUST REGISTER WITH TAG (TAG INCLUDES REGISTER TYPE, NECK SIZE AND CFM)

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| CKD BY: | CG |
| CONTRACT NO.: | W912QS-11-D-0001 |
| SUBMITTED BY: | ICE |
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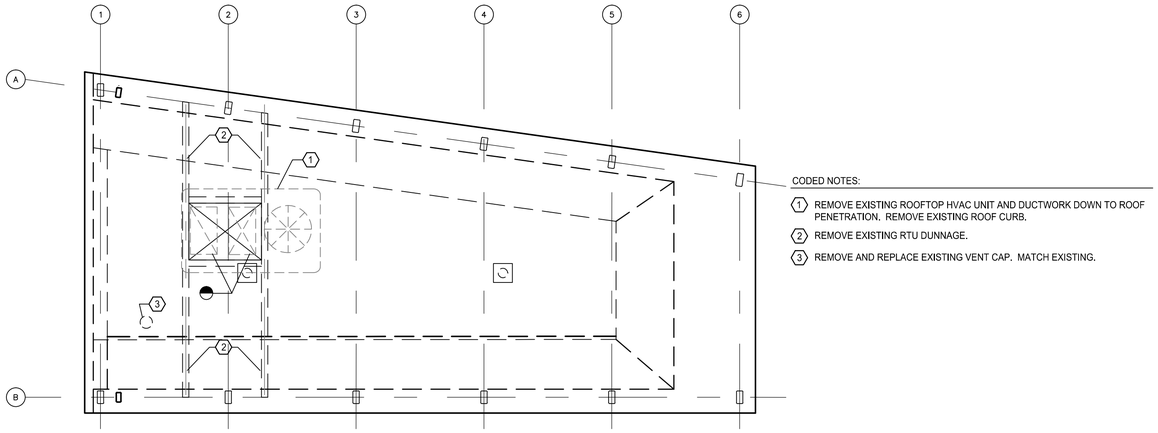
GOSHOW PROJECT # 201530

SHEET IDENTIFICATION
M-001
SHEET 20 OF 44

AS BUILT DRAWING
DATE - 03-02-2018



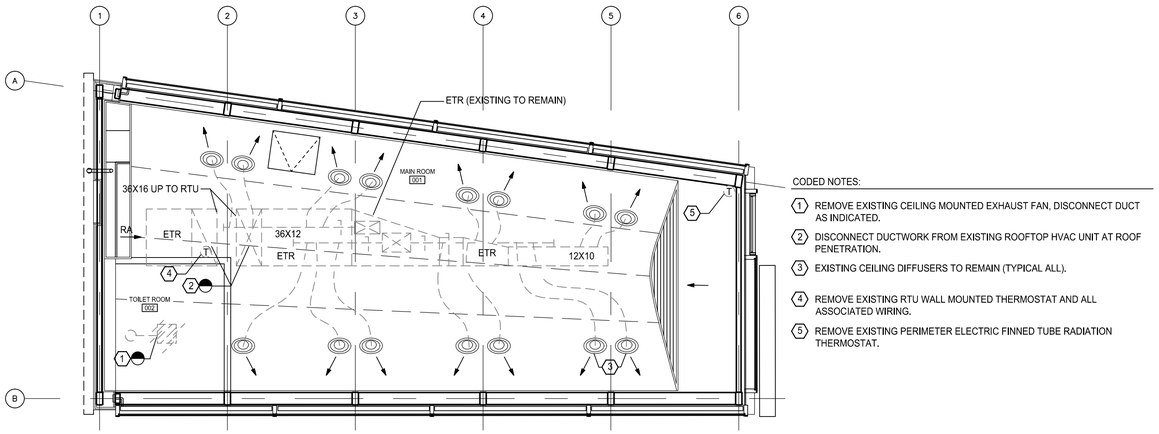

CODED NOTES:

1. REMOVE EXISTING ROOFTOP HVAC UNIT AND DUCTWORK DOWN TO ROOF PENETRATION. REMOVE EXISTING ROOF CURB.
2. REMOVE EXISTING RTU DUNNAGE.
3. REMOVE AND REPLACE EXISTING VENT CAP. MATCH EXISTING.

## 1 ROOF HVAC DEMOLITION PLAN

MD-102 SCALE: 1/4" = 1'-0"

0 2' 4' 8'




CODED NOTES:

1. REMOVE EXISTING CEILING MOUNTED EXHAUST FAN, DISCONNECT DUCT AS INDICATED.
2. DISCONNECT DUCTWORK FROM EXISTING ROOFTOP HVAC UNIT AT ROOF PENETRATION.
3. EXISTING CEILING DIFFUSERS TO REMAIN (TYPICAL ALL).
4. REMOVE EXISTING RTU WALL MOUNTED THERMOSTAT AND ALL ASSOCIATED WIRING.
5. REMOVE EXISTING PERIMETER ELECTRIC FINNED TUBE RADIATION THERMOSTAT.

## 2 FIRST FLOOR HVAC DEMOLITION RCP

MD-101 SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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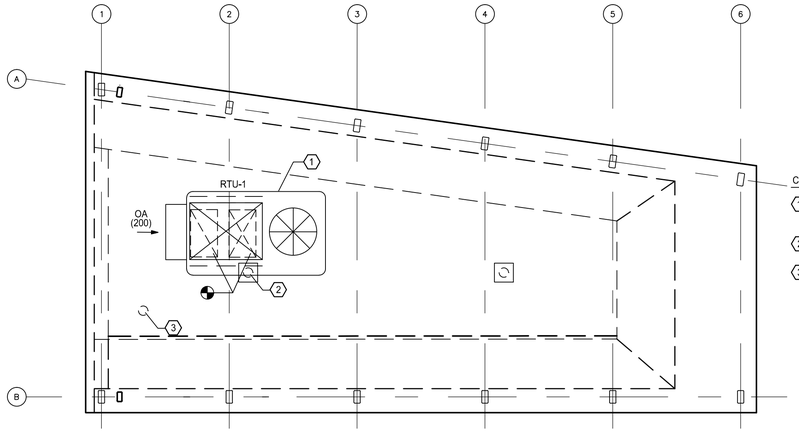
MD-101
SHEET 21 OF 44



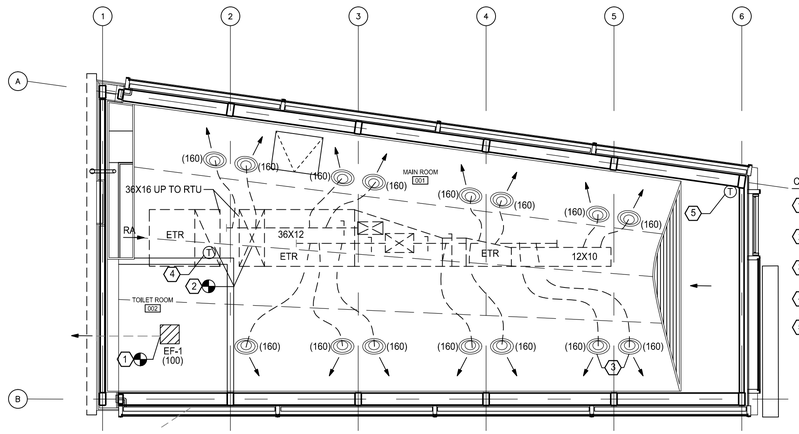

CODED NOTES:

1. INSTALL RTU-1 ON NEW CONVERTER ROOF CURB. TRANSITION DUCTWORK INSIDE ROOF CURB TO CONNECT TO EXISTING SUPPLY AND RETURN DUCTS.
2. PIPE 1" CONDENSATE DRAIN FROM RTU-1 TO ROOF DRAIN. PIPING SHAL BE TYPE "L" COPPER.
3. REMOVE AND REPLACE EXISTING VENT CAP. NEW CAP SHALL MATCH EXISTING.

1 / M-102 ROOF HVAC PLAN

SCALE: 1/4" = 1'-0"

0 2' 4' 8'




CODED NOTES:

1. INSTALL EF-1 IN CEILING AND CONNECT TO EXISTING EXHAUST DUCT.
2. CONNECT NEW RTU-1 DUCTWORK TO EXISTING DUCTWORK.
3. EXISTING CEILING DIFFUSER TO REMAIN. BALANCE EXISTING CEILING DIFFUSER TO CFM INDICATED.
4. INSTALL RTU-1 WALL MOUNTED THERMOSTAT/CONTROLLER.
5. INSTALL NEW PROGRAMMABLE THERMOSTAT FOR PERIMETER ELECTRIC FINNED TUBE RADIATION.

2 / M-101 FIRST FLOOR HVAC RCP

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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SHEET 22 OF 44

## EXHAUST FAN SCHEDULE

| TAG | AREA SERVED | UNIT LOCATION | FAN TYPE | DRIVE | CFM | ESP (IN. WG) | RPM | ELECTRICAL | | | BASIS OF DESIGN | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | HP | VOLTS | PHASE | | |
| EF-1 | TOILET ROOM | CEILING | CABINET | DIRECT | 100 | 0.40 | 1200 | 1/30 | 110 | 1 | COOK # GC160 | |
| | | | | | | | | | | | | |

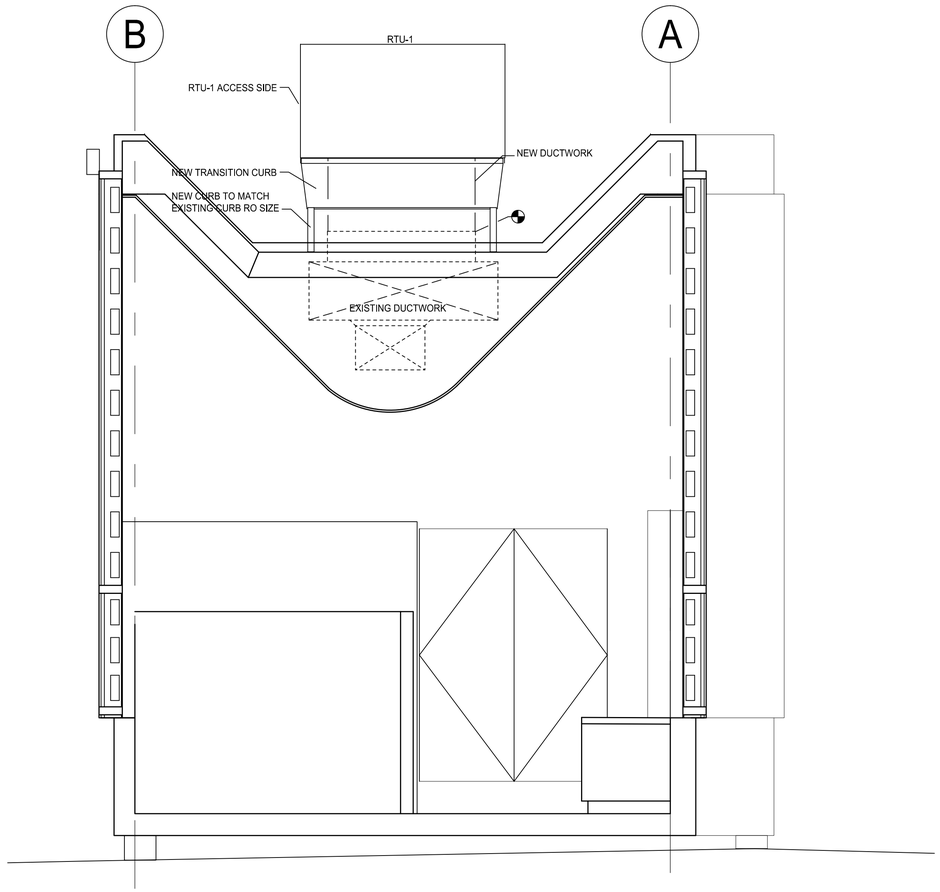
FURNISH EACH FAN WITH DISCONNECT SWITCH, BACK DRAFT DAMPER, CEILING GRILLE, VARIABLE SPEED CONTROLLER AND MOUNTING HARDWARE.

## PACKAGE ROOF TOP UNIT

| TAG | AREA SERVED | UNIT LOCATION | UNIT CFM | OA CFM | FAN TYPE | DRIVE | ESP (IN. WG) | RPM | HP | DX COOLING | | | | ELECTRIC HEAT | | | | ELECTRICAL | | | | BASIS OF DESIGN | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | EAT °F DB/WB | LAT °F DB/WB | SENSIBLE MBH | TOTAL MBH | EAT °F DB | LAT °F DB | KW | | MCA | MOCP | VOLTS | PHASE | | |
| RTU-1 | AS INDICATED | ROOF | 2400 | 200 | FC | DIRECT | 0.80 | 1200 | 1 | 77.1/62.1 | 53.0/52.5 | 54.0 | 72.0 | 64.1 | 82.0 | 13.5 | | 53.1 | 60 | 208 | 3 | TRANE# THC072 | UNIT WEIGHT= 700 lbs |
| | | | | | | | | | | | | | | | | | | | | | | | |

FURNISH UNIT WITH DISCONNECT SWITCH, VARIABLE SPEED SUPPLY FAN (ECM MOTOR), ECONOMIZER HOOD, BAROMETRIC RELIEF DAMPER, 1" MERV 8 FILTER, 2" CHARCOAL FILTER, NEW ROOF CURB(TO MATCH EXISTING CURB SIZE) , 18" HIGH INSULATED CONVERTER ROOF CURB, CONDENSATE DRAIN TRAP, SMOKE DETECTOR, COMPLETE PACKAGED CONTROL SYSTEM WITH WALL MOUNTED PROGRAMMABLE THERMOSTAT/CONTROLLER.

CONVERTER CURB SHALL BE CUSTOM FACTORY FABRICATED INSULATED GALVANIZED STEEL ROOF CURB SIMILAR TO CONFAB ADAPTER CURB.




1 M-601 NTS — RTU ROOF CURB SECTION

1 NEW RTU-1
2 CONVERTER CURB
3 NEW ROOF CURB TO MATCH SIZE OF EXISTING ROOF CURB.

2 M-601 NTS — TYPICAL RTU ROOF CURB ADAPTER

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SHEET 23 OF 44

## POWER

- DUPLEX RECEPTACLE (DOT INDICATES MOUNTED 44" ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE)
- DOUBLE DUPLEX RECEPTACLE
- GFI DUPLEX RECEPTACLE WALL MOUNTED
- DUPLEX RECEPTACLE CEILING MOUNTED
- DOUBLE DUPLEX RECEPTACLE CEILING MOUNTED
- (3) SPECIAL PUPOSE RECEPTACLE "3" INDICATES TYPE, REFER TO SPECIAL PURPOSE RECEPTACLE SCHEDULE.
- PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY, DATA & POWER (WIREMOLD (G4000) POWER OUTLETS TO BE DUPLEXES
- (J) OR (J) JUNCTION BOX FOR CONNECTION TO EQUIPMENT AS INDICATED:

| | |
|---|---|
| "HT" HEAT TRACE | "DC" MOTORIZED DOOR OPERATOR |
| "SD" SMOKE DAMPER | "HD" HAND DRYER |
| "HW" INSTANT HOT WATER | "FA" FIRE ALARM SYSTEM |
| "CTL" CONTROLS | "SM" SNOW MELT SYSTEM |
| "SEC" SECURITY SYSTEM | |

- WP WEATHERPROOF
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- (#) MOTOR, (# INDICATES HORSE POWER)
- MOTOR STARTER
- COMBINATION MOTOR STARTER
- $M MANUAL MOTOR STARTER
- CP CONTROL PANEL
- P PUSH BUTTON FOR MOTORIZED DOOR
- VIDEO INTERCOM STATION
- EPO EMERGENCY POWER OFF
- PUSHBUTTON STATION
- CB CIRCUIT BREAKER
- PB PULLBOX
- TB TAP BOX
- T DRY TYPE DISTRIBUTION TRANSFORMER
- 120/208V PANEL RECESSED MOUNTED
- 120/208V PANEL SURFACE MOUNTED
  DISTRIBUTION PANEL SURFACE MOUNTED
- RACEWAY
- RACEWAY TURNING DOWN
- RACEWAY TURNING UP
- HOMERUN 1CKT.
- CIRCUITING BREAK LINE
- CIRCUIT CONTINUED OR CONNECTED TO EQUIPMENT INDICATED
- G GROUNDING BUS BAR

## LIGHTING

F1

- 1 / a,b — 2' X 2' LIGHT FIXTURE
  - "F1" DENOTES FIXTURE TYPE
  - "1" DENOTES CIRCUIT NUMBER
  - "a,b" DENOTES SWITCH CONTROL
  - ● SHADING INDICATES FIXTURE TO BE WIRED TO LIFE SAFETY/EMERGENCY SYSTEM, UN-SWITCHED
  - "EM" DENOTES FIXTURE SHALL BE PROVIDED WITH A BODINE GENERATOR TRANSFER DEVICE (GTD-EMERGENCY RELAY) WIRED TO ONE BALLAST CIRCUITED TO THE EMERGENCY LIGHTING CIRCUIT.
- WALL SCONCE LIGHT FIXTURE
- 1' X 4' LINEAR LIGHT FIXTURE
- 2' X 4' LINEAR LIGHT FIXTURE
- 2' X 2' LINEAR LIGHT FIXTURE
- 1' X 8' LINEAR LIGHT FIXTURE
- 1' X 4' LINEAR LIGHT FIXTURE - WALL MOUNTED
- 1' X 4' LINEAR STRIP LIGHT
- 1' X 4' LINEAR STRIP LIGHT - WALL MOUNTED
- LIGHTING FIXTURE - CEILING MOUNTED
- LIGHTING FIXTURE - WALL MOUNTED
- WALL WASH LIGHT
- EXIT LIGHT FIXTURES-CEILING MOUNTED
  -SHADING INDICATES SIDE OF ILLUMINATION
  -ARROWS INDICATES DIRECTION
- EXIT LIGHT FIXTURES-WALL MOUNTED
  -SHADING INDICATES SIDE OF ILLUMINATION
  -ARROWS INDICATE DIRECTION

## SWITCHING & CONTROLS

- $ SWITCH-SINGLE POLE
- $3 SWITCH-THREE WAY
- $P SWITCH-SINGLE POLE WITH PILOT LIGHT
- $D DIMMER
- $ OCCUPANCY SENSOR - WALL MOUNTED WITH OVERRIDE SWITCH
- $a,b DUAL RELAY OCCUPANCY SENSOR - WALL MOUNTED WITH OVERRIDE SWITCHES
- $day a,b DUAL RELAY OCCUPANCY SENSOR - WALL SWITCH WITH INTEGRAL DAYLIGHT SENSOR
- OCCUPANCY SENSOR DUAL TECHNOLOGY, EXTENDED RANGE - CEILING MOUNTED
- DAYLIGHT SENSOR CLOSED LOOP - CEILING MOUNTED.
- PC PHOTO CELL
- PP a,b LIGHTING CONTROL POWER PACK LETTER SUBSCRIPT DENOTES SWITCH CONTROL. MULTIPLE LETTER SUBSCRIPT DENOTES DUAL RELAY REQUIRED.
- SP LIGHTING CONTROL SLAVE PACK
- MS WALL MOUNTED SECURITY MOTION SENSOR

## ONE LINE

- CIRCUIT BREAKER
- COMBINATION STARTER MOTOR CIRCUIT PROTECTOR
- FUSE
- DISCONNECT SWITCH
- DISCONNECT SWITCH AND FUSE
- LIGHTNING ARRESTER
- TAG HOOK WITH TAG INDICATES FEEDER SCHEDULE DESIGNATION
- GEN GENERATOR SET
- TRANSFER SWITCH
- TR1 225 KVA OA 4800-120/240 1 PH TWO WINDING POWER TRANSFORMER
- ML1 120/240 50A MCB PANELBOARD
- EQUIPMENT TAG / UNIT NUMBER MECHANICAL EQUIPMENT WITH ELECTRICAL LOAD

## DEMOLITION ABBREVIATIONS:

| | | |
|---|---|---|
| XM | = | EXISTING TO BE MAINTAINED |
| XN | = | EXISTING TO BE REMOVED AND REPLACED WITH NEW |
| XR | = | EXISTING TO BE REMOVED |
| XRE | = | EXISTING TO BE REMOVED AND RELOCATED |
| REL | = | RELOCATED EXISTING |

## KEYED NOTE:

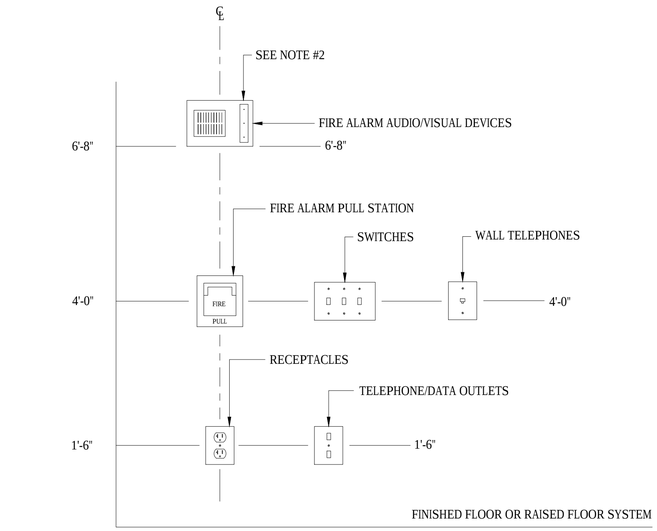
(1) KEYED NOTE REFERENCE SYMBOL.
ONLY REFERS TO KEYED NOTE ON SAME DRAWING.
KEYED NOTES APPLY ONLY WHERE REFERENCED ON PLAN.

- ELECTRICAL DISCIPLINE
- SERIES/GROUP NUMBER
- DRAWING NUMBER

| | |
|---|---|
| E001 | GENERAL (INDEX, SYMBOLS, ABBREVIATIONS, LEGEND) |
| E100 | LIGHTING FLOOR PLANS |
| E200 | POWER FLOOR PLANS |
| E300 | LOW VOLTAGE FLOOR PLANS |
| E400 | RISER DIAGRAMS |
| E500 | SCHEDULES |
| E600 | ELECTRICAL DETAILS |
| E900 | CLIN PLANS AND DETAILS |

## NOTES:

1. WIRING IS SHOWN ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. BRANCH WIRING AND RACEWAY SHALL BE REQUIRED FOR ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH WIRING AND RACEWAY AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRING AND CONDUIT ARE NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
5. A GREEN GROUND CONDUCTOR SHALL BE RUN WITH ALL BRANCH CIRCUITS AND FEEDERS. VERIFY CONDUIT SIZE TO ENSURE IT CAN ACCOMMODATE ALL PHASE, NEUTRAL AND GROUND CONDUCTORS.
6. ALL MECHANICAL/PLUMBING EQUIPMENT VFD'S, MOTOR STARTERS, AND DISCONNECT
   SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE RESPECTIVE TRADE, AND WIRED BY THE ELECTRICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
7. SNOWMELT, BIRD SHOCK, BIRD DETERRENT, VIDEO INTERCOM AND CLOSED CIRCUIT TELEVISION SYSTEMS SHALL EACH BE INSTALLED IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURERS APPROVED SHOP DRAWING, RECOMMENDATIONS AND INSTRUCTIONS FOR A COMPLETE FUNCTIONING SYSTEM INCLUDING ALL REQUIRED ACCESSORIES AND APPURTENANCES. SHOP DRAWING SHALL INCLUDE A PROJECT SPECIFIC WIRING DIAGRAM, EACH SYSTEM SHALL BE TESTED BY THE ELECTRICAL CONTRACTOR AT THE COMPLETION OF THE PROJECT. EACH SYSTEMS FEATURES AND FUNCTIONS SHALL BE DEMONSTRATED TO THE OWNERS REPRESENTATIVE. IN ADDITION THE DEMONSTRATION OF EACH SYSTEM SHALL BE DIGITALLY RECORDED AND PRESENTED TO THE OWNER FOR FUTURE REFERENCE.




NOTES:

1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE. U.O.N.
2. DEVICES, NOT NECESSARILY THE ELECTRICAL BACK BOX, SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHERE EVER POSSIBLE.
3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.
4. REFER TO ARCHITECT'S PLANS, ELEVATION AND DETAILS FOR HORIZONTAL ARRANGEMENT.

1 / E-001 DEVICE MOUNTING DETAIL
NOT TO SCALE

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ELECTRICAL LEGEND

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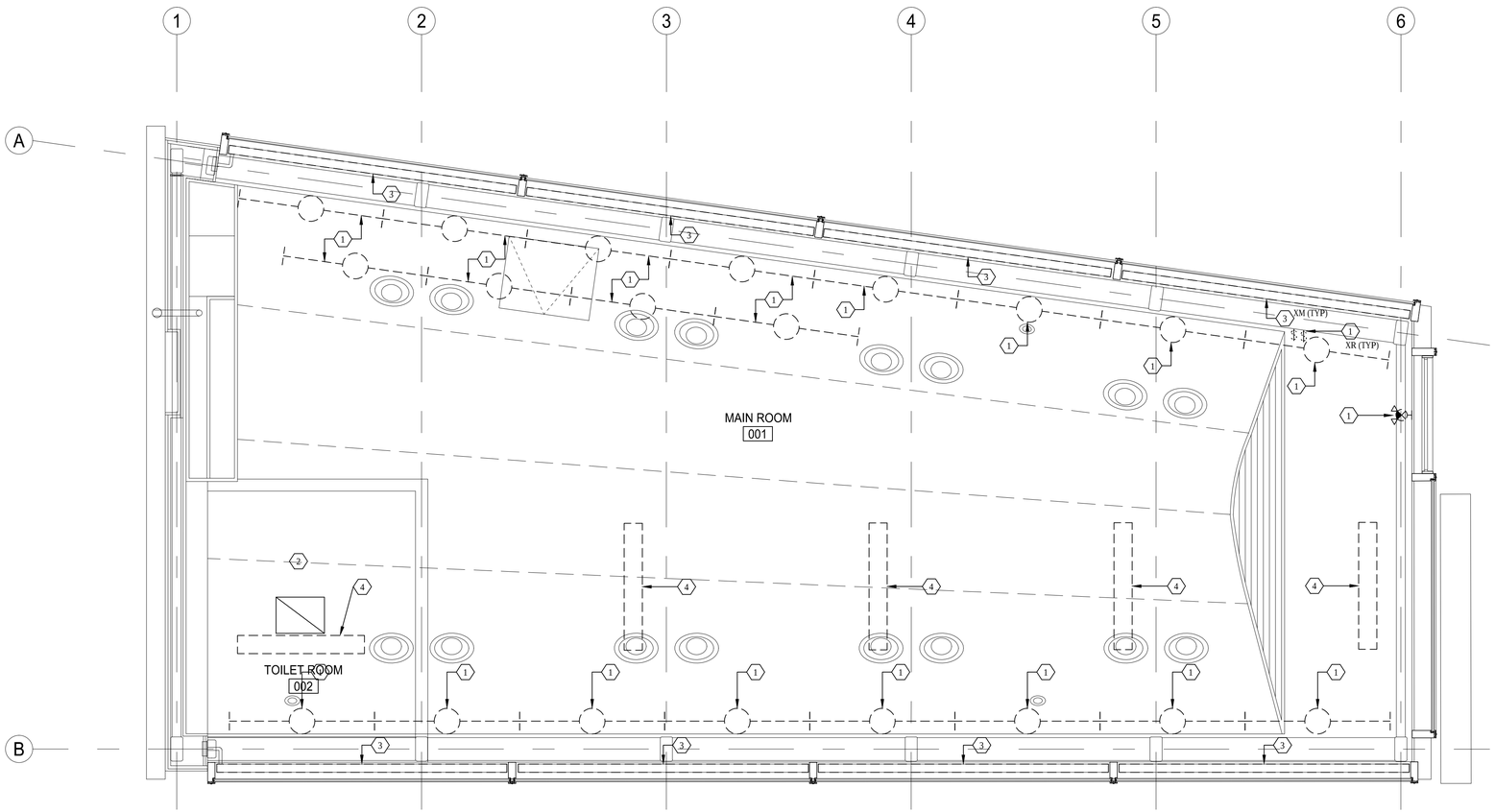


1 ED-101 FIRST FLOOR LIGHTING DEMOLITION PLAN

SCALE: 1/2" = 1'-0"

## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
4. REMOVE ALL CONDUCTORS, FLP PANEL TO BE RELOCATE, CABLING AND EXPOSED CONDUIT RENDERED UNUSED BY THE SCOPE OF WORK BACK TO THE POINT OF SOURCE OF SUPPLY.
5. REMOVE ALL LIGHT FIXTURES AND ASSOCIATED CIRCUITRY IN CEILINGS SHOWN TO BE DEMOLISHED.
6. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES:

" (#) "

1. DE-ENERGIZE, REMOVE, AND DISPOSE OF EXISTING LIGHTING FIXTURES AND CONTROLS. REMOVE CONDUCTORS AND CABLES. UTILIZE EXISTING CONDUIT TO RUN CONDUCTORS AND CABLES FOR CONNECTION TO NEW LIGHT FIXTURES AND CONTROLS.
2. EXISTING LIGHT FIXTURES, CONTROLS AND ASSOCIATED CIRCUITS IN THIS ROOM TO REMAIN. INTERCEPT AND EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL.
3. EXISTING FLAG LIGHT FIXTURES AND ASSOCIATED CIRCUITS TO REMAIN. INTERCEPT AND EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL.
4. PRIOR TO FURNITURE REMOVAL DE-ENERGIZE, REMOVE EXISTING UNDER SHELF LIGHT FIXTURE.

0 1" 2" 4"

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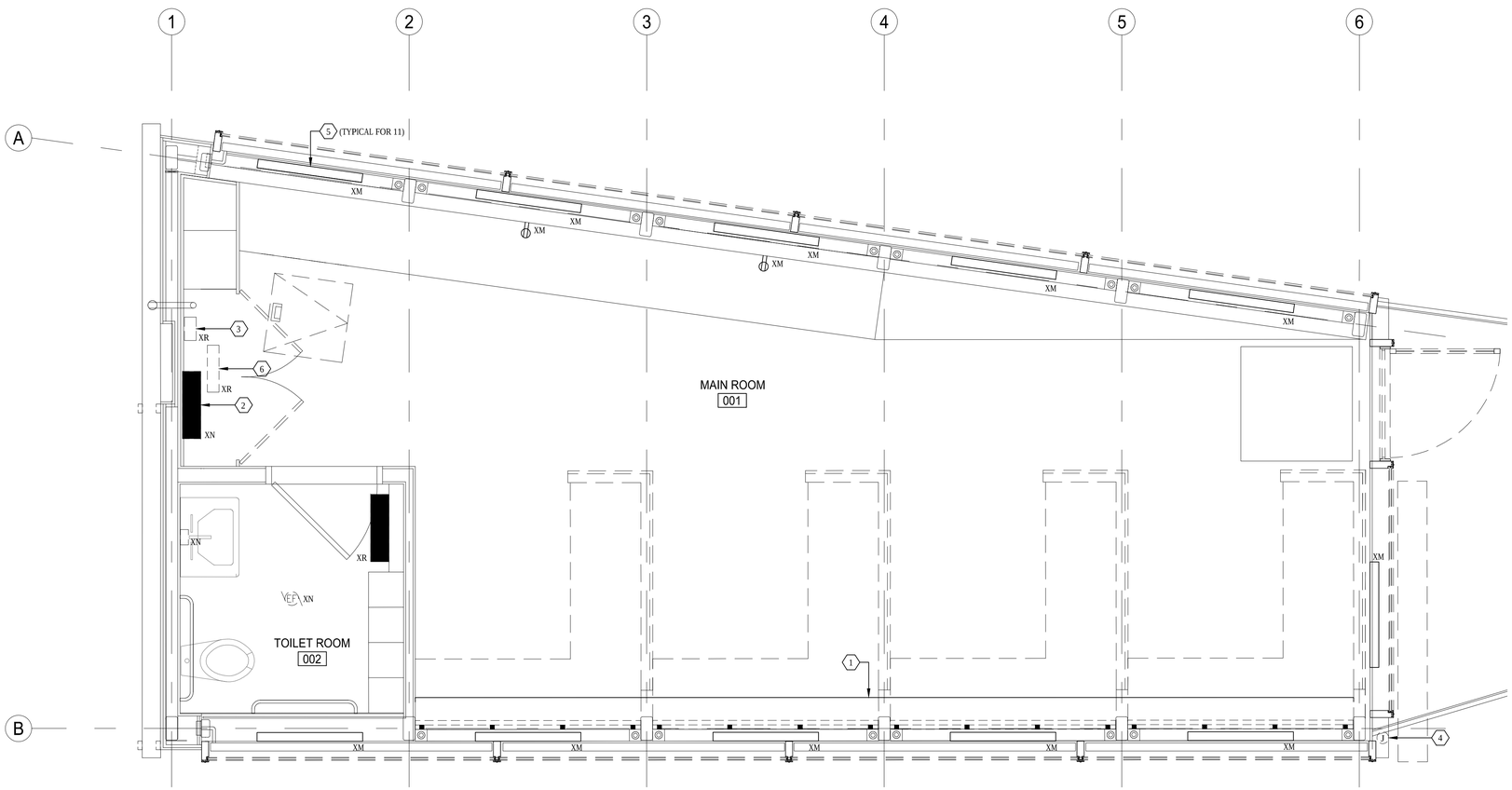
FIRST FLOOR LIGHTING DEMOLITION PLAN

SHEET IDENTIFICATION
ED-101
SHEET 25 OF 44




## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
4. REMOVE ALL CONDUCTORS, CABLING AND EXPOSED CONDUIT RENDERED UNUSED BY THE SCOPE OF WORK BACK TO THE POINT OF SOURCE OF SUPPLY. FLP TO BE RELOCATE, NYPD CONDUIT TO BE EXTENDED TO ROOF
5. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES:

" (#) "

1. EXISTING DUAL CHANNEL WIREMOLD TO REMAIN. PROVIDE NEW COVER PLATE WITH NEW DEVICE CONFIGURATION. EXTEND EXISTING CONDUIT AND CABLING TO NEW LOCATION INDICATED, OR PROVIDE NEW CABLING AS REQUIRED. WHERE POSSIBLE, AND WHERE NEW OUTLETS ARE BEING INSTALLED, ROUTE CABLE THRU DUAL CHANNEL WIREMOLD OR DEVICE AS INDICATED ON DRAWING E-201.
2. DE-ENERGIZE AND REMOVE EXISTING 225A, 208V, 3 PHASE PANEL 'LRP'. MAKE PROVISIONS TO INTERCEPT AND EXTEND EXISTING FEEDER AND BRANCH CIRCUITS TO REMAIN TO NEW PANEL .
3. DE-ENERGIZE, REMOVE AND DISPOSE OF EXISTING SNOW MELT SYSTEM CONTROL PANEL. REMOVE EXISTING ELECTRICAL POWER AND/OR CONTROL CONDUIT AND CABLING BACK TO SOURCE.
4. DE-ENERGIZE AND DISCONNECT POWER TO THE LED DISPLAY IN FRONT OF THE BUILDING. INTERCEPT AND EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL. AFTER GLASS REPLACEMENT, THE LED DISPLAY SHALL BE REINSTALLED BY GC AND EC SHALL RECONNECT POWER .
5. EXISTING ELECTRIC HEATERS TO REMAIN. INTERCEPT AND EXTEND EXISTING BRANCH CIRCUITS TO NEW PANEL.
6. DE-ENERGIZE AND REMOVE AND DISPOSE OF EXISTING FLAG LIGHT PANEL.

1 ED-201 FIRST FLOOR POWER DEMOLITION PLAN

SCALE: 1/2" = 1'-0"

N

0 1' 2' 4'

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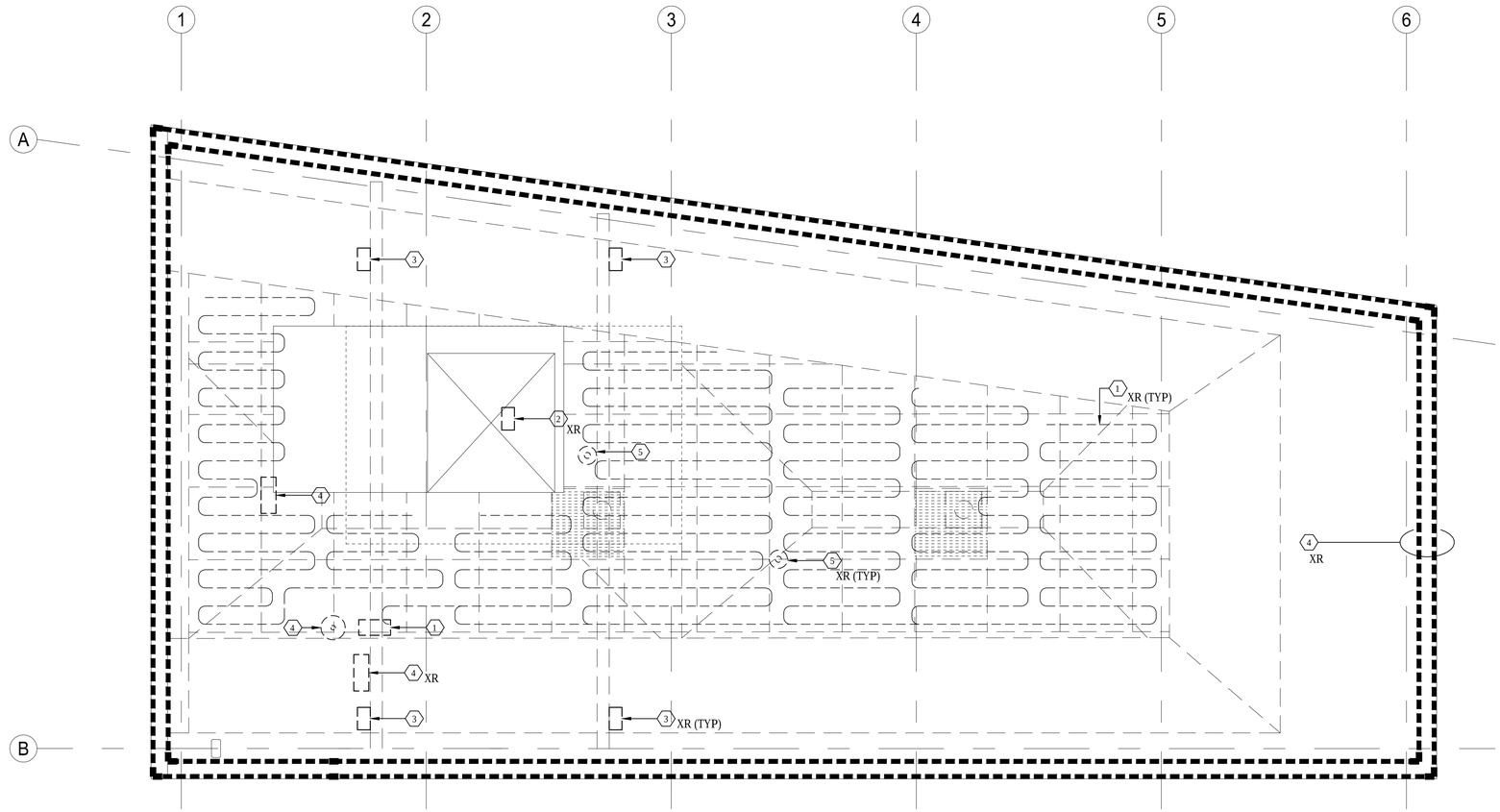
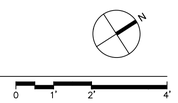
FIRST FLOOR POWER DEMOLITION PLAN

SHEET IDENTIFICATION
ED-201
SHEET 26 OF 44




1 ED-202 ROOF POWER DEMOLITION PLAN

SCALE: 1/2" = 1'-0"




## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET 501 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REMOVE ALL CONDUCTORS, CABLING AND EXPOSED CONDUIT RENDERED UNUSED BY THE SCOPE OF WORK BACK TO THE POINT OF SOURCE OF SUPPLY.
4. REMOVE ALL ELECTRICAL SYSTEMS, DEVICES, EQUIPMENT AND ASSOCIATED CIRCUITS IN AND ON ROOF SHOWN TO BE DEMOLISHED.
5. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES: "(#)"

1. DE-ENERGIZE, REMOVE AND DISPOSE OF EXISTING SNOW MELT EQUIPMENT. REMOVE EXISTING ELECTRICAL POWER AND/OR CONTROL CONDUIT AND CABLING BACK TO SOURCE.
2. DE-ENERGIZE, REMOVE AND DISPOSE OF EXISTING BIRD DETERRENT SYSTEM CONTROL UNIT / POWER ADAPTER. REMOVE EXISTING ELECTRICAL POWER AND/OR CONDUIT AND CABLING BACK TO SOURCE.
3. REMOVE AND DISPOSE OF BIRD DETERRENT SYSTEM SOUND SPEAKER. REMOVE CABLES BACK TO SOURCE.
4. DE-ENERGIZE, REMOVE AND DISPOSE OF EXISTING BIRD-SHOCK FLEX TRACK SYSTEM AND POWER SUPPLY. REMOVE EXISTING ELECTRICAL POWER AND/OR CONDUIT AND CABLING BACK TO SOURCE.
5. DE-ENERGIZE, REMOVE AND DISPOSE OF EXISTING ELECTRICAL EQUIPMENT. REMOVE EXISTING ELECTRICAL POWER AND/OR CONTROL CONDUIT AND CABLING BACK TO SOURCE.

AS BUILT DRAWING
DATE - 03-02-2018

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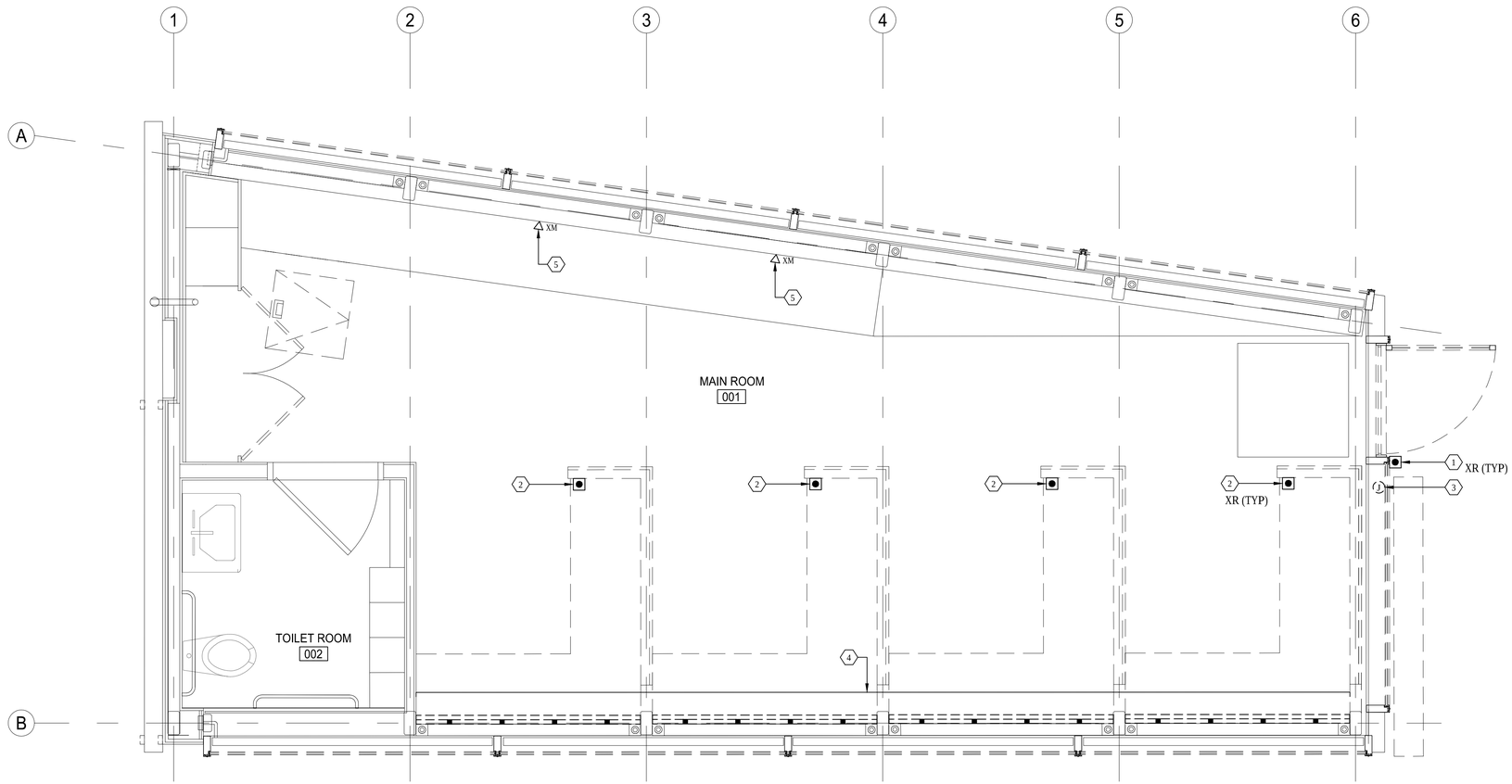
ROOF POWER DEMOLITION PLAN

SHEET IDENTIFICATION
ED-202
SHEET 27 OF 44




1 ED-301 FIRST FLOOR LOW VOLTAGE SYSTEMS DEMOLITION PLAN

SCALE: 1/2" = 1'-0"

0 1' 2' 4'

## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.

## KEYED NOTES: "(#)"

1. REMOVE AND DISPOSE OF DOOR STATION. REMOVE EXISTING CABLING BACK TO SOURCE.
2. REMOVE AND DISPOSE OF MASTER STATIONS (4) PLACES. REMOVE EXISTING CABLING BACK TO SOURCE.
3. DISCONNECT DATA CONNECTIONS TO THE LED DISPLAY IN FRONT OF THE BUILDING. AFTER GLASS REPLACEMENT, THE LED DISPLAY SHALL BE REINSTALLED BY GC AND EC SHALL RECONNECT POWER AND DATA.
4. EXISTING DUAL CHANNEL WIREMOLD TO REMAIN. PROVIDE NEW COVER PLATE WITH NEW DATA DEVICE CONFIGURATION. EXTEND EXISTING CONDUIT AND CABLING TO NEW LOCATION INDICATED, OR PROVIDE NEW CABLING AS REQUIRED. WHERE POSSIBLE, AND WHERE NEW DATA OUTLETS ARE BEING INSTALLED, ROUTE CABLE THRU DUAL CHANNEL WIREMOLD OR DEVICE AS INDICATED ON DRAWING E-201.
5. REMOVE AND DISPOSE OF EXISTING DATA OUTLET. REMOVE EXISTING CABLING BACK TO SOURCE.

AS BUILT DRAWING
DATE - 03-02-2018

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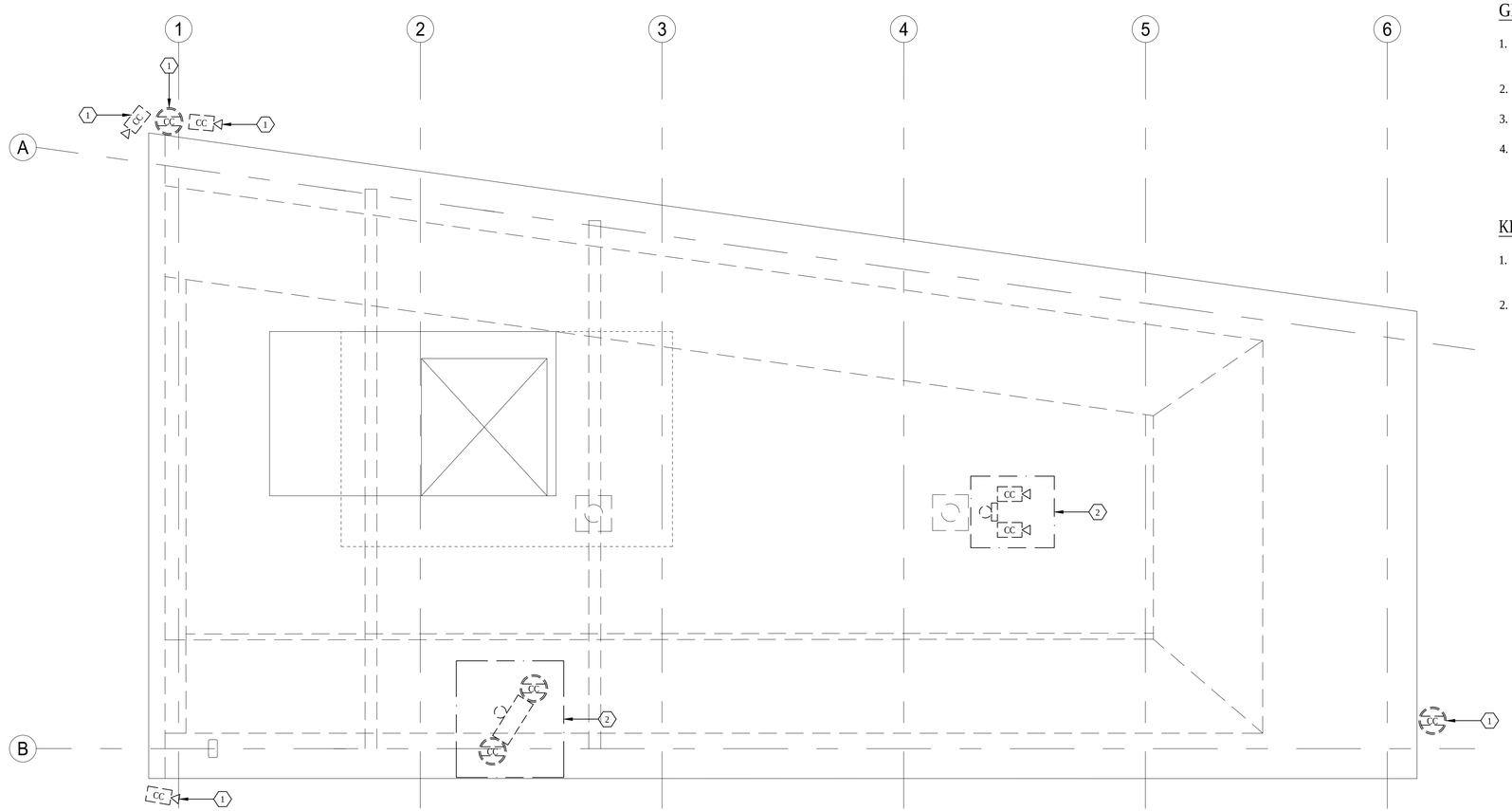
FIRST FLOOR LOW VOLTAGE SYSTEMS
DEMOLITION PLAN

SHEET IDENTIFICATION
ED-301
SHEET 28 OF 44




## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES: "(#)"

1. REMOVE AND TURN OVER TO OWNER EXISTING CAMERA. REMOVE EXISTING ELECTRICAL POWER AND/OR CONTROL CONDUIT AND CABLING BACK TO SOURCE.
2. THE REMOVAL AND RE-INSTALLATION OF NEW YORK CITY POLICE DEPARTMENT EQUIPMENT SHALL BE BY OTHERS.

1 / ED-302 ROOF LOW VOLTAGE SYSTEMS DEMOLITION PLAN
SCALE: 1/2" = 1'-0"

0 1" 2" 4"

AS BUILT DRAWING
DATE - 03-02-2018

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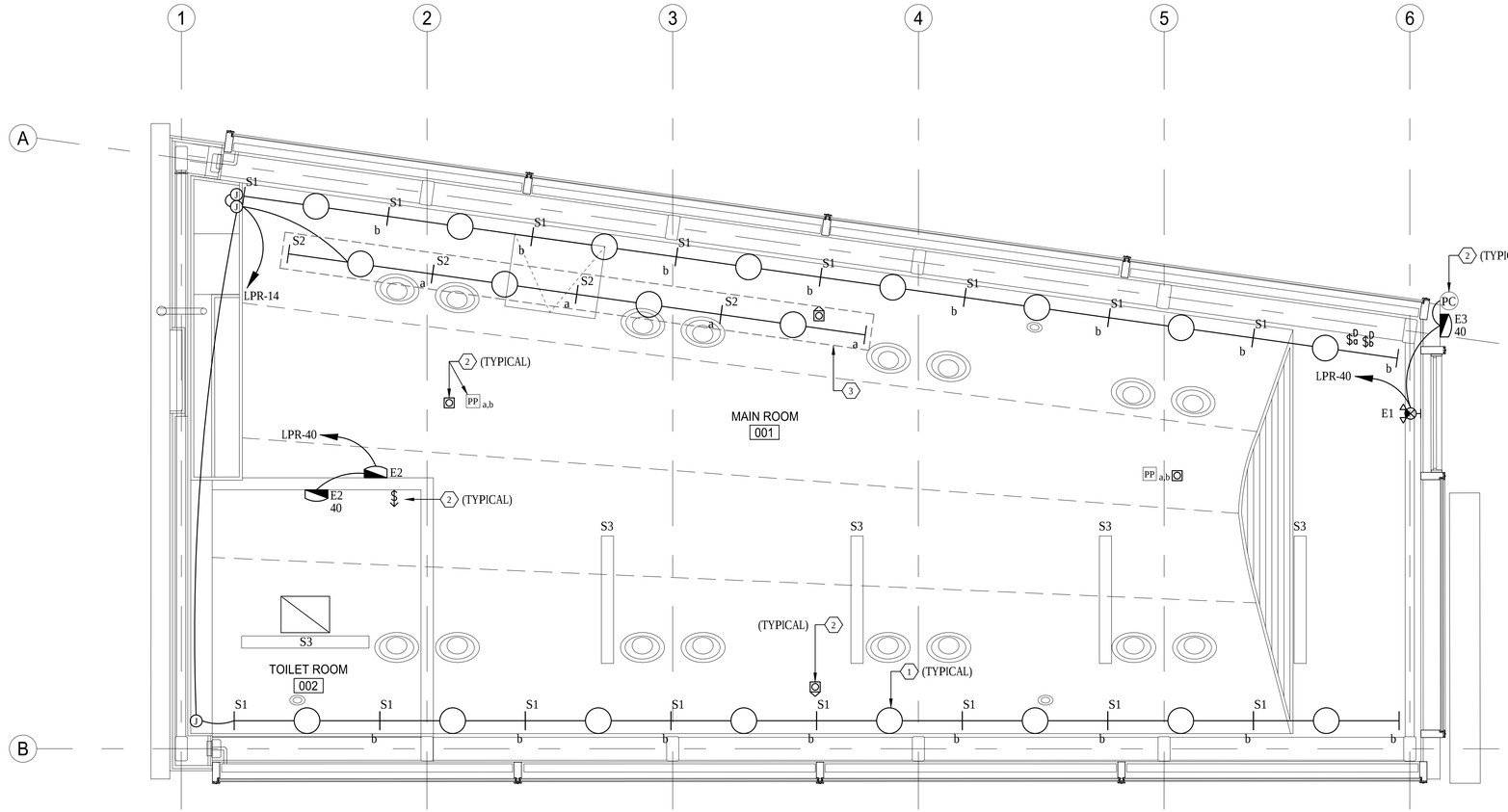
ROOF LOW VOLTAGE SYSTEMS
DEMOLITION PLAN

SHEET IDENTIFICATION
ED-302
SHEET 29 OF 44




## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.

## KEYED NOTES: "(#)"

1. UNLESS OTHERWISE NOTED. PROVIDE NEW LUMINAIRES AS SHOWN CONNECT EXISTING POWER TO NEW LUMINAIRES. EXTEND EXISTING CONDUIT AS REQUIRED, AND FIELD VERIFY EXISTING CABLING TO ENSURE CABLES HAVE SUFFICIENT LENGTH TO EXTEND TO NEW LUMINAIRES WITHOUT SPLICING. IF CABLES ARE OF ADEQUATE LENGTH, MAKE CONNECTION AS REQUIRED. IF EXISTING CABLE LENGTH IS INADEQUATE, REMOVE EXISTING CABLES BACK TO SOURCE AND PROVIDE NEW CABLES FROM NEW LUMINAIRES TO SOURCE.
2. PROVIDE NEW LIGHT SWITCHES AND DAY LIGHTING SENSORS TO CONTROL ALL NEW AND EXISTING LUMINAIRES. LUMINAIRE SWITCHING SHALL BE GROUPED AS INDICATED OR AS EXISTING. PROVIDE ADDITIONAL 120 VOLT RELAYS, RELAY CABINETS AND ALL CONTROL WIRING AND CONNECTIONS AS REQUIRED FOR A COMPLETE SYSTEM. ALL MATERIAL SHALL BE CONSISTENT WITH BUILDING SYSTEM.
3. STAINLESS STEEL LIGHTING SHELF TO BE MAINTAINED.

1 / E-101 FIRST FLOOR LIGHTING PLAN

SCALE: 1/2" = 1'-0"

0 1" 2" 4"

LIGHTING FIXTURE SCHEDULE

| TYPE | TYPE COMMENTS | DESCRIPTION | LAMP | WATTAGE | VOLTAGE | MANUFACTURER | MODEL | KEYED NOTES |
|---|---|---|---|---|---|---|---|---|
| E1 | WALL MOUNTED | COMBO ī RED LED, BLACK HOUSING, UNIVERSAL BLACK EXIT FACE, 3-12 WATT TUNGSTEN LAMP HEADS | LED | 15 VA | 120 V | PHILIPS CHLORIDE | SCLRB3 | |
| E2 | WALL MOUNTED | PATRON LED SERIES DIE-CAST ALUMINUM LED WALL LIGHT/UNIT | LED | 8 VA | 120 V | PHILIPS CHLORIDE | PLEMB-BAC | |
| E3 | WALL MOUNTED | PATRON LED SERIES DIE-CAST ALUMINUM LED WALL LIGHT/UNIT | LED | 8 VA | 120 V | PHILIPS CHLORIDE | PLACE-BAC | |
| S1 | SURFACE | 4 FOOT SURFACE MOUNTED LINEAR LED CONTINUOUS TANDEM WIRED | LED | 52 VA | 120 V | PHILIPS DAY-BRITE | LF-4-FR-60-40-U-DZT-LFCPL | |
| S2 | SURFACE | 4 FOOT SURFACE MOUNTED LINEAR LED UNDER SHELF CONTINUOUS FLOOR STRIP | LED | 53 VA | 120 V | PHILIPS DAY-BRITE | LFR-4-FL-41-SLD-55-40-U-DZT-SV5CPL | |
| S3 | SURFACE | 42 INCHES SURFACE MOUNTED LINEAR LED UNDER SHELF ON FURNITURE | LED | 53 VA | 120 V | PHILIPS DAY-BRITE | LFR-4-FL-41-SLD-55-40-U-DZT-SV5CPL | |

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FIRST FLOOR LIGHTING PLAN

SHEET IDENTIFICATION
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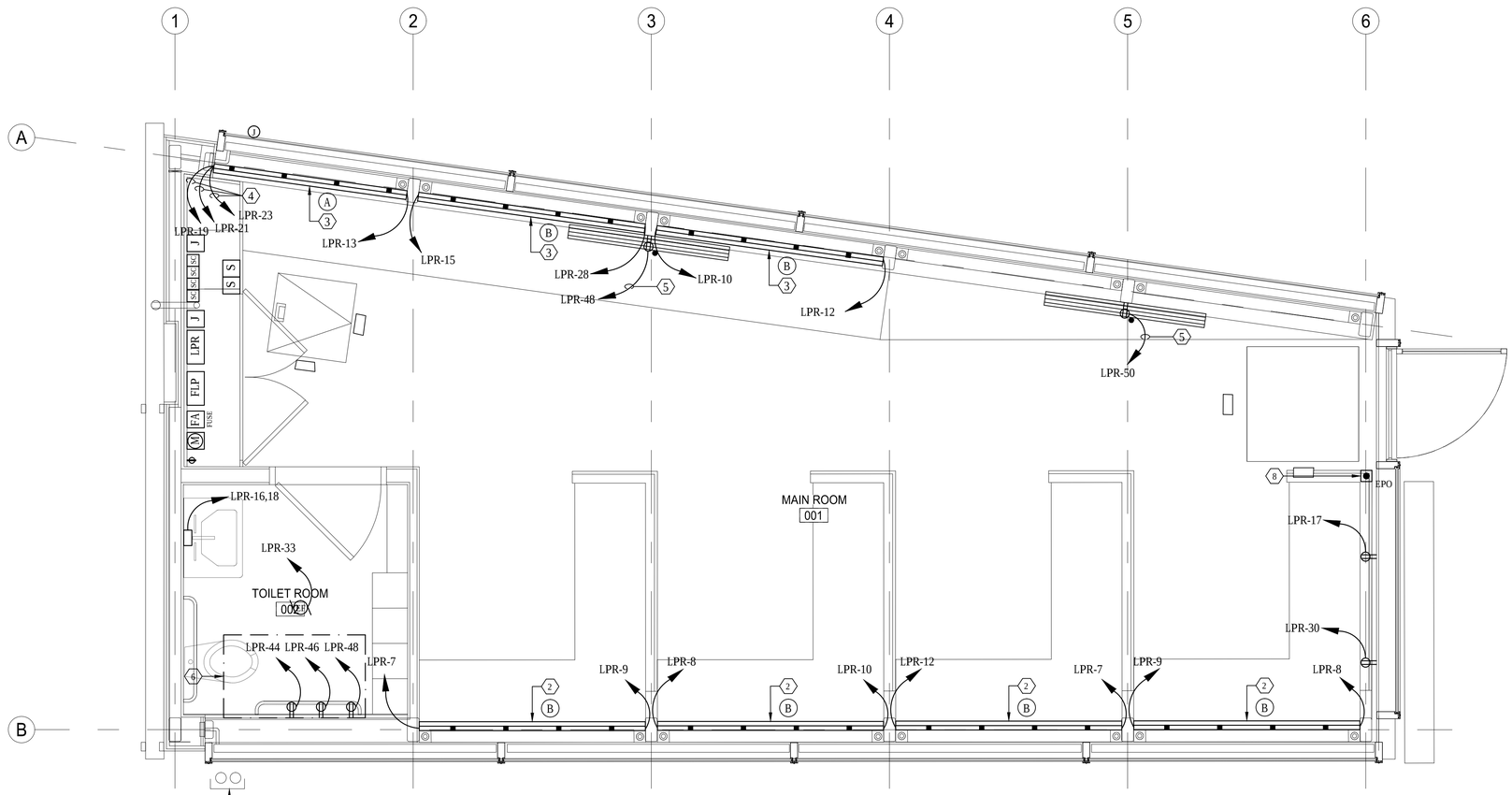
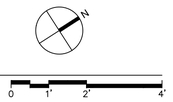
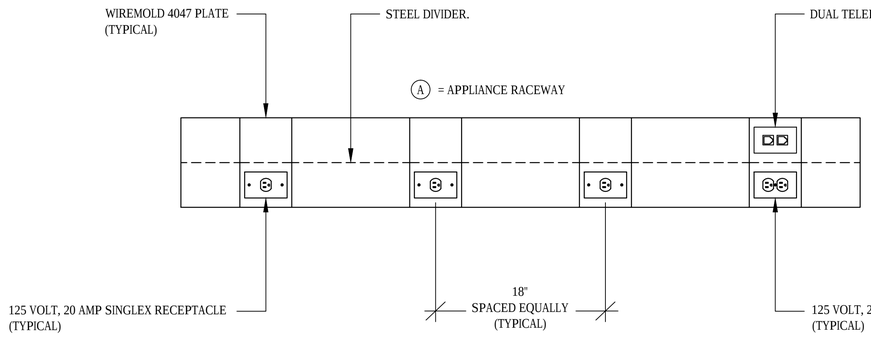
SHEET 30 OF 44




1 E-201 FIRST FLOOR POWER PLAN

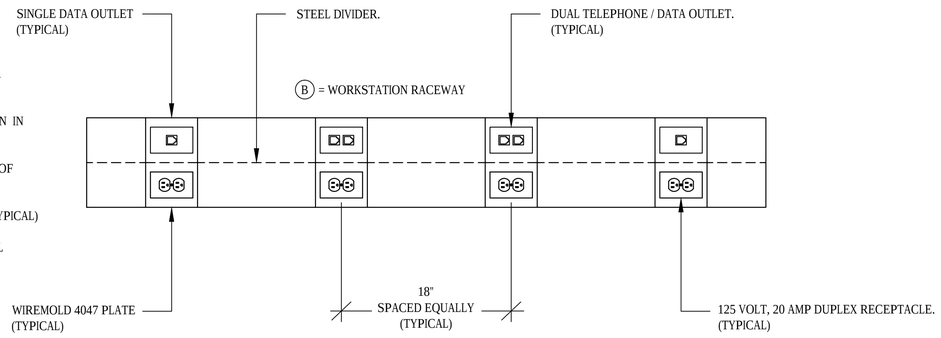
SCALE: 1/2" = 1'-0"




NOTES:

1. REFER TO SYMBOL LEGEND ON DRAWING E-001 FOR DESCRIPTION OF SURFACE RACEWAY.
2. PROVIDE NUMBER AND TYPE OF OUTLETS AS SHOWN IN DETAIL.
3. COORDINATE WITH ARCHITECT FOR EXACT HEIGHT OF WIREMOLD PRIOR TO INSTALLING ANY MATERIAL.
4. DERATE CONDUCTORS AS REQUIRED PER CODE. (TYPICAL)
5. PROVIDE PULL STRINGS AND BUSHED ENDS FOR ALL CONDUITS (TYP.).




2 E-201 SURFACE RACEWAY WITH OUTLETS DETAIL

NOT TO SCALE

## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.

## KEYED NOTES: "(#)"

1. NEW 225A, 208V, 3 PHASE PANEL 'LPR'. UPDATE MAIN PANEL BOARD SCHEDULE AND INSTALL CIRCUIT BREAKER NUMBERING TO MATCH SCHEDULE
2. REINSTALL EXISTING PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY, DATA & POWER (WIREMOLD G4000). PROVIDE NEW COVER PLATE WITH NEW DEVICE CONFIGURATION. EXTEND EXISTING POWER CIRCUIT(S), CONDUIT AND CABLING TO NEW TO DEVICE LOCATION AS INDICATED OR PROVIDE NEW CABLING AS REQUIRED. PROVIDE NEW DATA CABLING FROM DEVICE TO EXISTING IT CABINET. REFER TO DETAIL ON THIS SHEET.
3. PROVIDE PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY, DATA & POWER (WIREMOLD G4000). MOUNT PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY ABOVE COUNTER AND DESKS. (APPROXIMATELY 2'-6" ABOVE FINISHED FLOOR VERIFY IN THE FIELD)
4. PROVIDE DEDICATED OUTLETS AND CIRCUITS FOR REFRIGERATOR, MICROWAVE AND COFFEE MAKER.
5. PROVIDE DEDICATED OUTLETS AND CIRCUITS FOR (2) 55" VIDEO DISPLAYS.
6. PROVIDE (3) RECEPTACLES MOUNTED ON EQUIPMENT RACK LOCATED OVER THE RESTROOM.
7. SNOW MELT PANEL, REFER TO POWER RISER ON SHEET E-401.
8. ELECTRICAL CONTRACTOR SHALL WIRE EPO TO THE ROOF TOP UNIT STARTER TO SHUT DOWN RTU-1 UPON ACTIVATION.

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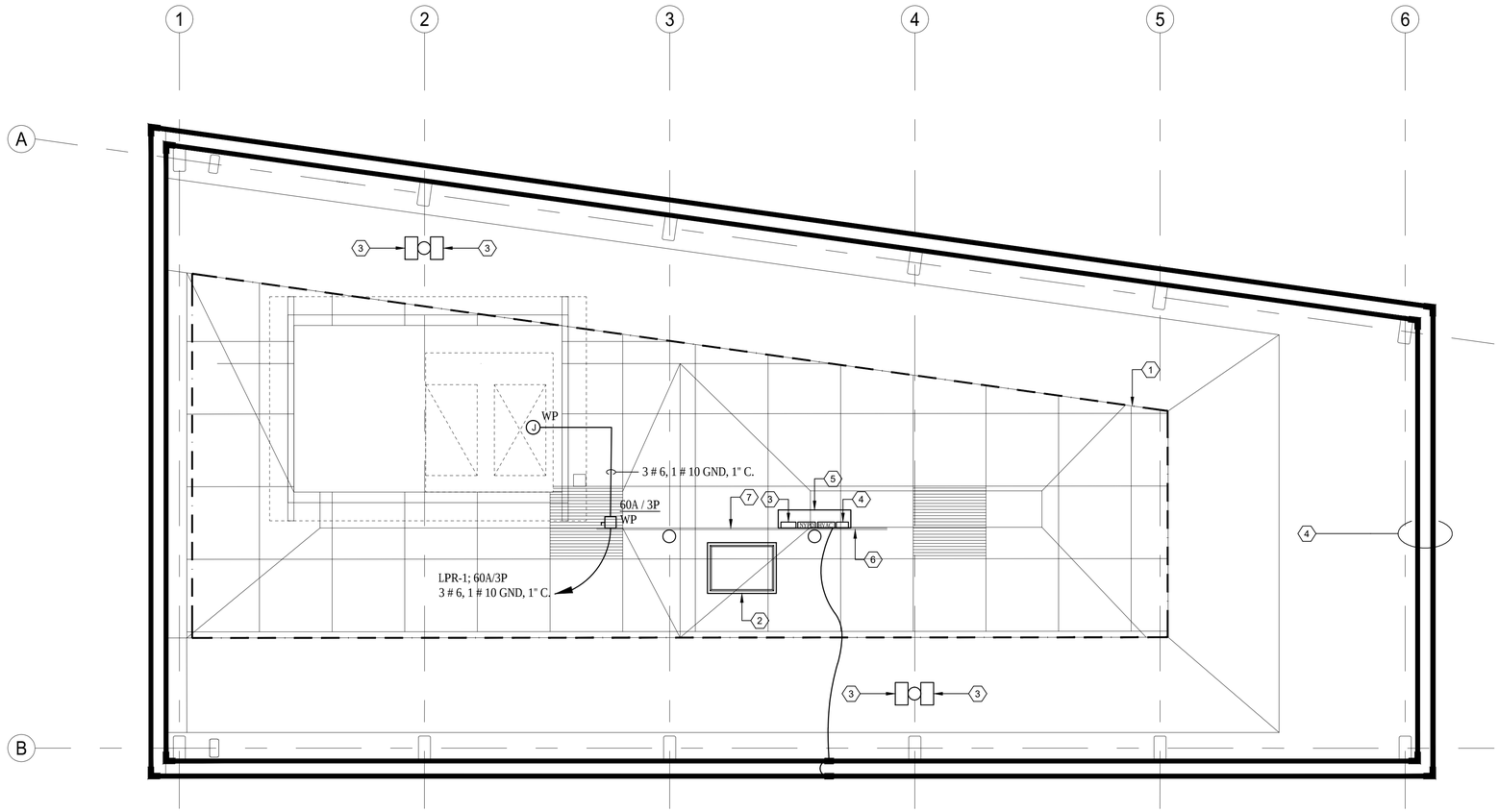
NEW YORK DISTRICT
NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530

FIRST FLOOR POWER PLAN

SHEET IDENTIFICATION
E-201
SHEET 31 OF 44




1 ROOF POWER PLAN
E-202 SCALE: 1/2" = 1'-0"

## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES: "(#)"

1. PROVIDE NEW ROOF SNOW MELT SYSTEM. SNOW MELT CABLE SHALL BE PROVIDED WITH HEATING CABLE INSTALLATION TRAY AT EACH ROW OF 2' X 2' PEDESTAL MOUNTED PAVERS. REFER TO SHEET E-602 FOR ADDITIONAL INFORMATION.
2. PROVIDE CONDUIT CHASE HOUSING CONSTRUCTED OF .080" THICK ALUMINUM HOUSING AND CURB (NOT FIBERGLASS OR MOLDED PLASTIC) UV PROTECTED POWDER COATED FINISH (2MIL THICK) WITH STAINLESS STEEL FASTENERS, FULL THERMAL BREAK IN THE HOUSING AND CURB GASKETED LID TO HOUSING AND HOUSING TO CURB CONNECTION POINTS. ALL NEW WIRING TO THE ROOF UNDER THIS CONTRACT SHALL BE ROUTED VIA THE CONDUIT CHASE AND OUT THROUGH THE SIDES OF THE CONDUIT CHASE. NO WIRING SHALL TO BE ALLOWED OUT THE CONDUIT CHASE COVER. CHASE COVER SHALL REMAIN REMOVABLE AS A PULL POINT FOR FUTURE USE. EC SHALL INCLUDE 2-4"C. WITH PULLCORDS FOR NYPD USE. ROUTE 2-4"C. DOWN THE CONDUIT CHASE TO ABOVE THE CEILING OF THE OFFICE, THEN DOWN THE EXTERIOR WALL TO THE SUBWAY TUNNEL AND THROUGH TO THE NYPD. LIMIT TO 180 DEGREES BETWEEN PULL POINTS, WITH NO PULL BOXES WITHIN THE TUNNEL. FIELD VERIFY ROUTING.
3. PROVIDE ELECTRIC BIRD DETERRENT SYSTEM. BIRD-X MODEL SUPER BIRDXPELLER PRO. REFER TO SHEET E-603 FOR ADDITIONAL INFORMATION.
4. PROVIDE BIRD DETERRENT SHOCK TRACK SYSTEM. BIRD-X MODEL AVISHOCK TRACK. INSTALL TO TRACKS AS INDICATED AROUND THE PERIMETER OF THE ROOF. REFER TO SHEET E-603 FOR ADDITIONAL INFORMATION.
5. NEMA 4X BOX SHALL BE 1' DEEP x 3' WIDE x 3'HIGH. WITHIN THE BOX INSTALL BIRD DETERRENT CONTROL PANEL, BIRD SHOCK CONTROL PANEL AND TWO 20A GFI DUPLEX OUTLETS TO POWER EACH BIRD DETERRENT SYSTEM CONTROLLER. EACH DUPLEX SHALL BE DEDICATED CIRCUITS LPR-43, 45.
6. SNOW MELT SYSTEM CONTROLLER. REFER TO E-602 FOR ADDITIONAL INFORMATION.
7. PROVIDE UNISTRUT STRUCTURE ACROSS WELDED POSTS FOR MOUNTING ELECTRICAL EQUIPMENT.

N

0 1' 2' 4'

AS BUILT DRAWING
DATE - 03-02-2018

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DATE: 3/2/2018
SOLICITATION NO.:
DWN BY: SP
CHD BY: DS
CONTRACT NO: W912DS-11-D-0001
SUBMITTED BY: SE
ISSUE DATE:
FILE NUMBER:
PLOT SCALE: AS_NOTED
FILE NAME:
SIZE: ANSI_D

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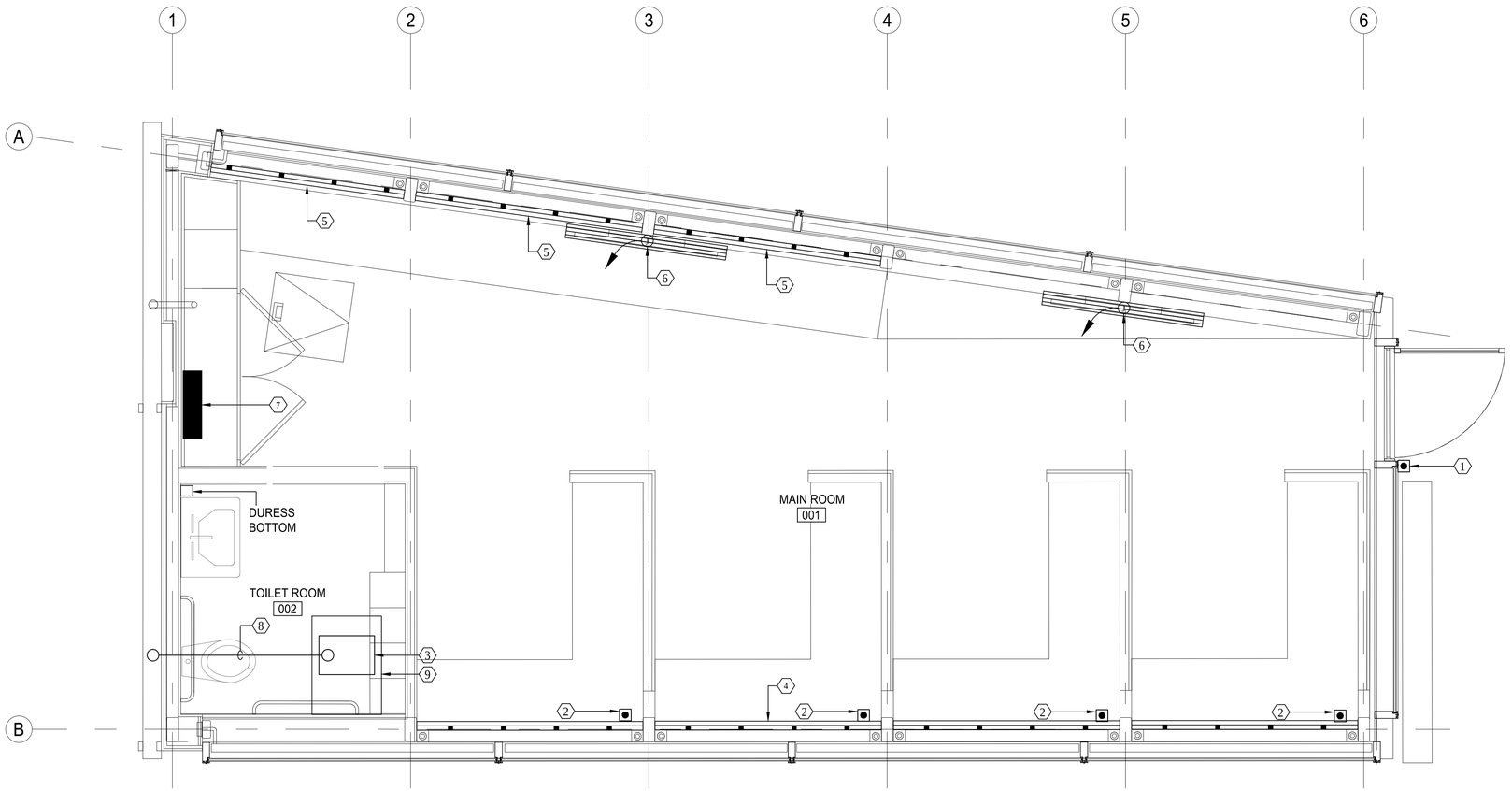
GOSHOW PROJECT # 201530
ROOF POWER PLAN

SHEET IDENTIFICATION
E-202
SHEET 32 OF 44




1 E-301 FIRST FLOOR LOW VOLTAGE SYSTEMS PLAN

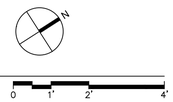
SCALE: 1/2" = 1'-0"

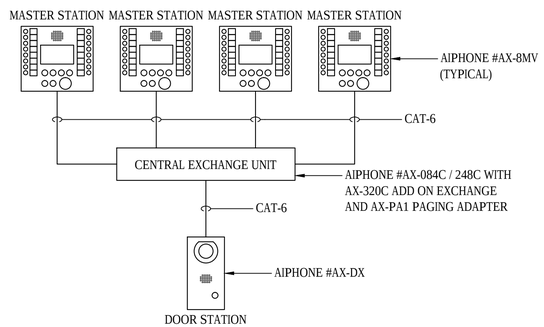
## GENERAL NOTES:

1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. ALL DATA CABLES SHALL BE BLUE AND TELPHONE CABLES GRAY.

## KEYED NOTES: "(#)"

1. PROVIDE DOOR STATION AIPHONE #AX-DX AND CAT 6 CABLE FOR CONNECTION TO CONTROL EXCHANGE UNIT. REFER TO DETAIL.
2. PROVIDE MASTER STATIONS (4) PLACES AND CAT 6 CABLES FOR CONNECTION TO CONTROL EXCHANGE UNIT. REFER TO DETAIL.
3. PROVIDE CONTROL EXCHANGE UNIT TO BE MOUNTED IN TRIPP-LITE SR18UB SMART RACK 18U ENCLOSURE CABINET LOCATED ABOVE RESTROOM. REFER TO DETAIL.
4. REINSTALL EXISTING PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY, DATA & POWER (WIREMOLD G4000). PROVIDE NEW COVER PLATE WITH NEW DEVICE CONFIGURATION. EXTEND EXISTING CONDUIT AND CABLING TO NEW TO DEVICE LOCATION AS INDICATED OR PROVIDE NEW CABLING AS REQUIRED. PROVIDE NEW DATA CABLING FROM DEVICE TO EXISTING IT CABINET. REFER TO DETAIL ON SHEET E-201.
5. PROVIDE PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY, DATA & POWER (WIREMOLD G4000). MOUNT PRE WIRED TWO CHANNEL MULTI-OUTLET ASSEMBLY ABOVE COUNTER AND DESKS. (APPROXIMATELY 2'-6" ABOVE FINISHED FLOOR VERIFY IN THE FIELD)
6. PROVIDE CONNECTIONS AS REQUIRED BY DISPLAY MANUFACTURER FOR MONITORS.
7. NEW 225A, 208V, 3 PHASE PANEL 'LPR'.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE 24 PAIR TELEPHONE CABLE FROM SERVICE PROVIDER TO PATCH PANEL IN NETWORK RACK.
9. PROVIDE TRIPP-LITE SR18UB SMART RACK 18U ENCLOSURE CABINET COMPLETE WITH GROUNDING BAR, SURGE PROTECTED POWER STRIP WITH 6 DUPLEX 20 AMP RECEPTACLES, AND FAN COOLING. INSTALL SR18UB SMART RACK ABOVE RESTROOM.




2 E-301 VIDEO INTERCOM WIRING DIAGRAM

NOT TO SCALE

NOTES:

1. AFTER INSTALLATION HAS BEEN COMPLETED, CONDUCT ENDURANCE, VERIFICATION, AND ACCEPTANCE TESTING, USING THE APPROVED TEST PLAN, TO DEMONSTRATE THAT THE EQUIPMENT OPERATES IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS. SUBMIT TEST PLAN AND PROCEDURES FOR THE TESTS EXPLAINING IN DETAIL STEP-BY-STEP ACTIONS AND EXPECTED RESULTS TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS SPECIFIED. THE PROCEDURES SHALL ALSO EXPLAIN METHODS FOR SIMULATING THE NECESSARY CONDITIONS OF OPERATION TO DEMONSTRATE SYSTEM PERFORMANCE. NOTIFY THE CONTRACTING OFFICER 14 DAYS PRIOR TO THE PERFORMANCE OF TESTS. IN NO CASE SHALL NOTICE BE GIVEN UNTIL AFTER THE CONTRACTOR HAS RECEIVED WRITTEN APPROVAL OF THE TEST PLANS.

AS BUILT DRAWING
DATE - 03-02-2018

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DATE: 3/2/2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-17-D-0001
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CKD BY: CG
SUBMITTED BY:
ISSUE DATE:
FILE NUMBER:
PLOT SCALE: AS_NOTED
FILE NAME:
SIZE: ANSI_D

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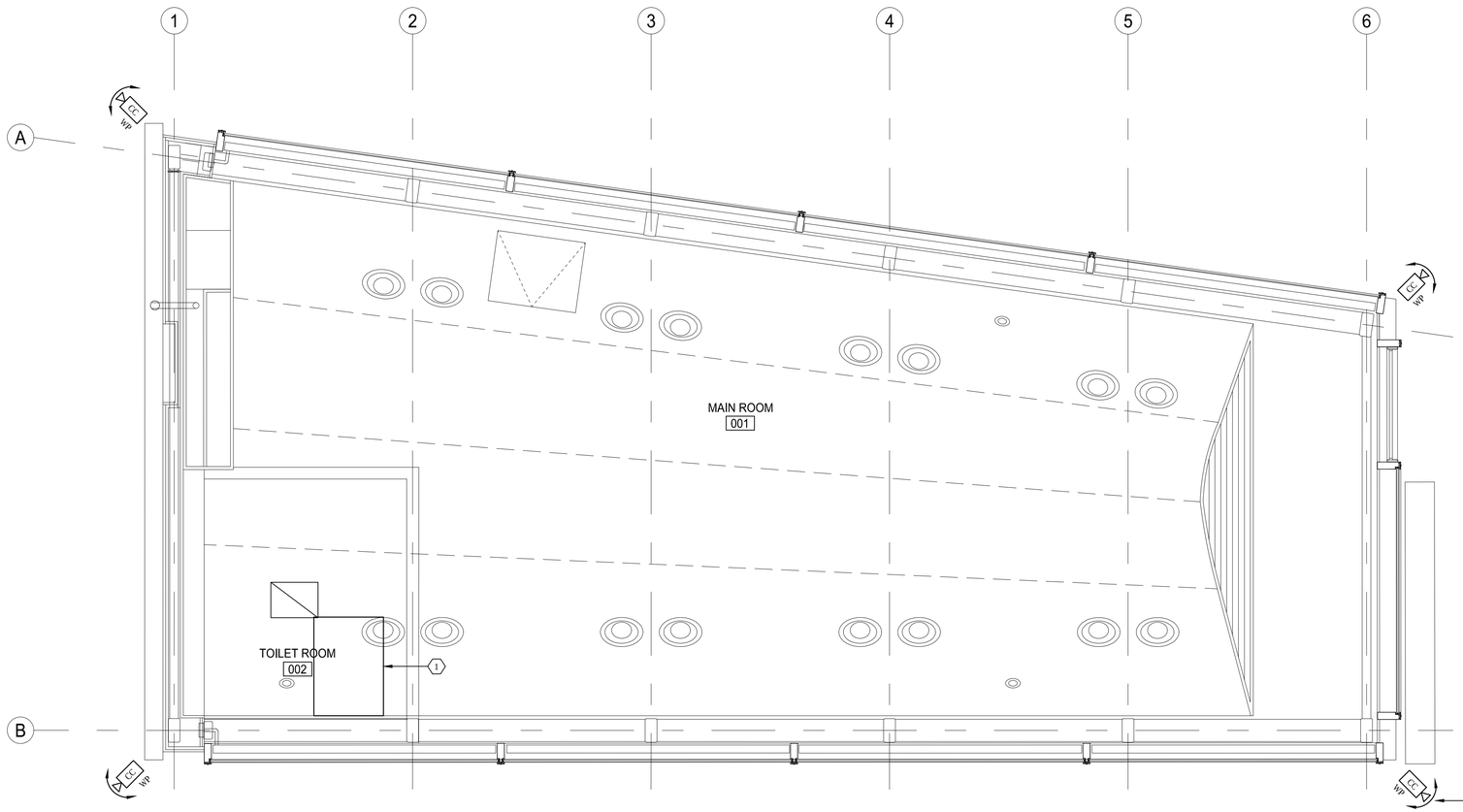
GOSHOW PROJECT # 201530

FIRST FLOOR LOW VOLTAGE SYSTEMS PLAN

SHEET IDENTIFICATION
E-301
SHEET 33 OF 44



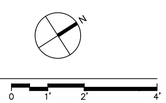

## GENERAL NOTES:

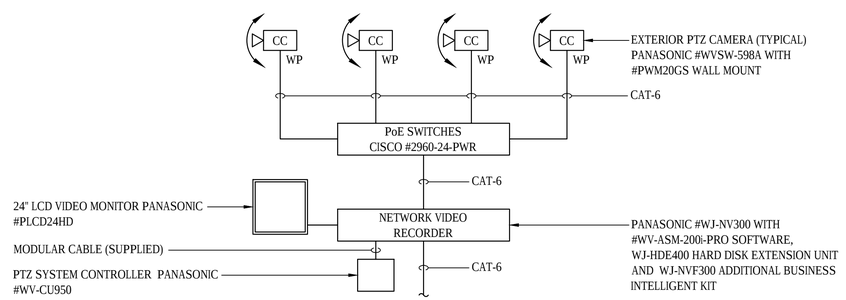
1. REFER TO SHEET E-001 ELECTRICAL SYMBOLS. REFER TO SHEET E-101 FOR LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E-401 FOR RISER DIAGRAMS.
2. REFER TO SHEET E501 FOR ELECTRICAL PANELBOARD SCHEDULES.
3. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. TAKE CARE TO MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT, DEVICES, CABLING AND SYSTEMS THAT ARE EXISTING TO REMAIN.

## KEYED NOTES: "⬡"

1. PROVIDE PoE SWITCHES AND NETWORK VIDEO RECORDER TO BE MOUNTED IN TRIPP-LITE SR18UB SMART RACK 18U ENCLOSURE CABINET LOCATED ABOVE RESTROOM. FOR MORE INFORMATION REFER TO DETAIL.
2. PROVIDE EXTERIOR PTZ CAMERA FOR MORE INFORMATION REFER TO DETAIL.

1 EXTERIOR SYSTEMS PLAN
E-302 SCALE: 1/2" = 1'-0"




2 IP CCTV SYSTEM WIRING DIAGRAM
E-302 NOT TO SCALE

NOTES:

1. PRIOR TO ACCEPTANCE OF THIS SYSTEM, THE CONTRACTOR SHALL ENGAGE THE SERVICE OF AN ESTABLISHED SERVICE AND MAINTENANCE COMPANY TO TEST THE COMPLETE SYSTEM. THE SYSTEM SHALL INCLUDE ALL WIRING AND THE PROPER OPERATION OF ALL EQUIPMENT. PRIOR TO ACCEPTANCE OF THIS SYSTEM, A WRITTEN REPORT BY THE SAID SERVICE COMPANY SHALL BE SUBMITTED TO THE ARCHITECT AND IT SHALL STATE THAT THE TEST HEREIN REQUIRED HAS BEEN MADE AND THAT THE SYSTEM IS OPERATING SATISFACTORILY. THE CONTRACTOR SHALL PAY FOR ALL CHANGES FOR THIS TEST REQUIREMENT.
2. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF ALL EQUIPMENT WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL PROVIDE ALL RACK-MOUNTING EQUIPMENT AS REQUIRED FOR CONSOLE AND/OR DESK MOUNTING.

AS BUILT DRAWING
DATE - 03-02-2018

US Army Corps of Engineers ®

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SOLICITATION NO.:
DWN BY: JM
CKD BY: CS
SUBMITTED BY: ICE
CONTRACT NO.: W91220S-11-D-0001
PLOT SCALE: AS_NOTED
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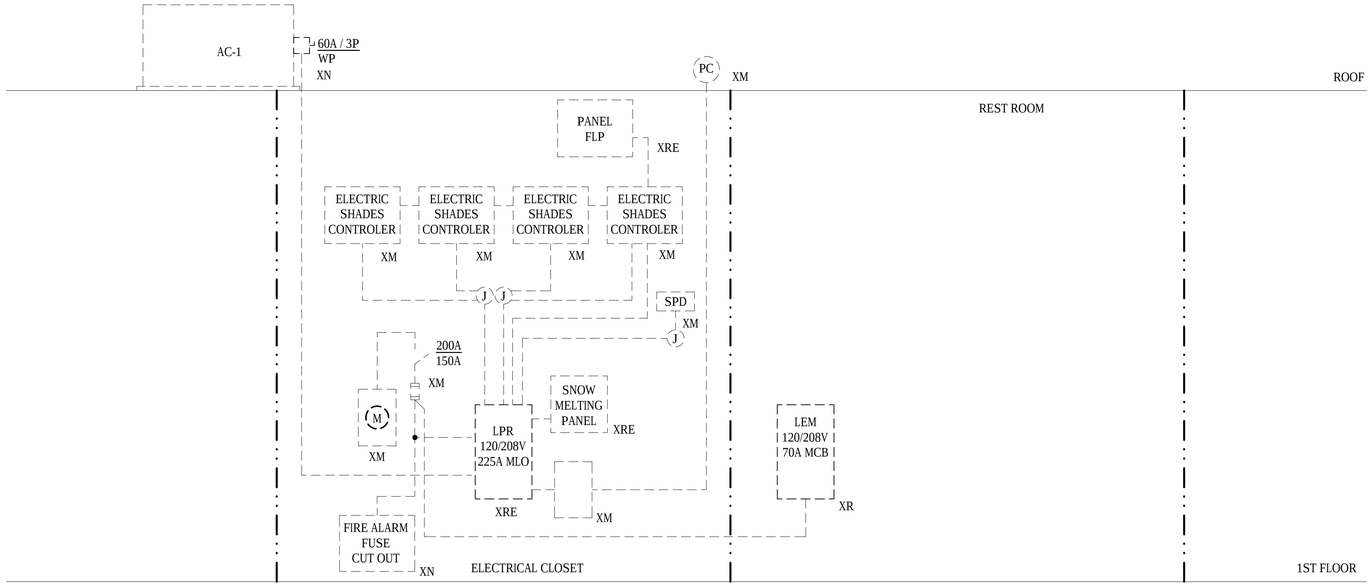
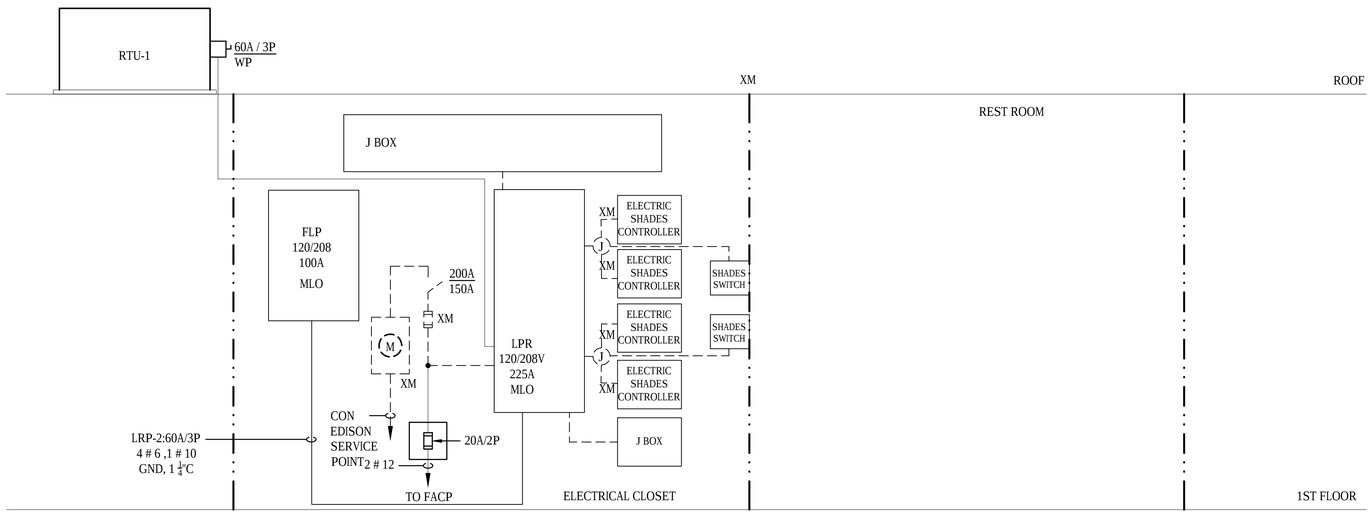
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
EXTERIOR LOW VOLTAGE SYSTEMS PLAN

SHEET IDENTIFICATION
E-302
SHEET 34 OF 44




1 E-401 EXISTING ELECTRICAL RISER DIAGRAM
NOT TO SCALE




2 E-401 REVISED ELECTRICAL RISER DIAGRAM
NOT TO SCALE

AS BUILT DRAWING
DATE - 03-02-2018

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200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530

ELECTRICAL RISER DIAGRAMS

SHEET IDENTIFICATION
E-401
SHEET 35 OF 44

| PROJECT: | US ARMY CORPS OF ENGINEERS - TIME SQUARE | PANEL VOLTAGE: | 208 / 120V | AIC RATING: | 42,000 |
|---|---|---|---|---|---|
| PANEL: | PANEL LPR | PHASE & WIRE: | 3PH, 4W | MOUNTING: | SURFACE |
| LOCATION: | ELECTRICAL CLOSET | BUS/MAIN (AMPS): | 400 MLO | NOTES: | SEE NOTES BELOW |

| CKT | OCD | | | LOAD (KVA) | | | 3 PH SEQUENCE | | | LOAD (KVA) | | | | OCD | | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | A | P | DESCRIPTION | MISC | REC | LTG | A | B | C | MISC | REC | LTG | DESCRIPTION | A | P | NO. |
| 1 | | | | 6.4 | | | 9.0 | | | 2.6 | | | FLAG LIGHT PANEL 'FLP' | 60 | | 2 |
| 3 | 60 | 3 | RTU-1 | 6.4 | | | | 8.5 | | 2.1 | | | FLAG LIGHT PANEL 'FLP' | | | 4 |
| 5 | | | | 6.4 | | | | | 8.5 | 2.1 | | | FLAG LIGHT PANEL 'FLP' | | 3 | 6 |
| 7 | 20 | 1 | WIREMOLD | | 1.3 | | 2.5 | | | | 1.3 | | WIREMOLD | 20 | 1 | 8 |
| 9 | 20 | 1 | WIREMOLD | | 1.3 | | | 2.5 | | | 1.3 | | WIREMOLD | 20 | 1 | 10 |
| 11 | 20 | 1 | COPIER | | 1.0 | | | | 2.3 | | 1.3 | | WIREMOLD | 20 | 1 | 12 |
| 13 | 20 | 1 | WIREMOLD | | 0.6 | | 1.6 | | | | | 1.0 | COVE AND COUNTER LIGHTING | 20 | 1 | 14 |
| 15 | 20 | 1 | WIREMOLD | | 0.6 | | | 2.7 | | 2.1 | | | HOT WATER HEATER | 30 | | 16 |
| 17 | 20 | 1 | VIDEO DISPLAY | | 0.2 | | | | 2.3 | 2.1 | | | HOT WATER HEATER | | 2 | 18 |
| 19 | 20 | 1 | MICROWAVE | | 1.5 | | 5.3 | | | 3.8 | | | SPARE | 40 | | 20 |
| 21 | 20 | 1 | COFFEE MAKER | | 1.2 | | | 5.0 | | 3.8 | | | SPARE | | | 22 |
| 23 | 20 | 1 | REFRIGERATOR | | 0.7 | | | | 4.5 | 3.8 | | | SPARE | | 3 | 24 |
| 25 | 20 | | BASEBOARD HEAT EAST | 1.9 | | | 2.0 | | | | 0.2 | | ROOF RECEPTACLE | 20 | 1 | 26 |
| 27 | | 2 | BASEBOARD HEAT EAST | 1.9 | | | | 2.5 | | | 0.6 | | TROPHY LIGHTING | 20 | 1 | 28 |
| 29 | 20 | | BASEBOARD HEAT EAST | 1.9 | | | | | 2.1 | | 0.2 | | VIDEO DISPLAY | 20 | 1 | 30 |
| 31 | | 2 | BASEBOARD HEAT EAST | 1.9 | | | 3.8 | | | 1.9 | | | BASEBOARD HEAT WEST | 20 | | 32 |
| 33 | 20 | 1 | VANITY/CABINET/FAN GFI | 0.1 | 0.2 | | | 2.1 | | 1.9 | | | BASEBOARD HEAT WEST | | 2 | 34 |
| 35 | 20 | 1 | TELECOM REC. | | | | | | 1.9 | 1.9 | | | BASEBOARD HEAT WEST | 20 | | 36 |
| 37 | 20 | 1 | WINDOW SHADES WEST | 0.2 | | | 2.1 | | | 1.9 | | | BASEBOARD HEAT WEST | | 2 | 38 |
| 39 | 20 | 1 | WINDOW SHADES EAST | 0.2 | | | | 0.4 | | 0.2 | | | EMERGENCY LIGHTING | 20 | 1 | 40 |
| 41 | 20 | 1 | ROOF POWER | | | | | | 1.0 | 1.0 | | | DATA/NETWORK RACK | 20 | 1 | 42 |
| 43 | 20 | 1 | BIRD SHOCK SYSTEM | 0.2 | | | 0.4 | | | | 0.2 | | DATA/NETWORK RACK | 20 | 1 | 44 |
| 45 | 20 | 1 | BIRD DETERRANT SYSTEM | 0.2 | | | | 0.4 | | | 0.2 | | DATA/NETWORK RACK | 20 | 1 | 46 |
| 47 | 50 | | SNOW MELT PANEL 'SMP' | 4.0 | | | | | 4.2 | | 0.2 | | 55" MONITOR | 20 | 1 | 48 |
| 49 | | | SNOWMELT PANEL 'SMP' | 4.0 | | | 4.2 | | | | 0.2 | | 55" MONITOR | 20 | 1 | 50 |
| 51 | | 3 | SNOWMELT PANEL 'SMP' | 4.0 | | | | 4.7 | | | | 0.7 | SECURITY PANEL | 20 | 1 | 52 |
| 53 | 20 | 1 | SPARE | | | | | | 0.6 | | 0.6 | | BATHROOM GFCI | 20 | 1 | 54 |
| SUB-TOTAL CONNECTED LOAD (KVA) | | | | 39.5 | 8.5 | 0.0 | 31 | 29 | 27 | 31.2 | 6.1 | 1.7 | | | | |
| CONNECTED LOAD THIS SECTION (KVA) | | | | 70.7 | 14.6 | 1.7 | | | | | | | | | | |
| TOTAL CONNECTED LOAD (KVA) | | | | 70.7 | 14.6 | 1.7 | | | | | | | | | | |
| DEMAND FACTOR | | | | 1.0 | 1.0 | 1.0 | | | | | | | DEMAND LOAD (KVA) | | | 84.7 |
| TOTAL DEMAND LOAD (KVA) | | | | 70.7 | 12.3 | 1.7 | | | | | | | SPARE LOAD (KVA) | | | 16.9 |
| | | | | | | | | | | | | | TOTAL DEMAND (KVA) | | | 101.6 |
| | | | | | | | | | | | | | LINE CURRENT (AMPS) | | | 282 |

X= 1ST 10KVA @ 100%, + REMAINDER @ 50% (2002 N.E.C. 220-13)

CIRCUITS 11, 24, 25, 28, 29, 32, 36, 37, 39,40, 42 AND 52 ARE EXISTING CIRCUITS IN EXISTING PANEL 'LPR' TO BE BOXED AND EXTENDED TO INDICATED CIRCUIT IN NEW PANEL 'LPR'

| PROJECT: | US ARMY CORPS OF ENGINEERS-TIME SQUARE | PANEL VOLTAGE: | 208 / 120V | AIC RATING: | 22,000 |
|---|---|---|---|---|---|
| PANEL: | PANEL FLP | PHASE & WIRE: | 3PH, 4W | MOUNTING: | FLUSH |
| LOCATION: | OPEN OFFICE | BUS/MAIN (AMPS): | 60A MLO | NOTES: | SEE NOTES BELOW |

| CKT | OCD | | | LOAD (KVA) | | | 3 PH SEQUENCE | | | LOAD (KVA) | | | | OCD | | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | A | P | DESCRIPTION | MISC | REC | LTG | A | B | C | MISC | REC | LTG | DESCRIPTION | P | A | NO. |
| 1 | 20 | | FLAG LIGHTING | 0.43 | | | 0.9 | | | 0.43 | | | FLAG LIGHTING | | 20 | 2 |
| 3 | | 2 | | 0.43 | | | | 0.9 | | 0.43 | | | | 2 | | 4 |
| 5 | 20 | | FLAG LIGHTING | 0.43 | | | | | 0.9 | 0.43 | | | FLAG LIGHTING | | 20 | 6 |
| 7 | | 2 | | 0.43 | | | 0.9 | | | 0.43 | | | | 2 | | 8 |
| 9 | 20 | | FLAG LIGHTING | 0.43 | | | | 0.9 | | 0.43 | | | FLAG LIGHTING | | 20 | 10 |
| 11 | | 2 | | 0.43 | | | | | 0.9 | 0.43 | | | | 2 | | 12 |
| 13 | 20 | | FLAG LIGHTING | 0.43 | | | 0.9 | | | 0.43 | | | FLAG LIGHTING | | 20 | 14 |
| 15 | | 2 | | 0.43 | | | | 0.9 | | 0.43 | | | | 2 | | 16 |
| 17 | 20 | | LED SIGNAGEAY | | | | | | 0.0 | | | | EXTERIOR DISPLAY | | 20 | 18 |
| 19 | | 2 | | | | | 0.0 | | | | | | | 2 | | 20 |
| 21 | 20 | | EXTERIOR DISPLAY | | | | | 0.0 | | | | | EXTERIOR DISPLAY | | 20 | 22 |
| 23 | | 2 | | | | | | | 0.0 | | | | | 2 | | 24 |
| 25 | 20 | | EXTERIOR DISPLAY | | | | 0.0 | | | | | | SPARE | | 20 | 26 |
| 27 | | 2 | | | | | | 0.0 | | | | | | 2 | | 28 |
| 29 | | | | | | | | | 0.0 | | | | | | | 30 |
| SUB-TOTAL CONNECTED LOAD (KVA) | | | | 3.4 | 0.0 | 0.0 | 3 | 3 | 2 | 3.4 | 0.0 | 0.0 | | | | |
| CONNECTED LOAD THIS SECTION (KVA) | | | | 6.8 | 0.0 | 0.0 | | | | | | | | | | |
| SECTION 2 TOTAL CONN. LOAD (KVA) | | | | 0.0 | 0.0 | 0.0 | | | | | | | DEMAND LOAD (KVA) | | | 6.8 |
| TOTAL CONNECTED LOAD (KVA) | | | | 6.8 | 0.0 | 0.0 | | | | | | | SPARE LOAD (KVA) | | | 1.7 |
| DEMAND FACTOR | | | | 1.0 | X | 1.0 | | | | | | | TOTAL DEMAND (KVA) | | | 9 |
| TOTAL DEMAND LOAD (KVA) | | | | 6.8 | 0.0 | 0.0 | | | | | | | LINE CURRENT (AMPS) | | | 23.6 |

X= 1ST 10KVA @ 100%, + REMAINDER @ 50% (PER CURRENT N.E.C.)

* GFCI INDICATES GROUND FAULT INTERRUPTING CIRCUIT BREAKER

| PROJECT: | US ARMY CORPS OF ENGINEERS-TIME SQUARE | PANEL VOLTAGE: | 208 / 120V | AIC RATING: | 22,000 |
|---|---|---|---|---|---|
| PANEL: | PANEL SMP | PHASE & WIRE: | 3PH, 4W | MOUNTING: | SURFACE |
| LOCATION: | ELECTRICAL CLOSET | BUS/MAIN (AMPS): | 60A MLO | NOTES: | SEE NOTES BELOW |

| CKT | OCD | | | LOAD (KVA) | | | 3 PH SEQUENCE | | | LOAD (KVA) | | | | OCD | | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | A | P | DESCRIPTION | MISC | REC | LTG | A | B | C | MISC | REC | LTG | DESCRIPTION | P | A | NO. |
| 1 | 20 | | SNOW MELT | 1.5 | | | 3.0 | | | 1.5 | | | SNOW MELT | | 20 | 2 |
| 3 | | 2 | | 1.5 | | | | 3.0 | | 1.5 | | | | 2 | | 4 |
| 5 | 20 | | SNOW MELT | 1.5 | | | | | 3.0 | 1.5 | | | SNOW MELT | | 20 | 6 |
| 7 | | 2 | | 1.5 | | | 3.0 | | | 1.5 | | | | 2 | | 8 |
| 9 | 20 | | SPARE | | | | | 0.0 | | | | | SPARE | | 20 | 10 |
| 11 | | 2 | | | | | | | 0.0 | | | | | 2 | | 12 |
| 13 | 20 | | SPARE | | | | 0.0 | | | | | | SPARE | | 20 | 14 |
| 15 | | 2 | | | | | | 0.0 | | | | | | 2 | | 16 |
| 17 | 20 | | SPARE | | | | | | 0.0 | | | | SPARE | | 20 | 18 |
| 19 | | 2 | | | | | 0.0 | | | | | | | 2 | | 20 |
| 21 | 20 | | SPARE | | | | | 0.0 | | | | | SPARE | | 20 | 22 |
| 23 | | 2 | | | | | | | 0.0 | | | | | 2 | | 24 |
| SUB-TOTAL CONNECTED LOAD (KVA) | | | | 6.0 | 0.0 | 0.0 | 6 | 3 | 3 | 6.0 | 0.0 | 0.0 | | | | |
| CONNECTED LOAD THIS SECTION (KVA) | | | | 12.0 | 0.0 | 0.0 | | | | | | | | | | |
| SECTION 2 TOTAL CONN. LOAD (KVA) | | | | 0.0 | 0.0 | 0.0 | | | | | | | DEMAND LOAD (KVA) | | | 12 |
| TOTAL CONNECTED LOAD (KVA) | | | | 12.0 | 0.0 | 0.0 | | | | | | | SPARE LOAD (KVA) | | | 3 |
| DEMAND FACTOR | | | | 1.0 | X | 1.0 | | | | | | | TOTAL DEMAND (KVA) | | | 15 |
| TOTAL DEMAND LOAD (KVA) | | | | 12.0 | 0.0 | 0.0 | | | | | | | LINE CURRENT (AMPS) | | | 41.6 |

X= 1ST 10KVA @ 100%, + REMAINDER @ 50% (PER CURRENT N.E.C.)

* GFCI INDICATES GROUND FAULT INTERRUPTING CIRCUIT BREAKER

AS BUILT DRAWING
DATE - 03-02-2018

US Army Corps of Engineers®

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EYP Architecture & Engineering
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eypae.com

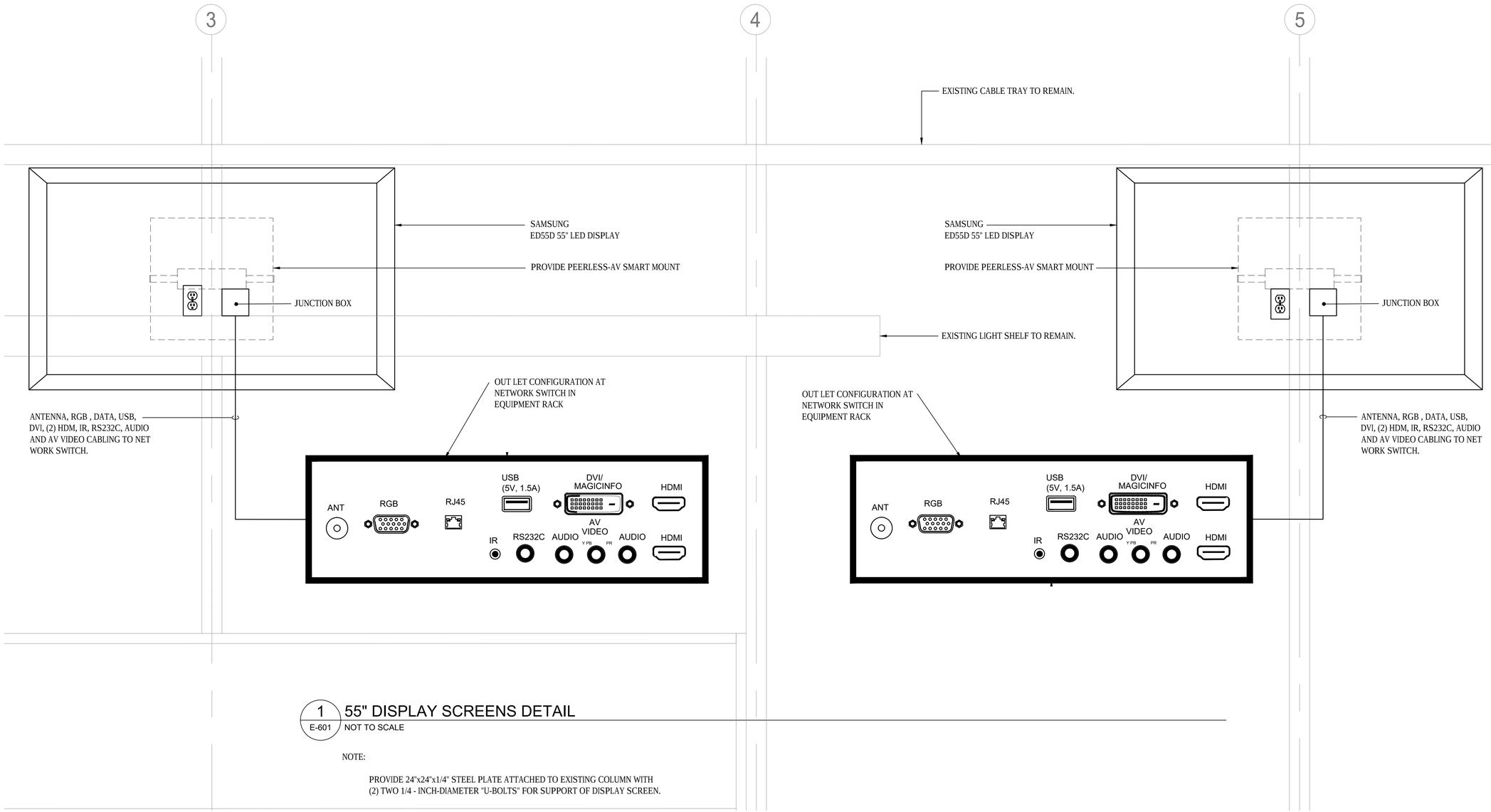
DATE: 3/2/2018 | SOLICITATION NO: | CONTRACT NO: W912QR-17-D-0001
DWN BY: SP | CKD BY: CG | SUBMITTED BY: | ISSUE DATE: | FILE NUMBER:
PLOT SCALE: AS_NOTED | FILE NAME:
SIZE: ANSI_D

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
ELECTRICAL PANEL SCHEDULES

SHEET IDENTIFICATION
E-501
SHEET 36 OF 44




1 E-601 55" DISPLAY SCREENS DETAIL

NOT TO SCALE

NOTE:

PROVIDE 24"x24"x1/4" STEEL PLATE ATTACHED TO EXISTING COLUMN WITH (2) TWO 1/4 - INCH-DIAMETER "U-BOLTS" FOR SUPPORT OF DISPLAY SCREEN.

AS BUILT DRAWING
DATE - 03-02-2018

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EYP Architecture & Engineering
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West Hartford, CT 06119
Telephone 860.278.5627
Fax 860.521.3529
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DATE: 3/2/2018
SOLICITATION NO:
CONTRACT NO: W912QR-17-D-0001
DWN BY: SP
CKD BY: CG
SUBMITTED BY:
ISSUE DATE:
FILE NUMBER:
PLOT SCALE: AS_NOTED
FILE NAME:
SIZE: ANSI_D

U.S. ARMY CORPS OF ENGINEERS
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NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

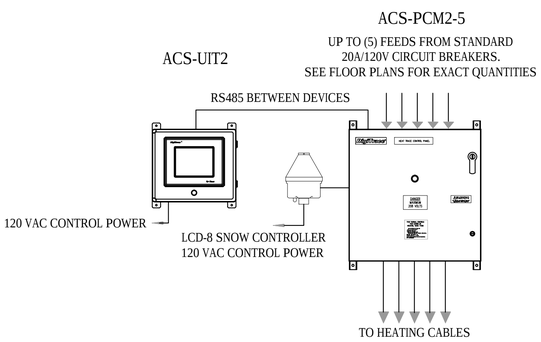
TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530

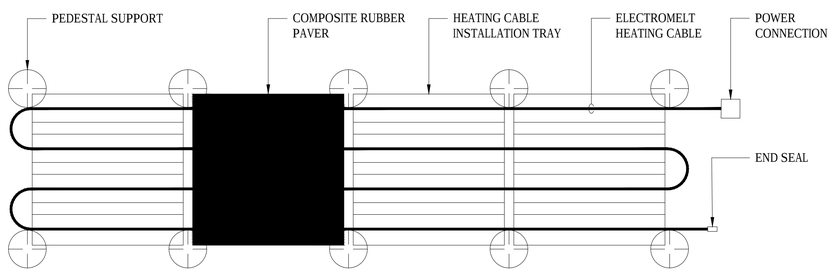
ELECTRICAL DETAILS - 1

SHEET IDENTIFICATION
E-601
SHEET 37 OF 44

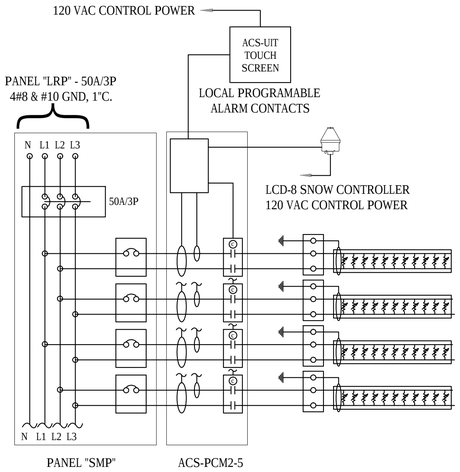
NOTES:

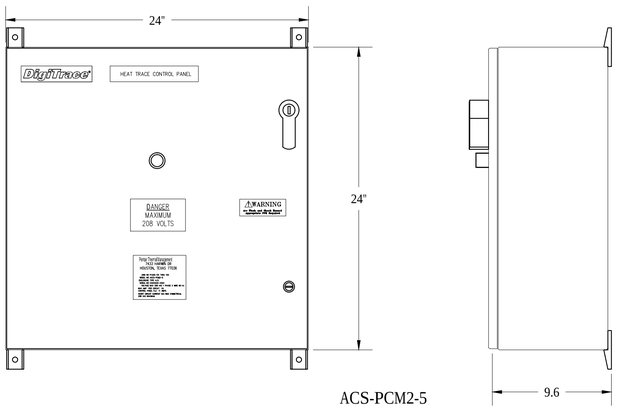
1. ALL SNOW MELT AND SNOW MELT CONTROLS AND DEVICES SHALL BE FURNISHED, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
2. THE ACS-PCM2-5 PROVIDES THE GROUND FAULT PROTECTION REQUIRED FOR ALL ELECTRIC HEAT TRACING APPLICATIONS. A STANDARD BREAKER CAN BE USED FOR POWER DISTRIBUTION.
3. ACS-UIT2 REQUIRES A CONTROL POWER 120V SUPPLY. ACS-PCM2-5 CONTROL POWER CAN BE PROVIDED VIA A HEATING CABLE CIRCUIT OR A SEPARATE 120V SUPPLY.
4. DEVICES MAY BE "DAISY CHAINED" IN ANY ORDER BUT MUST BE IN A STRAIGHT LINE.
5. TEEING LINE IS NOT PERMITTED.
6. THE LAST COMPONENT IN THE 485 "CHAIN" MUST HAVE THE END OF LINE RESISTOR IN THE PROPER LOCATION. CONSULT INSTALLATION GUIDES FOR PROPER RESISTOR LOCATIONS.
7. SELF REGULATING SNOW MELT CABLE, PENTAIR #EM2-XR INSTALLED IN HEATING CABLE INSTALLATION TRAY.



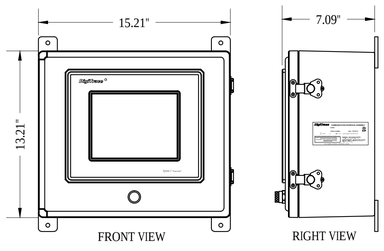




TYPICAL SYSTEM LAYOUT OF PAVERS, HEATING CABLE, INSTALLATION TRAY, AND PEDESTAL SUPPORTS

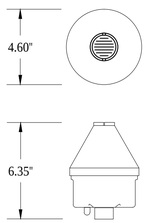



ACS-PCM2-5




ACS-UIT2




LCD-8
SNOW CONTROLLER

1 E-602 SNOW MELT SYSTEM CONTROL SCHEMATIC DETAIL
NOT TO SCALE

AS BUILT DRAWING
DATE - 03-02-2018

US Army Corps of Engineers®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eypae.com


| | |
|---|---|
| DATE: | 3/2/2018 |
| SOLICITATION NO.: | |
| CONTRACT NO.: | W912QR-14-D-0001 |
| DWN BY: | SP |
| CKD BY: | CG |
| SUBMITTED BY: | |
| ISSUE DATE: | |
| FILE NUMBER: | |
| PLOT SCALE: | AS NOTED |
| FILE NAME: | |
| SIZE: | ANSI_D |

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530
ELECTRICAL DETAILS - 2

SHEET IDENTIFICATION
E-602
SHEET 38 OF 44

NOTES:

1. ALL ELECTRIC BIRD DETERRENT SYSTEM CONTROLS AND DEVICES SHALL BE FURNISHED, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
2. USE THE MOUNTING HARDWARE (INCLUDED) TO MOUNT THE CONTROL UNIT BOX IN SIDE A NEMA 4X BOX 1' DEEP X 3' WIDE X 3' HIGH AND PROVIDE A DUPLEX OUTLET TO POWER THE SYSTEM.
3. MOUNT THE SPEAKER(S) ON A POST LOCATED ON THE ROOF AT A HEIGHT THAT IS AIMED DIRECTLY AND AT THE SAME LEVEL AS THE INFESTED AREA.
4. SET THE RECORDING SWITCHES, MODE SETTING SWITCHES, TIME-OFF SWITCHES, TIME OF OPERATION SWITCHES AND RANDOM OPERATION SWITCHES TO THE DESIRED SETTINGS. (SEE "PROGRAMMING YOUR BIRDXPELLER" FOR COMPLETE DETAILS ON HOW TO PROGRAM YOUR BIRD REPELLER).
5. MAKE SURE THE VOLUME SETTING IS SET TO LOW (ALL THE WAY COUNTER-CLOCKWISE)
6. SLIDE THE POWER SWITCH TO THE "ON" POSITION. THE UNIT MAY TAKE A FEW SECONDS BEFORE STARTING.
7. ADJUST THE VOLUME TO THE DESIRED LEVEL.
8. AFTER THE BIRD DETERRENT IS COMPLETELY INSTALL PER MANUFACTURES INSTRUCTIONS THE ELECTRICAL CONTRACTOR SHALL INSURE THAT THE BIRD DETERRENT SYSTEM WILL OPERATE PROPERLY.

**DETAILED STEP-BY-STEP INSTALLATION GUIDE**

***1. POSITION THE ENERGISER***

- Position the Energiser close to the power supply (plug socket) supplied by the customer
- The Energiser can be easily installed to a wall by hooking it onto small screws (head diameter 5mm-8mm), via the holes in the back
- Encase, or locate the Energiser where it cannot be easily seen or disturbed
- The Energiser must however be easily accessible to the installer and other parties should the system need to be isolated (unplugged)
- The Energiser plug must be clearly labelled.

***Internal Power Supply***

- If the Power Supply is situated inside the building, ensure that the lead wire is channelled from the track outside to the Energiser inside
- It is a requirement to use separate trunking from any other cables.

***External Power Supply***

- If the Power Supply is outside of the building, ensure the power supply (plug socket) and Energiser are encased in a Water-Proof casing
- The Energiser should remain isolated (unplugged) whilst working on the system.

***2. PREPARE INTENDED TRACK LOCATION***

Surfaces should be clean, dry and free from peeling paint, rust, bird droppings and other debris.

- Remove peeling paint, rust, bird droppings using a scraper/wire brush
- Remove any grease or oily deposits with Surface Cleaner
- If surface is porous (e.g. sandstone), apply an appropriate primer to seal it
- Remove or repair articles that may damage the system.

***3. INSTALL CORNER CONNECTOR BASES***

- The bases can be screwed or glued in place using a surface-appropriate adhesive
- Position the base at the corner of the ledge and press firmly into place

***4. INSTALL JUMPER BASES***

- The bases can be screwed or glued in place using a surface-appropriate adhesive
- Align the base to the ledge edge and press firmly into place

***5. LAY OUT TRACK AND CUT TO FIT***

- Wheel the track out until you meet the corner connector, or the end of the surface that is to be protected
- Run the track over the Jumper bases
- When you are comfortable you have allowed enough track to protect the entire length, cut the track straight across using Avishock Shears
- If the surface is a straight run of more than 65 ft (20m), wheel the whole track out. At the end of the 65 ft track, you will need to install a Straight Connector (see Step 6).

***6. INSTALL STRAIGHT CONNECTOR (IF REQUIRED)***

- The bases can be screwed in place or glued in place using apropriate adhesive
- Apply adhesive to the underside of the base
- Align the base to the ledge edge where required and press firmly into place

***7. APPLY GLUE TO THE TRACK BASE***

- The track should be glued in place using appropriate adhesive
- Run a bead of glue approx 1/4" (6mm) wide along the base of the track

***8. FIT DRAINAGE TUBES AND GLUE TRACK IN PLACE***

- Drainage may be required to allow water to run underneath the track
- Place tubes as required (e.g. 1/8" = 0.3cm apart) onto the bead of glue along the back of the track
- Two or more tubes can be used at each location as required
- Flip the track
- Start at a Connector and press the track down into the connector base
- Align the track to the ledge edge
- Firmly press the track onto the surface
- Cut off any excess track at the end of a run.

***9. ATTACH TRACK TO CONNECTORS***

***Attaching to a Connector***

- For corners cut the track at 45° to fit into the corner connector, using the cutting guide on the Avishock track reel or the Avishock Cutting Guide Tool.
- For Straight Connectors, cut to length at 90°
- Take a locking cap and clip it over the track and into the connector base. PRESS DOWN HARD ON THE CAP, ideally with an implement, to ensure the teeth underneath penetrate right through the black conductive plastic strips of the track and make good contact with the copper conductors.
- If Lead Wire is not to be connected to the locking caps, press the protruding male connectors down and outwards. (Once the system is live the male connectors will conduct electricity, so pressing them down will prevent birds from trying to perch on the connectors)

***Attaching to a Jumper***

- Take a locking cap and clip it over the track and into the base
- PRESS DOWN HARD ON THE CAP, ideally with an implement, to ensure the teeth underneath penetrate right through the black conductive plastic strips of the track and make good contact with the copper conductors.

***10. POSITION WARNING SIGNS***

- AVISHOCK™ Warning Signs should be used in conjunction with the system
- Two Warning Signs are available
  - Warning Plates
  - Window Warning Stickers
- Warning Signs should be fitted to every point where persons may gain ready access to the track and connectors
- The Warning Plate should be glued in place & positioned vertically, 15 ft (5m) apart on the face of the building where AVISHOCK™ is installed
- If installing the track onto a Window Ledge, stick the double-sided Window Warning Stickers to the inside of the window so that they are visible from the inside and outside.

***11. CONNECT LEAD WIRE TO TRACK***

- Take one end of the Lead Wire from the reel
- Separate the wires at the ends using Avishock Shears
- Use the Wire Stripper to remove approx. 1/4" (7mm) of insulation from each wire
- Attach a Female Spade Connector to each wire
- Using the red (0.5 - 1.0mm) indent of the Connector Crimper Tool, crimp the barrel of the connector to the Lead Wire
- Insert the crimped female Spade Connector onto the protruding male spades of the Connectors or Jumpers.
- Run the Lead Wire from the connector/ jumper to a connector/jumper on another track or the energiser
- Follow contours of the surface to ensure a neat and discreet solution
- Secure the Lead Wire to the surface using Wire Guides at 1 ft (300mm) intervals
- Cut the lead wire to length using Avishock Shears

***12. CONNECT LEAD WIRE TO ENERGISER***

- Separate wires at ends using Avishock Shears
- Use Wire Stripper to remove approx 1/4" of insulation from each wire
- Attach a Ring Terminal to each wire
- Using the red (0.5 - 1.0mm) indent of the Connector Crimper Tool, crimp the barrel of the ring terminal to the lead wire
- Remove the red plastic terminal nuts from the Energiser
- Hook the Connector Ring Terminals onto each of the terminals of the Energiser
- Screw the red plastic terminal nuts back onto the Energiser.

***13. VISUAL CHECK***

- Ensure no tools or other obstructions are left on the track
- Wipe the track down with Big Wipes Industrial+ to ensure the track is free from dirt and debris.
- Check that the Lead Wire is correctly attached to the Connectors and Energisers
- ENSURE THAT EVERYBODYHAS STOPPED WORKING ON THE SYSTEM.

***14. PLUG IN ENERGISER***

- Insert the Energiser lead jack plug into the power socket in the side of the Energiser
- Insert the plug into the chosen plug socket and switch on.
- The green light on the Energiser will flash to indicate power is on.

***15. TEST TRACK WITH A DIGITAL VOLTAGE TESTER***

- Use the Digital Voltage Tester to check that the track is powered
- Test the track at all dead ends to ensure that the entire track is live
- Put one probe to one conductor strip and the other to the second conductor strip
- You should expect to see a reading of between 4,000V and 5,500V (4.0 – 5.5KV)
- If there is no/low power see Troubleshooting.

1 / E-603 — BIRD DETERANT SYSTEM DETAILS

NOT TO SCALE

AS BUILT DRAWING

DATE - 03-02-2018

US Army Corps of Engineers®

CONTRACTOR:

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| | | | |
|---|---|---|---|
| DATE: 3/2/2018 | | | |
| SOLICITATION NO.: | DWN BY: SP | CKD BY: CG | |
| CONTRACT NO.: W912DS-11-D-0001 | SUBMITTED BY: ICE | | |
| FILE NUMBER: | PLOT SCALE: AS_NOTED | ISSUE DATE: | |
| | SIZE: ANSI_D | FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

GOSHOW ARCHITECTS
44 W 28TH ST, 5TH FL
NEW YORK, NY 10001

TIMES SQUARE
RECRUITING STATION RENOVATION
200 W 43RD ST, NEW YORK, NY 10036
GOSHOW PROJECT # 201530

ELECTRICAL DETAILS - 3

SHEET IDENTIFICATION
E-603
SHEET 39 OF 44

CLIN 1

CLIN 1

CLIN 1

CLIN 1

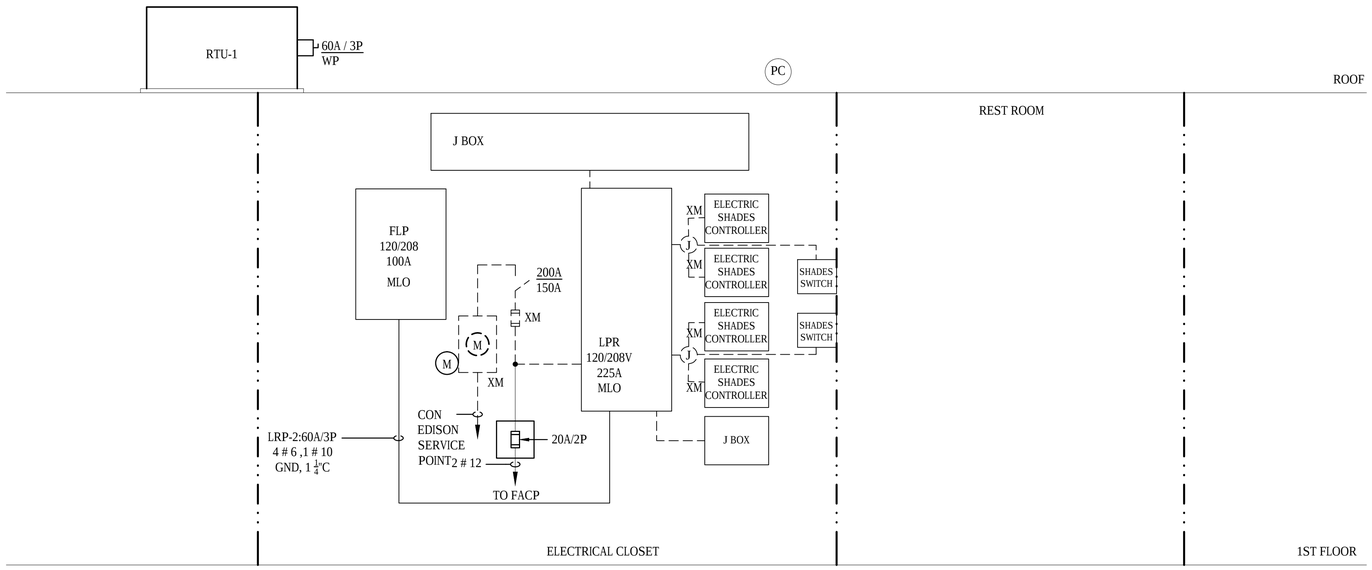
| PROJECT: | US ARMY CORPS OF ENGINEERS - TIME SQUARE | | | PANEL VOLTAGE: | 208 / 120V | | | | AIC RATING: 42,000 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PANEL: | PANEL LPR | | | PHASE & WIRE: | 3PH, 4W | | | | MOUNTING: SURFACE | | | | |
| LOCATION: | ELECTRICAL CLOSET | | | BUS/MAIN (AMPS): | 400 MLO | | | | NOTES: SEE NOTES BELOW | | | | |

| CKT | OCD | | | LOAD (KVA) | | | 3 PH SEQUENCE | | | LOAD (KVA) | | | | OCD | | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | A | P | DESCRIPTION | MISC | REC | LTG | A | B | C | MISC | REC | LTG | DESCRIPTION | A | P | NO. |
| 1 | | | | 6.4 | | | 9.0 | | | 2.6 | | | FLAG LIGHT PANEL 'FLP' | 60 | | 2 |
| 3 | 60 | 3 | RTU-1 | 6.4 | | | | 8.5 | | 2.1 | | | | | | 4 |
| 5 | | | | 6.4 | | | | | 8.5 | 2.1 | | | | | 3 | 6 |
| 7 | 20 | 1 | WIREMOLD | | 1.3 | | 2.5 | | | | 1.3 | | WIREMOLD | 20 | 1 | 8 |
| 9 | 20 | 1 | WIREMOLD | | 1.3 | | | 2.5 | | | 1.3 | | WIREMOLD | 20 | 1 | 10 |
| 11 | 20 | 1 | COPIER | | 1.0 | | | | 2.3 | | 1.3 | | WIREMOLD | 20 | 1 | 12 |
| 13 | 20 | 1 | WIREMOLD | | 0.6 | | 1.6 | | | | | 1.0 | COVE AND COUNTER LIGHTING | 20 | 1 | 14 |
| 15 | 20 | 1 | WIREMOLD | | 0.6 | | | 2.7 | | 2.1 | | | HOT WATER HEATER | 30 | | 16 |
| 17 | 20 | 1 | VIDEO DISPLAY | | 0.2 | | | | 2.3 | 2.1 | | | | | 2 | 18 |
| 19 | 20 | 1 | MICROWAVE | | 1.5 | | 5.3 | | | 3.8 | | | EXTERIOR VIDEO DISPLAY | 40 | | 20 |
| 21 | 20 | 1 | COFFEE MAKER | | 1.2 | | | 5.0 | | 3.8 | | | | | | 22 |
| 23 | 20 | 1 | REFRIGERATOR | | 0.7 | | | | 4.5 | 3.8 | | | | | 3 | 24 |
| 25 | 20 | | BASEBOARD HEAT EAST | 1.9 | | | 2.0 | | | | 0.2 | | ROOF RECEPTACLE | 20 | 1 | 26 |
| 27 | | 2 | BASEBOARD HEAT EAST | 1.9 | | | | 2.5 | | | 0.6 | | TROPHY LIGHTING | 20 | 1 | 28 |
| 29 | 20 | | BASEBOARD HEAT EAST | 1.9 | | | | | 2.1 | | 0.2 | | VIDEO DISPLAY | 20 | 1 | 30 |
| 31 | | 2 | BASEBOARD HEAT EAST | 1.9 | | | 3.8 | | | 1.9 | | | BASEBOARD HEAT WEST | 20 | | 32 |
| 33 | 20 | 1 | VANITY/CABINET/FAN GFI | 0.1 | 0.2 | | | 2.1 | | 1.9 | | | BASEBOARD HEAT WEST | | 2 | 34 |
| 35 | 20 | 1 | SPARE | | | | | | 1.9 | 1.9 | | | BASEBOARD HEAT WEST | 20 | | 36 |
| 37 | 20 | 1 | WINDOW SHADES WEST | 0.2 | | | 2.1 | | | 1.9 | | | BASEBOARD HEAT WEST | | 2 | 38 |
| 39 | 20 | 1 | WINDOW SHADES EAST | 0.2 | | | | 0.4 | | 0.2 | | | TIMECLOCK, RELAY PNL, MISC. EQUIP. | 20 | 1 | 40 |
| 41 | 20 | 1 | SPARE | | | | | | 1.0 | 1.0 | | | HEAT TRACING GFI BREAKER | 20 | 1 | 42 |
| 43 | 20 | 1 | BIRD SHOCK SYSTEM | 0.2 | | | 0.4 | | | | 0.2 | | CENTRAL EXCHANGE UNIT | 20 | 1 | 44 |
| 45 | 20 | 1 | BIRD DETERRANT SYSTEM | 0.2 | | | | 0.4 | | | 0.2 | | PoE SWITCH | 20 | 1 | 46 |
| 47 | 50 | | SNOW MELT PANEL 'SMP' | 4.0 | | | | | 4.2 | | 0.2 | | 55" MONITOR | 20 | 1 | 48 |
| 49 | | | | 4.0 | | | 4.2 | | | | 0.2 | | 55" MONITOR | 20 | 1 | 50 |
| 51 | | 3 | | 4.0 | | | | 4.7 | | | | 0.7 | FLAG POLE SITE LIGHTING | 20 | 1 | 52 |
| 53 | 20 | 1 | SPARE | | | | | | 0.6 | | 0.6 | | WIREMOLD | 20 | 1 | 54 |
| SUB-TOTAL CONNECTED LOAD (KVA) | | | | 39.5 | 8.5 | 0.0 | 31 | 29 | 27 | 31.2 | 6.1 | 1.7 | | | | |
| CONNECTED LOAD THIS SECTION (KVA) | | | | 70.7 | 14.6 | 1.7 | | | | | | | | | | |
| TOTAL CONNECTED LOAD (KVA) | | | | 70.7 | 14.6 | 1.7 | | | | | | | | | | |
| DEMAND FACTOR | | | | 1.0 | 1.0 | 1.0 | | | | | | | | | | |
| TOTAL DEMAND LOAD (KVA) | | | | 70.7 | 12.3 | 1.7 | | | | | | | | | | |

| | |
|---|---|
| DEMAND LOAD (KVA) | 84.7 |
| SPARE LOAD (KVA) | 16.9 |
| TOTAL DEMAND (KVA) | 101.6 |
| LINE CURRENT (AMPS) | 282 |

X= 1ST 10KVA @ 100%, + REMAINDER @ 50% (2002 N.E.C. 220-13)

CIRCUITS 11, 24, 25, 28, 29, 32, 36, 37, 39,40, 42 AND 52 ARE EXISTING CIRCUITS IN EXISTING PANEL 'LPR' TO BE BOXED AND EXTENDED TO INDICATED CIRCUIT IN NEW PANEL 'LPR'




1 E-901 ELECTRICAL RISER DIAGRAM

NOT TO SCALE

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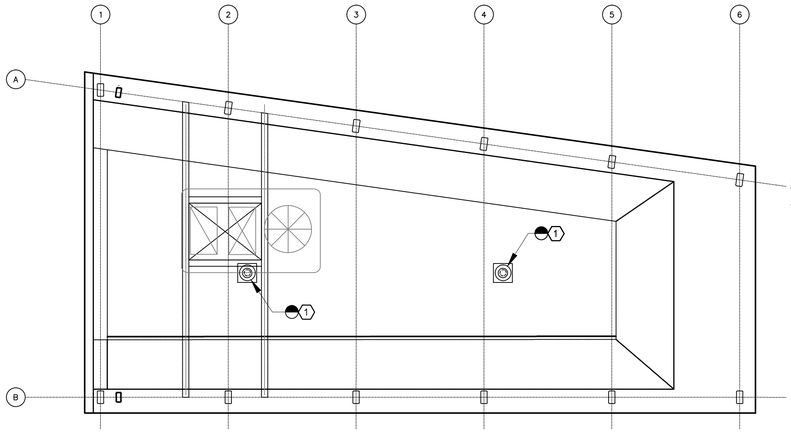
ELECTRICAL RISER DIAGRAM

SHEET IDENTIFICATION
E-901
SHEET 40 OF 44



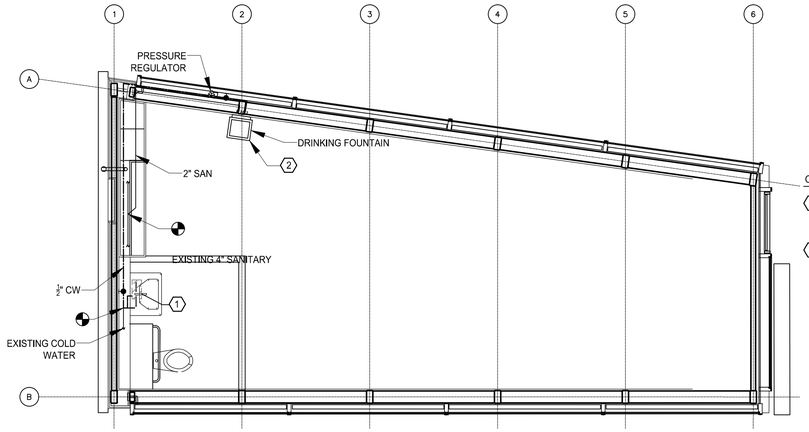

CODED NOTES:

1. REMOVE EXISTING ROOF DRAINS AND REPLACE WITH NEW SIMILAR TO SMITH # 1409, 14" FLANGE , PIPE OUT SIZE TO MATCH EXISTING. CONNECT NEW RD TO EXISTING PIPING.

## 1 P-101 ROOF PLUMBING PLAN

SCALE: 1/4" = 1'-0"

0 2' 4' 8'




CODED NOTES:

1. REMOVE EXISTING INSTANTANEOUS ELECTRIC WATER HEATER AND REPLACE WITH EEMAX MODEL # SP4208, 4.1 KW, 208V, 1PH. UNIT SHALL BE RATED FOR 0,5 GPM.
2. FURNISH AND INSTALL NEW DRINKING FOUNTAIN ALONG WITH ASSOCIATED COLD WATER AND SANITARY PIPING. CONNECT TO EXISTING PLUMBING SYSTEMS.

## 2 P-101 FIRST FLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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SHEET IDENTIFICATION
P-101
SHEET 41 OF 44

1. THE SCOPE OF THIS WORK INCLUDES THE UPGRADE OF THE EXISTING FIRE ALARM SYSTEM WITH THE INSTALLATION OF A COMPLETE, ELECTRONICALLY SUPERVISED, MANUAL AND AUTOMATIC FIRE ALARM SYSTEM WITH A SIMPLEX FIRE ALARM CONTROL PANEL. SYSTEM SHALL BE COMPLIANT WITH NFPA 70, (2011 EDITION), NFPA 72 (2010 EDITION).

2. PROVIDE SMOKE DETECTORS AT THE LOCATION OF ALL FIRE ALARM CONTROL PANELS (FACP), REMOTE TRANSPONDERS, AND NAC PANELS.

3. PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF NFPA, STATE FIRE MARSHALL/DEPARTMENT OF LABOR & INDUSTRY, AND THOSE OF ANY CITY, STATE, OR FEDERAL AGENCY HAVING JURISDICTION OVER THIS PROJECT.

4. ALL FIRE ALARM CIRCUITS SHALL BE ELECTRICALLY SUPERVISED, AS FOLLOWS:
   NETWORK RISER: STYLE 6
   SIGNALING LINE CIRCUITS: CLASS A, STYLE 6
   INITIATING DEVICE CIRCUITS: CLASS A
   NOTIFICATION APPLIANCE CIRCUITS: CLASS B, STYLE 4

5. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE FIRE ALARM CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. COORDINATE WITH THE MECHANICAL AND ELECTRICAL CONTRACTORS TO PROVIDE ALL INTERCONNECTIONS NECESSARY TO ACCOMPLISH FAN SHUTDOWN AND SMOKE DAMPER OPERATION UPON DUCT DETECTOR ACTUATION

6. LOCATE MANUAL PULL STATIONS WITHIN 5 FEET OF THE EXIT DOOR THEY SERVE, MEASURED HORIZONTALLY. THE OPERATING MECHANISM SHALL BE LOCATED 48 INCHES ABOVE FINISHED FLOOR.

7. THE LENS HEIGHT OF WALL MOUNTED VISUAL NOTIFICATION APPLIANCES (STROBES) SHALL BE LOCATED A MINIMUM 80 INCHES TO A MAXIMUM OF 96" ABOVE THE FINISHED FLOOR.

8. CEILING MOUNTED SMOKE DETECTORS SHALL BE LOCATED NOT LESS THAN 4 INCHES FROM THE NEAREST SIDE WALL AND NOT LESS THAN 36 INCHES FROM ANY HVAC REGISTER. PROVIDE INTERFACE TO BUILDING ACCESS CONTROL SYSTEM TO PROVIDE LOCKED DOOR RELEASE.

9. CEILING MOUNTED SMOKE DETECTORS AND CEILING MOUNTED NOTIFICATION DEVICES SHALL BE CENTERED IN CEILING TILES.

10. COORDINATE WITH CEILING INSTALLER. COORDINATE WORK WITH THAT OF OTHER TRADES. NOTIFY GENERAL CONTRACTOR OF ANY CONFLICTS WITH OTHER TRADES.

11. COORDINATE LOCATIONS OF ALL FIRE ALARM DEVICES WITH ARCHITECTURAL TRIM AND ROOM FINISHES.

12. UL LISTED FIRESTOPPING NEEDED AS A RESULT OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.

13. SUPPLY AND INSTALL AN INTRUSION ALARM SYSTEM AS MANUFACTURED BY SIMPLEX OR APPROVED EQUAL WITH ALL NECESSARY APPURTENANCES REQUIRED FOR A COMPLETE WORKING SYSTEM. SYSTEM SHALL BE SPECIFIED HERIN BUT NOT LIMITED TO THE FOLLOWING:

SECURITY PANEL - 8 HARDWIRED ZONES EXPANDABLE TO 16. PANEL SHALL BE PROGRAMMABLE FROM SECURITY KEYPAD ALLOWING FOR SEVENTEEN USER AUTHORIZATION CODES. PROGRAMMABLE TIMERS FOR ENTRY DELAY, EXIT DELAY, LOOP RESPONSE, SIX STAGE LIGHTING/ TRANSIENT PROTECTION. RECHARGEABLE 12 VOLT 6AMP-HOUR LEAD ACID BATTERY POWER SUPPLY SHALL HAVE REVERSE POLARITY PROTECTION ON BATTERY INPUTS. FLOAT CHARGING CIRCUT SHALL BE 13.8 VOLTS DC.

KEY PAD - TWELVE BUTTON TELEPHONE BUTTON TYPE TOUCH PAD, ALPHA NUMERIC LCD DISPLAY WITH PROGRAMMABLE ZONE DESCRIPTION. TWO LED DISPLAY ("ARMED" AND "POWER"). FOUR WIRE CONNECTION TO CONTROL PANEL.

PASSIVE INFARED MOTION DETECTOR - PROVIDES A TRUE CONTINUOUS WALL-TO-WALL-TO-FLOOR NARROW CURTAIN OF PROTECTION. ALARM CONTACT RATING OF 0.05A (50 MA) AMPS @ 150V DC, SPST WITH INTERNAL 33 OHM PROTECTION RESISTOR. DETECTS TARGETS MOVING FROM 0.5 FT/SEC TO 7.5 FT/SEC, DETECTS TEMPERATURE DIFFERENTIALS AS LOW AS 2 DEGREES CELSIUS.

MAGNETIC DOOR CONTACT - CORROSION RESISTANT,WIDE GAP CAPABILITY, RHODIUM PLATED CONTACTS MADE TO FIT IN A 3/8" DIAMETER HOLE. CONTACT RATING 30 VOLTS MAX.

SIREN/ HORN - HORN INSTALLED IN A WEATHERPROOF ENCLOSURE.

## FIRE ALARM GENERAL NOTES

| | |
|---|---|
| ● | DURESS ALARM SWITCH |
| M | PASSIVE INFARED DETECTOR |
| IAK | INTRUSION ALARM KEYPAD |
| DH | MAGNETIC DOOR CONTACT |
| DL | DOOR LATCH |
| AIM | ADDRESSABLE INPUT MODULE |
| | CEILING MOUNTED SPEAKER/ STROBE |
| M WP | WALL MOUNTED WEATHERPROOF SIREN/HORN |
| D | EXISTING WALL MOUNTED SPEAKER/STROBE TO BE REMOVED |
| | WALL MOUNTED SPEAKER/STROBE |
| IAP | INTRUSION (SECUIRTY) ALARM PANEL |
| FACP D | EXISTING FIRE ALARM CONTROL PANEL TO BE REMOVED |
| FACP | FIRE ALARM CONTROL PANEL |
| ET | EMERGENCY TEXTUAL VISIBLE APPLIANCE |
| | WALL MOUNTED STROBE |
| D | EXISTING SMOKE DETECTOR TO BE REMOVED |
| | SMOKE DETECTOR - PHOTOELECTRIC |
| P D | EXISTING MANUAL PULL STATION TO BE REMOVED |
| P | MANUAL PULL STATION |
| RTS | DUCT SMOKE DETECTOR W/ REMOTE ALARM INDICATING AND TEST SWITCH |

## FIRE ALARM SYMBOLS

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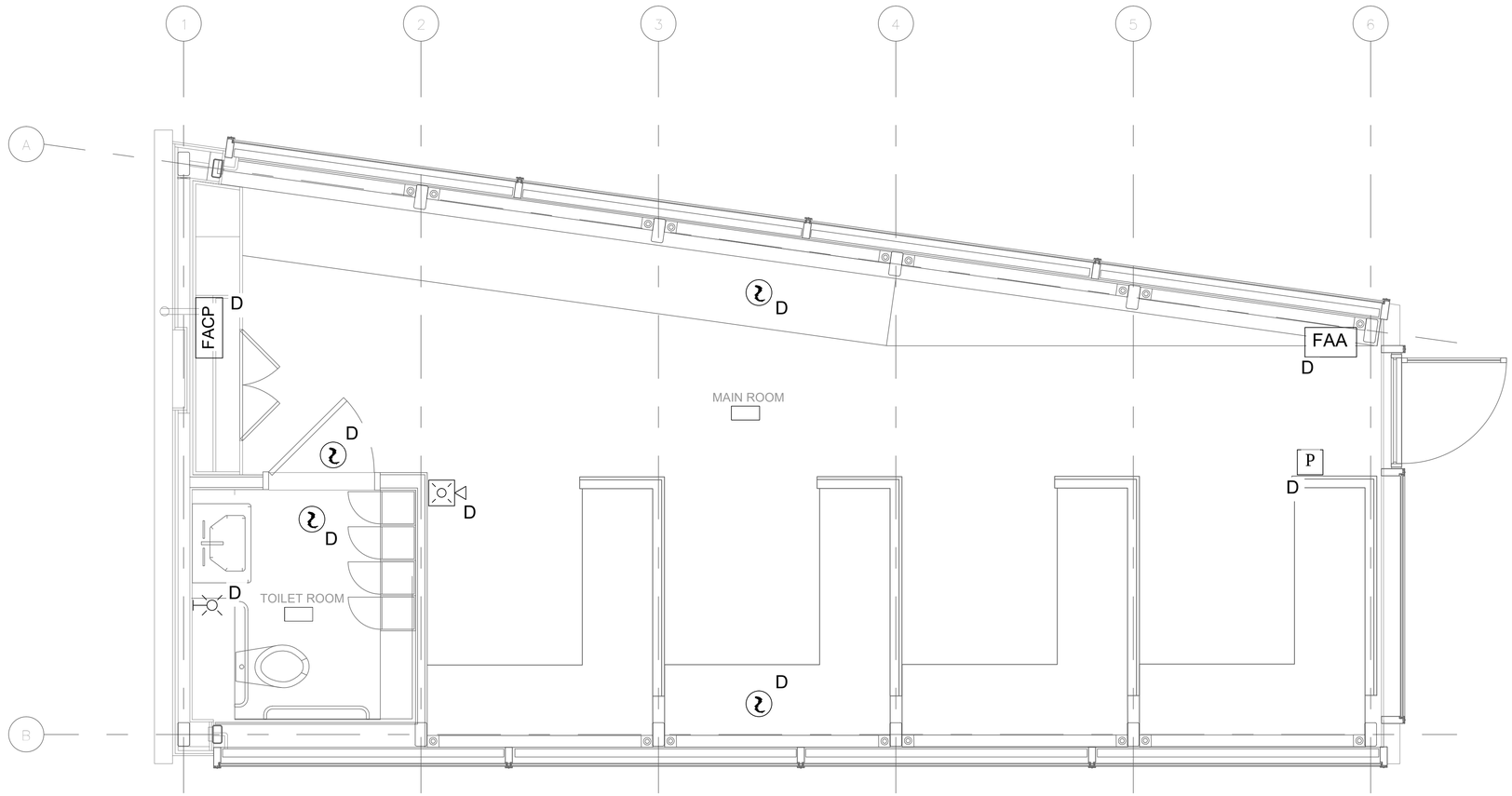
GOSHOW PROJECT # 201530

FIRE ALARM
GENERAL NOTES AND SYMBOLS

SHEET IDENTIFICATION
FA-001
SHEET 42 OF 44




# FIRE ALARM DEMO PLAN

SCALE: 1/2" = 1'-0"

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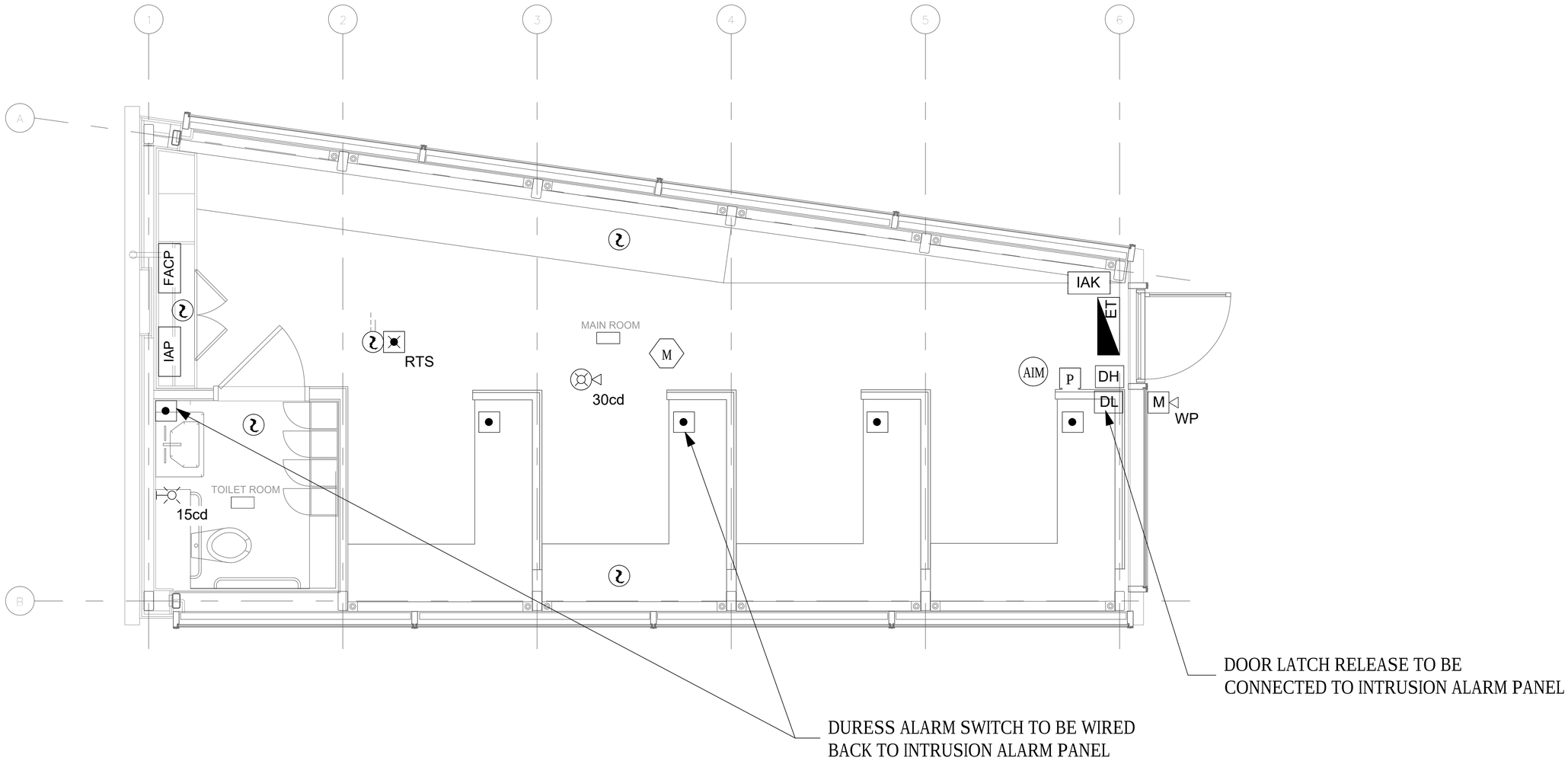
FIRE ALARM DEMO PLAN

SHEET IDENTIFICATION
FA-D101
SHEET 43 OF 44




# FIRE ALARM LAYOUT

SCALE: 1/2" = 1'-0"

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FIRE ALARM LAYOUT

SHEET IDENTIFICATION
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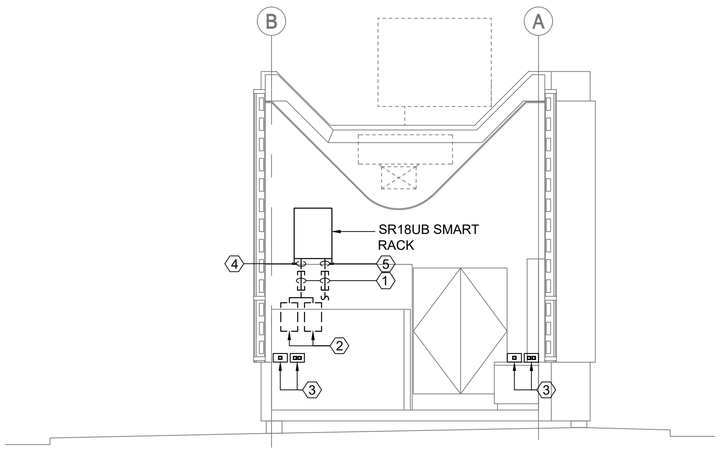
SHEET 44 OF 44

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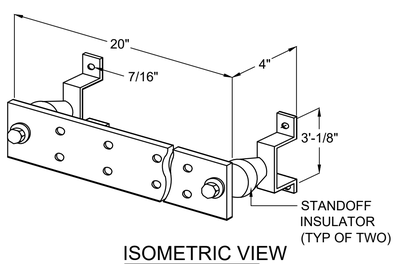
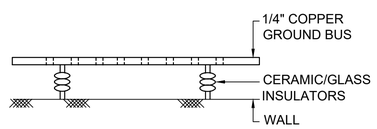
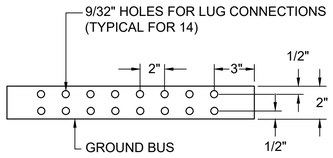



ISOMETRIC VIEW




TEL/DATA GROUND BUS - PLAN VIEW

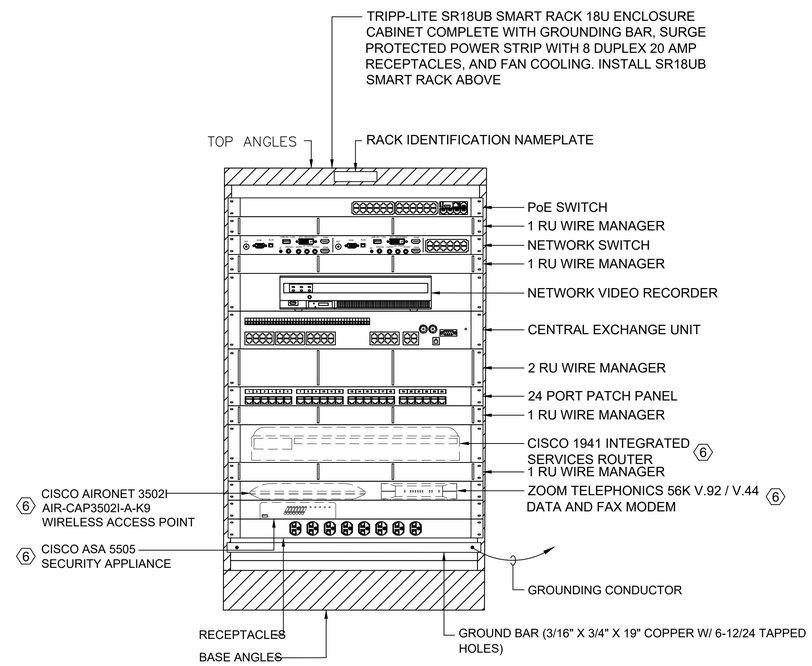



TEL/DATA GROUND BUS- ELEVATION

2 GROUND BUS DETAIL
E-604 NOT TO SCALE

## KEYED NOTES: "#"

1. PROVIDE (2)-2" SLEEVES THROUGH WALL FOR ROUTING OF DATA, CCTV SYSTEM, AND TELEPHONE CABLING. FIRESTOP ALL PENETRATIONS.
2. PROVIDE WALL-MOUNTED CATEGORY 6, TYPE 110 PUNCH-DOWN BLOCKS FOR TERMINATING TELEPHONE CABLES. PROVIDE ANOTHER SET OF PUNCH-DOWN BLOCKS FOR TERMINATING HORIZONTAL CABLES IN THE TELEPHONE / DATA CLOSET IN BACK OF THE BUILDING. PROVIDE CROSS-CONNECTS.
3. FROM EACH TELEPHONE RJ45 JACK PROVIDE ONE FOUR-PAIR CATEGORY 6 CABLE TO WALL-MOUNTED TELEPHONE 110 PUNCH-DOWN BLOCKS IN THE TELEPHONE / DATA CLOSET IN BACK OF THE BUILDING. FROM EACH RJ45 DATA JACK PROVIDE ONE FOUR-PAIR CATEGORY 6 CABLES TO THE CATEGORY 6 PATCH PANEL IN THE SR18UB SMART RACK.
4. PROVIDE 2" EMT WITH ONE 100 PAIR TELEPHONE CABLES TO SERVICE PROVIDER POINT OF PRESENCE.
5. PROVIDE 2" EMT WITH CAT 6 CABLES.
6. EXISTING EQUIPMENT TO REMAIN.




1 TRIPP-LITE SR18UB SMART RACK 18U ENCLOSURE CABINET DETAIL
E-604 NOT TO SCALE

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ELECTRICAL DETAILS - 1

SHEET IDENTIFICATION
E-604
SHEET 45 OF 44

# Attachment C – Structural Report

# FOR REFERENCE ONLY

FOR REFERENCE ONLY

# U.S. Armed Forces
# Time Square Recruiting Station

STRUCTURAL ASSESSMENT REPORT

**FINAL COPY**

09 AUGUST 2024

Contract No. W912DS-20-D-0001

Task Order No. W912DS-24-F-0071

QPK Design Project No. 224158.00

UNITED STATES ARMY CORPS OF ENGINEERS

FOR REFERENCE ONLY

# U.S. Armed Forces
# Time Square Recruiting Station

## STRUCTURAL ASSESSMENT REPORT

**PREPARED FOR**

United States Army Corps of Engineers

New York District

**PREPARED BY**

QPK DESIGN
in association with
CRAWFORD CONSULTING SERVICES

# 1.0 EXECUTIVE SUMMARY


1.1 Purpose / Scope of Work
1.2 Project Background
1.3 Authorization
1.4 Summary of Findings

## 1.1 Purpose / Scope of Work

QPK Design is contracted under Crawford Consulting Services for the United States Army Corps of Engineers (USACE) Contract #W912DS24D0001 to perform a structural engineering study on the U.S. Armed Forces Recruiting Station, located at 200 West 43rd Street in Times Square, New York City to determine the feasibility of installing a technology upgrade, which includes a three-sided, 95 ft. long LED screen on the north, west, and east sides of the existing facility. The new screen is proposed to project approximately 10 ft. above the existing walls. The purpose of this study is to determine the impact of the additional height and weight of the screen on the building structural system.

The complete project design services include:

- Review of available as-built documentation
- Structural field observation and assessment of the existing structure
- Structural analysis of the building frame with the proposed screen
- Submission of a Structural Assessment Report identifying conclusions and recommendations.

## 1.2 Project Background

The U.S. Armed Forces Recruitment center was originally constructed in 1998 and later modified with additional X-bracing (shortly after original construction, date unknown). In 2018 a renovation project included replacement of exterior glass. The building frame is comprised of structural steel tube columns and roof beams. The floor and roof decks consist of 3-inch-deep metal decking. The building is currently supported by two steel beams along the east and west sides. The beams are supported by concrete rib walls spanning across the vault. Each beam is supported at three locations with two expansion anchors at each bearing plate. The building is approximately 18 ft. tall, 34 feet long and tapers in width from 16 ft. wide to 12 ft. wide.

## 1.3 Authorization

This Project Definition Report has been authorized by the U.S. Army Corps of Engineers, New York District.

a. Structural Standards

- UFC 3-301-01: Structural Design Criteria for Buildings
- UFC 4-010-01: Minimum Antiterrorism Standards for Buildings

  *Existing structures are exempt from Progressive Collapse resistance
- IBC 2021: International Building Code
- IEBC 2021: International Existing Building Code

- ICSSC RP 8/NIST GCR 11-917-12: Standards of Seismic Safety for Existing Federally Owned and Leased Buildings
- NYCBC 2022: New York City Building Code

## 1.4 Summary of Findings

The result of this feasibility assessment concluded that the proposed screen produced three deficiencies in the existing building structure:

1. Lateral drift increases from 0.5 in. to 1.25 in. with LED screen (H/400 vs. H/170) (maximum drift occurring at the north end of the building).
2. Marginal overstress in upper north x-brace (15% overstressed) with LED screen.
3. Tension (uplift) demand on existing supports increases by factor of 3 with LED screen.

# 2.0 STRUCTURAL EVALUATION


2.1 Introduction
2.2 Approach
2.3 Process and Observations
2.4 Results
2.5 Conclusions
2.6 Recommendations

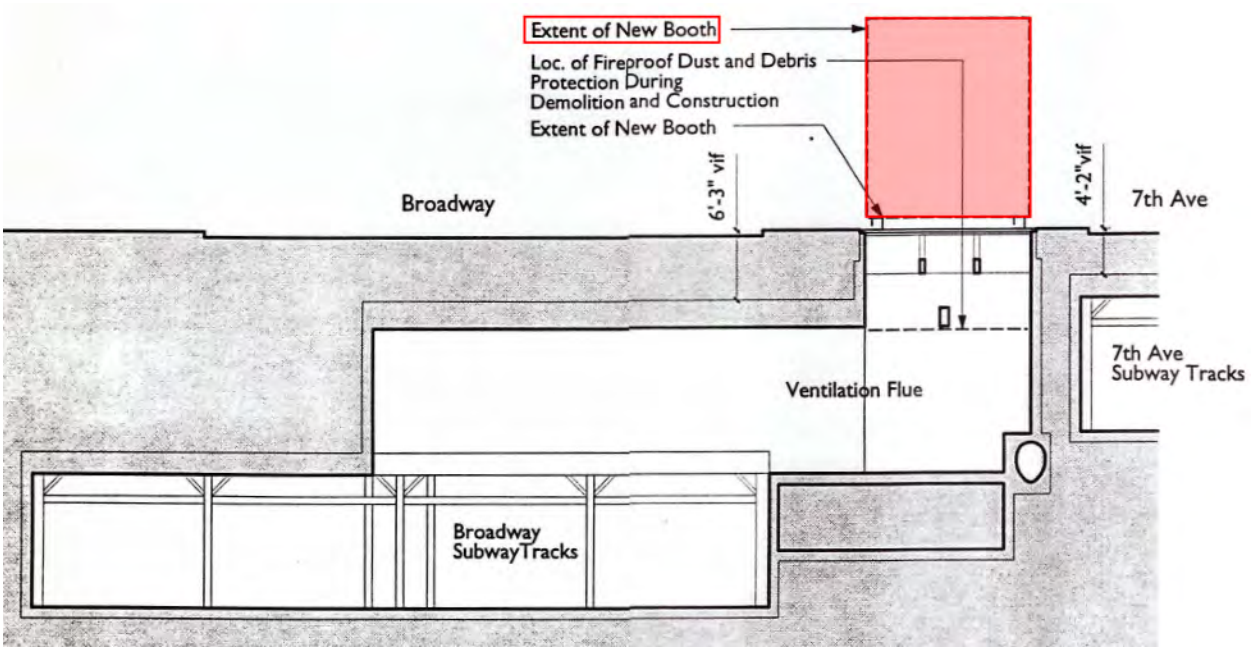


Figure 1: Building Site Cross Section (Parsons Brinckerhoff 1998)

## 2.1 Introduction

Originally constructed in 1998 (with a renovation completed in 2018), The U.S. Armed Forces Recruitment Center is a single story, 450 sq. ft building positioned on "Military Island" in Times Square, NY. The building is constructed above an existing subterranean ventilation vault for the Broadway Avenue subway. This office was provided with the following as-built documentation:

- U.S. Armed Forces Recruiting Station Times Square Construction Documents, dated 7 August 1998 by Parsons Brickerhoff
- Times Square Recruiting Station Renovation As-Built Drawings dated 2 March 2018 by Goshow Architects.

The original floor structure consists of 3-inch metal deck and plywood supported by steel channel purlins spaced approximately 6'-9" on center spanning in the east-west direction. The channels are supported by a W18x65 edge beam along the east and west sides. Each edge beam is supported by three bearing points, anchored to concrete ribs below with ¾ inch expansion anchors. Along the edge beam, vertical HSS 8x4 columns spaced 6'-9" extend up to support the roof structure. Roof structure consists of 3-inch metal deck supported by HSS 8x4 bent beam purlins spanning in the east-west direction.

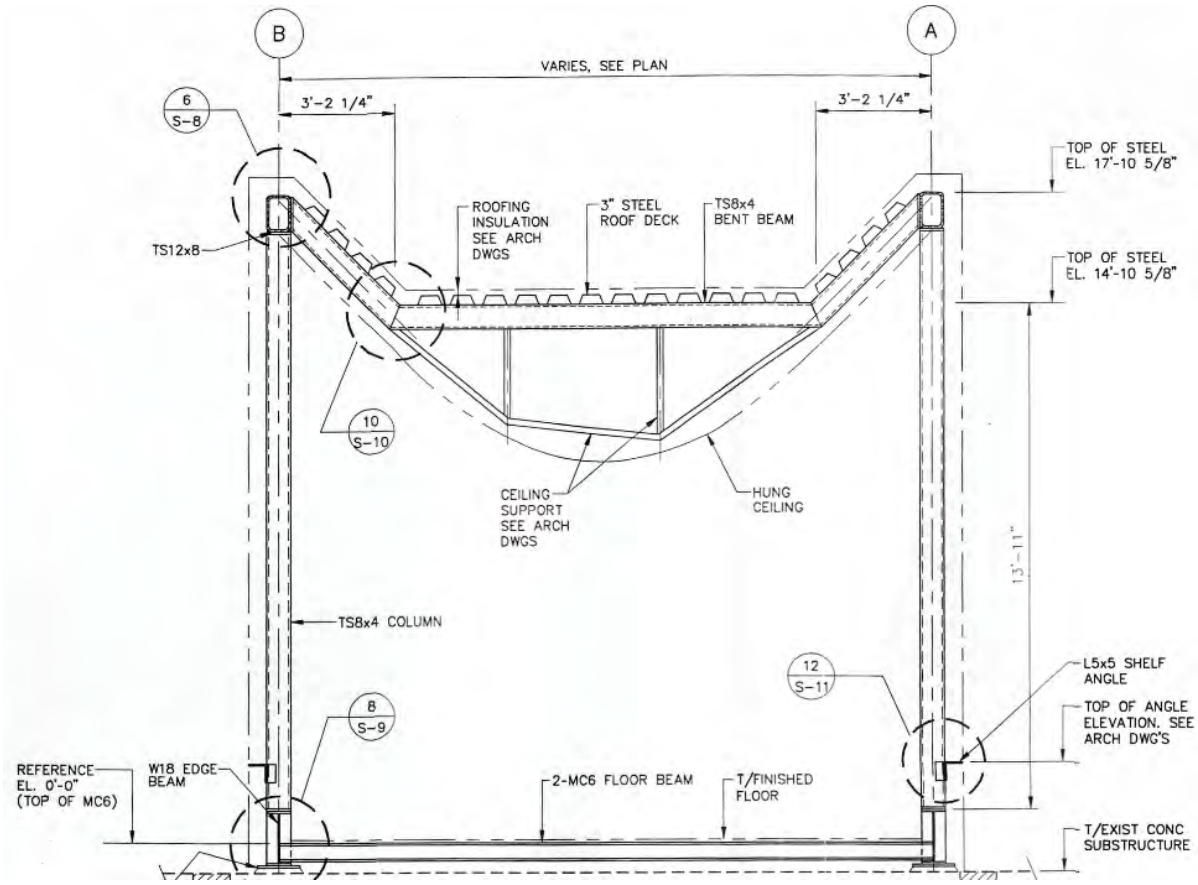


Figure 2: Typical Building Cross Section

The exterior façade consists of a glass curtain wall system along the north, east, and west faces. The south face is stud framed with stainless steel panels and aluminum grating. In 2018, a renovation included replacement of the exterior curtain wall glass panels.

A new LED media advertisement screen is proposed to be installed around the north, east, and west sides of the existing roof. The proposed screen will extend approximately 10 feet above the existing roof level. The screen will be supported by the existing Recruiting Station structural frame. It is our understanding that the supporting structure, bracing, nor connections for the new media screen have not yet been evaluated nor designed at the time of this structural assessment.

Figure 3: Proposed Media Screen Rendering (Clear Channel)

Our work scope for this project is to review and evaluate the proposed media screen and analyze the effect of this screen on the primary building frame. This project will determine the structural feasibility of installing a screen wall proposed to extend 10 feet above the existing roof line, around three sides of the existing building. The structural design of the screen wall support and proposed anchorage to the building is not part of this assessment.

## 2.2 Approach

The primary goal of this assessment is to investigate and analyze the existing structural system and determine if the existing building structural components can accommodate the media screen. We reviewed the existing documentation and developed a computer model of the existing structural frame components. Structural models were developed to establish the as-built condition as well as the proposed condition with the media screen. The structural models were subjected to building code prescribed load cases and a comparative analysis was performed.

## 2.3 Process and Observations

A supplemental field investigation was performed on 25 July 2024. Visible structural components of the building were observed and compared to the as-built documentation. The building is currently in use and occupied. The building is accessed by a man door in the north wall. Finishes and furnishings conceal a large portion of the structural components. The tube columns along the east and west sides are exposed and the sizes were consistent with the drawings.

The exterior façade of the building consists of tinted glass curtain wall on the north, west and east elevations. The south elevation is clad in stainless steel panels and aluminum grating.

Figure 4: North and West Exterior Facade

The as-built drawings do not define lateral bracing for the building, however lateral x-braces were observed on site. Symmetrical x-braces were observed positioned on the inside of the tube columns along the east and west walls. The north wall of the building includes a pair of offset high and low x-braces (in plane), to avoid conflict with the door.

All x-braces in the north, west, and east wall consist of 1 inch diameter steel rod. The braces are bolted to a gusset plate at each end which is welded to the inside face of the exposed tube columns. The south wall includes a x-brace, concealed within the electrical closet. The brace members consist of 4 inch x ½ inch steel plate. The gusset connections at the top and bottom of the braces could not be observed.

Figure 5: Exposed X-Bracing aligned with inside face of HSS Columns

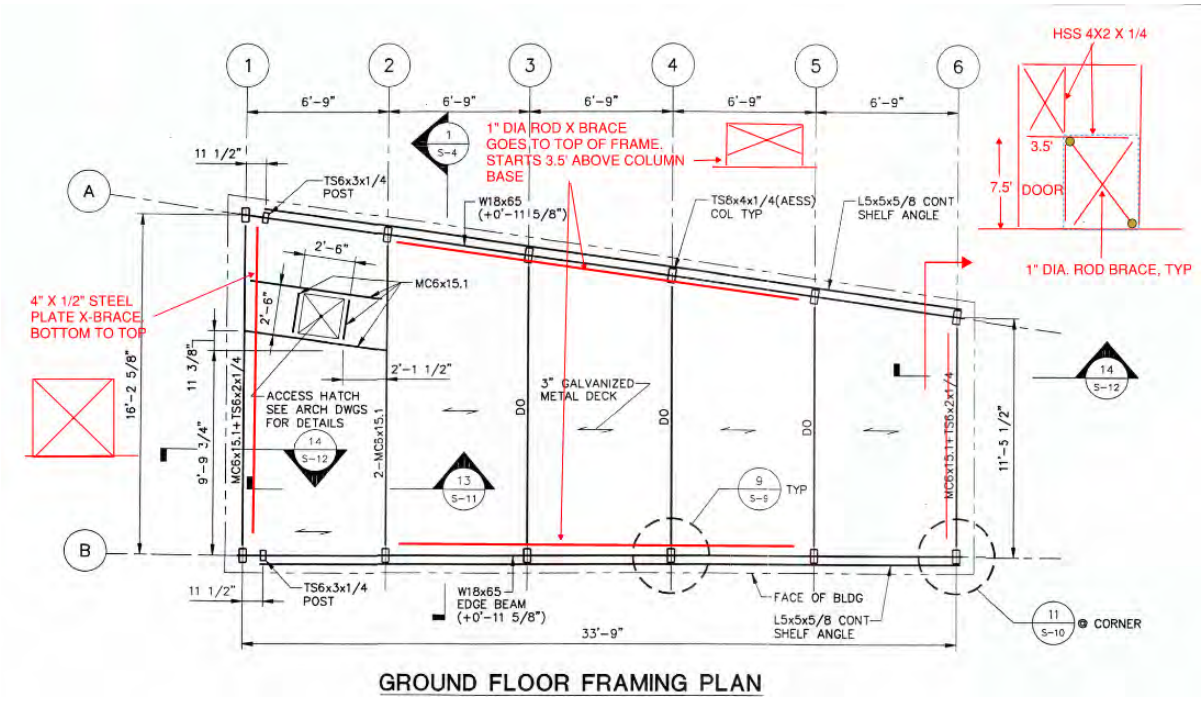


Figure 6: Field Notes Defining Existing Lateral Braces

The exterior perimeter was observed; however, the supporting beam base plate connections were concealed. The building includes a floor hatch toward the south end. The hatch door was opened for observation. No ladder or safety measure exist; therefore, observation of structural components was limited. The underside of the floor deck in the near vicinity was visible. The adjacent supporting concrete rib walls were observed.

Figure 7: Floor Hatch Exposing Concrete Support Ribs Over Ventilation Shaft

No structural deficiencies were observed during this site visit. Aside from the lateral bracing that was observed, the existing structure appears to conform to the provided as-built documentation.

## 2.4 Results

A comparative analysis of two structural computer models was performed. Wind load cases were generated per applicable building codes using a 10 year mean recurrence interval (MRI) wind speed of 80 mph. This is typical engineering procedure for the analysis of lateral frames and estimating lateral drift of a building due to wind forces. Based on our analysis, the existing building lateral drift without the proposed LED screen is approximately 0.5 inches, which equates to a drift ratio of H/400. This is typically acceptable for most curtain wall systems. The existing structure, inclusive of the proposed media screen, will deflect approximately 1.25 inches. The drift ratio with the LED screen is approximately H/170 and may be problematic for the existing curtain wall system and facade. An increase in lateral stiffness of the building may be required to limit the lateral deflection of the building to an acceptable level (i.e. H/400), or as recommended by the curtainwall manufacturer. This may require strengthening of the existing columns, and/or additional structural modifications to increase the lateral stiffness of the building.

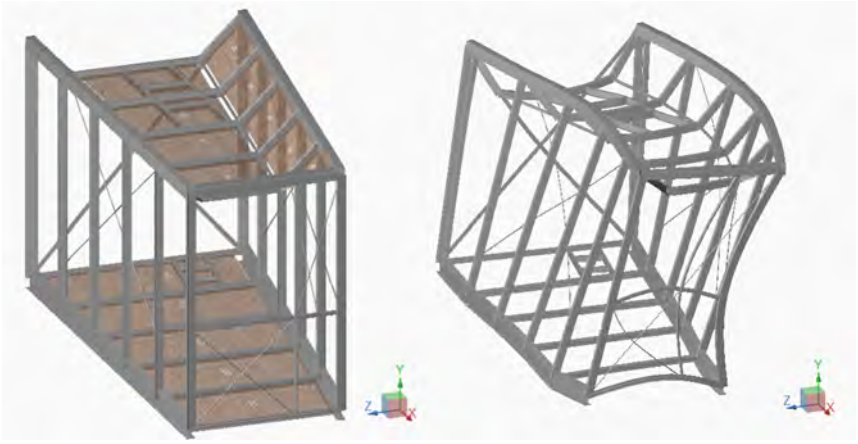

Figure 8: Isometric Views of Analysis Model with the Deflected Shape

One x-brace location (1” diameter rod) is overstressed on the North wall under the additional wind loads from the proposed LED screen. The existing brace loads increased from approximaltey 7,500 lbs. to 18,000 lbs. due to the increase in wind load from the LED screen. This resulted in a diagonal component with an overstress of approximately 15%.

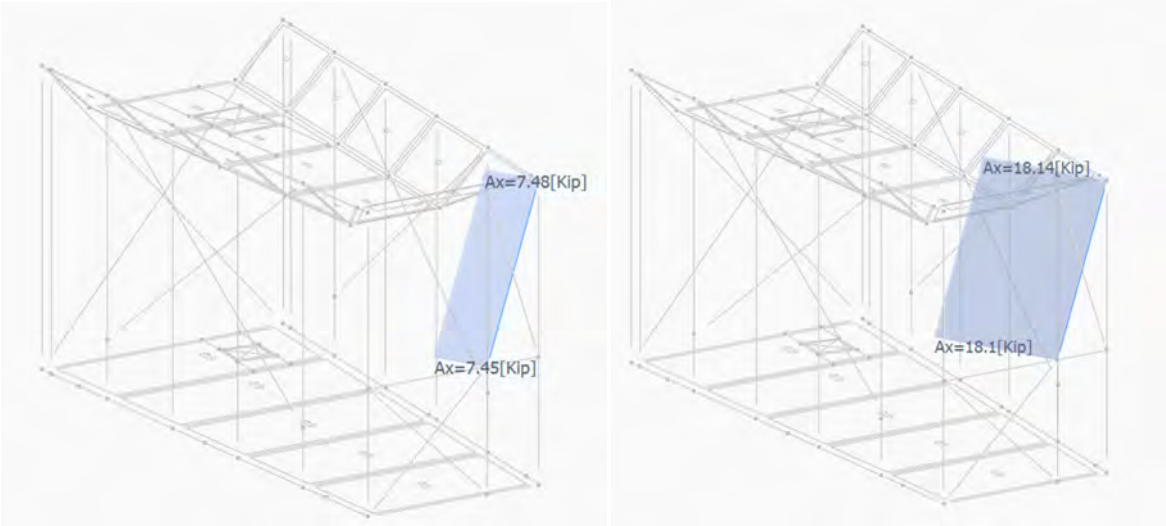


Figure 9: Increase in Demand for North X-Brace Member

The maximum uplift demand on the anchors increased from 6,600 lbs. to 16,600 lbs. due to the additional wind load from the LED screen. The increase in the uplift and shear demands may require additional anchorage locations be added to the existing W18x65 rail beam to the concrete stem walls below and may require retrofit of the existing anchorage locations.

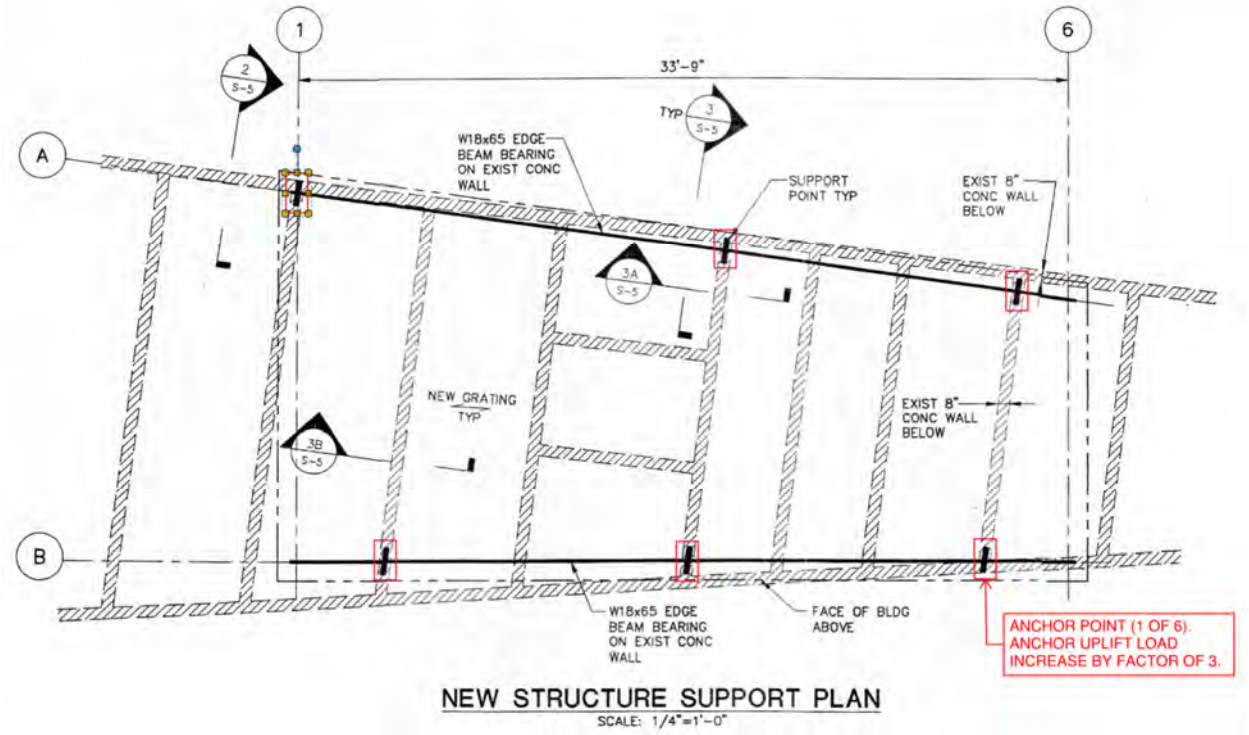


Figure 10: Existing Anchorage and Baseplate Plan

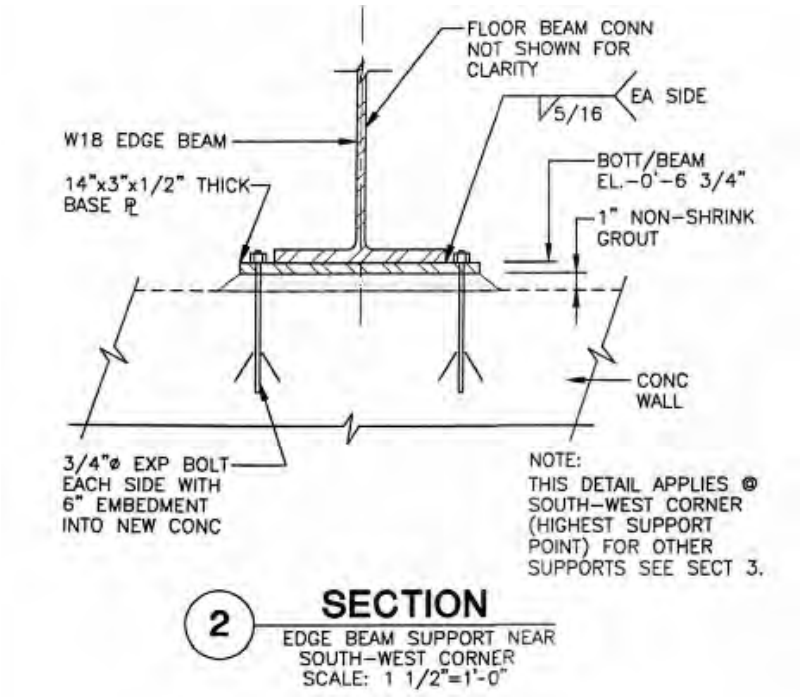


Figure 11: Existing Anchorage Detail

## 2.5 Conclusions

The existing building structure exhibits three deficiencies when subjected to the additional wind load due to increased vertical projection of the surface. The structural deficiencies are explained in further detail:

**1. Increased drift at the existing roof level in the lateral force resisting system:**
The existing roof level of the building will exhibit additional lateral movement due to the increase in wind load on the existing building frame. The original lateral drift for the building roof approximates 0.5 inches, and correlates to H/400. When the building is subjected to the wind load with the proposed screen, the lateral drift may approximate 1.25 inches, or H/170. The lateral movement may be problematic for the existing architectural finishes on the building such exterior curtain wall glass and interior drywall finishes. For reference, although not specifically referencing structural frame drift, the UFGS specifications for Curtain Wall and Glazed Assemblies defines a maximum deflection of 1/175 of its clear span or ¾ inch, whichever is less.

**2. Marginal overstress in the north brace (upper) diagonal member:**
The lateral brace on the north side of the building consists of two in-place offset lateral braces (upper and lower) to avoid conflict with the door. The aspect ratio of the upper brace approaches 3:1. This geometry negatively affects the performance of this brace, and therefore the diagonal members exhibit a marginal overstress due to the increased tension load as a result of the proposed media screen.

**3. Significant increase in uplift at the north support reactions:**
The existing building structure is currently supported by six beam bearing plates that are fastened to the existing concrete subterranean structure with expansion anchors. The two bearing plates at the north end currently resist approximately 6,600 pounds of uplift based on design wind pressures against the building. The maximum uplift reactions increase to approximately 16,600 pounds of uplift due to the increased wind load as a result of the proposed media screen. The existing expansion anchors could not be observed during the field investigation. Expansion anchors are not recommended in dynamic load situations due to their tendency of losing friction between the anchor and substrate. The anchors for this building are subjected to wind load reversals from wind in addition to daily vibrations from the nearby subway system.

## 2.6 Recommendations

At this time, the screen wall support structure has not been completed. We recommend revising this structural assessment following final review of the screen support structure design documents.

Based on our analysis results and conclusions, we offer the following recommendations relative to the three deficiencies:

1. The existing building frame will require additional stiffness to reduce the increased drift as a result of the additional wind forces. Additional stiffness may be accomplished with new steel bracing elements connected to the existing structural steel components exposed and accessible inside the building. The reinforced bracing system shall be designed to limit lateral drift to a maximum of ¾ inch at the roof level.
2. The potential overstress in the north upper brace can be remediated by the addition of another lateral brace adjacent.
3. The supporting rail beams along the east and west sides will require remediation to the bearing supports. Additionally, it may be advantageous to add adhesive anchors to resist the additional uplift.

Figure 12: Recommended North Wall Bracing (Item #2 above)

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DESIGN
ARCHITECTURE
ENGINEERING
SITE & PLANNING

# STRUCTURAL CALCULATIONS FOR BUILDING ASSESSMENT OF U.S. ARMED FORCES RECRUITMENT CENTER AND PROPOSED VIDEO DISPLAY SCREEN

August 2, 2024

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**PREPARED BY:**
**QPK DESIGN**
**QPK NO. 224158.00**
**August 2, 2024**

**STRUCTURAL:**

1. Applicable Publications:

The following have been identified as being applicable to the structural portion of this project:

| | |
|---|---|
| IBC 2021 | International Building Code, International Code Council (2021). |
| ASCE 7-16 | American Society of Civil Engineers - Minimum Design Loads for Buildings and Other Structures (2016). |
| ACI 318-19 | American Concrete Institute Building Code Requirements for Structural Concrete (2019). |
| AISC 15th Ed. | American Institute of Steel Construction, Steel Construction Manual (Fifteenth Edition). |
| NYC BC 2022 | 2022 New York City Building Code |

2. Loading and Design Criteria:

(a) Risk Category — II (NYC BC 2022 1604.5)

(b) Dead Load
Dead loads are gravity-induced loads intended to provide for the permanent requirements of the building occupancy and construction.

Loads:

| | |
|---|---|
| 1) Roof | 10.0 PSF |
| 2) Ground Floor | 5.0 PSF |
| 3) Steel framing | Self-Weight |

(c) Roof Live Loads
This load is based on an ordinary pitched roof.

| | |
|---|---|
| Roof Live Load | 20.0 PSF (NYC BC 2022 1607.1) |

(d) Snow Loads
These loads are based off NYC BC 2022 and will be used for any work on the building. The factors were determined in accordance with ASCE 7-16.

| | |
|---|---|
| 1) Ground snow load, $P_g$ | 25.0 PSF (NYC BC 2022 1608.2) |
| 2) Importance Factor, $I_s$ | 1.0 |
| 3) Exposure Factor, $C_e$ | 1.2 |
| 4) Roof Thermal Factor, $C_t$ | 1.0 |
| 5) Flat Roof Snow Load, $P_f$ | 21.0 PSF |
| 6) Slope Factor, $C_s$ | 1.0 |

(e) Wind Loads

These loads are based off NYC BC 2022 Main Wind Force Resisting System (NYC BC 2022 1609.6.2) and will be used for assessment of the structure.

1) Ultimate Wind Speed, V — 117 MPH (NYC BC 2022 1609.3)
2) Wind Exposure — C (NYC BC 2022 1609.4.3 (1))
3) Lateral Wind Pressure — 32.0 PSF

3. Dead Load from Video Display Addition

The dead load resulting from the self-weight of the screen was 28 kips, as given by Clear Channel. The distribution of the dead load was based on the area of the panel section within its respective side of the structure.

| Dead Loads from Panel Section | | | | |
|---|---|---|---|---|
| Total Weight (lb) | 28000 | | | |
| Panel Location | Panel Height (ft) | Panel Width (ft) | Panel Area (ft^2) | Percent Taking DL |
| East Wall | 9.6 | 40.8 | 391.68 | 38% |
| North Wall | 19.2 | 13.2 | 253.44 | 24% |
| West Wall | 9.6 | 40.8 | 391.68 | 38% |
| | | | 1036.8 | |

| Dead Loads from Panel Section | | | |
|---|---|---|---|
| Total Weight (lb) | | | |
| Panel Location | Total DL (kips) | Beam Length (ft) | Applied Dead Line Load (lb/ft) |
| East Wall | 10.58 | 33.75 | 313.42 |
| North Wall | 6.84 | 11.46 | 597.25 |
| West Wall | 10.58 | 34.1 | 310.20 |
| | 28.00 | | |

4. Snow Load Development

The roof was assessed for a flat roof snow load, calculated using respective factors and equations from ASCE 7-16 as well as a given ground snow load of 25 PSF.

| Solving for Flat Roof Snow Load | | | | | | |
|---|---|---|---|---|---|---|
| | pg (psf) | Ce | Ct | Is | pf (psf) | Cs |
| | 25 | 1.2 | 1 | 1 | 21 | 1 |
| ACI | | 7.3-1 | 7.3-2 | 1.5-2 | 7.3-1 | 7.4-1 |

5. Wind Load Development

The roof canopy was assessed for wind loads relative to the Main Wind Force Resisting System from NYC BC 2022 1609.6.2. Three separate cases were outlined in NYC BC 2022 1609.6.3 and each was assessed for a before and after case with the addition of the Video Display.

| Wind Case : East/West Winds | | | | |
|---|---|---|---|---|
| | | | | |
| Design Pressure p (psf) | 32 | Screen p (psf) | 32 | |
| | | | | |
| Case | Surface | H/2 (ft) | % Pressure Taken | p (psf) |
| | | | | |
| Case 1A | Windward | 9 | 100% | 32 |
| | | | | |
| Case 3 | Windward | 9 | 75% | 24 |
| Case 3 | Sidewall | 9 | 75% | 24 |

| Wind Case : East/West Winds | | | |
|---|---|---|---|
| | | | |
| Design Pressure p (psf) | Building | | |
| | Before Screen | After Screen | From Screen Addition |
| Case | Line Load Applied to beam (lb/ft) | Line Load Applied to beam (lb/ft) | Line Load Applied to beam (lb/ft) |
| | | | |
| Case 1A | 288.00 | 659.37 | 371.37 |
| | | | |
| Case 3 | 216.00 | 583.56 | 367.56 |
| Case 3 | 216.00 | 707.69 | 707.69 |

| Wind Case : North/South Winds | | | | |
|---|---|---|---|---|
| | | | | |
| Design Pressure p (psf) | 32 | Screen p (psf) | 32 | |
| | | | | |
| Case | Surface | H/2 (ft) | % Pressure Taken | p (psf) |
| | | | | |
| Case 1B | Windward | 9 | 100% | 32 |
| | | | | |

| Wind Case : North/South Winds | | | |
|---|---|---|---|
| | | | |
| Design Pressure p (psf) | Building | | |
| | Before Screen | After Screen | From Screen Addition |
| Case | Line Load Applied to beam (lb/ft) | Line Load Applied to beam (lb/ft) | |
| | | 0 | |
| Case 1B | 288 | 707.69 | 707.69 |
| | | | |

| Case 2 - Eccentric Trapezoidal Loading - Highlighted must be equal | | | |
|---|---|---|---|
| Without screen | | | |
| A1 (lb) | h1 (ft) | a1 (lb/ft) | b1 (lb/ft) |
| 3674 | 22 | 118 | 216 |
| A2 (lb) | h2 (ft) | a2 (lb/ft) | b2 (lb/ft |
| 3672 | 12 | 216 | 396 |
| With screen added | | | |
| A1 (lb) | h1 (ft) | a1 (lb/ft) | b1 (lb/ft) |
| 10030 | 22 | 322 | 590 |
| A2 (lb) | h2 (ft) | a2 (lb/ft) | b2 (lb/ft |
| 10030 | 12 | 590 | 1082 |

The calculated pressures were then converted into line loads acting on the roof beams, based on the length of the respective beam. These loads were then applied in RAM Elements.

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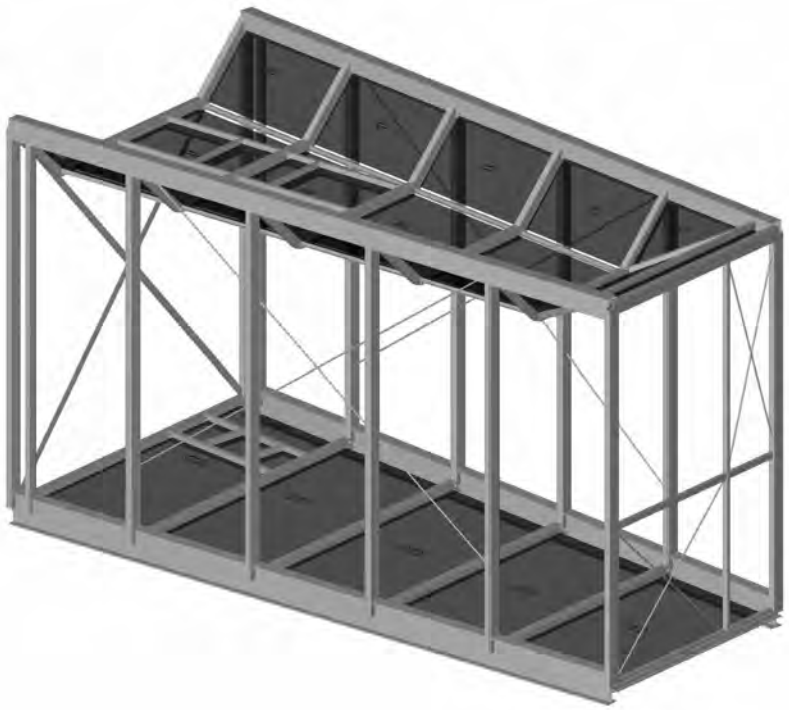

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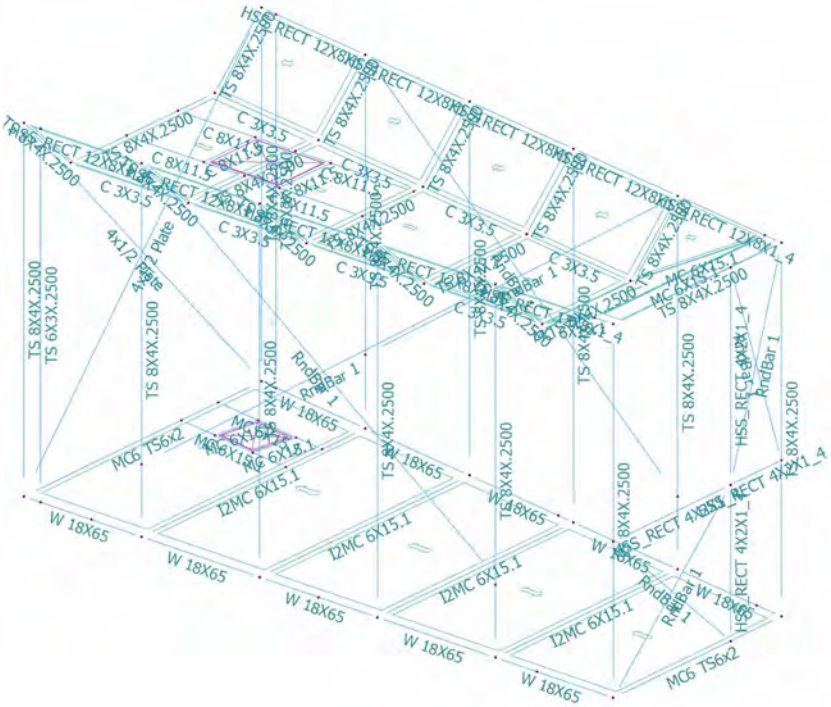

RAM® Elements
CONNECT Edition

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# List of materials

Note.- Only the graphically selected members and shells are listed

## Members:

| Profile | Material | Uweight [Kip/ft] | Length [ft] | Weight [Kip] |
|---|---|---|---|---|
| 4X1/2 PLATE | A36 | 6.82E-03 | 48.310 | 0.329 |
| C 8X11.5 | A992 GR50 | 1.14E-02 | 34.000 | 0.387 |
| HSS_RECT 12X8X1_4 | A500 GRB RECTANGULAR | 3.03E-02 | 67.834 | 2.055 |
| HSS_RECT 4X2X1_4 | A500 GRC RECTANGULAR | 8.25E-03 | 29.358 | 0.242 |
| I2MC 6X15.1 | A992 GR50 | 3.00E-02 | 55.354 | 1.662 |
| MC 6X15.1 | A992 GR50 | 1.50E-02 | 44.207 | 0.664 |
| MC6 TS6X2 | A500 GRC RECTANGULAR | 3.70E-02 | 27.677 | 1.025 |
| RNDBAR 1 | A36 | 2.67E-03 | 143.571 | 0.384 |
| TS 6X3X.2500 | A992 GR50 | 1.39E-02 | 35.800 | 0.496 |
| TS 8X4X.2500 | A500 GRB RECTANGULAR | 1.89E-02 | 309.729 | 5.862 |
| W 18X65 | A992 GR50 | 6.46E-02 | 67.834 | 4.381 |
| Total weight [Kip] | | | | 17.488 |

## Shells:

| Thickness [in] | Material | Uweight [Kip/ft2] | Area [ft2] | Weight [Kip] |
|---|---|---|---|---|
| 3.00000 | A36 | 1.23E-01 | 21.344 | 2.619 |
| Total weight [Kip] | | | | 2.619 |

RAM® Elements
CONNECT Edition

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# Load data

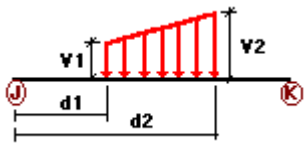
GLOSSARY

Comb : Indicates if load condition is a load combination

## Load Conditions

| Condition | Description | Comb. | Category |
|---|---|---|---|
| DL | Dead Load | No | DL |
| SL | Snow Load | No | SNOW |
| LL | L1 Live Load | No | LL |
| W1A | Wind Load N/S | No | WIND |
| W1B | Wind Load E/W | No | WIND |
| W3 | Wind Load Applied to two sides | No | WIND |
| W2 | Eccentric Wind Load | No | WIND |
| C1 | DL+0.6W1A | Yes | |
| C2 | DL-0.6W1A | Yes | |
| C3 | DL+0.6W1B | Yes | |
| C4 | DL-0.6W1B | Yes | |
| C5 | DL+0.6W3 | Yes | |
| C6 | DL-0.6W3 | Yes | |
| C7 | 0.6DL+0.6W1A | Yes | |
| C8 | 0.6DL-0.6W1A | Yes | |
| C9 | 0.6DL+0.6W1B | Yes | |
| C10 | 0.6DL-0.6W1B | Yes | |
| C11 | 0.6DL+0.6W3 | Yes | |
| C12 | 0.6DL-0.6W3 | Yes | |
| C13 | DL+0.75SL+0.75LL+0.45W1A | Yes | |
| C14 | DL+0.75SL+0.75LL+0.45W1B | Yes | |
| C15 | DL+0.75SL+0.75LL+0.45W3 | Yes | |
| C16 | DL+0.75SL+0.75LL+0.45W2 | Yes | |
| C17 | 0.6DL+0.6W2 | Yes | |
| C18 | DL+0.6W2 | Yes | |
| S1 | DL+0.42W1A | Yes | |
| S2 | DL+0.42W2 | Yes | |
| S3 | DL+0.42W3 | Yes | |

## Distributed force on members



| Condition | Member | Dir1 | Val1 [Kip/ft] | Val2 [Kip/ft] | Dist1 [ft] | % | Dist2 [ft] | % |
|---|---|---|---|---|---|---|---|---|
| DL | 90 | Y | 0.00 | -0.0024 | 0.00 | No | 6.8168 | No |
| | 92 | Y | -0.0169 | -0.0169 | 0.00 | No | 15.2667 | No |
| | | Y | -0.0024 | 0.00 | 99.1733 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | -0.0024 | 94.1297 | Yes | 99.1733 | Yes |
| | 93 | Y | -0.0169 | -0.0169 | 0.00 | No | 15.2667 | No |
| | | Y | -0.0169 | -0.0169 | 0.00 | No | 14.3146 | No |
| | | Y | -0.0169 | 0.00 | 93.7636 | Yes | 100.00 | Yes |
| | 94 | Y | -0.0169 | -0.0169 | 0.00 | No | 14.3146 | No |
| | | Y | -0.0169 | 0.00 | 93.3487 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | -0.0169 | 0.00 | Yes | 93.3487 | Yes |
| | 95 | Y | -0.0169 | -0.0169 | 0.00 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | 0.00 | 92.8748 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | -0.0169 | 0.00 | Yes | 92.8748 | Yes |
| | 96 | Y | -0.0169 | -0.0169 | 0.00 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | 0.00 | 92.3282 | Yes | 100.00 | Yes |
| | | Y | -0.0169 | -0.0169 | 0.00 | Yes | 92.3282 | Yes |
| | 97 | Y | -0.0169 | -0.0169 | 0.00 | Yes | 100.00 | Yes |
| | 102 | Y | 0.00 | -0.0024 | 0.00 | Yes | 100.00 | Yes |
| | 103 | Y | 0.00 | -0.0024 | 0.00 | Yes | 100.00 | Yes |
| | 104 | Y | 0.00 | -0.0024 | 0.00 | Yes | 100.00 | Yes |
| | 109 | Y | 0.00 | -0.0024 | 0.00 | Yes | 100.00 | Yes |
| | 110 | Y | -0.31 | -0.31 | 0.00 | No | 6.8168 | No |
| | | Y | 0.00 | -0.0065 | 0.00 | No | 6.8168 | No |
| | 111 | Y | -0.31 | -0.31 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0065 | 0.00 | Yes | 100.00 | Yes |
| | 112 | Y | -0.31 | -0.31 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0065 | 0.00 | Yes | 100.00 | Yes |
| | 113 | Y | -0.31 | -0.31 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0065 | 0.00 | Yes | 100.00 | Yes |
| | 114 | Y | -0.31 | -0.31 | 0.00 | No | 6.8168 | No |
| | | Y | 0.00 | -0.0055 | 0.00 | Yes | 84.1128 | Yes |
| | | Y | 0.00 | -0.0007 | 84.1128 | Yes | 100.00 | Yes |
| | 115 | Y | -0.60 | -0.60 | 0.00 | No | 11.4583 | No |
| | | Y | -0.0054 | -0.0054 | 0.00 | Yes | 30.1816 | Yes |
| | | Y | -0.0054 | -0.0054 | 30.1816 | Yes | 100.00 | Yes |
| | 116 | Y | -0.313 | -0.313 | 0.00 | No | 6.75 | No |
| | 117 | Y | -0.313 | -0.313 | 0.00 | Yes | 100.00 | Yes |
| | 118 | Y | -0.313 | -0.313 | 0.00 | Yes | 100.00 | Yes |
| | 119 | Y | -0.313 | -0.313 | 0.00 | Yes | 100.00 | Yes |
| | 120 | Y | -0.313 | -0.313 | 0.00 | No | 6.75 | No |
| | 121 | Y | -0.0675 | -0.0675 | 0.00 | No | 4.3772 | No |
| | 122 | Y | -0.0338 | -0.0338 | 0.00 | No | 8.8925 | No |
| | | Y | -0.0338 | -0.0338 | 0.00 | No | 7.9425 | No |
| | | Y | -0.0338 | 0.00 | 89.3168 | Yes | 100.00 | Yes |
| | 123 | Y | -0.0339 | 0.00 | 70.1335 | Yes | 100.00 | Yes |
| | | Y | -0.0339 | -0.0339 | 0.00 | Yes | 70.1335 | Yes |
| | | Y | -0.0339 | -0.0339 | 29.8566 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0339 | 0.00 | Yes | 29.8566 | Yes |
| | 124 | Y | -0.0675 | -0.0675 | 0.00 | No | 4.3772 | No |
| | 125 | Y | -0.0338 | -0.0338 | 0.00 | No | 7.9425 | No |
| | | Y | -0.0338 | -0.0338 | 0.00 | No | 6.9875 | No |
| | | Y | -0.0338 | 0.00 | 6.9875 | No | 7.9425 | No |
| | 126 | Y | -0.0339 | 0.00 | 70.0881 | Yes | 100.00 | Yes |
| | | Y | -0.0339 | -0.0339 | 0.00 | Yes | 70.0881 | Yes |
| | | Y | -0.0339 | -0.0339 | 29.8418 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0339 | 0.00 | Yes | 29.8418 | Yes |
| | 127 | Y | -0.0675 | -0.0675 | 0.00 | No | 4.3772 | No |
| | 128 | Y | -0.0338 | -0.0338 | 0.00 | No | 6.9875 | No |
| | | Y | -0.0338 | 0.00 | 86.3327 | Yes | 100.00 | Yes |
| | | Y | -0.0338 | -0.0338 | 0.00 | Yes | 86.3327 | Yes |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 129 | Y | -0.0339 | -0.0339 | 29.9459 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0339 | 0.00 | Yes | 29.9459 | Yes |
| | | Y | -0.0339 | 0.00 | 70.1154 | Yes | 100.00 | Yes |
| | | Y | -0.0339 | -0.0339 | 0.00 | Yes | 70.1154 | Yes |
| | 130 | Y | -0.0621 | -0.0338 | 0.00 | No | 4.3772 | No |
| | 131 | Y | -0.0658 | -0.0658 | 0.00 | No | 6.0325 | No |
| | 132 | Y | -0.0339 | -0.0339 | 29.9187 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0339 | 0.00 | Yes | 29.9187 | Yes |
| | | Y | -0.0285 | 0.00 | 74.8985 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0285 | 0.00 | Yes | 74.8985 | Yes |
| | 134 | Y | 0.00 | -0.0321 | 0.00 | Yes | 20.5827 | Yes |
| | | Y | -0.0321 | -0.0321 | 20.5827 | Yes | 72.5442 | Yes |
| | | Y | -0.0321 | 0.00 | 72.5442 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0054 | 0.00 | Yes | 1.3029 | Yes |
| | | Y | -0.0054 | -0.0054 | 1.3029 | Yes | 31.0913 | Yes |
| | | Y | -0.0054 | -0.0054 | 31.0913 | Yes | 100.00 | Yes |
| | 135 | Y | -0.0173 | -0.0143 | 0.00 | No | 7.1607 | No |
| | 136 | Y | -0.0112 | -0.0137 | 0.00 | No | 6.8517 | No |
| | 157 | Y | -0.0338 | -0.0338 | 0.00 | Yes | 100.00 | Yes |
| | 158 | Y | -0.0338 | 0.00 | 90.336 | Yes | 100.00 | Yes |
| | | Y | -0.0338 | -0.0338 | 0.00 | No | 8.8925 | No |
| | 159 | Y | -0.0048 | 0.00 | 95.794 | Yes | 100.00 | Yes |
| | | Y | -0.0339 | -0.0048 | 70.134 | Yes | 95.794 | Yes |
| | | Y | -0.0339 | -0.0339 | 0.00 | Yes | 70.134 | Yes |
| | 160 | Y | -0.0065 | -0.0047 | 0.00 | No | 6.8167 | No |
| | 161 | Y | -0.0065 | -0.0047 | 0.00 | No | 6.8165 | No |
| | 162 | Y | -0.0065 | -0.0047 | 0.00 | No | 6.8172 | No |
| | 163 | Y | -0.0065 | -0.0047 | 0.00 | No | 6.8172 | No |
| SL | 110 | Y | 0.00 | -0.0137 | 0.00 | No | 6.8168 | No |
| | 111 | Y | 0.00 | -0.0137 | 0.00 | Yes | 100.00 | Yes |
| | 112 | Y | 0.00 | -0.0137 | 0.00 | Yes | 100.00 | Yes |
| | 113 | Y | 0.00 | -0.0137 | 0.00 | Yes | 100.00 | Yes |
| | 114 | Y | 0.00 | -0.0115 | 0.00 | Yes | 84.1128 | Yes |
| | | Y | 0.00 | -0.0016 | 84.1128 | Yes | 100.00 | Yes |
| | 115 | Y | -0.0113 | -0.0113 | 0.00 | Yes | 30.1816 | Yes |
| | | Y | -0.0113 | -0.0114 | 30.1816 | Yes | 100.00 | Yes |
| | 121 | Y | -0.1418 | -0.1418 | 0.00 | No | 4.3772 | No |
| | 122 | Y | -0.0709 | -0.0709 | 0.00 | No | 8.8925 | No |
| | | Y | -0.0709 | -0.0709 | 0.00 | No | 7.9425 | No |
| | | Y | -0.0709 | 0.00 | 89.3168 | Yes | 100.00 | Yes |
| | 123 | Y | -0.0712 | 0.00 | 70.1335 | Yes | 100.00 | Yes |
| | | Y | -0.0712 | -0.0712 | 0.00 | Yes | 70.1335 | Yes |
| | | Y | -0.0712 | -0.0712 | 29.8566 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0712 | 0.00 | Yes | 29.8566 | Yes |
| | 124 | Y | -0.1418 | -0.1418 | 0.00 | No | 4.3772 | No |
| | 125 | Y | -0.0709 | -0.0709 | 0.00 | No | 7.9425 | No |
| | | Y | -0.0709 | -0.0709 | 0.00 | No | 6.9875 | No |
| | | Y | -0.0709 | 0.00 | 6.9875 | No | 7.9425 | No |
| | 126 | Y | -0.0712 | 0.00 | 70.0881 | Yes | 100.00 | Yes |
| | | Y | -0.0712 | -0.0712 | 0.00 | Yes | 70.0881 | Yes |
| | | Y | -0.0712 | -0.0712 | 29.8418 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0712 | 0.00 | Yes | 29.8418 | Yes |
| | 127 | Y | -0.1418 | -0.1418 | 0.00 | No | 4.3772 | No |
| | 128 | Y | -0.0709 | -0.0709 | 0.00 | No | 6.9875 | No |
| | | Y | -0.0709 | 0.00 | 86.3327 | Yes | 100.00 | Yes |
| | | Y | -0.0709 | -0.0709 | 0.00 | Yes | 86.3327 | Yes |
| | 129 | Y | -0.0712 | -0.0712 | 29.9459 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0712 | 0.00 | Yes | 29.9459 | Yes |
| | | Y | -0.0712 | 0.00 | 70.1154 | Yes | 100.00 | Yes |
| | | Y | -0.0712 | -0.0712 | 0.00 | Yes | 70.1154 | Yes |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 130 | Y | -0.1304 | -0.0709 | 0.00 | No | 4.3772 | No |
| | 131 | Y | -0.1382 | -0.1383 | 0.00 | No | 6.0325 | No |
| | 132 | Y | -0.0712 | -0.0712 | 29.9187 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0712 | 0.00 | Yes | 29.9187 | Yes |
| | | Y | -0.0599 | 0.00 | 74.8985 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0599 | 0.00 | Yes | 74.8985 | Yes |
| | 134 | Y | 0.00 | -0.0674 | 0.00 | Yes | 20.5827 | Yes |
| | | Y | -0.0674 | -0.0674 | 20.5827 | Yes | 72.5442 | Yes |
| | | Y | -0.0674 | 0.00 | 72.5442 | Yes | 100.00 | Yes |
| | | Y | 0.00 | -0.0113 | 0.00 | Yes | 1.3029 | Yes |
| | | Y | -0.0113 | -0.0113 | 1.3029 | Yes | 31.0913 | Yes |
| | | Y | -0.0113 | -0.0114 | 31.0913 | Yes | 100.00 | Yes |
| | 135 | Y | -0.0364 | -0.03 | 0.00 | No | 7.1607 | No |
| | 136 | Y | -0.0235 | -0.0287 | 0.00 | No | 6.8517 | No |
| | 157 | Y | -0.0709 | -0.0709 | 0.00 | Yes | 100.00 | Yes |
| | 158 | Y | -0.0709 | 0.00 | 90.336 | Yes | 100.00 | Yes |
| | | Y | -0.0709 | -0.0709 | 0.00 | No | 8.8925 | No |
| | 159 | Y | -0.01 | 0.00 | 95.794 | Yes | 100.00 | Yes |
| | | Y | -0.0712 | -0.01 | 70.134 | Yes | 95.794 | Yes |
| | | Y | -0.0712 | -0.0712 | 0.00 | Yes | 70.134 | Yes |
| | 160 | Y | -0.0136 | -0.0099 | 0.00 | No | 6.8167 | No |
| | 161 | Y | -0.0136 | -0.0099 | 0.00 | No | 6.8165 | No |
| | 162 | Y | -0.0137 | -0.0099 | 0.00 | No | 6.8172 | No |
| | 163 | Y | -0.0137 | -0.0099 | 0.00 | No | 6.8172 | No |
| LL | 90 | Y | 0.00 | -0.0189 | 0.00 | No | 6.8168 | No |
| | 92 | Y | -0.135 | -0.135 | 0.00 | No | 15.2667 | No |
| | | Y | -0.019 | 0.00 | 99.1733 | Yes | 100.00 | Yes |
| | | Y | -0.135 | -0.019 | 94.1297 | Yes | 99.1733 | Yes |
| | 93 | Y | -0.135 | -0.135 | 0.00 | No | 15.2667 | No |
| | | Y | -0.135 | -0.135 | 0.00 | No | 14.3146 | No |
| | | Y | -0.135 | 0.00 | 93.7636 | Yes | 100.00 | Yes |
| | 94 | Y | -0.135 | -0.135 | 0.00 | No | 14.3146 | No |
| | | Y | -0.135 | 0.00 | 93.3487 | Yes | 100.00 | Yes |
| | | Y | -0.135 | -0.135 | 0.00 | Yes | 93.3487 | Yes |
| | 95 | Y | -0.135 | -0.135 | 0.00 | Yes | 100.00 | Yes |
| | | Y | -0.135 | 0.00 | 92.8748 | Yes | 100.00 | Yes |
| | | Y | -0.135 | -0.135 | 0.00 | Yes | 92.8748 | Yes |
| | 96 | Y | -0.135 | -0.135 | 0.00 | Yes | 100.00 | Yes |
| | | Y | -0.135 | 0.00 | 92.3282 | Yes | 100.00 | Yes |
| | | Y | -0.135 | -0.135 | 0.00 | Yes | 92.3282 | Yes |
| | 97 | Y | -0.135 | -0.135 | 0.00 | Yes | 100.00 | Yes |
| | 102 | Y | 0.00 | -0.0189 | 0.00 | Yes | 100.00 | Yes |
| | 103 | Y | 0.00 | -0.0189 | 0.00 | Yes | 100.00 | Yes |
| | 104 | Y | 0.00 | -0.0189 | 0.00 | Yes | 100.00 | Yes |
| | 109 | Y | 0.00 | -0.0189 | 0.00 | Yes | 100.00 | Yes |
| W1A | 110 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 111 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 112 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 113 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 114 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 116 | 3 | -0.66 | -0.66 | 0.00 | No | 6.75 | No |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 117 | 3 | -0.66 | -0.66 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 118 | 3 | -0.66 | -0.66 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 119 | 3 | -0.66 | -0.66 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 120 | 3 | -0.66 | -0.66 | 0.00 | No | 6.75 | No |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| W1B | 115 | 3 | 0.61 | 0.61 | 0.00 | No | 11.4583 | No |
| W3 | 110 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 111 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 112 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 113 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 114 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 115 | 3 | 0.924 | 0.924 | 0.00 | No | 11.4583 | No |
| | 116 | 3 | -0.584 | -0.584 | 0.00 | No | 6.75 | No |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 117 | 3 | -0.584 | -0.584 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 118 | 3 | -0.584 | -0.584 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 119 | 3 | -0.584 | -0.584 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 120 | 3 | -0.584 | -0.584 | 0.00 | No | 6.75 | No |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| W2 | 110 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 111 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 112 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 113 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 114 | Y | -0.12 | -0.12 | 0.00 | Yes | 100.00 | Yes |
| | 116 | Z | -0.795 | -1.072 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 117 | Z | -0.569 | -0.59 | 0.00 | Yes | 18.50 | Yes |
| | | Z | -0.59 | -0.795 | 18.50 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 118 | Z | -0.486 | -0.569 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 119 | Z | -0.404 | -0.486 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |
| | 120 | Z | -0.322 | -0.404 | 0.00 | Yes | 100.00 | Yes |
| | | Y | 0.12 | 0.12 | 0.00 | Yes | 100.00 | Yes |

## Self weight multipliers for load conditions

| Condition | Description | Self weight multiplier | | | |
|---|---|---|---|---|---|
| | | Comb. | MultX | MultY | MultZ |
| DL | Dead Load | No | 0.00 | -1.00 | 0.00 |
| SL | Snow Load | No | 0.00 | 0.00 | 0.00 |
| LL | L1 Live Load | No | 0.00 | 0.00 | 0.00 |
| W1A | Wind Load N/S | No | 0.00 | 0.00 | 0.00 |
| W1B | Wind Load E/W | No | 0.00 | 0.00 | 0.00 |
| W3 | Wind Load Applied to two sides | No | 0.00 | 0.00 | 0.00 |
| W2 | Eccentric Wind Load | No | 0.00 | 0.00 | 0.00 |
| C1 | DL+0.6W1A | Yes | 0.00 | 0.00 | 0.00 |
| C2 | DL-0.6W1A | Yes | 0.00 | 0.00 | 0.00 |
| C3 | DL+0.6W1B | Yes | 0.00 | 0.00 | 0.00 |
| C4 | DL-0.6W1B | Yes | 0.00 | 0.00 | 0.00 |
| C5 | DL+0.6W3 | Yes | 0.00 | 0.00 | 0.00 |
| C6 | DL-0.6W3 | Yes | 0.00 | 0.00 | 0.00 |
| C7 | 0.6DL+0.6W1A | Yes | 0.00 | 0.00 | 0.00 |
| C8 | 0.6DL-0.6W1A | Yes | 0.00 | 0.00 | 0.00 |
| C9 | 0.6DL+0.6W1B | Yes | 0.00 | 0.00 | 0.00 |
| C10 | 0.6DL-0.6W1B | Yes | 0.00 | 0.00 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| C11 | 0.6DL+0.6W3 | Yes | 0.00 | 0.00 | 0.00 |
| C12 | 0.6DL-0.6W3 | Yes | 0.00 | 0.00 | 0.00 |
| C13 | DL+0.75SL+0.75LL+0.45W1A | Yes | 0.00 | 0.00 | 0.00 |
| C14 | DL+0.75SL+0.75LL+0.45W1B | Yes | 0.00 | 0.00 | 0.00 |
| C15 | DL+0.75SL+0.75LL+0.45W3 | Yes | 0.00 | 0.00 | 0.00 |
| C16 | DL+0.75SL+0.75LL+0.45W2 | Yes | 0.00 | 0.00 | 0.00 |
| C17 | 0.6DL+0.6W2 | Yes | 0.00 | 0.00 | 0.00 |
| C18 | DL+0.6W2 | Yes | 0.00 | 0.00 | 0.00 |
| S1 | DL+0.42W1A | Yes | 0.00 | 0.00 | 0.00 |
| S2 | DL+0.42W2 | Yes | 0.00 | 0.00 | 0.00 |
| S3 | DL+0.42W3 | Yes | 0.00 | 0.00 | 0.00 |

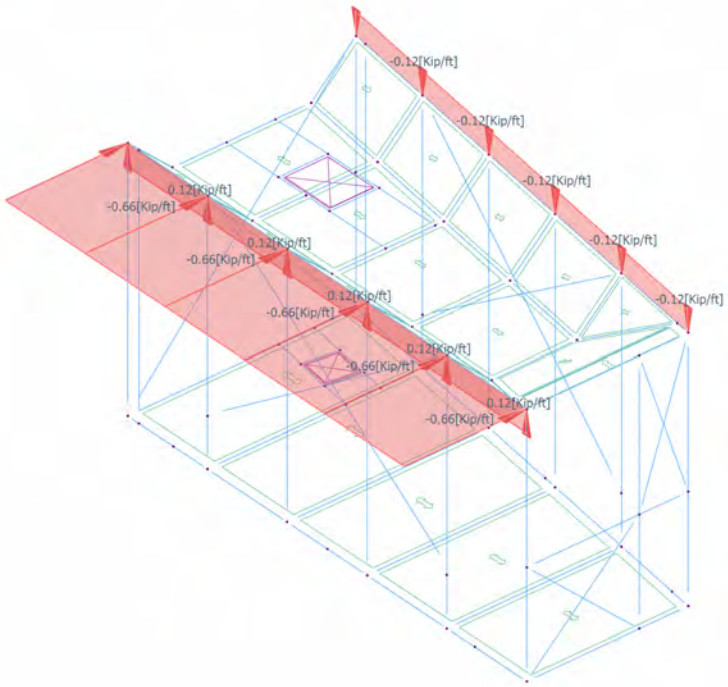
## Earthquake (Dynamic analysis only)

| Condition | a/g | Ang. [Deg] | Damp. [%] |
|---|---|---|---|
| DL | 0.00 | 0.00 | 0.00 |
| SL | 0.00 | 0.00 | 0.00 |
| LL | 0.00 | 0.00 | 0.00 |
| W1A | 0.00 | 0.00 | 0.00 |
| W1B | 0.00 | 0.00 | 0.00 |
| W3 | 0.00 | 0.00 | 0.00 |
| W2 | 0.00 | 0.00 | 0.00 |
| C1 | 0.00 | 0.00 | 0.00 |
| C2 | 0.00 | 0.00 | 0.00 |
| C3 | 0.00 | 0.00 | 0.00 |
| C4 | 0.00 | 0.00 | 0.00 |
| C5 | 0.00 | 0.00 | 0.00 |
| C6 | 0.00 | 0.00 | 0.00 |
| C7 | 0.00 | 0.00 | 0.00 |
| C8 | 0.00 | 0.00 | 0.00 |
| C9 | 0.00 | 0.00 | 0.00 |
| C10 | 0.00 | 0.00 | 0.00 |
| C11 | 0.00 | 0.00 | 0.00 |
| C12 | 0.00 | 0.00 | 0.00 |
| C13 | 0.00 | 0.00 | 0.00 |
| C14 | 0.00 | 0.00 | 0.00 |
| C15 | 0.00 | 0.00 | 0.00 |
| C16 | 0.00 | 0.00 | 0.00 |
| C17 | 0.00 | 0.00 | 0.00 |
| C18 | 0.00 | 0.00 | 0.00 |
| S1 | 0.00 | 0.00 | 0.00 |
| S2 | 0.00 | 0.00 | 0.00 |
| S3 | 0.00 | 0.00 | 0.00 |

RAM® Elements
CONNECT Edition

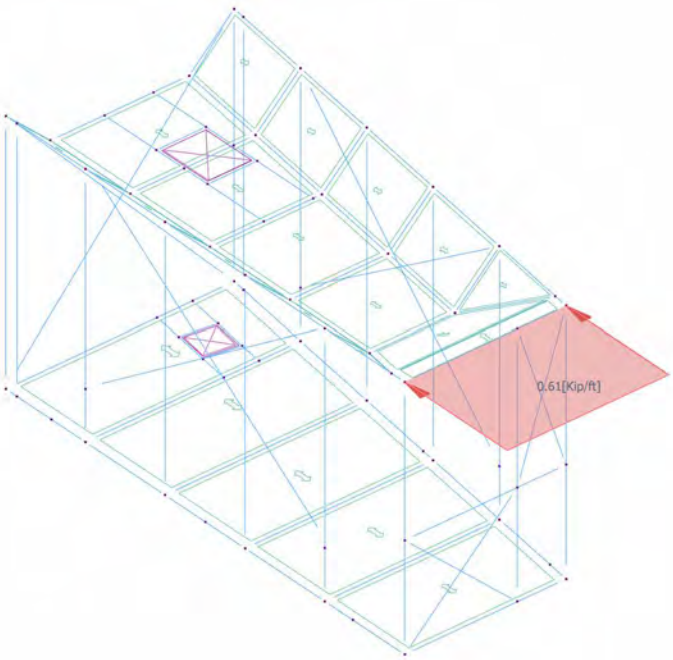
**Current Date:** 8/2/2024 10:19 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Catalina\Existing Structure Model 8.1.retx
**Load condition:** W1A=Wind Load N/S

Loads
Axial force
Distributed user loads - Members



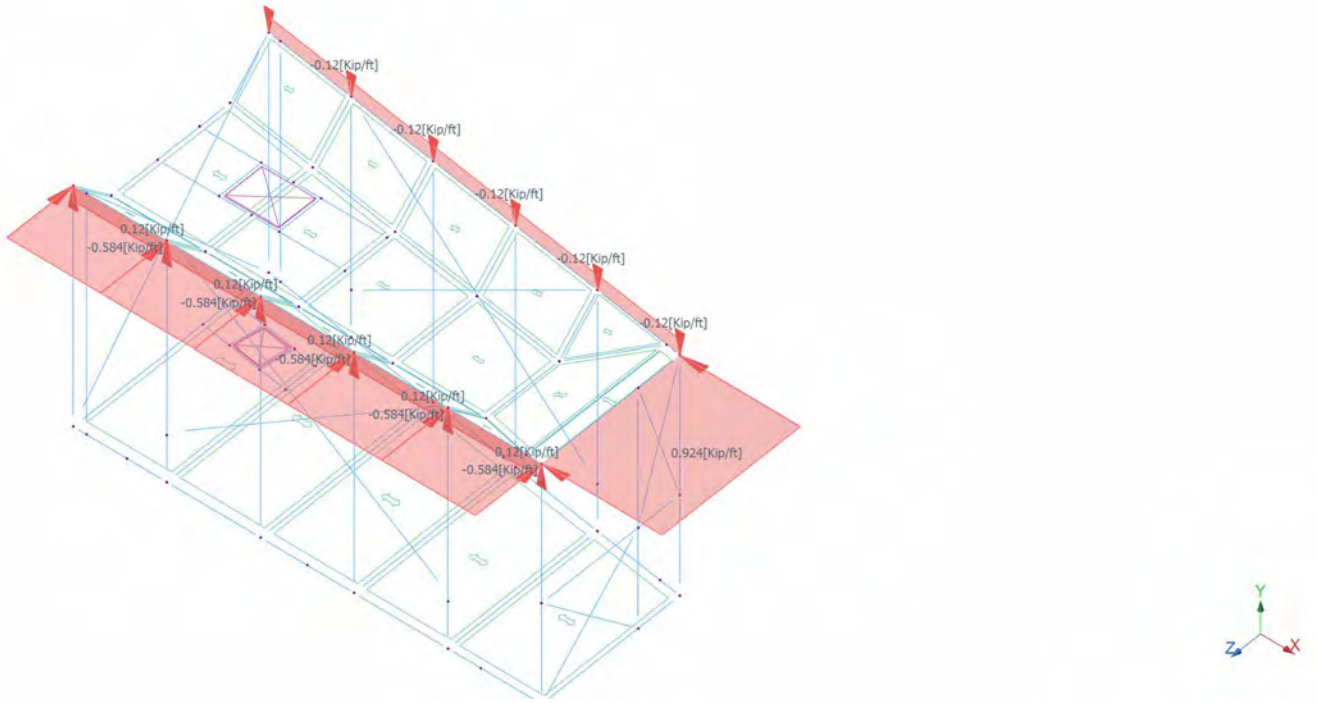
RAM® Elements
CONNECT Edition

**Current Date:** 8/2/2024 10:20 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Catalina\Existing Structure Model 8.1.retx
**Load condition:** W1B=Wind Load E/W



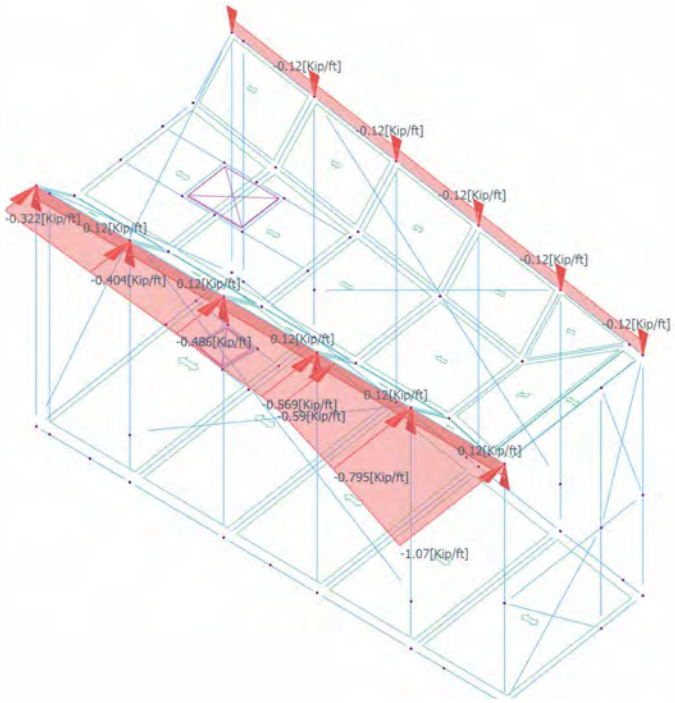
RAM® Elements
CONNECT Edition

**Current Date:** 8/2/2024 10:21 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Catalina\Existing Structure Model 8.1.retx
**Load condition:** W3=Wind Load Applied to two sides



RAM® Elements
CONNECT Edition

**Current Date:** 8/2/2024 10:21 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Catalina\Existing Structure Model 8.1.retx
**Load condition:** W2=Eccentric Wind Load



RAM Elements
CONNECT Edition

**Current Date:** 8/2/2024 12:07 PM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Catalina\Existing Structure Model 8.1.retx

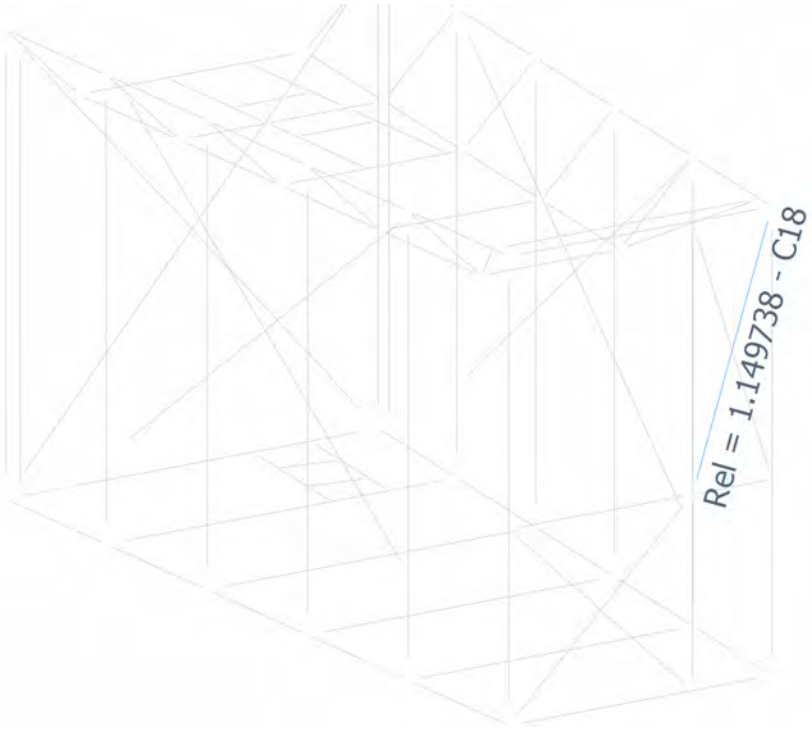
# Steel Code Check

**Report: Summary - Group by section**

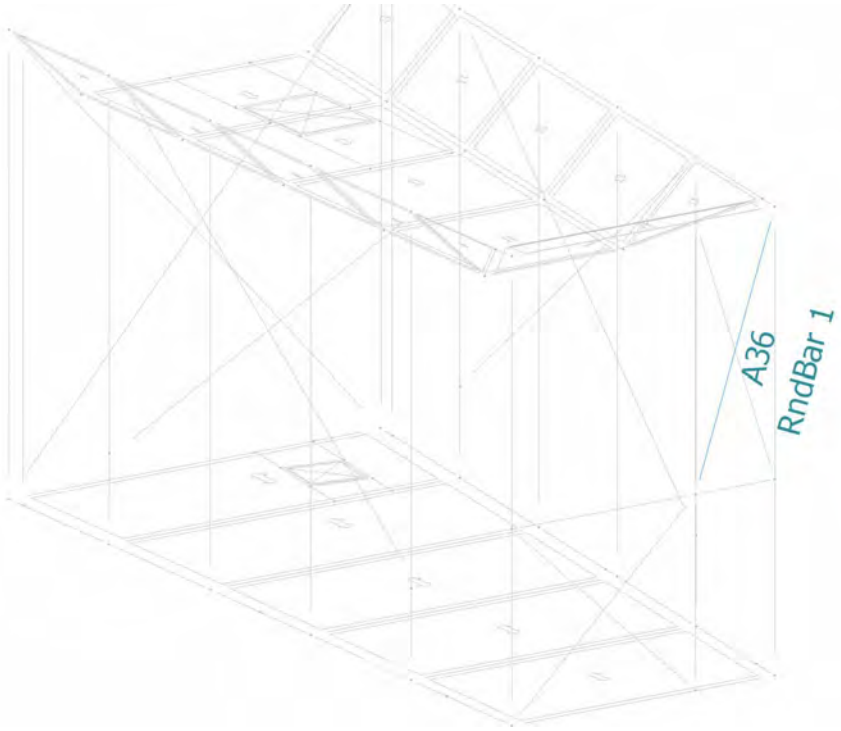
**Load conditions to be included in design :**

C1=DL+0.6W1A
C2=DL-0.6W1A
C3=DL+0.6W1B
C4=DL-0.6W1B
C5=DL+0.6W3
C6=DL-0.6W3
C7=0.6DL+0.6W1A
C8=0.6DL-0.6W1A
C9=0.6DL+0.6W1B
C10=0.6DL-0.6W1B
C11=0.6DL+0.6W3
C12=0.6DL-0.6W3
C13=DL+0.75SL+0.75LL+0.45W1A
C14=DL+0.75SL+0.75LL+0.45W1B
C15=DL+0.75SL+0.75LL+0.45W3
C16=DL+0.75SL+0.75LL+0.45W2
C17=0.6DL+0.6W2
C18=DL+0.6W2

| Description | Section | Member | Ctrl Eq. | Ratio | Status | Reference |
|---|---|---|---|---|---|---|
| 1" D Rod X-brace | *RndBar 1* | 380 | C18 at 40.63% | 1.15 | N.G. | |
| 4x1/2 X-brace | *4x1/2 Plate* | 171 | C1 at 100.00% | 0.41 | With warnings | |
| Access Hatch Support | *MC 6X15.1* | 99 | C7 at 0.00% | 0.02 | OK | |
| Column | *TS 8X4X.2500* | 154 | C6 at 78.13% | 0.60 | OK | |
| HSS 12x8x1/4 | *HSS_RECT 12X8X1_4* | 110 | C15 at 100.00% | 0.67 | OK | |
| HSS 4x2x1/4 | *HSS_RECT 4X2X1_4* | 476 | C2 at 0.00% | 0.93 | OK | |
| L1 Edge Girder | *MC6 TS6x2* | 97 | C2 at 31.25% | 0.33 | OK | |
| L1 Interior Girder | *I2MC 6X15.1* | 93 | C13 at 54.17% | 0.20 | With warnings | |
| L2 Edge Girder | *TS 8X4X.2500* | 115 | C6 at 50.00% | 0.79 | OK | |
| POST | *TS 6X3X.2500* | 144 | C15 at 100.00% | 0.51 | OK | |
| Roof Girder | *TS 8X4X.2500* | 158 | C1 at 72.92% | 0.57 | OK | |
| Roof Opening Members | *C 8X11.5* | 141 | C2 at 0.00% | 0.95 | OK | |
| Roof Sloped MC6 | *MC 6X15.1* | 134 | C16 at 50.00% | 0.33 | OK | |
| W18X65 | *W 18X65* | 109 | C18 at 75.00% | 0.30 | OK | |


Rel = 1.149738 - C18

Y
Z
X


A36
RndBar 1

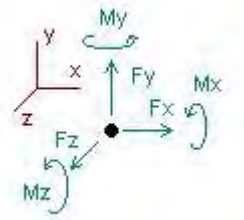
Y
Z
X

RAM® Elements
CONNECT Edition

**Current Date:** 8/2/2024 11:48 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Fisher\Existing Structure Model WF mod 7.31.retx

# Analysis result

## Reactions




*Direction of positive forces and moments*

| | Forces [Kip] | | | Moments [Kip*ft] | | |
|---|---|---|---|---|---|---|
| **Node** | **FX** | **FY** | **FZ** | **MX** | **MY** | **MZ** |
| Condition **ACIa=1.4DL** | | | | | | |
| 69 | -0.18074 | 8.72473 | -0.08390 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.03332 | 9.58893 | 0.00170 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.13692 | 16.26774 | -0.03498 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.00860 | 11.23759 | -0.00618 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.13565 | 17.59954 | -0.01656 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 0.13755 | 11.42008 | 0.13993 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 74.83861 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIb=1.2DL+0.5SL+1.6LL** | | | | | | |
| 69 | -0.30922 | 12.00808 | -0.15419 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.09321 | 15.81986 | -0.01087 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.23355 | 18.13091 | -0.07160 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.01969 | 15.57063 | -0.00940 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.22685 | 25.70883 | -0.02150 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 0.18962 | 12.52518 | 0.26756 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 99.76349 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIc1=1.2DL+1.6SL+0.5W1A** | | | | | | |
| 69 | -0.24561 | 16.03409 | 4.65267 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.14240 | 17.87038 | 0.11913 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.37363 | 2.94192 | -2.60674 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.00513 | 3.23493 | 0.65524 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.24401 | 21.74310 | -0.02275 | 0.00000 | 0.00000 | 0.00000 |
| 150 | -0.03153 | 20.66249 | 8.33995 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 82.48692 | 11.13750 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIc2=1.2DL+1.6SL+0.5W2** | | | | | | |
| 69 | -0.21980 | 14.47535 | 3.22855 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.12119 | 17.29674 | 0.08609 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.28975 | 2.45953 | -2.71433 | 0.00000 | 0.00000 | 0.00000 |
| 148 | -0.00340 | 5.49855 | 0.54725 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.19014 | 21.44869 | -0.01902 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 0.00241 | 21.30806 | 8.79598 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SUM | 0.00000 | 82.48692 | 9.92451 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIc3=1.2DL+1.6SL+0.5W3** | | | | | |
| 69 | 0.21762 | 16.64730 | 4.13719 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.99394 | 16.02594 | 0.09057 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 2.30773 | 3.45649 | -2.27972 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.10065 | 6.78474 | 0.52599 | 0.00000 | 0.00000 | 0.00000 |
| 149 | 0.84979 | 21.85520 | 0.14221 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 0.82400 | 17.71725 | 7.23876 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 5.29373 | 82.48692 | 9.85500 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId1=1.2DL+0.5SL+W1A** | | | | | |
| 69 | -0.13292 | 20.74674 | 9.46959 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.14387 | 21.08424 | 0.25960 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.43147 | -11.51981 | -5.12129 | 0.00000 | 0.00000 | 0.00000 |
| 148 | -0.02090 | -8.57660 | 1.37426 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.23365 | 19.39692 | -0.03582 | 0.00000 | 0.00000 | 0.00000 |
| 150 | -0.18788 | 28.78083 | 16.32867 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 69.91232 | 22.27500 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId2=1.2DL+0.5SL+W2** | | | | | |
| 69 | -0.07441 | 17.64056 | 6.62477 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.11010 | 20.00076 | 0.18392 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.28296 | -12.49499 | -5.33422 | 0.00000 | 0.00000 | 0.00000 |
| 148 | -0.08113 | -4.09768 | 1.16408 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.12010 | 18.81253 | -0.02165 | 0.00000 | 0.00000 | 0.00000 |
| 150 | -0.11742 | 30.05115 | 17.23213 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 69.91232 | 19.84902 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId3=1.2DL+0.5SL+W3** | | | | | |
| 69 | 0.43493 | 22.20768 | 8.43866 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 1.79908 | 17.46379 | 0.20190 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 4.19707 | -10.29623 | -4.42833 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.16507 | -1.68725 | 1.11771 | 0.00000 | 0.00000 | 0.00000 |
| 149 | 2.12575 | 19.37446 | 0.32117 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 1.86557 | 22.84985 | 14.05889 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 10.58747 | 69.91232 | 19.71000 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIf1=0.9DL+W1A** | | | | | |
| 69 | -0.04880 | 18.17892 | 9.50792 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.11908 | 17.87510 | 0.25761 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.37613 | -15.63944 | -5.09800 | 0.00000 | 0.00000 | 0.00000 |
| 148 | -0.05821 | -12.02604 | 1.39220 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.17304 | 13.96341 | -0.02877 | 0.00000 | 0.00000 | 0.00000 |
| 150 | -0.21517 | 25.79869 | 16.24405 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 48.15063 | 22.27500 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIf2=0.9DL+W2** | | | | | |
| 69 | 0.01108 | 15.07498 | 6.66377 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 0.08695 | 16.80394 | 0.18008 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 0.23129 | -16.61653 | -5.31048 | 0.00000 | 0.00000 | 0.00000 |
| 148 | -0.12678 | -7.55654 | 1.18316 | 0.00000 | 0.00000 | 0.00000 |
| 149 | -0.05835 | 13.37990 | -0.01331 | 0.00000 | 0.00000 | 0.00000 |
| 150 | -0.14419 | 27.06488 | 17.14580 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SUM | 0.00000 | 48.15063 | 19.84902 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIf3=0.9DL+W3** | | | | | |
| 69 | 0.42396 | 19.67935 | 8.46891 | 0.00000 | 0.00000 | 0.00000 |
| 146 | 1.76152 | 14.21659 | 0.20648 | 0.00000 | 0.00000 | 0.00000 |
| 147 | 4.11404 | -14.38053 | -4.40125 | 0.00000 | 0.00000 | 0.00000 |
| 148 | 0.15724 | -5.13030 | 1.13186 | 0.00000 | 0.00000 | 0.00000 |
| 149 | 2.19896 | 13.86593 | 0.32637 | 0.00000 | 0.00000 | 0.00000 |
| 150 | 1.93176 | 19.89958 | 13.97763 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 10.58747 | 48.15063 | 19.71000 | 0.00000 | 0.00000 | 0.00000 |

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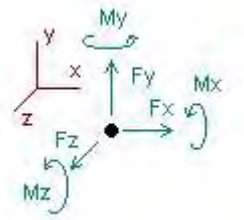
**Current Date:** 8/2/2024 11:47 AM
**Units system:** English
**File name:** J:\jobs\224158.00 U.S. Armed Forces Recruitment Center Times Square NYC\CALCS\Fisher\Existing Structure Model WF mod 7.31.retx

# Analysis result

## Reactions




*Direction of positive forces and moments*

| | Forces [Kip] | | | Moments [Kip*ft] | | |
|---|---|---|---|---|---|---|
| **Node** | **FX** | **FY** | **FZ** | **MX** | **MY** | **MZ** |
| Condition **ACIa=1.4DL** | | | | | | |
| 6 | -0.10095 | 4.87009 | -0.06244 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.06461 | 3.01792 | 0.07201 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.00219 | 6.11487 | 0.00875 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.07581 | 8.02982 | -0.00661 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.03812 | 5.00346 | -0.00231 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.07184 | 4.55066 | -0.00940 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 31.58683 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIb=1.2DL+0.5SL+1.6LL** | | | | | | |
| 6 | -0.22761 | 8.72422 | -0.13097 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.13308 | 5.28290 | 0.18126 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.00847 | 11.17740 | 0.00860 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.16665 | 17.51678 | -0.01552 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.07948 | 11.82899 | -0.00802 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.17323 | 8.16004 | -0.03535 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 62.69033 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIc1=1.2DL+1.6SL+0.5W1A** | | | | | | |
| 6 | -0.17572 | 9.00777 | 1.98824 | 0.00000 | 0.00000 | 0.00000 |
| 141 | -0.00887 | 8.07944 | 3.69945 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.00143 | 4.46308 | 0.27597 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.15415 | 12.24989 | -0.01177 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.08653 | 11.05681 | 0.04996 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.25078 | 0.53628 | -1.14186 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 45.39326 | 4.86000 | 0.00000 | 0.00000 | 0.00000 |
| Condition **ACIc2=1.2DL+1.6SL+0.5W2** | | | | | | |
| 6 | -0.17216 | 8.02335 | 1.12961 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.01394 | 7.69594 | 3.30410 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.00016 | 5.92557 | 0.18681 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.13378 | 12.13707 | -0.01037 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.07821 | 10.39314 | 0.02832 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.21363 | 1.21818 | -1.00588 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SUM | 0.00000 | 45.39326 | 3.63259 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIc3=1.2DL+1.6SL+0.5W3** | | | | | |
| 6 | 0.04762 | 8.56721 | 1.46420 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.10810 | 6.70495 | 2.79596 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.02709 | 6.14019 | 0.19311 | 0.00000 | 0.00000 | 0.00000 |
| 143 | 0.01915 | 12.35788 | 0.01384 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.30284 | 10.05140 | 0.03400 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.73270 | 1.57164 | -0.85611 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 1.23750 | 45.39326 | 3.64500 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId1=1.2DL+0.5SL+W1A** | | | | | |
| 6 | -0.06902 | 9.99077 | 4.12405 | 0.00000 | 0.00000 | 0.00000 |
| 141 | -0.08361 | 10.83585 | 7.12656 | 0.00000 | 0.00000 | 0.00000 |
| 142 | -0.02677 | -1.76328 | 0.59732 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.10903 | 8.60657 | -0.01555 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.05701 | 11.48574 | 0.11398 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.23142 | -6.35659 | -2.22636 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 32.79906 | 9.72000 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId2=1.2DL+0.5SL+W2** | | | | | |
| 6 | -0.06113 | 8.02318 | 2.40747 | 0.00000 | 0.00000 | 0.00000 |
| 141 | -0.03774 | 10.06658 | 6.33475 | 0.00000 | 0.00000 | 0.00000 |
| 142 | -0.03434 | 1.15572 | 0.41896 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.06768 | 8.38142 | -0.01263 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.04136 | 10.16679 | 0.07069 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.15952 | -4.99462 | -1.95406 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 32.79906 | 7.26518 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACId3=1.2DL+0.5SL+W3** | | | | | |
| 6 | 0.13173 | 9.26129 | 3.07477 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.33310 | 8.05439 | 5.27353 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.03491 | 1.43469 | 0.43186 | 0.00000 | 0.00000 | 0.00000 |
| 143 | 0.40037 | 8.66852 | 0.06055 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.45163 | 9.55474 | 0.08160 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 1.12326 | -4.17457 | -1.63230 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 2.47499 | 32.79906 | 7.29000 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIf1=0.9DL+W1A** | | | | | |
| 6 | -0.00555 | 8.24383 | 4.15837 | 0.00000 | 0.00000 | 0.00000 |
| 141 | -0.09695 | 9.66470 | 7.06283 | 0.00000 | 0.00000 | 0.00000 |
| 142 | -0.05331 | -4.11336 | 0.60667 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.06386 | 5.22099 | -0.01320 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.03616 | 9.27283 | 0.11693 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.18352 | -7.98318 | -2.21159 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 0.00000 | 20.30582 | 9.72000 | 0.00000 | 0.00000 | 0.00000 |
| | | | | | | |
| Condition | **ACIf2=0.9DL+W2** | | | | | |
| 6 | 0.00234 | 6.27624 | 2.44179 | 0.00000 | 0.00000 | 0.00000 |
| 141 | -0.05108 | 8.89542 | 6.27102 | 0.00000 | 0.00000 | 0.00000 |
| 142 | -0.06089 | -1.19436 | 0.42831 | 0.00000 | 0.00000 | 0.00000 |
| 143 | -0.02251 | 4.99584 | -0.01028 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.02051 | 7.95388 | 0.07364 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 0.11162 | -6.62121 | -1.93930 | 0.00000 | 0.00000 | 0.00000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SUM | 0.00000 | 20.30582 | 7.26518 | 0.00000 | 0.00000 | 0.00000 |

Condition **ACIf3=0.9DL+W3**

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | 0.13387 | 7.54469 | 3.10520 | 0.00000 | 0.00000 | 0.00000 |
| 141 | 0.36987 | 6.89166 | 5.20659 | 0.00000 | 0.00000 | 0.00000 |
| 142 | 0.03088 | -0.91714 | 0.44131 | 0.00000 | 0.00000 | 0.00000 |
| 143 | 0.47099 | 5.23921 | 0.06682 | 0.00000 | 0.00000 | 0.00000 |
| 144 | 0.41957 | 7.31137 | 0.08437 | 0.00000 | 0.00000 | 0.00000 |
| 145 | 1.04980 | -5.76398 | -1.61429 | 0.00000 | 0.00000 | 0.00000 |
| SUM | 2.47499 | 20.30582 | 7.29000 | 0.00000 | 0.00000 | 0.00000 |

# Attachment D – Field Investigation Report

## FOR REFERENCE ONLY

US Army Corps of Engineers®
New York District

# Times Square Recruiting Station Field Investigation Report

**USACE New York District**
**Manhattan, NY**

Project No. W912DS25F0040
24 April 2025

# FOR REFERENCE ONLY

TETRA TECH
Mason&Hanger
A Day & Zimmermann Company
Joint Venture

PREPARED FOR

**UNITED STATES ARMY CORPS OF ENGINEERS – NEW YORK DISTRICT**

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# 1.0 PROJECT SUMMARY

**Project Number: W912DS25F0040**

**Project Title: Times Square Armed Forces Recruiting Station Video Display Upgrade**

## 1.1 GENERAL PROJECT INFORMATION:

Architect-Engineer (AE) services are required to provide U.S. Army Corps of Engineers with a field investigation report that includes an architectural investigation and electrical and electronic assessment for upgrading the Armed Forces Recruiting Booth in Times Square, New York City, by installing a new state-of-the-art digital video display, weighing approximately 28,000 lbs. The objective is to complete this installation with minimal disruption to the high volume of pedestrians and local businesses while ensuring compliance with safety standards and maintaining the structural integrity of the booth. The project will also assess the existing electrical service to confirm its capability to support the new display. Careful planning and execution are essential due to the bustling environment, and the design will adhere to applicable Department of Defense standards, utilizing local materials and construction techniques where feasible, and meeting antiterrorism and force protection requirements.

## 1.2 DATA COLLECTION METHODOLOGY:

Data was collected by the A/E team on a site visit, conducted on April 16th and 18th by Uriel Reyes (Project Manager), Quintin Biagi (Architect), Joshua Zweback (Electrical Engineer), and Peter Kraljic (Electronics/IT). The Tetra Tech/Mason & Hangar JV was assisted by Nicole Furtado (USACE-NAN) and Stephen Brown (USACE-NAN). Mr. Brown provided access to the recruiting station and offered insight into the operational status of the building and building systems. All spaces were made accessible during the visit, including roof access. Original construction and record drawings were made available to the team before the site visit. The data collected falls into these categories:

- Physical Inspection: The evaluation includes a visual physical inspection of the building, interior, electrical and electronic equipment, and roof.
- Deficiencies: Deficiencies or deterioration of building and site features are documented. All underground site utilities such as water, storm water, sanitary, and natural gas systems shall be visually and photometrically evaluated. Individual utilities will be further evaluated by the appropriate discipline within the building.

## 1.3 IMPACT OF LEED V4 SILVER CERTIFICATION:

Unified Facilities Criteria (UFC) 1-200-02 (Change 02, 01 June 2022) High Performance and Sustainable Building Requirements were considered prior to site assessment. LEED Silver Certification is not required because the existing building assets are <10,000 GSF.

## 1.4 ANTI-TERRORISM / FORCE PROTECTION

Unified Facilities Criteria (UFC) 4-010-01 (Change 3, 24 May 2024) DoD Minimum Antiterrorism Standards for Buildings were considered prior to site assessment and video display upgrade project requirements. It is determined that the existing building meets and complies with AT/FP requirements.

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# 2.0 ARCHITECTURAL INVESTIGATION

## 2.1 ARMED FORCES RECRUITING STATION VIDEO DISPLAY UPGRADE, TIMES SQUARE, MANHATTAN, NY.

Located in Times Square, Manhattan, NY, the Armed Forces Recruiting Station is in one of the busiest and most iconic locations in New York City.

### 2.1.1 EXTERIOR BUILDING CHARACTERISTICS

**ARMED FORCES RECRUITING STATION VIDEO DISPLAY UPGRADE, TIMES SQUARE, MANHATTAN, NY**.

The Armed Forces Recruiting Station is a one-story, approximately 535 gross square foot recruiting facility constructed of structural steel framing with stainless steel and storefront exterior walls. (see figure Arch 1) The self-contained six-sided assembly is situated on top of a New York Mass Transit Authority tunnel grate and is skirted with a horizontal louver that transitions from the surrounding grade slope to the bottom of the building envelope to create an enclosed finish at the building base. (see figure Arch 2) The exterior storefront walls are glazed with ballistic glazing. The East and West elevations feature LED-lit American flag video displays that are located on the interior side of the glazing. The exterior entrance passage door on the North-East elevation is a stainless-steel door with a full vision panel of ballistic glazing. The NE elevation also features storefront windows and a large-format electronic video display screen above the main entrance. The South-West elevation is stainless steel panel and a stainless-steel grating that features logos for four branches of the military as well as prominent identification signage. (see figure Arch 3) The roof assembly is an insulated membrane roofing system with walk pads and stainless-steel coping flashing. (see Figure Arch 4). There are a number of roof-mounted cameras that extend beyond the top of the recessed roof well.

*Figure 2-1 - Arch 1*

*Figure 2-2 - Arch 2*

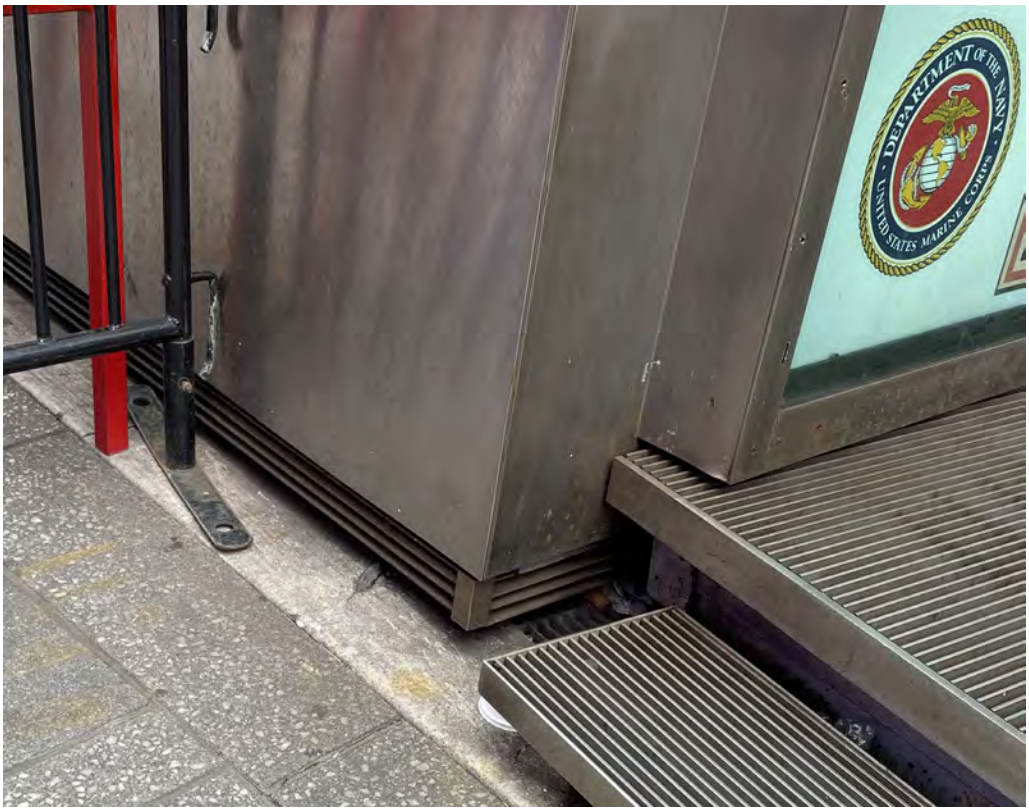
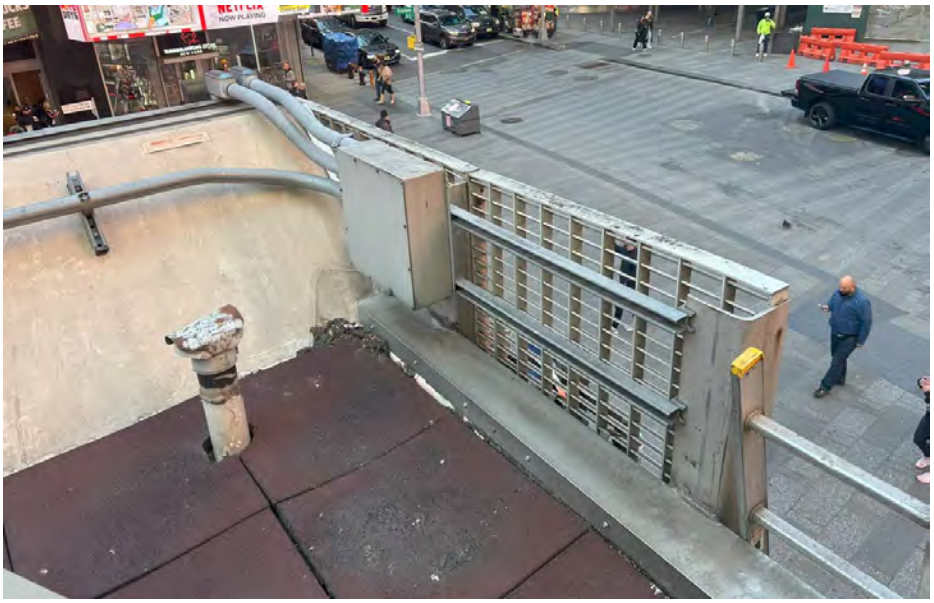


*Figure 2-3 – Arch 3*

*Figure 2-4 - Arch 4*



**Exterior Deficiencies:**

- The building exterior envelope has minor deficiencies, none of which impacts the installation of a new video display system to be mounted above the architectural envelope. Minimal roof penetration will be required to mount the structural framing of the new system. The existing roofing system appears to be the same system that was installed during the 2018 renovation and refresh. That would indicate that the membrane roof is at the mid-point of the expected life cycle.
- There are several locations of damaged glazing in the window system.
- The SW elevation has minimal damage and misalignments of lettering.

**Exterior Recommendations:**

- Provide a replacement schedule for a new roof and insulation in compliance with the requirements of UFC 3-110-03 ROOFING and UFC 1-200-02 HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS. The expected time for execution is 10 years.
- Schedule replacement of damaged glazing, this is not part of the SOW of the current project.
- Clean stainless-steel siding and components of accumulation of air pollution contaminants on the surface of the building.
- Raise security cameras and components to exceed the new video display system.

### 2.1.2 INTERIOR BUILDING CHARACTERISTICS

Interior finish replacement has not been evaluated as part of this project, with the exception of minor repairs and modifications required as a result of modifications to the interior to support the installation of the new video display system. This may include adjustments to existing walls, casework, and countertops to accommodate control devices.

The interior spaces are limited in nature to one open office space supporting four built-in workstations with stainless steel work surfaces, a stainless-steel guest bench, and guest work surfaces and seating. There is also a small break area with a water fountain, a microwave, and an accessible unisex restroom with lockers.

The existing interior finishes include resilient floor tile in the open office area and ceramic tile in the restroom. Interior partition walls are wood paneling with stainless steel trim. The ceiling is a bowed suspended gypsum wallboard system that conceals the mechanical system ductwork.

**Interior Deficiencies:**

Deficiencies noted are identified only as observed. The current scope of work limits the number of interior modifications or revisions.

1. Damage from a previous water infiltration at the roof drain in the ceiling finish needs repair. (see Figure Arch 5)
2. Damage to the wood finish of the workstation for the Army at the base of the wall panel. Similar damage to the base of the restroom wall paneling. (see Figure Arch 6)

*Figure 2-5 - Arch 5*

*Figure 2-6 - Arch 6*

**Interior Recommendations:**

- Schedule the repair of the ceiling and wall paneling.

# 3.0 ELECTRICAL AND ELECTRONIC ASSESSMENT

## 3.1 ELECTRICAL ASSESSMENT

### 3.1.1 SERVICE ENTRANCE

The complex receives power service from Con Edison Electrical Company. The service is metered and rated 200 amperes, 208Y/120, 3-phase, 4-wire + ground. The electrical distribution equipment is in good condition. The location of the electrical distribution closet is shown below in Figure 1. The existing electrical single-line diagram is shown in Figure 2.

Figure 3-1 - Electrical Room Location Plan

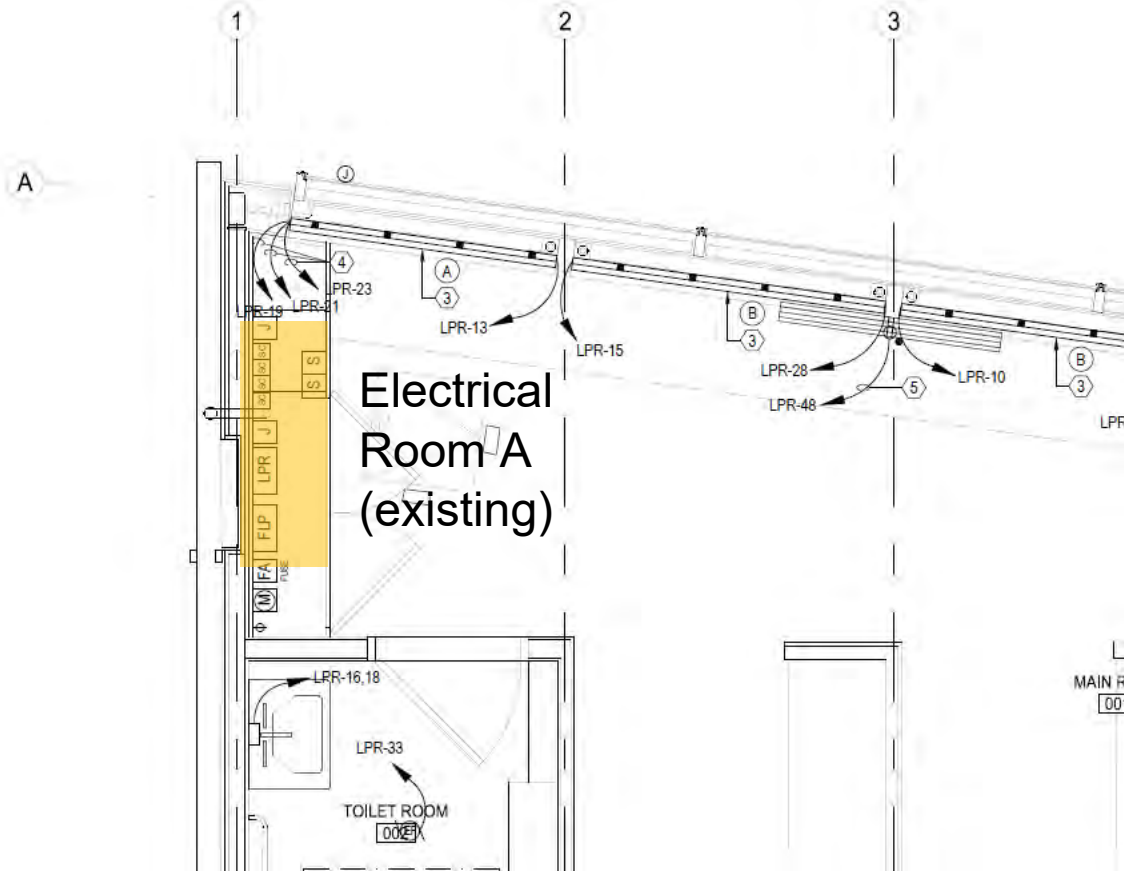
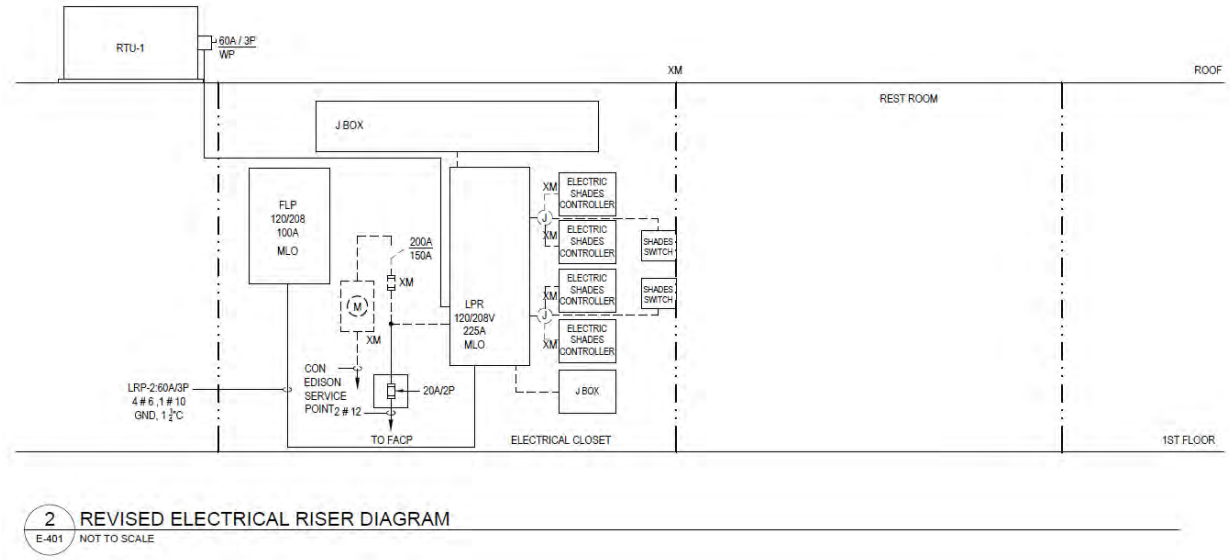


*Figure 3-2 - Electrical Single Line Diagram*




## 3.1.2 DISTRIBUTION

The electric service enters the building from below and passes through the meter (Figure 3) and then onto the main distribution panel LPH, feeding the panel RP and the shading control panels (Figure 4). The loads served are the rooftop mechanical unit, electrical baseboard heating, lighting, signage, general power, IT rack, snow melting, and domestic water heating.

*Figure 3-3 - ConEd Meter*

*Figure 3-4 - Electrical Closet*

*Figure 3-5 - Electrical Panels with Wire Trough Overhead*

*Figure 3-6 - Panel LPH Nameplate Information*

## Video Display Implementation:

- Estimated power requirement is 30-40 kW average power, and 75-105 kW peak power.
- During the design phase, the A-E Team will submit a request for a load letter to Con Edison to determine service capacity.
- If service is ruled inadequate, the utility company is required by the PSC to supply the customer with a new or reinforced service at the Utility company's cost.

**Follow-up Items**

- Request 12-24 months of utility bills from USACE Real Estate Division
- A qualified electrician will remove the electrical panel cover, measure the electrical load and confirm the nameplate rating of the main circuit breaker in Panel LPH
- Utility bills and spot electrical load measurements will be used to confirm existing demand.

**Upgrade and Modification Considerations**

- Maintain the existing electrical service and distribution as is. Add a separate new dedicated 400-ampere metered service with a 60-pole circuit breaker panel.
- Combine existing 200Ampere plus new 400ampere into a single new 600Ampere, metered Electric Service.

## 3.2 ELECTRONIC ASSESSMENT

### 3.2.1 Existing Conditions:

The Army recruiters in the building stated that the IT systems are connected to the DoD Network and are fully operational. They also have internet connectivity via mobile hotspot devices and VPN measures. The existing video display on the exterior of the recruiting station (North End) was offline during our visit (Figure 17). Lastly, during our assessment, the surveillance camera network TV monitors mounted on the upper right wall were offline.

**Other Existing Conditions:**

- The existing IT equipment cabinet is half-height (18RU) and located above the bathroom. See Figure 13
- Cabinet houses cable terminations on old-style 110 block and 1U 24-port patch panel. See Figure 14
- Cabinet active equipment includes network switches, server/PC, AV hardware, etc.
- Approximately 8 RU in the cabinet are free (not used). Removal of inactive (TBD) 110 block termination could add an additional 4RU of space for a total of 12 RU that can be designated for future/display use.
- It is undetermined if the local New York Police Department monitors the existing surveillance camera network (Figure 15).
- The existing north-facing LED display installed in 2003 does not provide acceptable service. Staff stated that the display has experienced several offline periods in the past 12 months.
- Head-end equipment (Figure 16) is past its operational life.

*Figure 3-8 - Existing Countertop*

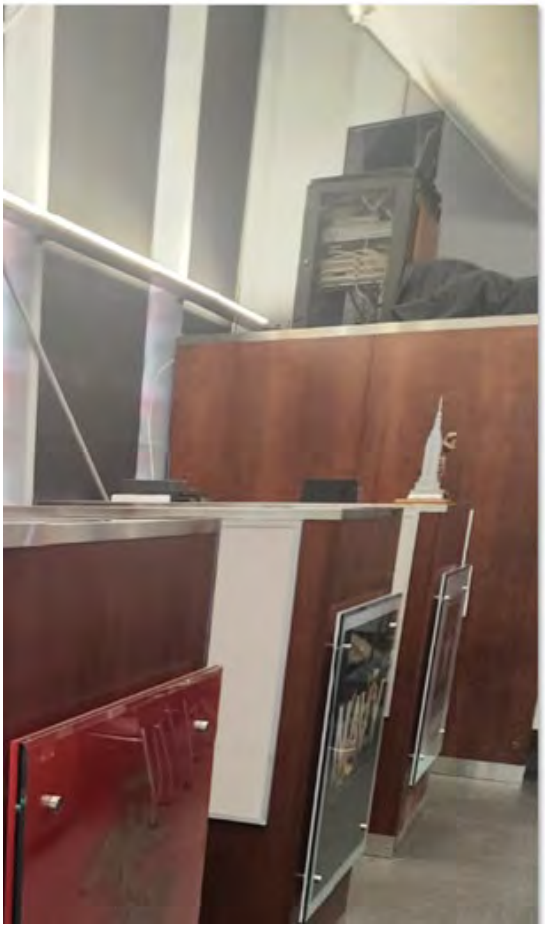


*Figure 3-7 - Existing IT Rack*

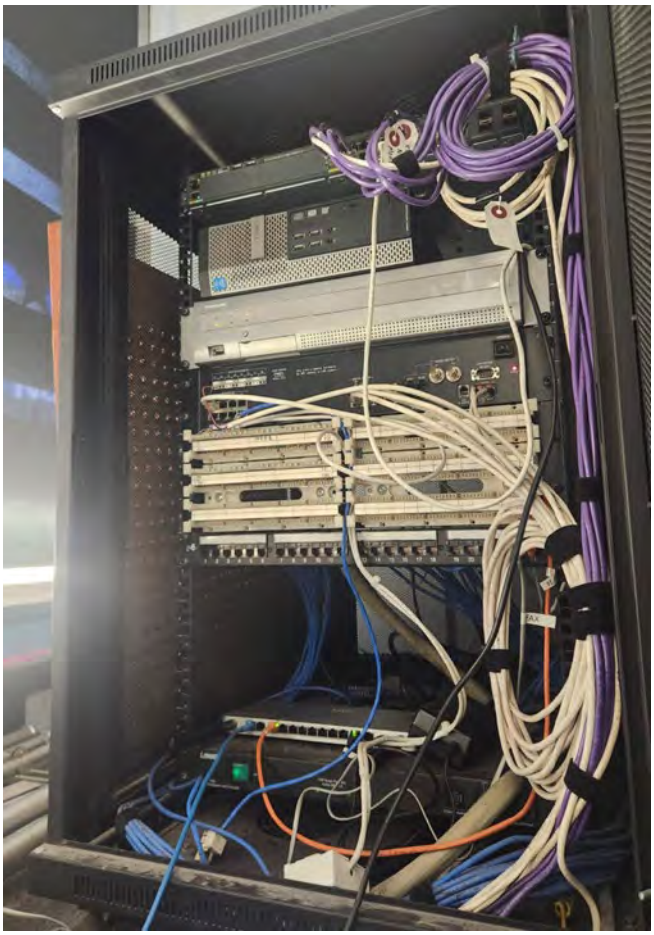


*Figure 3-9 - Surveillance Camera Network*

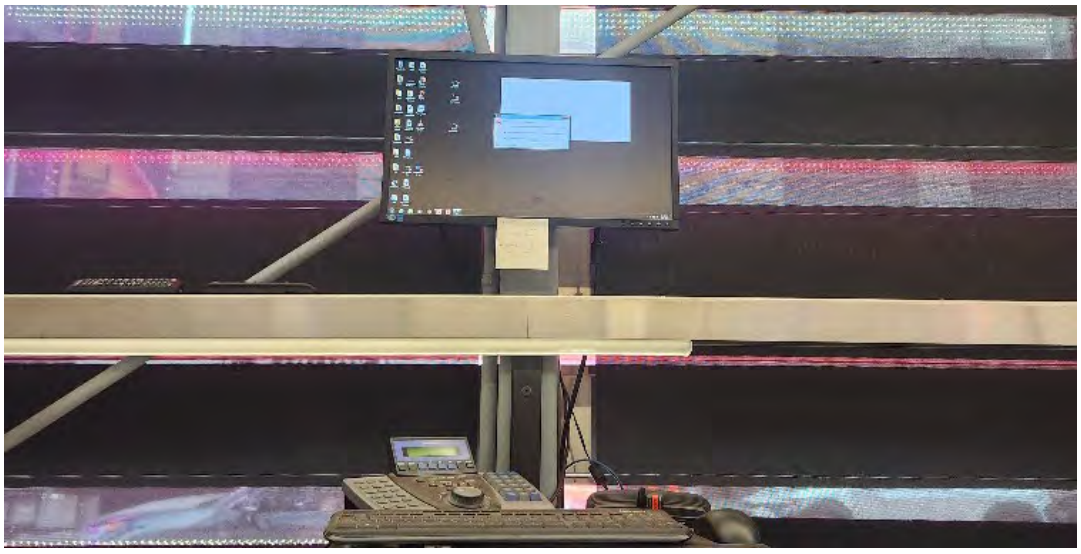
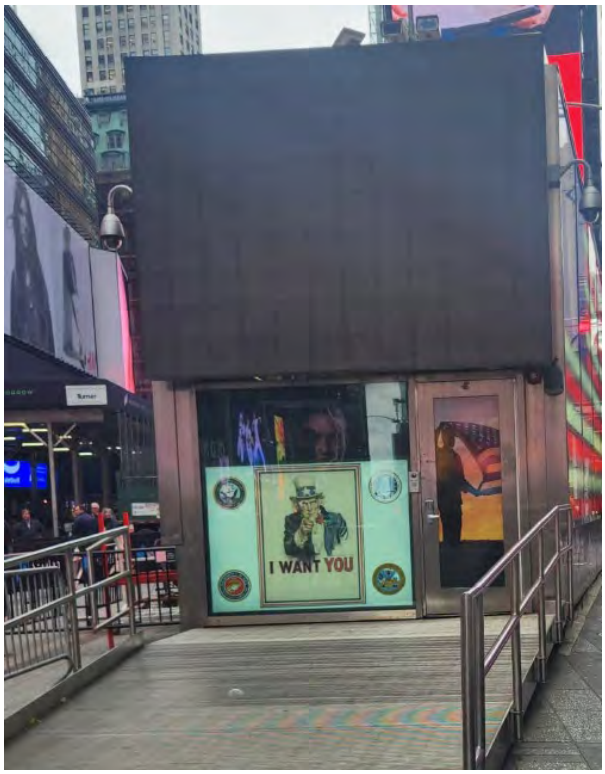


*Figure 3-10 - Video Head End Equipment*

*Figure 3-11 - Existing North Facing LED Display*




**Video Display Implementation:**

- Install a Video Control Server within the open space in the existing IT Rack (located above the toilet room). The existing HVAC can handle the additional cooling load.
- Provide a separate IT Rack enclosed in a new dedicated closet space under the existing counter. This requires a separate dedicated exhaust fan, either part of the rack cabinet or a cabinet fan with a louvered door.

**Upgrade and Modification Considerations**

- The New Display cabinet is approximately 24” x 24” x 24” to house all the anticipated display equipment; the size depends on the display vendor.
- New Display cabinet requires (2) 20A dedicated circuits. The existing electrical panel has (3) spare dedicated circuits to meet this requirement.
- New Display cabinet to generate approx. 2,000 BTU/Hr of heat.

# 4.0 CONCLUSION

The Field Investigation Report for the Armed Forces Recruiting Booth upgrade in Times Square provides a comprehensive overview of the existing conditions, deficiencies, and recommendations necessary to successfully install a new digital video display. The architectural investigation confirmed that while the booth is structurally sound, minor exterior and interior repairs are needed to facilitate the installation, including damaged glazing and water infiltration issues. The electrical and electronic assessments revealed that the current power service is adequate, but measures must be taken to ensure the electrical system can support the new display's power requirements. By addressing the identified deficiencies and implementing the recommended upgrades, this project will enhance the functionality and visibility of the Armed Forces Recruiting Booth, ultimately supporting its mission to engage with the public effectively.

# 5.0 CODES REQUIREMENTS

## 5.1 FACILITY DESIGN GUIDES AND REFERENCES

- DD Form 1391 Military Construction Project Data

Unified Facilities Criteria (UFC)

- UFC 1-200-01 DOD Building Code
- UFC 1-200-02 High Performance and Sustainable Building Requirements
- UFC 3-101-01 Architecture
- UFC 3-120-10 Interior Design
- UFC 3-201-01 Civil Engineering
- UFC 3-201-02 Landscape Architecture
- UFC 3-210-10 Low Impact Development
- UFC 3-220-05 Dewatering and Groundwater Control
- UFC 3-230-01 Water Storage and Distribution
- UFC 3-240-01 Wastewater Collection and Treatment
- UFC 3-250-01 Pavement Design for Roads and Parking Areas
- UFC 3-250-03 Standard Practice Manual for Flexible pavements
- UFC 3-250-04 Standard Practice for Concrete Pavement Construction
- UFC 3-250-08FA Standard Practice for Sealing Joints and Cracks in Rigid and Flexible Pavements
- UFC 3-301-01 Structural Engineering
- UFC 3-401-01 Mechanical Engineering
- UFC 3-410-01 Heating, Ventilation, and Air Conditioning Systems
- UFC 3-410-02 Direct Digital Control for HVAC and Other Building Control Systems
- UFC 3-420-01 Plumbing Systems
- UFC 3-501-01 Electrical Systems
- UFC 3-520-01 Interior Electrical Systems
- UFC 3-530-01 Interior and Exterior Lighting Systems and Controls
- UFC 3-550-01 Exterior Electrical Power Distribution
- UFC 3-560-01 Operation and Maintenance: Electrical Safety
- UFC 3-575-01 Lightning and Static Electricity Protection Systems
- UFC 3-580-01 Information and Communications Technology Infrastructure Planning and Design
- UFC 3-600-01 Fire Protection Engineering for Facilities
- UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- UFC 4-021-01 Design and O&M: Mass Notification Systems
- UFC 4-022-03 Security Fences and Gates
- UFC 4-214-03 Central Vehicle Wash Facilities
- USAR DG Design Guide, U.S. Army Reserve Facilities

Other Design Criteria and Standards

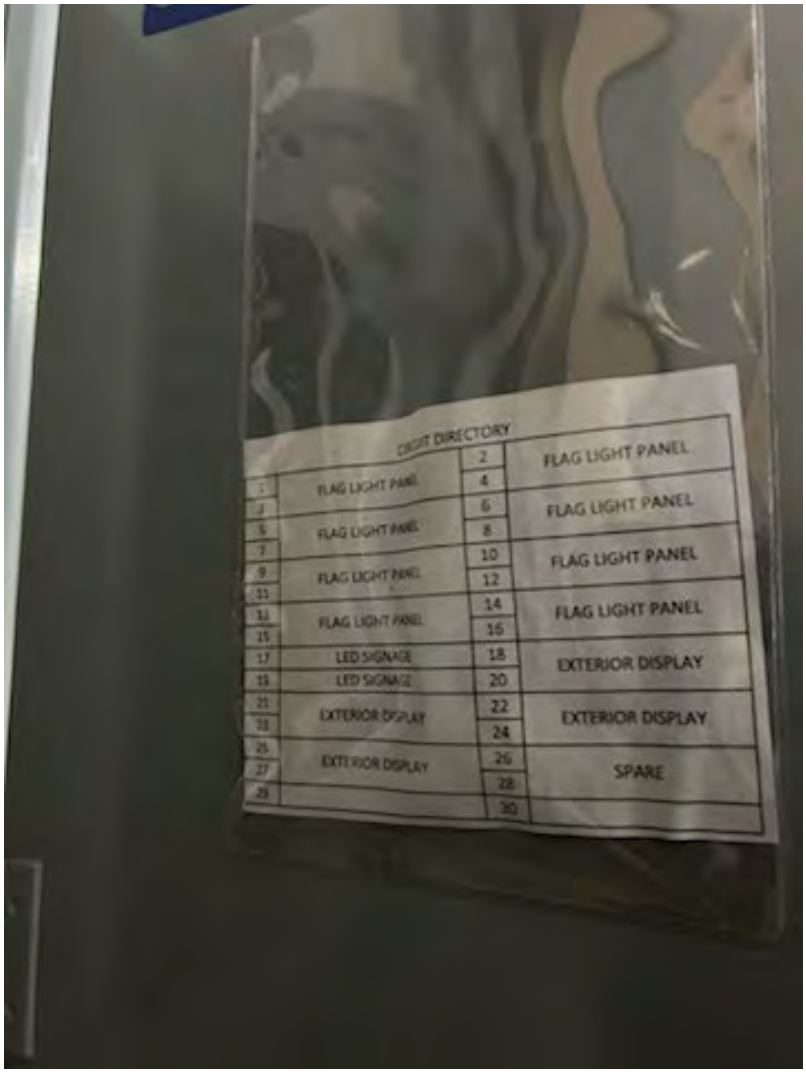
- ABA/ADA/UFAS Architectural Barriers Act, Americans with Disabilities Act Guidelines, Uniform Federal Accessibility Standards
- ARNEC U.S. Army Reserve Network Enterprise Center (ARNEC) Infrastructure Technical Criteria
- ASHRAE 15 Safety Standard for Refrigeration Systems-2019
- ASHRAE 55 Thermal Environmental Conditions for Human Occupancy, 2017
- ASHRAE 62.1 Ventilation for Acceptable Indoor Air Quality, 2016
- ASHRAE 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, 2013
- ASHRAE 135 ASHRAE BACnet Standard-2016
- ASHRAE 183 Peak Cooling and Heating Load Calculations in Buildings Except Low-Rise Residential Buildings – 2007 (RA 2017)
- ASHRAE 189.1 International Green Construction Code
- ASHRAE Handbooks Latest Edition
- ASHRAE Design Guides Latest Edition
- EISA Section 438 Stormwater Management for Federal Facilities Under Section 438 of the Energy Independence and Security Act
- I3A Technical Criteria for the Installation Information Infrastructure Architecture
- IMC International Mechanical Code, 2018
- NFPA 54 National Fuel Gas Code, 2021 Edition
- NFPA 90A Standard for the Installation of Air Conditioning and Ventilating Systems, 2018 Edition
- NFPA 101 Life Safety Code, 2018 Edition
- OSHA Occupational Safety and Health Administration
- SDDCTEA 55-17 Better Military Traffic Engineering 2016
- SMACNA Sheet Metal and Air Conditioning Contractors National Association

# APPENDIX A – PHOTOGRAPHS

*Appendix A- 1 Electrical Panel alongside Fire Alarm Disconnect*

*Appendix A- 2 Circuit Director Panel LPH*

*Appendix A- 3 Panel RP Interior View*




*Appendix A- 4 Circuit Director Flag Light Panel*

# Attachment E – Roofing Systems Guarantee

# FOR REFERENCE ONLY

Johns Manville
A Berkshire Hathaway Company

10100 W Ute Ave (80127)
PO Box 625001
Littleton, CO 80162-5001
800-922-5922
877-403-1747 Fax

Dear Building Owner:

Attached to this letter is the Peak Advantage® Roofing Systems Guarantee for the new roof recently installed on your building. We believe your building is now protected by one of the finest commercial roofing systems available on the market today. We appreciate the opportunity to provide you with a level of protection unmatched in the industry.

There are some things you should be aware of before you file this document away in a safe place:

1. This is NOT a maintenance agreement or an insurance policy. Johns Manville liability is strictly governed by the terms of the guarantee. If you have any questions about this Guarantee, contact Johns Manville Guarantee Services at the appropriate number given below.

2. You are required to perform routine maintenance on the roofing system to keep the coverage to the guarantee intact. For your convenience, a list of maintenance items is printed on the back of the guarantee.

We hope that you never experience any difficulty with your roofing system. If you do have a problem, you should contact Johns Manville Guarantee Services at the appropriate numbers provided. Please have the guarantee on hand so that we may more efficiently handle your inquiry.

Our Technical Services Department is staffed by some of the most experienced roofing professionals in the roofing industry. Please call on them for any questions you might have about commercial and industrial roofing and Johns Manville products.

Sincerely,

Matt Sayer
Manager, Guarantee Services
Johns Manville Roofing Systems Group
(800) 922-5922
gsu@jm.com
www.jm.com

FOR REFERENCE ONLY

Johns Manville

## Peak Advantage Guarantee

PEAK ADVANTAGE Johns Manville

**Building Owner:**
Dept. of the Army-NY District Corp of Engineers
26 Federal Plaza
New York, NY 11201

**Building Name:**
Times Square Recruiting Center
200 West 43rd Street
New York, NY 10036

**Guarantee Number:** ANP107344762
**Expiration Date:** July 25, 2037
**Job Name:** Times Square Recruiting Center

**Date of Completion:** July 25, 2017

**Approved Roofing Contractor:**

ROOFCO INC
221 RUTGERS STREET
MAPLEWOOD, NJ 07040

**Terms & Maximum Monetary Obligation to Maintain a Watertight Roofing System.**

**Years:** 20 Year **$** No Dollar Limit

**Coverage:**
The components of the Roofing System covered by this Guarantee are:
**Total Squares:** 7

| Sec. | Sqs. | Roof Type | Membrane Spec. | Insulation Type Layer 1 | Layer 2 | Layer 3 | Cover Board |
|---|---|---|---|---|---|---|---|
| 1 | 7 | PVC | SP6RA | ENRGY 3 | Tapered ENRGY 3 | Securock | |

**Accessories:**

| Type | Product Name | Quantity | |
|---|---|---|---|
| Expand-O-Flash (1) Style: | | 0 | lin. ft. |
| Expand-O-Flash (2) Style: | | 0 | lin. ft. |
| Expand-O-Flash (3) Style: | | 0 | lin. ft. |
| Fascia Style: | | 0 | lin. ft. |
| Copings Style: | | 0 | lin. ft. |
| Gravel Stop Style: | | 0 | lin. ft. |
| Drains (1) Style: | | 0 | ea. |
| Drains (2) Style: | | 0 | ea. |
| Vents Style: | | 0 | ea. |

These Johns Manville Guaranteed components are referred to above as the "Roofing System" and ALL OTHER COMPONENTS OF THE OWNER'S BUILDING ARE EXCLUDED FROM THE TERMS OF THIS GUARANTEE, including any amendments thereto.

Johns Manville* guarantees to the original Building Owner that during the Term commencing with the Date of Completion (as defined above), JM will pay for the materials and labor reasonably required in Johns Manville's sole and absolute discretion to repair the Roofing System to return it to a watertight condition if leaks occur due to: ordinary wear and tear, or deficiencies in any or all of the Johns Manville component materials of the Roofing System, or workmanship deficiencies only to the extent they arise solely out of the application of the Roofing System. Non-leaking blisters are specifically excluded from coverage. Should any investigation or inspection reveal the cause of a reported leak to be outside the scope of coverage under this Guarantee, then all such investigation and inspection costs shall be borne solely by the Building Owner.

WHAT TO DO IF YOUR ROOF LEAKS

If you should have a roof leak please refer to directions on the reverse side. Failure by the Building Owner to comply with any of the directions on the reverse side of this document will render the coverage provided under this Guarantee, including any applicable amendments and/or riders, null and void.

LIMITATIONS AND EXCLUSIONS

**This Guarantee is not a maintenance agreement or an insurance policy;** therefore, routine inspections and maintenance are the Building Owner's sole responsibility (see reverse side of this document). Failure to follow the Maintenance Program on the reverse side of this document will void the Guarantee in its entirety. This Guarantee does not obligate JM to repair or replace the Roofing System, or any part of the Roofing System, for leaks or appearance issues resulting, in whole or in part, from one or more of the following (a) natural disasters including but not limited to the direct or indirect effect of lightning, flood, hail storm, earthquake, tornados, hurricanes or other extraordinary natural occurrences and/or wind speeds in excess of 55 miles per hour; (b) misuse, abuse, neglect or negligence; (c) installation or material failures other than those involving the component materials expressly defined above as the Roofing System or exposure of the Roofing System components to damaging substances such as oil, fertilizers, or solvents or to damaging conditions such as vermin; (d) any and all (i) changes, alterations, repairs to the Roofing System, including, but not limited to, structures, penetrations, fixtures or utilities (including vegetative and solar overlays) based upon or through the Roofing System as well as any (ii) changes to the Building's usage that are not pre-approved in writing by JM; (e) failure of the Building substrate (mechanical, structural, or otherwise and whether resulting from Building movement, design defects or other causes) or improper drainage; (f) defects in or faulty/improper design, specification construction or engineering of the Building or any area over which the Roofing System is installed; (g) defects in or faulty/improper architectural, engineering or design flaws of the Roofing System or Building, including, but not limited to, design issues arising out of improper climate or building code compliance; or (h) in instances of a recover project, Johns Manville is not responsible for the performance of pre-existing materials that predated the recover. Instead, Johns Manville's sole responsibility in recover systems where JM materials are adhered to existing materials is limited to the installed recover JM Roofing materials up to the wind speed listed herein. Guarantee coverage is limited to replacing recover JM Roofing materials only (and not the pre-existing materials – which is the Owner's responsibility) as required to return the roofing system to a watertight condition due to a claim covered under the terms and conditions herein. Johns Manville is not responsible for leaks, injuries or damages resulting from any water entry from any portion of the Building structure not a part of the Roofing System, including, but not limited to, deterioration of the roofing substrate, walls, mortar joints, HVAC units and all other non-Johns Manville materials and metal components. Moreover, the Building Owner is solely and absolutely responsible for any removal and/or replacement of any overburdens, super-strata or overlays, in any form whatsoever, as reasonably necessary to expose the Roofing System for inspection and/or repair.

This Guarantee becomes effective when (1) it is delivered to Owner; and (2) all bills for installation, materials, and services have been paid in full to the Approved Roofing contractor and to JM. Until that time, this Guarantee is not in force, has no effect – and JM is under no obligation whatsoever to perform any services/work.

The Parties agree that any controversy or claims relating to this Guarantee shall be first submitted to mediation under the Construction Industry Arbitration and Mediation Rules of the American Arbitration Association (Regular Track Procedures) or to such other mediation arrangement as the parties mutually agree. No court or other tribunal shall have jurisdiction until the mediation is completed. In any action or proceeding brought against the Building Owner to enforce this Guarantee or to collect costs due hereunder, Johns Manville shall be entitled to recover its reasonable costs, expenses and fees (including expert witness' fees) incurred in any such action or proceeding, including, without limitation, attorneys' fees and expenses, and the Building Owner shall pay it.

TO THE FULLEST EXTENT PERMITTED BY LAW, JM DISCLAIMS ANY IMPLIED WARRANTY, INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND LIMITS SUCH WARRANTY TO THE DURATION AND TO THE EXTENT OF THE EXPRESS WARRANTY CONTAINED IN THIS GUARANTEE.

THE EXCLUSIVE RESPONSIBILITY AND LIABILITY OF JM UNDER THIS GUARANTEE IS TO MAKE REPAIRS NECESSARY TO MAINTAIN THE ROOFING SYSTEM IN A WATERTIGHT CONDITION IN ACCORDANCE WITH THE OBLIGATIONS OF JM UNDER THIS GUARANTEE. JM AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE BUILDING STRUCTURE (UPON WHICH THE ROOFING SYSTEM IS AFFIXED) OR ITS CONTENTS AND OR OCCUPANTS, LOSS OF TIME OR PROFITS OR ANY INCONVENIENCE, INJURY. JM SHALL NOT BE LIABLE FOR ANY CLAIM MADE AGAINST THE BUILDING OWNER BY ANY THIRD PARTY AND THE BUILDING OWNER SHALL INDEMNIFY AND DEFEND JM AGAINST ANY CLAIM BROUGHT BY ANY THIRD PARTY AGAINST JM RELATING TO OR ARISING OUT OF THE ROOFING SYSTEM OR JM'S OBLIGATIONS UNDER THIS GUARANTEE. JM AND ITS AFFILIATES SHALL NOT BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS GUARANTEE. THIS GUARANTEE DOES NOT COVER, AND EXPLICITLY EXCLUDES, ANY AND ALL INJURIES, CLAIMS AND/OR DAMAGES RESULTING, IN WHOLE OR IN PART, FROM ANY WATER ENTRY FROM ANY PORTION OF THE BUILDING STRUCTURE INCLUDING, BUT NOT LIMITED TO, THE ROOFING SYSTEM.

No one is authorized to change, alter, or modify the provision of this Guarantee other than the Manager, Guarantee Services or authorized delegate. JM's delay or failure in enforcing the terms and conditions contained in this Guarantee shall not operate as a waiver of such terms and conditions. This Guarantee is solely for the benefit of the Building Owner identified above and Building Owner's rights hereunder are not assignable. Upon sale or other transfer of the Building, Building Owner may request transfer of this Guarantee to the new owner, and JM may transfer this Guarantee, in its sole and absolute discretion only after receiving satisfactory information and payment of a transfer fee, which must be paid no later than 30 days after the date of Building ownership transfer.

In the event JM pays for repairs which are required due to the acts or omissions of others, JM shall be subrogated to all rights of recovery of the Building Owner to the extent of the amount of the repairs.

Because JM does not practice Engineering or Architecture, neither the issuance of this Guarantee nor any review of the Building's construction or inspection of roof plans (or the Building's roof deck) by JM representatives shall constitute any warranty by JM of such plans, specifications, and construction or in any way constitute an extension of the terms and conditions of this Guarantee. Any roof inspections are solely for the benefit of JM.

JM does not supervise nor is it responsible for a roofing contractor's work except to the extent stated herein, and roofing contractors are not agents of JM.

*JOHNS MANVILLE ("JM") is a Delaware corporation with its principal mailing address at P.O. Box 5108, Denver, Colorado 80217-5108.

Joseph Smith

By: Joseph Smith
Title: President Roofing Systems

## Addendum(s)

~ None ~

# Maintenance Program

**In order to continue the coverage of this Guarantee, the following Maintenance Program must be implemented and followed:**

1. Building Owner must notify JM Guarantee Services Unit (see below) immediately upon discovery of the leak and in no event later than ten (10) days after initial discovery of the leak, time being of the essence. Failure of the Building Owner to provide timely notice to JM Guarantee Services of any leak is a material ground for termination of the Guarantee.

2. In response to timely notice, JM will arrange to inspect the Roofing System, and
   (i) If, in JM's sole and absolute opinion, the leak(s) is/are the responsibility of JM under this Guarantee (see Limitations and Exclusions), then JM will take prompt appropriate action to return the Roofing system to a watertight condition, or
   (ii) If, in JM's sole and absolute opinion, the leak(s) is/are not the responsibility of JM under this Guarantee, then JM will advise the Building Owner within a reasonable time of the minimum repairs that JM believes are required to return the Roofing System to a watertight condition. If the Building Owner, at his expense, promptly and timely makes such repairs to the Roofing System (time being of the essence) then this Guarantee will remain in effect for the unexpired portion of its Term. Failure to make any of these repairs in a timely and reasonable fashion will void any further obligation of JM under this Guarantee as to the damaged portion of the Roofing System as well as any other areas of the Roofing System impacted by such failure.

3. In the event an emergency condition exists which requires immediate repair to avoid damage to the Building, its contents or occupants, then Building Owner may make reasonable, essential temporary repairs. JM will reimburse Building Owner for those reasonable repair expenses only to the extent such expenses would have been the responsibility of JM under the Guarantee.

There are a number of items not covered by this Guarantee that are the sole, exclusive responsibility of the Building Owner. In order to ensure that your new roof will continue to perform its function and to continue JM's obligations under the Guarantee, you must examine and maintain these items on a regular basis:

- Maintain a file for your records on this Roofing System, including, but not limited to, this Guarantee, invoices, and subsequent logs of all inspections performed and repairs that are made to the Roofing System.
- Inspect your Roofing System at least semi-annually. This is best done in the spring, after the Roofing System has been exposed to the harsh winter conditions, and, in the Fall after a long hot summer. It is also a good idea to examine the Roofing System for damage after severe weather conditions such as hailstorms, heavy rains, high winds, etc.
- Since these types of Roofing Systems typically have a low slope, they are easily examined. However, care must be taken to prevent falling and other accidents. JM expressly disclaims and assumes no liability for any inspections performed on the Roofing System.

**When checking the Roofing System:**

- Remove any debris such as leaves, small branches, dirt, rocks, etc. that have accumulated.
- Clean gutters, down spouts, drains and the surrounding areas. Make certain they allow water to flow off the Roofing System. Positive drainage is essential.
- Examine all metal flashings and valleys for rust and damage that may have been caused by wind or traffic on the Roofing System, and make certain they are well attached and sealed. Any damaged, loose, or poorly sealed materials must be repaired by a JM Approved Roofing Contractor only.
- Examine the areas that abut the Roofing System. Damaged masonry, poorly mounted counter flashing, loose caulking, bad mortar joints, and any loose stone or tile coping can appear to be a membrane leak. Have these items repaired by a JM Approved Roofing Contractor if found to be defective.
- Examine the edges of the Roofing System. Wind damage often occurs in these areas. Materials that have been lifted by the wind need to be corrected by a JM Approved Roofing Contractor.
- Examine any roof top equipment such as air conditioners, evaporative coolers, antennas, etc. Make certain they do not move excessively or cause a roof problem by leaking materials onto the Roofing System.
- Check the building exterior for settlement or movement. Structural movement can cause cracks and other problems which in turn may lead to leaks in your Roofing System.
- Examine protective coatings; any cracked, flaking, or blistered areas must be recoated.

**Protecting your investment:**

- Avoid unnecessary roof top traffic.
- If you allow equipment servicemen to go onto the Roofing System, advise them to be careful. Dropped tools, heavy equipment, etc. can damage the membrane. Log all such trips to the Roofing System.
- Do not allow service personnel to make penetrations into the Roofing System; these are to be made only by a JM Approved Roofing Contractor.

All the terms and conditions of this Guarantee shall be construed under the internal law of the state of Colorado without regard to its conflicts of law principles. Invalidity or unenforceability of any provisions herein shall not affect the validity or enforceability of any other provision which shall remain in full force and effect to the extent the main intent of the document is preserved.

This form is not to be copied or reproduced in any manner. This Guarantee is valid only in the United States of America.

**Guarantee Services**
(800) 922-5922
E-mail: gsu@jm.com
www.jm.com/roofing

**Mailing Address:**
Johns Manville
Guarantee Services
P.O. Box 625001
Littleton, CO 80162-5001

**Shipping Address:**
Johns Manville
Guarantee Services
10100 West Ute Avenue
Littleton, CO 80127

# This Roof May be Covered by a Manufacturer's Guarantee.

**Notify building personnel prior to making any alterations to the roofing membrane.**

**Roof repairs must be made by an authorized contractor; failure to do so will void the guarantee.**

JM
Johns Manville

# CAUTION!

## Protect the Roof!

- Report any spills on the roof.
- Roof may be slippery when wet or during adverse conditions.
- Care should be taken not to damage the roofing membrane.

## Installing Solar?

- JM must be notified before installing a solar system on any roof with a JM guarantee; failure to do so will void the guarantee.

## Making alterations to the roofing system?

- Changes to the roofing system must be approved by Johns Manville and made by an authorized contractor.

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**To inquire about this roof call Johns Manville: (800) 922-5922**

RS-7292 7-17 (Replaces 2-13)

US Army Corps
of Engineers ®
NEW YORK DISTRICT

TETRA TECH

Mason&Hanger
A Day & Zimmermann Company

Joint Venture

# MANHATTAN, NEW YORK
# TIMES SQUARE VIDEO DISPLAY UPGRADE

## PROJECT # 461269

SOLICITATION NO.: TBD
CONTRACT NO.: TBD
ISSUE DATE: AUGUST 2025
VOLUME:

## SHEET LIST

| SHEET | SHEET NAME |
|---|---|
| GENERAL | |
| G-001 | COVER SHEET |
| G-002 | PROJECT NOTES AND ASSET OPTIONS |
| CIVIL | |
| CS-101 | SITE LOGISTICS PLAN |
| STRUCTURAL | |
| S-001 | STRUCTURAL GENERAL NOTES |
| S-101 | STRUCTURAL PLANS AND SECTIONS |
| ARCHITECTURE | |
| A-100 | EXISTING FLOOR PLAN |
| A-101 | PLAN WITH LED OVERLAY |
| A-102 | ROOF PLAN |
| A-201 | ELEVATIONS |
| A-301 | SECTIONS |
| A-302 | SECTIONS |
| A-901 | EXISTING CONDITIONS |
| A-902 | D2 AND D3 LED OVERLAY |
| A-903 | D3 AND D4 LED OVERLAY |
| ELECTRICAL | |
| E-101 | ELECTRICAL POWER PLAN - LEVEL 1 |
| E-102 | ELECTRICAL POWER PLAN - ROOF |
| E-201 | ELECTRICAL RISER AND SCHEDULES |
| COMMUNICATIONS | |
| T-101 | COMMUNICATIONS PLAN - LEVEL 1 |

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. CONES
SUBMITTED BY: U. REYES
SIZE: ANSI D
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER
JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

COVER SHEET

SHEET ID
G-001

RTA SUBMISSION

# PROJECT NOTES: MINIMUM SPECIFICATIONS AND REQUIREMENTS

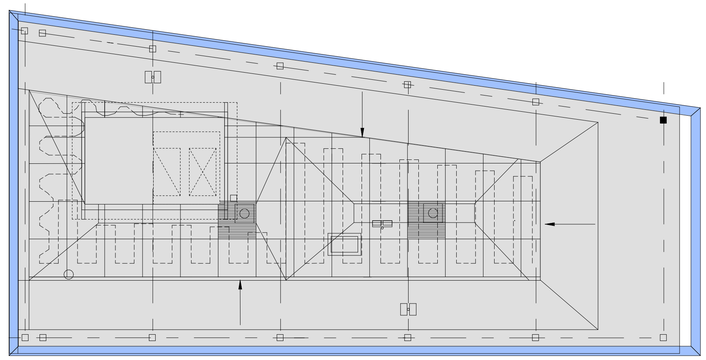
| | |
|---|---|
| PIXEL PITCH: | 6- 6.67MM EXTERIOR |
| LED CONFIGURATION: | SURFACE MOUNT DEVICE |
| LED PIXEL RESOLUTION: | TBD [SEE DRAWINGS] |
| BRIGHTNESS: | 7000 NITS MINIMUM |
| BIT DIMMING: | 11- 14 NITS |
| COLORS: | 281 TRILLION MINIMUM |
| CONTRAST RATIO: | 2,000 TO 1 |
| DIMMING: | 100 LEVELS MINIMUM<br>AUTO OR MANUAL |
| DISPLAY VIEW ANGLES: | 150º HORIZONTAL<br>-70º VERTICAL |
| REFRESH RATE: | 3,840 HZ MINIMUM |
| CONTINUOUS WORK TIME: | 24 HOURS, 365 DAYS |
| LIFETIME: | 100,000 HOURS |
| SERVICE AREA: | FRONT AND REAR [TBD] |
| OPERATING TEMPERATURE: | -20C TO 60C |
| OPERATING HUMIDITY: | 10% TO 95% RH |
| CONTENT FORMAT: | TEXT, ANIMATION, GRAPHIC, & MOTION VIDEO |
| POWER PER SQ.FT.: | 20W AVERAGE<br>60W MAXIMUM |
| WEATHER PROTECTION: | IP 65 FRONT<br>IP 54 REAR |
| CERTIFIED STANDARD: | UL/FCC |
| CONTENT MANAGEMENT: | NOVASTAR & SENSORS [NOVASTAR BASIS OF DESIGN] |
| MODULES FOR MAIN: | 2% SPARES |
| MODULES FOR CUSTOM: | ±10% SPARES |
| WARRANTY: | 2 YEARS PARTS AND LABOR ON THE SYSTEM |

# LED VENDOR REQUIREMENTS

1. VENDOR TO PROVIDE AN OUTLINE OF THE SCHEDULE TIMELINE, DETAILING WHEN ALL PROCESSES ARE EXPECTED TO BE COMPLETED.
2. IN THE SCHEDULE, PROVIDE TASKS, STATUS, START DATE, END DATE, DURATION, AND ANY PROJECT-SPECIFIC ITEMS REQUIRED BY THE LED VENDOR TO ACCOMPLISH THE WORK.
3. PROVIDE LEAD TIMES, PROCUREMENT, FABRICATION, SHIPPING, AND OTHER DETAILS FOR ALL MATERIAL AND COLOR SAMPLES TO BE SUBMITTED FOR REVIEW, AS WELL AS FOR ALL PRODUCTS REQUIRED TO COMPLETE THE WORK.
4. ROVIDE THE PDR, CDR, FACTORY ACCEPTANCE TEST (FAT), AND ALL SHOP DRAWING DELIVERY DATES. FACTOR A 5-DAY REVIEW PERIOD INTO THE SCHEDULE.
5. VERIFY THAT THE CORRECT ARCHITECTURAL BACKGROUNDS (DESIGN INTENT) ARE USED AS THE BASIS FOR THE SHOP DRAWINGS. THE LED VENDOR MUST VERIFY ALL PHYSICAL SITE CONDITIONS BEFORE WORK.
6. PROVIDE SPECIFIATIONS FOR EACH MATERIAL REQUIRED TO COMPLETE THE WORK, WITH COLOR SAMPLES FOR APPROVAL. PAINT FIISHES ARE TO BE SATIN UNLESS OTHERWISE NOTED.
7. PROVIDE A FULL RANGE OF THE MANUFACTURER'S COLOR AND MATERIALS PALETTE. THE DIFFERENT COLOR SYSTEMS, SUCH AS PANTONE, RAL, SHERWIN-WILLIAMS, AND NAPA, DO NOT USE THE SAME NAMING AND NUMBERING SYSTEMS. SPECIFICATIONS, PHYSICAL PAINT, AND MATERIAL SAMPLES ARE REQUIRED.
8. PROVIDE [2] MATERIAL SAMPLES FOR EACH MATERIAL AND COLOR PAINT. A PAINT SAMPLE WILL BE APPLIED TO THE MATERIAL USED IN THE PROJECT. PROVIDE PAINT FOR EACH MATERIAL
SED TO ACCOMPLISH THE WORK. PROVIDE 6"X6" SAMPLES UNLESS OTHERWISE NOTED. PROVIDE A LABEL ON THE REVERSE OF EACH SAMPLE INDICATING THE MATERIAL, COLOR, AND PRODUCT NAME.
9. PROVIDE 1/8" THICK ALUMINUM PANELS IN THE SPECIFIED COLOR(S). PROVIDE MATERIALS THAT ARE THICK AND RIGID ENOUGH TO PREVENT VISUAL DISTORTIONS. PREVENT ANY BUCKLING OR WARPING OF THE METAL PANELS. TORQUE ALL FASTENERS TO THE CORRECT LEVEL TO PREVENT BUCKLING, WARPING, AND OIL-CANNING.
10. USE HIDDEN FASTENERS -OR- COUNTERSINK ALL VISIBLE SCREWS AND FASTENERS IN PREDRILLED HOLES.
11. ALL VISIBLE FASTENERS FINISH TO MATCH THE PANEL TO WHICH THEY ARE ATTACHED.
12. ALL PERFORATION PATTERNS ARE TO BE CUSTOM AND APPROVED BY THE OWNER'S TEAM.
13. ALL PERFORATED PANELS ARE TO HAVE SOLID EDGE MARGINS OF 1". COORDINATE WITH DESIGN INTENT DRAWINGS.
14. PROVIDE DRAWINGS AND SPECIFICATIONS FOR THE MATERIAL THICKNESS, PERFORATION OPENNESS, AND MATERIAL COMPOSITION.
15. THE VENDOR MUST VERIFY THE REQUIRED PERFORATION OPENNESS TO MEET THE VENTILATION REQUIREMENTS OF THE LEDS. ALL PERFORATED PANELS WILL HAVE CUSTOM PERFORATION PATTERNS. [D2] LED WILL REQUIRE PERFORATED CLADDING FOR VENTILATION AT THE BOTTOM AND THE SIDES.
16. THE VENDOR WILL PROVIDE AN EFFECTIVE SOLUTION FOR THE COFIDENCE CAMERAS.
17. PROVIDE SPECIFICATIONS FOR EACH CAMERA TYPE USED IN THE PROJECT. IF A PTZ CAMERA TYPE IS USED, ENSURE THAT THE VIEW POSITION AND ANGLE COMPLETELY COVER THE LED FACES, TAKING OBSTRUCTIONS INTO ACCOUNT.
18. PROVIDE THE CONTENT MANAGEMENT SYSTEM RACK WITH A COFIDENCE CAMERA CONDUIT AND CABLE PLAN EARLY IN THE WORK. INSTALL THE CAMERAS BEFORE THE DISPLAY(S). COFIDENCE CAMERAS MAY HAVE POWER AT THE SOURCE AND DATA RELAYED BACK TO THE RACK WITHOUT A DATA CABLE.
19. PROVIDE A MONITORING SYSTEM THAT DELIVERS CLEAR VIEWS OF THE DISPLAYS TO THE MANAGEMENT TEAM AT A FRAME RATE THAT ALLOWS REAL-TIME OBSERVATIONS OF THE DISPLAYS 24 HOURS A DAY.
20. PROVIDE DETAILED DRAWINGS FOR APPROVAL THAT CALCULATE THE ASSET'S WEIGHT AND THE FASTENING POINTS TO THE BUILDING'S CONNECTIONS, CONSIDERING LIVE AND DEAD LOADS. PROVIDE DRAWINGS FOR ALL REQUIRED STRUCTURES TO SUPPORT THE ASSET IN THE LOCATION, ENSURING COMPLIANCE WITH SEISMIC, WIND, AND ALL APPLICABLE LOCAL CODES.
21. THE DESIGN INTENT DRAWINGS DO NOT SHOW LATERAL BRACING, BUT WILL BE REQUIRED BY THE LED VENDOR.
22. VERIFY THAT THE DISPLAY ASSEMBLY DEPTH MEETS THE DESIGN INTENT. ASSEMBLY DEPTH REQUIRES DISPLAY, PRIMARY, AND SECONDARY STRUCTURE.
23. FOR PRELIMINARY DESIGN REVIEW [PDR], PROVIDE BASIC DRAWINGS WITH ENOUGH DETAIL TO DEFINE THE SIZE, WEIGHT, AND POWER TO A LEVEL THAT ALLOWS ALL DISCIPLINES, SUCH AS ARCHITECTURAL, STRUCTURAL, ELECTRICAL, DATA, AND MECHANICAL, TO REFINE THEIR PREVIOUS DIAGRAMMATIC WORK ASSUMPTIONS.
24. FOR PDR, PROVIDE A DEAD LOAD CALCULATION FOR THE DISPLAY ASSEMBLY. [EX: L/250]
25. FOR PDR, PROVIDE A BUILDING PLAN DRAWING SHOWING DATA PATHS AND DISTANCES.
26. FOR PDR, THE LED CORNER GAPS BETWEEN LEDS MUST BE A MAXIMUM OF 1/8".
27. FOR THE CRITICAL DESIGN REVIEW [CDR] PROVIDE DETAILED DRAWINGS WITH A HIGH LEVEL OF DETAIL THAT ALLOWS FOR A COMPLETE, DEEP UNDERSTANDING OF WHAT WILL BE REQUIRED TO CONNECT AND PLACE THE SYSTEM INTO ITS ENVIRONMENT.
28. FOR THE CDR, PROVIDE A COMPREHENSIVE DESIGN FOR THE DIGITAL SYSTEMS ROOM, INCLUDING THE LOCATION OF CONTROL RACKS AND THE ROUTING OF ELECTRICAL AND DATA CONDUITS.
29. A COMPATIBLE CONTENT MANAGEMENT SYSTEM [CMS] IS REQUIRED FOR SMOOTH VIDEO PLAYBACK OF THE LEDS.
30. FOR CDR, PROVIDE A SPARE PARTS LIST THAT INCLUDES THE QUANTITY AND PERCENTAGE OF SPARE PARTS, TAKING INTO ACCOUNT ANY CUSTOM COMPONENTS.
31. FOR CDR, LIST THE TOOLS PROVIDED AND REQUIRED TO BE ON SITE FOR FUTURE REPAIRS.
32. FOR CDR, PROVIDE THE REQUIRED NUMBER AND SIZE OF RACKS WITH THE EQUIPMENT LAYOUT.
33. FOR CDR, PROVIDE AN ANALYSIS OF THE SUPPORT STRUCTURE SHOWING LATERAL BRACING.
34. FOR CDR, SPECIFICATIONS FOR ALL FASTENERS MUST BE PROVIDED.
35. FOR CDR, PROVIDE LOAD TABLES FOR THE ENGINEER OF RECORD TO REVIEW.
36. FOR CDR, PROVIDE ALL LANE CLOSURES, PERMIT REQUIREMENTS, AND A SCHEDULE OF ALL INSPECTIONS REQUIRED.
37. FOR CDR, PROVIDE DETAILS ON THE COORDINATION MEANS AND METHODS FOR THE STRUCTURAL ASSEMBLY LOGIC.
38. FOR CDR, SHOW THE DISPLAY LAYOUT AND ON-SITEASSEMBLY IN A PLAN DRAWING.
39. PROVIDE FULLY WORKING DISPLAYS FOR THE FACTORY ACCEPTANCE TEST [FAT] APPROVAL. THE OWNER'S REPRESENTATIVE WILL PROVIDE A PDF INDICATING THE REQUIRED SECTIONS OF THE DISPLAYS FOR TESTING.
40. THE OWNER'S REPRESENTATIVE IS TO PROVIDE A PDF OF THE FAT EXPECTATIONS.
41. PROVIDE FIELD REPORTS DAILY FROM INITIAL CONSTRUCTION TO FINAL ACCEPTANCE. FIELD REPORTS EXPRESS WEATHER, FIELD CONDITIONS, AND CONSTRUCTION PROGRESS.
42. PROVIDE A SHOP DRAWING OF THE SPECIFIC SPACE, IDENTIFYING THE LOCATION OF THE RACK(S).
43. PROVIDE CLEANING FOR FINAL COMPLETION.
44. PROVIDE ANNUAL CLEANING AND A SCHEDULE.
45. PROVIDE SPECIFICATIONS AND PROCEDURES FOR CLEANING AND MAINTAINING THE DISPLAY.
46. PROVIDE PROTECTIVE COVERINGS FOR DISPLAY AND EQUIPMENT WHEN OTHER WORK IS PRESENT, SUCH AS PAINTING OR WELDING.
47. THE VENDOR WILL PROVIDE A TIMELINE AND PLAN FOR REPAIRING AND RETURNING THE DAMAGED MODULES TO SERVICE.
48. A FINE-WEAVE BIRD NETTING WILL BE REQUIRED FOR THE BACK OF THE LED CABINETS.
49. A BIRD DETERRENT IS REQUIRED AT THE TOP OF THE LED CABINET TO REDUCE THE NEED FOR FREQUENT LED CLEANINGS.
50. ALL EXPOSED LED EDGES ARE TO BE CLAD. THE [D2] LED WILL HAVE EXPOSED SIDES THAT WILL REQUIRE CLADDING.
51. A 6" CLEAR GAP BETWEEN THE BOTTOM OF THE LEDS AND THE TOP OF THE FINISHED PARAPET IS REQUIRED. THIS INCLUDES ALL EDGE CLADDING SYSTEMS.
52. THE LED VENDOR CONTRACTOR MUST ENGAGE THE SERVICES OF A REPUTABLE [MINIMUM 10 YEARS' EXPERIENCE] LED DISPLAY CONTRACTOR MUST DESIGN, ENGINEER, FABRICATE, AND INSTALL A LARGE-FORMAT LED DISPLAY BASE, INCLUDING PRIMARY AND SECONDARY STRUCTURAL FRAMES, ELECTRICAL AND DATA WIRING TO THE EXISTING BUILDING STRUCTURE AND INFRASTRUCTURE, AND MAKE ALL NECESSARY CONNECTIONS AND ATTACHMENTS TO BRING THE LED DISPLAYS TO A COMPLETE WORKING ORDER.
53. THE LED VENDOR IS TO PROVIDE CONTENT CREATION GUIDES FOR EACH DISPLAY, D1, D2, D3, AND D4 [AN ADD-ON OPTION IS INCLUDED].
54. VENDOR TO PROVIDE CONTENT CREATION GUIDE EARLY IN THE PROCESS TO ENSURE CONTENT CREATORS HAVE GUIDANCE.
55. VENDOR TO PROVIDE FULL COMMISSIONING, ENSURING FULL MOTION, REPAIRED PIXEL OUTAGES, HOT SEAMS, COLD SEAMS, COLORS, BRIGHTNESS, NIT LEVELS, AND VISUAL FAULTLESSNESS. ENSURE A FULLY FUNCTIONING, FAULTLESS SYSTEM.

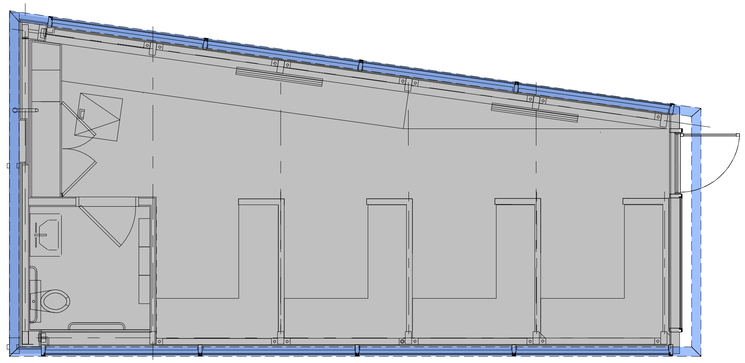
# ASSET OPTIONS

| LED ASSET CODE AND LOCATION | TYPE | LED DISPLAY SIZE WIDTH | LED DISPLAY SIZE HEIGHT | TOTAL AREA | WEIGHT | AVERAGE POWER | MAXIMUM POWER | MAXIMUM HEAT LOAD | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| D1: WEST: BASE | 6mm to 6.67mm EXTERIOR LED | (± 37.0 ft) 11,278 mm | (± 10.0 ft) 3,048 mm | (± 370.0 sf) 34.37 m2 | (± 5,550 lb) ± 2,517 kg | ± 11,840 W | ± 29,230 W | (± 99,737 Btu/h) ± 105,228 kJ/h | |
| D2: NORTH: BASE | 6mm to 6.67mm EXTERIOR LED | (± 13,250 ft) 4,039 mm | (± 20.0 ft) 6,096 mm | (± 265.0 sf) 24.62 m2 | (± 3,975 lb) ± 1,803 kg | ± 8,480 W | ± 20,935 W | (± 71,433 Btu/h) ± 75,366 kJ/h | BASE [D1,D2, D3]: |
| D3: EAST: BASE | 6mm to 6.67mm EXTERIOR LED | (± 36.50 ft) 11,125 mm | (± 10.0 ft) 3,048 mm | (± 365.0 sf) 33.91 m2 | (± 5,475 lb) ± 2,483 kg | ± 11,680 W | ± 28,835 W | (± 98,389 Btu/h) ± 103,806 kJ/h | Total Area: 1000sft |
| D4: SOUTH: BID OPTION 1 | 6mm to 6.67mm EXTERIOR LED | (± 18.0 ft) 5,486 mm | (± 10.0 ft) 3,048 mm | (± 180.0 sf) 16.72 m2 | (± 2,700 lb) ± 1,225 kg | ± 5,760 W | ± 14,220 W | (± 48,521 Btu/h) ± 51,192 kJ/h | With [D4] Option 1: 1180sf |
| C1: WEST: | CONFIDENCE CAMERA | +EACH LED FACES TO BE MONITORED WITH A CONFIDENCE CAMERA IN ORDER FOR ANY POTENTIAL DOWN TIME OF THE DISPLAY TO BE AT A MINIMUM. | | | | | | | |
| C2: NORTH: | CONFIDENCE CAMERA | +THE LOCATION OF THE CAMERAS TO BE DETERMINED BY SITE CONDITIONS. | | | | | | | |
| C3: EAST: | CONFIDENCE CAMERA | | | | | | | | |
| C4: SOUTH: | CONFIDENCE CAMERA | | | | | | | | |



## ROOF PLAN WITH BID OPTION 1

PLAN NORTH



## FIRST FLOOR PLAN WITH BID OPTION 1

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. COMES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

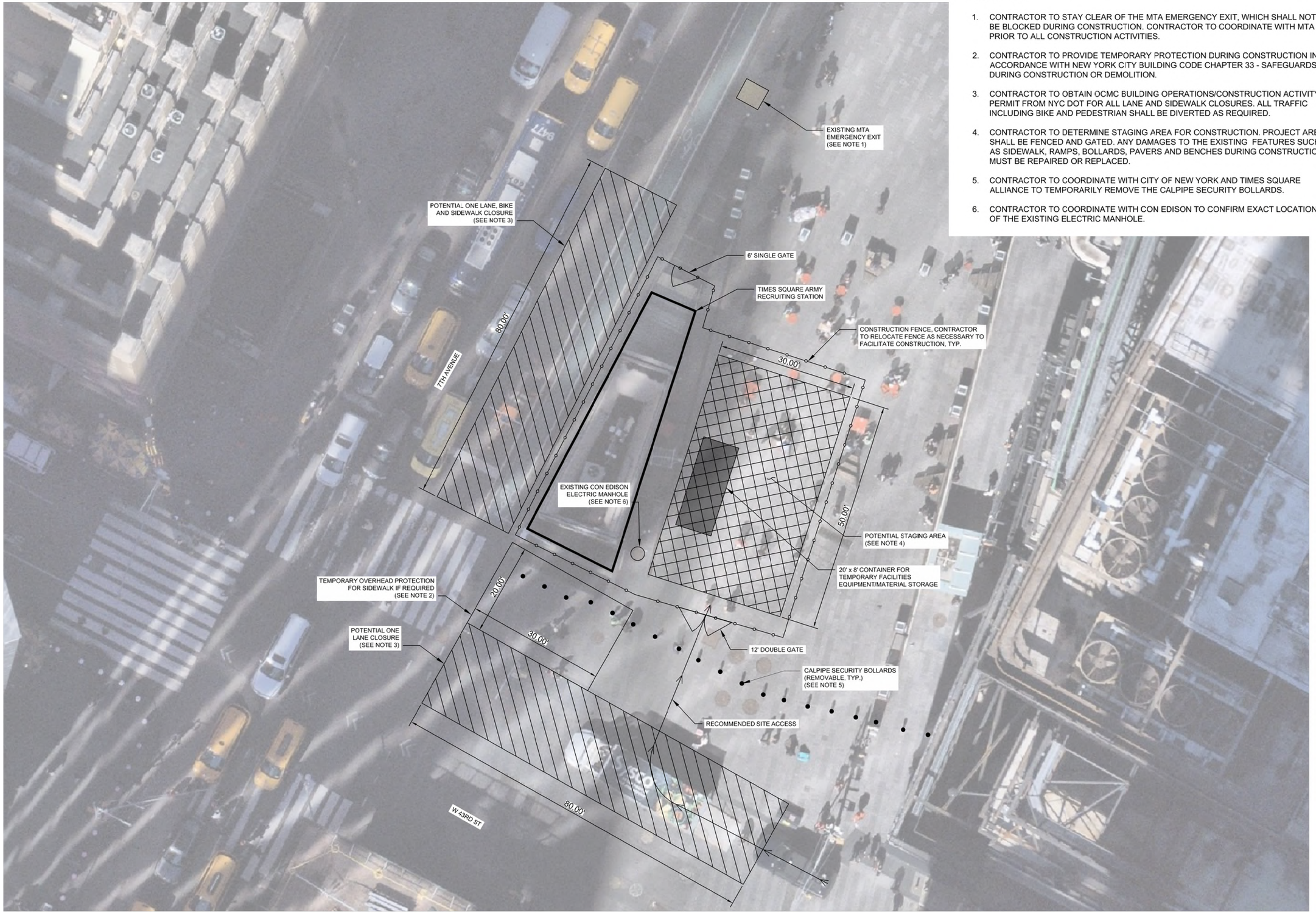
TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

PROJECT NOTES AND ASSET OPTIONS

SHEET ID
G-002

RTA SUBMISSION




## NOTES:

1. CONTRACTOR TO STAY CLEAR OF THE MTA EMERGENCY EXIT, WHICH SHALL NOT BE BLOCKED DURING CONSTRUCTION. CONTRACTOR TO COORDINATE WITH MTA PRIOR TO ALL CONSTRUCTION ACTIVITIES.
2. CONTRACTOR TO PROVIDE TEMPORARY PROTECTION DURING CONSTRUCTION IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE CHAPTER 33 - SAFEGUARDS DURING CONSTRUCTION OR DEMOLITION.
3. CONTRACTOR TO OBTAIN OCMC BUILDING OPERATIONS/CONSTRUCTION ACTIVITY PERMIT FROM NYC DOT FOR ALL LANE AND SIDEWALK CLOSURES. ALL TRAFFIC INCLUDING BIKE AND PEDESTRIAN SHALL BE DIVERTED AS REQUIRED.
4. CONTRACTOR TO DETERMINE STAGING AREA FOR CONSTRUCTION. PROJECT AREA SHALL BE FENCED AND GATED. ANY DAMAGES TO THE EXISTING FEATURES SUCH AS SIDEWALK, RAMPS, BOLLARDS, PAVERS AND BENCHES DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED.
5. CONTRACTOR TO COORDINATE WITH CITY OF NEW YORK AND TIMES SQUARE ALLIANCE TO TEMPORARILY REMOVE THE CALPIPE SECURITY BOLLARDS.
6. CONTRACTOR TO COORDINATE WITH CON EDISON TO CONFIRM EXACT LOCATION OF THE EXISTING ELECTRIC MANHOLE.

PLAN NORTH

0 5' 10' 20'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

DESIGNED BY: A. BATHAN
DRAWN BY: T. CHEN
CHECKED BY: J. LEITENBERGER
SUBMITTED BY: J. JONES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MANSON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT #461269

# SITE LOGISTICS PLAN

SHEET ID

CS-101

RTA SUBMISSION

# STRUCTURAL GENERAL NOTES

1. REFER TO THE FOLLOWING DOCUMENTS FOR ADDITIONAL INFORMATION REGARDING THE EXISTING STRUCTURE, CURRENT CONDITIONS AND PRELIMINARY MODIFICATIONS ASSOCIATED WITH THE PROPOSED WORK:
   - A. EXISTING AS-BUILT DRAWINGS, BY PARSONS BRINCKERHOFF, DATED 06-02-1998.
   - B. EXISTING AS-BUILT DRAWINGS, BY GOSHOWARCHITECTS, DATED 03-02-2018
   - C. STRUCTURAL ASSESSMENT REPORT, BY QPK DESIGN, DATED 08-09-2024.
2. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE DRAWING READER'S CONVENIENCE.
3. ALL REFERENCED STANDARDS HEREIN ARE TO MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE IN PROJECT SPECIFICATIONS OR ON THE DRAWING.
4. ALL ELEVATIONS ARE REFERENCED TO THE EXISTING FIRST FLOOR EL. 0'-0". ELEVATIONS SHOWN ON DRAWINGS ARE REFERENCED TO THIS DATUM UNLESS NOTED OTHERWISE.
5. ALL EXISTING DIMENSIONS SHOWN WITH THE ± SYMBOL ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
6. ALL NEW WORK SHOWN IS FOR D-B RFP PURPOSES ONLY. D-B CONTRACTOR MAY UTILIZE ALTERNATIVE METHODS TO ACCOMPLISH THE OVERALL STRUCTURAL GOALS OF THIS PROJECT. D-B CONTRACTOR TO SUBMIT ALTERNATIVE METHODS FOR CLIENT REVIEW.
7. SUBMIT SHOP DRAWINGS, PROJECT DATA AND SAMPLES AS SPECIFIED IN PROJECT SPECIFICATIONS.
8. ABBREVIATIONS:

| | | | | | |
|---|---|---|---|---|---|
| ADD'L | ADDITIONAL | EJ | EXPANSION JOINT | PL | PLATE |
| AISC | AMERICAN INSTITUTE OF STEEL CONSTRUCTION | EL / ELEV. | ELEVATION | PLF | POUNDS PER LINEAR FOOT |
| | | ENGR | ENGINEER | PSF | POUNDS PER SQUARE FOOT |
| ARCH. | ARCHITECT(URAL) | EQ | EQUAL | PSI | POUNDS PER SQUARE INCH |
| B.O.S. | BOTTOM OF STEEL | EX | EXISTING | QTY | QUANTITY |
| BOT. | BOTTOM | FLR | FLOOR | REQ/REQ'D | REQUIRED |
| CL | CENTER LINE | FRMG | FRAMING | REV | REVISION |
| CLR | CLEAR | FT | FOOT | SF | SQUARE FOOT |
| COL | COLUMN | GA | GAGE, GAUGE | SIM. | SIMILAR |
| CONC | CONCRETE | GALV | GALVANIZED | SPEC | SPECIFICATIONS |
| CONT | CONTINUOUS | GR. | GRADE | SQ | SQUARE |
| COORD | COORDINATE | IN. | INCH | SS | STAINLESS STEEL |
| CTR | CENTER | LLH | LONG LEG HORIZONTAL | STL | STEEL |
| D-B | DESIGN-BUILD | LLV | LONG LEG VERTICAL | STRUCT | STRUCTURE(AL) |
| DEMO | DEMOLISH | MAX | MAXIMUM | T/ | TOP OF |
| DIA | DIAMETER | MFR | MANUFACTURER | THK | THICKNESS |
| DTL. | DETAIL | MIN | MINIMUM, MINUTE | TYP | TYPICAL |
| DWG(S) | DRAWING(S) | MISC. | MISCELLANEOUS | UNO | UNLESS NOTED OTHERWISE |
| E/EX/EXIST. | EXISTING | N.T.S. | NOT TO SCALE | V.I.F. | VERIFY IN FIELD |
| EA | EACH | NO | NUMBER | W/ | WITH |
| EF | EACH FACE | O.C. | ON CENTER | W/O | WITHOUT |
| | | OPNG | OPENING | | |

# COMPONENTS & CLADDING WIND PRESSURES ASCE 7-22

FACTORED (ULTIMATE) COMPONENTS & CLADDING WIND PRESSURES (PSF)

**ALL ROOFS 0 TO 10 DEGREES AND h > 60 FT**

| ROOF ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 50 SF | 100 SF |
| NEGATIVE ZONE 1 | -50.5 | -42.8 | -39.5 |
| NEGATIVE ZONE 1' | -29.0 | -29.0 | -29.0 |
| NEGATIVE ZONE 2 | -66.7 | -56.7 | -52.4 |
| NEGATIVE ZONE 3 | -66.7 | -56.7 | -52.4 |
| POSITIVE ALL ZONES | 16.0 | 16.0 | 16.0 |

**WALLS**

| WALL ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 100 SF | 500 SF |
| NEGATIVE ZONE 4 | -31.5 | -27.2 | -24.2 |
| NEGATIVE ZONE 5 | -38.7 | -30.2 | -24.2 |
| POSITIVE ZONE 4 & 5 | 29.0 | 24.8 | 21.8 |

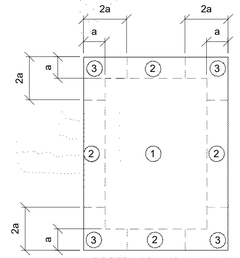
**PARAPETS**

| PARAPET ZONES | EFFECTIVE TRIBUTARY AREA* | | |
|---|---|---|---|
| | 10 SF | 100 SF | 500 SF |
| NEGATIVE ZONE 4p | -55.2 | -45.9 | -39.4 |
| NEGATIVE ZONE 5p | -63.1 | -49.2 | -39.4 |
| POSITIVE ZONE 4p & 5p | 93.5 | 73.3 | 59.3 |

NOTES:

1. EDGE DISTANCE : 'a' = 3'-0"
2. * EFFECTIVE TRIBUTARY AREA: SPAN LENGTH MULTIPLIED BY AN EFFECTIVE WIDTH THAT NEED NOT BE LESS THAN 1/3 THE SPAN LENGTH
3. NEGATIVE VALUE DENOTES PRESSURE ACTING AWAY FROM THE SURFACE
4. UNFACTORED (NOMINAL) COMPONENTS AND CLADDING PRESSURES MAY BE OBTAINED BY MULTIPLYING THE VALUES IN THE TABLE BY 0.60

LOCATION OF WIND PRESSURE ZONES




ALL ROOFS W/ θ ≤ 10° **AND** h > 60'

WALLS

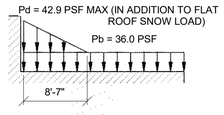
# DESIGN CRITERIA

1. REFERENCES:
   - A. UFC 3-301-01 - STRUCTURAL DESIGN FOR BUILDINGS, WITH CHANGE 3, 3 FEBRUARY 2025
   - B. UFC 4-010-01 - MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS, WITH CHANGE 3, 24 MAY 2024
   - C. ICC INTERNATIONAL BUILDING CODE, 2024 EDITION, RISK CATEGORY II IN ACCORDANCE WITH TABLE 1604.5
   - D. ICC INTERNATIONAL EXISTING BUILDING CODE, 2024 EDITION
   - E. NEW YORK CITY BUILDING CODE, 2022
   - F. STATE BUILDING CODE: NEW YORK, 2020
   - G. ASCE/SEI 7-22 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
2. DEAD LOADS:

| | |
|---|---|
| DEAD LOAD AVAILABLE TO RESIST UPLIFT | = SELF WEIGHT OF STRUCTURAL FRAMING ONLY |
| ROOF | = 10 PSF |
| GROUND FLOOR | = 5 PSF |
| STEEL FRAMING | = SELF WEIGHT |

3. LIVE LOADS (U.N.O.):

| | |
|---|---|
| ROOF | = 20 PSF |
| TYPICAL GROUND FLOORS (OFFICE USE) | = 50 PSF |




SNOW DRIFT DIAGRAM AT DISPLAY

4. ROOF SNOW LOAD:

| | | |
|---|---|---|
| GROUND SNOW LOAD, Pg | = 46.0 PSF | |
| BALANCED SNOW LOAD, Pb | = 36.0 PSF | (Pf OR Ps) |
| MINIMUM SNOW LOAD, Pm | = 30.0 PSF | (LOW SLOPE ROOFS) |
| UNIFORM ROOF DESIGN SNOW LOAD | = 36.0 PSF | |
| SNOW EXPOSURE FACTOR, Ce | = 1.0 | |
| SNOW LOAD IMPORTANCE FACTOR, I | = 1.0 | |
| THERMAL FACTOR, Ct | = 1.149 | |

5. WIND LOAD:

| | |
|---|---|
| BASIC DESIGN WIND SPEED, V | = 117 MPH |
| NOMINAL DESIGN WIND SPEED, Vasd | = 90.6 (Vult*√0.6) MPH |
| RISK CATEGORY | = II |
| WIND EXPOSURE CATEGORY | = C |
| DIRECTIONALITY FACTOR, Kd | = 0.85 |
| TOPOGRAPHIC FACTOR, Kzt | = 1.0 |
| INTERNAL PRESSURE COEFFICIENT, GCpi | = ± 0.18 |
| BUILDING ENCLOSURE CLASSIFICATION | = ENCLOSED |
| WIND PRESSURE ON SOLID SIGNS | = 44.4 PSF |

6. SEISMIC DESIGN DATA:

| | |
|---|---|
| RISK CATEGORY | = II |
| SEISMIC IMPORTANCE FACTOR, Ie | = 1.00 |
| SDS | = 0.120 |
| SD1 | = 0.073 |
| SS | = 0.28 |
| S1 | = 0.05 |
| SITE CLASS | = D (ASSUMED) |
| SEISMIC DESIGN CATEGORY | = B |
| RESPONSE MODIFICATION FACTOR, R | = 3 |
| BASIC SEISMIC FORCE RESISTING SYSTEM | = STRUCTURAL STEEL SYSTEM NOT SPECIFICALLY DETAIL FOR SEISMIC RESISTANCE |
| SEISMIC RESPONSE COEFFICIENT, Cs | = 0.101 |
| ANALYSIS PROCEDURE: | = EQUIVALENT LATERAL FORCE |

7. AT/FP (UFC 4-010-01):

   PER THE REQUIREMENTS OF UFC 4-010-01, WITH CHANGE 3, 24 MAY 2024, HARDENING OF THE BUILDING STRUCTURE IS NOT REQUIRED, INCLUDING AROUND GLAZED WINDOWS AND DOORS, AS THE EXISTING ARMY RECRUITMENT STATION IS CONSIDERED A LOW OCCUPANCY BUILDING AND IS THEREFORE EXEMPT FROM ALL PROVISIONS OF THE STANDARD.

# STRUCTURAL STEEL

1. REFERENCES
   - A. AISC STEEL CONSTRUCTION MANUAL, 16TH EDITION
   - B. AWS D1.1 STRUCTURAL WELDING CODE - STEEL
2. MATERIALS
   - A. GRADE STEEL

| | |
|---|---|
| WIDE FLANGES | ASTM A992, GRADE 50 |
| CHANNELS, ANGLES, AND PLATES | ASTM A572 |
| SHEAR CONNECTOR PLATES | ASTM A572, GRADE 50 |
| STRUCTURAL PIPE | ASTM A53, GRADE B, Fy=35 KSI |
| ROUND HSS | ASTM A500, GRADE C, Fy=50 KSI |
| SQUARE OR RECTANGLE HSS | ASTM A500, GRADE C, Fy=50 KSI |

   - B. ANCHOR BOLTS: ASTM F1554, GRADE 55, WELDABLE.
   - C. STRUCTURAL BOLTS: ASTM A325-N
   - D. WELDS: E70XX ELECTRODES
3. CONNECTIONS
   - A. AISC MANUAL STANDARD CONNECTIONS UNLESS NOTED OTHERWISE. HIGH-STRENGTH BOLTS: ASTM A325-N, 3/4" UNLESS NOTED OTHERWISE. BEARING TYPE INSTALLED IN CONFORMANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS. UNLESS NOTED OTHERWISE, STANDARD AISC "USUAL GAGE" DIMENSIONS SHALL BE USED FOR LOCATING HOLES FOR BOLTS, EXPANSION ANCHORS, ETC. IN ALL ANGLES, BEAM FLANGES, ETC.
   - B. THE ASSEMBLY SURFACE, INCLUDING THOSE ADJACENT TO THE WASHER, SHALL BE FREE OF MILL SCALE, OIL, PAINT OR OTHER COATINGS.
   - C. ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THAT SPECIFIED IN THE AISC MANUAL. FULL TENSIONING SHALL BE BY THE TURN OF NUT METHOD, BY A DIRECT TENSION INDICATOR, OR BY PROPERLY CALIBRATED WRENCHES. PROVIDE HARDENED WASHERS UNDER THE NUT OR BOLT HEAD, WHICHEVER IS THE ELEMENT TURNED IN TIGHTENING.
   - D. WELDING - PERFORM ALL WELDING IN ACCORDANCE WITH AWS D1.1 CODE, LATEST EDITION, WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY AWS IN PERFORMING THE TYPE OF WORK INDICATED.
   - E. ALL BEAMS SHALL HAVE SIMPLE SHEAR CONNECTIONS DESIGNED TO SUPPORT AT LEAST 1/2 THE TOTAL UNIFORM LOAD LISTED IN THE AISC MANUAL OF STEEL CONSTRUCTION.
4. TOLERANCES: AISC CODE OF STANDARD PRACTICE (LATEST EDITION)
5. SHOP DRAWINGS
   - A. SUBMIT ERECTION AND FABRICATION SHOP DRAWINGS FOR A/E APPROVAL PRIOR TO CONSTRUCTION.
   - B. SUBMIT ERECTION PROCEDURES AND TEMPORARY BRACING PLAN FOR A/E REVIEW PRIOR TO CONSTRUCTION.
   - C. SUBMIT CONNECTION CALCULATIONS FOR A/E APPROVAL PRIOR TO CONSTRUCTION.
   - D. SHOP DRAWINGS AND CALCULATIONS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE STRUCTURAL STEEL WILL BE INSTALLED.

# CONCRETE POST-INSTALLED ANCHORS

1. ADHESIVE ANCHORS
   - A. APPROVED SYSTEMS INCLUDE HILTI HIT-RE 500 V3 (ICC ESR 3814) OR HILTI HIT-HY 200 ADHESIVE WITH HAS/HIT-V THREADED ROD WITH SAFESET TECHNOLOGY (ICC ESR 3187) OR EQUAL CONSIDERING LOAD RESISTANCE, IN-SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OR COMPREHENSIVE INSTALLATION INSTRUCTIONS, AND CREEP. ADHESIVE ANCHORS SHALL BE APPROVED FOR USE WITH CRACKED CONCRETE PER ACI 308. CURRENT ICC-ESR SHALL BE SUBMITTED.
   - B. ALL PERSONNEL INSTALLING ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. TRAINING DOCUMENTATION FROM THE MANUFACTURER SHALL BE AVAILABLE ON REQUEST.
   - C. HOLE SIZES AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)
   - D. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH SHALL BE BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO WATER SATURATED HOLES DRILLED USING A CARBIDE DRILL BIT INTO CONCRETE THAT HAS BEEN CURED FOR AT LEAST 21 DAYS.
   - E. FILL IN ALL ABANDONED HOLES WITHIN 2" OF NEW ANCHOR LOCATIONS.
   - F. WHERE REQUIRED, A PROGRAM FOR ON-SITE PROOF LOADING, THAT IS, PROOF LOADING PROGRAM, TO BE CONDUCTED AS PART OF THE SPECIAL INSPECTION AND SHALL BE ESTABLISHED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD AND SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS:
     - a. FREQUENCY OF PROOF LOADING BASED ON ANCHOR TYPE, DIAMETER, AND EMBEDMENT.
     - b. PROOF LOADS BY ANCHOR TYPE, DIAMETER, EMBEDMENT, AND LOCATION.
     - c. ACCEPTABLE DISPLACEMENTS AT PROOF LOAD.
     - d. REMEDIAL ACTION IN THE EVENT OF FAILURE TO ACHIEVE PROOF LOAD OR EXCESSIVE DISPLACEMENT.

     UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGN PROFESSIONAL OF RECORD, PROOF LOADS SHALL BE APPLIED AS CONFINED TENSION TESTS (4.7.2.3). PROOF LOADS LEVELS SHALL NOT EXCEED THE LESSER OF 50 PERCENT OF THE EXPECTED PEAK LOAD BASED ON ADHESIVE BOND STRENGTH, OR 80 PERCENT OF THE ANCHOR YIELD STRENGTH. MAINTAIN THE PROOF LOAD AT THE REQUIRED LOAD LEVEL FOR A MINIMUM OF 10 SECONDS.
2. EQUIPMENT ANCHORS:
   - A. SIZE, LENGTH, AND LOCATION OF EQUIPMENT ANCHORS SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: J. THOMAS
DRAWN BY: J. THOMAS
CHECKED BY: A. COATS
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

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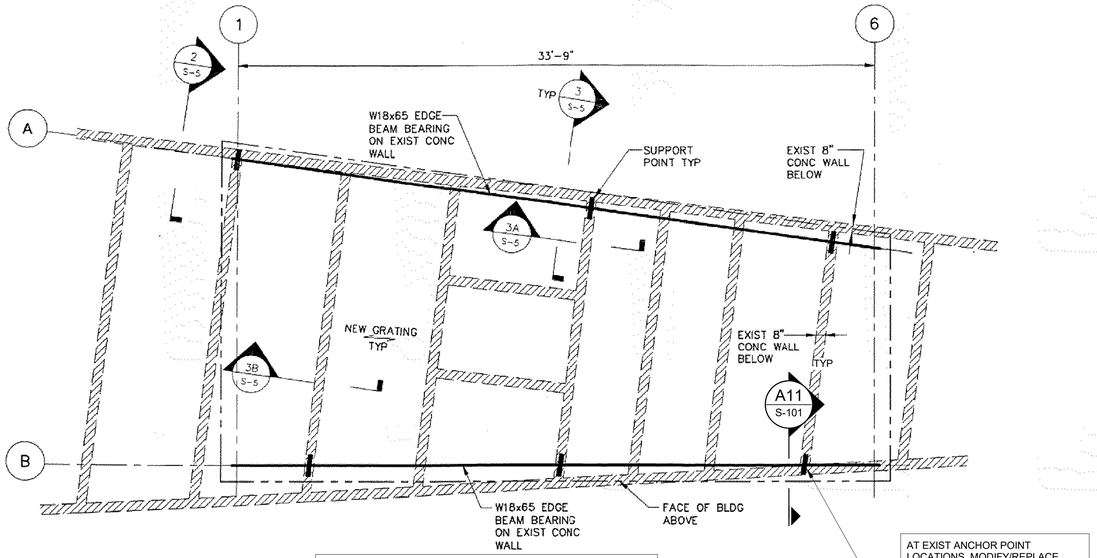
J. JONES

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

STRUCTURAL GENERAL NOTES

SHEET ID
S-001

RTA SUBMISSION

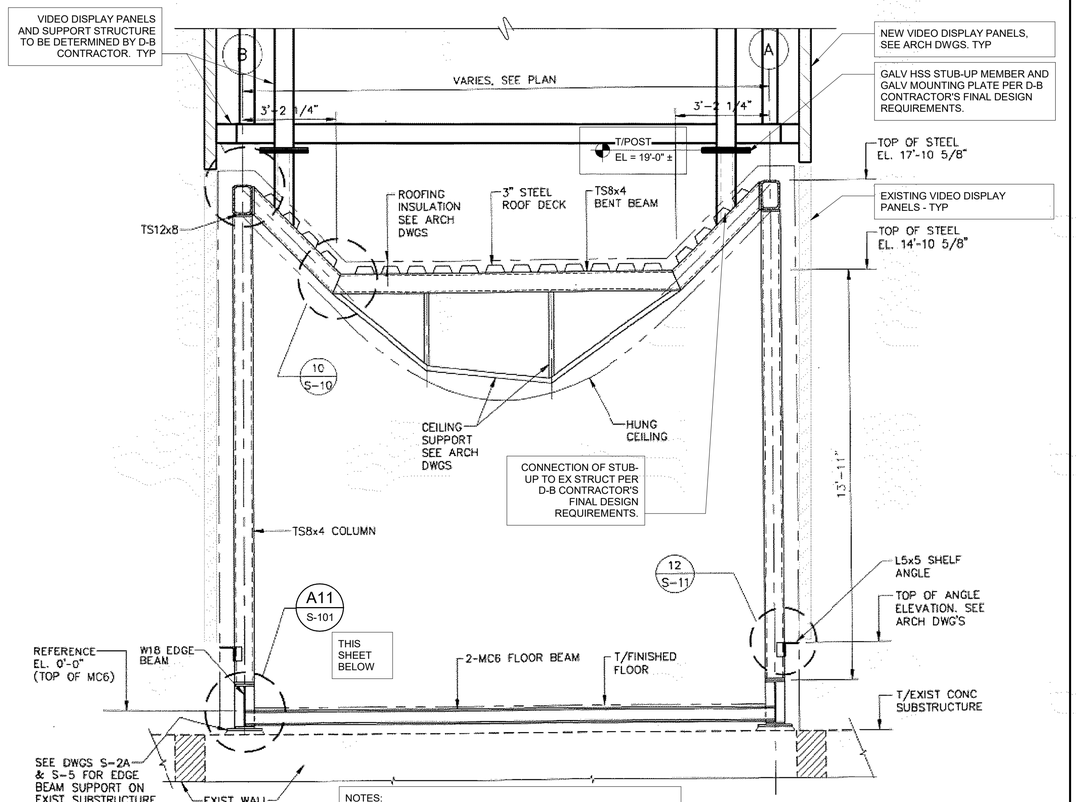



NOTES:

1. EXIST STRUCTURE SUPPORT PLAN IS COPIED FROM RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## J1 EX STRUCTURE SUPPORT PLAN/ NEW WORK

SCALE: NTS

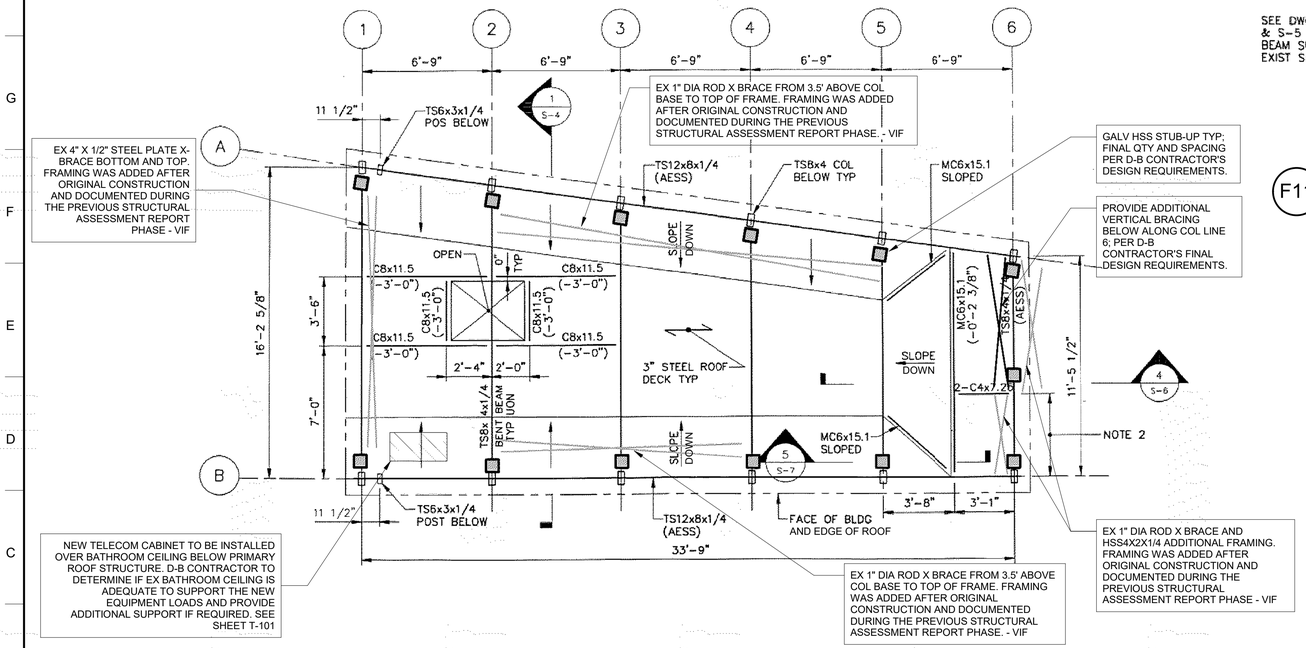



NOTES:

1. EXIST FRAME ELEVATIONIS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## F11 TYP EX FRAME ELEVATION/ NEW WORK

SCALE: NTS



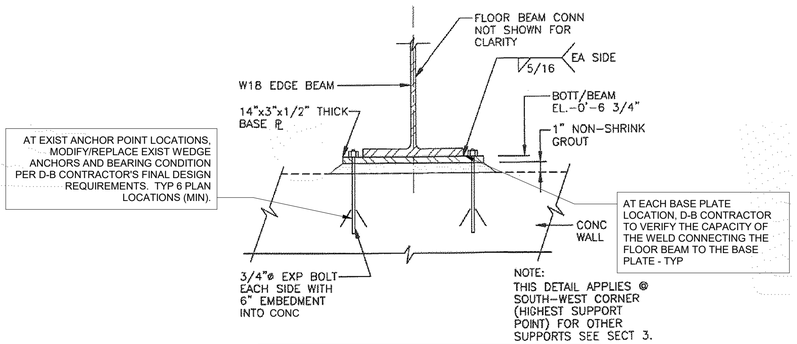

NOTES:

1. EXIST ROOF FRAMING PLAN IS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## A1 EX ROOF FRAMING PLAN/ NEW WORK

SCALE: NTS

PLAN NORTH




NOTES:

1. EXIST ANCHORAGE DETAIL IS COPIED FROM THE RECORD DRAWINGS, DATED 06-02-1998. ALL NEW WORK NOTES HAVE BEEN INCLUDED INSIDE RECTANGLES.

## A11 TYP EX ANCHORAGE DETAIL/ NEW WORK

SCALE: NTS

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ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
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DESIGNED BY: A. COATS
DRAWN BY: J. THOMAS
CHECKED BY: J. JONES
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
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TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100
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MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

STRUCTURAL PLANS AND SECTIONS

SHEET ID

S-101

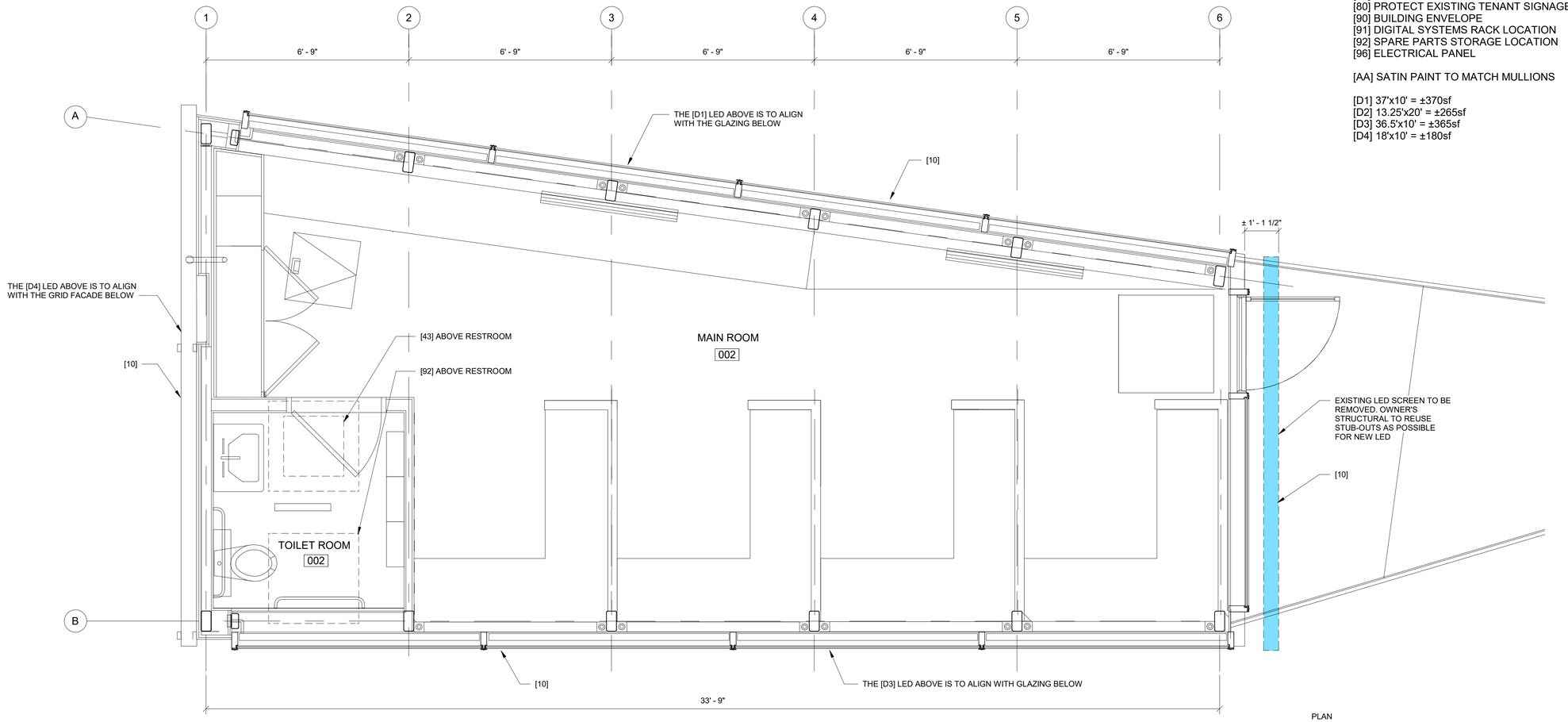
RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
[24] BASE BUILDING STRUCTURE
[30] ELECTRICAL CONDUIT, CABLE, JUNCTION BOX, AND DISTRIBUTION
[32] CABLE MANAGEMENT SYSTEM
[40] DATA CABLE
[41] DATA CONDUIT AND JUNCTION BOX
[43] CONTROL EQUIPMENT RACK
[50] WATERPROOFED BUILDING PENETRATIONS, TYPICAL OF ALL
[60] DISPLAY ENCLOSURE PANELS
[70] CONFIDENCE CAMERA
[80] PROTECT EXISTING TENANT SIGNAGE
[90] BUILDING ENVELOPE
[91] DIGITAL SYSTEMS RACK LOCATION
[92] SPARE PARTS STORAGE LOCATION
[96] ELECTRICAL PANEL

[AA] SATIN PAINT TO MATCH MULLIONS

[D1] 37'x10' = ±370sf
[D2] 13.25'x20' = ±265sf
[D3] 36.5'x10' = ±365sf
[D4] 18'x10' = ±180sf




## FIRST FLOOR PLAN - EXISTING

SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
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TETRA TECH / MASON HANGER JOINT VENTURE
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ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

EXISTING FLOOR PLAN

SHEET ID

A-100

RTA SUBMISSION

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
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[30] ELECTRICAL CONDUIT, CABLE, JUNCTION BOX, AND DISTRIBUTION
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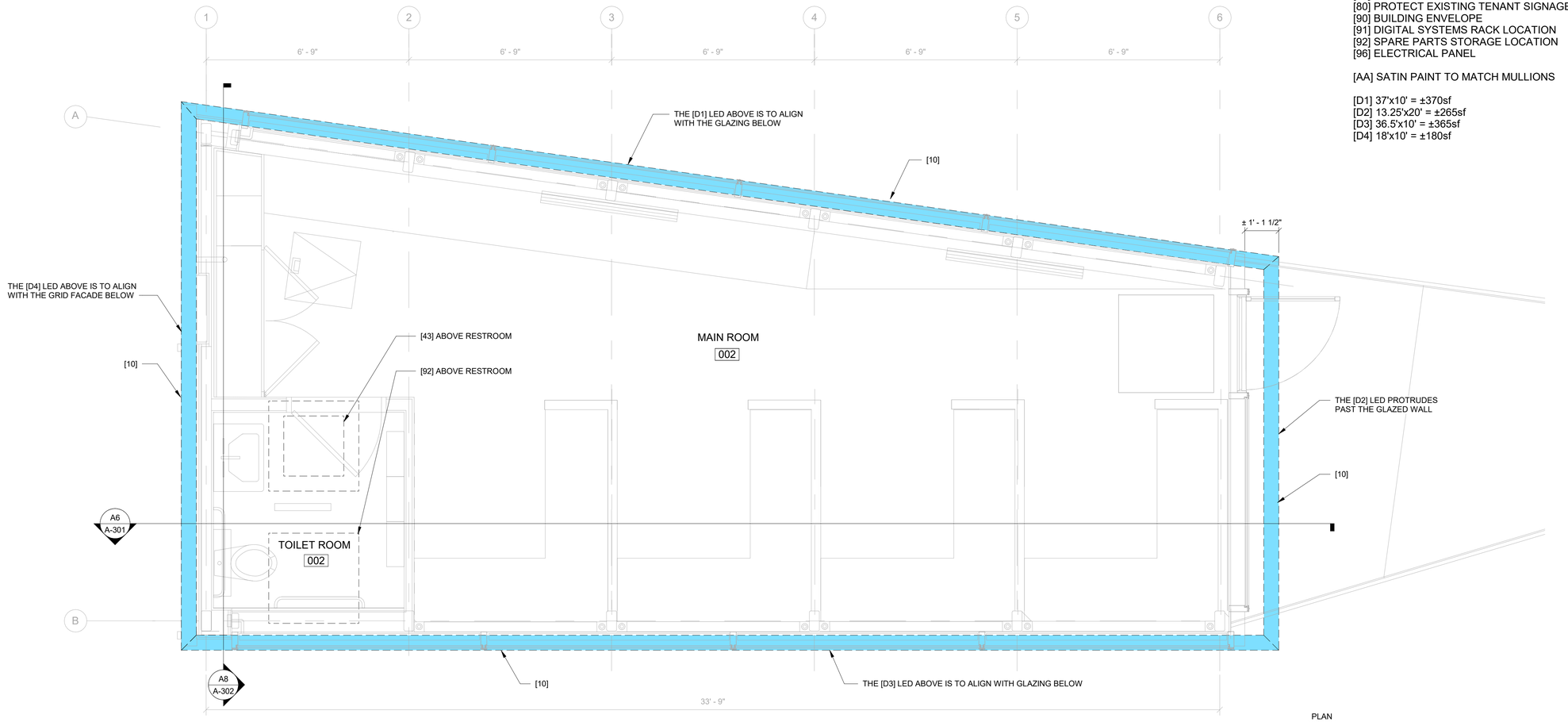



## CLERESTORY PLAN

SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

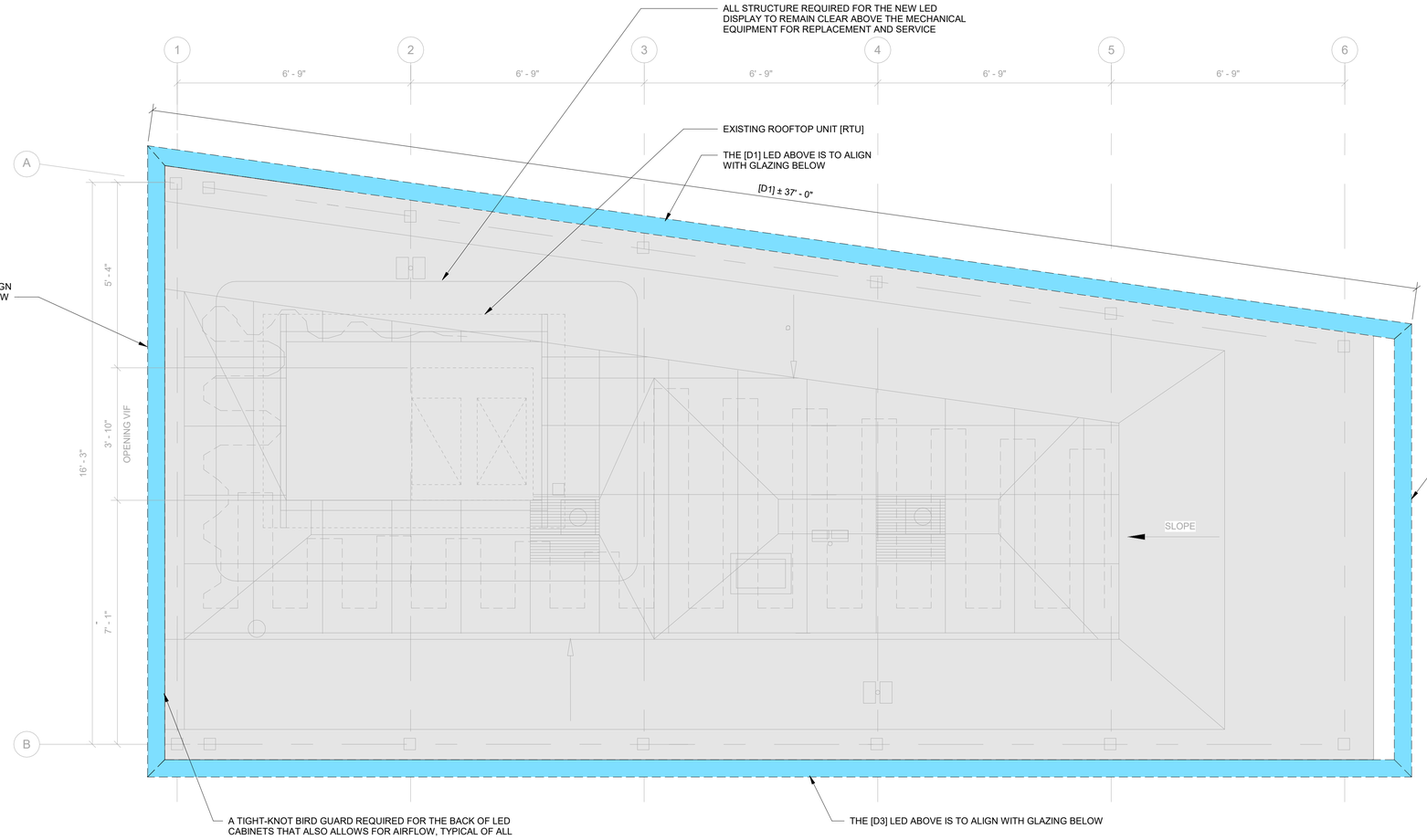
MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

PLAN WITH LED OVERLAY

SHEET ID

A-101

RTA SUBMISSION




## ROOF PLAN

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

# KEYNOTES:

[10] LED DISPLAY
[20] SECONDARY STRUCTURE
[21] PRIMARY STRUCTURE
[22] PRIMARY MATCH-PLATE
[23] BASE BUILDING MATCH-PLATE
[24] BASE BUILDING STRUCTURE
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[43] CONTROL EQUIPMENT RACK
[50] WATERPROOFED BUILDING PENETRATIONS, TYPICAL OF ALL
[60] DISPLAY ENCLOSURE PANELS
[70] CONFIDENCE CAMERA
[80] PROTECT EXISTING TENANT SIGNAGE
[90] BUILDING ENVELOPE
[91] DIGITAL SYSTEMS RACK LOCATION
[92] SPARE PARTS STORAGE LOCATION
[96] ELECTRICAL PANEL

[AA] SATIN PAINT TO MATCH MULLIONS

[D1] 37'x10' = ±370sf
[D2] 13.25'x20' = ±265sf
[D3] 36.5'x10' = ±365sf
[D4] 18'x10' = ±180sf

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
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OPTION TITLE 1
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US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
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1136 OAK VALLEY DRIVE, SUITE 100
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MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ROOF PLAN

SHEET ID

A-102

RTA SUBMISSION

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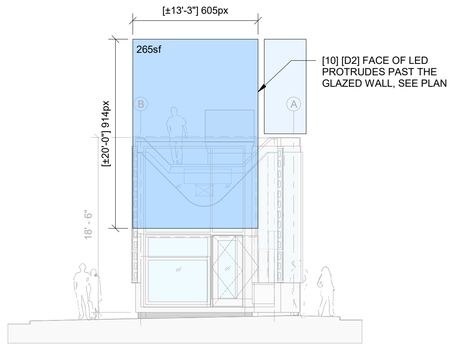
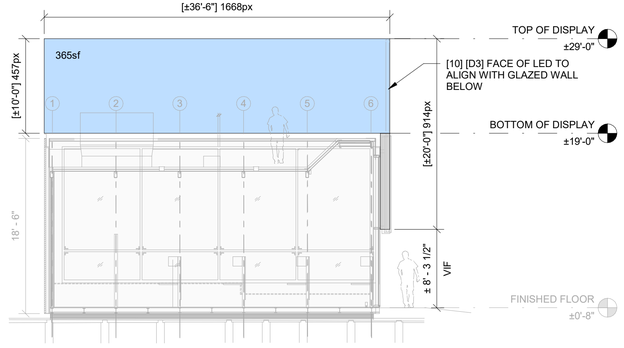
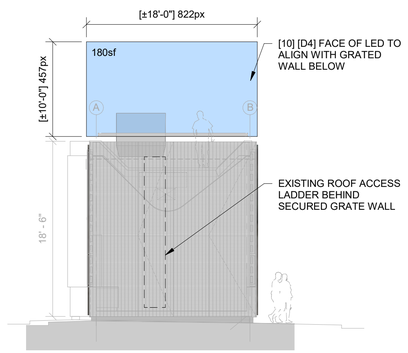


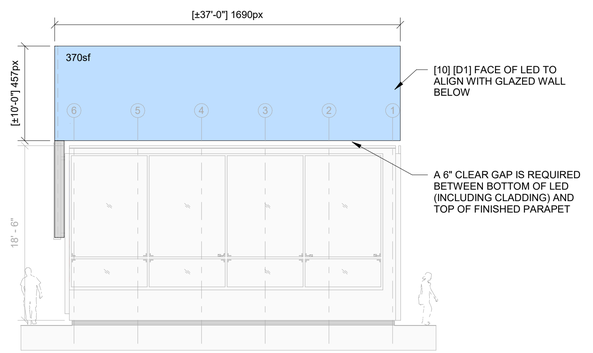

G5 NORTH ELEVATION - D2 LED
SCALE: 1/8" = 1'-0"




G11 EAST ELEVATION - D3 LED
SCALE: 1/8" = 1'-0"

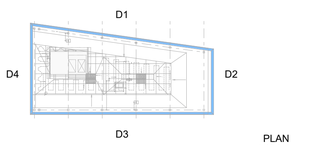



B5 SOUTH ELEVATION - D4 LED
SCALE: 1/8" = 1'-0"




B11 WEST ELEVATION - D1 LED
SCALE: 1/8" = 1'-0"

0 4' 8' 16'




KEY PLAN

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: O. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELEVATIONS

SHEET ID
A-201

RTA SUBMISSION

# KEYNOTES:

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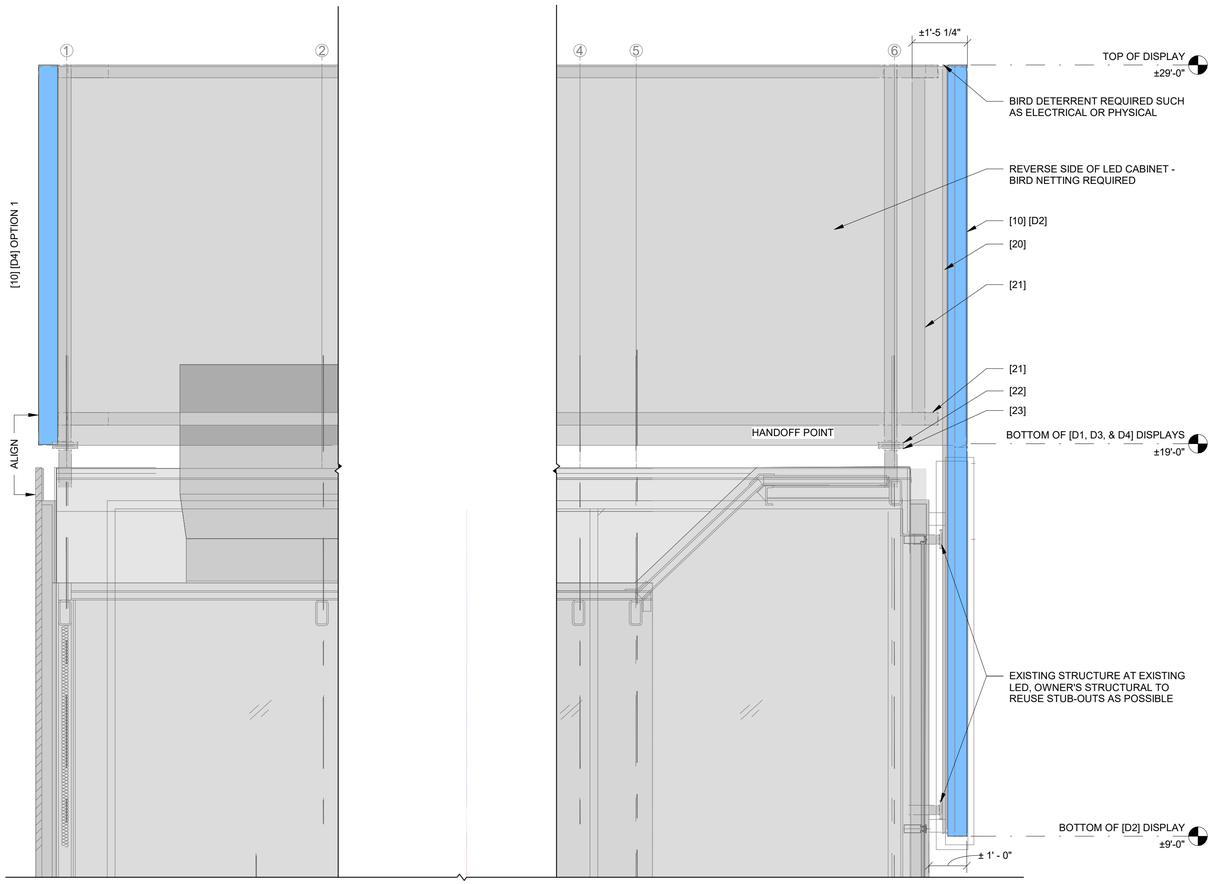


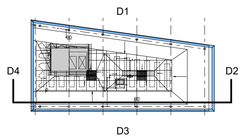


KEY PLAN

PLAN NORTH

A6 SECTION DIAGRAM - EAST
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. LOWES
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OPTION TITLE 1
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US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALE DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

SECTIONS

SHEET ID
A-301

RTA SUBMISSION

# KEYNOTES:

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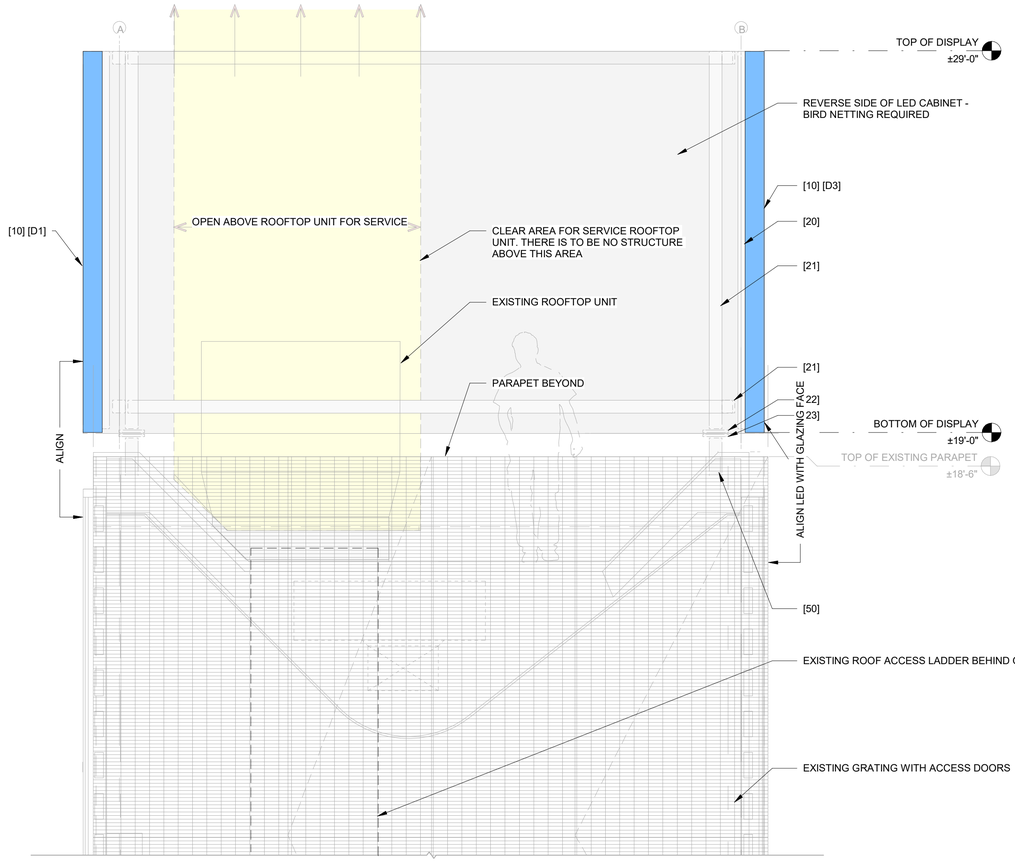


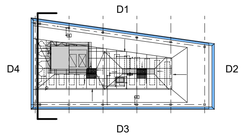


KEY PLAN

PLAN NORTH

A8 SECTION DIAGRAM - SOUTH
SCALE: 1/2" = 1'-0"

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD
OPTION TITLE 1
OPTION TITLE 2

DESIGNED BY: Q. BIAGI
DRAWN BY: T. HOURIGAN
CHECKED BY: J. JONES
SUBMITTED BY: U. REYES
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

SECTIONS

SHEET ID
A-302

RTA SUBMISSION

EXISTING CONDITIONS

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
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TETRA TECH / MASON HANGER JOINT VENTURE
1136 OAKVALLEY DRIVE, SUITE 100
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SIZE: ANSI D

ISSUE DATE: AUGUST 2025
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OPTION TITLE 1
OPTION TITLE 2

MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

EXISTING CONDITIONS

SHEET ID
A-901

RTA SUBMISSION

D2 AND D3 LED OVERLAY

## KEYNOTES:

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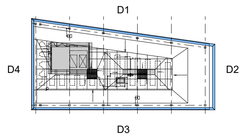


KEY PLAN

PLAN NORTH

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | ISSUE DATE: |
| Q. BIAGI | AUGUST 2025 |
| DRAWN BY: | SOLICITATION NO.: |
| T. HOURIGAN | TBD |
| CHECKED BY: | CONTRACT NO.: |
| J. JONES | TBD |
| SUBMITTED BY: | OPTION TITLE 1 |
| U. REYES | OPTION TITLE 2 |
| SIZE: ANSI D | |

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
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MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

D2 AND D3 LED OVERLAY

SHEET ID

A-902

RTA SUBMISSION

D3 AND D4 LED OVERLAY

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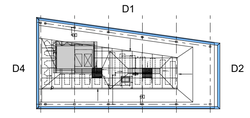


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MANHATTAN, NEW YORK
TIMES SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

D3 AND D4 LED OVERLAY

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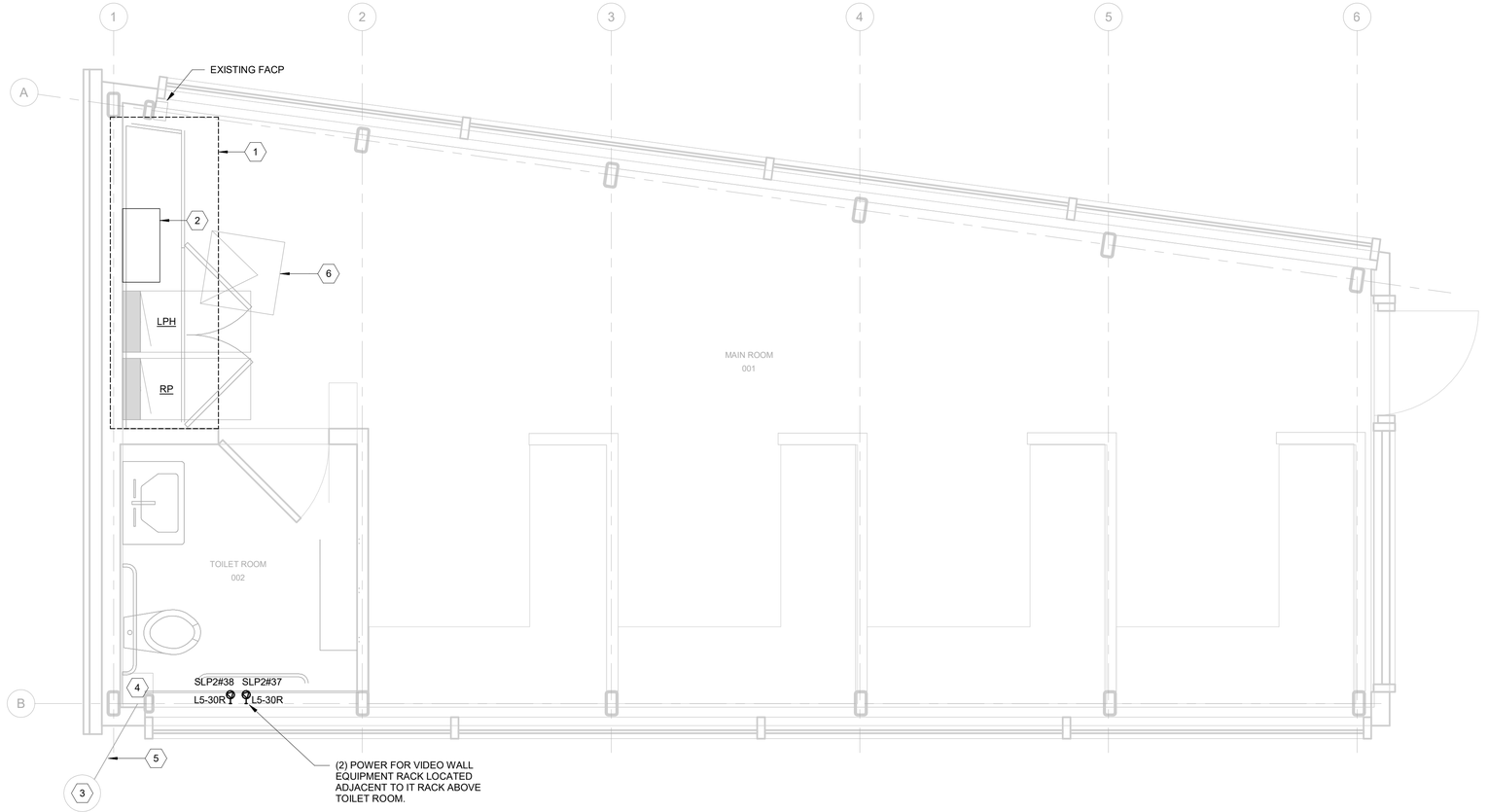


## ELECTRICAL POWER PLAN - LEVEL 1

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

## KEYED NOTES

1 THE CONTRACTOR SHALL EVALUATE THE ADJACENT CLOSET SPACE AND ASSESS THE POTENTIAL FOR EXPANDING THE ELECTRICAL CLOSET TO THE RIGHT, WHERE THE PAPER GOODS STORAGE IS CURRENTLY HOUSED. IF THE AVAILABLE SPACE DOES NOT ACCOMMODATE BOTH THE NEW 600A METERED PANEL AND THE ELECTRICAL SHADE CONTROLLERS, THE CONTRACTOR SHALL RELOCATE THE ELECTRICAL SHADE CONTROLLERS AND, IF NECESSARY, DECOMMISSION THEM TO FACILITATE THE INSTALLATION OF THE PANEL AS PLANNED.

IT IS IMPERATIVE THAT THE INSTALLATION OF THE 600A METERED PANEL REMAINS WITHIN THE ELECTRICAL CLOSET TO COMPLY WITH PROJECT REQUIREMENTS, AS THIS PANEL IS CRITICAL FOR POWERING THE STATE-OF-THE-ART DIGITAL VIDEO DISPLAY SYSTEM.

THE CONTRACTOR IS RESPONSIBLE FOR INCLUDING ANY NECESSARY GENERAL CONSTRUCTION WORK REQUIRED FOR THE EXPANSION OF THE ELECTRICAL CLOSET AND MAINTAIN THE VISUAL AESTHETIC AND MATERIALITY OF THE ADJACENT CASEWORK, ENSURING THAT THERE IS ADEQUATE SPACE FOR BOTH THE 600A METERED PANEL AND THE RELOCATED ELECTRICAL SHADE CONTROLLERS.

2 NEW CON ED 600 AMP COMBO DISCONNECT TRANS S CABINET/CON ED METER.

3. EXISTING CON ED ELECTRIC MANHOLE IN SIDEWALK - APPROXETMETLY 5'-0" FROM BUILDING. (EXACT LOCATION TO BE CONFIRMED BY CON ED).

4. EXISTING SERVICE END BOX LOCATED UNDER RECRUITMENT CENTER AND WITHIN MTA VENTILATION VAULT

NOTE MTA VENTILATION VAULT IS APPROXIMATELY 20'FT DEEP AND LOCATED UNDER RECRUITMENT CENTER. CURRENTLY THERE IS NO SCAFFOLDING OR PLATFORM TO ACCESS THE VAULT

5. EXISTING SERVICE: 4#2/0 IN CONDUIT. WIRE SIZE TO BE VERIFIED BY CON ED.

6. EXISTING FLOOR HATCH TO MTA VENTILATION VAULT BELOW - POINT OF VISUAL OBSERVATION OF SERVICE CONDUIT AND SEB.

## GENERAL NOTES

1. ALL WIRING TO BE IN CONDUIT.
2. ALL CONDUIT SHALL BE EMT INTERIOR, RGS (RIGID STEEL) EXTERIOR OR UP TO 10' ABOVE FINISHED FLOOR WITH RISK OF DAMAGE FROM EXPOSURE.
3. GROUND PER CODE.
4. COORDINATE AND SCHEDULE SHUTDOWNS WITH OWNER 2-WEEKS IN ADVANCE PRIOR TO WORK.
5. COORDINATE ROUTING OF EMPTY RACEWAYS FOR LOW VOLTAGE WIRING TO VIDEO WALL WITH ELECTRICAL POWER RACEWAYS.
6. COORDINATE NEW ELECTRICAL WORK WITH MTA AND CON EDISON. REQUEST APPROVAL FROM MTA, DOT AND OTHER AHJS.
7. DURING CONSTRUCTION PROVIDE SCAFFOLDING /PLATFORM TO PERFORM WORK WITHIN MTA VAULT
8. RACEWAYS SHALL BE PROVIDED WITH EXPANSION, EXPANSION-DEFLECTION, OR DEFLECTION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION, DEFLECTION, AND CONTRACTION.
9. CONTRACTOR IS TO PROVIDE LABELS FOR ALL RECEPTACLES DENOTING PANEL AND CIRCUIT NUMBER.

## ELECTRICAL SYMBOLS

- WP — WALL MOUNTED NEMA 3R JUNCTION BOX. (COORDINATE QUANTITY AND LOCATION WITH VIDEO DISPLAY VENDER SHOP DRAWINGS)
- L5-30R — SPECIAL PURPOSE RECETACLE
- UTILITY METER
- FUSE
- DISCONNECT
- DISCONNECT

## ABBREVATIONS

| | |
|---|---|
| A | AMPS |
| C | CONDUIT |
| G | GROUND |
| MCB | MAIN CIRCUIT BREAKER |
| V | VOLTAGE |
| VA | VOLT AMPS |
| WP | WATERPROOF |

## COORDINATION NOTES:

1. CONTRACTOR TO COORDINATE NEW ELECTRICAL SERVICE WITH CON EDISON.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL PERMIT FEES AND CONSTRUCTION COST.
3. CON EDISON CASE NUMBER MC-839555.

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: JS
DRAWN BY: CBM
CHECKED BY: JS
SUBMITTED BY: UR
ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
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MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

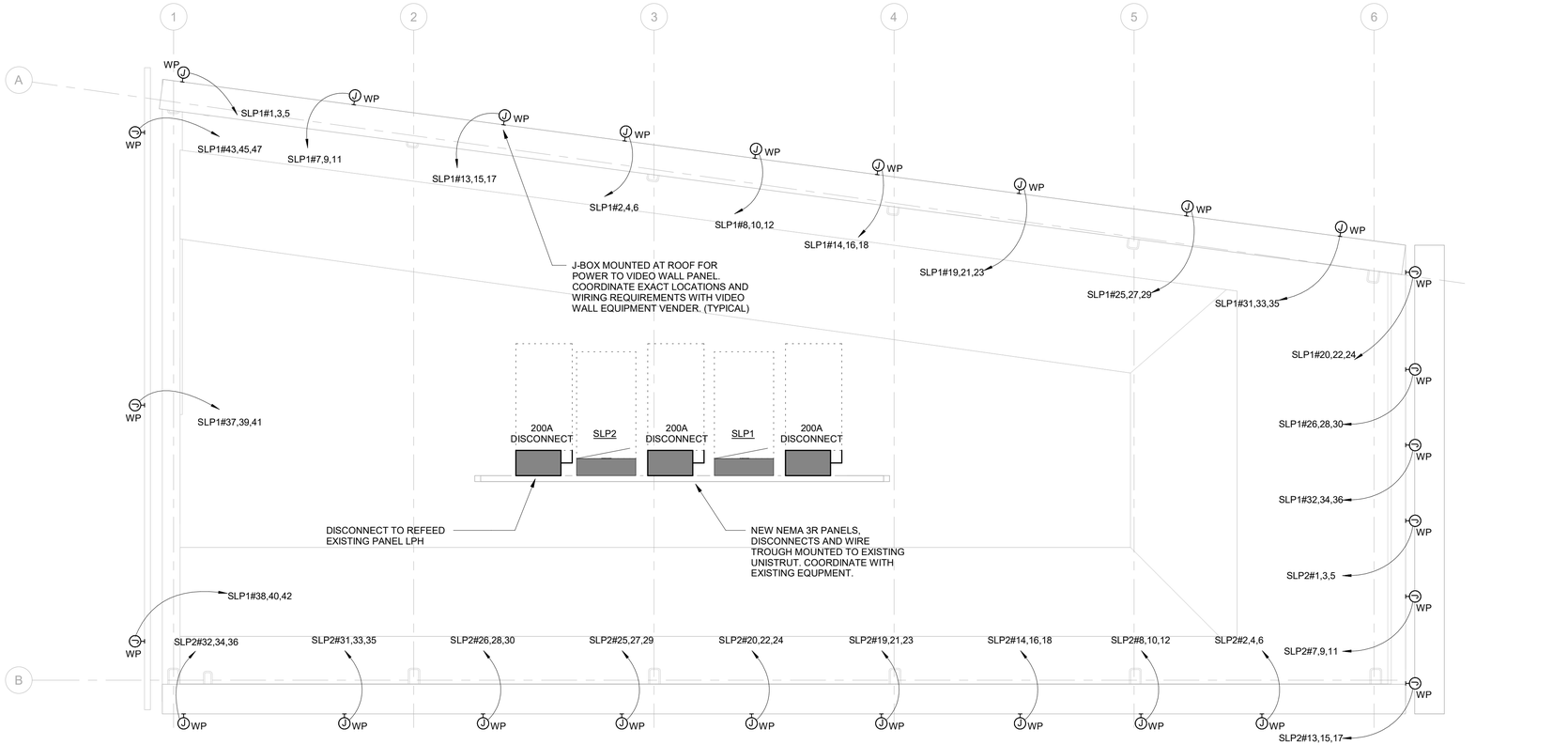
ELECTRICAL POWER PLAN - LEVEL 1

SHEET ID

E-101

RTA SUBMISSION

CUI




## ELECTRICAL POWER PLAN - ROOF

SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 4'

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
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| | | |

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MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELECTRICAL POWER PLAN - ROOF

SHEET ID

E-102

RTA SUBMISSION

CUI

## Branch Panel: SLP1

**Location:** | **Supply From:** | **Mounting:** SURFACE | **Enclosure:** Type 1

**Volts:** 120/208 Wye | **Phases:** 3 | **Wires:** 4

**A.I.C. Rating:** 65,000 | **Mains Type:** M.C.B | **Mains Rating:** 200 A | **MCB Rating:** 200 A

**Notes:**

| CKT | Circuit Description | Trip | Poles | A | | B | | C | | Poles | Trip | Circuit Description | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 2 |
| 3 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 4 |
| 5 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 6 |
| 7 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 8 |
| 9 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 12 |
| 13 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D1 | 14 |
| 15 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 16 |
| 17 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 18 |
| 19 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 20 |
| 21 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 22 |
| 23 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 24 |
| 25 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 26 |
| 27 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 28 |
| 29 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 30 |
| 31 | SIGN MODULE - D1 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D2 | 32 |
| 33 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 34 |
| 35 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 36 |
| 37 | SIGN MODULE - D4 (OPTION 1) | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D4 (OPTION 1) | 38 |
| 39 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 40 |
| 41 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 42 |
| 43 | SIGN MODULE - D4 (OPTION 1) | 20 A | 3 | 1400 | 0 | | | | | 1 | 20 A | Spare | 44 |
| 45 | -- | -- | -- | | | 1400 | 0 | | | 1 | 20 A | Spare | 46 |
| 47 | -- | -- | -- | | | | | 1400 | 0 | 1 | 20 A | Spare | 48 |
| 49 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 50 |
| 51 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 52 |
| 53 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 54 |
| | | **Total Load:** | | 21000 VA | | 21000 VA | | 21000 VA | | | | | |
| | | **Total Amps:** | | 175 A | | 175 A | | 175 A | | | | | |

**Legend:**

| Load Classification | Connected Load | Demand Factor | Estimated Demand | Panel Totals | |
|---|---|---|---|---|---|
| Other | 63000 VA | 100.00% | 63000 VA | | |
| | | | | **Total Conn. Load:** | 63000 VA |
| | | | | **Total Est. Demand:** | 63000 VA |
| | | | | **Total Conn. Current:** | 175 A |
| | | | | **Total Est. Demand...** | 175 A |

## Branch Panel: SLP2

**Location:** | **Supply From:** | **Mounting:** SURFACE | **Enclosure:** Type 1

**Volts:** 120/208 Wye | **Phases:** 3 | **Wires:** 4

**A.I.C. Rating:** 65,000 | **Mains Type:** M.C.B | **Mains Rating:** 200 A | **MCB Rating:** 200 A

**Notes:**

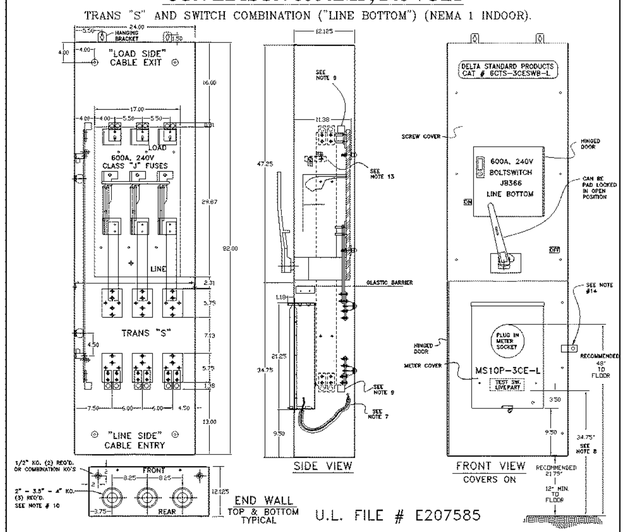
| CKT | Circuit Description | Trip | Poles | A | | B | | C | | Poles | Trip | Circuit Description | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 2 |
| 3 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 4 |
| 5 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 6 |
| 7 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 8 |
| 9 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 10 |
| 11 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 12 |
| 13 | SIGN MODULE - D2 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 14 |
| 15 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 16 |
| 17 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 18 |
| 19 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 20 |
| 21 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 22 |
| 23 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 24 |
| 25 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 26 |
| 27 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 28 |
| 29 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 30 |
| 31 | SIGN MODULE - D3 | 20 A | 3 | 1400 | 1400 | | | | | 3 | 20 A | SIGN MODULE - D3 | 32 |
| 33 | -- | -- | -- | | | 1400 | 1400 | | | -- | -- | -- | 34 |
| 35 | -- | -- | -- | | | | | 1400 | 1400 | -- | -- | -- | 36 |
| 37 | VIDEO CONTROL EQUIP. RACK | 30 A | 1 | 1200 | 1200 | | | | | 1 | 30 A | VIDEO CONTROL EQUIP. RACK | 38 |
| 39 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 40 |
| 41 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 42 |
| 43 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 44 |
| 45 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 46 |
| 47 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 48 |
| 49 | Spare | 20 A | 1 | 0 | 0 | | | | | 1 | 20 A | Spare | 50 |
| 51 | Spare | 20 A | 1 | | | 0 | 0 | | | 1 | 20 A | Spare | 52 |
| 53 | Spare | 20 A | 1 | | | | | 0 | 0 | 1 | 20 A | Spare | 54 |
| | | **Total Load:** | | 19200 VA | | 16800 VA | | 16800 VA | | | | | |
| | | **Total Amps:** | | 160 A | | 140 A | | 140 A | | | | | |

**Legend:**

| Load Classification | Connected Load | Demand Factor | Estimated Demand | Panel Totals | |
|---|---|---|---|---|---|
| Other | 50400 VA | 100.00% | 50400 VA | | |
| R | 2400 VA | 100.00% | 2400 VA | **Total Conn. Load:** | 52800 VA |
| | | | | **Total Est. Demand:** | 52800 VA |
| | | | | **Total Conn. Current:** | 147 A |
| | | | | **Total Est. Demand...** | 147 A |

## CON EDISON 600 AMP, 240 VOLT

TRANS "S" AND SWITCH COMBINATION ("LINE BOTTOM") (NEMA 1 INDOOR).

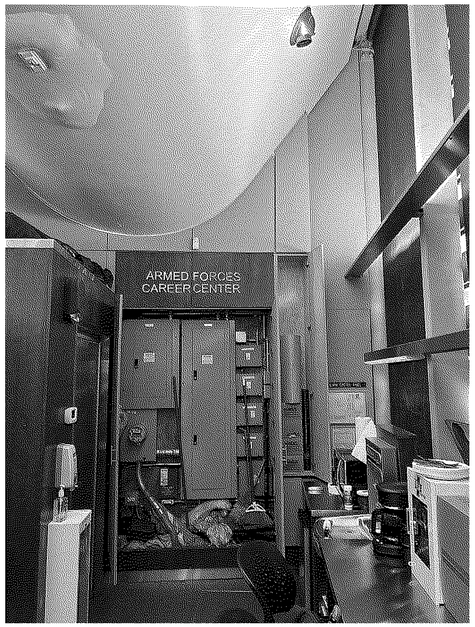



U.L. FILE # E207585

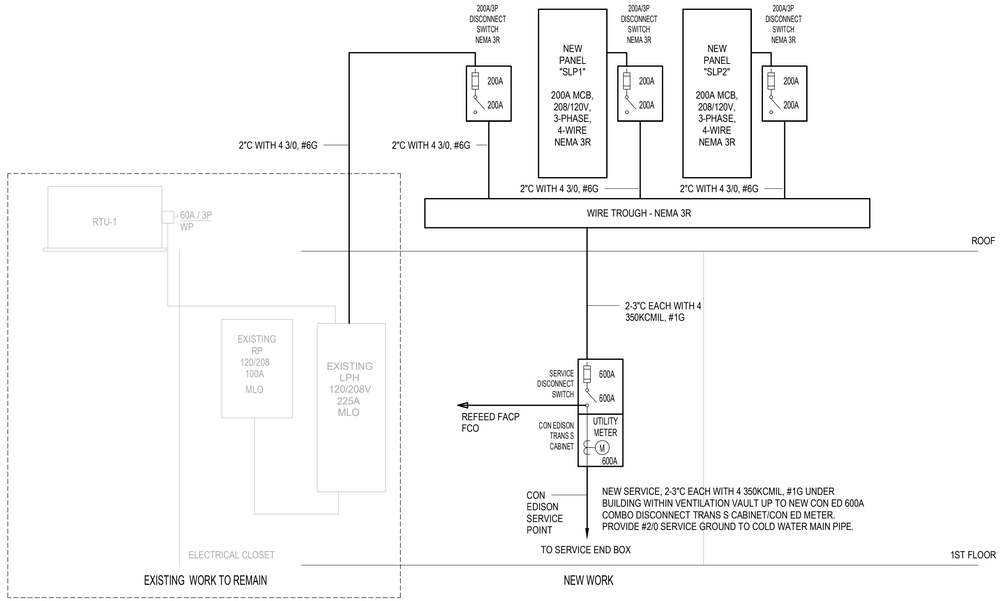
1. CABINET SHALL BE RATED NEMA 1 ( INDOOR ONLY ) AND SHALL BE CONSTRUCTED FROM CODE GAUGE GALVANIZED OR GALVANNEALED STEEL.
2. BUS BAR SHALL BE SILVER OR TIN PLATED AND SHALL BE SIZED PER THE NEC.
3. BUS BAR SHALL BE MOUNTED IN THE CABINET BY MEANS OF STANDOFF INSULATORS OR INSULATED MOUNTING BRACKETS. INSULATING MATERIAL SHALL CONFORM TO THE APPLICABLE SECTIONS OF UL 746 AND UL 94. THE CABINET SHALL BE UL, CON EDISON AND NYC ADVISORY BOARD APPROVED.
4. THE CABINET IS INTENDED FOR CABLE ENTRY THROUGH BOTTOM AND EXIT THROUGH THE TOP ONLY.
5. THE SHORT CIRCUIT WITHSTAND CAPABILITY OF THE CABINET ASSEMBLY SHALL BE RATED AT 200,000 RMS SYMMETRICAL AMPERES WITH CLASS "J" FUSES.
6. THE ENCLOSED SWITCH REQUIRES 600AMP, 250V, CLASS "J" FUSES – NOT PROVIDED.
7. INSULATED SLEEVING SHALL BE PROVIDED WHERE MULTICONDUCTOR BUNDLE PASSES UNDER NEUTRAL BAR. WIRE MOUNTS ARE RIVETED IN PLACE.
8. THE RECOMMENDED MOUNTING HEIGHT TO THE FLOOR IS 21.75". THE MINIMUM MOUNTING HEIGHT TO THE FLOOR IS 12" WHERE FIELD CONDITIONS DO NOT PERMIT THE RECOMMENDED HEIGHT TO BE USED.
9. USE ONLY MANUFACTURER'S APPROVED LUGS PROVIDED. EACH SINGLE LUG ON CT SIDE IS RATED FOR (1) 600MCM – #4. DOUBLE LUGS ON SWITCH SIDE IS RATED FOR (2) 600MCM – #4 CABLE.
10. **ONLY FACTORY PREFABRICATED KNOCKOUTS ON THE ENCLOSURE SHALL BE USED.**
11. PROVIDE PREWIRED TRANS "S" UNIT WITH #12 AWG STRANDED (19/25) THHN COPPER COLOR CODED WIRE FROM THE TEST SWITCH TO THE SOCKET ASSEMBLY AND FROM THE TEST SWITCH METERING COMPARTMENT INTO THE CT COMPARTMENT. LEAVE 7 FT. OF WIRE FOR FUTURE CONNECTION TO THE CURRENT TRANSFORMERS. USE EITHER HOOK OR RING TYPE TINNED COPPER LUGS FOR TERMINATIONS. ALL WIRING IN ACCORDANCE WITH CON EDISON MES #195, EXCEPT AS NOTED IN MES #751 FOR FORM 9S METER SOCKET.
12. THE UNIT IS MARKED "SUITABLE FOR USE AS SERVICE EQUIPMENT".
13. THE UNIT IS SHIPPED WITH AN "INSULATED NEUTRAL" AND A BOUNDING KIT ("BBK") PROVIDED WITH INSTRUCTION (FOR INSTALLATION AS REQUIRED BY CONTRACTOR).
14. PROVISIONS FOR MOUNTING SECURITY HARDWARE IN CT CABINET DOOR AND METER COVER (HARDWARE NOT PROVIDED).

**CAT.# 6CTS-3CESWB-L**

| | |
|---|---|
| **SUPERIOR ELECTRICAL ENCLOSURE INC.**<br>**DBA: Delta Standard Products**<br>16 SPENCER ST. BROOKLYN, N.Y. 11205<br>PHONE: 718-797-9090 FAX: 718-797-9099<br>**e-mail: Info@SuperiorEE.com** | TITLE: CON EDISON (LINE-BOT)<br>600 AMP, 240 VOLT<br>DWG. NO.: 4/30/12<br>SPEC. NO.: FL-300A0160-SEE |




2 EXISTING ELECTRICAL CABINET
SCALE: NTS




1 ELECTRICAL RISER DIAGRAM
SCALE: NTS

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

DESIGNED BY: JS
DRAWN BY: CBM
CHECKED BY: JS
SUBMITTED BY: UR
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

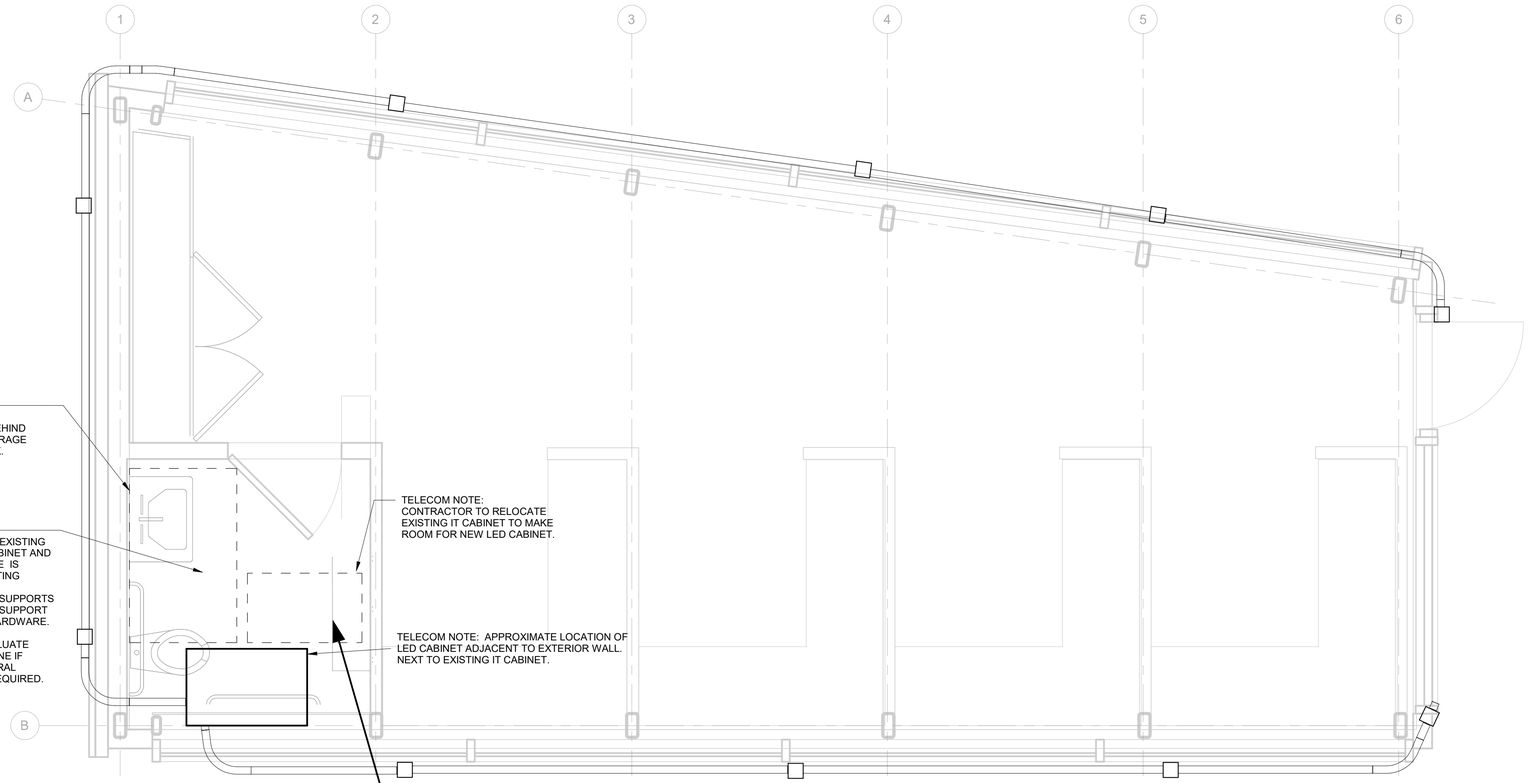
TERTA TECH / MASON HANGER JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MICHIGAN 48108

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461269

ELECTRICAL RISER AND SCHEDULES

SHEET ID
E-201

RTA SUBMISSION




## COMMUNICATIONS PLAN - LEVEL 1

SCALE: 1/2" = 1'-0"

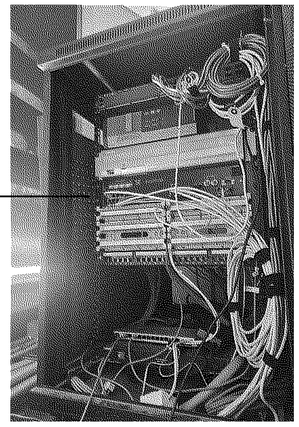
## TELECOM NOTES

1. CONTRACTOR TO PROVIDE GROUNDING BAR NEARBY NEW LED CABINET, GROUNDED TO BUILDING STEEL.

2. ALL LOW VOLTAGE CABLING ASSOCIATED WITH LED SCOPE TO BE PROVIDED BY LED VENDOR.

3. LED VENDOR TO PROVIDE ALL PATCH CORDS TO NETWORK SWITCH AS REQUIRED.

EXISTING TELECOM CABINET ABOVE BATHROOM THAT NEEDS TO BE MOVED RIGHT TO MAKE ROOM FOR NEW LED CABINET



INSIDE EXISTING TELECOM CABINET ABOVE BATHROOM

0 1'-0" 2'-0" 4'-0"
SCALE: 1/2" = 1'-0"

US Army Corps of Engineers ®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: PK
DRAWN BY: KG
CHECKED BY: JA
SUBMITTED BY: U REYES
SIZE: ANSI D

ISSUE DATE: AUGUST 2025
SOLICITATION NO.: TBD
CONTRACT NO.: TBD

US ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
26 FEDERAL PLAZA
NEW YORK, NY 10278

TERTA TECH / MASON HANGER
JOINT VENTURE
1136 OAK VALLEY DRIVE, SUITE 100 ANN
ARBOR, MICHIGAN 48103

MANHATTAN, NEW YORK
TIME SQUARE VIDEO DISPLAY UPGRADE
PROJECT # 461289

COMMUNICATIONS PLAN - LEVEL 1

SHEET ID

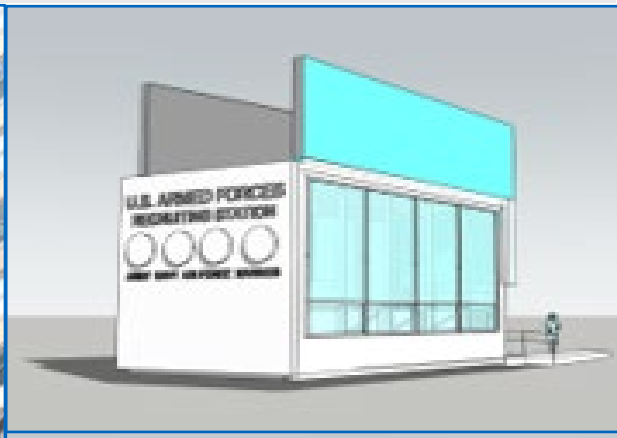
T-101

RTA SUBMISSION

US Army Corps
of Engineers ®
New York District

# Times Square Video Display Upgrade
# Manhattan, NY

Design Analysis – RTA Submission



Contract No. **W912DS21D0002**
Project No. **W912DS25F0040**
07 August 2025

**FINAL D-B RFP w/ 25% Design**

TETRA TECH

Mason&Hanger
*A Day & Zimmermann Company*

Joint Venture

# Times Square Video Display Upgrade Manhattan, NY

Contract No. **W912DS21D0002**, Project No. **W912DS25F0040**
07 August 2025

## PRESENTED TO

**New York District Corps of Engineers**
26 Federal Plaza, Room 17-302
New York, NY 10278-0090
Attn: Nicole Furtado,
nicole.a.furtado@usace.army.mil
Stephen Brown,
stephen.m.brown@usace.army.mil

## PRESENTED BY

**Tetra Tech/ Mason & Hanger Joint Venture**
1136 Oak Valley Drive, Suite 100
Ann Arbor, MI 48108

Prepared by:

Jeffery Jones 8/7/25
Sr. Project Manager

Uriel Reyes Digitally signed by Uriel Reyes
Date: 2025.08.06 16:36:46 -04'00'

Uriel Reyes 8/7/25
Project Manager

Brunelle, Michelle Digitally signed by Brunelle, Michelle
DN: E=Michelle.Brunelle@masonandhanger.com, CN="Brunelle, Michelle", OU=Users, OU="Lexington, KY", OU=Mason Hanger, OU=DZ - Government Services, DC=corp, DC=dayzim, DC=com
Date: 2025.08.06 16:52:46-04'00'

Michelle Brunelle 8/7/25
Project Manager

TETRA TECH Mason&Hanger
Joint Venture

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Appendix A: Design Charrette

Appendix B: Weekly In-Progress Meeting Minutes

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# 1 GENERAL

Tetra Tech / Mason & Hanger JV (TTHMJV) is contracted by the New York District Corps of Engineers to develop and prepare the Ready to Advertise (RTA) Design-Build Request for Proposal (D-B RFP) to design, fabricate and install a new digital video display on the Armed Forces Recruiting Booth in Manhattan, NY.

## 1.1 PROJECT NARRATIVE

The Armed Forces Recruiting Booth in Times Square requires a significant upgrade to enhance its visibility and engagement capabilities with the public. This project aims to install a new state-of-the-art digital video display that will not only attract potential recruits but also ensure compliance with all relevant safety and regulatory standards. Given the high traffic volume in this iconic location, the installation must be executed with minimal disruption to the bustling environment and local businesses. The project will involve assessing the existing electrical infrastructure to support the new display, which will weigh approximately 28,000 lbs. The design will adhere to applicable Department of Defense (DoD) standards and local regulations, including the New York City Construction Codes and Zoning Resolution, while incorporating local materials and construction techniques where feasible. Additionally, detailed site logistics plans will be developed to manage the flow of pedestrian and vehicular traffic during installation, ensuring safety and accessibility. The overall goal is to create a visually impactful and functional display that meets the needs of the Armed Forces while seamlessly integrating into the dynamic landscape of Times Square.

### 1.1.1 Scope of Work

The scope of work for the upgrade of the Armed Forces Recruiting Booth in Times Square includes the design, fabrication, and installation of a new digital video display, ensuring compliance with all relevant Department of Defense (DoD) standards and New York City regulations. The project began with a thorough assessment of the existing electrical service to confirm its capacity to support the new display, which has been determined to have an approximate weight of 28,000 lbs. The installation process must be meticulously planned to minimize disruption to pedestrian and vehicular traffic, adhering to safety protocols, NYC permitting requirements, and maintaining accessibility for the public and local businesses. The design will incorporate local materials and construction techniques where cost-effective, and all work will comply with DoD antiterrorism and force protection requirements. Detailed site logistics plans will be developed to outline temporary facilities, access routes, and safety measures necessary during construction. The project will also include the preparation of all necessary documentation, including drawings and specifications, utilizing Computer-Aided Design-Building Information Modeling (CAD-BIM) technology to ensure clarity and precision in the execution of the work. The overarching goal is to deliver a high-quality, visually engaging digital display that enhances the functionality of the Armed Forces Recruiting Booth while seamlessly integrating into the vibrant environment of Times Square.

### 1.1.2 Investigations & Charrette

#### 1.1.2.1 Field Investigations

Field Investigations included Architectural Investigation and Electrical/Electronic Assessment conducted from 15-18 April 2025. The Field Investigation Report was submitted on 24 April 2025. The field investigation report outlines the assessment conducted for the upgrade of the Armed Forces Recruiting Booth located in Times Square, New York City. The assessment included an architectural investigation and an electrical and electronic evaluation, aimed at facilitating the installation of a new state-of-the-art digital video display weighing approximately 28,000 lbs.

Key findings from the investigation include:

- Existing Conditions: The booth is a one-story facility constructed of structural steel framing with stainless steel and storefront exterior walls. It features ballistic glazing and is situated above a New York Mass Transit Authority tunnel grate.
- Deficiencies: Minor deficiencies were noted in the building's exterior envelope, including damaged glazing in the window system and minor misalignments of signage. Interior inspections revealed some water damage in the ceiling and damage to wood finishes. Undiagnosed trouble signal at the fire alarm control panel. Addressing these minor deficiencies is outside this contracts Scope Of Work.
- Electrical Assessment: The existing electrical service is rated at 200 amperes, 208Y/120, 3-phase, and is in good condition. The power requirements for the new video display were estimated to be between 30-40 kW average and 75-105 kW peak. Recommendations for potential upgrades to the electrical system were provided to ensure it can support the new installation.
- Compliance: The project will adhere to Unified Facilities Criteria (UFC) standards, including antiterrorism and force protection requirements. LEED Silver Certification is not required as the existing building assets are less than 10,000 GSF.
- The report emphasizes the need for careful planning and execution during the installation to minimize disruption to the high volume of pedestrian and vehicular traffic in Times Square, while ensuring compliance with safety standards and maintaining the structural integrity of the booth.

#### 1.1.2.2 Charrette

A half-day Charrette was conducted on April 17, 2025, in Tetra Tech's Manhattan, New York, Office. Three Concept Designs were presented to U.S. government personnel. The designs include LED displays with varying pixel pitches and structural considerations. The government selected Option 1, three-sided (North, East, and West); the Design Build RFP should include the option to add a fourth screen on the South end. See the Appendix A Charrette meeting minutes.

### 1.1.3 Building Program

The building program is currently 535 gross square feet.

Table 1-1 - Program Areas

| Program Area | Area (SF) |
|---|---|
| Subtotal Building Space – Open Office | 435 |
| Subtotal Building Space - Restroom | 43 |
| Subtotal Building – Net to Gross | 57 |
| **TOTAL BUILDING SPACE** | **535** |

The program has the following programmatic areas:

#### 1.1.3.1 Open Office

The Open Office space is used for recruitment with existing finishes and furnishings for a front office function with storage, guest seating and four workstations.

#### 1.1.3.2 Restroom

The existing single-occupant restroom and staff lockers.

#### 1.1.3.3 Net to Gross

Net to Gross area adjustment accounts for life safety circulation, utility rooms, and wall thicknesses.

## 1.2 CRITERIA AND STANDARDS

The following criteria and standards are applicable to the project. Discipline specific criteria and standards will be indicated within each disciplines section throughout this design analysis.

- UFC 1-200-01 DoD Building Code, Change 4 17 DEC 2024
- UFC 3-600-01 Fire Protection Engineering for Facilities with Change 6, 6 MAY 2021
- UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, Change 3, 24 MAY 2024
- NFPA 101 Life Safety Code, 2018 (as directed by UFC 3-600-01)
- IBC International Building Code (2024)
- ABA Architectural Barriers Act
- ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Building (2019)
- CABO A117.I (2017) American National Standard for Accessible and Useable Buildings and Facilities
- BCNYS Building Code of New York State
- NYCBC New York City Building Code

# 2 DESIGN QUALITY CONTROL PLAN

## 2.1 PURPOSE AND BACKGROUND

Tetra Tech / Mason & Hanger JV (TTHMJV) will develop and prepare the Ready to Advertise (RTA) Design-Build Request for Proposal (D-B RFP) to design, fabricate, and install a new digital video display on the Armed Forces Recruiting Booth in Manhattan, NY. The recruiting display is approximately 535 sq ft.

### 2.1.1 Communications

Regularly scheduled team conference calls will be conducted to keep all members informed of findings and progress and expected do-outs. Schedule compliance will be assessed with appropriate staff adjustments made to maintain schedule.

### 2.1.2 Record Keeping

Records will be prepared of all relevant telephone discussions, meetings, and decisions reached during the project. The PM will be responsible for maintaining the record and providing the USACE PM and PE/A copies within 7 days.

### 2.1.3 Sustainability

Per the Scope of Work, this project shall comply with UFC 1-200-02 High Performance and Sustainable Building Requirements. The project will not pursue third-party certification, as LEED Silver Certification is not required due to the existing building assets being less than 10,000 GSF. However, the design will incorporate sustainable practices where feasible.

### 2.1.4 Cost Estimating

The Cost Estimate will be prepared in accordance with AACE International Recommended Practice No. 18R-97 “Cost Estimate Classification System” using MCASES MII Version 4.4.3

Cost Estimate is a separate report accompanying this submittal.

## 2.2 QUALITY CONTROL REVIEWS

### 2.2.1 General

This section outlines the general process followed by Tetra Tech / Mason & Hanger JV Team to ensure quality.

### 2.2.2 Quality Control Reviews

Reviews will be completed in accordance with Paragraph 6 of the Request for Proposal Scope of Work. The main objectives of the reviews are to confirm:

- The project meets the customer’s scope, intent, and quality objectives.
- Concepts and project costs are valid.
- Appropriate computer models and methods of analysis were used, and basic assumptions are valid and used for intended purpose.
- BIM processes were followed, and clash detection was resolved.

- The source, amount, and level of detail of the data used in the analyses are appropriate for the complexity of the project.
- Content and project documentation are sufficiently complete for the current phase of the project and provides an adequate basis for future development efforts.
- The product, across all disciplines, is coordinated and consistent.
- Contract documents are clear and enforceable.

### 2.2.3 BIM Model

The BIM Manager will review the BIM Model and AutoCAD drawing to ensure they are in accordance with the plan.

### 2.2.4 Independent Technical Review

- Approximately 2 weeks prior to the submission to the client, submittal documents will be compiled by the PM/QC Manager and submitted to the Discipline Checkers / ITR Team for review.
- Approximately five days will be allowed for the ITR Team to review the documents, three days will be allowed for the Design Team incorporate the comments and two days will be allowed for production and delivery.
- Comments from the Discipline Checker / ITR Reviewers will be provided to the Design Team by “redlining” documents and by completing the Discipline ITR Checklist.
- The Design Team will respond to comments, indicating agreement, or in some cases disagreement (with an explanation).
- The Discipline Checkers / ITR Reviewers will complete the ITR Certification Letter after they have confirmed that agreed to changes have been completed.
- The PM/QC Manager will monitor the team performance.
- Upon completion of the back check the ITR, the documents will be submitted to USACE and the user for review and comment.

## 2.3 SUBMITTAL SUMMARY

### 2.3.1 Design Charrette Report

The Charrette Report will include the following:

- Meeting Minutes
- Three-Design Concepts Presentation
- Preliminary Cost Estimate

### 2.3.2 DRAFT D-B RFP Submission w/20% Concept Design

The Draft DB RFP submittal will include the following:

- Design Analysis Report
- 20% Concept Design Drawings
- Specifications
- Cost Estimate Report
- Engineering Considerations and Instructions for Field Personnel (ECIFP Report)
- Other Supporting Documents

### 2.3.3 FINAL D-B RFP Submission w/25% Concept Design

The Final DB RFP submittal will include the following:

- Rev. Design Analysis Report
- Rev. 25% Concept Design Drawings
- Rev. Specifications
- Rev. Cost Estimate Report
- Rev. ECIFP Report
- Rev. Other Supporting Documents

### 2.3.4 Certified Final (Ready to Advertise) D-B RFP Submission

The Certified Final Ready-to-Advertise submittal will include the following:

- Design Analysis Report
- 25% Concept Design
- Specifications
- Cost Estimate
- ECIFP Report
- DD 1354
- Cost Estimate

## 2.4 PROCESS

### 2.4.1 Pre-Site Visit Document Review

The following information was provided with the USACE Request for Proposal:

- Attachment 1 SOW TS Video Display 20250206
- Attachment 2 QPK Design U.S. Armed Forces Time Square Recruiting Station Structural Assessment Report FINAL COPY dated 09 August 2024
- As-Builts for building 20180515.

### 2.4.2 Charrette Preparation

The Design Team reviewed all material supplied by USACE New York for the project, including but not limited to the items listed in “Pre-Site Visit Document Review.”

The Design Team conducted a kick-off meeting to learn about the project and its program.

### 2.4.3 Charrette and Field Investigation

The Field Investigation consisted of an Architectural Investigation Team and an Electrical/Electronic Assessment Team. They conducted on-site interviews and documented findings.

The JV Project Managers, Architect, Civil Engineer, Structural Engineer, Mechanical Engineer, Fire Protection Engineer, Video Display Consultant, Electrical Engineer, IT/Electronics, and Cost Estimator attended the virtual charrette, which was hosted in person and virtually. The purpose of the charrette was to present video display concepts to the client, select a design, further develop the design, and discuss potential design issues. Led by the Senior PM, each discipline briefed existing conditions and provided recommendations for video display implementation.

### 2.4.4 Charrette Meeting Minutes

All discussions, decisions, and information received were documented in the Charrette Meeting Minutes.

## 2.4.5 DRAFT D-B RFP w/20% Design Submission

A. The requirements and decisions from the Charrette Meeting Minutes will be incorporated into the 20% submittal.
B. The 20% submittal will include the Design Narrative, Design Analysis, Site Logistics Plan, Permit Requirements (see ECIFP), Drawings, specifications table of contents, and a parametric cost estimate.

## 2.4.6 20% Submittal Documents Quality Control

A. Quality Control and ITR reviews will be performed on the 20% Submittal prior to submittal to USACE and the Base. This process is described in Section 2.2.4 of this document.
B. Approximately 2 weeks have been planned for USACE and the user to provide comments. USACE and the user are to enter comments into DrChecks.

## 2.4.7 20% Review Meeting

A. Prior to the 20% Review meeting, the Design Team will respond to the 20% Review DrChecks Comments from the user and USACE. Items that require clarification or discussion will be highlighted.
B. The PM will prepare an Agenda based on the comments received and issues prior to the Review Meeting.
C. The TT/MHJV Design Team will attend the 20% Review Meeting with the User and USACE. Other disciplines will be available via conference call as needed.
D. After the Review Meeting, the Design Team will update DrChecks to reflect on the discussions and decisions made during the meeting. The PM will issue Meeting Minutes that include the updated DrChecks Comments.
E. Comments discussed that were not entered into DrChecks will be recorded in the meeting minutes.

## 2.4.8 FINAL D-B RFP w/25% Design Submission

A. The required additional details will be incorporated into the Final 20% Documents to create the 25% Documents. The 20% DrChecks comments will also be incorporated into the 25% Draft Final Submission.
B. The 25% submittal will include updated Design Analysis, Site Logistics Plan, Permit Requirements, Drawings, specifications table of contents, and a parametric cost estimate.

## 2.4.9 25% Final Submittal Documents Quality Control

A. Quality Control and ITR reviews will be performed on the 25% Final Submittal prior to submittal to USACE and the Base. This process is described in Section 2.2.4 of this document.
B. The PM / QC Manager will verify the 25% DrChecks Comments have been incorporated into the submittal documents.
C. Approximately 2 weeks have been planned for USACE and the User to provide comments. USACE and the User are to enter comments into DrChecks.

## 2.4.10 25% Review Meeting

A. Prior to the 25% Review meeting the Design Team will respond to the 25% Review DrChecks Comments from the user and USACE. Items that require clarification and/or discussion will be highlighted.
B. The PM will prepare an Agenda based on the comments received and issue prior to the Review Meeting.
C. The TT/MHJV Design Team will attend the 25% Review Meeting with the User and USACE. Other disciplines will be available via conference call as needed.
D. After the Review Meeting, the Design Team will update DrChecks to reflect on the discussions and decisions made during the meeting. The PM will issue Meeting Minutes that include the updated DrChecks Comments.

E. Comments discussed that were not entered into DrChecks will be recorded in the meeting minutes. DrChecks will be reopened for a short period of time to allow the user to enter any missed comments that were discussed at the review meeting.

### 2.4.11 Certified Final (RTA) Submission

A. The purpose of this submittal is to:

- Allow USACE and the User to confirm comments received through the Corrected Final D-B RFP 25% Design Submittal have been incorporated.
- To update the submission with any comments received from contracting.

## 2.5 PROJECT TEAM

### 2.5.1 Design Team

Table 2-1 - Design Team

| Name | Role | email | phone |
|---|---|---|---|
| Jeff M. Jones, PE, PMP, ENV SP | Project Manager | jeffery.jones@tetratech.com | (256) 424-4070 |
| Uriel Reyes, PMP, FMP, CQM-C | Project Manger | uriel.reyes@tetratech.com | (813) 775-9956 |
| Michelle Brunelle, PMP | Project Manger | Michelle.brunelle@masonandhanger.com | (859) 221-4190 |
| Quintin Biagi, RA, AIA, GPCP, NCARB, CDT, LEED AP BD+C | Architect | Quintin.Biagi@tetratech.com | (502) 569-9057 |
| Jake Oldenburger, PE | Civil Engineer | jake.oldenburger@tetratech.com | (646) 56-4023 |
| Andrew Coats, PE | Structural Engineer | andrew.coats@tetratech.com | (513) 241-0149 |
| Rocky Edwards, PE | Fire Protection Engineer | rocky.edwards@tetratech.com | (617) 748-7800 |
| Joshua Zweback, PE | MEP | Joshua.zweback@tetratech.com | (212) 615-3760 |
| Peter J. Kraljic | IT/Electronics | Peter.kraljic@tetratech.com | (212) 615-3921 |
| Fred Cooper | Cost Estimating | fred.cooper@masonandhanger.com | (502) 569-9008 |

### 2.5.2 Independent Technical Reviewers

Table 2-2 - ITR Team

| Name | Role | email | phone |
|---|---|---|---|
| Kim Blanford, RA | Architectural & Interior ITR | Kim.Blanford@masonandhanger.com | (859) 280-3549 |
| Jared Lock, PE | Civil ITR | Jared.Lock@masonandhanger.com | 859.280.3567 |
| David Dickey, PE | Structural ITR | david.dickey@masonhanger.com | 859.280.3576 |
| Justin Wheeler, PE | Fire Protection ITR | Justin.Wheeler@MasonandHanger.com | 757-217-4003 |
| Paul Breisch | MEP ITR | Paul.Breisch@masonandhanger.com | 757.217.4970 |
| Taylor Canfield, PE | Cost Estimating | taylor.canfield@tetratech.com | (502) 569-9008 |

# 3 CIVIL

## 3.1 GENERAL

All civil site works will be temporary and consist of the staging area, overhead protection for bike lanes and pedestrian sidewalks, and lane and sidewalk closures during the project's construction.

### 3.1.1 Criteria and Standards

The following criteria and standards are applicable to the project. Discipline-specific criteria and standards are indicated within this section. See section 1.2, Criteria and Standards, for general criteria that are applicable to the project.

- UFC 3-201-01 Civil Engineering, 20 December 2022
- NYCBC New York City Building Code
- NYCDOT New York City Department of Transportation Standard Details of Construction

## 3.2 TEMPORARY CONSTRUCTION FACILITIES AND MAINTENANCE

The contractor may utilize the potential staging area as shown on CS-101 Site Logistics Plan, which is located at the plaza next to the Times Square Army Recruiting Station. The staging areas can be accessed via West 43rd Street.

The contractor shall coordinate with the City of New York and the Times Square Alliance to temporarily remove the Calpipe security bollards. The project area will be required to be fenced and gated. The contractor may use a 20’ x 8’ container for temporary facilities equipment or material storage. During construction, any damage to the existing features, such as the sidewalk, bollards, pavements, pavers, and benches, must be repaired or replaced.

For site maintenance during construction, the contractor must ensure the construction site is secure, in safe condition to protect workers and the public, debris is managed and that the structural integrity of both the new and existing portions of the building is upheld. This shall be in accordance with 2022 New York City General Administrative Provision for Construction Codes, Chapter 3 Maintenance of Buildings and NYCBC 3303: Safeguards and Maintenance of Site.

## 3.3 CIVIL COORDINATION’S AND PERMIT REQUIREMENTS

The contractor must coordinate with MTA/NYC Transit through the External Partner Program (EPP) as soon as possible, prior to commencing the project and to obtain access to the MTA ventilation vault located under the Recruitment Center. The contractor must stay away from the existing MTA emergency exit. Coordination with Con Edison will be required to locate the existing Con Edison electric manhole at the sidewalk.

Temporary overhead protection for bike lanes and pedestrian sidewalks must be in accordance with New York City Building Code Chapter 33—Safeguards During Construction or Demolition. The contractor is responsible for obtaining all lane/sidewalk closure permits through the NYC DOT Office of Construction Mitigation and Coordination (OCMC).

- NYC DOT – OCMC Building Operations/Construction Activity Permit for all lane and sidewalk closures.
- NYC DOB – Building and Site Safety Plan Permit: Required for construction, alteration, or demolition of buildings. A Site Safety Plan permit is required for specific safety measures.

- Contractor to coordinate with MTA/NYC Transit for all construction activities.
- Contractor to coordinate with Con Edison to locate existing electric manhole at the sidewalk.

# 4 STRUCTURAL

## 4.1 CRITERIA AND STANDARDS

The following criteria and standards apply to the project. Where the criteria conflict, the most stringent Unified Facilities Criteria (UFC) will take precedence, unless directed otherwise by the Client. Discipline-specific criteria and standards are indicated within this section; see section 1.2 Criteria and Standards for general criteria.

| | |
|---|---|
| UFC 1-200-01 | DoD Building Code with Change 4, (17 Dec 2024) |
| UFC 3-220-01 | Geotechnical Engineering with Change 2 (17 Oct 2024) |
| UFC 3-301-01 | Structural Engineering with Change 3 (3 Feb 2025) |
| UFC 4-010-01 | DoD Min. Antiterrorism Standards for Buildings with Change 3 (24 May 2024) |
| IBC 2024 | International Building Code |
| IEBC 2024 | International Existing Building Code |
| BCNYS | Building Code of New York State |
| NYCBC | New York City Building Code |
| ASCE 7-22 | Minimum Design Loads for Buildings and Other Structures |
| ACI 318-19 | Building Code Requirements for Structural Concrete |
| AISC 360-22 | Specification for Structural Steel Buildings, 2022 |
| AISC 325-22 | Steel Construction Manual, 2022 |
| AWS D1.1 | Structural Welding Code, Steel, 2020 |
| AWS D1.3 | Structural Welding Code, Sheet Steel, 2018 |
| SDI | Applicable Steel Deck Institute Design Guides |

The provided as-built documentation and previously conducted Structural Assessment Report are listed below, and are critical documents for the future design and construction of the proposed Scope of Work:

1) U.S. Armed Forces Recruiting Station Time Square Construction Documents, dated 7 August 1998 by Parsons Brickerhoff.
2) Times Square Recruiting Station Renovation As-Built Drawings, dated 2 March 2018 by Goshow Architects.
3) U.S. Armed Forces Times Square Recruiting Station – Structural Assessment Report, dated 9 August 2024 by QPK Design.

## 4.2 STRUCTURAL SYSTEMS

The scope of the project consists of upgrading the existing U.S. Armed Forces Recruiting Station with the installation of new, state-of-the-art video displays on three (3) sides of the existing building, while adhering to the provided Assessment Report, ensuring the structural integrity of the station, and minimizing disruption to the public and local businesses. The proposed new video displays will extend to approximately ten (10) feet above the existing parapet level, and will be installed on the north, west and east sides of the existing facility. It is anticipated that galvanized hollow structural steel tubes and mounting plates will be connected to the existing roof's bent beam support members at even spacings to adequately support the new video display panels and associated support and bracing system. Final design of support structure will be by the Design-Build Contractor.

According to the use and occupancy of the building as described, the building shall be designated as Risk Category II. In addition, the Design-Build Contractor shall ensure that the existing structure is evaluated per Section 805.2 of the IEBC.

Due to the location of the existing building, the Design-Build Contractor is to design to the Code governing requirements associated with high-wind regions (ultimate design wind speeds exceeding 115 mph). This includes, but is not limited to, the roof diaphragm and its connections must be evaluated for uplift resistance, and if the diaphragm cannot resist at least 75% of the wind loads specified in the Code, the roof diaphragm must be strengthened or replaced.

The U.S. Armed Forces Recruiting Station was originally constructed in 1998 and later modified with additional X-bracing (shortly after original construction, date unknown). The building is approximately 18 feet tall, 34 feet long and tapers in width from 16 feet wide to 12 feet wide. The floor structure consists of 3-inch-deep metal deck and plywood supported by steel channel purlins spaced approximately 6'-9" on center spanning in the east-west direction. The channels are supported by a W18x65 edge beam along the east and west sides. These beams are supported by 8" wide concrete rib walls spanning across the existing subterranean ventilation vault for the Broadway Avenue subway. Each beam is supported at three locations with two ¾-inch expansion anchors at each bearing plate. It is the responsibility of the Design-Build Contractor to field verify all existing and proposed structural conditions and dimensions.

Along the edge beams, vertical HSS8x4 columns spaced 6'-9" on center extend up to support the roof structure. The roof structure consists of 3-inch metal deck supported by HSS8x4 bent beam purlins spanning in the east-west direction.

The exterior façade consists of a glass curtain wall system along the north, east and west faces. The south face is stud framed with stainless steel panels and aluminum grating. In 2018, a renovation included replacement of the exterior curtain wall glass panels.

From the referenced 2024 Structural Assessment Report, the analysis indicated that the existing building's structure will exhibit at least three deficiencies when subjected to the additional wind load due to increased vertical projection of the building's surface. Here is a detailed explanation of the structural deficiencies found, and the recommended structural remedial work to address each issue:

**1) Increased drift at the existing roof level in the lateral force resisting system:**

The existing roof level of the building will exhibit additional lateral movement due to the increase in wind load on the existing building frame. The original lateral drift for the building roof approximates 0.5 inches, and correlates to H/400. When the building is subjected to the wind load on the proposed screen, the lateral drift may approximate 1.25 inches, or H/170. The lateral movement may be problematic for the existing architectural finishes on the building such as exterior curtain wall glass and interior drywall finishes. For reference, although not specifically referencing structural frame drift, the UFGS specifications for Curtain Wall and Glazed Assemblies defines a maximum deflection of 1/175 of its clear span or ¾ inch, whichever is less.

Recommended structural remedial work: The existing building frame will require additional stiffness to reduce the increased drift due to the additional wind forces. Additional stiffness may be accomplished with new steel bracing elements connected to the existing structural steel components exposed and accessible inside the building. The reinforced bracing system shall be designed to limit lateral drift to a maximum of ¾ inch at the roof level. Final analysis, design and detailing is to be completed by the Design-Build Contractor.

**2) Marginal overstress in the north brace (upper) diagonal member:**

The lateral brace on the north side of the building consists of two in-place offset lateral braces (upper and lower) to avoid conflict with the door. The aspect ratio of the upper brace approaches 3:1. This geometry negatively affects the performance of this brace, and therefore the diagonal members exhibit a marginal overstress (1.15) due to the increased tension load because of the proposed display screens.

Recommended structural remedial work: The potential overstress in the north upper brace would be remediated by the addition of another lateral brace adjacent. Final analysis, design and detailing is to be completed by the Design-Build Contractor.

**3) Significant increase in uplift at the north support reactions:**

The existing building structure is currently supported by six beam bearing plates that are fastened to the existing concrete subterranean structure with expansion anchors. Preliminary assessment resulted in expansion anchors failing due to increased uplift forces of approximately 250%. In general, expansion anchors are not recommended in dynamic load situations due to their tendency to lose friction between the anchor and substrate. The anchors for this building are subjected to wind load reversals from wind in addition to daily vibrations from the nearby subway system.

Recommended structural remedial work: The supporting rail beams along the east and west sides will require remediation to the bearing supports. It may be advantageous to add adhesive anchors to resist the additional uplift forces. Final analysis, design and detailing is to be completed by the Design-Build Contractor. In addition, the Design-Build Contractor shall review the potential impacts of adding a video display screen to the south face of the building in the future. For all anchor point information, see output pages 22-43 of the previous Structural Assessment Report and coordinate with the Structural Assessment's Engineer as required for any additional information.

In addition, it is the responsibility of the Design-Build Contractor to field verify all existing and proposed structural conditions and provide remedial work as deemed necessary by their own analysis.

At the existing base plates and welds, the Design-Build Contractor is to analyze these conditions and determine if they can withstand the additional wind loads induced by the proposed screens. See Section 2.6 of the previous Structural Assessment Report and coordinate with the Structural Assessment's Engineer as required for any additional information.

Besides the remedial work stated above, this may also involve, but is not limited to, reinforcing the existing roof members to adequately support the proposed HSS stub-up posts, adding steel plates to adequately support existing roof deck at new HSS stub-up post locations, adding additional bracing within or above the roof level, and reinforcing the existing column members to adequately support the proposed work.

All new work shown is for Design-Build RFP purposes only. Design-Build Contractor may utilize alternative methods to accomplish the overall structural goals of this project. Design-Build Contractor to submit alternative methods for Client review.

### 4.2.1 Lateral Load Resistance Design

The building is designated Risk Category II (RCII), with a corresponding Seismic Design Category (SDC) B, it is therefore not anticipated that seismic design will be critical. The governing lateral forces will most likely be wind.

## 4.3 DESIGN CRITERIA & LOADING

### 4.3.1 Design Criteria

In line with UFC 3-301-01 the design criteria for the site and existing building are as follows:

Table 4-1 - Design Criteria

| | |
|---|---|
| Risk Category | II |
| **Dead Loads** | |
| Roof | 10 PSF |
| Ground Floor | 5 psf |
| Steel Framing | Self-Weight |
| Dead Load Available to Resist Uplift | Self Weight of Structural Framing Only |
| **Live Loads** | |
| Roof | 20 PSF |
| Typ Ground Floor (Office) | 50 PSF |
| **Wind Criteria** | |
| Ultimate Wind Speed | 117 mph |
| Exposure Category | C |
| Directionality Factor ($K_d$) | 0.85 |
| Topography | 1.0 |
| Internal Pressure Coefficient ($GC_{pi}$) | +/- 0.18 |
| Building Enclosure Classification | Enclosed |
| **Seismic Criteria** | |
| Spectral Acceleration – 1sec period ($S_1$) | 0.05g |
| Spectral Acceleration – short period ($S_s$) | 0.28g |
| Site Classification | D (assumed) |
| Seismic Importance Factor | 1.0 |
| Seismic Design Category | B |
| Analysis Procedure | Equivalent Lateral Force (ELF) Analysis |
| **Snow & Ice Criteria** | |
| Design Frost Penetration Depth | 48 in |
| Ground Snow Load | 46 psf |

| | |
|---|---|
| Snow Importance Factor ($I_s$) | 1.0 |
| Snow Exposure Factor Factor ($C_e$) | 1.0 |
| Thermal Factor ($C_t$) | 1.149 |
| | |

## 4.4 ANTI-TERRORISM

Per the requirements of UFC 4-010-01, with Change 3 (24 May 2024), hardening of the building structure is not required, including around glazed windows and doors, as the existing Army Recruitment Station is considered a Low Occupancy Building and is therefore exempt from all provisions of the Standard.

# 5 ARCHITECTURAL

## 5.1 GENERAL

Located in Times Square, Manhattan, NY, the Armed Forces Recruiting Station is in one of the busiest and most iconic locations in New York City.

### 5.1.1 Criteria and Standards

The following criteria and standards are applicable to the project. Discipline specific criteria and standards are indicated within this section, see section 1.2 Criteria and Standards for general criteria that are applicable to the project.

- UFC 1-200-01 DoD Building Code with Change 4, (17 Dec 2024)
- UFC 3-101-01 Architecture, with Change 4, (08 Jan 2024)
- UFC 3-110-03 Roofing, with Change 5, (12 June 2020)
- UFC 3-120-01 Design: Sign Standards with Change 4, (01 Feb 2023)
- UFC 4-010-01 DoD Min. Antiterrorism Standards for Buildings with Change 3 (24 May 2024)
- UFC 4-610-01 Administrative Facilities with Change 1, (30 Apr 2021)
- IBC 2024 International Building Code
- IEBC 2024 International Existing Building Code
- BCNYS Building Code of New York State
- NYCBC New York City Building Code
- NYC LPC New York City Landmark Preservation Commission

## 5.2 NARRATIVES

### 5.2.1 Architectural Exterior Building Characteristics

The Armed Forces Recruiting Station is a one-story, approximately 535 gross square foot recruiting facility constructed of structural steel framing with stainless steel and storefront exterior walls. The self-contained six-sided assembly is situated on top of a New York Mass Transit Authority tunnel grate and is skirted with a horizontal louver that transitions from the surrounding grade slope to the bottom of the building envelope to create an enclosed finish at the building base. The exterior storefront walls are glazed with ballistic glazing. The East and West elevations feature LED-lit American flag video displays that are located on the interior side of the glazing. The exterior entrance passage door on the North-East elevation is a stainless-steel door with a full vision panel of ballistic glazing. The NE elevation also features a large-format electronic video display screen above the main entrance. The South-West elevation is stainless steel panel and a stainless steel grating which features logos for four branches of the military as well as prominent identification signage. The roof assembly is an insulated membrane roofing system with walk pads and stainless-steel coping flashing. There are a number of roof-mounted cameras that extend beyond the top of the recessed roof as well.

### 5.2.2 Architectural Building Interior Characteristics

Interior finish replacement have not been evaluated as part of this project with the exception of minor repairs and modifications required as a result of modifications to the interior to support the installation of the new video display system. This may include adjustments to existing walls, casework, countertops to accommodate control devices.

The interior spaces are limited in nature to one open office space supporting four built-in workstations with stainless steel worksurfaces. Stainless steel guest bench, and guest work surface and seating. A small break area with a water fountain and microwave. An accessible uni-sex restroom with lockers.

The existing interior finishes include resilient floor tile in the open office area and ceramic tile in the restroom. Interior partition walls are wood paneling with stainless steel trim. The ceiling is a bowed suspended gypsum wallboard system that conceals the mechanical system ductwork.

## 5.2.3 Landmark Preservation Considerations

The design is subject to the review and approval of the New York City Landmarks Preservation Commission (LPC) due to its location within a designated historic district. This project involves the installation of digital video displays that will significantly contribute to Times Square's vibrant character while adhering to the LPC's standards for preservation and design integrity.

In accordance with the LPC Permit Guidebook, a permit is required for any work that affects the exterior of a building or site within a historic district. The application process necessitates the submission of a fully completed application form, along with detailed materials that explain the existing conditions and the proposed work. The application will include architectural drawings, visual simulations of the proposed displays, and a narrative that addresses how the project complies with LPC Rules. The design must demonstrate that the new installations enhance the historic character of the area while being sensitive to the architectural context of surrounding buildings.

The proposed design is designed to complement the dynamic environment of Times Square, which is characterized by its iconic signage and vibrant public spaces. The displays will utilize advanced technology to create visually engaging content that aligns with the artistic and commercial essence of the area. By incorporating high-quality materials and design elements that reflect the historic context, the project aims to preserve the unique character of Times Square while enhancing its appeal as a cultural and commercial hub. Furthermore, the project will comply with all applicable LPC guidelines to ensure that it contributes positively to the historic fabric of the district.

## 5.2.4 Demolition

Minor demolition to the roofing and flashing assembly will be required as part of the SOW for this project. New structural steel supporting members for the new audio screens will require removal of portions of stainless-steel coping flashing and membrane roofing. The 2018 renovation as-built drawings provide detail to the roof curb assembly composed of wood framed curb and blocking, metal coping and roofing membrane. Selective reconfiguration of the casework enclosing the electrical equipment in the open office may require modification to the existing to accommodate new electrical equipment.

## 5.2.5 Construction Materials and Finishes Narrative

New and modified flashing will be required to ensure a weather tight finished assembly at the new supporting structural steel framework. Compliance with the UFC 3-110-03 Roofing, with Change 5 and Sheet Metal and Air Conditioning contractors National Association (SMACNA) Architectural Sheet Metal Manual is required. Selective modification to casework enclosing new electrical equipment may require modification to the configuration of the casework. New and modified work shall match adjacent wood panel finishes in material, color and finish.

The Contractor is responsible for including any necessary general construction work required for the expansion of the Electrical Closet and maintain the visual aesthetic and materiality of the adjacent casework, ensuring that there is adequate space for both the 600A Metered Panel and the relocated electrical shade controllers.

# 6 MECHANICAL

## 6.1 CRITERIA AND STANDARDS

The following criteria and standards are applicable to the project. Discipline specific criteria and standards are indicated within this section, see section 1.2 Criteria and Standards for general criteria that are applicable to the project.

The HVAC work will comply with the latest edition of the following Codes and Standards:

- UFC 3-401-01 Mechanical Engineering, 2013 with Change 1, (01 Oct 2015)
- UFC 3-410-01 Heating, Ventilating, and Air Conditioning Systems, with Change 9, (09 Jan 19)
- UFC 4-010-01 DOD Minimum Antiterrorism Standards for Buildings, with Change 3, (24 May 2024)
- ASHRAE Handbooks, American Society of Heating, Refrigerating and Air Conditioning Engineers
- ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1-2019, Energy Standard for Buildings Except Low-Rise Residential Buildings
- ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy
- ASTM Codes and Standards, American Society of Testing and Materials International Mechanical Code
- SMACNA Guidelines Sheet Metal and Air Conditioning Contractors' National Association International Building Code
- International Mechanical Code as modified by UFC 3-410-01

## 6.2 HEATING, VENTILATION, AND AIR CONDITIONING NARRATIVE

### 6.2.1 Design Conditions

During our initial 20% and 25% Concept Design analysis, it has been determined that the existing Rooftop Packaged HVAC unit is adequate to handle the additional cooling load estimated at 2,000 BTU/hour generated by the video display IT rack for the new video display. However, the design-build contractor is responsible for verifying the BTU/hour equipment load with the video display vendor to ensure accuracy. It is recommended that the new video display cabinet be equipped with internal fans that are thermostatically controlled to facilitate effective heat extraction from the adjacent space. This will help maintain optimal operating conditions and ensure the reliability of the HVAC system in supporting the additional load.

# 7 ELECTRICAL

## 7.1 GENERAL

The design and construction effort requires thorough coordination with Con Edison to ensure the successful integration of electrical services and infrastructure into the design and construction phases. This coordination is critical to meet the energy demands of the new video displays while adhering to safety and regulatory requirements.

The design team initiated communication with Con Edison to discuss the project scope, electrical load requirements, and any necessary upgrades to the existing utility infrastructure. The design team submitted detailed electrical plans and specifications that outline the anticipated power requirements for the video displays and any associated equipment. Additionally, the team is coordinating with Con Edison to determine the availability of service connections, the need for any new service installations, and the timeline for implementation.

The building receives power service from Con Edison Utility Company. The service is metered and rated 200 amperes, 208Y/120, 3-phase, 4-wire + ground. The electrical distribution equipment is in good condition. The location of the electrical distribution closet on the South end of the interior. Refer to Appendix C. Field Investigation Report 3.0 Electrical and Electronic Assessment.

## 7.2 CRITERIA AND STANDARDS

The following criteria and standards are applicable to the project. Discipline-specific criteria and standards are indicated within this section. See section 1.2, Criteria and Standards, for general criteria that are applicable to the project. Unified Facilities Criteria (UFC)

- UFC 3-501-01 Electrical Engineering, 27 November 2024
- UFC 3-520-01 Interior Electrical Systems, 16 January 2025
- UFC 3-530-01 Interior and Exterior Lighting Systems, Change 1, 15 December 2023
- UFC 3-550-01 Exterior Electrical Power Distribution, Change 3, 05 November 2019
- UFC 3-560-01 Electrical Safety, O&M, Change 3, 15 May 2023
- UFC 3-570-01 Cathodic Protection, Change 1, 14 January 2019
- UFC 3-575-01 Lightning and Static Electricity Protection, Change 1, 01 October 2021
- UFC 3-580-01 Telecommunications Interior Infrastructure Planning and Design, 01 March 2024
- UFC 4-010-06 Cybersecurity of Facility-Related Control Systems, 10 October 2023
- UFC 4-021-02 Electronic Security Systems, Change 1, September 2019

Other Design Criteria and Standards

- NYCEC New York City Electrical Code based on NEC 2008 Electrical Code and amendments, 2011
- NFPA 70 National Electrical Code, 2023
- NFPA 70E Electric Safety in the Workplace, 2022
- NFPA 101 Life Safety Code, 2021
- NFPA 780 Standard for the Installation of Lightning Protection System, 2023
- IECC International Energy Conservation Code, 2021
- IESNA Lighting Applications Standard Collection, 2020

# 7.3 INTERIOR AND EXTERIOR ELECTRICAL DISTRIBUTION SYSTEMS

## 7.3.1 Service Entrance

The existing electric service enters the building from below and passes through the 200A meter and then onto the main distribution panel LPH, feeding the panel RP and the shading control panels. The existing loads served are the rooftop mechanical unit, electrical baseboard heating, lighting, signage, general power, IT rack, snow melting, and domestic water heating.

A new Con Edison Electric Service consisting of Trans “S” and Switch Combination CT NEMA 1 cabinet, with a 600A, 240V, will be required to be installed in the existing electrical cabinet.

## 7.3.2 Interior Requirements

The Contractor shall evaluate the adjacent closet space and assess the potential for expanding the Electrical Closet to the right, where the paper goods storage is currently housed. If the available space does not accommodate both the new 600A Metered Panel and the electrical shade controllers, the Contractor shall relocate the electrical shade controllers and, if necessary, decommission them to facilitate the installation of the panel as planned. It is imperative that the installation of the 600A Metered Panel remains within the Electrical Closet to comply with project requirements, as this panel is critical for powering the state-of-the-art digital video display system.

## 7.3.3 Exterior Requirements

Two 54-pole circuit breaker panels, SLP, are required for the video display system installation. Additionally, three (3) 200A disconnect switches are required on the roof to support the LED video display system as detailed in the project RFP.

## 7.3.4 Equipment Data

See Plans.

## 7.3.5 Conduit and Wiring

Conductors will be copper with THHN/THWN-2, 75 degrees C rated insulation.

All interior conduit will be EMT, except in areas subject to physical damage, which shall utilize GRC. Flexible liquid-tight metal conduit will be used for final connections to mechanical equipment and motors. The minimum conduit size for electric power is 3/4-inch, and for communications, it is 1-inch minimum..

All exterior conduit will be GRS with threaded bodies and bushings. Power to the video display system will be provided per the video wall manufacturer's requirements. The exact location of connections must be coordinated with the Video Display vendor and per shop drawings.

Where the conduit passes through the roof, waterproof penetrations must be provided as approved by the architect and required by the roof manufacturer to ensure the roof's workmanship warranty. In any metallic conduit, dielectric breaks will be provided in the walls or lid of the controlled area. The conduit on the secure side of the wall will be bonded to ground and will have a conduit fitting for pulling and inspecting enclosed cables.

Additionally, raceways shall be provided with expansion, expansion-deflection, or deflection fittings where necessary to compensate for thermal expansion, deflection, and contraction. All circuits shall be clearly labeled with associated panel and circuit numbers for ease of identification, maintenance, and troubleshooting throughout the system lifecycle.

The Contractor shall coordinate with the Video Display vendor to determine all associated power requirements of the LED video display system, including furnishing and installing necessary branch wiring, back boxes, breakers, and related equipment. Branch circuit wiring will be in rigid galvanized steel conduit with two pull cords in each conduit to facilitate future wiring installation and maintenance. The Contractor shall evaluate and arrange the quantity and sizes of tie conduits from the outdoor LED panels to the new electrical panels based on vendor specifications.

## 7.4 GROUNDING

Ground per code and video display manufacturer's specifications.

## 7.5 METERING

Metering and Current Transformers per Con Edison specifications for video display implementation.

## 7.6 LED VIDEO DISPLAY SYSTEM

### 7.6.1 Design Conditions

The complete design is a four-sided display. The West, North, and East displays are the base requirement, and the added South LED display is Option 1. The exterior LED system includes the IP65 LED cabinets, secondary structure, primary structure, and base building structure. Also included are all engineering, delivery, installation, and all city approvals. The LED electrical includes all connections, conduit, and cables to power the displays and confidence cameras. The LED data includes conduit, data cables, and connections through the building envelope. The LED Content Management System will be located within the building envelope and accessed remotely by the Owner. The framerate capability is 60 frames per second to support video, photos, and text. Content can be uploaded remotely or on-site through a secure system and managed remotely. The four screens will have scalability and the potential to contain individual content or all work together to form a single piece of content, such as anamorphic content. All building envelope penetrations, including structural, electrical, and data, will require waterproofing.

## 7.7 TELECOMMUNICATION SPACES

Provide and install a Video Control Server within the open space near the existing IT Rack (located above the toilet room).

## 7.8 SERVER ROOM EQUIPMENT

Provide and install a separate IT Rack near the existing IT Rack (located above the toilet room). The existing low-voltage IT cabinet located above the bathroom, which serves the space’s current IT needs, shall remain in its current vicinity. Any relocation of the existing IT cabinet must be carefully evaluated and executed by the Contractor to ensure sufficient cable slack is maintained. The Contractor shall provide all required power distribution units (PDU) and internal thermostatically controlled fans within the new IT cabinet to ensure adequate heat extraction.

Furnish and install two (2) hard-wired CAT 6A network cables from the existing network switch to the new cabinet to support monitoring and remote management functions. All CAT 6A station cabling, patch panels, and patch cords shall meet CAT 6A standards, with network certification testing in compliance with these standards.

Provide a minimum 1” telecommunications conduit or larger as a cable raceway from the new cabinet to the backend of the new outdoor LED panel. Coordination of the exact location of the backbox behind the LED panel will be required with the LED vendor. All exterior conduit pathways shall be rigid galvanized steel and threaded to ensure environmental protection, and each conduit shall be equipped with two (2) pull cords.

Coordinate with local activity authorities and building users for specific requirements as may be directed by the Contracting Officer, including existing security system requirements.

# 8 CYBERSECURITY

## 8.1 GENERAL

The existing building cybersecurity infrastructure is assumed adequate; however, the new LED video display system includes an IT control system rack requiring a hardwired network connection for VPN remote access. The Design-Build Contractor is responsible for ensuring compliance with DoD cybersecurity requirements, including UFC 4-010-06, DoD Instructions 8500.01 and 8510.01, and Facility Engineering Command (FEC) policies. Cybersecurity controls shall incorporate NIST SP 800-82 Industrial Control System (ICS) requirements per Appendix G, Table G-1. All cybersecurity design documentation, risk assessments, and control implementations shall be submitted per UFC 4-010-06 Chapter 5.

## 8.2 CRITERIA AND STANDARDS

The following criteria and standards are applicable to the project. Discipline specific criteria and standards are indicated within this section, see section 1.2 Criteria and Standards for general criteria that are applicable to the project.

- UFC 4-010-06 Cyber Security of Facility-Related Control Systems, 10 October 2023

# 9 LIFE SAFETY / FIRE PROTECTION

## 9.1 GENERAL

The Life Safety and Fire Protection requirements for this facility follow the requirements of UFC 3-600-01. Building construction is governed by UFC 1-200-01 and all construction or design related to egress shall follow UFC 3-600-01 and NFPA 101: The Life Safety Code. The existing fire/life safety systems for the building are satisfactory as they are currently installed. We recommend trouble-shooting the noted trouble signal at the fire alarm control panel. No upgrades to the fire/life safety systems will be triggered as part of the video display upgrade project

## 9.2 CRITERIA AND STANDARDS

The following criteria and standards are applicable to the project. Discipline specific criteria and standards are indicated within this section, see section 1.2 Criteria and Standards for general criteria that are applicable to the project.

UFC 3-600-01 Fire Protection Engineering for Facilities, with Change 6, 06 May 2025

## 9.3 FIRE ALARM/ MASS NOTIFICATION SYSTEM

Fire Alarm System provided. Based on the existing Notifier panel, model NFW2-100. Reports to the central station. Features smoke detectors, duct smoke detection, manual pull station, occupant notification, & remote annunciator panel. The main control panel reports to the central station. Multiple exits directly into the street.

# 10 ANTITERRORISM / FORCE PROTECTION

## 10.1 GENERAL

Unified Facilities Criteria (UFC) 4-010-01 (Change 3, 24 May 2024) DoD Minimum Antiterrorism Standards for Buildings were considered prior to site assessment and video display upgrade project requirements. It is determined that the existing building meets and complies with AT/FP requirements.

# 11 COST

## 11.1 GENERAL

This cost estimate has been prepared in accordance with AACE International Recommended Practice No. 18R-97 Cost Estimate Classification System. Cost estimates prepared by Tetra Tech / Mason & Hanger JV are consistent with the construction industry's best practices.

This cost estimate represents a Class 3 estimate based on the Maturity Level of Project Definition as defined by AACE International. The purpose of this estimate is to establish funding for the project. The expected accuracy range is L: -10% to –20%; H: +10% to +30%. A productivity factor of 80% was applied to the estimate to allow for work performed at night in a busy metropolitan area.

## 11.2 ECONOMIC IMPACT – CURRENT MARKET CONDITIONS FOR 2025

The RS Means 2024 Database is the primary source of unit pricing. Inflation factors were used to adjust RS Means costs from the database year for Material (January 2024 to May 2025) based on Engineering News Record Material Price Index.

Inflation Material (1/1/2024 to 5/1/2025 (6257.57 / 6150.97)) = 1.73%

## 11.3 CONSTRUCTION INFLATION ALERT:

Escalation to midpoint of construction is based on ENR's Building Cost Index recent three-year average of 4.58% per year or 0.38% per month. It has been assumed for the purpose of this estimate that the current Building Cost Index trend will continue to the midpoint of construction.

Escalation (5/1/2025 to construction midpoint 4/1/2026) = 3.81%

## 11.4 COST IMPACT ON THIS PROJECT:

The Project Cost in the Current Working Estimate exceeds the Programmed Amount. The Project Cost includes Construction Cost plus Owner Contingency, Supervision and Overhead.

Possible impacts of recently proposed tariffs are excluded from the cost estimate.

# 12 SUSTAINABLE DESIGN

## 12.1 GENERAL

Unified Facilities Criteria (UFC) 1-200-02 (Change 02, 01 June 2022) High Performance and Sustainable Building Requirements were considered prior to site assessment. LEED Silver Certification is not required because the existing building assets are <10,000 GSF.

# 13 ENVIRONMENTAL INFORMATION

## 13.1 GENERAL

A hazardous material assessment was not performed on the Times Square Armed Forces Recruiting Station. It is assumed there are no environmental concerns for the installation of the new video display.

### 13.1.1 Environmental Permit Considerations

The proposed construction activities associated with the Times Square Video Display Project may necessitate the acquisition of a Construction Noise Permit from the New York City Department of Environmental Protection (DEP). This permit is essential to ensure compliance with local noise regulations and protect the surrounding community and environment during the construction phase.

The DEP requires a Construction Noise Permit for any construction activities that are expected to generate significant noise levels. The permit application must include a detailed description of the proposed work, the anticipated noise levels, and the duration of the construction activities. In addition, the application should outline any noise mitigation measures that will be implemented to minimize the impact on nearby residents and businesses. These measures may include scheduling construction activities during permissible hours, utilizing quieter equipment, and employing sound barriers or enclosures as necessary.

While the Times Square area is characterized by its vibrant atmosphere and high levels of ambient noise, it is still imperative to manage construction noise to prevent disruptions to local businesses and the public. The project team is committed to adhering to all applicable noise regulations and will work closely with the DEP to ensure that the construction activities are carried out in a manner that minimizes disruption. The project's design and construction schedule will take into consideration peak pedestrian traffic times and local events, aiming to limit high-noise activities during these periods. By proactively addressing potential noise impacts and implementing effective mitigation strategies, the project will contribute to the ongoing vitality of Times Square while respecting the needs of the community.

# 14 STRUCTURAL CALCULATIONS

## 14.1 STRUCTURAL CALCULATIONS

The previously conducted Structural Assessment Report, listed below, included limited structural calculations.

1) U.S. Armed Forces Times Square Recruiting Station – Structural Assessment Report, dated 9 August 2024 by QPK Design. (Refer to Specification for Report)

# APPENDIX A: DESIGN CHARRETTE

A.1 Design Charrette Meeting Minutes

A.2 Charrette Presentation

TETRA TECH Mason&Hanger A Day & Zimmermann Company

Joint Venture

**Design Charrette Meeting Minutes**
**Times Square Recruiting Station Video Display Upgrade**
**Manhattan, NY**
**Project Number: W912DS25F0040**
**Contract Number: W912DS21D0002**
**17 April 2025 (1:00 PM – 3:17 PM)**

**Summary:** This meeting was held to conduct a Design Charrette for Times Square Recruiting Station Video Display Upgrade in Manhattan, NY.

*Three design concepts were presented:*
Option 1 (3-Sided Video Display),
Option 2 (4-Sided Square Video Display)
Option 3 (4-Sided Video Display with rounded North End)

The designs include LED displays with varying pixel pitches and structural considerations. The structural assessment revealed deficiencies requiring additional bracing and anchoring. Civil considerations include permits and coordination with Metro-North Transit Authority (MTA). Information technology requirements involve minimal space for new racks. Mechanical considerations include HVAC and electrical upgrades. The estimated cost, including structural, architectural, and electrical work, exceeds the $3 million programming amount (PA). Sales tax, possible tariffs, and additional contingencies were also discussed. The meeting focused on the cost and design of a display project. The government selected Option 1, similar to Clear Channel Concept; Design Build RFP should include the option to add a fourth screen. Value engineering was discussed, with a 10% cost reduction possible by increasing pixel size. Construction is expected to be completed by July 4, 2026. The D-B RFP w/ 20% design will be submitted by May 16, 2025.

**Participants:** (see attached rosters)

**USACE Team:**

- Technical Manager: Nicole Furtado
- Technical Manager: Katie Hughes
- Project Manager: Stephen Brown
- Chief of Real Estate: Helen Luke
- New York District Commander: COL Alex Young

**A-E Design Team:**

- Senior PM: Jeff M. Jones, PE, PMP, ENV SP
- PM: Uriel Reyes, PMP, FMP, CQM-C
- PM: Michelle Brunelle, PMP
- Architect: Quintin Biagi, RA*, AIA, RID, LEED AP BD+C, GPCP, CDT
- Structural: Andrew Coats, PE*, LEED AP - BD+C
- Civil/Site: Andrew BaThan, PE
- Mechanical/Electrical: Joshua Zweback, PE

- IT/Electronics: Onorius Vaidean and Peter Kraljic
- Fire Protection: Tony Meehan, PE
- Cost Estimator: Fred Cooper, CCP
-

**Sensory Interactive Video Design Consultant:**

- Berny Hintz, AIA, LEED AP CBCP
- Steph Vainiunas
- Everett E Henderson Jr.

**Agenda Presentation and Transcript:**
(see attachments)

**General Discussions:**

**Introduction, Project Overview, and Housekeeping**

Jeff Jones, Senior Project Manager, outlines the schedule for the meeting.

• The meeting includes a detailed presentation of display concepts and client and stakeholder feedback.

• Jeff emphasizes the importance of interactive feedback during the presentation hour.

**Design Concepts and Technical Details**

• Bernie Hintz provides an overview of LED displays, including pixel pitch and cost considerations.

• Bernie explains the economic trade-offs between pixel pitch, display size, viewing distance, and budget.

• Bernie presents three design concepts for the video display upgrade, each with unique features and benefits.

• Bernie discusses the designs' anamorphic content capabilities, emphasizing the displays' dynamic nature.

• USACE (Helen) asks about the process for repairing the displays, and Bernie explains the typical repair process and warranty details.

• Bernie discusses the importance of having on-site storage for replacement parts to ensure quick repairs.

• Bernie details the storage requirements, including the number and size of bins needed for spare parts.

• Discussion of the feasibility of storing parts on the roof or inside the building.

**Architectural, Structural and Civil Considerations**

• Quinton, presents the architectural considerations for the three design concepts, including HVAC, security cameras, and roof access.

• Andrew Coates, discusses the structural assessment of the building, identifying deficiencies due to increased wind loads and the need for additional bracing.

• Andrew Coates, outlines potential structural enhancements to address the deficiencies, including adding bracing and revising anchoring at the base level.

• Andrew BaThann discusses the civil and permanent considerations, including permits, coordination with MTA, and staging areas.

• Onorius, from the IT group, discusses the existing cabling infrastructure and the options for installing new racks for controls.

**Mechanical and Fire Protection**

• Joshua discuss the mechanical considerations, including the existing HVAC system and the need for additional air circulation and drainage.
• Tony, provides an overview of the fire protection and safety conditions, noting that the building does not require sprinkler protection.
• Tony mentions the need to troubleshoot the fire alarm system with the vendor.
• Joshua discusses the importance of maintaining the existing HVAC system and the potential need for additional power requirements.

**Cost Estimates and Next Steps**

• Fred presents the preliminary pricing for the three design concepts: Option 1 is $1.3 million, Option 2 is $1.55 million, and Option 3 is $1.8 million.
• Fred explains the inclusion of sales tax and the need for a government purchase order to avoid sales tax.
• Fred outlines the cost breakdown for each option, including design contingency, prime contractor markups, and additional costs for structural, architectural, and electrical work.
• Fred emphasizes developing a comprehensive cost estimate that includes all necessary components and contingencies.
• Bernie clarifies that the video display cost includes installation, equipment, content management systems, commissioning, and a two-year warranty.

**Cost Estimation and Value Engineering**

• USACE mentions the need for more effort to fully develop cost estimates and will include them in the out brief notes.
• USACE discusses the need to know the all-in costs to explore value engineering options to reduce costs.
• USACE confirms the PA is $3 million.
• USACE suggests including an option to add a fourth screen later if the contractor bids low enough.

**Design and Cost Considerations**

• USACE highlights the importance of adding other disciplines and the design fee, which still exceeds the $3 million PA.
• Bernie mentions the possibility of increasing pixel size to reduce costs, but notes it diminishes quality.
• Bernie explains that moving to the next pixel size reduces costs by about 10%, but it affects quality.
• USACE Representatives discuss checking internal cost branches to ensure consistency.

**Warranty, Project Funding, and Value Engineering**

• Bernie explains the warranty period, which includes a two-year initial warranty and optional extended warranties.
• Bernie discusses the lag between substantial completion and final completion, and how the warranty period compensates for this.
• USACE requests, including possible cost savings opportunities in the all-in cost delivery.
• Bernie explains the design process for the display, emphasizing the need to maximize advertising impact.
• USACE and Bernie discuss the potential for value engineering by increasing pixel sizes, but note the diminishing returns.
• USACE confirms the project is funded through a minor MILCON and is open procurement, with a current limit of $7.5 million.

• USACE discusses the best value trade-off for option one, with an option for additional screens if costs align.
• Discuss and outline the need for detailed cost estimates, value engineering, and descriptions.
• Discuss the need for a consolidated list of space requirements and electrical coordination.

**Security Cameras**

• Jeff lists RFIs, including the Metro-North Transit Authority (MTA) filing right-of-way and user act content delivery.
• Bernie advises having monitoring cameras for the display to detect outages.
• Jeff discusses the need for MTA access and the challenges of covering up areas during construction.

**Installation and Construction Schedule**

• USACE inquiries about the construction schedule and timeline.
• A-E Team estimates a nine-month construction duration, with a nine-month initial design.
• Uri outlines the submittal schedule, with a 20% submittal on May 16 and a 25% submittal on June 25.
• COL Young emphasizes the importance of completing the project by July 4, 2026, for the 250th anniversary of the country.
• Bernie explains the installation process, including the need for sidewalk protection and night installations.
• Bernie describes the commissioning process, starting as soon as power is connected.
• Jeff mentions the need for the marketing agency to start working on content concurrently with the construction.
• Jeff discusses the fabrication process, including off-site fabrication and on-site installation.

**Compliance Matrix and Closing Comments**

• Jeff presents a compliance matrix, covering items from the scope of work and UFC.
• Jeff mentions the site visit with all disciplines, noting the need for more information to develop concepts.
• Jeff discusses the Buy American and sustainability requirements, noting minimal compliance needed.
• Jeff emphasizes meeting the government's CCL and the potential for value engineering.

**Action Items**

- Investigate the status and functionality of the existing NYPD cameras on the building.
- Obtain utility bills to understand the current power demand and capacity of the building.
- Open the electrical panel and take load measurements to assess the existing electrical system.
- Determine the best location to install a new electrical sub-panel to support the video display upgrade.
- Consolidate a list of all the additional space and infrastructure requirements for the video display upgrade.

TETRA TECH Hazen & Hanger JOINT VENTURE

PROJECT: Times Square Recruiting Station Video Display Upgrade
DATE: 17 April 2025 1300-1700

| NAME | ORGANIZATION | ROLE | PHONE | EMAIL |
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# W912DS25F0040: Times Square Recruiting Station Video Display Upgrade Design Charrette

External | Join | 17

Thursday, April 17, 2025 12:52 PM - 3:17 PM

Download

| 11 | 12:52 PM - 3:17 PM | 2h 25m 26s | 1h 55m 43s |
|---|---|---|---|
| Attended | Start and end time | Meeting duration | Average attendance time |

## Participants

| Name | First join | Last leave | In-meeting duration | Role |
|---|---|---|---|---|
| ReyesCastanon, Uriel<br>uriel.reyes@tetratech.com | 12:52 PM | 3:17 PM | 2h 25m 22s | Organizer |
| Coats, Andrew<br>Andrew.Coats@tetratech.com | 12:53 PM | 2:19 PM | 1h 22m 32s | Presenter |
| 12543191352 (Unverified) | 12:55 PM | 3:08 PM | 1h 14m 34s | Attendee |
| CPT Zachary A. Gile (Unverified) | 12:56 PM | 3:17 PM | 2h 20m 58s | Presenter |
| Cooper, Fred<br>Fred.Cooper@masonandhanger.com | 12:56 PM | 3:17 PM | 2h 20m 41s | Presenter |
| Biagi, Quintin<br>Quintin.Biagi@tetratech.com | 12:58 PM | 3:17 PM | 2h 18m 42s | Presenter |
| CPT Pen, Chorn (Unverified) | 12:59 PM | 3:17 PM | 2h 17m 50s | Presenter |
| Steph Vainiunas (Unverified) | 12:59 PM | 3:17 PM | 2h 17m 36s | Presenter |
| ehenderson@sensoryinteractiv... | 1:00 PM | 3:17 PM | 2h 17m 5s | Presenter |
| 15206931767 (Unverified) | 1:00 PM | 3:17 PM | 2h 16m 34s | Attendee |

# Design Charrette
# Design-Build RFP Development
# Times Square Recruiting Station Video Display Upgrade

**Manhattan, NY**

**17 April 2025**

**United States Army Corps of Engineers – New York District**
**Project Number: W912DS25F0040**
**Contract Number: W912DS21D0002**

# Agenda



| Time | Duration | Topic / Activity | Presenter(s) / Facilitators |
|---|---|---|---|
| 1:00–1:10 PM | 10 min | **Introductions and Charrette Overview** | Jeff Jones, PE (Senior PM) |
| 1:10–1:25 PM | 15 min | **Project Objectives & Quality Management** | Jeff Jones, PE / Uriel Reyes, PMP |
| 1:25–1:50 PM | 25 min | **Presentation of Video Display Concepts** | Berny Hintz (Sensory Interactive) |
| 1:50–2:25 PM | 35 min | **Client and Stakeholder Feedback and Q&A** | USAREC & USACE |
| 2:25–2:50 PM | 25 min | **Buy American Act Overview and Sourcing Discussion** | Jeff Jones, PE / Uriel Reyes, PMP |
| 2:50–3:00 PM | 15 min | **BREAK** | All |
| 3:00–3:55 PM | 55 min | **Existing Conditions & Technical Assessments** | Technical Discipline Leads: |
| 3:55–4:10 PM | 15 min | **Cost Estimation Approach** | Fred Cooper, CCP |
| 4:10-4:40 PM | 30 min | **Client Design Concept Analysis & Selection** | Jeff Jones, PE / USACE / US Army Recruiting |
| 4:40–4:55 PM | 15 min | **A-E Team Design Refinement, Risks & Next Steps** | Jeff Jones, PE / Quintin Biagi, RA |
| 4:55–5:00 PM | 5 min | **Summary, Next Steps, & Closing Remarks** | Jeff Jones, PE |

# Introductions



## A-E Design Team:

- Senior PM: Jeff M. Jones, PE, PMP, ENV SP
- Uriel Reyes, PMP, FMP, CQM-C
- Michelle Brunelle, PMP
- Architect:  Quintin Biagi, RA*, AIA, RID, LEED AP BD+C, GPCP, CDT
- Structural: Andrew Coats, PE*, LEED AP - BD+C
- Civil/Site: Andrew BaThan, PE
- MEP: Joshua Zweback, PE
- IT & Telecommunications: Onorius Vaidean; Peter Kraljic
- Fire Protection: Tony Meehan, PE
- Cost Estimator: Fred Cooper, CCP

## Video Design Consultant:

- Sensory Interactive: Berny Hintz, AIA, LEED AP CBCP

# Project Objectives



**Project Objectives:**

- Install a new digital video display on the Armed Forces Recruiting Booth
  - Provide three (3) concept sketches to the Government stakeholders
- Minimize disruption to the surrounding area during construction
  - Provide preliminary information to the Government on how we plan to accomplish this
- Ensure the structural integrity of the booth with a new video display
  - Provide structural findings and preliminary structural modifications required
- Determine electrical and electronic service requirements to support the display
  - Provide service entrance information and remaining capacity
  - Provide telecommunications information (controls)
  - Provide other architectural and engineering requirements or modifications

**Design Requirements:**

- UFC 1-200-02 High Performance and Sustainable Building Requirements
  - LEED Certification not required <10,000 GSF
- Regulations outlined in the New York City Construction Codes, the New York City Zoning Resolution, and the City of New York Rules.

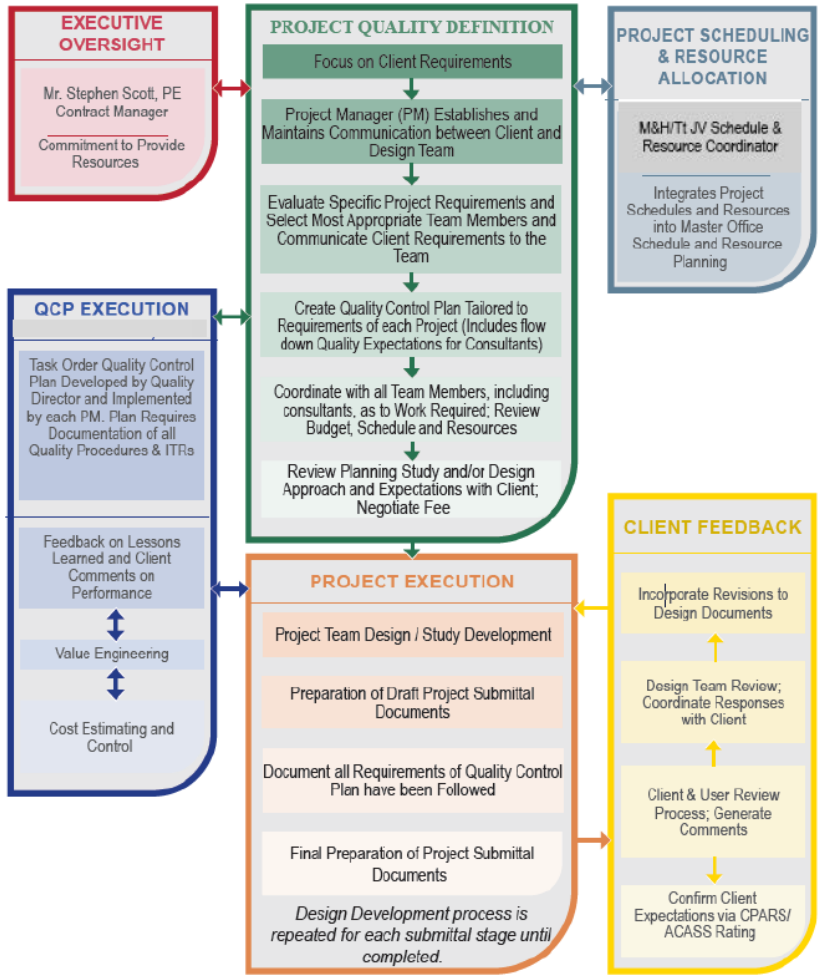
**Quality Management Plan:**

- Approved on 15 April 2025.

**End-State:**

- The government selects a design concept
- The government provides feedback for selected design refinement

**Control Processes and Design Quality Plan**



# LED Pixel Pitch and View Distances

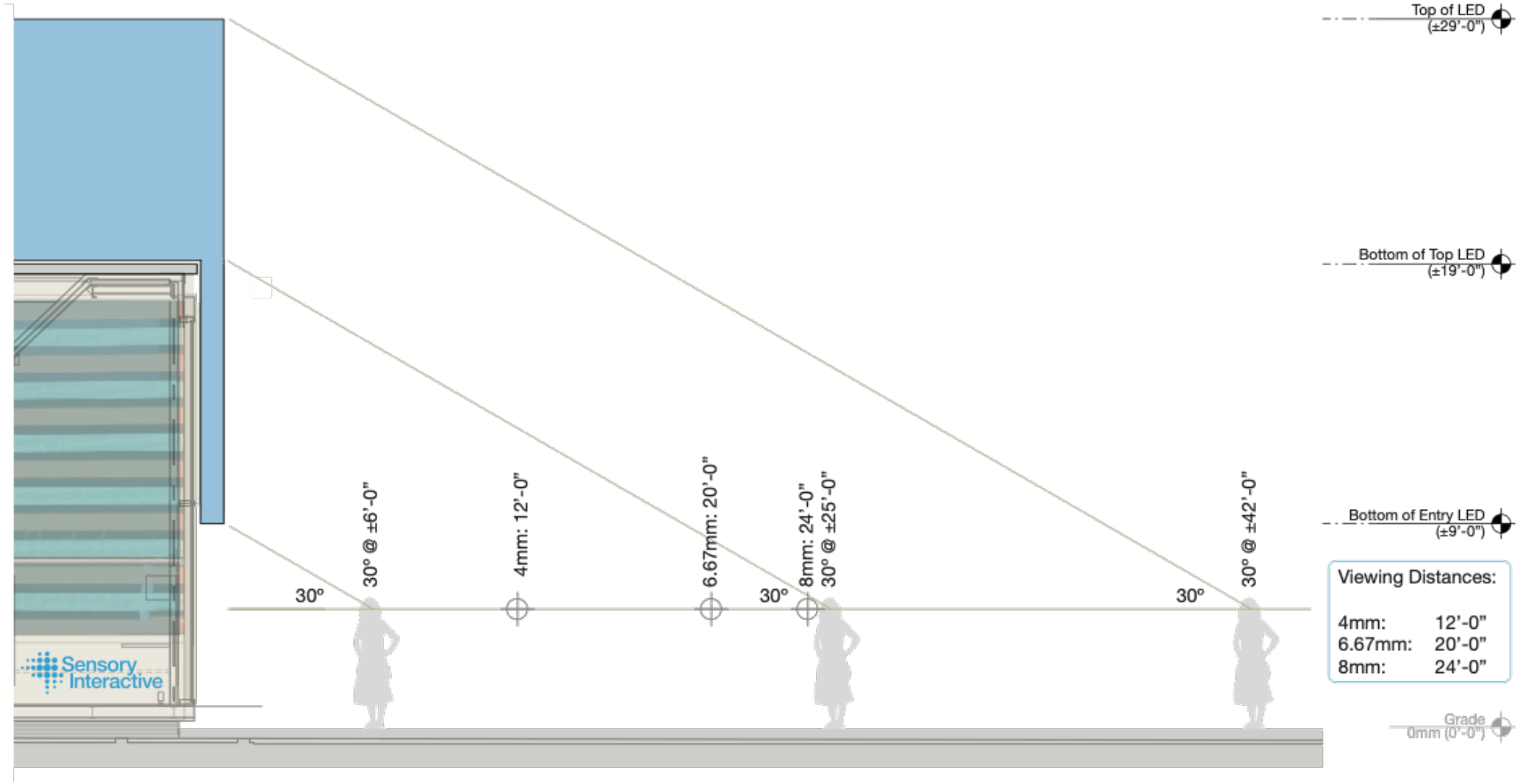
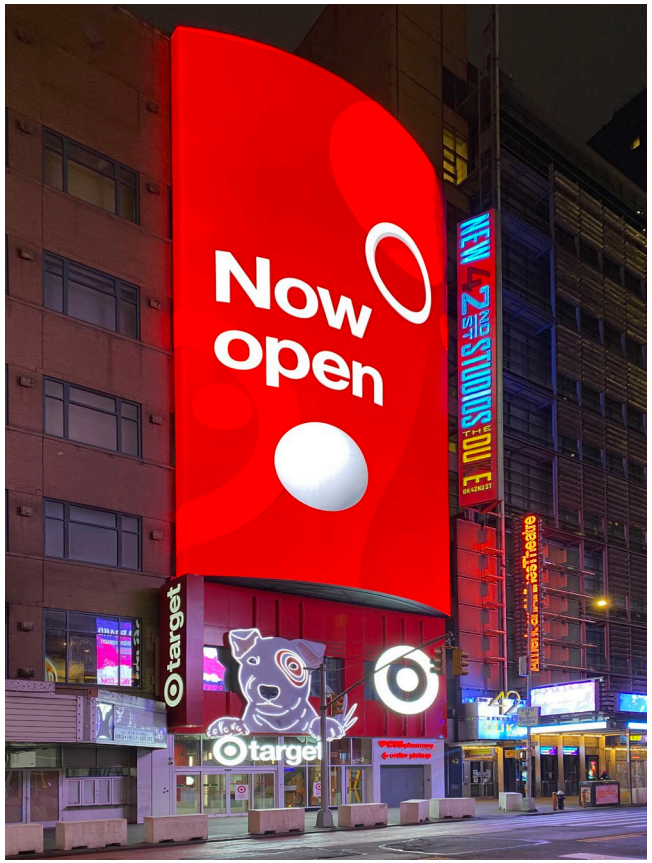



Diagram for Pixel Pitch & View Distances

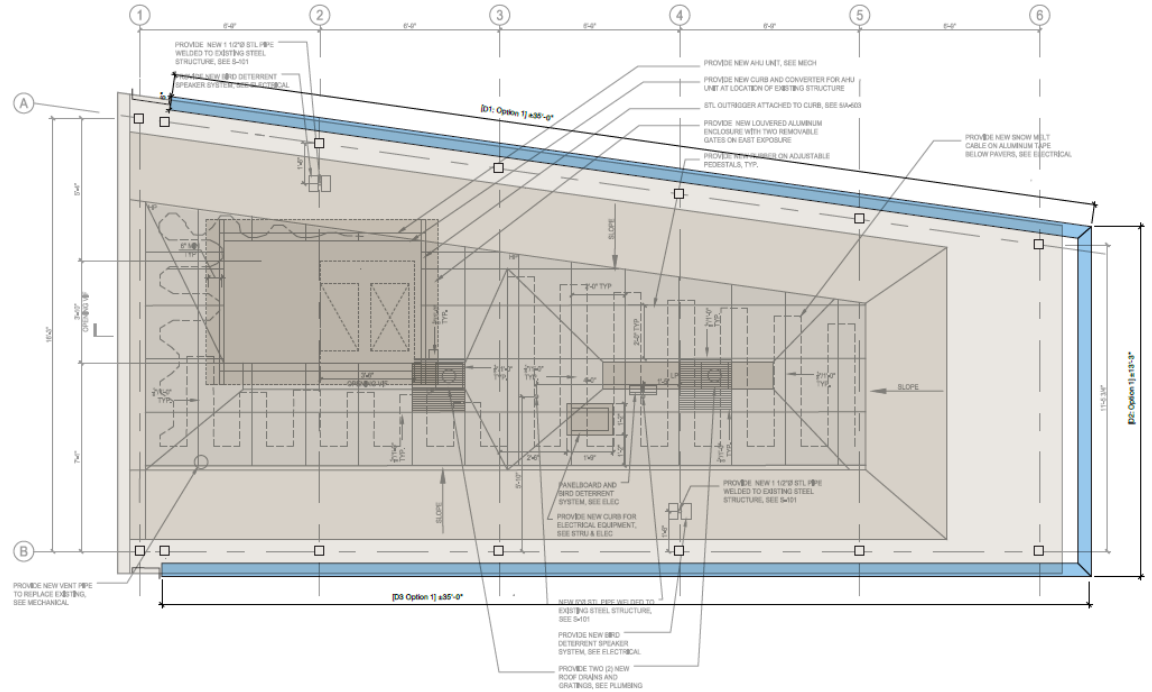


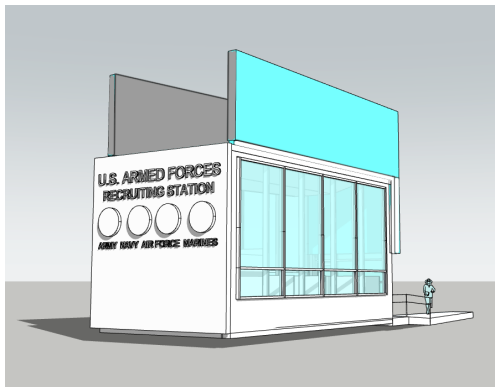

Target LED @ Times Square 6.67mm

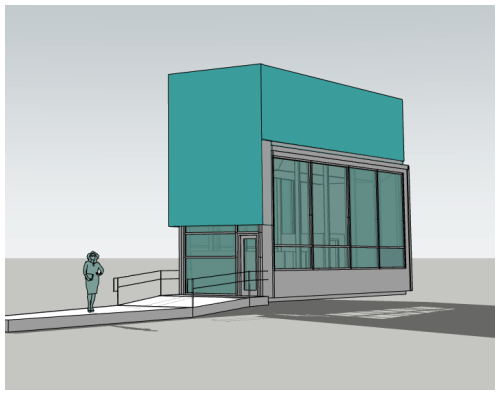
# LED Display Concept 1



- LED Total Area: 965sf
- LED & Secondary Structure Estimated Weight: 14,475lb
- LED Power Requirement: 76,235W [maximum]



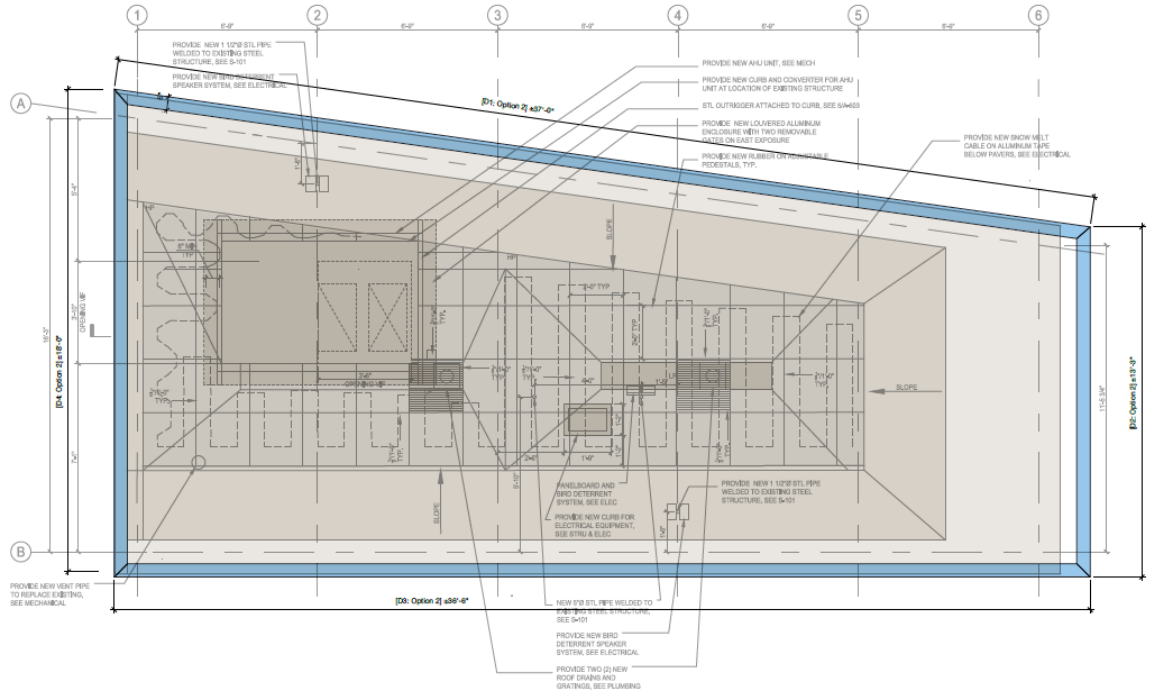


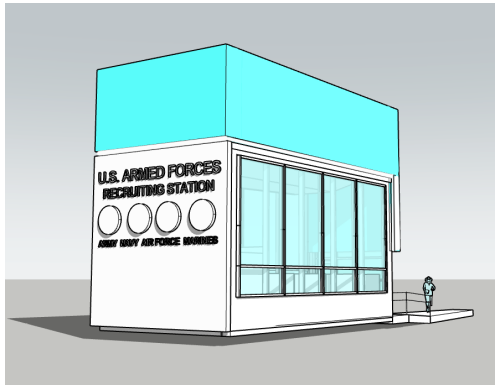


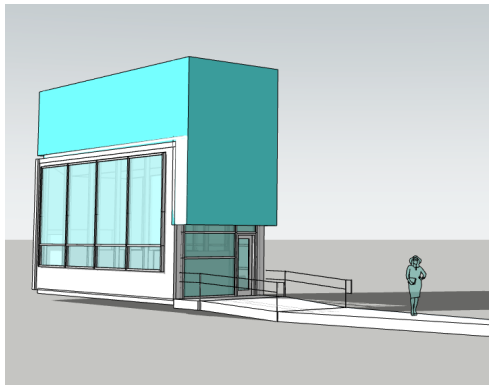
# LED Display Concept 2

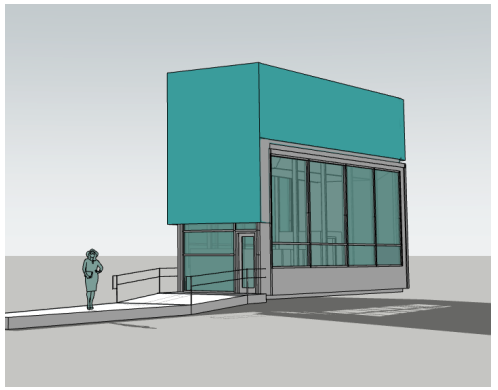


- LED Total Area: 1180sf
- LED & Secondary Structure Estimated Weight: 17,700lb
- LED Power Requirement: 93,220W [maximum]





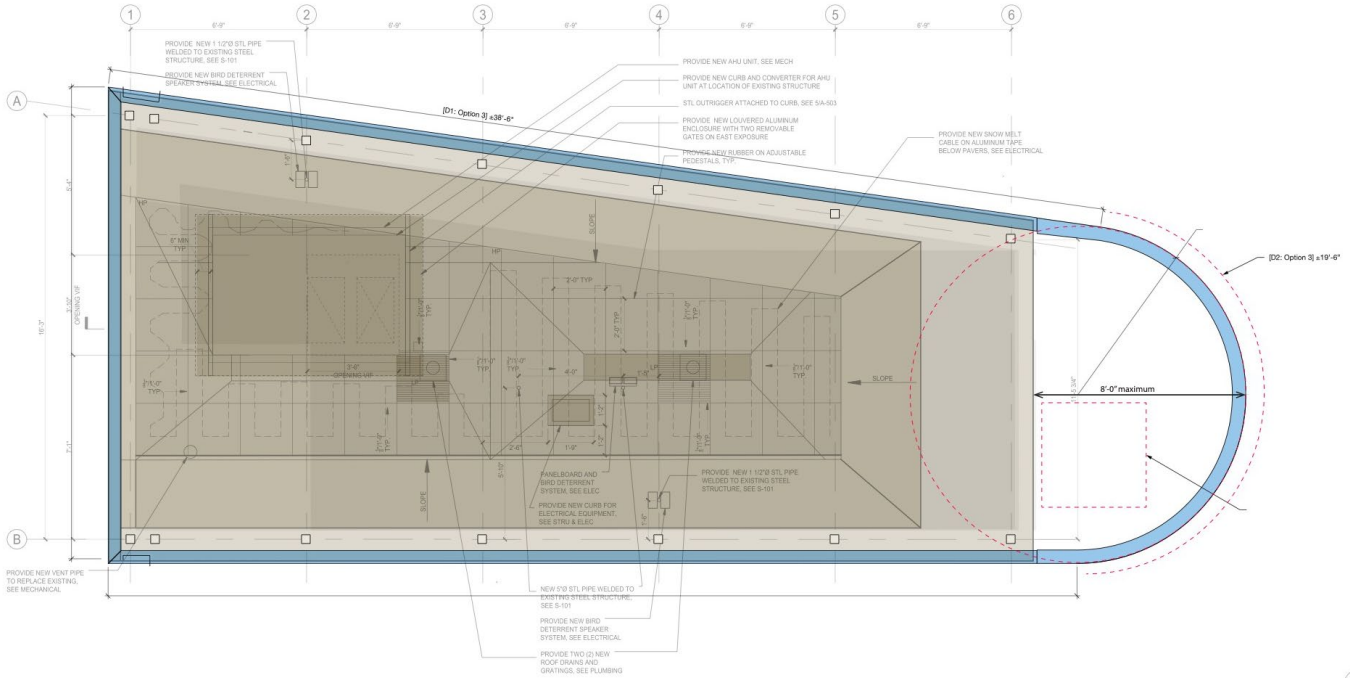



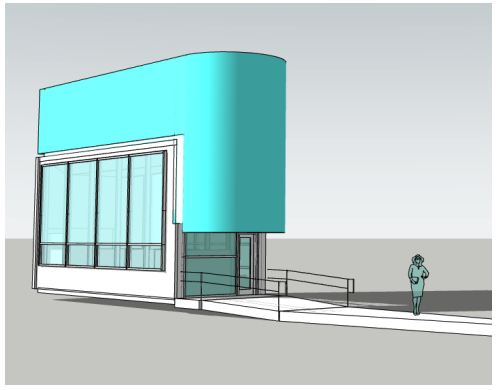


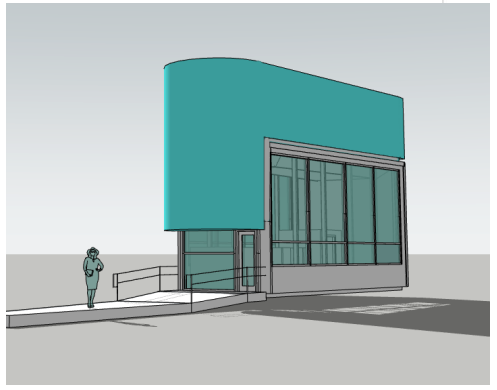
# LED Display Concept 3



- LED Total Area: 1325sf
- LED & Secondary Structure Estimated Weight: 19,875lb
- LED Power Requirement: 104,675W [maximum]
- LED Canopy can provide roof access above the entry.







# LED Anamorphic Content

South-East Corner

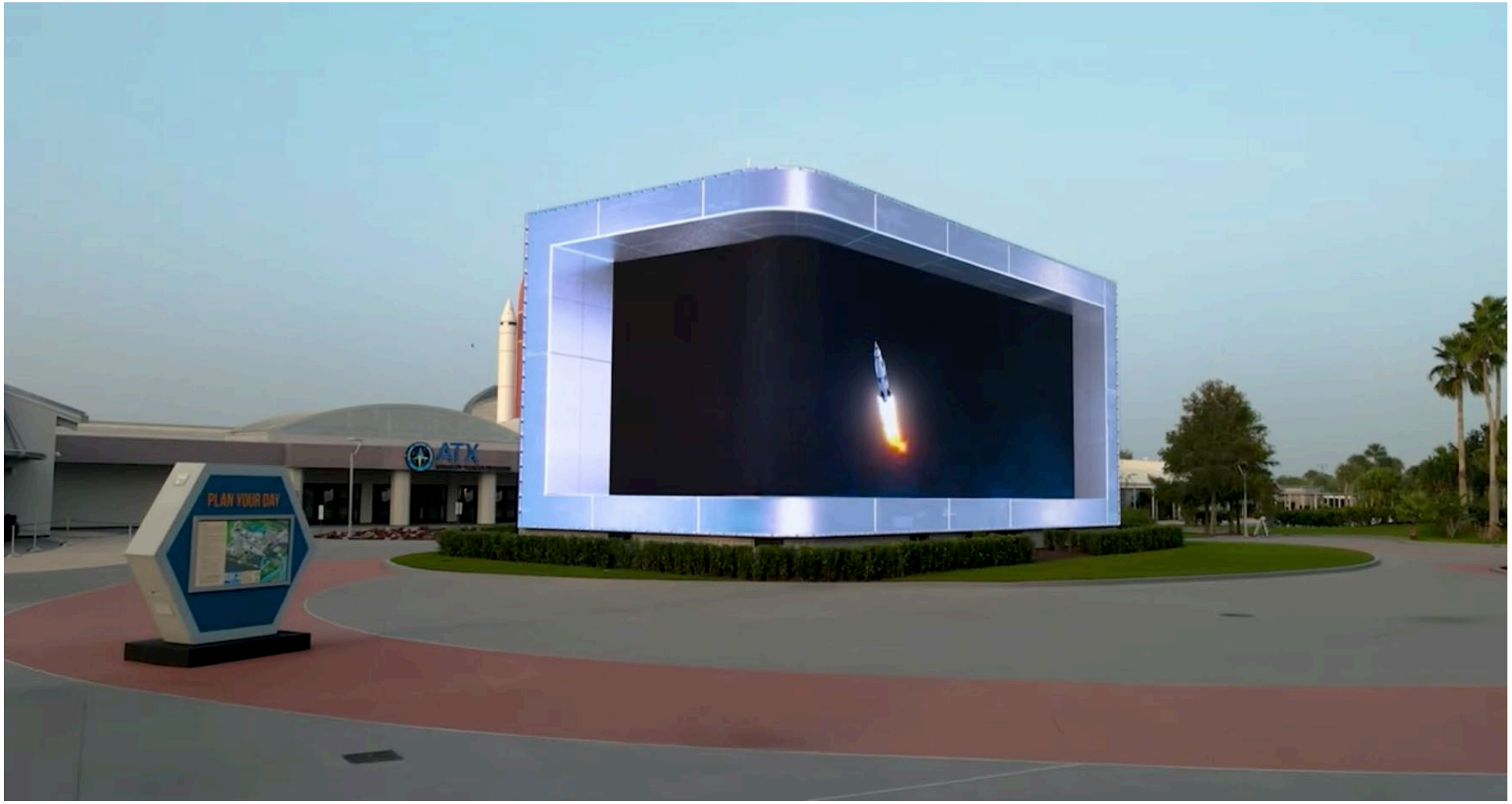
North-East Corner

# LED Anamorphic Content



Anamorphic Content Video

- Dynamic Content
- Memorable Aesthetic
- Extends View Angles
- Wider Field of View



# Video Board Sourcing Discussion



1. Have specific video boards been identified for the project, and are there long-lead-time purchasing actions underway?

2. Associated items:
    1. Buy American Act compliance;
    2. Justification & Approval (J&A) for sole or limited suppliers;
    3. O&M considerations

Figure 3: Proposed Media Screen Rendering (Clear Channel)

# Q & A

## Questions & Feedback

Figure 3: Proposed Media Screen Rendering (Clear Channel)

# Break



| Time | Duration | Topic / Activity | Presenter(s) / Facilitators |
|---|---|---|---|
| 1:00–1:10 PM | 10 min | **Introductions and Charrette Overview** | Jeff Jones, PE (Senior PM) |
| 1:10–1:25 PM | 15 min | **Project Objectives, UFC Requirements & Quality Management** | Jeff Jones, PE / Uriel Reyes, PMP |
| 1:25–1:50 PM | 25 min | **Presentation of Video Display Concepts** | Berny Hintz (Sensory Interactive) |
| 1:50–2:25 PM | 35 min | **Client and Stakeholder Feedback and Q&A** | USAREC & USACE |
| 2:25–2:50 PM | 25 min | **Buy American Act Overview and Sourcing Discussion** | Jeff Jones, PE / Uriel Reyes, PMP |
| 2:50–3:00 PM | 15 min | **BREAK** | All |
| 3:00–3:55 PM | 45 min | **Existing Conditions & Technical Assessments** | Technical Discipline Leads: |
| 3:55–4:10 PM | 15 min | **Cost Estimation Approach** | Fred Cooper, CCP |
| 4:10-4:40 PM | 30 min | **Client Design Concept Analysis & Selection** | Jeff Jones, PE / USACE / US Army Recruiting |
| 4:40–4:55 PM | 15 min | **A-E Team Design Refinement, Risks & Next Steps** | Jeff Jones, PE / Quintin Biagi, RA |
| 4:55–5:00 PM | 5 min | **Summary, Next Steps, & Closing Remarks** | Jeff Jones, PE |

# Architectural

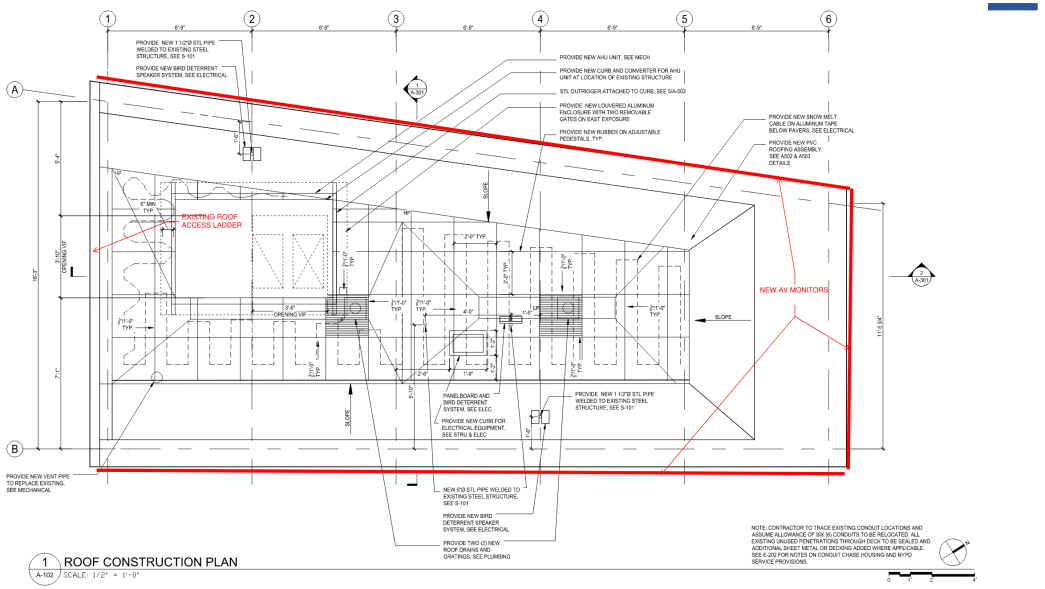


## Existing exterior considerations

- Architectural envelope

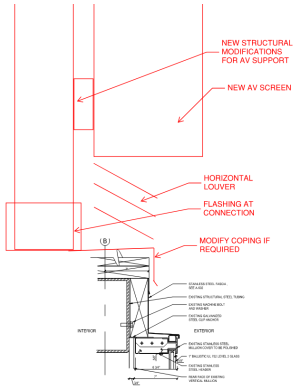
  Exterior Considerations

  - Connection and flashing details for new AV equipment mounting
  - New wind loading requirements
  - HVAC equipment adjustments for air flow
  - Security camera line of sight
  - Maintaining access to room mounted equipment

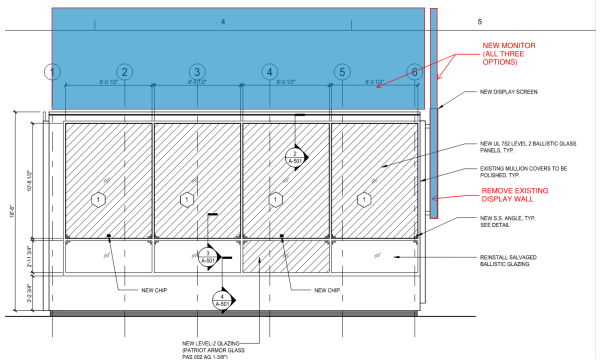



EXISTING ROOF PLAN

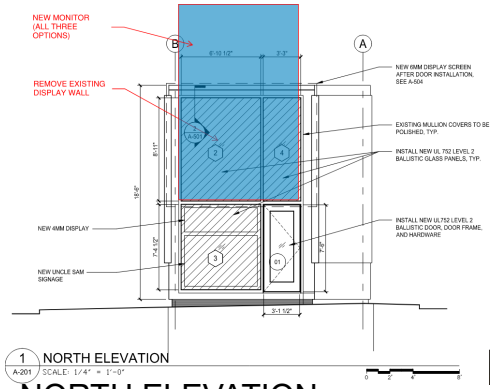
SECURITY CAMERAS




ROOF DETAIL CONCEPT




EAST ELEVATIONS




NORTH ELEVATION

# Architectural

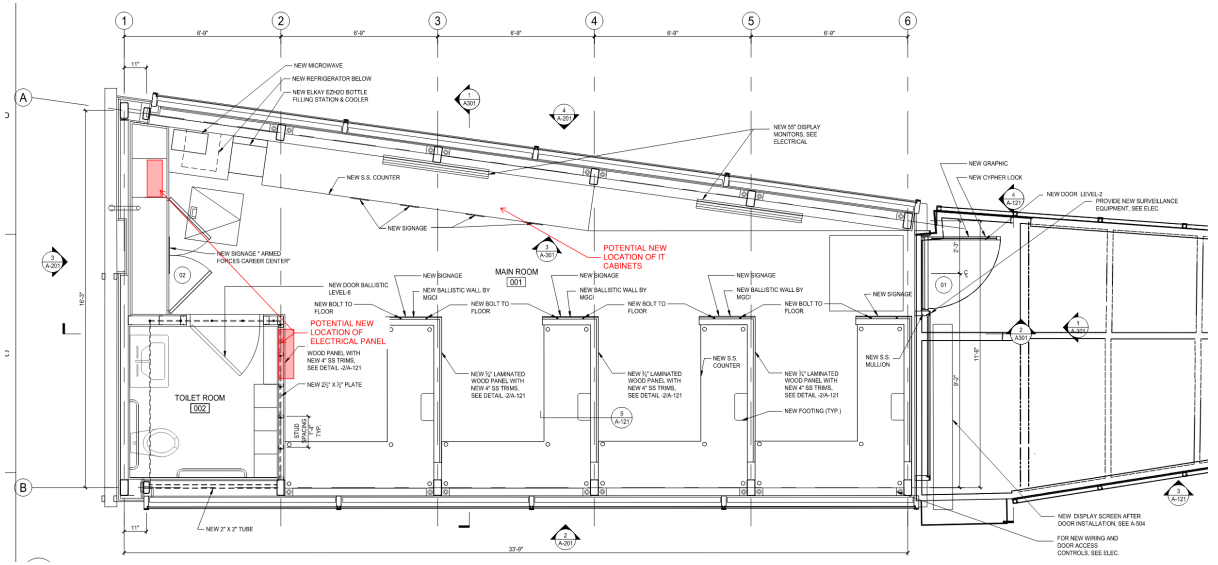


**Existing interior considerations**

- Architectural Interiors
  - Interior Walls: Storefront with ballistics grade glazing.  Wood paneling.
  - Doors: Stainless steel doors and frames

  - Interior Considerations (minor for necessary adjustments for new equipment)

  - Modifications for new electrical panel location
  - New IT cabinet and control's locations
  - New electrical and comms raceways




EXISTING FLOOR PLAN

INTERIOR VIEW

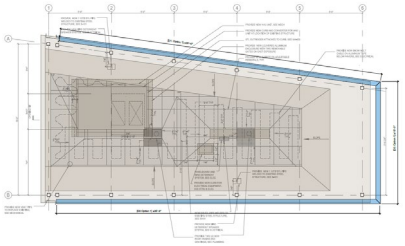
# Architectural



## Concept Considerations

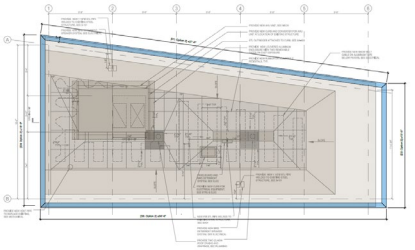
- Concept 1
  - Open end increases movement potential to damage flashing connections from structure to roof membrane
  - Less area for video displays.
  - Less impact on HVAC air flow

Concept 1



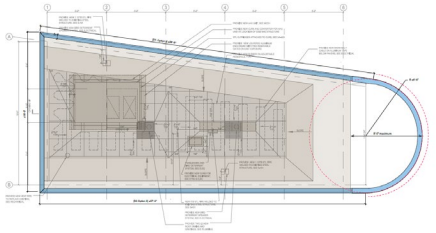
- Concept 2
  - More rigid structure creates better potential for stable flashing details.
  - No overhang simplifies impact on building system.
  - Access to roof from access ladder considerations

Concept 2



- Concept 3
  - More dynamic display system.
  - Complicates tie into existing roof and water management.
  - Access to roof from access ladder considerations

Concept 3



All Concepts impact line of sight from existing security cameras mounted to roof system.

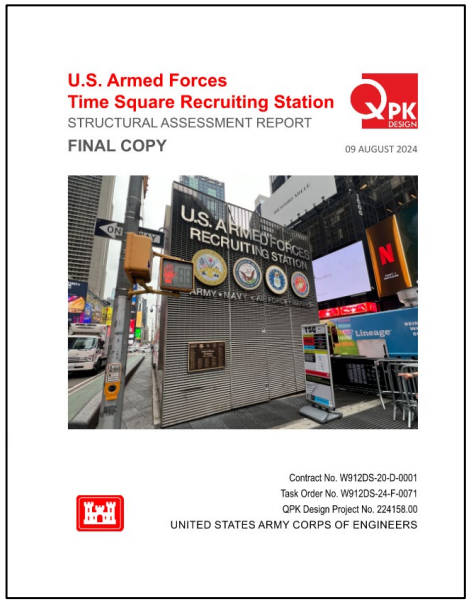
# Structural Findings



## Existing Conditions/Findings – Structural Assessment Report

- Completed August of 2024 by QPK Design

- Three potential deficiencies were found due to increased wind loads:
  - Increased drift at the existing roof level in the lateral force resisting system.
  - Overstressing of an existing diagonal lateral brace member.
  - Significant increase in uplift at the bottom bearing plate expansion anchors.



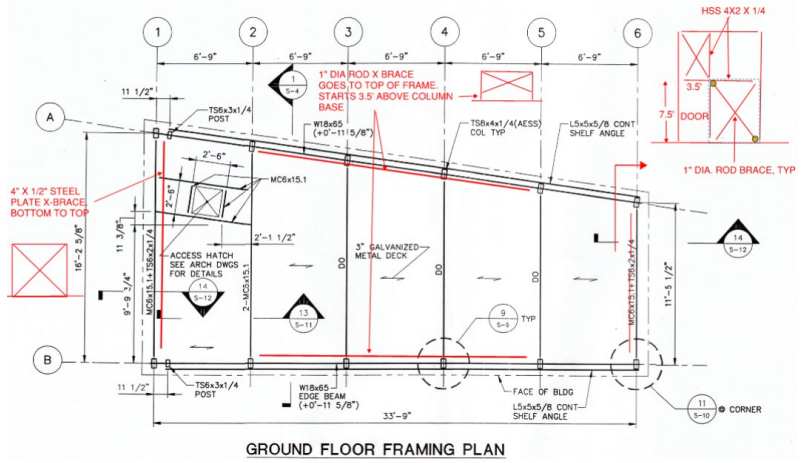
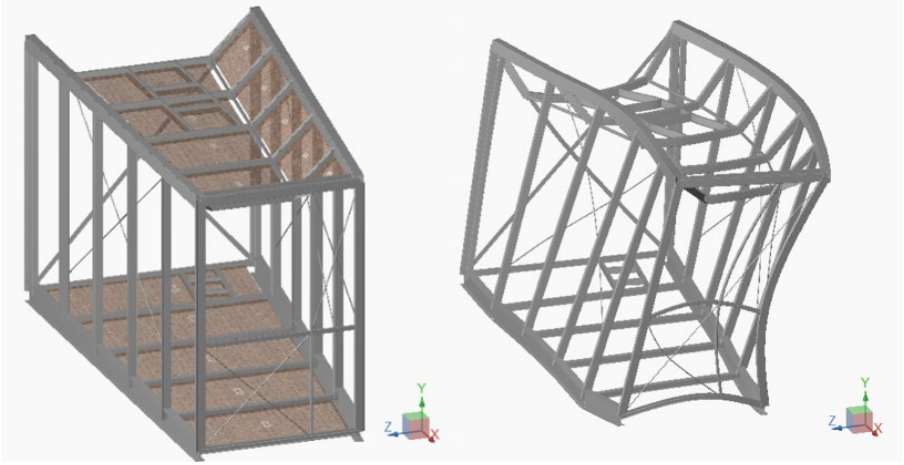
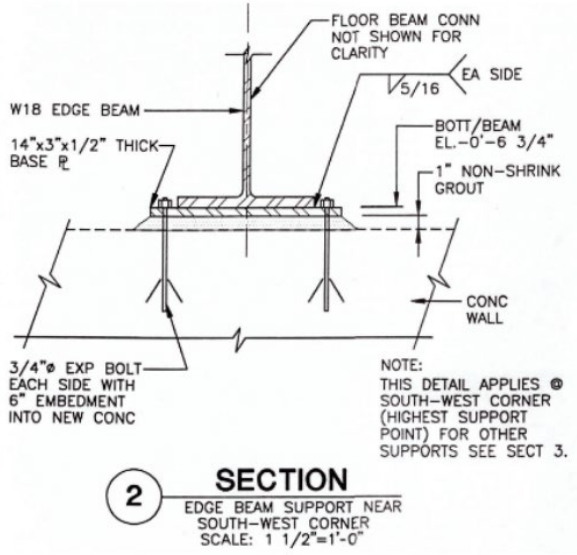




Figure 6: Field Notes Defining Existing Lateral Braces



## Potential Structural Enhancements to the Existing Structure

- Increased Drift – New steel bracing elements to reduce lateral drift to ¾ inch max at roof level.
- Bracing Overstressing – New steel bracing element adjacent.
- Uplift at Expansion Anchors – Remediation at bearing support, replace with adhesive anchors and/or install additional adhesive anchors.



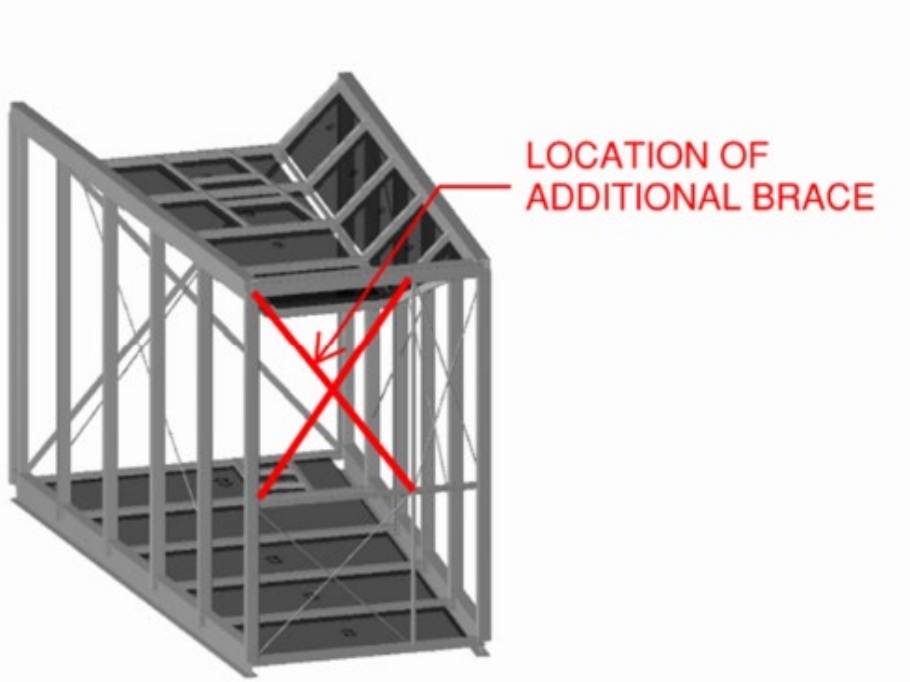




Figure 11: Existing Anchorage Detail

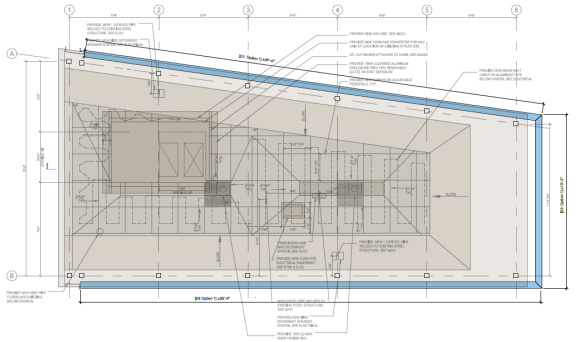
# Structural



## Concept Considerations

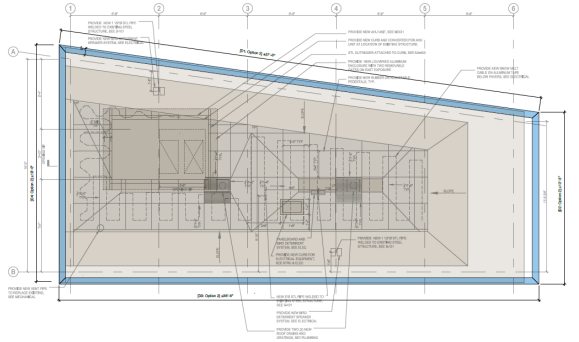
- Concept 1
  - Less symmetrical loading on existing structure.
  - Video system framing less rigid at open ends, additional framing may be required.

Concept 1



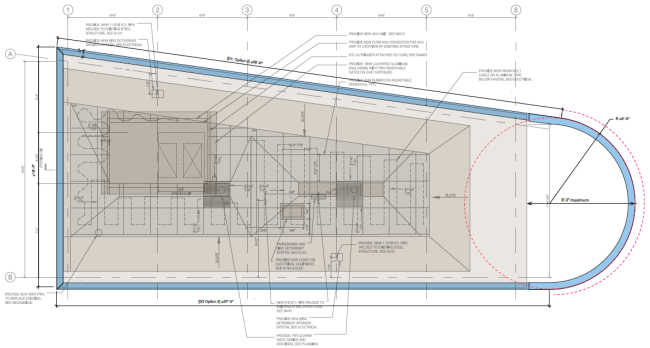
- Concept 2
  - Increased dead load of new display.
  - Video system framing more rigid at all four corners.

Concept 2



- Concept 3
  - Increased dead load of new display.
  - Eccentric loading at display overhang.

Concept 3



# Civil & Permitting Considerations



## Existing Conditions

- Building is existing, no impacts to civil & site conditions
- Existing MTA Emergency Exit

## Potential Permits and Coordination for the Contractor

1. NYC DOT - The Office of Construction Mitigation and Coordination (OCMC): Building Operations / Construction Activity Permit
    - DOT's permit will have stipulations that identifies site specific work restrictions, e.g. construction time & schedule to avoid holidays.

2. Consultations with MTA through the External Partner Program (EPP)
    - Construction activities within 200 feet of MTA property
    - Construction impacts that could create noise, vibrations or other disturbances that might affect MTA operations or passenger safety.

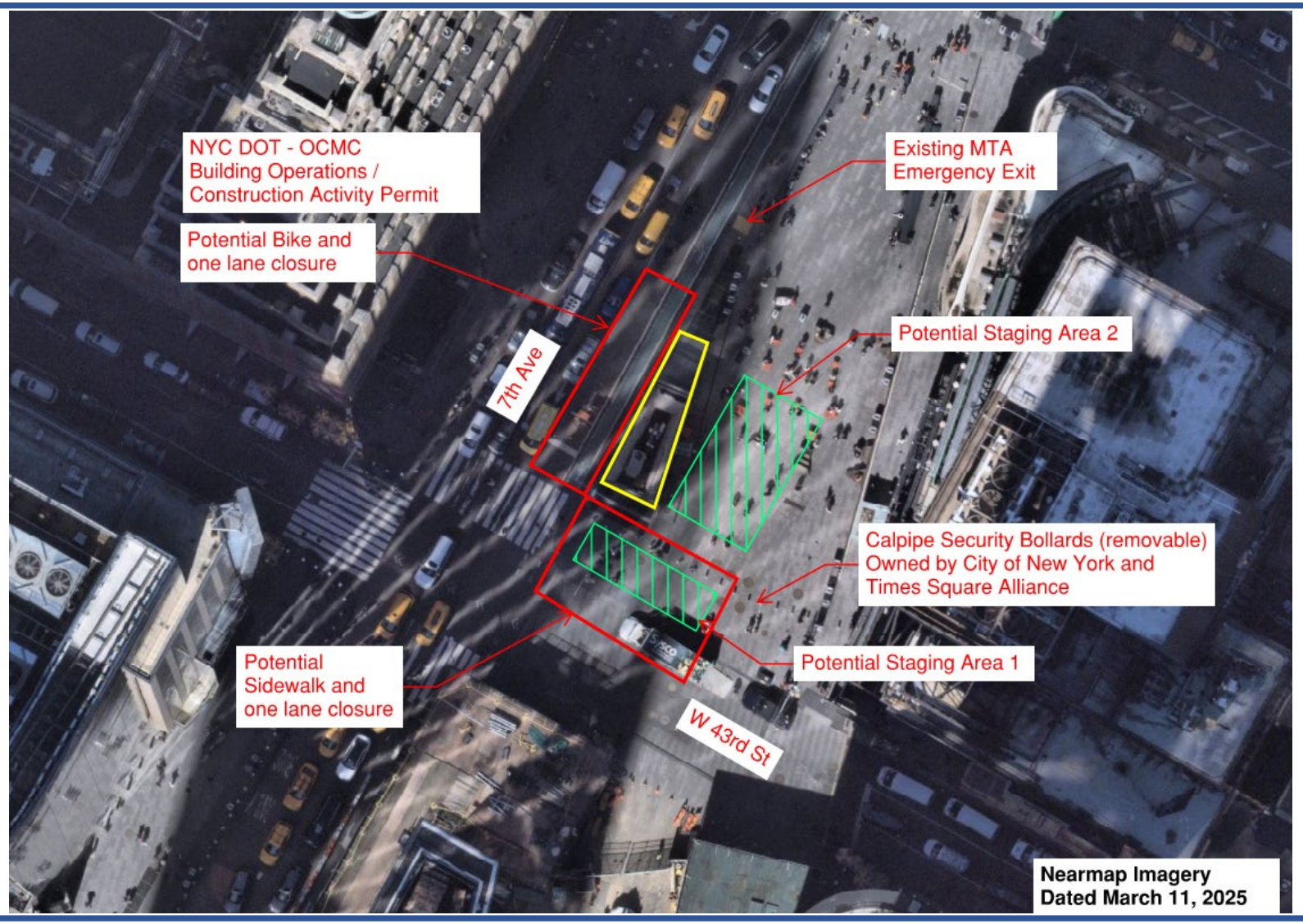
3. City of New York and Times Square Alliance
    - Coordination for a staging area

## Concept Considerations

- Potential staging areas and road closures

# Construction Site Layout





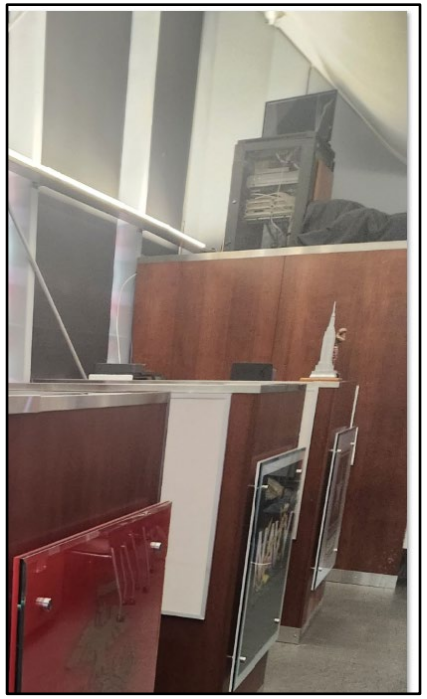
# Electronics / IT

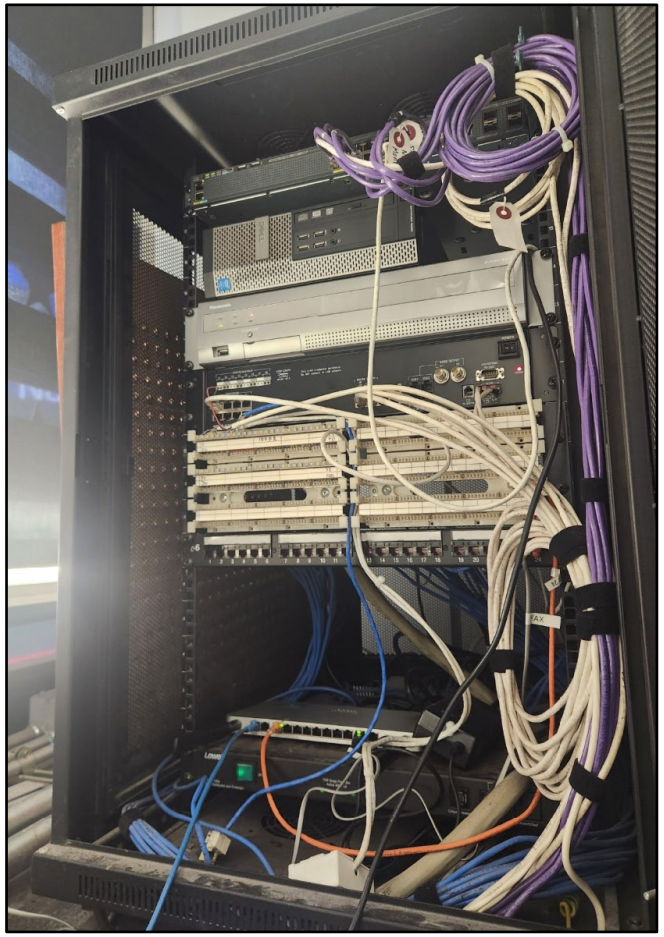


## Existing Conditions/Findings – IT Assessment Report

- Existing IT equipment cabinet half height (18RU) located above bathroom.
- Cabinet houses cable terminations on old style 110 block and 1U 24 port patch panel.
- Cabinet active equipment includes network switches, server/PC, AV hardware etc.
- Approximate 8 RU in cabinet are free (not used). Removal of inactive (TBD) 110 block termination could add an additional 4RU of space for a total of 12 RU can be designate for future/display use.

- Three potential recommendations.
  - Relocate existing cabinet from above bathroom which is not easily accessible to below counter, will need to remove storage cabinets.
  - Review option of placing all new display equipment to be installed in existing cabinet (free 12RU of space) assuming it fits.
  - Review placing new display cabinet side by side to existing and provide permanent ladder to gain access above bathroom.
  - Add KVM/laptop setup at existing desk/counter to facilitate cabinet network monitoring instead of current setup above bathroom.



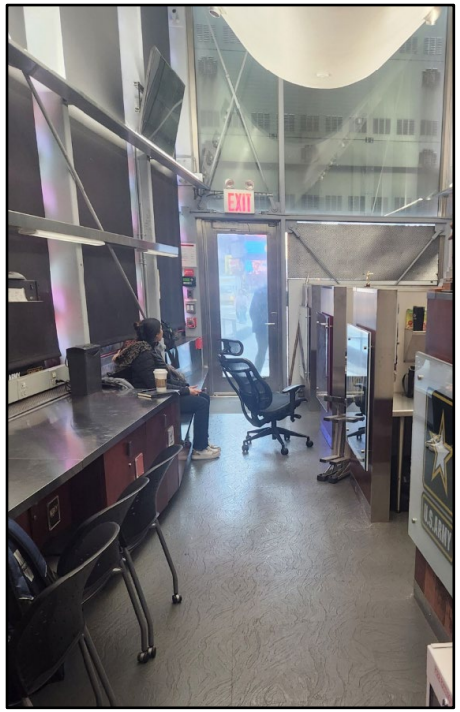


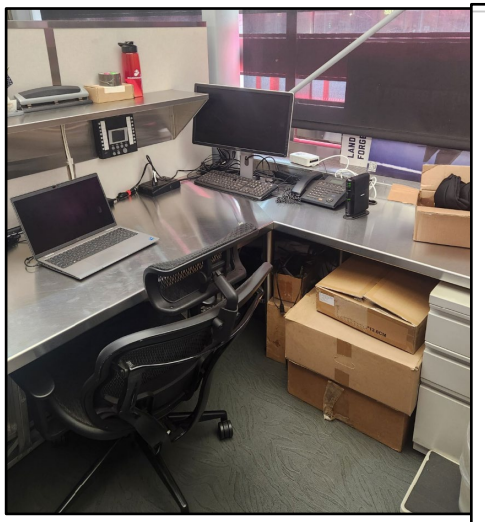
# Electronics / IT

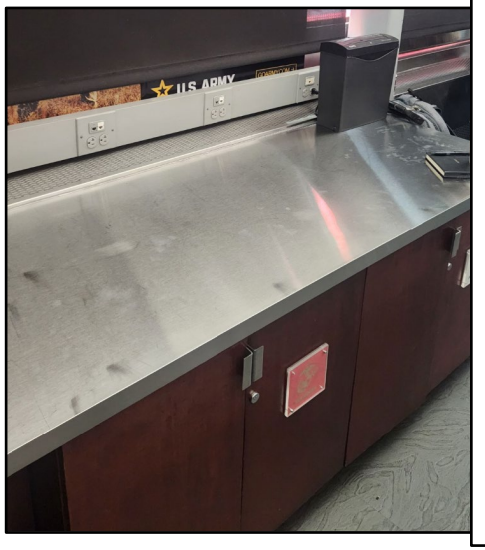


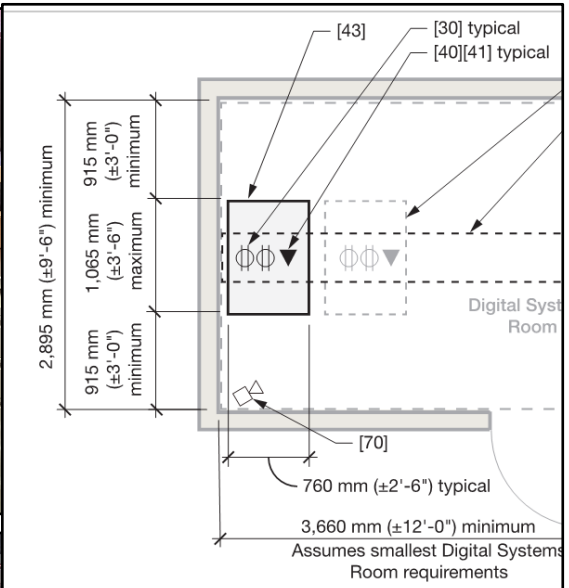
## Space Limitations for New Display Cabinet

- New Display cabinet size is approx. 24” x 24” x 24” to house all the anticipated display equipment, size depends on display vendor. Recommended vendor cabinet layout not possible due to lack of available space.
- Review option is to place Display cabinet below stainless-steel countertop if removal of existing is possible. Cabinet can be placed on caster for full access.
- Display cabinet to require (2) 20A dedicated circuits.
- Display cabinet to generate approx. 2,000 BTU/Hr of heat.
- Display cabinet to require hardwire network connection for VPM remote access.

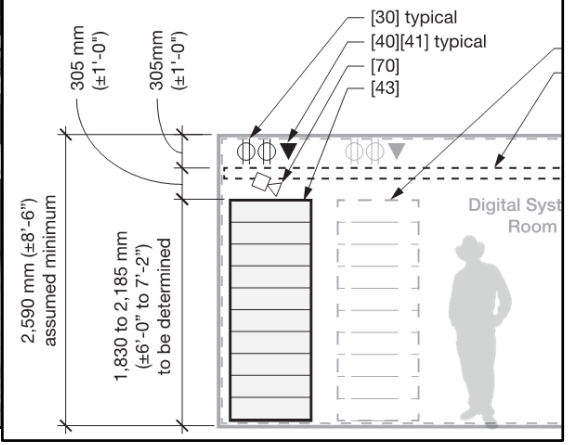





Plan: 1/4” = 1’-0”



# Mechanical



## Existing Conditions - Mechanical

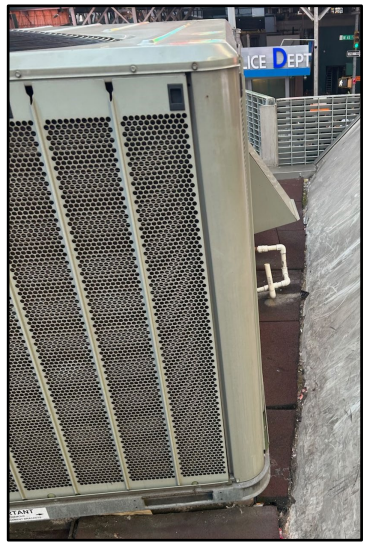
- Rooftop mechanical unit provides heating, cooling, ventilation – 72 MBH
- Electric baseboard heating for perimeter
- Plumbing: Water service to building for toilet room plumbing and drinking fountain. Roof drain needs maintenance

## Video Display Upgrade Implementation

- No plumbing impacts
- 2000 btu/hour equipment load

## Concept Considerations

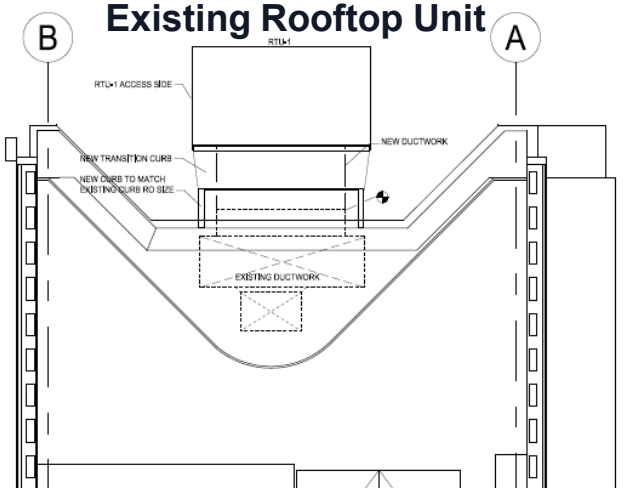
- For adding Video control server into existing Rack (located above toilet room) open to space – existing HVAC can handle additional cooling
- If separate IT Rack enclosed in new dedicated closet space – add exhaust fan
- Video wall exterior – no special HVAC or Fire Protection considerations




PACKAGE ROOF TOP UNIT

| TAG | AREA SERVED | UNIT LOCATION | UNIT CFM | OA CFM | FAN TYPE | DRIVE | ESP (IN. WG) | RPM | HP | DX COOLING | | | | ELECTRIC HEAT | | | | ELECTRICAL | | | | BASIS OF DESIGN | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | EAT °F DB/WB | LAT °F DB/WB | SENSIBLE MBH | TOTAL MBH | EAT °F DB | LAT °F DB | KW | | MCA | MOCP | VOLTS | PHASE | | |
| RTU-1 | AS INDICATED | ROOF | 2400 | 200 | FC | DIRECT | 0.80 | 1200 | 1 | 77.1/62.1 | 53.0/52.5 | 54.0 | 72.0 | 64.1 | 82.0 | 13.5 | | 53.1 | 60 | 208 | 3 | TRANE# THC072 | UNIT WEIGHT= 700 lbs |

## Existing Rooftop Unit



# Electrical



## Existing Conditions – Electrical

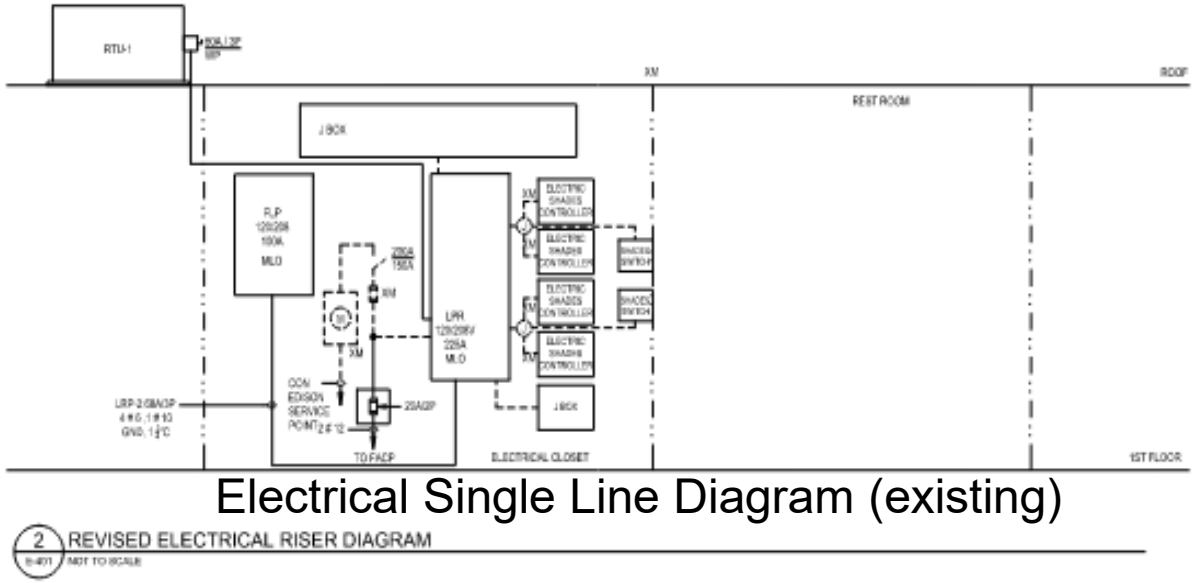
- 200 ampere, Con Ed metered electric service
- 208Y/120, 3-phase, 4-wire based on as-built and panel label (confirm with electrician)
- Loads served: mechanical unit, electrical baseboard, lighting, general power, IT rack, snow melting, and domestic water heating
- Good Condition – Request utility bills, load measurements to confirm existing demand

## Video Display Upgrade Implementation

- Video wall requires 30-40 kw average power, 75-105 kw peak power
- Submit load letter to Con Ed to determine service capacity
- If service is ruled inadequate, utility company is required by PSC to supply customer with a new or reinforced service.

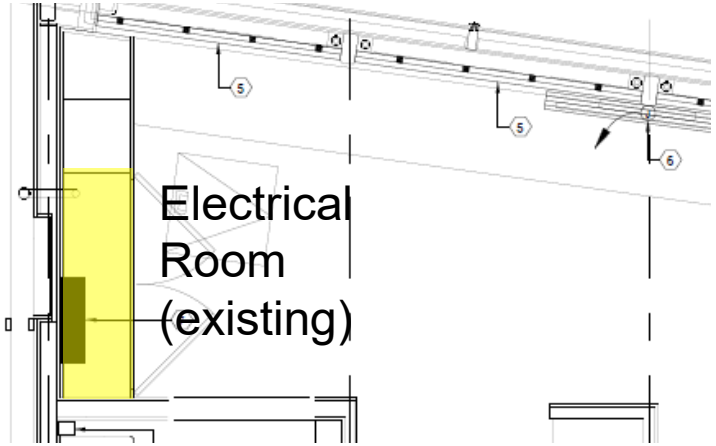
## Concept Considerations

- Maintain existing electrical service and distribution as is
- Add separate new 400 ampere metered service with 60-pole circuit breaker panel
- Several locations have been studied for new equipment
- Alternative: combine existing plus new into a single 600Ampere, metered Electric Service




Electrical Single Line Diagram (existing)

2 REVISED ELECTRICAL RISER DIAGRAM



# Fire Protection



## Existing Conditions – Fire/Life Safety Assessment

- Building is not sprinklered
- Fire Alarm System provided. Based on existing Notifier panel, model NFW2-100. Reports to central station Features smoke detectors, duct smoke detection, manual pull station, occupant notification, & remote annunciator panel. Main control panel reports to central station.
- Exiting sufficient. Multiple exits directly to the street.

## Video Display Upgrade Implementation

- Proposed project does not trigger sprinkler protection
- New climate-controlled IT closet does not require any protection.

## Concept Considerations

- Fire protection does not change with concepts. Existing systems to remain is acceptable.
- Recommend to properly maintain the fire alarm system as trouble signal was noted at the time of survey.

# Cost Estimate



**ROM Cost Analysis**

| Preliminary Cost Estimate | Option 1 | Option 2 | Option 3 |
|---|---|---|---|
| Video display ROM Cost | $ 1,300,000.00 | $ 1,550,000.00 | $ 1,800,000.00 |
| Sales Tax 8.875% | $ 115,440.00 | $ 137,640.00 | $ 159,840.00 |
| A/E Design Contingency 15% | $ 212,316.00 | $ 253,146.00 | $ 293,976.00 |
| ROM cost of Video screen prior to contractor markups | $ 1,627,756.00 | $ 1,940,786.00 | $ 2,253,816.00 |
| Prime Contractor JOOH 37% | $ 701,980.00 | $ 701,980.00 | $ 701,980.00 |
| Prime Contractor HOOH 5% | $ 116,487.00 | $ 132,138.00 | $ 147,780.00 |
| Prime Contractor Profit 8.53% | $ 208,663.00 | $ 236,700.00 | $ 264,736.00 |
| Bond 2% | $ 53,098.00 | $ 60,232.00 | $ 67,366.00 |
| ROM Video Display after Prime Contractor Markups | $ 2,707,984.00 | $ 3,071,835.00 | $ 3,435,688.00 |

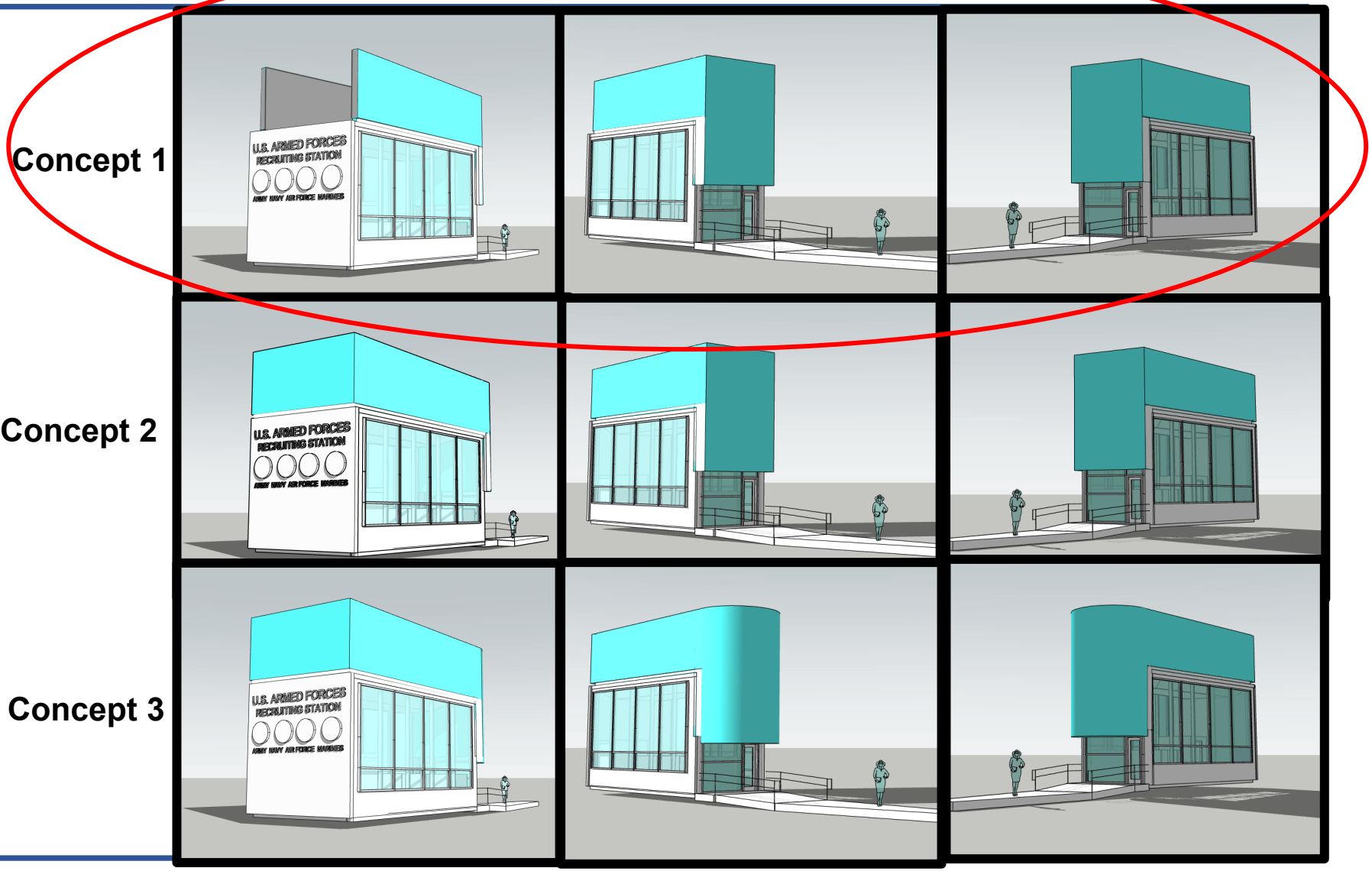
- Structural, Architectural, and Electrical scope of work are not included in this ROM Estimate.
- A/E Design Fee has not been included.
- Escalation to midpoint of construction has not been included in this ROM Estimate.
- Owner Contingency & SIOH are not included.
- Tariffs are not included.

# Concept Analysis



**Design Selected w/option to add a fourth side (Concept 2)**

**Design Selection**



# Out-Brief & Design Refinement



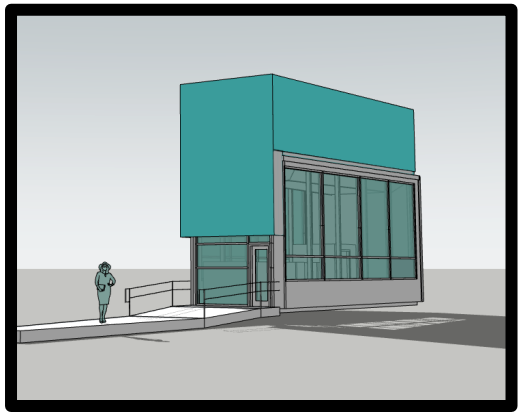
## Selected Design Considerations

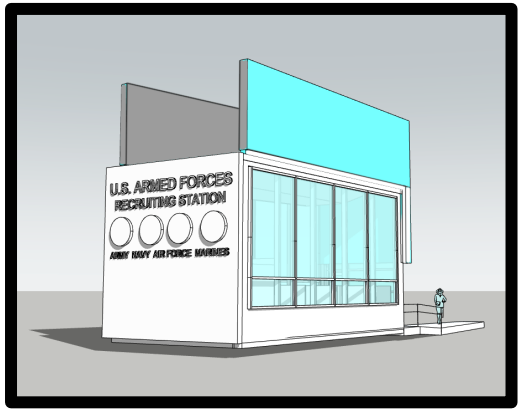
- **A-E Team Design Refinement**
  - Design Selected: Option 1: 3-Sides
  - Value Engineering options under consideration:
    - Reduce the size of panes from 10’ to 8’
  - Cost Savings options
    - Reduce construction time from nine to six months:  JOOH and HOOH savings;
    - Given the modularity of construction, require off site and remove on-site laydown and required security.
    - Given USAREC vacating site during construction, utilize the existing office as a “construction trailer,” saving JOOH costs.

- **RFIs**
  - USAREC: Delivery of content? Standalone vs network
  - Real Estate: NYPD Cameras - Line of Site?

- **Next Steps**

  - ROM Estimate from all disciplines
  - CON ED Estimate
  - Space Requirements for 2% Parts Bins, Placement of half rack, placement of

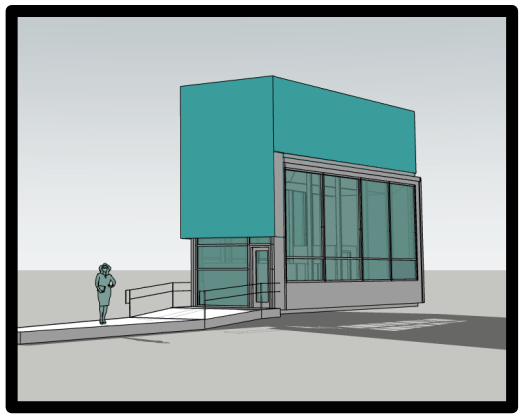




# Out-Brief & Closing Remarks

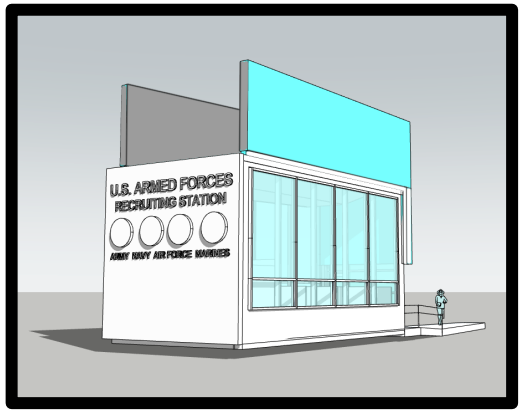


- **A-E Team**
  - Request load analysis from Con Edison
  - Consolidate a list of all the additional space and infrastructure requirements for the video display upgrade.
  - Cost estimate refinement for selected design.
    - Include Architectural, Structural, and Electrical modification costs.



- **Government Project Delivery Team**
  - Investigate the status and functionality of the existing NYPD cameras on the building.
    - MOA?
  - Provide 12-24 months of utility bills to understand the current power demand and capacity of the building.
  - Compare cost estimation approaches, USG vs. A-E Cost Estimator

- **Next Steps**
  - Value Engineering strategy and cost-savings options
  - Updated cost estimate for selected design.



# Compliance Matrix



| Requirements | Charrette Agenda Item | Meets Criteria? (Y/N) | Comments |
|---|---|---|---|
| **Kick-off meeting and introductions to establish roles and responsibilities** | Introductions and Charrette Overview | Y | Clearly identifies roles and responsibilities. |
| **Clearly defined project scope and objectives** | Project Objectives & Key Requirements | Y | Clearly presents and aligns with UFC requirements. |
| **Client and stakeholder involvement and feedback** | Client and Stakeholder Feedback, Client Design Concept Analysis & Selection | Y | Direct engagement and input captured clearly. |
| **Minimum of three (3) single-line concept sketches provided** | Video Display Concept Presentation (Concept 1, 2, and 3) | Y | Three distinct design concepts presented. |
| **Comprehensive assessment of existing site and building conditions** | Existing Conditions & Assessments Overview (Architectural, Structural, Civil, Electrical, Mechanical, Plumbing, Fire Protection, Telecommunications) | Y | Detailed interdisciplinary assessments are clearly included and addressed. |
| **Preliminary structural findings and modifications** | Structural Overview (Existing Conditions and Structural Enhancements) | Y | Included explicitly in structural review session. |
| **Determination of electrical and electronic service capacity** | Electrical/Electronic Network Assessment | Y | Clearly outlined and aligns with required criteria. |
| **Determination of HVAC and mechanical requirements** | Mechanical/Plumbing Assessment | Y | Clearly addressed in the Mechanical/Plumbing overview. |
| **Address primary audio-visual and technical components and systems** | Electronic / Telecommunications Overview and Video Display Concept Presentation | Y | Audio-visual and technical systems addressed thoroughly. |
| **Cost estimating (MII format recommended)** | Cost Estimation Approach and Considerations | Y | Clearly incorporated into agenda as a dedicated item. |
| **Identify design-build acquisition strategy and schedule** | A-E Team Design Refinement & Risk Mitigation, Project Out-Brief / Way Forward | Y | Acquisition strategy and schedule discussion implied; ensure clearly highlighted in charrette summary. |

# Compliance Matrix



| Requirements | Charrette Agenda Item | Meets Criteria? (Y/N) | Comments |
|---|---|---|---|
| **Technical Justification for brand names or single source** | Buy American Act Overview and Compliance Discussion | Y | Specifically addresses sourcing issues requiring technical justification memo for single sources. |
| **Address environmental, anti-terrorism, and force protection requirements** | Civil & Site Layout, Structural Overview | Y | Addressed generally; recommend specifically highlighting anti-terrorism/force protection explicitly during discussion. |
| **Documentation of stakeholder feedback, decisions made, and open items** | Client Design Concept Analysis & Selection, Project Out-Brief / Way Forward | Y | Clearly includes a session dedicated to documenting decisions and next steps. |
| **Technical Justification for brand names or single source** | Buy American Act Overview and Compliance Discussion | Y | Specifically addresses sourcing issues requiring technical justification memo for single sources. |
| **Address environmental, anti-terrorism, and force protection requirements** | Civil & Site Layout, Structural Overview | Y | Addressed generally; recommend specifically highlighting anti-terrorism/force protection explicitly during discussion. |
| **Documentation of stakeholder feedback, decisions made, and open items** | Client Design Concept Analysis & Selection, Project Out-Brief / Way Forward | Y | Clearly includes a session dedicated to documenting decisions and next steps. |

# Value Engineering Considerations

**1. Display Size Optimization**:

- Evaluate the optimal size for the LED displays based on viewing distance and audience engagement. Reducing the size of the displays can lower costs without significantly impacting visibility.

**2.Pixel Pitch Selection**:

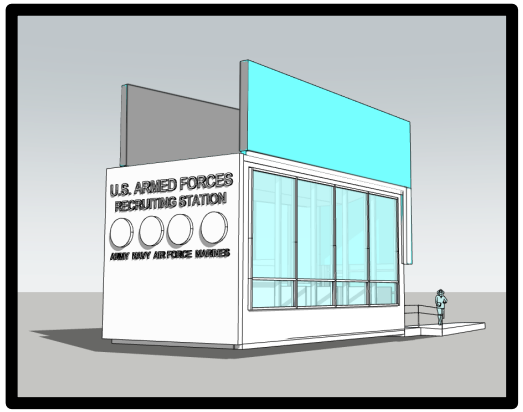
- Choose a pixel pitch that balances resolution and cost. A higher pixel density (smaller pitch) increases costs but may not be necessary depending on the viewing distance and content type.

**3.Modular Design**:

- Utilize modular LED panels that can be easily replaced or upgraded. This approach can reduce maintenance costs and allow for future upgrades without full replacement.

**4.Installation Techniques**:

- Explore alternative installation methods (e.g., using existing structures) to reduce labor and equipment costs. Consider the use of local contractors who may offer competitive pricing.




**5.Sourcing and Procurement**:

- Evaluate multiple suppliers for competitive pricing on LED panels and components. Consider bulk purchasing or long-term contracts for better pricing.

# Value Engineering Opportunities



**1. Architecture**:

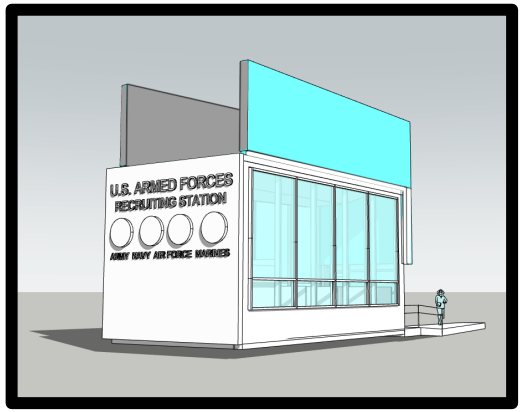
- Minimize structural roof penetrations for supports for the new video displays.
- Minimize/eliminate any interior modifications for electrical, IT or Comms reconfigurations of walls, casework or countertops.
- Omit the offset at the entrance façade to simplify video display into one uniform height (8') ribbon around the perimeter on either 3 or all 4 sides. Install decal style similar to glass adjacent to the entry door.

**2.Structural**:

- The selected design provides the best VE opportunity.

**3.MEP/IT**:

- Minimal VE opportunities. See architecture for interior installation recommendations.



# APPENDIX B: WEEKLY IN-PROGRESS MEETING MINUTES

TETRA TECH Mason&Hanger A Day & Zimmermann Company

Joint Venture

**Kickoff/Pre-Charrette Meeting Minutes**
**Times Square Recruiting Station Video Display Upgrade**
**Manhattan, NY**
**Project Number: W912DS25F0040**
**Contract Number: W912DS21D0002**
**08 April 2025 (0900-1000EST)**

**Summary:** This meeting was held to conduct a Kickoff/Pre-Charrette Meeting for Times Square Recruiting Station Video Display Upgrade in Manhattan, NY. The Project Delivery Team (PDT) made introductions with all A-E personnel and the Client (USACE) New York District. PDT discussed Roles and Responsibilities, Project Requirements, Schedule of Deliverable, and Coordination of Design Charrette.

**Participants:**

**USACE Team:**

- Technical Manager: Nicole Furtado
- Project Manager: Stephen Brown (dialed in)
- Chief of Military and Special Projects: Gerardo Siniscalchi

**A-E Design Team:**

- Senior PM: Jeff M. Jones, PE, PMP, ENV SP
- Senior PM: Chris Lowe, PE
- JV PM: Uriel Reyes, PMP, FMP, CQM-C
- JV PM: Michelle Brunelle, PMP
- Architect: Quintin Biagi, RA*, AIA, RID, LEED AP BD+C, GPCP, CDT
- Structural: Andrew Coats, PE*, LEED AP - BD+C
- Civil/Site: Andrew BaThan, PE
- Mechanical: Joshua Zweback, PE
- Electrical/IT: Onorius Vaidean, PE
- Fire Protection: Rocky Edwards, PE, FPE**, GPCP**
- Cost Estimator: Fred Cooper, CCP
-

**Sensory Interactive Video Design Consultant:**

- Berny Hintz, AIA, LEED AP CBCP
- Steph Vainiunas
- Everett E Henderson Jr.
- Stefan Baldacci

**Agenda Presentation and Transcript:**
(see attachments)

**General Discussions:**

1. Introductions: Roles and Responsibilities:
    a. A-E Design and USACE NAN team conducted introductions mentioning roles and responsibilities for project.
2. Project Requirements: Project overview included project background information, site location, objectives, and project requirements.
    a. Berny Hintz – Video Design Consultant
        i. Does the government own the building? Yes.
        ii. Permitting requirements? Some permitting and coordination may be required. Coordination between USG and A-E team.
        iii. Limitations to removing exterior finished. Yes, limitations exist. Specifics to be addressed with USACE PM Stephan Brown. (see Stephen RFI response)
        iv. Is the building currently occupied? Yes.
        v. Will building be occupied during installation? During design phase yes, not during construction phase.
    b. Uriel Reyes – JV PM
        i. Who is the end user/client? USACE Real Estate Office is the client.
3. Schedule of Deliverables: Discussed deliverables associated with Tasks 1-4.
4. Coordination of Design Charrette: Agreed that 17th April from 1200-1700 at 498 Seventh Avenue, 15th Floor, New York, NY 10018

**Notes and RFIs: (See Stephen Brown RFI Response Attachment)**

1. Rendering/Concept in Structural report is just that; end user conversation will drive concept development for RFP.
2. Building to be occupied during the design phase.
3. Remain flexible with dates in Task 4.

**Proposed Project Schedule – Times Square Recruiting Station Video Display Upgrade**
**Task 1: Field Investigation and Design Charrette**

- **08 APR 2025** – Kickoff Meeting & Document Review Begins
- **17 APR 2025** – Field Investigations Completed
- **17 APR 2025** – Design Charrette Held
- **21 APR 2025** – Design Charrette Meeting Minutes Distributed

**Task 2: Preliminary (20%) Design & Draft D-B RFP**

- **19 MAY 2025** – 20% Design & Draft Design-Build RFP Submission (~30 Days from Charrette)
- **03 JUNE 2025** – Government Review Period Ends (14 Days)
- **05 JUNE 2025** – 20% Design Review Conference

**Task 3: Final (25%) Design & D-B RFP**

- **25 JUN 2025** – 25% Design & Final Design-Build RFP Submission (~21 Days from 20% Review)
- **08 JUL 2025** – Government Review Period Ends (14 Days)
- **10 JUL 2025** – 25% Design Review Conference

**Task 4: Bidding Services and RTA Documents**

- **21 JUL 2025** – RTA Document Submission (10 Days from Final RFP Review)
- **22 JUL – 17 AUG 2025** – Bidding and Selection Period
- **18 AUG 2025** – Construction Notice to Proceed (NTP)
- **19 – 31 AUG-** D-B RFP Amendments
- **01 SEP 2025 –** D-B RFP Amendments Submission

**Option 1: Construction Services (Optional)**

- **18 AUG 2025 – 19 AUG 2026** – 12-Month Construction Execution (If option exercised)

# Kick-Off Meeting
# Design-Build RFP Development
# Times Square Recruiting Station Video Display Upgrade

**Manhattan, NY**

**08 April 2025**

**United States Army Corps of Engineers – New York District**
**Project Number: W912DS25F0040**
**Contract Number: W912DS21D0002**

TETRA TECH

Mason&Hanger
A Day&Zimmermann Company

Joint Venture

# Agenda

US Army Corps of Engineers®
New York District

- Introductions - Roles and Responsibilities
- Project Requirements
- Schedule of Deliverables
- Coordination of Design Charrette

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Mason&Hanger
A Day&Zimmermann Company

Joint Venture

# Roles and Responsibilities

US Army Corps of Engineers®
New York District

## A-E Design Team:

- Senior PM: Jeff M. Jones, PE, PMP, ENV SP
- JV PM: Uriel Reyes, PMP, FMP, CQM-C
- JV PM: Michelle Brunelle, PMP
- Architect:  Quintin Biagi, RA*, AIA, RID, LEED AP BD+C, GPCP, CDT
- Structural: Andrew Coats, PE*, LEED AP - BD+C
- Civil/Site: Jake Oldenburger, PE*, CFM, ENV SP
- Mechanical: Joshua Zweback, PE
- Electrical/IT: Onorius Vaidean, PE
- Fire Protection: Rocky Edwards, PE, FPE, GPCP
- Cost Estimator: Fred Cooper, CCP

## Video Design Consultant:

- Sensory Interactive: Berny Hintz, AIA, LEED AP CBCP

TETRA TECH Mason&Hanger Joint Venture

# Project Requirements

US Army Corps of Engineers® New York District

## Times Square Recruiting Station

**Background:**

- Situated in one of the most iconic and busiest locations in NYC
- Originally constructed in 1998, modified with X-bracing (date unknown)
- 450 sq ft. booth constructed above an existing subterranean ventilation vault
- Modified in 2018, exterior glass replacement
- Requires an upgrade with the installation of a new, state-of-the-art video display
- The proposed weight of the new video display is ± 28,000 lbs.

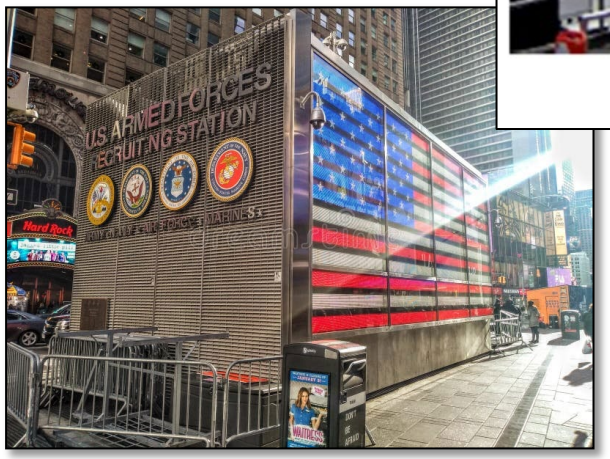
**Objectives:**

- Install a new digital video display on the Armed Forces Recruiting Booth, three sides
- Minimize disruption to the surrounding area during construction
- Ensure the structural integrity of the booth
- Determine electrical service requirements to support the display

**SOW Requirements (148 Days ANP):**

- **Task 1:** Kick-off, Field Investigations, and Design Charrette
  - Electrical and Electronic Assessment
  - Architectural Investigation
- **Task 2:** Draft D-B RFP including 20% Design
- **Task 3:** Final D-B RFP including 25% Design
- **Task 4:** Bidding Phase Services and RTA Documents

Figure 3: Proposed Media Screen Rendering (Clear Channel)




**Current "Military Island" Design**

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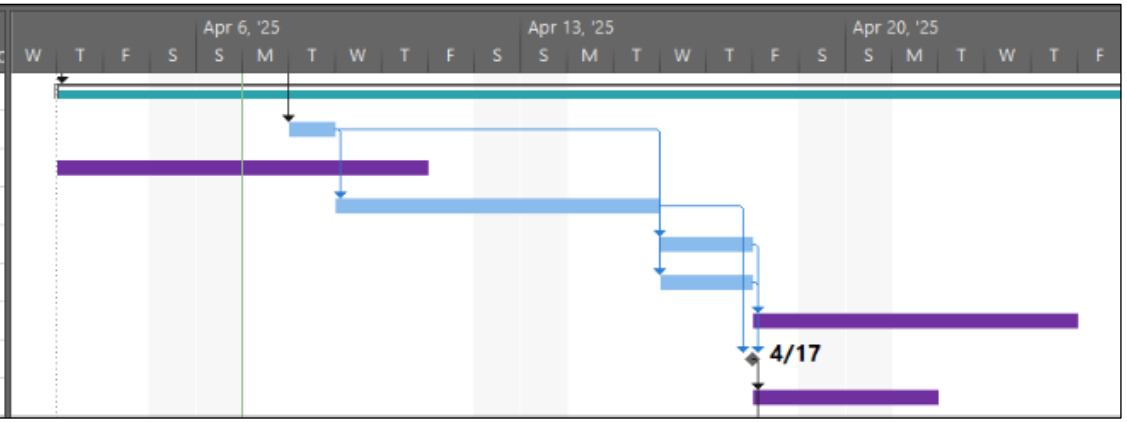
# Schedule of Deliverables

US Army Corps of Engineers®
New York District

## Task 1: Duration (~15 Calendar Days)

| Task Name | Duration | Start | Finish | Predec |
|---|---|---|---|---|
| **Task 1: Kick-off, Field Investigation and Design Charrette** | **107 days?** | **Thu 4/3/25** | **Fri 8/29/25** | **2** |
| Kick-Off Meeting | 1 day? | Tue 4/8/25 | Tue 4/8/25 | 2 |
| Quality Control Plan | 6 days | Thu 4/3/25 | Thu 4/10/25 | |
| Document Review | 5 days? | Wed 4/9/25 | Tue 4/15/25 | 4 |
| Electrical and Electronic Service Assessment | 2 days | Wed 4/16/25 | Thu 4/17/25 | 4 |
| Architectural Investigations | 2 days | Wed 4/16/25 | Thu 4/17/25 | 4 |
| Field Investigation Report | 5 days | Fri 4/18/25 | Thu 4/24/25 | 7,8 |
| Design Charette | 0 days | Thu 4/17/25 | Thu 4/17/25 | 7,8,6 |
| Design Charrette Meeting Mintues Submission | 2 days | Fri 4/18/25 | Mon 4/21/25 | 10 |




**Pending:**

- Coordination for access recruiting station utilities for architectural and electrical/electronic assessment
- Document review: U.S. Armed Forces Recruiting Station Times Square Construction Documents, dated 7 August 1998 by Parsons Brickerhoff, Times Square Recruiting Station Renovation As-Built Drawings dated 2 March 2018 by Goshow Architects, and Structural Assessment Report dated 09 August 2024 by QPK Design.

**Design Charrette Coordination:**

- Proposed Date: Tuesday, 15 April 2025
- Proposed Date: Thursday, 17 April 2025
- Proposed Time: 1200-1700 (includes lunch)
- Proposed location: 498 Seventh Avenue, 15th Floor, New York, NY 10018

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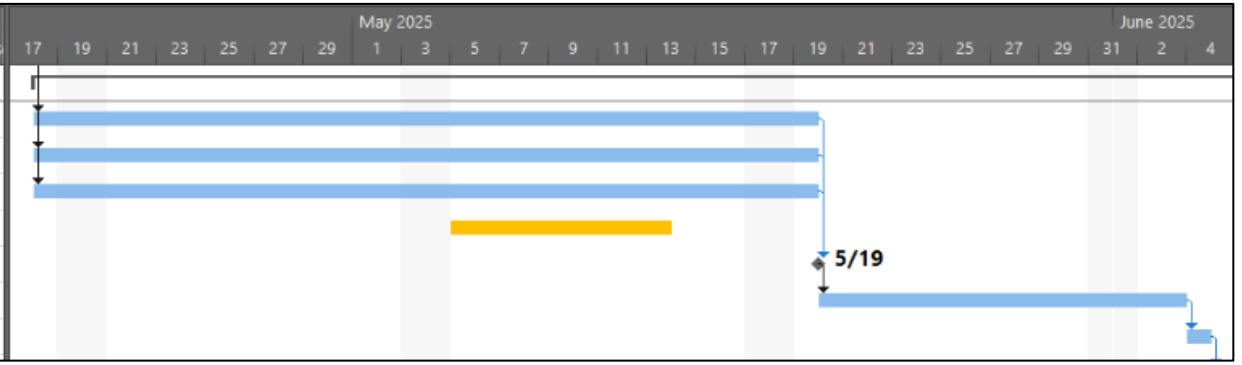
# Schedule of Deliverables

US Army Corps of Engineers® New York District

## Task 2: Duration (~47 Calendar Days)

| Task Name | Duration | Start | Finish | Predecess |
|---|---|---|---|---|
| **Task 2: Draft D-B RFP including 20% Design** | **97 days?** | **Fri 4/18/25** | **Mon 9/1/25** | |
| Design Analysis (DAR) | 22 days | Fri 4/18/25 | Mon 5/19/25 | 10 |
| 20% Design (Drawings) | 22 days | Fri 4/18/25 | Mon 5/19/25 | 10 |
| Cost Estimate | 22 days | Fri 4/18/25 | Mon 5/19/25 | 10 |
| ITR | 7 days | Mon 5/5/25 | Tue 5/13/25 | |
| 20% Submittal to USG | 0 days | Mon 5/19/25 | Mon 5/19/25 | 13,14,15 |
| DrChecks Comments | 11 days | Tue 5/20/25 | Tue 6/3/25 | 17 |
| Design Review Conference | 1 day? | Wed 6/4/25 | Wed 6/4/25 | 18 |




**Draft D-B RFP w/20% Submission:**

- 30-day from Charrette submission falls on Saturday (17 May)
- Proposed submission date is 19 May 2025
- Includes 14-Day USG Review Period
- Proposed Design Review Conference 4 or 5 June.

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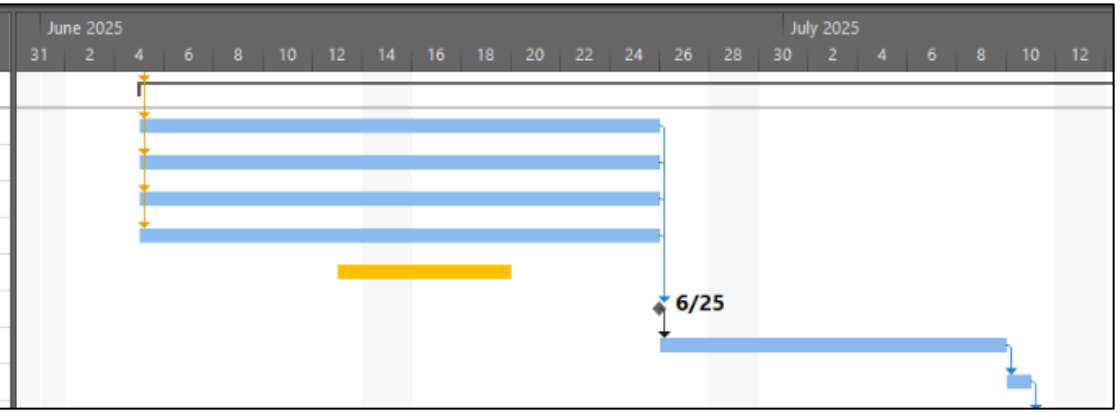
# Schedule of Deliverables

US Army Corps of Engineers ®
New York District

## Task 3: Duration (~35 Calendar Days)

| Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|
| **Task 3: Final D-B RFP including 25% Design** | **63 days?** | **Thu 6/5/25** | **Mon 9/1/25** | **19** |
| Final D-B RFP | 15 days | Thu 6/5/25 | Wed 6/25/25 | 19 |
| Design Analysis (DAR) | 15 days | Thu 6/5/25 | Wed 6/25/25 | 19 |
| 25% Design (Drawings) | 15 days | Thu 6/5/25 | Wed 6/25/25 | 19 |
| Cost Estimate | 15 days | Thu 6/5/25 | Wed 6/25/25 | 19 |
| ITR | 5 days | Fri 6/13/25 | Thu 6/19/25 | |
| 25% Submittal to USG | 0 days | Wed 6/25/25 | Wed 6/25/25 | 21,22,23,24 |
| DrChecks Comments | 10 days | Thu 6/26/25 | Wed 7/9/25 | 26 |
| Design Review Conference | 1 day? | Thu 7/10/25 | Thu 7/10/25 | 27 |




**Final D-B RFP w/25% Submission:**

- 21-day submission from 20% Review Conference
- Includes 14-Day USG Review Period
- Proposed Design Review Conference 10 July.

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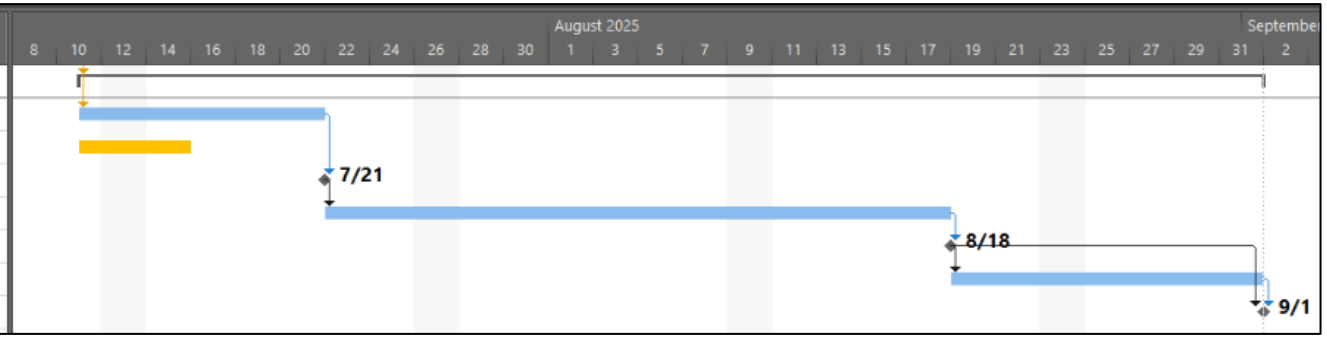
# Schedule of Deliverables

US Army Corps of Engineers ®
New York District

## Task 4: Duration (~45 Calendar Days)

| Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|
| **Task 4: Bidding Services and RTA Documents** | **37 days** | **Fri 7/11/25** | **Mon 9/1/25** | **28** |
| RTA Documents | 7 days | Fri 7/11/25 | Mon 7/21/25 | 28 |
| ITR | 3 days | Fri 7/11/25 | Tue 7/15/25 | |
| RTA Submission | 0 days | Mon 7/21/25 | Mon 7/21/25 | 30 |
| Bidding and Selection Period | 20 days | Tue 7/22/25 | Mon 8/18/25 | 32 |
| Construction Award/NTP | 0 days | Mon 8/18/25 | Mon 8/18/25 | 33 |
| D-B RFP Amendments | 10 days | Tue 8/19/25 | Mon 9/1/25 | 34 |
| D-B RFP Bidding Phase Amendments Submission | 0 days | Mon 9/1/25 | Mon 9/1/25 | 34,35 |




**Final D-B RFP w/25% Submission:**

- 10-day submission from Final D-B RFP
- Bidding and Selection Period
- 18 AUG 2025- Construction NTP

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# Summary Schedule of Deliverables

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## Design Schedule (~152 Calendar Days)
## NTP: 03 April 2025

**Task 1: Field Investigation and Design Charrette**

- **08 APR 2025** – Kickoff Meeting & Document Review Begins
- **17 APR 2025** – Field Investigations Completed
- **17 APR 2025** – Design Charrette Held
- **21 APR 2025** – Design Charrette Meeting Minutes Distributed

**Task 2: Preliminary (20%) Design & Draft D-B RFP**

- **19 MAY 2025** – 20% Design & Draft Design-Build RFP Submission (~30 Days from Charrette)
- **03 JUNE 2025** – Government Review Period Ends (14 Days)
- **05 JUNE 2025** – 20% Design Review Conference

**Task 3: Final (25%) Design & D-B RFP**

- **25 JUN 2025** – 25% Design & Final Design-Build RFP Submission (~21 Days from 20% Review)
- **08 JUL 2025** – Government Review Period Ends (14 Days)
- **10 JUL 2025** – 25% Design Review Conference

**Task 4: Bidding Services and RTA Documents**

- **21 JUL 2025** – RTA Document Submission (10 Days from Final RFP Review)
- **22 JUL – 17 AUG 2025** – Bidding and Selection Period
- **18 AUG 2025** – Construction Notice to Proceed (NTP)
- **19 – 31 AUG-** D-B RFP Amendments
- **01 SEP 2025 –** D-B RFP Amendments Submission

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# Thank you

1. **Can you provide the highlighted document, referenced in the Structural report?**

   Real Estate needs to locate the Parsons Brinkerhoff construction docs—I will follow up

2. **Does the LED flag display need to stay as is, or can it be removed/modified?**

   The LED flags on the east and west sides of the station will remain as part of the structure. We are currently in the process of awarding a contract to Fiberdyne for scheduled maintenance of the LEDs / installation of new light modules etc.

3. **Is the new video display itself funded by the Government (real estate/recruiting station), or is it included it the total Programmed Amount?**

   The display was contemplated as part of the ~$3M cost.

4. **Does Real Estate want to sole source the display? Any specific criteria, if any?**

   RE. sole source: I would like to consult with Contracting on whether we can sole source, and what our options are. I think someone on the call asked if we had already identified a vendor, manufacturer, etc.; we have not. The team had discussions last year with Clear Channel, which is an outdoor digital media company. Clear Channel provided some ideas to the team re. display technology and equipment, but no decisions were made.

   Re criteria: the military services intend to use the display to project imagery, like the current panel on the north façade, but HQ also needs the ability to adapt specific messaging remotely as needed. We are looking for latest hi-res digital technology consistent with other Times Square displays.

5. **Does the scope include an upgrade of the entire exterior of the building? Or is the intent just determining placement/sizing/parameters of the new displays?**

   Exterior upgrades are not contemplated under the scope. The intent is to determine what is viable in terms of adding a wraparound display (north, east and west sides) component to the existing structure. See #8.

6. **Is there an available scissor lift for use during field investigations to observe the roof?**

   We don’t have a scissor lift. There is a ladder for roof access on the south side of the structure behind the stainless-steel lattice panels which open from the outside. Panels have code locks. Onsite staff can access them as needed. Panel on the left side contains the ladder access.

7. **Confirm availability for field investigations/design charrette on either Tuesday, 15 April or Thursday ,17 April.**

   I can be available either day

Figure 3: Proposed Media Screen Rendering (Clear Channel)

8. **Is this the intended finished product?**
   Yes, this is the preferred design. We are seeking to replace the existing panel above the facility entrance on the north and include the 2 side panels extending ~10' above the flags / roof line.
   We are open to discussing viable options and concepts. We are aware of potential feasibility issues.

9. **Are the displays connected to any network that would require cybersecurity involvement.**
   The displays would need a secure connection and require accessibility by military HQ to remotely program content on an as-needed basis.

10. **Will building be occupied during construction?**

    The staff will vacate if necessary. We will discuss going forward as needed.

11. **Since the building is owned by the federal government, is permitting required?**Certain permits will most likely be required, e.g., for work requiring heavy equipment and conducted within certain proximity of active roadways, pedestrian or transit right of ways —City of NY / NYC Dept of Transportation (DOT) and Metropolitan Transportation Authority (MTA) / New York City Transit (NYCT).
    Note: the property the building sits on is owned by the City of New York. NYCT has active right-of-way tracks and vent flue directly below grade.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | April 29, 2025 | **DATE PREPARED:** | April 29, 2025 |
| **SUBJECT:** | Times Square Video Display Upgrade Design and Cost Estimate Update | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

The team discussed the project's cost estimate, focusing on the $3 million PA, which includes owner contingency (5-10%) and SIOH (6.6% as of 2023). The construction design fee is included in the $3 million. Discussion led to storing spare parts on the roof versus inside the facility, opting for the latter due to accessibility issues.

**Meeting**

Date & Time: The meeting started at 1000 EDT on April 29, 2025.

1. Attendance
    a. USACE NAN
        i. Stephen Brown, Project Manager -Real Estate Division
        ii. Kaitlin Hughes, Sr. Technical Manager
        iii. Nicole Furtado, Technical Manager
    b. Tech Tech/Mason & Hanger JV
        i. Michelle Brunelle
        ii. Jeff Jones
        iii. Uriel Reyes
    c. Video Display Consultant
        i. Berny Hintz
2. Project Updates and Cost Estimate RFIs (Uriel Reyes)
    a. Cost Estimating RFIs and Clarifications
        i. Is the owner contingency and SIOH included in the $3M PA?
            1. *USG Response: Yes, to be Included. Construction contingency is usually 5-10% should be included in PA. SIOH from a different project was 6.6% 2023.*
        ii. Will this be solicited as Full and Open, D-B MATOC, or Small Business?
            1. *USG Response: Full and Open for the best value and trade-off.*
        iii. Please confirm that we are to include the design fee in $3M PA?
            1. *USG Response: Yes, broken down into a separate CLIN.*

iv. Design Charrette Feedback: Discussed JOOH 37% presented at design charrette:
    1. *USG Feedback: Based on the USG Cost estimator feedback, it is usually 10-20%.*
    2. *USG Feedback: Sales Tax is optional if the vendor provides gov tax-exempt documents.*

b. Specifications:
    i. *USG to provide Division 00 Specs for D-B RFP.*

c. Space Requirements:
    i. USG: Please provide consolidated space requirements for the end-user and figure out possible storage solutions.
    ii. TT/MH JV response: Approximately six (6) 27-Gallon Bins for Video Display Spare Parts. See attachment.

3. **Action Items**

• USACE NAN to confirm if the $3 million PA is firm or flexible by end-user.

• USACE NAN to provide Division 00 Specifications for D-B RFP.

• TT/MH JV verify if subcontractor markups are included in the cost estimate.

• TT/MH JV will provide a consolidated list of space requirements to USACE NAN. See attachment: Video Display Space Requirement

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# Video Display Space Requirements

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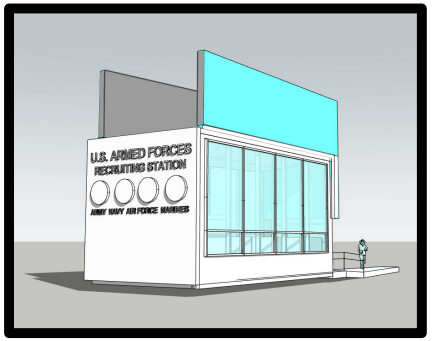
To ensure the effective management and maintenance of the video display system, we recommend the following storage requirements:




**1. Storage Bins**:

1. **Quantity**: Approximately six (6) storage bins are required.
2. **Purpose**: These bins will be used to store spare parts and equipment necessary to address any warranty issues during the two-year warranty period provided by the vendor.

**2. Storage Location**:

1. **Indoor Storage**: It is recommended that all spare parts be stored indoors. This will help prevent potential damage to sensitive electrical components due to environmental factors such as moisture, temperature fluctuations, and dust.

**3. Space Considerations**:

1. **Dimensions**: Please ensure that the designated storage area can accommodate the six bins or at least two, allowing for easy access and inventory management.

2. **Accessibility**: The storage area should be easily accessible for video display maintenance staff to facilitate quick repairs and replacements, minimizing downtime.

**4. Environmental Controls**:

1. **Climate Control**: The storage area should have climate control to maintain optimal conditions for sensitive electronic components, further protecting them from potential damage.

By adhering to these storage requirements, we can ensure that the video display system remains operational and that any necessary repairs can be conducted promptly and efficiently.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | May 6, 2025 | **DATE PREPARED:** | May 6, 2025 |
| **SUBJECT:** | Times Square Video Display Upgrade Design Weekly In-Progress Update | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The team discussed the inclusion of specifications and items/reports to include in the D-B RFP for bidders, emphasizing the need to exclude cost details. Discussed the work hours for the general contractor, considering night shifts for the D-B specifications specific for NYC. For the roof warranty, options include consulting the roof manufacturer, obtaining written approval, or engaging another roofing contractor. The project schedule was reviewed, noting a 148-day contract period and a tentative RTA submission date. The team also discussed coordination with Steve on electrical matters.

**Meeting**

Date & Time: The meeting started at 1000 EDT on May 6, 2025.

1. Attendance
    a. USACE NAN
        i. Nicole Furtado, Technical Manager
    b. Tech Tech/Mason & Hanger JV
        i. Uriel Reyes
2. Project Update (Uriel Reyes)
    a. Project Specifications and Roof Warranty Discussion
        i. Discussed whether the presented small project template TOC is adequate for the D-B RFP.
            1. *USG Response: Yes, further guidance and feedback will be provided during design review.*
        ii. What reports, meeting minutes, or other information should or should not be included in the RFP? Omit cost estimate information and design charrette presentation?
            1. *USG Response: TBD and pending guidance.*
        iii. Roof Workmanship Warranty: Is the roof still under warranty? If so, please provide documentation for review and advise for D-B RFP development. D-B RFP development recommendations for roof warranty: Items below can be implemented in D-B RFP.

## Recommendation for Ensuring Roof Warranty during Video Display Installation

1. **Consult with the Roof Manufacturer**: Before proceeding with the installation, it is essential to consult the roof manufacturer to understand the specific terms and conditions of the warranty. Inquire about any restrictions related to modifications or installations on the roof that could potentially void the warranty.

2. **Obtain Written Approval**: If the roof manufacturer allows for the installation of the video display, request written approval or guidelines that outline the necessary conditions to maintain the warranty. This may include specific installation methods, materials to be used, or additional protective measures.

3. **Engage a Qualified Roofing Contractor**: Ensure that a qualified roofing contractor is involved in the installation process. The contractor should have experience with the specific roofing system and be familiar with the manufacturer's warranty requirements. Their expertise can help ensure that the installation does not compromise the roof's integrity.

4. **Follow Manufacturer's Installation Guidelines**: Adhere strictly to the manufacturer's installation guidelines for both the video display and any modifications made to the roof structure. This includes using compatible materials and techniques that do not damage or alter the existing roofing system.

5. **Conduct a Pre-Installation Roof Inspection**: Before installation, perform a thorough inspection of the roof to identify any existing issues that could affect the warranty. Document the condition of the roof and address any necessary repairs prior to proceeding with the installation.

6. **Consider Additional Protective Measures**: Depending on the roof type and installation requirements, consider implementing additional protective measures, such as using a protective membrane or pad under mounting brackets to prevent direct contact with the roofing material.

7. **Document the Installation Process**: Keep detailed records of the installation process, including photographs, materials used, and any communications with the roof manufacturer. This documentation can be valuable in the event of a warranty claim.

8. **Review Warranty Terms Regularly**: After installation, periodically review the warranty terms to ensure ongoing compliance. This may include routine inspections and maintenance of the roof to prevent any issues that could void the warranty.

1. *USG Response: TBD.*

9. **Additional Action Items**

- TT/MH JV CON ED load letter review.
- TT/MH JV provides an updated design schedule.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | May 13, 2025 | **DATE PREPARED:** | May 13, 2025 |
| **SUBJECT:** | Times Square Video Display Upgrade Design Weekly In-Progress Update | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: TTMH JV PM provided a detailed D-B RFP w/20% Concept Design Submittal update. Key documents to be included are LED display specs with schematics, existing structural report, concept drawings, specifications, and cost estimate. The team is reviewing pending for further D-B RFP Development, roof warranty paperwork, utility bills, Con Edison application, NYPD camera coordination.

**Meeting**

Date & Time: The meeting started at 1300 EDT on May 13, 2025.

1. Attendance
    a. USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, PM
    b. Tech Tech/Mason & Hanger JV
        i. Uriel Reyes
        ii. Jeff Jones
        iii. Michelle Brunelle
2. Project Update (Uriel Reyes)
    a. ITR Progress and D-B RFP Development Update
        i. A-E provided ITR Progress.
            1. Current Status: The A-E team is finalizing the implementation of the ITR comment into the D-B RFP submittal for 16 May 2025.
        ii. D-B RFP Submittals
            1. A-E provided a detailed outline. (See below)
            2. *USG Response: Concurs with outlined submittal.*
        iii. Revisited: Roof Workmanship Warranty: Is the roof still under warranty? If so, please provide documentation for review and advise for D-B RFP development.
        iv. Projnet: USACE has provided design leads and PMs with Projnet access. A few disciplines are pending and will request access.
        v. Utility Bills: USACE has provided A-E with utility bills.

vi. Existing NYPD camera: Guidance is still pending for existing NYPD cameras located on the roof. Pending further guidance, A-E will continue with the D-B RFP development.

vii. Solicitation and Project Number for RFP RTA: USACE to provide required information prior to RTA document submission. Numbers will be TBD or XXXX for 20% submittal.

3. **Additional Action Items**

• TT/MH JV Con Edison coordination: A-E submitted an RFI and electrical design to Con Edison for review. Con Edison will determine if the existing service feeder is adequate for the proposed electrical design.

• TT/MH JV provides an updated design schedule.

D-B RFP w/20% Design Submittal

- 20% Concept Drawings: Architectural, Structural, Electrical, Civil- Site Logistics Plan
- Design Analysis
- D-B RFP Statement of Work Narrative with Division 01 Specifications:

| | | |
|---|---|---|
| 01 11 00 | SUMMARY OF WORK | 02/24 |
| 01 14 00 | WORK RESTRICTIONS | 11/22, CHG 4: 02/25 |
| 01 20 00 | PRICE AND PAYMENT PROCEDURES | 11/20, CHG 5: 02/25 |
| 01 30 00 | ADMINISTRATIVE REQUIREMENTS | 11/20, CHG 5: 02/25 |
| 01 32 01.00 10 | PROJECT SCHEDULE | 08/23, CHG 1: 08/24 |
| 01 33 00 | SUBMITTAL PROCEDURES | 08/18, CHG 4: 02/21 |
| 01 33 16.00 10 | DESIGN DATA (DESIGN AFTER AWARD) | 05/16 |
| 01 35 26 | GOVERNMENTAL SAFETY REQUIREMENTS | 05/24 |
| 01 42 00 | SOURCES FOR REFERENCE PUBLICATIONS | 05/24 |
| 01 45 00 | QUALITY CONTROL | 08/23, CHG 1: 05/24 |
| 01 50 00 | TEMPORARY CONSTRUCTION FACILITIES AND CONTRO | 11/20, CHG 3: 08/24 |
| 01 57 19 | TEMPORARY ENVIRONMENTAL CONTROLS | 08/22 |
| 01 58 00 | PROJECT IDENTIFICATION | 08/19, CHG 5: 08/22 |
| 01 74 19 | CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL | 02/19, CHG 3: 11/21 |

- 
- Cost Estimate Report
- Proposed Construction Schedule
- Design Document Report: ITR Forms and comment implementation
- Draft DD Form 1354
- Supporting Documentation/Attachments: LED Display Specifications and Schematics, 2024 Structural Report, 2025 Field Investigation Report, Design Charette Meeting Minutes and Design Charette Presentation, 2018 As-builts and Con Ed Letter.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | May 19, 2025 | **DATE PREPARED:** | May 21, 2025 |
| **SUBJECT:** | Times Square Video Display Upgrade Design Weekly In-Progress Update | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The Project delivery team discussed the submission of the Draft D-B RFP with 20% Design Submittal, which was completed one day ahead of schedule, 43 days after the notice to proceed, and 29 days from the design charrette. The D-B RFP includes six parts: proposal forms and documents, general requirements, prescriptive specifications, statement of work, and attachments. Key documents reviewed were the 20% concept drawings and attachments for submission, as-built drawings, structural report, and field investigation report. The pending A-E ITR certification form was submitted on 20 May 25. The cost estimate report and compliance matrix were also reviewed. The design review conference was proposed for June 12th to discuss review comments and adjustments.

**Meeting**

Date & Time: The meeting started at 1300 EDT on May 13, 2025.

1. Attendance
    a. USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, PM
    b. Tech Tech/Mason & Hanger JV
        i. Uriel Reyes
        ii. Bill Nieport
        iii. Jeff Jones
        iv. Michelle Brunelle
2. Project Update (Uriel Reyes)
    **a. Compliance Matrix and Review of Draft D-B RFP Submission**
        i. A-E outlines the six parts of the D-B RFP small project template.
            *1. USG Feedback: D-B RFP understood, no questions.*
        ii. A-E provides a detailed breakdown of the Design Analysis with appendices.
            *1. USG Feedback: DA and appendices understood, no questions.*
        *iii. A-E provides a cost estimate summary and overview.*
            *1. USG Feedback: Cost Estimate understood, no questions.*

iv. Revisited: Roof Workmanship Warranty: Is the roof still under warranty? If so, please provide documentation for review and advise for D-B RFP development.
v. Revisited: ProjNet/Dr. Checks access: All A-E Discipline leads have ProjNet access except the electrical engineer. PM will provide relay comments to the electrical engineer for response.
vi. Existing NYPD camera: Guidance is still pending for existing NYPD cameras located on the roof. Pending further guidance, A-E will continue with the D-B RFP development.
vii. Solicitation and Project Number for D-B RFP: USACE to provide required information prior to RTA document submission. Numbers will be TBD or XXXX for 20% submittal.

3. **Additional Action Items and updates**

• USACE NY: Will provide Roof Manufacturer/Warranty Information for D-B RFP inclusion.

• TT/MH JV & USACE NY: Confirmed the Design Review Conference for June 12th, 2025 from 1000 to 1200. The conference is scheduled, and the invitation was sent on 21 May 25.

• USACE NY: Will provide construction project information and PART 1 Proposal Forms with documents for D-B RFP inclusion.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | June 11, 2025 | **DATE PREPARED:** | June 13, 2025 |
| **SUBJECT:** | TSQ Video Display Draft D-B RFP with 20% Design Review Conference | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The Design Review Conference for the Times Square Video Display Upgrade covered ProjNet/Dr. Checks technical design comments and cost estimating comments. "For Information Only", "Check and Resolve" and "Non-concur" comments were discussed with reviewers. Throughout the design review the AE PM provided background project information relevant for the reviewer's comments. Concerns were raised about the selection of video display vendors, the adequacy of existing lighting, and cost estimate. The cost estimate was discussed, with a base bid of $3.3 million and flexibility to fund additional options. Approval from the end user and headquarters is pending before proceeding to the Bidding Phase. The team will continue to the 25% design phase.

**Meeting**

Date & Time: The meeting started at 1000 EDT on June 11, 2025.

1. Attendance (See attached roster)
    a. Key Personnel: USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, PM
        iii. Katie Hughes, Sr. Technical Manager
    b. Organizer: Tech Tech/Mason & Hanger JV
        i. Uriel Reyes, PM
2. Draft D-B RFP with 20% Design Review Conference
    a. **Introduction and Agenda**
        i. PM welcomed everyone to the Design Review Conference for the Times Square video display upgrade.
        ii. The agenda included introductions, a synopsis of the project, technical ITR comments, cost estimator comments, and preliminary questions.
        iii. PM introduced the AE team, various engineers, and specialists.
        iv. Nicole Furtado introduced the reviewers: Steve Brown (project manager), Charlie Newman (architect), Valentina Morrison (electrical), Bruno (structural), Claudio (mechanical), Danny (QA), and Jonathan Montoya (cost review).
    b. **Project Background and Road to 20% Design**

i. PM provided a background on the project, including the architectural investigation, electrical site assessment, and design charrette.
ii. The project team conducted site visits with Con Edison to determine electrical requirements.
iii. The 20% design submittal has undergone minor changes based on Con Edison feedback.

**c. Discussion on ProjNet Technical ITR Comments**

i. Valentina raised a concern about the location of new comms equipment above the bathroom, which PM and Architect clarifies is co-located but not directly at risk from water sources.
ii. Discussion on lighting requirements, with Valentina expressing concern about UFC requirements for telecom space.
iii. PM and Architect explain that existing recessed lighting and task lighting in the building are sufficient for the new rack.
iv. Claudio raises a concern about the selection of video display vendors, which PM and Video Display Consultant clarify is addressed in the specs and drawings. Uriel outlined the plan to go through ITR comments in sequence, with comments being written in as feedback is provided.

**d. Addressing Video Display and Content Management**

i. Claudio expressed concern about the RFP not specifying the selection of video display vendors.
ii. Everett explains that the specs and drawings include minimum requirements for LED displays based on top vendors.
iii. Discussion on the need for customer feedback and the involvement of the marketing team in content creation and messaging.
iv. Uriel and Everett clarify that the content management system (Nova Star) meets the minimum requirements.

**e. Storage and Maintenance of Equipment**

i. Steve raises a concern about the limited storage space for spare parts and equipment.
ii. Uriel suggests that one bin with parts should be inside the building for repairs, with coordination between recruiters and higher echelons in New York Recruiting region.
iii. Bruno raises a comment about the existing base plates and welds, which Uriel and Jacob clarify will be addressed in the final RFP.
iv. Discussed the need for further design and evaluation of the existing structure by the selected contractor.

**f. Cost Estimating and Budget Approval**

i. Fred provided an updated cost estimate, noting that the project costs are well above the PA at $3.3 million.
ii. Katie emphasizes the need for budget approval from the end user before proceeding to the final RFP.
iii. Steve confirms that flexibility exists to go above the PA, pending approval from NAD and headquarters.
iv. Discussion on the escalation calculation method, with Fred explaining the use of the Engineering News-Record building cost index.

**g. Finalizing Cost Estimating Comments**

i. Fred and Jonathan discuss the subcontractor and contractor markups, explaining the high percentage due to the small project scope.

ii. Katie suggests presenting the base bid and options to the end user for approval, with the flexibility to fund additional options if needed.
iii. Uriel confirms that the primary costs are architectural and electrical, with no additional interior changes expected.
iv. Nicole and Jonathan confirm that all open cost estimating comments have been addressed and closed.

3. **Conclusion and Next Steps**

• Uriel thanked everyone for their participation and confirms the next steps, including continuing to the 25% design and finalizing specifications.

• Nicole and Katie will follow up with the end user for budget approval.

• The AE team will submit the 25% design within 21 days from this meeting.

• The meeting concluded with all participants expressing their appreciation and readiness to proceed.

# TSQ Video Display 20% Design Review Conference with USACE NY Attendence

## 1. Summary

| | |
|---|---|
| Meeting title | TSQ Video Display 20% Design Review Conference with USACE NY |
| Attended participants | 18 |
| Start time | 6/11/25, 9:36:04 AM |
| End time | 6/11/25, 10:51:50 AM |
| Meeting duration | 1h 15m 45s |
| Average attendance time | 40m 2s |

## 2. Participants

| Name | First Join | Last Leave | In-Meeting | Email | Participant | Role |
|---|---|---|---|---|---|---|
| ReyesCastanon, Uriel | 6/11/25, 9:59:48 AM | 6/11/25, 10:51:40 AM | 51m 51s | uriel.reyes( | URIEL.REY | Organizer |
| Biagi, Quintin | 6/11/25, 9:49:21 AM | 6/11/25, 10:51:41 AM | 1h 2m 19s | Quintin.Bia | Quintin.Bia | Presenter |
| Thomas, Jacob | 6/11/25, 9:52:52 AM | 6/11/25, 10:33:42 AM | 40m 49s | JACOB.THC | JACOB.THC | Presenter |
| Charlie Newman (Unverified) | 6/11/25, 9:59:55 AM | 6/11/25, 10:34:11 AM | 34m 16s | | | Presenter |
| Cooper, Fred | 6/11/25, 9:59:57 AM | 6/11/25, 10:51:41 AM | 51m 44s | Fred.Coop | Fred.Coop | Presenter |
| Nicole Furtado (Unverified) | 6/11/25, 9:59:58 AM | 6/11/25, 10:51:38 AM | 51m 40s | | | Presenter |
| Daniel Wei USACE (Unverifie | 6/11/25, 10:00:00 AM | 6/11/25, 10:51:43 AM | 51m 43s | | | Presenter |
| Steve Brown (Unverified) | 6/11/25, 10:00:03 AM | 6/11/25, 10:51:40 AM | 51m 36s | | | Presenter |
| ehenderson@sensoryinterac | 6/11/25, 10:00:21 AM | 6/11/25, 10:51:44 AM | 51m 22s | | | Presenter |
| BaThan, Andrew | 6/11/25, 10:00:33 AM | 6/11/25, 10:33:44 AM | 33m 10s | Andrew.Ba | ANDREW.B | Presenter |
| Zweback, Joshua | 6/11/25, 10:00:58 AM | 6/11/25, 10:51:37 AM | 50m 38s | JZweback@ | Joshua.Zw | Presenter |
| Valentina Morrison (Unverifie | 6/11/25, 10:01:14 AM | 6/11/25, 10:33:41 AM | 32m 26s | | | Presenter |
| Katie Hughes (Unverified) | 6/11/25, 10:02:39 AM | 6/11/25, 10:51:50 AM | 49m 10s | | | Presenter |
| Claudio Sang (Unverified) | 6/11/25, 10:03:09 AM | 6/11/25, 10:04:09 AM | 59s | | | Presenter |
| Claudio Sang (Unverified) | 6/11/25, 10:03:26 AM | 6/11/25, 10:33:41 AM | 30m 15s | | | Presenter |
| Bruno Tchoudja (Unverified) | 6/11/25, 10:03:44 AM | 6/11/25, 10:04:26 AM | 42s | | | Presenter |
| Bruno Tchoudja (Unverified) | 6/11/25, 10:04:01 AM | 6/11/25, 10:33:45 AM | 29m 43s | | | Presenter |
| Jonathan Montoya (Unverifie | 6/11/25, 10:05:20 AM | 6/11/25, 10:51:39 AM | 46m 18s | | | Presenter |

## 3. In-Meeting Activities

| Name | Join Time | Leave Time | Duration | Email | Role |
|---|---|---|---|---|---|
| ReyesCastanon, Uriel | 6/11/25, 9:59:48 AM | 6/11/25, 10:51:40 AM | 51m 51s | uriel.reyes( | Organizer |
| Biagi, Quintin | 6/11/25, 9:49:21 AM | 6/11/25, 10:51:41 AM | 1h 2m 19s | Quintin.Bia | Presenter |
| Thomas, Jacob | 6/11/25, 9:52:52 AM | 6/11/25, 10:33:42 AM | 40m 49s | JACOB.THC | Presenter |
| Charlie Newman (Unverified) | 6/11/25, 9:59:55 AM | 6/11/25, 10:34:11 AM | 34m 16s | | Presenter |
| Cooper, Fred | 6/11/25, 9:59:57 AM | 6/11/25, 10:51:41 AM | 51m 44s | Fred.Coop | Presenter |
| Nicole Furtado (Unverified) | 6/11/25, 9:59:58 AM | 6/11/25, 10:51:38 AM | 51m 40s | | Presenter |
| Daniel Wei USACE (Unverifie | 6/11/25, 10:00:00 AM | 6/11/25, 10:51:43 AM | 51m 43s | | Presenter |
| Steve Brown (Unverified) | 6/11/25, 10:00:03 AM | 6/11/25, 10:51:40 AM | 51m 36s | | Presenter |
| ehenderson@sensoryinterac | 6/11/25, 10:00:21 AM | 6/11/25, 10:51:44 AM | 51m 22s | | Presenter |
| BaThan, Andrew | 6/11/25, 10:00:33 AM | 6/11/25, 10:33:44 AM | 33m 10s | Andrew.Ba | Presenter |
| Zweback, Joshua | 6/11/25, 10:00:58 AM | 6/11/25, 10:51:37 AM | 50m 38s | JZweback@ | Presenter |
| Valentina Morrison (Unverifie | 6/11/25, 10:01:14 AM | 6/11/25, 10:33:41 AM | 32m 26s | | Presenter |
| Katie Hughes (Unverified) | 6/11/25, 10:02:39 AM | 6/11/25, 10:51:50 AM | 49m 10s | | Presenter |
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| Claudio Sang (Unverified) | 6/11/25, 10:03:26 AM | 6/11/25, 10:33:41 AM | 30m 15s | | Presenter |
| Bruno Tchoudja (Unverified) | 6/11/25, 10:03:44 AM | 6/11/25, 10:04:26 AM | 42s | | Presenter |
| Bruno Tchoudja (Unverified) | 6/11/25, 10:04:01 AM | 6/11/25, 10:33:45 AM | 29m 43s | | Presenter |
| Jonathan Montoya (Unverifie | 6/11/25, 10:05:20 AM | 6/11/25, 10:51:39 AM | 46m 18s | | Presenter |

TETRA TECH Mason&Hanger A Day & Zimmermann Company

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | July 1, 2025 | **DATE PREPARED:** | July 2, 2025 |
| **SUBJECT:** | TSQ Video Display FINAL D-B RFP Pre-Submission Meeting | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The team discussed the Final D-B RFP Submittal and 25% Concept Design, highlighting only minor changes to the submittal and emphasizing the need to separate concept designs into a PDF and not include them in the D-B RFP. AE confirmed the inclusion of the bracket verification report and supplemental information for the specs. The submittal register was reviewed, noting 102 submittals over seven pages. They addressed the importance of not overrunning the district with submittal reviews and ensuring timely feedback. The team also reviewed the engineer considerations for field personnel, ensuring no delays to the submittal package. The meeting concluded with no further questions, and the team confirmed the distribution of the final package for July 02, 2025.

**Meeting**

Date & Time: The meeting started at 1300 EDT on July 1, 2025.

1. Attendance
    a. Key Personnel: USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, PM
    b. Organizer: Tech Tech/Mason & Hanger JV
        i. Uriel Reyes, PM
        ii. Jeff Jones, Sr. PM
        iii. Michelle Brunelle, PM
2. Final D-B RFP with 25% Design Pre-submittal Discussion
    a. **Initial Discussion**
        i. Uri mentions starting the meeting and highlights the 25% submittal additions or updates, emphasizing the importance of preventing delay.
        ii. Uri discusses the need to separate the concept designs into a PDF and not include them in the DB RFP. Nicole concurs.
        iii. Nicole clarifies that the concept designs should be reviewed separately and then included in the final package.
    **b. Submission and Specifications**

i. Uri confirms that the final DB RFP will address all 20% ProjNet comments and include the bracket verification report and supplemental information.
ii. Uri mentions the inclusion of a cost estimate report and the MLP file, as requested by Kaitie during last submittal.
iii. Uri reviews the submittal register, noting that there are 102 submittals over seven pages.
iv. Jeff suggests working together to ensure the right number and type of submittals are reviewed, proposing a list for USACE review.

**c. Submittal Review and Coordination**

i. Nicole explains that the construction division will inform which submittals need review and by whom.
ii. Team emphasizes the importance of not overrunning the district with submittal reviews and ensuring a smoother DB construction process.
iii. Uri provides a breakdown of the submittals, noting that 37 are for information only and 65 need district office review.
iv. Uri highlights the importance of aligning the drawings, DB RFP, and ECIFP documents for bidder clarity.

**d. Closing Remarks**

i. Uri mentions the inclusion of the ITR certification form and ensuring there is no delay in the signature this time.
ii. Nicole requests that Uri send the final package to Katie and Steve for distribution.

3. **Conclusion and Next Steps**

• Uriel thanked everyone for their participation and confirms the next steps, submitting Final D-B RFP package to USACE on 02 July 2025.

• Nicole provides DoD SAFE Link.

• Ensure the ITR certification is included in the submittal package.

FINAL D-B RFP addresses all ProjNet/Dr. Checks Reviewer Comments.

• **FINAL D-B RFP: Small Project Template | WBDG - Whole Building Design Guide**
o Attachment A – 25% Concept Drawings (To be Sent Separately in PDF)
o Attachment B – As-Built Drawings – For Reference Only
o Attachment C – Structural Report – For Reference Only
o Attachment D – Field Investigation Report – For Reference Only

• **Design Analysis w/Design Documentation**
o Appendix A: Design Charrette Meeting Minutes and Presentation
o Appendix B: Weekly Meeting Minutes
o Appendix C: Proposed Construction Schedule
o Appendix D: Con Edison Service Determination

• D-B RFP Division 01 Specifications: to include Bracket Verification Report add Attachments provided by the USACE Specs Reviewer

Contents of 'TSVIDEODISPUR' - Times Square Video Display Upgrade

| Name | Title | Section Date | Date Modified |
|---|---|---|---|
| 01 11 00 | SUMMARY OF WORK | 02/24 | 6/30/2025 17:04 |
| 01 14 00 | WORK RESTRICTIONS | 11/22, CHG 4: 02/25 | 6/30/2025 17:02 |
| 01 20 00 | PRICE AND PAYMENT PROCEDURES | 11/20, CHG 5: 02/25 | 6/30/2025 17:02 |
| 01 30 00 | ADMINISTRATIVE REQUIREMENTS | 11/20, CHG 5: 02/25 | 6/30/2025 17:00 |
| 01 32 01.00 10 | PROJECT SCHEDULE | 08/23, CHG 1: 08/24 | 6/30/2025 16:59 |
| 01 33 00 | SUBMITTAL PROCEDURES | 08/18, CHG 4: 02/21 | 6/30/2025 16:58 |
| 01 33 16.00 10 | DESIGN DATA (DESIGN AFTER AWARD) | 05/16 | 6/30/2025 16:55 |
| 01 35 26 | GOVERNMENTAL SAFETY REQUIREMENTS | 05/24 | 6/30/2025 17:52 |
| 01 42 00 | SOURCES FOR REFERENCE PUBLICATIONS | 05/24 | 11/12/2024 15:05 |
| 01 45 00 | QUALITY CONTROL | 08/23, CHG 2: 05/25 | 6/30/2025 15:45 |
| 01 45 00.15 10 | RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODI | 11/23 | 6/30/2025 15:45 |
| 01 45 35 | SPECIAL INSPECTIONS | 05/24 | 6/30/2025 15:44 |
| 01 50 00 | TEMPORARY CONSTRUCTION FACILITIES AND CONTRO | 11/20, CHG 3: 08/24 | 6/30/2025 15:42 |
| 01 57 19 | TEMPORARY ENVIRONMENTAL CONTROLS AND PERMI | 08/22 | 7/1/2025 11:31 |
| 01 58 00 | PROJECT IDENTIFICATION | 08/19, CHG 5: 08/22 | 6/30/2025 17:11 |
| 01 74 19 | CONSTRUCTION WASTE MANAGEMENT AND DISPOSAI | 02/19, CHG 3: 11/21 | 6/30/2025 15:34 |
| 01 78 00 | CLOSEOUT SUBMITTALS | 05/19, CHG 1: 08/21 | 6/30/2025 15:34 |
| 01 78 23 | OPERATION AND MAINTENANCE DATA | 05/23, CHG 1: 05/25 | 6/30/2025 15:32 |

• Cost Estimate Report (Include MLP File)
• Submittal Register Total 102 Submittals.
65 Submittals to be reviewed by District Office
28/65 are SD-01 Preconstruction Submittals
37 Submittals For Information Only
• Engineering Considerations and Instructions for Field Personnel (ECIFP) Report
• ITR Certification Form
• Draft DD Form 1354

## ReyesCastanon, Uriel

**From:** Brown, Stephen M CIV USARMY CENAN (USA) <Stephen.M.Brown@usace.army.mil>
**Sent:** Thursday, June 5, 2025 3:16 PM
**To:** ReyesCastanon, Uriel; Furtado, Nicole A CIV (USA)
**Cc:** Jones, Jeffrey; Brunelle, Michelle; Siniscalchi, Gerardo M CIV USARMY CENAN (USA)
**Subject:** RE: TSQ Video Display 20MAY25 Con Edison Site Visit Findings and Electrical Requirements

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Uriel-

I just received our final response from the services / end users, and all are in concurrence with the possibility of losing motorized functionality of the roller shades, providing the shades remain in the down position.

Let us know if you have questions or need additional comment.

Thank you

Stephen Brown
Real Estate Division
US Army Corps of Engineers
26 Federal Plaza, New York, NY 10278
office: 917-790-8465 | mobile: 917-612-3933

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**From:** ReyesCastanon, Uriel <uriel.reyes@tetratech.com>
**Sent:** Friday, May 23, 2025 11:43 AM
**To:** Furtado, Nicole A CIV (USA) <Nicole.A.Furtado@usace.army.mil>; Brown, Stephen M CIV USARMY CENAN (USA) <Stephen.M.Brown@usace.army.mil>
**Cc:** Jones, Jeffrey <Jeffrey.Jones@tetratech.com>; Brunelle, Michelle <michelle.brunelle@masonandhanger.com>; Siniscalchi, Gerardo M CIV USARMY CENAN (USA) <Gerardo.M.Siniscalchi@usace.army.mil>
**Subject:** [Non-DoD Source] TSQ Video Display 20MAY25 Con Edison Site Visit Findings and Electrical Requirements

Nicole, Stephen,

BLUF: Requesting USACE NY and End-User concurrence with the possibility of losing motorized Electrical Shade functionality, for the required new electrical equipment for video display installation. Please review the D-B RFP narrative for the Contractor; our 25% Design will reflect this change.

BACKGROUND: I hope this message finds you well. I wanted to provide you with an update following Con Edison's site visit on Tuesday, May 20th, 2025, which resulted in some additional (larger) electrical equipment requirements: 600A Trans (S) and Switch Cabinet Combo for Video Display Installation. Our D-B RFP Narrative and 25% Design would reflect this solution.

As you know, space is very limited within the Recruiting Station. To manage renovation costs effectively, it is crucial that Architectural Interiors' work is kept to a minimum. After discussing the placement of the electrical panels and the new 600A service for the video display with the design team, we have evaluated several options. Additionally, I spoke with Stephen regarding the electrical shades' use: It seems that shades are primarily in the

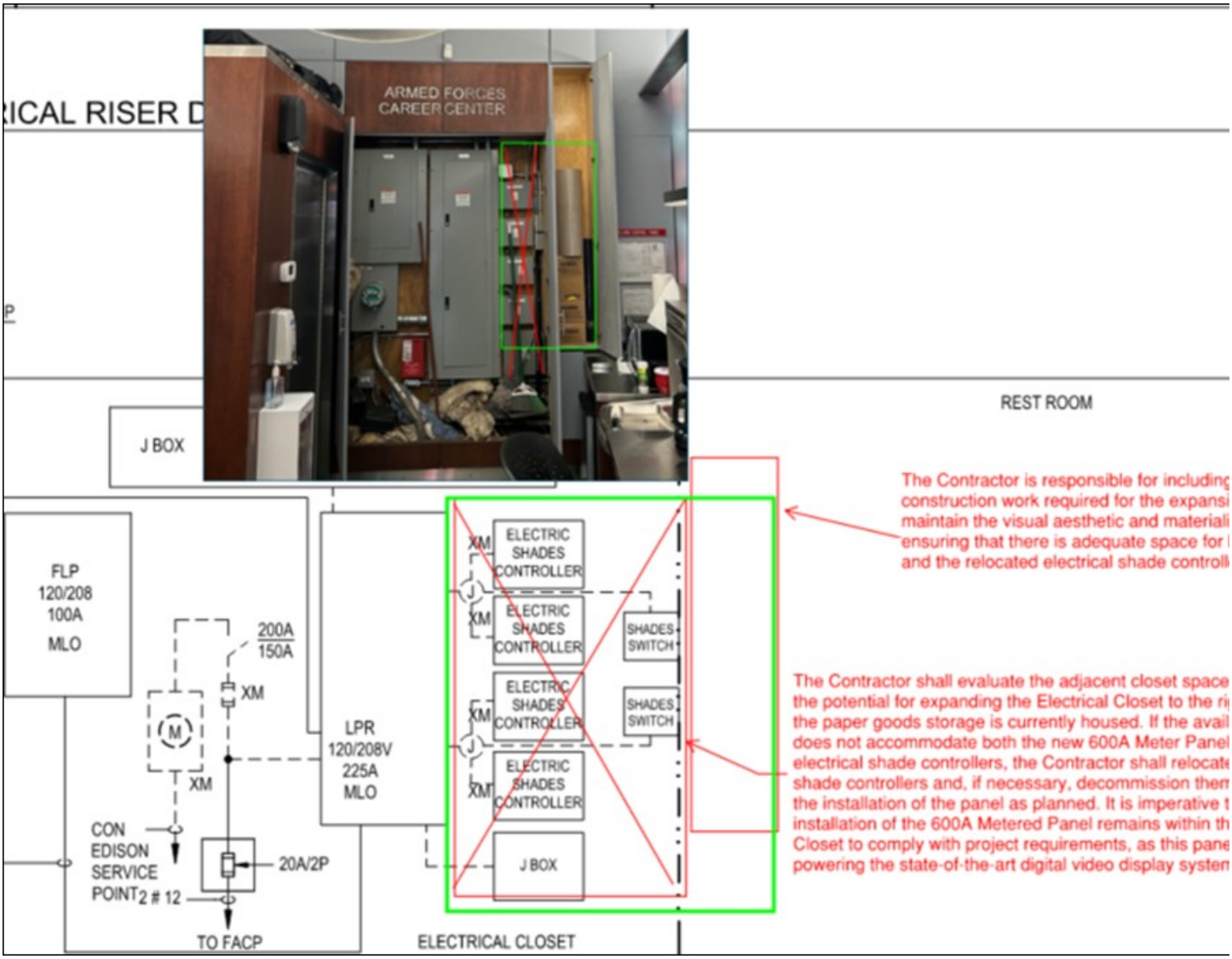
down position and used as the LED USA Flag background and privacy for the recruiters. If the shades are to remain down 100% of the time, I believe that the motorized function may not be necessary, pending end-user approval.

We propose the following solution: install subpanels on the roof, colocated with the new video display, while placing the Con Edison 600A meter panel inside the existing electrical closet. This arrangement will optimize the use of available space and minimize costs associated with the renovation.

PROPOSED D-B RFP NARRATIVE: The Contractor shall evaluate the adjacent closet space and assess the potential for expanding the Electrical Closet to the right, where the paper goods storage is currently housed. If the available space does not accommodate both the new 600A Metered Panel and the electrical shade controllers, the Contractor shall relocate the electrical shade controllers and, if necessary, decommission them to facilitate the installation of the panel as planned.

It is imperative that the installation of the 600A Metered Panel remains within the Electrical Closet to comply with project requirements, as this panel is critical for powering the state-of-the-art digital video display system.

The Contractor is responsible for including any necessary general construction work required for the expansion of the Electrical Closet and maintain the visual aesthetic and materiality of the adjacent casework, ensuring that there is adequate space for both the 600A Metered Panel and the relocated electrical shade controllers.




Please advise, Thank you.

**Uriel Reyes, PMP, FMP** | Project Manager
Pronouns: he, him, his
Direct **+1 (813) 775-9956** | Mobile **+1 (863) 205-0343** | uriel.reyes@tetratech.com

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | July 28, 2025 | **DATE PREPARED:** | July 31, 2025 |
| **SUBJECT:** | TSQ Video Display FINAL D-B RFP with 25% Design Review Conference Meeting | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The team discussed Final D-B RFP with 25% Concept Design ProjNet/Dr. Checks Comments. The team focused on “Non-Concur and Check and Resolve” comments. Key points included the resolution of comments on dual Section panel boards, MTA coordination, architectural integration of the video display with the building's façade, and specifications. Structural comments addressed the clarity of existing and new work in drawings. Cost estimating confirmed funding for $3.4 million and awaited fiscal year confirmation. The team agreed to address open 20% Design Review Conference comments by the end of the week and finalize the RTA submittal. The meeting concluded with no further questions, and the team confirmed the RTA Submission for August 07, 2025.

**Meeting**

Date & Time: The meeting started at 1300 EDT on July 28, 2025.

1. Attendance
    a. Key Personnel: USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, PM
    b. Organizer: Tech Tech/Mason & Hanger JV
        i. Uriel Reyes, PM
        ii. Jeff Jones, Sr. PM
        iii. Michelle Brunelle, PM
2. Final D-B RFP with 25% Design Review Conference
    a. **Introduction and Project Overview**
        i. Uriel mentions introduces the project: The Times Square recruiting station video display upgrade.
        ii. Nicole introduces their team members: Bruno (structural), Charlie (architect), Anthony Jara (construction), and Steve Brown (PM).
        iii. Uriel introduces the A-E team: Michelle, Bernie, Jeff Jones (senior PM), Tricia (architect), Fred Cooper (cost estimator), Andrew Coates (structural engineer), and Josh (electrical engineer).
    **b. Open 20% Draft D-B RFP Comments and MTA Coordination**

i. Uri requests reviewers to address open 20% Design Review Conference comments before the RTA submittal.
ii. Nicole raises a question about MTA coordination, which Uriel confirms is included in the RFP.
iii. Uriel highlights a comment about title blocks and annotation coordination, which requires further evaluation.
iv. Charles discusses the importance of maintaining the building's architectural character with the video display.

**c. Architectural and Structural Comments**

i. Charles emphasizes the need for frames around the screens to maintain the building's architectural integrity.
ii. Berny (Video Design Consultant) explains the use of metal cladding to harmoniously integrate the display with the building's facade.
iii. Berny discusses the importance of not attaching the bottom of the display directly to the pyramid to avoid waterproofing issues.
iv. Charles and Berny agree on the importance of the content creators to enhance the display's seamless integration with the building.
v. Uriel shows structural drawings, explaining the use of different line weights for existing and new work.
vi. Bruno suggests using the same line weight for existing and new members to improve clarity.
vii. Andrew explains the limitations of modifying existing drawings and the use of notes to clarify new work.
viii. Brruno confirms that the current drawings are clear and can be closed as non-issues.

**d. Cost Estimating and Contracting Discussion**

i. Nicole and Steve confirm funding for the 3.4 estimate and awaits confirmation on the fiscal year.
ii. Uriel mentions open comments from Jonathan Montoya and Nicole regarding the cost estimate.
iii. Nicole plans to follow up with contracting once the RTA is set.
iv. Nicole confirms the project number for the cover sheet and agrees to work on other details.

**e. Closing Remarks**

i. Uriel asks once again if USG reviewers could close comments by RTA Submission.
ii. Uriel confirms RTA Submission date of 07 August 2025.

3. **Conclusion and Next Steps**

• Uriel thanked everyone for their participation and confirms the next steps; Uriel confirms with Nicole RTA Submission date of 07 August 2025.

• Uriel discusses Specifications ProjNet comments separately with Tenzin Kunchok and Nicole to clarify one comment. NSTR.

• Steve provides project number 461269 for Solicitation Documents.

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# MEETING MINUTES

| | | | |
|---|---|---|---|
| **PROJECT:** | Times Square Video Display Upgrade, Manhattan, NY | **PROJECT #:** | W912DS25F0040 |
| **PREPARED BY:** | Uriel Reyes-Castanon | **TETRA TECH OFFICE:** | 5201 West Kennedy Blvd<br>Tampa, FL 33609<br>Phone: (813) 775-9956 |
| **DATE:** | August 5, 2025 | **DATE PREPARED:** | August 7, 2025 |
| **SUBJECT:** | TSQ Video Display RTA Timeline Discussion | | |

This confirms and records our understanding of the discussions and decisions made during this conversation. Unless notified in writing within seven (7) days of the date prepared, we will assume that the following documentation is complete and accurate.

Summary: The team discussed the RTA timeline, procurement, and funding challenges for the Times Square Video Display Project. Steve suggested including the optional fourth screen, but noted funding might not be available in Q2 of FY26. The team discussed awarding the option simultaneously with the base bid to avoid procurement issues. Nicole confirmed the period of performance is 365 days from contract award. Steve explained the difficulty in securing full funding in Q1 and suggested pushing it to Q2. The team agreed to hold off on the RTA cost estimate and construction schedule until funding is confirmed.

**Meeting**

Date & Time: The meeting started at 1030 EDT on August 5, 2025.

1. Attendance
    a. Key Personnel: USACE NAN
        i. Nicole Furtado, Technical Manager
        ii. Stephen Brown, Project Manager
    b. Organizer: Tech Tech/Mason & Hanger JV
        i. Uriel Reyes, PM
        ii. Michelle Brunelle, PM

2. Draft D-B RFP Specifications Review

    a. **Discussion on RTA Timeline, Procurement, and Funding**

    • Steve and Nicole discussed the optional fourth screen and the availability of funding for quarter one of the fiscal year 26.

    • The team agreed that funding should be awarded all at once to avoid procurement issues for the video display, suggesting a delay until the second quarter.

    • The team confirms the period of performance for the A-E Team is 365 days since the NTP, suggesting funding by quarter 2 would not cause contract modifications.

    • The team discusses impact on construction schedule and cost estimate, resulting in the holding cost estimate and schedule.

• Nicole confirms not to submit cost estimate or construction schedule for RTA Submission.

b. **Adjustments and Future Guidance**

• Uri requests an email confirmation of the expected timeline and adjustments, with Nicole agreeing to provide it within a day or two.

3. **Additional Action Items**

• Nicole email confirming RTA Submission not to include Cost Estimate and Construction Schedule.

## ReyesCastanon, Uriel

**From:** Furtado, Nicole A CIV (USA) <Nicole.A.Furtado@usace.army.mil>
**Sent:** Tuesday, August 5, 2025 11:01 AM
**To:** ReyesCastanon, Uriel; Brunelle, Michelle
**Cc:** Brown, Stephen M CIV USARMY CENAN (USA); Hughes, Kaitlin T CIV USARMY CENAN (USA)
**Subject:** TSRS Video Display - Construction Award Date FY26 Q2

⚠️ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠️

Uri & Michelle,

Army HQ has advised our PM, Steve, that they cannot guarantee the full $3.7M funding to support the base and optional bid items by FY26 Q1 and request that the construction award date be pushed to FY26 Q2.

Please continue to submit all RTA submission documents by 8 August 2025, but hold off on submitting the construction schedule and cost estimate as these may change with the new construction award date. I will follow-up with you as we receive confirmation regarding the funding and a date to begin the bidding phase and award for construction.

This delay will still be within TT/MH's 365-day period of performance according to the SOW, so no modification to your contract should be necessary.

Respectfully,

Nicole Furtado
Technical Manager
Engineering Management Branch, Military Section
U.S. Army Corps of Engineers 🏰
(O) 917-790-8252
(P) 914-733-5417

# APPENDIX C: CON EDISON LETTER

Consolidated Edison Company of New York, Inc.
Customer's Electric Service Layout (2-80)
Equipment to be installed by the Customer's Contractor

| | |
|---|---|
| **Case ID** | MC-839555 |
| **Layout/Ticket #** | |
| Customer Service Date | |

| | |
|---|---|
| **Service Address** | 200 W 43rd |
| **Unit/Suite#** | |
| **City State Zip** | New York, NY 10036 |
| **Project Name** | |
| **Created By/Date** | Pavlotskiy, Dmitriy/ May 2, 2025 |

| | | | |
|---|---|---|---|
| **Customer** | Stephen Brown | **Contractor** | Josh Zweback |
| **CompanyName** | U.S. Army Corps of Engineer | **CompanyName** | Tetra Tech dba Cosentini Associates |
| **Address** | 26FEDERAL PLZ | **Address** | 4987TH AVE |
| **Unit/Suite#** | | **Unit/Suite#** | |
| **City State Zip** | New York NY 10278 | **City State Zip** | NYC NY 10018 |
| **E-mail** | stephen.m.brown@usace.army.mil | **E-mail** | jzweback@cosentini.com |
| **Phone** | (917)612-3933 | **Phone** | (917)635-3850 |

| **Con Edison Service Determination** |
|---|
| ELECTRIC SERVICE ADEQUATE - SECONDARY SERVICE |
| Service Determination: The customers existing 4-2/0 service cable coming is adequate for the customers new load value. Sensitive Area: Contact: Community Affairs. Paving: On Street: WEST 43 STREET From: 7 AVENUE To: AVENUE OF THE AMERICAS Protected Until: 10-06-2026 DOT SAM Holds: 04-06-2023 Boro/Muni: MANHATTAN REGION: NYC embargo: true Completed Date: 10-06-2021 |
| |

| **Please Review the following Items** |
|---|
| This Service Layout is subject to revision based on field conditions and customer or Con Edison needs. |
| Modification of this Layout may only be done by an authorized Con Edison representative. Please contact your representative if you need a written revision. |
| Please review the specifications referenced in this document to ensure any new equipment is compliant with the electric codes of the local authorities having jurisdiction and Con Edison specifications. |
| This Layout is good for 60 days. Please check back with your representative for the most recent specifications prior to starting your work. |
| Final Inspections are completed by Con Edison representatives at no cost to the customer. |
| If you have any questions prior to starting your work, please notify a representative at the number provided in this email. |
| Approved certificates of inspection must be provided by the authorities having jurisdiction prior to energizing services. |
| When the contractor's work is completed, the customer or contractor must provide certificates from the authorities having jurisdiction and submit a Final Checklist |
| Representatives require 48 hours of notice to schedule inspections. |
| Please follow this link to read and share information on safe excavation practices related to Call Before You Dig |

| **Equipment&Specifications** | | | |
|---|---|---|---|
| **Equipment Type** | **Qty** | **Equipment Description** | **Specification** |
| Meter Pan | | Self-Contained Three Phase Four Wire Bypass Meter | MES-194 |
| CT Cabinet | | 200/400amp Trans S CT Cabinet for 4 Wire Wye Service | MES-755 |

| **Prerequisites for Construction** | |
|---|---|
| | Customer to complete by: |

| **Prerequisites for Final Inspection** | |
|---|---|
| The Customer's/Contractor's responsibilities prior to requesting a Final Inspection are to: | Customer to complete by: |
| Notify your representative when you are ready for an Inspection and Submit a Final Checklist | 8/31/25 |
| Provide City Certificates or Underwriters Certificates authorizing Electric service. | 5/30/25 |

* Inability to meet the deadlines outlined above will jeopardize Con Edison's ability to meet the Customer Service Date.

## A-E Contractor Statement of Technical Review

## Completion of Independent Technical Review

Project Name: Recruiting Station Video Display Upgrade at T

P2 No.:

Project Location: Manhattan, N Y

Product Type: Draft D-B RFP with 20% Design

A-E Contractor: Tetra Tech / Mason & Hanger JV

A-E Contract No.: W912DS21D0002

The A-E Contractor listed above has completed the above listed product for the above listed project and location. Notice is hereby given that an independent technical review (ITR), that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Quality Control Plan. During the independent technical review, compliance with established policy, principles, and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The independent technical review was accomplished by the ITR team listed below. All comments resulting from ITR have been resolved.

Uriel Reyes Digitally signed by Uriel Reyes DN: C=US, E=uriel.reyes@tetratech.com, O="Tetra Tech", OU=CBI, CN=Uriel Reyes Date: 2025.05.19 13:38:08-04'00' 5/19/25

Uriel Reyes , A-E Project Manager Date

### ITR Team Members (Name, Discipline)

| | | | |
|---|---|---|---|
| Lock, Jared Digitally signed by Lock, Jared | 5/12/25 | Jared Lock Civil , Team Leader | Date |
| Mumby, Ryan R | 5/13/25 | Ryan Mumby Structural | Date |
| Blanford, Kimberly | 5/13/25 | Kimberly Blanford Architecture | Date |
| Breisch, Paul | 5/13/25 | Paul Breisch Electrical | Date |
| Taylor Canfield Digitally signed by Taylor Canfield Date: 2025.05.19 12:05:35 -04'00' | 5/13/25 | Taylor Canfield Cost Estimate | Date |
| | | | Date |
| | | | Date |
| | | | Date |
| | | | Date |

### Design Team Members (Name, Discipline)

| | | | |
|---|---|---|---|
| | | Quintin Biagi Architect , Team Leader | Date |
| Joshua Zweback 2025.05.19 17:14:09 -04'00' | 5/19/25 | Joshua Zweback, Electrical | Date |
| Andrew Ba Than Digitally signed by Andrew Ba Than DN: C=US, E=andrew.bathan@tetratech.com, O=Tetra Tech, CN=Andrew Ba Than Date: 2025.05.19 11:00:25-04'00' | 5/13/25 | Andrew BaThan, Civil | Date |
| Andrew Coats Andrew Coats 2025.05.19 14:18:20-04'00' | 5/19/25 | Andrew Coates, Structural | Date |
| Fred Cooper Digitally signed by Fred Cooper DN: C=US, E=Fred.cooper@masonandhanger.com, O=Mason and Hanger, OU=Cost Estimating, CN=Fred Cooper Date: 2025.05.13 13:00:35-04'00' | 5/13/25 | Fred Cooper Cost Estimate | Date |
| | | | Date |
| | | | Date |
| | | | Date |
| | | | Date |

* Any references to Independent Technical Review (ITR) within these BCOES documents are also applicable to District Control (DQC) Review for Civil Works programs.

## A-E Contractor Statement of Technical Review

## Completion of Independent Technical Review

| | | | |
|---|---|---|---|
| Project Name: | Recruiting Station Video Display Upgrade at Times Square | P2 No.: | |
| Project Location: | Manhattan, NY | Product Type: | Draft D-B RFP with 25% Design |
| A-E Contractor: | Tetra Tech / Mason & Hanger JV | A-E Contract No.: | W912DS21D0002 |

The A-E Contractor listed above has completed the above listed product for the above listed project and location. Notice is hereby given that an independent technical review (ITR), that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Quality Control Plan. During the independent technical review, compliance with established policy, principles, and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The independent technical review was accomplished by the ITR team listed below. All comments resulting from ITR have been resolved.

| | | |
|---|---|---|
| | 7/02/2025 | |
| Uriel Reyes | , A-E Project Manager | Date |

### ITR Team Members (Name, Discipline)

| | | |
|---|---|---|
| | 6/25/25 | |
| Kim Blanford, Architecture | , Team Leader | Date |
| | 6/25/2025 | |
| David Dickey, Structural | | Date |
| | 6/25/2025 | |
| Paul Breisch, Electrical | | Date |
| | 6/25/2025 | |
| Jared Lock, Civil | | Date |
| | | |
| Taylor Canfield, Cost Estimating | | Date |
| | | |
| | | Date |
| | | |
| | | Date |
| | | |
| | | Date |
| | | |
| | | Date |

### Design Team Members (Name, Discipline)

| | | |
|---|---|---|
| | | |
| Quintin Biagi, Architecture | , Team Leader | Date |
| | 7/02/2025 | |
| Jacob Thomas , Structural | | Date |
| | 7/02/2025 | |
| Joshua Zweback, Electrical | | Date |
| | 7/02/2025 | |
| Andrew BaThan, Civil | | Date |
| | | |
| Fred Cooper, Cost Estimating | | Date |
| | | |
| | | Date |
| | | |
| | | Date |
| | | |
| | | Date |
| | | |
| | | Date |

* Any references to Independent Technical Review (ITR) within these BCOES documents are also applicable to District Control (DQC) Review for Civil Works programs.

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SECTION 01 11 00

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**02/24**

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-- End of Section Table of Contents --

SECTION 01 11 00

SUMMARY OF WORK
**02/24**

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Salvage Plan; G, RO

1.2 FAR 52.211-10, COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK

a. The Contractor is required to (i) commence work under this contract within five (5) calendar days after the date the Contractor receives the Notice to Proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use not later than 416 calendar days after the date the Contractor recieves the notice to proceed. The time stated for completion must include final cleanup of the premises.

b. The Contractor must furnish all labor, materials, equipment, and services for the following work: shown in the plans and specifications.

c. All work must be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject, in every detail, to his supervision, direction, and instructions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

1.3.1 Project Description

The work includes the design, fabrication, and related work for the installation of a new digital video display upgrade for the Armed Forces Recruiting Station, a one-story facility situated in the heart of Times Square, New York City, with an approximate gross square footage of 535 square feet. The intended occupancy includes military recruitment personnel and the general public, necessitating compliance with New York City Building Code and regulations specific to high-traffic urban environments.

The building features structural steel framing with stainless steel and storefront exterior walls, constructed in accordance with the applicable construction types as specified by the Department of Defense and the New York City Building Code. This project will involve the installation of a state-of-the-art digital video display, with associated support structrure and equipment, weighing approximately 28,000 lbs, designed to enhance visibility and engagement while adhering to the aesthetic standards of the

Times Square area.

The execution of this project will be carefully planned to minimize disruption to the high volume of pedestrians and local businesses in the vicinity. All work will be conducted with consideration for public safety and compliance with local regulations regarding noise, traffic management, and construction activities in a densely populated urban setting. Additionally, incidental related work may include necessary structural reinforcements, electrical upgrades, and integration with existing systems to ensure seamless operation of the new display.

1.3.2 Location

The work is located at the Times Square Armed Forces Rercuiting Station in Manhattan, NY , approximately as indicated. The exact location will be shown by the Contracting Officer.

1.3.2.1 Disclosure of the Magnitude of Construction Projects

This project is estimated between $1,000,000.00 and $5,000,000.00.

1.4 OCCUPANCY OF PREMISES

Building will not be occupied during performance of work under this Contract.

Before work is started, arrange with the Contracting Officer a sequence of procedure, means of access, space for storage of materials and equipment, and use of approaches, corridors, and stairways.

1.5 EXISTING WORK

Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work must be in a condition equal to or better than that which existed before new work started.

At Contractor's own expense, immediately restore to service and repair any damage caused by Contractor's workmen to the existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone). Provide immediate notification to the Contracting Officer and verbal procedures to restore. Immediately assemble personnel, equipment and material necessary to restore. Compliance with Contract Documents for quality installation must be included. The work must proceed at 24-hours per day until satisfactorily restored service is achieved. Fixing loose ends requires Contracting Officer approval to perform during normal working hours. The request to perform repairs during normal working hours requires Contractor's written approval. The write up of procedures to repair must be submitted to the Contracting officer.

Repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the

damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

## 1.6 LOCATION OF UNDERGROUND UTILITIES

Coordinate with New York City Transit-Metropolitan Transit Authority (MTA) and obtain permits prior to start of underground utilities work, and comply with New York City requirements for locating and marking underground utilities. Contact and coordinate with Con Edision utility locating service a minimum of 14 days prior to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. Verify existing utility locations indicated on contract drawings, within area of work.

### 1.6.1 Notification Prior to Utilities Work

Notify the Contracting Officer at least 48 hours prior to starting utility work.

## 1.7 SALVAGE MATERIAL AND EQUIPMENT

It is not expected that salvage material or equipment will be required for this project. Items designated by the Contracting Officer to be salvaged remain the property of the Government. Segregate, itemize, deliver and off-load the salvaged property at the Government designated storage area located within five (5) miles of the construction site.

Provide a salvage plan, if required, listing material and equipment to be salvaged, and their storage location. Maintain property control records for material or equipment designated as salvage. Provide a system for property control in the salvage plan. Store and protect salvaged materials and equipment until disposition by the Contracting Officer.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

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WORK RESTRICTIONS

**11/22, CHG 4: 02/25**

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-- End of Section Table of Contents --

SECTION 01 14 00

WORK RESTRICTIONS
**11/22, CHG 4: 02/25**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contact Personnel

1.3 CONTRACTOR ACCESS AND USE OF PREMISES

1.3.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear appropriate personal protective equipment (PPE) in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. Ensure all Contractor equipment, include delivery vehicles, are clearly identified with their company name.

1.3.1.1 Subcontractors and Personnel Contacts

Provide a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

1.3.1.2 No Smoking Policy

Smoking is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The

Contracting Officer will identify designated smoking areas.

1.3.2 Working Hours

Regular working hours will consist of an 8 1/2 hour period established by the Contracting Officer, typically between 8 a.m. and 5 p.m.,Monday through Friday , and 7 a.m. to 3:30 p.m. on Saturday , excluding Government holidays. The Contractor is to evalutate whether regular working hours can complete the entire work as stated in Section 01 11 00 Statement of Work para 1.2 FAR 52.211-10. Coordination with the Times Square Alliance is required.

1.3.3 Work Outside Regular Hours

Work outside regular working is expected for this project in Times Square New York and these hours require Contracting Officer approval. Make application 15 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in accordance with requirements of EM 385-1-1. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

1.3.4 Exclusionary Periods

Coordinate with the Times Square Alliance and New York City Transit (MTA) officials to identify any exclusionary periods during which work is prohibited. No work shall be performed during these designated exclusionary periods as provided by the Times Square Alliance or other New York City authorities. Additionally, no work shall occur on Federal or Government holidays without prior written approval from the Contracting Officer. Special attention must be given to major events, such as the New Year's Eve celebration, during which exclusionary periods will be strictly enforced. Notify the Contracting Officer of these exclusionary periods within 21 days of Notice to Proceed. Exclusionary periods have not been considered in computing the time allowed for the performance of this contract.

1.3.5 Utility Cutovers and Interruptions

a. Coordination with Con Edision will be required. CI: 1108035 MC: 839555. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in paragraph WORK OUTSIDE REGULAR HOURS.

b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.

c. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, compressed air, and network are considered utility cutovers pursuant to the paragraph WORK OUTSIDE REGULAR HOURS.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES
**11/20, CHG 5: 02/25**

PART 1 GENERAL

1.1 CONTRACT COST BREAKDOWN

The Contractor must furnish within 30 days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate, a breakdown of its single job pay item or items which will be reviewed by the Contracting Officer as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the Contracting Officer to agree with a reasonable cost of the work included in the various items. This Contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

1.2 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this Contract on which the Contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed constitutes full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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1.4 VIEW LOCATION MAP
1.5 PROGRESS AND COMPLETION PICTURES
1.6 GENERAL MEETING REQUIREMENTS
1.7 MINIMUM INSURANCE REQUIREMENTS
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1.12 SUBMISSION OF CLAIMS
1.13 (S-102) CONTRACTOR SUPPLY and USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (April 2011)
1.14 DESIGNATION OF PROPERTY ADMINISTRATOR

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SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS
**11/20, CHG 5: 02/25**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

View Location Map

Progress and Completion Pictures

SD-04 Samples

Color Boards; G, RO

1.3 COLOR BOARDS

Submit five sets of color boards within 90 calendar days after Contract Award. Each set of boards must include samples of colors and finishes of interior surfaces, such as walls, floors, and ceilings. Present the samples on 8 by 10-1/2 inches boards (modules) with a maximum spread of 24 by 31-1/2 inches for foldouts. Design modules to fit in a standard loose-leaf, three-ring binder. Where special finishes such as architectural concrete, carpet, or prefinished textured metal panels are required, submit samples not less than 12 inches square with the board. If more space is needed, more than one board per set may be submitted. Certify that the color samples have been reviewed in detail, and that the color samples are in strict accordance with contract drawings and specifications, except as may be otherwise explicitly stated. Submittal of color samples does not relieve the Contractor of the responsibility to submit samples required elsewhere herein.

## 1.4 VIEW LOCATION MAP

Submit, prior to or with the first digital photograph submittals, a sketch or drawing indicating the required photographic locations. Update as required if the locations are moved.

## 1.5 PROGRESS AND COMPLETION PICTURES

Photographically document site conditions prior to start of construction operations. Provide monthly, and within one month of the completion of work, digital photographs, 1600x1200x24 bit true color minimum resolution in JPEG file format showing the sequence and progress of work. Take a minimum of 20 digital photographs each week throughout the entire project from a minimum of ten different viewpoints selected by the Contractor unless otherwise directed by the Contracting Officer. Submit with the monthly invoice two sets of digital photographs, cumulative of all photos to date. Indicate photographs demonstrating environmental procedures. Provide photographs for each month in a separate monthly directory and name each file to indicate its location on the view location sketch. Also provide the view location sketch with the submission in the agency construction management system of record as a digital file. Include a date designator in file names. Photographs provided are for unrestricted use by the Government.

## 1.6 GENERAL MEETING REQUIREMENTS

Preparatory and Initial Phase Meeting Checklists

See Section 01 45 00 QUALITY CONTROL for Preparatory and Initial Phase meeting checklists. Contractor is responsible for phase and progress meetings to include:

a. Meeting notification to participants
b. Prepare agenda for meetings
c. Use phase checklists for Preparatory and Initial Phase meetings
d. Physical arrangements for meetings
e. Preside at meetings
f. Record minutes recording proceedings and decisions
g. Copy and send minutes to:
(1) Meeting participants
(2) Project parties affected by decisions
(3) Contracting Officer (No later than 3 working days)

Weekly Progress Meetings Agenda

The weekly progress meeting. Modify agenda as needed for on-going work.

a. Review minutes from previous progress meetings
b. Review RMS CM Contractor Action Item Report
c. Review work progress since previous meeting
d. Review current definable features of work:
-- Identify phases of current features of work
-- Identify pending phase changes
-- Identify features for discussion in next scheduled meeting
e. Discuss problem prevention:
(1) Field observations
(2) Deficiencies and tracking
(3) Procedures working well
(4) Problems, conflicts

(5) Methods to improve
f. Review construction schedule:
(1) Identify delays
(2) Discuss proposed corrective actions to regain schedule
g. Submittals and Requests for Information (design interpretation):
(1) Review submittal register
(2) Identify submittals to expedite as required
h. Review off-site activities:
(1) Fabrications
(2) Material and equipment delivery schedule
i. Review Testing:
(1) Type, Schedule
(2) Received Results
j. Review changes to construction schedule:
(1) Planned progress during succeeding work period
(2) Coordination of various schedules
(3) Effect of changes on construction and completion date
k. Review site safety
l. Discuss maintaining contract quality for materials and workmanship
m. Discuss pending modifications, changes and substitutions
n. Discuss other business, as appropriate

## 1.7 MINIMUM INSURANCE REQUIREMENTS

a. Before commencing work under this contract, the Contractor must notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance must contain an endorsement to the effect that cancellation or material change adversely affecting the Government's interest cannot be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

b. Provide the minimum insurance coverage required by FAR 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by State law.

## 1.8 SUPERVISION

### 1.8.1 Superintendent Qualifications

Provide project superintendent with a minimum of 10 years experience in construction with at least 5 of those years as a superintendent on projects similar in size and complexity. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

For projects where the superintendent is permitted to also serve as the Quality Control (QC) Manager as established in Section01 45 00 QUALITY CONTROL, the superintendent must have qualifications in accordance with that section.

1.8.2 Minimum Communication Requirements

Have at least one qualified superintendent, or competent alternate, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of Contract work. In addition, if a Quality Control (QC) representative is required on the Contract, then that individual must also have fluent English communication skills.

1.8.3 Duties

The project superintendent is primarily responsible for managing subcontractors and coordinating day-to-day production and schedule adherence on the project. The superintendent is required to attend Red Zone meetings, partnering meetings, and quality control meetings. The superintendent or qualified alternative must be on-site at all times during the performance of this contract until the work is completed and accepted.

1.8.4 Non-Compliance Actions

The Project Superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders is acceptable as the subject of claim for extension of time or excess costs or damages by the Contractor.

1.9 PRECONSTRUCTION CONFERENCE

Upon completion of design and design acceptance by the government, prior to commencing any work at the site, coordinate with the Contracting Officer a time and place to meet for the Preconstruction Conference. The purpose of this conference is to discuss and develop a mutual understanding of the administrative requirements of the Contract including but not limited to: daily reporting, invoicing, value engineering, safety, base-access, outage requests, hot work permits, schedule requirements, quality control, schedule of prices or earned value report, shop drawings, submittals, cybersecurity, prosecution of the work, government acceptance, final inspections and contract close-out. Contractor must present and discuss their basic approach to scheduling the construction work and any required phasing.

The Contractor must provide at this conference the following items as indicated:
a. Initial Project Schedule;
b. Accident Prevention Plan (APP); Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS
c. Contractor Quality Control (CQC) Plan; Section 01 14 00 WORK RESTRICTIONS.
e. Letter appointing Superintendent.
f. Detailed Concept of Operations Plan.

1.9.1 Attendees

Contractor attendees must include the Project Manager, Superintendent,

Site Safety and Health Officer (SSHO), Quality Control Manager and major subcontractors.

1.10 FACILITY TURNOVER PLANNING MEETINGS (Red Zone Meetings)

Meet with the Government to identify strategies to ensure the project is carried to expeditious closure and turnover to the Client. Start planning the turnover process at the Pre-Construction Conference meeting with a discussion of the Red Zone process and convene at regularly scheduled Red Zone Meetings beginning at approximately 75 percent of project completion. Include the following in the facility Turnover effort:

1.10.1 Red Zone Checklist

a. Contracting Officer's Technical Representative (COTR) will provide the Contractor a copy of the Red Zone Checklist template.

b. Prior to 75 percent completion, modify the Red Zone Checklist template by adding or deleting critical activities applicable to the project and assign planned completion dates for each activity. Submit the modified Red Zone Checklist to the Contracting Officer. The Contracting Officer may request additional activities be added to the Red Zone Checklist at any time as necessary.

1.10.2 Meetings

a. Conduct regular Red Zone Meetings beginning at approximately 75 percent project completion, or three to six months prior to Beneficial Occupancy Date (BOD), whichever comes first.

b. The Contracting Officer will establish the frequency of the meetings, which is expected to increase as the project completion draws nearer. At the beginning, Red Zone meetings may be every two weeks then increase to weekly towards the final month of the project.

c. Using the Red Zone Checklist as a Plan of Action and Milestones (POAM) and basis for discussion, review upcoming critical activities and strategies to ensure work is completed on time.

d. During the Red Zone Meetings discuss with the COTR any upcoming activities that require Government involvement.

e. Maintain the Red Zone Checklist by documenting the actual completion dates as work is completed and update the Red Zone Checklist with revised planned completion dates as necessary to match progress. Distribute copies of the current Red Zone Checklist to attendees at each Red Zone Meeting.

1.11 PARTNERING

To most effectively accomplish this Contract, the Contractor and Government must form a cohesive partnership with the common goal of drawing on the strength of each organization in an effort to achieve a successful project without safety mishaps, conforming to the Contract, within budget and on schedule. The partnering team must consist of personnel from both the Government and Contractor including project level and corporate level leadership positions. Key Personnel from the supported command, end user, USACE, Contractor, key subcontractors and the Designer of Record (DOR) (regardless of whether the contract is a

design-build or a design-bid-build) are required to participate in the Partnering process.

1.11.1 Team-Led (Informal) Partnering

a. The Contracting Officer will coordinate the initial Team-Led (Informal) Partnering Session with key personnel of the project team, including Contractor and Government personnel. The Partnering Session will be co-led by the Government Construction Manager and Contractor's Project Manager.

b. The Initial Team-led Partnering session may be held concurrently with the meeting. Partnering sessions will be held at a location mutually agreed to by the Contracting Officer and the Contractor, typically at a conference room on-base or at the Contractor's temporary trailer.

c. The Initial Team-Led Partnering Session will be conducted and facilitated using electronic media (a video and accompanying forms) provided by Contracting Officer.

d. The Partners will determine the frequency of the follow-on sessions.

e. Participants will bear their own costs for meals, lodging and transportation associated with Partnering.

f. An outcome of the Partnering session must be an escalation matrix and developing a Construction Joint Risk Register agreed upon by both the Government and Contractor, which identifies key Government and Contractor decision makers by name and anticipated decision durations.

1.12 SUBMISSION OF CLAIMS

The following must be submitted to the Contracting Officer at the following address: U.S. Army Corps of Engineers, Room 16-300, New York District, 26 Federal Plaza, New York, New York 10278-0090:

a. Claims referencing or mentioning the Contracting Disputes Act of 1978.

b. Requests for a written decision by the Contracting Officer.

c. Claims certified in accordance with the Contract Disputes Act of 1978.

No other Government representative is authorized to accept such requests. A copy must also be provided to the Authorized Representative of the Contracting Officer.

Provide the Contracting Officer with a copy of any requests for additional time, money or interpretation of contract requirements which were provided to the Authorized Representative of the Contracting Officer and which have not been resolved after 90 days.

1.13 (S-102) CONTRACTOR SUPPLY and USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (April 2011)

The Contractor is encouraged to use a commercially-available electronic system to process and submit certified payrolls electronically to the Government. The requirements for preparing, processing and providing certified labor payrolls are established by the Davis-Bacon Act as stated in FAR 52.222-8, PAYROLLS AND BASIC RECORDS and FAR 52.222-13, COMPLIANCE

WITH DAVIS-BACON AND RELATED ACT REGULATIONS.

If the Contractor elects to use an electronic Davis-Bacon payroll processing system, then the Contractor must be responsible for obtaining and providing for all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the Contractor to comply with Davis-Bacon and related Act regulations. When the Contractor uses an electronic Davis-Bacon payroll system, the electronic payroll service shall be used by the Contractor to prepare, process, and maintain the relevant payrolls and basic records during all work under this construction contract and the electronic payroll service must be capable of preserving these payrolls and related basic records for the required three years after contract completion. If the Contractor chooses to use an electronic Davis-Bacon payroll system, then the Contractor must obtain and provide electronic system access to the Government, as required to comply with the Davis-Bacon and related Act regulations over the duration of this construction contract. The access must include electronic review access by the Government contract administration office to the electronic payroll processing system used by the Contractor.

The Contractor's provision and use of an electronic payroll processing system must meet the following basic functional criteria: Commercially available; compliant with appropriate Davis Bacon Act payroll provisions in the FAR; able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract; demonstrated security of data and data entry rights; ability to produce Contractor-certified electronic versions of weekly payroll data; ability to identify erroneous entries and track the data/time of all versions of the certified Davis Bacon payrolls submitted to the Government over the life of the contract; capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic Davis-Bacon payroll processing system must be provided to the Government during contract closeout.

The Contractor's provision and use of an electronic payroll processing system must meet the following basic functional criteria: Commercially available; compliant with appropriate Davis Bacon Act payroll provisions in the FAR; able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract; demonstrated security of data and data entry rights; ability to produce Contractor-certified electronic versions of weekly payroll data; ability to identify erroneous entries and track the data/time of all versions of the certified Davis Bacon payrolls submitted to the Government over the life of the contract; capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic Davis-Bacon payroll processing system must be provided to the Government during contract closeout.

All Contractor-incurred costs related to the Contractor's provision and use of an electronic payroll processing service must be included in the Contractor's price for the overall work under the contract. The costs for Davis-Bacon Act compliance using electronic payroll processing services must not be a separately bid/proposed or reimbursed item under this contract.

1.14 DESIGNATION OF PROPERTY ADMINISTRATOR

The Chief, Property and Accounting Section, U.S. Army Engineer District, New York, Federal Building, 26 Federal Plaza, New York, N.Y. 10278-0090 is designated as Property Administrator, in connection with this contract.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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PROJECT SCHEDULE
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AACE INTERNATIONAL (AACE)

| | |
|---|---|
| AACE 29R-03 | (2011) Forensic Schedule Analysis |
| AACE 52R-06 | (2006) Time Impact Analysis - As Applied in Construction |
| AACE 84R-13 | (2015) Planning and Accounting for Adverse Weather |

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

| | |
|---|---|
| ASCE 67-17 | (2017) Schedule Delay Analysis |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| ER 1-1-11 | (2017) Administration -- Project Schedules |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Scheduler Qualifications; G, RO

Preliminary Project Schedule; G, RO

Initial Project Schedule; G, RO

Periodic Schedule Update; G, RO

1.3 PROJECT SCHEDULER QUALIFICATIONS

Designate an authorized representative to be responsible for the preparation of the schedule and all required updating and production of reports. The Designated Project Scheduler must have prepared and maintained at least three previous construction schedules for projects of

similar size and complexity to this contract, using Primavera P6 or Microsoft Project. Representative must have a comprehensive knowledge of CPM scheduling principles and application.

## PART 2 PRODUCTS

### 2.1 SOFTWARE

The scheduling software utilized to produce and update the schedules required herein must be capable of meeting all requirements of this specification.

#### 2.1.1 Government Default Software

The Government uses Primavera P6. Ensure exported schedule files are compatible with the version of P6 used by the Government.

#### 2.1.2 Contractor Software

Scheduling software used by the contractor must be commercially available from the software vendor for purchase with vendor software support agreements available. The software routine used to create the required sdef file must be created and supported by the software manufacturer.

##### 2.1.2.1 Primavera

If Primavera P6 is selected for use, provide the "xer" export file in a version of P6 importable by the Government system. Verify at the SEKO meeting which version of P6 is in use by the Government. Export the schedule in a version of P6 no newer than that used by the Government.

##### 2.1.2.2 Other Than Primavera

If the Contractor chooses software other than Primavera P6, that is compliant with this specification, provide for the Government's use two licenses, two computers, and training for two Government employees in the use of the software. These computers will be stand-alone and not connected to Government network. Computers and licenses will be returned at project completion.

## PART 3 EXECUTION

### 3.1 GENERAL REQUIREMENTS

Prepare for approval a Project Schedule, as specified herein, pursuant to FAR Clause 52.236-15 Schedules for Construction Contracts. Show in the schedule the proposed sequence to perform the work and dates contemplated for starting and completing all schedule activities. The scheduling of the entire project is required. The scheduling of design and construction is the responsibility of the Contractor. The order of work is at the discretion of the Construction Contractor. Contractor management personnel must actively participate in its development. Designers, Subcontractors, and suppliers working on the project must also contribute in developing and maintaining an accurate Project Schedule. Provide a schedule that is a forward planning as well as a project monitoring tool. Use the Critical Path Method (CPM) of network calculation to generate all Project Schedules. Prepare each Project Schedule using the Precedence Diagram Method (PDM).

3.1.1 Scheduling Expectations Kickoff Meeting(SEKO)

In conjunction with the post award conference or pre construction conference the Government and the Contractor will hold a separate and distinct Scheduling Expectations Kickoff Meeting(SEKO). The intent of this meeting is for the Government to review with the contractor the requirements of the scheduling specification, communicate the Government’s expectations regarding schedule development and management, and answer any questions the Contractor may have regarding the schedule requirements.

3.2 BASIS FOR PAYMENT AND COST LOADING

The schedule is the basis for determining contract earnings during each update period and therefore the amount of each progress payment. The aggregate value of all activities coded to a contract CLIN must equal the value of the CLIN. Match the progress payment "Pay Period Thru" date in RMS to the schedule data date.

3.2.1 Activity Cost Loading

Activity cost loading must be reasonable and without front-end loading. Activities with a negative cost loading is not allowed. Provide additional documentation to demonstrate reasonableness if requested by the Contracting Officer.

3.2.2 Cost Loading of Submittals

No costs are to be assigned to activities for the preparation, review, or approval of submittals, except as described under paragraph COST LOADING OF CLOSEOUT ACTIVITIES, paragraph AS-BUILT DRAWINGS, design submittals, and paragraph O&M MANUALS.

3.2.3 Withholdings / Payment Rejection

Failure to meet the requirements of this specification may result in the disapproval of the preliminary, initial, or periodic schedule updates and subsequent rejection of payment requests until compliance is met.

In the event that the Contracting Officer directs schedule revisions and those revisions have not been included in subsequent Project Schedule revisions or updates, the Contracting Officer may withhold 10 percent of pay request amount from each payment period until such revisions to the project schedule have been made.

3.3 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.3.1 Level of Detail Required

Develop the Project Schedule to the appropriate level of detail to address major milestones and to allow for satisfactory project planning and execution. Failure to develop the Project Schedule to an appropriate level of detail will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.3.2 Activity Durations

Reasonable activity durations are those that allow the progress

of ongoing activities to be accurately determined between update periods. Non-procurement activities Original Durations (OD) are not to exceed 20 workdays or 30 calendar days.

3.3.3 Design and Permit Activities

Include design and permit activities with the necessary conferences and follow-up actions and design package submission dates. Include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. Provide a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. Also include review and correction periods associated with each item.

3.3.4 Procurement Activities

Include in the schedule activities associated with the critical submittals and their approvals, procurement, fabrication, and delivery of long lead materials, equipment, fabricated assemblies, and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days.

3.3.5 Mandatory Activities

Include the following activities in the initial project schedule and all updates.

a. Submission, review and acceptance of SD-01 Preconstruction Submittals (individual activity for each).

b. Submission, review and acceptance of design packages.

c. Submission of mechanical/electrical/information systems layout drawings.

d. Submission and approval of O & M manuals.

e. Submission and approval of as-built drawings.

f. Submission and approval of DD1354 data and installed equipment lists.

g. Submission and approval of testing and air balance (TAB).

h. Submission of TAB specialist design review report.

i. Submission and approval of fire protection specialist.

j. Submission and approval of Building Commissioning Plan, Controls testing plan, test data, and reports: Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with the contract commissioning requirements. All tasks associated with building testing and commissioning will be completed prior to submission of building commissioning report and subsequent contract completion.

These activities may include but are not limited to: air and water balancing, building commissioning -functional performance testing, controls testing, and performance verification testing. Include other systems testing, if required. Include additional commissioning

requirements noted elsewhere in the Contract as required in the schedule and discuss during the SEKO meeting, noted in paragraph SCHEDULING EXPECTATIONS KICKOFF MEETING (SEKO).

k. Contractor's pre-final inspection.

l. Correction of punch list from Contractor's pre-final inspection.

m. Government's pre-final inspection.

n. Correction of punch list from Government's pre-final inspection.

o. Final inspection.

3.3.6 Government Activities

Show in schedule, Government and other agency activities that could impact progress. These activities include, but are not limited to acceptance, design reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.7 Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11. This exact structure is mandatory. Develop and assign all Activity Codes to activities as detailed herein.

The SDEF format is as follows:

| Field | Activity Code | Length | Description |
|---|---|---|---|
| 1 | WRKP | 3 | Workers per day |
| 2 | RESP | 4 | Responsible party |
| 3 | AREA | 4 | Area of work |
| 4 | MODF | 6 | Modification Number |
| 5 | BIDI | 6 | Bid Item (CLIN) |
| 6 | PHAS | 2 | Phase of work |
| 7 | CATW | 1 | Category of work |
| 8 | FOW | 20 | Feature of work* |

*Some systems require that FEATURE OF WORK values be placed in several activity code fields. The notation shown is for Primavera P6. Refer to the specific software guidelines with respect to the FEATURE OF WORK field requirements.

3.3.7.1 Workers Per Day (WRKP)

Assign Workers per Day for all field construction or direct work activities, if directed by the Contracting Officer. Workers per day is based on the average number of workers expected each day to perform a task for the duration of that activity.

3.3.7.2 Responsible Party Coding (RESP)

Assign responsibility code for all activities to the Prime Contractor, Subcontractor(s) or Government agency(ies) responsible for performing the activity.

a. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Property/Equipment (GFP) and Notice to Proceed (NTP) for phasing requirements.

b. Activities cannot have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for USACE).

3.3.7.3 Area of Work Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities cannot have more than one Work Area Code.

3.3.7.4 Modification Number (MODF)

Assign a Modification Number Code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer. Key all Code values to the Government's modification numbering system. An activity can have only one Modification Number Code.

3.3.7.5 Bid Item Coding (BIDI)

Assign a Bid Item Code to all activities using the Contract Line Item Number (CLIN) to which the activity belongs, even when an activity is not cost loaded. An activity can have only one BIDI Code.

3.3.7.6 Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities. Examples of phase of work are design phase, procurement phase and construction phase. Each activity can have only one Phase of Work code.

a. Code proposed fast track design and construction phases proposed to allow filtering and organizing the schedule by fast track design and construction packages.

b. If the contract specifies phasing with separately defined performance periods, identify a Phase Code to allow filtering and organizing the schedule accordingly.

3.3.7.7 Category of Work Coding (CATW)

Assign a Category of Work Code to all activities. Category of Work Codes include, but are not limited to design, design submittal, design reviews, review conferences, permits, construction submittal, procurement, fabrication, weather sensitive installation, non-weather sensitive installation, start-up, and testing activities. Each activity can have no more than one Category of Work Code.

3.3.7.8 Feature of Work Coding (FOW)

Assign a Feature of Work Code to appropriate activities based on the Definable Feature of Work to which the activity belongs based on the approved QC plan.

Definable Feature of Work is defined in Section 01 45 00 QUALITY CONTROL. An activity can have only one Feature of Work Code.

3.3.8 Contract Milestones and Constraints

Milestone activities are to be used for significant project events including, but not limited to, project phasing, project start and end activities, or interim completion dates. The use of artificial float constraints such as "zero free float" or "zero total float" are prohibited.

Mandatory constraints that ignore or affect network logic are prohibited. No constrained dates are allowed in the schedule other than those specified herein. Submit additional constraints to the Contracting Officer for approval on a case by case basis.

3.3.8.1 Project Start Date Milestone and Constraint

The first activity in the project schedule must be a start milestone titled "NTP Acknowledged," which must have a "Start On" constraint date equal to the date that the NTP is acknowledged.

3.3.8.2 End Project Finish Milestone and Constraint

The last activity in the schedule must be a finish milestone titled "End Project."

Constrain the project schedule to the Contract Completion Date in such a way that if the schedule calculates an early finish, then the float calculation for "End Project" milestone reflects positive float on the longest path. If the project schedule calculates a late finish, then the "End Project" milestone float calculation reflects negative float on the longest path.

3.3.8.3 Interim Completion Dates and Constraints

Constrain contractually specified interim completion dates to show negative float when the calculated late finish date of the last activity in that phase is later than the specified interim completion date.

3.3.8.3.1 Start Phase

Use a start milestone as the first activity for a project phase. Call the start milestone "Start Phase X" where "X" refers to the phase of work.

3.3.8.3.2 End Phase

Use a finish milestone as the last activity for a project phase. Call the finish milestone "End Phase X" where "X" refers to the phase of work.

3.3.9 Adverse Weather

Ensure anticipated adverse weather is accounted for in the Project Schedule. AACE 84R-13 provides methodologies for techniques in planning for adverse weather. The preferred methodology is the use of a weather calendar. If a method other than a weather calendar is proposed, discuss the reason during the SEKO meeting.

3.3.10 Calendars

Schedule activities on a Calendar to which the activity logically belongs. Develop calendars to accommodate any contract defined work period such as a 7-day calendar for Government Acceptance activities, concrete cure times, etc. Develop the default Calendar to match the physical work plan with non-work periods identified including weekends and holidays. Develop Seasonal Calendar(s) and assign to seasonally affected activities as applicable.

If a weather calendar is used its implementation and execution is to be in accordance with AACE 84R-13

3.3.11 Open Ended Logic

Only two open ended activities are allowed: the first activity "NTP Acknowledged" is to have no predecessor logic, and the last activity -"End Project" is to have no successor logic. Except as noted above, each activity must have at least a start-to-start or finish-to-start relationship with its predecessor and a finish-to-finish or finish-to-start relationship with its successor.

Predecessor open ended logic may be allowed in a time impact analyses upon the Contracting Officer's approval.

3.3.12 Default Progress Data Disallowed

Actual Start and Finish dates must not automatically update with default mechanisms included in the scheduling software. Updating of the percent complete and the remaining duration of any activity must be independent functions. Disable program features that calculate one of these parameters from the other. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process must match those dates provided in the Contractor Quality Control Reports. Failure to document the AS and AF dates in the Daily Quality Control report will result in disapproval of the Contractor's schedule.

3.3.13 Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a

case-by-case basis subject to approval by the Contracting Officer. Propose logic corrections to eliminate out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule. Address out of sequence progress or logic changes in the Narrative Report and in the periodic schedule update meetings.

3.3.14 Added and Deleted Activities

Do not delete activities from the project schedule or add new activities to the schedule without approval from the Contracting Officer. Activity ID and description changes are considered new activities and cannot be changed without Contracting Officer approval.

3.3.15 Original Durations

Activity Original Durations (OD) must be reasonable to perform the work item. OD changes are prohibited unless justification is provided and approved by the Contracting Officer.

3.3.16 Leads, Lags, and Start to Finish Relationships

Lags must be reasonable as determined by the Government and not used in place of realistic original durations, must not be in place to artificially absorb or create float, or to replace proper schedule logic.

a. Leads (negative lags) are prohibited.

b. Start to Finish (SF) relationships are prohibited.

3.3.17 Retained Logic

Schedule calculations must retain the logic between predecessors and successors ("retained logic" mode) even when the successor activity(s) starts and the predecessor activity(s) has not finished (out-of-sequence progress). Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") are not be allowed.

3.3.18 Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be declared 100 percent complete to allow for proper schedule management. Budgeted cost of activity is to be reduced by the amount needed to correct deficiency. The activity referenced in paragraph COST LOADING of CLOSEOUT ACTIVITIES must have its budgeted cost increased by this amount.

3.3.19 Remaining Duration

Update the remaining duration for each activity based on the number of estimated workdays it will take to complete the activity. Remaining duration may not mathematically correlate with percentage found under paragraph entitled Percent Complete. The remaining duration for unstarted activities are not to be less than its orginal duration.

3.3.20 Cost Loading of Closeout Activities

Cost load the "Correction of punch list from Government pre-final inspection" activity(ies) not less than 1 percent of the present contract value. Activity(ies) may be declared 100 percent complete upon the Government's verification of completion and correction of all punch list work identified during Government pre-final inspection(s).

3.3.20.1 As-Built Drawings

If there is no separate contract line item (CLIN) for as-built drawings, cost load the "Submission and approval of as-built drawings" activity not less than $35,000 or 1 percent of the present contract value, which ever is greater, up to $200,000. Activity will be declared 100 percent complete upon the Government's approval.

3.3.20.2 O & M Manuals

Cost load the "Submission and approval of O & M manuals" activity not less than $20,000. Activity will be declared 100 percent complete upon the Government's approval of all O & M manuals.

3.3.21 Early Completion Schedule and the Right to Finish Early

An Early Completion Schedule is an Initial Project Schedule (IPS) that indicates all scope of the required contract work will be completed before the contractually required completion date.

a. No IPS indicating an Early Completion will be accepted without being fully resource-loaded (including crew sizes and hours) and the Government agreeing that the schedule is reasonable and achievable.

b. The Government is under no obligation to accelerate work items it is responsible for to ensure that the early completion is met nor is it responsible to modify incremental funding (if applicable) for the project to meet the contractor's accelerated work.

3.4 PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data reports and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS. If the Contractor fails or refuses to furnish the information and schedule updates as set forth herein, the Contractor will be deemed not to have provided an estimate upon which a progress payment can be made.

Review comments made by the Government on the schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents.

3.4.1 Preliminary Project Schedule Submission

Within 15 calendar days after the NTP is acknowledged, submit the Preliminary Project Schedule defining the planned operations detailed for the first 90 calendar days for approval. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. The Preliminary Project Schedule may be summary in nature for the remaining performance period. It must be early start and late finish constrained and

logically tied as specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required plan and program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, planned submissions of all early design packages, permitting activities, design review conference activities, and other non-construction activities intended to occur within the first 90 calendar days. Government acceptance of the associated design package(s) and all other specified Program and Plan approvals must occur prior to any planned construction activities. Code activities that are summary in nature, after the first 90 calendar days, with the following activity codes: Bid Item (CLIN) code (BIDI), Responsibility Code (RESP), and Feature of Work code (FOW)..

### 3.4.2 Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 42 calendar days after notice to proceed is issued. The schedule must demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. Include in the design-build schedule detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead item acquisition prior to design completion. Also cover in the initial design-build schedule the entire construction effort with as much detail as is known at the time but, as a minimum, include all construction start and completion milestones, and detailed construction activities through the dry-in, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone. No payment will be made for work items not fully detailed in the Project Schedule.

#### 3.4.2.1 Design Package Schedule Submission

With each design package submitted to the Government, submit a fragnet schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

### 3.4.3 Periodic Schedule Updates

Update the Project Schedule on a regular basis, monthly at a minimum. Provide a draft Periodic Schedule Update for review at the schedule update meetings as prescribed in the paragraph PERIODIC SCHEDULE UPDATE MEETINGS. These updates will enable the Government to assess Contractor's progress. Update the schedule to include detailed construction activities as the design progresses, but not later than the submission of the final un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission if such activity is authorized.

a. Update information including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD), and Percent Complete. Updated information is subject to the approval of the Government at the meeting.

b. AS and AF dates must match the date(s) reported on the Contractor's Quality Control Report for an activity start or finish.

3.5 SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1 Electronic Scheduling Data

Provide electronic scheduling data containing the current project schedule and all previously submitted schedules in the format of the scheduling software (e.g. .xer). Also include the Narrative Report and all required Schedule Reports. The electronic file is to identify the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and schedule file name. Each schedule must have a unique file name and use project specific settings. The file naming convention is to be determined at SEKO meeting.

3.5.2 Narrative Report

Provide a Narrative Report with each schedule submission. The Schedule Narrative Report is a "stand alone" report in PDF or Word format. Title the report "Schedule Narrative Report". Show the Report date, schedule name, and contract number on the first page. Indicate who is responsible for the schedule update and narrative report. Provide a brief description of the Project Scope. The Narrative Report is expected to communicate to the Government the thorough analysis of the schedule output and the plans to compensate for problems, either current or potential, which are revealed through that analysis. Include the following information at a minimum in the Narrative Report:

a. Identify and discuss the work scheduled to start in the next update period.

b. Describe activities along the critical path in addition to activities on the next float path after the critical path.

c. Describe current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. Identify the party responsible for delay, if applicable.

d. Identify and explain why activities, based on their calculated late dates, should have either started or finished during the update period but did not.

e. Identify and discuss all schedule changes by activity ID and activity name including what specifically was changed and why the change was needed. Include at a minimum new and deleted activities, logic changes, duration changes, calendar changes, lag changes, resource changes, and actual start and finish date changes.

f. Identify and discuss out-of-sequence work.

g. If the longest path changes from a monthly update to the next, provide an explanation of the factors driving the change.

h. Respond to USACE Schedule Review Comments from the previous update(s).

3.5.3 Schedule Reports

The format, filtering, organizing, and sorting for each schedule report will be as directed by the Contracting Officer. Typically, reports contain Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float, Actual Start Date, Actual Finish Date, and Percent Complete. Provide the reports electronically in .pdf format. Provide two set(s) of hardcopy reports. The following lists typical reports that will be requested:

3.5.3.1 Activity Report

List of all activities sorted according to activity number.

3.5.3.2 Logic Report

List of detailed predecessor and successor activities for every activity in ascending order by activity number.

3.5.3.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.3.4 Earnings Report by CLIN

A compilation of the Total Earnings on the project from the NTP to the data date, which reflects the earnings of activities based on the agreements made in the schedule update meeting defined herein. Provided a complete schedule update has been furnished, this report serves as the basis of determining progress payments. Group activities by CLIN number and sort by activity number. Provide a total CLIN percent earned value, CLIN percent complete, and project percent complete. The printed report must contain the following for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Earnings to Date, Earnings this period, Total Quantity, Quantity to Date, and Percent Complete (based on cost).

3.5.3.5 Scheduling and Leveling Report

Provide a Scheduling/Leveling Report generated from the current project schedule being submitted.

3.5.4 Network Diagram

The Network Diagram is required for the Preliminary, Initial and Periodic Updates. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to

review compliance with this paragraph:

3.5.4.1 Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.4.2 Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.4.3 Critical Path

Show all activities on the critical path. The critical path is defined as the longest path.

3.5.4.4 Grouping and Sorting

Group and sort activities as directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by major elements of work, category of work, work area and/or responsibility.

3.5.4.5 Cash Flow / Schedule Variance Control (SVC) Diagram

With each schedule submission, provide a SVC diagram showing 1) Cash Flow S-Curves indicating planned project cost based on projected early and late activity finish dates, and 2) Earned Value to-date.

3.6 PERIODIC SCHEDULE UPDATE

3.6.1 Periodic Schedule Update Meetings

Conduct periodic schedule update meetings for the purpose of reviewing the proposed Periodic Schedule Update, Narrative Report, Schedule Reports, and progress payment. Conduct meetings at least monthly within five days of the proposed schedule data date. Provide a computer with the scheduling software loaded and a projector which allows all meeting participants to view the proposed schedule during the meeting. The Contractor's authorized scheduler must organize, group, sort, filter, perform schedule revisions as needed and review functions as requested by the Contractor and/or Government. The Contractor scheduler must attend in person unless virtual attendance is approved by Contracting Officer. The meeting is a working interactive exchange which allows the Government and Contractor the opportunity to review the updated schedule on a real time and interactive basis. The meeting will last no longer than 8 hours. Submit schedule file and narrative to the Government a minimum of two workdays in advance of the meeting. The Contractor's Project Manager must attend the meeting with the authorized representative of the Contracting Officer. Superintendents, foremen and major subcontractors must attend the meeting as required to discuss the project schedule and work. Following the schedule update meeting, make corrections to the schedule and resubmit, following the required schedule naming convention. Include only those changes approved by the Government in the schedule review meeting. Only approved schedules may be used to generate invoices for payment.

### 3.6.2 Update Submission Following Progress Meeting

Submit the complete Periodic Schedule Update of the Project Schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 workdays after the periodic schedule update meeting.

## 3.7 WEEKLY PROGRESS MEETINGS

Conduct a weekly meeting with the Government (or as otherwise mutually agreed to) between the meetings described in paragraph entitled PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. Use the current approved schedule update for the purposes of this meeting and for the production and review of reports. At the weekly progress meeting, address the status of RFIs, RFPs and Submittals.

## 3.8 REQUESTS FOR TIME EXTENSIONS

ASCE 67-17 provides delay analysis guidelines. If there is a conflict between the contract and guidance provided in ASCE 67-17, the contract will govern. Provide justification of delay to the Contracting Officer in accordance with the contract provisions and clauses for approval, within 10 days of a delay occuring. Also prepare a time impact analysis for each Government request for proposal (RFP).

### 3.8.1 Justification of Delay

Provide a description of the event(s) that caused the delay and/or impact to the work. As part of the description, identify all schedule activities impacted. Show that the event that caused the delay/impact was the responsibility of the Government. Provide a time impact analysis that demonstrates the effects of the delay or impact on the project completion date, or interim completion date(s). Evaluate multiple impacts chronologically; each with its own justification of delay. With multiple impacts consider any concurrency of delay. A time extension and the schedule fragnet becomes part of the project schedule and all future schedule updates upon approval by the Contracting Officer.

### 3.8.2 Changes That Do Not Cause Delay

If it is determined that a change does not constitute a schedule time extension, a fragnet as described in paragraph FRAGMENTARY NETWORK, is to be created and inserted into the Project schedule.

### 3.8.3 Time Impact Analysis (Prospective Analysis)

Submit requests for time extensions based on a prospective analysis if the work involved or the impact identified has not already occurred. Where the impact is ongoing a prospective analysis may be considered. However, the Government reserves the right to require a retrospective analysis be prepared after the impact has ended.

Prepare a time impact analysis for approval by the Contracting Officer based on industry recommended practice AACE 52R-06. Utilize a copy of the last approved schedule prior to the first day of the impact or delay for the time impact analysis. If Contracting Officer determines the time frame between the last approved schedule and the first day of impact is

too great, prepare an interim updated schedule to perform the time impact analysis. Unless approved by the Contracting Officer, no other changes may be incorporated into the schedule being used to justify the time impact.

3.8.4 Forensic Schedule Analysis (Retrospective Analysis)

Submit requests for time extensions based on a retrospective analysis if the work involved or the impact identified has already occurred. The analysis must account for the actual performance of both the impacted work and all other contract work in the schedule.

If a methodology is chosen from AACE 29R-03, the method must adhere to the principles identified in ASCE 67-17. If there is a conflict with the methodology chosen from AACE 29R-03 and ASCE 67-17, ASCE 67-17 will govern. Choice of methodology should be discussed prior to submission to Government.

3.8.5 Fragmentary Network (Fragnet)

Prepare a proposed fragnet for time impact analysis consisting of a sequence of new activities that are proposed to be added to the project schedule to demonstrate the influence of the delay or impact to the project's contractual dates. Clearly show how the proposed fragnet is to be tied into the project schedule including all predecessors and successors to the fragnet activities. The proposed fragnet must be approved by the Contracting Officer prior to incorporation into the project schedule.

3.8.6 Time Extension

The Contracting Officer must approve the Justification of Delay including the time impact analysis before a time extension will be granted. No time extension will be granted unless the delay consumes all available Project Float and extends the projected finish date ("End Project" milestone) beyond the Contract Completion Date. The time extension will be in calendar days.

Actual delays that are found to be caused by the Contractor's own actions, which result in a calculated schedule delay, are not a cause for an extension to the performance period, completion date, or any interim milestone date.

3.8.7 Impact to Early Completion Schedule

No extended overhead will be paid for delay prior to the original Contract Completion Date for an Early Completion IPS unless the Contractor actually performed work in accordance with that Early Completion Schedule. The Contractor must show that an early completion was achievable had it not been for the impact.

3.9 FAILURE TO ACHIEVE PROGRESS

Should the progress fall behind the approved project schedule for reasons other than those that are excusable within the terms of the contract, the Contracting Officer may require provision of a written recovery plan for approval. The plan must detail how progress will be made-up to include which activities will be accelerated by adding additional crews, longer work hours, extra workdays, etc.

### 3.9.1 Artificially Improving Progress

Artificially improving progress by means such as, but not limited to, revising the schedule logic, modifying, or adding constraints, shortening activity durations, or changing calendars in the project schedule is prohibited. Indicate assumptions made and the basis for any logic, constraint, duration, and calendar changes used in the creation of the recovery plan. Any additional resources, manpower, or daily and weekly work hour changes proposed in the recovery plan must be evident at the work site and documented in the daily report along with the Schedule Narrative Report.

### 3.9.2 Failure to Perform

Failure to perform work and maintain progress in accordance with the supplemental recovery plan may result in an interim and final unsatisfactory performance rating and may result in corrective action directed by the Contracting Officer pursuant to FAR 52.236-15 Schedules for Construction Contracts, FAR 52.249-10 Default (Fixed-Price Construction), and other contract provisions.

### 3.9.3 Recovery Schedule

Should the Contracting Officer find it necessary, submit a recovery schedule pursuant to FAR 52.236-15 Schedules for Construction Contracts.

## 3.10 OWNERSHIP OF FLOAT

Except for the provision given in the paragraph IMPACT TO EARLY COMPLETION SCHEDULE, float available in the schedule, at any time, belongs to the Project and is available for Contractor and Government use. This includes activity and project float. Activity float is the number of workdays that an activity can be delayed without causing a delay to the "End Project" finish milestone. Project float (if applicable) is the number of work days between the projected early finish and the "End Project" finish.

## 3.11 TRANSFER OF SCHEDULE DATA INTO RESIDENT MANAGEMENT SYSTEM

Ensure schedule data is uploaded to RMS. This data is additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and matching electronic versions of the application for progress payment.

## 3.12 PRIMAVERA P6 MANDATORY REQUIREMENTS

Ensure Primavera P6 settings provide a schedule capable of fulfilling the requirements of the contract. The following settings are mandatory and required in all schedule submissions to the Government:

a. Activity Codes must be Project Level, not Global or EPS level.

b. Calendars must be Project Level, not Global or Resource level.

c. Activity Duration Types must be set to "Fixed Duration & Units".

d. Percent Complete Types must be set to "Physical".

e. Time Period Admin Preferences must remain the default "8.0 hr/day, 40 hr/week, 172 hr/month, 2000 hr/year". Set Calendar Work Hours/Day to 8.0 Hour days.

f. Set Schedule Option for defining Critical Activities to "Longest Path".

g. Set Schedule Option for defining progressed activities to "Retained Logic".

h. Set up cost loading using a single lump sum non-labor resource. The Price/Unit must be $1/hr, Default Units/Time must be "8h/d", and settings "Auto Compute Actuals" and "Calculate costs from units" un-selected.

i. Activity ID's must not exceed 10 characters.

j. Activity Names must have a verb-noun structure and contain the most defining and detailed description within the first 30 characters.

k. The daily ending hour for all work calendars must be the same.

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# APPENDIX A

# SUBMITTAL REGISTER

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# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Times Square Video Display Upgrade

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAG # RAPH | CLASSIFICATION | GOVT OR A/E REVWR | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
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| | | 01 14 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
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| | | 01 30 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
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# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Times Square Video Display Upgrade

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAG # RAPH | CLASSIFICATION | GOVT OR A/E REVWR | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
| (a) | (b) | (c) | (d) | (e) | (f) | | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) |
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| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Accident Reports | 1.12.2 | G | RO | | | | | | | | | | | | |
| | | | LHE Inspection Reports | 1.12.3 | | | | | | | | | | | | | | |
| | | | Monthly Exposure Reports | 1.5 | G | RO | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | |
| | | | Activity Hazard Analysis (AHA) | 1.9 | G | RO | | | | | | | | | | | | |
| | | | Certificate of Compliance | 1.12.4 | | | | | | | | | | | | | | |
| | | | Hot Work Permit | 1.13 | | | | | | | | | | | | | | |
| | | | Standard Lift Plan | 1.12.4 | G | RO | | | | | | | | | | | | |
| | | 01 45 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Contractor Quality Control (CQC) | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Plan | | | | | | | | | | | | | | | |
| | | | Additional Requirements For | 1.5.2.2 | G | RO | | | | | | | | | | | | |
| | | | Design Quality Control (DQC) Plan | | | | | | | | | | | | | | | |

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Times Square Video Display Upgrade

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAG # RAPH | CLASSIFICATION | GOVT OR A/E REVWR | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | | APPROVING AUTHORITY | | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | ACTION CODE | DATE OF ACTION | DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR | DATE FWD TO OTHER REVIEWER | DATE RCD FROM OTH REVIEWER | ACTION CODE | DATE OF ACTION | | |
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| | | 01 45 00 | SD-05 Design Data | | | | | | | | | | | | | | | | |
| | | | Design Quality Control | 1.12.2 | | | | | | | | | | | | | | | |
| | | | Discipline-Specific Checklists | 1.5.2.2 | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | | |
| | | | Verification Statement | 1.12.3 | | | | | | | | | | | | | | | |
| | | 01 45 35 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | | |
| | | | Written NDT Practices | 3.1.2 | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | | |
| | | | Special Inspection Daily Reports | 3.1.1 | | | | | | | | | | | | | | | |
| | | | Special Inspection Daily Reports | 3.1.2 | | | | | | | | | | | | | | | |
| | | | Special Inspection Biweekly | 3.1.1 | | | | | | | | | | | | | | | |
| | | | Reports | | | | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | | |
| | | | AISC Certified Steel Fabricator | 2.1 | | | | | | | | | | | | | | | |
| | | | AC472 Accreditation | 2.1 | | | | | | | | | | | | | | | |
| | | | Certificate of Compliance | 2.1 | | | | | | | | | | | | | | | |
| | | | Special Inspector | 1.5 | G | RO | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | | |
| | | | Comprehensive Final Report | 3.1.2 | G | RO | | | | | | | | | | | | | |
| | | | Final Report | 3.1.3 | G | RO | | | | | | | | | | | | | |
| | | 01 50 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | | |
| | | | Construction Site Plan | 1.3 | G | RO | | | | | | | | | | | | | |
| | | | Traffic Control Plan | 3.3.1 | G | RO | | | | | | | | | | | | | |
| | | | Haul Road Plan | 2.2.1 | G | RO | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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| | | 01 50 00 | Contractor Computer | 1.5.1.4 | G | RO | | | | | | | | | | | | |
| | | | Cybersecurity Compliance | | | | | | | | | | | | | | | |
| | | | Statements | | | | | | | | | | | | | | | |
| | | | Contractor Temporary Network | 1.5.6 | G | RO | | | | | | | | | | | | |
| | | | Cybersecurity Compliance | | | | | | | | | | | | | | | |
| | | | Statements | | | | | | | | | | | | | | | |
| | | 01 57 19 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Preconstruction Survey | 1.5.1 | | | | | | | | | | | | | | |
| | | | Regulatory Notifications | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Environmental Manager | 1.5.3 | G | RO | | | | | | | | | | | | |
| | | | Qualifications | | | | | | | | | | | | | | | |
| | | | Employee Training Records | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | Environmental Protection Plan | 1.6 | G | RO | | | | | | | | | | | | |
| | | | Dirt and Dust Control Plan | 1.6.7.1 | G | RO | | | | | | | | | | | | |
| | | | Solid Waste Management Permit | 1.9 | G | RO | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Monthly Solid Waste Disposal | 1.9.1 | G | RO | | | | | | | | | | | | |
| | | | Report | | | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | |
| | | | Employee Training Records | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | |
| | | | Regulatory Notifications | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Assembled Employee Training | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | Records | | | | | | | | | | | | | | | |
| | | | Solid Waste Management Permit | 1.9 | G | RO | | | | | | | | | | | | |
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| | | 01 57 19 | Waste Determination | 3.4.1 | G | RO | | | | | | | | | | | | |
| | | | Documentation | | | | | | | | | | | | | | | |
| | | | Project Solid Waste Disposal | 3.4.2.1 | G | RO | | | | | | | | | | | | |
| | | | Documentation Report | | | | | | | | | | | | | | | |
| | | | Sales Documentation | 3.4.2.1 | G | RO | | | | | | | | | | | | |
| | | | Contractor Certification | 3.4.2.1 | | | | | | | | | | | | | | |
| | | 01 58 00 | SD-02 Shop Drawings | | | | | | | | | | | | | | | |
| | | | Preliminary One Line | 1.3.1.1 | G | RO | | | | | | | | | | | | |
| | | | Sign Legend Orders | 1.4.1 | G | RO | | | | | | | | | | | | |
| | | | SD-04 Samples | | | | | | | | | | | | | | | |
| | | | Final Rendering | 1.3.1.2 | G | RO | | | | | | | | | | | | |
| | | | Final Framed Rendering | 1.3.1.3 | G | RO | | | | | | | | | | | | |
| | | 01 74 19 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Construction Waste Management | 1.7 | G | RO | | | | | | | | | | | | |
| | | | Plan | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Quarterly Reports | 1.9.2 | | | | | | | | | | | | | | |
| | | | Annual Report | 1.9.3 | | | | | | | | | | | | | | |
| | | 01 78 00 | SD-03 Product Data | | | | | | | | | | | | | | | |
| | | | Warranty Management Plan | 1.8.1 | | | | | | | | | | | | | | |
| | | | Warranty Tags | 1.8.5 | | | | | | | | | | | | | | |
| | | | Spare Parts Data | 1.6 | | | | | | | | | | | | | | |
| | | | SD-08 Manufacturer’s Instructions | | | | | | | | | | | | | | | |
| | | | Instructions | 1.8.1 | | | | | | | | | | | | | | |
| | | | SD-10 Operation and Maintenance | | | | | | | | | | | | | | | |
| | | | Data | | | | | | | | | | | | | | | |

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| | | 01 78 00 | Operation and Maintenance | 3.7 | G | RO | | | | | | | | | | | | |
| | | | Manuals | | | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | |
| | | | As-Built Drawings | 3.1 | G | RO | | | | | | | | | | | | |
| | | | Record Drawings | 3.3 | G | RO | | | | | | | | | | | | |
| | | | Record Model | 2.2 | G | RO | | | | | | | | | | | | |
| | | | As-Built Record of Equipment | 3.6 | | | | | | | | | | | | | | |
| | | | and Materials | | | | | | | | | | | | | | | |
| | | | Warranted Equipment and | 1.8.1 | | | | | | | | | | | | | | |
| | | | Materials | | | | | | | | | | | | | | | |
| | | | Final Approved Shop Drawings | 3.4 | G | RO | | | | | | | | | | | | |
| | | | Construction Contract | 3.5 | G | RO | | | | | | | | | | | | |
| | | | Specifications | | | | | | | | | | | | | | | |
| | | | Certification of EPA Designated | 2.3 | G | RO | | | | | | | | | | | | |
| | | | Items | | | | | | | | | | | | | | | |
| | | | Certification Of USDA Designated | 2.4 | G | RO | | | | | | | | | | | | |
| | | | Items | | | | | | | | | | | | | | | |
| | | | Interim DD FORM 1354 | 3.9.1 | G | RO | | | | | | | | | | | | |
| | | | List Of Installed Building | 3.9.2 | | | | | | | | | | | | | | |
| | | | Equipment Items For DD Form | | | | | | | | | | | | | | | |
| | | | 1354 | | | | | | | | | | | | | | | |
| | | 01 78 23 | SD-10 Operation and Maintenance | | | | | | | | | | | | | | | |
| | | | Data | | | | | | | | | | | | | | | |
| | | | Facility Data Workbook | 1.4 | G | RO | | | | | | | | | | | | |
| | | | Training Plan | 3.1.1 | G | RO | | | | | | | | | | | | |
| | | | Training Outline | 3.1.3 | G | RO | | | | | | | | | | | | |

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| | | 01 78 23 | Training Content | 3.1.2 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Progress Submittal | 3.2.1 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Prefinal Submittal | 3.2.2 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Final Submittal | 3.2.3 | G | RO | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | | |
| | | | Training Video Recording | 3.1.4 | G | RO | | | | | | | | | | | | | |
| | | | Validation of Training Completion | 3.1.6 | G | RO | | | | | | | | | | | | | |
| | | | Training Plan | 3.1.1 | G | RO | | | | | | | | | | | | | |
| | | | Record Drawings And Utility Systems | 1.6.6.7 | G | RO | | | | | | | | | | | | | |

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# APPENDIX B

# Eng Form 4025-R

| TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE<br>For use of this form, see ER 415-1-10; the proponent agency is CECW-CE. | DATE | TRANSMITTAL NO. |
|---|---|---|

**SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS** (*This section will be initiated by the contractor*)

| TO: | FROM: | CONTRACT NO. | CHECK ONE:<br>☐ THIS IS A NEW TRANSMITTAL<br>☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____ |
|---|---|---|---|

| SPECIFICATION SEC. NO. (*Cover only one section with each transmittal*) | PROJECT TITLE AND LOCATION | THIS TRANSMITTAL IS FOR: (*Check one*)<br>☐ FIO ☐ GA ☐ DA ☐ CR ☐ DA/CR ☐ DA/GA |
|---|---|---|

| ITEM NO. (*See Note 3*)<br>a. | DESCRIPTION OF SUBMITTAL ITEM (*Type size, model number/etc.*)<br>b. | SUBMITTAL TYPE CODE (*See Note 8*)<br>c. | NO. OF COPIES<br>d. | CONTRACT DOCUMENT REFERENCE | | CONTRACTOR REVIEW CODE<br>g. | VARIATION Enter "Y" if requesting a variation (*See Note 6*)<br>h. | USACE ACTION CODE (*Note 9*)<br>i. |
|---|---|---|---|---|---|---|---|---|
| | | | | SPEC. PARA. NO.<br>e. | DRAWING SHEET NO.<br>f. | | | |
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| REMARKS | I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated. | |
|---|---|---|
| | NAME OF CONTRACTOR | SIGNATURE OF CONTRACTOR |

**SECTION II - APPROVAL ACTION**

| ENCLOSURES RETURNED (*List by item No.*) | NAME AND TITLE OF APPROVING AUTHORITY | SIGNATURE OF APPROVING AUTHORITY | DATE |
|---|---|---|---|
| | | | |

## INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each Transmittal shall be numbered consecutively. The Transmittal Number typically includes two parts separated by a dash (-). The first part is the specification section number. The second part is a sequential number for the submittals under that spec section. If the Transmittal is a resubmittal, then add a decimal point to the end of the original Transmittal Number and begin numbering the resubmittal packages sequentially after the decimal.

3. The "Item No." for each entry on this form will be the same "Item No." as indicated on ENG FORM 4288-R.

4. Submittals requiring expeditious handling will be submitted on a separate ENG Form 4025-R.

5. Items transmitted on each transmittal form will be from the same specification section. Do not combine submittal information from different specification sections in a single transmittal.

6. If the data submitted are intentionally in variance with the contract requirements, indicate a variation in column h, and enter a statement in the Remarks block describing he detailed reason for the variation.

7. ENG Form 4025-R is self-transmitting - a letter of transmittal is not required.

8. When submittal items are transmitted, indicate the "Submittal Type" (*SD-01 through SD-11*) in column c of Section I.
   Submittal types are the following:
   SD-01 - Preconstruction SD-02 - Shop Drawings SD-03 - Product Data SD-04 - Samples SD-05 - Design Data SD-06 - Test Reports
   SD-07 - Certificates SD-08 - Manufacturer's Instructions SD-09 - Manufacturer's Field Reports SD-10 - O&M Data SD-11 - Closeout

9. For each submittal item, the Contractor will assign Submittal Action Codes in column g of Section I. The U.S. Army Corps of Engineers approving authority will assign Submittal Action Codes in column i of Section I. The Submittal Action Codes are:

   A -- Approved as submitted.
   B -- Approved, except as noted on drawings. Resubmission not required.
   C -- Approved, except as noted on drawings. Refer to attached comments. Resubmission required.
   D -- Will be returned by separate correspondence.
   E -- Disapproved. Refer to attached comments.
   F -- Receipt acknowledged.
   X -- Receipt acknowledged, does not comply with contract requirements, as noted.
   G -- Other action required *(Specify)*
   K -- Government concurs with intermediate design. (*For D-B contracts*)
   R -- Design submittal is acceptable for release for construction. (*For D-B contracts*)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract.

SECTION 01 33 00

SUBMITTAL PROCEDURES
**08/18, CHG 4: 02/21**

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Information

The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

Units of weights and measures used on all submittals are to be the same as those used in the contract drawings.

1.1.2 Project Type

The Contractor and the Designer of Record (DOR), if applicable, are to check and approve all items before submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

1.1.3 Submission of Submittals

Schedule and provide submittals requiring Government approval before acquiring the material or equipment covered thereby. Pick up and dispose of samples not incorporated into the work in accordance with manufacturer's Safety Data Sheets (SDS) and in compliance with existing laws and regulations.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

SD-01 Preconstruction Submittals

Submittals that are required prior to or at the start of construction (work) or the next major phase of the construction on a multiphase contract.

Government approved Division 01 preconstruction submittals that are required prior to or commencing with the start of work must be submitted within 30 calendar days of contract award unless specified elsewhere in

the specifications. Contractor approved Division 01 submittals that are required prior to or commencing with the start of work must be submitted within 45 calendar days of contract award unless specified elsewhere in the specifications.

Preconstruction Submittals include schedules and a tabular list of locations, features, and other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates Of Insurance

Surety Bonds

List Of Proposed Subcontractors

List Of Proposed Products

Baseline Network Analysis Schedule (NAS)

Submittal Register

Schedule Of Prices Or Earned Value Report

Accident Prevention Plan

Work Plan

Quality Control (QC) plan

Environmental Protection Plan

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those that will be removed at conclusion of the work.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

Design submittals, design substantiation submittals and extensions of design submittals.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. Unless specified in another section, testing must have been within three years of date of contract award for the project.

Report that includes findings of a test required to be performed on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report that includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily logs and checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that the product, system, or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor. The document purpose is to further promote the orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.

Confined space entry permits

Text of posted operating instructions

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Safety Data Sheets(SDS)concerning impedances, hazards and safety precautions.

SD-10 Operation and Maintenance Data

Data provided by the manufacturer, or the system provider, including manufacturer's help and product line documentation, necessary to maintain and install equipment, for operating and maintenance use by facility personnel.

Data required by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

Data incorporated in an operations and maintenance manual or control system.

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Submittals required for Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

1.2.3 Work

As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction. In exception, excludes work to produce SD-01 submittals.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal Register; G

## 1.4 SUBMITTAL CLASSIFICATION

### 1.4.1 Government Approved (G)

Government approval is required for any variations from the Solicitation or the Accepted Proposal and for other items as designated by the Government.

Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, submittals are considered to be "shop drawings."

### 1.4.2 Design-Build Submittal Classifications

#### 1.4.2.1 Designer of Record Approved (DA)

Designer of Record (DOR) approval is required for extensions of design; critical materials; any variations from the Solicitation, the Accepted Proposal, or the completed design; equipment whose compatibility with the entire system must be checked; and other items as designated by the Contracting Officer. Provide the Government with the number of copies designated hereinafter of all DOR approved submittals. The Government may review any or all Designer of Record approved submittals for conformance with the Solicitation, the Accepted Proposal, and the completed design. The Government will review all submittals designated as varying from the Solicitation or Accepted Proposal, as described below. Provide design submittals in accordance with Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD). Generally, list design submittals under SD-05 Design Data.

#### 1.4.2.2 Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards, and contract requirements. Design data includes the design documents described in Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

#### 1.4.2.3 Designer of Record Approved/Government Conformance Review (DA/CR)

##### 1.4.2.3.1 Variations from the Accepted Design

DOR approval and the Government's concurrence are required for any proposed variation from the accepted design that still complies with the contract before the Contractor is authorized to proceed with material acquisition or installation. If necessary to facilitate the project schedule, before official submission to the Government, the Contractor and the DOR may discuss with the Contracting Officer's Representative a submittal proposing a variation. However, the Government reserves the right to review the submittal before providing an opinion. In any case, the Government will not formally agree to or provide a preliminary opinion on any variation without the DOR's approval or recommended approval. The Government reserves the right to reject any design, variation that may affect furniture, furnishings, equipment selections, or operational decisions that were made, based on the reviewed and concurred design.

##### 1.4.2.3.2 Substitutions

Unless prohibited or otherwise provided for elsewhere in the contract,

where the Accepted Proposal named products, systems, materials or equipment by manufacturer, brand name, model number, or other specific identification, and the Contractor desires to substitute a manufacturer or model after award, submit a requested substitution for Government concurrence. Include substantiation, through identifying information and the DOR's approval, that the substitute meets the contract requirements and that it is equal in function, performance, quality, and salient features to that in the accepted contract proposal. If the contract otherwise prohibits substitutions of equal named products, systems, materials or equipment by manufacturer, brand name, model number or other specific identification, the request is considered a "variation" to the contract. Variations are discussed below in paragraphs: "DESIGNER OF RECORD APPROVED/GOVERNMENT APPROVED" and VARIATIONS.

1.4.2.4 Designer of Record Approved/Government Approved (DA/GA)

In addition to the above-stated requirements for proposed variations to the accepted design, both DOR and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation for any proposed variation to the contract (the Solicitation or the Accepted Proposal), that constitutes a change to the contract terms. The Government reserves the right to accept or reject any such proposed variation.

1.4.3 For Information Only

Submittals not requiring Government approval will be for information only. For Design-build construction all submittals not requiring DOR or Government approval will be for information only. Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are not considered to be "shop drawings."

1.5 PREPARATION

1.5.1 Transmittal Form

Use the ENG Form 4025-R transmittal form for submitting both Government-approved and information-only submittals. Submit in accordance with the instructions on the reverse side of the form. These forms or similar forms are included in the RMS CM software that the Contractor is required to use for this contract. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

1.5.2 Submittal Format

1.5.2.1 Format of SD-01 Preconstruction Submittals

When the submittal includes a document that is to be used in the project, or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

1.5.2.2 Format for SD-02 Shop Drawings

Provide shop drawings not less than 8 1/2 by 11 inches nor more than 30 by 42 inches, except for full-size patterns or templates. Prepare drawings to accurate size, with scale indicated, unless another form is required. Ensure drawings are suitable for reproduction and of a quality to produce clear, distinct lines and letters, with dark lines on a white background.

a. Include the nameplate data, size, and capacity on drawings. Also include applicable federal, military, industry, and technical society publication references.

b. Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

1.5.2.2.1 Drawing Identification

Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph IDENTIFYING SUBMITTALS.

Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location next to the title block. Place the Government contract number in the margin, immediately below the title block, for each drawing.

Reserve a blank space, no smaller than 4 inches inches on the right-hand side of each sheet for the Government disposition stamp.

1.5.2.3 Format of SD-03 Product Data

Present product data submittals for each section. Include a table of contents, listing the page and catalog item numbers for product data.

Indicate, by prominent notation, each product that is being submitted; indicate the specification section number and paragraph number to which it pertains.

1.5.2.3.1 Product Information

Supplement product data with material prepared for the project to satisfy the submittal requirements where product data does not exist. Identify this material as developed specifically for the project, with information and format as required for submission of SD-07 Certificates.

Provide product data in units used in the Contract documents. Where product data are included in preprinted catalogs with another unit, submit the dimensions in contract document units, on a separate sheet.

1.5.2.3.2 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters

Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.3.3 Data Submission

Collect required data submittals for each specific material, product, unit of work, or system into a single submittal that is marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of the construction effort.

Submit the manufacturer's instructions before installation.

1.5.2.4 Format of SD-04 Samples

1.5.2.4.1 Sample Characteristics

Furnish samples in the following sizes, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:

a. Sample of Equipment or Device: Full size.

b. Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.

c. Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.

d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.

e. Sample Volume of Nonsolid Materials: Pint. Examples of nonsolid materials are sand and paint.

f. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard unit.

g. Sample Panel: 4 by 4 feet.

h. Sample Installation: 100 square feet.

1.5.2.4.2 Sample Incorporation

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at the time of use.

Recording of Sample Installation: Note and preserve the notation of any area constituting a sample installation, but remove the notation at the final clean-up of the project.

1.5.2.4.3 Comparison Sample

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range. Mark each unit to describe its relation to the range of the variation.

When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.5.2.5 Format of SD-05 Design Data

Provide design data and certificates on 8 1/2 by 11 inch paper.

1.5.2.6 Format of SD-06 Test Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.2.7 Format of SD-07 Certificates

Provide design data and certificates on 8 1/2 by 11 inch paper.

1.5.2.8 Format of SD-08 Manufacturer's Instructions

Present manufacturer's instructions submittals for each section. Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry, and technical-society publication references. If supplemental information is needed to clarify the manufacturer's data, submit it as specified for SD-07 Certificates.

Submit the manufacturer's instructions before installation.

1.5.2.8.1 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.9 Format of SD-09 Manufacturer's Field Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.2.10 Format of SD-10 Operation and Maintenance Data (O&M)

Comply with the requirements specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA for O&M Data format.

1.5.2.11 Format of SD-11 Closeout Submittals

When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

1.5.3 Source Drawings for Shop Drawings

1.5.3.1 Source Drawings

The entire set of source drawing files (DWG) will not be provided to the Contractor. Request the specific Drawing Number for the preparation of shop drawings. Only those drawings requested to prepare shop drawings will be provided. These drawings are provided only after award.

1.5.3.2 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim, and waives to the fullest extent permitted by law any claim or cause of action of any nature against the Government, its agents, or its subconsultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities, or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic source drawing files are not construction documents. Differences may exist between the source drawing files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic source drawing files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. The Contractor is responsible for determining if any conflict exists. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished source drawing files, the signed and sealed construction documents govern. Use of these source drawing files does not relieve the Contractor of the duty to fully comply with the contract documents, including and without limitation the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to

this contract, remove all previous indication of ownership (seals, logos, signatures, initials and dates).

## 1.6 QUANTITY OF SUBMITTALS

### 1.6.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit two sets of administrative submittals.

### 1.6.2 Number of SD-04 Samples

a. Submit two samples, or two sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.

b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.

c. Submit one sample installation, where directed.

d. Submit one sample of nonsolid materials.

## 1.7 INFORMATION ONLY SUBMITTALS

Submittals without a "G" designation must be certified by the QC manager and submitted to the Contracting Officer for information-only. Provide information-only submittals to the Contracting Officer a minimum of 14 calendar days prior to the Preparatory Meeting for the associated Definable Feature of Work (DFOW). Approval of the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. For Design-Build construction, the Government will retain two copies of information-only submittals.

## 1.8 PROJECT SUBMITTAL REGISTER

A sample Project Submittal Register showing items of equipment and materials for when submittals are required by the specifications is provided as "Attachment A - Submittal Register."

### 1.8.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output in columns (a), (g), (h), and (i) as approved. As an attachment, provide a submittal register showing

items of equipment and materials for which submittals are required by the specifications. This list may not be all-inclusive and additional submittals may be required. Maintain a submittal register for the project in accordance with Section 01 45 00.15 10 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE(RMS CM). The Government will provide the initial submittal register

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD Number. and type, e.g., SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in each specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting the project requirements.

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on which submittals are received by and returned by the Government.

1.8.2 Design-Build Submittal Register

The Designer of Record develops a complete list of submittals during design and identify required submittals in the specifications, and use the list to prepare the Submittal Register. The list may not be all inclusive and additional submittals may be required by other parts of the contract. Complete the submittal register and submit it to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. Coordinate the submit dates and need dates with dates in the Contractor prepared progress schedule. Submit monthly or until all submittals have been satisfactorily completed, updates to the submittal register showing the Contractor action codes and actual dates with Government action codes. Revise the submittal register when the progress schedule is revised and submit both for approval.

1.8.3 Preconstruction Use of Submittal Register

Submit the submittal register. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for the approving authority to receive submittals.

Column (h) Contractor Approval Date: Date that Contractor needs approval of submittal.

Column (i) Contractor Material: Date that Contractor needs

material delivered to Contractor control.

1.8.4 Contractor Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in the program used by the Contractor with each submittal throughout the contract.

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (l) Date submittal transmitted.

Column (q) Date approval was received.

1.8.5 Approving Authority Use of Submittal Register

Update the following fields:

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (l) Date submittal was received.

Column (m) through (p) Dates of review actions.

Column (q) Date of return to Contractor.

1.8.6 Action Codes

1.8.6.1 Contractor Action Codes

| DESIGN BUILD SUBMITTALS | | | |
|---|---|---|---|
| Submittal Classifications shown in UFGS Sections | Submittal Classification | Corresponding SpecsIntact Submittal Register Code which is populated in the SI Submittal Register. Software Limitations: (The software shows one character delineation in the SpecsIntact Submittal Register) | RMS – The following Submittal Classifications are populated in RMS when the SpecsIntact Submittal Data File is pulled into RMS) |
| G | Submittal requires Government Approval | G | GA |

| DESIGN BUILD SUBMITTALS | | | |
|---|---|---|---|
| BLANK | Submittal is For Information Only(FIO) | BLANK | FIO |
| DA | Submittal requires Designer of Record Approval | D | DA |
| CR | Submittal requires Government Conformance Review | C | CR |
| DA/CR | Submittal requires Designer of Record Approval and Government Conformance Review | R | DA/CR |
| DA/GA | Submittal requires Designer of Record Approval and Government Approval | A | DA/GA |

1.8.7 Delivery of Copies

Submit an updated electronic copy of the submittal register to the Contracting Officer with each invoice request. Provide an updated Submittal Register monthly regardless of whether an invoice is submitted.

1.9 VARIATIONS

Variations from contract requirements require Contracting Officer approval pursuant to contract Clause FAR 52.236-21 Specifications and Drawings for Construction, and will be considered where advantageous to the Government.

1.9.1 Considering Variations

Discussion of variations with the Contracting Officer before submission of a variation submittal will help ensure that functional and quality requirements are met and minimize rejections and resubmittals. For variations that include design changes or some material or product substitutions, the Government may require an evaluation and analysis by a licensed professional engineer hired by the contractor.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

1.9.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Contracting Officer, with documentation illustrating the nature and features of the variation including any necessary technical submittals and why the variation is desirable and beneficial to

Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

Check the column "variation" of ENG Form 4025 for submittals that include variations proposed by the Contractor. Set forth in writing the reason for any variations and note such variations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted variations.

1.9.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.9.4 Review Schedule Extension

In addition to the normal submittal review period, a period of 14 calendar days will be allowed for the Government to consider submittals with variations.

1.10 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals. Allow an additional 14 calendar days for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.

b. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."

c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within 30 calendar days after

the date of submission.

1.10.1 Government Reviewed Design

The Government will review design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Government review is required for variations from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the DOR's design documents do not include enough detail to ascertain contract compliance. The Government may, but is not required to, review extensions of design such as structural steel or reinforcement shop drawings.

1.11 GOVERNMENT APPROVING AUTHORITY

When the approving authority is the Contracting Officer, the Government will:

a. Note the date on which the submittal was received.

b. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date submittals. One (1) copies of the submittal will be retained by the Contracting Officer and one (1) copies of the submittal will be returned to the Contractor.If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be identified and returned, as described above.

1.11.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.

b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.

c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.

d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals

returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Government. This applies only to "information-only submittals" as previously defined.

1.12 DISAPPROVED SUBMITTALS

Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only thatthe general method of construction, materials, detailing, and other information are satisfactory. The design, general method of construction, materials, detailing, and other information appear to meet the Solicitation and Accepted Proposal.

Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained with in each submittal accurately conforms with the requirements of the contract documents.

After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.14 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not be construed to change or modify any contract requirements. Before submitting samples, provide assurance that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those that may be damaged in testing, will be returned to the Contractor, at its expense, upon completion of the contract. Unapproved samples will also be returned to the Contractor at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient

cause for refusal to consider, under this contract, any further samples of the same brand or make as that material. The Government reserves the right to disapprove any material or equipment that has previously proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Replace such materials or equipment to meet contract requirements.

1.15 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made unless all required DOR approvals or required Government approvals have been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information-only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.16 CERTIFICATION OF SUBMITTAL DATA

Certify the submittal data as follows on Form ENG 4025: "I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

_____NAME OF CONTRACTOR _____ SIGNATURE OF CONTRACTOR

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 33 16.00 10

DESIGN DATA (DESIGN AFTER AWARD)

**05/16**

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DESIGN DATA (DESIGN AFTER AWARD)
**05/16**

PART 1 GENERAL

1.1 SUMMARY

After award, develop the accepted proposal into the completed design, as described herein. Use a collaborative, integrated design process for all stages of project delivery with comprehensive performance goals for site development, energy, water, material selection, indoor environmental quality, and waste diversion. Ensure incorporation of these goals in project delivery. Consider all stages of the building lifecycle, including deconstruction, rehabilitation, re-purposing, or demolition.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

| | |
|---|---|
| ISO 19005-3 | (2012) Document Management -- Electronic Document File Format for Long-Term Preservation -- Part 3: Use of ISO 32000-1 with Support for Embedded Files (PDF/A-3) |
| ISO 32000-1 | (2008) Document Management -- Portable Document Format -- Part 1: PDF 1.7 |

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

| | |
|---|---|
| NBIMS-US | (V3) National BIM Standard - United States |
| NCS | (V6) United States National CAD Standard |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 1110-1-2909 | (2012) Engineering and Design -- Geospatial Data and Systems |
| ERDC/ITL SR-23-1 | (2023) A/E/C Graphics Standard, Release 2.2 |
| ERDC/ITL SR-24-3 | (2024) A/E/C CAD Standard – Release 6.2 |

U.S. DEPARTMENT OF DEFENSE (DOD)

| | |
|---|---|
| UFC 1-300-02 | (2014; with Change 3, 2021) Unified Facilities Guide Specifications (UFGS) Format Standard |
| UFC 3-101-01 | (2020; with Change 4, 2024) Architecture |

| | |
|---|---|
| UFC 4-010-01 | (2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings |
| UFC 4-023-03 | (2009; with Change 4, 2024) Design of Buildings to Resist Progressive Collapse |

1.3 DEFINITIONS

1.3.1 Designer of Record (DOR)

Professional Registered members of the Contractor’s Design-Build team that check, approve, sign, date, and certify, prior to submitting the deliverables to the Government, that the D-B design submittals comply with the contract requirements.

The DOR's stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage. The DOR(s) are responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination, review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional design responsibilities.

1.3.2 Government Furnished Material (GFM)

Government material that may be incorporated into, or attached to, an end item to be delivered under a contract or which may be consumed in the performance of a contract. It includes, but is not limited to, raw and processed material, parts, components, assemblies, and small tools and supplies.

1.3.3 Advanced Modeling

A subset of geospatial technologies as defined in EM 1110-1-2909 to include BIM, CIM, GIS, and CAD. Advanced Modeling is comprised of models and drawings that form a digital representation of the project, or part thereof, that are comprised of model elements with facility data.

1.3.4 Model Element

A self-contained graphical element with a unique identification that is used to populate a model, and whose behavior and properties are defined by facility/site data and software processes. Model elements can represent a physical entity, such as a pump, a concrete wall, or a utility vault and range from the simple to the complex and can be custom modified.

1.3.5 USACE Minimum Modeling Matrix (M3)

The USACE Minimum Modeling Matrix (M3) describes the minimum modeling and data requirements by defining the level of development (LOD) and element grade.

1.3.6 Facility Data

Non-graphical data attached to surface and subsurface components for both building and site model elements that describe various facility characteristics such as parametric values that drive physical sizes, material definitions (e.g. wood, metal), manufacturer data, industry standards (e.g. AISC steel properties), location, and project identification numbers. Facility data can also define supplementary physical entities that are not shown graphically in the model, such as the system of a duct, hardware on a door, content of conduit, site surface, alignment, levee, channel or transformer properties.

1.3.7 Industry Foundation Class (IFC)

IFC are a standard and file format used for the exchange of model elements and data; see http://www.iai-tech.org. In the context of this section, IFC does not mean "Issued For Construction."

1.3.8 Model Uses

A Model Use is a method or strategy of applying modeling during a facility's life cycle to achieve one or more specific objectives. Reference NBIMS-US for the definitive list of Model Uses and definitions.

1.3.9 USACE BIM/CIM Platform Configuration Standards - Templates, Workspaces, Catalogs, and Environments

1.3.9.1 USACE Revit Templates

The USACE Revit templates are discipline specific and include family content pertinent to that discipline. The templates share standard symbology such as annotation families, line styles, and text styles. The templates include pre-defined shared parameters.

1.3.10 USACE CAD/BIM Technology Center

The USACE CAD/BIM Technology Center hosts all standard content for USACE. This content can be accessed through the CAD/BIM Technology Center website, .

1.4 ORDER OF PRECEDENCE

In the event of a conflict or inconsistency between any of the requirements within the Contract, precedence is applied:

a. Any portions of the accepted proposal which both conform to and exceed the requirements of the solicitation.

b. The provisions of the solicitation.

c. All other provisions of the accepted proposal.

d. Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, and equipment installation drawings. These are "deliverables" under the contract are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence.

## 1.5 PRECONSTRUCTION ACTIVITIES

### 1.5.1 Design Quality Control Plan

Submit a Design Quality Control Plan in accordance with Section 01 45 00 QUALITY CONTROL before design may proceed.

### 1.5.2 Meetings and Conferences

#### 1.5.2.1 Post Award Conference

The Government will conduct a post award conference at the project site , as soon as possible after Contract award, coordinated with issuance of the notice to proceed (NTP). Participation by the Contractor and major subcontractor representatives is mandatory. All designers need not attend this first meeting. The government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

As a minimum the following will be addressed during the conference: determination and introduction of contact person and their authorities; contract administration requirements; discussion of expected project progress processes; and coordination of subsequent meeting.

a. The government will introduce the Government project delivery team members, facility users, facility command representatives, and installation representatives.

b. Introduce key personal, major subcontractors and other needed staff.

c. Define expectations and duties of each participant.

d. Develop a meeting roster with complete contact information including name, office, project role, phone, mailing and physical address, and e-mail address for distribution to all participants. Also, provide minutes of the meeting to all participants.

#### 1.5.2.2 Initial Design Conference

After Contract award, conduct the initial design conference, and provide a record of the meeting. All Designers of Record must participate in the conference. The primary purpose of the meeting is to make sure any needs are assigned and due dates established, as well as points of contact identified. The initial design conference may be scheduled and conducted at the project installation after the Post Award Conference and prior to initiation of significant preliminary design development, although it is recommended that the partnering process be initiated at the time of or before the initial design conference. Limit any design work conducted after award and prior to this conference to site work.

#### 1.5.2.3 Advanced Modeling Kick-Off Meeting

Conduct an Advanced Modeling Kick-Off Meeting prior to submission of the Advanced Modeling PxP, within 45 days after Notice to Proceed. Required meeting attendance includes, at a minimum, the DOR, the design drawing and modeling specialist and the Geographic District BIM Manager or delegate.

The intent of this meeting is to coordinate the expectations for the Advanced Modeling PxP.

1.5.2.4 Advanced Modeling PxP Demonstration Meeting

Within 30 days after the acceptance of the Advanced Modeling PxP and M3, conduct a demonstration to review the Plan for clarification, and to verify the functionality of planned Model technology workflow and processes. If modifications are required, complete the modifications and resubmit the Advanced Modeling PxP performing a subsequent demonstration for Government acceptance.

1.5.2.5 Pre-Construction Conference

Before starting any construction activities, jointly conduct an administrative conference with the Government to discuss any outstanding requirements and to review local installation requirements. It is possible there will be multiple Pre-Construction Conferences based on the configuration of the design packages. Provide minutes of the meeting(s) to all participants.

1.6 SUBMITTALS

Each submittal includes an associated approval level designation as defined in the following table:

| Approval Level Designation | Definition |
|---|---|
| G | Government approval |
| no designation | for information only |
| D | Designer of Record approval |
| C | Government Conformance Review of Design |
| R | Designer of Record Approval and Government Conformance Review |
| A | Designer of Record Approval and Government Approval |

When used, a designation following the approval level designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Advanced Modeling Project Execution Plan (PxP); C,

Design Quality Control Plan; G, RO

Initial Design Conference

Preconstruction Conference

DCM Procedures; G, RO

Submittal Register; G, RO

SD-05 Design Data

Design and Code Checklists; C,

Interim Design Submittals; R,

Building Rendering

Interior And Exterior Building Finishes Scheme; G, RO

Conference Documentation

Final Design Submittals; R,

Design Complete Documents; C,

SD-11 Closeout Submittals

DD Form 1354; A,

## 1.7 DESIGN QUALITY CONTROL

### 1.7.1 Design And Code Checklists

Develop and utilize appropriate discipline-specific checklists during the design and quality control of each submittal. Submit these completed checklists with each design submittal, as applicable, as part of the project documentation. See Section 01 45 00 Contractor Quality Control and paragraph FIRE PROTECTION AND LIFE SAFETY CODE REVIEW for a sample Fire Protection and Life Safety Code Review checklist.

### 1.7.2 Advanced Modeling Project Execution Plan (PxP)

Develop an Advanced Modeling Project Execution Plan ("Plan" or "PxP") documenting mandatory and Contractor-elected BIM Uses, analysis technologies and workflows. Submit the PxP within 45 days after issuance of Notice to Proceed.

Use the USACE ADVANCED MODELING PROJECT EXECUTION PLAN (PxP) Template located at the USACE CAD/BIM Technology Center website to develop an acceptable Plan and update to include platforms and processes to meet the requirements of the project.

#### 1.7.2.1 M3 Template

Use the M3 Template located at the USACE CAD/BIM Technology Center website and submit as part of the Advanced Modeling PxP.

#### 1.7.2.2 Model Uses

Mandatory Model Uses are predefined in the Project Execution Plan (PxP) and cannot be modified. Identify additional elected Model Uses in the PxP.

## 1.8 DELIVERY, STORAGE, AND HANDLING

### 1.8.1 Electronic Design Submittal

Provide identical copies of discs for approval, for each submittal required. Provide quantities and sizes indicated in Section 01 33 00 SUBMITTAL PROCEDURES the distribution list at the end of this specification section. Provide on approved electronic media (one copy per disc or set of discs) as defined below. Provide submittal files on electronic storage media in compliance with the quality requirements identified in this specification.

#### 1.8.1.1 Malicious Content

Scan all electronic files for malicious viruses using commercially available scanning program that is routinely updated to identify and remove current virus threats.

#### 1.8.1.2 Storage Media

Provide project data on disc-based (DVD±R/RW) media. Provide the full submittal on one single disc whenever possible. When separation of the submittal is required separate deliverables onto separate media. Document any media divisions in the PxP for approval by the Contracting Officer.

a. Directly print identification of contents onto storage media. Do not provide adhesived labels. Include the name of the submittal, project, project location, Contract number, Designer of Record firm/Prime Contractor company's name, title of submission, and security classification (in accordance with the applicable security classification labeling regulations) on the label. If multiple discs are provided, clearly document the contents of each disc on the label.

b. Include the name and contact information of the individual who produced the final data disc to ensure that any problems with the data or media can be easily resolved.

c. When browsed on any computer, the disc displays the following folders and their associated content:

   (1) Submittal files (containing all submittal data)

   (2) All supporting documents associated with the submittal

   (3) Readme containing one TXT, PDF, or HTML file with general use information, organizational instructions, and basic preparer contact information.

### 1.8.2 Advanced Model File Packaging

Execute the following actions for all design drawing and modeling files:

#### 1.8.2.1 Autodesk AutoCAD

a. Purge unused

b. Audit

c. Compress

1.8.3 PDF File Packaging

Utilize PDF file format in accordance with ISO 32000-1 and ISO 19005-3. Provide files from original sources, text-searchable, and saved in "Standard" (uncompressed) resolution whenever possible.

1.8.3.1 Bookmarking

a. Bookmark drawing submittal PDF sets to include one Parent Bookmark per Discipline and one Child Bookmark per sheet within each Discipline. Format Parent Bookmarks as "Discipline" (e.g. Architectural). Format Child Bookmarks as "Sheet ID Sheet Title" (e.g. A-101 First Floor Plan).

b. Bookmark specification submittal PDF sets using the SpecsIntact Print Processing PDF Print/Publish feature, combining processed sections into one PDF document. Insert the Submittal Register into the file where specified by Section 01 33 00 SUBMITTAL PROCEDURES and bookmark.

c. Bookmark design analysis and calculation submittal PDF sets to include one Parent Bookmark per design analysis section and one Child Bookmark per major paragraph per section. Format Parent Bookmarks as "Section" (e.g. Architectural). Format Child Bookmarks as "major paragraph designation Sheet Title" (e.g. 2.1 Primary Facility Functions).

1.8.3.2 Hyperlinking

Hyperlink all reference annotation symbology (e.g. section cut symbology, detail callout symbology, elevation callout symbology) to the sheet referenced by the annotation.

PART 2 PRODUCTS

2.1 ADVANCED MODELING DOCUMENTS

Provide all of the following documents with each design submittal.

2.1.1 Submitted Files List

Provide list of all submitted electronic files including a description, directory, and file name for each file submitted. Identify which files have been produced from the Model and Facility Data. For all Sheet files, include a list of the sheet titles and sheet numbers.

2.1.2 Advanced Modeling Submittal Checklist

Complete the USACE BIM/CIM Advanced Modeling Submittal Checklist and include with each submittal. Download the Checklist from the USACE CAD/BIM Technology Center website (https://cadbimcenter.erdc.dren.mil/).

2.1.3 Advanced Modeling Electronic Files

Include all Advanced Modeling files associated with the contract scope of work.

2.1.3.1 3D Interactive Review Model

Provide a copy of each BIM and CIM Model in an approved interactive review format. Use Google Earth (KMZ) or other Government Approved format documented in the PxP for the 3D Interactive Review Model format.

2.1.3.2 Industry Foundation Class (IFC) Coordination View

Provide an IFC Coordination View for all deliverables. Provide exported property set data for all IFC supported named building elements. Submit all IFC models in the IFC2x3 Coordination View V2.0 schema.

2.1.3.3 Quality Control (QC) Reports

As a minimum, include the following reports:

2.1.3.3.1 Model Standards Checks and Reports

Provide QC checks demonstrating adherence to the NCS v6.0 BIM Implementation section. Identify and report non-compliant elements and submit a corrective action plan. Provide the Government with detailed justification and request Government acceptance for any non-compliant elements that the Contractor proposes to be allowed to remain in the Model. Verify the following for the Model(s) and Facility Data set:

a. No undefined, incorrectly defined, or duplicated elements.

a. No errors when opening.

b. No broken Links, References, or X-References.

c. Minimized extraneous information.

d. Content uses the coordinate system defined in the approved PxP.

e. Models share a common alignment point.

f. For a Design Complete or Record Submittal; no unloaded Links, References, or X-References exist.

2.1.3.3.2 Graphics Standards Checks and Report

Provide QC checks on all graphic deliverables demonstrating that the fonts, dimensions, symbology and other construction document formatting are compliant with the requirements of this specification. Identify and report non-compliant content.

2.1.3.3.3 CAD Standards Checks and Report

Provide QC checks on CAD Output demonstrating that filenames, sheet borders, layer/level names, and symbology are compliant with the requirements of this specification. Identify and report non-compliant content.

2.1.3.3.4 Interference Management (3D Coordination) Checks and Report

Execute Interference Management checks and provide a summary of the results noting total hard interferences (e.g., mechanical vs. structural, or

mechanical vs. mechanical, overlaps in the same location) and soft interferences (e.g., conflicts regarding equipment clearance, service access, fireproofing, insulation, code space requirements).

2.1.3.3.5 Additional Parameters

Additional QC parameters as deemed appropriate for the Project may be developed and documented in the Advanced Modeling PxP.

2.1.4 Advanced Modeling Re-Submittals

If components of an Advanced Modeling submittal are rejected, provide the following for each Advanced Modeling Re-Submittal, in addition to re-submittal information required by Section 01 33 00 SUBMITTAL PROCEDURES:

a. Re-submit all components required under paragraph ADVANCED MODELING PACKAGE, including a new Advanced Modeling Checklist and updated content in response to Government comments.

b. Provide a copy of all Government review comments.

c. Provide a response to each Government review comment for back check.

2.2 DESIGN DRAWINGS

From advanced model files, produce design drawings that describe the scope of the Contract for all required submittals including all interim and final deliverables.

2.2.1 Electronic Drawing Files

Provide electronic drawing files in PDF format for each project drawing in the design set.

2.2.2 Drawing Index

Provide an index of drawings sheet as part of the drawing set, and an electronic table of all drawings submitted. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title containing the data for each drawing.

2.2.3 Shop Drawings Used as Design Drawings

Design drawings may be prepared similar to shop drawings to minimize construction submittals after the Design Complete Submittals. Prepare and submit with the design drawings, appropriate connection, fabrication, layout, and product specific drawings.

2.2.3.1 Drawing Format For Shop Drawings Used as Design Drawings

Use the Contractor-originated drawings as the basis for the record drawings. Conform shop drawings included as design documents with the same drawing requirements such as drawing format, sheet size, layering, lettering, and title block used in design drawings.

2.2.3.2 Identification of Shop Drawings Used as Design Drawings

Indicate which shop drawings are being submitted as design drawings in the transmittal letter.

2.2.4 Seal on Documents

Sign, date and seal all Contractor-originated design drawings by the registered architect or the registered engineer of the respective discipline. This is the seal of the Designer of Record for that drawing. Application of the electronic seal and signature accepts responsibility for the work shown thereon.

2.3 SPECIFICATIONS

Provide a Contractor-originated design specification that, in conjunction with the drawings, demonstrates compliance with materials, equipment, execution, and field quality control requirements of the RFP and accepted proposal.2.3.1 Specifications Format

Utilize the Unified Facility Guide Specifications (UFGS) current at the time of Contract award. Process the specifications with the SpecsIntact software package.

a. Edit and expand the appropriate specifications to ensure that all project design requirements, current code requirements, and regulatory requirements are met. Provide non-proprietary, descriptive project specifications in compliance with the requirements in UFC 1-300-02. Do not provide proprietary information in the project specifications unless approved by the Contracting Officer.

b. Note that the UFGS are based on design-bid-build contracting and will require editing to apply to a design-build project. For instance, they assume that the Government will approve most submittals, whereas in design-build, the DOR has that action, unless this solicitation requires Government approval for specific submittals.

c. Organize project sections not based on UFGS in accordance with CSI MasterFormat and UFC 1-300-02.

2.3.2 Identification of Manufacturer's Product Data Used as Specifications.

Provide complete and legible catalog cut sheets, product data, installation instructions, operation and maintenance instructions, warranty, and certifications for products and equipment for which final material and equipment choices have been made. Indicate, by prominent notation, each product that is being submitted including optional manufacturer's features, and indicate where the product data shows compliance with the Contract requirements.

2.3.3 Specifications Packaging

Provide specifications to include the following:

a. Cover sheet and project table of contents.

b. Specification sections, each section with a table of contents.

c. Manufacturer's Product Data. If providing as attachments to the applicable specification section, incorporate as attachment reference within the section and section table of contents.

2.3.4 Specification Deliverable

Submit a bundled specification package in PDF format for each design package. As a minimum, bookmark each specification section in the bundled package. Also, submit the source files, in the processing system format, used to create the PDF.

2.4 DESIGN ANALYSIS

Prepare, organize, and present a design analysis that will document the general parameters, functional and technical requirements, design objectives, design assumptions, and provides design calculations applicable to a project's design. Organize the design analysis into three parts; Part 1 - General Description; Part 2 - Design Requirements and Provisions; and Part 3 - O&M Provisions.

The design analysis states the purpose, authorization, applicable criteria and the project description for the project, and provides a summary of the factors influencing the choice of the civil site plan, architectural, structural, mechanical, electrical, and communications features used in the project along with an indication of how the initial costs and life cycle costs were factored into final selections. In the final design analysis clearly and succinctly include:

a. An introductory description of the project concepts that addresses the salient points of the design

b. An orderly and comprehensive documentation of criteria and rationale for system selection, supported by life cycle cost analysis.

c. The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process.

d. Identify all applicable codes and criteria and highlight specific requirements within these codes and criteria for critical issues in the facility design.

e. Required calculations as specified and as needed to support the design.
f.

g. Clearly identify "Antiterrorism" requirement if required and document the antiterrorism and force protection features as required by UFC 4-010-01.

2.4.1 Design Requirements and Provisions

Include subparts for each major design discipline and basic project design requirements for each discipline that justify and validate design decisions to include, but not limited to: life cycle cost effectiveness.

2.4.1.1 Civil

Include site design, site improvements, site logistics plan, utilities systems analysis and design, if required.

2.4.1.2 Environmental

Include an impact assessment checklist covering air and noise effects from the project and construction; worker health and safety; transportation and disposal regulation requirements; pollution prevention control requirements; and design measures to be implemented and environmental permits.

2.4.1.3 Architectural

Include space allowance, functional layout, unique features, interior design, signage, accessibility, security, air barriers, and energy conservation as well as site analysis focusing on orientation, space-mass composition, materials used and details relevant to image, safety, maintenance and cost effectiveness as related to the video display system. Address the historical or landmark preservation context, including requirements from the Landmarks Preservation Commission (LPC), only as necessary and in accordance with the project scope.

2.4.1.4 Structural

Include foundation, structural assessments, and seismic analysis and design.

2.4.1.5 Mechanical

Should the existing HVAC system prove insufficient to accommodate the new video display equipment, include heating, ventilation and air conditioning systems, refrigeration, energy conservation, and process systems design, if required.

2.4.1.6 Electrical

Include power generation, transmission and distribution systems necessary to support the video display system. Include data communication systems as required for system monitoring and remote management of the video display.

2.4.1.7 Cybersecurity

The new LED video display system will include an IT control system rack and associated content management system requiring a hardwired network connection for VPN remote access. It is necessary to evaluate the existing building cybersecurity infrastructure to confirm its adequacy to support this system. Include Cybersecurity requirements identified in UFC 4-010-06, Cybersecurity of Facility-Related Control Systems (FRCS), along with applicable DoD cybersecurity policies including DoD Instructions 8500.01 and 8510.01 and Facility Engineering Command (FEC) or installation-specific policies, must be incorporated. Industrial Control System (ICS) security controls per NIST SP 800-82, Appendix G, Table G-1, shall be integrated to ensure the system’s integrity and secure remote access over the existing DoD communication network.

2.4.2 Operations and Maintenance (O&M) Provisions

Identify design provisions made to enhance and to reduce the cost of operating and maintaining the facility when completed. Identify any special

safety considerations or occupational health related considerations that may affect operation and maintenance activities as a result of the final design.

2.4.3 Design Analysis Packaging

2.4.3.1 Assembly and Identification

Assemble design analysis in a single volume with a table of contents if possible. Include a cover page in the basis of design for each discipline indicating the project title and locations, contract number, table of contents, and tabbed separations or bookmarks for quick reference. At a minimum tab or bookmark for each discipline.

2.4.4 Calculations

Place the signature and seal of the designer of record responsible for the work on the cover page of the calculations for the respective design discipline.

PART 3 EXECUTION

3.1 DESIGN SUBMITTALS

Include all deliverable products and associated support documents described in Part 2 of this specification with each design submittal.

3.2 DESIGN SUBMITTALS PHASES

The stages of design submittals described below define requirements with respect to process and content. Determine how to best plan and execute the design and review process for the project, within the parameters listed below. As a minimum, provide at least one interim design submittal, at least one final design submittal before construction of a design package may proceed, and at least one Design Complete submittal that documents the accepted design.

3.2.1 Interim Design Submittals

Submit either a single interim design for review, representing a complete package with all design disciplines, or split the interim design into smaller, individual design packages as deemed necessary for fast-track construction purposes. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk.

3.2.1.1 Interim Design Development Management

Maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal interim design development review.

3.2.1.2 Over-the-Shoulder Progress Review

To facilitate a streamlined design-build process, the Government and the Contractor may agree to one-on-one review or small group reviews, on-line, or at the Contractor's design offices or other agreed location, when practicable to the parties. Coordinate such reviews to minimize or

eliminate disruptions to the design process. Due to limits on project funding, utilize the maximum virtual teaming methods. Facilitate these reviews with electronic format data transfer and collaboration. Through the partnering process, find ways to facilitate the quality assurance process and to facilitate meeting or bettering the design-build schedule.

3.2.1.3 Interim Design Development Review Waiver

The Government may agree to shorten or waive the formal interim design development review period for design package(s) if an effective, mutually agreeable partnering procedure is established and implemented for regular (e.g., weekly) over-the shoulder review. During the course of the procedure, keep the Government reviewers fully informed of the progress, contents, design intent, design documentation, and other pertinent factors of the design package.

3.2.2 Final Design Submissions

After acceptance of the interim design package, revise the design package to incorporate the comments generated and resolved, perform and document a back-check review and submit the final design package.

3.2.3 Design Complete Submittals

After the final design submission and review conference for a design package, revise the design package to incorporate the comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which represents released for construction documents.

3.3 DESIGN PLATFORM AND FILE FORMATS

Design the project using the systems and platforms defined below:

3.3.1 CAD

3.3.1.1 Native CAD Authoring Content

All content produced through CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3. Autodesk AutoCAD Template Files Most recent version at the time of Contract award. Download form the CAD/BIM Technology Center website as part of the A/E/C Work Structure.

3.3.1.2 CAD Extracted From BIM/CIM Authoring Platforms

Provide editable CAD sheet files extracted from the BIM or CIM files. CAD content exported from a BIM or CIM modeling platform must comply with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3.

3.4 ADVANCED MODELING REQUIREMENTS

3.4.1 CAD

All content produced through layer-centric CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3.

Autodesk AutoCAD Template Files Most recent version at the time of Contract award. Download form the CAD/BIM Technology Center website as part of the A/E/C Work Structure.

## 3.5 DESIGN CONFIGURATION MANAGEMENT (DCM)

### 3.5.1 Procedures

Develop and maintain effective, DCM procedures to control and track all revisions to the design documents subsequent to the Interim Design Submission and continuing through submission of the As-Built documents. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Special Contract Requirement: Deviating From the Accepted Design). Submit the DCM procedures within the Design Quality Control Plan.

a. Include authorities and concurrences in the DCM system to authorize revisions, including documentation as to why the revision is required.

b. An internal system may be used with interactive Government concurrences or the Government's "Dr Checks Design Review and Checking System" may be used.

c. Make the DCM data available to the Government reviewers at all times.

### 3.5.2 Tracking Design Review Comments

Although an internal system for overall design configuration management is allowed, use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design review comments.

The Government will set up the project in DrChecks. Throughout the design process parties enter, track, and back-check comments using the DrChecks system. Designers of Record annotate comments timely and specifically to indicate exactly the action to be taken or why the action is not required. After the design review conference and prior to the next design submittal for the package, the DORs annotate those comments that require DOR action or design revision to show how and where it has been addressed in the design documents. These procedures are part of the required design configuration management plan. Flag comments considered critical by the conference participants.

#### 3.5.2.1 DrChecks Initial Account Set-Up

Identify a contact person within the office to act as the administrator for all Contractor personnel, including subcontractors, that will be accessing the PROJNET Dr Checks system. Through the Contracting Officer, coordinate with the Project Manager and the District PROJNET administrator for system access, system instruction and comment process instructions.

PROJNET contains an introductory file and other tutorial material that can be accessed once user accounts have been established. Upon log in, select Portals/User Documentation.

#### 3.5.2.2 DrChecks Review Comments

Annotate and resolve all comments prior to the next submittal. Include the DrChecks comments and responses in the design analysis for record in the next design submittal for the package.

a. Upon review of comments prior to the design review conference, the DOR(s) evaluate the comments. Include exactly what action will be taken or why action is not required.

b. After the review conference, the DOR(s) formally respond to each applicable comment in DrChecks a second time, prior to the next submittal, clearly indicating what action was taken and what drawing/spec/analysis changed. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next design submittal, reviewers will back-check answers to the comments against the new submittal, in addition to reviewing additional design work.

c. Clearly annotate in DrChecks those comments that require effort outside the requirements of the contract. Do not proceed with work outside the contract until a modification to the contract is properly executed.

## 3.6 DISCIPLINE DESIGN REQUIREMENTS

Provide interim design deliverables that include drawings, specifications, and design analysis for the part of design that the Contractor considers ready for review.

a. Drawings: Include comments from any previous design conferences incorporated into the documents to provide an interim design for the feature of work submitted.

b. Specifications: Provide specifications to ensure that all project design features are addressed, meeting current code requirements, and regulatory requirements. Use the track changes feature (redlines) to facilitate review of additions and deletions.

c. Design Analysis: Prepare and present design analysis under the authority of the DOR, with calculations necessary to substantiate and support all design documents submitted. Address design substantiation required by the applicable codes and references.

d. Building Rendering: Provide a draft color computer, artist, or hand drawn rendering with the conceptual design submittal of the building exterior. Include a slightly overhead view of the entire building in perspective renderings, to encompass elevations and the roof configuration of the building. After Government review and acceptance, provide a final rendering, including the following:

(1) Two C size (17 x 22) color prints, framed and matted behind glass with project title underneath the print.

(2) One image file in JPG format for those in the submittal distribution list.

### 3.6.1 Civil Site and Utilities Design Contents

a. Include the following in the interim design for the site and utilities. This list is not intended to limit the contractor from providing different or additional information as needed to support the design presented.

b. Location and vicinity maps

c. Removal and/or relocation plan

d. Site Logisitics and Layout plan. Show the locations and dimensions of temporary facilites (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes, Indicated if the use of a supplemental or other statging is permitted. Show locations of safety fences and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilitis, and worker parking areas.

e. Utility Plan: Identify and locate water lines, sanitary
f. sewer lines, force mains, industrial waste lines, and other subsurface utility features

g. Road, sidewalk, and parking area profiles

h. Utility Profiles: Indicate invert elevations of all drainage structures, manholes, storm drainpipe with size and invert elevations, ground profile, and new or existing structures or utilities crossing the new utilities.

i. Civil details sheet

j. Concrete Joint Plan: Provide a joint layout plan for each concrete apron, hardstands, road, pavement, etc

k. Site specific civil calculations, if required.

3.6.2 Structural Systems

3.6.2.1 General

a. Identify all loads to be used for design of all existing/new structural components.

b. Describe the method of providing lateral stability for the exisitng/newstructural systems to meet seismic and wind load requirements. Include structural assessments and sufficient calculations to verify the adequacy of the method.

c. Calculations for all existing/new principal roof, floor, and support members and bracing and secondary members.Calculations shall include all reinforcement or remedial work of the existing structural systems. Calculations for the video display structural support system shall also be provided.

d. Drawings showing principal members for roof and floor framing, including bracing, plans as applicable.

e. Foundation plan showing main support foundation elements where applicable, including any modifications to the existing strucutrual support systems.

f. Typical sections for exisitng/new roof, floor, and foundation conditions.

g. Complete seismic analyses for all structural, mechanical, electrical, architectural, and building features as dictated by the seismic zone in which the facility is being constructed.

h. Identify the program name, source, and version used for computer generated calculations. Provide input data, including loads, loading diagrams, node diagrams, and documentation to illustrate the design. On the schematic models used for input,t show, as a minimum, nodes/joints, element/members, materials/properties, and all loadings; induced settlements/deflections; and a list of load combinations. Include an output listing for maximum and minimum stresses, forces, and deflections for each element, and the reactions for each loading case and combination.

3.6.2.2 Anti-Terrorism/Force Protection (ATFP)

Provide a design narrative and calculations where applicable, demonstrating compliance with each of the 22 standards in UFC 4-010-01, which includes Design of Buildings to Resist Progressive Collapse (use the most recent version of UFC 4-023-03, regardless of references to any specific version in UFC 4-010-01).

a. Where sufficient standoff distance is not being provided, show calculations for blast resistance of the structural system and building envelope.

b. Show complete calculations for members subjected to ATFP loads, e.g., support members of glazed items (jambs, headers, sills) connections of windows to support members and connections of support members to the rest of the structure.

c. For three story and higher buildings, provide calculations to demonstrate compliance with progressive collapse requirements.

3.6.3 Architectural

Provide a project design that meets the criteria and requirements identified in UFC 3-101-01. Consider architectural compatibility with the local environment, functional requirements, economy of construction, energy conservation, interior and exterior details, and life cycle costs. Optimize special functionality, aesthetics, material quality, and maintainability of operations to meet intended functional requirements in the final design.

Include the following in the basis of design as needed to sufficiently describe the project design

a. Selective Demolition Plan, floor plans, roof plans showing slope, exterior elevations, building sections and cross sections indicating

floor to floor heights and wall sections which clearly delineate materials systems.

b. Interior building elevations and Selective Demolition Interior elevations .

c. Special signage and graphic requirements and all required built-in casework, casework modifications, and equipment.

d. Air Barrier System: air barrier system plans and details (i.e. window flashing details, penetration in air barrier details.

3.6.4 Interior Design

3.6.4.1 Structural Interior Design (SID) Requirements

Remove, store, and re-install existing workstations, furnishings, and accessories as required to accommodate selective demolition and installation of new structural elements. Structural Interior Design includes all interior and exterior building related elements and components generally part of the building itself, such as wall finishes, ceilings finishes, floor coverings, marker/bulletin boards, blinds, signage, built in casework and all exterior building finishes. Develop the SID in conjunction with the furniture footprint.

3.6.4.1.1 Format and Schedule

a. Prepare and submit for approval an interior and exterior building finishes scheme for an interim design submittal. Conduct a meeting between the DOR and the appropriate Government officials to discuss the finish schemes prior to preparation of the schemes to be presented. Present original sets of the schemes to reviewers at an interim design conference.

b. At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the Contractor may proceed to final design with the interior finishes scheme presented.

c. Submit the SID information and samples in letter size format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Maximum spread for fold out items is 25-1/2 inches. Provide cover and spine inserts sheets identifying the document as "Structural Interior Design" package. Include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

d. Design submittal requirements include, but are not limited to:

(1) Narrative of the Structural Interior Design Objectives: Include a narrative in the SID that discusses the building related finishes. Include topics that relate to base standards, life safety, sustainable design issues, aesthetics, durability and

maintainability, discuss the development and features as they relate to the occupants requirements and the building design.

(2) Interior Color Boards

(a) Identify and key each item item on the color boards to the contract documents to provide a clear indication of how and where each item will be used. Arrange finish samples to the maximum extent possible by room type in order to illustrate room color coordination. Label all samples on the color boards with the manufacturer's name, patterns and colors name and number. Key or code samples to match key code system used on contract drawings.

(b) Material and finish samples indicating true pattern, color and texture. Provide photographs or colored photocopies of materials or fabrics to show large overall patterns in conjunction with actual samples to show the actual colors. Provide finish samples large enough to show a complete pattern or design where practical.

(c) Color boards include, but are not limited to, original color samples of

1. All walls finishes and ceiling finishes, including corner guards, acrylic wainscoting and wall guards/chair rail finishes.
2. All tile information, including tile grout color and tile patterns.
3. All flooring finishes, including patterns.
4. All door, door frame finishes and door hardware.
5. All signage, wall base, toilet partitions, locker finishes and operable/folding partitions and trim.
6. All millwork materials and finishes (cabinets, counter tops)
7. All window frame finishes and window treatments (sills, blinds)

(d) Color board samples reflect all actual finish textures, patterns and colors required as specified. Patterned samples sized to adequately show pattern and its repeat if a repeat occurs.

(3) Exterior Color Boards

(a) Prepare exterior finishes color boards in similar format as the interior finishes color boards, for presentation to the reviewers during an interim design conference. Provide original color samples of all exterior finishes including but not limited to the following:

| |
|---|
| All Roof Finishes |
| All Brick and Cast Stone Samples |

| |
|---|
| All Exterior Insulation and Finish Samples |
| All Glass Color Samples |
| All Exterior Metals Finishes |
| All Window & Door Frame Finishes |
| All Specialty Item Finishes, including trim |

(b) Identify each item on the exterior finishes color boards and key to the building elevations to provide a clear indication of how and where each item will be used.

3.6.4.1.2 Structural Interior Design Documents

Indicate the placement of extents of SID material, finishes and colors on related drawings and detail to define all interior work. The following is a list of minimum requirements:

3.6.4.1.2.1 Finish Color Schedule

Provide finish color schedule(s) in the contract documents. Provide a finish code, material type, manufacturer, series, and color designations. Key the finish code to the color board samples and drawings.

3.6.4.1.2.2 Interior Finish Plans

Indicate electrical cabinet closet material transitions and extents of interior finishes. Include a finish material/color board, presenting a physical representation of material selections

3.6.4.1.2.3 Interior Elevations, Sections and Details

Indicate electrical cabinet closet material, color and finish placement.

3.6.5 HVAC Systems

3.6.5.1 Design Analysis

Should the existing HVAC system prove insufficient to accommodate the new video display equipment,provide complete design calculations for mechanical systems. Include computations for sizing equipment, compressed air systems, air duct design, and U-factors for ceilings, roofs and exterior walls and floors.

Employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation is required. Based on the results of calculations, provide a complete list of the materials and equipment

proposed with the manufacturer's published cataloged product installation specifications and roughing-in data.

3.6.6 Electrical Systems

3.6.6.1 Design Analysis

Include electrical load analysis and calculations, voltage drop calculations, electrical short circuit and protective device coordination analysis and calculations, arc fault calculations, and a load letter to the utility company.

3.6.6.2 Floor Plan

On the floor plans show all principle architectural features of the building which will affect the electrical design. Also show the following on the floor plan:

(1) Room designations
(2) Electrical legend and applicable notes
(3) Lighting fixtures, properly identified
(4) Switches for control of lighting
(5) Receptacles
(6) Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications.
(7) Service entrance (conduit and main disconnect)
(8) Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

3.6.6.3 Building Riser Diagram

From pad-mounted transformer to unit load center panelboard indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

3.6.6.4 Load Center Panelboard Schedule(s)

Indicate the following information in the schedule(s):

(1) Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting
(2) Branch Circuit Designations
(3) Load Designations
(4) Circuit Breaker Characteristics (Number of Poles, Trip Rating, AIC Rating)
(5) Branch Circuit Connected Loads (AMPS)
(6) Special Features

3.6.6.5 Details

Provide construction details, sections, elevations only where required for clarification of methods and materials of design.

3.6.7 Telecommunications and Security

Provide design details of the installed Video Control System Cabinet. Include network load analysis and system capacity calculations.Provide design details for network infrastructure, access control, and surveillance systems, ensuring compliance with applicable standards, if required.

3.6.7.1 Cybersecurity

Provide details of cybersecurity measures for the Video Control System Cabinet, ensuring compliance with applicable DoD instructions and NIST ICS security standards.

3.6.8 Commercial Equipment

3.6.8.1 LED Video Display System

a. List of criteria codes, documents and design conditions used.

b. List of any required permits and registrations for construction of items of LED Video Display and associated equipment.

c. Description and manufacturer specifications of the proposed turnkey LED Video Display system.

d. Description, approximate capacity and location of any special equipment for LED Video Display System.

3.7 INTERIM DESIGN REQUIREMENTS

At least one interim design submittal, review and review conference is required for each design package (except that the Contractor may, upon Government approval, skip the interim design submission and proceed directly to final design of the sitework and utilities package). Additional interim design conferences or over-the-shoulder reviews may be scheduled, as needed, to assure continued Government concurrence with the design work. Include the interim submittal review periods and conferences in the Section 01 32 01.00 10 PROJECT SCHEDULE and indicate in periodic schedule updates what part of the design work is at what percentage of completion. See also paragraph INTERIM DESIGN DEVELOPMENT REVIEW WAIVER for a waiver to the formal interim design review.

3.7.1 Submission Review

After receipt of an Interim Design submission, the Government requires 14 calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods (e.g., over-the -shoulder or electronic file sharing), through the partnering process.

a. For each interim design review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.

b. The Government reserves the right to reject design document submittals if comments are deemed significant.

c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance within five calendar days after receipt of these comments.

d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.7.2 Interim Review Conference

Hold an Interim Review conference for each design submittal at either the installation or as agreed upon as part of the partnering process. Attendees include, at a minimum, the DOR(s) involved in development of the design submittal. Schedule the conference to take place the week after the receipt of the comments. Notify the Contracting Officer of any comments that with concurrence would require further design development.

For smaller fast-track packages that involve only a few reviewers, the parties may agree to alternative conferencing methods, such as teleconferencing, or televideo, where available, as determined through Partnering.

3.7.3 Conference Documentation

3.7.3.1 Minutes and Comment Process

Provide meeting minutes within two work days after the conference adjourns, and enter final resolution of all comments into DrChecks. Include copies of comments, annotated with comment action agreed on, with the minutes.

a. Resolve issues remaining open after the conference adjourns by immediate follow-on action to close the issue within 30 calendar days.

b. Incorporate comments as agreed upon during the conference.

3.7.3.2 Availability

In order to facilitate the Government code and contract conformance reviews, identify, track resolution of, and maintain all comments and action items generated during the design review process. Make this available to the designers and reviewers prior to the subsequent design reviews.

3.8 FINAL DESIGN REQUIREMENTS

Provide final design submittals that comply with requirements of the Design Manualconsist of 100 percent complete drawings, specifications, submittal register, design analyses for Government review and acceptance.

a. Include any permits required by the contract for each package submitted.

b. In order to expedite the final design review, prior to the conference, ensure that the design configuration management data and all review comment resolutions are up-to-date.

c. Perform independent technical reviews and back-checks of previous comment resolutions, as required by Section 01 45 00 QUALITY CONTROL.

3.8.1 Design Drawings

Submit drawings complete with all contract requirements incorporated into the documents to provide a 100 percent design for each package submitted. In addition to all native Advanced Modeling files, provide separate electronic files in a PDF format.

3.8.1.1 Geo-Referenced Data

Capture geo-referenced coordinates of all changes that will be made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract.

Close-out requirements at the as-built stage, require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 00 CLOSEOUT SUBMITTALS.

3.8.2 Design Analysis

Provide a design analysis with calculations necessary to validate and support all design work submitted. Expand and advance calculations and information presented in the interim design stage to the current level of design. The responsible DOR(s) stamp, sign and date the design analysis.

3.8.3 Specifications

Provide specifications 100 percent complete and in final form.

3.8.4 Submittal Register

Provide an updated, cumulative submittal register with each design package that identifies the design and construction submittals required by that design package.

3.8.5 Preparation of DD Form 1354 (Transfer of Real Property)

This form itemizes the types, quantities and costs of various equipment and systems that comprise the project, for the purpose of transferring the new construction project from the Corps Construction Division to the Installation's inventory of real property. The Government will furnish the Contractor's design manager a DD Form 1354 checklist to use to produce a draft Form 1354. Submit the completed checklist and prepared draft Form DD 1354 with the 100 percent design. The Government will use these documents to complete interim and final DD 1354s for turnover of a portion or all of the construction project.

3.9 DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference, revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference. Perform and document a back-check review and submit the final, design complete documents. The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a review of the released for construction documentation. Promptly correct any errors or omissions found during the Government review.

## 3.10 ACCEPTANCE AND RELEASE FOR CONSTRUCTION

After acceptance of the Design Complete Construction Document(s) the Contracting Officer will allow construction to start for that design package.

Government review and acceptance of design submittals is for contract conformance only and does not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor's accepted proposal, or limit the Contractor's responsibility of design as prescribed under Special Contract Requirement: "Responsibility of the Contractor for Design" or limit the Government's rights under the terms of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

| | |
|---|---|
| ANSI/ASSP A10.34 | (2021) Protection of the Public on or Adjacent to Construction Sites |
| ANSI/ASSP A10.44 | (2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations |

ASTM INTERNATIONAL (ASTM)

| | |
|---|---|
| ASTM F855 | (2020) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment |

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

| | |
|---|---|
| IEEE 1048 | (2016) Guide for Protective Grounding of Power Lines |
| IEEE C2 | (2023) National Electrical Safety Code |

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

| | |
|---|---|
| ANSI/ISEA Z89.1 | (2014; R 2019) American National Standard for Industrial Head Protection |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

| | |
|---|---|
| NFPA 51B | (2024) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work |
| NFPA 70 | (2023; ERTA 1 2024; TIA 24-1) National Electrical Code |
| NFPA 70E | (2024) Standard for Electrical Safety in the Workplace |
| NFPA 241 | (2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

| | |
|---|---|
| 29 CFR 1910 | Occupational Safety and Health Standards |
| 29 CFR 1915 | Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment |
| 29 CFR 1926 | Safety and Health Regulations for Construction |
| CPL 2.100 | (1995) Application of the Permit-Required Confined Spaces (PRCS) Standards, 29 CFR 1910.146 |

## 1.2 DEFINITIONS

The following definitions are for the convenience of the reader. If there is a referenced document in the text of this specification section, that is the document that should define terms for that paragraph. If further clarification is needed, contact the Contracting Officer.

### 1.2.1 Site Safety and Health Officer (SSHO)

A Contractor Employee that is responsible for overseeing and ensuring implementation of the prime Contractor's Safety and Occupational Health (SOH) program according to the Contract, EM 385-1-1, applicable federal, state, and local requirements.

#### 1.2.1.1 Level One SSHO

A designated employee with full-time SOH responsibility that meets and follows the requirements of EM 385-1-1.

#### 1.2.1.2 Level Two SSHO

A designated employee with Level Two SSHO responsibility that meets and follows the requirements of EM 385-1-1. Level Two SSHOs cannot be assigned to projects that have a residual Risk Assessment Code (RAC) of high or extremely high.

#### 1.2.1.3 Level Three SSHO

A designated Qualified Person or Competent Person with SOH responsibility that meets and follows the requirements of EM 385-1-1. Level 3 SSHOs cannot be assigned to projects that have a residual RAC of high or extremely high.

#### 1.2.1.4 Alternate SSHO

An employee that meets the definition of the contract-required level SSHO, but is not the primary SSHO.

1.2.2 Competent Person (CP)

The CP is a person designated in writing, who, through training, knowledge and experience, is capable of identifying, evaluating, and addressing existing and predictable hazards in the working environment or working conditions that are unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them.

1.2.3 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

1.3 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractors for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, RO

SD-06 Test Reports

Accident Reports; G, RO

LHE Inspection Reports

Monthly Exposure Reports; G, RO

SD-07 Certificates

Activity Hazard Analysis (AHA); G, RO

Certificate of Compliance

Hot Work Permit

Standard Lift Plan; G, RO

1.4 PUBLIC HEALTH EMERGENCIES

In the event of a declared public health emergency, follow safety precautions as required by the Occupational Safety and Health Administration (OSHA) www.osha.gov, the Centers for Disease Control and Prevention (CDC) www.cdc.gov, and as required by federal, state and local requirements.

## 1.5 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report by the fifth of each month. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the progress payment.

## 1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1, and the following federal, state, and local laws, ordinances, criteria, rules and regulations at the date of the Solicitation for this Contract. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

## 1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

### 1.7.1 Site Safety and Health Officer (SSHO)

#### 1.7.1.1 Qualifications of SSHO

All SSHOs will have met the training, experience requirements identified in the EM 385-1-1 and this Contract.

#### 1.7.1.2 Duties of SSHO

All SSHOs will carry out the roles and responsibilities as identified in this Contract and the EM 385-1-1. All SSHOs will be designated on an ENG Form 6282, provided by the Contracting Officer. Superintendent, QC Manager, and SSHO are subject to dismissal if their required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

#### 1.7.1.3 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, or foremen must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance.

### 1.7.2 Roles and Responsibilities of Prime Contractor and SSHO

The Prime Contractor and SSHO must ensure that the requirements of all applicable OSHA and EM 385-1-1 are met for the project. The Prime Contractor must ensure an SSHO or an equally qualified Alternate SSHO(s) is at the worksite at all times to implement and administer the

Contractor's safety program and Government accepted Accident Prevention Plan. If the required SSHO has to temporarily (that is, up to 24 hours / 1 day) leave the site of work due to unforeseen or emergency situations, a Level One, Two, or Three SSHO may be used in the interim and must be on the site of work at all times when work is being performed.

If the SSHO must be off-site for a period longer than 24 hours / 1 day, a qualified alternate that meets the contract requirements must be onsite.

a. Prime contractor must ensure all SSHOs will:

(1) Are designated on an ENG Form 6282.

(2) Meet minimum training and experience requirements identified in EM 385-1-1.

(3) Execute roles and responsibilities identified in EM 385-1-1.

1.7.3 Contract Site Safety And Health Officer(s)(SSHOs) Minimum Requirements.

Provide a minimum of one Level One SSHO that meets the requirements of EM 385-1-1 for this project.

1.7.4 Competent Person for Confined Space Entry

Provide a CP for Confined Space Entry who meets the requirements of EM 385-1-1 and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1.

1.7.5 Preconstruction Conference

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction conference. This includes the project superintendent, Site Safety and Occupational Health Officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).

b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the Contract. This list of proposed AHAs will be reviewed and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays. The creation of the APP and Schedule will be created after being given Notice to Proceed.

c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

## 1.8 ACCIDENT PREVENTION PLAN (APP)

### 1.8.1 Accident Prevention Plan (APP)

Provide a site-specific Accident Prevention Plan (APP), including Activity Hazard Analyses (AHA), in accordance with EM 385-1-1, ENG Form 6293, for the design team to follow during site visits and investigations. For subsequent visits, update the plan if there are changes in the personnel who will be attending, or the tasks to be performed. Submit the APP for review and acceptance by the Government at least 15 calendar days prior to the start of the design field work after being given Notice to Proceed. Field work must not begin until the design APP is accepted by the Contracting Officer. Prior to the start of construction incorporate the Design APP into the Construction APP so that one site specific APP exists for the project and submit to the Contracting Officer for acceptance.

If the design scope includes borings or other subsurface investigations, include in the APP the type of field investigation and verification techniques, such as visual, local utility locating service scanning and third party subcontractor scanning, potholing, or hand digging within two feet of a known utility that will be required. Mark underground utilities before starting any ground-disturbing actions. Notify the Contracting Officer 15 days prior to the start of soil borings or sub-surface investigations.

### 1.8.2 Accident Prevention Plan (APP)

Submit the Accident Prevention Plan (APP) for review and acceptance by the Government at least 15 calendar days prior to the start, after being given Notice to Proceed. A competent person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, ENG Form 6293, and herein. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and occupational health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling employer" for all worksite safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed in accordance with the APP and ENG Form 6293 Accident Prevention Plan Worksheet. The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the

accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e., imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSP A10.34), and the environment.

1.8.3 Names and Qualifications

Provide plans in accordance with the requirements outlined in EM 385-1-1, including the following:

a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used. Specify the duties of each position.

b. As a minimum, designate and submit qualifications of Competent Persons (CP) for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; and personal protective equipment and clothing to include selection, use and maintenance. Designate and submit qualifications for additional CPs as applicable to the work performed under this Contract.

1.8.4 Plans

Provide plans in the APP in accordance with the requirements outlined in EM 385-1-1, including the following:

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

1.9.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.9.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

Contractors must arrange for their own emergency medical treatment in accordance with EM 385-1-1. The Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS AND REPORTS

1.12.1 Accident Notification

Notify the Contracting Officer in accordance with the EM 385-1-1 Accident Reporting Timeline.

**Table**
**Accident Reporting Required Timeline**

| Accident Type | Notify KO or COR | Complete Final Accident Report on ENG 3394 and provide to KO or COR |
|---|---|---|
| Fatality, in-patient hospitalization, amputation, eye loss, or property damage over $600,000. | Immediately, no later than (NLT) 8 Hours | Within 7 Days |
| All other accidents and near misses | Immediately, no later than (NLT) 24 Hours | Within 7 Days |

Within notification include Contractor name; Contract title; type of

Contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any accident or near miss.

1.12.2 Accident Reports

a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. All accidents are reportable, regardless of whether or not it is recordable. Complete the applicable USACE Accident Report, ENG Form 3394, and provide the report to the Contracting Officer within 7 calendar days of the accident. The Contracting Officer will provide copies of any required or special forms. All accidents are reportable, regardless of whether or not it is recordable.

b. Near Misses: For Army projects, report all "Near Misses" to the COR, using local accident reporting procedures, within 24 hours. The COR will provide the Contractor the required forms. Near miss reports are considered positive and proactive Contractor safety management actions.

1.12.3 LHE Inspection Reports

Submit LHE inspection reports required in accordance with EM 385-1-1 and as specified herein with Daily Reports of Inspections.

1.12.4 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging

Provide a Certificate of Compliance for LHE entering an activity under this Contract and in accordance with EM 385-1-1. Post certifications on the crane.

Develop a Standard Lift Plan (SLP) in accordance with EM 385-1-1 and using Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

1.13 HOT WORK PERMIT

1.13.1 Permit and Personnel Requirements

Submit and obtain a written permit prior to performing "Hot Work" (i.e., welding or cutting) or operating other flame-producing/spark producing devices, from the Fire Division. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. Contractors are required to meet all criteria before a permit is issued. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 1 hour after completion of the task or as specified on the hot work permit.

When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. Report any fire, no matter how small, to the responsible Fire Division immediately.

1.13.2 Work Around Flammable Materials

Obtain permit approval from a NFPA Certified Marine Chemist, or Certified Industrial Hygienist for "Hot Work" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1.

1.14 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with EM 385-1-1, 29 CFR 1926, 29 CFR 1910, and Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used.

1.14.1 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.15 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:

a. Secure outside equipment and materials and place materials that could be damaged in protected areas.

b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.

c. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 CONSTRUCTION AND OTHER WORK

Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:

a. Head Protection that meets ANSI/ISEA Z89.1

b. Long Pants

c. Appropriate Safety Footwear

d. Appropriate Class Reflective Vests

3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this Contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.3 Unforeseen Hazardous Material

Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e., 29 CFR Part 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during demolition, repair, renovation, or construction operations. Stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages at least 14 days in advance. At a minimum, the

written request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1. In accordance with EM 385-1-1, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy.

These activities include, but are not limited to, a review of Hazardous Energy Control Program (HECP) and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1 and NFPA 70E, work on energized electrical circuits must not be performed without prior Government authorization. Government permission is considered through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible.

## 3.3 OUTAGE COORDINATION MEETING

After the utility outage request is approved and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Public Utilities representative. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA, assurance of trade personnel qualifications, identification of competent persons, and compliance with HECP training in accordance with EM 385-1-1. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

## 3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1, 29 CFR 1910, 29 CFR 1915, ANSI/ASSP A10.44, NFPA 70E.

### 3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

### 3.4.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE

detailed in the Contractor's AHA and required by EM 385-1-1. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1.

### 3.4.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECP. In accordance with EM 385-1-1, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

## 3.5 FALL PROTECTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with EM 385-1-1.

### 3.5.1 Fall Protection Equipment and Systems

Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 and 29 CFR 1926.

#### 3.5.1.1 Additional Personal Fall Protection Measures

In addition to the required fall protection systems, other protective measures such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

#### 3.5.1.2 Personal Fall Protection Equipment

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of

being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1.

## 3.6 EQUIPMENT

### 3.6.1 Use of Explosives

Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

## 3.7 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1.

### 3.7.1 Electrical Work

As described in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attach temporary grounds in accordance with ASTM F855 and IEEE 1048. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator is allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

When working in energized substations, only qualified electrical workers are permitted to enter. When work requires work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety footwear, insulating gloves and electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA. Ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.

3.7.2 Qualifications

Electrical work must be performed by QP with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State, Local requirements applicable to where work is being performed.

3.7.3 Arc Flash

Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with NFPA 70E.

All personnel entering the identified arc flash protection boundary must be QPs and properly trained in NFPA 70E requirements and procedures. Unless permitted by NFPA 70E, no Unqualified Person is permitted to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

3.7.4 Grounding

Ground electrical circuits, equipment and enclosures in accordance with NFPA 70 and IEEE C2 to provide a permanent, continuous and effective path to ground unless otherwise noted by EM 385-1-1.

3.7.5 Testing

Temporary electrical distribution systems and devices must be inspected, tested and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system, and signed by the electrical CP or QP.

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SOURCES FOR REFERENCE PUBLICATIONS
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PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g., ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AACE INTERNATIONAL (AACE)
726 East Park Avenue #180
Fairmont, WV 26554 USA
Ph: 304-296-8444
Fax: 304-291-5728
Internet: https://web.aacei.org/

ACOUSTICAL SOCIETY OF AMERICA (ASA)
1305 Walt Whitman Road, Suite 110
Melville, NY 11747-4300
Ph: 516-576-2360
Fax: 631-923-2875
E-mail: asa@acousticalsociety.org
Internet: https://acousticalsociety.org/

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC. (AIA/NAS)
1000 Wilson Blvd, Suite 1700
Arlington, VA 22209-3928
Ph: 703-358-1000
E-mail: aia@aia-aerospace.org
Internet: https://www.aia-aerospace.org/

AIR BARRIER ASSOCIATION OF AMERICA (ABAA)
1600 Boston-Providence Hwy
Walpole, MA 02081
Ph: 1-866-956-5888
Fax: 1-866-956-5819
E-mail: abaa@airbarrier.org
Internet: https://www.airbarrier.org/

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
1520 Belle View Blvd #5220

Alexandria, VA 22307
Ph: 703-575-4477
Internet: https://www.acca.org/

AIR DUCT COUNCIL (ADC)
1300 Summer Ave.
Cleveland, OH 44115
Ph: 216-241-7333

E-mail: info@flexibleduct.org
Internet: https://flexibleduct.org/

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. (AMCA)
30 West University Drive
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
E-mail: communications@amca.org
Internet: http://www.amca.org

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)
2311 Wilson Blvd, Suite 400
Arlington, VA 22201
Ph: 703-524-8800
Internet: http://www.ahrinet.org

ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS (ATIS)
1200 G Street, NW, Suite 500
Washington, D.C. 20005
Ph: 202-628-6380

Internet: http://www.atis.org

ALUMINUM ASSOCIATION (AA)
1400 Crystal Drive
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Arlington, VA 22202
Ph: 703-358-2960

Internet: https://www.aluminum.org/

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1900 E Golf Rd, Suite 1250
Schaumburg, IL 60173
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E-mail: customerservice@FGIAonline.org
Internet: https://fgiaonline.org/

AMERICAN ASSOCIATION OF RADON SCIENTISTS AND TECHNOLOGISTS (AARST)
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Hendersonville, NC 28739
Ph: 828-348-0185

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Internet: http://aarst-nrpp.com/wp/

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
555 12th Street NW, Suite 1000

Washington, DC 20004
Ph: 202-624-5800
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E-Mail: info@aashto.org
Internet: https://www.transportation.org/

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
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P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141

E-Mail: ordering@aatcc.org
Internet: https://www.aatcc.org/

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
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Alexandria, VA 22314
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E-mail: info@americanbearings.org
Internet: https://www.americanbearings.org/

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA/BOIL)
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E-mail: info@abma.com
Internet: https://www.abma.com/

AMERICAN BUREAU OF SHIPPING (ABS)
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Ph: 281-877-6000
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E-Mail: ABS-WorldHQ@eagle.org
Internet: https://ww2.eagle.org/

AMERICAN COLLEGE OF RADIOLOGY (ACR)
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Reston, VA 20191
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E-mail: info@acr.org
Internet: https://www.acr.org/

AMERICAN COMPOSITES MANUFACTURERS ASSOCIATION (ACMA)
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Arlington, VA 22201
Ph: 703-525-0511
Fax: 703-525-0743
Internet: https://acmanet.org

AMERICAN CONCRETE INSTITUTE (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331-3439
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Fax: 248-848-3701
Internet: https://www.concrete.org/

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
5605 N. MacArthur Blvd, Suite 340
Irving, TX 75038
Ph: 972-506-7216
Fax: 972-506-7682
E-mail: info@concrete-pipe.org
Internet: https://www.concretepipe.org/

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
3640 Park 42 Drive
Cincinnati, OH 45241
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Fax: 513-742-3355
Email: customerservice@acgih.org
Internet: https://www.acgih.org/

AMERICAN FOREST FOUNDATION (AFF)
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Email: info@forestfoundation.org
Internet: https://www.treefarmsystem.org

AMERICAN FOREST AND PAPER ASSOCIATION (AF&PA)
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AMERICAN GAS ASSOCIATION (AGA)
400 North Capitol Street, NW
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Internet: https://www.aga.org/

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)
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Internet: https://www.agma.org/

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AMERICAN IRON AND STEEL INSTITUTE (AISI)
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8669 NW 36 Street, #130
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Email: customercare@aws.org
Internet: https://www.aws.org/

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Internet: https://cleanpower.org/

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50 Catoctin Circle SE, Suite 201
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E-mail: info@awc.org
Internet: https://www.awc.org/

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Internet: http://www.awpa.com

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APA - THE ENGINEERED WOOD ASSOCIATION (APA)
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Internet: https://www.asminternational.org/

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Internet: http://www.asphaltinstitute.org

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Internet: https://www.arra.org/

ASPHALT ROOFING MANUFACTURERS ASSOCIATION (ARMA)
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Internet: http://www.aami.org

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)

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Washington, DC 20037
Ph: 205-257-3839
Fax: 205-257-2540

Internet: https://aeic.org/

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)
1111 19th Street NW, Suite 1150
Washington, DC 20036
Ph: 202-872-5955
E-mail: info@aham.org
Internet: http://www.aham.org

ASSOCIATION OF ILLINOIS SOIL AND WATER CONSERVATION DISTRICTS (AISWCD)
201 West Lawrence
Springfield, Illinois 62704
Ph: 217-744-3414
E-mail: info@aiswcd.org
Internet: www.aiswcd.org

POOL & HOT TUB ALLIANCE (PHTA)
1650 King St., Ste. 602
Alexandria, VA 22314-4679
Ph: 703-838-0083
Fax: 703-549-0493
E-mail: service@phta.org
Internet: https://phta.org/

ASSOCIATION OF THE WALL AND CEILING INDUSTRY (AWCI)
513 West Broad Street, Suite 210
Falls Church, VA 22046
Ph: 703-538-1600
Fax: 703-534-8307
Internet: https://www.awci.org/

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: service@astm.org
Internet: https://www.astm.org/

AUDIOVISUAL AND INTEGRATED EXPERIENCE ASSOCIATION (AVIXA)
11242 Waples Mill Road
Suite 200
Fairfax, VA 22030
Ph: 703-273-7200/800-659-7469
E-mail: membership@avixa.org
Internet: https://www.avixa.org/

BACNET TESTING LABORATORIES (BTL)
BACnet Testing Laboratories
2900 Delk Road
Suite 700, PMB 321
Marietta, GA 30067
Ph: 770-971-6003
Fax: 678-229-2777

Internet: https://www.btl.org/

BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD)
375 Beale Street, Suite 600
San Francisco, CA 94105
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Fax: 415-928-8560
Internet: http://www.baaqmd.gov/

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Email: bicsi@bicsi.org
Internet: https://www.bicsi.org/

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Ph: 610-967-4135
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BRITISH STANDARDS INSTITUTION (BSI)
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E-mail: cservices@bsigroup.com
Internet: https://www.bsigroup.com/

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
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Washington, DC 20045
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Fax: 212-370-9047
Internet: https://www.buildershardware.com/

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Internet: https://www.cdph.ca.gov/

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Internet: https://www.energy.ca.gov/

CARPET AND RUG INSTITUTE (CRI)
P.O. Box 2048
Dalton, GA 30722-2048
Ph: 706-278-3176
Fax: 706-278-8835
Internet: https://carpet-rug.org/

CAST IRON SOIL PIPE INSTITUTE (CISPI)
2401 Fieldcrest Drive
Mundelein, IL 60060
Ph: 224-864-2910
Internet: https://www.cispi.org/

CEILINGS AND INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION (CISCA)
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Elmhurst, IL 60126
Ph: 630-584-1919
Fax: 866-560-8537
E-mail: cisca@cisca.org
Internet: https://www.cisca.org

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
1600 Clifton Road
Atlanta, GA 30329-4027
Ph: 800-232-4636
TTY: 888-232-6348
Internet: https://www.cdc.gov

CHEMICAL FABRICS AND FILM ASSOCIATION (CFFA)
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Internet: https://www.chemicalfabricsandfilm.com/

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Internet: https://www.cagi.org/

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Internet: https://www.cganet.com/

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CONCRETE SAWING AND DRILLING ASSOCIATION (CSDA)
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Internet: https://www.csda.org

CONSUMER ELECTRONICS ASSOCIATION (CEA)
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Internet: https://www.cta.tech/

CONSUMER PRODUCT SAFETY COMMISSION (CPSC)
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Internet: https://www.cpsc.gov

CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION (CEMA)
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COOL ROOF RATING COUNCIL (CRRC)
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COOLING TECHNOLOGY INSTITUTE (CTI)
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Fax: 281-537-1721
E-mail: vmanser@cti.org
Internet: https://www.coolingtechnology.org/

COPPER DEVELOPMENT ASSOCIATION (CDA)
Internet: https://www.copper.org/

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)
722 Jackson Place
Washington DC 20506
Internet: https://www.whitehouse.gov/administration/eop/ceq

CRANE MANUFACTURERS ASSOCIATION OF AMERICA (CMAA)
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E-mail: member@csagroup.org
Internet: https://www.csagroup.org/

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD (DDESB)
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DISTRICT OF COLUMBIA MUNICIPAL REGULATIONS (DCMR)
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PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

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SECTION 01 45 00

QUALITY CONTROL
**08/23, CHG 2: 05/25**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

| | |
|---|---|
| ASTM D3740 | (2023) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction |
| ASTM E329 | (2025b) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |
| ER 1110-3-12 | (2021) Military Engineering and Design Quality Management |

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program. Include all associated costs in the applicable Pricing Schedule item.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G, RO

Additional Requirements For Design Quality Control (DQC) Plan; G, RO

SD-05 Design Data

Design Quality Control

Discipline-Specific Checklists

SD-06 Test Reports

Verification Statement

1.4 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC is comprised of plans, procedures, and organization necessary to produce an end product that complies with the Contract requirements. The QC system covers all design and construction operations, both onsite and offsite, and must be keyed to the proposed design and construction sequence. The Quality Control Manager, Superintendent, Site Safety and Health Officer (SSHO), and all on-site supervisors are responsible for the quality of work and are subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the Contract. The Quality Control Manager must maintain a physical presence at the work site at all times and is the primary individual responsible for all quality control.

1.5 QUALITY CONTROL (QC) PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, QC Plan, QC Plan Meeting(s), a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, QC certifications, independent Special Inspections in accordance with Section 01 45 35 SPECIAL INSPECTIONS, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations that comply with the requirements of this Contract. The QC program must cover on-site and off-site work and be keyed to the work sequence. No construction work or testing may be performed unless the QC Manager is on the work site. The QC Manager must report to an officer of the firm and not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the QC Manager is the primary individual responsible for quality control, all individuals will be held responsible for the quality of work on the job.

1.5.1 Meetings

1.5.1.1 Quality Control Plan Meeting

Prior to submission of the QC Plan, the Contractor may request a meeting with the Contracting Officer to discuss the QC Plan requirements of this Contract.

The purpose of this meeting is to develop a mutual understanding of the QC Plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Feature of Work (DFOW).

1.5.1.2 Coordination and Mutual Understanding Meeting

After the Post Award Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer and discuss the Contractor's quality control system.

During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor, the Architect/Engineer (A/E), and the Government. Provide a copy of the signed minutes to all attendees and incorporate into the relevant QC Plan. At a minimum the Coordination and Mutual Understanding Meeting must be repeated when a new QC Manager is appointed. There can be other occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

1.5.1.2.1 Purpose

The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, design intent, environmental requirements and procedures, coordination of activities to be performed, Special Inspections, and the coordination of the Contractor's management, production, and QC personnel. At the meeting, the Contractor must explain in detail how three phases of control will be implemented for each DFOW, as well as how each DFOW will be affected by each management plan or requirement as listed below:

a. Waste Management Plan.

b. Procedures for noise and acoustics management.

c. Environmental Protection Plan.

d. Environmental regulatory requirements.

e. Special Inspections.

1.5.1.2.2 Coordination of Activities

Coordinate activities included in various sections to assure efficient and orderly installation of each component. Coordinate operations included under different sections that are dependent on each other for proper installation and operation. Coordinate Special Inspections.

1.5.1.2.3 Attendees

As a minimum, the Contractor's personnel required to attend include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, Alternate QC Manager, QC Specialists, Special Inspector, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities must have a principal of the firm at the meeting.

1.5.1.3 Quality Control (QC) Meetings

After the start of construction, conduct weekly QC meetings led by the QC Manager at the work site with the Project Superintendent, the QC Specialists, the Special Inspector, and the other personnel as necessary. The QC Manager is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer may attend these meetings. As a minimum, accomplish

the following at each meeting:

a. Review the minutes of the previous meeting.

b. Review the schedule and the status of work and deficiencies/rework. Review the most current approved schedule (in accordance with schedule specification) and the status of work and deficiencies/rework.

c. Review the status of submittals and Request For Information (RFIs).

d. Review the work to be accomplished in the next 3 weeks as defined by the schedule section paragraph WEEKLY PROGRESS MEETINGS in Section 01 32 01.00 10 PROJECT SCHEDULE and all documentation required for that work.

e. Review Testing Plan and Log including status of tests performed since last QC Meeting.

f. Resolve QC and production problems. Discuss status of pending change orders.

g. Address items that may require revising the QC Plan.

h. Review Accident Prevention Plan (APP) and effectiveness of the safety program.

i. Review environmental requirements and procedures.

j. Review Environmental Management Plan.

k. Review Waste Management Plan.

l. Review the status of training completion.

### 1.5.2 Contractor Quality Control (CQC) Plan

Submit no later than 30 days after receipt of notice to proceed, the CQC Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. The Government will consider an interim plan for the first 7 days of operation. Design and Construction will be permitted to begin only after acceptance of the CQC Plan and other Contract requirements or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work. Design work is not permitted to start prior to approval of a Design Quality Control Plan.

#### 1.5.2.1 Content of Contractor Quality Control (CQC) Plan

Provide a CQC Plan, prior to start of construction that includes a table of contents, with major sections identified, pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project. The CQC Plan must at a minimum include the following sections:

a. A description of the quality control organization and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified.

b. An organizational chart showing the quality control organization with individual names and job titles and lines of authority up to an executive of the company at the home office.

c. NAMES AND QUALIFICATIONS: Names and qualifications, in resume format, (including position titles and durations for qualifying experiences) for each person in the QC organization. Include the Construction Quality Management (CQM) for Contractors course certifications for the QC personnel as required by the paragraph CONSTRUCTION QUALITY MANAGEMENT TRAINING.

d. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.

e. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.

f. APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager, Design Quality Control Manager, and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work that is not in compliance with the Contract. Letters of direction are to be issued by the QC Manager to the Assistant QC Manager and all other QC Specialists or quality control representatives outlining their duties, authorities, and responsibilities. Include copies of the letters in the QC Plan.

g. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, scheduling, and managing submittals, including those of subcontractors, designers of record, consultants, architect-engineers (AE), offsite fabricators, suppliers, and purchasing agents. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.

h. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraph ACCREDITATION REQUIREMENTS, as applicable.

i. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, associated feature of work required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.

j. Procedures to complete design and construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected. This phase is performed prior to beginning work on each definable feature of work, after all required plans, documents, materials are approved, and after copies are at the work site.

k. Reporting procedures, including proposed reporting formats.

l. Procedures for submitting and reviewing design changes/variations

prior to submission to the Contracting Officer.

m. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines, or it is work by the same trade in a different environment. A DFOW is by definition any item or activity on the construction schedule, and the schedule specification provides direction regarding how the DFOWs are to be structured. Include in the list of DFOWs for all activities on the Construction Schedule. Provide separate DFOWs in the Network Analysis Schedule for each design development stage and submittal package. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. Identify the specification section number and schedule activity ID for each DFOW listed. The DFOW list will be reviewed in coordination with the construction schedule and agreed upon during the Coordination and Mutual Understanding Meeting.

n. PROCEDURES FOR PERFORMING AND TRACKING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each Definable Feature of Work (DFOW), a Preparatory and Initial phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.

o. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Special Inspections Project Manual. Where the applicable code issued by the International Code Council (ICC) calls for inspections by the Building Official, the Contractor must include the inspections in the Quality Control Plan and must perform the inspections required by the applicable ICC. The Contractor must perform these inspections using independent qualified inspectors. Include the Special Inspections Project Manual requirements in the QC Plan.

p. o. PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.

q. q. ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications required for entities such as subcontractors, testing laboratories, suppliers, and personnel. The QC Manager will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the Contract that the work is being performed.

1.5.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the DQC Plan:

a. Submit and maintain a DQC Plan as an effective quality control program which assures that all services required by this Contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents must be technically reviewed by competent, independent

reviewers identified in the DQC Plan. The same element that produced the product may not perform the Independent Technical Review (ITR). Correct errors and deficiencies in the design documents prior to submitting them to the Government.

b. Include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific Contract period. Schedule must include sufficient detail to identify all major design tasks, including those that control the flow of work. Include review and correction periods associated with each item. Schedule must be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, submit a revised schedule reflecting the change within 7 calendar days.

c. Include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. Submit at each design phase as part of the project documentation these completed discipline-specific checklists. ER 1110-3-12 provides some useful information in developing checklists.

d. Implement the DQC Plan by a Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated and who coordinates work with and reports to the Contracting Officer via the QC Manager. Notify the Contracting Officer, in writing, of the name of the individual and the name of an alternate person assigned to the position.

e. Provide Quality Control Documentation procedures such as QC review sets and QC comments to demonstrate that cross checking of all engineering disciple's design drawings and specifications has taken place. The QC review documentation must exhibit a checking process of the design documents for completeness, accuracy, and constructability.

1.5.3 Acceptance of the Quality Control (QC) and Design Quality Control (DQC) Plan

The Contracting Officer's acceptance of the Contractor QC Plan, or interim plan applicable to the particular feature of work to be started, and Design Quality Control Plan is required prior to the start of design and construction. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work. The Contracting Officer reserves the right to require changes in the QC and DQC Plan and operations as necessary, including removal or addition of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC and DQC organization at any time to verify the submitted qualifications. All QC and DQC organization personnel are subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the Contract.

1.5.4 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed changes in the QC Plan or changes to the QC organization personnel. Proposed changes are subject to acceptance by the Contracting Officer.

1.5.5 Special Inspections

Perform all required Special Inspections per Section 01 45 35 SPECIAL INSPECTIONS, the statement of Special Inspections and the Schedule of Special Inspections.

1.6 QUALITY CONTROL (QC) ORGANIZATION

1.6.1 Personnel Requirements

The requirements for the CQC organization are a Site Safety and Health Officer (SSHO), QC Manager, a Design Quality Manager, and enough qualified personnel to ensure safety and Contract compliance. The SSHO reports directly to a senior project (or corporate) official independent from the QC Manager. The SSHO will also serve as a member of the CQC Staff Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The CQC staff always maintains a presence at the site during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules, and all other project documentation to the CQC organization. The CQC organization is responsible for always maintaining these documents and records at the site, except as otherwise acceptable to the Contracting Officer.

1.6.2 Quality Control (QC) Manager

1.6.2.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The QC Manager must be employed by the Prime Contractor. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this Contract. The QC Manager must attend the Coordination and Mutual Understanding Meeting, perform the three phases of control except for those phases of control designated to be performed by QC Specialists, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by the QC Specialists, testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. The QC manager is responsible for notifying the Special Inspector of activities which require their review. The QC manager is responsible for coordinating the Special Inspection activities, see paragraph CONTRACTOR'S QUALITY CONTROL (QC) MANAGER, in Section 01 45 35 SPECIAL INSPECTIONS.

1.6.2.2 Qualifications

The QC Manager must possess at least a Bachelor's degree in engineering, architecture, or construction management, with a current professional engineer registration in the state of New York or a current licensed architect in the state of New York and a minimum of 10 years construction experience as a Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type construction Contracts which included the major trades that are part of

this Contract. The individual must have at least 2 years experience as a QC Manager. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification, safety compliance, and sustainability.

The QC Manager and all members of the QC organization must be capable of reading, writing, and conversing fluently in the English language.

1.6.2.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager Alternate QC Manager, Superintendent, QC Specialist, and DQCM must have completed the CQM for Contractors course. If the QC Manager does not have a current certification, obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Systems Command and the Army Corps of Engineers. Contact the Contracting Officer for information on the next scheduled class.

The Construction Quality Management Training certificate expires after 5 years. If the QC Manager's certificate has expired, retake the course to remain current.

1.6.3 Organizational Changes

Maintain the QC staff with personnel as required by the specification section at all times. When it is necessary to make changes to the QC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

1.6.4 Design Quality Control (DQC) Manager

The DQC Manager must be a member of the QC organization, must coordinate actions with the QC Manager, and must not be subordinate to the Project Superintendent or the Project Manager.

1.6.4.1 Qualifications

a. Must be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect.

1.6.4.2 Responsibilities

a. Be responsible for the design integrity, professional design standards, and all design services required.

1.6.5 Alternate Quality Control (QC) Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The qualification requirements for the Alternate QC Manager must be the same as for the QC Manager.

1.6.6 Quality Control (QC) Specialists

Provide a separate QC Specialist at the work site for each of the areas as listed in the Matrix listed below, who must assist and report to the QC Manager and who must have no duties other than their assigned quality

control duties. These individuals or specialized technical companies are directly employed by the Prime Contractor and cannot be employed by a supplier or subcontractor on this project. A single person can cover more than one area provided that the single person is qualified to perform quality control activities in each designated and that workload allows. QC Specialists must be physically present at the work site with frequency as indicated in the Experience Matrix below, to participate in the QC Meetings, perform the three phases of control, including participation in Preparatory and Initial Phase meetings, and to perform and document Follow-up inspections as an extension of the QC Manager for each definable feature of work in their area of responsibility. QC Specialist must assist and be present for training events, and Critical System Acceptance inspections by the Government. Qualification, experience, Area of Responsibility, and frequency of QC surveillance are provided in Matrix listed herein.

| **Experience Matrix** | | |
|---|---|---|
| **1. Area** | **2-1. Qualification**<br>**2-2. Experience** | **3-1. Area of Responsibility**<br>**3-2. Frequency** |
| Structural | 2-1. Graduate Civil Engineer (with Structural Track or Focus) or Construction Manager with a professional engineer registration in the state of New York, and<br>2-2. 2 years experience or person 5 years of experience supervising structural features of work in the field with a construction company | 3-1. Area of Responsibility: Structural Support Specialist for Video Display<br>3-2. Frequency of QC surveillance and inspection will be conducted four times during installation and including final inspection. |
| LED Video Display Specialist | 2-1. Installation and testing of LED Video Display with Content Management System<br>2-2. 10 years of experience | 3-1. Area of Responsibility: Shop Drawing Review; Factory Acceptance Testing; Seam, Color, Brightness, Pixel Alignment; Full LED Video Display Commisioning.<br>3-2. Frequency of QC surveillance and inspection will be Full-Time during installation and including final inspection. |

| | | |
|---|---|---|
| Building Envelope QC Specialist | 2-1. Roofing Manufacturer's Technical Representative<br>2-2. 5 years minimum with roofing system used | 3-1. Area of Responsibility: Waterproofing,Reinstallation and testing of roofing.<br>3-2. Frequency of QC surveillance and inspection will be once a week during installation, once a week during flashing installation and full-time during roof testing. |

1.6.7 Special Inspector

The Special Inspector (SI) must be an independent third party hired directly by the Prime Contractor. The SI must not be a company employee of the Contractor or any subcontractor performing the work to be inspected. The qualifications of the SI are defined in Section 01 45 35 SPECIAL INSPECTION.

1.7 SUBMITTAL AND DELIVERABLES REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES. Procedures must include field verification of relevant dimensions and component characteristics by the QC organization prior to submittal being sent to the Contracting Officer. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the Contract.

1.8 THREE PHASES OF CONTROL

CQC enables the Contractor to ensure that the construction, including that of subcontractors and suppliers, complies with the requirements of the Contract. At least three phases of control must be conducted by the QC Manager to adequately cover both on-site and off-site work for each definable feature of the construction work as follows:

1.8.1 Preparatory Phase

Document the results of the preparatory phase actions by separate minutes prepared by the QC Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required to meet Contract specifications.

Notify the Contracting Officer at least 2 business days in advance of each preparatory phase meeting. The meeting will be conducted by the QC Manager and attended by the QC Specialists, the Project Superintendent, the Special Inspector, and the foreman responsible for the DFOW. When the DFOW will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. Perform the following prior to beginning work on each DFOW:

a. Review each paragraph of the applicable specification sections, reference codes, and standards. Make available during the prepatory inspection a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Government personnel until final acceptance of the work.

b. Review the Contract drawings.

c. Verify that field measurements are as indicated on construction or shop drawings or both before confirming product orders, to minimize waste due to excessive materials.

d. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.

e. Review the testing plan and ensure that provisions have been made to provide the required QC testing.

f. Examine the work area to ensure that the required preliminary work has been completed and complies with the Contract and ensure any deficiencies/rework items in the preliminary work have been corrected and confirmed by the Contracting Officer.

g. Review coordination of product/material delivery to designated prepared areas to execute the work.

h. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.

i. Check to assure that all materials and equipment have been tested, submitted, and approved.

j. Discuss specific controls to be used, construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFOW. Ensure any portion of the plan requiring separate Contracting Officer acceptance has been approved.

k. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted.

l. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

m. Discuss schedule and execution of the initial control phase and confirmation or construction quality compliance.

n. Review Special Inspections required by Section 01 45 35 SPECIAL INSPECTION, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.2 Initial Phase

Notify the Contracting Officer at least 2 business days in advance of each initial phase. When construction crews are ready to start work on a DFOW, conduct the initial phase with the QC Specialists, the Project Superintendent, the Special Inspector, and the foreman responsible for that DFOW. Observe the initial segment of the DFOW to ensure that the

work complies with Contract requirements. Document the results of the initial phase in the daily CQC Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site when acceptable levels of specified quality are not being met. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases. Perform the following for each DFOW:

a. Check work to ensure that it is in full compliance with Contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full Contract compliance. Verify required control inspection and testing comply with the Contract.

c. Establish level of workmanship and verify that it meets the minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve any workmanship issues.

e. Ensure that testing is performed by the approved laboratory.

f. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.

g. Review project specific work plans (i.e., HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.

h. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.3 Follow-Up Phase

Perform the following for on-going DFOW daily, or more frequently as necessary, until the completion of each DFOW. The Final Follow-Up for any DFOW will clearly note in the daily report the DFOW is completed, and all deficiencies/rework items have been completed in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Each DFOW that has completed the Initial Phase and has not completed the Final Follow-up must be included on each daily report. If no work was performed on that DFOW for the period of that daily report, it must be so noted. Document all Follow-Up activities for DFOWs in the daily CQC Report:

a. Ensure the work including control testing complies with Contract requirements until completion of that particular work feature. Record checks in the CQC documentation.

b. Maintain the quality of workmanship required.

c. Ensure that testing is performed by the approved laboratory.

d. Ensure that deficiencies/rework items are being corrected. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work.

e. Do not build upon nor conceal non-conforming work.

f. Assure manufacturers' representatives have performed necessary inspections if required and perform safety inspections.

g. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW has not started within 45 days of the initial preparatory meeting or has resumed after 45 days of inactivity, or if other problems develop.

1.8.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least 2 weeks prior to the start of the preparatory and initial phases.

1.8.6 Deficiency/Rework Items List

The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be corrected, the activity ID number associated with the item, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected.

The QC Manager reviews the list at each weekly QC Meeting:

a. There is no requirement to report a deficiency/rework item that is corrected the same day it is discovered.

b. No successor task may be advanced beyond the preparatory phase meeting until all deficiencies/rework items have been cleared by the QC Manager and concurred with by the Contracting Officer. This must be confirmed as part of the Preparatory Phase activities.

c. Attach a copy of the "Deficiency/Rework Items List" to the last daily CQC Report of each month.

d. The Contractor is responsible for including those items identified by the Contracting Officer.

e. All deficiencies/rework items must be confirmed as corrected by the QC Manager, and concurred by the Contracting Officer, prior to commencement of any completion inspections per paragraph COMPLETION INSPECTIONS unless specifically exempted by the Contracting Officer.

f. Non-Compliance with these requirements is grounds for removal in accordance with paragraph ACCEPTANCE OF THE QUALITY CONTROL (QC) and DESIGN QUALITY CONTROL (DQC) PLAN.

g. All delays, concurrent or related to failure to manage, monitor, control, and correct deficiencies/rework items are entirely the

responsibility of the Contractor and can not be made the subject, or any component of any request for additional time or compensation.

## 1.9 TESTING

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to Contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and acceptance tests when specified. Procure the services of an U.S. Army Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site or within 15 miles. Perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with Contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all test documentation requirements, have been prepared.

e. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports are submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated results in nonpayment for related work performed and disapproval of the test facility for this Contract.

### 1.9.1 Laboratory Accreditation Authorities

All testing laboratories must be validated by the USACE Material Testing Center (MTC) for the tests to be performed. Information on the USACE MTC with web-links to both a list of validated testing laboratories and for the laboratory inspection request for can be found at: https://mtc.erdc.dren.mil

### 1.9.2 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract. Laboratories utilized for testing soils, concrete, asphalt, and steel must meet criteria detailed in ASTM D3740 and ASTM E329.

#### 1.9.2.1 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed the cost of or for recheck fees. The Contractor will reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be

deducted from the Contract amount due the Contractor.

1.9.2.2 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

1.9.3 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager.

1.10 COMPLETION INSPECTIONS

1.10.1 Punch-Out Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications, and Contract. Include in the punch list any remaining items on the "Deficiency/Rework Items List", that were not corrected prior to the Punch-Out Inspection as approved by the Contracting Officer in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer.

The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. All punch list items must be confirmed as corrected by the QC Manager and concurred by the Contracting Officer. Once this is accomplished, notify the Government that the facility is ready for the Government "Pre-Final Inspection".

1.10.2 Pre-Final Inspection

The Government and QC Manager will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" will be documented by the QC Manager as a result of this inspection. The QC Manager will ensure that all items on this list are corrected and concurred by the Contracting Officer prior to notifying the Government that a "Final" inspection with the Client can be scheduled. All items noted on the "Pre-Final" inspection must be corrected and concurred by the Contracting Officer in a timely manner and be accomplished before the Contract completion date for the work, or any increment thereof, if the project is divided into increments by separate completion dates unless exceptions are directed by the Contracting Officer.

1.10.3 Final Acceptance Inspection

Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, and others deemed necessary. Attendees for the Government will include the Contracting Officer, other Government QA personnel, and personnel representing the Client. Failure of the Contractor to have all Contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

1.11 QUALITY CONTROL (QC) CERTIFICATIONS

1.11.1 Contractor Quality Control (CQC) Report Certification

Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used, and work performed during this reporting period is in compliance with the Contract drawings and specifications to the best of my knowledge, except as noted in this report."

1.11.2 Completion Certification

Upon completion of work under this Contract, the QC Manager must furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the preparer of the Operation & Maintenance (O&M) documentation.

1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER

Maintain current and complete records of on-site and off-site QC program operations and activities.

Contact the Contracting Officer for sample forms or print from RMS-QCS as needed. Prior to commencing work on construction, the Contractor must obtain a copy set of the current report forms. The report forms will consist of the Contractor Quality Control (CQC) Report, CQC Report (Continuation Sheet), Contractor Production Report, Contractor Production Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Testing Plan and Log, and Rework Items List. Unless otherwise provided by the Contracting Officer, Contractor may use the forms provided as related material located at www.wbdg.org/dod/ufgs/ufgs-01-45-00.

1.12.1 Construction Documentation

Prepare a Construction Production Report and a Contractor Quality Control Report for each day that work is performed. Attach the Construction Production Report to the Contractor Quality Control Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities.

Account for each calendar day throughout the life of the Contract.

The Project Superintendent and the QC Manager must prepare and sign the

Contractor Production and CQC Reports, respectively. Every space on the forms must be filled in. Use N/A if nothing can be reported in one of the spaces. The reporting of work must be identified by terminology consistent with the construction schedule. In the "Remarks" sections of the reports, enter pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered, a record of visitors to the work site, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, and meetings held. For each entry in the report(s), identify the Schedule Activity No. that is associated with the entered remark.

1.12.2 Quality Control Activities

CQC and Contractor Production reports will be prepared daily to maintain current records providing factual evidence that required quality control activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

a. The name and area of responsibility of the Contractors and any subcontractors.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When a Network Analysis Schedule (NAS) is used, identify each item of work performed each day by NAS activity number.

d. Control phase activities performed. Preparatory, and Initial phase Checklists associated with the DFOW referenced to the construction schedule. Follow-up phase activities identified to the DFOW. If testing or specific QC Specialist activities are associated with the Follow-up phase activities for a specific DFOW note this and include those reports.

e. Test and control activities performed with results and references to specifications and drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST.

f. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications and drawings requirements.

g. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.

h. Offsite surveillance activities, including actions taken.

i. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

j. Instructions given/received and conflicts in plans and specifications.

k. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identification of the Independent Technical Review (ITR) team and their review comments, responses and the record of resolution of the comments.

1.12.3 Verification Statement

Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract.

Furnish the original and one copy of these records in report form to the Government by 10:00 AM the next working day after the date covered by the report. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the Contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the QC Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the QC Manager Report.

1.12.4 Reports from the Quality Control (QC) Specialist(s)

Document inspection results on a QC specialist report prepared each day work is performed in their area of responsibility. The report must include a description of the visual inspection or observation performed, a written summary of findings, a conclusion on compliance with the Contract documents, and signature of the QC Specialist. In person inspections must be documented with Video/photographs. Video/photographic documentation of deficiencies must include before and after conditions and physical measurements, as necessary. Forward the QC daily report to the QC Manager who must include the report with the submission of their daily QC Report to the Government each day. Every site visit by the QC Specialist must be documented on a QC Specialist daily report.

1.12.5 Quality Control Validation

Establish and maintain the following in an electronic folder. Divide folder into a series of tabbed sections as shown below. Ensure folder is updated at each required progress meeting.

a. CQC Meeting minutes in accordance with paragraph QUALITY CONTROL (QC) MEETINGS.

b. All completed Preparatory and Initial Phase Checklists, arranged by specification section, further sorted by DFOW referenced to the construction schedule. Submit each individual Phase Checklist the day the phase event occurs as part of the CQC daily report.

c. All milestone inspections, arranged by Activity Number referenced to the construction schedule.

d. An up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section referenced to the DFOW to which individual reports results are associated. Individual field test reports will be submitted within 2 working days after the test is performed in accordance with the paragraph QUALITY CONTROL ACTIVITIES.

e. Copies of all Contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.

f. An up-to-date copy of the paragraph DEFICIENCY/REWORK ITEMS LIST.

g. g. Special Inspection reports.

h. h. Upon commencement of Completion Inspections of the entire project or any defined portion, maintain up-to-date copies of all punch lists issued by the QC staff to the Contractor and subcontractors and all punch lists issued by the Government in accordance with the paragraph COMPLETION INSPECTIONS.

1.12.6 Testing Plan and Log

As tests are performed, the QC Manager will record on the "Testing Plan and Log" the date the test was performed and the date the test results were forwarded to the Contracting Officer. Attach a copy of the updated "Testing Plan and Log" to the last daily CQC Report of each month. Provide a copy of the final "Testing Plan and Log" to the preparer of the Operation & Maintenance (O&M) documentation.

1.12.7 As-Built Drawings

The QC Manager must ensure the as-built drawings, required by Section 01 78 00 CLOSEOUT SUBMITTALS are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. The as-built drawings document commences with the QC Manager ensuring all amendments, or changes to the Contract prior to Contract award are accurately noted in the initial document set creating the accurate baseline of the Contract prior to any work starting. Ensure each deviation has been identified with the appropriate modifying documentation (e.g., PC No., Modification No., Request for Information No.). The QC Manager or QC Specialist assigned to an area of responsibility must initial each revision. Upon completion of work, the QC Manager will furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

1.13 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance with the Contract. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, is deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of a claim for extension of time for excess costs or damages by the Contractor.

1.14 DELIVERY, STORAGE, AND HANDLING

Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories

covered and off the ground, and store in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect all materials and installations from damage by the activities of other trades.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

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RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |

1.2 MEASUREMENT AND PAYMENT

The work of this section is not measured for payment. The Contractor is responsible for the work of this section, without any direct compensation other than the payment received for contract items.

1.3 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Closeout
Import/Export of Data

The Contractor must be prepared to transition from the Resident Management System (RMS) to the new Construction Management Platform (CMP) at any time during the period of performance of this contract, once the USACE enterprise implements this change. The Contractor's obligation to transition from RMS to the CMP system is a requirement of this contract. Therefore, additional time or cost increase to complete this transition will not be considered. In the event of the transition, RMS project information will be migrated to CMP by the government and available in the CMP system. After the transition, the Contractor must utilize the CMP system to perform all contract administration functions previously required in RMS, including all areas listed above. After the transition, “RMS” and “CMP” will be synonymous for all “Resident Management System”

and “RMS” references in this contract’s specification. To facilitate the transition from RMS to CMP, online training for the CMP system will be made available to the Contractor with enough time to train staff, prior to the transition occurring.

1.3.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some documents such as correspondence, including pay requests and payrolls, may be required in paper format with original signatures. Paper documents will govern in the event of discrepancy with the electronic version. Contracting Officer will determine which documents require submission of paper copies.

1.3.2 Other Factors

Other portions of this document have a direct relationship to the reporting accomplished through RMS. Particular attention is directed to FAR 52.236-15 Schedules for Construction Contracts; FAR 52.232-27 Prompt Payment for Construction Contracts; FAR 52.232-5 Payments Under Fixed-Priced Construction Contracts; Section 01 32 01.00 10 PROJECT SCHEDULE; Section 01 33 00 SUBMITTAL PROCEDURES; Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS; and Section 01 45 00 QUALITY CONTROL.

1.4 RMS SOFTWARE

RMS is a web based application. Download, install and be able to utilize the latest version of RMS within 7 calendar days of receipt of the Notice to Proceed. RMS software, user manuals, access and installation instructions, program updates and training information are available from the RMS website (https://rms.usace.army.mil). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

1.5 CONTRACT DATABASE - GOVERNMENT

The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance(QA)comments, as well as other miscellaneous administrative information.

1.6 CONTRACT DATABASE - CONTRACTOR

Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The Contractor responsibilities for entries in RMS typically include the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Enter all current Contractor administrative data and information into RMS

within 7 calendar days of receiving access to the contract in RMS. This includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

1.6.1.2 Subcontractor Information

Enter all missing subcontractor administrative data and information into RMS CM within seven calendar days of receiving access to the Contract in RMS or within seven calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

1.6.1.3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters are numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C" or "RFP".

1.6.1.4 Equipment

Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates in accordance with Section 01 45 00 QUALITY CONTROL.

1.6.1.5 Reports

Track the status of the project using the reports available in RMS. The value of these reports reflects the quality of the data input. These reports include but are not limited to the Progress Payment Request worksheet, Quality Control (QC) comments, Deficiency Tracking Log, Submittal Register Status, and Three-Phase Control worksheets in accordance with Sections 01 20 00 PRICE AND PAYMENT PROCEDURES, Section 01 32 01.00 10 PROJECT SCHEDULE, 01 33 00 SUBMITTAL PROCEDURES, and 01 45 00 QUALITY CONTROL.

1.6.1.6 Request For Information (RFI)

Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response. Provide status at weekly progress meeting in accordance with Section 01 32 01.00 10 PROJECT SCHEDULE.

1.6.2 Finances

1.6.2.1 Pay Activity Data

Develop and enter a list of pay activities in conjunction with the project schedule in accordance with Section 01 32 01.00 10 PROJECT SCHEDULE. The sum of pay activities equals the total Contract amount, including modifications. Each pay activity must be assigned to a Contract Line Item Number (CLIN). The sum of the activities assigned to a CLIN equals the amount of each CLIN.

1.6.2.2 Payment Requests

Prepare all progress payment requests using RMS. Update the work completed under the Contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data, either electronically or by hard copy.

1.6.3 Quality Control (QC)

Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Link each deficiency and QC test to a pay activity. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Ensure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments. Provide within seven calendar days of Government acceptance of the CQC Plan.

1.6.3.1 Quality Control (QC) Reports

The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. QC Daily Reports must be finalized and signed in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

1.6.3.2 Deficiency Tracking

Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

1.6.3.3 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS, and upload meeting minutes of the meetings. Worksheets for the three-phase control meetings are generated within RMS.

1.6.3.4 Labor and Equipment Hours

Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

1.6.3.5 Accident/Safety Reporting

Both the Contractor and the Government enter safety related comments in RMS as a deficiency. The Contractor must monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and

incidents as required in EM 385-1-1, Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS and as required by any other applicable Federal, State or local agencies.

1.6.3.6 Definable Features of Work

Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

1.6.3.7 Activity Hazard Analysis

Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager. Prepare activity hazard analysis in accordance with Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS.

1.6.4 Submittal Management

Enter all current submittal register data and information into RMS within seven calendar days of receiving access to the Contract in RMS. Contractor is responsible for entering Activity Numbers for each submittal item corresponding to their Schedule. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the Contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

Enter all submittals as listed in the approved design's submittal register within 14 calendar days of design approval for construction.

Contractor may request submittals to be added to RMS throughout the lifecycle of the project. Approval/disapproval of Contractor requests is at the discretion of the Contracting Officer. Submittals entry into RMS must be updated daily or as practical for performance of the Contract, as approved by the Contracting Officer.

1.6.5 Schedule

Enter and update the contract project schedule in RMS by either manually entering all schedule data or by importing the Standard Data Exchange Format (SDEF) file, based on the requirements in Section 01 32 01.00 10 PROJECT SCHEDULE.

1.6.6 Closeout

Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

1.7 IMPLEMENTATION

Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

1.8 NOTIFICATION OF NONCOMPLIANCE

Take corrective action within seven calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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SECTION 01 45 35

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**05/24**

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SECTION 01 45 35

SPECIAL INSPECTIONS
**05/24**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

| | |
|---|---|
| ASCE 7-22 | (2022; Supp 1 2023; Supp 2 2023; Supp 3 2025) Minimum Design Loads and Associated Criteria for Buildings and Other Structures |

INTERNATIONAL CODE COUNCIL (ICC)

| | |
|---|---|
| ICC IBC | (2024) International Building Code |

U.S. DEPARTMENT OF DEFENSE (DOD)

| | |
|---|---|
| UFC 3-301-01 | (2023; with Change 6, 2026) Structural Engineering |
| UFC 3-301-02 | (2023; with Change 1, 2025) Design of Risk Category V Structures, National Strategic Military Assets |

1.2 GENERAL REQUIREMENTS

Perform Special Inspections in accordance with the Statement of Special Inspections, Schedule of Special Inspections, Chapter 17 of ICC IBC, and UFC 3-301-01. The Statement of Special Inspections and Schedule of Special Inspections are included as an attachment to this specification. Special Inspections are to be performed by an independent third party and are intended to ensure that the work of the Prime Contractor is in accordance with the Contract Documents and applicable building codes. Special inspections do not take the place of the three phases of control inspections performed by the Contractor's QC Manager or any testing and inspections required by other sections of the specifications.

Structural observations will be performed by the Structural Engineer of Record (SER). The Contractor must provide notification to the Contracting Officer and Structural Engineer of Record (SER) 14 days prior to the following points of construction to allow for structural observation:

a. Modification of existing base plates, gusset plates, or lateral braces.

b. Anchoring to the exisitng concrete support ribs below.

c. Installation of support frame for the LED Video Display.

## 1.3 DEFINITIONS

### 1.3.1 Continuous Special Inspections

Continuous Special Inspections is the constant monitoring of specific tasks by a special inspector. These inspections must be carried out continuously over the duration of the particular tasks.

### 1.3.2 Perform

Perform these tasks for each weld, fastener or bolted connection, and noted required verification.

### 1.3.3 Observe

Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Observe these Special Inspections items on a periodic daily basis. Operations need not be delayed pending these inspections.

### 1.3.4 Special Inspector (SI)

A qualified person retained by the Contractor and approved by the Contracting Officer as having the competence necessary to inspect a particular type of construction requiring Special Inspections. The SI must be an independent third party hired directly by the Prime Contractor.

### 1.3.5 Associate Special Inspector (ASI)

A qualified person who assists the SI in performing Special Inspections but who must perform inspection under the direct supervision of the SI and who cannot perform inspections without the SI on site.

### 1.3.6 Third Party

A Special inspector must not be an employee of the Contractor or of any Sub-Contractor performing the work to be inspected.

### 1.3.7 Contracting Officer

The Government official having overall authority for administrative contracting actions. Certain contracting actions may be delegated to the Contracting Officer's Representative (COR).

### 1.3.8 Quality Control (QC) Manager

An individual retained by the Prime Contractor and qualified in accordance with the Section 01 45 00 QUALITY CONTROL having the overall responsibility for the Contractor's QC organization.

### 1.3.9 Structural Engineer of Record (SER)

A registered design professional retained by the Prime Contractor responsible for the overall design and review of submittal documents prepared by others. The SER is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in the state in which the design professional works. The SER is also referred to as the Engineer of Record (EOR) in design documents.

1.3.10 Statement of Special Inspections (SSI)

A document developed by the SER identifying the materials, systems, components and work required to have Special Inspections. This statement is included at the end of this specification.

1.3.11 Schedule of Special Inspections (SSI)

A schedule which lists each of the required Special Inspections, the extent to which each Special Inspection is to be performed, and the required frequency for each in accordance with ICC IBC Chapter 17. This schedule is included at the end of this specification.

1.3.12 Designated Seismic Systems (DSS)

Those nonstructural components that require design in accordance with ASCE 7-22 Chapter 13 and for which the component importance factor, Ip, is greater than 1.0. This designation applies to systems that are required to be operational following the Design Earthquake for RC I - IV structures and following the MCER for RC V structures. All systems in RC V facilities designated as MC-1 in accordance with UFC 3-301-02 are considered part of the Designated Seismic Systems.

1.3.13 Definable Feature of Work (DFOW)

An inspection group that is separate and distinct from other inspection groups, having inspection requirements or inspectors that are unique.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Special Inspections Agency's Written NDT Practices with method and evidence of regular equipment calibration where applicable

SD-06 Test Reports

Special Inspection Daily Reports

Special Inspection Biweekly Reports

SD-07 Certificates

AISC Certified Steel Fabricator

AC472 Accreditation

Certificate of Compliance

Special Inspector Qualifications; G, RO

SD-11 Closeout Submittals

Comprehensive Final Report of Special Inspections; G, RO

Final Report of Structural Observations where required; G, RO

1.5 SPECIAL INSPECTOR QUALIFICATIONS

Submit qualifications for each special inspector according to the following certification requirements. The Government will consider alternate equivalent certification upon request. Without written acceptance deviations to the following qualifications are not approved.

1.5.1 Steel Construction and High Strength Bolting

1.5.1.1 Special Inspector

a. ICC Structural Steel and Bolting Special Inspector certificate with one year of related experience, or

b. Registered Professional Engineer with 3 years of related experience

1.5.2 Welding Structural Steel

1.5.2.1 Special Inspector

a. ICC Structural Welding Special Inspector certificate with one year of related experience, or

b. AWS Certified Welding Inspector

1.5.3 Nondestructive Testing of Welds

1.5.3.1 Special Inspector

NDT Level III Certificate

1.5.4 Concrete Construction

1.5.4.1 Special Inspector

a. ICC Reinforced Concrete Special Inspector Certificate with one year of related experience, or

b. ACI Concrete Construction Special Inspector, or

c. Registered Professional Engineer with 3 years of related experience

1.5.5 Verification of Site Soil Condition, Fill Placement and Load-Bearing Requirements

1.5.5.1 Special Inspector

a. ICC Soils Special Inspector Certificate with one year of related experience, or

b. National Institute for Certification in Engineering Technologies (NICET) Soils Technician Level II Certificate in Construction Material Testing, or

c. Geologist-In-Training with 3 years of related experience, or

d. Registered Professional Engineer with 3 years of related experience

PART 2 PRODUCTS

2.1 SPECIAL INSPECTION OF FABRICATED ITEMS

Special Inspection of fabricator's work performed in the fabricator's shop is required to be inspected in accordance with the Statement of Special Inspections and the Schedule of Special Inspections unless the fabricator is certified by the approved agency to perform such work without Special Inspections. Submit the following certifications to the Contracting Officer for information to allow work performed in the fabricator's shop to not be subjected to Special Inspections.

AISC Certified Steel Fabricator.

International Accreditation Service, AC472 Accreditation

At the completion of fabrication, submit a certificate of compliance, to be included with the comprehensive final report of Special Inspections, stating that the materials supplied and work performed by the fabricator are in accordance with the construction documents.

PART 3 EXECUTION

3.1 RESPONSIBILITIES

3.1.1 Quality Control Manager

a. Supervise all Special Inspectors required by the Contract Documents and the IBC.

b. Verify the qualifications of all the Special Inspectors.

c. Verify the qualifications of all fabricators.

d. Maintain a 3-ring binder for the Special Inspector's special inspection daily reports and special inspection biweekly reports. This binder must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the SER.

e. Maintain a rework items list that includes discrepancies noted on the Special Inspector's daily report.

3.1.2 Special Inspectors

a. Inspect all elements of the project which the special inspector is qualified to inspect and which are identified in the Schedule of Special Inspections.

b. Attend preparatory phase meetings related to the Definable Feature of Work (DFOW) which the Special Inspector is qualified to inspect.

c. Submit Special Inspection agency's written NDT practices for the monitoring and control of the agency's operations, to include the

following:

(1) The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualification and certification of inspection personnel.

(2) The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.

d. Submit NDT procedures and equipment calibration records for NDT to be performed and equipment to be used for the project.

e. Submit a copy of the special inspection daily reports to the QC Manager.

f. Report discrepancies that are observed during Special Inspections to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.

g. Submit a biweekly Special Inspection Report until all inspections are complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:

(1) A brief summary of the work performed during the reporting time frame.

(2) Changes from and discrepancies with the drawings, specifications that were observed during the reporting period.

(3) Discrepancies which were resolved or corrected.

(4) A list of nonconforming items requiring resolution.

(5) All applicable test result, including nondestructive testing reports.

h. At the completion of the project, submit a comprehensive final report of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed and dated and it must indicate the certification of the Special Inspector qualifying them to conduct the inspection.

3.1.3 Structural Engineer of Record (SER)

a. Develop the Statement of Special Inspections and the Schedule of Special Inspections as defined in Chapter 17 of ICC IBC. Submit the Statement of Special Inspections and the Schedule of Special Inspections for approval by the Contracting Officer.

The Statement of Special Inspections must include the following information:

(1) List of Architectural Components that are part of the Designated Seismic System.

(2) List of Mechanical Components that are part of the Designated

Seismic System.

(3) List of the Electrical Components that are part of the Designated Seismic System.

(4) List of periodic walk-down inspections required by UFC 3-301-01.

(5) List of elements that are part of the progressive collapse resisting system.

Develop Schedule of Special Inspections using the template located on the Whole Building Design Guide website at: www.wbdg.org/dod/ufgs/ufgs-01-45-35

b. Prior to the start of structural observations submit a written statement identifying the frequency and extent of structural observations.

c. At the conclusion of the structural observations submit a final report of structural observations indicating that the structural observation site visits have been made and identify any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved.

d. Perform a final walk-down inspection of the mechanical and electrical components that are part of the designated seismic system to ensure that the nonstructural components satisfy life safety mounting requirements as defined in the Statement of Special Inspections.

e. Submit a report of the final walk-down inspection that includes the following:

(1) Record of/observations from final site visit.

(2) Documentation that all required inspections were performed in accordance with the Statement of Special Inspections.

(3) Documentation that the Designated Seismic Systems were installed in accordance with the construction documents and the requirements of ICC IBC Chapter 17, as modified by UFC 3-301-01 or UFC 3-301-02.

## 3.2 DEFECTIVE WORK

Check work as it progresses, but failure to detect any defective work or materials must in no way prevent later rejection if defective work or materials are discovered, nor obligate the Contracting Officer to accept the defective work or materials.

-- End of Section --

Project: Times Square Video Display Upgrade
Location: Manhattan, NY
Project #: 461269
Date: 6/17/2026

# STATEMENT OF SPECIAL INSPECTIONS

Seismic Design Category: B
Risk Category: II
Number of Stories above Grade: 1
Height of Highest Occupied Roof or Floor 18

Hazardous Occupancy or attached to such? No Group H Occupancies

## Special Inspector of Record (SIOR)

A Special Inspector of Record (SIOR) **IS NOT** required (per UFGS 01 45 35, Section 1.3.7)

## Lateral Force Resisting System (LFRS)

2024 IBC 1704.3.2 and 1704.3.3

Following is a listing of critical elements of the main wind/seismic force-resisting system for this structure. Carefully inspect these elements as part of the roles and responsiblities of the Special Inspector (reference the Schedule of Special Inspections for inspection checklists).

| **Vertical LFRS Elements** | **Notes** |
|---|---|
| Steel Ordinary Concentrically Braced Frames | See Plan, Ex Roof Framing Plan / New Work |
| Steel Special Concentrically Braced Frames | N/A |
| Steel Ordinary Moment Frames (SMF) | N/A |
| Ordinary Reinforced Concrete Shear Walls | N/A |
| Concrete Grade Beams Resisting Lateral Loads | N/A |
| Ordinary Reinforced Masonry Shear Walls | N/A |
| OSB Sheathed Shear Walls (nailing, sill bolting, Etc) | N/A |
| Wood Shear Wall Hold Downs | N/A |
| **Horizontal LFRS Elements** | **Notes** |
| Continuous Roof Ties | See Plan, Ex Roof Framing Plan / New Work |
| Collector Elements | N/A |
| Concrete topping over metal deck | N/A |
| Metal Roof Deck & Related Fastening System | N/A |
| Out-of-Plane Wall Connections | N/A |
| Diaphragm Cross Rod Bracings | N/A |
| Cast-in-Place Concrete Floor and Roof Diaphragms | N/A |

| | |
|---|---|
| Special Force Transfer Connections | N/A |



Project: Times Square Video Display Upgrade
Location: Manhattan, NY
Project #: 461269
Date: 8/7/2025

## Designated Seismic Systems (DSS)

(2024 IBC 1705.13.4) (ASCE 7-22, 13.2.3, C13.2.2) (UFC 3-301-1, 2-5.3)

| ELECTRICAL Components that are part of the Designated Seismic System (DSS) , which require a Certificate of Compliance |
|---|
| N/A |
| N/A |
| N/A |
| N/A |
| N/A |

If additional space is required, append an additional sheet listing the remaining DSS

| MECHANICAL/PLUMBING Components that are part of the Designated Seismic System (DSS), which require a Certificate of Compliance |
|---|
| N/A |
| N/A |
| N/A |
| N/A |
| N/A |
| N/A |

If additional space is required, append an additional sheet listing the remaining DSS

| OTHER Designated Seismic Systems (DSS) requiring a Certificate of Compliance |
|---|
| N/A |
| N/A |
| N/A |
| N/A |
| N/A |
| N/A |

## Final Walk-Down Inspection and Report

(UFC 3 301 01 SECTION 2-5.4)

Final Walk Down Inspection of non-structural Designated Seismic Systems does not apply to this project (no Designated Seismic Systems)

- m
-

# SCHEDULE OF SPECIAL INSPECTIONS

Reference UFGS 01 45 35 for all requirements not noted as part of this schedule.

**INSPECTION DEFINITIONS:**

**PERFORM**: Perform these tasks for each weld, fastener or bolted connection, and required verification.

**OBSERVE:** Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Operations need not be delayed pending these inspections at contractor's risk.

**DOCUMENT**: Document, with a report, that the work has been performed in accordance with the contract documents. This is in addition to any other reports required in the Special Inspections guide specification.

**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

**PERIODIC:** Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

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The Seismic Design Category for this project is: ☐ A, ☒ B, ☐ C, ☐ D, ☐ E, ☐ F (check appropriate box)

**DESIGNER NOTES (delete this box after reviewing):**

1. This schedule contains minimum requirements. Do not delete applicable inspection tasks unless notes in blue indicate it is acceptable to do so.
2. Blue text = designers notes. The designer must review and edit all blue text in this schedule prior to inserting this schedule into the special inspections spec (UFGS 01 45 35).
3. Check section boxes with ANY inspection tasks applicable to your project. You may choose to delete unchecked sections or leave them in the schedule unchecked.
4. Individual rows/tasks that are not applicable to the project may be left in the section, as the inspector can determine whether they occur/apply (e.g. metal trusses in the light gauge framing section for example).
5. Design discipline sections are color coded for easier reference by designers. This schedule does NOT need to be printed in color.
6. When finished editing, delete this note box and save this schedule as a PDF and insert into the project specifications (special inspections section).

## A. STRUCTURAL STEEL – WELDING

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

| STEEL INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-1 and Table C-N5.4-1 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify that the welding procedures specification (WPS) is available | **PERFORM** | |
| 2. Verify manufacturer certifications for welding consumables are available | **PERFORM** | |
| 3. Verify material identification | **PERFORM** | Type and grade. |
| 4. Verify use of qualified welders | **PERFORM** | Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements. |
| 5. Welder Identification System | OBSERVE | ✓ Fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified.<br>✓ Die stamping of members subjected to fatigue shall be prohibited unless approved by the engineer of record. |
| 6. Fit-up of groove welds (including joint geometry) | OBSERVE | ✓ Joint preparation<br>✓ Dimensions (alignment, root opening, root face, bevel)<br>✓ Cleanliness (condition of steel surfaces)<br>✓ Tacking (tack weld quality and location)<br>✓ Backing type and fit (if applicable) |
| 7. Fit-up of CJP groove welds of HSS T-, Y-, and K-connections without backing (including joint geometry | **PERFORM** | ✓ Joint preparations<br>✓ Dimensions (alignment, root opening, root face, bevel)<br>✓ Cleanliness (condition of steel surfaces)<br>✓ Tacking (tack weld quality and location) |
| 8. Configuration and finish of access holes | OBSERVE | |
| 9. Fit-up of fillet welds | OBSERVE | ✓ Dimensions (alignment, gaps at root)<br>✓ Cleanliness (condition of steel surfaces)<br>✓ Tacking (tack weld quality and location) |
| STEEL INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2 and Table C-N5.4-2 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 10. Control and handling of welding consumables | OBSERVE | ✓ Packaging<br>✓ Electrode atmospheric exposure control |
| 11. No welding over cracked tack welds | OBSERVE | |
| 12. Environmental conditions | OBSERVE | ✓ Wind speed within limits<br>✓ Precipitation and temperature |

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

| STEEL INSPECTION <u>DURING</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2 and Table C-N5.4-2 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 13. Welding Procedures Specification followed | OBSERVE | ✓ Settings on welding equipment<br>✓ Travel speed<br>✓ Selected welding materials<br>✓ Shielding gas type/flow rate<br>✓ Preheat applied<br>✓ Interpass temperature maintained (min./max.)<br>✓ Proper position (F, V, H, OH)<br>✓ Intermix of filler metals avoided |
| 14. Welding techniques | OBSERVE | ✓ Interpass and final cleaning<br>✓ Each pass within profile limitations<br>✓ Each pass meets quality requirements |
| STEEL INSPECTION <u>AFTER</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-3 and Table C-N5.4-3 | | |
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 15. Welds cleaned | OBSERVE | ✓ |
| 16. Verify size, length, and location of all welds | **PERFORM** | ✓ Size, length, and location of all welds conform to the requirements of the construction drawings. |
| 17. Verify welds meet visual acceptance criteria | **PERFORM AND DOCUMENT** | ✓ Crack prohibition<br>✓ Weld/base-metal fusion<br>✓ Crater cross section<br>✓ Weld profiles<br>✓ Weld size<br>✓ Undercut<br>✓ Porosity |
| 18. Check for arc strikes | **PERFORM** | |
| 19. Visually inspect *k*-area | **PERFORM** | When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld |
| 20. Verify backing removed, weld tabs removed and finished, and fillet welds added where required | **PERFORM** | |
| 21. Repair activities | **PERFORM AND DOCUMENT** | |
| 22. Acceptance or rejection of welded joint or member | **PERFORM AND DOCUMENT** | |
| 23. No prohibited welds have been added without the approval of the engineer of record | OBSERVE | |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

## B. STRUCTURAL STEEL – BOLTING

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| STEEL INSPECTION TASKS PRIOR TO BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6-1 and Table C-N5.6-1 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify manufacture's certifications available for fastener materials | **PERFORM** | |
| 2. Fasteners marked in accordance with ASTM requirements | OBSERVE | |
| 3. Proper fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane) | OBSERVE | |
| 4. Proper bolting procedure selected for joint detail | OBSERVE | |
| 5. Connecting elements, including appropriate faying surface condition and hole preparation, if specified, meet applicable requirements | OBSERVE | |
| 6. Pre-installation verification testing for each fastener assembly performed by installation personnel, carefully observing and documenting the installation methods. | OBSERVE | Check if the fastener assemblies and the installation methods are capable of achieving 105%, or more, of the minimum required bolt pretension. |
| 7. Proper storage provided for bolts, nuts, washers, and other fastener components | OBSERVE | |
| STEEL INSPECTION TASKS DURING BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6-2 and Table C-N5.6-2 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 8. Fastener assemblies of suitable condition, placed in all holes and washers (if required) are positioned as required | OBSERVE | |
| 9. Joint brought to the snug-tight condition prior to pretensioning operation | OBSERVE | |
| 10. Fastener component not turned by the wrench prevented from rotating | OBSERVE | |
| 11. Bolts are pretensioned in accordance with RCSC *Specification*, progressing systematically from the most rigid point toward the free edges | OBSERVE | |
| STEEL INSPECTION TASKS AFTER BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6.3 and Table C-N5.6-3 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 12. Acceptance or rejection of all bolted connections | **DOCUMENT** | |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

## C. STRUCTURAL STEEL - NONDESTRUCTIVE TESTING

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Section N5.5 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify use of qualified nondestructive testing personnel | **PERFORM** | Visual weld inspection and nondestructive testing (NDT) shall be conducted by personnel qualified in accordance with AWS D1.8 Clause 7.2 |
| 2. CJP groove welds | OBSERVE | **[NOTE: DOR must delete this row if Section D (SEISMIC PROVISIONS SECTION) is checked]** Dye penetrant testing (DT) and ultrasonic testing (UT) shall be performed on 20% of CJP groove welds for materials greater than 5/16" (8 mm) thick. Testing rate must be increased to 100% if greater than 5% of welds tested have unacceptable defects. |
| 3. Welded joints subject to fatigue | OBSERVE | Dye penetrant testing (DT) and Ultrasonic testing (UT) shall be performed on 100% of welded joints identified on contract drawings as being subject to fatigue. Table A-3.1 in AISC 360-22 provides Fatigue Design Parameters for welded joints that must be checked. |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

## D. STRUCTURAL STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS)

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 341-22: Section J7.2 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| **[NOTE: DOR may uncheck this section for projects NOT designed in accordance with AISC 341 (Seismic Provisions) or for projects designed according to AISC 341, but using an R value equal to 3]** | | |
| 4. CJP groove welds | OBSERVE | Ultrasonic testing (UT) shall be performed on 100% of complete-joint-penetration (CJP) groove welds in materials 5/16 in. (8 mm) thick or greater. UT in materials less than 5/16 in. (8 mm) thick is not required. Welds shall be inspected by UT in compliance with AWS D1.8/D1.8M.<br><br>Magnetic particle testing (MT) shall be performed on 25% of all beam-to-column CJP groove welds. Welds shall be inspected by MT in compliance with AWS D1.8/ D1.8M.<br><br>For ordinary moment frames in structures in risk categories I or II, UT and MT of CJP groove welds shall be required only for demand critical welds. |
| 5. Beam cope and access hole. | OBSERVE | At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested using magnetic particle testing (MT) or dye penetrant testing (DT), when the flange thickness exceeds 1 1/2 in. for rolled shapes, or when the web thickness exceeds 1 1/2 in. for built-up shapes. |
| 6. *k*-area NDT (AISC 341 Table J7.1 and AWS D1.8 Clause 7.4) | **PERFORM AND DOCUMENT** | Where welding of doubler plates, continuity plates or stiffeners has been performed in the *k*-area, the web shall be tested for cracks using magnetic particle testing (MT). The MT inspection area shall include the *k*-area base metal within 3 in. of the weld. The MT shall be performed no sooner than 48 hours following completion of the welding. |
| 7. Placement of reinforcing or contouring fillet welds (Table J7.1) | **PERFORM AND DOCUMENT** | |
| 8. Weld tab removal sites | OBSERVE | At the end of welds where weld tabs have been removed, magnetic particle testing shall be performed on the same beam-to-column joints receiving UT. |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports

## E. STRUCTURAL STEEL - COMPOSITE CONSTRUCTION[1]

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| COMPOSITE CONSTRUCTION PRIOR TO PLACING CONCRETE – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2, AISC 341-22: Table J10.1 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Placement and installation of steel headed stud anchors | **PERFORM** | |
| 2. Material identification of reinforcing steel (Type/Grade) | OBSERVE | |
| 3. Determination of carbon equivalent for reinforcing steel other than ASTM A706 | OBSERVE | |
| 4. Proper reinforcing steel size, spacing, clearances, support, and orientation | OBSERVE | |
| 5. Reinforcing steel has not been rebent in the field | OBSERVE | |
| 6. Required reinforcing steel clearances have been provided | OBSERVE | |
| 7. Reinforcing steel has been tied and supported as required | OBSERVE | |
| 8. Composite member has required size | OBSERVE | |

**END SECTION**

## F. STRUCTURAL STEEL - OTHER INSPECTIONS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22 Section N5.8, AISC 341-22: Tables J9.1 & J11.1 | | |
|---|---|---|
| TASK | INSPECTION TYPE [2] | DESCRIPTION |
| 1. Verify anchor rods and other embedments supporting structural steel | **PERFORM** | Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete. |
| 2. Fabricated steel or erected steel frame | OBSERVE | Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection. |
| 3. Check reduced beam sections (RBS) where/if they occur | **PERFORM AND DOCUMENT** | ✓ Contour and finish<br>✓ Dimensional tolerances |
| 4. Check protected zones | **PERFORM AND DOCUMENT** | No holes or unapproved attachments made by fabricator or erector |
| 5. Check H-piles where/if they occur | **PERFORM AND DOCUMENT** | No holes or unapproved attachments made by the responsible contractor |

**END SECTION**

## G. STRUCTURAL COLD-FORMED METAL DECK PLACEMENT

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[1] See Concrete Construction Section for all concrete related inspection of composite steel construction.

[2] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| METAL DECK INSPECTION PRIOR TO DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.1 | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness | **PERFORM** | |
| 2. Acceptance or rejection of deck and deck accessories | **DOCUMENT** | |
| METAL DECK INSPECTION AFTER DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.2 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 3. Verify compliance of deck and all deck accessory installation with construction documents | **PERFORM** | |
| 4. Verify deck materials are represented by the mill certifications that comply with the construction documents | **PERFORM** | |
| 5. Acceptance or rejection of installation of deck and deck accessories | **DOCUMENT** | |
| METAL DECK INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.3 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 6. Verify welding procedure specification (WPS) is available | **PERFORM** | |
| 7. Verify manufacturer's certifications for welding consumables are available | **PERFORM** | |
| 8. Material identification (type/grade) | OBSERVE | |
| 9. Check welding equipment | **PERFORM** | |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

## H. STRUCTURAL COLD-FORMED METAL DECK – WELDING

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| METAL DECK INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.4 | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Use of qualified welders | OBSERVE | |
| 2. Control and handling of welding consumables | OBSERVE | |
| 3. Environmental conditions (wind speed, moisture, temperature) | OBSERVE | |
| 4. WPS followed | OBSERVE | |
| METAL DECK INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.5 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 5. Verify size and location of welds, including support, sidelap, and perimeter welds. | **PERFORM** | |
| 6. Verify welds meet visual acceptance criteria | **PERFORM** | |
| 7. Verify repair activities | **PERFORM** | |
| 8. Acceptance or rejection of welds | **DOCUMENT** | |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

## I. STRUCTURAL COLD-FORMED METAL DECK – FASTENING

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| METAL DECK INSPECTION BEFORE MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.6 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Manufacturer installation instructions available for mechanical fasteners | OBSERVE | |
| 2. Proper tools available for fastener installation | OBSERVE | |
| 3. Proper storage for mechanical fasteners | OBSERVE | ✓ Fasteners are located away from moisture and in a protected location, such as off the ground and away from excessive handling.<br>✓ Uncoated fasteners are stored in airtight containers to reduce corrosion and rust. |
| METAL DECK INSPECTION DURING MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.7 | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 4. Fasteners are positioned as required | OBSERVE | |
| 5. Fasteners are installed in accordance with manufacturer's instructions | OBSERVE | |
| METAL DECK INSPECTION AFTER MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.8 | | |
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 6. Check spacing, type, and installation of support fasteners | **PERFORM** | |
| 7. Check spacing, type, and installation of side-lap fasteners | **PERFORM** | |
| 8. Check spacing, type, and installation of perimeter fasteners | **PERFORM** | |
| 9. Verify repair activities | **PERFORM** | |
| 10. Acceptance or rejection of mechanical fasteners | **DOCUMENT** | |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.

## J. STRUCTURAL COLD-FORMED STEEL FRAMING AND/OR COLD-FORMED TRUSSES

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| COLD-FORMED STEEL CONSTRUCTION AND CONNECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.5, 1705.12.2, 1705.12.3, 1705.13.3, 1705.13.9, UFC 4 023 03 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify compliance of trusses spanning 60-feet or greater where/if applicable | **PERFORM** | Verify that temporary and permanent truss restraint/bracing is installed in accordance with approved truss submittal package. |
| 2. Welded connections (seismic and/or wind resisting system) | OBSERVE | Visually inspect all welds that are part of the main wind or seismic force resisting system, including shear walls, braces, collectors (drag struts), and hold-downs. **[NOTE: DOR must identify critical wind and/or seismic force resisting welds in the contract drawings so that the special inspector can confirm compliance.]** |
| 3. Connections (seismic and/or wind resisting system) | OBSERVE | Visually inspect all screw attachment, bolting, anchoring and other fastening of components within the main wind or seismic force resisting system, including roof deck, roof framing, exterior wall covering, wall to roof/floor connections, braces, collectors (drag struts) and hold-downs. **[NOTE: DOR must identify critical wind and/or seismic force resisting connection/fastener components in the contract drawings so that the special inspector can confirm compliance.]** |
| 4. Cold-formed steel (progressive collapse resisting system where/if applicable) | OBSERVE | Verify proper welding operations, screw attachment, bolting, anchoring and other fastening of components within the progressive collapse resisting system, including horizontal tie force elements, vertical tie force elements and bridging elements (UFC 4 023 03). **[NOTE: DOR must identify critical progressive collapse resisting connection/fastener components in the contract drawings so that the special inspector can confirm compliance.]** |

**END SECTION**

## K. STRUCTURAL OPEN-WEB STEEL JOISTS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| OPEN-WEB STEEL JOISTS AND JOIST GIRDERS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.2.4, 2024 IBC 2207.1, SJI 100 OR 200 | | |
|---|---|---|
| | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Installation of open-web steel joists and joist girders | OBSERVE | ✓ End connections – welded or bolted for compliance with SJI 100 or 200<br>✓ Bridging – horizontal and diagonal for compliance with SJI 100 or 200 |

**END SECTION**

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
**OBSERVE**: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

## L. STRUCTURAL CONCRETE CONSTRUCTION

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

| CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE) | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Inspect reinforcement, including prestressing tendons, and verify placement. | PERIODIC | Verify prior to placing concrete that reinforcement is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that specified cover has been provided; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that specified lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report. |
| 2. Inspect reinforcing bar welding | PERIODIC | ✓ Verify weldability of reinforcing bars other than ASTM A 706<br>✓ Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4 |
| | CONTINUOUS | ✓ Inspect welding of reinforcement for special moment frame, boundary elements of special shear walls, and coupling beams.<br>✓ Inspect welded reinforcement splices.<br>✓ Inspect welding of primary tension reinforcement in corbels. |
| | PERIODIC | ✓ Inspect all other welds in accordance with AWS D1.4 |
| 3. Inspect cast-in-place anchors, post-installed drilled anchors, and adhesive anchors other than those in item 4 below | PERIODIC | ✓ Verify prior to placing concrete that cast in place anchors and post installed drilled anchors have proper embedment, spacing and edge distance.<br>✓ Inspection requirements for adhesive anchors are different from those for other post-installed anchors and require assessment and qualification under the provisions of ACI 355.4 which may require proof loading. |
| 4. Inspect post-installed adhesive anchors in horizontal or upward inclined orientations and | CONTINUOUS AND DOCUMENT | ✓ Inspect as required per approved ICC-ES report |

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
**DOCUMENT**: Document in a report that the work has been performed as required. This is in addition to all other required reports.
**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

| CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE) | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| subject to sustained tension loading. | | ✓ Verify that installer is certified for installation of horizontal and overhead installation applications<br>✓ Verify proof loading as required by the contract documents |
| 5. Verify use of required mix design | PERIODIC | Verify that all mixes used comply with the approved construction documents |
| 6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete | CONTINUOUS | At the time fresh concrete is sampled to fabricate specimens for strength test, verify these tests are performed by qualified technicians. |
| 7. Inspect concrete and/or shotcrete placement for proper application techniques | CONTINUOUS | Verify proper application techniques are used during concrete conveyance and that depositing avoids segregation or contamination. Verify that concrete is properly consolidated. |
| 8. Verify maintenance of specified curing temperature and technique | PERIODIC | Inspect curing and cold weather, or hot weather protection procedures. |
| 9. Inspect prestressed concrete | CONTINUOUS | Verify application of prestressing forces and grouting of bonded prestressing tendons. |
| 10. Inspect erection of precast concrete members | PERIODIC | ✓ Verify dimensional tolerances for precast members and interfacing members.<br>✓ Verify details of lifting devices, embedments, and related reinforcement required to resist temporary loads from handling, storage, transportation, and erection, if designed by the licensed design professional. |
| 11. Inspect precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability element (MDE or HDE) in structures assigned to Seismic Design Category C, D, E, or F | **CONTINUOUS** | Inspect such connections and reinforcement in the field for:<br>✓ Installation of the embedded parts<br>✓ Completion of the continuity of reinforcement across joints.<br>✓ Completion of connections in the field |
| 12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5 | PERIODIC | |

| CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE) | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs. | PERIODIC | See ACI 318 26.11.2 |
| 14. Inspect formwork for shape, location and dimensions of the concrete member being formed. | PERIODIC | Formwork fabrication and installation shall result in final structure that conforms to shapes, lines, and dimensions of the members as required by the construction documents. |

**END SECTION**

## M. STRUCTURAL - MASONRY CONSTRUCTION (ALL RISK CATEGORIES)

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH AT START OF CONSTRUCTION 2024 IBC 1705.4 (TMS 402/602-22 TABLE 3 & 4) | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Verify compliance with approved submittals prior to start | PERIODIC | |
| 2. Verify proportions of site-mixed mortar. | PERIODIC | |
| 3. Verify grade, type and size of reinforcement, connectors, and anchor bolts | PERIODIC | |
| 4. Verify sample panel construction | PERIODIC<br>**CONTINUOUS** | **[NOTE: DOR must either delete 'PERIODIC' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/ III]** |
| MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH PRIOR TO GROUTING IBC 1705.4 (TMS 402/602-22 TABLE 4) | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 5. Verify grout space | PERIODIC<br>**CONTINUOUS** | **[NOTE: DOR must either delete 'PERIODIC' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/ III]** |
| 6. Verify placement of reinforcement, connectors, and anchor bolts | PERIODIC<br>**CONTINUOUS** | **[NOTE: DOR must either delete 'PERIODIC' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/ III]** |
| 7. Verify proportions of site-prepared grout | PERIODIC | |
| MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH DURING CONSTRUCTION IBC 1705.4 (ACI 530-16 TABLE 4) | | |
| TASK | INSPECTION TYPE | DESCRIPTION |
| 8. Verify compliance of materials and procedures with the approved submittals | PERIODIC | |
| 9. Verify placement of masonry units and mortar joint construction | PERIODIC | |
| 10. Verify size and location of structural elements | PERIODIC | |
| 11. Verify type, size and placement of reinforcement, connectors, anchor bolts, and anchorages, including details of anchorage of masonry to structural members, frames, or other construction | PERIODIC<br>**CONTINUOUS** | **[NOTE: DOR must either delete 'PERIODIC' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/III]** |
| 12. Verify type, size and location of veneer ties and movement joints | PERIODIC | Periodic inspection of veneers is required when the height of the veneer exceeds 60 ft (18.3 m) above grade plane. See Commentary in Appendix A. |

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

| MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH DURING CONSTRUCTION<br>IBC 1705.4 (ACI 530-16 TABLE 4) | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 13. Verify installation of adhered veneer | PERIODIC | Periodic inspection of veneers is required when the height of the veneer exceeds 60 ft (18.3 m) above grade plane |
| 14. Verify welding of reinforcement | **CONTINUOUS** | |
| 15. Verify preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°c) or hot weather (temp above 90°F (32.2°C)) | PERIODIC | |
| 16. Verify placement of grout | **CONTINUOUS** | |
| 17. Observe preparation of grout specimens, mortar specimens, and/or prisms | PERIODIC<br>**CONTINUOUS** | **[NOTE: DOR must either delete 'PERIODIC' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/III]** |

**END SECTION**

## N. STRUCTURAL – WOOD CONSTRUCTION – SPECIALTY ITEMS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| WOOD CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.5 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. High-load diaphragms where applicable | PERIODIC | Verify thickness and grade of sheathing, size of framing members at panel edges, nail diameters and length, and the number of fastener lines and that fastener spacing is per approved contract documents. |
| 2. Metal-plate connected wood trusses spanning 60 feet or greater | PERIODIC | Verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package |
| Mass timber elements in Type IV-A, IV-B, and IV-C construction. Refer to 2024 IBC 602.4 for details about Type IV construction | | |
| 3. Inspect anchorage and connections of mass timber construction to timber deep foundation systems | PERIODIC | |
| 4. Inspect erection of mass timber construction | PERIODIC | |
| 5. Inspect connections where installation methods are required to meet design loads | | |
| a) Threaded fasteners | PERIODIC | ✓ Verify use of proper installation equipment<br>✓ Verify use of pre-drilled holes where required<br>✓ Inspect screws, including diameter, length, head type, spacing, installation angle and depth |
| b) Adhesive anchors connections installed in horizontal or upwardly inclined orientation to resist sustained tension loads. | CONTINUOUS | |
| c) Adhesive anchors not defined in preceding cell | PERIODIC | |
| d) Bolted connections | PERIODIC | |
| e) Concealed connections | PERIODIC | |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

## N. STRUCTURAL – WOOD CONSTRUCTION – SPECIALTY ITEMS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| WOOD CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.5 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. High-load diaphragms where applicable | PERIODIC | Verify thickness and grade of sheathing, size of framing members at panel edges, nail diameters and length, and the number of fastener lines and that fastener spacing is per approved contract documents. |
| 2. Metal-plate connected wood trusses spanning 60 feet or greater | PERIODIC | Verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package |
| Mass timber elements in Type IV-A, IV-B, and IV-C construction. Refer to 2024 IBC 602.4 for details about Type IV construction | | |
| 3. Inspect anchorage and connections of mass timber construction to timber deep foundation systems | PERIODIC | |
| 4. Inspect erection of mass timber construction | PERIODIC | |
| 5. Inspect connections where installation methods are required to meet design loads | | |
| a) Threaded fasteners | PERIODIC | ✓ Verify use of proper installation equipment<br>✓ Verify use of pre-drilled holes where required<br>✓ Inspect screws, including diameter, length, head type, spacing, installation angle and depth |
| b) Adhesive anchors connections installed in horizontal or upwardly inclined orientation to resist sustained tension loads. | CONTINUOUS | |
| c) Adhesive anchors not defined in preceding cell | PERIODIC | |
| d) Bolted connections | PERIODIC | |
| e) Concealed connections | PERIODIC | |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

## O. STRUCTURAL WOOD CONSTRUCTION - SEISMIC & WIND

**THIS SECTION IS APPLICABLE IF BOX IS CHECKED: ☐**

| WOOD CONSTRUCTION SEISMIC AND WIND – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.12 & 1705.13.2 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| **[NOTE: DOR may uncheck this section where the lateral resistance is provided by structural sheathing, the sheathing nailing/fasteners (shear walls, shear panels and diaphragms) are consistently greater than 4" on center, or if the design wind speed (ASD) is less than 140 mph (62.6 meters/sec) AND the seismic design category is A or B]** | | |
| 1. Nailing, bolting, anchoring and other fastening of elements of the main wind/seismic force-resisting system | PERIODIC | Includes connectors for: shear wall sheathing, roof/floor sheathing, drag struts/collectors (double top plates), braces, hold downs, roof connections to exterior walls. |
| 2. Field gluing operations of elements of the main wind/seismic force-resisting system | **CONTINUOUS** | |

**END SECTION**

## P. STRUCTURAL ISOLATION AND ENERGY DISSIPATION SYSTEMS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| ISOLATION AND ENERGY DISSIPATION SYSTEMS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.13.8, 1705.14.4 | | |
|---|---|---|
| **[NOTE: This section is <u>not</u> applicable to Seismic Design Category A. Uncheck this section if this category applies]** | | |
| TASK | INSPECTION TYPE[2] | DESCRIPTION |
| 1. Verify fabrication and installation of isolator units and energy dissipation devices | PERFORM | Verify that fabrication and installation of isolator units and energy dissipation devices conform to manufacturer's recommendations and approved construction documents |
| 2. Test of seismic isolation systems in seismically isolated structures | PERFORM | Seismic isolation systems in seismically isolated structures shall be tested in accordance with ASCE 7, Section 17.8 |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

[2] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.

## Q. GEOTECHNICAL - SOILS INSPECTION

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| SOILS INSPECTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.6 and TABLE 1705.6 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity. | PERIODIC | |
| 2. Verify excavations are extended to proper depth and have reached proper material | PERIODIC | |
| 3. Perform classification and testing of compacted fill materials | PERIODIC | |
| 4. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly | PERIODIC | |
| 5. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill | **CONTINUOUS** | |

**END SECTION**

## R. GEOTECHNICAL - DRIVEN DEEP FOUNDATION ELEMENTS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| DRIVEN DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.7 and TABLE 1705.7 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Verify element materials, sizes and lengths comply with requirements | **CONTINUOUS** | |
| 2. Inspect driving operations and maintain complete and accurate records for each element | **CONTINUOUS** | |
| 3. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element | **CONTINUOUS** | |
| 4. Determine capacities of test elements and conduct additional load tests if required. | **CONTINUOUS** | |
| 5. For steel, concrete, concrete-filled, perform additional special inspections in accordance with the steel and concrete sections in this schedule | | |
| 6. For specialty elements, perform additional inspections as determined by the licensed design professional in responsible charge | | In accordance with Statement of Special Inspections |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
**CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

## S. GEOTECHNICAL - HELICAL PILE FOUNDATIONS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| HELICAL PILE FOUNDATIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.9 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required. The approved geotechnical report and the contract documents prepared by the licensed design professional in responsible charge shall be used to determine compliance | **CONTINUOUS** | |
| 2. Determine capacities of test elements and conduct additional load tests if required. | **CONTINUOUS** | |

**END SECTION**

## T. GEOTECHNICAL – CAST-IN-PLACE CONCRETE DEEP FOUNDATION ELEMENTS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| CAST-IN-PLACE CONCRETE DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.8 | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Inspect drilling operations and maintain complete and accurate records for each element | **CONTINUOUS** | |
| 2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes | **CONTINUOUS** | |
| 3. For concrete elements, perform tests and additional special inspections in accordance with Concrete section of this schedule | **CONTINUOUS** | |
| 4. Determine capacities of test elements and conduct additional load tests if required. | **CONTINUOUS** | |

**END SECTION**

[1] **CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

## U. FIRE PROTECTION - SPRAYED FIRE-RESISTANT MATERIALS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| SPRAYED FIRE RESISTANT MATERIALS (SFRM) – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.15 | | |
|---|---|---|
| TASK | INSPECTION TYPE [1] | DESCRIPTION |
| 1. Check substrate condition | PERIODIC | Prior to application, confirm that surfaces have been prepared according to the approved fire-resistant design and manufacturer's instructions. See 2024 IBC 1705.15.2 and 1705.15.3 for more details. |
| 2. Verify material thickness | PERIODIC | Verify SFRM thickness according to 2024 IBC 1705.15.4 |
| 3. Verify material density | PERIODIC | Verify SFRM density according to 2024 IBC 1705.15.5 |
| 4. Verify bond strength | PERIODIC | Verify bond strength of cured SFRM according to 2024 IBC 1705.15.6 |
| 5. Inspect the condition of finished application | PERIODIC | |

**END SECTION**

## V. FIRE PROTECTION - INTUMESCENT FIRE-RESISTIVE MATERIALS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| INTUMESCENT FIRE-RESISTIVE MATERIALS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.16 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Inspect according to AWCI 12-B and the contract documents | PERIODIC | Inspections shall be performed in accordance with AWCI 12-B, Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials.<br><br>Inspections shall be performed during construction. Additional visual inspection shall be performed after rough installation and where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems. |

**END SECTION**

## W. FIRE PROTECTION – FIRE-RESISTANT PENETRATIONS AND JOINTS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| FIRE-RESISTANT PENETRATIONS AND JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.18 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Inspect of penetration firestop systems conducted in accordance with ASTM E2174. | PERIODIC | **[NOTE: This section applies to Risk Category III, IV, & V structures, or in fire areas containing Group R occupancies with an occupant load greater than 250. DOR may choose to uncheck this section where project is assigned to Risk Category I or II. Confirm Risk Category with licensed design professional in responsible charge]** |
| 2. Inspecti of fire-resistant joint systems conducted in accordance with ASTM E2393 | PERIODIC | |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

## X. FIRE PROTECTION – SMOKE CONTROL

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| SMOKE CONTROL – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.19 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Verify device locations and perform leakage testing | PERIODIC | Perform during erection of ductwork and prior to concealment |
| 2. Perform pressure difference testing, flow measurements and detection and control verification | PERIODIC | Perform prior to occupancy and after sufficient completion |

**END SECTION**

## Y. SEALANT – SEALING OF MASS TIMBER

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| SEALING OF MASS TIMBER – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.20 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| 1. Inspect sealants or adhesives | PERIODIC | Inspect sealants or adhesives where sealant and adhesive are required by 2024 IBC 703.7 |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

## Z. ARCHITECTURAL - EXTERIOR INSULATION AND FINISH SYSTEMS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.17 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| 1. Water-resistive barrier coating applied over a sheathing substrate. | PERIODIC | Verify that water-resistive barrier coating complies with ASTM E2570.<br>**[NOTE: Not required for EIFS applications installed over:**<br>**a) a water-resistive barrier with a means of draining moisture to the exterior.**<br>**b) masonry or concrete walls**<br>**Uncheck this section in those cases]** |

**END SECTION**

## AA. ARCHITECTURAL – ARCHITECTURAL COMPONENTS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

| ARCHITECTURAL COMPONENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.13.5, 1705.13.7 and TABLE 1705.13.7 | | |
|---|---|---|
| TASK | INSPECTION TYPE | DESCRIPTION |
| **[NOTE: This section is not applicable to Seismic Design Categories A, B, & C. Uncheck this section if one of those categories applies. Confirm Seismic Design Category with the licensed design professional in responsible charge.]** | | |
| 1. Erection and fastening of exterior cladding and interior and exterior veneer. | PERIODIC | Verify appropriate materials, fasteners and attachment at commencement of work and at completion. **[NOTE: Inspection not required if height is less than 30 feet or weight is less than 5psf]** |
| 2. Interior and exterior non-load-bearing walls | PERIODIC | Verify appropriate materials, fasteners and attachment at commencement of work and at completion. **[NOTE: Inspection not required if interior non-load-bearing walls weigh less than 15psf]** |
| 3. Access floors | PERIODIC | Verify that anchorage complies with approved construction documents. |
| 4. Storage racks | PERIODIC | Steel storage racks and steel cantilevered storage racks that are 8 feet in height or greater shall be inspected for:<br>✓ Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents<br>✓ Fabricated storage rack elements<br>✓ Storage rack anchorage installation<br>✓ Completion of storage rack system<br>Inspection of post-installed anchors shall comply with approved ICC-ES report.<br>**[NOTE: Not required for racks less than 8 feet in height]** |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

## BB. PLUMBING/MECHANICAL/ELECTRICAL - DESIGNATED SEISMIC SYSTEMS

**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

| PLUMBING, MECHANICAL AND ELECTRICAL – DESIGNATED SEISMIC SYSTEMS<br>2024 IBC 1705.13.6 | | |
|---|---|---|
| TASK | INSPECTION TYPE[1] | DESCRIPTION |
| **[NOTE: This section is not applicable to Seismic Design Categories A or B. Uncheck this section if one of those categories applies. Confirm Seismic Design Category with licensed design professional in responsible charge.]** | | |
| 1. Check anchorage of electrical equipment for emergency and standby power systems | PERIODIC | ✓ Check for general conformance |
| 2. Check anchorage of all other electrical equipment in Seismic Design Categories E and F only (See first page of this schedule for Seismic Design Category) | PERIODIC | ✓ Check for general conformance |
| 3. Check installation and anchorage of piping designed to carry hazardous materials and their associated mechanical units. | PERIODIC | ✓ Check for general conformance |
| 4. Check installation and anchorage of vibration isolation systems where the construction documents require a nominal clearance of ¼" or less between support framing and restraint. | PERIODIC | ✓ Check for general conformance |
| 5. Verify clearance between fire sprinkler piping and surrounding mechanical and electrical equipment, including ductwork, piping and their structural supports. | PERIODIC | ✓ Check for minimum clearances noted in ASCE 7 13.2.3 or a nominal clearance of not less than 3 in. |

**END SECTION**

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

# APPPENDIX A

## Commentary on M12

Table 4 of TMS 602-22 does not have any Level 3 inspection requirements (for Risk Category IV structures). The leadership of the standard committee was contacted. They indicated that there are no requirements because veneers are covered under Part 4: Prescriptive Design Methods, and for prescriptive design there is never any Level 3 inspection requirement according to Table 3.1 of TMS 402-22. Although veneer is covered in Part 4, Chapter 13 of TMS 402-22, in Section 13.2.3, there is Engineered Design of Anchored Masonry Veneer and in Section 13.3.3, there is Engineered Design of Adhered Masonry Veneer. Engineered Design is covered in Part 3 of the standard, and for Part 3, Engineered Design, there are Level 3 inspection requirements in Table 3.1 of TMS 402-22. Upon further discussion, the leadership of the standard committee suggested to keep inspection Periodic for all Risk Category structures.

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**11/20, CHG 3: 08/24**

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TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
**11/20, CHG 3: 08/24**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

| | |
|---|---|
| NFPA 70 | (2023; ERTA 1 2024; TIA 24-1) National Electrical Code |
| NFPA 241 | (2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2024) Safety -- Safety and Occupational Health (SOH) Requirements |

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

| | |
|---|---|
| MUTCD | (2009; Rev 2012) Manual on Uniform Traffic Control Devices |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Site Plan; G, RO

Traffic Control Plan; G, RO

Haul Road Plan; G, RO

Contractor Computer Cybersecurity Compliance Statements; G, RO

Contractor Temporary Network Cybersecurity Compliance Statements; G, RO

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit for Government approval a site plan

showing the locations and dimensions of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Indicate if the use of a supplemental or other staging area is desired. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

## 1.4 DOD CONDITION OF READINESS (COR)

DOD will set the Condition of Readiness (COR) based on the weather forecast for sustained winds 50 knots (58 mph) or greater. Contact the Contracting Officer for the current COR setting.

Monitor weather conditions a minimum of twice a day and take appropriate actions according to the approved Emergency Plan in the accepted Accident Prevention Plan, EM 385-1-1 Emergency Plan requirements and the instructions below.

Unless otherwise directed by the Contracting Officer, comply with:

a. Condition FOUR (Sustained winds of 58 mph or greater expected within 72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than 3.3 feet high. Remove all debris, trash, or objects that could become missile hazards. Review requirements pertaining to "Condition THREE" and continue action as necessary to attain "Condition FOUR" readiness. Contact Contracting Officer for weather and COR updates and completion of required actions.

b. Condition THREE (Sustained winds of 58 mph or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition ONE" which cannot be completed within 18 hours. Cease all routine activities which might interfere with securing operations. Commence securing and stow all gear and portable equipment. Make preparations for securing buildings. Reinforce or remove formwork and scaffolding. Secure machinery, tools, equipment, materials, or remove from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact Contracting Officer for weather and COR updates and completion of required actions. Review requirements pertaining to "Condition TWO" and continue action as necessary to attain "Condition THREE" readiness.

c. Condition TWO (Sustained winds of 58 mph or greater expected within 24 hours): Secure the jobsite, and leave Government premises.

d. Condition ONE. (Sustained winds of 58 mph or greater expected within 12 hours): Contractor access to the jobsite and Government premises is prohibited.

## 1.5 CYBERSECURITY DURING CONSTRUCTION

{For Reference Only: This subpart (and its subparts) relates to AC-18, SA-3, CCI-00258.} Meet the following requirements throughout the

construction process.

1.5.1 Contractor Computer Equipment

Contractor owned computers may be used for construction. When used, contractor computers must meet the following requirements:

1.5.1.1 Operating System

The operating system must be an operating system currently supported by the manufacturer of the operating system. The operating system must be current on security patches and operating system manufacturer required updates.

1.5.1.2 Anti-Malware Software

The computer must run anti-malware software from a reputable software manufacturer. Anti-malware software must be a version currently supported by the software manufacturer, must be current on all patches and updates, and must use the latest definitions file. All computers used on this project must be scanned using the installed software at least once per day.

1.5.1.3 Passwords and Passphrases

The passwords and passphrases for all computers must be changed from their default values. Passwords must be a minimum of eight characters with a minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.5.1.4 Contractor Computer Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Computer Cybersecurity Compliance Statements for each company using contractor owned computers. Contractor Computer Cybersecurity Compliance Statements must use the template published at https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-50-0 Each Statement must be signed by a cybersecurity representative for the relevant company.

1.5.2 Temporary IP Networks

Temporary Contractor-installed IP networks may be used during construction. When used, temporary contractor-installed IP networks must meet the following requirements:

1.5.2.1 Network Boundaries and Connections

The network must not extend outside the project site and must not connect to any IP network other than IP networks provided under this project or Government furnished IP networks provided for this purpose. Any and all network access from outside the project site is prohibited.

1.5.3 Government Access to Network

Government personnel, as defined, prescribed, and identified by the Contracting Officer, must be allowed to have complete and immediate access to the network at any time in order to verify compliance with this specification. If there is a Government agency responsible for network

access, identify that agency.

1.5.4 Temporary Wireless IP Networks

1.5.4.1 Contractor Provided Wi-Fi Network

Provide standalone Wi-Fi network for authorized Government personnel. Network access must be available throughout the jobsite and for the entire Contract period. The Government will use the Wi-Fi service for coordination in the field and related activities. Do not attach or connect the temporary Wi-Fi network to Government networks or systems unrelated to construction activities.

Password information must adhere to requirements outlined in Paragraph PASSWORDS AND PASSPHRASES. Provide password and Wi-Fi network name (SSID) to the Contracting Officer for Government personnel access. Wi-Fi performance must be capable of handling bandwidth to support Government and Contractor activities, including drawing and model access onsite. Provide a point of contact for reporting Wi-Fi outages.

1.5.4.2 Temporary Wireless IP Networks Security

In addition to the other requirements on temporary IP networks, temporary wireless IP (WiFi) networks must not interfere with existing wireless network and must use WPA2 security. Network names (SSID) for wireless networks must be changed from their default values.

1.5.5 Passwords and Passphrases

The passwords and passphrases for all network devices and network access must be changed from their default values. Passwords must be a minimum 8 characters with a minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.5.6 Contractor Temporary Network Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Temporary Network Cybersecurity Compliance Statements for each company implementing a temporary IP network. Contractor Temporary Network Cybersecurity Compliance Statements must use the template published at https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-50-0 Each Statement must be signed by a cybersecurity representative for the relevant company. If no temporary IP networks will be used, provide a single copy of the Statement indicating this.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNAGE

2.1.1 Bulletin Board

Prior to the commencement of work activities, provide a clear weatherproof covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the Contract, Wage Rate Information poster, Safety and Health Information as required by EM 385-1-1 and other information approved by the Contracting Officer. Coordinate requirements herein with 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Locate the bulletin board at the project site in a conspicuous place easily accessible to all

employees, and in location as approved by the Contracting Officer.

### 2.1.2 Project Identification Signs

The requirements for the signs, their content, and location are as indicated and as specified in Section 01 58 00 PROJECT IDENTIFICATION. Erect signs within 15 days after receipt of the notice to proceed. Correct the data required by the safety sign daily, with light colored metallic or non-metallic numerals.

### 2.1.3 Warning Signs

Post temporary signs, tags, and labels to give workers and the public adequate warning and caution of construction hazards according to the EM 385-1-1. Attach signs to the perimeter fencing every 150 feet warning the public of the presence of construction hazards. Signs must require unauthorized persons to keep out of the construction site. Correct the data required by safety signs daily. Post signs at all points of entry designating the construction site as a hard hat area.

## 2.2 TEMPORARY TRAFFIC CONTROL

### 2.2.1 Haul Roads

Construct access and haul roads necessary for proper prosecution of the work under this Contract in accordance with EM 385-1-1. Construct with suitable grades and widths; avoid sharp curves, blind corners, and dangerous cross traffic. Submit haul road plan for approval. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, must be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and haul roads are subject to approval by the Contracting Officer. Lighting must be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations.

### 2.2.2 Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades are required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

## 2.3 FENCING

Provide fencing along the construction site and at all open excavations and tunnels to control access by unauthorized personnel. Safety fencing must be highly visible to be seen by pedestrians and vehicular traffic. All fencing must meet the requirements of EM 385-1-1. Remove the fence upon completion and acceptance of the work.

To block public view of the construction, enclose the project work area and Contractor lay-down area with a 8 ft high chain link fence and gates with brown, UV light resistant, plastic fabric mesh netting (similar to tennis court or other screening).

2.3.1 Polyethylene Mesh Safety Fencing

Temporary safety fencing must be a high visibility orange colored, high density polyethylene grid, a minimum of 48 inches high and maximum mesh size of 2 inches. Fencing must extend from the grade to a minimum of 48 inches above the grade and be tightly secured to T-posts spaced as necessary to maintain a rigid and taut fence. Fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection.

2.3.2 Chain Link Panel Fencing

Temporary panel fencing must be galvanized steel chain link panels 8 feet high. Multiple fencing panels may be linked together at the bases to form long spans as needed. Each panel base must be weighted down using sand bags or other suitable materials in order for the fencing to withstand anticipated winds while remaining upright. Fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection.

2.3.3 Post-Driven Chain Link Fencing

Temporary post-driven fencing must be galvanized chain link fencing 8 feet high supported by an tightly secured to galvanized steel posts driven below grade. Fence posts must be located on minimum 10 foot centers. Posts may be set in various surfaces such as sand, soil, asphalt or concrete as necessary. Chain link fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection. Completely remove fencing and posts at the completion of construction and restore surfaces disturbed or damaged to its original condition. Locate and identify underground utilities prior to setting fence posts. Equip fence with a lockable gate. Gate must remain locked when construction personnel are not present.

2.4 TEMPORARY WIRING

Provide temporary wiring in accordance with EM 385-1-1, NFPA 241 and NFPA 70. Include monthly inspection and testing of all equipment and apparatus.

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Construction Contract employees must park privately owned vehicles in an area designated by the Contracting Officer. Employee parking must not interfere with existing and established parking requirements of the Government installation.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

3.2.1 Temporary Utilities

Provide temporary utilities required for construction. Materials may be new or used, must be adequate for the required usage, not create unsafe conditions, and not violate applicable codes and standards.

3.2.2 Payment for Utility Services

a. The Government will make all reasonably required utilities available from existing outlets and supplies, as specified in the Contract. Unless otherwise provided in the Contract, the amount of each utility service consumed will be charged to or paid at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. Carefully conserve utilities furnished without charge.

b. Reasonable amounts of the following utilities will be made available at the following rates:

c.

| Utility Services | | |
|---|---|---|
| | Cost ($) per | Unit |
| Electricity | 15.900¢ | per kWh |
| Potable Water | N/A | N/A |
| Natural Gas | N/A | N/A |
| Sanitary Sewer | N/A | N/A |

d. The point at which the Government will deliver such utilities or services and the quantity available is as indicated andmust be coordinated with the Contracting Officer. Pay all costs incurred in connecting, converting, and transferring the utilities to the work. Make connections, including providing meters;and providing transformers; and make disconnections.

3.2.3 Meters and Temporary Connections

Provide and maintain necessary temporary connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. Notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. Do not make the final electrical connection.

3.2.4 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of $50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed prior to the end of the current fiscal year.

3.2.5 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. Then remove all the

temporary distribution lines, meter bases, and associated appurtenances. Pay all outstanding utility bills before final acceptance of the work by the Government.

3.2.6 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities in accordance with EM 385-1-1. Locate the facilities behind the construction fence or out of the public view. Clean units and empty wastes at least once a week or more frequently into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into a municipal, district, or commercial sanitary sewer system. Penalties or fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Contracting Officer and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times. Include provisions for pest control and elimination of odors. Government toilet facilities will not be available to Contractor's personnel.

3.2.7 Telephone

Make arrangements and pay all costs for telephone facilities desired.

3.2.8 Fire Protection

Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials weekly to minimize potential hazards.

3.3 TRAFFIC PROVISIONS

3.3.1 Maintenance of Traffic

a. Conduct operations in a manner that will not close a thoroughfare or interfere with traffic on railways or highways except with written permission of the Contracting Officer at least 15 calendar days prior to the proposed modification date, and provide a Traffic Control Plan for Government approval detailing the proposed controls to traffic movement for approval. The plan must be in accordance with State and local regulations and the MUTCD, Part VI. Make all notifications and obtain all permits required for modification to traffic movements outside Station's jurisdiction.. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the highway authority have been met.

b. Conduct work so as to minimize obstruction of traffic, and maintain traffic on at least half of the roadway width at all times. Obtain approval from the Contracting Officer prior to starting any activity that will obstruct traffic.

c. Provide, erect, and maintain, at Contractor's expense, lights, barriers, signals, passageways, detours, Life Safety Signage, overhead protection, and other items that may be required by the authority having jurisdiction.

d. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic. Do not use foil-backed material for temporary pavement marking because of its

potential to conduct electricity during accidents involving downed power lines.

3.3.2 Protection of Traffic

Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment the work, and the erection and maintenance of adequate warning, danger, and direction signs, will be as required by the State and local authorities having jurisdiction. Provide self-illuminated (lighted) barricades during hours of darkness. All personnel working in roadways will wear brightly-colored vests or other high visibility apparel in accordance with EM 385-1-1. Protect the traveling public from damage to person and property. Minimize the interference with public traffic on roads selected for hauling material to and from the site. Investigate the adequacy of existing roads and their allowable load limit. Contractor is responsible for the repair of damage to roads caused by construction operations.

3.3.3 Rush Hour Restrictions

Do not interfere with the peak traffic flows preceding and during normal operations without notification to and approval by the Contracting Officer.

3.3.4 Dust Control

Dust control methods and procedures must be approved by the Contracting Officer. Coordinate dust control methods with 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

3.4 CONTRACTOR'S TEMPORARY FACILITIES

Contractor is responsible for security of their property. Provide adequate outside security lighting at the temporary facilities. Trailers must be anchored to resist high winds and meet applicable state or local standards for anchoring mobile trailers. Coordinate anchoring with EM 385-1-1. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

3.4.1 Storage Area

Construct a temporary 6 foot high chain link fence around trailers and materials. Include plastic strip inserts, colored green, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Do not place or store trailers, materials, or equipment outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the installation boundaries. Trailers, equipment, or materials must not be open to public view with the exception of those items which are in support of ongoing work on the current day. Do not stockpile materials outside the fence in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment within the fenced area at the end of each work day.

Keep fencing in a state of good repair and proper alignment. If the

Contractor elects to traverse grassed or unpaved areas which are not established roadways with construction equipment or other vehicles, cover the grassed or unpaved areas with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation must be at the Contractor's discretion. Mow and maintain grass located within the boundaries of the construction site for the duration of the project. Grass and vegetation along fences, structures, under trailers, and in areas not accessible to mowers must be edged or trimmed neatly.

3.4.2 Supplemental Storage Area

Upon request, and pending availability, the Contracting Officer will designate another or supplemental area for the use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but will be within the installation boundaries. Maintain the area in a clean and orderly fashion and secured if needed to protect supplies and equipment. Utilities will not be provided to this area by the Government.

3.4.3 Appearance of Trailers

a. Trailers must be roadworthy and comply with all appropriate state and local vehicle requirements. Trailers which are rusted, have peeling paint or are otherwise in need of repair will not be allowed on Installation property. Trailers must present a clean and neat exterior appearance and be in a state of good repair.

b. Maintain the temporary facilities. Failure to do so will be sufficient reason to require their removal at the Contractor's expense.

3.4.4 Safety Systems

Protect the integrity of all installed safety systems or personnel safety devices. Obtain prior approval from the Contracting Officer if entrance into systems serving safety devices is required. If it is temporarily necessary to remove or disable personnel safety devices in order to accomplish Contract requirements, provide alternative means of protection prior to removing or disabling any permanently installed safety devices or equipment and obtain approval from the Contracting Officer.

3.4.5 Weather Protection of Temporary Facilities and Stored Materials

Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

3.4.5.1 Building and Site Storm Protection

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions must include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

## 3.5 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, furnish and erect temporary project safety fencing at the work site. Maintain the safety fencing during the life of the Contract and, upon completion and acceptance of the work, remove from the work site.

## 3.6 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store all salvageable materials resulting from demolition activities within the fenced area described above or at the supplemental storage area. Neatly stack stored materials not in trailers, whether new or salvaged.

## 3.7 RESTORATION OF STORAGE AREA

Upon completion of the project remove the bulletin board, signs, barricades, haul roads, and all other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence. Restore areas used during the performance of the Contract to the original or better condition. Remove gravel used to traverse grassed areas and restore the area to its original condition, including top soil and seeding as necessary.

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TEMPORARY ENVIRONMENTAL CONTROLS AND PERMITS
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

| | |
|---|---|
| 29 CFR 1910.1053 | Respirable Crystalline Silica |
| 29 CFR 1910.1200 | Hazard Communication |
| 29 CFR 1926.1153 | Respirable Crystalline Silica |
| 40 CFR 50 | National Primary and Secondary Ambient Air Quality Standards |
| 40 CFR 60 | Standards of Performance for New Stationary Sources |
| 40 CFR 63 | National Emission Standards for Hazardous Air Pollutants for Source Categories |
| 40 CFR 64 | Compliance Assurance Monitoring |
| 40 CFR 82 | Protection of Stratospheric Ozone |
| 40 CFR 241 | Guidelines for Disposal of Solid Waste |
| 40 CFR 243 | Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste |
| 40 CFR 258 | Subtitle D Landfill Requirements |
| 40 CFR 260 | Hazardous Waste Management System: General |
| 40 CFR 261 | Identification and Listing of Hazardous Waste |
| 40 CFR 261.7 | Residues of Hazardous Waste in Empty Containers |
| 40 CFR 262.11 | Hazardous Waste Determination and Recordkeeping |
| 40 CFR 268 | Land Disposal Restrictions |
| 40 CFR 273 | Standards for Universal Waste Management |

| | |
|---|---|
| 40 CFR 279 | Standards for the Management of Used Oil |
| 40 CFR 300 | National Oil and Hazardous Substances Pollution Contingency Plan |
| 40 CFR 300.125 | National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications |
| 40 CFR 355 | Emergency Planning and Notification |
| 40 CFR 403 | General Pretreatment Regulations for Existing and New Sources of Pollution |
| 49 CFR 171 | General Information, Regulations, and Definitions |
| 49 CFR 172 | Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements |
| 49 CFR 173 | Shippers - General Requirements for Shipments and Packagings |

## 1.2 DEFINITIONS

### 1.2.1 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act. A list of Class I ODS can be found on the EPA website at the following weblink. https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances.

Class II ODS is defined in Section 602(s) of The Clean Air Act. A list of Class II ODS can be found on the EPA website at the following weblink. https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances.

### 1.2.2 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e., methyl ethyl ketone, toluene), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

### 1.2.3 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

### 1.2.4 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the

environment aesthetically, culturally or historically.

1.2.5 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.6 Hazardous Debris

As defined in paragraph SOLID WASTE, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) in accordance with 40 CFR 261. Hazardous debris also includes debris that exhibits a characteristic of hazardous waste in accordance with 40 CFR 261.

1.2.7 Hazardous Materials

Hazardous material is any material that: Is defined in 49 CFR 171, listed in 49 CFR 172, regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.1200; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

1.2.8 Hazardous Waste

Hazardous Waste is any material that meets the definition of a solid waste and exhibits a hazardous characteristic (ignitability, corrosivity, reactivity, or toxicity) as specified in 40 CFR 261, Subpart C, or contains a listed hazardous waste as identified in 40 CFR 261, Subpart D, or meets a state, local, or host nation definition of a hazardous waste.

1.2.9 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.10 Land Application

Land Application means spreading or spraying discharge water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" must occur.

Comply with federal, state, and local laws and regulations.

1.2.11 Municipal Separate Storm Sewer System (MS4) Permit

MS4 permits are those held by municipalities or installations to obtain NPDES permit coverage for their stormwater discharges.

1.2.12 National Pollutant Discharge Elimination System (NPDES)

The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

1.2.13 Oily Waste

Oily waste are those materials that are, or were, mixed with Petroleum, Oils, and Lubricants (POLs) and have become separated from that POLs. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, POLs and may be appropriately tested and discarded in a manner which is in compliance with other state and local requirements.

This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land filled provided that: It is not prohibited in other state regulations or local ordinances; the amount generated is "de minimus" (a small amount); it is the result of minor leaks or spills resulting from normal process operations; and free-flowing oil has been removed to the practicable extent possible. Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, perform a hazardous waste determination prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

1.2.14 Pesticide

Pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.15 Pesticide Treatment Plan

A plan for the prevention, monitoring, and control to eliminate pest infestation.

1.2.16 Pests

Pests are arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.17 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual who resides at a Civil Works Project office and who is responsible overseeing of pesticide

application on project grounds.

1.2.18 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

1.2.19 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.20 Solid Waste

Solid waste is a solid, liquid, semi-solid or contained gaseous waste. A solid waste can be a hazardous waste, non-hazardous waste, or non-Resource Conservation and Recovery Act (RCRA) regulated waste. Types of solid waste typically generated at construction sites may include:

1.2.20.1 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 2.5-inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.20.2 Green Waste

Green waste is the vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

1.2.20.3 Material Not Regulated As Solid Waste

Material not regulated as solid waste is nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

1.2.20.4 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with 40 CFR 261.

1.2.20.5 Recyclables

Recyclables are materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable, wiring, insulated/non-insulated

copper wire cable, wire rope, and structural components. It also includes commercial-grade refrigeration equipment with Freon removed, household appliances where the basic material content is metal, clean polyethylene terephthalate bottles, cooking oil, used fuel oil, textiles, high-grade paper products and corrugated cardboard, stackable pallets in good condition, clean crating material, and clean rubber/vehicle tires. Metal meeting the definition of lead contaminated or lead based paint contaminated may not be included as recyclable if sold to a scrap metal company. Paint cans that meet the definition of empty containers in accordance with 40 CFR 261.7 may be included as recyclable if sold to a scrap metal company.

1.2.20.6 Surplus Soil

Surplus soil is existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars, and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included and must be managed in accordance with paragraph HAZARDOUS MATERIAL MANAGEMENT.

1.2.20.7 Scrap Metal

This includes scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe, and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.

1.2.20.8 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.2.21 Surface Discharge

Surface discharge means discharge of water into drainage ditches, storm sewers, or creeks meeting the definition of "waters of the United States". Surface discharges from construction sites are discrete, identifiable sources and require a permit from the governing agency. Comply with federal, state, and local laws and regulations.

1.2.22 Wastewater

Wastewater is the used water and solids that flow through a sanitary sewer to a treatment plant.

1.2.22.1 Stormwater

Stormwater is any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead collects and flows into storm drains, rivers, and streams.

1.2.23 Waters of the United States

Waters of the United States means Federally jurisdictional waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and

Harbors Act.

1.2.24 Wetlands

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

1.2.25 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (for example, thermostats), and lamps (for example, fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at 40 CFR 273.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preconstruction Survey

Regulatory Notifications; G, RO

Environmental Manager Qualifications; G, RO

Employee Training Records; G, RO

Environmental Protection Plan; G, RO

Dirt and Dust Control Plan; G, RO

Solid Waste Management Permit; G, RO

SD-06 Test Reports

Monthly Solid Waste Disposal Report; G, RO

SD-07 Certificates

Employee Training Records; G, RO

SD-11 Closeout Submittals

Regulatory Notifications; G, RO

Assembled Employee Training Records; G, RO

Solid Waste Management Permit; G, RO

Waste Determination Documentation; G, RO

Project Solid Waste Disposal Documentation Report; G, RO

Sales Documentation; G, RO

Contractor Certification

## 1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

If construction activities are expected to generate significant noise levels, the contractor must apply for a Construction Noise Permit from the NYC Department of Environmental Protection (DEP). This includes a detailed description of the work, anticipated noise levels, and proposed mitigation measures.

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Tests and procedures assessing whether construction operations comply with Applicable Environmental Laws may be required. Analytical work must be performed by qualified laboratories; and where required by law, the laboratories must be certified.

## 1.5 QUALITY ASSURANCE

### 1.5.1 Preconstruction Survey and Protection of Features

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, perform a Preconstruction Survey of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record. Include in the report a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. The Contractor and the Contracting Officer will sign this survey report upon mutual agreement regarding its accuracy and completeness. Protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference that their preservation may cause to the work under the Contract.

### 1.5.2 Regulatory Notifications

Provide regulatory notification requirements in accordance with federal, state and local regulations. In cases where the Government will also provide public notification (such as stormwater permitting), coordinate with the Contracting Officer. Submit copies of regulatory notifications to the Contracting Officer at least seven (7) days prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all-inclusive): demolition, renovation, NPDES defined site work, construction, removal or use of a permitted air emissions source, and remediation of controlled substances (asbestos, hazardous waste, lead paint).

### 1.5.3 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager is directly responsible for coordinating contractor compliance with federal, state, local, and installation requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the EPP; ensure environmental permits are obtained, maintained, and closed out; ensure compliance with Stormwater Program requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however, the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out. Submit Environmental Manager Qualifications to the Contracting Officer.

### 1.5.4 Employee Training Records

Prepare and maintain Employee Training Records throughout the term of the contract meeting applicable 40 CFR requirements. Provide Employee Training Records in the Environmental Records Binder. Submit these Assembled Employee Training Records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet state requirements. Conduct environmental protection/pollution control meetings for personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, waters of the United States, and endangered species and their habitat that are known to be in the area.

### 1.5.5 Non-Compliance Notifications

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with federal, state or local environmental laws or regulations, permits, and other elements of the Contractor's EPP. After receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. FAR 52.242-14 Suspension of Work provides that a suspension, delay, or interruption of work due to the fault or negligence of the Contractor allows for no adjustments to the contract for time extensions or equitable adjustments. In addition to a suspension of work, the Contracting Officer may use additional authorities under the contract or law.

## 1.6 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP not less than 60 calendar days before scheduled final site or building design approval. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

The EPP includes, but is not limited to, the following elements:

### 1.6.1 General Overview and Purpose

#### 1.6.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as spill control plan,solid waste management plan, traffic control plan Non-Hazardous Solid Waste Disposal Plan.

#### 1.6.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, who is responsible for manifesting hazardous waste to be removed from the site (if applicable), and who is responsible for training the Contractor's environmental protection personnel.

1.6.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.6.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.6.1.5 Contact Information

Emergency contact information contact information (office phone number, cell phone number, and e-mail address).

1.6.2 General Site Information

1.6.2.1 Drawings

Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

1.6.2.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

Show where any fuels, hazardous substances, solvents, or lubricants will be stored. Provide a spill plan to address any releases of those materials.

1.6.2.3 Documentation

A letter signed by an officer of the firm appointing the Environmental Manager and stating that person is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.6.3 Management of Natural Resources

a. Land resources

b. Temporary construction

1.6.4 Protection of the Environment from Waste Derived from Contractor Operations

Control and disposal of solid and sanitary waste.

Control and disposal of hazardous waste.

This item consist of the management procedures for hazardous waste to be generated. The elements of those procedures will coincide with the Installation Hazardous Waste Management Plan when within an installation. The Contracting Officer will provide a copy of the Installation Hazardous Waste Management Plan as applicable.

As a minimum, include the following:

a. List of the types of hazardous wastes expected to be generated

b. Procedures to ensure a written waste determination is made for appropriate wastes that are to be generated

c. Sampling/analysis plan, including laboratory method(s) that will be used for waste determinations and copies of relevant laboratory certifications

d. Methods and proposed locations for hazardous waste accumulation/storage (that is, in tanks or containers)

e. Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted)

f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268 )

g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar

h. Used oil management procedures in accordance with 40 CFR 279; Hazardous waste minimization procedures

i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.6.5 Prevention of Releases to the Environment

Procedures to prevent releases to the environment

Notifications in the event of a release to the environment

1.6.6 Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 180 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits. The EPP will not be approved until the permits have been obtained.

1.6.7 Clean Air Act Compliance

1.6.7.1 Haul Route

Submit truck and material haul routes along with a Dirt and Dust Control Plan for controlling dirt, debris, and dust on New York City roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.6.7.2 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current New York City permits and the impacts of the project. Ensure required permits are obtained prior to installing and operating applicable equipment/processes.

1.6.7.3 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ, and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Logs must include reasons for operation and delineate between maintenance/testing, emergency, and non-emergency operation.

1.6.7.4 Refrigerants

Identify management practices to ensure that heating, ventilation, and air conditioning (HVAC) work involving refrigerants complies with 40 CFR 82 requirements. Technicians must be certified, maintain copies of certification on site, use certified equipment and log work that requires the addition or removal of refrigerant. Any refrigerant reclaimed is the property of the Government, coordinate with the Installation Environmental Office to determine the appropriate turn in location.

1.6.7.5 Air Pollution-engineering Processes

Identify planned air pollution-generating processes and management control measures (including, but not limited to, spray painting, abrasive blasting, demolition, material handling, fugitive dust, and fugitive emissions). Log hours of operations and track quantities of materials used.

1.6.7.6 Compliant Materials

Provide the Government a list of SDSs for all hazardous materials proposed for use on site. Materials must be compliant with all Clean Air Act regulations for emissions including solvent and volatile organic compound contents, and applicable National Emission Standards for Hazardous Air Pollutants requirements. The Government may alter or limit use of specific materials as needed to meet installation permit requirements for emissions.

## 1.7 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project and in accordance with FAR 52.236-7 Permits and Responsibilities. Notify the Government of all equipment that may require permits or special approvals that the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7 Permits and Responsibilities. The list of permits provided herein is not exhaustive. The Contractor shall be responsible for identifying, obtaining, and complying with all licenses, permits, and approvals required for the execution and completion of the work, including those mandated by local, state, and federal authorities.

a. The following permits shall be obtained by the Contractor, this list of permits herein is not exhaustive:

(1) NYC Department of Buildings (DOB) Permit: The contractor must submit a Building and Site Safety Plan Permit application. The primary permit applications are: New Building (NB), Alteration-CO (Alt-CO), and Alteration (Alt).

(2) NYC Environmental Protection Construction Noise Permit (if applicable): The contractor must submit a Building and Site Safety Plan Permit application. The primary permit applications are: New Building (NB), Alteration-CO (Alt-CO), and Alteration (Alt).

(3) NYC Landmarks Preservation Commision Permit (LPC): The design must be reviewed and approved by LPC. Obtain a permit for any exterior work, with design review by LPC.

(4) NYC Department of Transportation (DOT)Permit: The Contractor must secure permits for any lane (pedestrian and bike) or sidewalk closures related to construction activities.

(5) NYC Metroplitan Transportation Authority (MTA) External Partner Program Coordination: The Contractor must coordinate review and approval with the MTA regarding any work affecting transit operations or infrastructure. Any public- or private-sector entity engaging in construction activities within 200 feet of MTA property must file their plans with the MTA to ensure that our unique infrastructure is protected and preserved.

(6) NYC Times Square Alliance Coordination: The Contractor must engage with the Times Square Alliance early in the project to discuss design plans, obtain necessary approvals for signage and public space usage, and ensure alignment with the economic development goals and policies of the Times Square area.

(7) Con Edision Utility Coordination: The Contractor must coordinate with Con Edison for electrical service connections and any necessary upgrades. Case Number: MC-839555

## 1.8 ENVIRONMENTAL RECORDS BINDER

Maintain on-site a separate three-ring Environmental Records Binder and submit at the completion of the project. Make separate parts within the binder that correspond to each submittal listed under paragraph CLOSEOUT SUBMITTALS in this section.

## 1.9 SOLID WASTE MANAGEMENT PERMIT

Provide the Contracting Officer with written notification of the quantity of anticipated solid waste or debris that is anticipated or estimated to be generated by construction. Include in the report the locations where various types of waste will be disposed or recycled. Include letters of acceptance from the receiving location or as applicable; submit one copy of the receiving location state and local Solid Waste Management Permit or license showing such agency's approval of the disposal plan before transporting wastes off Government property.

### 1.9.1 Monthly Solid Waste Disposal Report

Monthly, submit a solid waste disposal report to the Contracting Officer. For each waste, the report will state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste.

# PART 2 PRODUCTS

Not Used

# PART 3 EXECUTION

## 3.1 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. If the water is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization in advance from the Installation Environmental Office for any release of contaminated water.

### 3.1.1 Work Area Limits

Mark the areas that need not be disturbed under this Contract prior to commencing construction activities. Mark or fence isolated areas within the general work area that are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, all markers must be visible in the dark. Personnel must be knowledgeable of the purpose for marking and protecting particular objects.

### 3.1.2 Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Contracting Officer. Move or relocate the Contractor facilities only when approved by the Government. Provide erosion and sediment controls for onsite borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant or work areas to protect adjacent areas.

## 3.2 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.2.1 Preconstruction Air Permits

Notify the Air Program Manager, through the Contracting Officer, at least 6 months prior to bringing equipment, assembled or unassembled, onto the Installation, so that air permits can be secured. Necessary permitting time must be considered in regard to construction activities. Clean Air Act (CAA) permits must be obtained prior to bringing equipment, assembled or unassembled, onto the Installation.

Confirm that these permits have been obtained.

3.2.2 Oil or Dual-fuel Boilers and Furnaces

Provide product data and details for new, replacement, or relocated fuel fired boilers, heaters, or furnaces to the Installation Environmental Office (Air Program Manager) through the Contracting Officer. Data to be reported include: equipment purpose (water heater, building heat, process), manufacturer, model number, serial number, fuel type (oil type, gas type) size (MMBTU heat input). Provide in accordance with paragraph PRECONSTRUCTION AIR PERMITS.

3.2.3 Burning

Burning is prohibited on the Government premises.

3.2.4 Class I and II ODS Prohibition

Class I and II ODS are Government property and must be returned to the Government for appropriate management. Coordinate with the Installation Environmental Office to determine the appropriate location for turn in of all reclaimed refrigerant.

3.2.5 Venting of Refrigerant

Accidental venting of a refrigerant is a release and must be reported immediately to the Contracting Officer. Intentional venting of refrigerants (including most Non-ODS substitute refrigerants) is prohibited per 40 CFR 82.

3.2.6 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Maintain copies of certifications at the employees' places of business; technicians must carry certification wallet cards, as provided by environmental law.

3.2.7 Dust Control

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster. Since these products contain Crystalline Silica, comply with the applicable OSHA standard, 29 CFR 1910.1053 or 29 CFR 1926.1153 for controlling exposure to Crystalline Silica Dust.

3.2.7.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations.

3.2.7.2 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the Installation Air Program Manager. The use of silica sand is prohibited in sandblasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris. Perform work involving removal of hazardous material in accordance with 29 CFR 1910.

3.2.8 Odors

Control odors from construction activities. The odors must be in compliance with state regulations and local ordinances and may not constitute a health hazard.

3.3 WASTE MINIMIZATION

Minimize the use of hazardous materials and the generation of waste. Include procedures for pollution prevention/ hazardous waste minimization in the Hazardous Waste Management Section of the EPP. Obtain a copy of the installation's Pollution Prevention/Hazardous Waste Minimization Plan for reference material when preparing this part of the EPP. If no written plan exists, obtain information by contacting the Contracting Officer. Describe the anticipated types of the hazardous materials to be used in the construction when requesting information.

3.3.1 Salvage, Reuse and Recycle

Identify anticipated materials and waste for salvage, reuse, and recycling. Describe actions to promote material reuse, resale or recycling. To the extent practicable, all scrap metal must be sent for reuse or recycling and will not be disposed of in a landfill.

Include the name, physical address, and telephone number of the hauler, if transported by a franchised solid waste hauler. Include the destination and, unless exempted, provide a copy of the state or local permit (cover) or license for recycling.

3.3.2 Nonhazardous Solid Waste Diversion Report

Maintain an inventory of nonhazardous solid waste diversion and disposal of construction and demolition debris. Submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that nonhazardous solid waste has been generated. Include the following in the report:

| | |
|---|---|
| Construction and Demolition (C&D) Debris Disposed | cubic yards,cubic meters as appropriate |
| C&D Debris Recycled | cubic yards,cubic meters as appropriate |
| C&D Debris Composted | cubic yards,cubic meters as appropriate |
| Total C&D Debris Generated | cubic yards,cubic meters as appropriate |
| Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) | cubic yards,cubic meters as appropriate |

3.4 WASTE MANAGEMENT AND DISPOSAL

3.4.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. All potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g., scrap metal, domestic sewage) or subject to special rules, (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 262.11 or corresponding applicable state or local regulations. Base waste determination on user knowledge of the processes and materials used, and analytical data when necessary. Consult with the Installation environmental staff for guidance on specific requirements. Attach support documentation to the Waste Determination form. As a minimum, provide a Waste Determination form for the following waste (this listing is not exhaustive): oil- and latex -based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

3.4.2 Solid Waste Management

3.4.2.1 Project Solid Waste Disposal Documentation Report

Provide copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, a statement indicating the disposal location for the solid waste that is signed by an employee authorized to legally obligate or bind the firm may be submitted. The sales documentation Contractor certification must include the receiver's tax identification number and business, EPA or state registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained for the Contractor's own use, submit the information

previously described in this paragraph on the solid waste disposal report. Prices paid or received do not have to be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

3.4.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Solid waste disposal offsite must comply with most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

Manage hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, in accordance with 49 CFR 173.

3.4.3 Releases/Spills of Oil and Hazardous Substances

3.4.3.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the Installation Command Duty Officer, the Installation Environmental Office, the Contracting Officer and the state or local authority.

Submit verbal and written notifications as required by the federal ( 40 CFR 300.125 and 40 CFR 355), state, local regulations and instructions. Provide copies of the written notification and documentation that a verbal notification was made within 20 days. Spill response must be in accordance with 40 CFR 300 and applicable state and local regulations. Contain and clean up these spills without cost to the Government.

3.4.3.2 Clean Up

Clean up hazardous and non-hazardous waste spills. Reimburse the Government for costs incurred including sample analysis materials, clothing, equipment, and labor if the Government will initiate its own spill cleanup procedures, for Contractor- responsible spills, when: Spill cleanup procedures have not begun within one hour of spill discovery/occurrence; or, in the Government's judgment, spill cleanup is inadequate and the spill remains a threat to human health or the environment.

3.4.4 Mercury Materials

Immediately report to the Environmental Office and the Contracting Officer instances of breakage or mercury spillage. Clean mercury spill area to the satisfaction of the Contracting Officer.

Do not recycle a mercury spill cleanup; manage it as a hazardous waste for disposal.

3.4.5 Wastewater

3.4.5.1 Disposal of Wastewater

Disposal of wastewater must be as specified below.

3.4.5.1.1 Treatment

Do not allow wastewater from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, and forms to enter water ways or to be discharged prior to being treated to remove pollutants. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws and regulations.

3.4.5.1.2 Surface Discharge

For discharge of ground water, obtain a state or federal permit specific for pumping and discharging ground water prior to surface discharging.

3.4.5.1.3 Land Application

Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing must be discharged into the sanitary sewer with prior approval and notification to the Wastewater Treatment Plant's Operator.

3.5 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

Storage of oil, including fuel, on the project site is not allowed. Fuel must be brought to the project site each day that work is performed.

3.6 INADVERTENT DISCOVERY OF PETROLEUM-CONTAMINATED SOIL OR HAZARDOUS WASTES

If petroleum-contaminated soil, or suspected hazardous waste is found during construction that was not identified in the Contract documents, immediately notify the Contracting Officer. Do not disturb this material until authorized by the Contracting Officer.

3.7 CHLORDANE

Evaluate excess soils and concrete foundation debris generated during the demolition of housing units or other wooden structures for the presence of chlordane or other pesticides prior to reuse or final disposal.

3.8 SOUND INTRUSION

Make the maximum use of low-noise emission products, as certified by the

EPA. Blasting or use of explosives are not permitted without written permission from the Contracting Officer, and then only during the designated times. Confine pile-driving operations to the period between 8 a.m. and 4 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the State of New York rules.

## 3.9 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section --

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PROJECT IDENTIFICATION

**08/19, CHG 5: 08/22**

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SECTION 01 58 00

PROJECT IDENTIFICATION
**08/19, CHG 5: 08/22**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EP 310-1-6a | (2006; 2019 Change 2) Project Operation -- Sign Standards Manual, VOL 1 |
| EP 310-1-6b | (2006) Sign Standards Manual, VOL 2, Appendices |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Preliminary One Line Drawings Of Project Rendering; G, RO

Sign Legend Orders; G, RO

SD-04 Samples

Final Rendering Sample; G, RO

Final Framed Rendering and Copies; G, RO

1.3 QUALITY CONTROL

1.3.1 Rendering

Provide the project rendering in accordance with the following drawing stages as required in the SUBMITTALS paragraph. The following submittal data is required to properly identify the appropriate view and approve the final rendering of the facility. The final painted rendering will be used to produce the image for the signboard and framed photographic copies provided to the Contracting Officer.

1.3.1.1 Preliminary One Line Drawings

Provide three different views of the facility in a preliminary single line drawing (black and white) format. These three views will represent the

best angles at which to view the proposed facility showing the best design features and the three dimensional character of the facility.

1.3.1.2 Final Rendering Sample

Provide a photographic copy (8 by 10 inches minimum size) of final rendering for approval of color, landscaping, and foreground/background development prior to final submittal.

1.3.1.3 Final Framed Rendering and Copies

Provide final full color rendering of the proposed facility as specified.

1.4 PROJECT IDENTIFICATION SIGN

1.4.1 Construction Project Signs

Furnish the construction project sign package, maintain the signs during construction, and remove the signs from the job site upon completion of the project. The construction project sign package consists of two signs: one for project identification and the other to show the on-the-job safety performance of the contractor. Ensure that the package conforms to the requirements of EP 310-1-6a and EP 310-1-6b, specifically Section 16. Submit the sign legend orders as described in Section 16 of EP 310-1-6a before erecting the signs.

Utilize the Example Graphic of Signage with Dimensions for MILCON Project and follow USACE policy provided in Engineering Pamphlet (EP) 310-1-6a, Sign Standards Manual, VOL 1 for guidelines on fabricating, locating, and mounting construction project signs (https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/EP_310-1-6a%20change%202.pdf).

PART 2 PRODUCTS

Not used.

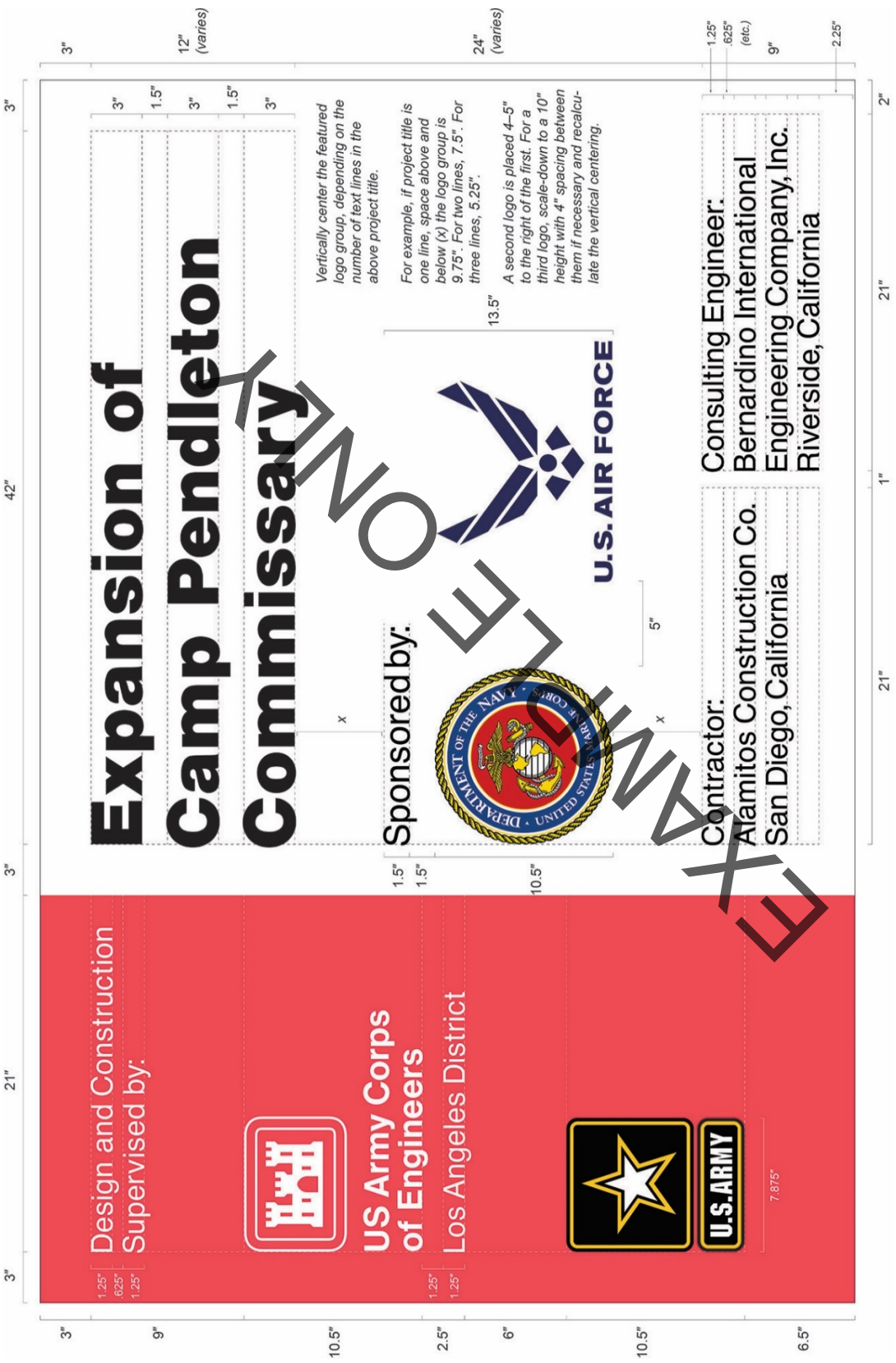
PART 3 EXECUTION

Not used.

-- End of Section --

**ECB No.** 2020-1
**SUBJECT:** USACE Construction Project Signs and Use of the Army Star

**ATTACHMENT A:** Example Graphic of Signage with Dimensions for MILCON Project



# SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Group 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group1: Standard two-line title "safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

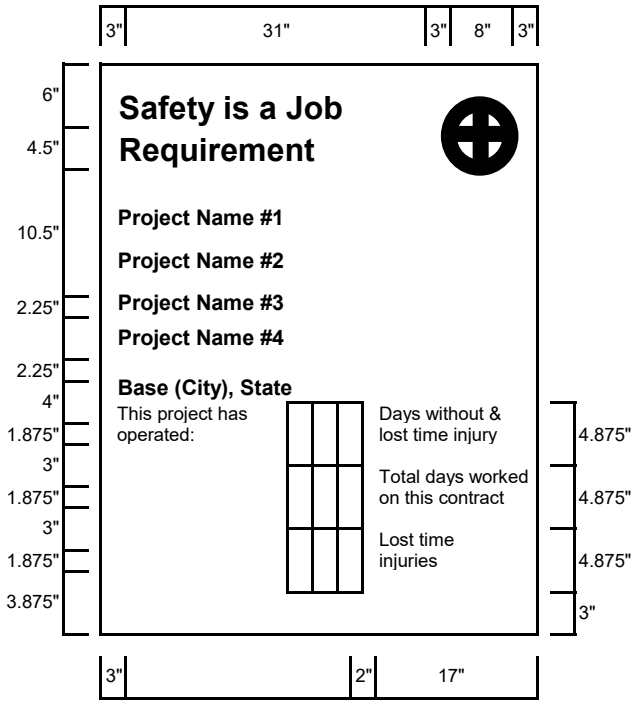
Legend Group 3: One - to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black

Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060: aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5"x.5"

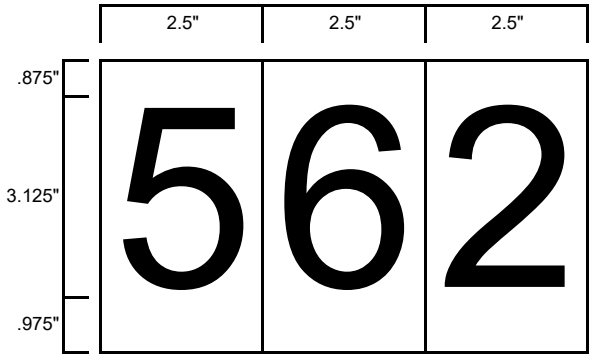
All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D. *




Dimensions inches.
See attached sheet for fabrication and mounting guidelines.

* Refer to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

| Sign Type | Legend Size | Panel Size | Post Size | Specifications Code | Mounting Height | Color Bkg/Lgd |
|---|---|---|---|---|---|---|
| CID-02 | various | 4"x4" | 4"x4" | HDO-3 | 48" | WH/BK-GR |



# US ARMY

CORPS OF ENGINEERS, NEW YORK DISTRICT

Project Name #1 & 2
Project Name #3 & 4
Base (City), State

CONTRACTOR:
FUNDED BY:
COMPLETION DATE:

## FOR YOUR SAFETY

1. DO NOT ENTER DESIGNATED WORK AREAS
2. OBEY ALL STATE AND LOCAL REQUIREMENTS CONCERNING PROHIBITED ACTIVITIES

DISTRICT ENGINEER: COL. ALEXANDER YOUNG

# Fabrication and Mounting Guidelines

As Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDD specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2'x4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5"). **

Drill and Insert six (6) .375" T-nuts from the front face of the HDD sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

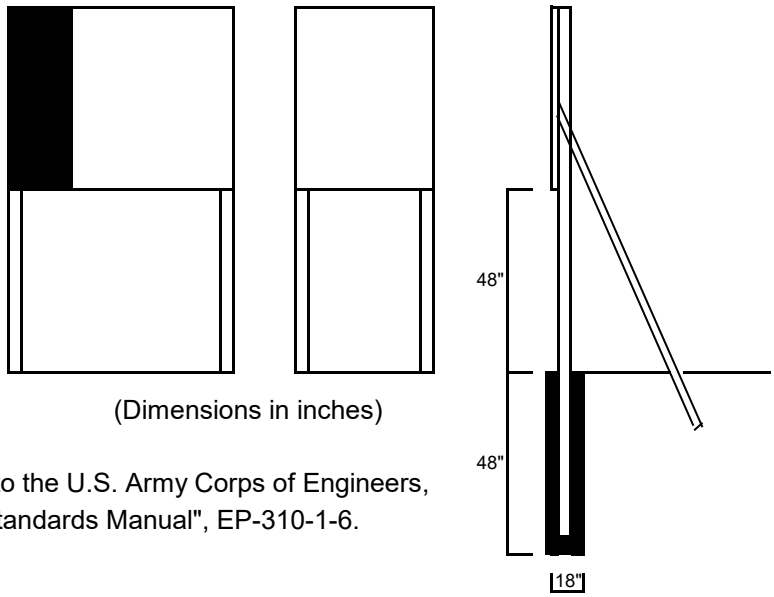
Apply graphic panel to prepared HDD plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4"x4" treated Douglas Fir or Southern Yellow Pine. No.1 or better. Post to be 12" long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4" hole. Local soil conditions and/or wind loading may require bolting additional 2"x4" struts on inside face of uprights to reinforce installation as shown.

Detailed specifications for HDD plywood panel preparation are provided in Appendix B.**

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.




(Dimensions in inches)

** Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EP-310-1-6.

Construction Project Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor /A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign
Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

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SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

**02/19, CHG 3: 11/21**

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CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
**02/19, CHG 3: 11/21**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

| | |
|---|---|
| 40 CFR 273 | Standards for Universal Waste Management |
| 49 CFR 173 | Shippers - General Requirements for Shipments and Packagings |
| 49 CFR 178 | Specifications for Packagings |

1.2 DEFINITIONS

1.2.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.2.2 Construction Waste

Waste generated by construction activities, such as scrap materials, damaged or spoiled materials, temporary and expendable construction materials, and other waste generated by the workforce during construction activities.

1.2.3 Demolition Debris/Waste

Waste generated from demolition activities, including minor incidental demolition waste materials generated as a result of Intentional dismantling of all or portions of a building, to include clearing of building contents that have been destroyed or damaged.

1.2.4 Disposal

Depositing waste in a solid waste disposal facility, usually a managed landfill or incinerator, regulated in the US under the Resource Conservation and Recovery Act (RCRA).

1.2.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.2.6 Recycling

The series of activities, including collection, separation, and processing, by which products or other materials are diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products sold or distributed in commerce, or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel.

1.2.7 Reuse

The use of a product or materials again for the same purpose, in its original form or with little enhancement or change.

1.2.8 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.2.9 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.3 CONSTRUCTION WASTE (INCLUDES DEMOLITION DEBRIS/WASTE)

Divert a minimum of 60 percent by weight of the project construction waste and demolition debris/waste from the landfill or incinerator. Follow applicable industry standards in the management of waste. Apply sound environmental principles in the management of waste. (1) Practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction waste and demolition debris/waste from landfills and incinerators and to facilitate the recycling or reuse of excess construction materials.

1.4 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of construction construction waste, recycling process, disposal of demolition debris/waste, and require all subcontractors, vendors, and suppliers to participate in the Construction Waste Management Program. Establish a process for clear tracking, and documentation of construction waste and demolition debris/waste.

1.4.1 Implementation of Construction Waste Management Program

Develop and document how the Construction Waste Management Program will be implemented in a Construction Waste Management Plan. Submit a Construction Waste Management Plan to the Contracting Officer for approval. Construction waste and demolition debris/waste materials include un-used construction materials not incorporated in the final work, as well as demolition debris/waste materials from demolition activities or deconstruction activities. In the management of waste, consider the availability of viable markets, the condition of materials, the ability to provide material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates.

1.4.2 Oversight

The Quality Control Manager, as specified in Section 01 45 00 QUALITY CONTROL, is responsible for overseeing and documenting results from executing the Construction Waste Management Plan for the project.

1.4.3 Special Programs

Implement special programs involving rebates or similar incentives related to recycling of construction waste and demolition debris/waste materials. Retain revenue or savings from salvaged or recycling, unless otherwise directed. Ensure firms and facilities used for recycling, reuse, and disposal are permitted for the intended use to the extent required by federal, state, and local regulations.

1.4.4 Special Instructions

Provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the projects. Designation of single source separating or commingling will be clearly marked on the containers.

1.4.5 Waste Streams

Delineate waste streams and characterization, including estimated material types and quantities of waste, in the Construction Waste Management Plan. Manage all waste streams associated with the project. Typical waste streams are listed below. Include additional waste steams not listed:

a. Land Clearing Debris

b. Asphalt

c. Masonry and CMU

d. Concrete

e. Metals (Includes, but is not limited to, banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, bronze.)

f. Wood (nails and staples allowed)

g. Glass

h. Paper

i. Plastics (PET, HDPE,PVC,LDPE,PP,PS, Other)

j. Gypsum

k. Non-hazardous paint and paint cans

l. Carpet

m. Ceiling Tiles

n. Insulation

o. Beverage Containers

1.5 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Waste Management Plan; G, RO

SD-06 Test Reports

Quarterly Reports

Annual Report

SD-11 Closeout Submittals

1.6 MEETINGS

Conduct Construction Waste Management meetings. After award of the Contract and prior to commencement of work, schedule and conduct a meeting with the Contracting Officer to discuss the proposed Construction Waste Management Plan and to develop a mutual understanding relative to the management of the Construction Waste Management Program and how waste diversion requirements will be met.

The requirements of this meeting may be fulfilled during the coordination and mutual Understanding meeting outlined in Section 01 45 00 QUALITY CONTROL. At a minimum, discuss and document waste management goals at following meetings:

a. Preconstruction meeting.

b. Regular Quality Control meetings.

c. Work safety meeting (if applicable).

1.7 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan within 15 days after notice to proceed. Revise and resubmit Construction Waste Management Plan as necessary, in order for construction to begin.. Submit Construction Waste Management Plan not less than 60 calendar days before scheduled final site or building design approval. Revise and resubmit Construction Waste Management Plan until it receives final approval from the Contracting Officer, in order for construction to begin. Execute demolition or deconstruction activities in accordance with Section 02 41 00 DEMOLITION AND DECONSTRUCTION. Manage demolition debris/waste or deconstruction materials in accordance with the approved construction waste management plan.

An approved Construction Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting project cumulative waste diversion requirement. Ensure all subcontractors receive a copy of the approved Construction Waste Management Plan. The plan demonstrates how to meet the project waste diversion requirement. Also, include the following in the plan:

a. Identify the names of individuals responsible for waste management and waste management tracking, along with roles and responsibilities on the project.

b. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.

c. Description of the regular meetings to be held to address waste management.

d. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of materials.

e. Name of landfill and incinerator to be used.

f. Identification of local and regional re-use programs, including non-profit organizations such as schools, local housing agencies, and organization that accept used materials such as material exchange networks and resale stores. Include the name, location, phone number for each re-use facility identified, and provide a copy of the permit or license for each facility.

g. List of specific materials, by type and quantity, that will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, or recycled. Identify the recycling facilities by name, address, and phone number.

h. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.

i. Description of the means by which materials identified in item (g) above will be protected from contamination.

j. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).

k. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.

l. Facilities or subcontractors offering construction waste transport on-site or off-site must ensure that proper shipping orders, bill of lading, manifests, or other shipping documents containing waste diversion information meet requirements of 40 CFR 273 Universal Waste Management, 49 CFR 173 Shippers - General Requirements for Shipments and Packagings, and 49 CFR 178 Specifications for Packaging.

Individuals signing manifests or other shipping documents should meet the minimum training requirements.

m. List each supplier who deliver construction materials, in bulk, or package products in returnable containers or returnable packaging, or have take-back programs. List each program and the applicable material to actively monitor and track to assist in meeting waste diversion requirements on the project.

n. Identify local jurisdiction requirements for waste management. Include local requirements and points of contact.

Distribute copies of the waste management plan to each subcontractor, Quality Control Manager , and the Contracting Officer.

## 1.8 RECORDS (DOCUMENTATION)

### 1.8.1 General

Maintain records to document the types and quantities of waste generated and diverted though re-use, recycling and sale to third parties; through disposal to a landfill or incinerator facility. Provide explanations for materials not recycled, reused or sold. Collect and retain manifests, weight tickets, sales receipts, and invoices specifically identifying diverted project waste materials or disposed materials.

### 1.8.2 Accumulated

Maintain a running record of materials generated and diverted from landfill disposal, including accumulated diversion rates for the project. Make records available to the Contracting Officer during construction or incidental demolition activities. Provide a copy of the diversion records to the Contracting Officer upon completion of the construction, incidental demolitions or minor deconstruction activities.

## 1.9 REPORTS

### 1.9.1 General

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the quarterly reports, annual reports and final reports: the project name, contract information, information for waste generated, diverted and disposed of for the current reporting period and show cumulative totals for the project. Reports must identify quantifies of waste by type and disposal method. Also include in each report, supporting documentation to include manifests, weigh tickets, receipts, and invoices specifically identifying the project and waste material type and weighted sum.

### 1.9.2 Quarterly Reporting

Provide cumulative reports at the end of each quarter (December, March, June, and September, corresponding with the federal fiscal year for reporting purposes). Submit quarterly reports not later than 15 calendar days after the preceding quarter has ended. Submit Quarterly Reports to the appropriate office or identified point of contact.

1.9.3 Annual Reporting

Provide a cumulative construction waste diversion report annually. Submit annual report not later than 30 calendar days after the preceding fourth quarter has ended. Provide copy of annual construction waste diversion report to the installation POC.

1.10 COLLECTION

Collect, store, protect, and handle reusable and recyclable materials at the site in a manner which prevents contamination, and provides protection from the elements to preserve their usefulness and monetary value. Provide receptacles and storage areas designated specifically for recyclable and reusable materials and label them clearly and appropriately to prevent contamination from other waste materials. Keep receptacles or storage areas neat and clean.

Train subcontractors and other service providers to either separate waste streams or use the co-mingling method as described in the Construction Waste Management Plan. Handle hazardous waste and hazardous materials in accordance with applicable regulations and coordinate with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and Section 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS. Separate materials by one of the following methods described herein:

1.10.1 Source Separation Method

Separate waste products and materials that are recyclable from trash and sort as described below into appropriately marked separate containers and then transport to the respective recycling facility for further processing. Deliver materials in accordance with recycling or reuse facility requirements (e.g., free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process). Separate materials into the category types as defined in the Construction Waste Management Plan.

1.10.2 Co-Mingled Method

Place waste products and recyclable materials into a single container and then transport to an authorized recycling facility, which meets all applicable requirements to accept and dispose of recyclable materials in accordance with all applicable local, state and federal regulations. The Co-mingled materials must be sorted and processed in accordance with the approved Construction Waste Management Plan.

1.10.3 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.11 DISPOSAL

Control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at intervals approved by the Contracting Officer and in compliance with waste management procedures as described in the waste management plan. Except as otherwise specified in other sections of the specifications, dispose of in accordance with the following:

1.11.1 Reuse

Give first consideration to reusing construction and demolition materials as a disposition strategy. Recover for reuse materials, products, and components as described in the approved Construction Waste Management Plan. Coordinate with the Contracting Officer to identify onsite reuse opportunities or material sales or donation available through Government resale or donation programs. Sale of recovered materials is not allowed on the Installation. Consider the use of surplus industrial supply broker services, who match entities with reusable or repurpose industrial materials with entities with need of such materials.

1.11.2 Recycle

Recycle non-hazardous construction and demolition/debris materials that are not suitable for reuse. Track rejection of contaminated recyclable materials by the recycling facility. Rejected recyclables materials will not be counted as a percentage of diversion calculation. Recycle all fluorescent lamps, HID lamps, mercury (Hg) -containing thermostats and ampoules, and PCBs-containing ballasts and electrical components as directed by the Contracting Officer. Do not crush lamps on site as this creates a hazardous waste stream with additional handling requirements.

1.11.3 Waste

Dispose by landfill or incineration only those waste materials with no practical use, economic benefit, or recycling opportunity.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used. -- End of Section --

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CLOSEOUT SUBMITTALS
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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 1110-1-2909 | (2012) Engineering and Design -- Geospatial Data and Systems |
| ERDC/ITL SR-23-1 | (2023) A/E/C Graphics Standard, Release 2.2 |
| ERDC/ITL SR-24-3 | (2024) A/E/C CAD Standard – Release 6.2 |

U.S. DEPARTMENT OF DEFENSE (DOD)

| | |
|---|---|
| UFC 1-300-08 | (2023) Criteria for Transfer and Acceptance of DoD Real Property |

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are the marked-up drawings, maintained by the Contractor on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the Contracting Officer; design that is the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

Produce the record drawings from the Record Model(s) and do not include annotations indicating revisions.

1.2.3 Record Model

A model reflecting approved changes during construction including red-lines, requests for information (RFI's), and contract modifications. Include updated construction phase facility/site data for components.

1.2.4 Advanced Modeling

A subset of geospatial technologies as defined in EM 1110-1-2909 to include Building Information Modeling (BIM), Civil Information Modeling (CIM), Geographic Information Systems (GIS), and Computer-Aided Design (CAD). Advanced modeling is comprised of models and drawings that form a digital representation of the project, or part thereof, that are comprised of model elements with facility data.

1.2.5 USACE CAD/BIM Technology Center

The USACE CAD/BIM Technology Center hosts all standard content for USACE. This content can be accessed through the CAD/BIM Technology Center website, https://cadbimcenter.erdc.dren.mil/.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

1.3.1 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction drawings and data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 RECORD DRAWINGS

The Government will provide pdf and or program files at the preconstruction conference that contains one set of "as-designed" electronic CAD files in

the specified software and format revised to reflect all amendments and the final contract PDF drawings. The CAD files are provided to enable preparation of as-built or as-constructed drawings. If discrepancies exist between the CAD files and the contract PDF drawings, correct the CAD files to show the contract PDF drawings.

### 1.4.1 Variation with Contract Drawings

The electronic files provided are not part of the contract documents. If there is any discrepancy between the electronic files and the contract drawings, the contract drawings govern. The Government has no responsibility to modify any Government furnished materials (GFM) due to changes in the design that occur after award.

Evaluate the content and quality of the GFM upon receipt. If major discrepancies or omissions occur in the GFM, notify the Contracting Officer and indicate the nature of such variations.

### 1.4.2 Data Loss, Corruption, and Error

Transfer of GFM files may result in corrupted files resulting in data loss and errors. Use of GFM files at own risk. Verify data integrity upon receipt and request a replacement if necessary. Make any adjustment in file structure, format, or software version as needed to make GFM compatible with computer systems and/or software to meet the requirements of the contract.

### 1.4.3 Modeling Completeness and Quality

The Government makes no guarantee that the GFM provide the level of completeness or quality as required by the contract. Further, the Government makes no guarantee that identified variations will be corrected upon notification.

## 1.5 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Warranty Management Plan

Warranty Tags

Spare Parts Data

SD-08 Manufacturer's Instructions

Posted Instructions

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G, RO

SD-11 Closeout Submittals

As-Built Drawings; G, RO

Record Drawings; G, RO

Record Model; G, RO

As-Built Record of Equipment and Materials

Warranted Equipment and Materials

Final Approved Shop Drawings; G, RO

Construction Contract Specifications; G, RO

Certification of EPA Designated Items; G, RO

Certification Of USDA Designated Items; G, RO

Interim DD FORM 1354; G, RO

List Of Installed Building Equipment Items For DD Form 1354

1.6 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

a. Indicate manufacturer's name, part number, and stock level required for test and balance, pre-commissioning, maintenance and repair activities. List those items that may be standard to the normal maintenance of the system.

b. At acceptance of commissioning, ensure the required stock level is supplied as indicated in subparagraph a for maintenance and repair activities through the facilities warranty period. Provision of spare parts does not relieve the Contractor of responsibilities listed under the contract guarantee provisions.

1.7 QUALITY CONTROL

Additions and corrections to the contract drawings must be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols must conform to ERDC/ITL SR-24-3.

1.8 WARRANTY MANAGEMENT

1.8.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether

tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9 month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.

c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.

d. Warranted Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:

(1) Name of item.
(2) Model and serial numbers.
(3) Location where installed.
(4) Name and phone numbers of manufacturers or suppliers.
(5) Names, addresses and telephone numbers of sources of spare parts.
(6) Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have warranties longer than one year must be indicated with separate warranty expiration dates.
(7) Cross-reference to warranty certificates as applicable.
(8) Starting point and duration of warranty period.
(9) Summary of maintenance procedures required to continue the warranty in force.
(10) Cross-reference to specific pertinent Operation and Maintenance manuals.
(11) Organization, names and phone numbers of persons to call for warranty service.
(12) Typical response time and repair time expected for various warranted equipment.

e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

f. Procedure and status of tagging of equipment covered by warranties longer than one year.

g. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

1.8.2 Performance Bond

The Performance Bond must remain effective throughout the construction and warranty period .

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.8.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. At this meeting, establish and review communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact must be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.8.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and back charge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems
(1) (If assessment and analysis after completion of video display installation indicate HVAC system deficiencies related to the video display IT rack cooling load, warranty responsibilities apply accordingly.)

(2) Air conditioning leak in part of building, if causing damage.
(3) Air conditioning system not cooling properly.

Code 1-Electrical
(4) Power failure (entire area or any building operational after 1600 hours).

Code 2-Electrical
(5) Power failure (no power to a room or part of building).
(6) Receptacle and lights (in a room or part of building).

Code 1-Heat
(If assessment and analysis after completion of video display installation indicate HVAC system deficiencies related to the video display IT rack cooling load, warranty responsibilities apply accordingly.)

(7) Area power failure affecting heat.
(8) Heater in unit not working.

(9) Code 3-Interior
(10) Casework.

Code 1-Roof Leaks
(11) Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
(12) Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 3-All other work not listed above.

1.8.5 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag

with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following information on the tag.

| | |
|---|---|
| Type of product/material | |
| Model number | |
| Serial number | |
| Contract number | |
| Warranty period from/to | |
| Inspector's signature | |
| Construction Contractor | |
| Address | |
| Telephone number | |
| Warranty contact | |
| Address | |
| Telephone number | |
| Warranty response time priority code | |
| WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD. | |

## PART 2 PRODUCTS

### 2.1 RECORD DRAWINGS

Prepare the CAD drawing files in AutoCAD Release 2025MicroStation 2024 format compatible with a Windows 10 or above operating system.

#### 2.1.1 Additional Drawings

If additional drawings are required, prepare them using the specified electronic file format applying ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings.

2.1.1.1 Sheet Numbers and File Names

If a sheet needs to be added between two sequential sheets, append a Supplemental Drawing Designator in accordance with ERDC/ITL SR-24-3 Adding a drawing sheet, and ERDC/ITL SR-23-1 Adding or deleting drawing sheets and index sheet procedures.

2.2 ADVANCED MODELING PACKAGE

For each Advanced Modeling Package submittal for both the Interim Record Model Package and the Final Record Model Package, submit in accordance with ERDC/ITL SR-24-3 and in accordance with Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) and also provide the following items:

a. Advanced Modeling PxP: Provide an electronic copy of the most current approved version of the project Advanced Modeling PxP.

b. Electronic Files: Provide an electronic list (.txt file or similar), of all submitted electronic files including a description, directory, and file name for each file submitted. Identify which files have been produced from the Model and Facility Data. For all sheet files, include a list of the sheet titles and sheet numbers.

c. Advanced Modeling Submittal Checklist: Complete the USACE BIM/CIM Advanced Modeling Submittal Checklist and include with each submittal. Download the Checklist from the USACE CAD/BIM Technology Center website.

d. Advanced Modeling Files: Provide all native Advanced Modeling files associated with the production of the contract drawings and associated as-modeled drawings. Update and maintain in compliance with the Advanced Modeling formatting, content requirement, and standards in Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) , in order to yield a complete and coordinated document package.

e. Quality Control (QC) Reports: Provide electronic PDFs of all QC reports and checklist utilized to ensure full compliance with the contract requirements and standards.

f. CAD Exports of BIM-Generated Sheets and Drawings: Provide supplemental 2D CAD exports from the project BIM model as needed to demonstrate compliance with contract requirements. Export all contract drawings sheets to the CAD format(s) defined in Section 01 33 16.00 10 DESIGN DATA(DESIGN AFTER AWARD).

2.3 CERTIFICATION OF EPA DESIGNATED ITEMS

Submit the Certification of EPA Designated Items as required by FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items and FAR 52-223-17 Affirmative Procurement of EPA designated items in Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with

current EPA standards for recycled/recovered materials content. The following exemptions may apply to the non-procurement of recycled/recovered content materials:

a. The product does not meet appropriate performance standards;

b. The product is not available within a reasonable time frame;

c. The product is not available competitively (from two or more sources);

d. The product is only available at an unreasonable price (compared with a comparable non-recycled content product)."

Record each product used in the project that has a requirement noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, exemptions (a, b, c, or d, as indicated), and comments. Recycled content values may be determined by weight or volume percent, but must be consistent throughout.

2.4 CERTIFICATION OF USDA DESIGNATED ITEMS

Submit the Certification of USDA Designated Items as required by FAR 52-223-1 Bio-based Product Certifications and FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current USDA standards for biobased materials content. The following exemptions may apply to the non-procurement of biobased content materials:

a. The product does not meet appropriate performance standards;

b. The product is not available within a reasonable time frame;

c. The product is not available competitively (from two or more sources);

d. The product is only available at an unreasonable price (compared with a comparable bio-based content product)."

Record each product used in the project that has a requirement noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, total value of biobased content, exemptions (a, b, c, or d, as indicated), and comments. Biobased content values may be determined by weight or volume percent, but must be consistent throughout.

2.5 PDF AS-BUILT FILES

Provide electronic PDF "plots" of all contract drawings sheets associated with the as-built drawing submittal. Compile and organize the PDF set to match the contract drawings. Bookmark and label the pages of the PDF file in accordance with Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

2.6 REDLINES AND MARKUPS

Provide PDFs of the current working redlines and/or markups complying with the as-builts drawing and markup requirements contained in this specification.

2.7 GEO-DATA-BASE FILES

Provide a SDSFIE/FGDC GeoReferenced personal GeoDataBase. For all information outside of the building walls, provide a personal GeoDataBase in .mdb format using the latest version of Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) as the database structure. Provide a shell database to define the projection and database structure.

For all drawings within and including the exterior walls, utilize the advanced modeling formats described and referenced herein. Provide a short GeoDataBase read-me file explaining the deliverable. The read-me file will include a description of the software used to create the data, projection, and include the attribute tables used.

2.8 AS-BUILT OR ADVANCED MODELING RE-SUBMISSION REQUIREMENTS

If elements of an as-built submittal or advanced modeling package are rejected, provide the following for each re-submission, in addition to any information required in Section 01 33 00 SUBMITTAL PROCEDURES:

a. Re-submit all components required under paragraph As-Builts or Advanced Modeling Package, including a new Advanced Modeling Submittal Checklist and updated content in response to Government comments.

b. Provide a copy of all Government review comments.

c. Provide a disposition/response to each Government review comment for a back-check of the re-submission deliverable.

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. Submit As-Built Drawings 30 days prior to Beneficial Occupancy Date (BOD).

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

a. Use base colors of red, green, and blue. Color code for changes as follows:

(1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.

(2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.

(3) Additions (Green) - Added items, lettering in notes and leaders.

b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

g. For deletions, cross out all features, data and captions that relate to that revision.

h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

i. Indicate one of the following when attaching a print or sketch to a markup print:

(1) Add an entire drawing to contract drawings

(2) Change the contract drawing to show changes on the drawing.

(3) Provided for reference only to further detail the initial design.

j. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Revise As-Built Drawings and red-lined PDF files in accordance with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3. Keep these working as-built markup drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract drawings which are made during construction or additional information which might be uncovered in the course of construction must be accurately and neatly recorded as they occur by means of details and notes. Submit the working as-built markup drawings for approval prior to submission of each monthly pay estimate. For failure to maintain the working and final record drawings as specified herein, the Contracting Officer will withhold 10 percent of the monthly progress payment until approval of updated drawings. Show on the as-built drawings, but not limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.

b. The location and dimensions of any changes within the building structure.

c. Layout and schematic drawings of electrical circuits and piping.

d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

e. Changes in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment, and foundations.

f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

g. Changes or Revisions which result from the final inspection.

h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.

i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

k. Changes in location of equipment and architectural features.

l. Modifications.

m. Actual location of anchors, construction and control joints, etc., in concrete.

n. Unusual or uncharted obstructions that are encountered in the contract work area during construction.

o. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

3.2 RECORD DRAWING FILES

If additional drawings are required, prepare them using the specified electronic file format applying the same graphic standards specified for original drawings ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using CAD files. Provide all program files and hardware necessary to prepare final PDF record drawings. The Contracting Officer will review final PDF record drawings for accuracy and return them to the Contractor for required corrections, changes, additions, and deletions.

3.2.1 Rename the CAD Drawing files

Rename the CAD Drawing files using the contract number as the Project Code field,(e.g., W91238-15-C-10A-102.DWGDGN) as instructed in the Pre-Construction conference. Use only those renamed files for the Marked-up changes. Make all changes on the layer/level as the original item.

a. For AutoCAD files (DWG), enter all as-built delta changes and notations on the AS-BUILT layer.MicroStation files (DGN), enter all as-built delta changes and notations on:

   (1) - Level #63
   (2) - Level/Layer Name contains: ANNO-REVS
   (3) - Level/Layer Description: Revisions

b. When final revisions have been completed, show the wording "RECORD DRAWING AS-BUILTS" followed by the name of the Contractor in letters at least 3/16 inch high on the cover sheet drawing. Date RECORD DRAWING AS-BUILTS" drawing revisions in the revision block.

c. Within 10 days after Government approval of all of the working record drawings for a phase of work, prepare the final CAD record drawings for that phase of work and submit PDF drawing files and two sets of prints for review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 7 days revise the CAD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 days of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic CAD files, and one set of the approved working record PDF and or programfiles with two sets of prints. The CAD files must be complete in all details and identical in form and function to the CAD drawing files supplied by the Government. Prepare AutoCAD files for transmittal using e-Transmit. Prepare MicroStation files for transmittal using the Packager (Archive). Make any transactions or adjustments necessary to accomplish this. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CAD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final record PDF drawing files, CAD files and marked prints as specified will be cause for withholding any payment due under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made.

3.3 RECORD DRAWINGS

Prepare final record drawings after the completion of each definable phase of work as listed in the Contractor Quality Control Plan (such as Foundations, Utilities, or Structural Steel as appropriate for the project). Transfer the changes from the approved working as-built markup drawings to the original electronic CAD drawing files. Modify the as-built CAD drawing files to correctly show the features of the project as-built by bringing the working CAD drawing set into agreement with approved working as-built markup drawings, and adding such additional drawings as may be necessary. Refer to ERDC/ITL SR-23-1. Jointly review the working as-built markup drawings with printouts from working as-built CAD drawing PDF files for accuracy and completeness. Monthly review of working as-built CAD drawing PDF file printouts must cover all sheets revised since the previous review. These PDF drawing files are part of the permanent records of this project. Any drawings damaged or lost must be satisfactorily replaced at no expense to the Government.

Drawing revisions (include within change order price the cost to change working and final record drawings to reflect revisions) and compliance with the following procedures.

a. Follow directions in the revision for posting descriptive changes.

b. The revision delta size must be 5/16 inch unless the area where the delta is to be placed is crowded. Use a smaller size delta for crowded areas.

c. Place a revision delta at the location of each deletion.

d. For new details or sections which are added to a drawing, place a revision delta by the detail or section title.

e. For minor changes, place a revision delta by the area changed on the drawing (each location).

f. For major changes to a drawing, place a revision delta by the title of the affected plan, section, or detail at each location.

g. For changes to schedules or drawings, place a revision delta either by the schedule heading or by the change in the schedule.

### 3.3.1 Final Record Drawing Package

Submit the final record PDF and CAD drawings package for the entire project within 20 days of substantial completion of all phases of work. Submit one set of ANSI D size PDF and CAD files, two sets of ANSI D size prints and one set of the approved working record drawings. The package must be complete in all details and identical in form and function to the contract drawing files supplied by the Government.

## 3.4 FINAL APPROVED SHOP DRAWINGS

Submit final approved project shop drawings 30 days after transfer of the completed facility.

## 3.5 CONSTRUCTION CONTRACT SPECIFICATIONS

Submit final PDF file record construction contract specifications, including revisions thereto, 30 days after transfer of the completed facility.

## 3.6 AS-BUILT RECORD OF EQUIPMENT AND MATERIALS

Furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Submit Two sets of final record of equipment and materials 10 days after final inspection. Key the designations to the related area depicted on the contract drawings. List the following data:

| RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA | | | | |
|---|---|---|---|---|
| Description | Specification Section | Manufacturer and Catalog, Model, and Serial Number | Composition and Size | Where Used |
| | | | | |
| | | | | |

## 3.7 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals as specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA.. Submit to the Contracting Officer for approval within 30 calendar days of the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

## 3.8 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site..

## 3.9 REAL PROPERTY RECORD

Refer to UFC 1-300-08 for instruction on completing the DD FORM 1354. Contact the Contracting Officer for any project specific information necessary to complete the DD FORM 1354.

### 3.9.1 Interim DD FORM 1354

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, complete, update draft DD FORM 1354, and submit an accounting of all installed property with Interim DD FORM 1354. Include any

additional assets, improvements, and alterations from the Draft DD FORM 1354.

3.9.2 Completed DD FORM 1354

For convenience, a blank fillable PDF DD FORM 1354 may be obtained at the following link: www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd1354.pdf

Submit the completed List of Installed Building Equipment items for DD FORM 1354. Attach this list to the updated DD FORM 1354.

-- End of Section --

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA
**05/23, CHG 1: 05/25**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

| | |
|---|---|
| ASHRAE GUIDELINE 1.4 | (2019) Preparing Systems Manuals for Facilities |

ASTM INTERNATIONAL (ASTM)

| | |
|---|---|
| ASTM E1971 | (2024) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings |
| ASTM E2166 | (2016; R 2023) Standard Practice for Organizing and Managing Building Data |

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Facility Data Workbook; G, ROTraining Plan; G, RO

Training Outline; G, RO

Training Content; G, RO

Operation And Maintenance Manual, Progress Submittal; G, RO

Operation And Maintenance Manual, Prefinal Submittal; G, RO

Operation And Maintenance Manual, Final Submittal; G, RO

SD-11 Closeout Submittals

Training Video Recording; G, RO

Validation of Training Completion; G, RO

Training Plan; G, RO

Record Drawings And Utility Systems; G, RO

1.3 MEETINGS

To assure that Operation and Maintenance Manual and Facility Data Workbook requirements are being met through the duration of the project, organize the following meetings and discuss the subsequent topics:

1.3.1 Post-Award Kickoff Meeting

At a minimum, discuss the following:

a. The requirement for Operation and Maintenance Manuals and Facility Data deliverables under this contract including coordination meetings

b. Processes and method of gathering Facility Data information during construction

c. Primary roles and responsibilities associated with the development and delivery of the Operation and Maintenance Manuals and Facility Data deliverables, and

d. Identify and agree upon a date and attendance list for the meetings described below:

1.3.2 Operation and Maintenance Manual and Facility Data Workbook Coordination Meeting

Facilitate a meeting after the Post-Award Kickoff Meeting prior to the submission of the Operation and Maintenance Manual Progress Submittal. Meeting attendance must include the Contractor's Operation and Maintenance Manual and Facility Data Workbook Preparer, Designer of Record (DOR), Quality Control Manager, the Government's Design Manager (DM), Contracting Officer's Representative, and Government's facility data reviewer. Include any Mechanical, Electrical, and Fire Protection Sub-Contractors.

The purpose of this meeting is to reach a mutual understanding of the scope of work concerning the contract requirements for Operation and Maintenance Manual and coordinate the efforts necessary by both the Government and Contractor to ensure an accurate collection, preparation and timely Government review of Operation and Maintenance Manual.

1.3.3 Submittal Coordination Meeting

Facilitate a meeting following submission and Government review of each design or progress submittal of the Operation and Maintenance Manual and Facility Data Workbook.

a. Include personnel from the Coordination meeting and any additional personnel identified.

b. The purpose of this meeting is to demonstrate ongoing compliance with the requirements identified in this specification. Discuss Government review comments and unresolved items preventing completion and Government approval of the Operation and Maintenance Manuals and Facility Data Workbook (FDW).

c. The applicable deliverables, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting.

1.4 FACILITY DATA WORKBOOK

Develop an editable, electronic spreadsheet based on the equipment in the Operation and Maintenance Manuals that contains the information required to start a preventive maintenance program. As a minimum, provide Facility Data Workbook as a list of system equipment, location installed, warranty expiration date, manufacturer, model, and serial number.

1.5 OPERATION AND MAINTENANCE MANUAL MEDIA

Assemble Operation and Maintenance Manual into an electronically bookmarked file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide compact disks (CD) or data digital versatile disk (DVD) as appropriate, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete bookmarked operation and maintenance directory.

1.5.1 CD or DVD Label and Disk Holder or Case

Provide the following information on the disk label and disk holder or case:

a. Building Number

b. Project Title

c. Activity and Location

d. Construction Contract Number

e. Prepared For: (Contracting Agency)

f. Prepared By: (Name, title, phone number and email address)

g. Include the disk content on the disk label

h. Date

i. Virus scanning program used

1.5.2 O&M Manual Tabbed Hard Copy

Provide a hard copy of the O&M manual upon completion of the project. Provide tabs for each section and subsection for ease of navigation by the user.

1.6 O&M MANUAL CONTENT

Organize the bookmarked Operation and Maintenance Manual into the following Parts in accordance with ASHRAE GUIDELINE 1.4, and as modified and detailed below. Word template for O&M Manual is available at: www.wbdg.org/dod/ufgs/ufgs-01-78-23.

1.6.1 Part 1: Executive Summary

Provide a summary of the information found in the O&M manual including the purpose of the manual and a description of the manual's organization.

1.6.2 Part 2: Facility Design and Construction

1.6.2.1 General Facility and Systems Description

Provide an overview of the intent for design and use of the facility. Provide a PDF of the Record Drawings prepared in accordance with 01 78 00 CLOSEOUT SUBMITTALS and bookmarked using the sheet title and sheet number. Include uncluttered 11 by 17 inches floor plans with room numbers, type or function of space, and overall facility dimensions on the floor plans. Do not include items such as construction instructions, references, or frame numbers.

Detail the overall dimensions of the facility, number of floors, foundation type, expected number of occupants, and facility Category Code list and generally describe all the facility systems and any special building features (for example, HVAC Controls, Sprinkler Systems, Cranes, Elevators, and Generators). Include photographs marked up and labeled to show key operating components and the overall facility appearance.

1.6.2.2 Basis of Design

Provide a copy of the contract Basis of Design.

1.6.2.3 Contract Documents, RFP, Amendments, and Modifications

Provide the contract construction documents complete, to include specifications, drawings, Request for Proposal, amendments, and modifications.

1.6.2.4 Room Inventory of Real Property and Finishes

Provide a list of installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. Include, as applicable, the following information for each piece of equipment installed: description of item, all dimensions, location by room number, model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. Real property includes, but is not limited to, floor coverings, wall surfaces, ceiling surfaces, windows, roofing, HVAC filters, plumbing fixtures, and lighting fixtures. Submit the final list 30 days after transfer of the completed facility.

Include spatial data defining actual net square footage and data of each room. Also include the room finish schedule including room names and numbers. Include schedules in the construction drawings in the room inventory. Add a column to each schedule to record what was provided by the contractor during construction. Provide a PDF of room inventory. Key the designations to the related area depicted on the contract drawings. List the following data:

| RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA | | | | |
|---|---|---|---|---|
| Description | Specification Section | Manufacturer and Catalog, Model, and Serial Number | Composition and Size | Where Used |
| | | | | |

1.6.3 Part 3: Facilities, Systems, and Assemblies Information

1.6.3.1 Organization

Bookmark information in this section using the current version of ASTM E2166 Uniformat II, UFGS numbers, and document type as outlined in the example below. Bookmark/tab each item to the third level for easy navigation of the manual.

Example as shown in Table below:

| **PARTS AND SUBPART NUMBERING** |
|---|
| 3.1 B20 EXTERIOR CLOSURE (System) |
| 3.1.1 B2030 EXTERIOR DOORS (Subsystem) |
| 3.1.1.1 B2030110 GLAZED DOORS (Component) |
| 3.1.1.1.1 Applicable specifications List in UFGS Format |
| 3.1.1.1.2 Manufacturer's Operations and Maintenance Data |
| 3.1.1.1.3 Approved Submittal |
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| 3.1.1.1.12 Contractor / Supplies Listing and Contact Information |

1.6.3.2 Related Specifications

Reference each specification related to the subsystem in this section, and locate the actual specification section in Part 2 of the O&M Manual. List

specifications in table format as shown in the below example.

| UFGS Number | Specification Title | Page Spec Begins in Part 2 |
|---|---|---|
| | | |
| | | |
| | | |

1.6.3.3 Manufacturer's Operations and Maintenance Data

Provide a copy of all manufacturer specifications and cutsheets. Provide text-searchable, high-quality document files from the manufacturer's online or electronic documentation. Color documents are preferred. Provide documents specific to the product(s) installed under this Contract. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Provide Uniformat II Level 3 identification for D20, D30, D40 installed equipment. When possible, do not submit document files containing multiple product catalogs from the same manufacturer, or product data from multiple manufacturers in the same files. Provide documents directly from the manufacturer whenever possible. Do not provide scanned copies of hardcopy documents. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master part catalog.

1.6.3.4 Approved Submittals and Certificates

Provide a copy of all submittals documented with the required approval as applicable for each UFGS specification listed in the table outlined in applicable specifications. Include copies of SD-07 Certificates submittals documented with the required approval, SD-08 Manufacturer's Instructions submittals documented with the required approval, and SD-10 Operation and Maintenance Data submittals documents with the required approval.

1.6.3.5 Approved Coordination/Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work. Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project. Drawings prepared by or for the Contractor to show how multiple systems and

interdisciplinary work will be coordinated.

1.6.4 Sequence of Operation for Operating Equipment

Provide record one-line diagrams for each floor, delineating mechanical equipment location within the building. Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

1.6.4.1 Safety Precautions and Hazards

List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard. Specify if any certifications or licenses are required to operate the equipment.

1.6.4.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

1.6.4.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.6.4.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

1.6.4.5 Emergency Operations

Provide Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Provide Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.6.4.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

1.6.4.7 Environmental Conditions

Provide a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.6.4.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary

operating records.

1.6.4.9 Additional Requirements for Equipment Control Systems

Provide Data Package 5 and the following for all control systems:

a. Provide a narrative description on how to perform and apply functions, features, modes, and other operations, including unoccupied operation, seasonal changeover, manual operation, and alarms. Include detailed technical manual for programming and customizing control loops and algorithms.

b. Submit complete controls equipment schedules, full as-built sequence of operations, wiring and logic diagrams, Input/Output Tables, equipment schedules, copies of checkout tests and calibrations performed by the Contractor (not Cx tests), and all associates information.

c. Full points list. Provide a listing of rooms with the following information for each room:

(1) Floor

(2) Room number

(3) Room name

(4) Air handler unit ID

(5) Reference drawing number

(6) Air terminal unit tag ID

(7) Heating or cooling valve tag ID

(8) Minimum cfm

(9) Maximum cfm

d. Full print out of all schedules and set points after testing and acceptance of the system.

e. Full as-built print out of software program.

f. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.6.4.10 Testing Equipment Information and Performance Data

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points.

Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

1.6.5 Routine Maintenance Requirements

1.6.5.1 Preventive Maintenance Plan, Schedule, and Procedures

Provide manufacturer's schedule for routine preventive maintenance, inspections, condition monitoring (predictive tests) and adjustments required to ensure proper and economical operation and to minimize repairs. Provide instructions stating when the systems should be retested. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including requirements by type of activity. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

a. Define the anticipated time required to perform each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.

b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.6.5.2 Lubrication Data

Include the following preventive maintenance lubrication data, in addition to instructions for lubrication required under paragraph OPERATOR SERVICE REQUIREMENTS:

a. A table showing recommended lubricants for specific temperature ranges and applications.

b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities. Provide procedural instructions for Oil Sampling for all equipment.

c. A Lubrication Schedule showing service interval frequency.

1.6.6 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards. Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials. Specify if any certifications or licenses are required to repair the equipment.

1.6.6.1 Troubleshooting Guides and Diagnostic Techniques

Provide step-by-step procedures to promptly isolate the cause of typical

malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.6.6.2 Wiring Diagrams and Control Diagrams

Provide point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.6.6.3 Removal and Replacement Instructions

Provide step-by-step procedures and a list of required specialty tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Use a combination of text and illustrations.

1.6.6.4 Repair Work-Hours

Provide manufacturer's projection of repair work-hours including requirements by type of craft. Identify, and tabulate separately, repair that requires the equipment manufacturer to complete or to participate.

1.6.6.5 Warranty Information

List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Identify if replacement of a subassembly, attachment or accessory requires the entire assembly to be replaced. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6.6.6 Extended Warranty Information

List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6.6.7 Record Drawings and Utility Systems

The record drawings are the final compilation of actual conditions reflected in the as-built drawings. Provide record drawings as outlined in 01 78 00 CLOSEOUT SUBMITTALS.

Using Record Source Drawings, show and document details of the actual installation of the utility systems, annotate and highlight the Operation and Maintenance information. Provide the following drawings at a large enough scale to differentiate designated isolation units from surrounding valves and switches.

1.6.6.8 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.6.6.9 Contractor / Supplier Listing and Contact Information

Provide a list that includes the name, address, telephone number, email and website of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.6.7 Part 4: Facility Operations

1.6.7.1 Completed Facility Operating Plan

Provide a plan that documents that procedures for the operation of systems and assemblies in the facility. The systems that should be included in the Operating Plan include, but are not limited to:

a. Electrical systems and equipment

b. Mechanical systems and equipment

c. Fire Protection systems and equipment

d. Control Systems and equipment

e. Architectural and Structural systems, fixtures, structures, and equipment

f. Vertical transportation such as elevators and escalators

1.6.7.2 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points.

1.6.7.3 Testing and Performance Data

Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

1.6.7.4 Approved Field Test Reports and Manufacturer's Field Reports

Compile and provide approved Field Test Reports (SD-06) and Manufacturer's Field Reports (SD-09) submittals.

1.6.7.5 Maintenance Plans, Procedures, Checklists, Records, and Spare Parts Inventory

1.6.7.5.1 Maintenance Schedules

Include recommended maintenance schedules for systems and equipment.

1.6.7.5.2 Ongoing Commissioning Operational and Maintenance Record Keeping

Include ongoing commissioning and optimization procedures and documentation to monitor and improve the performance of facility systems.

1.6.7.5.3 Janitorial and Cleaning Plans and Procedures

Include a copy of facility cleaning and janitorial plan with procedures and intended chemicals and equipment.

Provide environmentally friendly cleaning recommendations in accordance with ASTM E1971.

1.6.7.6 Utility Record Drawings

1.6.7.6.1 Utility Schematic Diagrams

Provide a one-line schematic diagram for each utility system such as power, water, wastewater, and gas/fuel. Schematic diagram must show from the point where the utility line is connected to the mainline up to the 5 foot connection point to the facility. Indicate location or area designation for route of transmission or distribution lines; locations of duct banks, manholes/handholes or poles; isolation units such as valves and switches; and utility facilities such as pump stations, lift stations, and substations.

1.6.7.6.2 Enlarged Connection and Cutoff Plans

Provide enlarged floor plans and provide information between the 5 foot utilities connection point and where utilities connect to facility distribution. Enlarge floor plans/elevations of the rooms where the utility enters the building and indicate on these plans the locations of the main interiors and exterior connection and cutoff points for the utilities. Also enlarge floor plans/elevations of the rooms where equipment is located. Include enough information to enable someone unfamiliar with the facility to locate the connection and cutoff points. Indicate designations such as room number, panel number, circuit breaker, or valve number of each utility and equipment connection and cutoff point, and what that connection and cutoff point controls.

1.6.7.6.2.1 Description of Utility Metering and Monitoring Systems

Provide in narrative format a description of the utility metering and monitoring systems. Include locations, function, and related systems.

1.6.7.6.2.2 Procedures for Tracking Utility Use and Reporting

Procedures for usage reporting and tracking in support of establishing and monitoring utility budgets and costs, and in developing annual energy reports.

1.6.7.6.2.3 One-Line Diagrams and Meter Location of System

Provide one-line diagrams and design drawings that highlight meter locations on the site.

1.6.7.6.3 Spare Parts and Supply Lists

Provide lists of spare parts and supplies required for repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.6.8 Part 5: Training

Provide a copy of training plans used for each type of equipment along with training materials used, arranged in specification sequence. Provide a copy of training records, sign-in sheets, and agendas. Include training and documentation on the updating and continued use of the O&M Manual.

1.6.9 Part 6: Cx Project Report and TAB Report

Provide the final Cx Plan and complete Cx reports with evaluation and testing forms and records for each building system. Include relevant commissioned system assemblies test reports including installers checklists of assemblies. Provide all Cx Progress Reports, issues and resolutions logs with resolution or status of each item, and a list of any open items and seasonal or additional testing required.

1.6.10 Part 7: Regulatory Requirements

Provide information describing regulatory and policies compliance requirements or provide a reference to where it is stored.

1.6.11 Part 8: Permits

Provide information requiring frequently asked questions and associated answers or provide a reference to where it is stored.

1.6.12 Part 9: Operations and Maintenance Manual Approval

Provide a signed document stating that the project O&M Manual has been reviewed and confirming agreement with the approach it presents. Include contact information for the signer for coordination of any future changes.

1.7 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. O&M Data Packages are one of the components of the O&M Manual. The information required in each type of data package follows:

1.7.1 Package Quality

Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

1.7.2 Data Package 1

a. Safety precautions and hazards

b. Cleaning recommendations

c. Maintenance and repair procedures

d. Warranty information

e. Extended warranty information

f. Contractor information

g. Spare parts and supply list

1.7.3 Data Package 2

a. Safety precautions and hazards

b. Normal operations

c. Environmental conditions

d. Lubrication data

e. Preventive maintenance plan, schedule, and procedures

f. Cleaning recommendations

g. Maintenance and repair procedures

h. Removal and replacement instructions

i. Spare parts and supply list

j. Parts identification

k. Warranty information

l. Extended warranty information

m. Contractor information

1.7.4 Data Package 3

a. Safety precautions and hazards

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Environmental conditions

g. Operating log

h. Lubrication data

i. Preventive maintenance plan, schedule, and procedures

j. Cleaning recommendations

k. Troubleshooting guides and diagnostic techniques

l. Wiring diagrams and control diagrams

m. Maintenance and repair procedures

n. Removal and replacement instructions

o. Spare parts and supply list

p. Product submittal data

q. O&M submittal data

r. Parts identification

s. Warranty information

t. Extended warranty information

u. Testing equipment and special tool information

v. Testing and performance data

w. Contractor information

x. Field test reports

1.7.5 Data Package 4

a. Safety precautions and hazards

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Operator service requirements

g. Environmental conditions

h. Operating log

i. Lubrication data

j. Preventive maintenance plan, schedule, and procedures

k. Cleaning recommendations

l. Troubleshooting guides and diagnostic techniques

m. Wiring diagrams and control diagrams

n. Repair procedures

o. Removal and replacement instructions

p. Spare parts and supply list

q. Repair work-hours

r. Product submittal data

s. O&M submittal data

t. Parts identification

u. Warranty information

v. Extended warranty information

w. Personnel training requirements

x. Testing equipment and special tool information

y. Testing and performance data

z. Contractor information

aa. Field test reports

1.7.6 Data Package 5

a. Safety precautions and hazards

b. Operator prestart

c. Start-up, shutdown, and post-shutdown procedures

d. Normal operations

e. Environmental conditions

f. Preventive maintenance plan, schedule, and procedures

g. Troubleshooting guides and diagnostic techniques

h. Wiring and control diagrams

i. Maintenance and repair procedures

j. Removal and replacement instructions

k. Spare parts and supply list

l. Product submittal data

m. Manufacturer's instructions

n. O&M submittal data

o. Parts identification

p. Testing equipment and special tool information

q. Warranty information

r. Extended warranty information

s. Testing and performance data

t. Contractor information

u. Field test reports

v. Additional requirements for HVAC control systems

1.7.7 Changes to Submittals

Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 TRAINING

Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the video display system and equipment specified in the technical specifications. The training must be targeted for the building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS. Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer.

3.1.1 Training Plan

Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Quality Control Manager (QC) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and QC. Include within the plan the following elements:

a. Equipment included in training

b. Intended audience

c. Location of training

d. Dates of training

e. Objectives

f. Outline of the information to be presented and subjects covered including description

g. Start and finish times and duration of training on each subject

h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)

i. Instructor names and instructor qualifications for each subject

j. List of texts and other materials to be furnished by the Contractor that are required to support training

k. Description of proposed software to be used for video recording of training sessions.

3.1.2 Training Content

The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The QC is responsible for overseeing and approving the content and adequacy of the training. Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.

b. Relevant health and safety issues.

c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.

d. Design intent.

e. Use of O&M Manual Files.

f. Review of control drawings and schematics.

g. Interactions with other systems.

h. Special maintenance and replacement sources.

i. Tenant interaction issues.

3.1.3 Training Outline

Provide the Operation and Maintenance Manual Files (Bookmarked PDF) and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

3.1.4 Training Video Recording

Record classroom training session(s) on video. Provide to the Contracting Officer two copies of the training session(s) in DVD video recording format. Capture within the recording, in video and audio, the instructors' training presentations including question and answer periods with the attendees. The recording camera(s) must be attended by a person during the recording sessions to assure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

3.1.7 Quality Control Coordination

Coordinate this training with the QCin accordance with Section 01 45 00 QUALITY CONTROL.

3.2 SUBMITTAL SCHEDULING

3.2.1 Operation and Maintenance Manual, Progress Submittal

Submit the Progress submittal when construction is approximately 50 percent complete, to the Contracting Officer for approval. Provide Operation and Maintenance Manual Files (Bookmarked PDF). Include the elements and portions of system construction completed up to this point. The purpose of this submittal is to verify progress is in accordance with contract requirements as discussed during the Operation and Maintenance Manual Coordination Meeting.

3.2.2 Operation and Maintenance Manual, Prefinal Submittal

Submit the 100 percent submittal of the Operation and Maintenance Prefinal Submittal to the Contracting Officer for approval a minimum of 60 calendar days prior to the Beneficial Occupancy Date (BOD).. This submittal must provide a complete, working document that can be used to operate and maintain the facility. Any portion of the submittal that is incomplete or inaccurate requires the entire submittal to be returned for correction. Any discrepancies discovered during the Government's review of Operation and Maintenance Progress submittal must be corrected prior to the Prefinal submission. The Prefinal Submittal must include Operation and Maintenance Manual Files (Bookmarked PDF).

### 3.2.3 Operation and Maintenance Manual, Final Submittal

Submit completed Operation and Maintenance Manual Files (Bookmarked PDF) and one hard copy of the Operation and Maintenance Manuals. The Final submittal is due at BOD. Any discrepancies discovered during the Government's review of the Prefinal submittal, including the Field Verification, must be corrected prior to the Final submission.

-- End of Section --

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Times Square Video Display Upgrade

CONTRACTOR

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| | | 01 11 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Salvage Plan | 1.7 | G | RO | | | | | | | | | | | | |
| | | 01 14 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | List of Contact Personnel | 1.3.1.1 | | | | | | | | | | | | | | |
| | | 01 30 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | View Location Map | 1.4 | | | | | | | | | | | | | | |
| | | | Progress and Completion | 1.5 | | | | | | | | | | | | | | |
| | | | Pictures | | | | | | | | | | | | | | | |
| | | | SD-04 Samples | | | | | | | | | | | | | | | |
| | | | Color Boards | 1.3 | G | RO | | | | | | | | | | | | |
| | | 01 32 01.00 10 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Project Scheduler Qualifications | 1.3 | G | RO | | | | | | | | | | | | |
| | | | Preliminary Project Schedule | 3.4.1 | G | RO | | | | | | | | | | | | |
| | | | Initial Project Schedule | 3.4.2 | G | RO | | | | | | | | | | | | |
| | | | Periodic Schedule Update | 3.6.2 | G | RO | | | | | | | | | | | | |
| | | 01 33 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Submittal Register | 1.8 | G | | | | | | | | | | | | | |
| | | 01 33 16.00 10 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Advanced Modeling Project | 1.7.2 | C | | | | | | | | | | | | | |
| | | | Execution Plan (PxP) | | | | | | | | | | | | | | | |
| | | | Design Quality Control Plan | 1.5.1 | G | RO | | | | | | | | | | | | |
| | | | Initial Design Conference | 1.5.2.2 | | | | | | | | | | | | | | |
| | | | Preconstruction Conference | 1.5.2.5 | | | | | | | | | | | | | | |
| | | | DCM Procedures | 3.5.1 | G | RO | | | | | | | | | | | | |
| | | | Submittal Register | 3.8.4 | G | RO | | | | | | | | | | | | |
| | | | SD-05 Design Data | | | | | | | | | | | | | | | |

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| | | 01 33 16.00 10 | Design and Code Checklists | 1.7.1 | C | | | | | | | | | | | | | |
| | | | Interim Design Submittals | 3.2.1 | R | | | | | | | | | | | | | |
| | | | Building Rendering | 3.6 | | | | | | | | | | | | | | |
| | | | Interior And Exterior Building | 3.6.4.1.1 | G | RO | | | | | | | | | | | | |
| | | | Finishes Scheme | | | | | | | | | | | | | | | |
| | | | Conference Documentation | 3.7.3 | | | | | | | | | | | | | | |
| | | | Final Design Submittals | 3.8 | R | | | | | | | | | | | | | |
| | | | Design Complete Documents | 3.9 | C | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | |
| | | | DD Form 1354 | 3.8.5 | A | | | | | | | | | | | | | |
| | | 01 35 26 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Accident Prevention Plan (APP) | 1.8 | G | RO | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Accident Reports | 1.12.2 | G | RO | | | | | | | | | | | | |
| | | | LHE Inspection Reports | 1.12.3 | | | | | | | | | | | | | | |
| | | | Monthly Exposure Reports | 1.5 | G | RO | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | |
| | | | Activity Hazard Analysis (AHA) | 1.9 | G | RO | | | | | | | | | | | | |
| | | | Certificate of Compliance | 1.12.4 | | | | | | | | | | | | | | |
| | | | Hot Work Permit | 1.13 | | | | | | | | | | | | | | |
| | | | Standard Lift Plan | 1.12.4 | G | RO | | | | | | | | | | | | |
| | | 01 45 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Contractor Quality Control (CQC) | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Plan | | | | | | | | | | | | | | | |
| | | | Additional Requirements For | 1.5.2.2 | G | RO | | | | | | | | | | | | |
| | | | Design Quality Control (DQC) Plan | | | | | | | | | | | | | | | |

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| | | 01 45 00 | SD-05 Design Data | | | | | | | | | | | | | | | | |
| | | | Design Quality Control | 1.12.2 | | | | | | | | | | | | | | | |
| | | | Discipline-Specific Checklists | 1.5.2.2 | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | | |
| | | | Verification Statement | 1.12.3 | | | | | | | | | | | | | | | |
| | | 01 45 35 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | | |
| | | | Written NDT Practices | 3.1.2 | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | | |
| | | | Special Inspection Daily Reports | 3.1.1 | | | | | | | | | | | | | | | |
| | | | Special Inspection Daily Reports | 3.1.2 | | | | | | | | | | | | | | | |
| | | | Special Inspection Biweekly | 3.1.1 | | | | | | | | | | | | | | | |
| | | | Reports | | | | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | | |
| | | | AISC Certified Steel Fabricator | 2.1 | | | | | | | | | | | | | | | |
| | | | AC472 Accreditation | 2.1 | | | | | | | | | | | | | | | |
| | | | Certificate of Compliance | 2.1 | | | | | | | | | | | | | | | |
| | | | Special Inspector | 1.5 | G | RO | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | | |
| | | | Comprehensive Final Report | 3.1.2 | G | RO | | | | | | | | | | | | | |
| | | | Final Report | 3.1.3 | G | RO | | | | | | | | | | | | | |
| | | 01 50 00 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | | |
| | | | Construction Site Plan | 1.3 | G | RO | | | | | | | | | | | | | |
| | | | Traffic Control Plan | 3.3.1 | G | RO | | | | | | | | | | | | | |
| | | | Haul Road Plan | 2.2.1 | G | RO | | | | | | | | | | | | | |
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| | | 01 50 00 | Contractor Computer | 1.5.1.4 | G | RO | | | | | | | | | | | | |
| | | | Cybersecurity Compliance | | | | | | | | | | | | | | | |
| | | | Statements | | | | | | | | | | | | | | | |
| | | | Contractor Temporary Network | 1.5.6 | G | RO | | | | | | | | | | | | |
| | | | Cybersecurity Compliance | | | | | | | | | | | | | | | |
| | | | Statements | | | | | | | | | | | | | | | |
| | | 01 57 19 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Preconstruction Survey | 1.5.1 | | | | | | | | | | | | | | |
| | | | Regulatory Notifications | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Environmental Manager | 1.5.3 | G | RO | | | | | | | | | | | | |
| | | | Qualifications | | | | | | | | | | | | | | | |
| | | | Employee Training Records | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | Environmental Protection Plan | 1.6 | G | RO | | | | | | | | | | | | |
| | | | Dirt and Dust Control Plan | 1.6.7.1 | G | RO | | | | | | | | | | | | |
| | | | Solid Waste Management Permit | 1.9 | G | RO | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Monthly Solid Waste Disposal | 1.9.1 | G | RO | | | | | | | | | | | | |
| | | | Report | | | | | | | | | | | | | | | |
| | | | SD-07 Certificates | | | | | | | | | | | | | | | |
| | | | Employee Training Records | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | |
| | | | Regulatory Notifications | 1.5.2 | G | RO | | | | | | | | | | | | |
| | | | Assembled Employee Training | 1.5.4 | G | RO | | | | | | | | | | | | |
| | | | Records | | | | | | | | | | | | | | | |
| | | | Solid Waste Management Permit | 1.9 | G | RO | | | | | | | | | | | | |
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# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Times Square Video Display Upgrade

CONTRACTOR

| ACTIVITY NO | TRANSMITTAL NO | SPEC SECT | DESCRIPTION ITEM SUBMITTED | PARAG # RAPH | CLASSIFICATION | GOVT OR A/E REVWR | CONTRACTOR: SCHEDULE DATES | | | CONTRACTOR ACTION | | | APPROVING AUTHORITY | | | | MAILED TO CONTR/ DATE RCD FRM APPR AUTH | REMARKS |
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| | | 01 57 19 | Waste Determination | 3.4.1 | G | RO | | | | | | | | | | | | |
| | | | Documentation | | | | | | | | | | | | | | | |
| | | | Project Solid Waste Disposal | 3.4.2.1 | G | RO | | | | | | | | | | | | |
| | | | Documentation Report | | | | | | | | | | | | | | | |
| | | | Sales Documentation | 3.4.2.1 | G | RO | | | | | | | | | | | | |
| | | | Contractor Certification | 3.4.2.1 | | | | | | | | | | | | | | |
| | | 01 58 00 | SD-02 Shop Drawings | | | | | | | | | | | | | | | |
| | | | Preliminary One Line | 1.3.1.1 | G | RO | | | | | | | | | | | | |
| | | | Sign Legend Orders | 1.4.1 | G | RO | | | | | | | | | | | | |
| | | | SD-04 Samples | | | | | | | | | | | | | | | |
| | | | Final Rendering | 1.3.1.2 | G | RO | | | | | | | | | | | | |
| | | | Final Framed Rendering | 1.3.1.3 | G | RO | | | | | | | | | | | | |
| | | 01 74 19 | SD-01 Preconstruction Submittals | | | | | | | | | | | | | | | |
| | | | Construction Waste Management | 1.7 | G | RO | | | | | | | | | | | | |
| | | | Plan | | | | | | | | | | | | | | | |
| | | | SD-06 Test Reports | | | | | | | | | | | | | | | |
| | | | Quarterly Reports | 1.9.2 | | | | | | | | | | | | | | |
| | | | Annual Report | 1.9.3 | | | | | | | | | | | | | | |
| | | 01 78 00 | SD-03 Product Data | | | | | | | | | | | | | | | |
| | | | Warranty Management Plan | 1.8.1 | | | | | | | | | | | | | | |
| | | | Warranty Tags | 1.8.5 | | | | | | | | | | | | | | |
| | | | Spare Parts Data | 1.6 | | | | | | | | | | | | | | |
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| | | | Instructions | 1.8.1 | | | | | | | | | | | | | | |
| | | | SD-10 Operation and Maintenance | | | | | | | | | | | | | | | |
| | | | Data | | | | | | | | | | | | | | | |

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| | | 01 78 00 | Operation and Maintenance | 3.7 | G | RO | | | | | | | | | | | | |
| | | | Manuals | | | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | |
| | | | As-Built Drawings | 3.1 | G | RO | | | | | | | | | | | | |
| | | | Record Drawings | 3.3 | G | RO | | | | | | | | | | | | |
| | | | Record Model | 2.2 | G | RO | | | | | | | | | | | | |
| | | | As-Built Record of Equipment | 3.6 | | | | | | | | | | | | | | |
| | | | and Materials | | | | | | | | | | | | | | | |
| | | | Warranted Equipment and | 1.8.1 | | | | | | | | | | | | | | |
| | | | Materials | | | | | | | | | | | | | | | |
| | | | Final Approved Shop Drawings | 3.4 | G | RO | | | | | | | | | | | | |
| | | | Construction Contract | 3.5 | G | RO | | | | | | | | | | | | |
| | | | Specifications | | | | | | | | | | | | | | | |
| | | | Certification of EPA Designated | 2.3 | G | RO | | | | | | | | | | | | |
| | | | Items | | | | | | | | | | | | | | | |
| | | | Certification Of USDA Designated | 2.4 | G | RO | | | | | | | | | | | | |
| | | | Items | | | | | | | | | | | | | | | |
| | | | Interim DD FORM 1354 | 3.9.1 | G | RO | | | | | | | | | | | | |
| | | | List Of Installed Building | 3.9.2 | | | | | | | | | | | | | | |
| | | | Equipment Items For DD Form | | | | | | | | | | | | | | | |
| | | | 1354 | | | | | | | | | | | | | | | |
| | | 01 78 23 | SD-10 Operation and Maintenance | | | | | | | | | | | | | | | |
| | | | Data | | | | | | | | | | | | | | | |
| | | | Facility Data Workbook | 1.4 | G | RO | | | | | | | | | | | | |
| | | | Training Plan | 3.1.1 | G | RO | | | | | | | | | | | | |
| | | | Training Outline | 3.1.3 | G | RO | | | | | | | | | | | | |

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| | | 01 78 23 | Training Content | 3.1.2 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Progress Submittal | 3.2.1 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Prefinal Submittal | 3.2.2 | G | RO | | | | | | | | | | | | | |
| | | | Operation And Maintenance Manual, Final Submittal | 3.2.3 | G | RO | | | | | | | | | | | | | |
| | | | SD-11 Closeout Submittals | | | | | | | | | | | | | | | | |
| | | | Training Video Recording | 3.1.4 | G | RO | | | | | | | | | | | | | |
| | | | Validation of Training Completion | 3.1.6 | G | RO | | | | | | | | | | | | | |
| | | | Training Plan | 3.1.1 | G | RO | | | | | | | | | | | | | |
| | | | Record Drawings And Utility Systems | 1.6.6.7 | G | RO | | | | | | | | | | | | | |