Department of Public Works
Engineering Division
James M. Wolfe, P.E., City Engineer

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Principal Engineer 2
Janet Schmidt, P.E.

Principal Engineer 1
Kyle Frank, P.E.
Mark D. Moder, P.E.
Fadi El Musa Gonzalez, P.E.
Andrew J. Zwieg, P.E.

Financial Manager
Steven B. Danner-Rivers

March 20, 2025

ADDENDUM NO. 3
City of Madison, Engineering Division

CONTRACT NO. 9610
IMAGINATION CENTER AT REINDAHL PARK

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as **Imagination Center at Reindahl Park, Contract #9610, as issued on February 13, 2025** and is hereby made a part of the contract documents.

Please acknowledge this addendum on page E-1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at (608) 266-4751 to receive the material by another method.

For questions regarding this bid, contact:
Brent Pauba
PH: (608) 266-4092
Email: BPauba@CityofMadison.com
210 Martin Luther King Jr. Blvd
Room 115
Madison, WI 53703

Sincerely,

James M. Wolfe, P.E.
City Engineer

This addendum modifies the following documents:

1. 9610 Exhibit-A_drawings.pdf
2. 9610 Exhibit-B_specifications.pdf

Please attach these Addendum documents to the Drawings and Project manual in your possession.

1. GENERAL

A. Bid Express Online Bidding Instructions updated to note that the submission cost will be $50 per bid, or $60 monthly starting April 1, 2025.

2. BIDDER QUESTIONS AND ANSWERS

A. Specs call for 5/8" dens-deck for coverboard and thermal but drawings call for ½". Which should we proceed with?

i. **The spec has been updated to match the drawings.**

B. Is there a specific attachment you would like us to use to mechanically fasten the insulation? Or is the standard attachment sufficient?

i. **The A/E team is reviewing the preferred attachment methods for the entire roof assembly. Clarification will be provided in future addendum.**

C. In the roof accessories specifications, snow guards are called out. We do not see anything noted in the drawings regarding this. Can you confirm there is none needed for this project?

i. **Confirmed, this spec section has been removed.**

D. Would you be able to push the bid date by a week or so?

i. **See Addendum #2.**

E. Is Division 27 Contractor to provide all (3) Racks? SC Library Rack, 2-Post Rack, and City of Madison Rack per Detail B1 on T501? To provide all cable management and Power Strips as detailed in Detail B1 on T501?

i. **Per Section 27 00 05, article 2.06, the Division 27 contractor provides all racks for structured cabling.**

ii. **Per Section 27 00 05, articles 2.07 and 2.08, the Division 27 contractor provides both horizontal and vertical cable management.**

F. What is the type of parking marking? The spec listed all types. Paint or Epoxy?

i. **Thermoplastic pavement markings per City of Madison Specification Article 608.3.**

G. IG-2 is specifying fully tempered laminated glass. The minimum thickness that we use for that product is 7.8 laminated (3.1-060-3.1). We would also have to make you aware of the distortion that could appear in construction like this.

i. **IG-2 is incorrectly specified and has been changed in the spec to be fully tempered float glass.**

H. Type IG-2B we currently are not able to print ¼ bird glass with a coating on #2 surface.

i. **The bird glass for IG-2B and IG-3B will be an acid etching on the #1 surface. Low-E coating on the #2 surface.**

I. Are the furnishings for the sensory room(s) at the Imagination Center going to be bid separately? Or directly by the center's administration perhaps?

i. **Furnishings, including loose furniture and specialty equipment, not included in the bid documents will be bid separately. Please review Vendor Resources information on the City of Madison website: https://www.cityofmadison.com/finance/purchasing/vendor-resources. City bid opportunities are published on two internet bid distribution networks. To make sure you receive future bid or quote opportunities, subscribe to one or both bid networks.**

J. Can a standard size plant plug size be used in the bio-filtration basin instead of the 4" plug size that is specified?

i. **See updated landscape drawings for revised size.**

3. **ACCEPTABLE EQUIVALENTS**

A. Specification section 07 95 13 – Expansion Joint Cover Assemblies, Erie Metal.

i. **Request is approved – see updated specification.**

B. Specification section 08 80 00 – Glazing, Guardian Glass.

i. **Request is approved – see updated specification.**

C. Specification section 08 80 00 – Glazing, Vitro Solarban 65.

i. **Request is approved – see updated specification.**

D. Specification section 08 80 00 – Glazing, Oldcastle Building Envelope.

i. **Request is approved – see updated specification.**

E. Specification section 09 51 26 – Veneered Wood Ceiling Panels: Woodworks Grille - Forte, 9Wood.

i. **Request is approved – see updated specification.**

F. Specification section 10 22 39 – Folding Panel Partitions, Kwik-Wall.

i. **Request is approved – see updated specification.**

G. Specification section 10 71 13 43 – Fixed Sun Screens, Perforated Laser Metal Panels by Hendrick.

i. **Request is denied.**

H. Specification section 26 09 23 – Lighting Control Devices – Lutron, Creston.

i. **In review – response to be communicated in future addendum.**

I. Specification section 28 46 00 – Fire Detection and Alarm, Edwards.

i. **In review – response to be communicated in future addendum.**

4. **9610 Contract**

A. No change

5. **9610 Exhibit-A_drawings**

A. G001 - "INDEX SHEET"

i. Revised sheets are indicated with revision mark 'A3'.

B. L104 - "LANDSCAPE PLAN"

i. Plant sizes of bio-filtration basin plug mix reduced from 4" to 2-1/2".

C. L601 - "PLANT SCHEDULES AND LANDSCAPE POINTS"

i. Plant sizes of bio-filtration basin plug mix reduced from 4" to 2-1/2**".**

D. A500 - "EXTERIOR AND INTERIOR WALL ASSEMBLIES"

i. Revised wall assembly type S6CP.

E. AI102 - "RENDERED FLOOR FINISH PLAN"

i. Revised POR-01 and POR-02 graphics.

F. AI103 - "WALL FINISH PLAN"

i. Revised CWT-05 graphic.

G. AI104 - "WALL FINISH ELEVATIONS"

i. Revised CWT-05 graphic.

H. AI105 - "WALL FINISH ELEVATIONS"

i. Revised CWT-05 graphic.

I. AI411 – FINISHES & MATERIALS SCHEDULE

i. Revised Finishes & Materials Schedule, Floor, POR-01 and POR-02.

ii. Revised Finishes & Materials Schedule, Wall, CWT-05.

J. E010 - "ELECTRICAL SITE PLAN"
- i. Added keyed note #76.

K. E101 - "FIRST FLOOR PLAN - POWER & FIRE ALARM"
- i. Added keyed notes #84 and #85.
- ii. Revised receptacle layout and lighting control panel locations in IT 125.
- iii. Added lighting control panels in Storage 156.

L. E111 - "FIRST FLOOR PLAN - LIGHTING"
- i. Added keyed notes #33, #68, #77 - #83.
- ii. Revised wall section C3/E111.

M. E504 - "ELECTRICAL DETAILS"
- i. Replaced Lutron drawing with current layout.

N. E505 - "ELECTRICAL DETAILS"
- i. Replaced Lutron drawing with current layout.

O. E506 - "ELECTRICAL DETAILS"
- i. Replaced Lutron drawing with current layout.

P. T501 - "TECHNOLOGY DETAILS"
- i. Detail B5 – Added a note.

Q. T502 - "TECHNOLOGY DETAILS"
- i. Detail A3 – Added a note.

R. T704 - "AV FLOW DIAGRAMS"
- i. AV RPS-2 – Added a note.

6. 9610 Exhibit-B_specifications

A. 00 01 10 TABLE OF CONTENTS
- i. Sections revised or omitted are noted in the Table of Contents with (A3) after section title.

B. 01 60 00 PRODUCT REQUIREMENTS
- i. Paragraph 1.01: added the following note: "Referrals to this section for the purpose of product substitution should instead see Section 01 25 13 – Product Substitution Procedures". Section 01 60 00 typically references substitution requirements and most sections refer back to this as default. However, for this project, Section 01 60 00 is a City of Madison authored section and does not reference substitution requirements.

C. 07 42 13.23 METAL COMPOSITE MATERIAL WALL PANELS
- i. Paragraph 2.01.A.1: added "BASIS OF DESIGN"
- ii. Paragraph 2.01.A.2: added Alfrex FR as pre-approved equal.
- iii. Paragraph 2.01.A.4: corrected section reference for product substitution requests.

D. 07 53 00 ELASTOMERIC MEMBRANE ROOFING
- i. Paragraph 2.01.A.5: corrected section reference for product substitution requests.
- ii. Paragraph 2.04.A.1: corrected Deck Sheathing thickness to 1/2-inch from 5/8-inch to match drawings.
- iii. Paragraph 2.04.A.2.e: corrected section reference for product substitution requests.
- iv. Paragraph 2.05.A.1: corrected Coverboard thickness to 1/2-inch from 5/8-inch to match drawings.
- v. Paragraph 2.05.A.3.e: corrected section reference for product substitution requests.
- vi. Paragraph 2.06.A.6.e: corrected section reference for product substitution requests.
- vii. Paragraph 2.07.L.5.c: added section reference for product substitution requests.

E. 07 71 00 ROOF SPECIALTIES
- i. Paragraph 1.02.C: reference to snow guards removed.

F. 07 72 00 ROOF ACCESSORIES
- i. Paragraph 1.01.C: omitted snow guards from section since metal roof is no longer in project scope.
- ii. Paragraph 1.03: removed references to ASTM A123/A123M and ASTM A153/A153M.
- iii. Paragraph 1.04.C.1: omitted snow guards from submittal requirement.
- iv. Paragraph 2.01.A.5: corrected section reference for product substitution requests.
- v. Paragraph 2.02: add back to section roof hatch manufacturers, which was missing from original issuance.
- vi. Paragraph 2.03: added Pre-Manufactured Roof Ladder Safety Grab Post to section.
- vii. Paragraph 2.03: omitted all paragraphs related to snow guards.

G. 07 91 00 PREFORMED JOINT SEALS
- **i.** Paragraph 2.01.A.6: added Erie Metal Specialties, Inc. as pre-approved equal.
- **ii.** Paragraph 2.01.A.7: corrected section reference for product substitution requests.
- **iii.** Paragraph 2.01.B.5: added Erie Metal Specialties, Inc. as pre-approved equal.
- **iv.** Paragraph 2.01.B.6: corrected section reference for product substitution requests.

H. 07 95 13 EXPANSION JOINT COVER ASSEMBLIES
- **i.** Paragraph 2.01.A.10: added Erie Metal Specialties, Inc. as pre-approved equal.
- **ii.** Paragraph 2.01.A.11: corrected section reference for product substitution requests.
- **iii.** Paragraph 2.02.A.1.c: added Erie Metal Specialties, Inc. as pre-approved equal.
- **iv.** Paragraph 2.02.A.1.d: corrected section reference for product substitution requests.
- **v.** Paragraph 2.02.B.1.e: added Erie Metal Specialties, Inc. as pre-approved equal.
- **vi.** Paragraph 2.02.B.1.f: corrected section reference for product substitution requests.

I. 08 80 00 GLAZING
- **i.** Paragraph 1.03: omitted reference to AAMA 501.6. Not relevant to this project.
- **ii.** Paragraph 2.01.A: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
- **iii.** Paragraph 2.01.C: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
- **iv.** Paragraph 2.01.C.6: corrected section reference for product substitution requests.
- **v.** Paragraph 2.04.A: added Guardian Glass, LLC, Oldcastle Building Envelope, and Vitro Architectural Glass as pre-approved equals.
- **vi.** Paragraph 2.04.A.6: corrected section reference for product substitution requests.
- **vii.** Paragraph 2.04.E.4: omitted “laminated” from description for Inboard lite of IG-2.
- **viii.** Paragraph 2.10: removed Concealed nonprogressive structural glass mounting system – does not apply to this project.
- **ix.** Part 3: Removed the Wet Glazing installation methods. Dry glazing is less severely affected by installation, weather, workmanship, or compatibility issues than wet glazing.
- **x.** Part 3: Removed the following installation methods since they do not apply to this project.
  - **(1)** Butt Joint Glazing Method
  - **(2)** Pressure Glazed Systems
  - **(3)** Structural Silicone Glazing
  - **(4)** Acrylic Foam Tape Glazing
  - **(5)** Plastic Film
- **xi.** Paragraphs 3.07.G-H: replaced “___ type sealant” with “manufacturer’s recommended sealant”.
- **xii.** Paragraphs 3.08.F: replaced “specified” with “manufacturer’s recommended”.

J. 09 30 00 TILING
- **i.** Paragraphs 2.01.B.5.a-b: added tile material ID for clarity.
- **ii.** Paragraphs 2.01.C.7.a-b: added new tile selections for discontinued product originally specified.
- **iii.** Paragraphs 2.01.D.7.a-b: added tile material ID for clarity.
- **iv.** Paragraph 2.01.E.6.a: added tile material ID for clarity.

K. 09 51 26 VENEERED WOOD CEILING PANELS
- **i.** Renamed section to remove proprietary product name.
- **ii.** Paragraph 1.02.A.1: Removed proprietary reference to product.
- **iii.** Paragraph 2.01.C: corrected section reference for product substitution requests. Added 9Wood Inc. as pre-approved equal.

L. 10 22 39 FOLDING PANEL PARTITIONS
- **i.** Paragraph 2.01.A.1: added “BASIS OF DESIGN”
- **ii.** Paragraph 2.01.A.2: added Kwik-Wall Company as pre-approved equal.
- **iii.** Paragraph 2.01.A.3: corrected section reference for product substitution requests.

M. 28 13 00 ACCESS CONTROL SYSTEM (KEYSCAN)
- **i.** Paragraph 2.05.E: replaced “City-IT” with “Parks” and “City” with “Library”.

ii. Added paragraph 2.06 Security Panel (AC-SEC-2) for clarity. Remaining paragraphs in Part 2 renumbered accordingly.
iii. Paragraphs 2.07.B.1-2: revised to amend an outdated catalogue number.

N. 32 17 23 PAVEMENT MARKINGS
i. Paragraph 1.03.H: Added reference to City of Madison – Standard Specifications for Public Works Construction (2025).
ii. Paragraph 2.02: Replaced “painted” with “thermoplastic”.
iii. 2.02.B: “Painted pavement Markings: As indicated on drawings” replaced with “Comply with City of Madison Standard Specifications for Public Works Construction – Article 608”.
iv. Paragraph 3.02.B: Replaced “painted” with “thermoplastic”.
v. Paragraph 3.02.B.3: Added “Apply in accordance with City of Madison Standard Specifications for Public Works Construction – Article 608”.

7. 9610 Exhibit-C_drawing_landsForWork
A. No change

8. 9610 Exhibit-D_ConstructionSequenceRequirements
A. No change

9. 9610 Reference-1_survey_topographic
A. No change

10. 9610 Reference-2_survey_ALTA
A. No change

11. 9610 Reference-3_report_AsbestosLead
A. No change

12. 9610 Reference-4_report_GeotechExploration
A. No change

13. 9610 reference-5_drawings_existingConditions
A. No change

14. 9610 reference-6_form_BidSubmittalChecklist
A. No change

15. 9610 Proposal Page
A. No change

ADDENDUM-3
DRAWINGS

ABBREVIATIONS

A
A/C air condition
A/E Architect/Engineer
ACT acoustical ceiling tile
ADDL additional
ADDM addendum
AFC above finished counter
AFF above finished floor
AFG above finished grade
AFS above finished slab
ALT alternate
ALUM aluminum
APPD approved
APT apartment
ASC above suspended ceiling

B
BB baseboard
BB bulletin board
BLDG building
BL blinds (window)
BLT borrowed light
BLW below
BPL base plate
BO bottom of
BOS bottom of steel

C
CB catch basin
CB construction bulletin
CF/CI contractor furnished, contractor installed
CF/OI contractor furnished, owner installed
CF/VI contractor furnished, vendor installed
CG corner guard
CH BD chalkboard
CIP cast-in-place
CJ control joint
CJ construction joint
CL centerline
CLG ceiling
CLR clear
CM construction management
CMU concrete masonry unit
CO cleanout
COL column
CONC concrete
CORR corridor
CONT continuous
CPT carpet
CSWK casework
CT ceramic tile
CTB ceramic tile base

D
DEMO demolition
DEPT department
DF drinking fountain
DFS Door and Frame Schedule
DH double hung
DIA diameter
DR door
DR FR door frame
DTL detail
DW dishwasher
DWG drawing

E
E east
EIFS exterior insulation & finish system
EL elevation
ELEC electric, electrical
ELEV elevator
EP epoxy
EPB epoxy base
EPS expanded polystyrene board
EQ equal
EXIST existing
EXP expand, expansion
EXT exterior

F
F female
F filler
FA fire alarm
FAB fabric
FAX facsimile
FC file cabinet
FD floor drain
FEC fire extinguisher cabinet
FHC fire hose cabinet
FG foot grille
FLR floor
FM factory mutual
FM floor mat
FP fire protection
FP fireproof
FPL fire place
FRP fiber reinforced panel
FT feet
FTG footing
FWP fabric wrapped panel

G
GA gage
GALV galvanized
GB grab bar
GC general contractor
GL glass
GLT glass tile

G (continued)
GLU LAM glued laminated wood
GR grade, grading
GRAN granite
GT grout
GWB glazed wall tile
GYP BD gypsum board

H
HB hose bibb
HC hollow core
HCP handicapped
HM hollow metal
HORIZ horizontal
HSKPG housekeeping
HT height
HVAC heating, ventilating & air conditioning
HW hot water
HWF hardwood floor
HWY highway

I
ID inside diameter
INSUL insulation
INT interior

J
JS janitor sink

K

L
LAM laminate
LAV lavatory
LL live load

M
MAX maximum
MC modular carpet tile
MECH mechanical
MFR manufacturer
MIN minimum
MIN minute
MISC miscellaneous
MO masonry opening
MS mop sink
MRB marble base
MRF marble floor
MTL metal

N
N north
N/A not applicable

N (continued)
NIC not in contract
NO number
NOM nominal
NS no scale
NTS not to scale

O
OC on center
OD outside diameter
OF/CI owner furnished, contractor installed
OF/OI owner furnished, owner installed
OF/VI owner furnished, vendor installed
OH DR overhead (coiling) door
OPH opposite hand
OPNG opening

P
PLAM plastic laminate
PLYWD plywood
PREFAB prefabricated
PREFIN prefinished
PSI pounds per square inch
PT paint, painted
PTN partition

Q
QT quarry tile
QTB quarry tile base

R
RB resilient base
RCP reflected ceiling plan
RD roof drain
REBAR reinforcing steel bars
RF resilient flooring
RFS room finish schedule
RO rough opening

S
S south
SAN sanitary
SC sealed concrete
SC solid core
SF square foot
SH shades
SIM similar
SS stainless steel
SST solid surface
ST stain
ST stair
STN stone

S (continued)
STNB stone base
STRUCT structure
SV sheet vinyl

T
T&M time & materials
TEMP temperature
TER terrazzo
TERB terrazzo base
TFF top of finish floor
TK BD tackboard
TO top of ____
TOB top of beam
TOC top of concrete
TOJ top of joist
TOPO topography
TOS top of slab
TOS top of steel
TV television
TYP typical

U
UNO unless noted otherwise
UON unless otherwise noted

V
VCT vinyl composition tile
VF/CI vendor furnished, contractor installed
VF/OI vendor furnished, owner installed
VF/VI vendor furnished, vendor installed
VNR veneer
VIF verify in field
VWC vinyl wall covering

W
W west
W/ with
W/O without
WC water closet
WC wall covering
WD wood
WDB wood base
WDV wood veneer
WH water heater
WP wall protection
WP workpoint

X
XPS extruded polystyrene board (insul)

Y Z

SYMBOL LEGEND

VIEW NUMBER
19 TITLE — VIEW NAME
1/2" = 1' - 0" — VIEW SCALE

00 A000 SIM — DETAIL CALLOUT

00 A000 SIM — SECTION CALLOUT

2 A000 1 3 4 — ELEVATION CALLOUT

Level 0' - 0" — ELEVATION DATUM

NORTH ARROW

EXISTING CONSTRUCTION

DEMOLITION

NEW CONSTRUCTION

XX WALL TAG

000 DOOR TAG

000.000 KEYNOTE TAG

0 REVISION TAG

000 FURNITURE TAG

000 EQUIPMENT TAG

XX WINDOW TAG

000 W'x H" x D" — CASEWORK TAG (PLAN OR ELEVATION)

FLOOR / BASE / WALL / REMARKS — FINISH PLAN TAG

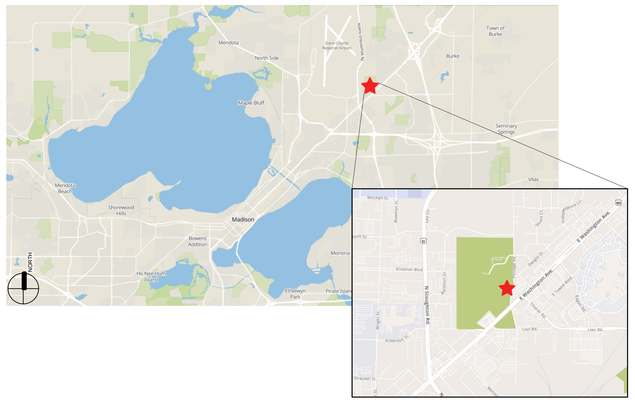
TYPE / HEIGHT — CEILING TAG

NAME / 0000 — ROOM TAG

A A / 1 2 — NEW GRID AND IDENTIFICATION

A B / 1 2 — EXISTING GRID AND IDENTIFICATION

VICINITY MAP



SHEET ORGANIZATION

EACH DRAWING SHEET IS BASED UPON A 30 SQUARE GRID SYSTEM, STARTING WITH '1' IN THE TOP LEFT HAND CORNER AND WORKING LEFT-TO-RIGHT AND TOP-TO-BOTTOM TO '30' IN THE BOTTOM RIGHT HAND CORNER, EXAMPLE BELOW:

1	2	3	4	5	6	TITLEBLOCK
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	
25	26	27	28	29	30	

3/20/2025 10:36:41 AM

PROJECT ADDRESS

IMAGINATION CENTER AT REINDAHL PARK

LIBRARY: 1814 PARKSIDE DR.
MADISON, WI 53704

PAVILION: 1818 PARKSIDE DR.
MADISON, WI 53704

CONTRACT No: 9610

MUNIS No: 17085

OWNER INFORMATION

CITY OF MADISON
210 MARTIN LUTHER KING, JR. BLVD.
MADISON, WI 53703-3342

CONTACT: Brent Pauba - Department of Public Works, Engineering Division
EMAIL: bpauba@cityofmadison.com
MAIN: 608.266.4092

PROJECT TEAM

ARCHITECTURAL

JLA ARCHITECTS & PLANNERS
800 WEST BROADWAY, SUITE 200
MONONA, WISCONSIN 53713
CONTACT: Jennifer Camp
EMAIL: jcamp@jla-ap.com
MAIN: 608.241.9500
GENERAL AND ARCHITECTURAL SHEETS:
G000–G300, ASP-200, A101–A811

CIVIL ENGINEERING

GRAEF, INC.
1010 EAST WASHINGTON AVENUE, SUITE 202
MADISON, WI 53703
CONTACT: Amy Larson, PE
EMAIL: amy.larson@graef-usa.com
MAIN: 608.245.1962
CIVIL SHEETS:
C100–C904

LANDSCAPING

SAIKI DESIGN, INC.
1110 SOUTH PARK STREET
MADISON, WI 53715
CONTACT: Abbie Mollien, PLA, ASLA
EMAIL: amollien@saiki.design
MAIN: 608.405.8149
LANDSCAPE SHEETS:
L101–L601

STRUCTURAL ENGINEERING

GRAEF, INC.
275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Steven Rech
EMAIL: steve.rech@graef-usa.com
MAIN: 414.266.9147
STRUCTURAL SHEETS:
S001–S603

PLUMBING & FIRE PROTECTION

GRAEF, INC.
275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Jessica Culver, PE
EMAIL: jessica.culver@graef-usa.com
MAIN: 414.266.9008
FIRE PROTECTION SHEETS: F001–F101
PLUMBING SHEETS: P001–P911

MECHANICAL

GRAEF, INC.
1010 EAST WASHINGTON AVENUE, SUITE 202
MADISON, WI 53703
CONTACT: Matt Garcia, PE
EMAIL: matthew.garcia@graef-usa.com
MAIN: 414.266.9232
MECHANICAL SHEETS:
M001–M806

ELECTRICAL & TECHNOLOGY

GRAEF, INC.
275 WEST WISCONSIN AVENUE, SUITE 300
MILWAUKEE, WI 53203
CONTACT: Beth Ann Bruss, DES
EMAIL: beth.bruss@graef-usa.com
MAIN: 414.266.9252
ELECTRICAL SHEETS: E5001–E620
TECHNOLOGY SHEETS: T001–T704

INTERIOR DESIGN

INTERIOR LOGIC
1201 SOUTH STOUGHTON ROAD, SUITE 150
MADISON, WI 53716
CONTACT: Robin Strobel, ASID, RID, LEED AP ID +C, WELL AP
EMAIL: rstroebel@intlogic.com
MAIN: 608.316.3870
INTERIORS SHEETS:
AI102–AI413

SET ISSUE

BID DOCUMENTS

JANUARY 6, 2025

SHEET INDEX

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

JLA PROJECT NUMBER: 20-0928

MADISON PUBLIC LIBRARY

play MADISON PARKS

IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

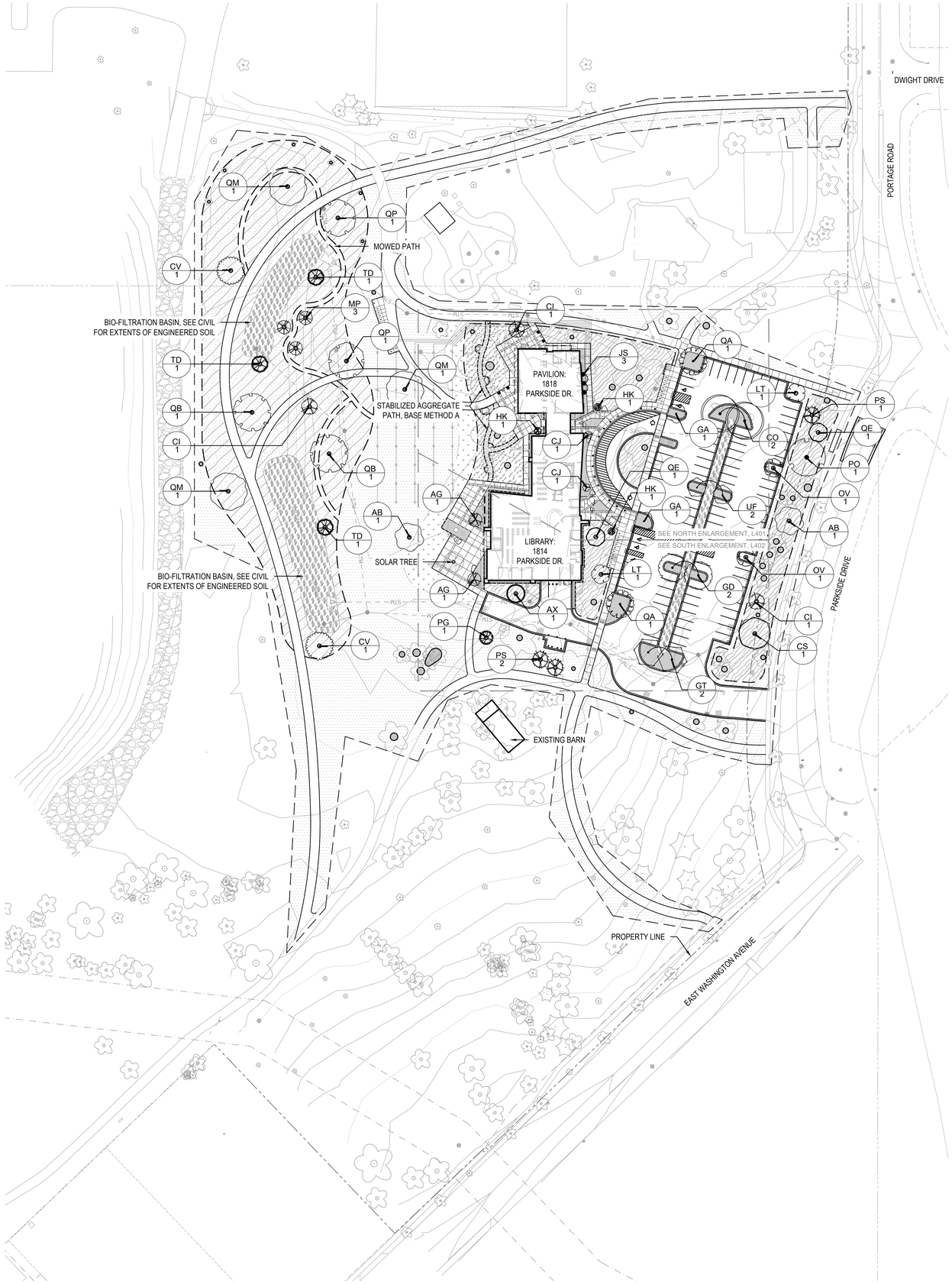
Mark	Description	Date
A1	ADDENDUM #1	03/07/2025
A3	ADDENDUM #3	03/20/2025

SHEET TITLE

INDEX SHEET

SHEET NUMBER

G001



1 Landscape Plan - Trees and Groundcovers

SCALE: 1"=50'-0"

0 50' 100'

1" = 50'-0"

NORTH

LEGEND

- SHREDDED HARDWOOD MULCH
- STONE MULCH
- DECORATIVE CONCRETE
- STABILIZED AGGREGATE PATH, SEE 10/L501
- METAL BED EDGING, SEE 7/L501
- SPADED BED EDGING, SEE 6/L501
- STONE MAINTENANCE EDGE SEE 8/L501
- PROJECT LIMITS
- EXISTING SITE FEATURES
- PROPERTY LINE
- MULCH TREE RING
- FUTURE PUBLIC ART LOCATION
- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE

PLAN NOTES

1. FIELD VERIFY SURVEY INFORMATION AND SITE CONDITIONS PRIOR TO START OF CONSTRUCTION AND REPORT ANY DISCREPANCIES TO LANDSCAPE ARCHITECT. CONTACT DIGGER'S HOTLINE TO LOCATE ALL PUBLIC AND PRIVATE UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE CAUSED TO EXISTING UTILITIES, EITHER SHOWN OR NOT, SHALL BE REPAIRED AND PAID FOR AT THE CONTRACTOR'S EXPENSE.
2. PROTECT ALL BENCHMARKS. INCLUDE ANY RELOCATED BENCHMARKS IN AS-BUILT DRAWINGS.
3. ALL EXISTING PLANT MATERIAL IS SHOWN AT EXISTING, APPROXIMATED SIZE PER CITY OF MADISON STANDARDS.
4. ANY STREET TREE REMOVALS REQUESTED AFTER THE DEVELOPMENT PLAN IS APPROVED BY THE PLAN COMMISSION OR THE BOARD OF PUBLIC WORKS AND CITY FORESTRY WILL REQUIRE A MINIMUM OF A 72-HOUR REVIEW PERIOD WHICH SHALL INCLUDE THE NOTIFICATION OF THE ALDERPERSON WITHIN WHOSE DISTRICT IS AFFECTED BY THE STREET TREE REMOVAL(S) PRIOR TO A TREE REMOVAL PERMIT BEING ISSUED.
3. ALL WRAPPINGS, WIRE BASKETS, BURLAP, AND OTHER MISCELLANEOUS MATERIAL SHALL BE COMPLETELY REMOVED FROM ALL SHRUB AND TREE ROOT BALLS PRIOR TO INSTALLATION.
4. VISUALLY INSPECT AND VERIFY SPECIFIED TOPSOIL AND PLANTING SOIL DEPTHS ARE PRESENT PRIOR TO PLANTING AS OUTLINED IN SPECIFICATIONS.
5. ANY LAWN OR LANDSCAPED AREAS WITHIN OR OUTSIDE OF THE CONSTRUCTION BOUNDARY THAT ARE DISTURBED SHALL BE RE-SEEDED AND/OR REPAIRED WITH ORIGINAL MATERIALS AND TO PRE-DISTURBANCE STANDARDS AT NO COST TO THE OWNER OR CITY.
6. SEE SECTIONS 32 92 19 "SEEDING" AND 32 93 00 "PLANTS" FOR NATIVE SEED AREA AND BIO-FILTRATION AREA EROSION CONTROL MATERIALS.
7. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE OF PLANT MATERIAL, SEE SPECIFICATIONS FOR MORE INFORMATION.
8. CONTACT CITY OF MADISON PRIOR TO PERFORMING ANY WORK WITHIN THE CITY RIGHT OF WAY TO CONFIRM RESTORATION.
9. THE RIGHT OF WAY IS THE SOLE JURISDICTION OF THE CITY OF MADISON AND IS SUBJECT TO CHANGE AT ANY TIME PER THE RECOMMENDATION OF TRAFFIC ENGINEERING AND ENGINEERING DIVISIONS. FORWARD ANY CHANGES PROPOSED BY CITY OFFICIALS TO LANDSCAPE ARCHITECT FOR CONSIDERATION AND DIRECTION BEFORE PROCEEDING.

PLANT SCHEDULE - TREES

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT.	SIZE
DECIDUOUS TREES				
	AB	Acer saccharum 'Ballsta' / Fall Fiesta® Sugar Maple	B & B	3"Cal
	AX	Aesculus x bushii 'Aaronl' / Mystic Ruby± Buckeye	B & B	2.5"Cal
	CV	Carya ovata / Shagbark Hickory	B & B	2.5"Cal
	CS	Catalpa speciosa / Northern Catalpa	B & B	2.5"Cal
	CO	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	B & B	3"Cal
	GA	Ginkgo biloba 'Autumn Gold' TM / Autumn Gold Maidenhair Tree	B & B	2" Cal
	GT	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust	B & B	2.5"Cal
	GD	Gymnocladus dioica 'Espresso' / Espresso Kentucky Coffeetree	B & B	2.5"Cal
	LT	Liriodendron tulipifera / Tulip Tree	B & B	2.5"Cal
	OV	Ostrya virginiana / American Hophornbeam	B & B	2.5"Cal
	PO	Platanus occidentalis 'Morton Circle' / Exclamation! American Sycamore	B & B	2.5"Cal
	QA	Quercus alba / White Oak	B & B	3"Cal
	QB	Quercus bicolor / Swamp White Oak	B & B	3"Cal
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	3"Cal
	QP	Quercus macrocarpa / Burr Oak	B & B	3" Cal
	QM	Quercus muehlenbergii / Chinkapin Oak	B & B	3" Cal
	TD	Taxodium distichum / Bald Cypress	B & B	6' HT (MIN.)
	UF	Ulmus x 'Frontier' / Frontier Elm	B & B	3"Cal
EVERGREEN TREES				
	JS	Juniperus scopulorum 'Wichita Blue' / Wichita Blue Juniper	B & B	5' HT. (MIN)
	PG	Picea glauca densata / Black Hills Spruce	B & B	6' HT (MIN.)
	PS	Pinus strobus / White Pine	B & B	6' HT (MIN.)
ORNAMENTAL TREES				
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	6'HT (MIN.),
	CJ	Carpinus caroliniana 'J.N. Upright' / Firespire American Hornbeam	B & B	2" Cal
	CI	Crataegus crus-galli inermis / Thornless Cockspur Hawthorn	B & B	6'HT (MIN.),
	HK	Hamamelis vernalis 'Kohankie Red' / Kohankie Red Ozark Witchazel	B & B	5' HT. (MIN.)
	MP	Malus x 'Prairifire' / Prairifire Crabapple	B & B	2" Cal

GROUNDCOVERS SCHEDULE

	NATIVE SEED - 01 Low-Growing Meadow for Dry Soils	21,617 sf
	NATIVE SEED - 02 Diverse Prairie for Dry Soils	52,864 sf
	NATIVE SEED - 03 Woodland Edge - Savanna for Medium Soils	5,806 sf
	BLUEGRASS LAWN SOD	8,611 sf
	BLUEGRASS LAWN SEED Madison Parks Blend	111,488 sf

NOTES

- VERIFY SQUARE FOOTAGE OF ALL GROUNDCOVER AREAS. IF PLAN CONFLICTS WITH SCHEDULE, PLAN SHALL GOVERN.
- FOR BIO-FILTRATION BASIN PLANTINGS, DISTRIBUTE PLANT SPECIES RANDOMLY AND EVENLY.

BIO-FILTRATION BASIN PLUG MIX	14,305 sf		
Allium cernuum / Nodding Onion	132	2 1/2" plug	2% @ 18" o.c.
Andropogon gerardii / Big Bluestem	199	2 1/2" plug	3% @ 18" o.c.
Asclepias incarnata / Swamp Milkweed	330	2 1/2" plug	5% @ 18" o.c.
Baptisia alba / White Wild Indigo	330	2 1/2" plug	5% @ 18" o.c.
Carex albicans / Whitetinge Sedge	199	2 1/2" plug	3% @ 18" o.c.
Carex eburnea / Bristleleaf Sedge	330	2 1/2" plug	5% @ 18" o.c.
Carex muskingumensis / Palm Sedge	330	2 1/2" plug	5% @ 18" o.c.
Carex praegracilis / California Field Sedge	330	2 1/2" plug	5% @ 18" o.c.
Dalea purpurea / Purple Prairie Clover	199	2 1/2" plug	3% @ 18" o.c.
Elymus canadensis / Canada Wild Rye	132	2 1/2" plug	2% @ 18" o.c.
Iris versicolor / Blue Flag	199	2 1/2" plug	3% @ 18" o.c.
Liatris spicata / Spike Gayfeather	330	2 1/2" plug	5% @ 18" o.c.
Lobelia siphilitica / Great Lobelia	330	2 1/2" plug	5% @ 18" o.c.
Monarda fistulosa / Bergamot	330	2 1/2" plug	5% @ 18" o.c.
Panicum virgatum / Switch Grass	330	2 1/2" plug	5% @ 18" o.c.
Pycnanthemum tenuifolium / Slender Mountain Mint	199	2 1/2" plug	3% @ 18" o.c.
Ratibida pinnata / Yellow Coneflower	199	2 1/2" plug	3% @ 18" o.c.
Rudbeckia subtomentosa / Sweet Black-eyed Susan	199	2 1/2" plug	3% @ 18" o.c.
Senna hebecarpa / Wild Senna	199	2 1/2" plug	3% @ 18" o.c.
Silphium perfoliatum / Cup Plant	199	2 1/2" plug	3% @ 18" o.c.
Silphium terebinthinaceum / Prairie Dock	199	2 1/2" plug	3% @ 18" o.c.
Sorghastrum nutans / Indian Grass	132	2 1/2" plug	2% @ 18" o.c.
Sporobolus heterolepis / Prairie Dropseed	199	2 1/2" plug	3% @ 18" o.c.
Symphyotrichum novae-angliae / New England Aster	330	2 1/2" plug	5% @ 18" o.c.
Verbena hastata / Blue Vervain	199	2 1/2" plug	3% @ 18" o.c.
Vernonia fasciculata / Ironweed	330	2 1/2" plug	5% @ 18" o.c.
Zizia aurea / Golden Alexander	199	2 1/2" plug	3% @ 18" o.c.

A3

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DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A1	ADDENDUM #1	03/07/25
A3	ADDENDUM #3	03/20/25

SHEET TITLE

LANDSCAPE PLAN

SHEET NUMBER

L104

PLANT SCHEDULE

DECIDUOUS TREES

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT.	SIZE	QTY
	AB	Acer saccharum 'Ballsta' / Fall Fiesta® Sugar Maple	B & B	3"Cal	2
	AX	Aesculus x bushii 'Aaroni' / Mystic Ruby® Buckeye	B & B	2.5"Cal	1
	CV	Carya ovata / Shagbark Hickory	B & B	2.5"Cal	2
	CS	Catalpa speciosa / Northern Catalpa	B & B	2.5"Cal	1
	CO	Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry	B & B	3"Cal	2
	GA	Ginkgo biloba 'Autumn Gold' TM / Autumn Gold Maidenhair Tree	B & B	2" Cal	2
	GT	Gleditsia triacanthos inermis 'Shademaster' / Shademaster Locust	B & B	2.5"Cal	2
	GD	Gymnocladus dioica 'Espresso' / Espresso Kentucky Coffeetree	B & B	2.5"Cal	2
	LT	Liriodendron tulipifera / Tulip Tree	B & B	2.5"Cal	2
	OV	Ostrya virginiana / American Hophornbeam	B & B	2.5"Cal	2
	PO	Platanus occidentalis 'Morton Circle' / Exclamation! American Sycamore	B & B	2.5"Cal	1
	QA	Quercus alba / White Oak	B & B	3"Cal	2
	QB	Quercus bicolor / Swamp White Oak	B & B	3"Cal	2
	QE	Quercus ellipsoidalis / Northern Pin Oak	B & B	3"Cal	2
	QP	Quercus macrocarpa / Burr Oak	B & B	3" Cal	2
	QM	Quercus muehlenbergii / Chinkapin Oak	B & B	3" Cal	3
	TD	Taxodium distichum / Bald Cypress	B & B	6' HT (MIN.)	3
	UF	Ulmus x 'Frontier' / Frontier Elm	B & B	3"Cal	2

EVERGREEN TREES

	JS	Juniperus scopulorum 'Wichita Blue' / Wichita Blue Juniper	B & B	5' HT. (MIN)	3
	PG	Picea glauca densata / Black Hills Spruce	B & B	6' HT (MIN.)	1
	PS	Pinus strobus / White Pine	B & B	6' HT (MIN.)	3

ORNAMENTAL TREES

	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	6'HT (MIN.), MULTI-STEMMED	2
	CJ	Carpinus caroliniana 'J.N. Upright' / Firespire American Hornbeam	B & B	2" Cal	2
	CI	Crataegus crus-galli inermis / Thornless Cockspur Hawthorn	B & B	6'HT (MIN.), MULTI-STEMMED	3
	HK	Hamamelis vernalis 'Kohankie Red' / Kohankie Red Ozark Witchazel	B & B	5' HT. (MIN.), MULTI-STEMMED	3
	MP	Malus x 'Prairifire' / Prairifire Crabapple	B & B	2" Cal	3

DECIDUOUS SHRUBS

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	QTY
	Am	Aronia melanocarpa 'Low Scape Mound' / Low Scape Mound Chokeberry	2 gal	CONT.	20
	Ai	Aronia melanocarpa 'Morton' TM / Iroquis Beauty Black Chokeberry	3 gal	CONT.	26
	Ar	Aronia melanocarpa 'UCONNAM012' TM / Ground Hog Black Chokeberry	3 gal	CONT.	13
	Dl	Diervilla lonicera / Dwarf Bush Honeysuckle	2 gal	CONT.	10
	Hb	Hydrangea arborescens 'Annabelle' / Annabelle Hydrangea	3 gal	CONT.	4
	Hq	Hydrangea paniculata 'Little Quick Fire' / Little Quick Fire Hydrangea	3 gal	CONT.	10
	Pd	Physocarpus opulifolius 'Donna May' TM / Little Devil Ninebark	3 gal	CONT.	17
	Vp	Viburnum carlesii 'Compactum' / Compact Koreanspice Viburnum	3 gal	CONT.	8

EVERGREEN SHRUBS

	Jb	Juniperus Scopulorum 'Blue Arrow' / Blue Arrow Juniper	5 gal	CONT.	1
	Pb	Pinus strobus 'Blue Shag' / Blue Shag White Pine	5 gal	CONT.	2
	Tm	Taxus x media 'Tauntonii' / Tauton Yew	5 gal	CONT.	4

GRASSES

	cxa	Carex albicans / White-tinged Sedge	1 qt	CONT.	13
	hma	Hakonechloa macra 'All Gold' / Japanese Forest Grass	1 gal	CONT.	9
	pvs	Panicum virgatum 'Shenandoah' / Switch Grass	1 gal	CONT.	53
	sht	Sesleria heufleriana / Moor Grass	1 gal	CONT.	20
	sph	Sporobolus heterolepis / Prairie Dropseed	1 qt	CONT.	97

PERENNIALS

	asb	Allium x 'Summer Beauty' / Summer Beauty Allium	1 qt	CONT.	144
	dha	Amsonia hubrichtii 'Halfway to Arkansas' / Arkansas Blue-star	1 gal	CONT.	17
	asc	Asarum canadense / Wild Ginger	1 qt	CONT.	31
	aos	Aster oblongifolius 'October Skies' / October Skies Aromatic Aster	1 gal	CONT.	82
	bam	Baptisia australis minor / Dwarf Blue Wild Indigo	1 gal	CONT.	47
	cnb	Calamintha nepeta 'Blue Cloud' / Blue Cloud Lesser Calamint	1 qt	CONT.	37
	epm	Echinacea x 'CBS Cone 2' / Pixie Meadowbrite® Purple Coneflower	1 gal	CONT.	28
	gme	Geranium maculatum 'Espresso' / Spotted Geranium	1 gal	CONT.	27
	hjp	Helleborus x hybridus 'Peppermint Ice' TM / Peppermint Ice Lenten Rose	1 gal	CONT.	6
	hva	Heuchera villosa var. atropurpurea / Maple Leaved Alumroot	1 gal	CONT.	14
	isc	Iris sibirica 'Caesar's Brother' / Caesar's Brother Siberian Iris	1 gal	CONT.	11
	pgb	Polygonatum biflorum / Solomon's Seal	1 gal	CONT.	13
	psa	Polystichum acrostichoides / Christmas Fern	1 gal	CONT.	6
	rfg	Rudbeckia fulgida 'Little Goldstar' / Little Goldstar Black-eyed Susan	1 gal	CONT.	45

VINES

	Hy	Hydrangea petiolaris / Climbing Hydrangea	2 gal	CONT.	10

GROUNDCOVERS SCHEDULE

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	BLUEGRASS LAWN SEED Madison Parks Blend	111,488 sf

A3

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Zizia aurea / Golden Alexander	199	2 1/2" plug	3% @ 18" o.c.

NOTES
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- FOR BIO-FILTRATION BASIN PLANTINGS, DISTRIBUTE PLANT SPECIES RANDOMLY AND EVENLY.

Imagination Center at Reindahl Park
Madison, WI
2025-01-06

Developed Lots	SF	Acres	Landscape Points Subtotal
Total Developed Area	330,256	7.58	
Landscape Points (5 pts/300 SF for first 5 acres, 1 pt/100 SF for additional)			4755
		Landscape Points Required	4755

Development Frontage (Parkside Drive)	LF	Overstory Trees Required*	Shrubs Required
Total LF of Street Frontage Between Parking/Building & Street	404	13	67

Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	4	5	315
Ornamental Tree	15	1	1	30
Tall Evergreen Tree	35	1	9	350
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	0	0	0
Shrub, evergreen	4	0	0	0
Ornamental Grass/Perennial	2	0	0	0
		Development Frontage Points Total		695

Interior Parking Lots	SF	Overstory Trees Required**	Islands Achieved (SF)
Total Parking Lot Area	59,015	30	
Min. Parking Lot Islands (8%)	4,721		8,037

Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	15	1	560
Ornamental Tree	15	0	0	0
Tall Evergreen Tree	35	0	0	0
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	47	0	141
Shrub, evergreen	4	0	0	0
Ornamental Grass/Perennial	2	264	0	528
		Interior Parking Lots Points Total		1229

General Site, Foundation, Screening				
Element	Point Value	Quantity Proposed	Quantity Existing	Points Achieved
Overstory Deciduous Tree	35	16	32	1680
Ornamental Tree	15	12	0	180
Tall Evergreen Tree	35	6	1	245
Upright Evergreen Shrub	10	0	0	0
Shrub, deciduous	3	61	0	183
Shrub, evergreen	4	7	0	28
Vine, deciduous	3	10	0	30
Ornamental Grass/Perennial	2	436	0	872
Ornamental/Decorative Fence or Wall (4 pts/10 LF)	4	0	0	0
		Foundation Plantings Total		3218

TOTAL LANDSCAPE POINTS	5142

* Two (2) ornamental trees or two (2) evergreen trees may be used in place of one (1) overstory deciduous tree.
** Two (2) ornamental deciduous trees may be substituted for one (1) canopy tree, but ornamental trees shall constitute no more than twenty-five percent (25%) of the required trees.

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DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

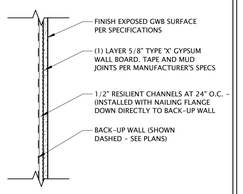
Mark	Description	Date
A3	ADDENDUM #3	03/20/25

SHEET TITLE
PLANT SCHEDULES AND LANDSCAPE POINTS

SHEET NUMBER
L601

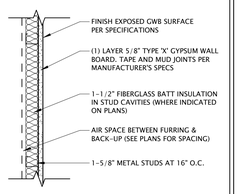
'SF' WALL ASSEMBLIES (STEEL FURRING)

SF1



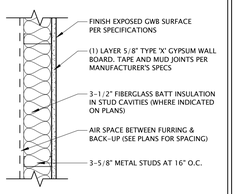
MARK	SF2	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	N/A		
STC TEST	N/A		

SF2



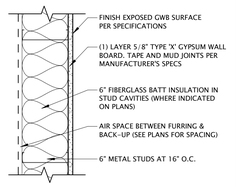
MARK	SF2	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	N/A		
STC TEST	N/A		

SF4



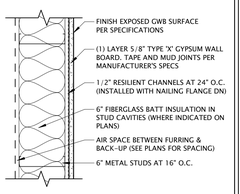
MARK	SF4	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	34	INSULATED	
STC TEST	NGC 2013012	INSULATED	

SF6



MARK	SF6	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	37	INSULATED	
STC TEST	NGC 2013021	INSULATED	

SF6C



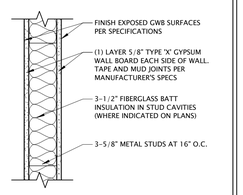
MARK	SF6C	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	37	INSULATED	
STC TEST	NGC 2013021	INSULATED	

'S' WALL TYPE NOTES

- SEE 2009 UNDERWRITER'S LABORATORY DIRECTORY FOR ADDITIONAL INFORMATION.
- SEE 2009 UNDERWRITER'S LABORATORY DIRECTORY FOR ALLOWABLE INSULATION TYPES IN RATED WALLS.
- SEE STRUCTURAL DRAWINGS FOR FINAL STUD SPACING.
- REFER TO SPECIFICATIONS FOR METAL STUD GAUGE INFORMATION
- STC RATINGS ARE WITH INSULATION. AT ALL INTERIOR WALLS, PROVIDE ACCOUSTICAL SEALANT AT TOP & BOTTOM OF PARTITION, AND AT ALL WALL PENETRATIONS.
- PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL WET AREAS INCLUDING KITCHENS, BATHROOMS, AND RESTROOMS.

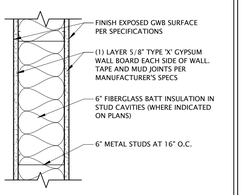
'S' WALL ASSEMBLIES (STEEL STUD)

S4



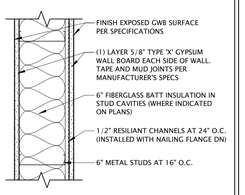
MARK	S4	S4-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	UL#U465	
STC RATING	46	46	INSULATED
STC TEST	NGC 2018106	NGC 2018106	INSULATED

S6



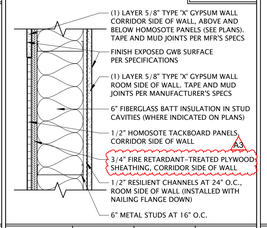
MARK	S6	S6-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	UL#U465	
STC RATING	44	44	INSULATED
STC TEST	NGC 2018130	NGC 2018130	INSULATED

S6C



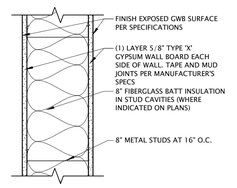
MARK	S6C	S6C-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	UL#U465	
STC RATING	50	50	INSULATED
STC TEST	NGC-2015001	NGC-2015001	INSULATED

S6CP



MARK	S6CP	S6CP-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	UL#U465	
STC RATING	50	50	INSULATED
STC TEST	NGC-2015001	NGC-2015001	INSULATED

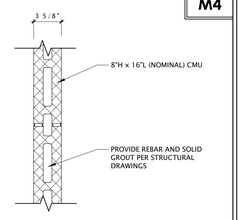
S8



MARK	S8	S8-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	UL#U465	
STC RATING	44+	44+	INSULATED
STC TEST	N/A	N/A	

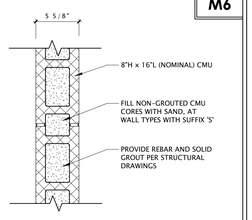
'M' WALL ASSEMBLIES (MASONRY)

M4



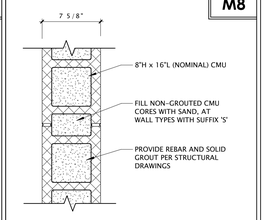
MARK	M4	COMMENTS	
FIRE RATING	N/A		
FIRE TEST	N/A		
STC RATING	44	HOLLOW	
STC TEST	N/A		

M6



MARK	M6 M6S	M6-X M6S-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	IBC TABLE 721.1 (2) MATERIAL 3	
STC RATING	46 / 49	46 / 49	HOLLOW / SAND-FILLED
STC TEST	N/A	N/A	

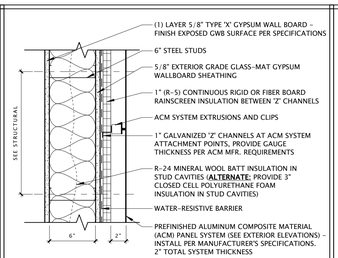
M8



MARK	M8 M8S	M8-X M8S-X	COMMENTS
FIRE RATING	N/A	1 HOUR	
FIRE TEST	N/A	IBC TABLE 721.1 (2) MATERIAL 3	
STC RATING	N/A	48 / 52	HOLLOW / SAND-FILLED
STC TEST	N/A	N/A	

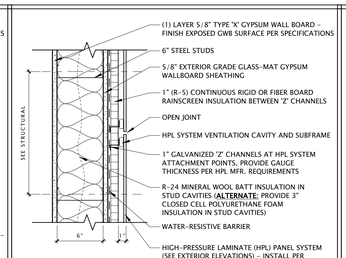
EXTERIOR STEEL WALL ASSEMBLIES

EXTERIOR WALL ASSEMBLY - ES6-ACM



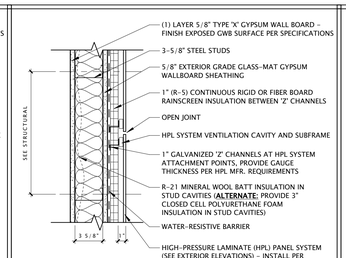
FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

EXTERIOR WALL ASSEMBLY - ES6-HPL



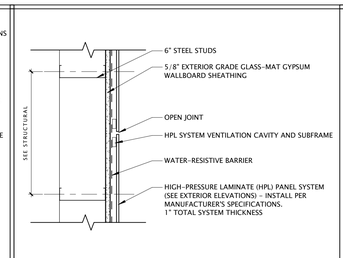
FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

EXTERIOR WALL ASSEMBLY - ES4-HPL



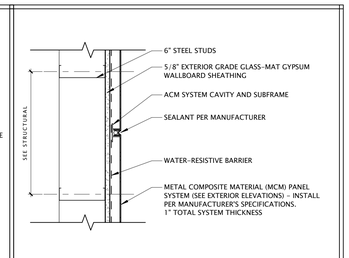
FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

EXTERIOR WALL ASSEMBLY - ES6.1-HPL



FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

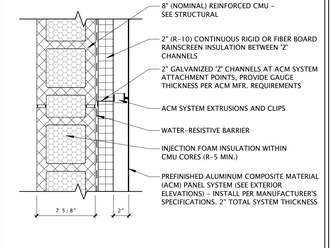
EXTERIOR WALL ASSEMBLY - ES6-MCM



FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

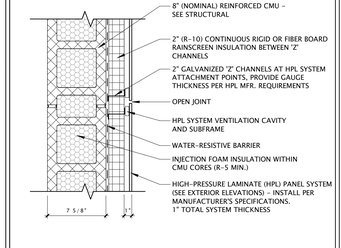
EXTERIOR MASONRY WALL ASSEMBLIES

EXTERIOR WALL ASSEMBLY - EM8-ACM



FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

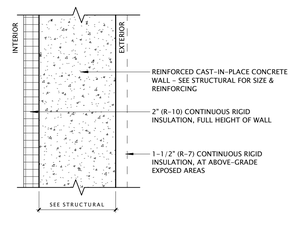
EXTERIOR WALL ASSEMBLY - EM8-HPL



FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

EXTERIOR CONCRETE WALL ASSEMBLIES

CONCRETE WALL ASSEMBLY - EC1



FIRE RATING	RATING	ASSEMBLY #
	0-HR	N/A

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JLA PROJECT NUMBER: 20-0928

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BID DOCUMENTS

DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A3	ADDENDUM #3	03/20/2025

SHEET TITLE

EXTERIOR AND INTERIOR WALL ASSEMBLIES

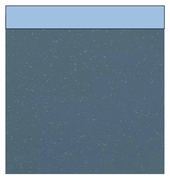
SHEET NUMBER

A500

3/19/2025 2:31:15 PM

RES-01: TARKETT
JOHNSONITE 24x24 COLOR
SPLASH HAMMERED
SPECKLED LAKE SHORE

RES-02: TARKETT
JOHNSONITE 24x24 COLOR
SPLASH HAMMERED
SPECKLED PERRYS BLUE



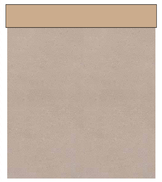
RES-03: TARKETT
JOHNSONITE 24x24 COLOR
SPLASH HAMMERED
SPECKLED VINEYARD

WOF-01: INTERFACE FLOR
INDUSTRIOUS - BEIGE

WOF-02: INTERFACE FLOR INDUSTRIOUS - BEIGE, MAHOGANY, AND LIME

A3

POR-01: CERAMIC
TILEWORKS OH!TAKE MOON
12X24 THIRD LAP INSTALL



POR-02: CERAMIC
TILEWORKS PLATFORM BLUE
12X24 THIRD LAP INSTALL

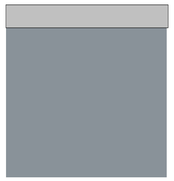
CPT-01: MILLIKEN
REVELATION - PATHWAY
TRIMLINE, FOREST

CPT-02: MILLIKEN
REVELATION - PATHWAY
TRIMLINE, SAIL

STAINED CONCRETE

SEALED CONCRETE

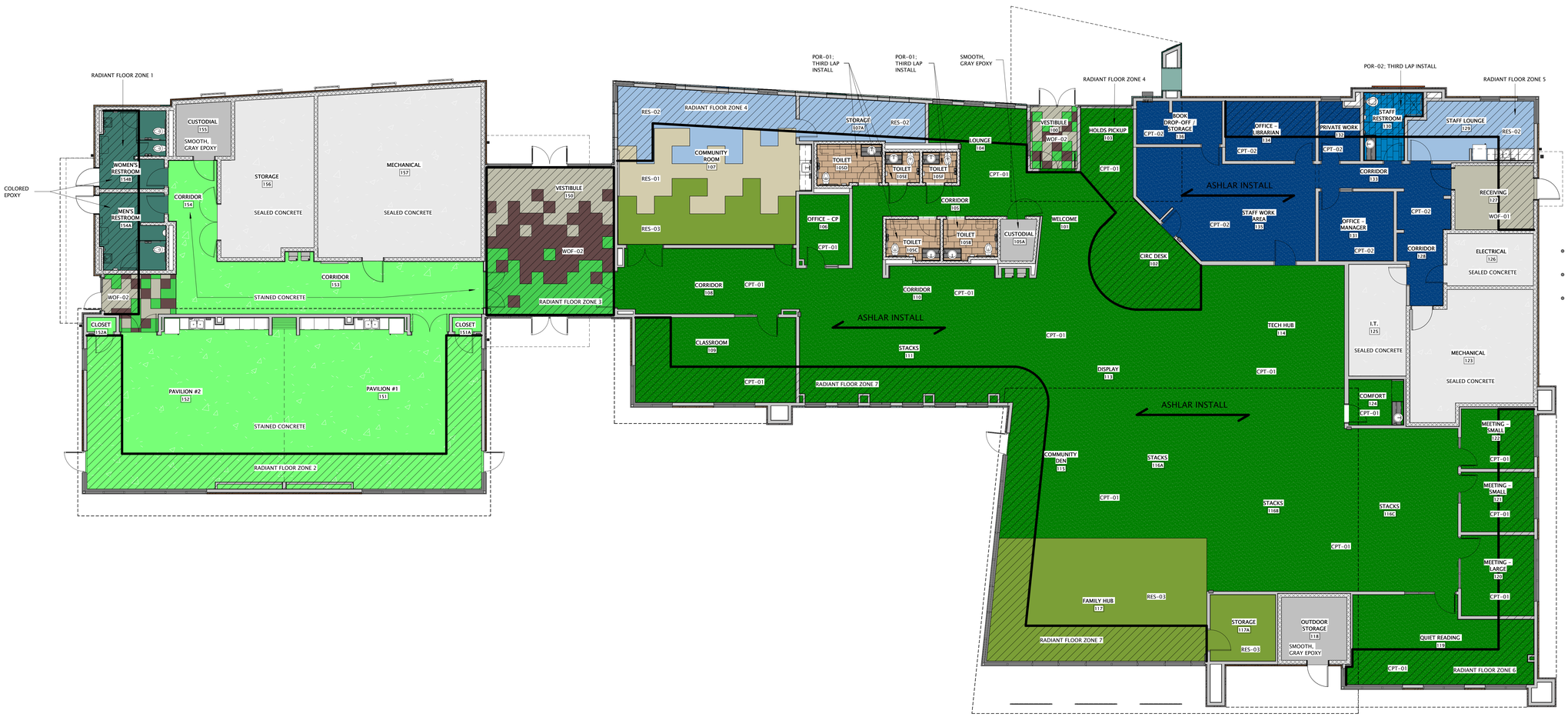
SMOOTH GRAY EPOXY: DUR-A-FLEX SHOP FLOOR EPOXY, SLATE GRAY



COLORED EPOXY: DUR-A-FLEX, ARMOR TOP GLOSS WITH GRIT, OCEAN

GENERAL NOTES:

- FINAL FLOORING PATTERN/LAYOUT TO BE COMPLETED BY FLOORING CONTRACTOR.
- FLOORING CONTRACTOR TO PROVIDE INSTALLATION DRAWINGS AT AREAS WHERE THERE ARE MULTIPLE COLORS FOR REVIEW AND APPROVAL PRIOR TO ORDER PLACEMENT.
- IN-FLOOR RADIANT HEAT ZONES ARE FOR REFERENCE ONLY. REFER TO MECHANICAL PLANS FOR EXACT LOCATION AND INFORMATION.
- FOLLOW MANUFACTURERS REQUIREMENTS FOR INSTALL OVER IN-FLOOR RADIANT HEAT.
- TRANSITIONS:
  1. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY. COLOR: CLEAR ANODIZED.
  2. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE. COLOR: CLEAR ANODIZED.
  3. JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM - COLOR IRONSTONE FROM CARPET TO CONCRETE.
  4. JOHNSONITE METAL EDGE ME001 TRANSITION - COLOR IRONSTONE FROM RUBBER TO CARPET.
- FLOORING INSTALLATIONS
  1. CARPET: ASHLAR INSTALL
  2. WALK OFF CARPET IN VESTIBULES: INSTALL PER PATTERN AS SHOWN; QUARTER-TURNED TILES
  3. PORCELAIN TILE: THIRD LAP INSTALL
  4. RESILIENT: INSTALL PER PATTERN AS SHOWN



1 FIRST FLOOR RENDERED FLOOR PLAN
1/8" = 1'-0"

NORTH

3/20/2025 9:07:08 AM

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MADISON | MILWAUKEE | DENVER
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InteriorLOGIC workplace strategy
1201 S. STOUGHTON RD.
MADISON, WI 53716

JLA PROJECT NUMBER: 20-0928

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BID DOCUMENTS

PROGRESS DOCUMENTS

These documents reflect progress and intent and may be subject to change, including additional detail. These are not final construction documents and should not be used for final bidding or construction-related purposes.

DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A3	Material spec. changed. Some items have long lead times. Confirm in order to meet construction schedule.	03/20/2025

SHEET TITLE

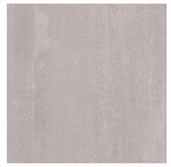
RENDERED FLOOR FINISH PLAN

SHEET NUMBER

A1102

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

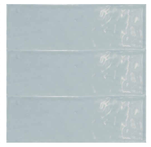


CWT-03: VIRGINIA TILE WOW USA - DUO WHITE 6X6, RANDOM INSTALLATION

CWT-04: VIRGINIA TILE 6TH AVENUE JADE 8X9 CURVE CHEVRON MOSAIC, GLOSSY

A3

CWT-05: CERAMIC TILEWORKS COUNTRY ASH BLUE, GLOSSY, GLAZED CERAMIC WALL TILE SUBWAY INSTALLATION

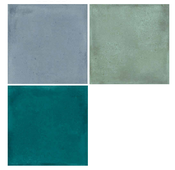


CWT-06: CERAMIC TILEWORKS EQUIPE VILLAGE SILVER MIST, 2.5X5, GLOSSY, SUBWAY INSTALLATION

CWT-07: CERAMIC TILEWORKS SYMMETRY, SUNRISE LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-08: CERAMIC TILEWORKS:
A. UP AVANA 4X4 GLOSSY
B. SMALL PRUNE 4X4 GLOSSY
C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09: CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
C. SMALL PRUSSIAN 4X4 GLOSSY



PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

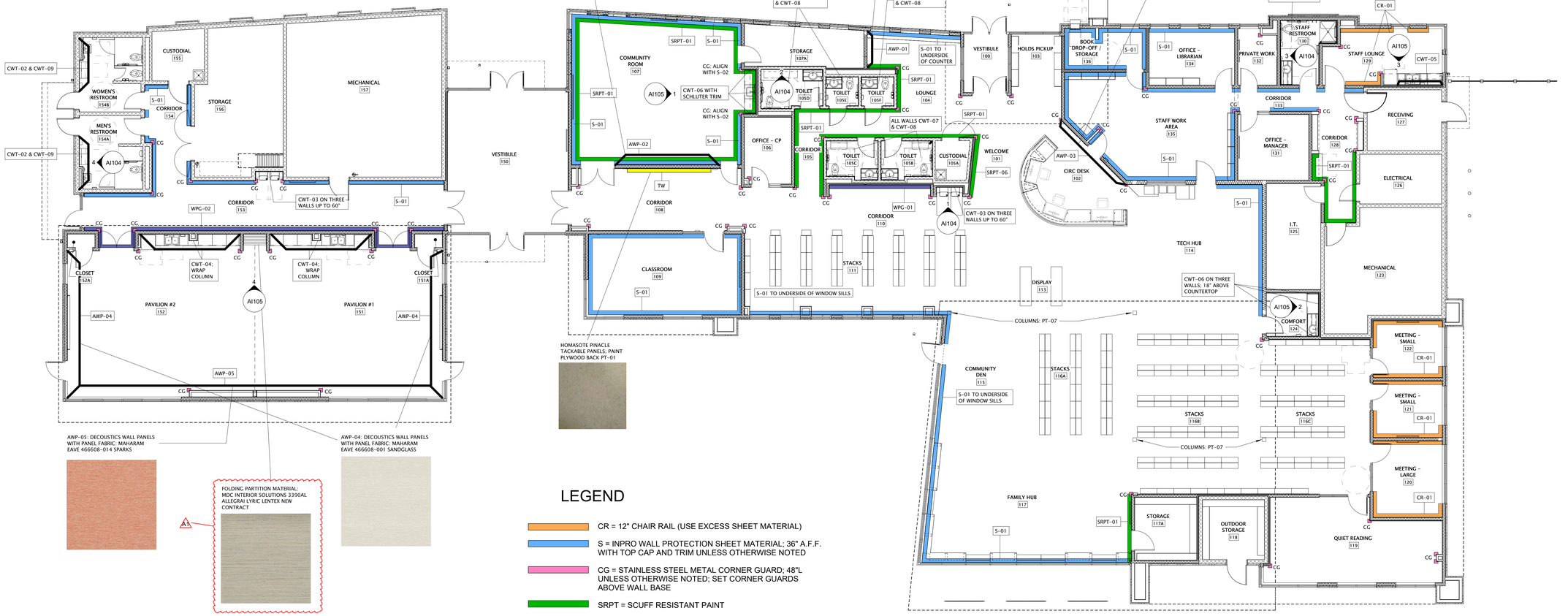
PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:
- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAO WX0075-A8 AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312



LEGEND

- CR = 12" CHAIR RAIL (USE EXCESS SHEET MATERIAL)
- S = INPRO WALL PROTECTION SHEET MATERIAL; 36" A.F.F. WITH TOP CAP AND TRIM UNLESS OTHERWISE NOTED
- CG = STAINLESS STEEL METAL CORNER GUARD; 48"L UNLESS OTHERWISE NOTED; SET CORNER GUARDS ABOVE WALL BASE
- SRPT = SCUFF RESISTANT PAINT
- WPG = INPRO ASPEX PRINTED WALL PROTECTION WITH CUSTOM GRAPHIC
- TW = TACKABLE WALL
- PT = PAINT
- AWP = ACOUSTIC WALL PANEL

1 FIRST FLOOR WALL FINISH PLAN
1/8" = 1'-0"

NORTH

3/20/2025 9:07:12 AM

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InteriorLOGIC workplace strategy
1201 S. STOUGHTON RD.
MADISON, WI 53716

JLA PROJECT NUMBER: 20-0928

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IMAGINATION CENTER AT REINDAHL PARK

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PROGRESS DOCUMENTS

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DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A1	Folding wall partition material spec. changed.	03/07/2025
A3	Material spec. changed. Some items have long lead times. Confirm in order to meet construction schedule.	03/20/2025

SHEET TITLE

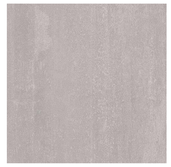
WALL FINISH PLAN

SHEET NUMBER

AI103

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION



CWT-03: VIRGINIA TILE WOW USA - DUO WHITE 6X6, RANDOM INSTALLATION

CWT-04: VIRGINIA TILE 6TH AVENUE JADE 8X9 CURVE CHEVRON MOSAIC, GLOSSY

A3

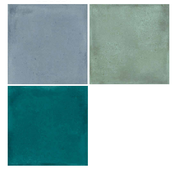
CWT-05: CERAMIC TILEWORKS COUNTRY ASH BLUE, GLOSSY, GLAZED CERAMIC WALL TILE SUBWAY INSTALLATION

CWT-06: CERAMIC TILEWORKS EQUIPE VILLAGE SILVER MIST, 2.5X5, GLOSSY, SUBWAY INSTALLATION

CWT-07: CERAMIC TILEWORKS SYMMETRY, SUNRISE LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-08: CERAMIC TILEWORKS:
A. UP AVANA 4X4 GLOSSY
B. SMALL PRUNE 4X4 GLOSSY
C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09: CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
C. SMALL PRUSSIAN 4X4 GLOSSY



PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
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- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
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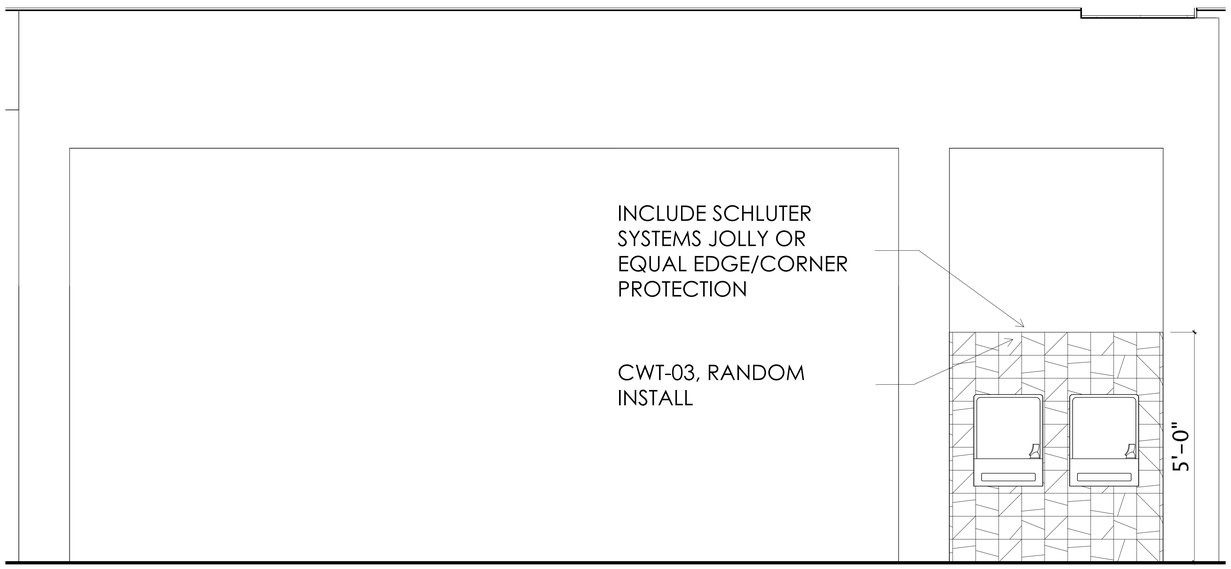
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- CIRC DESK AND BENCHES: WILSONART HIGH IMPACT LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
- SOLID SURFACE TOPS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- WINDOW SILLS: WILSONART SOLID SURFACE MORNING ICE 9204CE
- STAFF RESTROOM SINK APRON: FORMICA LAMINATE WEATHERED ASH 8842-WR WOODBRUSH FINISH
- STAFF RESTROOM TOP: WILSONART SOLID SURFACE ARCTIC DUNE 9253CM
- MAIN RESTROOMS SINK APRON: NEVAMAR LAMINATE GALAO WX0075-A8 AGED BARK
- MAIN RESTROOM TOPS: AVONITE SURFACES ALASKAN STONE 4312



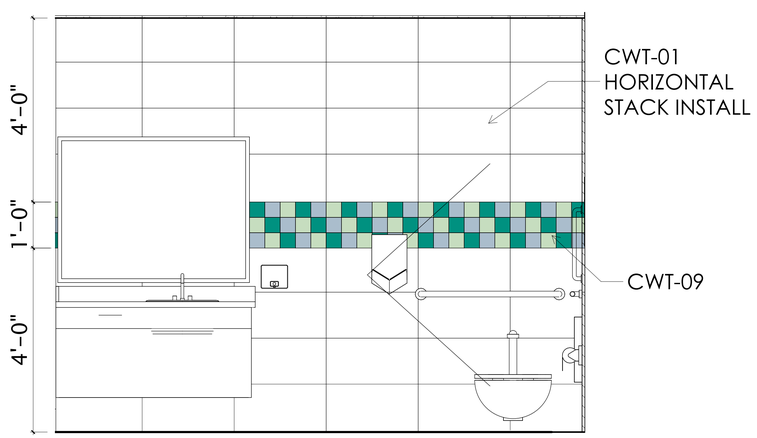
1 WATER FOUNTAIN - TILE INSTALLATION
3/4" = 1'-0"

CERAMIC TILEWORKS: SMALL FLAMINGO 4X4 GLOSSY

CERAMIC TILEWORKS: SMALL PRUNE 4X4 GLOSSY

CERAMIC TILEWORKS: UP AVANA 4X4 GLOSSY

2 TOILET ROOMS - WALL FINISHES TYPICAL
3/4" = 1'-0"

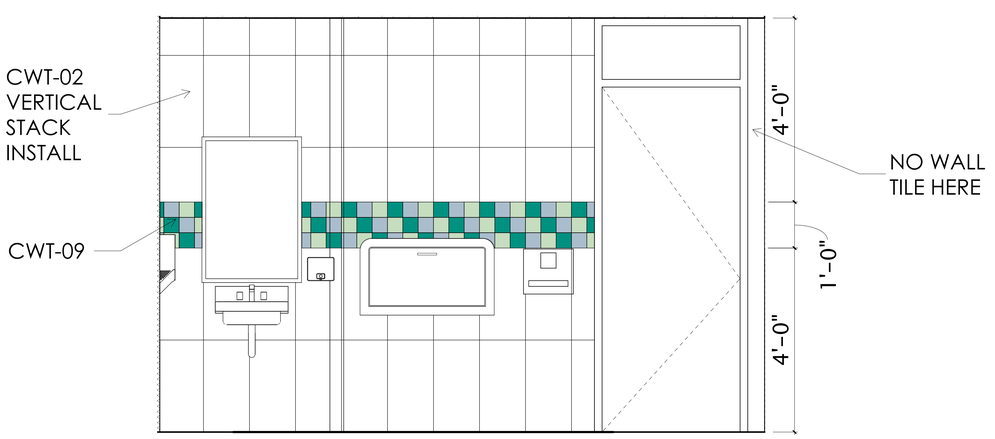


3 STAFF RESTROOM - WALL FINISHES TYPICAL
3/4" = 1'-0"

CERAMIC TILEWORKS: SMALL PRUSSIAN 4X4 GLOSSY

CERAMIC TILEWORKS: SMALL SAGE 4X4 GLOSSY

CERAMIC TILEWORKS: SMALL LIGHT BLUE 4X4 GLOSSY



4 PAVILION RESTROOM - NORTH WALL TILE INSTALL
3/4" = 1'-0"

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InteriorLOGIC workplace strategy
1201 S. STOUGHTON RD.
MADISON, WI 53716

JLA PROJECT NUMBER: 20-0928

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BID DOCUMENTS

PROGRESS DOCUMENTS

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DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A3	Material spec. changed. Some items have long lead times. Confirm in order to meet construction schedule.	03/20/2025

SHEET TITLE

WALL FINISH ELEVATIONS

SHEET NUMBER

AI104

3/20/2025 9:07:21 AM

CWT-01: CERAMIC TILEWORKS SYMMETRY, MORNING MIST LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-02: CROSSVILLE NATIVE METAL NICKEL PLATE, 12X24, VERTICAL STACK INSTALLATION

CWT-03: VIRGINIA TILE WOW USA - DUO WHITE 6X6, RANDOM INSTALLATION

CWT-04: VIRGINIA TILE 6TH AVENUE JADE 8X9 CURVE CHEVRON MOSAIC, GLOSSY

A3

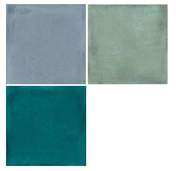
CWT-05: CERAMIC TILEWORKS COUNTRY ASH BLUE, GLOSSY, GLAZED CERAMIC WALL TILE SUBWAY INSTALLATION

CWT-06: CERAMIC TILEWORKS EQUIPE VILLAGE SILVER MIST, 2.5X5, GLOSSY, SUBWAY INSTALLATION

CWT-07: CERAMIC TILEWORKS SYMMETRY, SUNRISE LINEN, 12X24, HORIZONTAL STACK INSTALLATION

CWT-08: CERAMIC TILEWORKS:
A. UP AVANA 4X4 GLOSSY
B. SMALL PRUNE 4X4 GLOSSY
C. SMALL FLAMINGO 4X4 GLOSSY

CWT-09: CERAMIC TILEWORKS:
A. SMALL LIGHT BLUE 4X4 GLOSSY
B. SMALL SAGE 4X4 GLOSSY
C. SMALL PRUSSIAN 4X4 GLOSSY



PT-01 & SRPT-01: SW 9166 DRIFT OF MIST

PT-02: OMIT

PT-03: SW 7018 DOVETAIL (HOLLOW METAL FRAMES)

PT-04: SW 2812 ROOKWOOD JADE

PT-05: SW 2854 CARIBBEAN CORAL

PT-06 & SRPT-06: SW 7601 DOCKSIDE BLUE

PT-07: SW 6247 KRYPTON

WALL PROTECTION / FINISH NOTES:
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGES TBD.
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129

TILE ACCESSORIES NOTES:
- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:
- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
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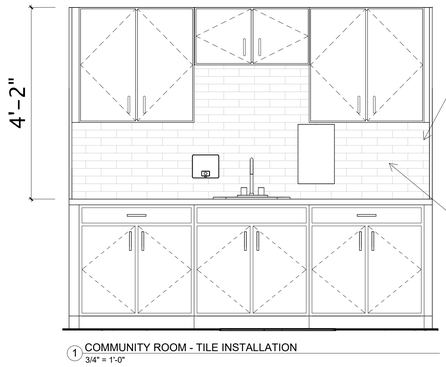
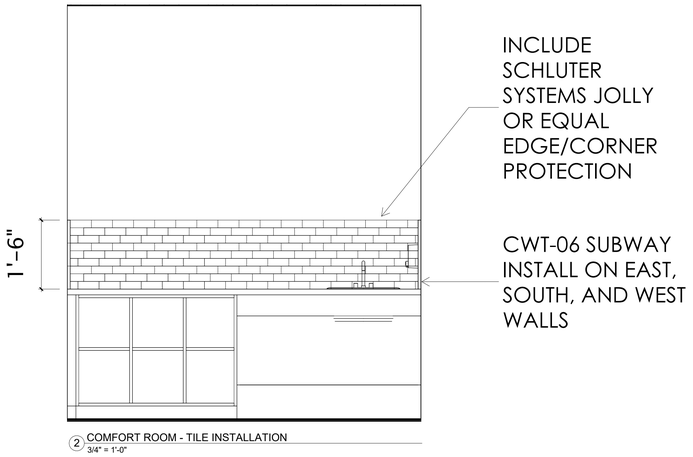
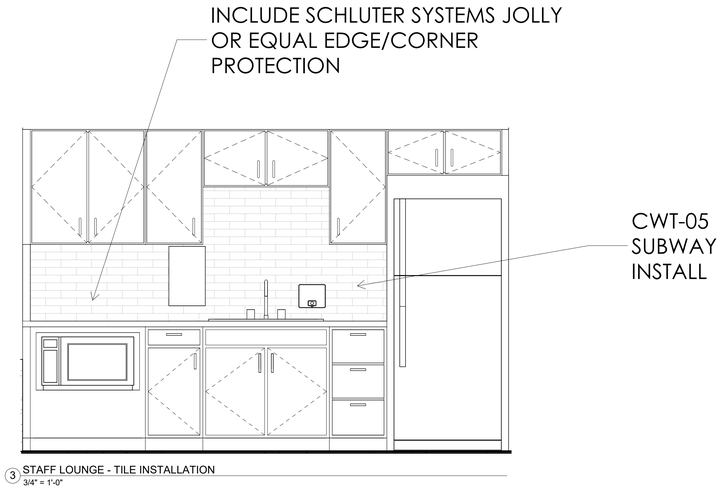


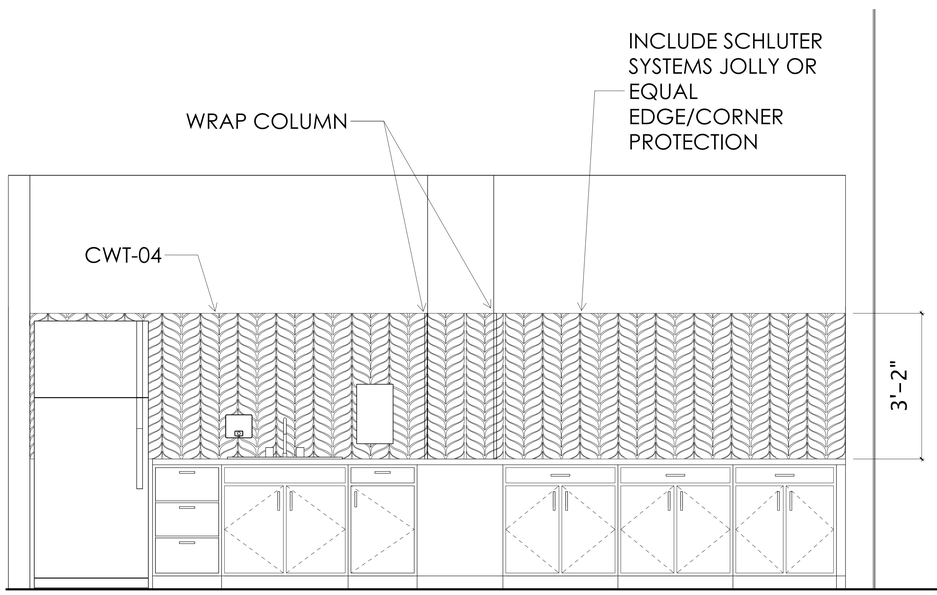
1 COMMUNITY ROOM - TILE INSTALLATION
3/4" = 1'-0"

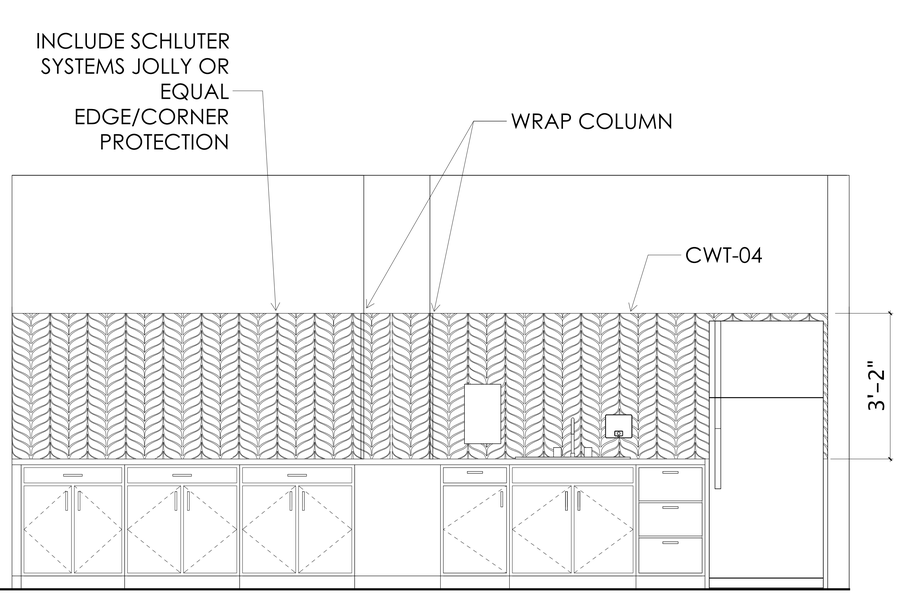


2 COMFORT ROOM - TILE INSTALLATION
3/4" = 1'-0"



3 STAFF LOUNGE - TILE INSTALLATION
3/4" = 1'-0"





4 PAVILIONS - TILE INSTALLATION
3/4" = 1'-0"

3/20/2025 9:07:24 AM

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SHEET TITLE

WALL FINISH ELEVATIONS

SHEET NUMBER

AI105

FINISHES & MATERIAL SCHEDULE

DIVISION	TITLE	CODE	SPECIFICATION	COLOR	INSTALLATION	REP CONTACT INFO.
09 FINISHES						
09 30 00	**TILING**					
	FLOOR A3	POR-01	CERAMIC TILEWORKS OH!TAKE GROUT: LATICRETE 56 DESERT KHAKI 1/8" GROUT JOINT	MOON	1/3 LAP	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		POR-02	CERAMIC TILEWORKS PLATFORM GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	BLUE	1/3 LAP	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
	WALL	CWT-01	CERAMIC TILEWORKS SYMMETRY 12X24 RECTIFIED TILE GROUT: LATICRETE 78 STERLING SILVER 3/16" GROUT JOINT	MORNING MIST LINEN	HORIZONTAL STACK	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		CWT-02	CROSSVILLE NATIVE METAL 12x24 RECTIFIED TILE. UPS FINISH. GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	NICKEL PLATE	VERTICAL STACK	Caitlin Frucci; (763) 218-7230 Caitlin.Frucci@virginiatile.com
		CWT-03	VIRGINIA TILE WOW USA DUO 6x6 RECTIFIED TILE. UPS FINISH. GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	WHITE	STACKED - RANDOM PATTERN	Caitlin Frucci; (763) 218-7230 Caitlin.Frucci@virginiatile.com
		CWT-04	VIRGINIA TILE 6TH AVENUE 8x9 CURVE CHEVRON MOSAIC TILE. GLOSSY FINISH. GROUT: LATICRETE 78 STERLING SILVER 1/8" GROUT JOINT	JADE	STACKED	Caitlin Frucci; (763) 218-7230 Caitlin.Frucci@virginiatile.com
	A3	CWT-05	CERAMIC TILEWORKS COUNTRY. GLAZED CERAMIC WALL TILE. GLOSSY FINISH. GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT LONG LEAD TIME ITEM. CONFIRM WITH CONSTRUCTION SCHEDULE.	ASH BLUE	SUBWAY	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		CWT-06	CERAMIC TILEWORKS VILLAGE 2.5x5 TILE. GLOSSY FINISH GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SILVER MIST	SUBWAY	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		CWT-07	CERAMIC TILEWORKS SYMMETRY 12X24 RECTIFIED TILE GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SUNRISE LINEN	HORIZONTAL STACK	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		CWT-08	CERAMIC TILEWORKS UP 4X4 TILE. GLOSSY CERAMIC TILEWORKS SMALL 4X4 TILE. GLOSSY GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	UP - AVANA SMALL - PRUNE SMALL - FLAMINGO	PATTERN AS INDICATED	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
		CWT-09	CERAMIC TILEWORKS SMALL 4X4 TILE. GLOSSY GROUT: LATICRETE 78 STERLING SILVER GROUT: 3/16" GROUT JOINT	SMALL - LIGHT BLUE, SAGE, PRUSSIAN	PATTERN AS INDICATED	Liz Nelson; Cell | (414) 412-0828 liz@ceramictileworksmn.com
	TILE ACCESSORIES					
		Floor	SCHLUTER SYSTEMS RENO U RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY	AE ANODIZED ALUMINUM		
		Wall	SCHLUTER SYSTEMS – JOLLY OR EQUAL - TOP/END CAP SCHLUTER SYSTEMS – DILEX-AHKA COVE OR EQUAL - WALL TILE TO EPOXY FLOOR SCHLUTER SYSTEMS – DILEX-EHK OR EQUAL - CERAMIC WALL TO FLOOR TILE	AE ANODIZED ALUMINUM		
09 60 00	**FLOORING**					
09 61 19	CONCRETE FLOOR STAINING	STAINED CONCRETE	SIKA USA LITHOCHROME CHEMSTAIN CLASSIC	CS-13 COPPER PATINA		
09 65 00	RESILIENT FLOOR	RES-01	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VE2 LAKESHORE	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
		RES-02	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VK4 PERRYS BLUE	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
		RES-03	TARKETT JOHNSONITE RUBBER TILE 24x24, 3.17MM THICK, HAMMERED SPECKLED	VJ5 VINEYARD	PATTERN AS INDICATED	Melissa Smith | (414) 299-0156 Melissa.Smith@tarkett.com
09 65 13	RESILIENT BASE					
		RB-01	Tarkett 4", 1/8 gauge, coiled, Toeless in carpeted areas, With Toe at VCT or SL areas	32 PEBBLE		
09 65 13	ACCESSORIES					
			SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE, CARPET TO PORCELAIN TILE, AND CARPET TO EPOXY	CLEAR ANODIZED		
			JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM CARPET TO CONCRETE	00178 IRONSTONE		
			JOHNSONITE METAL EDGE ME001 TRANSITION FROM RUBBER TO CARPET	00178 IRONSTONE		
09 67 00	FLUID APPLIED FLOORING					
		COLORED EPOXY	DUR-A-FLEX DUR-A-CHIP MICRO BROADCAST HIGH PERFORMANCE EPOXY	OCEAN		
		SMOOTH EPOXY	DUR-A-FLEX SHOP FLOOR PIGMENTED EPOXY FLOOR 1/8" THICKNESS	MEDIUM GREY		
09 68 13	CARPET TILE	CPT-01	MILLIKEN REVELATION PATHWAY TRIMLINE 50CM x 1M CARPET TILE	FOREST	ASHLAR PLANK	Roxanne Carlson; 414.418.9614 roxanne.carlson@milliken.com
		CPT-02	MILLIKEN REVELATION PATHWAY TRIMLINE 50CM x 1M CARPET TILE	SAIL	ASHLAR PLANK	Roxanne Carlson; 414.418.9614 roxanne.carlson@milliken.com
	WALK-OFF	WOF-01	INTERFACE FLOR INDUSTRIOUS 50CM x 50CM TILE	BEIGE	QUARTER TURN	Britt Resheske; 608.886.0338 britt.resheske@interface.com
		WOF-02	INTERFACE FLOR INDUSTRIOUS 50CM x 50CM TILE	BEIGE, MAHOGANY, LIME	QUARTER TURN, PATTERN AS INDICATED	Britt Resheske; 608.886.0338 britt.resheske@interface.com
09 80 00	**WALL FINISHES**					
09 84 11	ACOUSTIC TREATMENT	AWP-01	FILZFELT ARO PLANK 2.1 WALL MOUNTED PANELS REPEAT WIDTH 5"	472 MINZE	STRAPPING WITH INTERLOCKING MOUNTS; FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-02	FILZFELT GAP STANDARD PATTERN	698 DUNST	CONSTRUCTION ADHESIVE; LOWER PANELS TO BE REMOVABLE FOR FUTURE REPLACEMENT; FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-03	FILZFELT ION WALL PANELS STANDARD PATTERN, ONE COLOR	481 SANDSTEIN	Z-CLIP; FLOOR TO CEILING	Amy Mayer: 312.454.6920 amayer@spinneybeck.com
		AWP-04	DECOUSTICS WALL PANELS		METAL CLIPS	
		AWP-04 PANEL FABRIC	MAHARAM EAVE 466608-001	001 SANDGLASS		Cara McDonough: 414.458.8144 cmcdonough@maharam.com
		AWP-05	DECOUSTICS WALL PANELS		METAL CLIPS	

DIVISION	TITLE	CODE	SPECIFICATION	COLOR	INSTALLATION	REP CONTACT INFO.
09 90 00	**PAINTING AND COATING**					
	GENERAL	PT-01	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 9166 DRIFT OF MIST		
	GENERAL SCUFF RESISTANT	SRPT-01	Sherwin Williams Scuff Tuff Interior Waterbased Enamel LATEX, EGGSHELL FINISH	SW 9166 DRIFT OF MIST		
	ACCENT	PT-02	OMIT			
	HM FRAMES & EXPOSED COLUMNS	PT-03	Sherwin Williams – Enamel satin finish Must not exceed 250g/l VOC per Green Seal Standard GC-03 for anti-rust –paints applied to interior ferrous metal	SW 7018 DOVETAIL		
	CEILING TILE, GRID & TRIM	PT-04	Sherwin Williams	SW 2812 ROCKWOOD JADE	CEILING TILE AND GRID FINISHED BY MANUFACTURER.	
	CEILING GRID & TRIM	PT-05	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 2854 CARIBBEAN CORAL	GRID FINISHED BY MANUFACTURER.	
	ACCENT	PT-06	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 7601 DOCKSIDE BLUE		
	ACCENT SCUFF RESISTANT	SRPT-06	Sherwin Williams Scuff Tuff Interior Waterbased Enamel LATEX, EGGSHELL FINISH	SW 7601 DOCKSIDE BLUE		
	ACCENT	PT-07	Sherwin Williams ProMar® 200 Zero VOC LATEX, EGGSHELL FINISH	SW 6247 KRYPTON		

ROOM FINISH NOTES:

- FINAL FLOORING PATTERN/LAYOUT TO BE COMPLETED BY FLOORING CONTRACTOR.
- FLOORING CONTRACTOR TO PROVIDE INSTALLATION DRAWINGS AT AREAS WHERE THERE ARE MULTIPLE COLORS FOR REVIEW AND APPROVAL PRIOR TO ORDER PLACEMENT.
- FOLLOW MANUFACTURERS REQUIREMENTS FOR INSTALL OVER IN-FLOOR RADIANT HEAT.
- ALL WALLS PAINTED PT-01 UNLESS OTHERWISE NOTED.
- NO CORNER GUARDS ON EXPOSED STEEL COLUMNS.
- ALL EXPOSED METAL COLUMNS TO BE PAINTED PT-03, UNLESS OTHERWISE NOTED.
- WALL PROTECTION TO INCLUDE TOP CAP AND CORNER TRIM.
- WALL PROTECTION REQUIRES SMOOTH, DUST-FREE FINISH.
- WALL PROTECTION GRAPHICS: INCLUDE CLEAR WALL PROTECTION WITH BACK PRINTED GRAPHIC. IMAGE TBD.
- CHAIR RAILS: INCLUDE TOP CAP AND TRIM
  1. 42" A.F.F. TO TOP IN MEETING ROOMS 120, 121 & 122
  2. 34" A.F.F. TO TOP IN STAFF LOUNGE 129
- PAINT GYPSUM BULKHEADS PT-01 UNLESS OTHERWISE NOTED; REFER TO SHEET AI113 REFLECTED CEILING PLAN FOR CEILING FINISHES.
- TRANSITIONS:
  1. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM CARPET TO PORCELAIN TILE AND CARPET TO EPOXY. COLOR: CLEAR ANODIZED.
  2. SCHLUTER SYSTEMS RENO U 1/8" RAMPED TRANSITION OR EQUAL FROM EPOXY TO CONCRETE. COLOR: CLEAR ANODIZED.
  3. JOHNSONITE SLIM LINE RUBBER TRANSITIONS FROM - COLOR IRONSTONE FROM CARPET TO CONCRETE.
  4. JOHNSONITE METAL EDGE ME001 TRANSITION - COLOR IRONSTONE FROM RUBBER TO CARPET.
- FLOORING INSTALLATIONS
  1. CARPET: ASHLAR INSTALL
  2. WALK OFF CARPET IN VESTIBULES: INSTALL PER PATTERN AS SHOWN; QUARTER-TURNED TILES
  3. PORCELAIN TILE: THIRD LAP INSTALL
  4. RESILIENT: INSTALL PER PATTERN AS SHOWN
- DOORS:
  1. MASONITE ARCHITECTURAL ASPIRO SERIES WHITE MAPLE (PLAIN SLICE), STAIN COLOR: NUTMEG
  2. ALTERNATE: MASONITE ARCHITECTURAL ASPIRO SERIES WHITE MAPLE (PLAIN SLICE), STAIN COLOR: CANE

TILE ACCESSORIES NOTES:

- INCLUDE SCHLUTER SYSTEMS DILEX-AHKA OR EQUAL COVE AT CERAMIC WALL TILE TO EPOXY FLOOR TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS DILEX-EHK OR EQUAL AT CERAMIC WALL/FLOOR TILE TRANSITIONS
- INCLUDE SCHLUTER SYSTEMS JOLLY OR EQUAL AT EDGE/CORNER PROTECTION

CASEWORK NOTES:

- CASEWORK ELEVATIONS AND DETAILS BY JLA.
- CASEWORK: WILSONART LAMINATE PALISADES OAK 7987-38 FINE VELVET FINISH
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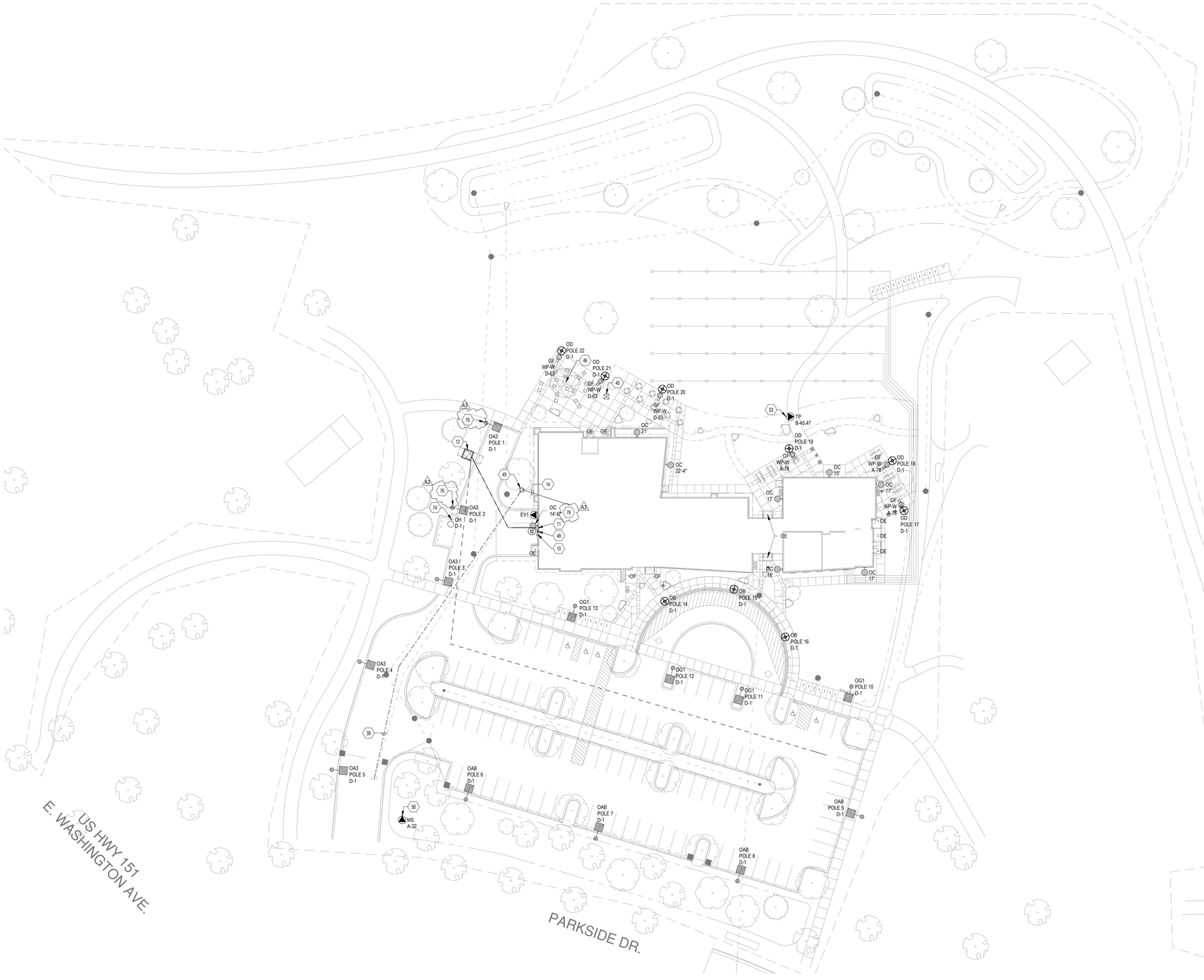
SHEET TITLE

FINISHES & MATERIALS SCHEDULE

SHEET NUMBER

AI411

3/20/2025 9:07:29 AM



A1 ELECTRICAL SITE PLAN

1" = 30'-0"

GENERAL SHEET NOTES

A. ALL EXTERIOR DUPLEX RECEPTACLES SHALL BE CONTROLLED VIA LUTRON ATHENA LIGHTING CONTROLS SYSTEM. SET TIME CLOCK OPERATION FROM 7:00 AM UNTIL 10:00 PM. SEE SHEET E504 FOR ADDITIONAL INFORMATION.
B. ALL EXTERIOR LIGHTING SHALL BE PROVIDED WITH OCCUPANCY SENSORS. SEE THE LIGHT FIXTURE SCHEDULE AND LIGHTING PLAN FOR ADDITIONAL INFORMATION. FIXTURE SHALL BE DIMMED TO 20% WHEN NO ACTIVITY HAS BEEN SENSED FOR 15 MINUTES. SEE SHEET E504 FOR ADDITIONAL LIGHTING CONTROLS INFORMATION.
C. LOCATE SITE POLE TYPES OA3, OAB AND OG1 3' FROM THE BACK EDGE OF THE CURB TO THE FRONT EDGE OF THE POLE BASE FOR MOWING.
D. LOCATE PEDESTRIAN POLES OB AT THE PATIOS 1' FROM THE BACK EDE OF THE PATIO CONCRETE TO THE FRONT EDGE OF THE POLE BASE.
E. LIGHTING CONTROLS SYSTEM SHALL AUTOMATICALLY DIM FIXTURE TYPE "OE" TO 50% LIGHT OUTPUT TO MEET CITY OF MADISON LIGHT LEVEL REQUIREMENTS.
F. LIGHTING CONTROLS SYSTEM SHALL AUTOMATICALLY DIM FIXTURE TYPE "OF" TO 45% LIGHT OUTPUT TO MEET CITY OF MADISON LIGHT LEVEL REQUIREMENTS.
G. LIGHTING CONTROLS SYSTEM SHALL AUTOMATICALLY DIM FIXTURE TYPE "OH" TO 35% LIGHT OUTPUT TO MEET CITY OF MADISON LIGHT LEVEL REQUIREMENTS.

SHEET KEYNOTES

03 FOR TEMPORARY POWER PROVIDE HUBBELL TPDL (DISTRIBUTION BOX), TPC100 (CABLE), CS8369 (50A TWIST-LOCK RECEPTACLE), AND HBL77CM74WO (50A RECEPTACLE COVER PLATE). MOUNT TO ARLINGTON 37" GARD-N-POST SUPPORT GP37BR.
10 PV DISCONNECT SWITCH
11 ELECTRICAL CONTRACTOR TO PROVIDE MG&E APPROVED AMP MANUFACTURING AND SUPPLY CT CABINET, CATALOG NUMBER MGECT12-4TMB.
12 PROPOSED LOCATION OR AREA OF MG&E TRANSFORMER.
14 (3) 2" C. 30" BFG. TO IT ROOM FOR INCOMING FIBER OPTIC CABLE. TWO ARE SPARES. CABLE BY CITY OF MADISON. PROVIDE #10 TRACER WIRE.
38 INCOMING UNDERGROUND 48 STRAND FIBER OPTIC CABLE FROM EAST WASHINGTON BY CITY OF MADISON - CONFIRM ROUTE WITH CITY OF MADISON INFORMATION TECHNOLOGY DEPARTMENT.
45 PROVIDE ONE EMPTY 1" CONDUIT WITH PULL STRING AND JUNCTION BOX UNDERGROUND FROM NEAREST ELECTRICAL PANEL FOR POWER TO FUTURE ARTWORK DISPLAY. FINAL LOCATION TO BE DETERMINED BY ARCHITECT.
46 SOLAR TREE LOCATION. PROVIDE (2) 1" CONDUIT AND PULL STRING BETWEEN SOLAR TREE FOUNDATION AND PANEL PV IN ELECTRICAL ROOM 126. PROVIDE WITH A 3/4" X 10'-0" COPPER GROUND ROD LOCATED WITHIN THE SOLAR TREE FOUNDATION AND CONNECT TO THE GROUND BAR WITHIN PANEL PV. SEE SHEET E502 FOR ADDITIONAL INFORMATION. SEE DETAIL A1/SS01 FOR FOUNDATION DETAIL.
48 ELECTRIC METER, METER TEST SWITCH, AND WIRING TO TEST SWITCH TO BE FURNISHED BY MG&E.
49 PROVIDE 30" X 48" TIER 8 QUAZITE HANDHOLE WITH "FIBER" LOGO COVER AND EXTENSION RINGS PER DETAIL D1 ON SHEET T501.
58 VERIFY LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
74 MOUNT TO TRASH ENCLOSURE FENCE POST.
76 LIGHTING CONTROLS SYSTEM SHALL AUTOMATICALLY DIM FIXTURE TO 65% LIGHT OUTPUT TO MEET CITY OF MADISON LIGHT LEVEL REQUIREMENTS.
A3

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REVISION SCHEDULE

Mark	Description	Date
A3	ADDENDUM #3	03/20/2025

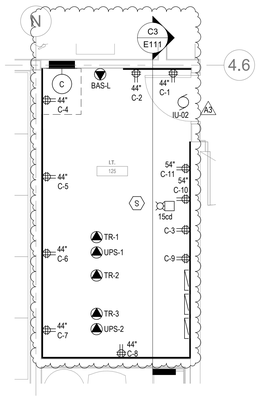
SHEET TITLE

ELECTRICAL SITE PLAN

SHEET NUMBER

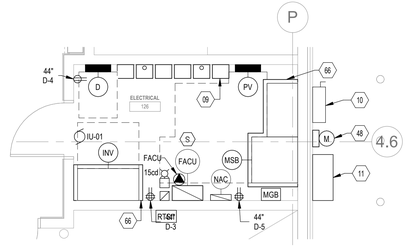
E010

3/17/2025 12:15:43 PM



ENLARGED PLAN - IT ROOM 125 - POWER & FIRE ALARM

C3 — 1/4" = 1'-0"



ENLARGED PLAN - ELECTRICAL ROOM 126 - POWER & FIRE ALARM

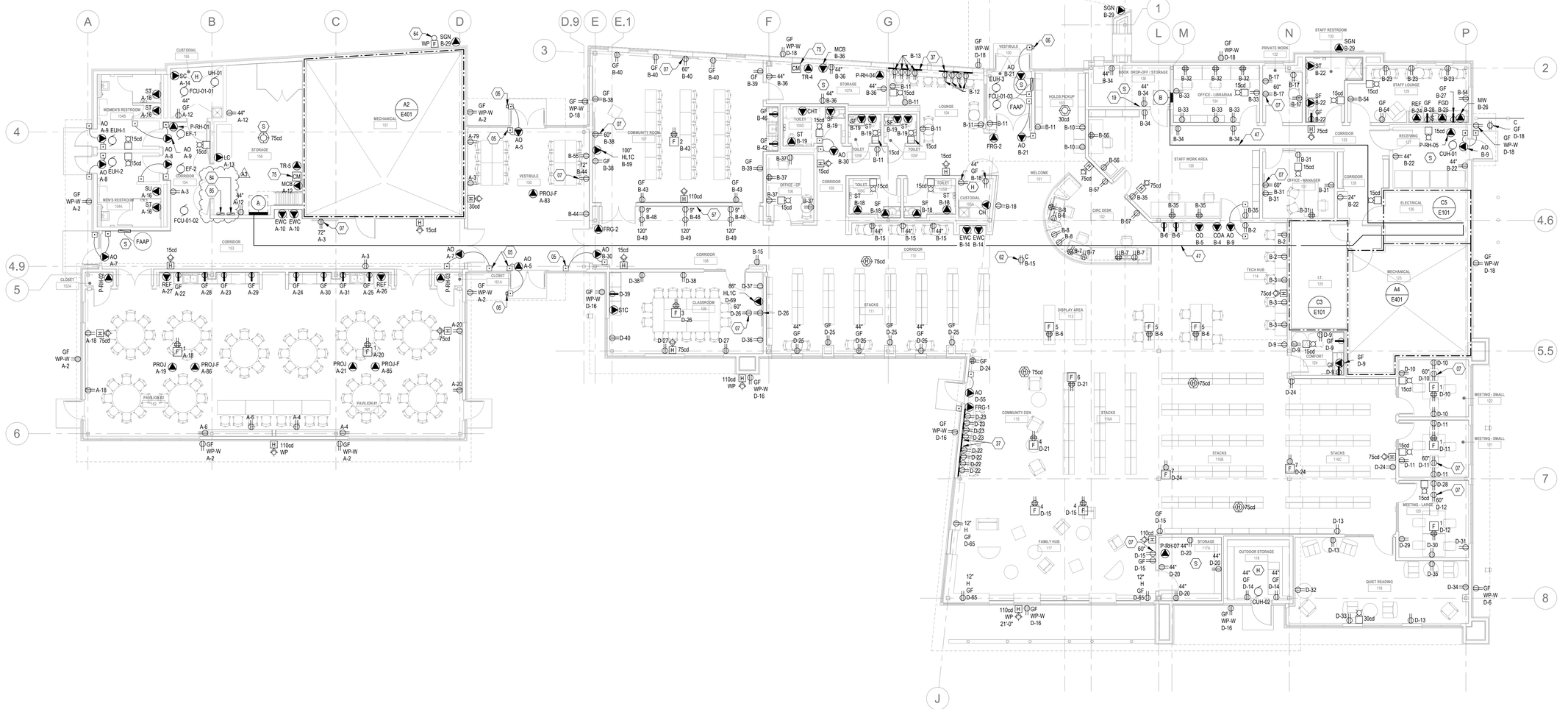
C5 — 1/4" = 1'-0"

GENERAL SHEET NOTES

A. ALL EXTERIOR DUPLEX RECEPTACLES SHALL BE CONTROLLED VIA LUTRON ATHENA LIGHTING CONTROLS SYSTEM. SET TIME CLOCK OPERATION FROM 7:00 AM UNTIL 10:00 PM. SEE SHEET E506 FOR ADDITIONAL INFORMATION.
B. SEE TECHNOLOGY SET FOR ADDITIONAL COORDINATION AS REQUIRED.

SHEET KEYNOTES

05 MULLION MOUNTED
06 PEDESTAL STYLE PUSH PLATE BEA LPR36.
07 PROVIDE HUBBELL TV WALL BOX CATALOG NUMBER NSAV62M. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION. SENSOR CONTROLS CANOPY FIXTURES.
09 PV INVERTER. (3) SYNERGY UNITS PLUS (1) SYNERGY MANAGER PER 50 KW 208V, 3-PHASE INVERTER. ONLY SYNERGY UNITS ARE SHOWN, SYNERGY MANAGER TO BE MOUNTED BELOW UNITS.
10 PV DISCONNECT SWITCH
11 ELECTRICAL CONTRACTOR TO PROVIDE MG&E APPROVED AMP MANUFACTURING AND SUPPLY CT CABINET, CATALOG NUMBER MGECT12-4TMB.
19 AV RACK FOR COMMUNITY ROOM 107 AND CLASSROOM 109.
37 PROVIDE TASK LIGHTING MULTI-OUTLET ASSEMBLY CATALOG NUMBER TR72-4WD-P-WT. MULTI-OUTLET ASSEMBLY HAS AN ANGLED FACE. MOUNT IN A MANNER THAT THE ANGLED FACE IS UP. MOUNT CENTERED BETWEEN THE BOTTOM OF THE WINDOW TRIM AND THE TOP OF THE COUNTERTOP.
47 POTENTIAL CONDUIT ROUTING PATH FOR PANELBOARD FEEDER.
48 ELECTRIC METER. METER TEST SWITCH, AND WIRING TO TEST SWITCH TO BE FURNISHED BY MG&E.
57 DO NOT MOUNT ANY LIGHTING OR FIRE ALARM DEVICES ON THIS WALL. WALL SPACE RESERVED FOR ARTWORK.
62 FOR FUTURE TV.
64 LOCATE NEAR FIRE DEPARTMENT CONNECTION.
66 EQUIPMENT PAD BY GC.
75 PROVIDE CONNECTION TO FIRE ALARM CONTROL MODULE AT AV RACK TO SILENCE PROGRAMMING IF A FIRE ALARM IS IN PROGRESS.
84 NORMAL LIGHTING DIMMING PANEL #3 WITH MAIN PROCESSOR
85 EMERGENCY LIGHTING DIMMING PANEL #2 WITH A/V INTERFACE



A1 FIRST FLOOR PLAN - POWER & FIRE ALARM

1/8" = 1'-0"

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A1	ADDENDUM #1	03/07/2025
A3	ADDENDUM #3	03/20/2025

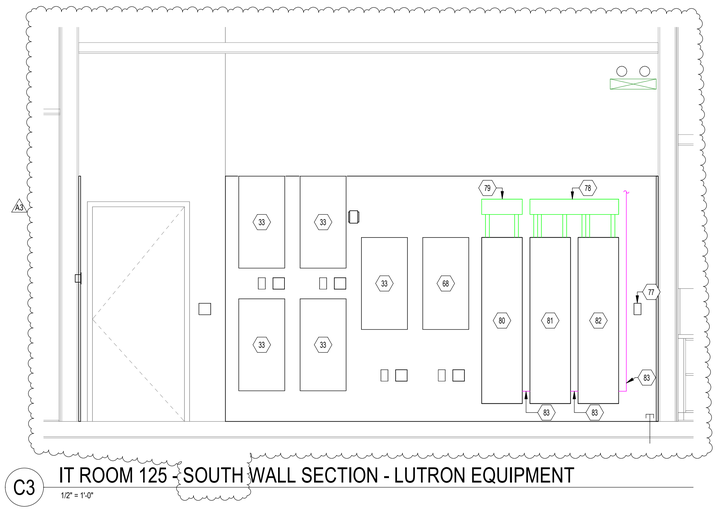
SHEET TITLE

FIRST FLOOR PLAN - POWER & FIRE ALARM

SHEET NUMBER

E101

3/17/2025 12:15:44 PM



C3 IT ROOM 125 - SOUTH WALL SECTION - LUTRON EQUIPMENT

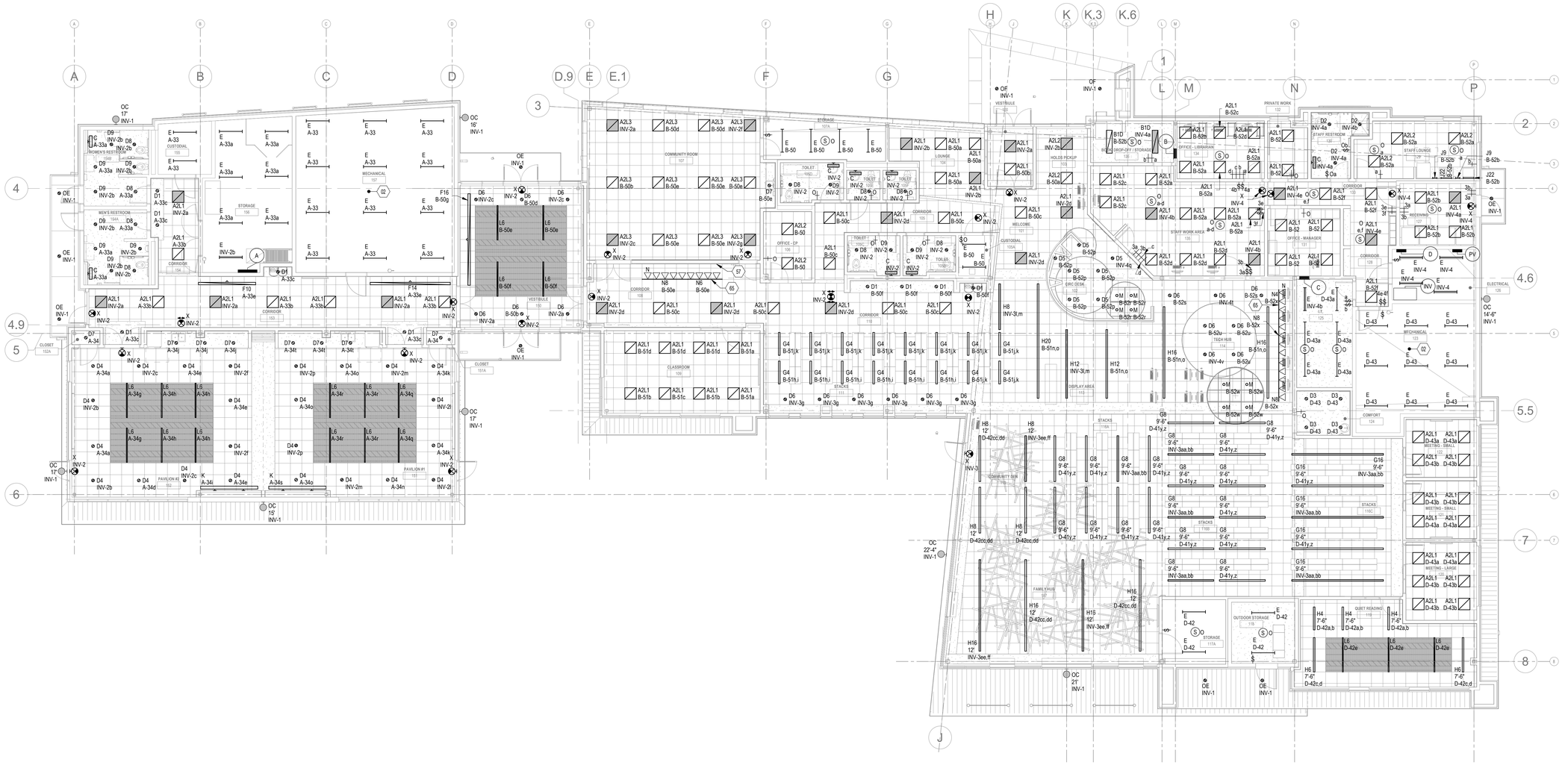
1/2" = 1'-0"

GENERAL SHEET NOTES

A. SEE SHEET E505 FOR LUTRON LIGHTING CONTROLS LAYOUT.

SHEET KEYNOTES

	02	ELECTRICAL CONTRACTOR TO FIELD COORDINATE LIGHTING WITH PLUMBING AND MECHANICAL PIPING, EQUIPMENT, AND DUCTWORK.
A3	33	PROVIDE (5) KEYSCAN CONTROL PANELS FOR LIBRARY AND PAVILION. STACK PANELS AS REQUIRED.
	57	DO NOT MOUNT ANY LIGHTING OR FIRE ALARM DEVICES ON THIS WALL. WALL SPACE RESERVED FOR ARTWORK.
	65	PROVIDE WITH 2 AMP CURRENT LIMITING DEVICE. JUNO LIGHTING CATALOG NUMBER TCLFM11-WH-TCLCB-2A-WHT.
	68	KEYSCAN CONTROL PANELS FOR IT 125.
	77	OVERRIDE KEYPAD WITH RAISE/LOWER.
	78	NORMAL LIGHTING WIREWAY
	79	EMERGENCY LIGHTING WIREWAY
	80	EMERGENCY LIGHTING DIMMING PANEL #1 WITH A/V INTERFACE
	81	NORMAL LIGHTING DIMMING PANEL #1
A3	82	NORMAL LIGHTING DIMMING PANEL #2 WITH MAIN PROCESSOR
	83	LOW VOLTAGE CONDUIT



A1 FIRST FLOOR PLAN - LIGHTING

1/8" = 1'-0"

N

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Mark	Description	Date
A3	ADDENDUM #3	03/20/2025

SHEET TITLE

FIRST FLOOR PLAN - LIGHTING

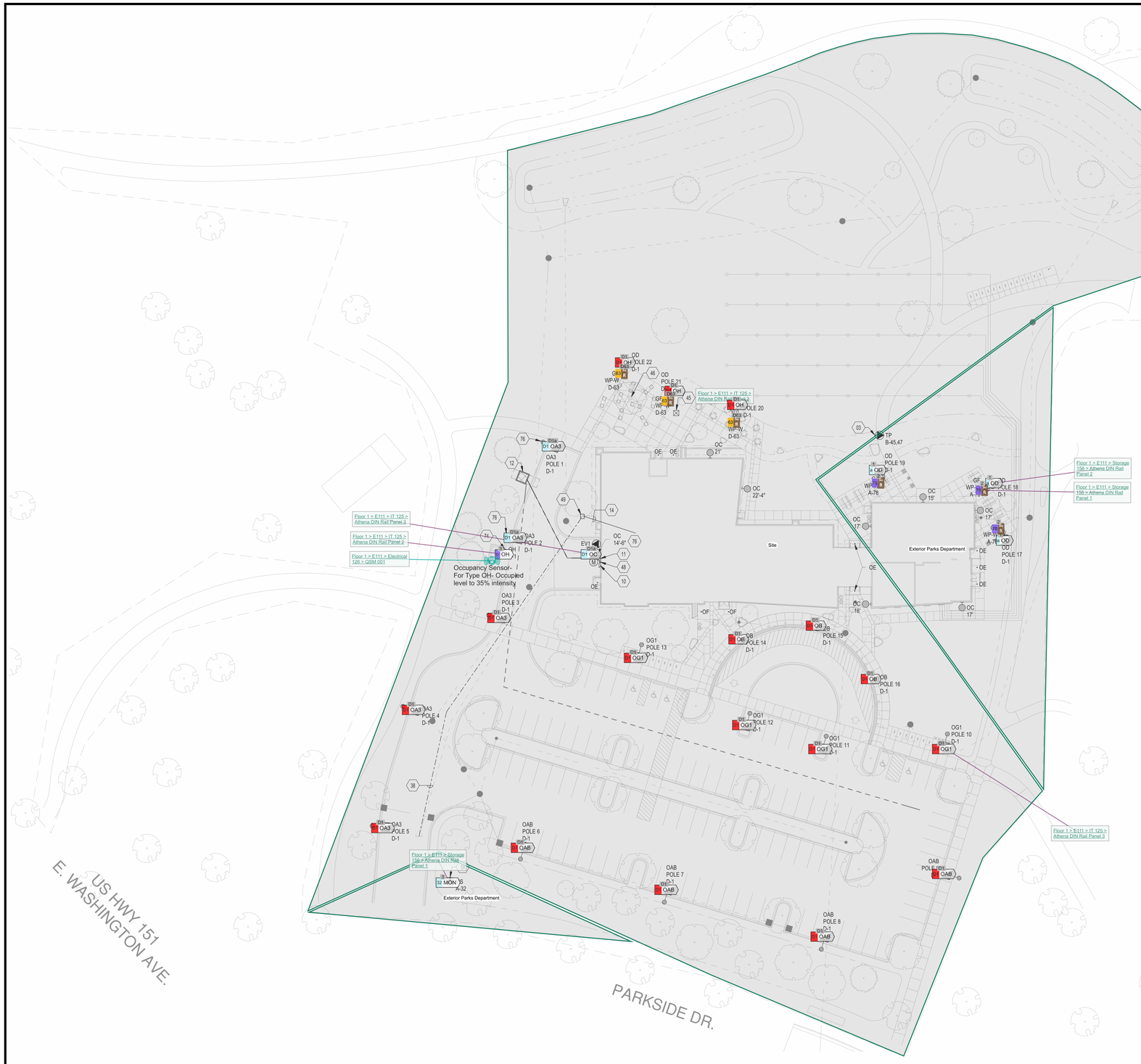
SHEET NUMBER

E111

3/17/2025 12:15:48 PM

GENERAL SHEET NOTES

A. DRAWING PROVIDED TO SHOW LUTRON CONTROLS AND EQUIPMENT.
B. SHADES PROVIDED BY THE GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE CONTROLS AND WIRING.



System Layout

General Notes

- This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
  - If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
- Verify shade design with Lutron.
- See Cover Sheet and One-Lines for additional information.
- Final location with adequate LTE coverage to be determined by electrical contractor

Legend

LUT-WSPLWOSMQ4V-360-LB-WH-CPN6562 (1)

Third Party Receptacle (6)

Project Name:
City of Madison Imagination Center

Location:
Madison, Wisconsin

Project Number:
2219061.1.1

Created by:
Kenny Allen

File Name:
City of Madison Imagination Center at Reindahl Park-Athena only-Change ESNs to DIN Rail Panels-01232025.lutd

Document Revision:

Date: January 27, 2025

Sheet: 1 of 4

Site/E010

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Lutron Designer 25.0.0.112

3/17/2025 12:15:51 PM

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A3	ADDENDUM #3	03/20/2025

SHEET TITLE

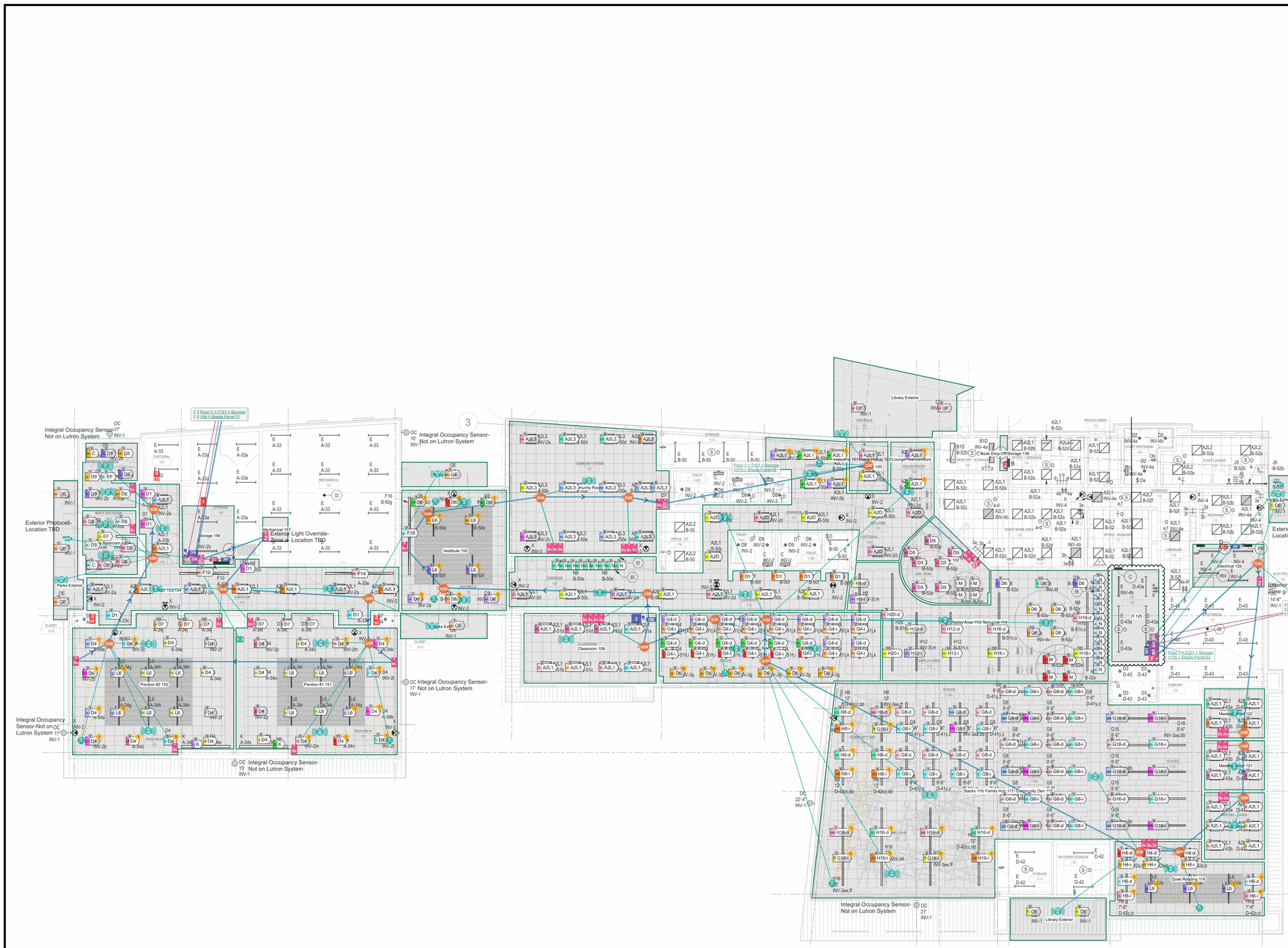
ELECTRICAL DETAILS

SHEET NUMBER

A3 E504

GENERAL SHEET NOTES

A. DRAWING PROVIDED TO SHOW LUTRON CONTROLS AND EQUIPMENT.
B. SHADES PROVIDED BY THE GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE CONTROLS AND WIRING.



A1 FIRST FLOOR PLAN - LIGHTING

N

Lutron Designer 25.0.0.112

System Layout

General Notes

- This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
  - If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
- Verify shade design with Lutron.
- See Cover Sheet and One-Lines for additional information.
- Final location with adequate LTE coverage to be determined by electrical contractor

Legend

ALPD10S-ZZZZZB0000 (1)
ALPD4C-ZZZ0-K0-1-00 (1)
ALPD8C-ZZZZZZZ0-K0-1-00 (1)
ALPD8C-ZZZZZZZ0-NC-2-L0 (1)
ALPD8C-ZZZZZZZZ-NC-2-L0 (1)
QSM2-4W-C (20)
QSM2-4W-J (2)
EPC-A-2-D (1)
LUT-8x8-ENC (1)
MS-OPS6M2-DV-WH (2)
MS-Z101-WH (1)
PX-2BRL-GWH-I01 (CW-1-WH) (26)
QSWS2-2BI-WH (2)
QSWS2-2RLDI-WH (3)
QSWS2-3BRLI-WH (2)
QSWS2-5BRLI-WH (4)
EC-DIR-WH (8)
GRX-CESO-120PKG (2)
GRX-IRPS-WH (1)
LOS-CDT-2000R-WH (4)
LOS-CIR-1500-WH (19)
LUT-WSPLWOSM24V-360-LB-WH-CPN6562 (6)
LUT-WSPSM24V-360-WH-CPN6111 (6)
LUT-ELI-3PH (1)
LUT-ELI-3PH (PP-DV) (2)
PP-DV (2)
QSPS-DH-1-75 (3)
LUT-LTE-1 (1)

Revisions

Project Name:
City of Madison Imagination Center

Location:
Madison, Wisconsin

Project Number:
2213961.1.1

Created by:
Kenny Allen

File Name:
City of Madison Imagination Center at Reindahl Park-Athena only-Change ESNs to DIN Rail Panels-012320251.lutd

Document Revision:

Date: January 27, 2025

Sheet: 3 of 4

Floor 1/E111

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A3	ADDENDUM #3	03/20/2025

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

A3 E505

3/17/2025 12:15:53 PM

GENERAL SHEET NOTES

A. DRAWING PROVIDED TO SHOW LUTRON CONTROLS AND EQUIPMENT.
B. SHADES PROVIDED BY THE GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE CONTROLS AND WIRING.

A1 FIRST FLOOR PLAN - POWER & FIRE ALARM

N

System Layout

General Notes

- This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
  - If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
- Verify shade design with Lutron.
- See Cover Sheet and One-Lines for additional information.
- Final location with adequate LTE coverage to be determined by electrical contractor

Legend

Third Party Receptacle (18)

Project Name:
City of Madison Imagination Center

Location:
Madison, Wisconsin

Project Number:
2213961.1.1

Created by:
Kenny Allen

File Name:
City of Madison Imagination Center at Reindahl Park Athena only-Change ESNs to DIN Rail Panels-01232025.lutd

Document Revision:

Date: January 27, 2025

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Floor 1/E101

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A3	ADDENDUM #3	03/20/2025

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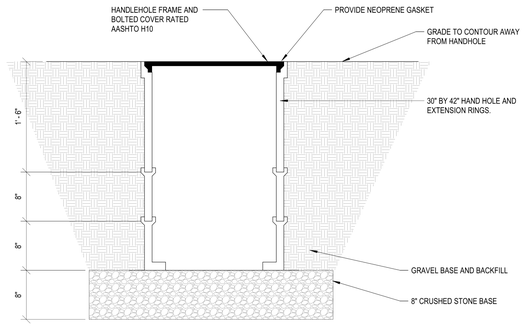
ELECTRICAL DETAILS

SHEET NUMBER

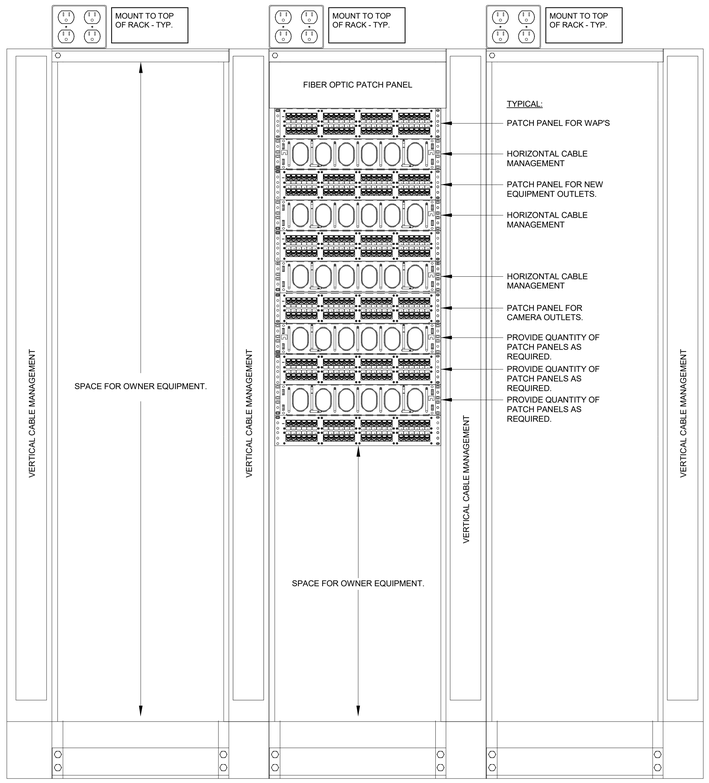
A3 E506



NOTE:
1. ALL WORK BY ELECTRICAL CONTRACTOR.

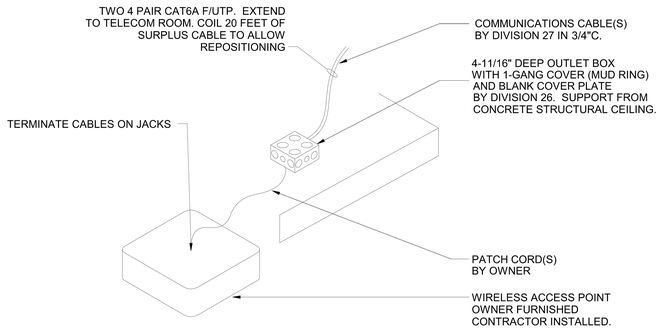
D1 TYPICAL HANDHOLE SECTION

NOT TO SCALE



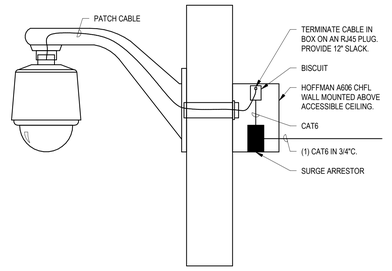
B1 TELECOM RACK DETAIL

NTS



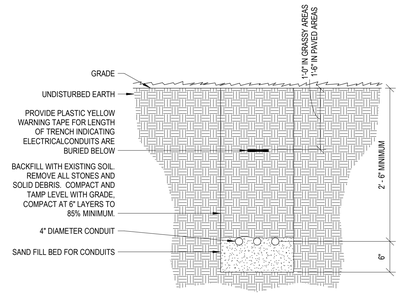
A1 EQUIPMENT OUTLET FOR WIRELESS ACCESS POINT

NTS



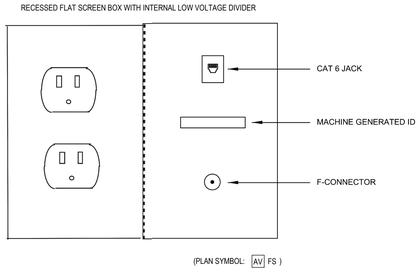
D3 EXTERIOR CAMERA MOUNTING DETAIL

NTS



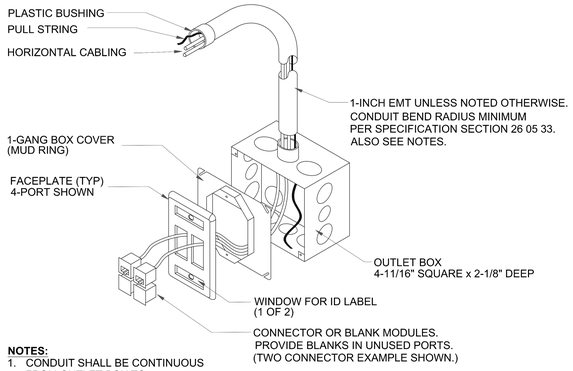
C3 CONDUIT TRENCH DETAIL

NTS



B3 FLAT SCREEN TV OUTLET DETAIL

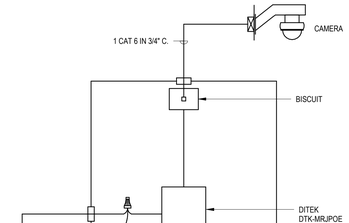
NTS



NOTES:
1. CONDUIT SHALL BE CONTINUOUS FROM OUTLET BOX TO ACCESSIBLE CEILING SPACE OR AS INDICATED ON DRAWINGS.
2. PROVIDE PULL STRING IN ALL CONDUITS.
3. REFER TO SPECIFICATION SECTION 27 10 00 FOR CONNECTOR TYPES.

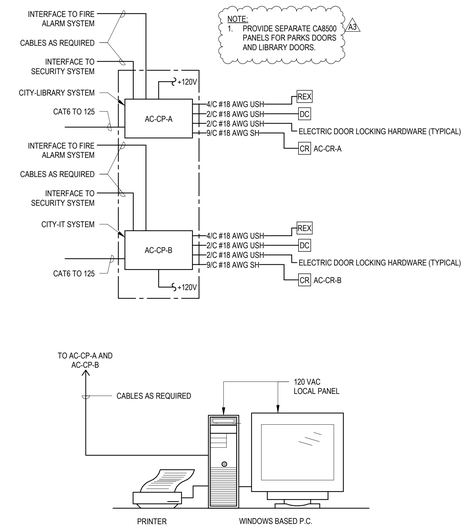
A3 COMMUNICATIONS EQUIPMENT OUTLET ROUGH-IN

NTS



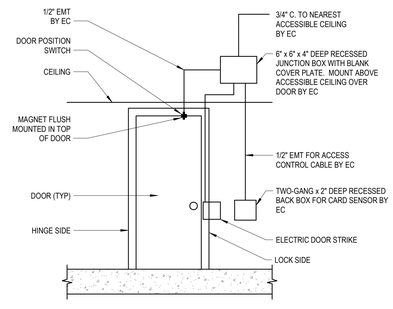
D5 EXTERIOR CAMERA SURVEILLANCE SURGE PROTECTION

NTS



B5 NETWORKED SECURITY BLOCK DIAGRAM

NTS



NOTES:
1. ELECTRICAL CONTRACTOR TO PROVIDE COMPLETE FUNCTIONAL SYSTEM. SEE SPECIFICATION SECTION 28 13 00.
2. HARDWARE CONTRACTOR TO PROVIDE DOOR POSITION SWITCH, MAGNET, AND ELECTRIC DOOR STRIKE.
3. SEE ARCHITECTURAL DOOR SCHEDULE FOR DOORS REQUIRING SECURITY DEVICES.

A5 SECURITY SYSTEM DETAIL

NTS

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A3	ADDENDUM #3	03/20/2025

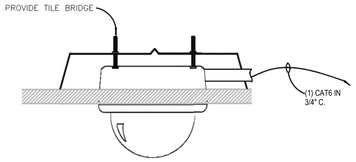
SHEET TITLE

TECHNOLOGY DETAILS

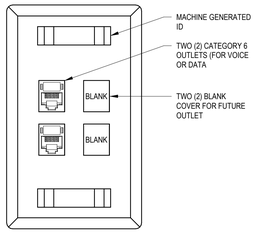
SHEET NUMBER

T501

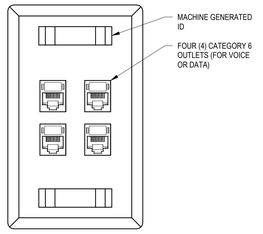
3/19/2025 1:17:20 PM



D3 FIXED INDOOR IN-CEILING DOME
NOT TO SCALE



D4 2 DATA TELECOMMUNICATIONS OUTLET DETAIL
NOT TO SCALE

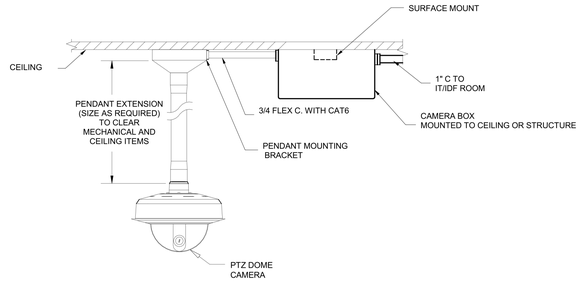


D6 4 DATA TELECOMMUNICATIONS OUTLET DETAIL
NOT TO SCALE

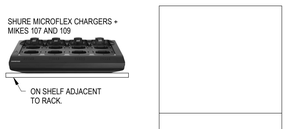
PA RACK 156
24RU

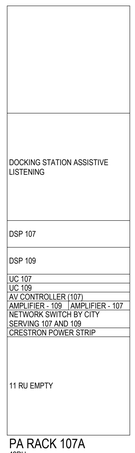
NOTES:
1. PROVIDE LOCKABLE DOOR CONTROLLED BY KEYSCAN CARD READER.

C2 TELECOM RACK 156
NOT TO SCALE



C3 SECURITY CAMERAS 06, 12 & 13 MOUNTING DETAIL
NTS

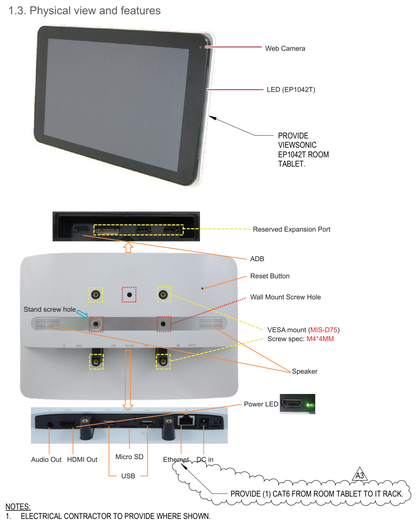




PA RACK 107A
42RU

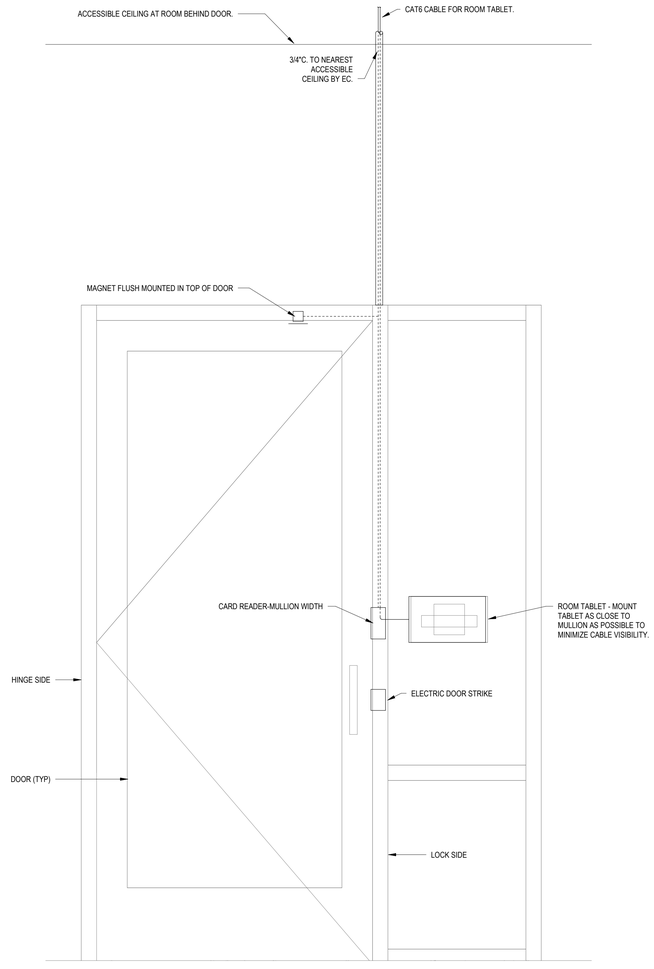
NOTES:
1. PROVIDE LOCKABLE DOOR CONTROLLED BY KEYSCAN CARD READER.

A2 TELECOM RACK 107A
NOT TO SCALE



NOTES:
1. ELECTRICAL CONTRACTOR TO PROVIDE WHERE SHOWN.

A3 VIEWSONIC ROOM TABLET DETAIL
NOT TO SCALE



NOTES:
1. ELECTRICAL CONTRACTOR TO PROVIDE COMPLETE FUNCTIONAL SYSTEM.
2. HARDWARE CONTRACTOR TO PROVIDE MAGNET AND ELECTRIC DOOR STRIKE.
3. SEE ARCHITECTURAL DOOR SCHEDULE FOR DOORS REQUIRING SECURITY DEVICES.

A5 MULLION MOUNT CARD READER & ROOM TABLET DETAIL
1 1/2" = 1'-0"

RT AV M CR

JLA ARCHITECTS
MADISON | MILWAUKEE | DENVER
JLA-AP.COM

GRAEF
1010 East Washington Avenue,
Suite 202
Madison, WI 53703
608 / 242 1550

JLA PROJECT NUMBER: 20-0928

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IMAGINATION CENTER AT REINDAHL PARK

BID DOCUMENTS

DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A1	ADDENDUM #1	03/07/2025
A3	ADDENDUM #3	03/20/2025

SHEET TITLE
TECHNOLOGY DETAILS

SHEET NUMBER
T502

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GENERAL SHEET NOTES

A. ALL EQUIPMENT SHOWN BELOW, UNLESS INDICATED "BY OWNER", SHALL BE PROVIDED BY THE AUDIO-VISUAL SYSTEM INTEGRATOR: A SUBCONTRACTOR TO THE DIVISION 26 CONTRACTOR WITH SPECIAL EXPERTISE IN AUDIOVISUAL WORK PERFORMING WORK UNDER SECTIONS 27 41 00, 27 41 16, 27 51 16, AND 27 51 23.

PAVILION #1 151 & PAVILION #2 152				
PLAN DESIGNATION	QTY	MASTER NO.	MANUFACTURER	DESCRIPTION
AV RPS-2	2	ELECTROL	DA-LITE	120" MOTORIZED PROJECTION SCREEN - SEE SPECIFICATION SECTION 11 52 13. A3.
AV P	2	L775U	EPSON	7000 LUMEN LASER 3LCD PROJECTOR
	2	V12808001	EPSON	UNIVERSAL PROJECTOR MOUNT
AV IN	2	HD-TX-101-C-1G-E-B-T	CRESTRON	HDMI INPUT PLATE
	2	HD-MD4X4-4KZ-E	CRESTRON	HDMI RECEIVER
AV C	2	TSW-570P-B-S	CRESTRON	WALL TOUCH PANEL
CPS XMTR/RCVR	1	GLS-PART-CN	CRESTRON	PARTION SENSOR
	1	PW240-RU	CRESTRON	POWER SUPPLY
	1	PC-200	CRESTRON	POWER STRIP
	LOT	CRESNET-P-TL-SP100	CRESTRON	CRESTRON SIGNAL CABLE
	1	TESIRA SERVER I-O	BIAMP	DIGITAL SIGNAL PROCESSOR
	2	SLX24D/SM58	SHURE	DUAL CHANNEL WIRELESS MIKES
SEE FLOOR PLAN	16	AD-C6T-WH	QSC	CEILING SPEAKERS, 70/100V TRANSFORMERS
AA	1	GXD 8 1200W	QSC	1200 WATT 2-CHANNEL AUDIO AMPLIFIER
AV I-0-1	2	DB-J2	RDL	AUX AUDIO INPUT PLATE
	1	DWR-16-22PD SPECIAL	MIDDLE ATLANTIC	WALL RACK WITH LOCKABLE DOOR CONTROLLED BY KEYSCAN CARD READER
	1	C9300X-48HX-A	CISCO	SWITCH FURNISHED BY CITY
	LOT	CAT6		CABLE
	LOT	14 AWG IN CONDUIT		SPEAKER WIRE
	2	CX-50	BARCO	CLICK-SHARE WIRELESS CONNECTION SYSTEM
AV-CC	1	CP4	CRESTRON	RACK MOUNTED AV CONTROL SYSTEM

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JLA PROJECT NUMBER: 20-0928

CITY OF MADISON WISCONSIN

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BID DOCUMENTS

DATE OF ISSUANCE JANUARY 6, 2025

REVISION SCHEDULE

Mark	Description	Date
A1	ADDENDUM #1	03/07/2025
A3	ADDENDUM #3	03/20/2025

SHEET TITLE

AV FLOW DIAGRAMS

SHEET NUMBER

T704

3/19/2025 1:17:01 PM

ADDENDUM-3
SPECIFICATIONS

TABLE OF CONTENTS

[CoM] Denotes City of Madison section
(A1) = Revised as part of Bid Specification Addendum 1, dated 3-6-25
(A3) - REvised as part of Bid Specification Addendum 3, dated 3-20-25.

Division 33 -- Utilities

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

Referrals to this section for the purpose of product substitution should instead see Section 01 25 13 - Product Substitution Procedures.

A. The purpose of this specification is to provide general guidelines and responsibilities related to the receiving, handling, and storage of all materials and products from arrival on the job site through installation.
   1. Immediate inspection of delivered goods means a timely replacement if damaged.
   2. Proper storage helps prevent damage and loss by weather, vandalism, theft, and job site accidents.
   3. Proper storage helps with job site performance and safety.
   4. Proper handling helps prevent damage and job site accidents.

B. Each Contractor shall be directly responsible for the receiving, handling, and storage of all materials and products associated with the Work of their Division or Trade.

C. Each Contractor responsible for Work associated with Owner provided materials or products shall be responsible for the receiving, handling and storage of the material/product as outlined in Section 3.08 below..

1.02 RELATED SPECIFICATIONS

A. Parts of this specification will reference articles within “The City of Madison FACILITIES MANAGEMENT SPECIFICATIONS for Public Works Construction”.
   1. Use the following link to access the FACILITIES MANAGEMENT SPECIFICATIONS web page: http://www.cityofmadison.com/business/pw/specs.cfm
      a. Click on the “Part” chapter identified in the specification text. For example if the specification says “Refer to City of Madison FACILITIES MANAGEMENT SPECIFICATION 210.2” click the link for Part II, the Part II PDF will open.
      b. Scroll through the index of Part II for specification 210.2 and click the text link which will take you to the referenced text.
      c. City Standard Detail Drawings (SDD) may be located from the index in Part VIII.

B. Section 01 57 21 - Indoor Air Quality.

C. Section 01 74 13 - Progress Cleaning.

D. Section 01 76 00 - Protecting Installed Construction.

E. Other Divisions and Specifications that may address more specifically the requirements for the storage and handling of materials and products associated Work of other Divisions or Trades.

1.03 QUALITY ASSURANCE

A. The GC shall be responsible for ensuring that these minimum storage and handling requirements are met by all contractors on the project site including but not limited to the following:
   1. Receiving deliveries of materials, products, and equipment.
      a. Inspect all deliveries upon arrival for damage, completeness, and compliance with the construction documents.
         1) Deliveries shall remain in original packaging or crates, shipping manifest shall be kept with the delivery and the packaging shall have visible identification of the items within the packaging.
      b. Immediately report any damaged products or equipment to the GC, begin arrangements for immediate replacement.
      c. Materials or equipment that have been damaged, are incomplete, or do not comply with the construction documents shall not be permitted to be installed.

2. All materials and products shall be stored within the designated limits of the project site. Only store the amount of material necessary for upcoming operations so as not to interfere with other construction activities and access to Work by the Owner and Architect. Any offsite storage shall be at the expense of the contractor storing the material or product. All offsite storage requirements shall comply with this specification. All offsite storage of materials is subject to Owner Representative Quality Management review at any time.
3. Large storage containers may be used but shall be weather tight, securable, placed on concrete blocks, timbers, or jack stands and shall be level.
4. When lifting equipment is required the equipment rating shall be greater than the loading requirements of the item being lifted. In addition all of the following shall apply as necessary:
   a. Only designated and/or designed lift points shall be used.
   b. Large items shall have tag lines and handlers at all times during lifting operations.
   c. Lift at multiple points as needed to prevent bending.
5. Materials and products stored inside of the structure shall comply with all of the following:
   a. Storage shall not be allowed to impede the flow of work in progress.
   b. Storage shall not be allowed to hide completed work from review and inspections.
   c. Storage shall not exceed the design loads of the structural components it is being stored upon.
6. All materials and products shall be stored according the manufacturers minimum recommended requirements. All of the following shall be considered before storing any product or material:
   a. Dust and dirt
   b. Moisture and humidity, including rain and snow
   c. Excessive temperatures, direct sun, etc
   d. Product or material weight and size
   e. Potential for breakage
   f. Product incompatibility with other products such as corrosiveness, chemical reactions, flammability, etc.
   g. Product or material value and replacement cost
7. The Contractor shall be responsible for providing fully functional tarps or plastic wrap, to protect materials and products from the weather. All coverings shall be free of large holes and tears, and shall be tied, strapped, or weighted down to resist blowing.
8. The Contractor shall be responsible for any temporary heating, cooling, or other utility requirement that may be associated with the storage of a material or product.
9. The Contractor shall be responsible for securing materials and products of value such as copper, A/V equipment, etc. Such items shall be stored in securable shipping containers, job trailers or other such storage devices. Container shall be kept secured when not in use.

B. The GC shall inspect the job site daily to ensure that all products and materials stay weather tight and are secured against vandalism or theft as required by this specification.

C. The Owners Representative may at any time request improvements regarding storage of any material or product being provided under these construction documents.

PART 2 – PRODUCTS – THIS SECTION NOT USED

PART 3 - EXECUTION

3.01 GENERAL CONTRACTOR REQUIREMENTS

A. Designate material storage and handling areas as needed including all of the following:
   1. Designate specific areas of the site for delivery and storage of materials to be used during the execution of the Work.
   2. Designated areas shall not be located so as to interfere with the installation of any Work including Work by others such as the installation of utilities or the maintenance of existing utilities. This shall include not storing items in active utility easements as designated by the site plan.

B. Arrange for openings in the building as needed to allow delivery and installation of large items. Openings shall be appropriately sized to include the use of booms, slings, and other such lifting devices that may be larger than the item being installed.
   1. When openings are required in completed Work (new or existing) the GC shall be responsible for providing an appropriate opening and for restoring the opening to the original or better condition upon completion. Restoration shall be weather tight and complete.

C. Repeated moving and handling of items being stored shall not be allowed. The GC shall be responsible for any damage and replacement because of mishandling or excessive handling.

3.02 BULK MATERIAL

A. Bulk material such as sand, gravel, top soil and other types of fill shall be stored away from the construction area and shall be stock piled as follows:
   1. All bulk material shall be piled safely and efficiently in as small an area as practical. Only store the amount of material necessary for upcoming operations so as not to interfere with other construction activities and access to Work by the Owner and Architect.
   2. All stock piles shall have silt fence/sock properly installed around the perimeter to prevent erosion and loss of material. Refer to City of Madison FACILITIES MANAGEMENT SPECIFICATION Section 210.1(f) and other related specification or details.
   3. Fine grained material shall be protected with tarps to prevent blowing. Tarps shall be weighted or staked to stay in place.

B. Bulk material such as brick, concrete block, stone, and other palletized materials shall be stored on original shipping pallets until ready for use.

3.03 DRY PACKAGED MATERIAL

A. Dry packaged material such as cement, mortar, etc shall be stored on pallets, on slightly elevated ground or clear stone pad to keep water away from the base of the material being stored. Protect from moisture.

3.04 STRUCTURAL AND FRAMING MATERIAL

A. All structural and framing material shall be stored in an organized manner arranged by type, size and dimension. Materials shall be stored on pallets or timbers as necessary and shall not be allowed to lie directly on the ground.

B. Long and heavy items shall be supported at several points to prevent bending and warping.

3.05 EQUIPMENT

A. Equipment delivered to the site shall be stored away from all construction activities until the item can either be moved inside or properly installed.

B. Equipment shall be stored on slightly elevated ground or clear stone pad to keep water away from the base of the equipment.

3.06 FINISH PRODUCTS

A. Finish products such as flooring, tile, counters, lockers, toilets, partitions, lighting, and other similar items should not be delivered and stored until the structure has been enclosed, is weather tight, temperature controlled and the contractor is ready for such items to be installed.
   1. Storage of finished products outside for any length of time shall not be allowed.

B. Products that cannot be stored inside the structure shall be stored in secured containers or job trailers until such time as they are ready to be installed.

C. Products with a high potential for breakage such as glass, mirrors, tiles, toilet fixtures, etc. shall be stored with additional protection as necessary such as but not limited to the following:
   1. Store in original shipping containers until ready for installation.
   2. Do not store in high traffic areas.
   3. Shield with other materials such as cardboard, plywood, or similar products.

3.07 DUCTWORK, PIPING, AND CONDUIT

A. All piping and conduit shall be stored horizontally unless otherwise specified by the manufacturer or Division and Trade Specifications.
   1. Do not store directly on grade.
   2. Cover metal pipes and tubes to prevent rust and corrosion, allow ventilation to prevent condensation.
   3. Whenever possible use pipe stands for storing pipe and conduit to prevent tripping and rolling hazards.

B. All ductwork shall be stored horizontally or vertically as necessary unless otherwise specified by the manufacturer or Division and Trade Specifications.
   1. During storage, both ends of each duct shall be protected with plastic sheathing to prevent dust and dirt from getting inside the duct. Sheathing shall be sufficiently taped to the duct.
   2. After installation, free/open ends shall remain protected with taped plastic sheathing and or temporary filters as specified by division or Trade specifications.

3.08 OWNER PROVIDED, CONTRACTOR INSTALLED EQUIPMENT

A. Section 3.08.A. shall apply to all equipment being provided to any contractor directly from the Owner for installation under the contract.
   1. The Owner or Owners Representative shall do the following:
      a. Inspect all deliveries upon receipt and notify manufacturer of any issues directly.
      b. Review the received shipment with the contractor.
         1) Only provide products or materials to the contractor that were not damaged through shipping or handling.
         2) Confirm missing products or materials and anticipated delivery schedule if known.
   2. The Contractor responsible for the installation of Work associated with Owner provided materials or products shall “take ownership” and provide safe and secure storage and handling as previously described within this specification.
      a. The Contractor shall be liable for the repair or replacement of any material or product damaged after taking ownership of the product from receipt through final acceptance.

B. Section 3.08.B. shall apply to all equipment being provided by the Owner but shipped directly to any sub-contractor or the project site for installation under the contract.
   1. The GC and/or Contractor responsible for the Work associated with the Owner provided materials or products shall do the following:
      a. Inspect all deliveries upon receipt and notify the Owner or Owners Representative of any issues directly.
         1) Owner or Owners Representative shall notify manufacturer of any issues directly.
      b. Review the received shipment with the Owner or Owners Representative
         1) Confirm missing products or materials and anticipated delivery schedule if known.
   2. The Contractor shall “take ownership” and provide safe and secure storage and handling as previously described within this specification.
      a. The Contractor shall be liable for the repair or replacement of any material or product damaged after taking ownership of the product from receipt through final acceptance.

END OF SECTION

SECTION 07 42 13.23
METAL COMPOSITE MATERIAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior curtain wall system consisting of formed metal composite material (MCM) sheet, framing, secondary supports, and anchors to structure.

B. Matching flashing and trim.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Installation of anchors.

B. Section 04 20 00 - Unit Masonry: Installation of anchors.

C. Section 05 40 00 - Cold-Formed Metal Framing: Panel support framing.

D. Section 07 25 00 - Weather Barriers: Water-resistive barrier behind wall panel system.

E. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashing components integrated with this wall system.

F. Section 07 92 00 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip; 2023b.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

E. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.

F. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

I. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

J. ASTM D1781 - Standard Test Method for Climbing Drum Peel for Adhesives; 1998 (Reapproved 2021).

K. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics; 2023.

L. ASTM D4145 - Standard Test Method for Coating Flexibility of Prepainted Sheet; 2010 (Reapproved 2022).

M. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023c.

N. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

O. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).

P. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meeting: Convene one week before starting work of this section to verify project requirements, coordinate with installers of other work, establish condition and completeness of building substrate, and review manufacturers' installation instructions and warranty requirements.
   1. Require attendance by the installer and relevant sub-contractors.
   2. Include MCM sheet manufacturer’s representative and wall system manufacturer’s representative to review storage and handling procedures.
   3. Review in detail truck transportation, parking, vertical transportation, schedule, personnel, installation of adjacent materials and substrate.
   4. Review procedures for protection of work and other construction.
   5. Review safety precautions.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data - MCM Sheets: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:
   1. Finish manufacturer's data sheet showing physical and performance characteristics.
   2. Storage and handling requirements and recommendations.
   3. Fabrication instructions and recommendations.
   4. Specimen warranty for finish, as specified herein.

C. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.
   4. Specimen warranty for wall system, as specified herein.

D. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, support clips, exposed fasteners, number of anchors, supports, reinforcement, trim, flashings, and accessories.
   1. Indicate panel numbering system.
   2. Differentiate between shop and field fabrication.
   3. Indicate substrates and adjacent work with which the wall system must be coordinated.
   4. Include large-scale details of anchorages and connecting elements.
   5. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2 inches per 12 inches (1:10).
   6. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

E. Selection Samples: For each finish product specified, submit at least three sample color chips representing manufacturer's standard range of available colors and patterns.

F. Verification Samples: For each finish product specified, submit at least three samples, minimum size 12 inch (305 mm) square, and representing actual product in color and texture.

G. Design Data: Submit structural calculations stamped by design engineer, for Architect's information and project record.

H. Test Report: Submit report of full-size mock-up tests for air infiltration, water penetration, and wind performance.

I. Manufacturer's Field Reports: Provide within 48 hours of field review. State what was observed and what changes, if any, were requested or required.

J. Testing agency's qualification statement.

K. Maintenance Data: Care of finishes and warranty requirements.

1.06 QUALITY ASSURANCE

A. Design Engineer's Qualifications: Design structural supports and anchorages under direct supervision of a Structural Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Testing Agency Qualifications: Independent agency experienced in testing assemblies of the type required for this project and having the necessary facilities for full-size mock-up testing of the type specified.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for requirements.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
   1. Protect finishes by applying heavy-duty removable plastic film during production.
   2. Package for protection against transportation damage.
   3. Provide markings to identify components consistently with drawings.
   4. Exercise care in unloading, storing, and installing panels to prevent bending, warping, twisting, and surface damage.

B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
   1. Store in well-ventilated space out of direct sunlight.
   2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
   3. Store at a slope to ensure positive drainage of accumulated water.
   4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F (49 degrees C).
   5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

1.09 FIELD CONDITIONS

A. Do not install panels when air temperature or relative humidity are outside manufacturer's limits.

1.10 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Composite Material (MCM) Sheet Manufacturers:
   1. BASIS OF DESIGN: ALUCOBOND by 3A Composites USA; ALUCOBOND PLUS: www.alucobondusa.com/#sle.
   2. Alfrex, LLC; Alfrex fr: www.alfrexusa.com/#sle.
   3. Coated Metals Group, CMG; System 1000: www.cmgmetals.com.
   4. Substitutions: See Section ~~01 60 00 Product Requirements~~. 01 25 13 – Product Substitution Procedures.

2.02 WALL PANEL SYSTEM

A. Wall Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage, or failure.
   1. Provide structural design by or under direct supervision of a Structural Engineer licensed in the State in which the Project is located.
   2. Provide panel jointing and weatherseal using a "wet", sealant-sealed system.
   3. Anchor panels to supporting framing without exposed fasteners.

2.03 PERFORMANCE REQUIREMENTS

A. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 20 degrees F (minus 29 degrees C) to 180 degrees F (82 degrees C) without buckling, opening of joints, undue stress on fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.
   1. Wind Performance: Provide system tested in accordance with ASTM E330/E330M without permanent deformation or failures of structural members under the following conditions:
   2. Inward Design Wind Pressure: as indicated on the Structural Engineer's drawings.
   3. Outward Design Wind Pressure:as indicated on the Structural Engineer's drawings.
   4. Maximum deflection of perimeter framing member of L/175 normal to plane of the wall; maximum deflection of individual panels of L/60.
   5. Maximum anchor deflection in any direction of 1/16 inch (1.6 mm) at connection points of framing members to anchors.

B. Air Leakage: 0.10 cfm/sq ft (0.50 L/sec sq m) maximum leakage when tested at 1.57 psf (75 Pa) pressure difference in accordance with ASTM E283/E283M.

C. Water Penetration: No water penetration under static pressure when tested in accordance with ASTM E331 at a differential of 10 percent of inward acting design load, 6.27 psf (300 Pa) minimum, after 15 minutes.
   1. Water penetration is defined as the appearance of uncontrolled water on the interior face of the wall.
   2. Design to drain leakage and condensation to the exterior face of the wall.

D. Building Envelope Performance: Comply with ASHRAE Std 90.1 I-P when tested as part of building envelope assembly.

2.04 PANELS

A. Panels: 1 inch (25.4 mm) deep pans formed of metal composite material sheet by routing back edges of sheet, removing corners, and folding edges.
   1. Reinforce corners with riveted aluminum angles.
   2. Provide concealed attachment to supporting structure by adhering attachment members to back of panel; attachment members may also function as stiffeners.
   3. Maintain maximum panel bow of 0.8 percent of panel dimension in width and length; provide stiffeners of sufficient size and strength to maintain panel flatness without showing local stresses or read-through on panel face.
   4. Reinforce panels per manufacturer recommendations with metal angle braces 24 inches (610 mm) on center in short direction.
   5. Secure members to back face of panels using structural silicone sealant approved by MCM sheet manufacturer.
   6. Metallic Finished Panels: Maintain consistent grain of MCM sheet; specifically, do not rotate sheet purely to avoid waste.
   7. Fabricate panels under controlled shop conditions.
   8. Where final dimensions cannot be established by field measurement before commencement of manufacturing, make allowance for field adjustments without requiring field fabrication of panels.

9. Fabricate as indicated on drawings and as recommended by MCM sheet manufacturer.
    a. Make panel lines, breaks, curves, and angles sharp and true.
    b. Keep plane surfaces free from warp or buckle.
    c. Keep panel surfaces free of scratches or marks caused during fabrication.
10. Provide joint details providing a watertight and structurally sound wall panel system that allows no uncontrolled water penetration on inside face of panel system.

2.05 MATERIALS

A. Metal Composite Material (MCM) Sheet: Two sheets of aluminum sandwiching a core of extruded thermoplastic material; no foamed insulation material content.
    1. Overall Sheet Thickness: 0.118 inch (3 mm), minimum.
    2. Bond and Peel Strength: No adhesive failure of the bond between the core and the skin nor cohesive failure of the core itself below 22.4 inch-pound/inch (100 N-mm/mm) with no degradation in bond performance, when tested in accordance with ASTM D1781, simulating resistance to panel delamination, after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F (21 degrees C).
    3. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
    4. Flammability: Self-ignition temperature of 650 degrees F (343 degrees C) or greater when tested in accordance with ASTM D1929.

B. Metal Framing Members: Include sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels required for complete installation.
    1. Provide material strength, dimensions, configuration as required to meet applied loads and in compliance with applicable building code.
    2. Sheet Steel Components: ASTM A653/A653M galvanized to G90/Z275 or zinc-iron alloy-coated to A60/ZF180; or ASTM A792/A792M aluminum-zinc coated to AZ60/AZM180.
    3. Stainless Steel Sheet Components: ASTM A480/A480M.
    4. Aluminum Components: ASTM B209/B209M; or ASTM B221 (ASTM B221M).

2.06 FINISHES

A. Factory Finish: Two coat fluoropolymer resin coating, approved by coating manufacturer for length of warranty specified for project, and applied by coil manufacturing facility that specializes in coil applied finishes.
    1. Coating Flexibility: Pass ASTM D4145 minimum 1T Bend at time of manufacturing.
    2. Long-Term Performance: Not less than that specified under WARRANTY in PART 1.

B. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, with at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch (0.023 mm); color and gloss as selected by Architect from manufacturer’s standard line.
    1. Products:
        a. PPG; Duranar: www.ppgmetalcoatings.com/#sle.
        b. Sherwin-Williams Company; Fluropon: www.coil.sherwin.com/#sle.
        c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Color/Texture: As indicated on the drawings and selected by Architect from manufacturer's standard range.

2.07 ACCESSORIES

A. Flashing: Sheet aluminum; 0.040 inch (1.0 mm) thick, minimum; finish and color to match MCM sheet; see Section 07 62 00 for additional requirements.

B. Joint Sealer: Provide color to match wall panels silicone sealant of type approved by MCM sheet manufacturer, and in compliance with ASTM C920.

C. Provide panel system manufacturer's and installer's standard corrosion resistant accessories, including fasteners, clips, anchorage devices, and attachments.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine dimensions, tolerances, and interfaces with other work.

B. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

D. Notify Architect in writing of conditions detrimental to proper and timely completion of work, and do not proceed with erection until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect adjacent work areas and finish surfaces from damage during installation.

B. Provide anchorage items to be cast into concrete or built into masonry to appropriate installer(s) together with setting templates.
   1. See Section 03 30 00 for additional cast-in-place concrete requirements.
   2. See Section 04 20 00 for additional unit masonry requirements.

3.03 INSTALLATION

A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.

B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.

C. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.

D. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.

E. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.

F. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

G. Where joints are designed for field-applied sealant, seal joints completely with specified sealant.

H. Install flashings as indicated on shop drawings. At flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.

I. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections maintaining the following installation tolerances:
   1. Variation From Plane or Location: 1/2 inch in 30 feet (10 mm in 10 m) of length and up to 3/4 inch in 300 feet (20 mm in 100 m), maximum.
   2. Deviation of Vertical Member From True Line: 0.1 inch in 25 feet (3 mm in 9 m) run, maximum.
   3. Deviation of Horizontal Member From True Line: 0.1 inch in 25 feet (3 mm in 9 m) run, maximum.
   4. Offset From True Alignment Between Two Adjacent Members Abutting End To End, In Line: 0.03 inch (0.75 mm), maximum.

J. Replace damaged products.
   1. Exception: Field repairs of minor damage to finishes are permitted only when approved in writing by Architect, panel manufacturer, and fabricator.

2. Field Repairs to Finishes: Using materials and methods sufficient that repairs are not discernible when viewed at distance of 10 feet (3 m) under all typical light conditions experienced at the project.

3.04 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Wall System Manufacturer's Field Services: Provide field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with instructions.

C. Site Visits: Schedule two site visits during execution of installation.

3.05 CLEANING

A. See Section 01 77 00-Closeout Procedures for additional requirements.

B. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.

C. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.

D. Remove temporary coverings and protection of adjacent work areas.

E. Clean installed products in accordance with manufacturer's instructions.

3.06 PROTECTION

A. Protect installed panel system from damage until Date of Substantial Completion.

END OF SECTION

SECTION 07 53 00
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Elastomeric roofing membrane application.

B. Insulation, flat and tapered.

C. Vapor retarder.

D. Deck sheathing.

E. Cover boards.

F. Roofing walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 05 31 00 - Steel Decking: Placement of acoustical insulation for deck flutes.

B. Section 07 62 00 - Sheet Metal Flashing and Trim.

C. Section 07 71 00 - Roof Specialties: Prefabricated roofing expansion joint flashing.

D. Section 07 71 23 - Manufactured Gutters and Downspouts.

E. Section 07 72 00 Roof Accessories.

1.03 REFERENCE STANDARDS

A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.

B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).

D. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 2022.

E. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2020).

F. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

G. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

H. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022a, with Editorial Revision (2023).

I. FM (AG) - FM Approval Guide; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of associated counterflashings installed under other sections.

B. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, and fasteners.

1. Vapor Retarder: per manufacturer requirements.

C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and mechanical fastener layout.

D. Samples for Verification: Submit two samples of standard size.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Installer's qualification statement.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact.

C. Store materials in weather protected environment, clear of ground and moisture.

D. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

E. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Do not apply roofing membrane when ambient temperature is below 40 degrees F (5 degrees C) or above 100 degrees F (38 degrees C).

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

E. Schedule applications so that no partially completed sections of roof are left exposed at end of workday.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Provide 30 year manufacturer's material and labor warranty to cover failure to prevent penetration of water.
   1. Cover wind speeds up to 72 mph

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. EPDM Membrane Materials:
   1. Basis of Design: Elevate/Firestone Rubbergard Max EPDM: www.holcimelevate.com
   2. Carlisle SynTec Systems; Sure-Tough EPDM: www.carlisle-syntec.com/#sle.
   3. Johns Manville; JM EPDM: www.jm.com/#sle.
   4. Versico Roofing Systems; VersiGard EPDM: www.versico.com/#sle.

5. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

B. Insulation:
1. Dow: www.dow.com/#sle.
2. GAF: www.gaf.com/#sle.
3. Hunter Panels: www.hunterpanels.com/#sle.
4. Owens Corning Corporation: www.owenscorning.com/#sle.
5. ROCKWOOL: www.rockwool.com/#sle.
6. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 ROOFING - UNBALLASTED APPLICATIONS

A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over vapor retarder and insulation.

B. Roofing Assembly Requirements:
1. Insulation Thermal Resistance (R-Value): 5 per inch, minimum; provide insulation of thickness required.

C. Acceptable Insulation Types - Constant Thickness Application: Any type that meets requirements and is approved by membrane manufacturer for application.

D. Acceptable Insulation Types - Tapered Application: Any type that meets requirements and is approved by membrane manufacturer for application.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. Membrane: Ethylene-propylene-diene-monomer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
1. Thickness: 90 mil, 0.090 inch (2.3 mm), minimum.
2. Sheet Width: 120 inches (3,048 mm), maximum.
a. Adhered Application: Limit width to 120 inches (3,048 mm), maximum, when ambient temperatures are less than 40 degrees F (4.4 degress C) for extended period of time during installation.
3. Color: Black.
4. Tensile Strength: 9 psi (1305 MPa), minimum, measured in accordance with ASTM D412.
5. Ultimate Elongation: 200 percent, minimum, measured in accordance with ASTM D412.
6. Durometer Hardness, Type A: 30, minimum, in accordance with ASTM D2240
7. Tear Strength: 150 lbf per inch (26.3 kN/m), measured in accordance with ASTM D624.
8. Water Absorption: 8 percent increase in weight, maximum, measured in accordance with ASTM D570, 24 hour immersion.
9. Water Vapor Permeability: 1 perm inch, measured in accordance with ASTM E96/E96M.

B. Seaming Materials: As recommended by membrane manufacturer.

C. Vapor Retarder: (only if required by manufacturer requirements) Non-bituminous, foil and fibrous mesh laminate, complying with requirements of fire rating classification; compatible with roofing and insulation materials.
1. Fire-retardant adhesive.
2. Vapor Permeability: 1 perm inch, measured in accordance with ASTM E96/E96M.

D. Flexible Flashing Material: Same material as membrane.
1. Thickness: 30 mil (0.76 mm).
2. Maximum Perm Rate: 0.04.
3. Tensile Strength: 1,200 psi (8.3 MPa).
4. Elasticity: 50 percent with full recovery without set.
5. Color: Black.

2.04 DECK SHEATHING

A. Deck Sheathing: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 1/4 inch (6.4 mm) thick.
   1. Thickness: ~~5/8 inch (15.9 mm)~~1/2-inch (12.7 mm), Type X, fire-resistant.
   2. Products:
      a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
      b. Georgia-Pacific; DensDeck Prime with EONIC Technology: www.densdeck.com/#sle.
      c. USG Corporation; Securock Ultralight Glass-Mat Roof Board: www.usg.com/#sle.
      d. USG Corporation; Securock Ultralight Coated Glass-Mat Roof Board: www.usg.com/#sle.
      e. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.05 COVER BOARDS

A. Cover Boards: Glass-mat faced gypsum panels complying with ASTM C1177/C1177M.
   1. Thickness: ~~5/8 inch (15.9 mm)~~1/2-inch (12.7 mm), Type X, fire-resistant.
   2. FM classified for Very Severe Hail (VSH) in approved single ply membrane assemblies.
   3. Products:
      a. Georgia-Pacific; DensDeck: www.densdeck.com/#sle.
      b. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.06 INSULATION

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
   1. Classifications:
      a. Type VII: Faced with glass mat faced gypsum board on one major surface of the core foam and faced on the other major surface with any facer described in this specification.
         1) Compressive Strength: 16 psi (110 kPa), minimum.
         2) Thermal Resistance, R-value (RSI-value): At 1-1/2 inches (38 mm) thick; R-8.5 (1.23) at 75 degrees F (24 degrees C); at total system minimum R-40 must be achieved.
   2. Board Size: 48 by 96 inches (1220 by 2440 mm).
   3. Board Thickness: 1.5 inch (37.5 mm).
   4. Tapered Board: Slope as indicated; minimum thickness as indicated on the drawings; fabricate of fewest layers possible.
   5. Board Edges: Square.
   6. Products:
      a. Dow Chemical Company: www.dow.com/#sle.
      b. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
      c. Mule-Hide Products Co, Inc; Poly ISO Flat: www.mulehide.com/#sle.
      d. Versico Roofing Systems; SecurShield Insulation: www.versico.com/#sle.
      e. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.07 ACCESSORIES

A. Prefabricated Roofing Expansion Joint Flashing: See Section 07 71 00.

B. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; elastomeric material compatible with membrane.

C. Sheathing Joint Tape: Paper type, 6 inches (152 mm) wide, self adhering.

D. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches (152 mm) wide; self adhering.

E. Membrane Adhesive: As recommended by membrane manufacturer.

F. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.

G. Insulation Adhesive: As recommended by insulation manufacturer.

H. Roofing Nails: Galvanized, hot-dipped type, size and configuration as required to suit application.

I. Strip Reglet Devices: Galvanized steel, maximum possible lengths per location, with attachment flanges.

J. Insulation Perimeter Restraint: Stainless steel edge device configured to restrain insulation boards in position and provide top flashing.

K. Sealants: As recommended by membrane manufacturer.

L. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: 100% Recycled Rubber, non-slip surface.
      a. With EPDM compatable adhesive strip
   2. Size: 30 inches wide, minimum.
   3. Thickness: 1/2-inch to 2-inches.
   4. Surface Color: Black, Grey or White.
   5. Manufacture:
      a. Same as roofing supplier, if they offer a suitable product.
      b. RubberForm Recycled Products, LLC.; Rooftop Walkway Rubber Mats;
      c. Substitutions: See Section 01 25 13 – Product Substitution Procedures

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 PREPARATION - METAL DECK

A. Install deck sheathing on metal deck.
   1. Lay with long side at right angle to flutes; stagger end joints; provide support at ends.
   2. Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
   3. Tape joints.

B. Mechanically fasten sheathing to roof deck, in accordance with roofing manufacturer's instructions.
   1. Over entire roof area, fasten sheathing using six fasteners with washers per sheathing board.
   2. At roof perimeter to a distance of 4 feet (1.2 m) in from edges, fasten sheathing using 6 fasteners with washers per board.

3.03 INSTALLATION - VAPOR RETARDER AND INSULATION, UNDER MEMBRANE

A. Install vapor retarder to deck surface with adhesive in accordance with manufacturer's instructions.
   1. Extend vapor retarder under cant strips and blocking to deck edge.
   2. Install flexible flashing from vapor retarder to air seal material of wall construction, lap and seal to provide continuity of the air barrier plane.

B. Ensure vapor retarder is clean and dry, continuous, and ready for application of insulation.

C. Attachment of Insulation: Embed insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.

D. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.

E. Lay subsequent layers of insulation with joints staggered minimum 6 inches (152 mm) from joints of preceding layer.

F. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

G. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.

H. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

I. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.

J. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches (457 mm).

K. Do not apply more insulation than can be covered with membrane in same day.

3.04 INSTALLATION - MEMBRANE

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Fully Adhered Application: Apply adhesive to substrate at rate of ___ gal per 100 sq ft (___ L/9.3 sq m). Fully embed membrane in adhesive except in areas directly over or within 3 inches (76 mm) of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (76 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.

E. At intersections with vertical surfaces:
   1. Extend membrane over cant strips and up a minimum of 4 inches (102 mm) onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.

F. Around roof penetrations, seal flanges and flashings with flexible flashing.

G. Install roofing expansion joints where indicated. Make joints watertight.
   1. Install prefabricated joint components in accordance with manufacturer's instructions.

H. Coordinate installation of roof drains and sumps and related flashings.

3.05 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements. for additional requirements.

B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing in accordance with requirements.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.06 CLEANING

A. See Section 01 77 00-Closeout Procedures for additional requirements.

B. Remove bituminous markings from finished surfaces.

C. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

D. Repair or replace defaced or damaged finishes caused by work of this section.

3.07 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 07 71 00
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured roof specialties, including copings, fascias, pentration flashings, and box scuppers.

B. Roof control and expansion joint covers.

1.02 RELATED REQUIREMENTS

A. Section 07 62 00 - Sheet Metal Flashing and Trim

B. Section 07 71 23 - Manufactured Gutters and Downspouts

C. Section 07 72 00 - Roof Accessories: Manufactured curbs, roof hatches ~~and snow guards~~.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

C. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.

D. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

F. NRCA (RM) - The NRCA Roofing Manual; 2025.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.

D. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Roof Edge Flashings and Copings:
   1. Architectural Products Co: www.archprod.com/#sle.
   2. ATAS International, Inc; Rapid-Lok Fascia: www.atas.com/#sle.
   3. Drexel Metals Inc: www.drexmet.com/#sle.
   4. Hickman Edge Systems; Formed Coping Plus: www.hickmanedgesystems.com/#sle.
   5. Metal-Era Inc; Perma-Tite Coping: www.metalera.com/#sle.
   6. Metal Roofing Systems, Inc; Rapid Lock Coping: www.metalroofingsystems.biz/#sle.
   7. Substitutions: See Section 01 60 00 - Product Requirements.

B. Control and Expansion Joint Covers:
   1. Construction Specialties, Inc; Roof Covers: www.c-sgroup.com/#sle.
   2. EMSEAL Joint Systems, Ltd; Emseal RoofJoint: www.emseal.com/#sle.

3. SITURA Inc; RedLINE Waterproof Expansion Joint Systems: www.situra.com/#sle.
4. Substitutions: See Section 01 60 00 - Product Requirements.

C. Pipe and Penetration Flashings:
1. Elmdor: www.elmdor.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

D. Counterflashings:
1. ATAS International, Inc: www.atas.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

E. Pipe Penetration Wall Seal:
1. Airex Manufacturing, Inc; Airex Titan Outlet: www.airexmfg.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

F. Expansion Joint Covers Vapor Barriers:
1. Construction Specialties, Inc; Vapor Barriers: www.c-sgroup.com/#sle.
2. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 COMPONENTS

A. Roof Edge Flashings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
1. Configuration: Fascia, cant, and edge securement for roof membrane.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
3. Exposed Face Height: As indicated on drawings.
4. Material: Formed steel sheet, galvanized, 24 gauge, 0.024 inch (0.6 mm) thick, minimum.
5. Finish: 70 percent polyvinylidene fluoride.
6. Color: As selected by Architect from manufacturer's standard range.
7. Products:
   a. Hickman Edge Systems; TerminEdge Fascia: www.hickmanedgesystems.com/#sle.
   b. Substitutions: See Section 01 60 00 - Product Requirements.

B. Copings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
3. Material: Formed steel sheet, galvanized, 24 gauge, 0.024 inch (0.6 mm) thick, minimum.
4. Finish: Mill finish.
5. Color: As selected by Architect from manufacturer's standard range.
6. Products:
   a. Metal-Era Inc: www.metalera.com/#sle.
   b. Hickman Edge Systems; Formed Coping Plus: www.hickmanedgesystems.com/#sle.
   c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Control and Expansion Joint Covers: Composite construction of 2-inch (51 mm) wide flexible EPDM flashing of white color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 1 inch (25.4 mm). Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

D. Pipe and Penetration Flashing: Base of galvanized steel, compatible with sheet metal roof systems, and capable of accomodating pipes sized between 3/8 inch (9.5 mm) and 12 inches (305 mm).
1. Caps: EPDM.
2. Color: As indicated on drawings.
3. Products:
   a. Menzies Metal Products; Plumbing Stack Spun Aluminum: www.menzies-metal.com/#sle.

b. Substitutions: See Section 01 60 00 - Product Requirements.

E. Roof Penetration Sealing Systems: Premanufactured components and accessories as required to preserve integrity of roofing system and maintain roof warranty; suitable for conduits and roofing system to be installed; designed to accommodate existing penetrations where applicable.
1. Products:
a. Menzies Metal Products; Electrical Roof Stack and Cap: www.menzies-metal.com/#sle.
b. Substitutions: See Section 01 60 00 - Product Requirements.

F. Counterflashings: Factory fabricated and finished sheet metal that overlaps top edges of base flashing by at least 4 inches (102 mm), and designed to snap into through-wall flashing or reglets with lapped joints.
1. Material: Formed aluminum sheet, 0.025 inch (0.64 mm) thick, minimum.
2. Finish: Mill finish aluminum.
3. Color: As indicated on drawings.

G. Pipe Penetration Wall Seal: Seal for HVAC piping wall penetrations with wall-mounted rigid plastic outlet cover and elastomeric wall seal gasket.
1. Wall Outlet Size, Siding and Compact Applications: 6-7/8 inches wide by 3-7/8 inches high (175 mm wide by 99 mm high).
a. Elastomeric Sleeve Diameter: 1-11/16 inches (43 mm).
2. Outlet Cover Color: Match adjacent cladding material color.
3. Wall Outlet Air Leakage: Comply with ASTM E283/E283M performance tests.
4. Wall Outlet Air Permeance: Comply with ASTM E2178 performance tests.

H. Box Scupper Drains: Parapet and sidewall applications for roof overflow and drainage.
1. Box Size: 4 inches square x 18 inches long. (Cut to appropriate wall thickness)
2. Flange: Full 4 inches.
3. Outlet Drain Box: 3 inch box wiht overflow and cleanout to be screw attached to box at building exterior.
4. Fasteners: Stainless Steel
5. Material: Aluminum
6. Finish/Color: As selected by Architect from manufacturer's standard options.
7. Accessories: Strainer Kit; finish to match scupper
8. Products:
a. Menzies Metal Products; Clamp-Tite Aluminum Box Scupper Drain: www.menzies-metal.com/#sle.
9. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 FINISHES

A. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mil, 0.0007 inch (0.018 mm) thick.

B. Color Anodized Finish: AAMA 611 AA-M12C22A42/44 Class I integrally or electrolytically colored anodic coating not less than 0.7 mil, 0.0007 inch (0.018 mm) thick.

C. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as indicated.

2.04 ACCESSORIES

A. Sealant for Joints in Linear Components: As recommended by component manufacturer.

B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

C. Insulation Board Adhesive: Two-component, low-rise polyurethane foam adhesive used for adhering insulation to low slope roof deck materials.
1. Products:

a. OMG Roofing Products; OlyBond500: www.roofing.com/#sle.
b. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.
   1. See Section 07 72 00 for information on roofing related accessories.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Seal joints within components when required by component manufacturer.

C. Anchor components securely.

D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

END OF SECTION

SECTION 07 72 00
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof curbs.

B. Insulated Roof hatches.

~~Snow guards.~~

1.02 RELATED REQUIREMENTS

A. Section 07 62 00-Sheet Metal Flashing and Trim.

B. Section 07 71 00 - Roof Specialties: Other manufactured roof specialty items.

1.03 REFERENCE STANDARDS

~~ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.~~

~~ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.~~

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.

~~Snow Guards: Submit design calculations for loadings and spacings based on manufacturer testing.~~

D. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
   3. Submit documentation that roof accessories are acceptable to roofing manufacturer, and do not limit the roofing warranty.

1.05 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store products under cover and elevated above grade.

1.06 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

B. Manufacturer Warranty: Provide 5-year manufacturer warranty for parts and labor. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 5-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Roof Curbs Manufacturers:
   1. AES Industries Inc: www.aescurb.com/#sle.
   2. The Pate Company: www.patecurbs.com/#sle.
   3. LMCurbs; Roof Curbs: www.lmcurbs.com/#sle.
   4. MKT Metal Manufacturing: www.mktduct.com/#sle.
   5. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.~~.~~

B. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
   1. Applications: Roof curbs used for roof penetrations/openings as indicated on drawings and HVAC units.
   2. Roof Curb Mounting Substrate: Curb substrate consists of flat roof deck sheathing with insulation.
   3. Sheet Metal Material:
      a. Galvanized Steel: Hot-dip zinc coated steel sheet complying with ASTM A653/A653M, SS Grade 33 (230); G60 (Z180) coating designation; 18 gauge, 0.048 inch (1.21 mm) thick.
   4. Roofing Cants: Provide integral sheet metal roofing cants dimensioned to begin slope at top of roofing system at 1:1 slope; minimum cant height 4 inches (102 mm).
   5. Provide layouts and configurations indicated on drawings.

C. Curbs Adjacent to Roof Openings: Provide curb on each side of opening, with top of curb horizontal for equipment mounting.
   1. Provide preservative treated wood nailers along top of curb.
   2. Insulate inside curbs with 1-1/2 inch (38 mm) thick fiberglass insulation.
   3. Height Above Finished Roof Surface: 8 inches (203 mm), minimum.

2.02 INSULATED ROOF HATCHES

A. Roof Hatch Manufacturers:
   1. Activar Construction Products Group, Inc. - JL Industries: www.activarcpg.com/#sle.
   2. Babcock-Davis: www.babcockdavis.com/#sle.
   3. Best Access Doors: www.bestaccessdoors.com/#sle.
   4. Bilco Company: www.bilco.com/#sle.
   5. FAKRO America LLC: www.fakrousa.com/#sle.
   6. Precision Ladders, LLC: www.precisionladders.com/#sle.
   7. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

B. Frames and Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Material: Galvanized steel, 14 gauge, 0.0747 inch (1.90 mm) thick.
   2. Material: Galvanized steel, 14 gauge, 0.0747 inch (1.90 mm) thick.
   3. Finish: Factory prime paint.
   4. Finish: Factory prime paint.
   5. Insulation: Manufacturer's standard; 1 inch (25 mm) rigid glass fiber, located on outside face of curb.

6. Insulation: Manufacturer's standard; 1 inch (25 mm) rigid glass fiber, located on outside face of curb.
7. Curb Height: 12 inches (305 mm) from finished surface of roof, minimum.
8. Provide when hatch or equipment does not have an integral curb.

C. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf (475 kPa) load.
   2. Hinges: Heavy duty pintle type.
   3. Hold open arm with vinyl-coated handle for manual release.
   4. Latch: Upon closing, engage latch automatically and reset manual release.
   5. Manual Release: Pull handle on interior.
   6. Locking: Padlock hasp on interior.

2.03 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Pre-Manufactured Roof Ladder Safety Grab Post
   1. Attaches to roof hatch, with hinged or telescoping movement that locks when fully extended above hatch opening. To provide stability when exiting or entering roof hatch.
   2. Material: Steel or Aluminum
   3. Finish: Powder coated
   4. Color: Safety Yellow
   5. Manufacturers:
      a. Global Industrial; Model WB713158: www.globalindustrial.com
      b. Bilco Company: Model LU-1: www.bilco.com
      c. Babcock Davis; Model BSPS; www.babcockdavis.com
      d. JL Industries/Activar Construction Products Group; Model LP-4, LP-6: www.activarcpg.com
      e. Or Approved Equal
   6. Substitutions: See Section 01 25 13 – Product Substitution Procedures.

~~**SNOW GUARDS**~~

~~Roof Membrane Fence Type Snow Guards: Base plate attached on top of EPDM, TPO, or PVC roof membrane and anchored to roof deck with mounting bracket that supports flat-faced bar or single tube snow guard.~~

~~Base Plate: Stainless steel plate with holes for mounting with anchor bolts through membrane to roof deck.~~

~~Bracket: Aluminum mounting bracket bolted to base plate.~~
~~Products:~~
~~Alpine SnowGuards; PP115 Pipe-Style Snow Guard: www.alpinesnowguards.com/#sle.~~
~~Rocky Mountain Snow Guards, Inc; Single Ply - 2 Pipe or 3 Pipe Bolt Down Snow Fence Bracket: www.rockymountainsnowguards.com/#sle.~~
~~TRA Snow and Sun; Single Ply 1 Deck Mount Snow Fence: www.trasnowandsun.com/#sle.~~
~~Substitutions: See Section 01 60 00 - Product Requirements.~~

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. See Section 07 71 00 for information on roof specialties.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

3.04 CLEANING

A. See Section 01 77 00-Closeout Procedures. for additional requirements.

B. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 07 91 00
PREFORMED JOINT SEALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Precompressed foam seals.

B. Compression gaskets.

C. Preformed strip seals.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Emissions restrictions for joint seal adhesives and primers.

B. Section 07 92 00 - Joint Sealants: Liquid and mastic joint sealants and their backing materials.

C. Section 07 95 13 - Expansion Joint Cover Assemblies: for coordiantion.

1.03 REFERENCE STANDARDS

A. ASTM D1056 - Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber; 2020.

B. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

C. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements; 1991 (Reapproved 2016).

D. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures. for submittal procedures.

B. Product Data: Manufacturer's technical data sheets for each product, including chemical composition, movement capability, color availability, limitations on application, and installation instructions.

C. Color Cards: For color selection.

D. Volatile Organic Content (VOC) Documentation: For adhesives and primers, submit VOC content and emissions documentation as specified in Section 01 61 16.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section with at least 10 years of documented experience.

1.06 WARRANTY

A. See Section 01 77 00-Closeout Procedures. for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealers that fail to achieve watertight seal or exhibit loss of adhesion or cohesion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Precompressed Foam Seals:
1. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
2. Nystrom, Inc: www.nystrom.com/#sle.
3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
4. Watson Bowman Acme Corporation: www.watsonbowmanacme.com/#sle.
5. Willseal LLC: www.willseal.com/#sle.
6. ~~[~~ ~~]~~Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
7. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

B. Preformed Strip Seals:
1. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
2. Sika Corporation: www.usa-sika.com/#sle.
3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
4. Willseal LLC: www.willseal.com/#sle.
5. ~~[~~ ~~]~~Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
6. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

2.02 PRECOMPRESSED FOAM SEALS

A. Precompressed Foam Seal: Comprised of urethane, modified-acrylic impregnated, open-cell polyurethane, or closed-cell neoprene foam impregnated with water-repellent, and with self-adhesive faces protected prior to installation by release paper.
1. Color: Black.
2. Size as required to provide weathertight seal when installed.
3. Calculate size according to manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Provide product recommended by manufacturer for traffic-bearing use.
6. Applications:
   a. Exterior wall expansion joints.
   b. Building facade with seismic constraints.

B. Precompressed Foam Seal, Fire-Retardant Impregnated: Comprised of waterproof silicone face on fire-retardant impregnated foam seal.
1. Color: Gray.
2. Size as required to provide water-tight seal when installed.
3. Calculate size according to manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Provide product recommended by manufacturer for traffic-bearing use.
6. Fire-Rating: As indicated on drawings, comply with UL 2079.
7. Applications:
   a. Exterior wall expansion joints.
   b. Building facade with seismic constraints.

2.03 COMPRESSION GASKETS

A. Compression Gasket: Extruded hollow polychloroprene (neoprene) gasket complying with ASTM D2628; not requiring blockout recess in substrate; not requiring vacuum to collapse seal for installation.
1. Color: Black.
2. Durometer Hardness, Type A: Within 55 to 65, when tested in accordance with ASTM D2240.
3. Size and Shape: As indicated on Drawings.

4. Calculate size in accordance with manufacturer's recommendations.
5. Measure size of existing joints before selecting seal width.
6. Applications:
    a. Exterior wall expansion joints.

B. Compression Gasket: Extruded hollow gasket made of closed cell expanded rubber complying with ASTM D1056, with dense surface skin and serrated sidewalls.
1. Color: Black.
2. Durometer Hardness, Type OO: Within 35 to 65, when tested in accordance with ASTM D2240.
3. Calculate size in accordance with manufacturer's recommendations.
4. Measure size of existing joints before selecting seal width.
5. Adhesive: Epoxy sealant/adhesive recommended by gasket manufacturer.
6. Applications:
    a. Exterior wall expansion joints.

2.04 PREFORMED STRIP SEALS

A. Preformed Strip Seal: Factory formed profile for adhered application to face of joint substrate.
1. Measure size of existing joints before selecting seal width.
2. Provide compatible materials for application as recommended by manufacturer.
3. Applications:
    a. Exterior wall expansion joints.
    b. Door and window perimeter joints.

2.05 ACCESSORIES

A. Adhesive: As recommended by seal manufacturer.

B. Substrate Cleaner: Non-corrosive, non-staining type recommended by seal manufacturer; compatible with joint forming materials.

C. Primer: Type recommended by seal manufacturer to suit application; non-staining.

D. Backing Tape: Self-adhesive polyethylene tape with surface that seal will not adhere to.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive this work.

B. Measure joint dimensions and verify that seal products are of the correct size to properly seal the joints.

3.02 PREPARATION

A. Properly prepare construction components adjacent to the work of this section to prevent damage and disfigurement due to this work.

3.03 INSTALLATION

A. Install in accordance with manufacturer's written instructions.

B. Precompressed Foam Seals:
1. Install only when ambient temperature is within recommended application temperature range of adhesive. Consult manufacturer when installing outside this temperature range.
2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion of sealant.
4. Do not stretch precompressed seal; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.

C. Compression Gaskets:
1. Install only when ambient temperature is within recommended application temperature range of adhesive. Consult manufacturer when installing outside this temperature range.

2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion of sealant.
4. Avoid joints except at ends, corners, and intersections; seal joints with adhesive; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.

D. Preformed Strip Seals:
1. Install when ambient temperature is within recommended application temperature range of adhesive, and consult with manufacturer before installing outside this temperature range.
2. Prepare joints and install seals in accordance with manufacturer's written recommendations.
3. Remove loose materials and foreign matter that could impair adhesion.
4. When installing over existing non-functioning sealant, remove portions of existing installation that protrude beyond surface; install backing tape on surface of existing sealant installation to prevent adhesion of strip seal.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect joints from damage until adhesives have properly cured.

END OF SECTION

SECTION 07 95 13
EXPANSION JOINT COVER ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Expansion joint cover assemblies for wall and ceiling surfaces.

1.02 RELATED REQUIREMENTS

A. Section 07 91 00 - Preformed Joint Seals: Sealing expansion and control joints using preformed joint seals.

B. Section 07 92 00 - Joint Sealants: Sealing expansion and control joints using gunnable and pourable sealants.

C. Section 09 21 16 - Gypsum Board Assemblies: Placement of expansion joint assemblies in gypsum board walls and ceilings.

1.03 REFERENCE STANDARDS

A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

C. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Installation Templates: For frames and anchors to be embedded in concrete or masonry, furnish templates to relevant installers; include installation instructions and tolerances.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish.

C. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction and anchorage locations.

D. Samples: Submit two samples of standard lengths, illustrating profile, dimension, color, and finish selected.

E. Manufacturer's Installation Instructions: Indicate rough-in sizes and required tolerances for item placement.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 for additional provisions.
   2. Extra Resilient Joint Filler: 15% of installed length and any special tools required for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Expansion Joint Cover Assemblies:
   1. Basis of Design: Inpro: www.inprocorp.com/#sle.
   2. Architectural Art Mfg, Inc: www.archart.com/#sle.
   3. Construction Specialties, Inc: www.c-sgroup.com/#sle.
   4. EMSEAL Joint Systems, Ltd: www.emseal.com/#sle.
   5. MM Systems Corp: www.mmsystemscorp.com/#sle.
   6. Nystrom, Inc: www.nystrom.com/#sle.
   7. Pecora Corporation: www.pecora.com/#sle.

8. SITURA Inc: www.situra.com/#sle.
9. Watson Bowman Acme Corporation: www.watsonbowmanacme.com/#sle.
10. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
11. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

2.02 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS

A. Interior Wall/Ceiling Joints Subject to Thermal Movement:
   1. Manufacturers:
      a. Balco, Inc; WD Wall and Ceiling Snap-On Joint Cover: www.balcousa.com/#sle.
      b. Construction Specialties, Inc; Allway Standard Wall and Ceiling Covers: www.c-sgroup.com/#sle.
      c. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
      d. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures..

B. Exterior Wall Joints Subject to Thermal Movement:
   1. Manufacturers:
      a. Balco, Inc; Exterior Wall, Elastomeric Face Seal System (FCWW): www.balcousa.com/#sle.
      b. Construction Specialties, Inc; Exterior Wall Covers: www.c-sgroup.com/#sle.
      c. EMSEAL Joint Systems, Ltd; BG System: www.emseal.com/#sle.
      d. SITURA Inc; RedLINE Waterproof Expansion Joint Systems: www.situra.com/#sle.
      e. [~~_____~~]Erie Metal Specialties, Inc., CSS Series; www.eriemetal.com.
      f. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures..

2.03 EXPANSION JOINT COVER ASSEMBLIES

A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.
   1. Joint Dimensions and Configurations: As indicated on drawings.
   2. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
   3. Joint Cover Styles: As indicated on drawings.
   4. Joint Movement Capability: If not indicated, provide minimum plus/minus 25 percent joint movement capability.
   5. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
   6. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.

B. Sliding Cover Plate Type Covers: Provide plate with beveled edges and neat fit that does not collect dirt.

C. Covers in Gypsum Board Assemblies: Provide style with anchoring wings that can be completely covered by joint compound.

2.04 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper; or ASTM B308/B308M, 6061 alloy, T6 temper.
   1. Exposed Finish Outdoors: Natural anodized.
   2. Exposed Finish at Floors: Mill finish or natural anodized.
   3. Exposed Finish at Walls and Ceilings: Natural anodized.

B. Anchors and Fasteners: As recommended by cover manufacturer.

C. Threaded Fasteners: Galvanized steel.

D. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

B. Verify that frames and anchors installed by others are in correct locations and suitable for installation of remainder of assembly.

3.02 INSTALLATION

A. Install components and accessories in accordance with manufacturer's instructions.

B. Align work plumb and level.

C. Rigidly anchor to substrate to prevent misalignment.

3.03 PROTECTION

A. Do not permit traffic over unprotected floor joint surfaces.

B. Provide strippable coating to protect finish surface.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 07 25 00 - Weather Barriers.

B. Section 07 26 00 - Vapor Retarders.

C. Section 07 27 00 - Air Barriers.

D. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.

E. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

F. Section 08 41 26 - All-Glass Entrances and Storefronts: Glazing provided as part of entrance assembly.

G. Section 08 43 13 - Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

~~AAMA 501.6 - Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from Window Wall, Curtain Wall and Storefront Systems; 2018.~~

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1036 - Standard Specification for Flat Glass; 2021.

F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

G. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

L. GANA (SM) - GANA Sealant Manual; 2008.

M. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

O. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

P. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Installer's qualification statement.
   1. Architectural Glass and Metal Technician (AGMT) certificates or equivalent ANSI accredited certificates for architectural glass and metal installers for no less than 50% of the crew installing architectural glass and metal products.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.

B. Installer Qualifications: A qualified glazing contractor for this Project who employs glazing technicians certified under the Architectural Glass and Metal Technician (AGMT) certification program. No less than 50% of the crew performing architectural glass and metal work shall be Architectural Glass and Metal Technicians (AGMT).

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.07 MOCK-UPS

A. See Section 01 43 39 - Mockups for additional requirements.

1.08 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F (4 degrees C).

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.09 WARRANTY

A. See Section 01 77 00-Closeout Procedures for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC;[~~____~~]: www.guardianglass.com/#sle.
   3. Oldcastle Building Envelope: www.obe.com
   4. Vitro Architectural Glass (formerly PPG Glass);[~~____~~]; Solarban 65: www.vitroglazings.com/#sle.
   5. Or Approved Equal.
   6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

B. Laminated Glass Manufacturers:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Or Approved Equal.
   3. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

C. Bird-Friendly Glass Manufacturers:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Guardian Glass, LLC; [____]: www.guardianglass.com/#sle.
3. Oldcastle Building Envelope: www.obe.com
4. Vitro Architectural Glass (formerly PPG Glass); [____]; Solarban 65: www.vitroglazings.com/#sle.
5. Or Approved Equal.
6. Substitutions: See Section 01 25 13 - Product Substitution Procedures.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:
a. Water-Resistive Barriers: See Section 07 25 00.
b. Vapor Retarders: See Section 07 26 00.
c. Air Barriers: See Section 07 27 00.
2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class B or 16 CFR 1201 - Category I impact test requirements.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
1. Glass: Any of the manufacturers specified for float glass.
2. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
3. Guardian Glass, LLC; [____]: www.guardianglass.com/#sle.
4. Oldcastle Building Envelope: www.obe.com

5. Vitro Architectural Glass (formerly PPG Glass);~~[_____]~~; Solarban 65: www.vitroglazings.com/#sle.
6. Substitutions: ~~See Section01 60 00 Product Requirements~~See Section 01 25 13 - Product Substitution Procedures.

B. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
3. Spacer Color: Black.
4. Edge Seal:
   a. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
7. Visible Light Transmittance (VLT): 68 percent, nominal.
8. Solar Heat Gain Coefficient (SHGC): 0.41, nominal.

D. Type IG-1B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
      1) Acid-etched on exterior, Surface 1, of IGU.
   c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

E. Type IG-2 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
   a. Basis of Design: Cardinal Endure IG spacer.
   b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
   a. Tint: Clear.
   b. Coating: Self-cleaning type, on #1 surface.

c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered ~~laminated~~ float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch or 25.7 mm.
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

F. Type IG-2B - Insulating Glass Units: Bird-friendly Acid Etched vision glass, double glazed.
1. Applications: Tempered exterior glazing as indicated on drawings.
2. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
3. Outboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
4. Inboard Lite: Fully tempered float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
5. Total Thickness: 1 inch or 24.4 mm .
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

G. Type IG-3B - Insulating Glass Units: Bird-friendly Acid Etched laminated exterior glazing.
~~Applications: See Section 01 23 00 - Alternates for locations .~~
1. Space between lites filled with argon.
a. Basis of Design: Cardinal Endure IG spacer.
b. Basis of Design Air Gap: 1/2 inch or 13 mm.
2. Outboard Lites: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
b. Bird-Friendly Pattern: 5 mm dots, spaced at 2 by 2 inches.
1) Acid-etched on exterior, Surface 1, of IGU.
c. Coating: Low-E (passive type), LoE-270 on #2 surface.
d. PVB Interlayer between outboard lites (LGI-1).
3. Inboard Lite: Heat-strengthened float glass, 1/4 inch or 5.77 mm thick, minimum.
a. Tint: Clear.
4. Total Thickness: 1 inch or 24.4 mm .
5. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.

2.05 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Total Thickness: 1 inch or 24.4 mm.
4. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.30, nominal.
5. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO.
6. Spacer Color: Black.
7. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
8. Color: Black.
9. Purge interpane space with dry air, hermetically sealed.

2.06 GLAZING UNITS

A. Type G-1 - Monolithic Interior Vision Glazing:
   1. Applications: Interior glazing unless otherwise indicated.
   2. Glass Type: Annealed float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch (6.4 mm), nominal.

B. Type G-2 - Monolithic Interior Vision Glazing:
   1. Applications: Tempered interior glazing as indicated on drawings.
   2. Glass Type: Fully tempered float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch (6.4 mm), nominal.

2.07 LAMINATED GLASS INTERLAYERS

A. Type LGI-1 - Polyvinyl Butyral (PVB) Interlayer for Laminated Glazing:
   1. Functionality: Post-breakage safety and security.
   2. Applications:
      a. Single pane, laminated glass unit.
      b. Interior laminated pane of insulating glass unit, Type IG-3B.
   3. Color: Clear.
   4. Thickness: As required for indicated performance of laminated glass application.
   5. Manufacturers:
      a. Eastman Chemical Company; Saflex Clear PVB Interlayer: www.saflex.com/#sle.
      b. Sekisui S-LEC America, LLC; S-LEC Clear Film: www.s-lec.us/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

2.08 GLASS COATINGS

A. Decorative Coating: Two component, water-based silicone polyurethane opaque color hybrid coating for roll coat and spray applications.
   1. Application: Interior locations as indicated on drawings.
      a. Glass and Coating Orientation: On surface facing substrate
   2. Decorative Coating Glass Unit Fabrication: Strictly according to coating manufacturer's written instructions.
   3. Dry Film Thickness: Between 0.0012 inch (0.030 mm) and 0.0015 inch (0.040 mm), minimum.
   4. Color: Selected from manufacturer's standard range and indicated on drawings.

2.09 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, nonsagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, nonstaining, nonbleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:

1. Bostik Inc: www.bostik-us.com/#sle.
2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
3. Momentive Performance Materials, Inc: www.momentive.com/#sle.
4. Pecora Corporation: www.pecora.com/#sle.
5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.

2.10 ACCESSORIES

~~Concealed nonprogressive structural glass mounting system.~~

~~Glass Panel Mounting System: Two-part patented system of interlocking metal rail brackets structurally connected to substrate surface and backs of glass units for concealed support.~~

~~Applications: As indicated on drawings for wall mounted glass units.~~

~~Include adaptations for installation where compliance with applicable seismic design is required.~~

~~Provide system successfully tested in accordance with AAMA 501.6.~~

~~Mounting Action: Hook shape of mounting rail bracket interlocks with hook shape of another mounting bracket.~~

~~Nonprogressive mounting sequence.~~

~~System Weight Supporting Capacity: Up to 84 lb/sq ft (410.0 kg/sq m) glass panel weight per unit of area, or up to 500 lb (226.8 kg) total glass panel weight.~~

~~Maximum Reveal Width Between Panel Edges: 1/4 inch (6.4 mm) at completed installation.~~

~~Manufacturers:~~

~~McGrory Glass Inc; CaptiveHook by McGrory Glass: www.mcgrory.com/#sle.~~

~~Substitutions: See Section 01 60 00 - Product Requirements.~~

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) by width of glazing rabbet space minus 1/16 inch (1.5 mm) by height to suit glazing method and pane weight and area.

B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
   1. Width: As required for application.
   2. Thickness: As required for application.
   3. Spacer Rod Diameter: As required for application.
   4. Manufacturers:
      a. Pecora Corporation: www.pecora.com/#sle.
      b. Tremco Global Sealants: www.tremcosealants.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

D. Glazing Clips: Manufacturer's standard type.

E. Smoke Removal Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable or fixed windows of high-rise buildings to identify units intended for post-fire smoke removal in compliance with ICC (IBC) and local building officials.

2.11 SOURCE QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide shop inspection and testing for all types of glass.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

~~INSTALLATION - WET GLAZING METHOD (COMPOUND AND COMPOUND)~~

~~Application - Interior Glazed: Set glazing infills from the interior of the building.~~

~~Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 24 inch (610 mm) centers, kept 1/4 inch (6 mm) below sight line.~~

~~Locate and secure glazing pane using glazers' clips.~~

~~Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.~~

3.07 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch (5 mm) below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch (6.4 mm) below sight lines.

1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with _____ ~~type~~manufacturer's recommended sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.

H. Apply cap bead of _____ ~~type~~ manufacturer's recommended sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.08 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch (152 mm) from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch (610 mm) intervals, 1/4 inch (6 mm) below sight line.

F. Fill gaps between pane and applied stop with ~~[specified]~~ manufacturer's recommended type sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

~~**INSTALLATION - BUTT JOINT GLAZING METHOD (SEALANT ONLY)**~~

~~Application - Exterior Glazed: Set glazing infills from exterior side of building.~~

~~Temporarily brace glass in position for duration of glazing process; mask edges of glass at adjoining glass edges and between glass edges and framing members.~~

~~Temporarily secure a small diameter nonadhering foamed rod on back side of joint.~~

~~Apply sealant to open side of joint in continuous operation; thoroughly fill joint without displacing foam rod, and then tool sealant surface smooth to concave profile.~~

~~Permit sealant to cure then remove foam backer rod, and then apply sealant to opposite side, tool smooth to concave profile.~~

~~Remove masking tape.~~

~~**INSTALLATION - PRESSURE GLAZED SYSTEMS**~~

~~**INSTALLATION - STRUCTURAL SILICONE GLAZING**~~

~~Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for glazing application.~~

~~Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.~~

~~Provide only structural silicone sealant, tested and manufactured for structural glazing.~~

~~**INSTALLATION - ACRYLIC FOAM TAPE STRUCTURAL GLAZING**~~

~~Application - Factory (Shop) Glazed: Follow basic guidelines of structural silicone glazing for acrylic foam tape structural glazing application.~~

~~Provide design review of the glazing system and project details, adhesion testing, proper surface preparation, training and a quality service program.~~

~~Provide only acrylic foam tapes designed, tested and manufactured for structural glazing.~~

~~**INSTALLATION - PLASTIC FILM**~~

~~Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.~~

~~Place without air bubbles, creases or visible distortion.~~

~~Install film tight to perimeter of glass and carefully trim film with razor sharp knife. Provide 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) gap at perimeter of glazed panel unless otherwise required. Do not score the glass.~~

3.09 FIELD QUALITY CONTROL

A. See Section 01 45 16-Field Quality Control Procedures for City of Madison requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.10 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

C. Remove nonpermanent labels immediately after glazing installation is complete.

D. Clean glass and adjacent surfaces after sealants are fully cured.

E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.11 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

3.12 SCHEDULES

A. See applicable schedules as indicated on the drawings.

END OF SECTION

SECTION 09 30 00
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Ceramic accessories.

D. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 07 95 13 - Expansion Joint Cover Assemblies: Expansion joint components.

C. Section 09 05 61 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing; remediation procedures.

D. Section 09 21 16 - Gypsum Board Assemblies: Tile backer board.

E. Section 22 40 00 - Plumbing Fixtures: Shower receptor.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017 (Reaffirmed 2022).

B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.

D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.

E. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.

F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.

G. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.

H. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

I. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

J. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.

K. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.

L. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2019.

M. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.

N. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2019.

O. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.

P. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

Q. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).

R. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 2017.

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

T. ANSI A118.13 - American National Standard Specification for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation; 2014 (Reaffirmed 2024).

U. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2019.

V. ANSI A136.1 - American National Standard Specifications for Organic Adhesives for Installation of Ceramic Tile; 2020.

W. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

X. ANSI A137.2 - American National Standard Specifications for Glass Tile; 2022.

Y. ANSI A137.3 - American National Standard Specifications for Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs; 2021.

Z. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.

AA. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

BB. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).

CC. ASTM E492 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine; 2022.

DD. ASTM E2179 - Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors; 2021.

EE. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

FF. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

GG. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

HH. ICC-ES AC380 - Acceptance Criteria for Termite Physical Barrier Systems; 2021, with Editorial Revision (2022).

II. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2023.

JJ. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting one week before starting work of this section; require attendance by affected installers

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout; patterns; color arrangement; perimeter conditions; junctions with dissimilar materials; control and expansion joints; thresholds; ceramic accessories; setting details.

D. Samples: Provide two of each type indicated.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.

G. Installer's Qualification Statement:
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.
   2. Submit documentation of completion of apprenticeship and certification programs.
   3. Submit documentation of Natural Stone Institute Accreditation.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Tile: 5 percent of each type, size, color, and surface finish combination

1.06 QUALITY ASSURANCE

A. Maintain one copy of ANSI A108/A118/A136 and TCNA (HB) on site.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.
   2. Installer Certification:
      a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
      b. Apprenticeship Program: Installer has achieved Journey-worker status through an apprenticeship from the International Union of Bricklayers and Allied Craft-workers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
      c. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F (10 degrees C) during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products of each type by the same manufacturer.
   1. Substitutions: Not permitted.

B. Glazed Wall Tile.
   1. Size: As indicated on the drawings.
   2. Surface finish as indicated on drawings.
   3. Color(s): As indicated on drawings.
   4. Pattern: As indicated on drawings.
   5. Products
      a. Virginia Tile; Wow USA Duo [CWT-03].
      b. Ceramic Tileworks; Craft [CWT-05], Village [CWT-06], Up [CWT-08], Small [CWT-09].
      c. Substitutions: Not permitted.

C. Porcelain Floor Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: 1/3 lap.
   7. Products:
      a. ~~Crossville Argent.~~Ceramic Tileworks; Oh!Take [POR-01].
      b. Ceramic Tileworks; Platform [POR-02].
      c. Substitutions: Not permitted.

D. Porcelain Wall Tile.
   1. Size: As indicated on the drawings.
   2. Thickness: 3/8 inch.
   3. Edges: Square (Rectified).
   4. Surface Finish: UPS.
   5. Color: As indicated on drawings.
   6. Pattern: As indicated on drawings.
   7. Products:
      a. Ceramic Tileworks; Symmetry [CWT-01 / CWT-07].
      b. Crossville; Native Metal [CWT-02].
      c. Substitutions: Not permitted.

E. Mosaic Wall Tile.
   1. Type: Curve Chevron.
   2. Size: As indicated on drawings.
   3. Finish: Gloss.
   4. Color(s): Jade.
   5. Pattern: As indicated on drawings.
   6. Products:
      a. Virginia Tile: Walker Zanger 6th Ave. [CWT-04]
      b. Substitutions: Not permitted.

2.02 TRIM AND ACCESSORIES

A. Non-Ceramic: Satin natural anodized extruded aluminum.
   1. Application: End Cap and Outside Corners
      a. Product: Schluter Systems Jolly.
      b. Size: As necessary for the tile/application.
   2. Application: Tile to carpet flooring transitions.
      a. Product: Schluter Systems Schiene.
      b. Size: As necessary for the tile/application.
   3. Application: Floor to wall transitions.

a. Product: Schluter Systems DILEX-EHK & AHKA.
b. Size: As necessary for the tile/application.
4. Installation: Set with tile mortar or adhesive.
5. Substitutions: ~~See Section 01 60 00 - Product Requirements~~.See Section 01 25 13 – Product Substitution Procedures.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
1. Basis of Design: LATICRETE International.
2. Substitutions: ~~See Section 01 60 00 - Product Requirements~~.See Section 01 25 13 – Product Substitution Procedures.

C. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
1. Applications: Use this type of bond coat where indicated, and where no other type of bond coat is indicated.
2. Products:
a. Basis of Design: LATICRETE International, Inc; MULTIMAX LITE.
b. Substitutions: ~~See Section 01 60 00 - Product Requirements~~. See Section 01 25 13 – Product Substitution Procedures.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Manufacturers:
1. Basis of Design: LATICRETE International, Inc.
a. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

C. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
1. Applications: Use this type of grout where indicated.
2. Color(s): As selected by Architect from manufacturer's full line.
3. Products:
a. SPECTRALOCK Pro.

2.05 ACCESSORY MATERIALS

A. Manufacturers:
1. Basis of Design: LATICRETE International.
2. Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

B. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; intended as waterproofing.
1. Crack Resistance: No failure at 1/8 inch (3.2 mm).
2. Fluid or Trowel Applied Type:
a. Material: Synthetic rubber; Acrylic.
b. Thickness: 20 mils (0.5 mm).
c. Product: HydroBAN.

C. Tile Underlayment: Specifically designed for bonding to thin-set setting mortar; not primarily waterproofing material and having the following characteristics:
1. Sound Reduction: Comply with ANSI A118.13; ASTM E492; ASTM E2179
2. Crack Resistance: No failure at 1/8-inch (3.2 mm) inch gap, minimum; comply with ANSI A118.12
3. Water Resistance: Comply with ANSI A118.10, bonded waterproofing.
4. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.

5. Suitable for installation over green concrete.
6. Type: Fluid or trowel applied.
   a. Products:
      1) LATICRETE International, Inc; Level Plus.
      2) Substitutions: ~~See Section 01 60 00 - Product Requirements.~~See Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 09 05 61.
   2. Test as Follows:
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   3. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
   4. Follow moisture and alkalinity remediation procedures in Section 09 05 61.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases; Align floor, base, and wall joints.; Align floor and wall joints

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square; and external angles square

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep control and expansion joints free of mortar, grout, and adhesive.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior; concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat; F116, organic adhesive; with standard grout unless otherwise indicated.
   1. Use uncoupling membrane under all tile unless other underlayment is indicated.
   2. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.
   3. Where epoxy bond coat and grout are indicated, install in accordance with TCNA (HB) Method F131.
   4. Where furan bond coat and grout are indicated, install in accordance with TCNA (HB) Method F133.
   5. Where epoxy or furan grout is indicated, but not epoxy or furan bond coat, install in accordance with TCNA (HB) Method F115.

3.05 INSTALLATION - WALL TILE

A. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat; W223, thin-set with organic adhesive.
   1. Where mortar bed is indicated, install in accordance with TCNA (HB) Method W222, one coat method.
   2. Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCNA (HB) Method W222, one coat method.

B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat, W211, bonded mortar bed without membrane.

3.06 CLEANING AND MAINTENANCE

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface 4 days after installation.

3.08 SCHEDULE

A. As indicated on the drawings.

END OF SECTION

SECTION 09 51 26
VENEERED WOOD CEILING PANELS~~: WOODWORKS GRILLE - FORTÉ~~

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.02 SUMMARY

A. Section Includes:
1. ~~WoodWorks Grille Forté~~ Veneered Wood Ceiling Panels ~~with Centered Notched and Flat Backers~~
2. Exposed grid suspension system.
3. Wire hangers, fasteners, main runners, cross tees, wall angle moldings and accessories.

B. Related Sections:
1. Section 09 51 00 - Acoustical Ceilings
2. Section 09 21 16 - Gypsum Board Assemblies
3. Section 09 22 16 - Non-Structural Metal Framing
4. Division 23 - HVAC
5. Division 26 - Electrical Work

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):
1. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
2. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot- Dip Process.
3. ASTM A 1008 Standard Specification for Steel, Sheet, and Cold Rolled Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
4. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
5. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
6. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
7. ASTM E 580 Application of Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels in Areas Requiring Seismic Restraint.
8. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
9. ASTM E 1264 Classification for Acoustical Ceiling Products.
10. Hardwood Plywood & Veneer Association (HPVA)
11. International Building Code
12. ASHRAE Standard 62 1 2004 Ventilation for Acceptable Indoor Air Quality
13. NFPA 70 National Electrical Code
14. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
15. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
16. International Code Council-Evaluation Services Report - Seismic Engineer Report
    a. ESR 1308 - Armstrong T-Bar or Dimensional Suspension
17. California Air Resources Board (CARB) compliant
18. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

1.04 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Shop Drawings: Layout and details of ceilings. Show locations of items that are to be coordinated with or supported by the ceilings.

C. Installation Instructions: Submit manufacturer's installation instructions as referenced in Part three, Installation.

D. Product Data: Submit manufacturer's technical data for each type of ceiling unit and suspension system required.

E. Samples: 4-1/4"x 7"x 3/4 – Real Wood Veneer on fire rated particle board– Semi-gloss tinted topcoat – Clear Finish

F. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

G. Non-Conformance: All products not conforming to the requirements of this specification and or the manufacturer's published values are to be disposed. The Contractor performing the work will replace with approved product at their expense.

1.05 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide ceiling panel units and grid components by a single manufacturer.

B. Fire Performance Characteristics: Identify ceiling components with appropriate markings of applicable testing and inspecting organization.
   1. Surface Burning Characteristics: As follows, tested per ASTM E-84 and complying with ASTM E 1264 for Class A products.
   2. HPVA (Hardwood Plywood and Veneer Association) certification and audit program per ASTM E-84 tunnel test.

C. Woodworking Standards: Manufacturer must comply with specified provisions of Architectural Woodworking Institute quality standards.

D. Coordination of Work: Coordinate ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store ceiling components in a dry interior location in their cartons prior to installation to avoid damage. Store cartons in a flat, horizontal position. The protectors between the panels should not be removed until installation.

B. Do not store in unconditioned spaces with humidity greater than 55 percent or lower than 25 percent relative humidity and temperatures lower than 50 degrees F or greater than 86 degrees F. Panels must not be exposed to extreme temperatures, for example, close to a heating source or near a window with direct sunlight.

C. Handle ceiling units carefully to avoid chipped edges or damage to units in any way.

1.07 PROJECT CONDITIONS

A. Wood ceiling materials should be permitted to reach room temperature and have a stabilized moisture content for a minimum of 72 hours before installation. (Remove plastic wrap to allow panels to climatize).

B. The wood panels should not be installed in spaces where the temperature or humidity conditions vary from the temperatures and conditions that will be normal in the occupied space.

C. As interior finish products, the veneered panels are designed for installation in temperature conditions between 50 degrees F and 86 degrees F, in spaces where the building is enclosed, and HVAC systems are functioning and will be in continuous operation. Relative humidity should not fall below 25 percent or exceed 55 percent.

1.08 WARRANTY

A. Veneered Wood Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to:
   1. Veneered Wood Panels: Defects in materials or factory workmanship.
   2. Grid System: Rusting and manufacturing defects.

B. Warranty Period:
   1. Veneered Wood panels: One (1) year from date of installation.
   2. Grid: Ten (10) years from date of installation.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.09 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
   1. Ceiling Units: Furnish quality of full-size units equal to 2.0 percent of amount installed.
   2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 1.0 percent of amount installed.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design WoodWorks Grille - Forte' Veneered Ceilings Panels:
   1. Armstrong World Industries, Inc.

B. Suspension Systems:
   1. Armstrong World Industries, Inc.

C. Substitutions: ~~not permitted.~~ ~~See Section~~ See Section 01 25 13 – Product Substitution Procedures. Pre-Approved Equal: 9Wood Inc; 1100 Cross Piece Grille: www.9wood.com.

2.02 WOOD CEILING UNITS

A. Ceiling Panels Type: WD-1
   1. Surface Texture: Smooth
   2. Composition: Real wood veneer on fire rated particle board
   3. Finish(s): Real Wood Veneer
      a. Dark Cherry
   4. Panel Width: as indicated on the drawings.
      a. Panel Length Size(s): as indicated on the drawings.
      b. Slat Width: as indicated on the drawings.
         1) Height – Number of Slats (Spacing)
            (a) As indicated on the drawings.
   5. Acoustical Performance Infill:
      a. Calla Square Lay-in panel - Item 2820BK – NRC 0.85, CAC 35
   6. Flame Spread:
      a. Class A: ASTM E84 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

7. Acceptable Product: WoodWorks Grille Forté Veneered Panels –items 6333L_ S14-S17, 6334L_S14-S14, 6335L _S14_S17, 6336L_S14-S16 as manufactured by Armstrong World Industries.
   a. Please use ordering format found on manufacturer's data page.

B. Accessories:
   1. As required for selected panel configuration(s)

2.03 SUSPENSION SYSTEMS

A. Components: All main beams and cross tees shall be commercial quality hot dipped galvanized steel as per ASTM A653. Main beams and cross tees are double-web steel construction with 15/16-inch type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
   1. Structural Classification: ASTM C635 (Heavy Duty).
   2. Color: Tech Black.
   3. Acceptable Product: Prelude XL 15/16" Exposed Tee Main beam item 7301BL, Prelude XL Exposed Tee item XL7341BL, Prelude XL Exposed Tee 2’ item XL7328BL as manufactured by Armstrong World Industries, Inc.

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least times-three design load, but not less than 12 gauge.

D. Accessories/Edge Moldings and Perimeter Trim:
   1. As selected by Architect from manufactuer's standard options.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out.

B. Proper designs for both supply air and return air, maintenance of the HVAC filters and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure supply air is properly filtered and the building interior is free of construction dust.

3.02 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. WoodWorks ceiling materials should be permitted to reach room temperature and have a stabilized moisture content for a minimum of 72 hours before installation. (Remove plastic wrap to allow panels to climatize).

3.03 INSTALLATION

A. Interior WoodWorks products, the veneered wood panels are designed for installation in temperature conditions between 50 degrees F and 86 degrees F, in spaces where the building is enclosed, and HVAC systems are functioning and will be in continuous operation. Relative humidity should not fall below 25 percent or exceed 55 percent.

B. Install suspension system and panels in compliance with ASTM C636, ASTM E580, with the approval of the authorities having jurisdiction, and in accordance with the manufacturer’s WoodWorks Grille Forté Veneered Installation Instructions.

3.04 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of ceilings panels, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

END OF SECTION

SECTION 10 22 39
FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and track support shimming.

B. Section 08 71 00 - Door Hardware: Lock cylinders for panels

C. Section 26 05 33.13 - Conduit for Electrical Systems: Empty conduit from partition motor controller to disconnect and from motor controller to control buttons.

D. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections; control buttons .

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2022.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

E. ASTM E413 - Classification for Rating Sound Insulation; 2022.

F. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

G. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics; 2020.

H. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
   1. Require attendance by representatives of installer.

1.05 SUBMITTALS

A. See Section 01 33 23-Submittals for City of Madison required submittal procedures.

B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.

C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.

D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

E. Samples for Review: Submit two samples of surface finish, 12 by 12 inches (300 by 300 mm) size, illustrating quality, colors selected, texture, and weight.

F. Certificates: Certify that partition system meets or exceeds specified acoustic requirements.

G. Manufacturer's Instructions: Indicate special procedures.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.08 WARRANTY

A. See Section 01 77 00-Closeout Procedures, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Folding Panel Partitions - Horizontal Opening:
1. BASIS OF DESIGN: Modernfold, a DORMA Group Company: www.modernfold.com/#sle.
2. Kwik-Wall Company~~; 2000 Series Operable Walls~~; Model 3050: www.kwik-wall.com/#sle.
3. Substitutions: ~~See Section01 60 00-Product Requirements~~See Section 01 25 13 – Product Substitution Procedures.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions: Center opening; paired panels; side stacking; motor operated.
1. Basis of Design: Acousti-seal Encore Paired Panel, STC 56 by Modernfold.

B. Panel Construction:
1. Panel Properties:
a. Thickness With Finish: 4 inches (100 mm).
b. Width: Equal widths.
c. Weight: 12 lb/sq ft (59 kg/sq m).

C. Panel Finishes:
1. Facing: Vinyl coated fabric.
a. Selection: Reed (Arani) 101189-513.
2. Exposed Metal Trim: Clear anodized.

D. Panel Seals:
1. Modernfold Sure Set Automatic System: Top and Bottom
2. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
3. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, floor and ceiling seals, and above track to structure acoustic seal.

E. Suspension System:
1. Modernfold Smart Track suspension system

F. Performance:
1. Acoustic Performance:
a. Sound Transmission Class (STC): Equal to or greater than 55 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft (9.3 sq m).
2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Operation:

1. Electric Operator: 12 inches (300 mm) per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
2. Control Station: One standard keyed, three button OPEN-STOP-CLOSE type; 24 volt circuit; surface mounted.
   a. Location to be determined
   b. Key switch prepared for mortise lock cylinder.
   c. Key switches alike.
3. Safety Features:
   a. Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
   b. Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
   c. Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
4. Electrical Requirements:
   a. See Manufacturer recommendations for motor size required for specified panel system.
   b. Disconnect Switch: Factory mount disconnect switch in control panel.

H. Accessories:
   1. Pocket Enclosures: Door, frame, and trim to match adjacent panels.

2.03 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

C. Hardwood Plywood: Face species Beech, plain sliced, book matched, veneer core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1; glue type as recommended for application.

D. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.

E. Acoustic Insulation:
   1. Type: As required for acoustic performance indicated.
   2. Thickness: As required for acoustic performance indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.

C. Verify track supports are laterally braced and will permit track to be level within 1/4 inch (6.4 mm) of required position and parallel to the floor surface.

D. Verify floor flatness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

E. Verify wall plumbness of 1/8 inch in 10 feet (3 mm in 3 m), non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.

B. Fit and align partition assembly level and plumb.

C. Lubricate moving components.

D. Install acoustic sealant to achieve required acoustic performance.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.

C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

SECTION 28 13 00
ACCESS CONTROL SYSTEM (KEYSCAN)

PART 1 GENERAL

1.01 SUMMARY

A. The City of Madison Information Technology Department has been assisting other City agencies with standardizing facilities through the use of access cards, key fobs, and punch pads. All hardware is installed locally at the facility while software controls access to various doors remotely.

B. These specifications describe the materials, equipment, and installation requirements to install an integrated, computerized access control and alarm monitoring system utilized by the City of Madison Information Technology (CoM-IT) Department.

C. The ACS System Contractor shall be responsible for verifying equipment requirements, locations, and coordination with the General Contractor and all other necessary trades as needed for a complete installation.

D. The ACS System Contractor shall be aware that the installation plans and specifications are for one (1) building with (3) separate areas and shall be wired as such. Refer to the Part 3-Execution for additional details.

1.02 RELATED SPECIFICATIONS

A. 01 31 23 - Project Management Web Site.

B. 01 33 23 - Submittals.

C. 08 71 00 - Door Hardware.

D. 27 00 05 - Communications Cabling.

1.03 RELATED DRAWINGS

A. Refer to all Electrical drawings for locations of distribution panels and equipment as it relates to standard line voltage locations.

B. Refer to all Technical drawings for locations of Access Control System (Keyscan) equipment.

C. Refer to the door hardware schedule and Architectural floor plans for information relating to door access locations and specific hardware requirements.

1.04 REFERENCES

A. The system shall comply with the standards, codes and regulations of the following regulatory bodies:
   1. Underwriters Laboratories (UL) Std No. 294 – Access Control System Units.
   2. Canadian Standards Association (CSA) Std C22.2 No. 205-M1983 – Signal Equipment.
   3. CE Standards.
      a. EN 55022 RF Emissions.
      b. EN 55024 RF Immunity.
      c. EN 60950-1 Equipment Safety.
   4. FCC Subpart B – RF Emissions.
   5. Industry Canada ICES 003 Emissions.
   6. RoHS.

1.05 CONTRACTORS QUALIFICATIONS

A. The Contractor installing the ACS system shall:
   1. Be a Certified Keyscan Enterprise Partner.
   2. Utilize installers who are Keyscan Enterprise Certified Technicians.
   3. Be able to provide 24/7/365 support during the warranty period of this project.
   4. Be able to respond and repair or replace most components within 4 hours of notification.

1.06 SUBMITTALS

A. The Contractor shall provide a complete submittal package in a timely manner to allow sufficient review time prior to ordering the system components required for a complete installation. The contractor shall be solely responsible for any equipment, purchased/ordered/delivered that is not approved of during the submittal review process.

B. The complete submittal package shall include but not be limited to the following:
   1. All certifications of the contractor and contractor's installation team. Certifications shall be current from the start of the contract through the end of the warranty period.
   2. Cut sheets indicating, shop drawings, performance data, and other such information that will indicate the component being installed matches the component that was specified.
   3. Cut sheets and shop drawing of Contractors recommendations for tags and labels.

1.07 WARRANTY

A. The Contractor shall warrant for one year the complete installation of equipment and components associated with this contract and installation. Contractor's warranty shall be in the form of a written letter on company letterhead referring to the contract information, dates of installation and acceptance, signed by an authorized representative of the Contractors Company.
   1. The Contractor's warranty shall include but not be limited to the following:
      a. Transportation to and from the location as often as needed during the warranty period.
      b. All labor and materials necessary to properly and thoroughly trouble shoot the system.
      c. All fees associated with the shipping of any component that needs to be returned or supplied by the manufacturer for repair or replacement.
      d. All labor and materials required to remove, repair, replace, or re-install any component.

B. The Contractor shall also provide all manufacturers warranties/guarantees associated with installed components of the completed installation.

1.08 QUALITY ASURANCE

A. The Contractor shall be responsible for coordinating his/her Work with other trades and divisions as needed for a complete installation. This shall include pre-installation meetings for locating equipment, conduit, cabling, control devices, and other materials and equipment required by this installation.

B. The General Contractor (GC) shall be responsible for ensuring that all doors requiring controlled access are properly prepared and installed per the contract documents. The GC shall further be responsible for ensuring all project coordination, pre-installation meetings, submittals and other such project management responsibilities are conducted efficiently and according to the project specifications and schedules.

PART 2 PRODUCTS

2.01 EXISTING SYSTEM PRODUCTS OVERVIEW

A. The City of Madison Information Technology Department (CoM IT) owns and operates a fully licensed copy of the Keyscan Access Control System software.
   1. The Keyscan Access Control System (ACS) provides controlled access to secured doors and elevators through the use of electronic door latches, proximity readers, control panels, and a proprietary software program.
   2. The Keyscan software allows CoM-IT and the facility the Owner to customize multiple levels of access and system performance through any combination of the following:
      a. Calendar and time based lock/unlock controls
      b. Group access control for common personnel groups
      c. Individual access control for specialized access control
      d. Elevator access control for accessing/not accessing various floors
      e. Temporarily disable access control for a specified time period
      f. Remotely unlock/lock a door
      g. Lockdown a facility from one location

h. Provide customizable alert notifications

2.02 NEW EQUIPMENT AND COMPONENTS

A. The Contractor guarantees that all equipment and components shall be furnished new, undamaged, free of defects, and conform to the drawings and specifications of this contract. The contractor is solely responsible for replacing any damaged or defective item.

B. New ACS components on interior and exterior access doors shall be able to be integrated with the Owners existing system.

2.03 DISTRIBUTION SUPPLY PANEL (AC-DS-1)

A. AC-DS-1 brings line voltage into the ACS system with the following performance specifications:
   1. Input
      a. 115VAC, 60Hz, 1.45A
   2. Output
      a. Eight (8) PTC protected outputs
      b. 16VAC output
      c. 16VAC @ 10amp (175 VA) supply current (1.25 amp per device, 2.5 amp max.)
      d. Outputs rated @ 2.5 amp
      e. Main fuse rated @ 15 amp/32V
      f. Surge suppression
   3. Miscellaneous electrical information
      a. Operating temperature 0º C to 49ºC ambient
      b. 82 BTU/hr
      c. System AC input VA requirement 166.75 AV
   4. Miscellaneous required features
      a. AC power LED indicators
      b. Illuminated master power disconnect circuit breaker with manual reset
   5. Agency Approvals
      a. UL 294 listed for Access Control System Units
      b. CUL listed-CSA Standard C22.2 No 205-M1983 Signal Equipment

B. AC-DS-1 shall be:
   1. Altronix, AL168175CB
   2. Pre-approved equal

2.04 POWER SUPPLY PANEL (AC-PS-1)

A. The AC-PS-1 brings line voltage from the AC-DS-1, reduces then distributes the voltage to the Access Security Panels (AC-SEC-1) with the following performance specifications:
   1. Input
      a. 115VAC, 60Hz, 1.9A
      b. Power supply input options
         1) One (1) common power input for ACM8 and lock power (factory installed)
         2) Two (2) isolated power inputs; one (1) to power the ACM8 and one (1) for lock accessory power, (external power supply is required). Current is determined by the power supply connected, not to exceed a maximum of 10 amp total
      c. Eight (8) Access control System trigger inputs with the following options:
         1) Eight (8) normally open (NO) inputs
         2) Eight (8) open collector inputs
         3) Any combination of the above
   2. Output
      a. 12VDC or 24VDC @ 6 amp supply current
      b. Eight (8) independently controlled outputs with the following options:
         1) Eight (8) Fail-Safe and/or Fail-Secure power outputs

2) Eight (8) form “C” 5 amp rated relay outputs
3) Any combination of the above

c. Eight (8) auxiliary power outputs (un-switched)
d. Output fuses rated @ 3.5 amp
e. Filtered and electronically regulated outputs (built-in power supply).

3. Miscellaneous electrical information
   a. Operating temperature 0º C to 49ºC ambient
   b. BTU/hr:
      1) 12VDC = 36.85 BTU/hr
      2) 24VDC = 73.70 BTU/hr
   c. ACM8 board main fuse is rated at 10 amp
4. Battery Backup
   a. Built-in charger for sealed lead acid or gel type batteries
   b. Power supply board maximum charge current 0.7 amp
   c. Automatic switch over to stand-by battery when AC fails
   d. Zero voltage drop when unit switches over to battery backup (AC failure condition)
   e. Battery fail and battery presence supervision (form “C” contact)
5. Miscellaneous required features
   a. Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the eight (8) outputs.
   b. Fire Alarm disconnect input options:
      1) Normally open (NO) or normally closed (NC) dry contact input
      2) Polarity reversal input for FACP signaling circuit
   c. Alarm output relay indicates that FACP input is triggered (form “C” contact rated @ 1 amp 28VDC)
   d. Short circuit and thermal overload protection
   e. AC fail supervision (form “C” contact)
   f. Red LEDs indicate outputs are triggered (relays energized)
   g. Green LED indicates FACP disconnect is triggered
   h. AC input and DC output LED indicators
   i. Enclosure accommodates up to two (2) 12AH batteries
6. Agency Approvals
   a. UL 294 listed for Access Control System Units
   b. CUL listed-CSA Standard C22.2 No 205-M1983 Signal Equipment

B. AC-PS-1 shall be:
   1. Altronix, AL600ULACM
   2. Pre-approved equal

2.05 SECURITY PANEL (AC-SEC-1)

A. The AC-SEC-1 distributes the reduced voltage and control wiring to/from each door with an access control device.

B. AC-SEC-1 shall be:
   1. Keyscan CA8500 – 8 Reader Access Control Panel

C. The AC-SEC-1 shall be provided, located and mounted by the Contractor.

D. Provide quantity required.

E. Provide separate security panels for doors/items controlled by ~~City IT~~ Parks and doors controlled by ~~City~~ Library.

2.06 SECURITY PANEL (AC-SEC-2)

A. The AC-SEC-2 distributes the reduced voltage and control wiring to/from each door to an IT telecommunications room.

B. AC-SEC-2 shall be:
   1. Keyscan CA150 - Single Door Access Control Panel.
   2. The AC-SEC-2 shall be provided, located, and mounted by the contractor.
   3. Provide one to control the door to the IT room.

2.07 DOOR CONTROL DEVICES

A. The Contractor shall be responsible for verifying the Door Control Device (DCD) quantities and locations with the door hardware schedule.

B. DCD shall be:
   1. ~~Keyscan K-KPR – Keyscan Proximity Reader/Keypad~~HID Global 40KTNKS-00-000000-Signo 40 wall mount keypad reader, this reader accepts swipe monitoring of cards, key fobs, and other such devices as well as accepting personal identification numbers (PINs). If a keypad is not needed, the HID Global 40NTKS-00-000000 Signo 40 0r 20NTKS-00-000000 Signo 20 can be used.
      1) Plan designation = AC-CR-A for door control device associated with City-Library system.
      2) Plan designation = AC-CR-B for door control device associiated with City-IT system.
   2. The ~~K-KPR~~S-00-000000 shall be used for all locations.

2.08 DOOR CONTROL CABLES

A. The following cables are required for a complete installation of the ACS, per controlled door, as follows:
   1. One (1) 22/6 shielded cable, required; to DCD
   2. One (1) 18/2 un-shielded cable, required; lock power
   3. One (1) 22/2 un-shielded cable, required; door contact
   4. One (1) 22/4 un-shielded cable, required but not used; for future request to exit sensors

B. At the Contractors option he/she may run a manufactured cable bundle containing all four (4) cables listed above. It shall be the sole responsibility of the contractor to appropriately size the conduits for the installation.

PART 3 EXECUTION

3.01 COOPERATION OF THE ACS CONTRACTOR

A. The Contractor shall be required to coordinate with all trades for a complete and timely installation. This includes attending all pre-installation meetings where equipment locations, conduit locations, and control devices will be installed or may be in conflict with the installation of other trades. The Contractor shall be solely responsible for any additional cost required for removing/replacing/modifying any completed work by other trades because the installation was not properly coordinated.

B. The Contractor shall coordinate with the Owners Representative from City IT for all information necessary to complete the installation and integration with the Owners existing hardware and software.

C. The Contractor shall verify with the appropriate Owners Representative for mounting heights of all hardware and equipment prior to installation. This shall be completed at a pre-installation walk through prior to rough-in.

D. The Contractor shall coordinate with the elevator equipment installer the location and wiring of the EFACP.

E. The Contractor shall coordinate with the Owner's Representative from City IT to verify all requirements for all access controlled doors are properly coordinated and understood prior to roughing in the installation.

3.02 GENERAL EQUIPMENT MOUNTING

A. All ACS equipment shall be mounted to the 3/4" AC fire rated plywood panels provided and installed by the General Contractor. Contractor shall tape out all equipment prior to mounting to insure adequate space is allotted for the complete installation per the riser diagrams including all related conduits and cables.

B. All equipment shall be neatly arranged so as to meet or exceed the manufacturer's recommended working space around each component.

C. Equipment to be installed on plywood mounting panels shall include but not be limited to the following:
   1. Distribution Service Panel (AC-DS-1)
   2. Power Supply Panel (AC-PS-1)
   3. Access Control Panel (AC-SEC-1)
   4. All required conduits, and boxes for line voltage

3.03 GENERAL CONDUITS AND WIRING

A. This section shall apply to both the ACS Contractor and the Electrical Contractor. The following division of responsibilities shall apply:
   1. The Electrical Contractor shall be responsible for furnishing, installing, and connecting all conduits, connectors, conductors, and other related materials associated with providing line voltage to the ACS system as follows:
      a. Providing an 110V, 20A, dedicated circuit from the designated distribution panel to AC-DS-1 as described in Section 2.3 above.
      b. Providing line voltage from AC-DS-1 to AC-PS-1 as described in Section 2.4 above.
   2. The ACS Contractor shall be responsible for furnishing installing, and connecting all conduits, connectors, conductors and other related materials required to complete the installation of the low voltage wiring and door controller cabling.

B. All conduits shall be properly sized for the number of wires or wire bundles being pulled through the conduit. The Contractor shall verify with the manufacturer the recommended fill rate by conduit size and shall not exceed the recommendations.

C. The contractor shall neatly lay out all conduits in such a fashion so as to minimize bending, crossovers, etc.

D. Bends, pull boxes, and pull points shall be sized and located as per all applicable codes and standards for the number of wires or wire bundles in the bend, pull box, pull point.

E. CAT6 cables from each AC-SEC-1 shall be neatly run in cable management equipment supplied and installed by the cabling contractor or conduits supplied and installed by the ACS Contractor as needed. The switch to be used for all ACS equipment shall be located in Telecom Room 125. Cables shall be labeled on both ends per the cabling specification.

F. The General Contractor and the ACS Contractor shall ensure the following Emergency Access requirements are properly installed and operational prior to the final Madison Fire Department inspection for occupancy.
   1. CoM IT shall provide a minimum of six (6) swipe cards to each installed Knox Box for emergency entrance. The cards shall be appropriately coded for entry at all controlled access doors.
   2. The following doors shall be wired to unlock in the event of an emergency.
      a. As directed by Owner.

3.04 EQUIPMENT IDENTIFICATION AND LABLEING

A. The Contractor shall provide and install all equipment identification and labeling to the following specifications.
   1. Tags and labels shall be permanent rigid plastic or metal tags with engraved or machine stamped lettering. Hand written self stick or metal hand stamped tags will not be accepted.
   2. The Contractor shall work out the labeling scheme for doors with City IT, Owner, and Architect prior to ordering any labels or tags.

3. The Contractor shall provide all labels and tags associated with this specification. This shall include the line voltage feed to each AC-DS-1 from the electrical distribution panel.

B. Panels and Boxes
   1. All panels and boxes shall be labeled on the outside cover that readily identifies the panel/box as a “Distribution Supply”, “Power Supply”, “Access Control Panel”, “Elevator Floor Access Control Panel”, etc. An associated number shall also be on each tag and the number “1” shall be used even if there is only one of that type panel/box.
   2. Access Control Panels shall have a card index inside the front cover of each door indicating the controller number, door number, and door location being served by that panel.

C. Conduits
   1. Line voltage from electrical distribution panels shall have conduits labeled on both ends as follows:
      a. At the distribution panel the line voltage conduit shall be labeled with the system supplied, and the ACS distribution supply panel number.
      b. In the Telecommunications Room the line voltage conduit label shall indicate the distribution panel and circuit number(s) controlling the supply line.
   2. Conduits between Access Control Panels and the controlled doors shall be labeled on both ends as follows:
      a. In the Telecommunications Room each conduit shall labeled with the door number(s) being supplied.
      b. Above the finished ceiling where the conduit is exposed prior to going into the wall space that serves the door the conduit shall be labeled with the Door Control Panel and Controller number associated with the door being served.
      c. If the conduit size is reduced as control cabling is supplied to doors along the run each change is conduit size shall be re-labeled as noted in 2.b. above.
   3. Conduits between equipment and components in the Telecommunications Room do not need to be identified.

3.05 INSTALLATION TESTING AND ACCEPTANCE

A. The CoM IT and the Owner shall be responsible for completing all software programming associated with the installation of this contract prior to the completion of the installation of the system components. It is the sole responsibility of the Contractor to notify the Owner no less than two (2) weeks in advance of completing the installation that all codes and time setting shall be prepared for final installation and testing.

B. The Contractor, CoM IT, and the Owner shall test each access control point with swipe cards and PINs to insure the door unlocks.

C. CoM IT shall test each door using the existing fully integrated software. This shall include but not be limited to the following:
   1. Remotely lock/unlock the doors
   2. Verify time clock feature works for locking doors
   3. Verify swipe cards and PINs work on all doors
   4. Verify emergency entrance cards for knox boxes work on all doors for the areas served.

D. The Contractor, CoM IT, and the Owner shall test the elevator floor access functions as follows:
   1. With swipe cards and PINs to ensure controlled access to all floors.
   2. With no swipe cards or PINs to ensure that the general public can only access the designated public floors and not controlled access floors.
   3. Verify time clock feature works for accessing floors

E. A completed and accepted installation shall pass all of the above tests for all controlled access points.

F. The warranty period for the completed and accepted installation shall not begin until the date of the accepted general contract. The Contractor shall coordinate this date with the General Contractor.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Painted pavement markings.

1.02 RELATED REQUIREMENTS

A. Section 32 12 16 - Asphalt Paving.

B. Section 32 16 23 - Sidewalks.

C. Section 32 17 13 - Parking Bumpers.

D. Section 32 17 26 - Tactile Warning Surfacing.

1.03 REFERENCE STANDARDS

A. AASHTO M 237 - Standard Specification for Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete 2005 (Reapproved 2019).

B. AASHTO M 247 - Standard Specification for Glass Beads Used in Pavement Markings 2013 (Reapproved 2018).

C. AASHTO M 249 - Standard Specification for White and Yellow Reflective Thermoplastic Striping Material (Solid Form) 2012 (Reapproved 2020).

D. AASHTO MP 24 - Standard Specification for Waterborne White and Yellow Traffic Paints 2015 (Reapproved 2020).

E. ASTM D4505 - Standard Specification for Preformed Retroreflective Pavement Marking Tape for Extended Service Life 2012 (Reapproved 2017).

F. ASTM E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester 1993 (Reapproved 2018).

G. FHWA MUTCD - Manual on Uniform Traffic Control Devices 2009, with Editorial Revision (2022).

H. City of Madison - Standard Specifications for Public Works Construction (2025)

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work of this section with adjoining work.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver glass beads in containers suitable for handling and strong enough to prevent loss during shipment, accompanied by batch certificate.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.08 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.

1.09 SEQUENCING

A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of markings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 ~~PAINTED~~THERMOPLASTIC PAVEMENT MARKINGS

A. Comply with State of Wisconsin Highway Department standards.

B. Comply with City of Madison Specifications for Public Works Construction - Article 608

C. ~~Painted Pavement Markings: As indicated on drawings.~~

PART 3 EXECUTION

3.01 PREPARATION

A. Establish survey control points for locating and dimensioning of markings.

B. Place barricades, warning signs, and flags as necessary to alert approaching traffic.

C. Clean surfaces prior to installation.
   1. Remove dust, dirt, and other debris.

3.02 INSTALLATION

A. General:
   1. Position pavement markings as indicated on drawings.
   2. Field location adjustments require approval of Architect.

B. ~~Painted Pavement Markings:~~Thermoplastic Pavement Marking
   1. Apply in accordance with manufacturer's instructions.
   2. Apply in accordance with State of Wisconsin Highway Department standards.
   3. Apply in accordance with City of Madison Specifications for Public Works Construction - Article 608

3.03 TOLERANCES

A. Maximum Variation From True Position: 3 inches (76 mm).

B. Maximum Offset From True Alignment: 3 inches (76 mm).

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Perform field inspection for deviations from true alignment or material irregularities.

C. If inspections indicate work does not meet specified requirements, rework and reinspect at no cost to Owner.

D. Allow the pavement marking to set at least the minimum time recommended by manufacturer.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals for additional requirements.

3.06 PROTECTION

A. Prevent approaching traffic from crossing newly applied pavement markings.

B. Replace damaged or removed markings at no additional cost to Owner.

C. Preserve survey control points until pavement marking acceptance.

END OF SECTION