New Jersey Sports & Exposition Authority
Lyndhurst, New Jersey

PROJECT MANUAL

for

NJSEA Lyndhurst Admin Building Envelope Improvements

Contract No.CN-302

Book 4 of 4

DESIGN DOCUMENTS

December 1, 2025

Project CN-302 NJSEA Lyndhurst Admin Building Envelope Improvements
DESIGN DOCUMENTS

Drawings

DRAWING NO.	Title	DATE
A-000	Project Data / Cover	**12-01-2025**
A-101	Existing First Floor Plan	**12-01-2025**
A-102	Existing Second and Third Floor Plans	**12-01-2025**
A-200	Elevations & Details	**12-01-2025**
A-201	Elevations	**12-01-2025**
A-202	Existing Elevations	**12-01-2025**
A-203	Existing Elevations	**12-01-2025**
A-204	Photo Documentation	**12-01-2025**
A-300	Window Elevations	**12-01-2025**
A-301	Curtain Wall Details	**12-01-2025**
A-311	Window Details	**12-01-2025**
A-312	Window Details	**12-01-2025**
A-401	Door Schedule, Elevations, and Details	**12-01-2025**

TECHNICAL SPECIFICATIONS

SPECIFICATION NO.	Title
01 10 00	Summary
01 22 00	Unit Prices
01 23 00	Alternates
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 35 16	Alteration Project Procedures
01 40 00	Quality Requirements
01 50 00	Temporary Facilities and Controls
01 73 00	Execution
01 74 19	Construction Waste Management & Disposal
02 41 19	Selective Demolition
06 10 00	Rough Carpentry & Framing
07 62 00	Sheet Metal Flashing and Trim
07 92 00	Joint Sealants
08 07 26	Bird Friendly Film
08 17 43	FRP Aluminum Hybrid Doors
08 41 13	Aluminum-Framed Entrances and Storefronts
08 44 13	Glazed Aluminum Curtain Walls
08 71 00	Door Hardware
08 80 00	Glass and Glazing
09 96 00	EIFS Recoating

09 96 11	High-Performance Coatings
12 21 24	Motorized Roller Shade System
12 24 13	Window Treatment (Manual)
12 36 61	Solid Surfacing Countertop

Project CN-302 NJSEA Lyndhurst Admin Building Envelope Improvements
DESIGN DOCUMENTS

Site Map

11/25/2025 1:00:55 PM

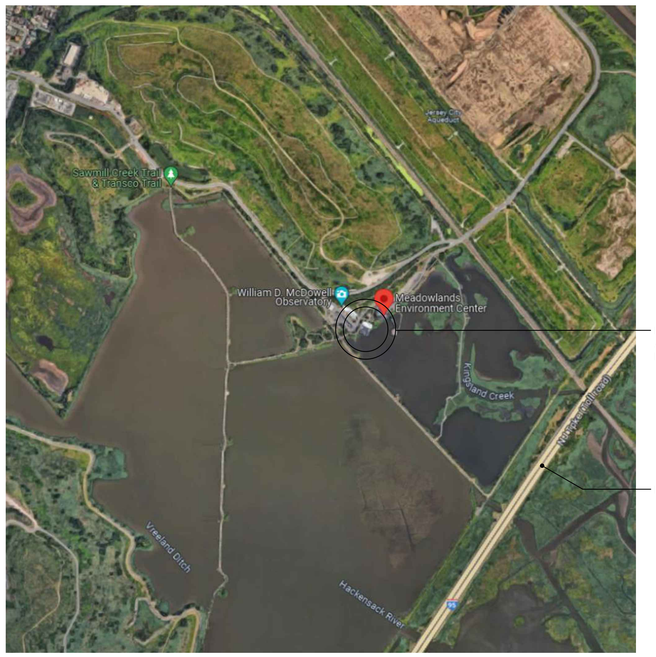
BUILDING ENVELOPE IMPROVEMENTS at:

NJSEA LYNDHURST ADMINISTRATION BUILDING
1 DeKorte Park Plaza
Lyndhurst, New Jersey 07071

Abbreviations

A.F.F.	ABOVE FINISH FLOOR
ALUM.	ALUMINUM
@	AT
ACT	ACOUSTIC CEILING TILE
ALT.	ALTERNATE
BM.	BEAM
B.E.J.	BUILDING EXPANSION JOINT
BET.	BETWEEN
BLK.	BLOCK OR BLOCKING
BD.	BOARD
BOT.	BOTTOM
BLDG.	BUILDING
B.O.	BOTTOM OF
C.B.	COLLECTOR BOX
CEM.	CEMENT
CEM. PLAS.	CEMENT PLASTER
C.L.	CENTER LINE
CONC.	CONCRETE
C.M.U.	CONCRETE MASONRY UNIT
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
C.J.	CONTROL JOINT
COORD.	COORDINATE
CT.	CERAMIC TILE
DET.	DETAIL
DIAM.	DIAMETER
D.F.	DRINKING FOUNTAIN
DR.	DOOR
DN.	DOWN
EA.	EACH
EIFS	EXTERIOR INSULATION FIN. SYSTEM
EL.	ELEVATION
E.O.S.	EDGE OF SLAB
EXIST.	EXISTING
EXP. JT.	EXPANSION JOINT
EXP.	EXPOSED
EXT.	EXTERIOR
EQ.	EQUAL
FT.	FEET
FIN.	FINISH
FIN. FLR.	FINISH FLOOR
F.G	FINISH GRADE
F.E	FIRE EXTINGUISHER
F.P.	FIREPROOFING
F.O.	FACE OF
FL.	FLOOR
F.D.	FLOOR DRAIN
F.O.W.	FACE OF WALL
FNDTN.	FOUNDATION
GALV.	GALVANIZED
GA.	GAUGE
G.C.	GENERAL CONTRACTOR
H.R.	HAND RAIL
HDWR.	HARDWARE
H.S.S.	STEEL TUBE BEAM OR COLUMN
HT.	HEIGHT
H.P.	HIGH POINT
H.M.	HOLLOW METAL
HOR.	HORIZONTAL
I.D.	INSIDE DIAMETER
I.D.F.	INTERMEDIATE DISTRIBUTION FRAME
INSUL.	INSULATION
L.D.R.	LEADER
L.F.	LINEAR FEET
M.H.	MANHOLE
M.O.	MASONRY OPENING
MAX.	MAXIMUM
M.E.P.	MECHANICAL, ELECTRICAL & PLUMBING
M.E.R.	MECHANICAL EQUIPMENT ROOM
MTL.	METAL
M.F.D.	METAL FLOOR DECK
M.F.T.R.	MANUFACTURER
M.R.D.	METAL ROOF DECK
MISC.	MISCELLANEOUS
N.R.	NOT REQUIRED
N.J.P.E.	NEW JERSEY PROFESSIONAL ENGR.
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPNG.	OPENING
O.D.	OUTSIDE DIAMETER
O.A.	OVERALL
PART.	PARTITION
PLAS.	PLASTER
PL.	PLATE
PNT.	PAINT
P.T.	PRESSURE TREATED
PTD.	PAINTED
REV.	REVISION
R.	RISERS
R.D.	ROOF DRAIN
RM.	ROOM
R.O.	ROUGH OPENING
SECT.	SECTION
SIM.	SIMILIAR
S.P.	STEEL PIPE COLUMN
SPECS.	SPECIFICATIONS
SQ.	SQUARE
SQ. FT.	SQUARE FEET
S.S.	STAINLESS STEEL
ST. STL.	STAINLESS STEEL
STL.	STEEL
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
T.O.	TOP OF
T.O.C.	TOP OF CURB
T.O.S.	TOP OF SLAB
T.O.STL.	TOP OF STEEL
TERR.	TERRAZZO FLOOR
TER. T.	TERRAZZO TILE
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.L.	UNDERWRITERS LABORATORY
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W.C.	WATER CLOSET
W.F.	WIDE FLANGE BEAM OR COLUMN
W.P.	WORK POINT
WPFG.	WATERPROOFING
WWM.	WELDED WIRE MESH
W/	WITH
WD.	WOOD

LOCATION MAP



SITE PLAN

General Notes:

A. PERMITTED HOURS OF WORK: 7:00 AM TO 4:00 PM MONDAY THROUGH FRIDAY. WORK ON SATURDAYS AND/OR SUNDAYS SHALL BE APPROVED BY OWNER. **CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SCHEDULE TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING ANY WORK ON SITE.**

B. PRIOR TO PROCEEDING WITH ANY WORK, THE CONTRACTORS SHALL REVIEW FOR APPROVAL, SITE ACCESS, STAGING AND PROPOSED WORK SCHEDULE WITH:

JOE ABRAMO - FACILITIES MANAGER
201-460-4635

C. ALL CONTRACTORS WILL BE REQUIRED TO WEAR AN IDENTIFICATION BADGE BEARING THEIR COMPANY NAME AND PHOTOGRAPH. BADGES SHALL BE ONE COLOR AND SHALL BE VISIBLE AT ALL TIMES.

D. PRIOR TO SUBMITTING A BID, ALL CONTRACTORS SHALL FIELD VERIFY ALL EXISTING FIELD CONDITIONS & DIMENSIONS INDICATED ON THESE DRAWINGS AS THEY ARE APPROXIMATE AND ARE TO BE USED AS A GUIDE ONLY. CONTRACTORS SHALL ALSO BE RESPONSIBLE TO MAKE A QUANTITATIVE TAKE OFF, AND INCLUDE IN ITS BID, THE AMOUNT FOR ALL WORK REQUIRED INCLUDING BUT NOT LIMITED TO JOINT SEALANT WORK, RECOATING OF EIFS, FLASHING, TRIM AND CONCRETE PAINT.

E. THE GENERAL CONTRACTOR SHALL OBTAIN AND ADHERE TO ANY / ALL WRITTEN GUIDELINES CONCERNING MATERIAL SEPARATION PROCEDURES FOR DUMP SITE DISPOSAL BY AGENCIES HAVING JURISDICTION.

F. THE CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN ALL CONST. PERMITS AND PAY ALL FEES RELATED TO SAME PERMITS CONCERNING EVERY ASPECT OF THE WORK DESCRIBED HEREIN. CONTRACTOR SHALL ARRANGE FOR ALL REQUIRED INSPECTIONS.

G. THE CONTRACTOR SHALL PROTECT ALL SITE UTILITIES DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELEC., UTILITY POLES AND ALL BUILDING-MOUNTED EQUIPMENT SUCH AS CONDUIT, JUNCTION BOXES, LIGHTING, CAMERAS, LOUVERS AND VENTS.

H. COORDINATE DELIVERY AND STAGING OF EQUIPMENT WITH OWNER. PARKING LOTS ARE NOT TO BE USED TO STORE MATERIAL EXCEPT WHERE INDICATED ON THESE DRAWINGS. BUILDING'S TOILET FACILITIES ARE NOT TO BE USED BY CONTRACTORS AT ANY TIME.

I. CONTRACTOR IS TO PROVIDE AND MAINTAIN TWO (2) PORTABLE TOILETS AND SHALL LOCATE THEM AS DIRECTED BY THE OWNER. UNITS SHALL BE REMOVED BY THE DATE OF SUBSTANTIAL COMPLETION.

J. CONTRACTORS SHALL PROVIDE ALL PROTECTION NECESSARY TO PREVENT BUILDING, SITE OR PROPERTY DAMAGE DURING THE COURSE OF CONSTRUCTION. ROOF SYSTEMS, COPINGS, FLASHING, TRIM, MECH. SYSTEMS, UTILITIES, WINDOWS, EXTERIOR WALLS, WALL-MOUNTED EQUIPMENT, ETC. SHALL BE PROPERLY PROTECTED. DAMAGE CAUSED BY THE CONTRACTOR OR ITS SUBCONTRACTORS SHALL BE REMEDIED TO THE SATISFACTION OF THE OWNER AND ARCHITECT AT THE CONTRACTORS COST.

K. OWNER'S DUMPSTERS ARE NOT TO BE USED FOR DISPOSAL OF ANY CONSTRUCTION DEBRIS AND ARE NOT TO BE USED BY CONTRACTORS FOR DISPOSAL OF ANY PERSONAL DEBRIS.

L. THE CONTRACTOR AND/OR CONTRACTORS SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO INSTALL AND COMPLETE ALL THE WORK DESCRIBED IN THE CONTRACT DOCUMENT DRAWINGS AND SPECIFICATIONS.

M. ALL NEW MATERIALS AND ASSEMBLIES REQUIRED AND/OR DESCRIBED IN THE DRAWINGS, DRAWING NOTES AND SPECIFICATIONS TO "MATCH EXISTING" OR DESCRIBED AS "MATCHING" SHALL BE THE EXACT OR SAME MATERIAL AND ASSEMBLY, IN EVERY RESPECT.

N. THE CONTRACTOR/S, AFTER NOTIFYING THE OWNER, SHALL PERFORM ANY REQUIRED SYSTEM SHUT-OFF AND / OR SHUTDOWN CONCERNING MECHANICAL AIR OR HEAT, PLUMBING, GAS, ELECTRICAL, CONTROLS AND ANY ALARM OR DETECTION SYSTEM, NECESSARY TO FACILITATE THE WORK.

O. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND THE LOCAL UTILITY COMPANY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REINSTALLING ALL CABLE AND/ OR CONDUIT, JUNCTION BOXES, AND FIXTURES NECESSARY TO FACILITATE THE WORK. ALL ELECTRICAL WORK MUST BE PERFORMED BY A QUALIFIED ELECTRIC SUB-CONTRACTOR LICENSED IN THE STATE OF NEW JERSEY. ALL SUCH EQUIPMENT LOCATIONS AND QUANTITIES SHALL BE CONFIRMED IN THE FIELD PRIOR TO SUBMITTING A BID.

P. THE PLANS AND SPECIFICATIONS FOR THIS PROJECT MAY CONTAIN REQUIREMENTS FOR PERFORMANCE OF THE WORK THAT ARE HIGHER OR MORE STRINGENT THAN, OR OTHERWISE DEPART FROM, CUSTOMARY STANDARDS OF THE INDUSTRY OR THE MANUFACTURER'S RECOMMENDATIONS. THE BIDDER SHALL TAKE THOSE DIFFERING REQUIREMENTS INTO ACCOUNT WHEN PREPARING ITS BID. THE BIDDER ACKNOWLEDGES THAT IF IT FAILS TO ACCOUNT FOR THOSE DIFFERING REQUIREMENTS IN ITS BID, IT WILL NOT BE ENTITLED TO CHANGES OF THE CONTRACT SUM OR CONTRACT TIME.

Q. CONTRACTORS SHALL MAINTAIN WATERTIGHT AND WEATHERTIGHT CONDITIONS AT THE ENTIRE BUILDING ENVELOPE DURING THE COURSE OF CONSTRUCTION.

R. THE CONTRACTOR SHALL REVIEW ALL WALL AND REFINISHING CONDITIONS WITH THE RESPECTIVE PRODUCT MANUFACTURERS PRIOR TO COMMENCING ITS WORK. ALL MATERIAL AND / OR SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS SPECIFICALLY REGARDING ENVIRONMENTAL CONDITIONS RELATING TO AIR TEMPERATURE, SURFACE TEMPERATURE AND RELATIVE HUMIDITY.

S. PRIOR TO THE COMMENCEMENT OF ANY ON-SITE CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL PHOTOGRAPH AND / OR VIDEO RECORD THE CONDITION OF THE EXISTING CURBING, SIDEWALKS, DRAINAGE INLETS, LAWN, LANDSCAPING AND PAVING ADJACENT TO THE BUILDING WINGS (PARKING LOT SIDE) WHICH ARE RECEIVING IMPROVEMENTS. THE PURPOSE OF THIS EXERCISE IS TO DOCUMENT ANY DAMAGED AREAS OF THE BUILDING AND SITE FOR FUTURE REFERENCE. ALL DOCUMENTATION IS TO BE SUBMITTED TO THE OWNER AND ARCHITECT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY.

T. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND REMOVING ALL SCAFFOLDING AND OTHER EQUIPMENT REQUIRED FOR ACCESS TO ALL BUILDING ELEVATIONS, SOFFITS, SILLS, JOINTS, ETC. FOR REPAIR AND RECOATING. CONTRACTOR SHALL SUBMIT AN ACCESS AND STAGING PLAN TO THE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF ANY WORK ON SITE. PENETRATION OF EXISTING BUILDING ENVELOPE FOR SCAFFOLDING AND OR BUILDING ACCESS IS PROHIBITED.

U. WHERE REMOVAL OF THE EXISTING WINDOW, DOOR OR CURTAINWALL SYSTEMS IMPACTS ADJACENT GYPSUM WALL BOARD (GWB) FINISHES, CAREFULLY CUT BACK GWB TO NEAREST JOINT OR FRAMING MEMBER (WHICHEVER RESULTS IN THE CLEANEST TERMINATION). AVOID DAMAGE TO REMAINING FINISHES, MECHANICAL/ELECTRICAL SYSTEMS, AND ADJACENT CONSTRUCTION. VERIFY CONDITION OF EXISTING ROUGH OPENING FRAMING AND BLOCKING. WHERE NECESSARY, REINFORCE OR MODIFY FRAMING TO ACCOMMODATE NEW WINDOW UNITS, MAINTAINING PLUMB, LEVEL, AND SQUARE CONDITIONS. PROVIDE NEW TREATED WOOD BLOCKING AS REQUIRED TO SECURE WINDOW ANCHORS AND TRIMS. INSTALL NEW GWB WHERE NECESSARY WITH TAPE, SPACKLE, PRIMER AND PAINT TO MATCH EXISTING ADJACENT COLOR AND FINISH. EXTEND PAINTING TO NEAREST LOGICAL BREAK.

V. SWING SCAFFOLDING / SUSPENDED SCAFFOLDING REQUIRED TO PERFORM WORK ABOVE SURFACES WHICH CANNOT ACCOMMODATE CONVENTIONAL SCAFFOLDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. EXISTING ROOFING ,PARAPETS, COPINGS, ROOF-MOUNTED EQUIPMENT AND WALLS SHALL BE PROPERLY PROTECTED AS A COMPONENT OF THE SCAFFOLDING DESIGN. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED (BY N.J.P.E.) SHOP DRAWINGS FOR SCAFFOLDING.

W. ALL ROOF SURFACES, FLASHINGS, COPINGS, PENETRATIONS AND ROOF-MOUNTED EQUIPMENT MUST BE PROTECTED WHILE WORK IS TAKING PLACE. ROOF ACCESS WILL BE NECESSARY TO RECOAT EXTERIOR WALLS ,REPLACE JOINT SEALANTS AND PROVIDE SWING SCAFFOLDING. EXISTING ROOFING INCLUDES VARIOUS VINTAGE EPDM (MEMBRANE) ROOF SYSTEMS.

X. SHOP DRAWINGS, PRODUCT DATA, SAMPLES SHALL BE PROVIDED FOR ALL COATINGS, INSULATION, SCAFFOLDING, JOINT SEALANT, BACKER-ROD, FLASHING, TRIM AND REPAIR SYSTEMS FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

Code Data

CONSTRUCTION TYPE: IIB (NONCOMBUSTIBLE / UNPROTECTED)
USE GROUP: USE GROUP: B (BUSINESS)

Applicable Codes

UNIFORM CONSTRUCTION CODE (N.J.A.C. 5:23)
2021 INTERNATIONAL BUILDING CODE (NJAC 5:23-3.14)
2021 NATIONAL STANDARD PLUMBING CODE (NJAC 5:23-3.15)
NFPA 70/2020 NATIONAL ELECTRICAL CODE (NJAC 5:23-3.16)
2021 INTERNATIONAL MECHANICAL CODE (NJAC 5:23-3.20)
REHABILITAION SUBCODE (NJAC 5:23-6)

Nature of Work (Code)

"REPAIR" AS DEFINED BY THE REHABILITATION SUBCODE (NJAC 5:23-6). THE WORK IN QUESTION INCLUDES THE RESTORATION TO A GOOD OR SOUND CONDITION OF MATERIALS, SYSTEMS AND / OR COMPONENTS THAT ARE WORN, DETERIORATED OR BROKEN USING MATERIALS OR COMPONENTS IDENTICAL TO OR CLOSELY SIMILAR TO THE EXISTING.

General Information and Scope:

GENERAL BUILDING DESCRIPTION:

1. ADMINISTRATION BUILDING IS A 3-STORY STRUCTURE, APPROXIMATELY 35,000 GSF. THE ORIGINAL 2-STORY WING WAS CONSTRUCTED IN 1981 AND THE 3RD-STORY WITH CONNECTING STAIR WAS CONSTRUCTED IN 1999.
2. THE BUILDING CONSISTS OF A STEEL SUPERSTRUCTURE WITH CONCRETE DECK, WITH COLD-FORMED METAL FRAMING FORMING THE EXTERIOR SHELL. EXTERIOR WALLS ARE INSULATED WITH BATT INSULATION AND AN EXTERIOR INSULATION FINISH SYSTEM (EIFS). EXISTING WINDOWS ARE PELLA CASEMENT WINDOWS.
3. THE BUILDING IS SUPPORTED ON A DRIVEN-PILE AND GRADE BEAM FOUNDATION SYSTEM. THE NORTH AND WEST BUILDING ELEVATIONS RESIDE ABOVE DRY LAND. THE SOUTH AND EAST BUILDING ELEVATIONS RESIDE (PARTIALLY AND FULLY) ABOVE THE KINGSLAND CREEK (A HACKENSACK RIVER TRIBUTARY) WHICH IS A TIDAL IMPOUNDMENT RETAINED BY A SLUICE GATE AND EARTHEN DIKE TO CREATE A HABITAT FOR NESTING AND MIGRANT AQUATIC ANIMALS AND BIRDS.
4. THE BUILDING CONSISTS OF A STEEL SUPERSTRUCTURE WITH CONCRETE DECK, WITH COLD-FORMED METAL FRAMED EXTERIOR WALLS. EXTERIOR WALLS ARE INSULATED WITH BATT INSULATION AND AN EXTERIOR INSULATION FINISH SYSTEM (EIFS). WINDOWS ARE PELLA CASEMENT WINDOWS. ROOF SYSTEM CONSISTS OF VARIOUS AGED EPDM ROOF SYSTEMS.

THE FOLLOWING IS A BRIEF SCOPE OF WORK FOR THIS BUILDING (NOT INTENDED TO BE ALL INCLUSIVE):

1. PROJECT INTENT IS TO IMPROVE THE BUILDING ENVELOPE OF THE EXISTING ADMINISTRATION BUILDING (LABELED ABOVE) IN ORDER TO CREATE WEATHERPROOF CONDITIONS AND EXTEND THE USEFUL LIFE OF THE BUILDING ENVELOPE COMPONENTS (WALL SYSTEMS ONLY). WORK, AS MORE FULLY DESCRIBED IN THESE CONSTRUCTION DOCUMENTS, INCLUDES:
   - PATCHING, REPAIRING AND RECOATING THE EXISTING EIFS SYSTEM.
   - REMOVING AND REPLACING ALL WINDOWS AND DOORS.
   - REMOVING AND REPLACING ALL JOINT SEALANT AT JOINTS, PENETRATION AND AROUND WALL-MOUNTED EQUIPMENT
   - PREPARING AND PAINTING THE CONCRETE BUILDING BASE
   - PROVIDING NEW METAL FLASHINGS AND SELECT LOCATIONS
2. SPECIAL CONDITIONS: WALL ELEVATION ACCESS WILL REQUIRED SUSPENDED SCAFFOLDING / SWING SCAFFOLDING AT THE SOUTH AND EAST BUILDING ELEVATIONS.

Drawing Index

A-000	PROJECT DATA / COVER
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A-103	EXISTING THIRD FLOOR PLAN
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A-201	ELEVATIONS
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A-203	WALL SECTION PROFILES & DETAILS
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A-310	CURTAINWALL DETAILS
A-311	WINDOW DETAILS
A-312	WINDOW DETAILS
A-401	DOOR SCHEDULE AND ELEVATIONS

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

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Richard D. Alderiso , AIA
NJ RA AI 15023, NY RA 027416, PA RA 405474

PRELIMINARY NOT FOR CONSTRUCTION

DO NOT SCALE. DRAWING MAY BE PRINTED AT REDUCED SCALE. CONSULT WITH ARCHITECT FOR DIMENSIONS.

Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/01/2023
Drawn By: SPJ
Checked By:

Sheet Name:
Project Data / Cover

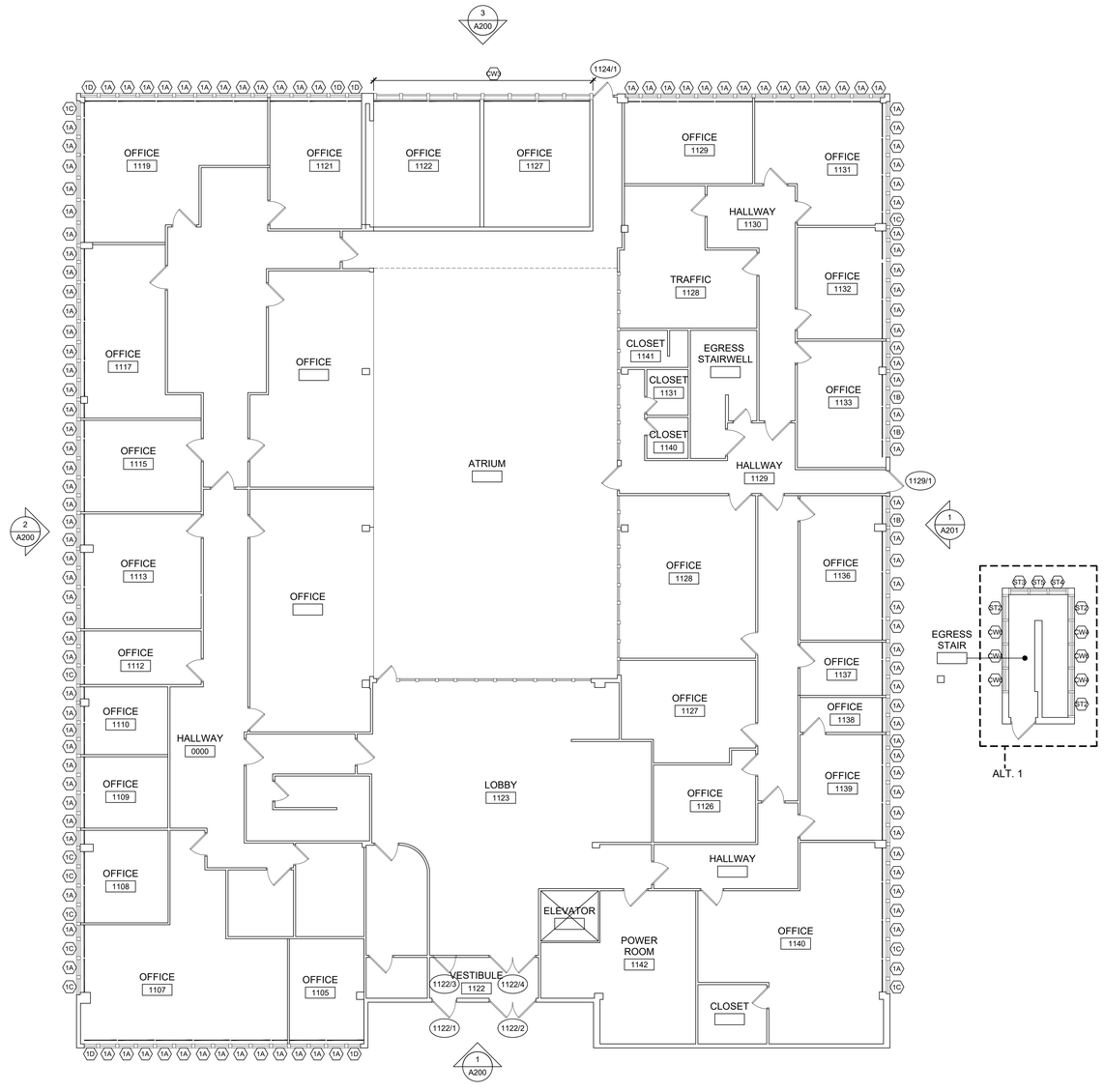
Sheet No:
A-000
Sheet 0 of 000

P:\2023\23.094 NJSEA LYNDHURST ADMIN BUILDING\DRAWINGS\CONDOCS\ADDDS GENERAL -COVER SCHEDULES PHASING ECT\

SNOW DESIGN LOAD SCHEDULE INTERNATIONAL BUILDING CODE 2021 NEW JERSEY EDITION /ASCE 7-16			
ITEM	SYMBOL	VALUE	REFERENCE
GROUND SNOW LOAD	Pg	25	FIGURE 1608.2
SNOW EXPOSURE FACTOR	Ce	1.0	TABLE 7.3-1
SNOW LOAD IMPORTANCE FACTOR	Is	1.0	TABLE 1.5-2
THERMAL FACTOR	Ct	1.0	TABLE 7.3-2
FLAT-ROOF SNOW LOAD	Pf	20	SECTION 7.3

RAIN DESIGN LOAD SCHEDULE INTERNATIONAL BUILDING CODE 2021 NEW JERSEY EDITION /ASCE 7-16			
RAIN INTENSITY	i	5"/HR	NJAC 5:23-3.15

LATERAL LOAD SCHEDULE IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE 2021 NEW JERSEY EDITION /ASCE 7-16	
WIND CRITERIA	
RISK CATEGORY, (TABLE 1604.5)	II
BASIC WIND SPEED, Vult (3-SECOND GUST), (FIGURE 1609.3)	115 MPH
EXPOSURE CATEGORY, (SECT. 1609.4)	D
INTERNAL PRESSURE COEFFICIENT (GCpi)	±0.18
SEISMIC LOAD	
SITE CLASS, (TABLE 20.3-1)	E
SEISMIC IMPORTANCE FACTOR (Ie), (TABLE 1.5-2)	1.0
SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS, (FIGURE 22-1) (Ss)	29.20%
SPECTRAL RESPONSE ACCELERATION AT A 1-SECOND PERIOD, (FIGURE 22-2) (S1)	6.0%g
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, (EQUATION 11.4-3), (Sds)	0.444
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER, (EQUATION 11.4-4), (Sd1)	0.169
SEISMIC DESIGN CATEGORY, (TABLE 11.6-1 & 11.6-2)	C



1 EXISTING FIRST FLOOR PLAN

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

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

DIGroupArchitecture
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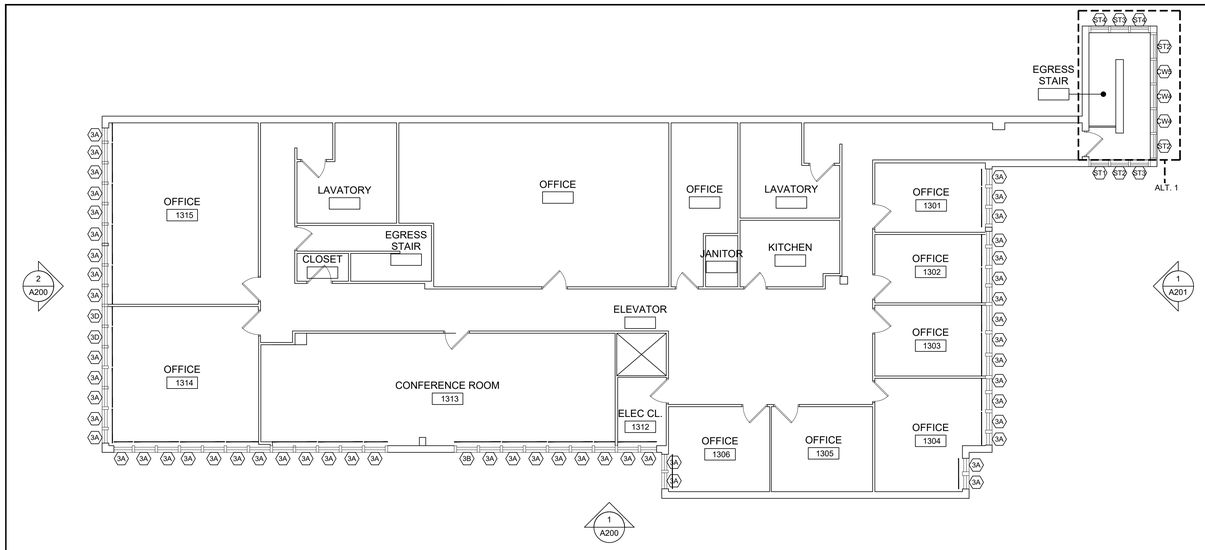
Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/03/2023
Drawn By: BG/ KT
Checked By:

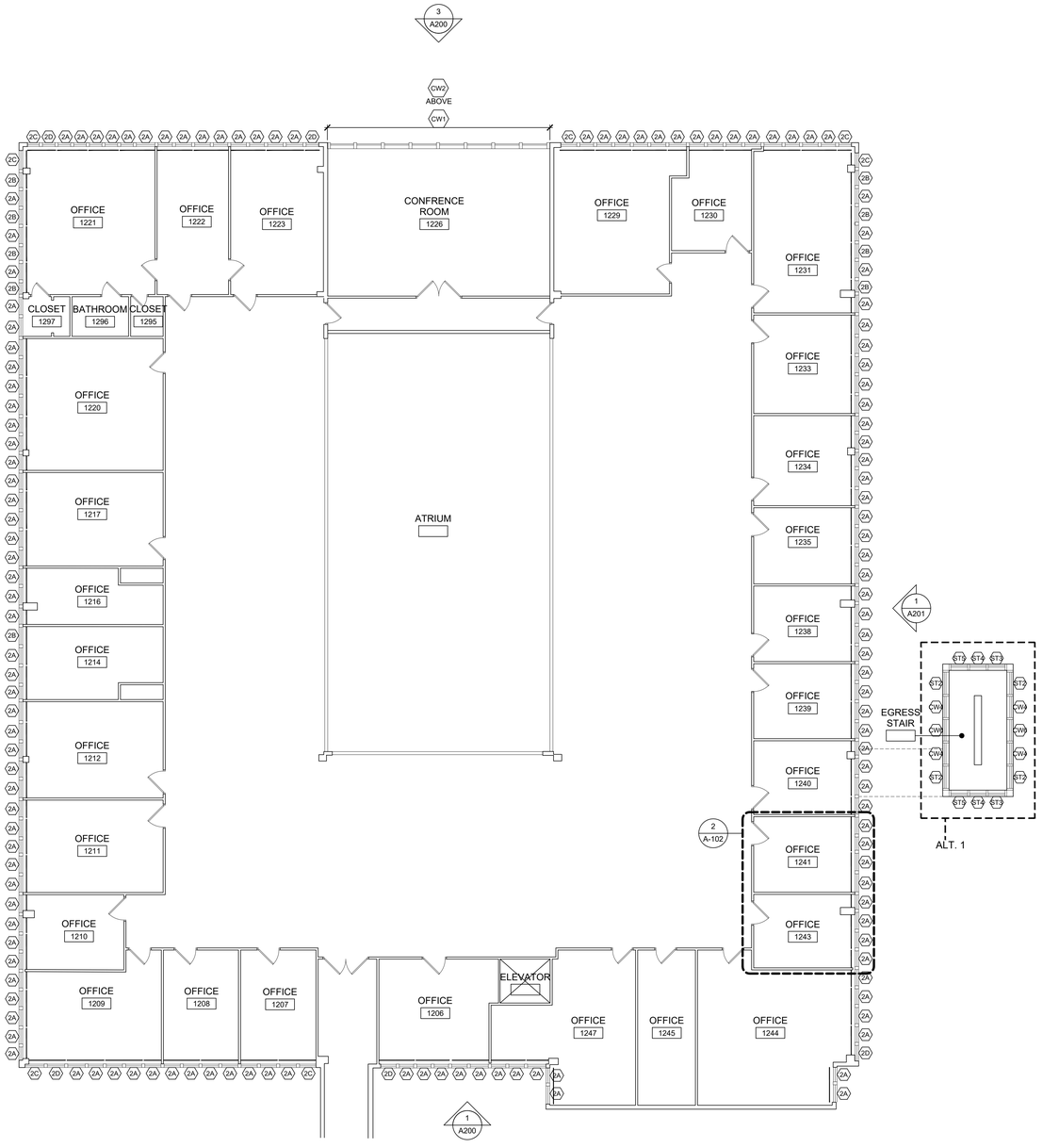
Sheet Name:
EXISTING FIRST FLOOR PLAN

Sheet No:
A-101
Sheet 0 of 000



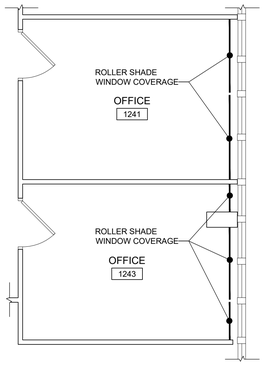
3 EXISTING THIRD FLOOR PLAN

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



1 EXISTING SECOND FLOOR PLAN

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



ROLLER SHADE/ WINDOW TREATMENT NOTE:

ROLLER SHADE WINDOW COVERAGE LINEWORK REPRESENTS THE REQUIRED NUMBER OF SHADES IN EACH ROOM, CORRESPONDING TO THE TOTAL NUMBER OF WINDOWS. WHERE FEASIBLE, A SINGLE ROLLER SHADE ASSEMBLY SHALL BE PROVIDED TO COVER TWO (2) ADJACENT WINDOWS. CONTRACTOR SHALL SUBMIT LAYOUT SHOP DRAWINGS FOR REVIEW AND APPROVAL. SHOP DRAWINGS SHALL CLEARLY INDICATE SHADE SIZES, COVERAGE LIMITS, MOUNTING CONDITIONS, AND ALL ASSOCIATED HARDWARE. CEILING GRID AND CEILING TILE MODIFICATIONS SHALL BE PERFORMED AS REQUIRED TO PROPERLY ACCOMMODATE THE SHADE ASSEMBLIES AND HOUSING. ALL MODIFICATIONS SHALL BE COORDINATED WITH THE FINAL APPROVED SHOP DRAWINGS.

2 ENLARGED WINDOW TREATMENT PLAN

SCALE: 1/4" = 1'-0"

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

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NJ RA AI 15023, NY RA 027416, PA RA 405474

PRELIMINARY NOT FOR CONSTRUCTION

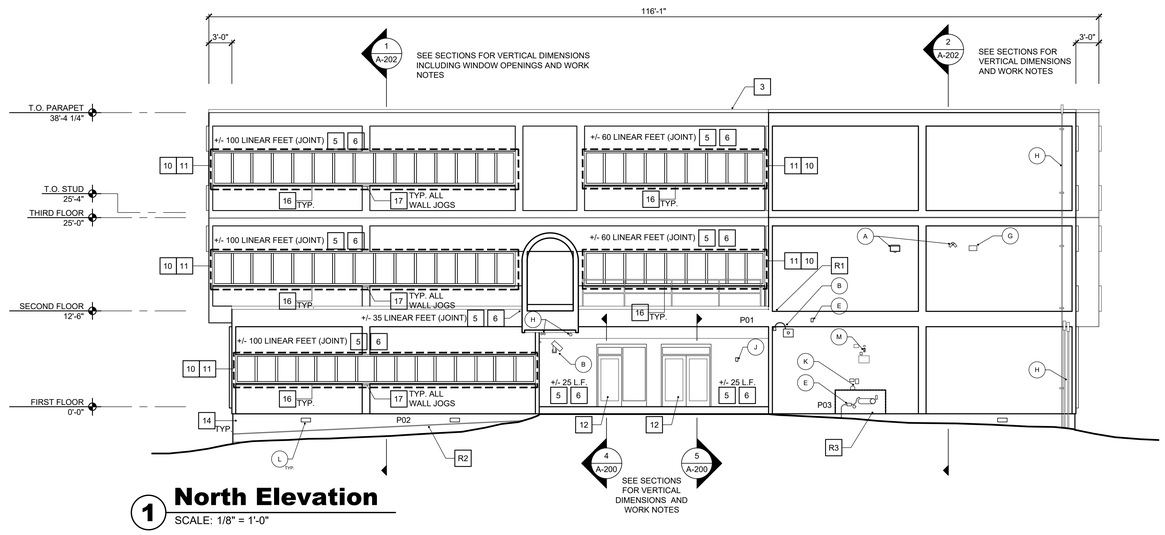
Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

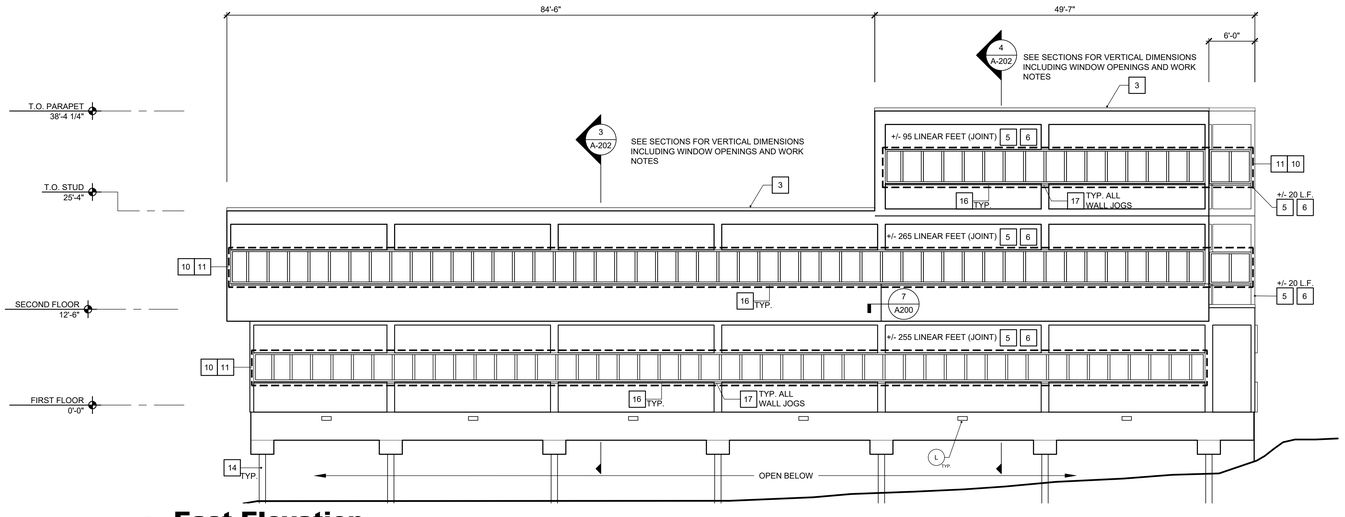
Drawing Information:
Project No: 23.094
Date: 08/01/2025
Drawn By: BGI KT
Checked By:

Sheet Name:
EXISTING SECOND AND THIRD FLOOR PLANS

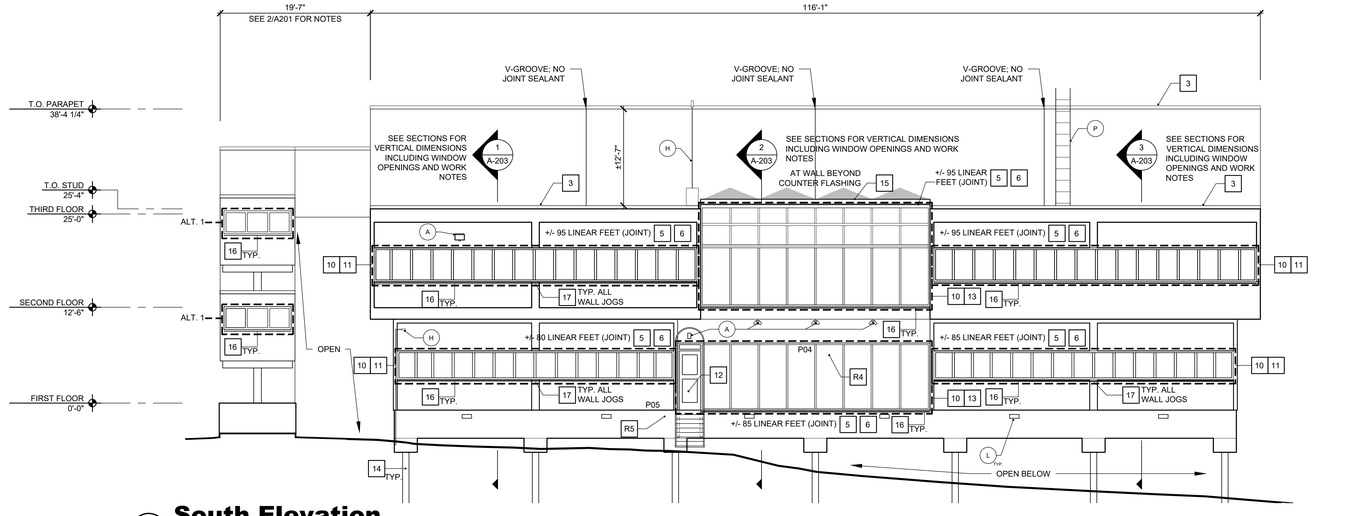
Sheet No:
A-102
Sheet 0 of 000



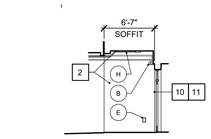
1 North Elevation
SCALE: 1/8" = 1'-0"



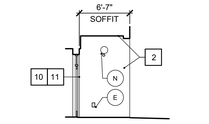
2 East Elevation
SCALE: 1/8" = 1'-0"



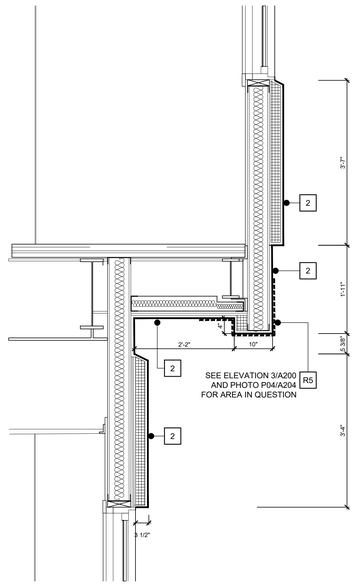
3 South Elevation
SCALE: 1/8" = 1'-0"



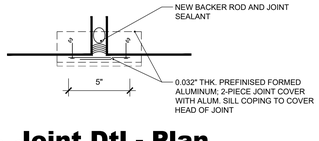
4 Entrance East Elevation
SCALE: 1/8" = 1'-0"



5 Entrance West Elevation
SCALE: 1/8" = 1'-0"



6 Partial Section - Soffit
SCALE: 3/4" = 1'-0"



7 Joint Dtl - Plan
SCALE: 6" = 1'-0"

EXISTING EQUIPMENT 07

- (A) WALL-MOUNTED LIGHT FIXTURE
- (B) WALL-MOUNTED CAMERA & J-BOX
- (C) HOSE BIB
- (D) SURFACE-MOUNTED PROXIMITY READER
- (E) SURFACE-MOUNTED J-BOX/POWER
- (F) LOUVER (20" x 20")
- (G) WALL VENT
- (H) ELECTRIC EQUIPMENT; PANELS, CONDUIT BUS-BAR, DISCONNECT BOX & UNISTRUT SUPPORT
- (J) STEEL SURFACE-MOUNTED KNOX BOX
- (K) FIRE-DEPT. CONNECTION / STAND PIPES
- (L) VENT PENETRATIONS TO CRAWL SPACE
- (M) FDC LIGHT & SPEAKER STROBE
- (N) WALL-MOUNTED ALARM BELL
- (P) WALL-MOUNTED ROOF LADDER

REFERENCE NOTES

1. WALL SECTION PROFILES AND ASSOCIATED DIMENSIONS ARE INTENDED TO PROVIDE CONTRACTOR WITH GENERAL SIZE AND FIGURATION OF EXTERIOR WALL SURFACES IN ORDER TO ESTIMATE QUANTITIES AND LABOR ASSOCIATED WITH EIFS REPAIRS AND REFINISHING. DIMENSIONS AND PROFILES ARE TO BE FIELD-VERIFIED BY CONTRACTOR PRIOR TO BIDDING THIS PROJECT.
2. ALL EXISTING EIFS SURFACES ARE TO BE RECOATED WITH AN ACRYLIC BASED FINISH AS FURTHER DESCRIBED IN SPECIFICATION SECTION 09 96 00. WORK INCLUDES ALL NECESSARY REPAIRS AND SURFACE PREPARATION NECESSARY TO COMPLY WITH FINISH MANUFACTURER'S REQUIREMENTS. DUE TO ENVIRONMENTAL CONCERNS ASSOCIATED WITH THE SUBJECT SITE, ALL COATINGS SHALL BE APPLIED WITH A BRUSH AND / OR ROLLER. NO SPRAYING WILL BE PERMITTED.
3. UNLESS OTHERWISE NOTED, METAL COPINGS, FLASHING AND TRIM SHALL REMAIN IN PLACE DURING THE REFINISHING OF THE EIFS SURFACES. MASK AND PROTECT ALL METALS PRIOR TO REFINISHING EIFS.
4. CONCRETE BASE SHALL BE CLEANED OF ALL LOOSE PAINT AND PRIMED AND PAINTED IN ACCORDANCE WITH THE HIGH-PERFORMANCE COATING SPECIFICATON SECTION 09 96 11.
5. EXISTING JOINT SEALANT/ BACKER-ROD SHALL BE REMOVED AND DISPOSED OF.
6. PROVIDE NEW CLOSED-CELL BACKER-ROD AND JOINT SEALANT AT ALL JOINTS BETWEEN DOORS, WINDOWS AND EIFS SURFACES. SEE DRAWINGS FOR OTHER JOINTS THAT REQUIRE REMOVAL AND REPLACEMENT. SEE SPECIFICATION SECTION 07 92 00 "JOINT SEALANT" FOR BALANCE OF INFORMATION.
7. EXISTING WALL-MOUNTED EQUIPMENT TO REMAIN MUST BE EITHER CAREFULLY REMOVED AND REINSTALLED IN ORDER TO FACILITATE WORK; OR IN THE CASE OF RIGID ELECTRICAL CONDUIT, EQUIPMENT PANELS, STAND-PIPES, MUST BE CAREFULLY WORKED AROUND. NEW JOINT SEALANT AND BACKER-ROD MUST BE INSTALLED BETWEEN ALL JOINTS.
8. PRE-FINISHED ALUMINUM, ONE-PIECE COUNTERFLASHING WITH KYNAR FINISH (COLOR TO BE SELECTED FROM MFTR. STANDARD RANGE OF COLORS. THICKNESS (0.040"), STANDARD LENGTHS (12-FT).
   MFTR.: METAL-ERA ROOF EDGE SOLUTIONS (OR APPROVED EQUIVALENT)
   MODEL: CFW-562
   SHOP DRAWINGS WITH PRODUCT DATA AND DETAILS TO BE SUBMITTED FOR REVIEW AND APPROVAL BY ARCH.
9. NOT USED
10. EXISTING DOOR AND/ OR WINDOWS/ CURTAINWALL TO BE REMOVED IN THEIR ENTIRETY.
11. FURNISH AND INSTALL NEW STOREFRONT SYSTEM. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
12. FURNISH AND INSTALL NEW DOOR. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
13. FURNISH AND INSTALL NEW CURTAINWALL SYSTEM. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
14. (ALT. 2) PREPARE AND PAINT EXISTING STEEL PILES WITH HIGH-PERFORMANCE COATINGS IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00 "HIGH PERFORMANCE COATINGS". INCLUDE 24 PILES (SOME OF WHICH EXIST ABOVE THE WATER LINE); 10-INCH DIAMETER WITH AVERAGE EXPOSURE ABOVE THE WATER LINE OF FORTY-EIGHT (48) INCHES.
15. METAL COPING TO BE REMOVED AND REPLACED FOR NEW WORK. SEE DETAIL H2/A-310 FOR BALANCE OF INFORMATION.
16. PROVIDE 0.040" THICK FORMED ALUMINUM SILL FLASHING WITH FACTORY-APPLIED KYNAR FINISH TO MATCH WINDOW COLOR. FABRICATE FLASHING IN APPROXIMATELY 6'-8" MAXIMUM LENGTHS WITH SPLICE PLATES AT JOINTS. ALL CORNERS AND CHANGES IN DIRECTION SHALL BE NEATLY MITERED AND FULLY SOLDERED FOR A CONTINUOUS, WATERTIGHT INSTALLATION. CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION. SUBMIT COMPLETE SHOP DRAWINGS FOR REVIEW AND APPROVAL, CLEARLY INDICATING ALL JOINT LOCATIONS, FASTENERS, HARDWARE, AND CONNECTION DETAILS.
17. AT EXPOSED EDGES OF EIFS, SILL FLASHING SHALL RETURN INTO FACE OF EXTERIOR WALL AND CONTINUE AROUND WALL PLANE TO THE NEXT WINDOWS. PROVIDE JOINT SEALANT AT ALL INTERIOR CORNERS.

EIFS REPAIR TYPES

PRIOR TO RECOATING EIFS SURFACES THE FOLLOWING REPAIRS SHALL BE MADE. SEE DRAWINGS FOR REPAIR LOCATIONS

R1 **STATIC CRACK REPAIR:** (APPROXIMATELY 1/8" TO 1/4" IN WIDTH). CRACK CONTINUES FROM WALL TO SOFFIT. SEE SPECIFICATION SECTION 09 96 00 FOR REPAIR DESCRIPTION.

R2 **INSULATION AND COATING:** (AREA OF CONCERN APPROXIMATELY 24" x 18")
CUT TO REMOVE DAMAGED AREA OF INSULATION. EXTEND CUT 12" MIN. FROM DAMAGED AREA AND CUT CLEANLY AND IN AN ORTHAGONAL PERIMETER. REMOVE AND DISPOSE OF DAMAGED MATERIAL AND REPLACE INSULATION IN KIND (APPROXIMATELY 3.5" THICK MOLDED, EXPANDED RIGID CELLULAR POLYSTYRENE BOARD INSULATION COMPLYING WITH ASTM E2430/E2430M.) MECHANICALLY SECURE NEW INSULATION TO EXISTING SUBSTRATE WITH CORROSION-RESISTANT FASTENERS AND ADHESIVE IN STRICT ACCORDANCE WITH MANUFACTURER'S GUIDELINES. PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.

R3 **FULL DEPTH REPAIR:** (AREA OF CONCERN APPROXIMATELY 60" x 48")
CUT TO REMOVE DAMAGED EIFS SYSTEM DOWN TO SUBSTRATE AT AREA INDICATED. CUT CLEANLY AND IN AN ORTHAGONAL PERIMETER. DAMAGE HAS OCCURRED AROUND PIPING AND OTHER PENETRATIONS AS INDICATED.
REMOVE AND DISPOSE OF DAMAGED MATERIAL, INCLUDING AIR/MOISTURE BARRIER AND REPLACE INSULATION IN KIND. SEE NOTE 'R2' FOR INSULATION AND FASTENER TYPE.
PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00. PROVIDE JOINT SEALANT AROUND ALL PENETRATIONS.

R4 **FULL DEPTH WITH SHEATHING:** (AREA OF CONCERN APPROXIMATELY 20 SQUARE FEET)
CUT TO REMOVE DAMAGED AREA, INCLUDING SUBSTRATE BOARD DOWN TO FRAMING. REPLACE ANY DAMAGED COLD-FORMED METAL FRAMING (STUDS & TRACK) WITH MIN. 20 GA., GALVANIZED CFMF. PROVIDE NEW SHEATHING (5/8" THICK FIBERGLASS MAT GYSPUM SHEATHING), AIR BARRIER AND POLYMER-BASED EIFS SYSTEM - INCLUDE HIGH IMPACT FORTIFICATION LAYER. ONCE CURED, PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.

R5 **WALL CLOSURE:** (AREA OF CONCERN APPROXIMATELY 6"H x 8"L)
OPENING IN WALL WHERE EXISTING MASONRY HAS DETERIORATED SHALL BE PACKED SOLID WITH HIGH-STRENGTH, NON-SHRINK GROUT AND TROWELLED SMOOTH. ONCE CURED, PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.
WHERE EXISTING SUBSTRATE/SHEATHING IS EXPOSED TO ACCOMMODATE REPAIR, FURNISH AND INSTALL NEW AIR/MOISTURE BARRIER (SELF-ADHERING MODIFIED BITUMINOUS SHEET; 40-MIL THICK).

GENERAL WORK NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND REMOVING ALL SCAFFOLDING AND OTHER EQUIPMENT REQUIRED FOR ACCESS TO ALL BUILDING ELEVATIONS, SOFFITS, SILLS, JOINTS FOR REPAIR AND RECOATING. THE CONTRACTOR SHALL SUBMIT AN ACCESS AND STAGING PLAN TO THE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY WORK ON SITE. PENETRATION OF THE EXISTING BUILDING ENVELOPE FOR SCAFFOLDING AND / OR BUILDING ACCESS IS PROHIBITED.
B. SWING SCAFFOLDING REQUIRED TO PERFORM WORK ABOVE SURFACES WHICH CANNOT ACCOMMODATE CONVENTIONAL SCAFFOLDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. EXISTING ROOFING, PARAPETS, COPINGS, ROOF-MOUNTED EQUIPMENT AND WALLS SHALL BE PROPERLY PROTECTED AS A COMPONENT OF THE SCAFFOLDING DESIGN. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED (BY N.J.P.E.) SHOP DRAWINGS FOR SCAFFOLDING.
C. ALL ROOF SURFACES, FLASHINGS, COPINGS, PENTRATIONS AND ROOF-MOUNTED EQUIPMENT MUST BE PROTECTED WHILE WORK IS TAKING PLACE. ROOF ACCESS WILL BE NECESSARY TO RECOAT EXTERIOR WALLS, REPLACE JOINT SEALANTS AND PROVIDE SWING SCAFFOLDING. EXISTING ROOFING INCLUDES VARIOUS VINTAGE EPDM ROOF SYSTEMS.
D. SHOP DRAWINGS, PRODUCT DATA, SAMPLES SHALL BE PROVIDED FOR ALL COATINGS, INSULATION, SCAFFOLDING, JOINT SEALANT, BACKER-ROD AND REPAIR SYSTEMS FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.
E. CONTRACTOR SHALL ENGAGE A LICENSED ELECTRICIAN TO REMOVE/REINSTALL ALL WALL-MOUNTED LIGHT FIXTURES, SECURITY DEVICES, ETC. REQUIRED FOR EIFS RESURFACING AND REPAIR/REPLACEMENT.

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

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PRELIMINARY NOT FOR CONSTRUCTION

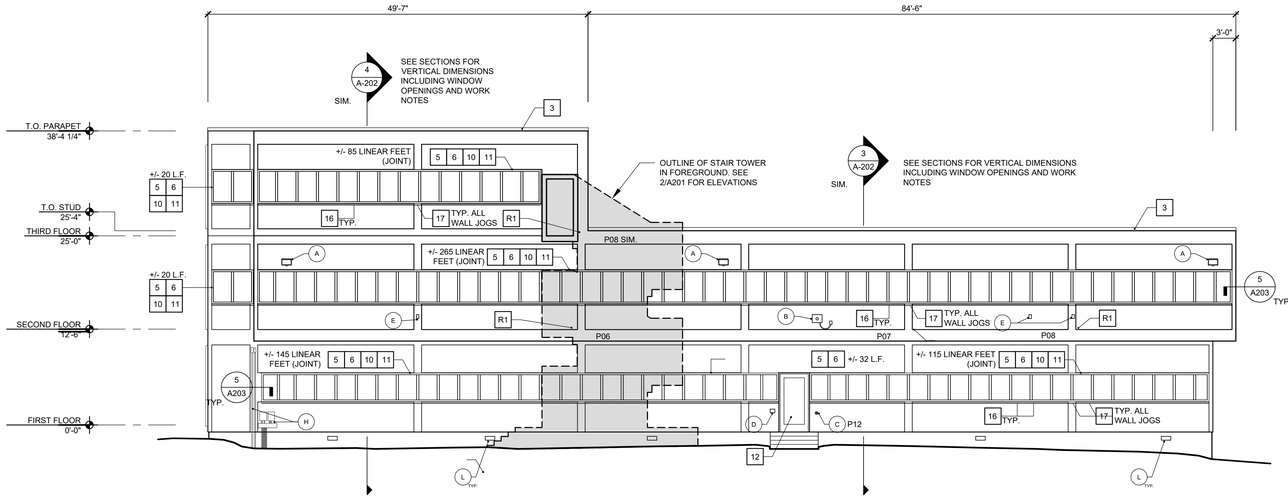
Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/01/2023
Drawn By: SPJ
Checked By:

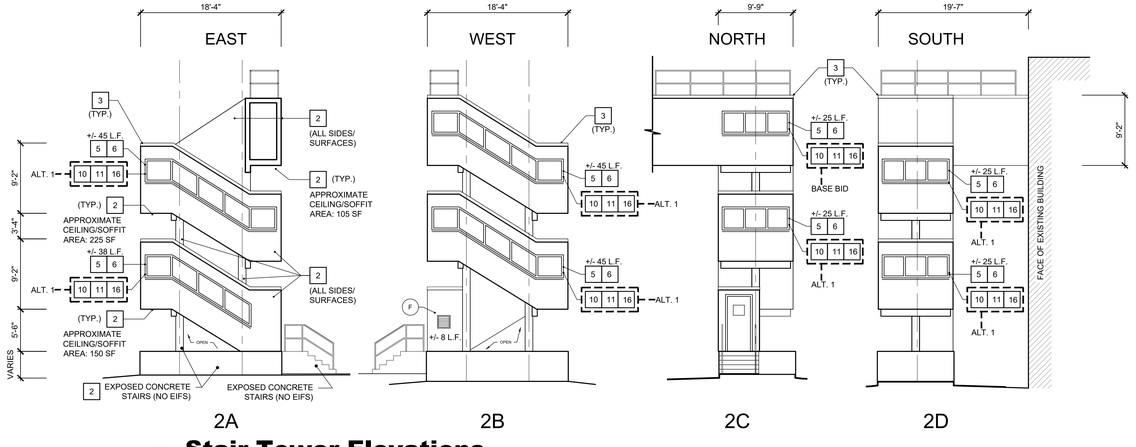
Sheet Name:
Elevations & Details

Sheet No:
A-200
Sheet 0 of 000



1 West Elevation (Without Stairs)

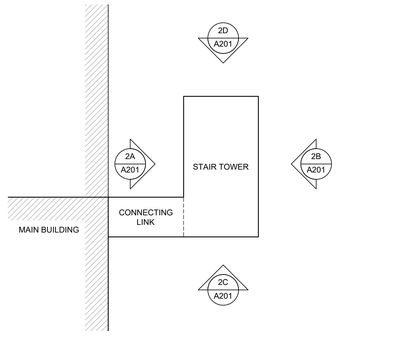
SCALE: 1/8" = 1'-0"



2 Stair Tower Elevations

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

NOTE: ALL EIFS RECOATING, JOINT SEALANT REMOVAL, AND NEW JOINT SEALANT WORK (NOTES 3, 5, AND 6). ARE TO BE INCLUDED INCLUDED IN THE BASE BID.WINDOW REMOVAL AND REPLACEMENT AT NOTED AREAS TO BE ALT. 1



3 Stair Tower Key Plan

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

EXISTING EQUIPMENT 07

- (A) WALL-MOUNTED LIGHT FIXTURE
- (B) WALL-MOUNTED CAMERA & J-BOX
- (C) HOSE BIB
- (D) SURFACE-MOUNTED PROXIMITY READER
- (E) SURFACE-MOUNTED J-BOX/POWER
- (F) LOUVER (20" x 20")
- (G) WALL VENT
- (H) ELECTRIC EQUIPMENT; PANELS, CONDUIT BUS-BAR, DISCONNECT BOX & UNISTRUT SUPPORT
- (J) STEEL SURFACE-MOUNTED KNOX BOX
- (K) FIRE-DEPT. CONNECTION / STAND PIPES
- (L) VENT PENETRATIONS TO CRAWL SPACE
- (M) FDC LIGHT & SPEAKER STROBE
- (N) WALL-MOUNTED ALARM BELL
- (P) WALL-MOUNTED ROOF LADDER

REFERENCE NOTES

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2. ALL EXISTING EIFS SURFACES ARE TO BE RECOATED WITH AN ACRYLIC BASED FINISH AS FURTHER DESCRIBED IN SPECIFICATION SECTION 09 96 00. WORK INCLUDES ALL NECESSARY REPAIRS AND SURFACE PREPARATION NECESSARY TO COMPLY WITH FINISH MANUFACTURER'S REQUIREMENTS. DUE TO ENVIRONMENTAL CONCERNS ASSOCIATED WITH THE SUBJECT SITE, ALL COATINGS SHALL BE APPLIED WITH A BRUSH AND / OR ROLLER. NO SPRAYING WILL BE PERMITTED.
3. UNLESS OTHERWISE NOTED, METAL COPINGS, FLASHING AND TRIM SHALL REMAIN IN PLACE DURING THE REFINISHING OF THE EIFS SURFACES. MASK AND PROTECT ALL METALS PRIOR TO REFINISHING EIFS.
4. CONCRETE BASE SHALL BE CLEANED OF ALL LOOSE PAINT AND PRIMED AND PAINTED IN ACCORDANCE WITH THE HIGH-PERFORMANCE COATING SPECIFICATON SECTION 09 96 11.
5. EXISTING JOINT SEALANT/ BACKER-ROD SHALL BE REMOVED AND DISPOSED OF.
6. PROVIDE NEW CLOSED-CELL BACKER-ROD AND JOINT SEALANT AT ALL JOINTS BETWEEN DOORS, WINDOWS AND EIFS SURFACES. SEE DRAWINGS FOR OTHER JOINTS THAT REQUIRE REMOVAL AND REPLACEMENT. SEE SPECIFICATION SECTION 07 92 00 "JOINT SEALANT" FOR BALANCE OF INFORMATION.
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   MFTR.: METAL-ERA ROOF EDGE SOLUTIONS (OR APPROVED EQUIVALENT)
   MODEL: CFW-562
   SHOP DRAWINGS WITH PRODUCT DATA AND DETAILS TO BE SUBMITTED FOR REVIEW AND APPROVAL BY ARCH.
9. NOT USED
10. EXISTING DOOR AND/ OR WINDOWS/ CURTAINWALL TO BE REMOVED IN THEIR ENTIRETY.
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14. (ALT. 2) PREPARE AND PAINT EXISTING STEEL PILES WITH HIGH-PERFORMANCE COATINGS IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00 "HIGH PERFORMANCE COATINGS". INCLUDE 24 PILES (SOME OF WHICH EXIST ABOVE THE WATER LINE); 10-INCH DIAMETER WITH AVERAGE EXPOSURE ABOVE THE WATER LINE OF FORTY-EIGHT (48) INCHES.
15. METAL COPING TO BE REMOVED AND REPLACED FOR NEW WORK. SEE DETAIL H2/A-310 FOR BALANCE OF INFORMATION.
16. PROVIDE 0.040" THICK FORMED ALUMINUM SILL FLASHING WITH FACTORY-APPLIED KYNAR FINISH TO MATCH WINDOW COLOR. FABRICATE FLASHING IN APPROXIMATELY 6'-8" MAXIMUM LENGTHS WITH SPLICE PLATES AT JOINTS. ALL CORNERS AND CHANGES IN DIRECTION SHALL BE NEATLY MITERED AND FULLY SOLDERED FOR A CONTINUOUS, WATERTIGHT INSTALLATION. CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION. SUBMIT COMPLETE SHOP DRAWINGS FOR REVIEW AND APPROVAL, CLEARLY INDICATING ALL JOINT LOCATIONS, FASTENERS, HARDWARE, AND CONNECTION DETAILS.
17. AT EXPOSED EDGES OF EIFS, SILL FLASHING SHALL RETURN INTO FACE OF EXTERIOR WALL AND CONTINUE AROUND WALL PLANE TO THE NEXT WINDOWS. PROVIDE JOINT SEALANT AT ALL INTERIOR CORNERS.

EIFS REPAIR TYPES

PRIOR TO RECOATING EIFS SURFACES THE FOLLOWING REPAIRS SHALL BE MADE. SEE DRAWINGS FOR REPAIR LOCATIONS

R1 **STATIC CRACK REPAIR:** (APPROXIMATELY 1/8" TO 1/4" IN WIDTH). CRACK CONTINUES FROM WALL TO SOFFIT. SEE SPECIFICATION SECTION 09 96 00 FOR REPAIR DESCRIPTION.

R2 **INSULATION AND COATING:** (AREA OF CONCERN APPROXIMATELY 24" x 18")
CUT TO REMOVE DAMAGED AREA OF INSULATION. EXTEND CUT 12" MIN. FROM DAMAGED AREA AND CUT CLEANLY AND IN AN ORTHAGONAL PERIMETER. REMOVE AND DISPOSE OF DAMAGED MATERIAL AND REPLACE INSULATION IN KIND (APPROXIMATELY 3.5" THICK MOLDED, EXPANDED RIGID CELLULAR POLYSTYRENE BOARD INSULATION COMPLYING WITH ASTM E2430/E2430M.) MECHANICALLY SECURE NEW INSULATION TO EXISTING SUBSTRATE WITH CORROSION-RESISTANT FASTENERS AND ADHESIVE IN STRICT ACCORDANCE WITH MANUFACTURER'S GUIDELINES. PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.

R3 **FULL DEPTH REPAIR:** (AREA OF CONCERN APPROXIMATELY 60" x 48")
CUT TO REMOVE DAMAGED EIFS SYSTEM DOWN TO SUBSTRATE AT AREA INDICATED. CUT CLEANLY AND IN AN ORTHAGONAL PERIMETER. DAMAGE HAS OCCURRED AROUND PIPING AND OTHER PENETRATIONS AS INDICATED.
REMOVE AND DISPOSE OF DAMAGED MATERIAL, INCLUDING AIR/MOISTURE BARRIER AND REPLACE INSULATION IN KIND. SEE NOTE 'R2' FOR INSULATION AND FASTENER TYPE.
PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00. PROVIDE JOINT SEALANT AROUND ALL PENETRATIONS.

R4 **FULL DEPTH WITH SHEATHING:** (AREA OF CONCERN APPROXIMATELY 20 SQUARE FEET)
CUT TO REMOVE DAMAGED AREA, INCLUDING SUBSTRATE BOARD DOWN TO FRAMING. REPLACE ANY DAMAGED COLD-FORMED METAL FRAMING (STUDS & TRACK) WITH MIN. 20 GA., GALVANIZED CFMF. PROVIDE NEW SHEATHING (5/8" THICK FIBERGLASS MAT GYSPUM SHEATHING), AIR BARRIER AND POLYMER-BASED EIFS SYSTEM - INCLUDE HIGH IMPACT FORTIFICATION LAYER. ONCE CURED, PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.

R5 **WALL CLOSURE:** (AREA OF CONCERN APPROXIMATELY 6"H x 8"L)
OPENING IN WALL WHERE EXISTING MASONRY HAS DETERIORATED SHALL BE PACKED SOLID WITH HIGH-STRENGTH, NON-SHRINK GROUT AND TROWELLED SMOOTH. ONCE CURED, PROVIDE NEW COATING IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00.
WHERE EXISTING SUBSTRATE/SHEATHING IS EXPOSED TO ACCOMMODATE REPAIR, FURNISH AND INSTALL NEW AIR/MOISTURE BARRIER (SELF-ADHERING MODIFIED BITUMINOUS SHEET; 40-MIL THICK).

GENERAL WORK NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND REMOVING ALL SCAFFOLDING AND OTHER EQUIPMENT REQUIRED FOR ACCESS TO ALL BUILDING ELEVATIONS, SOFFITS, SILLS, JOINTS FOR REPAIR AND RECOATING. THE CONTRACTOR SHALL SUBMIT AN ACCESS AND STAGING PLAN TO THE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY WORK ON SITE. PENETRATION OF THE EXISTING BUILDING ENVELOPE FOR SCAFFOLDING AND / OR BUILDING ACCESS IS PROHIBITED.

B. SWING SCAFFOLDING REQUIRED TO PERFORM WORK ABOVE SURFACES WHICH CANNOT ACCOMMODATE CONVENTIONAL SCAFFOLDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. EXISTING ROOFING, PARAPETS, COPINGS, ROOF-MOUNTED EQUIPMENT AND WALLS SHALL BE PROPERLY PROTECTED AS A COMPONENT OF THE SCAFFOLDING DESIGN. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED (BY N.J.P.E.) SHOP DRAWINGS FOR SCAFFOLDING.

C. ALL ROOF SURFACES, FLASHINGS, COPINGS, PENTRATIONS AND ROOF-MOUNTED EQUIPMENT MUST BE PROTECTED WHILE WORK IS TAKING PLACE. ROOF ACCESS WILL BE NECESSARY TO RECOAT EXTERIOR WALLS, REPLACE JOINT SEALANTS AND PROVIDE SWING SCAFFOLDING. EXISTING ROOFING INCLUDES VARIOUS VINTAGE EPDM ROOF SYSTEMS.

D. SHOP DRAWINGS, PRODUCT DATA, SAMPLES SHALL BE PROVIDED FOR ALL COATINGS, INSULATION, SCAFFOLDING, JOINT SEALANT, BACKER-ROD AND REPAIR SYSTEMS FOR REVIEW AND APPROVAL BY ARCHITECT AND OWNER.

E. CONTRACTOR SHALL ENGAGE A LICENSED ELECTRICIAN TO REMOVE/REINSTALL ALL WALL-MOUNTED LIGHT FIXTURES, SECURITY DEVICES, ETC. REQUIRED FOR EIFS RESURFACING AND REPAIR/REPLACEMENT.

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

DIGroupArchitecture
ARCHITECTURE FOR CHANGE
15 Bethany Street • New Brunswick, NJ 08901 • T:732.249.6242
2450 W Hunting Park Ave., Bldg 9 • Philadelphia, PA 19129-1302 • T: 215.634.3400
Richard D. Alderiso , AIA
NJ RA AI 15023, NY RA 027416, PA RA 405474

PRELIMINARY NOT FOR CONSTRUCTION

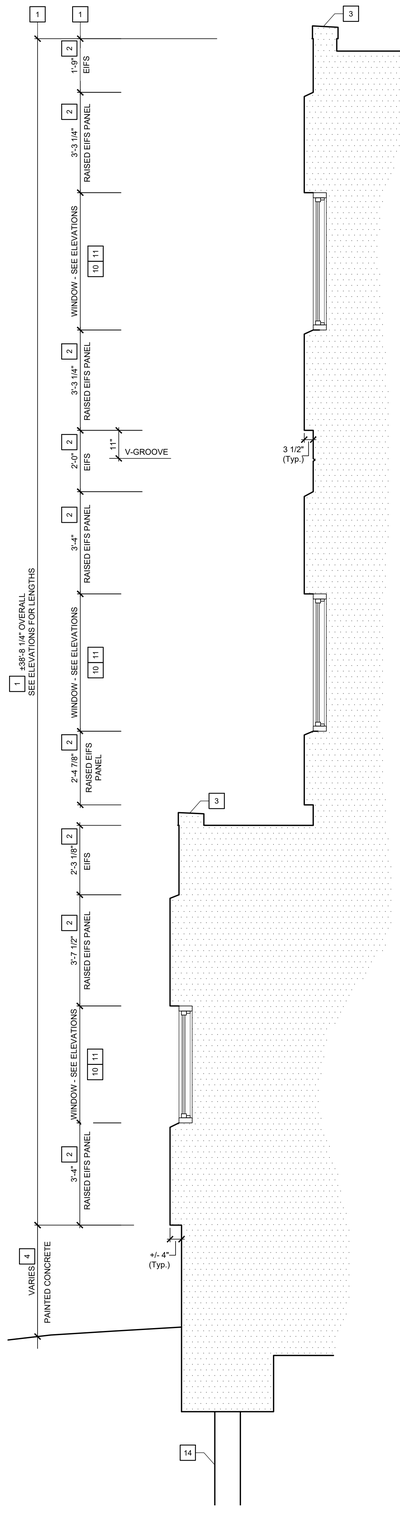
Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/03/2023
Drawn By: SPJ
Checked By:

Sheet Name:
Elevations

Sheet No:
A-201
Sheet 0 of 000



1 Wall Profile

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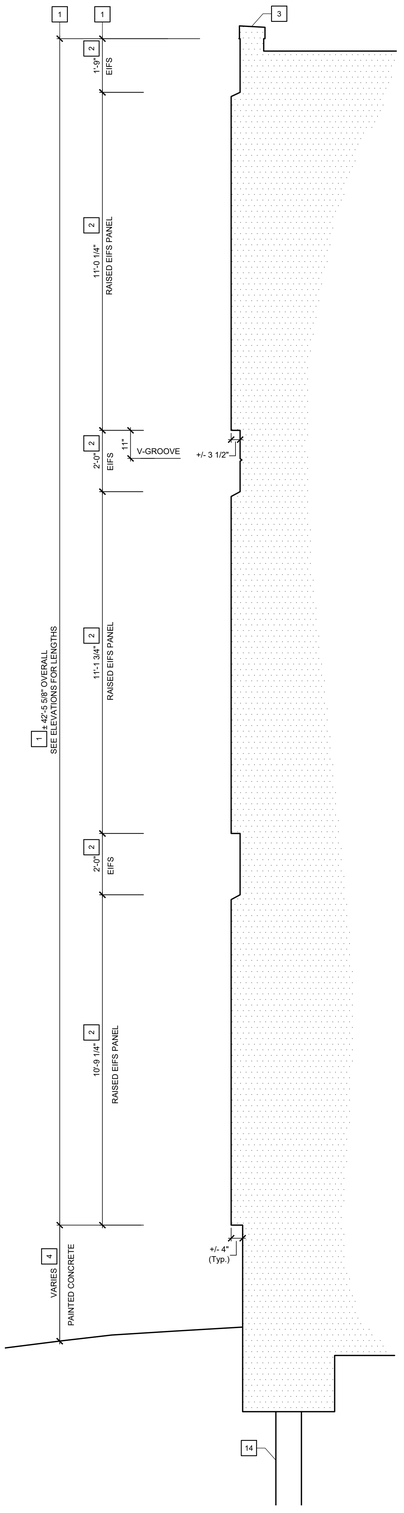

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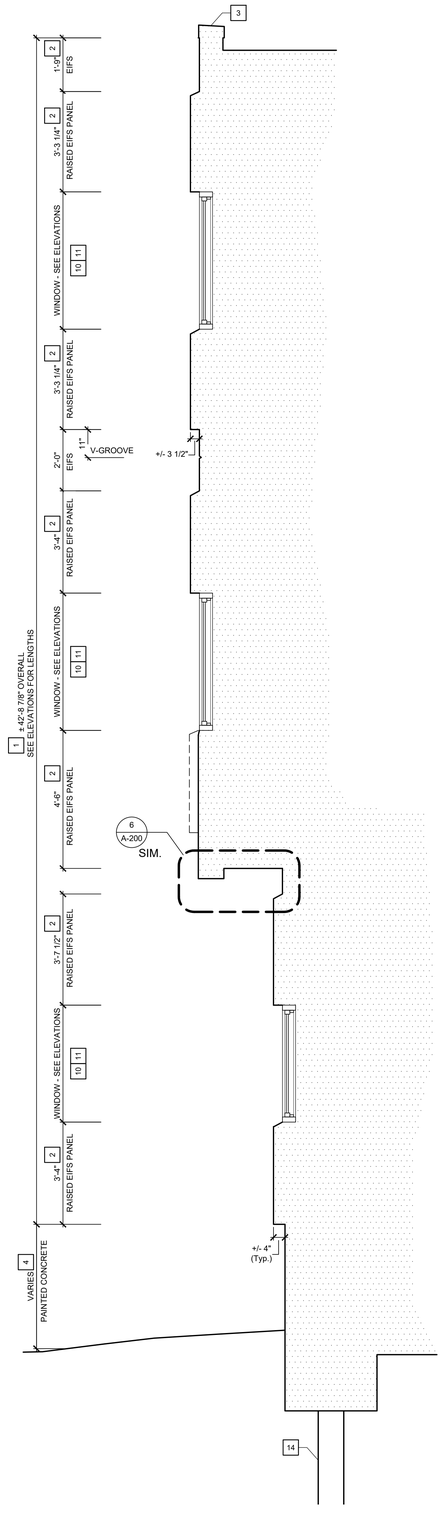

3 Wall Profile

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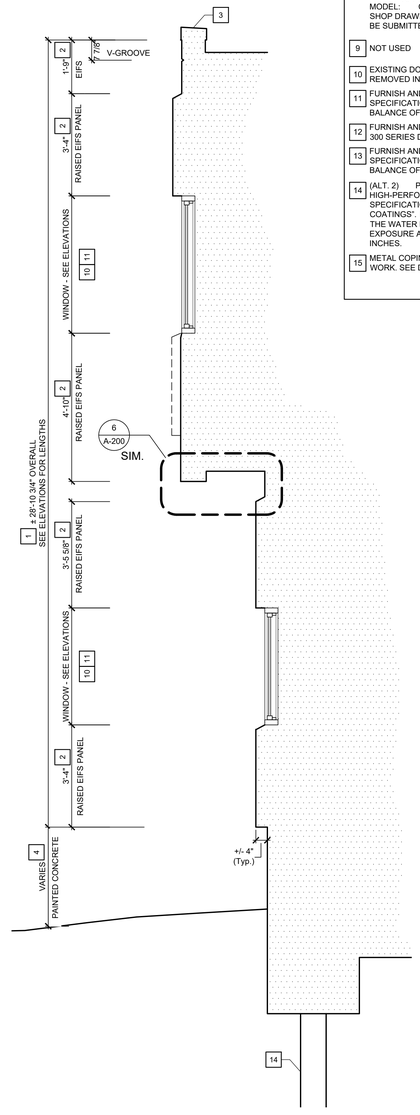

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REFERENCE NOTES

1. WALL SECTION PROFILES AND ASSOCIATED DIMENSIONS ARE INTENDED TO PROVIDE CONTRACTOR WITH GENERAL SIZE AND FIGURATION OF EXTERIOR WALL SURFACES IN ORDER TO ESTIMATE QUANTITIES AND LABOR ASSOCIATED WITH EIFS REPAIRS AND REFINISHING. DIMENSIONS AND PROFILES ARE TO BE FIELD-VERIFIED BY CONTRACTOR PRIOR TO BIDDING THIS PROJECT.
2. ALL EXISTING EIFS SURFACES ARE TO BE RECOATED WITH AN ACRYLIC BASED FINISH AS FURTHER DESCRIBED IN SPECIFICATION SECTION 09 96 00. WORK INCLUDES ALL NECESSARY REPAIRS AND SURFACE PREPARATION NECESSARY TO COMPLY WITH FINISH MANUFACTURER'S REQUIREMENTS. DUE TO ENVIRONMENTAL CONCERNS ASSOCIATED WITH THE SUBJECT SITE, ALL COATINGS SHALL BE APPLIED WITH A BRUSH AND / OR ROLLER. NO SPRAYING WILL BE PERMITTED.
3. UNLESS OTHERWISE NOTED, METAL COPINGS, FLASHING AND TRIM SHALL REMAIN IN PLACE DURING THE REFINISHING OF THE EIFS SURFACES. MASK AND PROTECT ALL METALS PRIOR TO REFINISHING EIFS.
4. CONCRETE BASE SHALL BE CLEANED OF ALL LOOSE PAINT AND PRIMED AND PAINTED IN ACCORDANCE WITH THE HIGH-PERFORMANCE COATING SPECIFICATON SECTION 09 96 11.
5. EXISTING JOINT SEALANT/ BACKER-ROD SHALL BE REMOVED AND DISPOSED OF.
6. PROVIDE NEW CLOSED-CELL BACKER-ROD AND JOINT SEALANT AT ALL JOINTS BETWEEN DOORS, WINDOWS AND EIFS SURFACES. SEE DRAWINGS FOR OTHER JOINTS THAT REQUIRE REMOVAL AND REPLACEMENT. SEE SPECIFICATION SECTION 07 92 00 "JOINT SEALANT" FOR BALANCE OF INFORMATION.
7. EXISTING WALL-MOUNTED EQUIPMENT TO REMAIN MUST BE EITHER CAREFULLY REMOVED AND REINSTALLED IN ORDER TO FACILITATE WORK; OR IN THE CASE OF RIGID ELECTRICAL CONDUIT, EQUIPMENT PANELS, STAND-PIPES, MUST BE CAREFULLY WORKED AROUND. NEW JOINT SEALANT AND BACKER-ROD MUST BE INSTALLED BETWEEN ALL JOINTS.
8. PRE-FINISHED ALUMINUM, ONE-PIECE COUNTERFLASHING WITH KYNAR FINISH (COLOR TO BE SELECTED FROM MFTR. STANDARD RANGE OF COLORS. THICKNESS (0.040"), STANDARD LENGTHS (12-FT).
   MFTR.: METAL-ERA ROOF EDGE SOLUTIONS (OR APPROVED EQUIVALENT)
   MODEL: CFW-562
   SHOP DRAWINGS WITH PRODUCT DATA AND DETAILS TO BE SUBMITTED FOR REVIEW AND APPROVAL BY ARCH.
9. NOT USED
10. EXISTING DOOR AND/ OR WINDOWS/ CURTAINWALL TO BE REMOVED IN THEIR ENTIRETY.
11. FURNISH AND INSTALL NEW STOREFRONT SYSTEM. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
12. FURNISH AND INSTALL NEW DOOR. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
13. FURNISH AND INSTALL NEW CURTAINWALL SYSTEM. SEE SPECIFICATIONS AND 300 SERIES DRAWINGS FOR BALANCE OF INFORMATION.
14. (ALT. 2) PREPARE AND PAINT EXISTING STEEL PILES WITH HIGH-PERFORMANCE COATINGS IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 00 "HIGH PERFORMANCE COATINGS". INCLUDE 24 PILES (SOME OF WHICH EXIST ABOVE THE WATER LINE); 10-INCH DIAMETER WITH AVERAGE EXPOSURE ABOVE THE WATER LINE OF FORTY-EIGHT (48) INCHES.
15. METAL COPING TO BE REMOVED AND REPLACED FOR NEW WORK. SEE DETAIL H2/A-310 FOR BALANCE OF INFORMATION.

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50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/01/2023
Drawn By: SPJ
Checked By:

Sheet Name:
Existing Elevations

Sheet No:
A-202
Sheet 0 of 000

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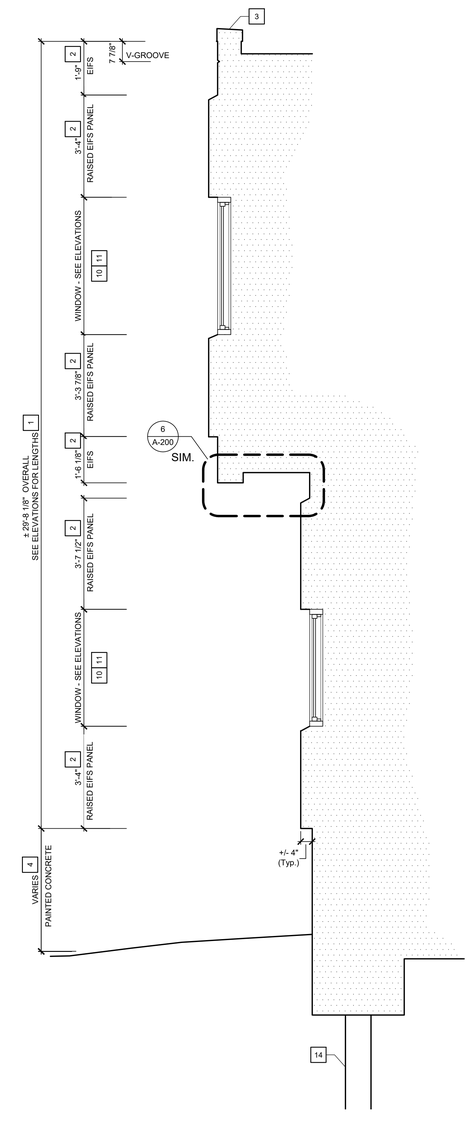

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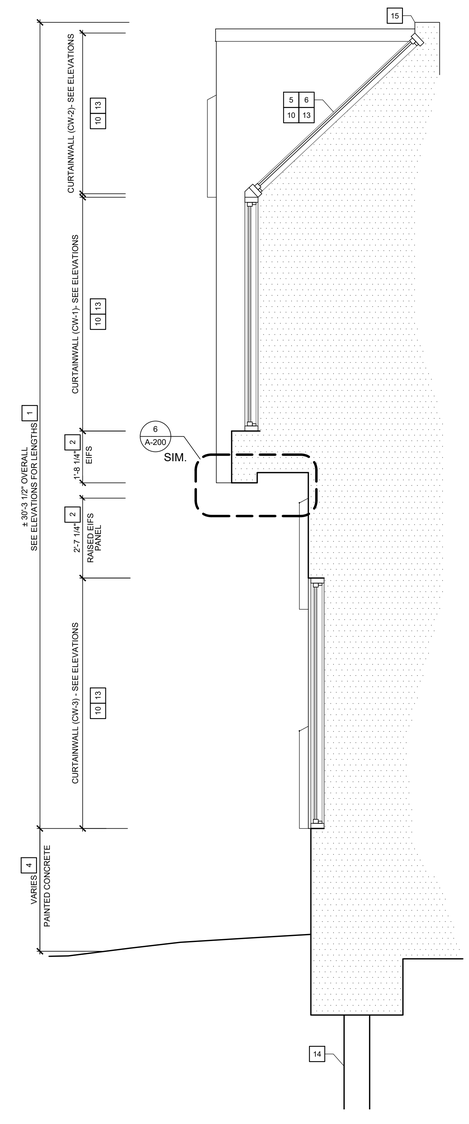
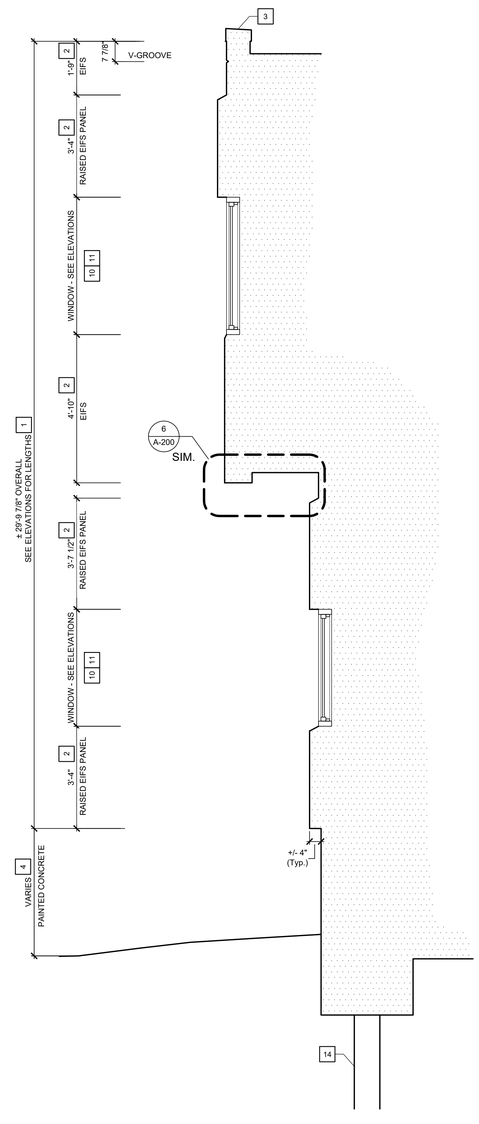


2 Wall Profile

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



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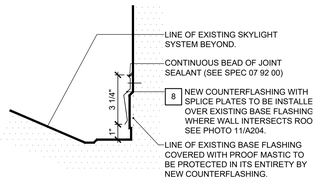

4 Detail - Base Flashing

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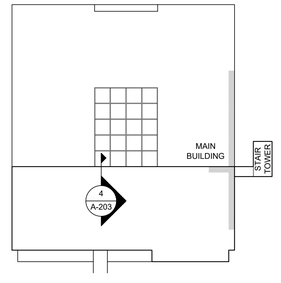

4 Roof Key Plan

SCALE: 1/32" = 1'-0"

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

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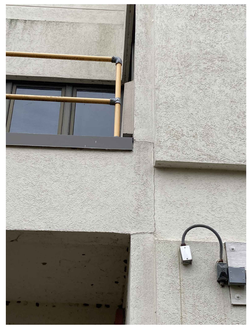
Sheet 0 of 000

P:\2023\23.094 NJSEA LYNDHURST ADMIN BUILDING\DRAWINGS\CONDOCS\A2DOS ELEVATIONS & BUILDING SECTIONS\



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2 Photo 02
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3 Photo 03
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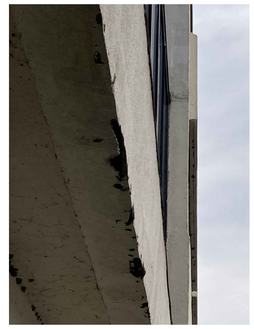

4 Photo 04
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5 Photo 05
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7 Photo 07
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8 Photo 08
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9 Photo 09
SCALE: NTS

10 Photo 10
SCALE: NTS

11 Photo 11
SCALE: NTS

12 Photo 12
SCALE: NTS

13 Photo 13
SCALE: NTS

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E. CONTRACTOR SHALL ENGAGE A LICENSED ELECTRICIAN TO REMOVE/REINSTALL ALL WALL-MOUNTED LIGHT FIXTURES, SECURITY DEVICES, ETC. REQUIRED FOR EIFS RESURFACING AND REPAIR/REPLACEMENT.

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

DIGroupArchitecture
ARCHITECTURE FOR CHANGE
15 Bethany Street • New Brunswick, NJ 08901 • T:732.249.6242
2450 W Hunting Park Ave., Bldg 9 • Philadelphia, PA 19129-1302 • T: 215.634.3400

Richard D. Alderiso , AIA
NJ RA AI 15023, NY RA 027416, PA RA 405474

PRELIMINARY
NOT FOR CONSTRUCTION

DO NOT SCALE. DRAWING MAY BE PRINTED AT REDUCED SCALE. CONSULT WITH ARCHITECT FOR DIMENSIONS.

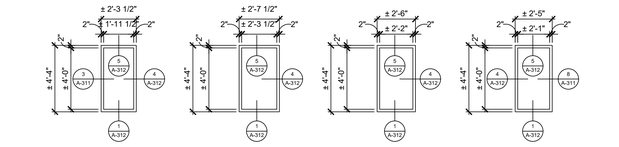
Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

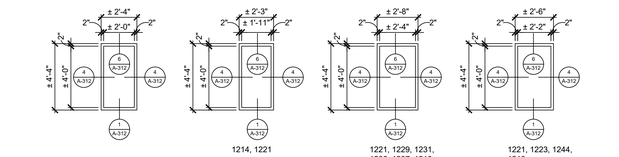
Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

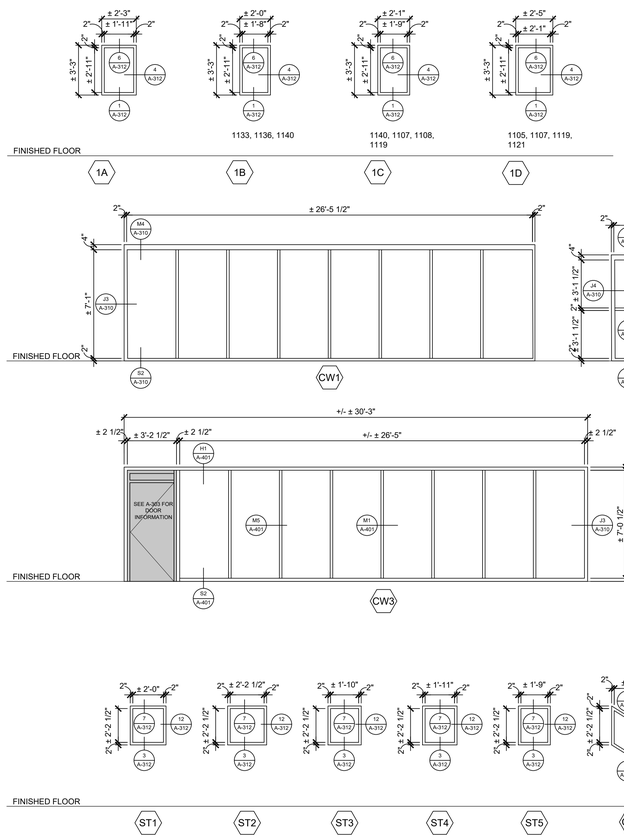
Drawing Information:
Project No: 23.094
Date: 12/21/2023
Drawn By: SPJ
Checked By:

Sheet Name:
Photo Documentation

Sheet No:
A-204
Sheet 0 of 000







1 WINDOW TYPES

SCALE: 1/4" = 1'-0"

NOTE: PROVIDE BIRD STRIKE PREVENTION FILM TO ALL GLAZING. SEE SPECIFICATION SECTION 080726 FOR BALANCE OF INFORMATION.

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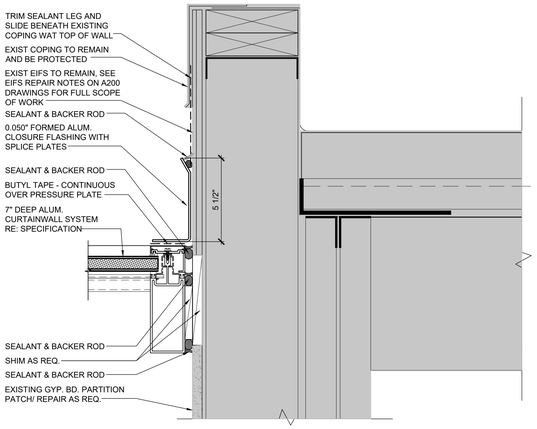
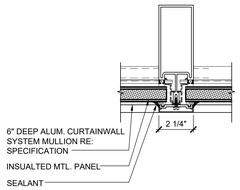
Date: 11/01/2023
Drawn By: KT
Checked By:

Sheet Name:
WINDOW ELEVATIONS

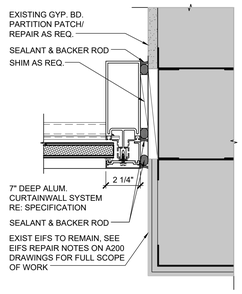
Sheet No:
A-300
Sheet 0 of 000



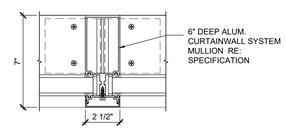
J5 CURTAINWALL VERTICAL DETAIL
SCALE: 3"=1'-0"



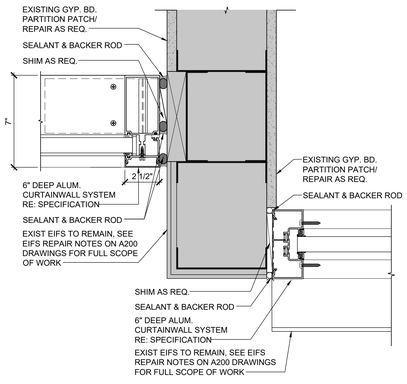
M6 RAFTER DETAIL
SCALE: 3"=1'-0" (SECOND FLOOR/ ROOF)



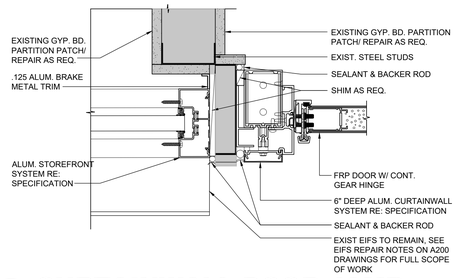
J4 VERTICAL JAMB DETAIL
SCALE: 3"=1'-0" (SECOND FLOOR/ ROOF)



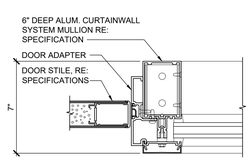
M5 MULLION DETAIL
SCALE: 3"=1'-0"



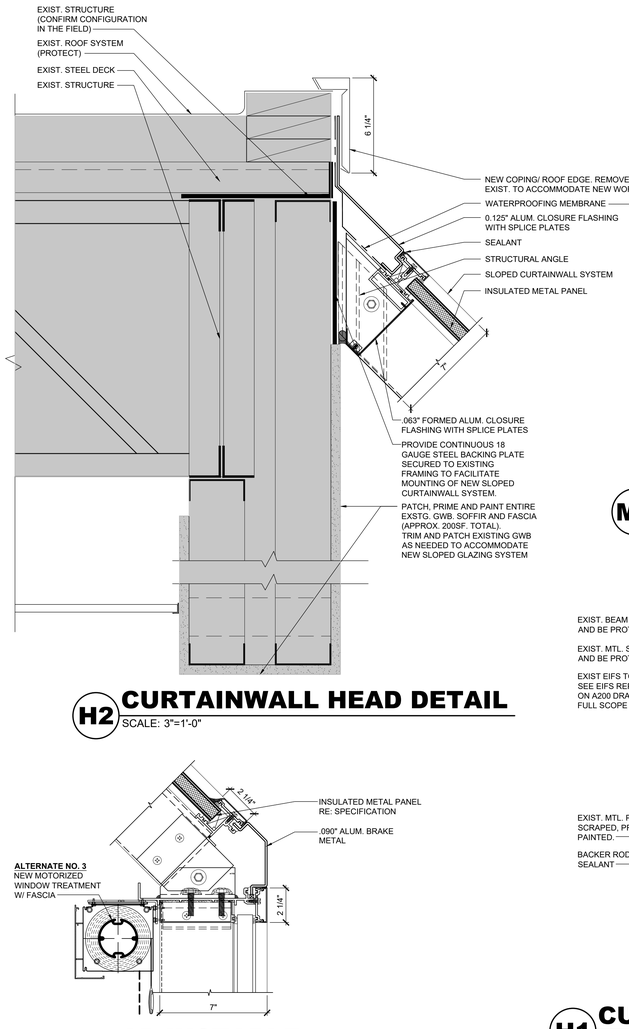
J3 CURTAINWALL JAMB DETAIL
SCALE: 3"=1'-0" (SECOND FLOOR)



J2 CURTAINWALL DOOR JAMB
SCALE: 3"=1'-0" (FIRST FLOOR)



M2 MULLION DETAIL
SCALE: 3"=1'-0" (FIRST FLOOR)



FOR NEW COPING NOTE:

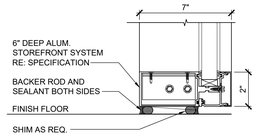
PROVIDE PRE-FINISHED ALUMINUM EDGE TRIM WITH RETAINER. KYNAR FINISH (COLOR TO BE SELECTED FROM MFTR. STANDARD RANGE OF COLORS). THICKNESS (0.050"), STANDARD LENGTHS (12-FT.)
MFTR.: METAL-ERA ROOF EDGE SOLUTIONS (OR APPROVED EQUIVALENT)
MODEL: TE-625 (INCLUDE RIGHT AND LEFT ENDCAPS AND 20GA. RETAINER)
SHOP DRAWINGS WITH PRODUCT DATA AND DETAILS TO BE SUBMITTED FOR REVIEW AND APPROVAL BY ARCH.

FOR WATERPROOFING MEMBRANE NOTE:

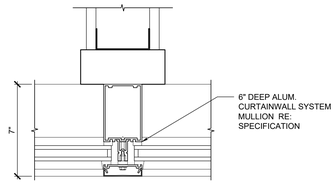
PROVIDE TEXTROFLASH SELF-ADHERING FLASHING BY HOHMANN & BARNARD, INC. OR APPROVED EQUIVALENT. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. PROVIDE SUBMITTAL FOR REVIEW AND APPROVAL.

H2 CURTAINWALL HEAD DETAIL
SCALE: 3"=1'-0"

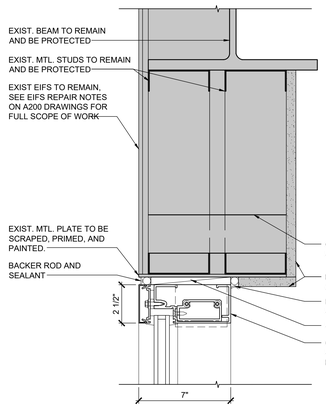
ADJUSTABLE BAFFLE DETAIL
M4
SCALE: 3"=1'-0" (SECOND FLOOR/ ROOF)



S2 CURTAINWALL SILL DETAIL
SCALE: 3"=1'-0" (SECOND FLOOR)

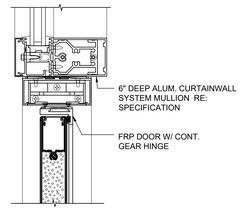


M1 MULLION DETAIL AT WALL
SCALE: 3"=1'-0" (FIRST FLOOR)

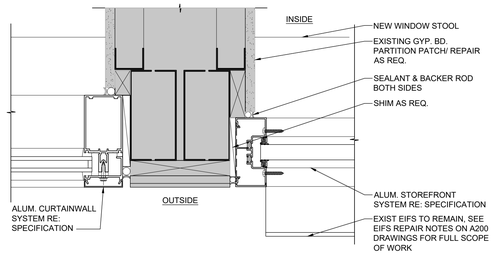


M7 PURLIN DETAIL
SCALE: 3"=1'-0" (SECOND FLOOR/ ROOF)

H1 CURTAINWALL HEAD DETAIL
SCALE: 3"=1'-0" (FIRST FLOOR)



M3 MULLION DETAIL
SCALE: 3"=1'-0" (FIRST FLOOR)



J1 CURTAINWALL JAMB DETAIL
SCALE: 3"=1'-0" (FIRST FLOOR)

(WT-2) W/ CHEDULE

No.	Date	Description
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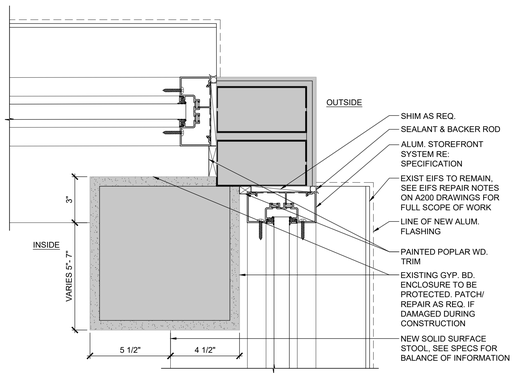
Drawing Information:
Project No: 23.094
Date: 11/01/2023
Drawn By: KT
Checked By:

Sheet Name:
CURTAIN WALL DETAILS

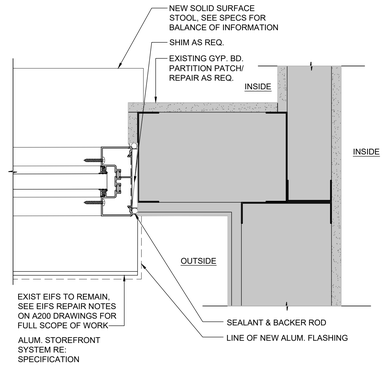
Sheet No:
A-310
Sheet 0 of 000



12 CORNER JAMB DETAIL

SCALE: 3"=1'-0"

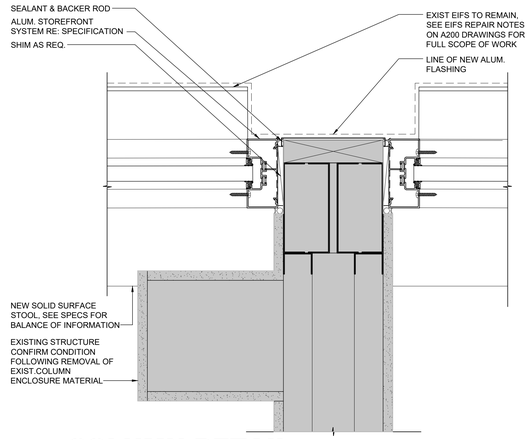
DETAIL OCCURS IN ROOM: 1131 AND 1119



11 CORNER JAMB DETAIL

SCALE: 3"=1'-0"

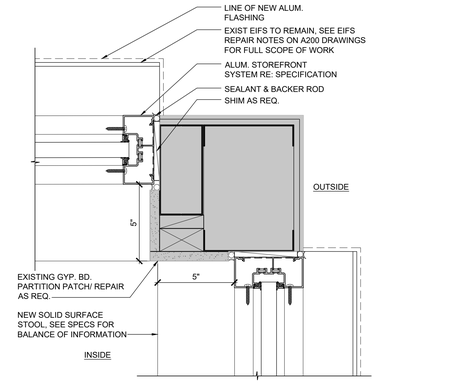
DETAIL OCCURS IN ROOMS: 1301 AND 1304



10 COLUMN DETAIL

SCALE: 3"=1'-0"

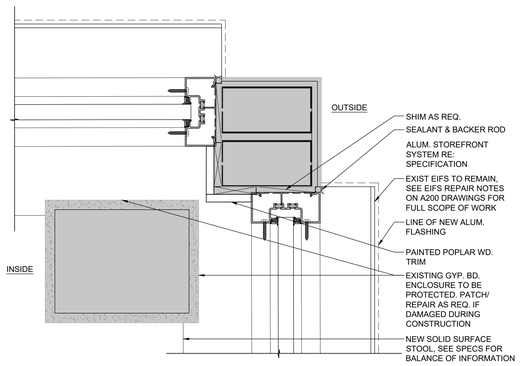
DETAIL OCCURS IN ROOM: 1303



9 OUTSIDE CORNER DETAIL

SCALE: 3"=1'-0"

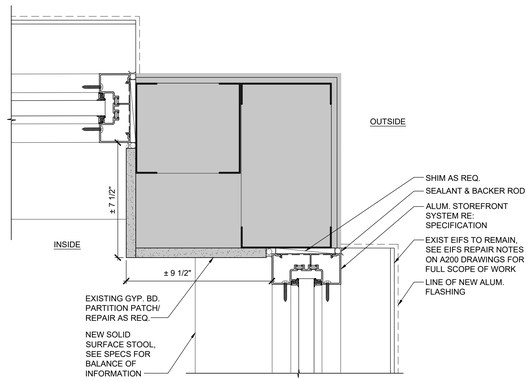
DETAIL OCCURS IN ROOM: 1221 AND 1231



8 CORNER JAMB DETAIL

SCALE: 3"=1'-0"

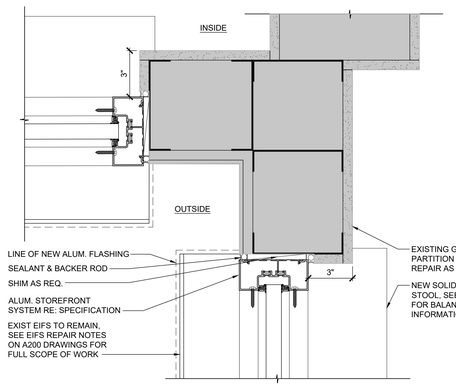
DETAIL OCCURS IN ROOMS: 1209 AND 1314



7 OUTSIDE CORNER DETAIL

SCALE: 3"=1'-0"

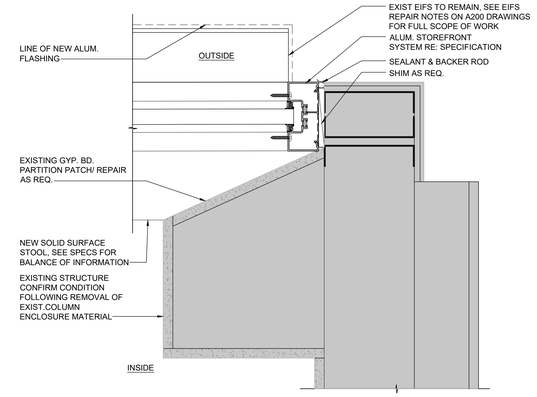
DETAIL OCCURS IN ROOMS: 1221 AND 1244



6 INSIDE CORNER DETAIL

SCALE: 3"=1'-0"

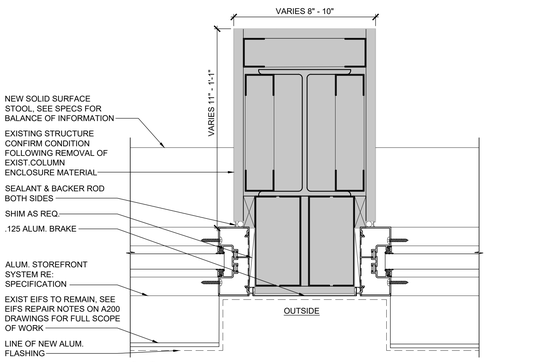
DETAIL OCCURS IN ROOMS: 1247 AND 1312



5 JAMB DETAIL @ COLUMN

SCALE: 3"=1'-0"

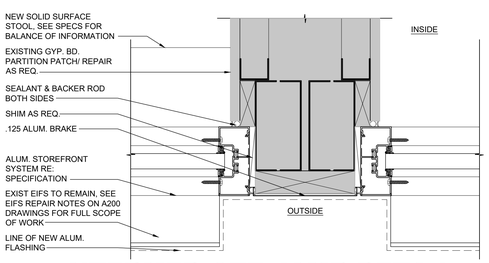
DETAIL OCCURS IN ROOM: 1304



4 COLUMN DETAIL

SCALE: 3"=1'-0"

DETAIL OCCURS IN ROOMS: 1302, 1315, 1209, 1212, 1216, 1220, 1231, 1234, 1238, 1240, 1243, 1133, 1136, 1140, 1107, 1108, 1110, 1113, AND 1117



3 INTERMEDIATE JAMB DETAIL

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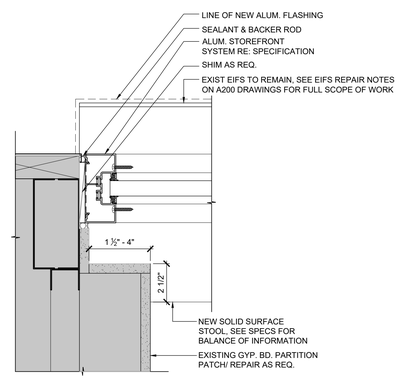
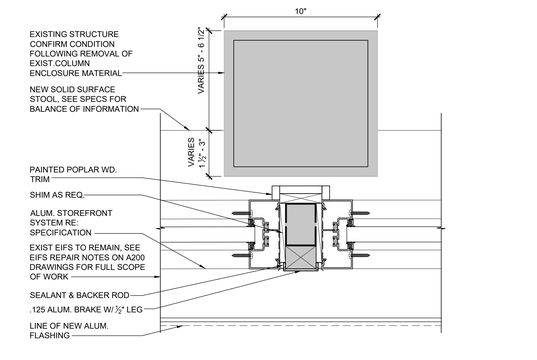


3 JAMB DETAIL

SCALE: 3"=1'-0"

DETAIL OCCURS IN ROOMS: 1139 AND 1140



1 JAMB DETAIL @ COLUMN

SCALE: 3"=1'-0"

DETAIL OCCURS IN ROOMS: 1221 AND 1231

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Date: 08/01/2025
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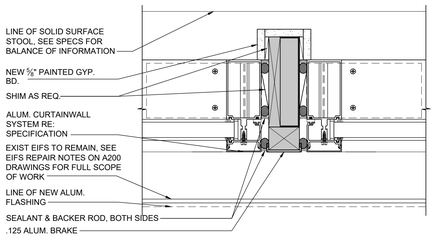
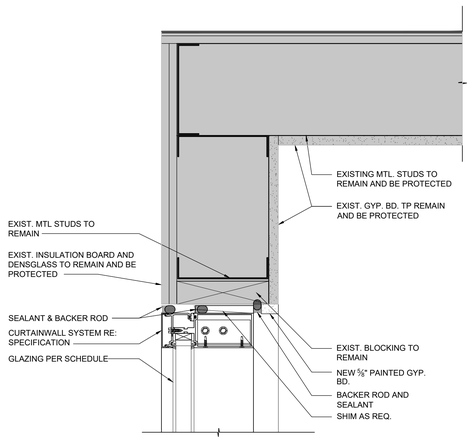
Checked By:

Sheet Name:
WINDOW DETAILS

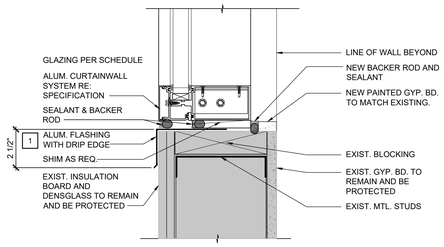
Sheet No:
A-311
Sheet 0 of 000



13 CURTAINWALL JAMB DETAIL
SCALE: 3"=1'-0"

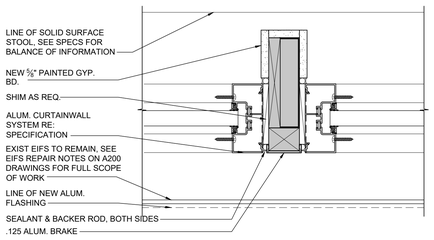


11 CURTAINWALL HEAD DETAIL
SCALE: 3"=1'-0" (EGRESS STAIR)

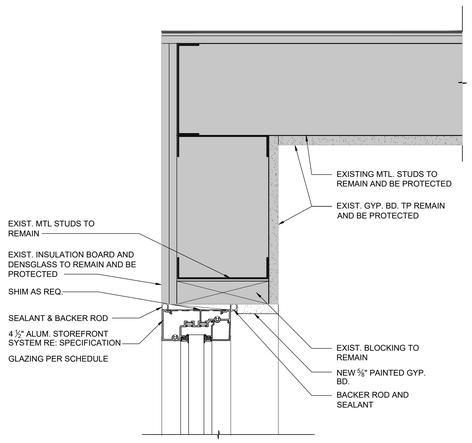


10 CURTAINWALL SILL DETAIL
SCALE: 3"=1'-0" (EGRESS STAIR)

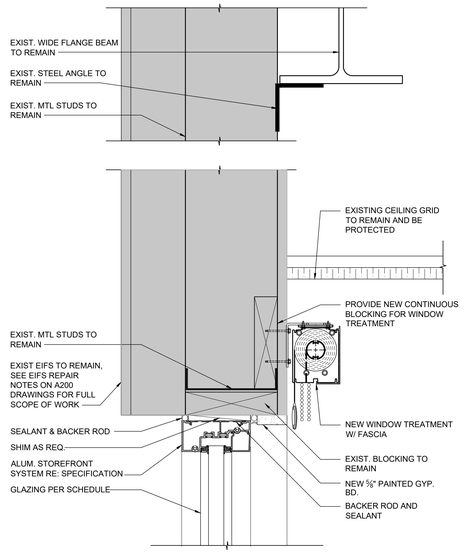
9 NOT USED
SCALE: 3"=1'-0"



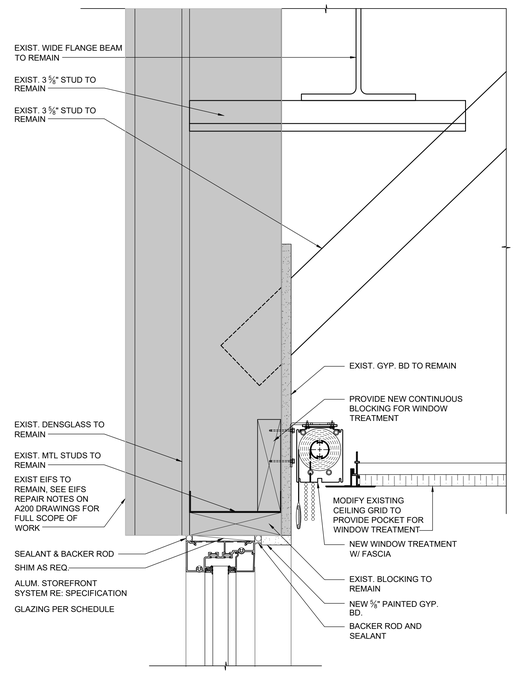
12 WINDOW JAMB DETAIL
SCALE: 3"=1'-0"



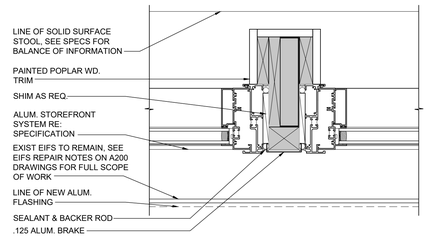
8 NOT USED
SCALE: 3"=1'-0"



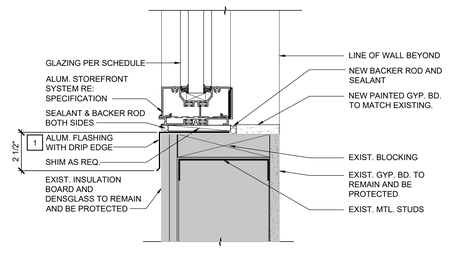
6 WINDOW HEAD DETAIL
SCALE: 3"=1'-0" (FIRST/ SECOND FLOOR)



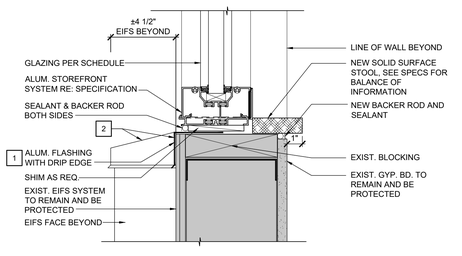
5 WINDOW HEAD DETAIL
SCALE: 3"=1'-0" (THIRD FLOOR)



4 INTERMEDIATE DETAIL
SCALE: 3"=1'-0"



3 WINDOW SILL DETAIL
SCALE: 3"=1'-0" (EGRESS STAIR)



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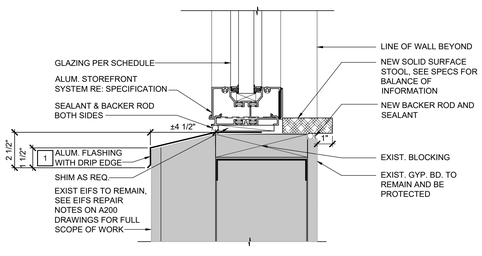

1 WINDOW SILL DETAIL
SCALE: 3"=1'-0"

SILL FLASHING NOTES

1 PROVIDE 0.040" THICK FORMED ALUMINUM SILL FLASHING WITH FACTORY-APPLIED KYNAR FINISH TO MATCH WINDOW COLOR. FABRICATE FLASHING IN APPROXIMATELY 6'-8" MAXIMUM LENGTHS WITH SPLICE PLATES AT JOINTS. ALL CORNERS AND CHANGES IN DIRECTION SHALL BE NEATLY MITERED AND FULLY SOLDERED FOR A CONTINUOUS, WATERTIGHT INSTALLATION. CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION. SUBMIT COMPLETE SHOP DRAWINGS FOR REVIEW AND APPROVAL, CLEARLY INDICATING ALL JOINT LOCATIONS, FASTENERS, HARDWARE, AND CONNECTION DETAILS.

2 AT EXPOSED EDGES OF EIFS, SILL FLASHING SHALL RETURN INTO FACE OF EXTERIOR WALL AND CONTINUE AROUND WALL PLANE TO THE NEXT WINDOWS. PROVIDE JOINT SEALANT AT ALL INTERIOR CORNERS.

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

DIGroupArchitecture
ARCHITECTURE FOR CHANGE
15 Bethany Street • New Brunswick, NJ 08901 • T:732.249.6242
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Richard D. Alderiso , AIA
NJ RA AI 15023, NY RA 027416, PA RA 405474

PRELIMINARY NOT FOR CONSTRUCTION

DO NOT SCALE. DRAWING MAY BE PRINTED AT REDUCED SCALE. CONSULT WITH ARCHITECT FOR DIMENSIONS.

Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 08/01/2025
Drawn By: KT
Checked By:

Sheet Name:
WINDOW DETAILS

Sheet No:
A-312
Sheet 0 of 000

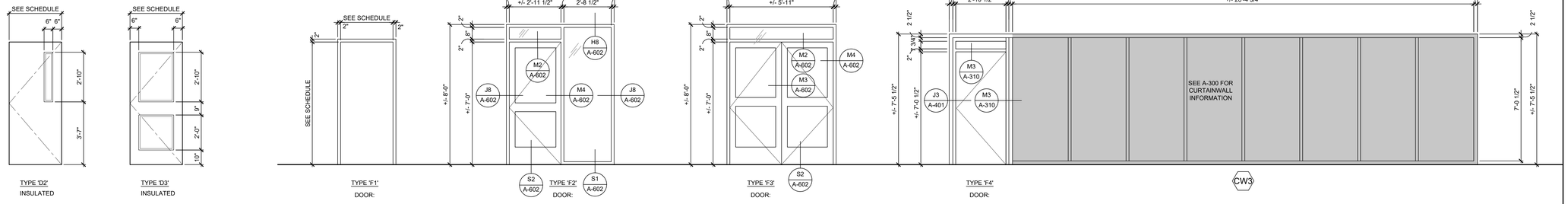
11/25/2025 1:01:14 PM

Door Schedule

DOOR NUMBER		DOOR TYPE	DOOR MAT'L	FIRE RAT'G	DOOR WIDTH	DOOR HEIGHT	FRAME TYPE	HEAD/ JAMB	HDWR GROUP	REMARKS
1122/1	VESTIBULE	D2	AL	---	3'-0"	7'-0"	F2	M2/ J1	XX	
1122/2	VESTIBULE	D2	AL	---	(2)@3'-0"	7'-0"	F3	M2/ J1	XX	
1122/3	VESTIBULE	D2	AL	---	3'-0"	7'-0"	F3	M2/ J1	XX	
1122/4	VESTIBULE	D2	AL	---	(2)@3'-0"	7'-0"	F3	M2/ J1	XX	
1124/1	EGRESS STAIR	D1	FRP	---	3'-0"	7'-0"	F4	H3/ J3	XX	
1129/1	CORRIDOR	D2	AL	---	3'-0"	7'-0"	F1	H2/ J2	XX	

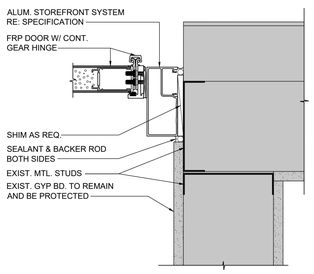
NOTE: INSTALL NEW PROVIDE HIGH INTENSITY REFLECTIVE VINYL DECALS IDENTIFICATION NUMBERS AT ALL DOORS TO BE REPLACED. NUMBER SEQUENCE, SIZE, STYLE AND COLOR TO BE COORDINATED W/ OWNER/ ARCHITECT.

NOTE: PROVIDE BIRD STRIKE PREVENTION FILM TO ALL GLAZING. SEE SPECIFICATION SECTION 080726 FOR BALANCE OF INFORMATION.

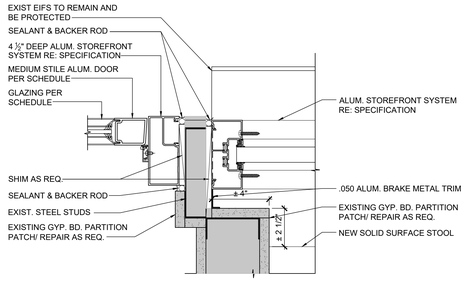


1 DOOR ELEVATIONS
SCALE: 3/8"= 1'-0"

2 ALUMINUM FRAME ELEVATIONS
SCALE: 3/8"= 1'-0"

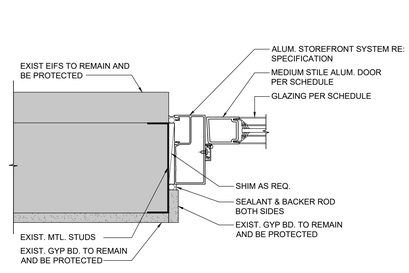


J3 DOOR JAMB DETAIL
SCALE: 3"=1'-0"

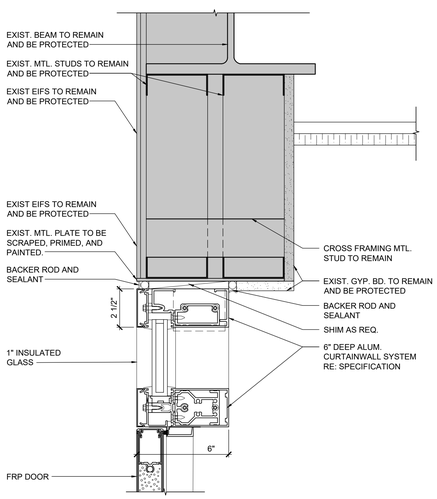


J2 DOOR JAMB AT WINDOW
SCALE: 3"=1'-0"

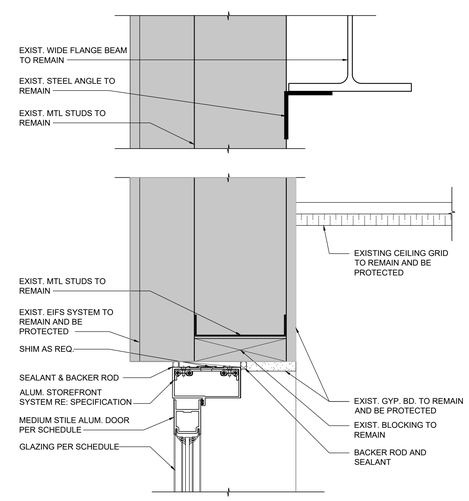
DETAIL OCCURS IN ROOMS:
1136



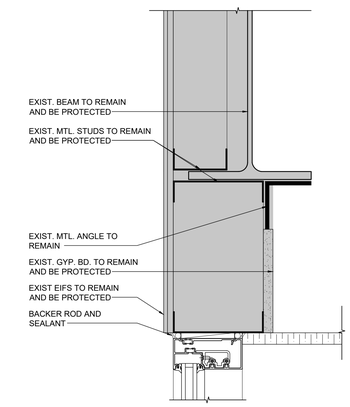
J1 DOOR JAMB DETAIL
SCALE: 3"=1'-0"



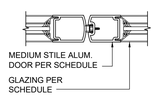
H3 DOOR HEAD DETAIL
SCALE: 3"=1'-0" (CURTAINWALL)



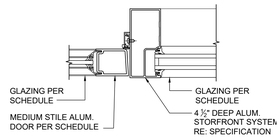
H2 DOOR HEAD DETAIL
SCALE: 3"=1'-0"



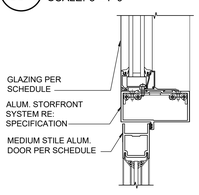
H1 DOOR HEAD DETAIL
SCALE: 3"=1'-0"



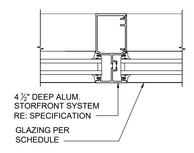
M4 Mullion Detail
SCALE: 3"=1'-0"



M3 Mullion Detail
SCALE: 3"=1'-0"



M2 Mullion Detail
SCALE: 3"=1'-0"



M1 Mullion Detail
SCALE: 3"=1'-0"

No.	Date	Description
-	12-01-2025	FOR BID

Revisions / Issues

DIGroupArchitecture
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Client:
New Jersey Sports & Exposition Authority
50 State Route 120
East Rutherford, NJ 07073

Project:
NJSEA Lyndhurst Admin Building
Building Envelope Improvements
1 DeKorte Park Plaza,
Lyndhurst, New Jersey 07071

Drawing Information:
Project No: 23.094
Date: 11/01/2023
Drawn By: KT
Checked By:

Sheet Name:
DOOR SCHEDULE, ELEVATIONS, AND DETAILS

Sheet No:
A-401
Sheet 0 of 000

P:\2023\23.094 NJSEA LYNDHURST ADMIN BUILDING\23.094-DIGRAWINGS\CONDOCS\A3DDS INTERIOR DETAILED PLANS & ELEVATIONS\

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Building Envelope Improvements at NJSEA Lyndhurst Administration Building.

1.3 Project Location:

A. 1 DeKorte Park Plaza, Lyndhurst, New Jersey 07071

B. Architect Identification: The Contract Documents, dated December 1, 2025, were prepared by DIGroupArchitecture, LLC.

Project Summary: Building Envelope Improvements

1. Scope of work includes, but is not limited to, the following (see contract drawings and specifications for the balance of scope not described in this summary):
    a. Repair and refinish existing EIFS barrier system as fully described on drawings and in specifications – includes all elevations, walls, soffits, fascia and trim.
    b. Window & Door Systems: Remove and replace existing exterior window and door systems, including frames, glazing, trim, sealants, and associated anchorage, in their entirety, as indicated on drawings.
    c. Curtain Wall System: Remove and replace existing curtain wall system including frames, glazing, trim, sealants and associated anchorage in its entirety as indicated on drawings.
    d. Patch and repair all finishes around openings (interior and exterior side of exterior wall system).
    e. Temporarily weatherproof openings (assumes separate demolition and new work activities) to maintain building envelope integrity and prevent water and insect intrusion. Protect interior finishes, furnishings, and equipment during demolition.
    f. See project Alternates for additional potential scope items.
    g. See section 1.7 for Exterior Access Requirements.

1.4 WORK SEQUENCE (pg 58 NJSEA Contract)

1.5 WORK HOURS (pg 79 NJSEA Contract)

1.6 USE OF PREMISES

A. General: Contractor's use of premises is limited by Owner's right to perform work and to operate business functions or to retain other contractors on portions of Project.

B. Contractor will not be allowed to store tools or materials inside or outside of the building unless otherwise approved in writing by Owner.

C. Contractor will not be allowed to use the Owner’s toilet facilities.

D. Egress must be maintained and protected at all exits immediately adjacent to the work area.

E. Nonsmoking and Nonvaping Building and Site: Smoking and/or Vaping is not permitted on School Grounds (Building and / or Site). Contractor will be fined $500 dollars per incident for smoking. Monies will be deducted from Contractor’s General Conditions accordingly.

G. Controlled Substances: Use of tobacco products and other controlled substances on Grounds (Building and / or Site) is not permitted.

H. Shirts: Contractor personnel and / or vendors are to wear shirts at all times while on Grounds (Building and / or Site).

I. Employee Identification: Provide laminated identification tags for ALL Contractor personnel working on Project site. Identification Tags are to be worn on ALL Contractor personnel AT ALL TIMES while they are on the Project Site.

Identification Tags Requirements:

1. Color: Orange.
2. Size: 2” x 4”.
3. Must contain photograph of personnel and name of company.
4. Must be worn (around neck) exposed to view at all times.
5. Must be laminated.

J. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.7 EXTERIOR ACCESS REQUIREMENTS

A. The Work, as noted above, includes building envelope repairs and replacements on all exterior elevations, including those located over or adjacent to bodies of water.

B. The Contractor shall be solely responsible for providing all means of access, scaffolding, rigging, and temporary platforms required to complete the Work. This includes, but is not limited to, suspended scaffolding, swing stages, roof-hung platforms, barges, floating platforms, and all associated hoisting and safety systems.

C. The Architect and Owner do not prescribe or control the Contractor’s means and methods of construction. Access systems and procedures shall be designed, furnished, and maintained by the Contractor in accordance with all applicable codes, safety regulations, and requirements specified in Section 01 50 00 – Temporary Facilities and Controls.

D. All costs associated with providing safe and adequate access for the Work shall be included in the Contractor’s bid price.

E. Prior to beginning exterior operations, the Contractor shall submit an engineered Access Plan as specified in Section 01 50 00 for review for conformance with the Contract Documents.

1.8 CONTRACTOR QUALIFICATIONS

A. A list of proposed subcontractors shall be included with the Bid as required by the Bid Forms. The list shall be accompanied by an experience statement for each subcontractor indicating each subcontractor's qualifications. If the NJSEA, after due investigation, has reasonable objection to any proposed subcontractor, the NJSEA may, before giving the notice of award, request the apparent Successful Bidder to submit an acceptable substitute without an increase in bid price. If the apparent Successful Bidder declines to make any such substitution, the Contract shall not be awarded to said Bidder; but its declining to make such a substitution will not constitute grounds for sacrificing its bid security. Any subcontractor, to whom the NJSEA does not make a written objection prior to the giving of the notice of award, shall be deemed acceptable to the NJSEA.

B. No Contractor shall be required to employ any subcontractor against whom it has objection.

C. The attention of the bidder is directed to GENERAL CONDITIONS for further information on Subcontractors.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: EIFS Repair Type ‘R1’

1. Description: Provide Static Crack Repair Type ‘R1’ as described in specification section 09 96 00 (Elastomeric Coating Restoration).
2. Unit of Measurement: Per Linear Foot.

B. Unit Price No. 2: EIFS Repair Type ‘R2’

1. Description: Provide Insulation and Coating Repair Type ‘R2’ as described on drawings and in specification section 09 96 00 (Elastomeric Coating Restoration).
2. Unit of Measurement: Per Square Foot.

C. Unit Price No. 3: EIFS Repair Type ‘R3’

1. Description: Provide Full Depth Repair Type ‘R3’ as described on drawings and in specification section 09 96 00 (Elastomeric Coating Restoration).
2. Unit of Measurement: Per Square Foot.

D. Unit Price No. 4: EIFS Repair Type ‘R4’

1. Description: Provide Full Depth with Sheathing Repair Type ‘R4’ as described on drawings and in specification section 09 96 00 (Elastomeric Coating Restoration).
2. Unit of Measurement: Per Square Foot.

E. Unit Price No. 5: EIFS Repair Type ‘R5’

1. Description: Wall Closure Repair Type ‘R5’ as described on drawings and in specification section 09 96 00 (Elastomeric Coating Restoration). Include Air/Moisture Barrier as described in drawings in this Unit Price.
2. Unit of Measurement: Per Square Foot.

F. Unit Price No. 6: Coating Existing Steel Piles

1. Description: Prepare and Paint existing steel pile with high performance coating in accordance with specification section 09 96 11(High Performance Coatings).
2. Unit of Measurement: Per pile (10-inch diameter and 48-inches of exposure).

G. Unit Price No. 7: Replacement of Sill Blocking and Metal Framing

1. Description: Remove and replace deteriorated and / or compromised sill blocking and metal stud framing after existing window system has been removed and disposed of and existing blocking and framing is exposed.

   a. Assumed blocking size and type: 2 x 6 pressure treated blocking

   b. Metal Framing: 6-inch track / runner. 18 gauge, galvanized. Reattach to existing metal stud framing with stainless steel, self-tapping screws (#10-16 x ¾").

2. Unit of Measurement: Per opening (assume 36-inch length for the purpose of this unit price).

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Stair Tower Windows

1. Base Bid: At the Stair Tower, the Base Bid shall include only the upper-level north-facing windows as shown on Drawing No. A-201, Elevation 2C. Refer to Specification Section 08 44 13 – "Glazed Aluminum Curtain Walls" for the window system requirements at these locations. All other Work associated with the Stair Towers shall be included in the Base Bid**.**

2. Alternate: At the Stair Tower, the Alternate Bid shall include all windows identified as part of Alternate No. 1 (Alt. 1) on Drawing No. A-201, Elevations 2A, 2B, 2C, and 2D. Refer to Specification Section 08 44 13 – "Glazed Aluminum Curtain Walls" for the window system requirements at these locations. All other Work associated with the Stair Towers is to remain included in the Base Bid and is not excluded under this Alternate.

B. Alternate No. 2: Exposed Steel Pile Painting

1. Base Bid: Existing exposed steel piles are to remain and be protected during the course of construction.

2. Alternate: Existing exposed steel piles shall be prepared and painted with high-performance coating in accordance with specification section 09 96 11 "High Performance Coatings". Include 24 piles (some of which exist above the water line); 10-inch diameter with average exposure above the water line of 48-inches. See drawings for additional information.

C. Alternate No. 3: Roll-Down Shades

1. Base Bid: Replace window systems without furnishing and installing Roll-Down Shades.

2. Alternate: Furnish and install the Manual Window Treatment System (Specification Section 12 24 13) and Motorized Roller Shade System (Specification Section 12 21 24) as indicated on the Drawings and in the Specifications. Work includes any necessary modifications to suspended ceiling systems to accommodate the installation of window treatments, as well as patching, refinishing, or repair of all adjacent finishes affected by the work. Refer to the Drawings for the locations and quantities of windows to be covered by each shade type. For motorized roller shades, the Alternate includes the provision of 110 V power, up to 100 feet of conduit and cabling routed above the ceiling, and connection to the nearest available distribution panel. Switch locations shall be determined in the field by the Owner. All work shall be coordinated to ensure proper function, aesthetic integration, and minimal disruption to existing conditions.

END OF SECTION 012300

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Construction schedule updating reports.
3. Daily construction reports.
4. Material location reports.
5. Site condition reports.
6. Unusual event reports.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.
2. Section 014000 "Quality Requirements" for schedule of tests and inspections.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time belongs to Owner.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.

3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of labor and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file.
2. PDF file.

B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports to contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at weekly intervals.

G. Material Location Reports: Submit at weekly intervals.

H. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.

2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

1. Contract completion date to not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each item of work as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Temporary Facilities: Indicate start and completion dates for the following as applicable:

a. Securing of approvals and permits required for performance of the Work.
b. Temporary facilities.
c. Construction of mock-ups, prototypes and samples.
d. Punch list.

3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

a. Curtain Wall Systems
b. Aluminum Storefront Systems
c. Doors, Frames and Hardware

4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and Final Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work Restrictions: Show the effect of the following items on the schedule:

a. Building access constraints associated with adjacent body of water.
b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Provisions for construction at adjacent building (Environment Center)
e. Seasonal variations.
f. Environmental control.

2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Scaffolding.
b. Purchases.
c. Temporary Protection
d. Fabrication.
e. Deliveries.
f. Installation.
g. Tests and inspections.

3. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

a. Temporary enclosure and space conditioning.
b. Permanent space enclosure.
c. Substantial Completion.

E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

F. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

H. Distribution: Distribute copies of approved schedule to Architect**,** Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.6 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in five (5) percent increments within time bar.

1.7 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received and implemented.
15. Services connected and disconnected.
16. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List to be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on

and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.

10. Drawing number and detail references, as appropriate.
11. Indication of full or partial submittal.
12. Location(s) where product is to be installed, as appropriate.
13. Other necessary identification.
14. Remarks.
15. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow seven (7) seven business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow (5) five business days for review of each resubmittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.7 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional (professional engineer licensed in the State of New Jersey).

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.

1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 013516 - ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes special procedures for alteration work.

1.2 DEFINITIONS

A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.

B. Consolidate: To strengthen loose or deteriorated materials in place.

C. Design Reference Sample: A sample that represents the Architect's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.

D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

K. Retain: To keep an element or detail secure and intact.

L. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 COORDINATION

A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.

1. Schedule construction operations in sequence required to obtain best Work results.
2. Coordinate sequence of alteration work activities to accommodate the following:

    a. Owner's continuing occupancy of portions of existing building.
    b. Owner's partial occupancy of completed Work.
    c. Other known work in progress.
    d. Tests and inspections.

3. Detail sequence of alteration work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of elevator and stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use in existing structure. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns **and adjacent to** restricted areas. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. Access to restricted areas may not be obstructed. Plan and execute the Work accordingly.

1.4 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed at Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.

1.6 STORAGE AND HANDLING OF SALVAGED MATERIALS

A. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.

B. Storage: Catalog and store items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item for reinstallation with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F (3 deg C) or more above the dew point.

1.7 FIELD CONDITIONS

A. Survey of Existing Conditions: Record existing conditions that affect the Work by use of measured drawings, preconstruction photographs and preconstruction videotapes.

B. Discrepancies: Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

C. Owner's Removals: Before beginning alteration work, verify in correspondence with Owner that the following items have been removed:

1. Interior furnishings adjacent to items to be selectively demolished.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
3. Erect temporary barriers to form and maintain fire-egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
5. Contain dust and debris generated by alteration work, and prevent it from reaching the public or adjacent surfaces.

6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building.

B. Temporary Protection of Materials to Remain:

1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

3.2 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:

1. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
2. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
3. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.

4. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
5. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:

    a. Train each fire watch in the proper operation of fire-control equipment and alarms.
    b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
    c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
    e. Maintain fire-watch personnel at each area of Project site until two hours after conclusion of daily work.

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 GENERAL ALTERATION WORK

A. Have specialty work performed only by qualified specialists.

B. Ensure that supervisory personnel are present when work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs or video recordings. Comply with requirements in Section 013233 "Photographic Documentation."

D. Perform surveys of Project site as the Work progresses to detect hazards resulting from alterations.

E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

    1. Do not proceed with the work in question until directed by Architect.

END OF SECTION 013516

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, Commissioning Authority, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed and tested at testing facility to verify performance characteristics.

2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as part of permanent construction, consisting of multiple products, assemblies, and subassemblies.
3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes; doors; windows; millwork; casework; specialties; furnishings and equipment; and lighting.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect or Construction Manager.

1.3 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1.4 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits.

To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

C. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.

10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Statement that products at Project site comply with requirements.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Statement that equipment complies with requirements.
2. Results of operational and other tests and a statement of whether observed performance complies with requirements.
3. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed

for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
d. When testing is complete, remove test specimens and test assemblies, and mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and Commissioning Authority, through Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.

2. Build mockups in location indicated or, if not indicated, as directed by Architect or Construction Manager.
3. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Architect's and Construction Manager's approval of mockups before starting corresponding work, fabrication, or construction.

    a. Allow seven days for initial review and each re-review of each mockup.

7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Demolish and remove mockups when directed unless otherwise indicated.

L. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect, Commissioning Authority, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect, Commissioning Authority, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
6. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency and/or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Commissioning Authority, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and Commissioning Authority, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's, Commissioning Authority's and Construction Manager's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Section also includes requirements for temporary access systems, scaffolding, rigging, and other means required for execution of exterior building envelope work.

C. Work includes provisions, maintenance, and removal of all temporary means necessary to safely access and complete the following:

1. EIFS repairs
2. Curtainwall and Window Replacement
3. Flashing and Trim Replacement

D. Coordinate access requirements with Owner operations and adjacent water bodies.

E. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
2. Section 24119 “Selective Demolition” for work restrictions associated with removals.

1.3 REFERENCES

A. Comply with applicable OSHA and local safety regulations.
B. Scaffolding: ANSI/ASSE A10.8.
C. Fall protection: OSHA 29 CFR 1926 Subpart M.
D. Water-borne operations: Owner and applicable State regulations.

1.4 CONTRACTOR’S RESPONSIBILITIES

A. Contractor shall be solely responsible for determining and providing all means of access necessary for performance of the Work, including, but not limited to:

1. Suspended scaffolding, swing stages, and / or roof-hung platforms
2. Floating platforms, or other water-borne access systems.
3. Hoisting, rigging, and fall-protection systems.

a. Architect and Owner do not prescribe, direct, or assume responsibility for the Contractor’s means, methods, or sequences of construction.

b. Access methods shall not damage existing construction or impair water quality or safety.

1.5 USE CHARGES

A. General: Installation and removal of and cost or use charges for temporary facilities are not chargeable to Owner and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:

1. Owner's Representative.
2. Architect.
3. Testing Agencies.
4. Personnel of authorities having jurisdiction.
5. Owner's vendor(s).

B. Water Service: The Contractor may use potable outdoor drinking fountain. The Contractor may use outdoor spigot for water and washing from the Owner's facilities.

C. Electric Power Service: The Contractor may use electrical service from the Owner's facilities.

D. Contractor(s) providing temporary services are responsible for all costs associated for providing temporary services as long as required, including but not limited to maintenance and relocation during construction.

1.6 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.

1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.

D. Access Plan:

1. Before commencing exterior work, submit a detailed access plan indicating:
   a. Proposed scaffolding, rigging, and / or water-based access systems.
   b. Anchorage or suspension methods from the roof for structure.
   c. Protection of building surfaces, adjacent property, and waterways.
   d. Safety provisions and fall-protection measures.

2. Plan shall be signed and sealed by a qualified professional engineer licensed in the project jurisdiction.
3. Schedule coordination showing how access systems interface with project phasing.

1.7 QUALITY ASSURANCE

A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

B. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

C. Access systems shall be designed and installed under supervision of personnel qualified per OSHA 1926 requirements.

1. All rigging equipment shall bear current inspection tags and load ratings.
2. Provide floating or marine equipment operated by qualified, licensed personnel.

1.8 PROTECTION

A. Protect completed portions of Work, existing surfaces, and water bodies from damage, debris and contamination.

B. Restore any affected areas to original conditions upon removal of access systems.

C. Prior to removal of the existing curtain wall system, the Contractor shall design, furnish, and install a complete temporary weather and environmental protection enclosure to safeguard interior spaces, finishes, furnishings, and systems within the affected conference room and atrium areas.

D. The temporary protection system shall:

1. Provide a continuous, weathertight, and insulated barrier to maintain interior environmental conditions and prevent air, water, dust and insect infiltration.
2. Be structurally stable under anticipated wind and weather conditions and safely integrated with the building’s structure without causing damage to adjacent construction.
3. Allow sufficient daylight or temporary lighting for safe working conditions and continued Owner operations, where applicable.
4. Include secure door or panel access as required for construction activities.
5. Remain in place and maintained in good condition until installation of the new permanent curtain wall system provides equivalent enclosure.

E. Protection materials shall include, but are not limited to, insulated temporary wall panels, reinforced polyethylene sheeting, rigid sheathing, or framed temporary partitions with appropriate flashing, weather stripping, and sealants to ensure weather-tight performance.

F. The temporary enclosure shall be detailed and installed to:

1. Prevent water intrusion during rainfall or wash-down operations.
2. Prevent insect and pest intrusion.
3. Prevent damage from wind uplift, vibration, and thermal movement.
4. Protect HVAC systems from dust and moisture infiltration.

5. Protect all interior finishes, furnishings, and equipment from damage.

G. Submit a Temporary Protection Plan prior to removal of existing curtain wall components. The plan shall include drawings and details showing:

1. Method of attachment and interface with existing structure.
2. Materials and construction of the temporary enclosure.
3. Method of maintaining watertight integrity and environmental separation.
4. Sequence for installation, maintenance, and removal.

H. The Contractor shall be fully responsible for maintaining the temporary protection system in a safe and weathertight condition for the duration of exposure and shall promptly repair or replace any portions damaged or displaced by weather or construction activity at no additional cost to the Owner.

1.9 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete bases for supporting posts.

B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

C. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).

D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

E. See section 1.8 for material associated with curtain wall removal protection.

2.2 TEMPORARY FACILITIES

A. Contractor MUST provide sanitary facilities for their employees and maintain said facilities.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
2. Final location to be approved by Owner and Architect.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. Heating and Cooling: Provide temporary heating and cooling required by construction activities to protect existing, interior spaces during construction improvements. Select equipment that will not have a harmful effect on completed installations or elements being installed.

B. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
2. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

C. Humidity Control:

1. Provide dehumidification systems when required to reduce moisture levels in existing spaces. Maintain humidity levels at or below 55% humidity.

3.3 SUPPORT FACILITIES INSTALLATION

A. Existing Roads, Sidewalks, Curbs, Inlets and other Paved Areas: Contractor is to document, through video and photographs, the condition of existing roads, sidewalks, inlets, and other paved areas. Items which are damaged, in any way during construction are to be replaced as follows:

1. Cracked or damaged sidewalk: Entire sections of sidewalk from joint to joint (control or expansion) are to be removed and replaced in kind.
2. Damaged Curb: Replace minimum 10-foot section.
3. Damaged Inlet: Remove and replace in its entirety – in kind.
4. Damaged Paved Areas: Replace sections in minimum 100 square foot areas.
5. Condition of adjacent Lawn Areas: New top soil, seed, stabilize and water (regularly for minimum of 1 month) damaged areas.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: See drawings for proposed contractor parking locations.

D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."

E. Provide, maintain, and remove access systems in a safe and orderly manner.

1. Coordinate with Owner to maintain building operations and public safety.
2. Remove access equipment promptly upon completion of Work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

D. Insect Control: The Contractor shall provide continuous and effective protection of all window and wall openings during removal and replacement activities to prevent the infiltration of insects and other pests. Due to the known presence of large quantities and high densities of

flying insects at this site - particularly during the spring and summer months - the Contractor shall implement enhanced insect-control measures. Occupied office areas and adjacent circulation spaces shall be fully isolated with temporary barriers, screens, or other approved enclosures to prevent the migration of flying insects into interior spaces for the duration of the work at each room or space. All protective measures shall be maintained in good condition and remain in place until the building envelope is fully secured.

E. Staging Area Enclosure Fence: Before construction operations begin furnish and install staging enclosure fence in a manner that will prevent people and animals from easily entering staging area except by entrance gates.

1. Extent of Fence: As indicated on Drawings.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

G. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
2. See section 1.8.G for Temporary Enclosure associated with curtain wall removal and installation.

I. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
2. Insulate partitions to control noise transmission to occupied areas.
3. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
4. Protect air-handling equipment.
5. Provide walk-off mats at each entrance through temporary partition.

J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking ANYWHERE on site.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Consider inserting specific removal requirements, as illustrated in first subparagraph below.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Installation.
2. Cutting and patching.
3. Progress cleaning.
4. Protection of installed construction.
5. Correction of the Work.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.

1. Prior to **commencing work requiring cutting and patching**, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Inform Architect of scheduled meeting. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:

a. Contractor's superintendent.
b. Trade supervisor responsible for cutting operations.
c. Trade supervisor(s) responsible for patching of each type of substrate.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb, and make horizontal work level.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

3.4 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, in accordance with regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces in accordance with written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:

1. Section 017320 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

PART 2 - EXECUTION

2.1 GENERAL

A. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

2.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 015000 “Temporary Facilities and Controls” for temporary protection of interior spaces and building access.
3. Section 017300 "Execution" for cutting and patching procedures.
4. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.4 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.
6. Review proposed location(s) for dumpsters and staging.

1.5 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

C. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Submit before Work begins.

1.6 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of mandatory pre-bid conference, for bidding purpose, will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.7 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Information noted on the drawings as "existing" has been obtained from construction drawings and inspections. Following demolition, confirm that flashing, masonry accessories and similar concealed work conforms, in general, to that noted. Report variations that would preclude installation of new work in accordance with drawings and specifications.

D. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs and / or video.

1. Inventory and record the condition of items to be removed and salvaged.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. Arrange to shut off utilities with utility companies where necessary to accommodate demolition and new work.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

    a. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Provide completely enclosed canvas, metal or plastic chutes of sufficient size for transfer of demolition projects to ground level containers. Chutes shall be dust-tight and patched or replaced as required to maintain this condition.
5. Cover and protect furniture, furnishings, and equipment that have not been removed.
6. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

D. Access: Due to the presence of bodies of water adjacent to two building elevations, the Contractor shall provide scaffolding supported from the roof structure, with appropriate protection of the roofing system to prevent damage. Where roof-based access is not feasible, the Contractor shall coordinate with the Authority Having Jurisdiction (AHJ) and Owner to obtain necessary approvals and make all required accommodations to perform work from the water side. All means and methods of access - including staging, scaffolding, and safety provisions

shall be the sole responsibility of the Contractor and its subcontractors. The Contractor shall ensure compliance with all applicable codes, regulations, and safety requirements throughout the duration of the work. See specification section 015000 “Temporary Facilities and Controls” for additional information.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least eight hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Locate and relocate hoists, cranes, chutes and dumpsters as required and directed by the Owner. Protect building and site from damage. Restore damaged surfaces and elements. Remove hoists, cranes, chutes and containers from site promptly after completion.
11. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas. From the day work begins assume full responsibility for maintaining the building dry. Check daily and long-range weather forecasts before planning each day's work. Be prepared to cover unfinished work with temporary covers in the event of an unexpected rain. At the end of each day leave the building in a completely watertight condition.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Window & Door Systems: Remove existing window door systems, including frames, glazing, trim, sealants, and associated anchorage, in their entirety, as indicated on drawings. Exercise care to avoid damage to surrounding construction, including adjacent finishes, structure, and building systems to remain. Coordinate removals to minimize disruption to occupied office spaces. Temporarily weatherproof openings to maintain building envelope integrity and prevent water and insect intrusion. Protect interior finishes, furnishings, and equipment during demolition. All debris shall be removed from the site and disposed of in accordance with local regulations. Verify existing conditions in the field prior to start of demolition. Notify Architect of any unforeseen conditions.

1. Execution:

a. Window System Removal: New window units shall be installed in a coordinated sequence immediately following the removal of existing window systems (room by room), in order to avoid the need for fully enclosing the building with temporary protection. However, the Contractor shall maintain temporary weather protection materials on-site and readily available in the event that unforeseen conditions, such as damage to existing rough openings, necessitate extended repair work prior to installation of new windows. All openings shall be secured and weather-tight at the end of each workday.

b. Insect Control: The Contractor shall provide continuous and effective protection of all window and wall openings during removal and replacement activities to prevent the infiltration of insects and other pests. Due to the known presence of large quantities and high densities of flying insects at this site - particularly during the spring and summer months - the Contractor shall implement enhanced insect-control measures. Occupied office areas and adjacent circulation spaces shall be fully isolated with temporary barriers, screens, or other approved enclosures to prevent the migration of flying insects into interior spaces for the duration of the work at each room or space. All protective measures shall be maintained in good condition and remain in place until the building envelope is fully secured.

B. Curtain Wall System: Remove existing curtainwall system in its entirety, including aluminum framing, glazing, pressure plates, caps, gaskets, sealants, flashings, anchors, and associated components, as indicated on Drawings. Demolition shall be limited to extents necessary for new construction and shall not compromise adjacent construction to remain.

1. Temporary Enclosure:

    a. Prior to the removal of curtainwall components, provide temporary weather-resistant enclosures to maintain building envelope integrity, prevent water intrusion, and control indoor environmental conditions. Once the curtainwall system is removed, the temporary weather-resistant enclosure must be waterproofed from the exterior side of the enclosure.

    b. Temporary closures shall be securely fastened and maintained in good condition until permanent installation is complete.

C. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent as noted above.
4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

D. Burning: Do not burn demolished materials.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 06 10 00 - ROUGH CARPENTRY & FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood blocking and nailers for the replacement of materials found to be damaged.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Power-driven fasteners.
3. Post-installed anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
4. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 MISCELLANEOUS LUMBER

A. General: Where existing miscellaneous is confirmed to be damaged or compromised during selective demolition of existing building components, provide new lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Grounds.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

C. Concealed Boards: 15 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
2. Eastern softwoods; No. 2 Common grade; NeLMA.
3. Northern species; No. 2 Common grade; NLGA.
4. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.

2.4 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 as appropriate for the substrate.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Do not splice structural members between supports unless otherwise indicated.

D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

E. Where wood-preservative-treated lumber is installed adjacent to windows and / or metal decking, install continuous flexible flashing separator between wood and metal decking.

F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC) – 2015 New Jersey Edition.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06 10 00

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured counterflashing.
2. Manufactured roof edge flashing.
3. Formed sill flashing for windows.
4. Formed miscellaneous flashing for exterior wall repairs.

1.2 ACTION SUBMITTALS

A. Product Data: For each of the following

1. Underlayment materials.
2. Elastomeric sealant.
3. Butyl sealant.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of special conditions.
9. Include details of connections to adjoining work.

C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.

1.3 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.4 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years minimum from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, are to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim are not to rattle, leak, or loosen, and are to remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. SPRI Wind Design Standard: Manufacture and install roof edge flashings tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:

1. Design Pressure: See drawings.

D. FM Approvals Listing: Manufacture and install roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-60. Identify materials with name of fabricator and design approved by FM Approvals.

E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F (67 deg C), ambient; material surfaces.

2.2 SHEET METALS

A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B209 (ASTM B209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.

   a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.

   2. Color: As selected by Architect from manufacturer's full range.

   3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil (0.013 mm).

2.3 UNDERLAYMENT MATERIALS

A. Synthetic Underlayment: See drawings for material description at head-of-wall condition for sloped curtain wall system.

2.4 MISCELLANEOUS MATERIALS

A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

   1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

      a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
      b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.

   2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
   3. Fasteners for Stainless Steel Sheet: Series 300 stainless steel.
   4. Fasteners for Zinc-Coated (Galvanized), Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329/F2329M.

C. Solder:

1. For Stainless Steel: ASTM B32, Grade Sn60, with acid flux of type recommended by stainless steel sheet manufacturer.
2. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

E. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

2.5 FABRICATION, GENERAL

A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.

1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances:

1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
2. Do not use lapped expansion joints unless explicitly noted on drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.

G. Seams:

1. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Manufactured Roof Edge Flashing (Coping/Gravel Stop): Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long sections. Furnish with 6-inch- (150-mm-) wide, joint cover plates.

1. Fabricate from the following materials:

a. Aluminum: 0.050 inch.
b. See drawing A-310 for balance of information.

B. Manufactured Counterflashing: Fabricate from the following materials:

1. Aluminum: 0.040 inch.
2. See drawing A-203 for balance of information.

2.7 SILL FLASHING FABRICATIONS

A. Opening Flashings in Frame Construction: Fabricate sill and similar flashings to extend the full width of wall openings. Form sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:

1. Aluminum: 0.040 inch thick.

B. Formed Miscellaneous Flashing for Exterior Wall Repairs: Fabricate from the following materials:

1. Aluminum: 0.032 inch thick.

PART 3 - EXECUTION

3.1 INSTALLATION OF UNDERLAYMENT (see detail H2 / A-310)

A. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, in accordance with manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.

1. Lap horizontal joints not less than 4 inches (100 mm).
2. Lap end joints not less than 12 inches (300 mm).

3.2 INSTALLATION, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.
3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
6. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
7. Do not field cut sheet metal flashing and trim by torch.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum and stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.

1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
3. Use lapped expansion joints only where explicitly indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 3/4 inch (19 mm) for wood screws. Do not use nails.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated.

a. Form joints to completely conceal sealant.
b. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
c. Adjust setting proportionately for installation at higher ambient temperatures.

1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).

2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Rivets: Rivet joints in uncoated aluminum or zinc at corners, miters, folds and where necessary for strength.

3.3 INSTALLATION OF ROOF FLASHINGS

A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.

1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

B. Roof Edge Flashing:

1. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch (75-mm) centers.
2. Anchor to resist uplift and outward forces in accordance with recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.

C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.

1. Insert counterflashing in receivers and fit tightly to base flashing.
2. Extend counterflashing 4 inches (100 mm) over base flashing.
3. Lap counterflashing joints minimum of 6 inches.

3.4 INSTALLATION OF FORMED SILL FLASHING FOR WINDOWS

A. Install sheet metal sill flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of sill flashing with installation of wall-opening components such as windows and doors.

B. Field measure all existing conditions prior to fabricating flashings and coordinate dimensions and fit with the window / storefront manufacturer.

C. Opening Flashings in Frame Construction: Install continuous sill and similar flashings to extend the full width of wall openings and extend over exposed EIFS edge profiles as indicated on drawings.

D. All miters, corners and folds are to be consistent and neatly joined with rivets and hemmed material at joints.

3.5 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

3.7 PROTECTION

A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-sag elastomeric joint sealant.

1.2 ACTION SUBMITTALS

A. Product data including MSDS.

B. Samples: Manufacturer's standard color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

1.3 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Reports: For field-adhesion-test reports, for each sealant application tested.

B. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

A. Warranty Documentation:

1. Manufacturers' special warranties.
2. Installer's special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Authorized representative who is trained and approved by manufacturer.

B. Testing Agency Qualifications: Qualified in accordance with ASTM C1021 to conduct the testing indicated.

1.6 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 URETHANE JOINT SEALANTS

A. Low-modulus, high-performance, 1-component, polyurethane-based, non-sag elastomeric sealant. Type II, Class A; ASTM C-920, Type S, Grade NS, Class 100/50, use T, NT, G, A, O, M. Must meet federal specification TT-S-00230C and TT-S-001543 A.

B. Basis of Design Manufacturer and Product: Sika; Sikaflex-15LM.

2.3 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Carefully remove and dispose of all existing joint sealant, sealant backings and bond-breaker tapes without damaging surrounding materials. Take precautions to protect EIFS surfaces from spalling.

B. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    a. Exterior insulation and finish systems.
    b. Masonry.
    c. Concrete
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    a. Metal.

C. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

D. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Carefully remove and dispose of all existing joint sealant, sealant backings and bond-breaker tapes without damaging surrounding materials. Take precautions to protect EIFS surfaces from spalling.

B. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

C. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants in accordance with requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 and as indicated on drawings. At windows, joint will take on the “fillet” profile while being tooled.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

H. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:

1. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

a. Extent of Testing: Test completed and cured sealant joints as follows:

1) Perform 5 tests for the first 500 ft. of joint length for each kind of sealant and joint substrate.
2) Perform one test for each 500 ft. of joint length thereafter or one test per each floor per elevation.

b. Test Method: Test joint sealants in accordance with Method A, Tail Procedure, in ASTM C1521.

1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

c. Inspect tested joints and report on the following:

1) Whether sealants filled joint cavities and are free of voids.
2) Whether sealant dimensions and configurations comply with specified requirements.
3) Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.

d. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.

e. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

2. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to

comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

C. Prepare test and inspection reports.

END OF SECTION 079200

SECTION 08 07 26 BIRD FRIENDLY FILM

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment and services necessary to complete glazing surface film as shown on the drawings and/or specified herein

1.3 SUBMITTALS

A. Product and Maintenance Data: For glazing surface film.

B. Samples: Submit two (2) samples 300mm X 300mm (12” X 12”) for each type of marker specified.

C. Qualification Data: For installer.

D. Shop Drawings: For glazing film text and/or designs and patterns.

1.4 WARRANTY

A. Provide manufacturer’s vertical surface warranty against defects in materials for a period of six (6) years. Durability and longevity 15 years plus.

1.5 PREPARATION

A. Clean glass surfaces of substances that could impair glazing film bond including mildew, oil, grease, dirt, and other foreign materials immediately before installation of markers.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver and store packaged materials in their original containers with manufacturer’s labels and seals intact.

B. Store flat at room temperature, avoid humidity. Keep out of sunlight in a clean, dry area.

1.7 MATERIALS: Markers shall be manufactured from premium exterior grade film with permanent exterior grade adhesive.

A. Obtain materials as specified and ensure consistent quality in appearance, physical properties, color and installation.

B. Execute work using qualified personnel skilled in installations similar to this product, design, and scope.

PRODUCTS

1.8 BIRD FRIENDLY FILM

A. Feather Friendly Technologies INC., design as selected by Architect or approved equal. See Elevations, Door/Window Schedule and Notes for further detail (extent and location).

2207 Dunwin Dr., Mississauga, Ont., L5L 1X1, 1 888 874 1755.

1.9 MATERIALS : Materials: Markers shall be manufactured from premium exterior grade film with permanent exterior grade adhesive.

A. Architect to select the pattern from full range of pattern provided by manufacturer.

PART 2 - EXECUTION

2.1 APPLICATION OF GLAZING SURFACE FILM

A. Follow manufacturer's written instructions.

2.2 CLEANING AND PROTECTION

A. Progress Cleaning: Leave work area clean at the end of each workday.

B. Final Cleaning: At completion of installation, ensure all windows and frames are thoroughly cleaned.

2.3 CLOSEOUT SUNMITTALS:

A. Submit manufacturer’s written instructions for cleaning solutions, materials, and procedures.

B. Submit name and contact information of original installation contractor.

END OF SECTION 08 07 26

SECTION 08 17 43 – FRP / ALUMINUM HYBRID DOORS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. SL-20 Sandstone Texture FRP/ Aluminum Hybrid Door
B. SL-20 Sandstone Texture FRP/ Aluminum Hybrid Door installed in Theramally Broken Aluminum Framing.

1.02 RELATED SECTIONS

A. Section 08 42 13 – Aluminum Storefront.
B. Section 08 71 00 – Door Hardware.

1.03 REFRENCES

A. AAMA 1304 – Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
B. ASTM-B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
C. ASTM-B221 – Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
D. ASTM-C518 – Standard test Method for Steady-State Thermal Transmission Properties by Means of Heat Flow Meter Apparatus.
E. ASTM-D256 – Standard Test Methods for Determining the Pendulum Impact Resistance of Plastics.
F. ASTM-D570 – Standard Test Method for Water Absorption of Plastics.
G. ASTM-D638 – Standard Test Method for Tensile Properties of Plastics.
H. ASTM-D790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
I. ASTM-D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
J. ASTM-D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics.
K. ASTM-D1623 – Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
L. ASTM-D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
M. ASTM-D2583 – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
N. ASTM-D3029 – Test Methods for Impact Resistance of Flat Rigid Plastic Specimens by Means of a Tup (Falling Weight) (Withdrawn 1995) (Replaced by ASTM-D5420).
O. ASTM-D5116 - Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/ Products.
P. ASTM-D6670 – Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/ Products.
Q. ASTM-E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
R. ASTM-E283 – Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

S. ASTM-E330 – Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
T. NFRC 100 – Procedure for Determining Fenestration Products U-Factors.
U. NFRC 400 – Procedure for Determining Fenestration Products Air Leakage.
V. TAS 201 – Impact Test Procedures.
W. TAS 202 – Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components Using Uniform Static Air Pressure.`
X. TAS 203 – Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.

1.04 SUBMITTALS

A. Action Submittals/ Informational Submittals.

1. Product Data.
   a. Submit manufacturer's product data sheets, catalog pages illustrating the products, description of materials, components, fabrication, finishes, installation instructions, and applicable test reports.

2. Shop Drawings.
   a. Submit manufacturer's shop drawings, including elevations, sections, and details indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, hardware schedule, and finish.

3. Samples.
   a. Submit manufacturer's door sample composed of door face sheet, core, framing and finish.
   b. Submit manufacturer's sample of standard colors for door face and frame.

4. Testing and Evaluation Reports.
   a. Submit testing reports and evaluations provided by manufacturer conducted by and accredited independent testing agency certifying doors and frames comply with specified performance requirements listed in Section 2.04.

5. Manufacturer Reports.
   a. Manufacturer's Project References.
      1. Submit list of successfully completed projects including project name, location, name of architect, type, and quantity of doors manufactured.

B. Closeout Submittals.

1. Operation and Maintenance Manual.
   a. Submit manufacturer's maintenance and cleaning instructions for doors and frames, including maintenance and operating instructions for hardware.

2. Warranty Documentation.
   a. Submit manufacturer's standard warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications.

1. Continuously engaged in manufacturing of doors of similar type to that specified, with a minimum of 25 years concurrent successful experience.
2. Door and frame components must be fabricated by same manufacturer.
3. Evidence of a documented complaint resolution quality management system.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery.
   1. Deliver materials to site in manufacturer's original, unopened, containers and packaging.
   2. Labels clearly identifying opening, door mark, and manufacturer.
B. Storage.
   1. Store materials in a clean, dry area, indoors in accordance with manufacturer's instructions.
C. Handling.
   1. Protect materials and finish from damage during handling and installation.

1.07 WARRANTY

A. Warrant doors, frames, and factory installed hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
B. Standard Period.
   1. Ten years starting on date of shipment.
C. Limited lifetime
   1. Covers failure of corner joinery, core deterioration, and delamination or bubbling of door skin and corrosion of all-fiberglass products while the door is in its specified application in its original installation.
D. Finish
   1. Kynar painted aluminum: 10 years.
   2. Painted SL-20 face sheets: 5 years.
   3. Thresholds do not have a finish warranty.

PART 2 - PRODUCTS

2.01 FRP/ALUMINUM HYBRID DOORS

A. Manufacturer.
   1. Special-Lite, Inc.
      a. PO Box 6, Decatur, Michigan 49045.
      b. Toll Free (800) 821-6531, Phone (269) 423-7068, Fax (800) 423-7610.
      c. Web Site www.special-lite.com.
      d. Special-Lite, Inc
   2. Equivalents: Subject to compliance with all material and performance requirements outlined in these specifications, "or equal" products by other manufacturers will be considered for use subject to review by the Architect. The Architect's decision regarding equivalency is final.

2.02 DESCRIPTION

A. Model.

1. SL-20 Sandstone Texture FRP/ Aluminum Hybrid Door.

B. Door Opening Size.
   1. Size as indicated on drawings.

C. Construction.
   1. Door Thickness: 1 -3/4”
   2. Stiles & Rails.
      a. Aluminum extrusions made from 6063 aluminum alloys with a minimum temper of T5.
      b. Minimum 2-5/16” deep one-piece extrusion with have integral reglets to accept face sheet on both interior and exterior side of door which secure face sheet into place and permit flush appearance.
      c. Screw or snap in place applied caps are not acceptable.
      d. Top rails must have integral legs for interlocking continuous extruded aluminum flush cap.
      e. Bottom rails must have integral legs for interlocking continuous weather bar with single nylon brush weather stripping or manually adjustable SL-301 door bottom with two nylon brush weather stripping.
      f. Meeting stiles to include integral pocket to accept pile brush weather seal.

   3. Corners.

      a. Mitered.
      b. Secured with 3/8” diameter full-width steel tie rod through extruded splines top and bottom which are integral to standard tubular shaped rails.
      c. 1-1/4” x 1-1/4” x 3/16” 6061 aluminum angle reinforcement at corner to give strong, flat surface for locking hex nut to bear on.
      d. Weld, glue, or other methods of corner joinery are not acceptable.

   4. Core.

      a. Poured-in-place polyurethane foam.
      b. Laid in foam cores are not acceptable.
      c. Foam Plastic Insulated Doors: IBC 2603.4.
         1. Foam plastic shall be separated from the interior of a building by an approved thermal barrier.
         2. Approved thermal barrier must meet the acceptance criteria of the Temperature Transmission Fire Test and Integrity Fire Test as stated in NFPA 275.
         3. IBC 2603.4.1.7 foam plastic insulation, having a flame spread index less than 75 and a smoke developed index of not more than 450 shall be permitted as a door core when the face is metal minimum 0.032” aluminum or 0.016” steel.
         4. Standard door assembly can be tested to show it meets these requirements without the use of thermal barrier. If no independent testing conducted all doors with foam plastic core must have a thermal barrier.

   5. Face Sheet.

      a. Exterior

         1. 0.120” thick, Sandstone texture, through color FRP sheet.

2. Optional painted finish consult manufacturer.
3. Class C standard.

b. Interior

1. 0.120” thick, Sandstone texture, through color FRP sheet.
2. Optional painted finish consult manufacturer.
3. Class C standard optional Class A available consult manufacturer.

c. Attachment of face sheet.

1. Extruded stiles and rails to have integral reglets to accept face sheet on both interior and exterior side of door which secure face sheet into place and permit flush appearance.
2. Use of glue to bond face sheet to core or extrusions is not acceptable.

6. Cutouts.

a. Manufacture doors with cutouts for required vision lites, louvers, and panels.

7. Hardware.

a. Pre-machine doors in accordance with templates from specified hardware manufacturers.
b. Surface mounted closures will be reinforced for but not prepped or installed at factory.
c. Factory install door hardware.

8. Reinforcements.

a. Aluminum extrusions made from 6061 or 6063 aluminum alloys.
b. Sheet and plate to conform to ASTM-B209.
c. Alloy and temper to be selected by manufacturer for strength, corrosion resistance, and application of required finish, and control of color.
d. Bars and tubes to meet ASTM-B221.

2.03 FRAMING

1. Thermally Broken Aluminum Framing.

a. Model.
1. SL-450TB.

b. Materials.
1. See 2.05.A.

c. Perimeter Frame Members.

1. Storefront frame with thermally broken pocket filler.
2. Factory fabricated.
3. Open-back framing is not acceptable.

d. Thermal Strut.
1. Fiber reinforced plastic, no other materials will be accepted.

e. Applied Door Stops.
   1. 5/8” x 1-1/4” or 5/8” x 1-3/4”, 0.125” wall thickness, with screws and weather-stripping.
   2. Provide solid ½” aluminum bar behind door stop for closer shoe attachment.
   3. Pressure gasketing for weathering seal.
   4. Counterpunch fastener holes in door stop to preserve full-metal thickness under fastener head.
   5. Minimum ½” aluminum bar reinforcement under doorstop for required hardware attachments, aluminum to meet ASTM-B221.

f. Caulking.
   1. Caulk joints before assembling frame members.

g. Frame Member to Member Connections.
   1. Secure joints with fasteners.
   2. Provide hairline butt joint appearance.
   3. Shear block construction only, no screw spline allowed.

h. Hardware

   1. Pre-machine and reinforce frame members for hardware in accordance with manufacturer's standards and door hardware schedule.
   2. Surface mounted closures will be reinforced for but not prepped or installed at factory.
   3. Factory install door hardware.

i. Anchors:

   1. Anchors appropriate for wall conditions to anchor framing to wall materials.
   2. Door Jamb and Header Mounting Holes: Maximum of 24-inch centers.
   3. Secure head and sill members of transom, side lites, and similar conditions.

2.04 PERFORMANCE

A. Face Sheet.

   1. Standard Interior and Exterior Class C 0.120” thick, Sandstone texture, through color FRP sheet.

      a. Flexural Strength, ASTM-D790: 27 x 10^3 psi.
      b. Flexural Modulus, ASTM-D790: 0.7 x 10^6 psi.
      c. Tensile Strength, ASTM-D638: 18 x 10^3 psi.
      d. Tensile Modulus, ASTM-D638: 1.0 x 10^6 psi.
      e. Barcol Hardness, ASTM-D2583: 40.
      f. Izod Impact, ASTM-D256: 7.0 ft-lb/in.
      g. Gardner Impact Strength, ASTM-D5420: 30 in-lb.
      h. Water Absorption, ASTM-D570: 0.16%/24hrs at 77°F.
      i. Surface Burning, ASTM-E84: Flame Spread ≤ 200, Smoke Developed ≤ 450.
      j. Chemical Resistance.

1. Excellent Rating.
    a. Acetic Acid, Concentrated.
    b. Acetic Acid, 5%.
    c. Bleach Solution.
    d. Detergent Solution.
    e. Distilled Water.
    f. Ethyl Acetate.
    g. Formaldehyde.
    h. Heptane.
    i. Hydrochloric Acid, 10%.
    j. Hydrogen Peroxide, 3%.
    k. Isooctane.
    l. Lactic Acid, 10%.

2. FRP face sheet with surfaseal does not contain any known carcinogen, mutagen, or teratogen classified as hazardous substances; heavy metals or toxic substances; antimicrobials; pesticides or substances with pesticidal characteristics.

B. Door Core.

1. Density, ASTM-D1622: ≤ 5.0 pcf.
2. Compressive Properties, ASTM-D1621: Compressive Strength ≥ 60 psi, Compressive Modulus ≥ 1948 psi.
3. Tensile and Tensile Adhesion Properties, ASTM-D1623: Tensile Adhesion, 3” x 3” FRP Facers ≥ 53 psi, Tensile Adhesion, 1” x 1” Foam ≥ 104 psi.
4. Thermal and Humid Aging, ASTM-D2126: Volume Change at 158 °F, 100% humidity, 14 days ≤ 13%.
5. Thermal Conductivity, ASTM-C518, Thermal Resistance ≥ 0.10 m^2K/W.

C. Door Panel.

1. Indoor Air Quality, ASTM-D5116, ASTM-D6607: GreenGuard, GreenGuard Gold.

2.05 MATERIALS

A. Aluminum Members.

1. Aluminum extrusions made 6061 or 6063 aluminum alloys.
2. Sheet and plate to conform to ASTM-B209.
3. Alloy and temper to be selected by manufacturer for strength, corrosion resistance, and application of required finish, and control of color.

B. Fasteners.

1. All exposed fasteners will have a finish to match material being fastened.
2. 410 stainless steel or other non-corrosive metal.
3. Must be compatible with items being fastened.

2.06 FABRICATION

A. Factory Assembly.

1. Door and frame components from the same manufacturer.
2. Required size for door and frame units, shall be as indicated on the drawings.
3. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
4. All cut edges to be free of burs.
5. Welding of doors or frames is not acceptable.
6. Maintain continuity of line and accurate relation of planes and angles.
7. Secure attachments and support at mechanical joints with hairline fit at contact surfaces.

B. Shop Fabrication

1. All shop fabrication to be completed in accordance with manufactures process work instructions.
2. Quality control to be performed before leaving each department.

2.07 FINISHES

A. Door.
1. Aluminum.
a. Paint: KYNAR
Topcoat.70% KYNAR® or HYLAR® 5000 Coating, meets or exceeds all AAMA 2605 specifications, 2.5 to 4.0 wet mils,1.00 to 1.20 dry mils.
1. Color: Dark Bronze

2. FRP Face Sheets
a. Through color – to be selected from manufacturer's full range of colors.

B. Frame

1. Aluminum.
a. Paint: KYNAR.
1. Topcoat: 70% KYNAR® or HYLAR® 5000 Coating, meets or exceeds all AAMA 2605 specifications, 2.5 to 4.0 wet mils, 1.00 to 1.20 dry mils.
2. Color: To be selected from manufacturer's full range of colors.

2.08 ACCESSORIES

A. Vision Lites.
1. Factory Glazing.
a. Model.
1. FL Standard.
2. Glazing Thickness: 1".
b.
Rectangular Lites.
a. Size, as indicated on drawings.

1. Other Shapes.
a. Attach drawing for vision lite shape.

B. Hardware.

1. Pre-machine doors in accordance with templates from specified hardware manufactures and hardware schedule.
2. Factory install hardware.
3. Hardware Schedule.

a. As follows.

1. Concealed adjustable bottom brush.
a. SL-301.
1. Not for use with CVR type hardware.

2. Concealed adjustable meeting stile astragal.
a. Adjustable astragal by Special-Lite.

3. Mullions.
a. Model.
1. SL-60E.

4. Balance of Hardware: As specified in Section 08 71 00.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to receive doors.
B. Notify architect of conditions that would adversely affect installation or subsequent use.
C. Do no proceed with installation until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Ensure openings to receive frames are plumb, level, square, and in tolerance.

3.03 ERECTION

A. Install doors in accordance with manufacturer's instructions.
B. Install doors plumb, level, square, true to line, and without warp or rack.
C. Anchor frames securely in place.
D. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by architect.
E. Set thresholds in bed of mastic and back seal.
F. Install exterior doors to be weathertight in closed position.
G. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by architect.
H. Remove and replace damaged components that cannot be successfully repaired as determined by architect.

3.04 FIELD QUALITY CONTROL

A. Manufacture's Field Services.

1. Manufacturer’s representative shall provide technical assistance and guidance for installation of doors.

3.05 ADJUSTING

A. Adjust doors, hinges, and locksets for smooth operation without binding.

3.06 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer’s instructions.
B. Do not use harsh cleaning materials or methods that would damage finish.

3.07 PROTECTION

A. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

END OF SECTION 08 71 43

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

1. GENERAL

1. SUMMARY

A. Section Includes:

1. Aluminum-framed entrance and storefront systems.

2. PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

3. ACTION SUBMITTALS

A. Product data.

B. Shop Drawings:

1. Plans, elevations, sections, full-size details, and attachments to other work.
2. Connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
3. Furnish & Install architectural aluminum storefront complete with related components as shown on drawings and as specified on this section.

C. Samples: Manufacturer's standard color sheets, showing full range of available colors for each type of exposed finish.

D. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.

E. Delegated Design Submittals: For aluminum-framed entrance and storefront systems, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

F. Sustainable Design Submittals:

1. Sealants
2. Recycled Content

4. INFORMATIONAL SUBMITTALS

A. Energy Performance Certificates: NFRC-certified energy performance values from manufacturer.

B. Product test reports.

C. Source quality-control reports.

D. Field quality-control reports.

E. Sample warranties.

5. CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

6. QUALITY ASSURANCE

A. Installer Qualifications:

1. An entity that employs installers and supervisors who are experienced and approved by manufacturer and that employs a qualified glazing contractor for this project who is certified under the North American Contractor Certification Program (NACC) for Architectural Glass & Metal (AGM) contractors.

B. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in New Jersey where Project is located and who is experienced in providing engineering services of the type indicated.

C. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner and Architect.

D. Egress Door Inspector Qualifications:

1. Inspector for field quality-control inspections of egress door assemblies to comply with qualifications set forth in NFPA 101, Ch. 7 "Means of Egress," Section "Means of Egress Components," Article "Inspection of Door Openings."

E. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sight lines, to one another, and to adjoining construction.

1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review (10) ten days prior to bid date.

7. WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of aluminum-framed entrance and storefront systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five (5) years from date of Substantial Completion.

B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked-enamel, powder-coat, or organic finishes within specified warranty period.

1. Warranty Period: Ten (10) years from date of Substantial Completion.

2.PRODUCTS

1. PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design aluminum-framed entrance and storefront systems.

B. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrance and storefront systems representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Aluminum-framed entrance and storefront systems to withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

C. Structural Loads:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: Snow Load - As indicated on Drawings.

D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:

1. Deflection Normal to Wall Plane: Limited to L/175 of clear span for spans of up to 13 feet 6 inches and to L/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches.
2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch or L/360, whichever is smaller.

a. Operable Units: Provide a minimum 1/8-inch clearance between framing members and operable units.

3. Cantilever Deflection: Limited to 2L/175 at unsupported cantilevers.

E. Structural: Test in accordance with ASTM E330/E330M as follows:

1. When tested at positive and negative wind-load design pressures, storefront assemblies, including entrance doors, do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including entrance doors and anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:

1. No evidence of water penetration through fixed glazing and framing areas, including entrance doors, when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 10 lbf/sq. ft..

G. Energy Performance: Certified and labeled by manufacturer for energy performance as follows:

1. Thermal Transmittance (U-factor):

   a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.38 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.
   b. Entrance Doors: U-factor of not more than 0.83 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.

2. Solar Heat-Gain Coefficient (SHGC):

   a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.29 as determined in accordance with NFRC 200.
   b. Entrance Doors: SHGC of not more than 0.29 as determined in accordance with NFRC 200.

3. Air Leakage:

   a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. at a static-air-pressure differential of 6.24 lbf/sq. ft. when tested in accordance with ASTM E283.
   b. Entrance Doors: Air leakage of not more than 1.0 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft..

4. Condensation Resistance Factor (CRF):

   a. Fixed Framing Areas: CRF for the system of not less than 67 as determined in accordance with AAMA 1503.
   b. Entrance Doors: CRF of not less than 25 as determined in accordance with AAMA 1503.

H. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2. ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS

A. Efco Series 403X Center Set, enhanced thermal performance storefront system @ 2" x 4.5", and Efco Series D502 Wide Stile, thermal entrance swing doors at exterior & D500 non-thermal entrance swing doors at interior are Basis of Design for this project.

B. Other manufacturers, Wausau Window & Wall and Tubelite USA, are subject to compliance with requirements offering products that may be incorporated into the scope of work for curtain wall systems.

1. Exterior Framing Construction: Thermally broken, dual thermal barriers required.
2. Interior Vestibule Framing Construction: Non-thermal.
3. Exterior Doors: Thermally broken door construction.
4. Interior Doors: Non-Thermal door construction.
5. Glazing System: Retained mechanically with gaskets on four sides.
6. Finish: High-performance organic finish.
7. Fabrication Method: Field-fabricated stick system.
8. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
9. Steel Reinforcement: As required by manufacturer.

C. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

E. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.

1. Door Construction: 2-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.

a. Thermal Construction: Thermal.

2. Door Design: Wide stile; 5-inch nominal width.
3. Glazing Stops and Gaskets: Square, snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide non-removable glazing stops on outside of door.

3. ENTRANCE DOOR HARDWARE

A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087100 "Door Hardware."

B. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule for each entrance door, to comply with requirements in this Section.

1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.

    a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to its minimum required width.
    b. Accessible Interior Doors: Not more than 5 lbf to fully open door.

C. Designations: Requirements for design, grade, function, finish, quantity, size, and other distinctive qualities of each type of entrance door hardware are indicated in "Entrance Door Hardware Sets" Article. Products are identified by using entrance door hardware designations as follows:

1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in "Entrance Door Hardware Sets" Article.

D. Door Stops: BHMA A156.16, Grade 1, floor or wall mounted, as appropriate for door location indicated, with integral rubber bumper.

E. Weather Stripping: Manufacturer's standard replaceable components.

1. Compression Type: Made of ASTM D2000 molded neoprene or ASTM D2287 molded PVC.
2. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

F. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.

4. GLAZING

A. Glazing: Comply with Section 088000 "Glazing."

B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.

C. Glazing Sealants: As recommended by manufacturer.

5. MATERIALS

A. Sheet and Plate: ASTM B209 (ASTM B209M).

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).

C. Structural Profiles: ASTM B308/B308M.

D. Steel Reinforcement:

1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.

2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

E. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

6. FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from **interior**.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

E. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.

F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.

G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

H. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

7. ALUMINUM FINISHES

A. High-Performance Organic Finish, Two-Coat PVDF: Fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat.

1. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for severe environments.
2. Color and Gloss: Architect is to select a Manufacturer’s featured color option (To Match Efco’s “Black” color), which the fenestration system manufacturer can provide “in house”. Architect will confirm final color during the shop drawing review process.

3.EXECUTION

1. INSTALLATION OF ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS

A. Comply with manufacturer's written instructions.

B. Do not install damaged components.

C. Fit joints to produce hairline joints free of burrs and distortion.

D. Rigidly secure non-movement joints.

E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

F. Seal perimeter and other joints watertight unless otherwise indicated.

G. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

H. Set continuous sill members and flashing in full sealant bed, as specified in Section 079200 "Joint Sealants," to produce weathertight installation.

I. Install joint filler behind sealant as recommended by sealant manufacturer.

J. Install components plumb and true in alignment with established lines and grades.

K. Install entrance doors to produce smooth operation and tight fit at contact points.

1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware in accordance with entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

L. Install glazing as specified in Section 088000 "Glazing."

2. FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests.

B. Tests: Perform the following test on representative areas of aluminum-framed entrance and storefront systems.

1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect to be tested in accordance with AAMA 501.2 and to not evidence water penetration.

    a. Perform a minimum of two tests in areas as directed by Architect.

C. Inspection Agency: Owner will engage a qualified inspector to perform inspections.

D. Inspections:

1. Egress Door Inspections: Inspect each aluminum-framed entrance door equipped with panic hardware, located in an exit enclosure, electrically controlled, and equipped with special locking arrangements, in accordance with NFPA 101, Ch. 7 "Means of Egress," Section "Means of Egress Components," Article "Inspection of Door Openings."

E. Aluminum-framed entrance and storefront systems will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION 084113

SECTION 084413 - GLAZED ALUMINUM CURTAIN WALLS

1.GENERAL

1. SUMMARY

A. Section Includes:

1. Glazed aluminum curtain wall systems.

2. PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at project site.

3. ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Sealants
2. Recycled Content

C. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.

1. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

2. Furnish & Install architectural aluminum curtain wall complete with related components as shown on drawings and as specified in this section.

D. Samples: For each type of exposed finish required.

E. Delegated-Design Submittal: For glazed aluminum curtain walls, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

4. INFORMATIONAL SUBMITTALS

A. Energy Performance Certificates: NFRC-certified energy performance values for each glazed aluminum curtain wall.

B. Product test reports.

C. Source quality-control reports.

D. Field quality-control reports.

E. Sample warranties.

5. CLOSEOUT SUBMITTALS

A. Maintenance data.

6. QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are experienced and approved by manufacturer and that employs a qualified glazing contractor for this Project who is certified under the North American Contractor Certification Program (NACC) for Architectural Glass & Metal (AGM) contractors.

B. Testing Agency Qualifications: Qualified in accordance with ASTM E699 for testing indicated and acceptable to Owner and Architect.

C. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sight lines, to one another, and to adjoining construction.

1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review (10) ten days prior to bid date.

7. WARRANTY

A. Special Assembly Warranty: Installer agrees to repair or replace components of glazed aluminum curtain wall that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five 5 years from date of Substantial Completion.

B. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked enamel, powder coat, or organic finishes within specified warranty period.

1. Warranty Period: Ten 10 years from date of Substantial Completion.

2. PRODUCTS

1. PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design glazed aluminum curtain walls.

B. General Performance: Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Glazed aluminum curtain walls shall withstand movements of supporting structure, including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

    a. Thermal stresses transferring to building structure.
    b. Glass breakage.
    c. Noise or vibration created by wind and thermal and structural movements.
    d. Loosening or weakening of fasteners, attachments, and other components.
    e. Failure of operating units.

C. Structural Loads:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: Snow Load - As indicated on Drawings.

D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:

1. Deflection Normal to Wall Plane: Limited to L/175 of clear span for spans of up to 13 feet 6 inches and to L/240 of clear span plus 1/4 inch for spans of greater than 13 feet 6 inches.
2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch **or** L/360, whichever is smaller.

    a. Operable Units: Provide a minimum 1/8-inch clearance between framing members and operable units.

3. Cantilever Deflection: Limited to 2l/175 at unsupported cantilevers.

E. Structural: Test in accordance with ASTM E330/E330M as follows:

1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
2. When tested at **150** percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding **0.2** percent of span.
3. Test Durations: As required by design wind velocity, but not less than **10** seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 12 lbf/sq. ft..

G. Energy Performance: Certified and labelled by manufacturer for energy performance as follows:

1. Thermal Transmittance (U-factor):

    a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.38 Btu/sq. ft. x h x deg F as determined in accordance with NFRC 100.

2. Solar Heat Gain Coefficient (SHGC):

    a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.29 as determined in accordance with NFRC 200.

3. Air Leakage:

    a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. at a static-air-pressure differential of 6.24 lbf/sq. ft. when tested in accordance with ASTM E283.

4. Condensation Resistance Factor (CRF):

    a. Fixed Framing Areas: CRF for the system of not less than **52** as determined in accordance with AAMA 1503.

H. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2. GLAZED ALUMINUM CURTAIN WALL SYSTEMS

A. Efco Series 5600 Slope Glaze & Vertical Curtain Wall system @ 2.25” x 7” and Efco Series D502 Wide Stile, thermal entrance swing doors at exterior is Basis of Design for this project.

B. Other manufacturers, Wausau Window & Wall and Tubelite USA, are subject to compliance with requirements offering products that may be incorporated into the scope of work for curtain wall systems.

C. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Thermally improved.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Glazing Plane: Front.
4. Finish: High-performance organic finish.
5. System: stick system.
6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
7. Steel Reinforcement: As required by manufacturer.

D. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing.

1. Include snap-on aluminum trim that conceals fasteners.

E. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

3. GLAZING

A. Glazing: Comply with Section 088000 "Glazing."

B. Glazing Gaskets: ASTM C509 or ASTM C864. Manufacturer's standard Compression-type, replaceable EPDM.

1. Color: Black.

C. Glazing Sealants: As recommended by manufacturer.

4. MATERIALS

A. Sheet and Plate: ASTM B209 (ASTM B209M).

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).

C. Structural Profiles: ASTM B308/B308M.

D. Steel Reinforcement:

1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.

E. Steel Reinforcement Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods in accordance with recommendations in SSPC-SP COM, and prepare surfaces in accordance with applicable SSPC standard.

5. FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from exterior.
6. Provisions for safety railings mounted on interior face of mullions

7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
8. Components curved to indicated radii.

D. Fabricate components to resist water penetration as follows:

1. Internal guttering system or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.
2. Pressure-equalized system or double barrier design with primary air and vapor barrier at interior side of glazed aluminum curtain wall and secondary seal weeped and vented to exterior.

E. Curtain-Wall Framing: Fabricate components for assembly using manufacturer's standard assembly method shear-block system.

F. Factory-Assembled Frame Units:

1. Rigidly secure non-movement joints.
2. Prepare surfaces that are in contact with structural sealant in accordance with sealant manufacturer's written instructions, to ensure compatibility and adhesion.
3. Preparation includes, but is not limited to, cleaning and priming surfaces.
4. Seal joints watertight unless otherwise indicated.
5. Install glazing to comply with requirements in Section 088000 "Glazing."

G. After fabrication, clearly mark components to identify their locations in Project in accordance with Shop Drawings.

6. ALUMINUM FINISHES

A. High-Performance Organic Finish, Two-Coat PVDF: Fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat.

1. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for severe environments.
2. Color and Gloss: Architect is to select a Manufacturer’s standard or featured color option (To match Efco’s “Black” color selection), which the fenestration system manufacturer can provide “in house”. Architect will select the standard or featured color during the shop drawing review process.

3. EXECUTION

1. INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions.

B. Do not install damaged components.

C. Fit joints to produce hairline joints free of burrs and distortion.

D. Rigidly secure non-movement joints.

E. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

F. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.

G. Seal joints watertight unless otherwise indicated.

H. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with primer, applying sealant or tape, or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

I. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.

J. Install components plumb and true in alignment with established lines and grades.

2. INSTALLATION OF GLAZING

A. Install glazing as specified in Section 088000 "Glazing."

3. FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Test Area: Perform tests on one bay at least 30 feet, by one story.

C. Field Quality-Control Testing: Perform the following test on representative areas of glazed aluminum curtain walls.

1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested in accordance with AAMA 501.2 and shall not evidence water penetration.

a. Perform a minimum of two tests in areas as directed by Architect.

D. Glazed aluminum curtain walls will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

END OF SECTION 084413

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Fiberglass Doors”,
2. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” heavy weight.
b. Sizes from 3’1” to 4’0”: 5” heavy weight.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges.
b. Interior Doors: Heavy weight, steel, ball bearing or oil impregnated bearing hinges.

4. Hinge Options: Comply with the following:

a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

a. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.2 CONTINUOUS HINGES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Where specified, provide modular continuous geared hinges that ship in two or three pieces and form a single continuous hinge upon installation.
2. Manufacturers:.

a. Pemko (PE).

2.3 SLIDING AND FOLDING HARDWARE

A. Sliding and Folding Door Hardware: Hardware is to be of type and design as specified and should conform with ANSI/BHMA A156.14.

1. Bi-folding Door Hardware: Rated for door panels weighing up to 125 lb.
2. Manufacturers:

a. Pemko (PE).

2.4 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. McKinney (MK) - QC (# wires) Option.

B. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

a. Pemko (PE) - EL-CEPT Series.
b. Securitron (SU) - EL-CEPT Series.

C. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

a. McKinney (MK) - QC-C Series.

2.5 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

a. Rockwood (RO).

B. Coordinators: ANSI/BHMA A156.3 door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

a. Rockwood (RO).

C. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls, where applicable, shall be provided with a 10” clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
6. Manufacturers:

a. Rockwood (RO).

2.6 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

1. Manufacturers:

    a. Sargent Manufacturing (SA).

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Manufacturer’s Standard.

C. Large Format Interchangeable Cores: Provide removable cores (LFIC) as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.

D. Provide a keyed core for every locking device on this project.

E. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer’s United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
2. Manufacturers:

    a. Sargent (SA) - Degree DG1.

F. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. New System: Key locks to a new key system as directed by the Owner.

G. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).
4. Construction Control Keys (where required): Two (2).
5. Permanent Control Keys (where required): Two (2).

H. Construction Keying: Provide construction master keyed cylinders.

I. Construction Keying: Provide temporary keyed construction cores.

J. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.7 KEY CONTROL

A. Key Control Software: Provide software that offers solutions for master key system design and management, key, key ring, and item issuance, cylinder and core pinning, personal records and inventories and building, door, and floor plans. Software shall come with the option for additional services that provide custom data integration, on-site and virtual training, consulting, technical support, and custom development.

1. Key Control: System shall manage all master key systems, keys, key rings, key holders and key requests. It shall provide total key control showing outstanding keys, overdue keys (with automatic notifications), key symbols, bittings, keyways, etc. and the ability to include all systems (multiple key manufacturers supported) and buildings in one database.
2. Master Keying: Software shall provide a comprehensive master key system generator compatible with multiplex systems (key sections, keyways, angles) along with a core pinning calculator. Master keying feature shall have automatic configurable key numbering and connection with key cutting machines.
3. Facility Management: Software shall reference every building, floor, and door of your facilities while identifying the operating keys of every door and generate control reports.
4. Available options shall include.

    a. Web Interface: Web portal option for key requests and approvals. Web users shall have restricted access, according to their privileges.
    b. Mobile Application for Key Deliveries: Display the list of keys issued, key policy, and capture the signature in the field.

5. Manufacturers:

    a. Medeco (MC) - Simple K.

B. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

1. Manufacturers:

    a. Lund Equipment (LU).
    b. MMF Industries (MM).

c. Telkee (TK).

2.8 MORTISE LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Heavy duty 12-gauge wrought steel case.
b. Stainless steel 3/4" one-piece anti-friction reversible latchbolt with a one-piece hardened stainless steel 1” projection deadbolt.
c. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
d. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
e. Status indicators inside, outside, or on both sides of doors as specified; available with wording for “locked/unlocked”, “vacant/occupied” or custom wording options. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of the indicator status.
f. Ten-year limited warranty for mechanical functions.

2. Manufacturers:

a. Sargent Manufacturing (SA) - 8200 Series.

2.9 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Short-lipped strikes: For locks at double doors.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.10 ELECTRIC STRIKES

A. Tubular Exit Device Electric Strikes: Provide electric strikes designed to work with tubular exit devices that conform to ANSI A156.31, Grade 1. Electric strikes shall be of stainless-steel construction with field selectable fail safe/fail secure and dual 12/24 VDC. Provide lock monitor when specified.

1. Manufacturers:

a. HES (HS) - 9100/9200 Series.

B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.11 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with keyed cylinder dogging device to hold the pushbar and latch in a retracted position.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide exit devices with functions and features as follows:

a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
c. No catch points: addition of applied deflectors or other added components are not allowed.
d. No visible plastic.
e. Chassis indicators as specified that show secured state of exterior trim.
f. Heavy duty end caps with flush and overlapping options made of stainless steel, brass, or bronze with architectural finishes.
g. Constructed of all stainless steel.
h. Stainless steel pullman type latch with deadlock feature.
i. Narrow or wide style exterior trim as specified in the hardware sets.
j. Center case adjustability on concealed vertical rod exit devices; single operation with hex key individually adjusts top or bottom latches. No retainer screws or clips required to maintain adjustment.
k. Ten-year limited warranty for mechanical features.

2. Electromechanical exit devices shall have the following functions and features:

a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
b. Wire routing for all non-access control electromechanical functions and EcoFlex trim to be contained within the carrier of the device eliminating the need for cavities in doors to be drilled. Include a protective film so that wires don't get damaged if the rail needs to be removed.
c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.

3. Manufacturers:

a. Sargent Manufacturing (SA) - PE80 Series.

2.12 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Cycle Testing: Provide closers which have surpassed 15 million cycles.
4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a 30-year warranty.

2. Manufacturers:

a. Norton Rixson (NO) - 7500 Series.
b. Sargent Manufacturing (SA) - 351 Series.

C. Door Closers, Surface Mounted (Cam Action): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, high efficiency door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be of the cam and roller design, one piece cast aluminum silicon alloy body with adjustable backcheck and independently controlled valves for closing sweep and latch speed.

1. Manufacturers:

a. Norton Rixson (NO) - 2800ST Series.
b. Sargent Manufacturing (SA) - 422 Series.

2.13 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and

not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:

    a. Rockwood (RO).

2.14 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

    a. Rockwood (RO).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Manufacturers:

    a. Norton Rixson (RF).
    b. Sargent Manufacturing (SA).

2.15 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).

2.16 ELECTRONIC ACCESSORIES

A. Request-to-Exit Motion Sensor: Request-to-Exit Sensors motion detectors specifically designed for detecting exiting through a door from the secure area to a non-secure area. Include built-in timers (up to 60 second adjustable timing), door monitor with sounder alert, internal vertical pointability coverage, 12VDC or 24VDC power and selectable relay trigger with fail safe/fail secure modes.

1. Manufacturers:

a. Alarm Controls (AK) - SREX Series.
b. Securitron (SU) - XMS Series.

B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Sargent Manufacturing (SA) - 3280 Series.
b. Securitron (SU) - DPS Series.

C. Intelligent Switching Power Supplies: Provide the least number of power supplies at the appropriate amperage level sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Power supplies shall meet all functions and features as specified herein.

a. UL listed dual voltage 12 or 24 VDC field selectable continuous output.
b. Dedicated fast charger to prolong battery life with low battery cutoff to protect batteries from deep discharge.
c. Enhanced surge immunity for input/output protection
d. Separate, dedicated battery charging circuit to keep locks cooler.
e. Dual-color LED visual notification to prevent applying incorrect voltages to the power supply.
f. Instant auto-switch to battery on AC loss.
g. Expandable up to 16 outputs in the standard enclosure
h. Integrated fire alarm interface to allow main output shutdown or disconnect on a per output basis when using an R8 output module.
i. Network ready and remotely manage locks and connected devices when using an M8 managed output module on network models.
j. Lifetime replacement, no-fault, no questions asked warranty.

2. Manufacturers:

a. Securitron (SU) - AQL Series.

2.17 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.18 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. Provide clear powder-coat finish on exterior door hardware.

D. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with

corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. SU - Securitron
4. RO - Rockwood
5. SA - SARGENT
6. HS - HES
7. RF - Rixson
8. NO - Norton

Hardware Sets

Set: 1.0
Doors: 1112/1 and 1112/2
Description: Exterior Alum Pair - Mullion; Card Access; Remote Release

2	Continuous Hinge	CFM-SLF-HD1-M EL-CEPTx32D		PE
1	Key Removable Mullion	(12) L980S	PC	SA
1	Rim Exit Device, NL,EL,RX,CD	DG164 16 55 56 PE8804 862 CPC	US32D	SA
1	Rim Exit Device, EL,RX,CD	DG164 16 55 56 PE8810 862 CPC	US32D	SA
1	Mullion Cylinder	DG164 980C1	US26D	SA
4	Core	DG1 6300 VKC2	US15	SA
2	Concealed Overhead Stop	1-X36; or 6-X36	630	RF
2	Surface Closer	R/PR 7500 Series (or to suit conditions)	689	NO
1	Mullion Gasket	5110BL		PE
1	Threshold (coord w/ details)	278x292AFGPK Pemkote FHSL14SS		PE
2	Door Position Switch	3287 (coord w/ Security)		SA
2	Door Wiring Harness	QC-Cxxx (hinge to device)		MK
2	Frame Wiring Harness	QC-CxxxP (hinge/strike to J-box)		MK
1	Power Supply	AQL4-R8E1 (coord w/ Security)		SU
1	Remote Release Switch	By Security		
1	Weather/Perimeter Seals	Supplied with door/frame assembly		
1	Card Reader	By Security		
1	Wiring Diagrams	Elevation & Point-to-Point		

Notes:
Operation: Doors are normally closed and locked. Valid card at reader (or signal from remote switch, where shown) retracts latches for momentary access. Monitoring by door position switches. During a loss of power the door will

default to secure. Free egress at all times. Lock status will not change when the fire detection / suppression systems are activated. Depressing pushrail will activate request to exit switch for appropriate monitor by EAC systems. Outside key override.

Set: 2.0
Doors: 1124/1
Description: Exterior FRP - Mullion; Card Access; Remote Release

1	Continuous Hinge	CFM-SLF-HD1-M EL-CEPTx32D		PE
1	Rim Exit Device, NL,EL,RX	DG164 12 55 56 PE8804 862 CPC	US32D	SA
1	Rim Exit Device, EL,RX	12 55 56 PE8810 862 CPC	US32D	SA
1	Mullion Cylinder	DG164 980C1	US26D	SA
1	Core	DG1 6300 VKC2	US15	SA
1	Concealed Overhead Stop	1-X36; or 6-X36	630	RF
1	Surface Closer	R/PR 7500 Series (or to suit conditions)	689	NO
1	Astragal	305CN		PE
1	Mullion Gasket	5110BL		PE
1	Sweep	315CN		PE
1	Threshold (coord w/ details)	278x292AFGPK Pemkote FHSL14SS		PE
1	Door Position Switch	3287 (coord w/ Security)		SA
1	Door Wiring Harness	QC-Cxxx (hinge to device)		MK
1	Frame Wiring Harness	QC-CxxxP (hinge/strike to J-box)		MK
1	Power Supply	AQL4-R8E1 (coord w/ Security)		SU
1	Weather/Perimeter Seals	Supplied with door/frame assembly		
1	Card Reader	By Security		
1	Wiring Diagrams	Elevation & Point-to-Point		

Notes:
Operation: Doors are normally closed and locked. Valid card at reader retracts latch for momentary access. Monitoring by door position switches. During a loss of power the door will default to secure. Free egress at all times. Lock status will change to latched/locked when the fire detection / suppression systems are activated. Depressing pushrail will activate request to exit switch for appropriate monitor by EAC systems. Outside key override.

Set: 3.0
Doors: 1129/1
Description: Corridor Side Entrance - Panic; Card Access

2	Continuous Hinge	CFM-SLF-HD1-M EL-CEPTx32D		PE
2	SVR Exit Device, NL,EL,RX,LBR	DG164 12 55 56 NBPE8706 NENJ	US32D	SA
2	Core	DG1 6300 VKC2	US15	SA
2	Surface Closer	R/PR 7500 Series (or to suit conditions)	689	NO
2	Kick Plate	K1050 10" 4BE CSK	US32D	RO
2	Door Stop	401; 404; 441CU; overhead per spec	US26D	RO
1	Head & Jamb Seal (adhesive)	S88BL		PE
2	Door Position Switch	3287 (coord w/ Security)		SA
2	Door Wiring Harness	QC-Cxxx (hinge to device)		MK
2	Frame Wiring Harness	QC-CxxxP (hinge/strike to J-box)		MK
1	Power Supply	AQL4-R8E1 (coord w/ Security)		SU
1	Card Reader	By Security		
1	Wiring Diagrams	Elevation & Point-to-Point		

Notes:
Operation: Doors are normally closed and locked. Valid card at reader retracts latches for momentary access. Monitoring by door position switches. During a loss of power the door will default to secure. Free egress at

all times. Lock status will not change when the fire detection / suppression systems are activated. Depressing pushrail will activate request to exit switch for appropriate monitor by EAC systems. Outside key override.

END OF SECTION 087100

SECTION 08 80 00 GLASS AND GLAZING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the glass and glazing as shown on the drawings and/or specified herein, including, but not limited to, glazing of the following:

1. Windows.
2. Entrances.
3. Storefront framing.

1.3 RELATED SECTIONS

A. Aluminum Entrances and Storefronts - Section 084113.

B. Aluminum Curtain Wall Systems – Section 084413.

1.4 REFERENCES

A. Comply with the recommendations of the following references unless more stringent requirements are indicated herein.

1. FGMA Publications: FGMA Glazing Manual.
2. LSGA Publications: LSGA Design Guide.
3. IGMA Publications: TM-3000 Vertical Glazing Guidelines.
4. Safety Glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201, Safety Standards for Architectural Glazing, Sealed Insulating Glass Manufacturing Association.
5. Fire-Resistive Glazing Products for Door Assemblies: Products identical to those tested per ASTM E 152, labeled and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
6. ASTM C 920, Standard Specification for Elastomeric Joint Sealants.
7. Insulating Glass Criteria: IGCC International Glass Certification Council.

1.5 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thicknesses indicated on drawings and/or specified herein are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:

1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
    a. Specified Design Wind Loads: Per ASCE-7.
2. Probability of Breakage for Vertical Glazing
    a. 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
    b. 1 lite per 1000 for lites installed 15 degrees from the vertical and under wind action.
    c. Load Duration: 60 seconds or less.
3. Maximum Lateral Deflection: For glass supported on all four edges, provide thickness required that limits center deflection at design wind pressure to 1/100 times the short side length or 1/2", whichever is less.
4. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
    a. Temperature Change (Range): 120 deg. F ambient; 180 deg F, material surfaces.
5. Thermal Solar Performance: See Article 2.2 herein.

C. Glass units shall be annealed, heat-strengthened, fully tempered or laminated where required to meet wind and/or snow loads and safety glazing requirements as shown, specified or recommended by the glass fabricator and as required by the 2018 International Building Code, New Jersey edition.

D. Passes positive pressure test standards UBC 7-2 and UBC 7-4.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements, including performance requirements.

B. Submit compatibility and adhesion test reports from sealant manufacturer indicating materials were tested for compatibility and adhesion with glazing sealant, as well as other glazing materials including insulation units.

C. Verification Samples: Submit representative samples of each glass and glazing material that is to be exposed in completed work. Show full color ranges and finish variations expected. Provide glass samples having minimum size of 144 sq. in. and 6 in. long samples of sealants and glazing materials; all samples shall bear the name of the manufacturer, brand name, thickness, and quality.

D. Calculations: Provide wind load charts, calculations, thermal stress analysis, and certification of performance of this work. Indicate how design requirements for loading and other performance criteria have been satisfied. Document shall be signed and sealed by a Professional Engineer licensed in the State of New Jersey.

E. Test Reports: Provide certified reports for specified tests.

F. Warranties: Provide written warranties as specified herein.

1.7 QUALITY ASSURANCE

A. Source: For each glass and glazing type required for work of this Section, provide primary materials which are products of one manufacturer. Provide secondary or accessory materials which are acceptable to manufacturers of primary materials.

B. Installer: A firm with a minimum of five years' experience in type of work required by this Section and which is acceptable to manufacturers of primary materials; and with a successful record of in-service installations similar in size and scope to this Project.

C. Glass Thickness: Glass thicknesses shown on drawings and/or specified herein are minimum thicknesses. Determine and provide size and thickness of glass products that are certified to meet or exceed performance requirements specified in this Section.

D. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.

1. GANA Publications: GANA's "Glazing Manual" and "Laminated Glass Design Guide."
2. IGMA Publications: IGMA TM-3000, "Vertical Glazing Guidelines for Sealed Insulating Glass Units."

E. Glazing for Fire-Rated Door Assemblies: Glazing for assemblies that comply with NFPA 80 and that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

F. Safety Glazing Products: Comply with the applicable requirements of the laws, codes, ordinances and regulations of Federal and Municipal authorities having jurisdiction. Wherever requirements conflict, the more stringent shall be required. Obtain approvals from all such authorities. As a minimum provide Category II materials complying with testing requirements in 16 CFR Part 12 and ANSI Z97.1.

1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council.

    a. For glazing types with multiple lites of glass, laminated or assembled into an insulating unit, where safety labeling is required, provide labels that align in position and orientation from lite to lite.

2. Where glazing units, including Kind FT glass and laminated glass, are specified in Part 2 articles for glazing lites more than 9 sq. ft. in exposed surface area of one side, provide glazing products that comply with Category II materials, for lites 9 sq. ft. or less in exposed surface area of one side, provide glazing products that comply with Category I or II materials, except for hazardous locations where Category II materials are required by 16 CFR 1201 and regulations of authorities having jurisdiction.

3. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

G. Insulating Glass Certification Program: Permanently marked on spacers with appropriate certification label of the following testing and inspecting agency:
1. Insulating Glass Certification Council.
2. Associated Laboratories, Inc.
3. Insulating Glass Manufacturers Alliance.

H. Manufacturer shall be ISO 9001-2000 Certified.

1.8 TESTS

A. Preconstruction Sealant Test: Submit samples of materials to be used to glazing sealant manufacturer to determine sealant compatibility. Include samples of glass, gaskets, glazing materials, framing members, and other components and accessories of glazing work. Test in accordance with ASTM C 794 to verify what type of primers (if any) are required to ensure sealant adhesion to substrates.
1. Submit minimum of nine pieces of each type and finish of framing member, and nine pieces of each type, class, kind, condition, and form of glass, including monolithic, laminated, and insulating glass for adhesion tests.
2. Provide manufacturer's written report and recommendations regarding proper installation.

1.9 PROJECT CONDITIONS

A. Weather: Perform work of this Section only when existing or forecasted weather conditions are within limits established by manufacturers of materials and products used.

B. Temperature Limits: Install sealants only when temperatures are within limits recommended by sealant manufacturer, except, never install sealants when temperatures are below 40 deg. F.

C. Do not install sealants when substrates are wet or where contaminants capable of interfering with adhesion are present.

1.10 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in unopened, factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations and GANA Manual.
1. Protect materials from moisture, sunlight, excess heat, sparks and flame.
2. Sequence deliveries to avoid delays, but minimize on-site storage.
3. Glass shall be delivered to the site bearing the manufacturer's label, complete with glazing instructions where applicable.
4. Comply with insulating glass manufacturer's written recommendations for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.11 WARRANTIES

A. General: Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.

B. Manufacturer's Special Project Warranty on Coated Glass Products: Provide written warranty signed by manufacturer of coated glass agreeing to furnish f.o.b. point of manufacture, within specified warranty period indicated below, replacements for those coated glass units which develop manufacturing defects. Manufacturing defects are defined as peeling, cracking or deterioration in metallic coating due to normal conditions and not due to handling or installation or cleaning practices contrary to glass manufacturer's published instructions.

1. Warranty Period: Manufacturer's standard but not less than five (5) years after date of substantial completion.

C. Manufacturer's Special Project Warranty on Insulating Glass: Provide written warranty signed by manufacturer of insulating glass agreeing to furnish f.o.b. point of manufacture, freight allowed project site, within specified warranty period indicated below, replacements for those insulating glass units developing manufacturing defects. Manufacturing defects are defined as failure of the hermetic seal of air space (beyond that due to glass breakage) as evidenced by intrusion of dirt or moisture, internal condensation or fogging, deterioration of protected internal glass coatings, if any, and other visual indications of seal failure or performance; provided the manufacturer's instructions for handling, installing, protecting and maintaining units have been complied with during the warranty period.

1. Warranty Period: Manufacturer's standard but not less than ten (10) years after date of substantial completion.

D. Manufacturer’s Special Project Warranty on Laminated Glass: Manufacturer’s standard form, made out to Owner and signed by laminated glass manufacturer agreeing to replace laminated glass units that deteriorate as defined in “Definitions” Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty period five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS/FABRICATORS

A. All glass and glazing used at the exterior of the Project shall be manufactured by the same manufacturer. The same manufacturer and the same furnace shall be used for all tempered and heat strengthened glass used throughout the project. Acceptable manufacturers include, but are not limited to, the following:

1. Vitro Architectural Glass.
2. Guardian Industries.
3. Pilkington.
4. AFG.
5. Viracon.
6. Or approved equal

2.2 GLASS MATERIALS AND PRODUCTS

A. Clear Float Glass: ASTM C 1036, Type I (transparent, flat), Class 1 (clear), Quality q3, minimum 1/4" thick.

B. Clear Tempered Glass: ASTM C 1048, Condition A (uncoated), Type I (transparent, flat), Class 1 (clear), Quality q3, Kind FT, minimum 1/4" thick. Tempered glass must be certified by SGCC to meet applicable standards.

1. Performance Requirements for Tempered Glass

    a. Length and Width: For 2.9 mm to 6.0 mm; +/-1.6 mm.
    b. Diagonal: +/- 3.0 mm.
    c. Edgework: Belt seaming or diamond wheels. 1.5 mm seam of upper and lower glass edges. No sharp edges.
    d. Corners: No more than 3.0 mm from square.
    e. Float Glass Defects: Must meet the requirements of ASTM C 1036. The most common defects are scratches, stones gaseous bubbles and edge chips. Tables in the glass standards have limits for size/quantity of defects.
    f. Tempered glass shall have a minimum surface compression of 10,000 psi.
    g. Tempered glass to be heat-treated by horizontal (roller hearth) process with inherent roller-wave distortion parallel to the bottom edge of the glass when installed.
    h. Flatness Tolerances

        - Roller-Wave or Ripple: The deviation from flatness at any peak shall be targeted not exceed 0.003" as measured per peak to valley for ¼" (6mm) thick glass.
        - Bow and Warp: The bow and warp tolerances shall not exceed 1/32" per linear foot.
        - Fully tempered glass shall be heat soaked to EN 14179-1:2005- European Heat Soaking Standard.

C. Insulating Glass: Insulating glass unit shall consist of 1/4" clear exterior lite of float (or tempered, where required) glass with low-E coating on No. 2 face, 1/2" interspace and 1/4" clear interior lite of float (or tempered, where required) glass. Provide factory assembled units of organically sealed panes of glass enclosing a hermetically sealed dehydrated air space, complying with ASTM E 2190, and as follows:

1. Sealing System: Dual Seal.
2. Primary Sealant: Polyisobutylene.
3. Secondary Sealant: Silicone, General Electric IGS 3204 or IGS 3100, or Dow Corning 982.

    a. For structurally glazed IG units, secondary seal shall conform to ASTM C 1249.
    b. Primary and secondary seals shall not contain voids and must be continuously bonded to the glass structure.

4. Spacer: Clear finish aluminum with welded, soldered, or bent corners, hollow tube types, filled with low nitrogen absorption desiccant.
5. Desiccant: Molecular sieve, silica gel, or blend of both.
6. Interspace Content: Argon.
7. Air Space Thickness: 1/2".
8. Glass Thickness: 1/4" minimum.
9. Low-E Coating: Provide high-performance, clear, metallic coating, VE1-2M as manufactured by Viracon or approved equal. Provide low-E coating having the following performance characteristics when applied to the No. 2 surface of 1" insulating units, both lites 1/4" clear:

    a. Visible Light Transmittance: 70%.
    b. Solar Energy Transmittance: 33%.
    c. Solar Heat Gain Coefficient (SHGC): 0.38.
    d. U-Value: 0.29 winter, 0.26 summer.

10. Units shall be certified for compliance with seal classification "CBA" by the Insulating Glass Certification Council (IGCC) or by IGMA, and tested in accordance with the above ASTM Test Methods.
11. Insulating glass shall conform to the following tolerances:
    a. Length and Width: + 3.0 mm/ -2.0 mm.
    b. Diagonal: +/- 3.0 mm.
    c. Thickness: As agreed +/- 1.0 mm.
    d. Edge-Deletion of Coating: Minimum 8 mm wide. Width of deletion must be more than the width of the secondary seal. Silver layer(s) must be completely removed. Appearance must be uniform.
    e. Primary PIB Seal: Must be complete with no breaks. Appearance must be uniform. PIB bead must overlap coating. No visible bright line when glass is viewed in transmission. The width of the PIB bead shall be 4.0 mm + 3.0/ -1.5 mm.
    f. Secondary Seal: Nominal 6 mm + 3.0/ - 1.5 mm. The minimum width of the secondary silicone seal for IG units that are glazed structurally must be determined according to ASTM C 1249. The secondary seal must be uniformly applied without bubbles, cavities or gaps. Avoid excess sealant that will need to be trimmed off later.
12. Additional requirements and properties for primary and secondary insulating glass seals and spacers:
    a. All glass units shall comply with IGMA Guidelines which limits the dimension of the visible edge seal encroachment into the vision area to be no greater than the sightline infringement of 3mm (0.12").
    b. Insulating glass unit hermetic seal to consist of butyl primary and silicone secondary seals with bent, welded, or soldered interpane spacer corners; keyed corners are not acceptable unless also soldered or welded. Spacers shall be aluminum or stainless steel. Locate spacer joint at the top or sides of the units, but in no instances at the sill. Design units to minimize the number of spacer joints. Provide solid keys, embedded in butyl sealant on all four sides, at spacer joints.
    c. Hermetic seals must be continuous and intimately bonded to both lites of glass. Provide primary seal of uniform depth with a nominal width of 1/8" to 3/16". Hermetic seals shall not be contaminated with debris, fingerprints, or other foreign matter and shall not contain voids or air pockets that decrease the width of the seal below the minimum widths listed in these Specifications, or that breach the seal. The width of the primary seal shall not be less than 1/16", and the total cumulative length of the primary seal between 1/16" and 1/8" shall be less than 12" in any one insulating glass unit. The primary seal shall not have a reduced thickness at the corners. An increased thickness of the primary seal at the corners is acceptable.
    d. Provide secondary seal of uniform depth with a nominal width of ¼". Provide a total width of the primary and secondary seal of ½". Units shall meet IGMA 65-7-2, latest edition. Units shall not contain breather or capillary tubes or similar penetrations.

D. Fire-Rated Glazing Material for Exterior Doors: Proprietary product in the form of clear flat sheets of 3/16" nominal thickness weighing 2.5 lb./sq. ft., and as follows:

1. Fire Protection Rating (see door schedule): As required by Code for the fire rated opening in which glazing material is installed, and permanently labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.
2. Product: "Premium FireLite" by Nippon Electric Glass Co., Ltd., and distributed by Technical Glass Products or approved equal.

3. Provide insulated fire rated assembly where noted on drawings.

E. Fire-Rated Glazing Material for Interior Doors: Proprietary product in the form of clear flat sheets of 5/16" nominal thickness weighing 4 lb./sq. ft., and as follows:

1. Fire Protection Rating (see door schedule): As required by Code for the fire rated opening in which glazing material is installed, and permanently labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.
2. Product: "Premium FireLite Plus" by Nippon Electric Glass Co., Ltd., and distributed by Technical Glass Products or approved equal.

F. Frameless Mirrors: 1/4", Quality q2, clear float glass with silver, copper, and organic coating, edges uniformly ground and polished.

2.3 GLAZING MATERIALS AND PRODUCTS

A. General: Provide sealants and gaskets with performance characteristics suitable for applications indicated. Ensure compatibility of glazing sealants with insulating glass sealants, with laminated glass interlayers, and with any other surfaces in contact.

B. General Glazing and Cap Bead Sealant: Provide sealant with maximum Shore A hardness of 50. Provide one of the following:

1. Dow Corning 795.
2. General Electric Silglaze N 2500 or Contractors SCS-1000.
3. Tremco Spectrem 2.

C. Weather Seal Sealant: Provide non-acid curing sealant with movement range + 50%, ASTM C 719. Provide one of the following:

1. Dow Corning 795.
2. General Electric Silpruf.
3. Tremco Spectrem 2.

D. Backer Rod: Closed cell non-gassing polyethylene rod with rod diameter 25% wider than joint width.

E. Dense Elastomeric Compression Seal Gaskets: Provide molded or extruded neoprene or EPDM gaskets, Shore A hardness of 75+5 for hollow profile, and 60+5 for solid profiles, ASTM C 864.

F. Cellular, Elastomeric Preformed Gaskets: Provide extruded or molded closed cell, integral-skinned neoprene, Shore A 40+5, and 20% to 35% compression, ASTM C 509; Type II.

G. Preformed Glazing Tape: Provide solvent-free butyl-polyisobutylene rubber with 100% solids content complying with ASTM C 1281 AAMA A 800 with integral continuous EPDM shim. Provide preformed glazing tape in extruded tape form. Provide Tremco "Polyshim II" or approved equal.

H. Setting Blocks: Provide 100% silicone blocks with Shore A hardness of 80-90. Provide products certified by manufacturer to be compatible with silicone sealants. Length to be not less than 4". Width for setting blocks to be 1/16" more than glass thickness and high enough to provide the lite recommended by glass manufacturer. When thickness of setting block exceeds 3/4" the

glass manufacturer must be consulted for sizes and configuration. In a vented system, setting block shall be designed so as to not restrict the flow of water within the glazing rabbet to the weep holes.

1. Shims: For shims used with setting blocks, provide same materials, hardness, length and width as setting blocks.
2. Structural Silicone Glazing: Provide silicone setting blocks where structural silicone occurs at sills and at insulating units with silicone edge seals.

I. Edge Blocks: Provide neoprene or silicone as required for compatibility with glazing sealants. Provide blocks with Shore A hardness of 55+5.

J. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place.

K. Miscellaneous Glazing Materials: Provide sealant backer rods, primers, cleaners, and sealers of type recommended by glass and sealant manufacturers.

L. Mirror Adhesive: Palmer's "Mirro-Mastic," or approved equal. Mastic must be compatible with mirror backing.

1. Clips: No. 4 finish Type 304 stainless steel.

2.4 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

C. Grind smooth and polish exposed glass edges.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine glazing framing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GENERAL GLAZING STANDARDS

A. Install products using the recommendations from the manufacturer of glass, sealants, gaskets and other glazing materials, except where more stringent requirements are indicated, including those in the GANA "Glazing Manual."

B. Verify that Insulating Glass Unit (IGU) secondary seal is compatible with glazing sealants.

C. Install glass in prepared glazing channels and other framing members.

D. Install setting blocks in rabbets as recommended by referenced glazing standards in GANA's "Glazing Manual" and IGMA's "Glazing Guidelines."

E. Provide bite on glass, minimum edge and face clearances and glazing material tolerances recommended by GANA's "Glazing Manual."

F. Provide weep system as recommended by GANA's "Glazing Manual."

G. Set glass lites in each series with uniform pattern, draw, bow and similar characteristics.

H. Distribute the weight of glass unit along the edge rather than the corner.

I. Comply with manufacturers and referenced industry standards on expansion joint and anchors; accommodating thermal movement; glass openings; use of setting blocks, edge, face, and bite clearances; use of glass spacers; edge blocks and installation of weep systems.

J. Protect glass edge damage during handling and installation.

K. Prevent glass from contact with contaminating substances that result from construction operations, such as weld spatter, fireproofing or plaster.

L. Remove and replace glass that is broken, chipped cracked or damaged in any way.

3.4 GLAZING

A. Glazing channel dimensions, as indicated on Shop Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead. Install setting blocks at the one greater points of each lite along the horizontal mullion.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where the length plus width is larger than 50 inches as follows:

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

I. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

J. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

K. Flush Glazing

1. If the butt joint in the metal framing is in the vertical direction, the glazier shall run the tape initially on the head and sill members going directly over this joint. Should the butt joint in the metal framing run horizontally, tapes must first be applied to the jambs so that it crosses over the joint.
2. Each tape section shall butt the adjoining tape and be united with a tool to eliminate any opening.
3. Do not overlap the adjoining length of tape or rubber shim as this will prevent full contact around the perimeter of glass.

L. Off-Set Glazing

1. Where the glazing legs are off-set, the difference in the rabbet width shall be compensated by employing different glazing tapes with different diameter shims. The difference in shim shall be equal to the size of the off-set. The thinner tape shall be positioned first on the glazing leg closest to the interior. The thicker tape shall be cut to the exact length of the dimension between the applied tapes, and installed on the outermost glazing leg.
2. Immediately prior to setting glass, paper backing shall be removed. Apply a toe bead of sealant 6" in each direction, from each corner.
3. Locate setting blocks in the sill member at quarter points, or if necessary to within 6" of each corner. Setting blocks must be set equal distance from center line of the glass and high enough to provide the recommended bite and edge clearances.
4. Set edge block according to glass manufacturer’s recommendations.
5. Set Glass: The glass shall be pressed firmly against the tape to achieve full contact.
6. In a vented system, apply a heel bead (air seal) of sealant around the perimeter of glass, between the sole of the I.G. unit and the base of the rabbet of the metal framing developing a positive bond to the unit and to the metal framing. The bead of the sealant

shall be deep enough so that it will partially fill the channel to a depth of 1/4" between the glass edge and the base of the metal framing rabbet.

7. Interior stops shall be set, and glazing tape spline for the appropriate face clearance shall be rolled into place, compressing the glass to the shim within the glazing tape.

3.5 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Do not remove release paper from tape until just before each glazing unit is installed.

F. Apply heel bead of elastomeric sealant as recommended by glass manufacturer or glass frame manufacturer.

G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

H. Apply cap bead of elastomeric sealant over exposed edge of tape where noted on approved shop drawings.

3.6 GASKET GLAZING (DRY)

A. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Install gaskets so they protrude past face of glazing stops.

3.7 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and

backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

1. Exterior glazing gasket shall be set a minimum of 1/8" below exterior glazing stop to create a channel for sealant installation.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.8 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Clean excess sealant or compound from glass and framing members immediately after application, using solvents or cleaners recommended by manufacturers.

F. Glass shall be cleaned according to:

1. GANA Glass Information Bulletin GANA 01-0300 – "Proper Procedure for Cleaning Architectural Glass Products."
2. GANA Glass Informational Bulletin GANA TD-02-0402 – Heat Treated Glass Surfaces are Different."

G. Do not use razor blades, scrapers or metal tools to clean glass.

END OF SECTION 08 80 00

SECTION 09 96 00 – ELASTOMERIC COATING RESTORATION

PART I - GENERAL

1.01 SCOPE

A. Provide all labor, materials and equipment necessary to apply the coating system over existing exterior insulation and finish systems (EIFS).

1.02 RELATED SECTIONS

A. Joint Protection - 07 90 00

1.03 DESCRIPTION

A. The coating system include elastomeric coatings and finishes, acrylic coatings and primers, for use over exterior insulation and finish systems (EIFS).

1.04 SUBMITTALS

A. Samples

1. The applicator shall submit two (2) 2 ft x 4 ft (.61 m x 1.2 m) samples of the proposed finish to the architect and/or owner for approval.

B. Mock-up

1. A minimum 8 ft x 8 ft (2.4 m x 2.4 m) area of actual project or mock-up wall shall be coated with the accepted finish to establish a standard of acceptance by the owner and architect.

C. Manufacturer's Information

1. Submit manufacturer's product information and specifications.
2. Repair details.
3. Material Safety Data Sheets for each material to be used on site.
4. Proof of Certification by Dryvit System, Inc.

1.05 QUALITY ASSURANCE

A. Qualifications

1. System Manufacturer: Shall be Dryvit Systems, Inc. or approved equivalent. All materials shall be obtained from approved manufacturer or its authorized distributors. System materials are not to be mixed and matched.

   a. Materials shall be manufactured at a facility covered by a current ISO 9001:2015 and ISO 14001:2015 certification. Certification of the facility shall be done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).

2. The applicator shall be knowledgeable in the application of exterior acrylic and elastomeric architectural finishes and coatings. Applicator must be manufacturer certified for system installation.

3. The Contractor and Installer/Applicator shall have performed a minimum of five (5) projects using the specified coating or equivalent, and shall furnish information regarding its prior experience to the Owner with its bid.

4. A minimum of one person, thoroughly familiar with the specified requirements and materials, shall be present on site at all times during Work, and shall direct all Work specified herein.

B. Substrates

1. Application of this coating restoration system shall be applied only to the following substrate when prepared in accordance with this specification.

a. Sound exterior insulation and finish systems (EIFS).

2. The applicator shall verify that the proposed substrate is acceptable prior to application of the coating restoration system.

1.06 DELIVERY, STORAGE AND HANDLING

A. All coating materials shall be delivered to the job site in the original, unopened packages with labels intact.

B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.

1. All coating materials shall be stored at the job site, and at all times, in a cool, dry location, out of direct sunlight, protected from weather and other damage. Minimum storage temperature shall be 45 °F (7 °C).

C. Maximum storage temperature shall not exceed 90 °F (32 °C).

1.07 JOB CONDITIONS

A. Existing conditions: The applicator shall have access to electric power, clean water and a clean work area at the location where the Weatherlast materials are to be installed.

B. Environmental Conditions:

1. The ambient air and wall temperatures shall be from 45 °F (7 °C) minimum to 90 °F (32 °C) maximum for application of coating restoration system. The temperature shall remain so for at least 24 hours thereafter, or longer if necessary for the materials to be sufficiently dried.

C. Protection

1. Adjacent areas/materials shall be protected from damage, drops and spills during the application of coating materials.

2. The coating materials shall be protected by permanent or temporary means from weather and other damage, prior to, during, and immediately after application. Care must be taken to prevent condensation and/or heat buildup when using tarp or plastic to prevent damage to the coating system.

3. Damage: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost.

D. Sequencing and Scheduling:

1. Application of the coating system shall be coordinated with other material installations such as flashing and joint sealants.

2. Sufficient labor and equipment shall be employed to ensure a continuous operation, free of cold joints, texture variations, scaffold lines, etc.

E. Utilities:

1. All water and power required for the Work shall be provided by owner at no cost to the Contractor.

2. Contractor shall coordinate all points of connection to the existing water and pwer systems with owner.

1.08 LIMITED MATERIALS WARRANTY

A. Dryvit shall offer a written Limited Materials Warranty upon receipt of a properly executed warranty request and completed project form.

PART II - PRODUCTS

2.01 GENERAL

A. All materials associated with this work shall be supplied by and obtained from Dryvit (or approved manufacturer) or its authorized distributors. Substitutions or addition of other materials will void the warranty.

2.02 COMPONENTS

A. Weatherlastic (or approved equivalent) Elastomeric Finishes and Coatings:

1. Weatherlastic Quarzputz® (or approved equivalent): A 100% acrylic based finish utilizing an elastomeric binder with a coarse aggregate producing an open textured pattern in a regular or random style.

B. Weathercoat Acrylic Coating (or approved equivalent): A smooth, nontextured 100% acrylic emulsion based exterior coating.

C. Weatherprime Acrylic Primer (or approved equivalent): A pigmented, exterior acrylic primer.

2.03 MATERIALS

A. Water: Shall be clean and potable.

B. Patching Material

1. The following products have been evaluated and found to be compatible with Weatherlast products:

a. #5100 Plastiflex® Elastomeric Adhesive Caulk (brush grade) - Available from Scott Paint (www.scottpaint.com) (1-800-282-2016)

b. #5200 Plastiflex Elastomeric Patching Compound (knife grade) - Available from Scott Paint (www.scottpaint.com) (1-800-282-2016)

2.04 EQUIPMENT

A. Mixing shall be done with a clean Goldblatt Jiffler Mixer #15311H7 or equivalent powered by a 1/2 in (12.7 mm) drill at 400-500 RPM.

B. Tools associated with the plastering and painting trades.

PART III - EXECUTION

3.01 INSPECTION

A. Examination of Substrate.

1. Ensure that the substrate is of a type and condition listed in Section 1.05.B.

B. Ensure that minimum application temperatures are met per Section 1.07.B.

3.02 SUBSTRATE PREPARATION FOR WEATHERLASTIC ELASTOMERIC FINISHES

**Patching primers and finishes noted in this section are based on the Weathelastic system components by Dryvit. If an approved equal is being used, all components of the surface patch and preparation shall be by the same manufacturer.

A. Coated Substrates

1. Shall be cleaned to remove all chalk, dirt, dust, loose coatings and other foreign materials.

2. Loose, delaminated or spalled areas shall be repaired with an appropriate patching compound compatible with the substrate material.

B. Noncoated Surfaces

1. Surfaces shall be cleaned and free of dirt, dust, from release agents or other foreign matter which may interfere with the bond of a finish coating.

2. Loose, delaminated or spalled masonry, stucco or concrete surfaces shall be repaired with an appropriate cementitious patching compound and allowed to cure a minimum of 7 days.

3. Prime surfaces with Weatherprime acrylic primer.

4. Terminations and juncture of dissimilar materials:

a. Caulk as necessary using compatible sealant.

b. Sealant shall be compatible with Dryvit products. Refer to Dryvit Publication DS153 for current listing.

c. Weatherlast materials shall be fully dried prior to sealant installation.

C. Coating New Stucco Surfaces

1. Stucco

a. Stucco shall be dry and fully cured for a minimum of 7 days prior to application of coatings.

b. Clean stucco walls to ensure removal of dirt, dust, efflorescence or any other foreign matter which may interfere with bond of a surface coating.

c. Prime stucco surface with Weatherprime acrylic primer.

D. Cracks shall be treated as follows:

1. Static cracks up to 1/32 in (.8 mm) can be bridged by Weatherlastic finishes without special treatment.

2. Static cracks up to 1/8 in (3.2 mm) in width.

   a. Remove all loose material and clean the crack.

   b. Apply compatible knife or brush grade patch compound directly over the crack and feather out a minimum of 4 in (102 mm) on each side.

3. Static cracks 1/8 in to 1/4 in (3.2 mm to 6.4 mm).

   a. Chip or grind out crack to a minimum 1/4 in (6.4 mm) wide by 1/4 in (6.4 mm) deep groove.

   b. Clean and remove all loose materials.

   c. Fill groove with compatible knife grade patch compound.

   d. Bridge crack with compatible brush grade patch compound. Apply at approximately 1/4 in (6.4 mm) thickness over the crack and feather out a minimum of 4 in (102 mm) on each side.

4. Static cracks over 1/4 in (6.4 mm) wide.

   a. Clean and remove all loose and unsound material from crack.

   b. Repair crack with non-shrinking cementitious patching mortar or cement plaster mix and allow to cure a minimum of 7 days.

   c. Coat with Weatherprime and top dress with a compatible brush grade patching material if necessary.

5. Dynamic cracks 1/16 in to 1/2 in (1.6 mm to 12.7 mm) wide.

   a. Chip or grind out the crack so that the width is equal to the depth, but not less than 1/4 in (6.4 mm).

   b. Clean and remove all loose material from crack.

   c. Fill the crack with a high grade urethane sealant. Tool into joint and allow to cure minimum 24 hours.

   d. Apply a coat of compatible brush grade patch compound over the crack and feather out to a minimum of 4 in (102 mm) on each side.

6. Prime patched surfaces with Weatherprime acrylic primer.

7. Cracks in EIFS systems shall be repaired using procedures described in Dryvit publication DS498.

8. EIFS surfaces shall be skimmed out with Dryvit NCB™ or Freestyle® to fill in texture prior to application of textured Weatherlast finishes.

3.03 WEATHERLASTIC FINISH APPLICATION

**The Finish Application noted in this section is based on the Weathelastic system components by Dryvit. If an approved equal is being used, all components of the application shall be by the same manufacturer.

A. The substrate and substrate preparation shall be inspected by the contractor to ensure it is in compliance with this specification.

B. Mixing

1. Mix the Weatherlastic finish thoroughly to a uniform homogeneous consistency using a Goldblatt Jiffler Mixer No. 15311H7 powered by a 1/2 in (12.7 mm) drill 400-500 RPM or equivalent. Mix until a uniform workable consistency is attained.

C. General

1. The Weatherlastic finish can be brush or trowel applied in accordance with specific product instructions. Due to environmental concerns on the subject site, spray application shall not be used.
2. No additives shall be added under any circumstances.
3. The finish shall be applied to the entire wall surface in a continuous application to a natural break.
4. Finish shall be protected from airborne contamination such as dust, soot, etc. and from weather and other damage until fully dried.

D. Weatherlastic Quarzputz

1. A tight coat shall be applied to the prepared substrate. When trowel applied, leveling and texture shall take place in one operation.
2. The thickness shall be not greater than 1 1/2 times the thickness of the largest aggregate.

G. Weatherprime, Weathercoat

1. Shall be applied to recommended coverage rate by brush or roller.
2. A maximum 3/4 in (19 mm) nap polyester or polyester blend with nylon or lamb's wool, beveled ends and phenolic core is recommended.
3. An 18 in (457 mm) wide roller frame with 2 1/4 in (57 mm) inside diameter roller is recommended.
4. Apply in a continuous application, maintaining a wet edge, to a natural break.

3.04 FIELD QUALITY CONTROL

A. The applicator shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures and workmanship is in accordance with project specifications and manufacturer's instructions.

B. If requested, the sealant applicator shall certify in writing that the sealant application is in accordance with the sealant manufacturer's and Dryvit's recommendations.

3.05 CLEAN-UP

A. Materials left over by the applicator at the job site shall be removed by the applicator.

B. The applicator shall clean adjacent materials and surfaces and the work area of foreign materials resulting from their work.

END OF SECTION

SECTION 099611 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and application of high-performance coating systems on the following substrates:

1. Exterior Substrates:

a. Concrete vertical surfaces.

b. Existing Steel Piles

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each type of coating system and each color and gloss of topcoat indicated.

PART 2 - PRODUCTS

2.1 HIGH-PERFORMANCE COATINGS

A. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
3. Products shall be of same manufacturer for each coat in a coating system.

B. Colors: As selected by Architect from manufacturer's full range.

2.2 POLYURETHANE COATINGS (for Concrete)

A. Polyurethane, Two-Component, Pigmented, Semigloss: Solvent-based, two-component polyurethane, pigmented coating with a semigloss finish formulated for resistance to abrasion, weathering, chemical and solvent exposure, for use on interior or exterior brick, block, concrete, plaster, wood, and metal surfaces, where is required.

1. Gloss Level: Manufacturer's standard semigloss finish.

2.3 HIGH BUILD EPOXY COATINGS (for existing Steel Piles)

A. See information under section 3.4.B below for this system.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted.

1. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
2. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed.
3. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk.

1. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean surfaces with pressurized water. Use pressure range of 1500 to 4000 psi at 6 to 12 inches.

E. Steel Substrates:

1. Blast clean to SSPC SP-10 or equivalent standard to remove any rust, salt, grease, and to ensure a tight profile.

3.3 APPLICATION

A. Apply high-performance coatings in accordance with manufacturer's written instructions. Due to the project site location and environmental concerns, the paint shall be applied with brush and / or roller. Spraying will not be permitted.

B. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.4 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

A. Concrete Substrates, Vertical Surfaces (for grade beams):

1. Pigmented Polyurethane over Epoxy System:

a. Prime Coat: Epoxy, matching intermediate coat.
b. Intermediate Coat: Epoxy, gloss.
c. Topcoat: Polyurethane, two component, pigmented, semigloss.

B. Steel Substrates (for existing Steel Piles):

1. Pigmented Polyurethane over Epoxy Zinc-Rich Primer and High-Build Epoxy System:

a. Prime Coat: Primer, zinc rich, epoxy**,** MPI #20.

1) Enviro-Zinc Organic Zinc Rich Primer from Sumter Coatings or approved equivalent.

b. Intermediate Coat: Epoxy, high build, low gloss, MPI #108.

1) 346 Series Rust Inhibitive Epoxy Primer by Sumter Coatings or approved equivalent.

c. First and Second Topcoat: Polyurethane, two component, pigmented, gloss (MPI Gloss Level 6), MPI #72.

1) Enviro-Tuff Polyurethane 459 Line by Sumter Coatings or approved equivalent.

END OF SECTION 099611

SECTION 12 21 24 - MOTORIZED ROLLER SHADE SYSTEM (ALTERNATE NO. 3)

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Provide electrically operated, sunscreen and blackout roller shades at Conference Room 1226 exterior building windows. Work includes local, group and master control systems for shade operation with addressable, encoded, Electronic Drive Units (EDU).

1.2 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
3. Storage and handling requirements and recommendations.
4. Mounting details and installation methods.
5. Typical wiring diagrams including integration of EDU controllers with building management system, audiovisual and lighting control systems as applicable.

B. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, power and control wiring diagrams, and relationship to adjacent work.

1. Prepare shop drawings that indicate unit sizes, locations, mounting equipment, coordination with curtainwall system and routing of electric for power and switching.
2. Prepare control, wiring diagrams based on, switching and operational requirements provided by the Architect in electronic format.
3. Include one-line diagrams, wire counts, coverage patterns, and physical dimensions of each item.
4. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.

C. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shade cloth samples and aluminum finish sample as selected. Mark face of material to indicate interior faces.

D. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

E. Warranty: Provide manufacturer's warranty documents as specified in this Section.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section. This

includes but is not limited to all required extrusions, accessories, controls and fabricated roller shades or else all stated and published warranties may be void.

B. Installer Qualifications: Engage an installer, which shall assume responsibility for installation of all system components, with the following qualifications.
   1. Installer for roller shade system shall be trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.

C. Fire-Test-Response Characteristics: Passes NFPA 701-99 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.

D. Electrical Components: NFPA Article 100 listed and labeled by either UL or ETL or other testing agency acceptable to authorities having jurisdiction, marked for intended use, and tested as a system. Individual testing of components will not be acceptable in lieu of system testing. Where applicable, system components shall be FCC compliant.

E. PVC-Free Shadecloth: Comply with the following.
   1. Shadecloth Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, and ATCC9645.
   2. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals, which do not include the Environmental Certification, below will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
   3. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.
   4. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.
   5. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

F. Requirements for Hardware, Controls, and Switches:
   1. Roller Shade Hardware, shade fabric, EDU, and all related controls shall be furnished and installed as a complete two-way communicating system and assembly.

G. Mock-Up: Provide a mock-up, if Architect requires, of one roller shade assembly for evaluation of mounting, appearance and accessories.
   1. Locate mock-up in window designated by Architect.
   2. Do not proceed with remaining work until, mock-up is accepted by Architect.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver components in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Power and control wiring shall be complete and certified, fully operational with uninterrupted communication on the lines and minimal noise certified by a commissioning agent (by others).
   1. 485, ICON, Lonmark and Dry Contract Network: Noise on the line not to exceed shade manufacturer's limits.

1.6 WARRANTY

A. Warranty: Provide manufacturer's standard warranties, including the following:
   1. Motorized Roller Shade Hardware, and Shadecloth: Manufacturer's standard non-depreciating twenty-five year limited warranty.
   2. Roller Shade EDU's and EDU Control Systems: Manufacturer's standard non-depreciating five-year warranty.
   3. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to access to the work above 12' Feet AFF, which are the responsibility of others.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. BASIS OF DESIGN: MECHO SHADE SYTEMS- ELECTRO2 OR 'APPROVED EQUAL'

2.2 SHADE CLOTH

A. Solar Shade Cloth

1. Basis of Design: Eurotwill 6420 Series with 3% Openness. Shade cloth selected from manufacturer's standard colors.

2. Other Acceptable Manufacturers:

a. Lutron
b. Sol-R-Veil Inc.
c. Draper

2.3 INTELLIGENT ENCODED ELECTRONIC DRIVE SYSTEM

A. Electronic Drive Unit (EDU):
1. Intelligent Encoded EDU, and Control System: Tubular, asynchronous (non-synchronous) EDU's, with built-in reversible capacitor operating at 120VAC/60Hz, or (230VAC/50Hz) single phase, temperature Class B, thermally protected, totally enclosed, maintenance free with line voltage power supply equipped with locking disconnect plug assembly furnished with each EDU.
2. Quiet 42 – 46 db (within 3 feet open air)
3. Conceal EDU's inside shade roller tube.
4. Maximum current draw for each shade EDU of 0.9Amps at 120VAC.
5. Use EDU's rated at the same nominal speed for all shades in the same room.
6. Use EDU's with minimum of 34RPM, that shall not vary due to load / lift capacity.
7. Total hanging weight of shade band shall not exceed 80 percent of the rated lifting capacity of the shade EDU and tube assembly.

B. EDU System: (software, two-way communication): Specifications and design are based on the Intelligent EDU Control System, WhisperShade®IQ® System) as manufactured by MechoSystems. Other systems may be acceptable providing all of the following performance capabilities are provided. EDU and control systems not in complete compliance with these performance criteria shall not be accepted as equal systems.
1. EDU shall support two methods of control
a. Local Dry Contact Control Inputs
1.) EDU shall be equipped with dry contact inputs to support moving the EDU/shade to the upper and lower limits.
2.) EDU shall be equipped with dry contact inputs to support moving the EDU/shade to local switch preset positions.
3.) Shall support configuring the EDU under protected sequences so that a typical user would not change the EDU's setup. At a minimum the configuration should include setting limits, setting custom presets and configuring key modes of operation.
b. Network Control
1.) EDU shall be equipped with a bi-directional network communication capability in order to support commanding the operation of large groups of shades over a common backbone. The network communication card shall be embedded into the tubular EDU assembly.
2. Upper and lower stopping points (operating limits) of shade bands shall be programmed into EDU's using either a hand held removable program module / configurator or a local switch.
3. Alignment Positions: Each EDU shall support a minimum of 133 repeatable and precisely aligned shade positions (including limits and presets).

a. All shades on the same switch circuit or with the same network group address with the same opening height shall align at each limit or preset (intermediate stopping position) when traveling from any position, up or down.
b. Shades of differing heights shall have capability for custom, aligned intermediate stop positions when traveling from any position, up or down.
c. Alignment of shades mechanically aligned on the same EDU shall not exceed +/- 0.125 inches (3.175mm) when commanded to the same alignment position.
d. Alignment of shades on adjacent EDU's shall not exceed +/- 0.25" inches (6.35mm) when commanded to the same alignment position.
e. Local Switch Presets: A minimum of 3 customizable preset positions shall be accessible over the local dry contact control inputs and over the network connection.
    1.) Upon setting the limits for the shade EDU these preset positions shall automatically default to 25%, 50% and 57% of the shade travel.
    2.) These positions shall be capable of being customized to any position between and including the upper and lower limits of the shade. A removable program module / configurator or local switch shall be capable of customizing the position of these presets.
f. Network Presets: A minimum of 29 customizable preset positions (including the 3 local switch presets) shall be accessible via network commands.
    1.) Upon setting the limits for the shade EDU these preset positions shall automatically default to the lower limit unless customized elsewhere.
    2.) These positions shall be capable of being customized to any position between and including the upper and lower limits of the shade. A removable program module / configurator shall be capable of customizing the position of these presets.

4. Network Control
    a. The system shall have the capability of two-way digital communication with the EDU's over a common backbone.
    b. Each EDU shall possess 8 addresses capable of being employed for various levels of group control. These addresses shall be configurable via a handheld configurator and/or a PC controller. A 9th unique address shall enable the EDU(s) to be independently controlled and configured over the network via a handheld configurator and/or a PC controller.
    c. Low Voltage Communication Network Implementation.
        1.) The low voltage network shall employ a bus topology with daisy chained network connections between nodes over a CAT5 cable (4 UTP) or over a 2 UTP cable employing at least 1 pair at 16 AWG for power and 1 pair at 22 AWG for data.
        2.) The low voltage network (+/- 13VDC) shall be powered by the nodes attached to it. These nodes could be line voltage powered EDU's attached to 120 VAC or 230 VAC. Alternatively, low voltage nodes shall be powered typically by a centralized low voltage power supply. If a CAT5 network cable is employed and the node draws less than 1W then the node may be powered by DC power supplied by an associated line voltage EDU.
        3.) Network Capacity: 4000 ft max, 250 nodes max
            (a) The number and size of a centralized DC supply shall vary depending upon the network requirements.

5. Operating Modes
    a. Uniform or Normal Modes of Operation:
        1.) Uniform mode shall allow for shades to only move to defined intermediate stop positions to maintain maximum uniformity and organization.
        2.) Normal Mode shall allow for shades to move to both intermediate stop positions, plus any position desired between the upper and lower limits as set by the installer.

6. Wall Switches:
    a. Shades shall be operated by, 5, 7, or 10-button low voltage standard switches, or programmable intelligent switches [IS]. Standard switch shall be wired to a bus interface and the bus interface will be programmed to transmit an address for the local switch.
    b. Intelligent switches may be installed anywhere on the bus line. Each IS shall be capable of storing one control level address to be broadcast along the bus line.
    c. An address that is transmitted by either a switch or central controller shall be responded to by those EDU's with the same address in their control table.
    d. IS shall provide for interface with other low voltage input devices via a set of dry contact terminals located on the switch.
    e. Standard switch or IS may control an individual, sub-group or group of EDU's in accordance with the address in each EDU.
    f. All local control switches will be installed in AV room or electrical closet. location to be determined by Architect.

2.4 SHADE BANDS

A. Shade Bands: Construction of Railroaded shade band includes the fabric, the enclosed hem weight, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable. Note: Each shade band shall cover a max of three (3) lights of glass without any horizontal seam joints.

1. Concealed Hembar: Shall be continuous extruded aluminum for entire width of shade band and with the following characteristics:
    a. Hembar shall be heat sealed on all sides.
    b. Open ends shall not be accepted.

2. Shade band and Shade Roller Attachment:
    a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection.
    b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" Spline mounting, without having to remove shade roller from shade brackets.
    c. Mounting Spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
    d. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets, does not meet the performance requirements of this specification and shall not be accepted.

2.5 ROLLER SHADE FABRICATION

A. Fabricate shade cloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided Shadecloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design.

B. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shade bands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the Shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.

C. For railroaded shade bands, provide seams in railroaded multi-width shade bands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroaded multi-width shade bands.

D. Provide battens for railroaded shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shade bands.

E. Blackout shade bands, when used in side channels, shall have horizontally mounted, roll-formed stainless steel or tempered-steel battens not more than 3 feet (115 mm) on center extending fully into the side channels. Battens shall be concealed in an integrally colored fabric to match the inside and outside colors of the shade band, in accordance with manufacturer's published standards for spacing and requirements.
   1. Battens shall be roll formed of stainless steel or tempered steel and concave to match the contour of the roller tube.

2.6 ROLLER SHADE COMPONENTS

A. Access and Material Requirements:
   1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
   2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
   3. Use only Delran engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester shall not be accepted.

B. Motorized Shade Hardware and Shade Brackets:
   1. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel, or heavier, thicker, as required to support 150 percent of the full weight of each shade. Plastic components without use of steel angle construction do not meet the intent of this specification and shall not be accepted.

2. Provide shade hardware system that allows for field adjustment of EDU or replacement of any operable hardware component without requiring removal of brackets, regardless of mounting position (inside, or outside mount).
3. Provide shade hardware system that allows for operation of multiple shade bands offset by a maximum of 8-45 degrees from the EDU axis between shade bands (4-22.5 degrees) on each side of the radial line, by a single shade EDU (multi-banded shade, subject to manufacturer's design criteria).
4. All bands within a single EDU group shall be aligned within ¼ inch.

2.7 SHADE CLOTH & ROLLER SHADE SCHEDULE

A. Refer to Finish drawings and specifications for Roller schedule and shade cloth. Shade cloth to be selected from manufacturer's standard colors.

PART 3 – EXECUTION

3.1 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.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 Turn-Key Single-Source Responsibility for Interior Roller Shades: To control the responsibility for performance of the electric roller shade system; assign the design, engineering, and installation of electronic drive roller shade control system, shades, addressable controls, communication interfaces, and any required sensors, switches and low voltage control wiring specified in this Section to the manufacturer of the shade and control system. The Architect will not produce a set of electrical drawings for the installation of control wiring for the electric roller shade control system.

A. General Contractor responsibilities: GC shall…
1. Provide power panels and circuits of sufficient size to accommodate roller shade manufacturer's requirements, as indicated on the mechanical and electrical drawings and manufacturer's shop drawings.
2. Coordinate with requirements of subcontractor for this section before inaccessible areas are constructed.
3. Coordinate requirements of ALSCS before inaccessible areas are constructed.
4. Provide conduit with pull wire in all areas, which might not be accessible to ALSCS due to building design, equipment location or schedule:
5. Coordinate with the main building electrical subcontractor to provide duplex 120 VAC power receptacle in Electric closet for floor/riser Communication Gateways.

6. Verify that wiring conditions, which have been previously installed under other sections or at a previous time, are acceptable for product installation in accordance with manufacturer's instructions.
7. Comply with manufacturer's product data, including shop drawings, technical bulletins, product catalog installation instructions, and product carton instructions for installation.
8. Protect installed product and finished surfaces from damage during all phases of installation including preparation, testing, and cleanup.
9. Be responsible for all other required electrical work including but not limited to roof penetrations, conduits, fireproofing, etc.
10. Provide conduit with pull wire in all areas, which might not be accessible to subcontractor due to building design, equipment location or schedule.

B. Window Covering Subcontractor (WC) responsibilities:
1. Shade Control Subcontractor shall furnish and install shade controllers, interfaces, splitters, coupler, sensors, switches, junction boxes, etc mounted in the ceiling in an accessible location. Locations for all visible devices to be coordinated with Architect. The shade control subcontractor shall inspect all material included in this contract prior to installation. Manufacturer shall be notified of unacceptable material prior to installation.

2. LINE VOLTAGE WIRING
WC to ROLLER SHADE EDU: The WC shall furnish and install power connection between Shade control system and EDU, and shall be capable of providing single line voltage wire pull for each EDU.

C. SHADE POWER WIRING (WC)
1. Shall furnish and install line voltage Cable from roller shade motor into line voltage side of control system.
2. Shall wire from General Contractor, provided, power junction box to each motor on the shade network.
3. Shall furnish and install a disconnect plug at the end of the power wiring run to each EDU. The disconnect plug must mate with a matching disconnect plug on the motor cable. EDU cable disconnect plug must be prefabricated by the manufacturer to meet UL and ETL systems requirements.
4. Include in Alternate No. 3 110v line voltage with 100 feet of conduit and cabling routed above the ceiling and connected to the nearest available distribution panel. Switch locations shall be determined in the field by the Owner. Work includes removal and restoration of ceiling to accommodate line voltage power and low voltage wiring and equipment mounting.

D. INTEGRATION TO 3RD PARTY SYSTEMS
Main Contractor shall coordinate and provide for others to furnish, install or program any interfaces or wiring to integrate 3rd party systems to the roller shade control system as specified herein. Integration to shade control network can be accomplished locally through dry contact closures, or RS-232.

3.4 INSTALLATION OF ROLLER SHADES

A. Contractor Furnish and Install Responsibilities:

1. Window Covering Contractor (WC) shall provide an on site, Project Manager, and shall be present for all related jobsite scheduling meetings.
2. WC shall supervise the roller shade installation, and setting of intermediate stops of all shades to assure the alignment of the shade bands within a single EDU group, which shall not exceed +/- 0.125 inches (3.175mm), and to assure the alignment between EDU groups, which shall not exceed +/- 0.25" inches (6.35mm).
3. WC shall be responsible for field inspection on an area-by- area and floor-by-floor basis during construction to confirm proper mounting conditions per approved shop drawings.
4. Verification of Conditions: examine the areas to receive the work and the conditions under which the work would be performed and notify General Contractor and Owner of conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected. Commencement of installation shall constitute acceptance of substrate conditions by the installer.
5. WC shall provide accurate to 0.0625" inch (1.5875mm); field measurements for custom shade fabrication on the Roller Shades manufacturers input forms.
6. WC Installer shall install roller shades level, plumb, square, and true according to manufacturer's written instructions, and as specified here in. Blocking for roller shades installed under the contract of the interior General Contractor shall be installed plumb, level, and fitted to window mullion as per interior architect's design documents and in accordance with industry standard tolerances. The horizontal surface of the shade pocket shall not be out-of-level more than 0.625" (15.875mm) over 20 linear feet (6.096 meters).
7. Shades shall be located so the shade band is not closer than 2 inches (50 mm) to the interior face of the glass. Allow proper clearances for window operation hardware.
8. Adjust, align and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
9. Installer shall set Upper, Lower and up to 3 intermediate stop positions of all motorized shade bands, and assure alignment in accordance with the above requirements.
10. WC shall certify the operation of all motorized shades and turn over each floor for preliminary acceptance.
11. The WC shall participate and cooperate with the electrical contractor, the window shade manufacturer and the Commissioning agent to verify and certify the installation is in full conformance with the specifications and is fully operational. This work to occur during the commissioning stage and is in addition to preliminary acceptance required for each floor.
12. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
13. WC shall train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.
14. Protect installed products until completion of project.
15. Touch-up, repair or replace damaged products before Substantial Completion.

3.5 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 12 21 24

SECTION 12 24 13 - WINDOW TREATMENTS (ALTERNATE NO. 3)

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the window treatments as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Manually-operated window shades.
2. Field measurements of as-built conditions.
3. Accessories and hardware required for complete installation and operation.

1.3 QUALITY ASSURANCE

A. Provide assemblies which are complete assemblies produced by one manufacturer, including hardware, accessory items, mounting brackets, and fastenings.

B. Provide materials in colors as selected by the Architect from manufacturer's standard colors.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include styles, material descriptions, construction details, dimensions of individual components and profiles, features, finishes, and operating instructions.

B. Shop Drawings: Submit floor layout and elevations, indicating location of all window treatments, mechanism details, type and size of each unit, type and location of controls. Shop drawings must also show seaming of shade fabric. Submit shop drawings showing details of installation and relation to adjoining construction and conditions.

C. Submit full range of colors for shade cloth for architect’s review.

D. Samples: Submit full size sample of each shade type for architect's acceptance.

E. Mock-Up

1. Install each type of shade assembly on one complete column bay for Architect's acceptance of installation details, workmanship and operation.
2. Approved mock-up shall be used as the standard for installation of work under this Section, and no further installation work shall proceed before Architect's acceptance of the mock-up.

1.5 WARRANTY

A. Manufacturer’s standard non-depreciating 25-year limited warranty covering all hardware, motors, motor control system and shade cloth.

1.6 DELIVERY, STORAGE AND HANDLING

A. Protect shades from damage, soiling and deterioration during transit, storage and handling to, until Owner's acceptance.

PART 2 PRODUCTS

2.1 MANUALLY OPERATED SHADES

A. Basis of Design: Mecho-Shade Corp.; Mechoshade/5 System.

B. OR APPROVED EQUAL

C. Shade system shall be pre-engineered overrunning clutch design that disengages to 90% during the raising and lowering of the shade. The brake can stand a pull force of 40 lb. in the stop position, or sized as required for shade weight, requiring no adjustment. Self-lubricating hub on to which the brake system is mounted includes an articulated brake assembly which ensures smooth, non-jerky operation in raising and lowering the shades. System shall include the following components:

1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing mounting hardware from opening and without requiring end or center supports to be removed.

2. Provide shade hardware that allows for removal and remounting of the shade bands without having to remove the shade tube, drive or operating support brackets.

3. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.

4. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.

5. Provide shade hardware system that allow for operation of multiple shade bands (multi-banded shades) by a single chain operator. Connectors shall be offset to ensure alignment from the first to the last shade band.

6. Provide shade hardware constructed of minimum 1/8" thick plated steel or heavier as required to support 150% of the full weight of each shade.

7. Drive Bracket/ Brake Assembly:

    a. MechoShade Drive Bracket M5, WT Shade SoloMount, or equal by other manufacturers noted herein.
    b. Rollease Acmeda chain driven clutch operating system of self-lubricating, uv stabilized fiberglass reinforced nylon construction and tempered high carbon steel internal springs, designed for smooth, trouble-free operation, precise

control, and uniform aesthetics. Galaxy geared or spring boost counter balance system to achieve < 6 lbs. constant pull forcesDrive Chain: #10 qualified stainless steel chain rated to 90 lb.

c. Minimum Breaking Strength: Nickel plate chain shall not be accepted.

D. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem pocket, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.

1. Hem Pockets and Hem Weights: Fabric hem pocket with RF welded seams (including welded ends) and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside a sealed hem pocket. Hem pocket construction and hem weights shall be the same, for all shades within one room.

2. Shade Band and Shade Roller Attachment:

a. Provide extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without deflection. Provide for positive mechanical engagement with drive/ brake mechanism.

b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable/ replaceable with a snap-on/snap-off spline mounting, without having to remove shade roller from shade brackets.

c. Mounting spline shall not require use of adhesives, adhesive tapes, staples and/or rivets.

2.2 SHADE CLOTH

A. Solar Shade Cloth

1. Basis of Design: Eurotwill Reversible Weave 6000 Series with 3% Openness. Shade cloth selected from manufacturer’s standard colors.

2. Other Acceptable Manufacturers:

a. Hunter Douglas Architectural

b. Lutron

c. Draper

2.3 FABRICATION

A. The shade and the fabric shall hang flat without buckling or distortion. The edge, when trimmed, shall hang straight without curling or raveling. An unguided roller shade cloth shall roll true and straight, without tracking sideways more than +/- 1/8" in either direction due to warp distortion or weave design. Shades shall fill window openings from head to sill and jamb to jamb.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where window treatments are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION: GENERAL

A. Coordinate with the work of other trades to ensure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install the work of this Section in strict accordance with the indicated design and the installation recommendations of the manufacturer as approved by the Architect.

C. Upon completion of the installation, put all components through at least ten (10) complete cycles of operation, adjusting as necessary to achieve optimum operation.

3.3 INSTALLATION OF MANUAL ROLLER SHADES

A. Install roller shades level, plumb, square, and true according to manufacturer's written instructions and located so shade band is not closer than 2" to interior face of glass. Allow proper clearances for window operation hardware.

B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

C. Clean roller shade surfaces after installation, according to manufacturers written instructions.

D. Modify suspended ceiling grid and tile as needed to accommodate the installation of window treatments as well as patching, refinishing, or repair of all adjacent finishes affected by the work.

3.4 PROTECTION AND CLEANING

A. Protect installed units to ensure proper operating condition, without damage or blemishes. Repair or replace damaged units as directed by the Architect.

END OF SECTION

SECTION 12 36 61 SOLID SURFACING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Solid surfacing millwork and window sills.

B. Adhesives and sealants.

1.2 RELATED REQUIREMENTS

A. Section 013000 - Submittals.

B. Section 017800 - Closeout Submittals.

1.3 REFERENCES

A. Reference Standards:

1. ANSI Z124.3: American National Standard for Plastic Lavatories.
2. ANSI Z124.6: American National Standard for Plastic Sinks.
3. ASTM C 834: Standard Specification for Latex Sealants.
4. ASTM C 920: Standard Specification for Elastomeric Joint Sealants.
5. ASTM D 256: Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
6. ASTM D 570: Standard Test Method for Water Absorption of Plastics.
7. ASTM D 638: Standard Test Method for Tensile Properties of Plastics
8. ASTM D 696: Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30ºC and 30ºC with a Vitreous Silica Dilatometer.
9. ASTM D 790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
10. ASTM D 792: Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
11. ASTM D 2583: Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
12. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.
13. ASTM G 21: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
14. ASTM G 22: Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Bacteria.
15. ASTM G 155: Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
16. NEMA LD-3: High Pressure Decorative Laminates.
17. NSF/ANSI Standard 51: Food Equipment Materials.

18. SCAQMD Rule 1168: Adhesive and Sealant Applications.
19. UL 2818: GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 3000 - Submittals.

B. Product Data:

1. Submit product data for each specified product. Include manufacturer's technical data sheets and published instruction instructions.
2. Submit Material Safety Data Sheets (MSDS) for adhesives and sealants.

C. Shop Drawings:

1. Submit fully dimensioned shop drawings showing window sill layouts, joinery, terminating conditions, substrate construction, cutouts and holes. Include elevations, section details, and large scale details.

D. Samples:

1. Submit selection and verification samples for each color, pattern, and finish required.

E. Quality Assurance Submittals:

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties, if required.
2. Warranty: Specimen copy of specified warranty.

F. Maintenance Data: Submit manufacturer's published maintenance manual with closeout submittals.

1.5 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with the U.S. Architectural & Transportation Barriers Compliance Board ADA-ABA Accessibility Guidelines for Buildings and Facilities.

B. Adhesives, Sealants, and Sealant Primers:

1. SCAQMD (South Coast Air Quality Management District) Rule 1168.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Fabricator Qualifications: Minimum of three years documented experience in fabricating solid surfacing countertops similar in scope and complexity to this Project. Currently certified by the manufacturer as an acceptable fabricator.

2. Installer Qualifications: Minimum of three years documented installation experience for projects similar in scope and complexity to this Project, and currently certified by the manufacturer as an acceptable installer. Installer shall be the fabricator.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver sinks in original containers.

B. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer. Store sheet materials flat on pallets or similar rack-type storage to preclude damage.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements and openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

B. Adhesive: Acclimatize adhesives to occupancy room temperatures with maximum temperature not to exceed 75 deg F.

1.9 WARRANTY

A. Manufacturer's Limited Warranty: Provide manufacturer's standard 10 Year Commercial Limited Warranty against defects in solid surface sheet materials.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Wilsonart LLC. OR approved equal

2.2 SOLID SURFACE SHEET MATERIAL

A. Acceptable Product: "Wilsonart Solid Surface."

B. Composition: Acrylic resins, fire-retardant mineral fillers, and proprietary coloring agents. Through-the-body color for full thickness of sheet material.

C. Material Thickness: 1/2 inch, nominal.

D. Conformance Standards:

1. UL 2818:

a. GREENGUARD - Emission levels in UL 2818, Section 7.1 are applicable for furniture products.

b. GREENGUARD Gold - Emission levels in UL 2818, Section 7.2 are applicable for building materials, finishes, and furnishings.

E. Physical Characteristics:

1. Tensile Strength: [6800 psi]; ASTM D 638.
2. Tensile Modulus: [1.5 x 10^6 psi]; ASTM D 638.
3. Tensile Elongation: 0.4 percent minimum; ASTM D 638.
4. Flexural Strength: [10,000 psi]; ASTM D 790.
5. Flexural Modulus: [1.5 x 10^6 psi]; ASTM D 790.
6. Thermal Expansion Coefficient: 1.37 x 10^5 in./in.^{o}F; ASTM D 696.
7. Hardness (Barcol Impressor): 55-62; ASTM D 2583.
8. Impact Resistance: [144 in.] drop with no fracture; NEMA LD-3, Method 3.8.
9. Izod Impact: 0.28 (ft-lb.)/in.; ASTM D 256, Method A.
10. Light Resistance - Xenon: No effect; NEMA LD-3, Method 3.3.
11. Stain Resistance: Pass; ANSI Z 124.3, modified.
12. Wear and Cleanability: Pass; ANSI Z 124.3.
13. Fungi Resistance: Pass; ASTM G21.
14. Bacterial Resistance: Pass; ASTM G22.
15. Boiling Water Resistance: No effect; NEMA LD-3, Method 3.5.
16. High Temperature Resistance: No effect; NEMA LD-3, Method 3.6.
17. Weatherability: Delta E less than 5; ASTMG 155.
18. Moisture Absorption: Less than 0.25 percent; ASTM D 570, long term.
19. Specific Gravity: [1.7 gram/cm^3]; ASTM D 792.
20. Weight: [4.4 lb./ft^2].
21. Surface Burning Characteristics: Class I and Class A; ASTM E 84.

F. Color, Pattern, and Finish Design: Architect to select color from manufacturer standard colors.

G. Edge Detail: Eased Edge

2.3 ACCESSORY MATERIALS

A. Joint Adhesive: Methacrylate-based adhesive for chemically bonding solid surfacing seams. Color complementary to solid surfacing sheet material. UL 2818 GREENGUARD Gold certified and complies with SCAQMD Rule 1168.

1. Product: “Wilsonart Hard Surface Adhesive.”

B. Elastomeric Sealant: Mildew-resistant silicone sealant for filling gaps between countertops and terminating substrates in wet environment applications. Complies with ASTM C 920, Type S (single component), Grade NS (nonsag).

1. Product: Acceptable to manufacturer.
2. Color: Clear

C. Siliconized Acrylic Sealant: Siliconized acrylic latex sealant. For general applications to fill gaps between countertops and at terminating substrates. Complies with ASTM C 834, Type OP, Grade NF, and SCAQMD Rule 1168.

1. Product: ”Wilsonart Color MatchedCaulk”.
2. Color: Clear

D. recommended silicone-based construction adhesive for backsplashes, endsplashes, and other applications according to manufacturer’s published fabrication instructions.

2.4 FABRICATION

A. Fabricate components in shop, to greatest extent practicable, in sizes and shapes indicated according to approved shop drawings and Wilsonart published fabrication requirements.

B. Form joint seams between solid surfacing components with specified seam adhesive. Completed joints inconspicuous in appearance and without voids. Provide joint reinforced if required by manufacturer for particular installation conditions.

C. Provide holes and cutouts indicated on approved shop drawings. Rout cutouts and complete by sanding all edges smooth.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions that could adversely affect the work of this Section.

B. Substrates must be sound, flat, smooth, and free from dust or other surface contaminants.

C. Commencement of work will constitute acceptance of substrates and conditions to receive the work.

3.2 WINDOW SILL INSTALLATION

A. Every opening shall be field verified prior to preparing and submitting shop drawings as conditions vary per room.

B. Install window sills for full length of each window unit, securing to substrates with concealed fasteners and specifiedadhesive.

C. Provide minimum 1/8 inch expansion gap on both sides of window sills. Fill gap with specified joint sealant.

D. Completed work to be plumb, level, and true, with edges eased and sanded smooth.

3.3 REPAIRS

A. If permissible to Architect, minor surface marring for solid surfacing components may be repaired according to manufacturer's published installation instructions.

B. Remove and replace solid surfacing components that are damaged and cannot be satisfactorily repaired.

3.4 CLEANING AND PROTECTION

A. Clean solid surfacing components according to manufacturer's published maintenance instructions. Completely remove excess adhesives and sealants from finished surfaces.

B. Protect completed work from damage during the remainder of construction period.

END OF SECTION 12 36 61