U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
ASSET # 623515B001

CONTRACT NO:12805B23D0001
ORDER NO:12805B24F0142

RANGE MANAGEMENT RESEARCH
LAS CRUCES, NEW MEXICO

USDA ARS NOTE:
ROOF TILE AREA REMOVED FROM SCOPE - SEE A101 AND A200.

INDEX OF DRAWINGS

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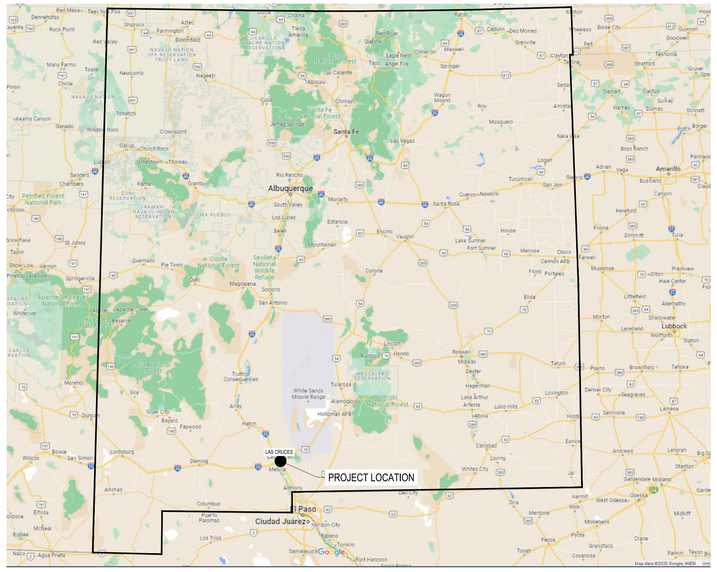
VICINITY MAP

NO SCALE



LOCATION MAP

NO SCALE

RANGE MANAGEMENT RESEARCH
2995 KNOX STREET
LAS CRUCES, NM 88003

STATE OF NEW MEXICO
Rodrigo P. Palma
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION

REVISIONS

A-E FIRM	USDA
PROJECT MANAGER REH	EPM BD
DESIGNER JLF	PPM XXX
CHECKED BY DRL	SAFETY & HEALTH EW
JOB # 2524-A	REAL PROPERTY WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

TITLE SHEET

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE	SHEET
XXX	2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	T100
DATE 03/19/2025		1 OF 13

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Mar 19, 2025 - 2:17pm

Bohannan ▲ Huston

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88011-8237
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MEMORANDUM

DATE: August 15, 2016

TO: Robert Herrera, NMSU Facilities and Services

FROM: Erin Clements, P.E. EAC

SUBJECT: **NMSU Utility Tunnel – Structural Integrity Study Update**

1 INTRODUCTION

An extensive field study of the approximately 15,000 linear feet of NMSU's utility tunnels was completed by Bohannan Huston, Inc. (BHI) in 2013. The condition of the entire tunnel system was visually examined and noted, and material testing was performed to verify the in-situ concrete strength and rule out degradation caused by alkali-silica reaction (ASR). All areas of concern noted during the field survey were ranked according to severity and priority for repair or replacement with preliminary opinions of construction cost. The report included site plans of the tunnel system with field notes and referenced photos taken during the field survey.

After the 2013 report was published, the tunnel section under Sweet and Williams Streets and the short spur to Thomas and Brown Hall were temporarily shored to prevent collapse under traffic loading while awaiting repair. In 2015, approximately 300 feet of tunnel in front of the Natatorium and Satellite Plant along Stewart Street was completely replaced along with the roof of the 40-foot shored section in front of Thomas and. A second replacement project has just been completed. This project included complete replacement of 75 feet of tunnel along Stewart Street in front of the Natatorium and James B. Delamater Activity Center, partial replacement of approximately 25 feet of tunnel in front of Milton Hall, and the replacement of the roof of a 15-foot section in front of Branson Hall.

Rapid, continued degradation of the tunnel at the Milton and Stewart Street locations were observed over three years that have elapsed since the 2013 study was completed during the design and construction of the two replacement projects, warranting an update to the

1

original study. This Update contains the documentation of a field reconnaissance completed in July 2016 and is intended as a supplement to the original 2013 report and follows the same methodology and recommended repair procedure outlined in that report and an update to the original recommendations. **Appendix A** contains the updated field notes on **Figures S101** through **S117** and the original and updated photos of selected areas on **Figure S118** thorough **S144**.

2 CAUSES OF FAILURE

The potential causes of failure in certain areas of the tunnel are numerous. Steam leaks have been documented in several areas which later showed degradation. The extreme heat and humidity created by a steam leak contribute to the deterioration of the concrete substrate and the corrosion of the underlying reinforcement.

Poor initial construction, honeycombing with exposed rebar, and poorly designed and repaired penetrations into the tunnel are other contributing factors to many of the deficiencies noted. Stormwater and irrigation water intruding into the tunnel at joint or cracks also likely led to many of the issues noted. The tunnel roof of the tunnel that runs down Frenger Mall is also the sidewalk in this area and the issues observed there are likely due to direct exposure to weather and traffic. However, overloading of the tunnel with construction, traffic, and/or depth of bury larger than the capacity of the individual sections of tunnel is probably the largest contributor to the current state of most of the areas that now require replacement.

While no record drawings of the tunnel structure are available, during the 2015 Stewart Street replacement project, BHI documented the precast panel thickness dimension and rebar size and spacing while the panels were being demolished and calculated the panel load capacity per the current concrete American Concrete Institute (ACI) 318 code. It was found that these precast panels are under-designed according to the current code for some of the bury depths and loading scenarios it is being subjected to and explains the extensive failure of these sections of tunnel. These panels are used throughout the tunnel system, particularly on the Stewart Street tunnel, the tunnel south of the PSL, and in the Hardman/Jacobs Hall tunnel. The panels appear to be have failed most severely in areas subjected to construction loading where buildings have been built or remodeled, such as the new Satellite Plant, O'Donnell Hall, Hardman Hall and the Hershel Zohn Theater. Other areas particularly subject to failure are under grass areas that are heavily irrigated, such as

2

west of O'Donnell Hall and east of the Activity Center. It is likely that cracking from overloading in these panels allowed irrigation water to seep into the panels, corroding the rebar, further exasperating the panel cracks and spalls. It is likely that the tunnel south of the PSL also experienced sever construction, traffic, or operational overloading in its history, creating the extensive spalling documented in that area.

3 REPAIR PRIORITY LEVELS

Five priority levels were established for the 2013 report and were followed during this Update. These categories are defined below. A new **Category A+** was created for this Update to help NMSU prioritize the critical repair locations and direct limited funding to these areas first. Locations that showed an observable increase in degradation since the 2013 study are noted on the tunnel plan drawings in **Appendix A**.

Category A+: Critical priority. These are locations previously identified as Category A locations that are showing additional deflection or degradation since the 2013 report was published. Observable changes in the degradation of these areas indicates the tunnel structures is in an unstable condition and in danger of imminent failure. These locations are recommended for immediate shoring or replacement.

Category A: Highest priority. Section of tunnel appears to be in danger of imminent failure, or is in severely deteriorated condition. Recommend prompt complete replacement of ceiling and walls as noted on the drawings. This category includes:

- Tunnel segments with significant observed deformations
- Extensive, two-way cracking
- Extensive reinforcement corrosion and moderate to severe section loss
- Failed pipe supports

Category B: High priority. Section of tunnel appears to be compromised, and prompt isolated repairs are recommended before problems spread or deteriorate to Category A level. This category includes:

3

- Large isolated cracks
- Horizontal wall cracks
- Large spalls with exposed rebar
- Reinforcement corrosion
- Active surface water intrusion
- Advanced corrosion of pipe supports or embeds

Category C: Medium Priority. These areas should be monitored and repair is recommended within three to five years before problems spread or deteriorate to a higher category. This category includes:

- Vertical wall cracks not at control joints
- Inactive water intrusion and secondary efflorescence
- Moderate corrosion of pipe supports or embeds
- Poorly repaired pipe penetrations with large missing concrete sections
- Poorly consolidated, honeycombed hatch installations with exposed rebar with no corrosion
- Moderate spalls

Category D: Low Priority. Condition is isolated and not likely to spread or affect the structural integrity of the tunnel. This category includes:

- Areas with unsealed pipe penetrations
- Minor cracking
- Moderate honeycombing without exposed reinforcement
- Areas showing efflorescence not accompanied by other serious deterioration
- Minor spalls

Category E: Lowest Priority. Issue is minor or cosmetic. This category includes:

- Minor honeycombing with no exposed reinforcement
- Surface imperfections
- Control joint material migrating
- Control joint vertical cracking without spalling or corrosion
- Surface staining

4

- Formwork that was never removed
- Other minor problems that do not appear to be due to moisture intrusion or low-quality materials.

5

STATE OF NEW MEXICO
Rebecca P. Palmer
NO. 004514
3/19/25
REGISTERED ARCHITECT

CONTRACTOR SHALL TAKE PRECAUTIONS WHEN WORKING ADJACENT TO THE UTILITY TRENCH. LIMIT LOADING OVER TRENCH TO SINGLE AXIAL VEHICLES. NOTIFY CONTRACTING OFFICERS REPRESENTATIVE IF TUNNEL FAILURE IS PRESENT PRIOR TO START OF WORK. STOCKPILING OF MATERIALS ADJACENT TO TUNNEL IS PROHIBITED.

NO.	DATE	BY	DESCRIPTION

REVISIONS

The Johnson McAdams Firm P.A.
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A-E FIRM	USDA
PROJECT MANAGER REH	EPM BD
DESIGNER JLF	PPM XXX
CHECKED BY DRL	SAFETY & HEALTH EW
JOB # 2524-A	REAL PROPERTY WR

USDA

USDA Agricultural Research Service

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LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO
NEW MEXICO STATE UNIVERSITY
TUNNEL CONDITION MAP

PROJECT NO.		SHEET
XXX	AGRICULTURAL RESEARCH SERVICE 2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	T101
DATE 3/19/2025		2 OF 13

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Mar 19, 2025 – 2:16pm

6' HIGH CMU BLOCK SCREEN WALLS SHALL BE PREPPED AND PAINTED TO MATCH MAIN STRUCTURE. DO NOT PAINT CAP STONES.

6' HIGH CMU BLOCK SCREEN WALLS SHALL BE PREPPED AND PAINTED TO MATCH MAIN STRUCTURE. TOTAL APPROXIMATE WALL LENGTH, THIS SECTION,= 98'+/-. DO NOT PAINT CAP STONES.

SPRAY APPLICATION OF PAINT IS NOT ALLOWED.

6' HIGH CMU BLOCK SCREEN WALLS SHALL BE PREPPED AND PAINTED TO MATCH MAIN STRUCTURE. DO NOT PAINT CAP STONES.

EXISTING FACILITY OUTLINE

69'-1"
16'-4"
8'-2"
27'-3"
17'-3"
12'-0"
10'-7"
15'-2"
88'-2"
153'-2"
55'-5"
10'-4"
5'-2"
1'-11"
16'-9"
25'-8"
10'-0"
13'-6"
74'-10"
48'-10"
23'-6"
78'-4"
42'-1"
12'-9"
7'-2"
9'-3"
22'-10"
13'-1"
38'-10"
9'-3"
8'-5"
124'-4"
23'-4"
204'-3"

1 A200

2 A201

2 A200

1 A100 BUILDING EXTERIOR OUTLINE
SCALE: 1/8" = 1'-0"

PLAN NORTH

0 4' 8' 16' 24'
SCALE: 1/8"= 1'-0"

STATE OF NEW MEXICO
JAMES R. PALMER
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION
			REVISIONS

Johnson Mˢ Adams PSMJ
ARCHITECTS/ENGINEERS PLANNERS SURVEYING ENVIRONMENT
P.O. BOX 913 LAS CRUCES, NEW MEXICO 88004 (575) 532-8161

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

BUILDING EXTERIOR OUTLINE

A-E FIRM	USDA
PROJECT MANAGER	REH
EPM	BD
DESIGNER	JLF
PPM	XXX
CHECKED BY	DRL
SAFETY & HEALTH	EW
JOB #	2524-A
REAL PROPERTY	WR
PROJECT NO.	XXX
DATE	03/19/2025

AGRICULTURAL RESEARCH SERVICE
2150 CENTRE AVENUE
BLDG D, SUITE 300
FORT COLLINS, CO 80526

SHEET A100
3 OF 13

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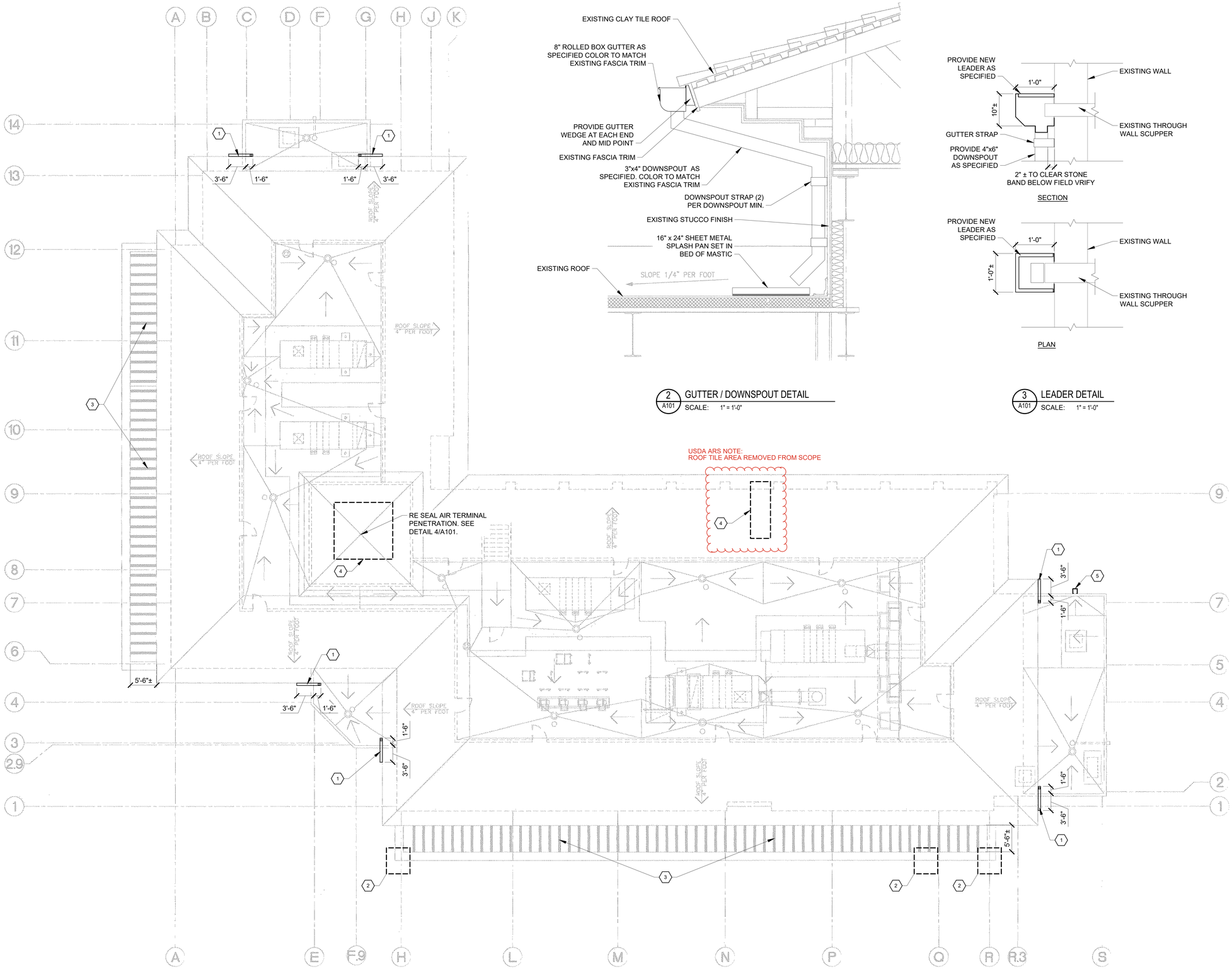
SPRAY APPLICATION OF PAINT IS NOT ALLOWED.



1 A101 ROOF PLAN
SCALE: 1/8" = 1'-0"

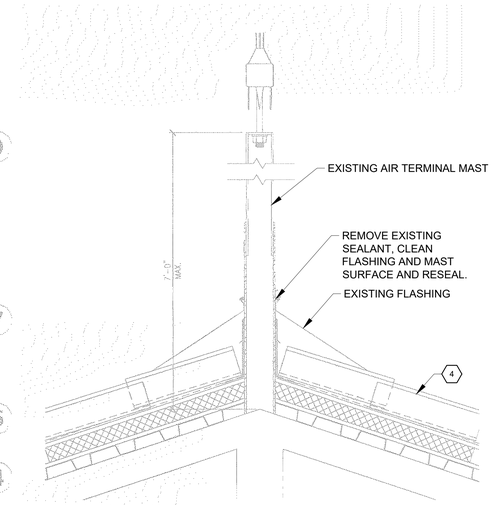
PLAN NORTH

2 A101 GUTTER / DOWNSPOUT DETAIL
SCALE: 1" = 1'-0"

3 A101 LEADER DETAIL
SCALE: 1" = 1'-0"

KEYED NOTES

1. PROVIDE 5' LONG SECTION OF GUTTER WITH DOWNSPOUT SEE DETAIL 2/A101.
2. REINSTALL EXISTING COPING STONE. FACILITY PERSONNEL HAS THE EXISTING STONE. CLEAN AND PREP AREA AS REQUIRED TO REINSTALL STONE.
3. PRESSURE WASH AND PREP METAL TRELLIS MEMBERS TO RECEIVE PAINT. PAINT AS SPECIFIED. CONTRACTOR SHALL NOT APPLY ANY WEIGHT TO TRELLIS SYSTEM.
4. ADJUST / SECURE EXISTING CLAY TILES PER TRI/WSRCA CONCRETE AND CLAY ROOF TILE INSTILLATION MANUAL, SUBMIT PROPOSED ATTACHMENT METHOD.
5. PROVIDE NEW LEADER AT EXISTING THROUGH WALL SCUPPER.



4 A101 TOWER AIR TERMINAL DETAIL
SCALE: N.T.S.

STATE OF NEW MEXICO
NO. 004514
3/19/25
REGISTERED ARCHITECT

SCALE: 1"=1'-0"

SCALE: 1/8"= 1'-0"

NO.	DATE	BY	DESCRIPTION

REVISIONS

A-E FIRM	USDA
PROJECT MANAGER: REH	EPM: BD
DESIGNER: JLF	PPM: XXX
CHECKED BY: DRL	SAFETY & HEALTH: EW
JOB #: 2524-A	REAL PROPERTY: WR

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LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

ROOF PLAN

PROJECT NO. XXX
DATE 03/19/2025

AGRICULTURAL RESEARCH SERVICE
2150 CENTRE AVENUE
BLDG D, SUITE 300
FORT COLLINS, CO 80526

SHEET A101
4 OF 13

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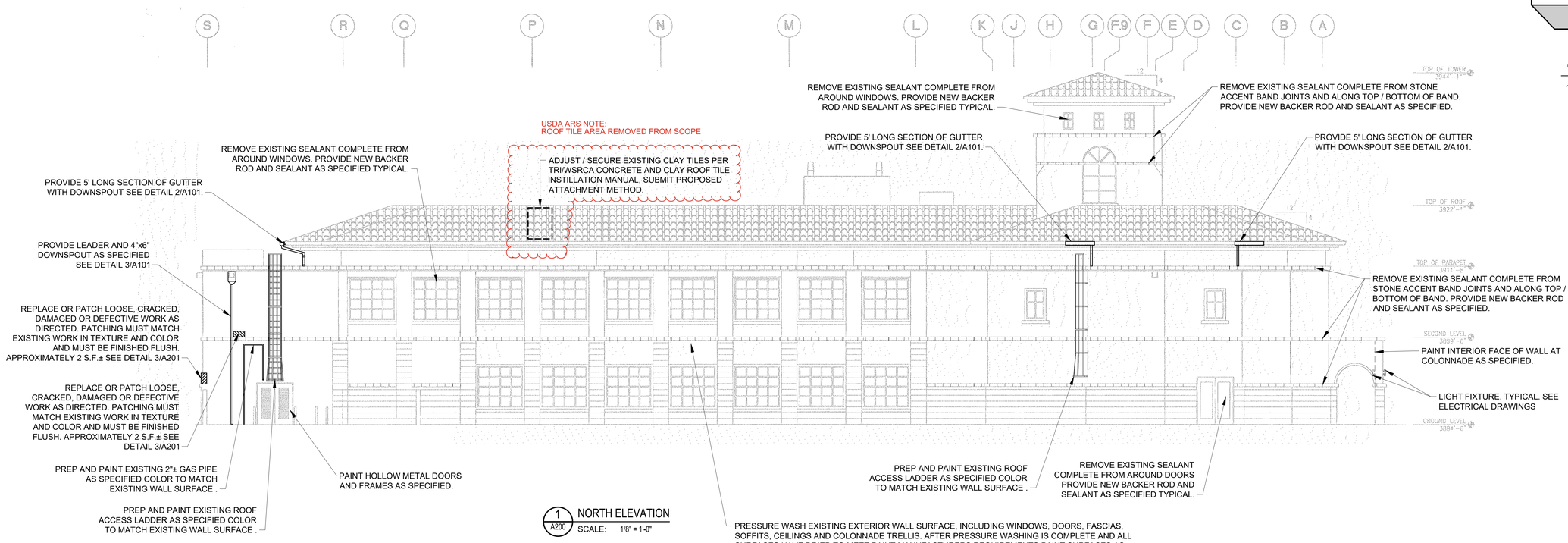
SPRAY APPLICATION OF PAINT IS NOT ALLOWED.

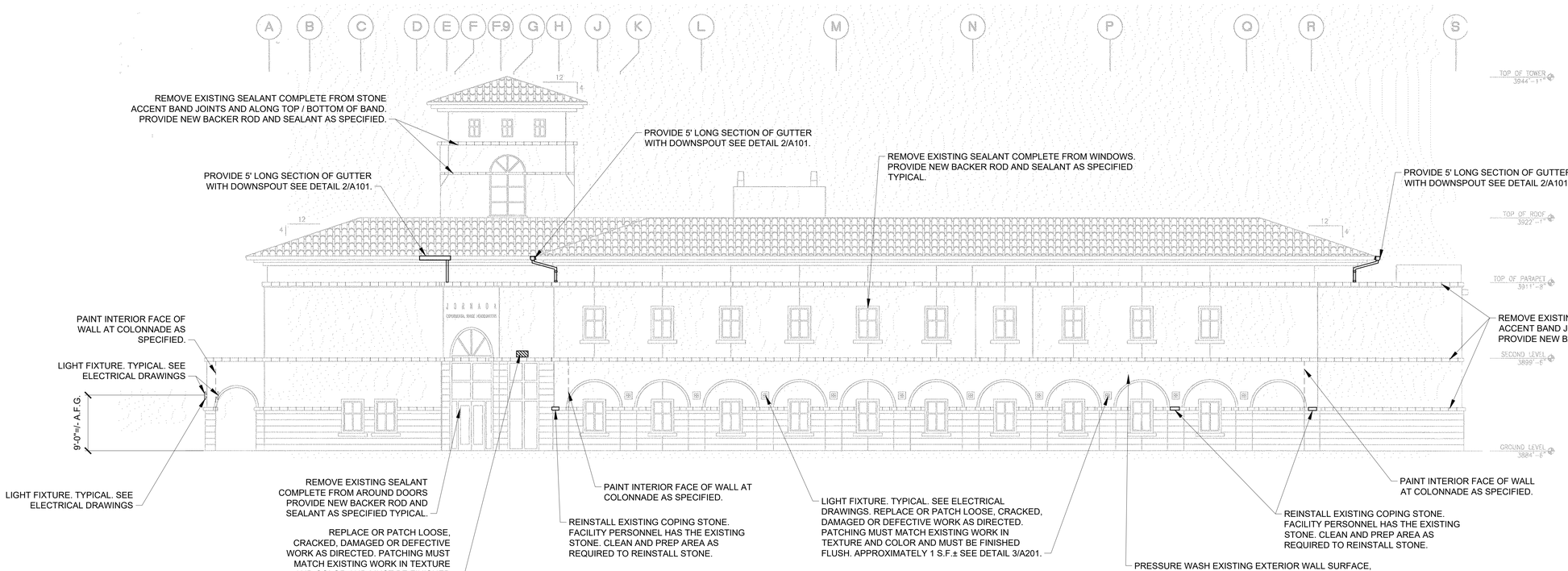


1 A200 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

GENERAL NOTE

1. CONTRACTOR SHALL NOTIFY C.O.R. OF ANY DISLODGED STUCCO FINISH THAT IS ENCOUNTERED DURING WORK. IF AREA IS ENCOUNTERED STOP WORK AT AREA UNTIL C.O.R. HAS INSPECTED AREA AND REPAIR METHOD HAS BEEN APPROVED.

DOOR / WINDOW PAINT SCHEDULE	
ALUMINUM WINDOWS	NO WINDOWS ARE TO BE PAINTED.
ALUMINUM DOORS	NO ALUMINUM STORE FRONT TYPE DOORS ARE TO BE PAINTED
HOLLOW METAL DOORS	PAINT AS SPECIFIED (3) DOORS INDICATED ON ELEVATIONS.



2 A200 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

0 4' 8' 16' 24'
SCALE: 1/8"= 1'-0"

STATE OF NEW MEXICO
Jeffrey L. Ferrell
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION

REVISIONS

Johnson. M'Adams PSW P.A.
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A-E FIRM	USDA
PROJECT MANAGER	EPM
REH	BD
DESIGNER	PPM
JLF	XXX
CHECKED BY	SAFETY & HEALTH
DRL	EW
JOB #	REAL PROPERTY
2524-A	WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

EXTERIOR ELEVATIONS

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE 2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	SHEET
XXX		A200
DATE		5 OF 13
03/19/2025		

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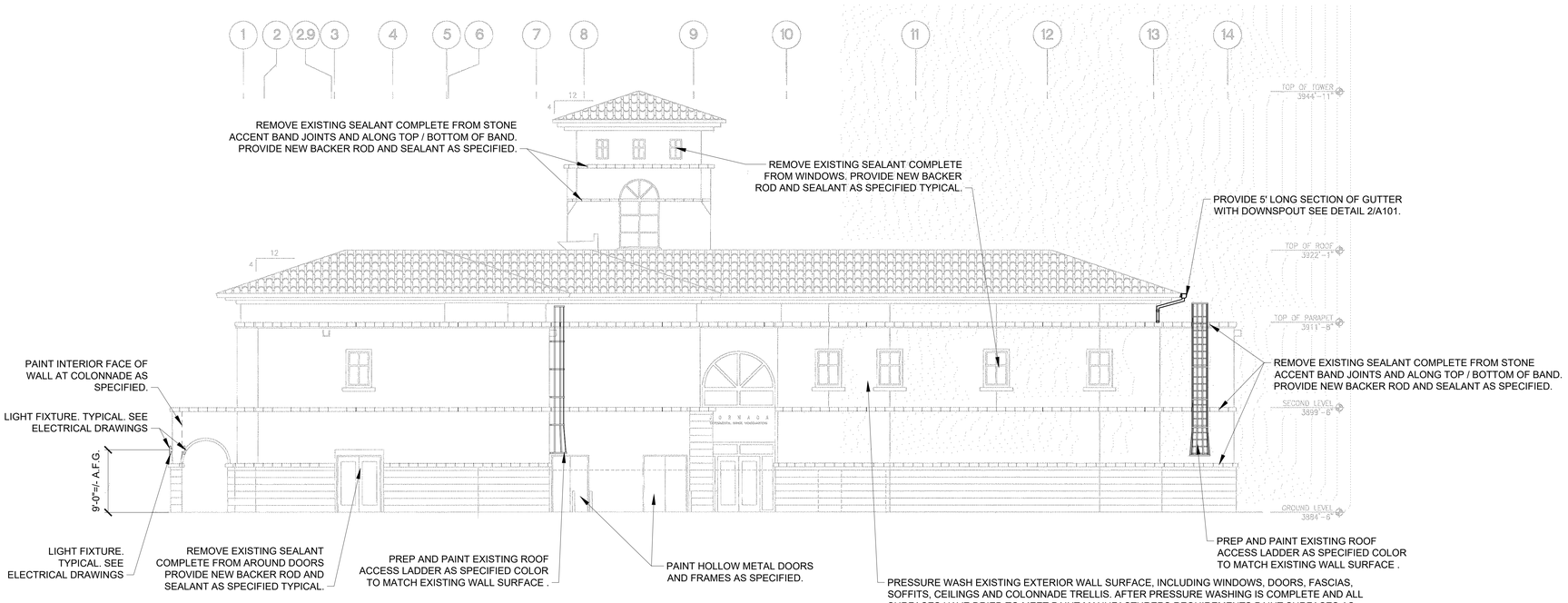
Mar 19, 2025 - 2:19pm

SPRAY APPLICATION OF PAINT IS NOT ALLOWED.

GENERAL NOTE

1. CONTRACTOR SHALL NOTIFY C.O.R. OF ANY DISLODGED STUCCO FINISH THAT IS ENCOUNTERED DURING WORK. IF AREA IS ENCOUNTERED STOP WORK AT AREA UNTIL C.O.R. HAS INSPECTED AREA AND REPAIR METHOD HAS BEEN APPROVED.

DOOR / WINDOW PAINT SCHEDULE	
ALUMINUM WINDOWS	NO WINDOWS ARE TO BE PAINTED.
ALUMINUM DOORS	NO ALUMINUM STORE FRONT TYPE DOORS ARE TO BE PAINTED
HOLLOW METAL DOORS	PAINT AS SPECIFIED (3) DOORS INDICATED ON ELEVATIONS.



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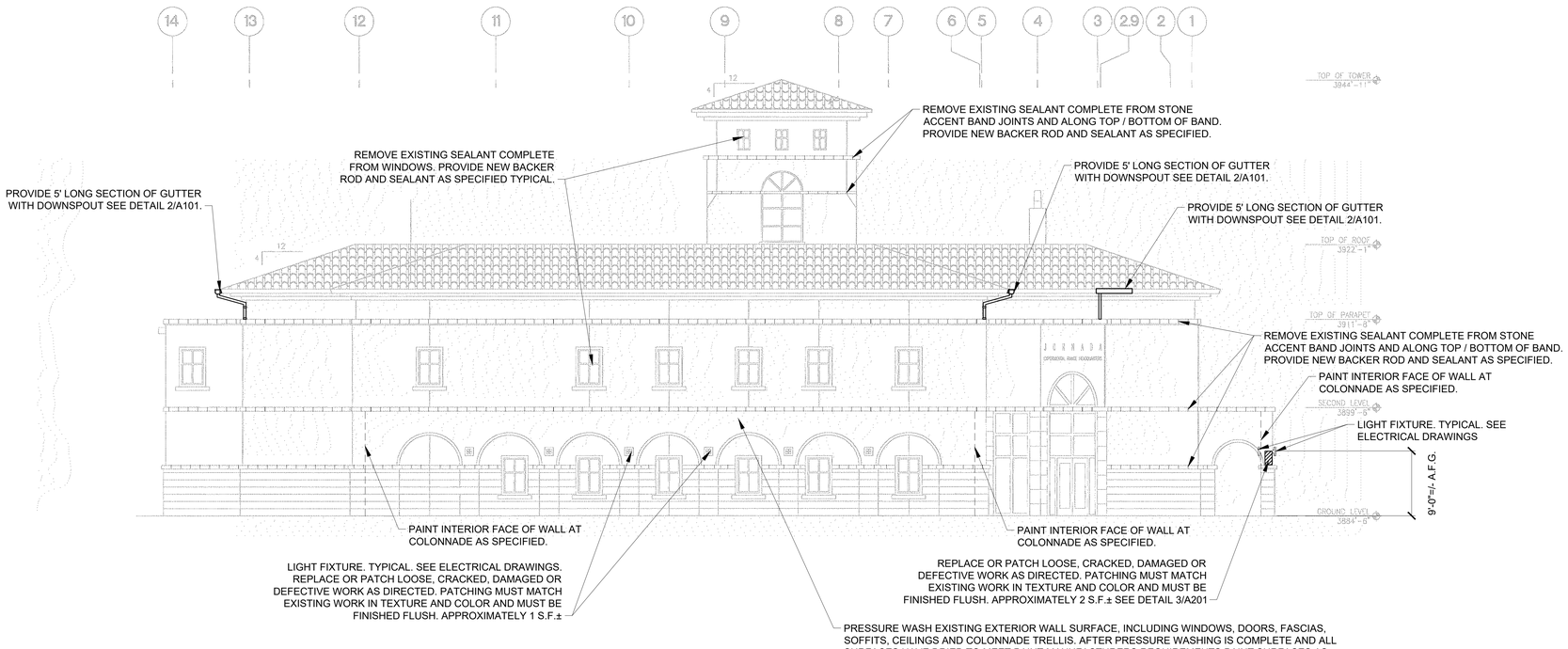
SCALE: 1/8" = 1'-0"



2 A201 WEST ELEVATION
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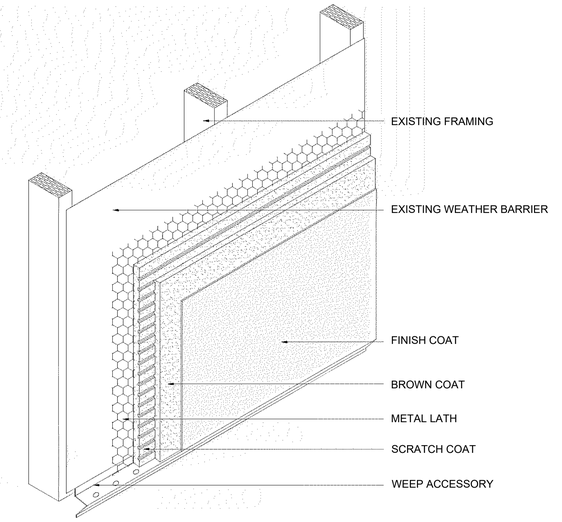

3 A201 GENERAL STUCCO DETAIL
SCALE: N.T.S.

STATE OF NEW MEXICO
Andrea P. Pitman
NO. 004514
3/19/25
REGISTERED ARCHITECT

0 4' 8' 16' 24'
SCALE: 1/8"= 1'-0"

NO.	DATE	BY	DESCRIPTION
			REVISIONS

Johnson McAdams PSM P.A.
ARCHITECTS/ENGINEERS PLANNING SURVEYING ENVIRONMENT
P.O. BOX 313 ORDERVILLE, MISSISSIPPI (662) 450-6441

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

EXTERIOR ELEVATIONS

A-E FIRM	USDA
PROJECT MANAGER	EPM
REH	BD
DESIGNER	PPM
JLF	XXX
CHECKED BY	SAFETY & HEALTH
DRL	EW
JOB #	REAL PROPERTY
2524-A	WR

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE	SHEET
XXX	2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	A201
DATE		6 OF 13
03/19/2025		

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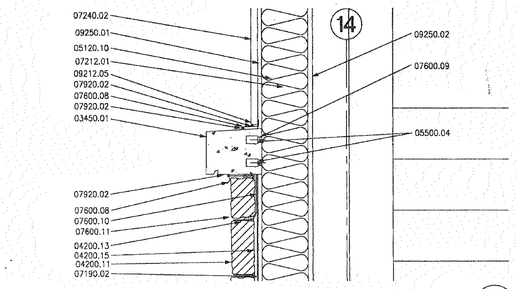

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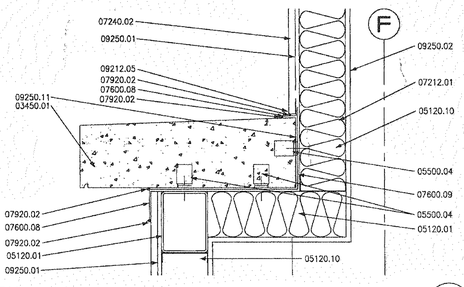
9 A3.07A3.05



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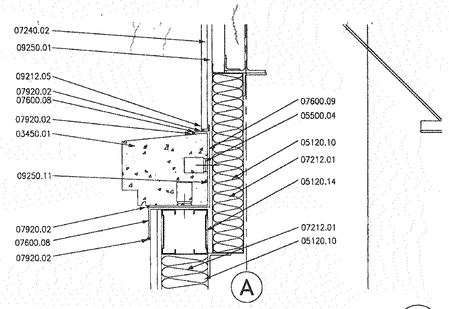

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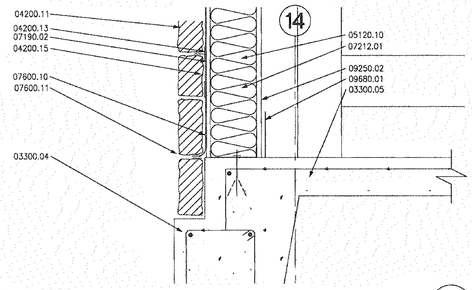

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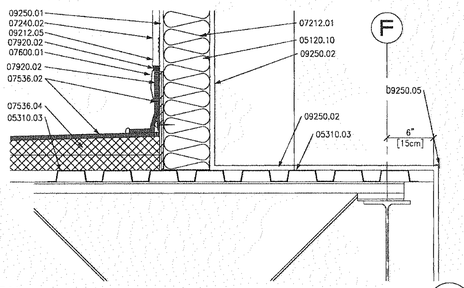

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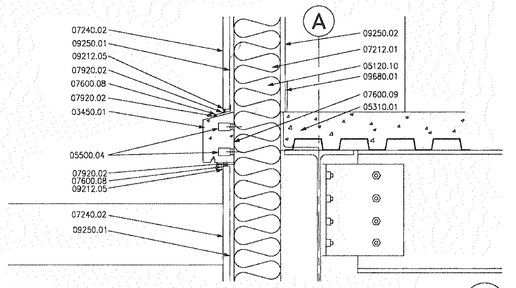

DETAIL
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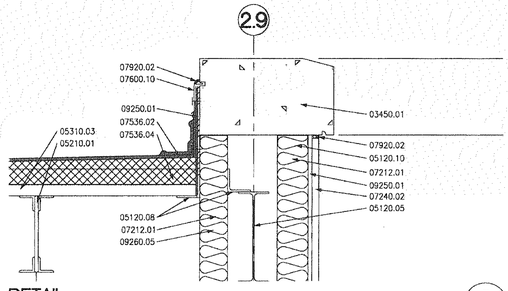
2 A3.06A3.05



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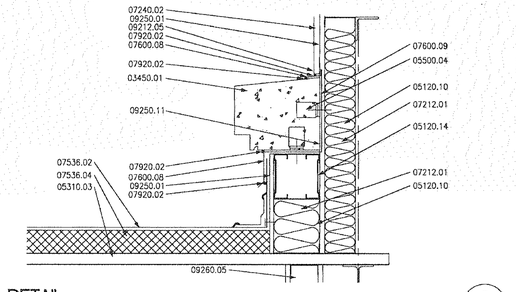
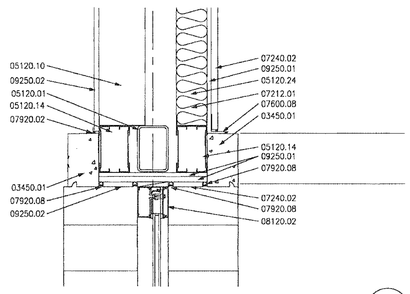
7 A3.08A3.05



DETAIL
Scale: 1 1/2"=1'-0"
3 A3.07A3.05



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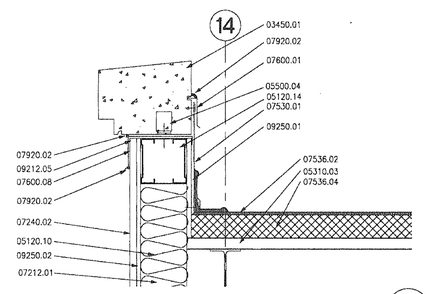

DETAIL
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KEYED NOTES

Division 3 – CONCRETE

03300.04* CONCRETE FOOTING
03300.05* 6" CONCRETE SLAB
03450.01* PRECAST CONCRETE.

Division 4 – MASONRY

04200.11* STONE MASONRY VENEER
04200.13* MASONRY ANCHOR TIE
04200.15* 1" AIR SPACE

Division 5 – METALS

05120.01 STEEL TUBE
05120.05* STEEL BEAM
05120.08* STEEL ANGLE
05120.10* 6" STRUCTURAL METAL STUD
05120.14* BUILT UP HEADER
05120.24* 4" METAL STUD
05210.01* OPEN WEB STEEL JOIST
05310.01* STEEL FLOOR DECK WITH CONCRETE FILL
05310.03* STEEL ROOF DECK
05500.04* BACKING BRACE

Division 7 – THERMAL & MOISTURE PROTECTION

07190.02* 15# FELT
07212.01* R-19 BATT INSULATION
07240.02 3 COAT STUCCO SYSTEM
07536.02* SINGLE-PLY ROOFING SYSTEM
07536.04* TAPERED RIGID INSULATION
07600.01* METAL COUNTER FLASHING
07600.08* METAL FLASHING
07600.09* METAL FLASHING PLACED BEHIND PRECAST CONCRETE
07600.10* MEMBRANE BASE FLASHING
07600.11* WEEP HOLE
07920.02* SEALANT
07920.08* SEALANT AND BACKER ROD

Division 8 – DOORS & WINDOWS

08120.02* ALUMINUM STOREFRONT
08520.07* NEOPRENE GASKETING

Division 9 – FINISHES

09212.05* ¼ SCREED
09250.01* 1/2" EXTERIOR GYPSUM SHEATHING
09250.02* 5/8" GYPSUM BOARD
09250.05 CORNER BEAD, TYP.
09250.11* 1/2" EXTERIOR GYPSUM SHEATHING CONTINUOUS BEHIND PRECAST CONC.
09260.04* 5/8" GYPSUM BOARD SUSPENDED CEILING
09260.05 3 5/8" METAL STUD
09680.01* SCHEDULED BASE

STATE OF NEW MEXICO
REGISTERED ARCHITECT
NO. 004514
3/19/25

NO.	DATE	BY	DESCRIPTION
			REVISIONS

A-E FIRM	USDA
PROJECT MANAGER	REH
EPM	BD
DESIGNER	JLF
PPM	XXX
CHECKED BY	DRL
SAFETY & HEALTH	EW
JOB #	2524-A
REAL PROPERTY	WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

REFERENCE DETAILS

PROJECT NO. XXX	AGRICULTURAL RESEARCH SERVICE 2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	SHEET A300
DATE 03/19/2025		7 OF 13

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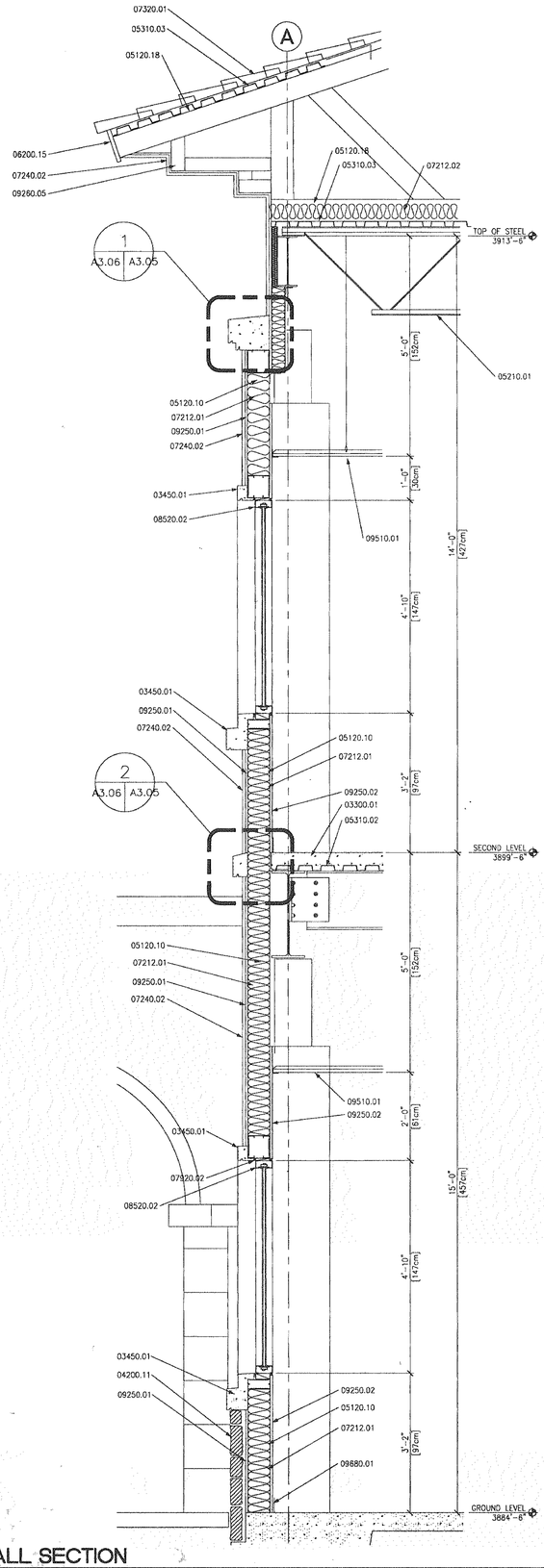
Mar 19, 2025 - 2:19pm



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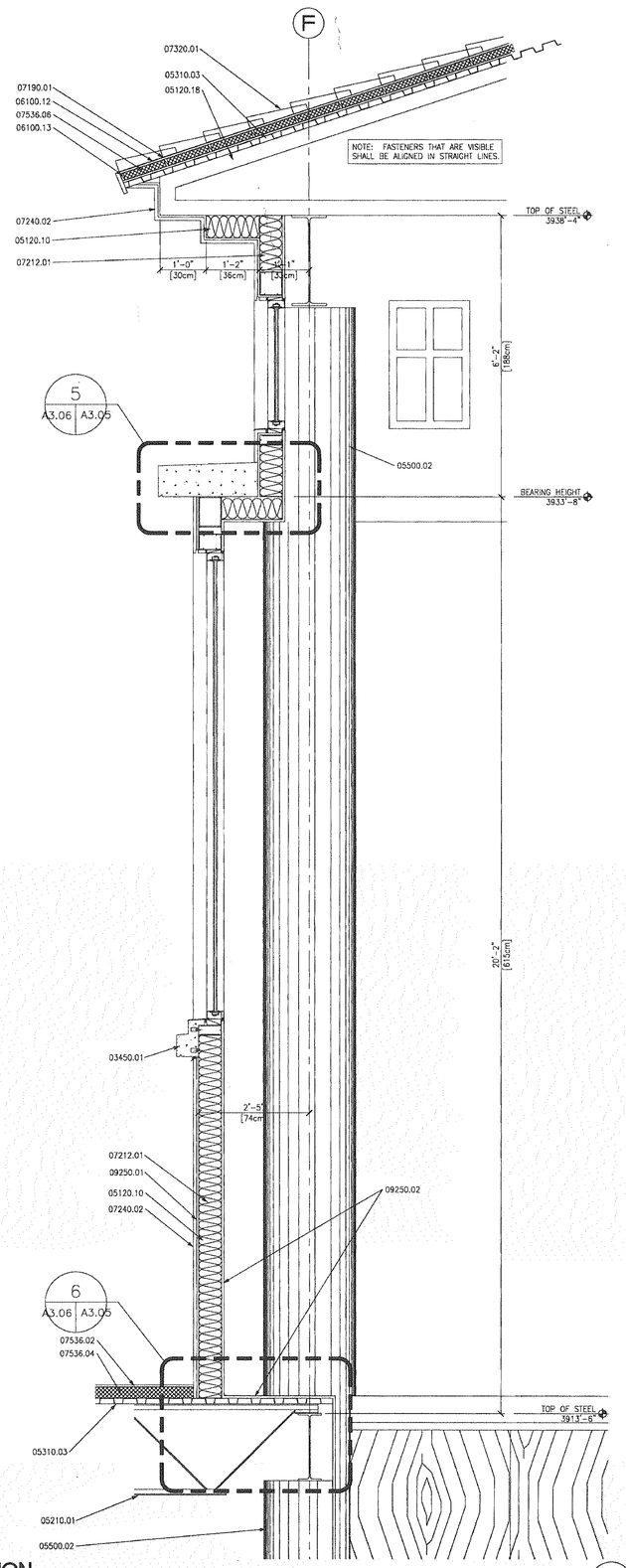

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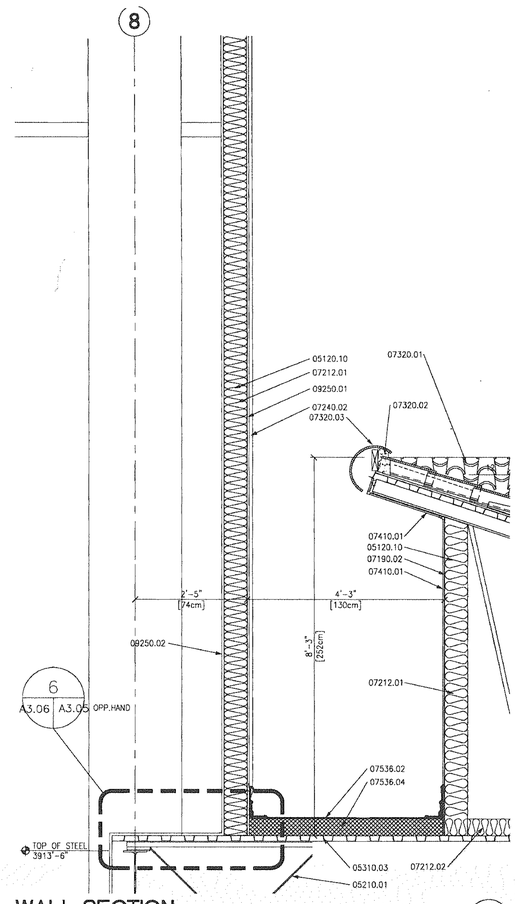

WALL SECTION

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KEYED NOTES

Division 3 – CONCRETE

03300.01* CONCRETE FILL FOR STEEL DECK
03450.01* PRECAST CONCRETE

Division 4 – MASONRY

04200.11* STONE MASONRY VENEER

Division 5 – METALS

05120.10* 6" STRUCTURAL METAL STUD
05120.18* TRUSS
05210.01* OPEN WEB STEEL JOIST
05310.02* STEEL FLOOR DECK
05310.03* STEEL ROOF DECK
05500.02* BRUSHED ALUMINUM COLUMN COVER

Division 6 – WOOD & PLASTICS

06100.12* 1/2" PLYWOOD
06100.13* 2X WOOD SPACERS
06200.15* FASCIA BOARD

Division 7 – THERMAL & MOISTURE PROTECTION

07190.01* 90# FELT
07190.02* 15# FELT
07212.01* R-19 BATT INSULATION
07212.02* R-30 BATT INSULATION
07240.02 3 COAT STUCCO SYSTEM
07320.01* ROOF TILE, S SHAPE
07320.02* CEMENT MORTAR, FILL SOLID
07320.03* ROOF TILE, END CAP
07410.01* FLUSH SEAM METAL WALL PANEL
07536.02* SINGLE-PLY ROOFING SYSTEM
07536.04* TAPERED RIGID INSULATION
07536.06* RIGID INSULATION
07920.02* SEALANT

Division 8 – DOORS & WINDOWS

08520.02* CLEAR FINISHED ANODIZED ALUMINUM WINDOW

Division 9 – FINISHES

09250.01* 1/2" EXTERIOR GYPSUM SHEATHING
09250.02* 5/8" GYPSUM BOARD
09260.05 3 5/8" METAL STUD
09510.01* ACOUSTICAL PANEL CEILING
09680.01* SCHEDULED BASE

STATE OF NEW MEXICO
Andrew R. Parmus
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION
			REVISIONS

Johnson McAdams PSC
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A-E FIRM	USDA
PROJECT MANAGER	EPM
REH	BD
DESIGNER	PPM
JLF	XXX
CHECKED BY	SAFETY & HEALTH
DRL	EW
JOB #	REAL PROPERTY
2524-A	WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

REFERENCE DETAILS

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE 2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	SHEET
XXX		A301
DATE		8 OF 13
03/19/2025		

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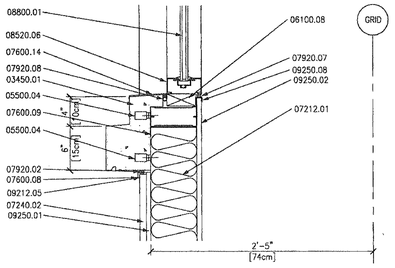
Mar 19, 2025 - 2:17pm



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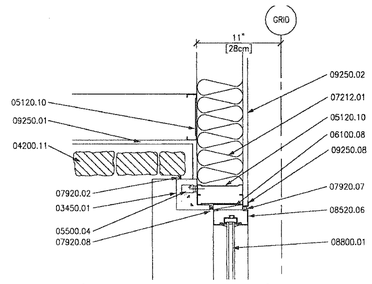

JAMB DETAIL (FIRST FLOOR - BELOW)

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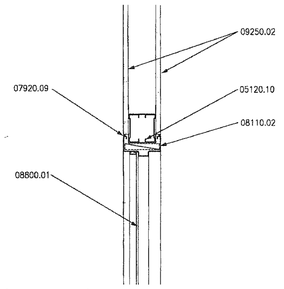

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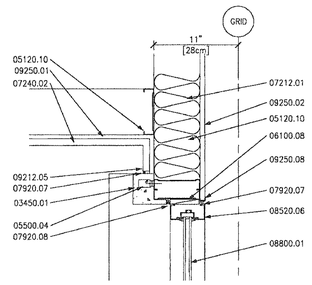

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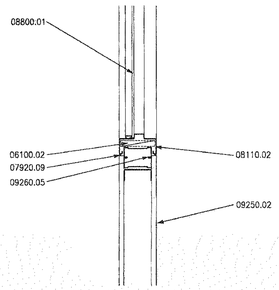

SILL DETAIL

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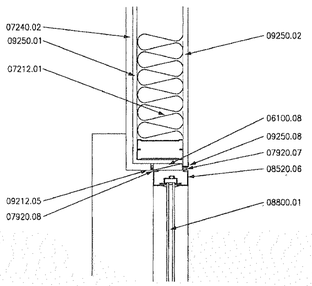

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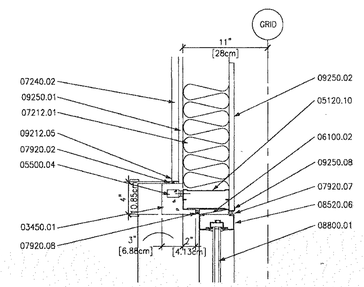

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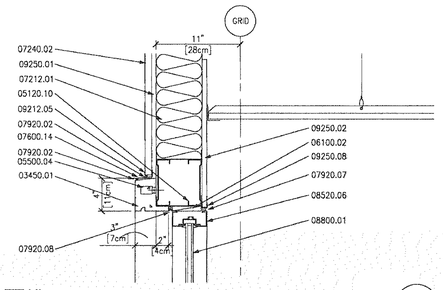

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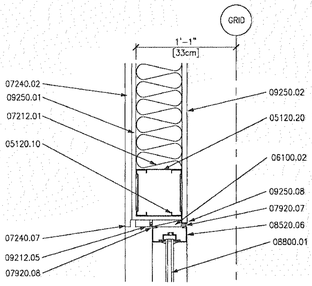

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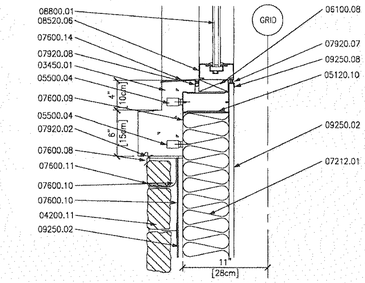

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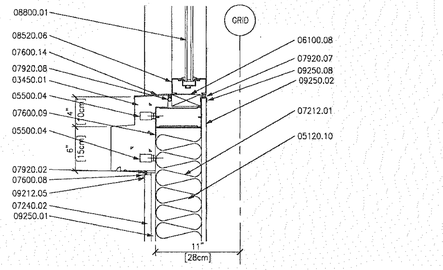

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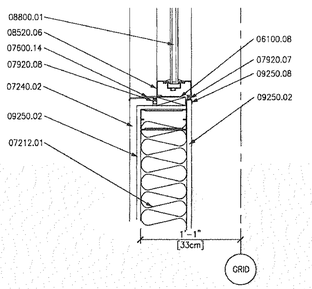

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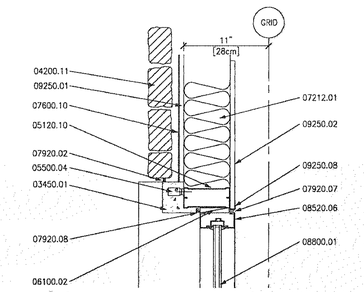

JAMB DETAIL (FIRST FLOOR - BELOW)

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

6 (A3.10 | A3.10)

KEYED NOTES

Division 3 – CONCRETE

03450.01* PRECAST CONCRETE

Division 4 – MASONRY

04200.11* STONE MASONRY VENEER

Division 5 – METALS

05120.10* 6" STRUCTURAL METAL STUD
05120.20* STEEL CHANNEL
05500.04* BACKING BRACE

Division 6 – WOOD & PLASTICS

06100.02* WOOD SHIM
06100.08* WOOD BLOCKING

Division 7 – THERMAL & MOISTURE PROTECTION

07212.01* R-19 BATT INSULATION
07240.02 3 COAT STUCCO SYSTEM
07240.07* DRIP SCREED
07600.08* METAL FLASHING
07600.09* METAL FLASHING PLACED BEHIND PRECAST CONCRETE
07600.10* MEMBRANE BASE FLASHING
07600.11* WEEP HOLE
07600.14* ALUMINUM FLASHING
07920.02* SEALANT
07920.07* SEALANT ALL AROUND
07920.08* SEALANT AND BACKER ROD
07920.09* SEALANT, TYP.

Division 8 – DOORS & WINDOWS

08110.02* STEEL FRAME
08520.06 WINDOW FRAME
08800.01* GLAZING

Division 9 – FINISHES

09212.05* J SCREED
09250.01* 1/2" EXTERIOR GYPSUM SHEATHING
09250.02* 5/8" GYPSUM BOARD
09250.08* EDGE TRIM
09260.05 3 5/8" METAL STUD

STATE OF NEW MEXICO
Matthew Palmer
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION
			REVISIONS

Johnson McAdams PSC
ARCHITECTS/ENGINEERS PLANNING SURVEYING MANAGEMENT
P.O. BOX 2110, GREENWOOD, MISSISSIPPI (662) 455-6447

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

REFERENCE DETAILS

A-E FIRM	USDA
PROJECT MANAGER	REH
EPM	BD
DESIGNER	JLF
PPM	XXX
CHECKED BY	DRL
SAFETY & HEALTH	EW
JOB #	2524-A
REAL PROPERTY	WR

PROJECT NO. XXX
DATE 03/19/2025

AGRICULTURAL RESEARCH SERVICE
2150 CENTRE AVENUE
BLDG D, SUITE 300
FORT COLLINS, CO 80526

SHEET A302
9 OF 13

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Mar 19, 2025 - 2:17pm

KEYED NOTES

Division 3 – CONCRETE

03450.01* PRECAST CONCRETE
03450.07* METAL STRAP ANCHOR WITH DOWELS

Division 4 – MASONRY

04200.11* STONE MASONRY VENEER

Division 5 – METALS

05120.10* 6" STRUCTURAL METAL STUD
05500.12 ALUMINUM BREAK METAL TO MATCH CURTAINWALL FRAME.

Division 6 – WOOD & PLASTICS

06100.02* WOOD SHIM
06100.08* WOOD BLOCKING

Division 7 – THERMAL & MOISTURE PROTECTION

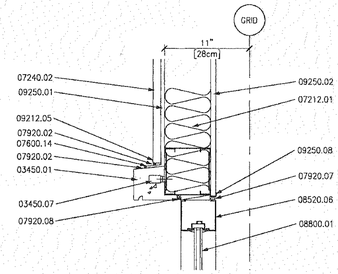
07212.01* R-19 BATT INSULATION
07240.02 3 COAT STUCCO SYSTEM
07600.14* ALUMINUM FLASHING
07920.02* SEALANT
07920.07* SEALANT ALL AROUND
07920.08* SEALANT AND BACKER ROD
07920.09* SEALANT, TYP.

Division 8 – DOORS & WINDOWS

08120.05 STOREFRONT ASSEMBLY. SEE WINDOW LEGEND.
08520.03 ALUMINUM FRAME CURTAIN WALL
08520.04* CLEAR FINISHED ANODIZED ALUMINUM STOREFRONT FRAME
08520.06 WINDOW FRAME
08520.09* SPANDREL GLASS
08800.01* GLAZING
08800.03* GLAZING. SEE WINDOW LEGEND.

Division 9 – FINISHES

09212.05* J SCREED.
09250.01* 1/2" EXTERIOR GYPSUM SHEATHING
09250.02* 5/8" GYPSUM BOARD
09250.08* EDGE TRIM



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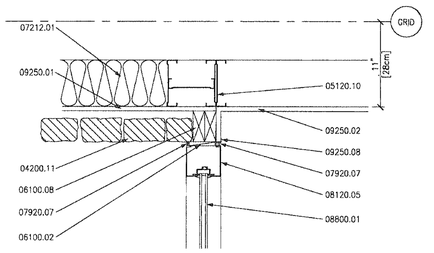

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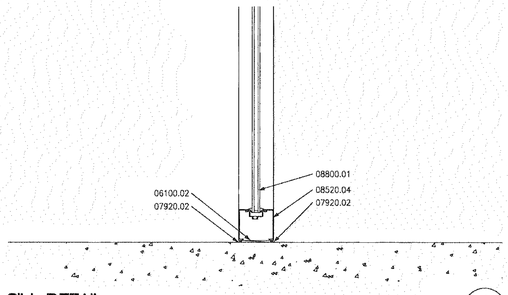

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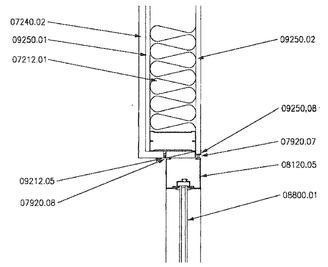

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Scale: 1 1/2"=1'-0"

STATE OF NEW MEXICO
Rebecca P. Palmer
NO. 004514
3/19/25
REGISTERED ARCHITECT

NO.	DATE	BY	DESCRIPTION

REVISIONS

THE Johnson McAdams FIRM P.A.
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P.O. BOX 515, GREENWOOD, MISSISSIPPI - 38622-0515

A-E FIRM	USDA
PROJECT MANAGER REH	EPM BD
DESIGNER JLF	PPM XXX
CHECKED BY DRL	SAFETY & HEALTH EW
JOB # 2524-A	REAL PROPERTY WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

REFERENCE DETAILS

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE	SHEET
XXX	2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	A303
DATE 03/19/2025		10 OF 13

Z:\2024 Jobs\2524-A USDA Wooton Hall Exterior Upgrades - Las Cruces NM\08 Submittals\Final\Arch\A303.dwg
Mar 19, 2025 - 2:17pm

ABBREVIATIONS

ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
A / AMP	AMPERE(S)	HP	HORSE POWER : HEAT PUMP
ACCU	AIR COOLED CONDENSING UNIT	IMC	INTERMEDIATE METAL CONDUIT
AC	ALTERNATING CURRENT : AIR COMPRESSOR	K	KILO
AC	AIR CURTAIN : ABOVE COUNTER/ BACKSPLASH	KAIC	THOUSAND AMPERE INTERRUPT CAPACITY
AF	AMPERE FRAME	KCMIL	THOUSANDS OF CIRCULAR MILS
AFF	ABOVE FINISHED FLOOR	KV	KILOVOLT
AFG	ABOVE FINISHED GRADE	KVA	KILOVOLT-AMPERES
AHU	AIR HANDLING UNIT	KW	KILOWATT
AIC	AMPERE INTERRUPT CAPACITY	KWHR	KILOWATT - HOUR
AL	ALUMINUM	L	LENGTH
AT	AMP TRIP	LAN	LOCAL AREA NETWORK
ATS	AUTOMATIC TRANSFER SWITCH	LTG	LIGHTING
AUTO	AUTOMATIC	MAX	MAXIMUM
AUX	AUXILIARY	MCA	MINIMUM CIRCUIT AMPACITY
AWG	AMERICAN WIRE GUAGE	MCB	MAIN CIRCUIT BREAKER
BRKR	BREAKER	MCC	MOTOR CONTROL CENTER
BLDG	BUILDING	MGB	MAIN GROUND BAR
C	CONDUIT	MGC	MAIN GROUNDING CONDUCTOR
CAT	CATEGORY	MH	MANHOLE / MOUNTING HEIGHT
CB	CIRCUIT BREAKER	MIN	MINIMUM
CCT	CORRELATED COLOR TEMPERATURE	MLO	MAIN LUGS ONLY
CCTV	CLOSED CIRCUIT TELEVISION	MTD	MOUNTED
CFCI	CONTRACTOR FURNISHED/ INSTALLED	N	NEUTRAL
CKT	CIRCUIT	NAT	NATIONAL
CLG	CEILING	NEC	NATIONAL ELEC CODE
CMH	COMMUNICATIONS MANHOLE	NEMA	NATIONAL ELEC MANUFACTURER'S ASSOCIATION
COMM	COMMUNICATIONS	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CP	CONDENSATE PUMP	NC	NORMALLY CLOSED
CPT	CONTROL POWER TRANSFORMER	NESC	NATIONAL ELEC SAFETY CODE
CRI	COLOR RENDERING INDEX	NL	NIGHT LIGHT
CT	CURRENT TRANSFORMER : COOLING TOWER	NO	NORMALLY OPEN
CU	COPPER : CONDENSING UNIT	NTS	NOT TO SCALE
D	DEPTH	P	POLE(S)
DC	DIRECT CURRENT	PF	POWER FACTOR
DISC	DISCONNECT	PH	PHASE
DIST	DISTRIBUTION	PNL	PANEL : PANELBOARD
DPST	DOUBLE POLE SINGLE THROW	PTAC	PACKAGED THRU-WALL AIR CONDITIONER
DPDT	DOUBLE POLE DOUBLE THROW	PVC	POLYVINYL CHLORIDE
EC	EMPTY CONDUIT	QTY	QUANTITY
EF	EXHAUST FAN	REC / RECPT	RECEPTACLE
ELEC	ELECTRICAL	RMC	RIGID METAL CONDUIT
EMER	EMERGENCY	RTU	ROOF TOP UNIT
EMH	ELECTRICAL MANHOLE	RVNR	REDUCED VOLTAGE NON-REVERSING
EMT	ELECTRICAL METALLIC TUBING	SA	SURGE ARRESTORS
EPA	EFFECTIVE PROJECTED AREA	SCCR	SHORT CIRCUIT CURRENT RATING
EQUIP	EQUIPMENT	SF	SUPPLY FAN
ETC.	ETCETERA	SPD	SURGE PROTECTIVE DEVICE
EX / EXIST	EXISTING	SPDT	SINGLE POLE DOUBLE THROW
ETR	EXISTING TO REMAIN	SPEC	SPECIFICATIONS
EUH	ELECTRIC UNIT HEATER	SPST	SINGLE POLE SINGLE THROW
EXP	EXPLOSION PROOF	SWBD	SWITCHBOARD
EWH / EWC	ELECTRIC WATER HEATER / COOLER	SWGR	SWITCHGEAR
F	FUSE	TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR
FACP	FIRE ALARM CONTROL PANEL	TOL	THERMAL OVERLOAD
FCU	FAN COIL UNIT	TYP	TYPICAL
FLEX	FLEXIBLE	UH	UNIT HEATER
G / GND	GROUND	UOI	UNLESS OTHERWISE INDICATED
GFGI	GOVERNMENT FURNISHED / INSTALLED	UL	UNDERWRITERS LABORATORY
GFI / GFCI	GROUND FAULT (CIRCUIT) INTERRUPTER	W	WATTS : WIDTH
GRS	GALVANIZED RIGID STEEL	WP	WEATHERPROOF
GUH	GAS UNIT HEATER	XFMR	TRANSFORMER
GWH	GAS WATER HEATER	Z	IMPEDANCE
H / HT	HEIGHT	***	*ABBREVIATIONS ABOVE ARE FOR ELECTRICAL SHEETS ONLY. NOT ALL MAY BE USED.*
HOA	HAND-OFF AUTOMATIC		

GENERAL SYMBOLS LEGEND

(NOT ALL SYMBOLS MAY APPLY, TYP.)

SYMBOL / KEY	DESCRIPTION
99	KEY NOTE DESIGNATION
,9,	REVISION TAG DESIGNATION
A (E101)	TOP DESIGNATION IS SECTION DESIGNATION
	BOTTOM DESIGNATION IS SECTION SHEET LOCATION (STANDARD SYMBOL SCALED DOWN FOR LEGEND)
1 (E101)	TOP DESIGNATION IS PLAN / ENLARGED PLAN / DETAIL NUMBER
	BOTTOM DESIGNATION IS SHEET LOCATION (STANDARD SYMBOL SCALED DOWN FOR LEGEND)
	NOTE: ANY CIRCUIT WITHOUT FURTHER DESIGNATION INDICATES A 2 WIRE #12AWG CIRCUIT WITH A #12AWG GND. A GREATER NUMBER OF WIRES IS INDICATED AS FOLLOWS: 4 WIRE, 2 CIRCUITS & GROUND (LONGER SLASH INDICATES NEUTRAL) 6 WIRE, 3 CIRCUITS & GROUND, ETC.(WIRING LARGER THAN #10AWG SHALL BE AS NOTED)
	INDICATES #10 GROUND CONDUCTOR UOI (DOUBLE TICK/SLASH INDICATES ISOLATED GROUND)
LA1:13	PANELBOARD AND CIRCUIT DESIGNATION
	RACEWAY CONCEALED IN WALL OR CEILING OR EXPOSED ON STRUCTURE AS REQUIRED
	CIRCUITRY RUN IN STRAIGHT LINE SEGMENTS SIGNIFIES EXPOSED SURFACE-MOUNTED RACEWAY (SEE SPECIFICATIONS).
LA1:13	HOMERUN TO PANELBOARD - LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUIT
*	TAG STYLE ANNOTATION: ELEC EQUIP DESIGNATION (PANELBOARDS, XFMRS, DIST BOARDS, ETC.)
*	TAG STYLE ANNOTATION: CIRCUIT DESIGNATION, POINT TOWARD ASSOCIATED BRANCH/DIST PANEL.
*	TAG STYLE ANNOTATION: ELECTRICALLY POWERED EQUIPMENT (PROVIDED BY OTHERS)
*	TAG STYLE ANNOTATION: ELECTRICALLY POWERED MECHANICAL/PLUMBING EQUIPMENT (RE: MECHANICAL)

LIGHTING AND SWITCHING LEGEND

SYMBOL / KEY	DESCRIPTION	SYMBOL / KEY	DESCRIPTION
	LIGHT FIXTURE, RECESSED, PENDANT OR SURFACE MTD. LIGHT FIXTURE, STRIP LUMINARE, RECESSED, PENDANT, OR SURFACE MTD.		EXIT LUMINAIRE, WALL OR CEILING MTD. ARROWS INDICATE DIRECTION, SHADING INDICATES LIGHTED FACES
	LIGHT FIXTURE, RECESSED TYPE DOWLIGHT. DIRECTIONAL AS INDICATED.		EMERGENCY FLOODLIGHT W/ BATTERY BACKUP
	LIGHT FIXTURE, PENDANT OR SURFACE MTD.		EMERGENCY FLOODLIGHT REMOTE HEAD LIGHT TRACK, NUMBER OF LUMINAIRES AS SHOWN.
	LIGHT FIXTURE, WALL MTD.		LUMINAIRE CONNECTED TO EMERGENCY CIRCUIT. TO INCLUDE BATTERY BACK-UP, GENERATOR, INVERTER, ETC. SEE PLANS
	POLE MOUNTED LIGHT FIXTURE. NUMBER OF HEADS AS INDICATED.		
$_{*}	SWITCH (* = TYPE)	$_{a} A,a	UPPERCASE LETTER INDICATES LUMINAIRE TYPE, LOWERCASE LETTER INDICATES CONTROLS/ SWITCH SYSTEM.
$	SINGLE POLE SWITCH		
$_{2}	DOUBLE POLE		
$_{3}	THREE WAY	TC	TIME CLOCK
$_{T}	TIMER SWITCH	VS	VACANCY SENSOR
$_{VS}	WALL BOX VACANCY SENSOR	OS	OCCUPANCY SENSOR
$_{OS}	WALL BOX OCCUPANCY SENSOR	PES	PHOTOELECTRIC SWITCH
$_{D}	DIMMER	C	LOCAL CONTACTOR
$_{a}	LOWERCASE LETTER INDICATES EQUIPMENT CONTROLLED	$_{TO}	SWITCH W/ THERMAL OVERLOAD SERVING MOTOR

ONE-LINE DIAGRAM, SCHEDULE, AND DISTRIBUTION LEGEND

SYMBOL / KEY	DESCRIPTION
	PANELBOARD (PLAN VIEW)

GENERAL PROJECT NOTES:

1. THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL PARTS OF THE WORK SO THAT NO WORK SHALL BE LEFT IN AN UNFINISHED OR INCOMPLETE CONDITION. INSTALLATION OF ELECTRICAL WORK SHALL BE COORDINATED WITH OTHER TRADES BEFORE ANY INSTALLATION IS DONE. CONDUIT AND DEVICES SHOWN ON PLANS ARE SCHEMATIC.
3. ALL WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR QUALITY OF MATERIALS AND WORKMANSHIP, AS WELL AS, ALL REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE CONTACTING OFFICER'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL PROTECT ANY EXISTING, IN-PLACE, AND NEW WORK.
5. ONCE ON SITE, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL VERIFY ALL NEW AND EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE C.O. IN WRITING OF ANY DIFFERING CONDITIONS BEFORE COMMENCEMENT OF WORK.
6. THE CONTRACTOR SHALL PLAN WORK TO PROVIDE ADEQUATE PROTECTION FOR PERSONS AND PROPERTY AT ALL TIMES, AND EXECUTE THE WORK IN SUCH A MANNER TO AVOID ANY HAZARD TO PERSONS AND PROPERTY AS NECESSARY.
7. MINIMUM RACEWAY SIZE SHALL BE 3/4-IN. INCREASE RACEWAY SIZE AS REQUIRED TO LIMIT RACEWAY FILL RATIO TO LESS THAN 40% FULL.
8. ALL CONDUCTORS SHALL BE COPPER.
9. ALL FEEDERS AND BRANCH CIRCUITS SHALL INCLUDE A GREEN INSULATED GROUND CONDUCTOR, SIZE PER NATIONAL ELECTRICAL CODE, OR AS SHOWN, CONNECTED TO EACH DEVICE AND OUTLET BOX ON THE CIRCUIT AND TO THE PANELBOARD GROUND BUS. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT. MULTIPLE BRANCH CIRCUITS IN ONE RACEWAY REQUIRE ONLY ONE GROUND CONDUCTOR.
10. ALL SAFETY DISCONNECTS SHALL BE HEAVY DUTY 240V NEMA 3R NON-FUSED TYPE.
11. NEW WORK SHALL BE MADE TO TIE INTO THE EXISTING IN A UNIFORM MANNER, SIMILAR ITEMS OF NEW WORK SHALL BE CHECKED AGAINST EXISTING WORK.
12. REFER TO ONE-LINE DIAGRAMS, SCHEDULES, AND TABLES FOR CONDUCTOR AND CONDUIT SIZES NOT SHOWN ON PLANS.
13. PROVIDE LABELS ON ALL RECEPTACLES, WALL MOUNTED LIGHT SWITCHES/OCCUPANCY SENSORS AND JUNCTION BOXES INDICATING THE SOURCE PANEL AND CIRCUIT(S). TEXT SHALL BE BLACK 1/4-IN IN HEIGHT PRINTED ON A CLEAR LABEL. HANDWRITTEN LABELS ARE NOT PERMITTED.
14. COORDINATE WALL, FLOOR AND ROOF PENETRATIONS WITH THE OWNER'S REPRESENTATIVE.
15. SUPPLEMENTAL STEEL MEMBERS REQUIRED TO SUPPORT ELECTRICAL EQUIPMENT FROM MAIN STRUCTURE SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
16. EXACT LOCATIONS OF PANELBOARDS, DISCONNECTS, TIMERS, AND SWITCHES SHALL BE COORDINATED WITH FINAL LOCATIONS OF WALL-MOUNTED ARCHITECTURAL AND MECHANICAL EQUIPMENT. MOUNT DISCONNECTS AND SWITCHES MINIMUM 48" AFF. MOUNT TIMERS MINIMUM 40" AFF.
17. SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS. HOWEVER, ITEMS SHOWN ON DRAWING BUT NOT IN THE SPECIFICATIONS ARE REQUIRED WITHIN THE PROJECT SCOPE. IN ADDITION, SPECIFIC ITEMS SHOWN ON THE DRAWINGS TAKE PRECEDENCE OVER SPECIFICATIONS IN CASES WHERE THE SPECIFICATION HAS OPTIONS.
18. ALL EQUIPMENT INSTALLED IN THIS PROJECT SHALL COMPLY WITH THE "BUY AMERICAN ACT". BASIS OF DESIGN SHOWN ON SCHEDULES IS TO ESTABLISH A STANDARD OF QUALITY, NOT TO LIMIT COMPETITION. EQUIVALENT EQUIPMENT FROM ANOTHER MANUFACTURER IS ACCEPTABLE.
19. PROVIDE WEATHERPROOF COVERS FOR ALL SWITCHES.
20. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL, MECHANICAL, CIVIL DRAWINGS AND SPECIFICATIONS FOR EXACT LOCATION OF EQUIPMENT. ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCE. REFER TO MECHANICAL DRAWINGS FOR PIPES, DUCTS, AND MECHANICAL EQUIPMENT.

Johnson McAdams PLLC
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P.O. BOX 313, GREENWOOD, MISSISSIPPI (662) 455-5443

NO.	DATE	BY	DESCRIPTION
			REVISIONS

A-E FIRM	USDA
PROJECT MANAGER	EPM
REH	BD
DESIGNER	PPM
DRL	XXX
CHECKED BY	SAFETY & HEALTH
JGM	EW
JOB #	REAL PROPERTY
2524-A	WR

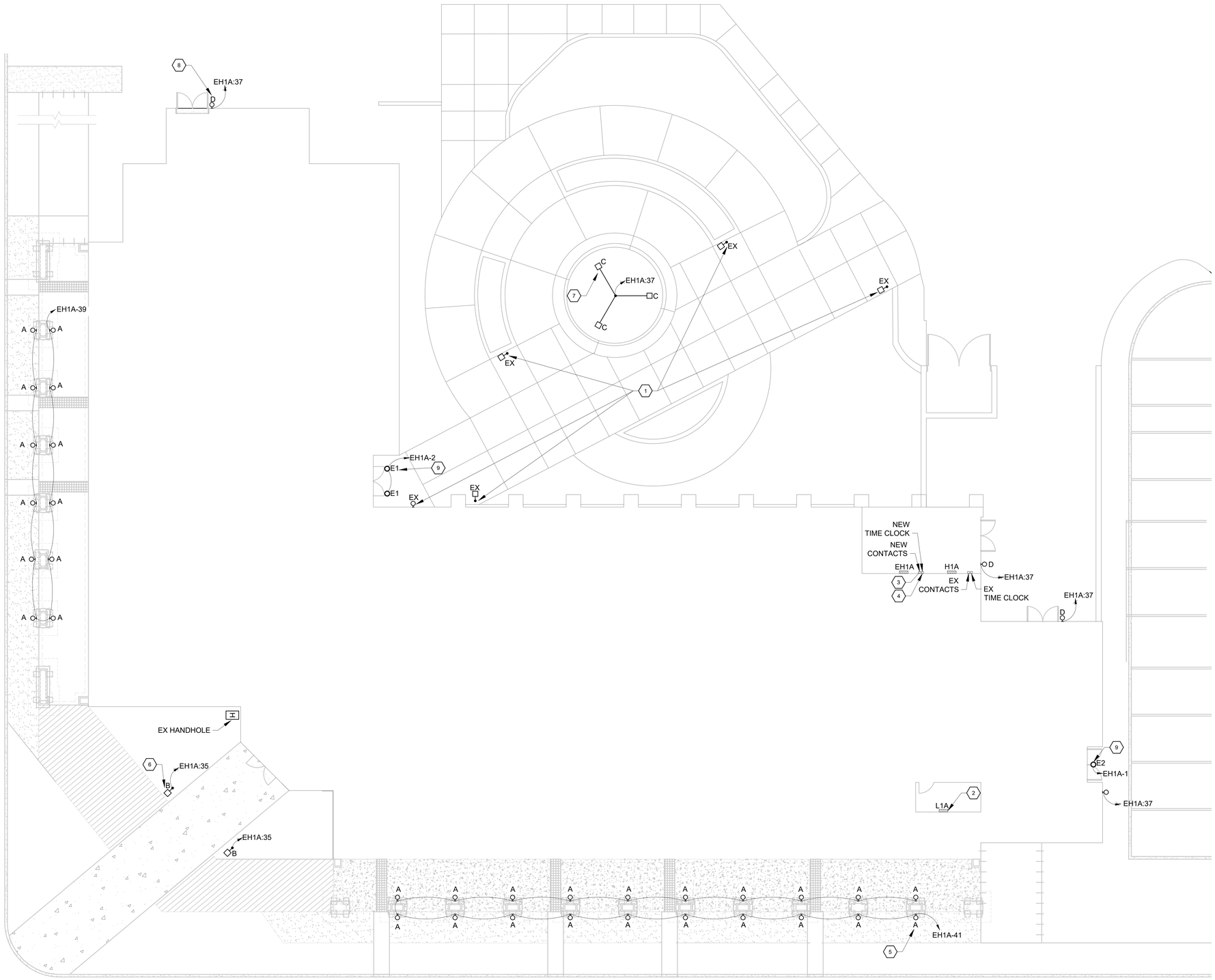
USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

ELECTRICAL LEGEND & ABBREVIATIONS

PROJECT NO.	AGRICULTURAL RESEARCH SERVICE	SHEET
XXX	2150 CENTRE AVENUE BLDG D, SUITE 300 FORT COLLINS, CO 80526	E001
DATE		11 OF 13
03/19/2025		

J:\2024 Jobs\2524-1 USDA Wooton Hall Exterior Upgrades - Las Cruces NM\08 Submittals\Final\Elec\DRAWINGS\E001.dwg
Mar 19, 2025 - 2:17pm



1 E100 COLONNADE PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

GENERAL NOTES

1. REFER TO E001 FOR GENERAL NOTES AND SYMBOLS LIST.
2. CONTRACTOR MUST IDENTIFY AND CONFIRM THE CONTENTS OF PANELS EH1A, H1A, AND L1A BEFORE BEGINNING WORK.

KEYED NOTES

1. DEMOLISH FIXTURE. CAP WIRES AND REPLACE FIXTURE WITH A PLATE COVER.
2. EXISTING LIGHTING CONTROLS ARE CURRENTLY POWERED FROM L1A. DEMO BACK TO L1A.
3. REPLACE EXISTING CONTACTS WITH NEW CONTACTS.
4. PROVIDE A NEW ASTRONOMICAL TIME CLOCK POWERED BY EXISTING SPARE, EH1A:33. TIME CLOCK IS TO OPERATE ON 120/277VAC. ASTRONOMICAL TIME CLOCK CONTROL: PROGRAM ON, PROGRAM OFF, PROVIDE HAND/OFF/AUTO SWITCH.
5. ALL FIXTURES THAT ARE FIXTURE "A" SHALL REPLACE EXISTING COLONNADE FIXTURES. THE FIXTURES SHALL BE MOUNTED AT THE SAME PLACE AS THE EXISTING FIXTURES. USE EXISTING CONDUIT AND WIRE TO RELOCATE INDIVIDUAL CIRCUITS H1A:7,9,11 TO EXISTING SPARE, EH1A:37,39,41.
6. ALL FIXTURES THAT ARE FIXTURE "B" SHALL BE POLE MOUNTED. THE POLE SHALL BE 12' AFG. POWER SHALL BE SUPPLIED BY THE EXISTING HANDHOLE. THE POWER IS CURRENTLY 120/208V. INDIVIDUAL CIRCUITS WILL BE CHANGED TO 277V AND RELOCATED FROM INDIVIDUAL CIRCUITS L1A:28,30 TO EXISTING SPARES, EH1A:33,35. THE WIRES, FROM THE TIME CLOCK TO FIELD DEVICES, WILL BE THE WRONG COLOR FOR THE VOLTAGE. THEY SHALL HAVE ENDS TAPED WITH THE APPROPRIATE COLOR/LABELING. DEMOLISH CIRCUIT BACK TO L1A.
7. ALL FIXTURES THAT ARE FIXTURE "C" SHALL BE POLE MOUNTED AND REPLACE THE EXISTING SPOT LIGHT. THE EXISTING FEEDER SHALL BE MOVED TO THE CENTER OF THE RAISED FLOWER BED. THE POLE SHALL BE 18' AFG IN THE CENTER OF THE RAISED FLOWER BED. THE POLE SHALL HAVE THREE 6' ARMS SPACED 120 DEGREES. USE EXISTING CONDUIT AND WIRE TO RELOCATE INDIVIDUAL CIRCUITS H1A:7,9,11 TO EXISTING SPARE, EH1A:37,39,41.
8. ALL FIXTURES THAT ARE FIXTURE "D" SHALL REPLACE EXISTING WALL PACKS. THE FIXTURES SHALL MOUNTED AT THE SAME PLACE AS THE EXISTING FIXTURES. USE EXISTING CONDUIT AND WIRE TO RELOCATE INDIVIDUAL CIRCUITS H1A:7,9,11 TO EXISTING SPARE, EH1A:37,39,41.
9. FIXTURES "E1" AND "E2" SHALL BE MOUNTED IN EXISTING OVERHANGS. POWER SHALL BE SUPPLIED BY EXISTING INTERIOR CIRCUITS.

DAVID R. LEARD
NEW MEXICO
18439
PROFESSIONAL ENGINEER
03/19/25

0 4' 8' 16' 24'
SCALE: 1/8"= 1'-0"

THE Johnson McAdams FIRM P.A.
ARCHITECTS/ENGINEERS PLANNING SURVEYING MANAGEMENT
P.O. BOX 515, GREENWOOD, MISSISSIPPI 38602-0515

NO.	DATE	BY	DESCRIPTION

REVISIONS

A-E FIRM	USDA
PROJECT MANAGER REH	EPM BD
DESIGNER DRL	PPM XXX
CHECKED BY JGM	SAFETY & HEALTH EW
JOB # 2524-A	REAL PROPERTY WR

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

LIGHTING PLAN

PROJECT NO. XXX
DATE 03/19/2025

AGRICULTURAL RESEARCH SERVICE
2150 CENTRE AVENUE
BLDG D, SUITE 300
FORT COLLINS, CO 80526

SHEET E100
12 OF 13

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Mar 19, 2025 - 2:17pm

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK MUST BE INCORPORATED DIRECTLY INTO HOUSING OR DRIVER COMPARTMENT TO ENSURE MAXIMUM HEAT TRANSFER AND DISSIPATION.
2. FINISH - MULTI-STAGE PRE-TREATMENT, FINISHED WITH BAKED-ON POLYESTER POWDER COAT. IP66 RATED.
3. POWER SUPPLY/LED DRIVER - CLASS 1 DRIVER MUST OPERATE AT 120/277 VOLTS, 50/60 HZ, POWER FACTOR GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY MUST BE 60 LM/W AT MAXIMUM 600mA OPERATING CURRRENT.
4. LED OPTICAL ASSEMBLY - PRECISION MOLDED ACRYLIC LENS PROVIDED FOR MULTIPLE HIGH-POWERED LEDS. BUG UPLIGHT RATING OF U0. MINIMUM COLOR RENDERING INDEX(CRI) MUST BE 80 FOR CORRELATED COLOR TEMPERATURE OF 3500K.
5. CERTIFICATION - UL AND/OR ETL LISTED FOR DAMP OR WET LOCATIONS (FOR EXTERIOR WALL MOUNT) AND ROHS COMPLIANT.
6. OPTIONS - VARIOUS LUMEN OUTPUT RATINGS AS INDICATED.
7. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LED WALL MOUNTED FIXTURE

FIXTURE TYPE: A

LUMINAIRE REQUIREMENTS:

1. HOUSING - SINGLE-PIECE-DIE-CAST ALUMINUM HOUSING WITH NOMINAL WALL THICKNESS OF .012". DIE-CAST TOP ACESS DOORFRAME HAS IMPACT RESISTANT, TEMPERED GLASS LENS (3/16 " THICK). DOORFRAME IS FULLY GASKETED WITH ONE-PIECE TUBLAR SILICONE.
2. FINISH - EXTERIOIR PARTS ARE PROTECTED BY A ZINC-INFUSED SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH THAT PROVIDES SUPERIOR RESTISTANCE TO CORROSION AND WEATHERING. FINISH IS DARK BRONZE.
3. POWER SUPPLY/LED DRIVER - CLASS 1 ELECTRONIC DRIVER HAS A POWER FACTOR >90%, THD <20%, AND HAS AN EXPECTED LIFE OF 100,000 HOURS WITH <1% FAILURE RATE. EASILY-SERVICEABLE SURGE PROTECTION DEVICE MEETS A MINIMUM CATEGORY C LOW FOR OPERATION (PER ANSI/IEEE C62.41.2).
4. LED OPTICAL ASSEMBLY - PRECISION ACRYLIC REFRACTIVE OPTICS FOR OPTIMUM LIGHT DISTRIBUTION THROUGH THE FLAT GLASS LENS. CORRELATED COLOR TEMPERATURE SHOULD BE AS SCHEDULED. MINIMUM 80 CRI CCT.
5. CERTIFICATION - CSA CERTIFIED TO U.S. AND CANADIAN STANDARDS. LUMINAIRE IS IP65 RATED. RATED FOR -40 DEGREES CELSIUS MINIMUM AMBIENT.
6. OPTIONS - VARIOUS LUMEN OUTPUT RATINGS AS INDICATED.
7. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

POLE MOUNTED PATH LIGHT

FIXTURE TYPE: B

LUMINAIRE REQUIREMENTS:

1. HOUSING - SINGLE-PIECE-DIE-CAST ALUMINUM HOUSING WITH NOMINAL WALL THICKNESS OF .012". DIE-CAST TOP ACESS DOORFRAME HAS IMPACT RESISTANT, TEMPERED GLASS LENS (3/16 " THICK). DOORFRAME IS FULLY GASKETED WITH ONE-PIECE TUBLAR SILICONE.
2. FINISH - EXTERIOIR PARTS ARE PROTECTED BY A ZINC-INFUSED SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH THAT PROVIDES SUPERIOR RESTISTANCE TO CORROSION AND WEATHERING. FINISH IS DARK BRONZE.
3. POWER SUPPLY/LED DRIVER - CLASS 1 ELECTRONIC DRIVER HAS A POWER FACTOR >90%, THD <20%, AND HAS AN EXPECTED LIFE OF 100,000 HOURS WITH <1% FAILURE RATE. EASILY-SERVICEABLE SURGE PROTECTION DEVICE MEETS A MINIMUM CATEGORY C LOW FOR OPERATION (PER ANSI/IEEE C62.41.2).
4. LED OPTICAL ASSEMBLY - PRECISION ACRYLIC REFRACTIVE OPTICS FOR OPTIMUM LIGHT DISTRIBUTION THROUGH THE FLAT GLASS LENS. CORRELATED COLOR TEMPERATURE SHOULD BE AS SCHEDULED. MINIMUM 80 CRI CCT.
5. CERTIFICATION - CSA CERTIFIED TO U.S. AND CANADIAN STANDARDS. LUMINAIRE IS IP65 RATED. RATED FOR -40 DEGREES CELSIUS MINIMUM AMBIENT.
6. OPTIONS - VARIOUS LUMEN OUTPUT RATINGS AS INDICATED.
7. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LED WALL MOUNTED FIXTURE

FIXTURE TYPE: C

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK MUST BE INCORPORATED DIRECTLY INTO HOUSING OR DRIVER COMPARTMENT TO ENSURE MAXIMUM HEAT TRANSFER AND DISSIPATION.
2. FINISH - MULTI-STAGE PRE-TREATMENT, FINISHED WITH BAKED-ON POLYESTER POWDER COAT. IP66 RATED. FINISH IS DARK BRONZE.
3. POWER SUPPLY/LED DRIVER - CLASS 1 DRIVER MUST OPERATE AT 120/277 VOLTS, 50/60 HZ, POWER FACTOR GREATER THAN 0.9 AND THD LESS THAN 20% AT FULL LOAD. MINIMUM EFFICACY MUST BE 60 LM/W AT MAXIMUM 600mA OPERATING CURRRENT.
4. LED OPTICAL ASSEMBLY - PRECISION MOLDED ACRYLIC LENS PROVIDED FOR MULTIPLE HIGH-POWERED LEDS. BUG UPLIGHT RATING OF U0. MINIMUM COLOR RENDERING INDEX(CRI) MUST BE 80 FOR CORRELATED COLOR TEMPERATURE OF 4000K.
5. CERTIFICATION - UL AND/OR ETL LISTED FOR DAMP OR WET LOCATIONS (FOR EXTERIOR WALL MOUNT) AND R0HS COMPLIANT.
6. OPTIONS - VARIOUS LUMEN OUTPUT RATINGS AS INDICATED.
7. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LED WALL MOUNTED FIXTURE

FIXTURE TYPE: D

LUMINAIRE REQUIREMENTS:

1. HOUSING - GALVANIZED STEEL MOUNTING/PLASTER FRAME. GALVANIZED STEEL JUNCTION BOX WITH THE BOTTOM HINGED COVERS AND SPRING LATCHES. REFLECTOR RETAINED BY TORSION SPRINGS.
2. LIGHT SOURCE - COLOR TEMPERATURE AS SCHEDULED, EFFICACY OF 91 LUMENS/ WATT, WITH A MINIMUM CRI OF 90.
3. DRIVER - OPERATING VOLTAGE OF 120/277V.
4. CERTIFICATION - UL 1598, DLC QUALIFIED, AND ROHS COMPLIANT. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS. UL 924 WHEN EQUIPPED WITH EMERGENCY BATTERY BACK-UP. IC RATED WHEN INDICATED.
5. MOUNTING - RECESSED IN SUSPENDED ACOUSTICAL TILE OR HARD CEILING.
6. THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

6" LED RECESSED DOWNLIGHT

FIXTURE TYPE: E1, E2

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	SOURCE TYPE	SOURCE CCT(K)	SOURCE LUMENS	VOLTAGE	TOTAL VA	MANUFACTURER / BASIS OF DESIGN NAME	MANUFACTURER / BASIS OF DESIGN CATALOG SERIES	MOUNTING
A	ARCH LIGHT	LED	4000	2300	120-277	50	VISA	OW1721_L40K_H	WALL MOUNTED
B	LIGHT POLE	LED	5000	3500	120-277	26	LITHONIA	RADPT_LED_P1_50K_SYM	POLE MOUNTED
C	LIGHT POLE WITH ARMS	LED	5000	6350	120-277	54	LITHONIA	RAD1_LED_P3_50K_PATH	POLE MOUNTED
D	DOOR WALLPACK	LED	5000	1500	120-277	16	LITHONIA	ARC2_LED_P1_50K_MVOLT_4W4H_ PE	WALL MOUNTED
E1	6" CAN	LED	5000	1500	120-277	18	LITHONIA	LDN6_50/_15_L06_WR_LD_TRW	RECESSED
E2	6" CAN	LED	5000	500	120-277	6	LITHONIA	LDN6_50/_05_L06_WR_LD_TRW	RECESSED

GENERAL NOTES:

A PRIOR TO SUBMITTAL VERIFY TRIM COMPATIBILITY WITH CEILING TYPE TO AVOID CONFLICTS.
B SHOULD ALTERNATE FIXTURES BE PROPOSED, EC SHALL PROVIDE PHOTOMETRICS FOR EACH SPACE CONTAINING PROPOSED ALTERNATES.
C FINAL FINISHES SHALL BE APPLIED AFTER FABRICATION.
D COORDINATE MOUNTING OF EXIT SIGNS WITH ARCHITECTURAL FEATURES.

SPECIFIC NOTES:

2 DOES UPDATE WORK?

Panel Name: EH1A
Panel Location: ROOM 104
Voltage: 277/480V
Phase/Wire: 3PH/3W
AIC Rating: 18
New/Existing: Existing

Bussing Amps: 225
Surface or Flush: SURFACE
Sections: ONE SECTION - 42X

Load VA Ph A	Load VA Ph B	Load VA Ph C	Branch Load Data	Breaker Trip	Breaker Pole	No.	Ph.	No.	Breaker Trip	Breaker Pole	Branch Load Data	Load VA Ph A	Load VA Ph B	Load VA Ph C
2188			LTG. - EAST WING FIRST FLOOR	20	1	1	a	2	20	1	LTG. - WEST WING FIRST FLOOR	1168		
	1314		LTG. - EAST WING SECOND FLOOR	20	1	3	b	4	20	1	LTG. - WEST WING SECOND FLOOR		834	
			SPACE	--	1	5	c	6	--		SPACE			
			SPACE	--	1	7	a	8	--		SPACE			
			SPACE	--	1	9	b	10	--		SPACE			
			SPACE	--	1	11	c	12	--		SPACE			
			SPACE	--	1	13	a	14	--		SPACE			
			SPACE	--	1	15	b	16	--		SPACE			
			SPACE	--	1	17	c	18	--		SPACE			
			SPACE	--	1	19	a	20	--		SPACE			
			SPACE	--	1	21	b	22	--		SPACE			
			SPACE	--	1	23	c	24	--		SPACE			
			SPACE	--	1	25	a	26	--		SPACE			
			SPACE	--	1	27	b	28	--		SPACE			
			SPACE	--	1	29	c	30	--		SPACE			
			SPARE	20	1	31	a	32	--		SPACE			
	6		ASTRONOMICAL TIME CLOCK	20	1	33	b	34	--		SPACE			
		214	LIGHT POLES	20	1	35	c	36	--		SPACE			
64			WALL PACKS	20	1	37	a	38				2500		
	1000		COLONADES LIGHTING SOUTH	20	1	39	b	40	125	3	75 KVA TRANSFORMER		2500	
		600	COLONADES LIGHTING WEST	20	1	41	c	42						2500
2252	2320	814									Sum per phase (VA) right side	3668	3334	2500
3668	3334	2500												
5920	5654	3314												
	53%													
	21	amps												
	30	amps												

Total Connected (VA): 14888
Total Connected Amps: 21
Calculated Load (Amps) @ ##: 21

1 E500 LIGHT POLE STANDARD FOUNDATION

SCALE: NONE

THE Johnson McAdams FIRM P.A.
ARCHITECTS/ENGINEERS PLANNING SURVEYING MANAGEMENT
P.O. BOX 513, GREENWOOD, MISSISSIPPI - (662) 455-4943

NO.	DATE	BY	DESCRIPTION

REVISIONS

A-E FIRM	USDA
PROJECT MANAGER REH	EPM BD
DESIGNER DRL	PPM XXX
CHECKED BY JGM	SAFETY & HEALTH EW
JOB # 2524-A	REAL PROPERTY WR

USDA

USDA Agricultural Research Service

USDA AGRICULTURAL RESEARCH SERVICE
LAS CRUCES WOOTON HALL EXTERIOR REPAIR DESIGN
USDA-ARS NEW MEXICO STATE UNIVERSITY
LAS CRUCES, NEW MEXICO

SCHEDULES AND DETAILS

PROJECT NO. XXX
DATE 03/19/2025

AGRICULTURAL RESEARCH SERVICE
2150 CENTRE AVENUE
BLDG D, SUITE 300
FORT COLLINS, CO 80526

SHEET E500
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