ELLIOTT-LARSEN BUILDING
REPLACE ROOF
320 S. WALNUT STREET, LANSING, MI 48933

Owner: STATE OF MICHIGAN
STATE FACILITY ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
3111 W. St. Joseph Street,
Lansing, MI 48917

Architect: MCSA GROUP, INC.
529 Greenwood Ave. SE
E. Grand Rapids, MI 49506
616-451-3346

MPE Engineer: MATRIX CONSULTING ENGINEERS,INC.
1601 E. Cesar E. Chavez Ave.
Lansing, MI 48906
517-487-2511

Sheet Index:

State File No. 171/24097.SDW

PROJECT DESCRIPTION

DEMOLITION OF EXISTING ROOFING SYSTEM:
- GRAVEL BROADCAST OVER COAL TAR PITCH
- 4-PLY TYPE IV FIBERGLASS FELT EMBEDDED IN COAL TAR PITCH
- ½" PERLITE INSULATION ADHERED
- MULTI-LAYERS POLY-ISO INSULATION (SLOPED AT ⅛" PER FOOT)
- EXISTING CONCRETE DECK AND METAL ROOF DECK

NEW EPDM ROOFING SYSTEM: 20 -YR WARRANTY.
- 60 MIL - EPDM FULLY ADHERED
- MULTI-LAYERS POLY-ISO INSULATION (SLOPED AT ¼" PER FOOT)
- NEW WALK OFF MATS AND ROOF TILES.

NEW GUTTERS & DOWNSPOUTS.
NEW OVERFLOW DRAINS AND NEW PLUMBING LINES - HIGH POINT DISCHARGE VIA DOWNSPOUT NOZZLES AT EXTERIOR FACADE .
REPLACEMENT OF EXISTING DRAINS - RECONNECTING TO EXISTING PLUMBING LINES.
RE-CERTIFICATION OF EXISTING FALL PROTECTION FOR ROOF ACCESS INCLUDING RAISING EXISTING GUARDRAILS PER NEW TAPERED INSULATION CONFIGURATION.

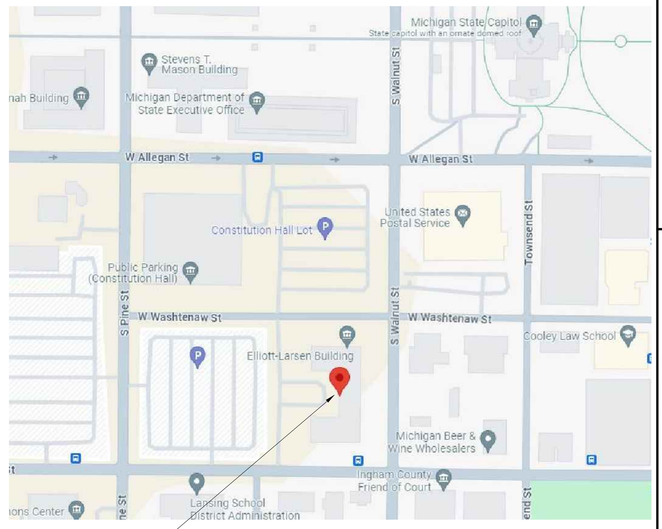
DEDUCTIVE ALTERNATES
1. REROOFING CENTER PENTHOUSE.
2. REROOFING NORTH PENTHOUSE.
3. REROOFING SOUTH PENTHOUSE.

Date:December 9, 2024
Architect Project No. A1245

PROJECT SCOPE: ALTERATIONS LEVEL 1 - ROOF REPLACEMENT

APPLICABLE CODES

BUILDING:	2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
	2015 MICHIGAN BUILDING CODE
	2015 MICHIGAN UNIFORM ENERGY CODE
PLUMBING:	2021 MICHIGAN PLUMBING CODE
ENERGY	2015 MICHIGAN UNIFORM ENERGY CODE ADOPTS W/ AMENDMENTS 2015 IECC ASHRAE 90.1.2013



PROJECT LOCATION

LOCATION MAP
NO SCALE

STATE OF MICHIGAN
JOLANTA STECKA
ARCHITECT
No. 1301038464
LICENSED ARCHITECT

MCSA GROUP, INC.
Architecture ● Park & Recreation Planning ● Landscape Architecture
Historic Preservation ● Facility Planning ● Interior Architecture
529 Greenwood Avenue S.E. ● East Grand Rapids, MI 49506
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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

TITLE

DTMB - ELLIOTT - LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE
T1	STATE FILE # 171/24097.SDW ARCHITECT PROJECT# A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024

NEW ROOF SYSTEM 1 - MAIN ROOF, WEST SECTION OF RECESSED ROOF

- EXISTING SLOPED METAL DECK . SLOPED AT $\frac{1}{4}$" PER FOOT, FIELD VERIFY.
- TWO LAYERS OF 2.6 INCHES OF POLYISOCYANURATE INSULATION BOARD FULLY ADHERED (FIRST LAYER MECHANICALLY FASTENED AT METAL DECK).
- FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION BOARD, SADDLE SLOPE $\frac{1}{4}$" PER FT TO DRAIN OR SCUPPER. SUBMIT TAPER LAYOUT BASED UPON EXISTING CONDITIONS.
- NEW METAL ROOF EDGE OR COPING PER PLANS. NEW P.T. WOOD ADDED TO ACCOMMODATED NEW INSULATION THICKNESS.
- FULLY ADHERED EPDM, 6 INCHES LAPS, SEE SPECIFICATIONS FOR EPDM ROOFING
- NEW WALKWAY PADS PER PLANS.

NEW ROOF SYSTEM 2 - SOUTH, CENTER & NORTH PENTHOUSES, LOWEST AREA AT RECESSED ROOF

- EXISTING FORMED CONCRETE ROOF DECK. SLOPED AT $\frac{1}{4}$ " PER FOOT, FIELD VERIFY.
- TWO LAYERS OF 2.6 INCHES OF POLYISOCYANURATE INSULATION BOARD FULLY ADHERED.
- FULLY ADHERED TAPERED POLYISOCYANURATE INSULATION BOARD. SADDLE SLOPE $\frac{1}{4}$" PER FT. TO DRAIN. SUBMIT TAPER LAYOUT BASED ON EXISTING CONDITIONS.
- NEW METAL ROOF EDGE OR COPING PER PLANS. NEW P.T. WOOD NAILERS ADDED TO ACCOMMODATE NEW INSULATION THICKNESS.
- FULLY ADHERED EPDM, 6 INCHES LAPS, SEE SPECIFICATIONS FOR EPDM ROOFING.
- NEW WALKWAY PADS PER PLANS.
- NEW EPDM TO BY APPLIED AT BRICK WALLS AT RECESSED ROOF: AT LOWEST LEVEL PERIMETER EXTEND FULL HEIGHT TO EDGE OF MAIN ROOF , AT MID-AND UPPER LEVEL PERIMETER EXTEND TO HEIGHT OF 24 " ABOVE UPPER LEVEL ROOF. PROVIDE SUBSTRATE BOARD IF REQUIRED BY EPDM MANUFACTURER FOR WARRANTED INSTALLATION.

NEW ROOF SYSTEM 3 - EXISITING 4'-8" WIDE SLOPED PERIMETER CORNICE ROOF

- EXISTING PLYWOOD ROOF SUBSTRATE. SLOPED AT $\frac{1}{4}$ " PER FOOT, FIELD VERIFY.
- ONE LAYER 1/2 INCH MIN.THICK BASE OF POLYISOCYANURATE INSULATION BOARD FULLY ADHERED.
- NEW METAL ROOF EDGE AS NEEDED TO INTEGRATE WITH EXISTING EDGE CAP AT SLOPED METAL ROOF. NEW P.T. WOOD NAILERS ADDED TO ACCOMMODATE NEW INSULATION BOARD THICKNESS.
- FULLY ADHERED EPDM, 6 INCHES LAPS, SEE SPECIFICATIONS FOR EPDM ROOFING. INSTALL NEW EPDM FULLY ADHERED TO THE PARAPET WALL AND INTEGRATING INTO MAIN ROOF SYSTEM. PROVIDE ADDITIONAL EPDM LAYERS AT FALL PROTECTION GUARDRAIL ATTACHMENTS POINTS.
- EPDM SHALL BE INSTALLED AT VERTICAL TRANSITIONS - CORNICE TO SIDE OF SLOPED METAL ROOF AT WEST ENDS OF NORTH AND SOUTH PENTHOUSES.

EXISITING FALL PROTECTION SYSTEM ADJUSTMENTS FOR RE-CERTIFICATION - SEE SHEET S1

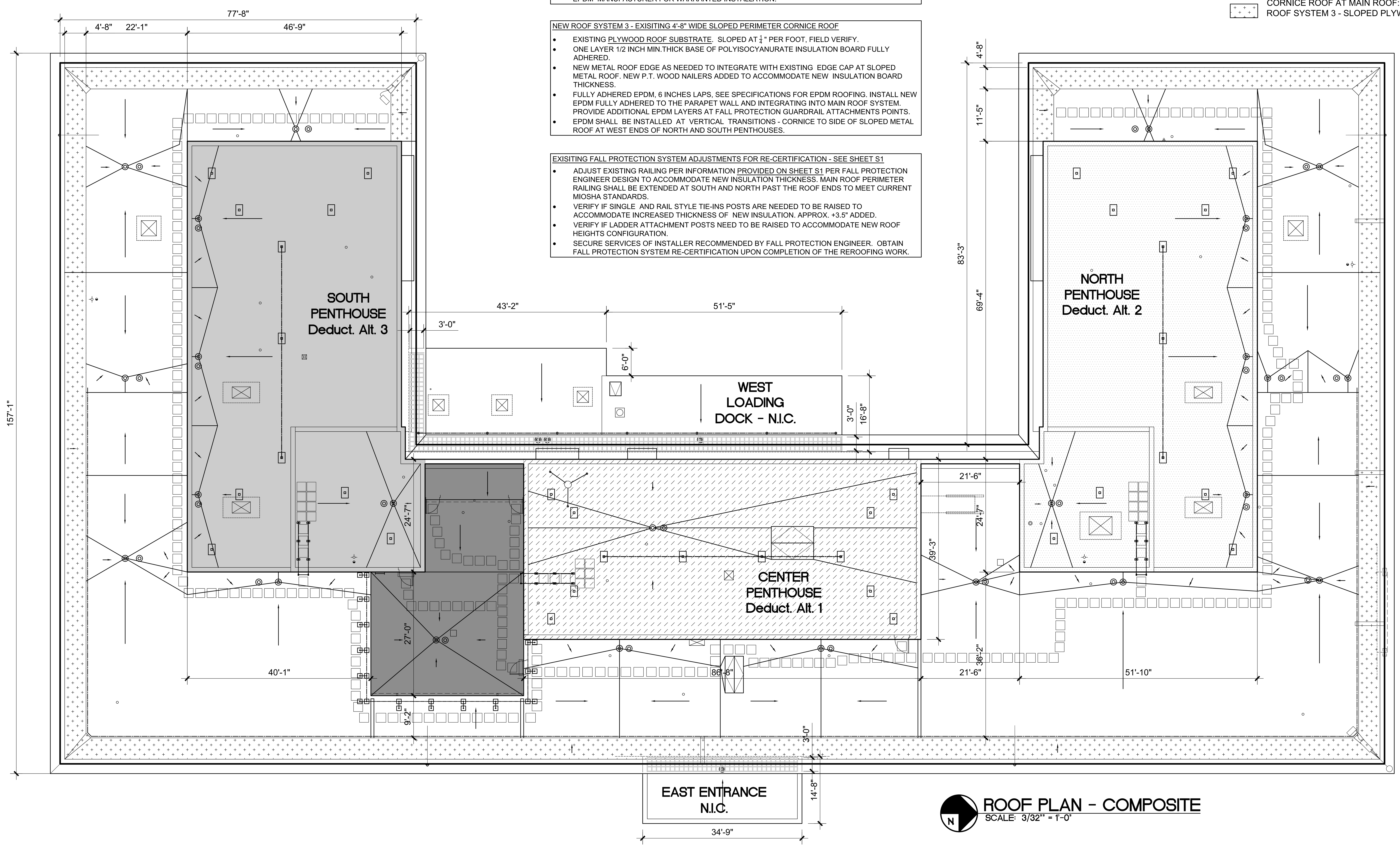
- ADJUST EXISTING RAILING PER INFORMATION PROVIDED ON SHEET S1 PER FALL PROTECTION ENGINEER DESIGN TO ACCOMMODATE NEW INSULATION THICKNESS. MAIN ROOF PERIMETER RAILING SHALL BE EXTENDED AT SOUTH AND NORTH PAST THE ROOF ENDS TO MEET CURRENT MIOSHA STANDARDS.
- VERIFY IF SINGLE AND RAIL STYLE TIE-INS POSTS ARE NEEDED TO BE RAISED TO ACCOMMODATE INCREASED THICKNESS OF NEW INSULATION. APPROX. +3.5" ADDED.
- VERIFY IF LADDER ATTACHMENT POSTS NEED TO BE RAISED TO ACCOMMODATE NEW ROOF HEIGHTS CONFIGURATION.
- SECURE SERVICES OF INSTALLER RECOMMENDED BY FALL PROTECTION ENGINEER. OBTAIN FALL PROTECTION SYSTEM RE-CERTIFICATION UPON COMPLETION OF THE REROOFING WORK.

LEGEND

- ROOF / OVERFLOW DRAIN
- VTR
- STAND PIPE & VALVE
- EXHAUST FAN / VENTILATOR
- VENT STACK
- LADDER
- SLOPE DIRECTION
- OVERFLOW DISCHARGE NOZZLE

APPROXIMATE ROOF AREA

- MAIN: 14,040 SQFT
  ROOF SYSTEM 1 - SLOPED MTL. DECK
- SOUTH PENTHOUSE: 4,522 SQFT
  ROOF SYSTEM 2 - SLOPED CONC. DECK
- CENTER PENTHOUSE: 3,404 SQFT
  ROOF SYSTEM 2 - SLOPED CONC. DECK
- NORTH PENTHOUSE: 4,522 SQFT
  ROOF SYSTEM 2 - SLOPED CONC. DECK
- RECESSED ROOF AREA: 1,406 SQFT TOTAL
  ROOF SYSTEM 1 & 2: SLOPED MTL. DECK & FLAT CONC. DECK AT LOWEST SECTION
- EAST ENTRY: 508 SQFT - Not in scope
  ROOF SYSTEM 1 - SLOPED MTL. DECK
- LOADING DOCK: 1,830 SQFT -Not in scope
  ROOF SYSTEM 1 - SLOPED MTL. DECK
- CORNICE ROOF AT MAIN ROOF: 1,496SQFT
  ROOF SYSTEM 3 - SLOPED PLYWOOD DECK



ROOF PLAN - COMPOSITE
SCALE: 3/32" = 1'-0"

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ROOF PLAN - COMPOSITE

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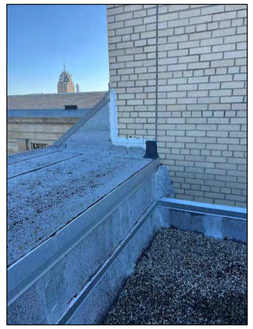
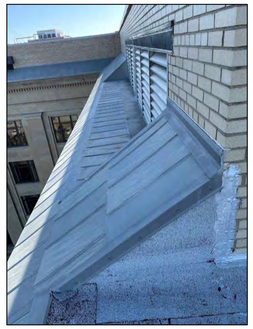
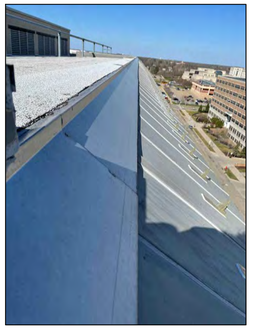
GENERAL ROOF REPLACEMENT NOTES:

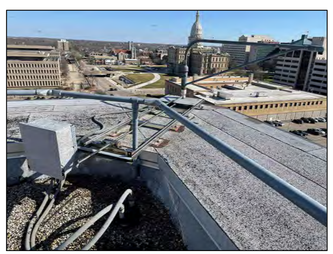
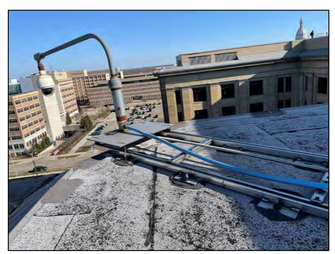
1. INVENTORY AND PHOTOGRAPH EXISTING BUILDING BEFORE CONSTRUCTION. NOTE ANY EXISTING DAMAGE TO BUILDING AND OWNER'S PROPERTY
2. PROTECT EXISTING BUILDING, FINISHES, AND OWNER'S PROPERTY. REPAIR ANY DAMAGE FROM CONSTRUCTION.
3. DIMENSIONS, EQUIPMENT AND DRAIN LOCATIONS SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY. CONTACT ARCHITECT IF FIELD DIMENSIONS CONFLICT WITH DRAWING DIMENSIONS.
4. REMOVE ABANDONED EQUIPMENT, COORDINATE W/ OWNER.
5. INTERFERENCE WITH ANY ENTRY OR EXIT OF THE BUILDING SHALL BE KEPT TO A MINIMUM DURING NORMAL WORKING HOURS AND A SCHEDULE APPROVED IN ADVANCE WITH OWNER. IF AN EXIT MUST BE BLOCKED PROVIDE AN ALTERNATE EXIT.
6. OWNER WILL DESIGNATE OUTDOOR STORAGE, TRAILER, AND PARKING AREAS.
7. CONTRACTOR IS REQUIRED TO REMOVE ALL DEBRIS AND TO RESTORE ALL SITE FEATURES, INCLUDING WALKS, DRIVES AND GRASS AREAS, DISTURBED BY THEIR WORK.
8. REMOVE ALL PACKAGING, DEMOLISHED AND UNUSED MATERIAL FROM SITE AND DISPOSE OF PROPERLY.
9. CONTRACTOR TO ENSURE ALL WORK IS WATER-TIGHT UPON COMPLETION OF THE DAY'S WORK.
10. NO SMOKING IS ALLOWED ON THE ROOF.

EPDM ROOF REPLACEMENT NOTES:

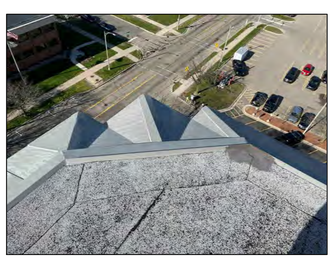
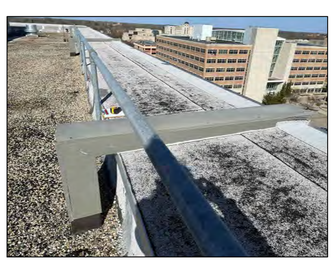
1. EXISTING ROOF: ALL EXISTING ROOFS ARE: GRAVEL ON TOP OF 4-PLY TYPE IV FIBERGLASS FELTS IMBEDDED IN COAL TAR PITCH ON ½" PERLITE INSULATION BOARD ADHERED TO POLY-ISO INSULATION. BASE INSULATION LAYER IS 1-1/2" + TAPERED POLY-ISO AT ¼" PER FT. SLOPE. EXISTING DECKS ARE EITHER METAL OR CONCRETE. ALL BIDDERS ARE RESPONSIBLE FOR TAKING THEIR OWN ROOF CORES PRIOR TO BIDDING TO CONFIRM QUANTITIES OF REMOVALS.
2. EXISTING ROOF DECKS ARE: CONCRETE STRUCTURALLY SLOPED AT PENTHOUSES OR FLAT CONCRETE DECK AT LOWEST SECTION OF RECESSED ROOF AREA .ALL OTHER ROOFS ARE METAL DECK STRUCTURALLY SLOPED.
3. TEAR OFF ALL GRAVEL, ROOFING, INSULATION, FLASHING AND ROOF EDGE / COPING TO ROOF DECK. DISPOSE OF LEGALLY AND IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.
4. VERIFY CONDITION OF ALL ROOF STONE CAPS, EDGE NAILERS. NOTIFY ARCHITECT OF ANY PROBLEMS. IT IS IN SCOPE OF THIS PROJECT TO ADD NEW P.T. NAILERS TO ACCOMMODATE NEW INSULATION HEIGHT.
5. ALL EXISTING ROOF DRAINS SHALL BE RECONDITIONED AS REQUIRED TO MEET NEW INSULATION THICKNESS AND ADDED OVERFLOW DRAINS CONFIGURATION. IF STILL UNDER WARRANTY IT SHALL MEET MANUFACTURER'S REQUIREMENTS IN NEW CONFIGURATION FOR CONTINUATION OF WARRANTY. EXISTING DRAINS MAY ALSO BE REPLACED WITH NEW DRAIN / OVERFLOW DRAIN PAIR IF EXISTING DRAIN CANNOT BE RECONDITIONED. REFER TO SPECIFICATIONS.
6. ROOFING CONTRACTOR TO FIELD VERIFY LOCATIONS OF MECHANICAL EQUIPMENT AND ADJUST / CONFIGURE NEW SADDLES ACCORDINGLY.
7. PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT.
8. PROVIDE NEW FLASHING, BOOTS, ETC. FOR ALL ROOF PENETRATIONS INCLUDING EXHAUST FANS, SANITARY STACKS, ETC.
9. PROVIDE WALKWAY PADS TO EQUIPMENT AND LOCATIONS AS SHOWN.
10. PROVIDE NEW FLASHING AT ADJACENT HIGH WALLS.
11. FLASHING DETAIL AT EQUIPMENT LOW CURBS TO BE COORDINATED W/ MANUFACTURER RECOMMENDATIONS. REMOVE & REINSTALL EXHAUST FAN FOR NEW CURBS PER DEPTH OF INSULATION.
12. ALL INSTALLED DETAILS TO MEET EPDM MANUFACTURERS REQUIREMENTS
13. CONTRACTOR TO PROVIDE FLUSHING AND OTHER FINISH METAL TRIM AT ALL HOLLOW METAL DOOR & FRAME / LOCATIONS.
14. SECURE SERVICES OF A CERTIFIED FALL PROTECTION ENGINEER TO OBTAIN RE-CERTIFICATION OF FALL PROTECTION SYSTEM AT SUBSTANTIAL COMPLETION. SECURE SERVICES OF FALL PROTECTION INSTALLER TO COORDINATE REROOFING WORK WITH ADJUSTING AND REINSTALLATION OF FALL PROTECTION SYSTEM ELEMENTS PER RECOMMENDATIONS PROVIDED BY FALL PROTECTION ENGINEER. CURRENT FALL PROTECTION SYSTEM INCLUDES: RAILING ATTACHED TO ROOF AND TO PARAPET, TIE-INS POST , TIE-IN POSTS WITH RAIL AND LADDERS TO ACCESS PENTHOUSES.
15. EXISTING SLOPED METAL ROOF AT PERIMETER OF BUILDING CORNICE IS TO REMAIN. TIE IN EDGE OF NEW EPDM ROOFING WITH EXISTING METAL ROOF EDGE FOR A COMPLETE AND WARRANTED INSTALLATION DETAIL.
16. EAST ENTRY ROOF AND WEST LOADING DOCK ROOF IS NOT IN SCOPE OF THIS PROJECT.

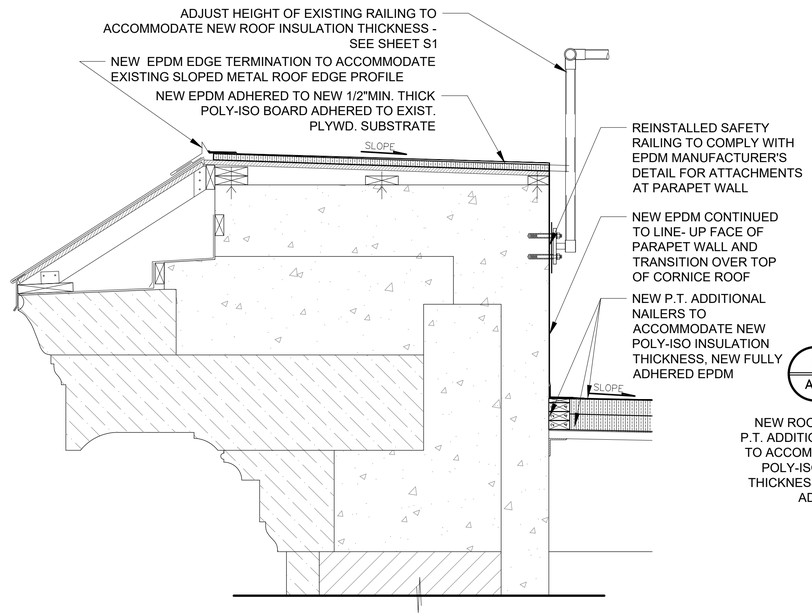
TYP. EXISTING METAL ROOF / CORNINCE ROOF AT MAIN ROOF PARAPET

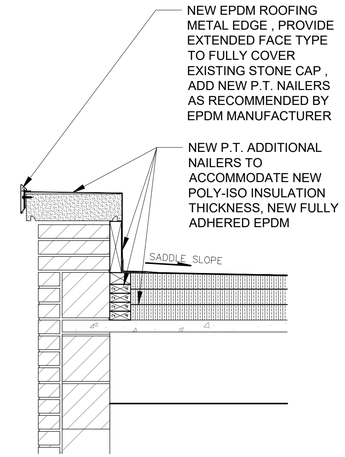
TYP. EXISTING SECURITY CAMERA INSTALLATION AT CORNICE / PARAPET ROOF

TYP. EXISTING METAL ROOF AND CORNICE ROOF AT MAIN ROOF PARAPET



1 A2.1 TYPICAL NEW ROOF AT CORNICE DETAIL
SCALE: 1" = 1'-0"



2 A2.1 TYPICAL NEW LOW PARAPET DET.
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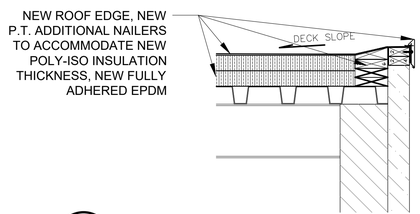
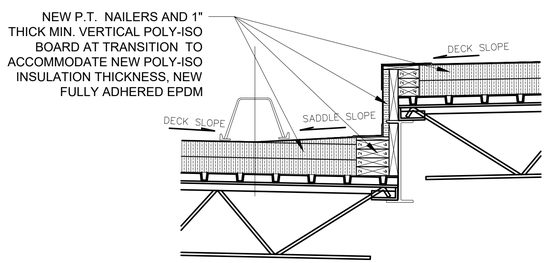


3 A2.1 TYPICAL NEW ROOF EDGE DET.
SCALE: 1" = 1'-0"



4 A2.1 DET. AT ROOF STEP DOWN
SCALE: 1" = 1'-0"

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ROOF DETAILS AND NOTES

DTMB - ELLIOTT - LARSEN BUILDING
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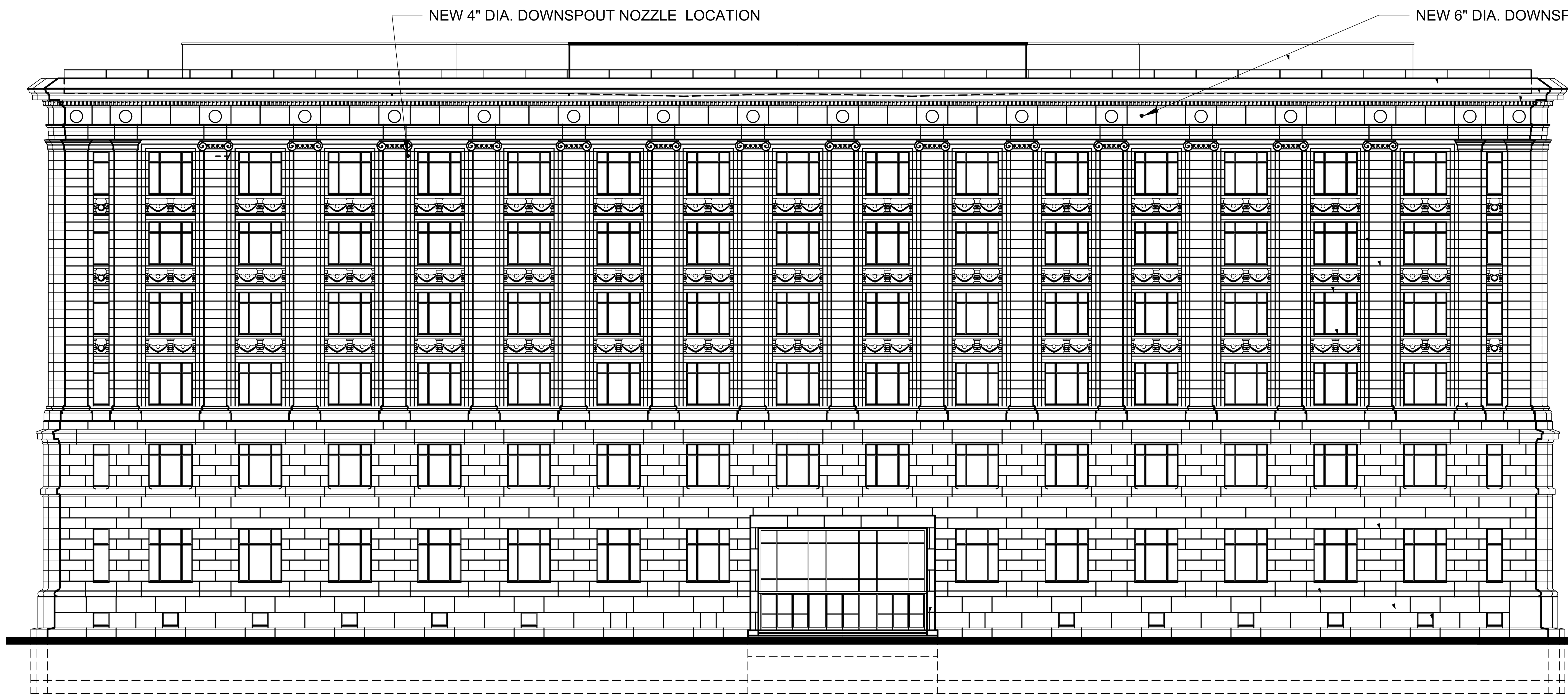
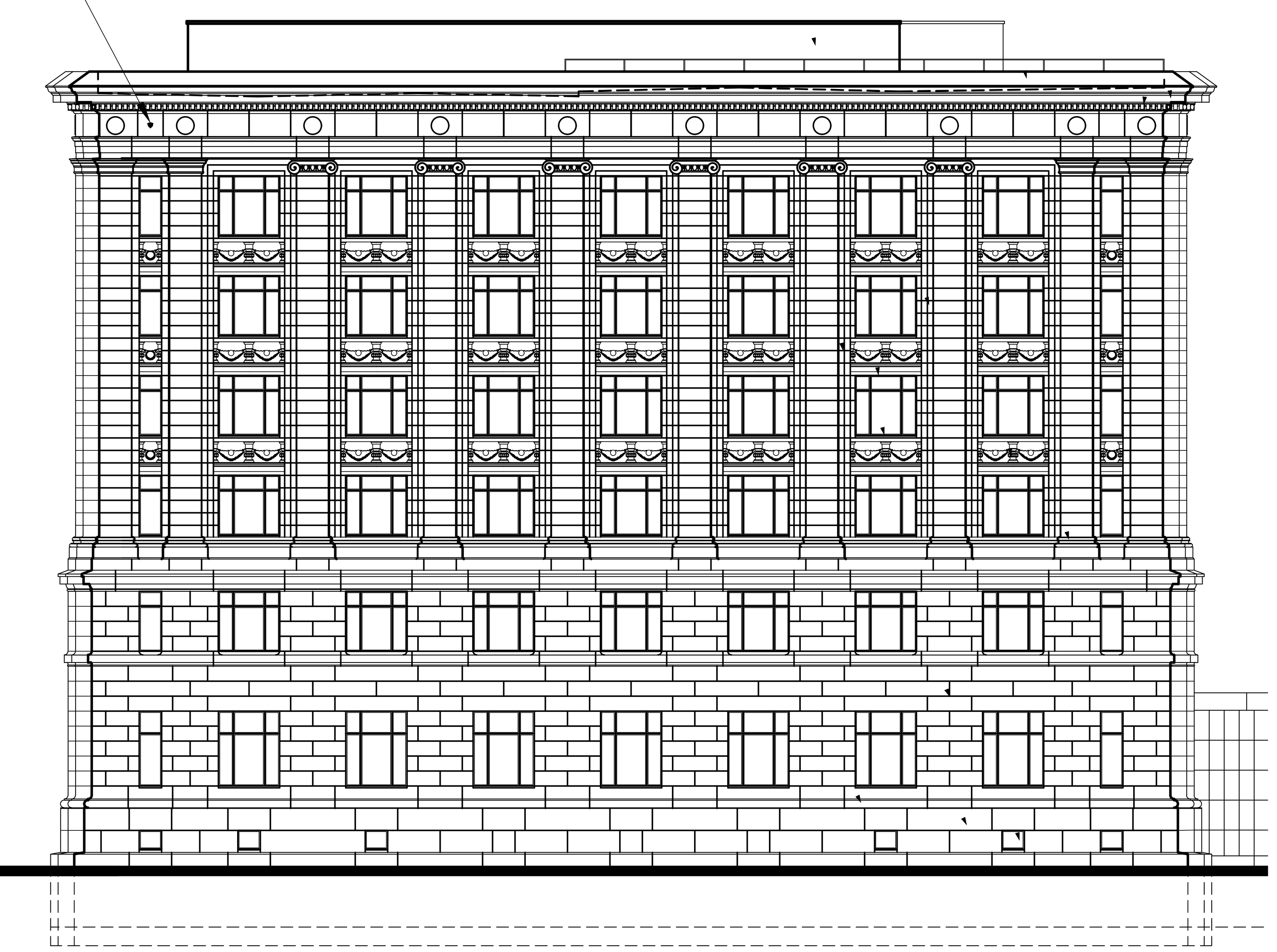
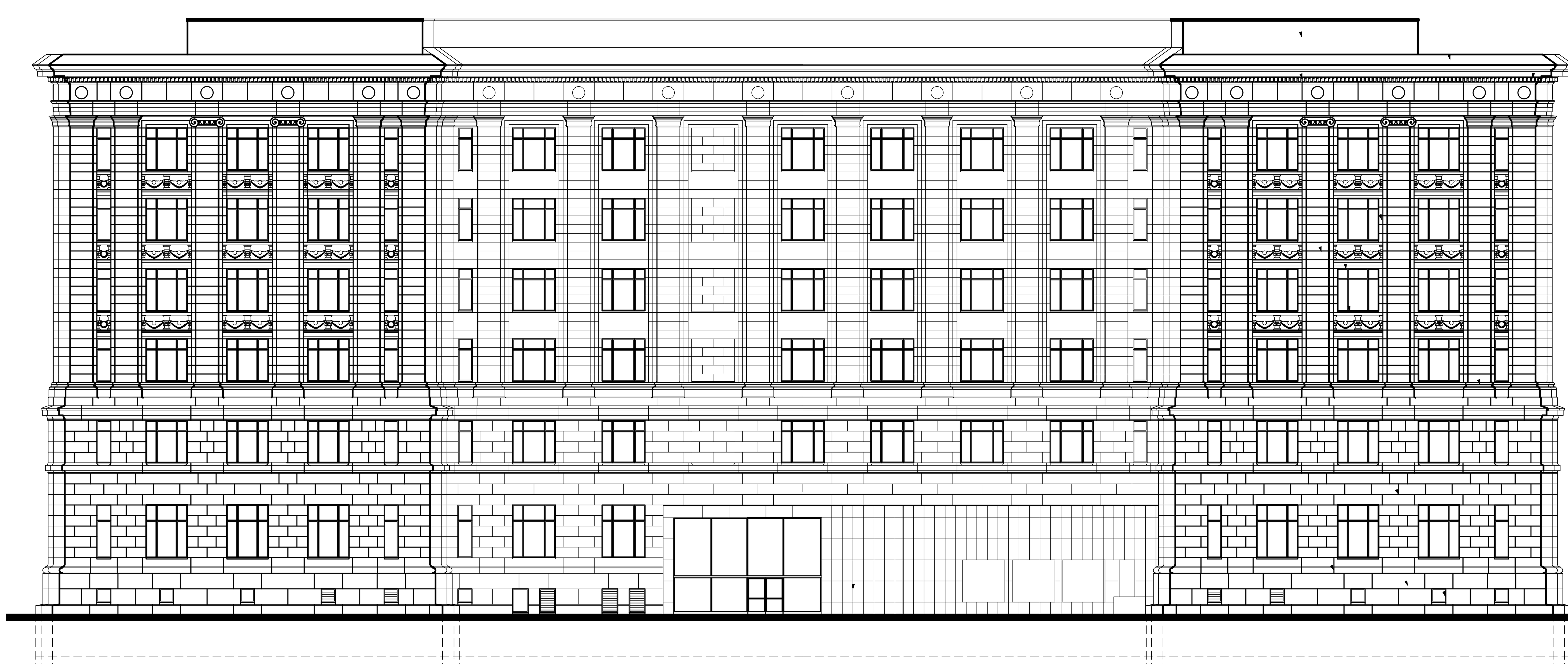
IDENTIFICATION NO.	STATE FILE # 171/240907.SDW ARCHITECT PROJECT# A1S45
ISSUED FOR	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD
DATE	12-9-2024
SHEET	A2.1



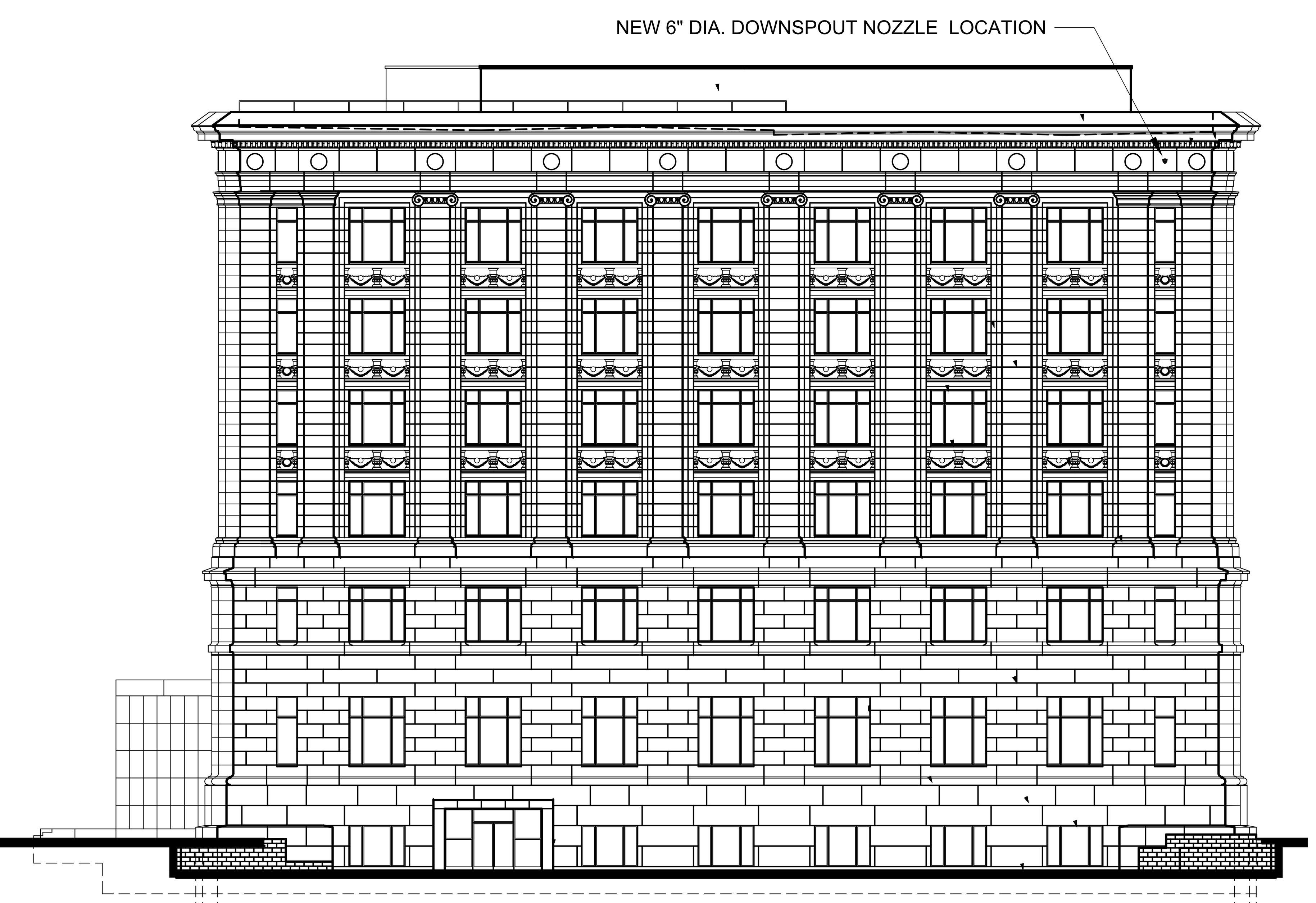
1 A2.2 **EAST ELEVATION**
SCALE: 1/16" = 1'-0"



2 A2.2 **SOUTH ELEVATION**
SCALE: 1/16" = 1'-0"



3 A2.2 **WEST ELEVATION**
SCALE: 1/16" = 1'-0"



4 A2.2 **NORTH ELEVATION**
SCALE: 1/16" = 1'-0"

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EXTERIOR ELEVATIONS

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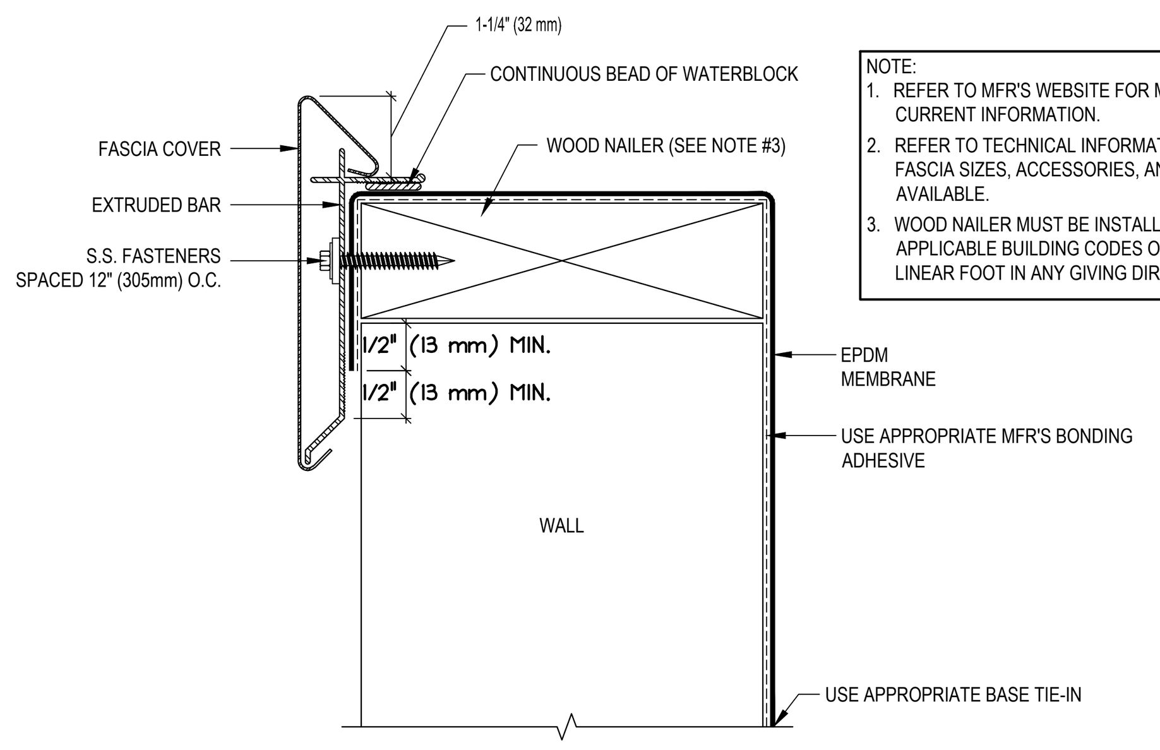
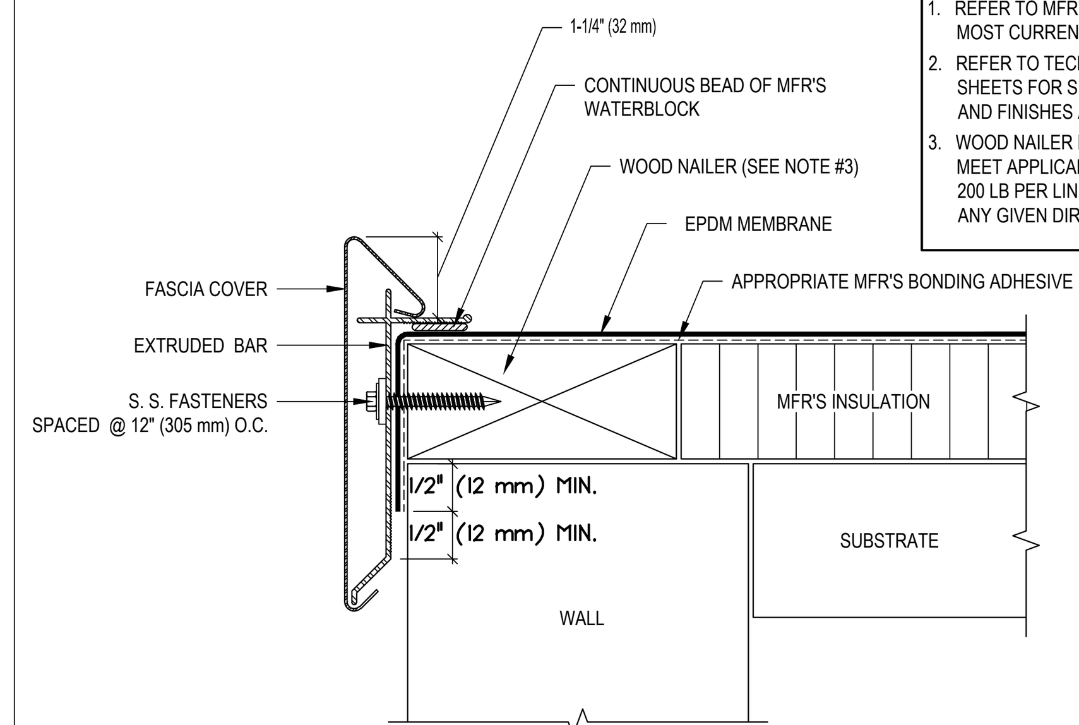
A2.2	STATE FILE # 171/24097.SDW ARCHITECT PROJECT# A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024



NOTE:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO TECHNICAL INFORMATION SHEET FOR FASCIA SIZES, ACCESSORIES, AND FINISHES AVAILABLE.
3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LB PER LINEAR FOOT IN ANY GIVING DIRECTION.

TERMINATION AT TOP OF WALL WITH FASCIA



NOTE:
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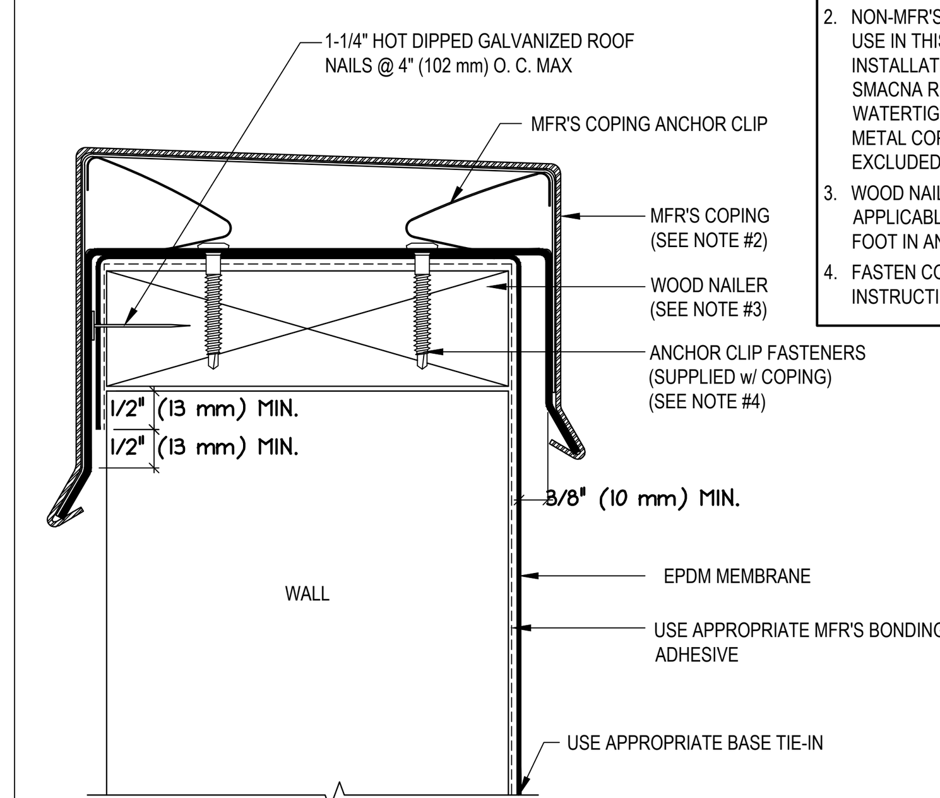
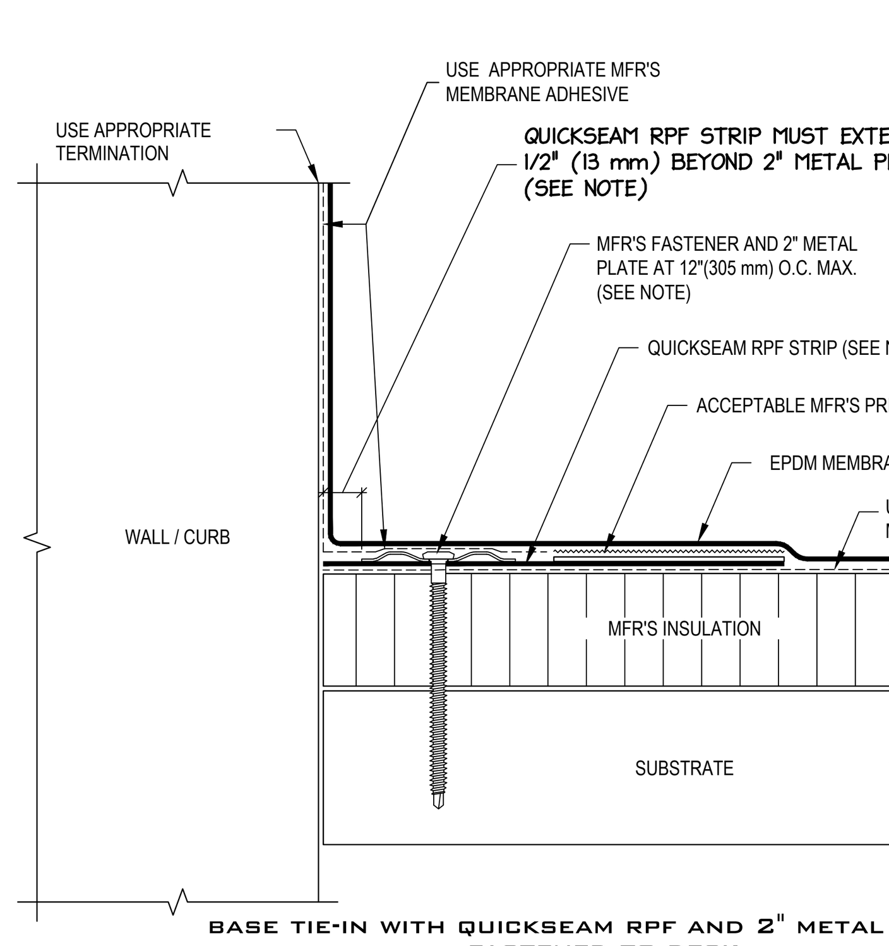
2. REFER TO TECHNICAL INFORMATION SHEETS FOR SIZES, ACCESSORIES, AND FINISHES AVAILABLE.
3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LB PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION.

ROOF EDGE WITH STANDARD FASCIA



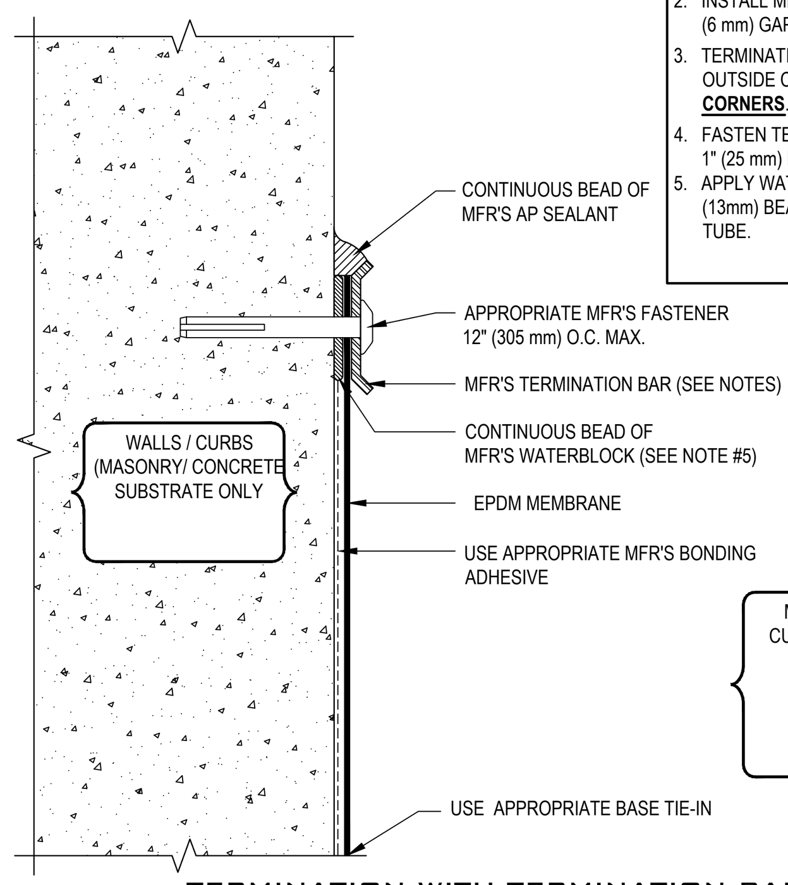
NOTE:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. NON-MFR'S METAL COPING IS ACCEPTABLE FOR THE USE IN THIS DETAIL PROVIDED FABRICATION AND INSTALLATION IS IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS. HOWEVER, WATERTIGHT INTEGRITY OF WALL AND NON-MFR'S METAL COPING SHALL BE ENSURED BY OTHERS AND EXCLUDED FROM WARRANTY COVERAGE.
3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LB PER LINEAR FOOT IN ANY GIVING DIRECTION.
4. FASTEN COPING CLEAT AS PER SUPPLIED INSTRUCTIONS.

TERMINATION AT TOP OF WALL WITH COPING



NOTES:
1. REFER TO MFR'S WEBSITE FOR THE MOST CURRENT INFORMATION.
2. MAXIMUM 10" (254 mm) LONG FASTENERS (NOTE WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENTS).
3. IN CASE OF OBSTRUCTION REFER TO DETAIL BT-5.
4. REFER TO BT-14 & BT-15 FOR QUICKSEAM RPF STRIP LAYOUTS AT CORNERS.
5. MEMBRANE ADHESIVE REQUIRED BETWEEN QUICKSEAM RPF STRIP AND INSULATION ON FULLY ADHERED SYSTEMS.

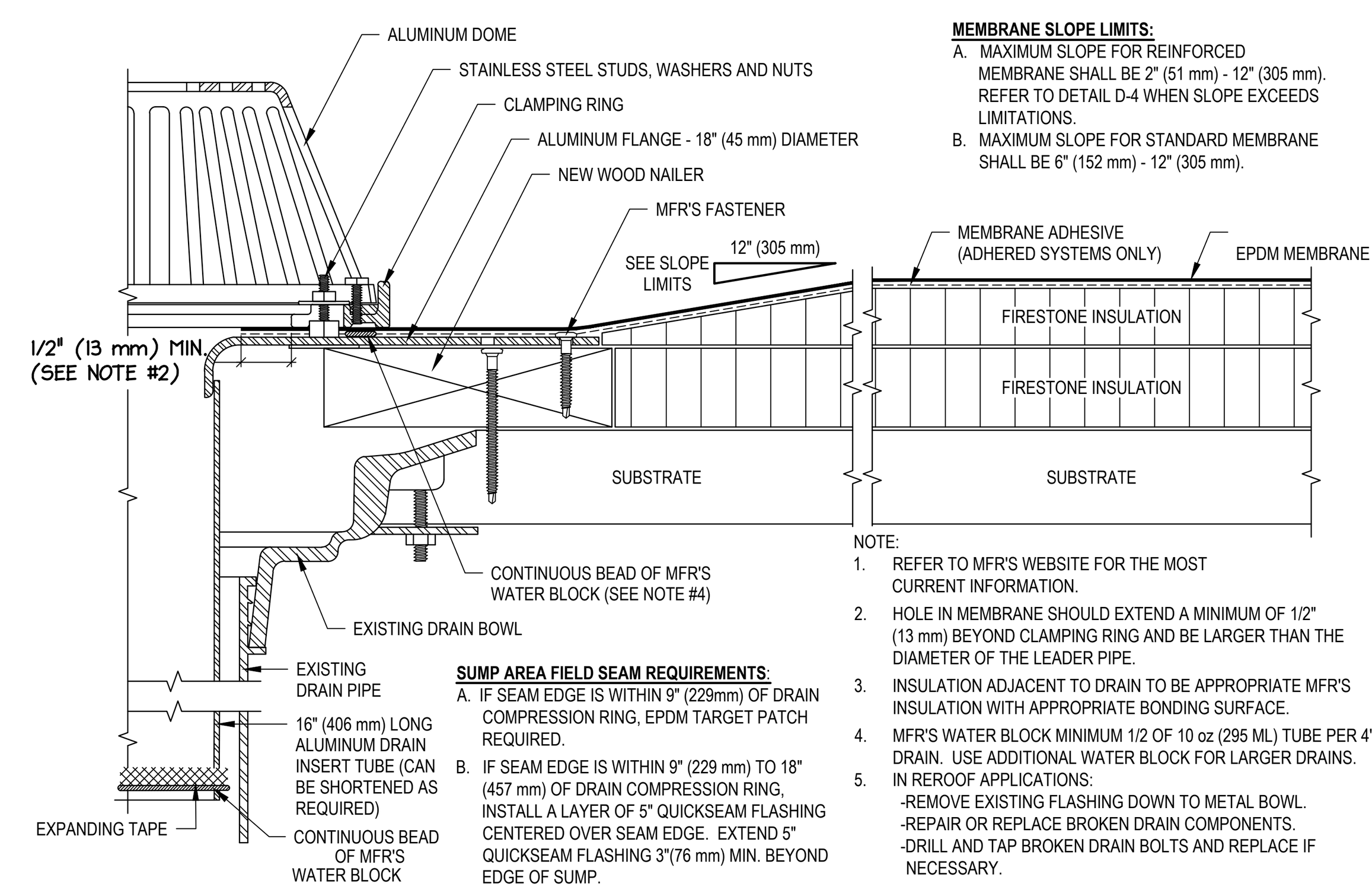
BASE TIE-IN WITH QUICKSEAM RPF AND 2" METAL PLATES FASTENED TO DECK



NOTE:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. INSTALL MFR'S TERMINATION BAR WITH 1/4" (6 mm) GAP BETWEEN ADJOINING SECTIONS.
3. TERMINATION BAR MUST BE CUT AT INSIDE AND OUTSIDE CORNERS. **DO NOT BEND AROUND CORNERS**.
4. FASTEN TERMINATION BAR WITHIN 1" (25 mm) MAX. OF ALL SECTION ENDS.
5. APPLY WATER BLOCK IN A 3/8" (10 mm) TO 1/2" (13mm) BEAD AT APPROXIMATELY 10 LF PER TUBE.

MASONRY AND CONCRETE WALLS / CURBS MUST BE WATERPROOFED AND MAINTAINED IN ORDER FOR ANY SURFACE MOUNTED TERMINATION TO BE EFFECTIVE.

TERMINATION WITH TERMINATION BAR

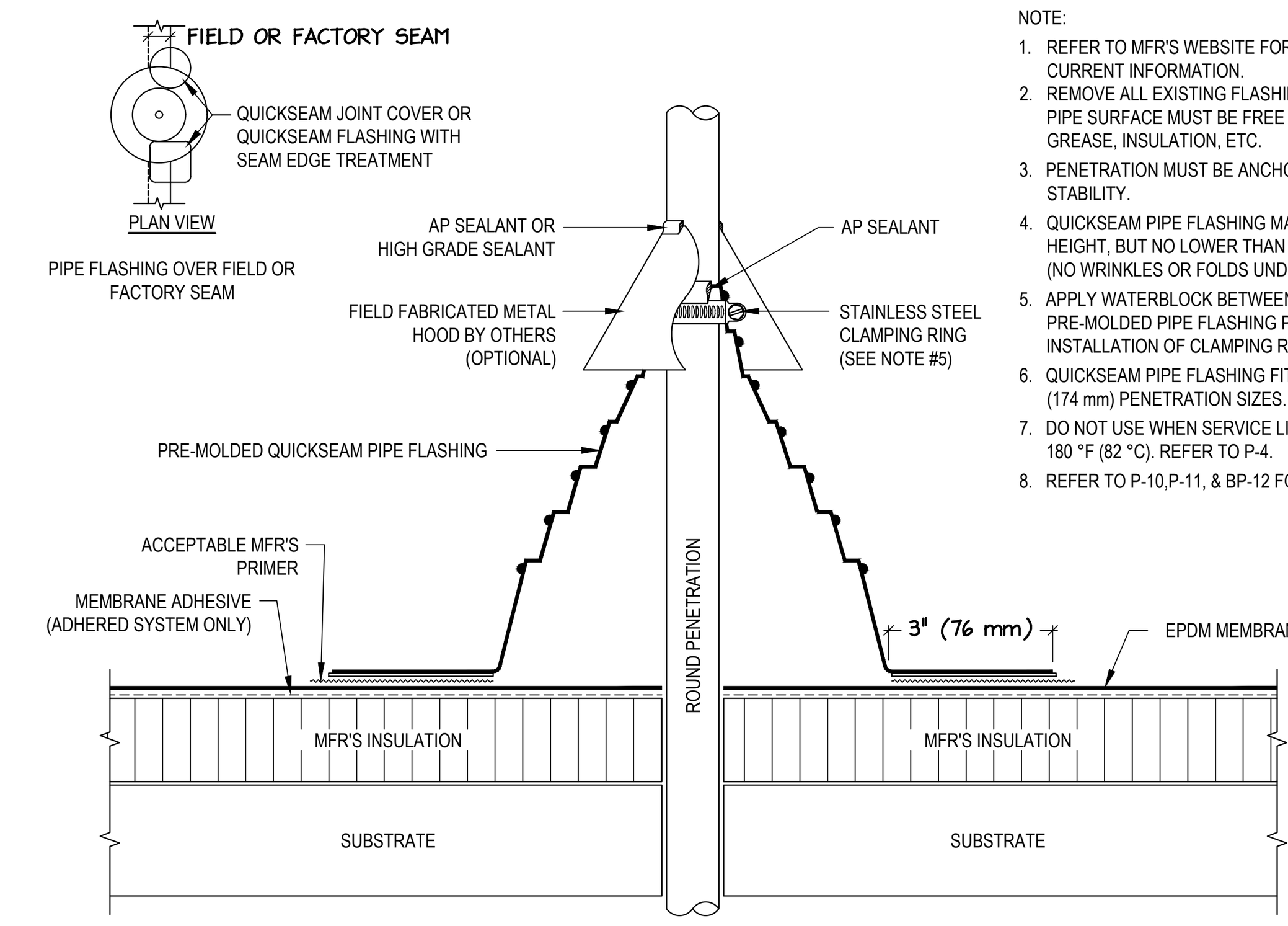


MEMBRANE SLOPE LIMITS:
A. MAXIMUM SLOPE FOR REINFORCED MEMBRANE SHALL BE 2" (51 mm) - 12" (305 mm). REFER TO DETAIL D-4 WHEN SLOPE EXCEEDS LIMITATIONS.
B. MAXIMUM SLOPE FOR STANDARD MEMBRANE SHALL BE 6" (152 mm) - 12" (305 mm).

SUMP AREA FIELD SEAM REQUIREMENTS:
A. IF SEAM EDGE IS WITHIN 9" (229mm) OF DRAIN COMPRESSION RING, EPDM TARGET PATCH REQUIRED.
B. IF SEAM EDGE IS WITHIN 9" (229 mm) TO 18" (457 mm) OF DRAIN COMPRESSION RING, INSTALL A LAYER OF 5" QUICKSEAM FLASHING CENTERED OVER SEAM EDGE. EXTEND 5" QUICKSEAM FLASHING 3"(76 mm) MIN. BEYOND EDGE OF SUMP.

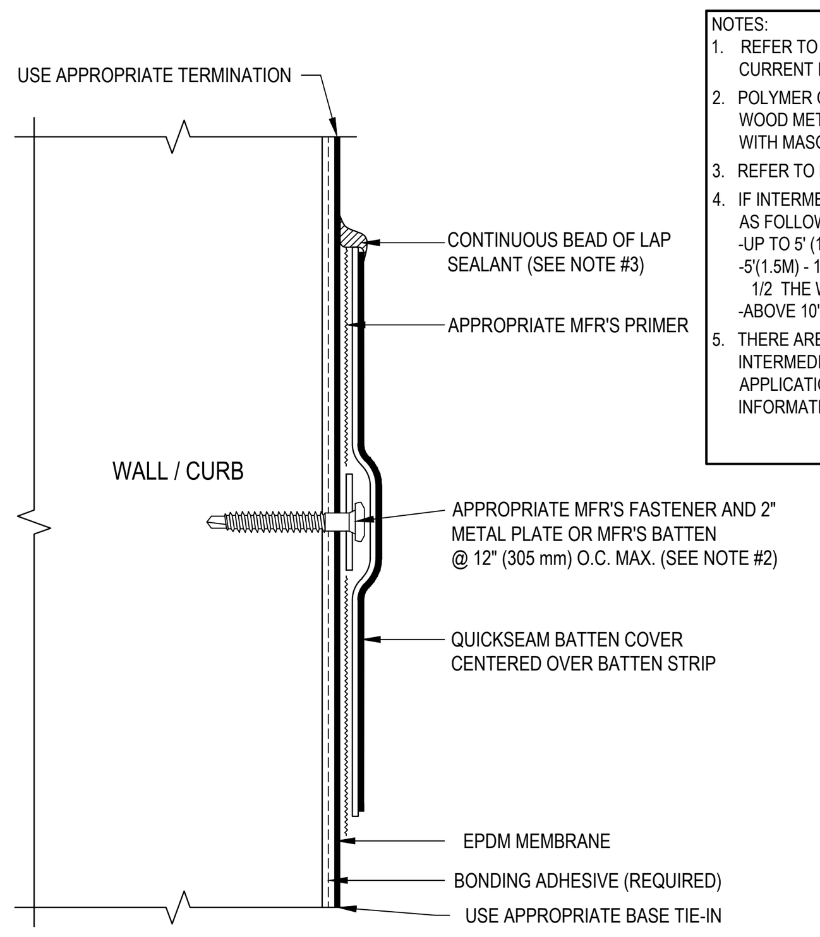
NOTE:
1. REFER TO MFR'S WEBSITE FOR THE MOST CURRENT INFORMATION.
2. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" (13 mm) BEYOND CLAMPING RING AND BE LARGER THAN THE DIAMETER OF THE LEADER PIPE.
3. INSULATION ADJACENT TO DRAIN TO BE APPROPRIATE MFR'S INSULATION WITH APPROPRIATE BONDING SURFACE.
4. MFR'S WATER BLOCK MINIMUM 1/2 OF 10 oz (295 ML) TUBE PER 4" DRAIN. USE ADDITIONAL WATER BLOCK FOR LARGER DRAINS.
5. IN REROOF APPLICATIONS:
   -REMOVE EXISTING FLASHING DOWN TO METAL BOWL.
   -REPAIR OR REPLACE BROKEN DRAIN COMPONENTS.
   -DRILL AND TAP BROKEN DRAIN BOLTS AND REPLACE IF NECESSARY.

DRAIN INSERT



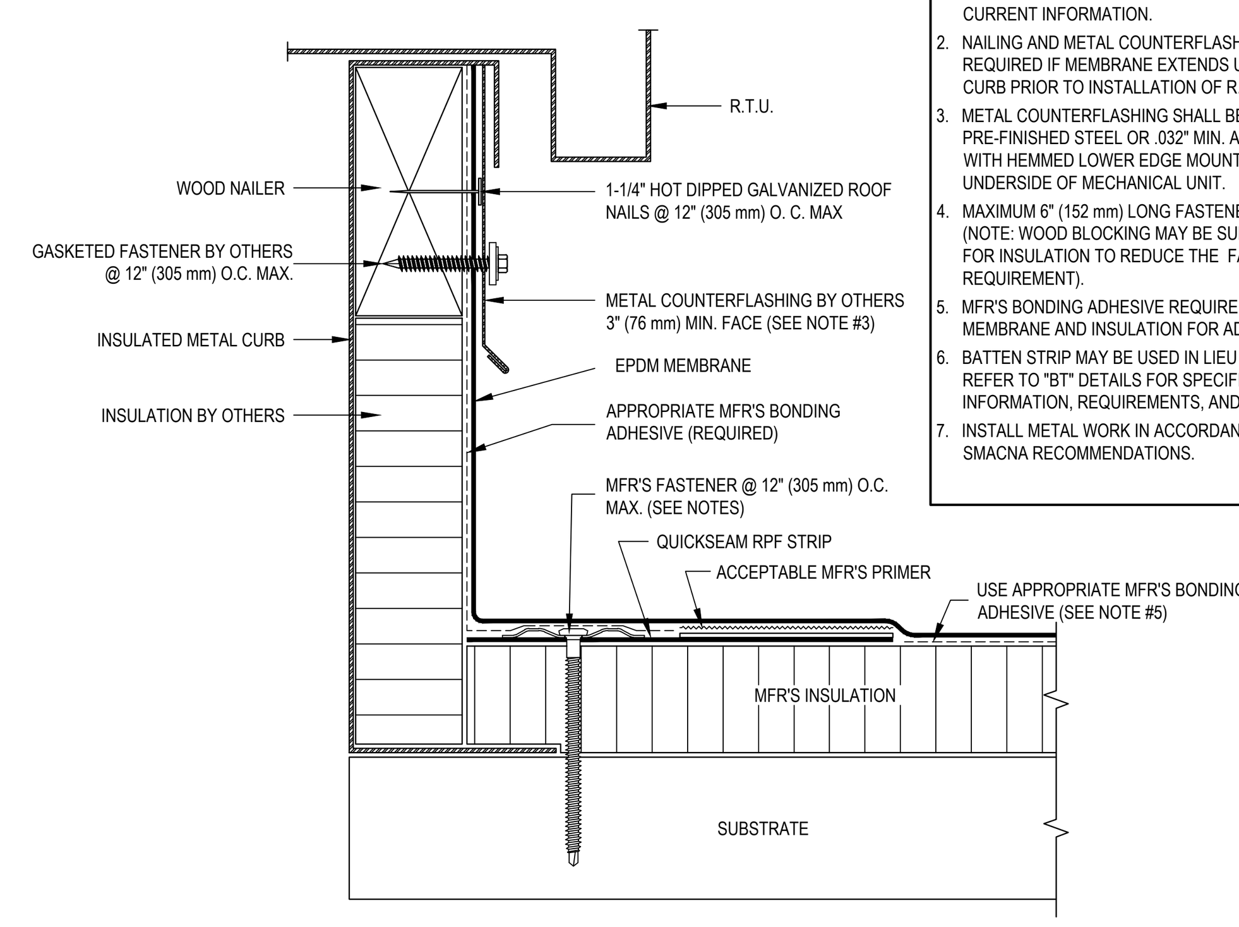
NOTE:
1. REFER TO MFR'S WEBSITE FOR THE MOST CURRENT INFORMATION.
2. REMOVE ALL EXISTING FLASHING, LEAD, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, INSULATION, ETC.
3. PENETRATION MUST BE ANCHORED TO ENSURE STABILITY.
4. QUICKSEAM PIPE FLASHING MAY BE CUT TO HEIGHT, BUT NO LOWER THAN REINFORCING RING (NO WRINKLES OR FOLDS UNDER CLAMPING RING).
5. APPLY WATERBLOCK BETWEEN PENETRATION AND PRE-MOLDED PIPE FLASHING PRIOR TO INSTALLATION OF CLAMPING RING.
6. QUICKSEAM PIPE FLASHING FITS 1" (25 mm) - 6 7/8" (174 mm) PENETRATION SIZES.
7. DO NOT USE WHEN SERVICE LINE TEMP. EXCEEDS 180 °F (82 °C). REFER TO P-4.
8. REFER TO P-10,P-11, & BP-12 FOR MAS.

PENETRATION WITH QUICKSEAM PIPE FLASHING



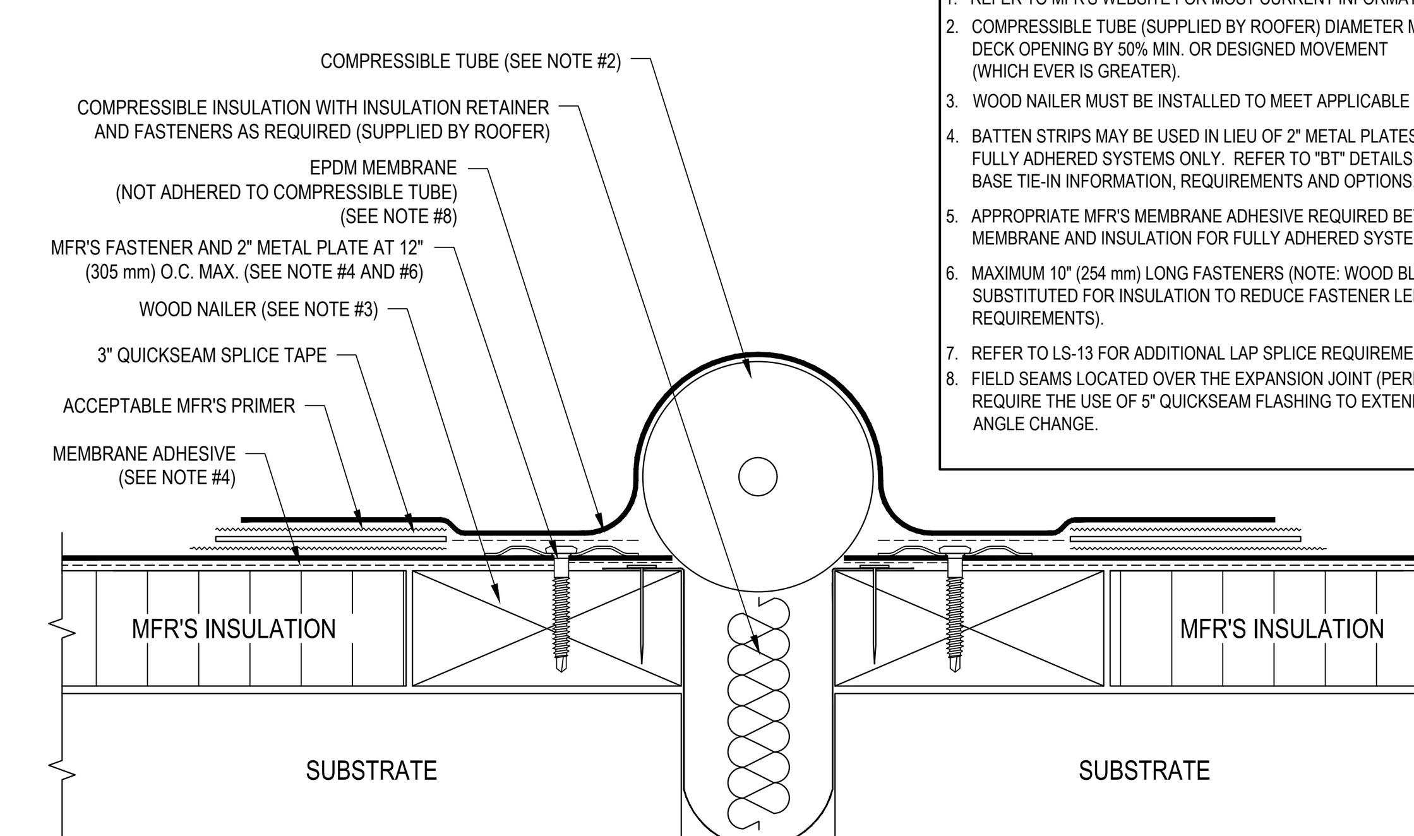
NOTES:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. POLYMER OR METAL BATTEN STRIP ACCEPTABLE FOR WOOD METAL SUBSTRATE. METAL BATTEN MUST BE USED WITH MASONRY SUBSTRATE.
3. REFER TO LS-9 FOR SEAM EDGE TREATMENT.
4. IF INTERMEDIATE ATTACHMENT IS REQUIRED, COMPLETE AS FOLLOWS:
   -UP TO 5' (1.5M) WALL HEIGHT - NON REQUIRED.
   -5'(1.5M) - 10' (3 M) WALL HEIGHT - ONE ATTACHMENT AT 1/2 THE WALL HEIGHT.
   -ABOVE 10' (3 M) - ONE ATTACHMENT EVERY 3' (1 M).
5. THERE ARE SOME CONDITIONS WHICH DO NOT REQUIRE INTERMEDIATE ATTACHMENT. REFER TO MFR'S APPLICATION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

INTERMEDIATE WALL FLASHING ATTACHMENT WITH QUICKSEAM BATTEN COVER AND PLATE OR BATTEN



NOTES:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. NAILING AND METAL COUNTERFLASHING ARE NOT REQUIRED IF MEMBRANE EXTENDS UP AND OVER TOP OF CURB PRIOR TO INSTALLATION OF R.T.U.
3. METAL COUNTERFLASHING SHALL BE 24 GAUGE PRE-FINISHED STEEL OR .032" MIN. ALUMINUM FORMED WITH HEMMED LOWER EDGE MOUNTED TIGHTLY TO UNDERSIDE OF MECHANICAL UNIT.
4. MAXIMUM 6" (152 mm) LONG FASTENER. (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE THE FASTENER LENGTH REQUIREMENT).
5. MFR'S BONDING ADHESIVE REQUIRED BETWEEN MEMBRANE AND INSULATION FOR ADHERED SYSTEMS.
6. BATTEN STRIP MAY BE USED IN LIEU OF 2" METAL PLATES. REFER TO "BT" DETAILS FOR SPECIFIC BASE TIE-IN INFORMATION, REQUIREMENTS, AND OPTIONS.
7. INSTALL METAL WORK IN ACCORDANCE WITH CURRENT SMACNA RECOMMENDATIONS.

TERMINATION AT R.T.U. WITH QUICKSEAM RPF AND COUNTERFLASHING (UNIT FLANGE MOUNTED TO SUBSTRATE)



NOTE:
1. REFER TO MFR'S WEBSITE FOR MOST CURRENT INFORMATION.
2. COMPRESSIBLE TUBE (SUPPLIED BY ROOFER) DIAMETER MUST EXCEED THE DECK OPENING BY 50% MIN. OR DESIGNED MOVEMENT (WHICH EVER IS GREATER).
3. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES.
4. BATTEN STRIPS MAY BE USED IN LIEU OF 2" METAL PLATES FOR MAS AND FULLY ADHERED SYSTEMS ONLY. REFER TO "BT" DETAILS FOR SPECIFIC BASE TIE-IN INFORMATION, REQUIREMENTS AND OPTIONS.
5. APPROPRIATE MFR'S MEMBRANE ADHESIVE REQUIRED BETWEEN MEMBRANE AND INSULATION FOR FULLY ADHERED SYSTEMS.
6. MAXIMUM 10" (254 mm) LONG FASTENERS (NOTE: WOOD BLOCKING MAY BE SUBSTITUTED FOR INSULATION TO REDUCE FASTENER LENGTH REQUIREMENTS).
7. REFER TO LS-13 FOR ADDITIONAL LAP SPLICE REQUIREMENTS.
8. FIELD SEAMS LOCATED OVER THE EXPANSION JOINT (PERPENDICULAR) WILL REQUIRE THE USE OF 5" QUICKSEAM FLASHING TO EXTEND 3" PAST EACH ANGLE CHANGE.

EXPANSION JOINT (FIELD FABRICATED) WITH QUICKSEAM SPLICE TAPE AND WOOD NAILER - ROOF TO ROOF

1 / A3.0 TYPICAL EPDM MANUFACTURER'S DETAILS

SCALE: NO SCALE

STATE OF MICHIGAN
JOLANTA STECKA
ARCHITECT
No. 1301038464
LICENSED ARCHITECT

MCSA GROUP, INC.

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

EPDM MANUFACTURER'S DETAILS

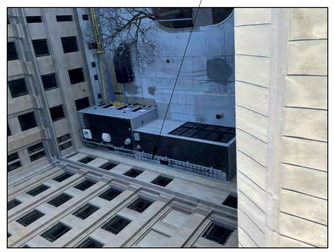
DTMB - ELLIOTT - LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE
A3.0	STATE FILE # 171/24097.SDW ARCHITECT PROJECT# A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024

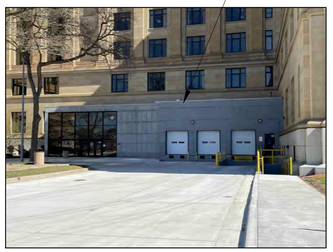
HIGH DISCHARGE POINT LOCATION OF OVERFLOW DRAINAGE LINE VIA DOWNSPOUT NOZZLE AT EAST WALL

LOW PARAPET AT EAST ENTRANCE, ROOF PAVERS SECTION ALONG BUILDING WALL

HIGH DISCHARGE POINT LOCATION OF OVERFLOW DRAINAGE LINE VIA DOWNSPOUT NOZZLE AT NORTH AND SOUTH WALLS



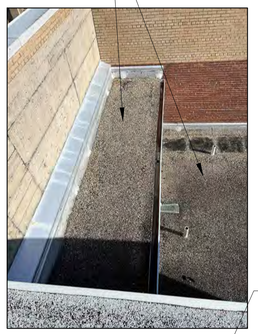
WEST LOADING DOCK ROOF WITH SECTION OF ROOF PAVERS ALONG BUILDING WALLS



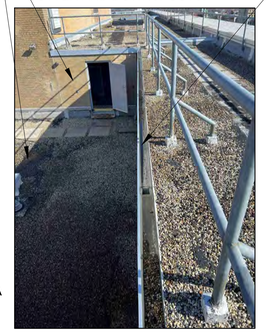
LOW PARAPET AT WEST LOADING DOCK ROOF

EXISTING METAL SLOPED ROOF TO REMAIN

ROOF STEP-DOWN , SOUTH SIDE OF MAIN ROOF , SAME AT NORTH ROOF



RECESSED ROOF AREA : UPPER SECTION AND MID-ROOF SECTION

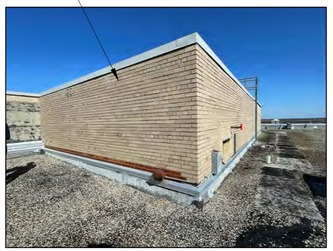


RECESSED ROOF AREA: LOWEST SECTION. NEW EPDM TO EXTEND FULL HEIGHT OF BRICK WALLS TO MAIN ROOF EDGE. REPLACE GUTTER AND DOWNSPOUTS.

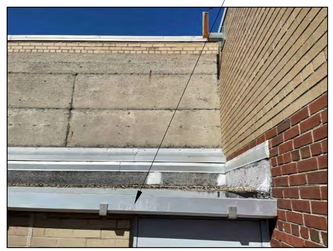
WEST PENTHOUSE ROOF LOOKING SOUTH

NORTH PENTHOUSE ROOF LOOKING WEST.

NORTH PENTHOUSE ROOF LOOKING EAST.

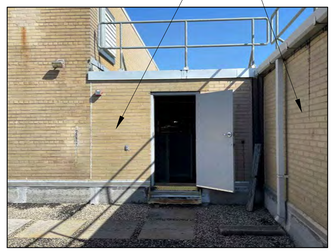


NORTH PENTHOUSE ROOF LOOKING NORTH



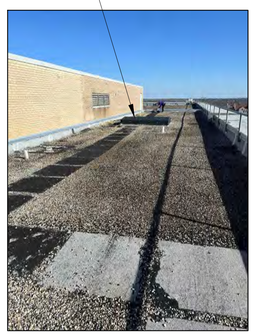
RECESSED ROOF AREA : UPPER SECTION AND MID-ROOF SECTION, REPLACE GUTTER & DOWNSPOUT

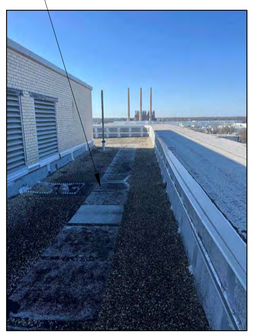
RECESSED ROOF AREA : UPPER , MID- AND LOWEST SECTION



RECESSED ROOF AREA: LOWEST SECTION. NEW EPDM TO EXTEND FULL HEIGHT OF BRICK WALLS TO MAIN ROOF EDGE. REPLACE GUTTER AND DOWNSPOUTS.

RAISE CURB OF EXISITNG MECHANICAL ROOM ACCESS DOOR HATCH TO ACCOMMODATE NEW INSULATION THICKNESS FOR PROPER FLASHING DETAIL

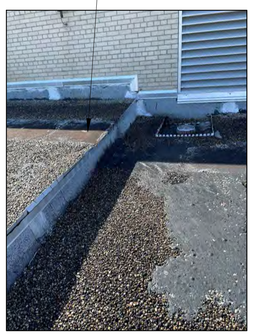




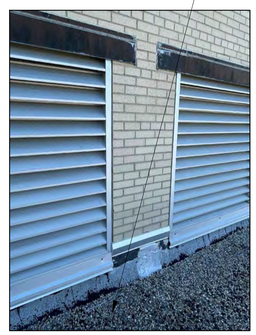
WEST SIDE OF MAIN ROOF, TYP. BETWEEN PENTHOUSE AND PARAPET

PARAPET AT WEST WALL BETWEEN WEST AND NORTH PAENTHOUSES

MAIN ROOF NORTH SIDE OF NORTH PENTHOUSE, SOUTH SIDE PENTHOUSE OPPOSITE HAND



ROOF STEP-DOWN , NORTH SIDE OF MAIN ROOF , SAME AT SOUTH ROOF



NORTH SIDE OF MAIN ROOF, SOUTH SIDE ROOF OPPOSITE HAND

1 / A4.1 TYPICAL EXISITNG ROOF CONDITIONS

SCALE: NO SCALE

STATE OF MICHIGAN
JOLANTA STECKA
ARCHITECT
No. 1301038464
LICENSED ARCHITECT

MCSA GROUP, INC.

Architecture ● Park & Recreation Planning ● Landscape Architecture
Downtown Planning ● Historic Preservation ● Project Management
320 Greenwood Avenue S.E. ● East Grand Rapids, MI 49506
(616)451-3346 ● www.mcsagroup.com

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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DTMB - ELLIOTT - LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

IDENTIFICATION NO.	ISSUED FOR	DATE
STATE FILE # 171/24097.SDW ARCHITECT PROJECT# A1845	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024

SHEET A4.1

EXISTING ROOF - PHOTOS

PLUMBING ABBREVIATIONS

AD	AREA DRAIN
ASR	AUTOMATIC SPRINKLER RISER
BFS	BELOW FLOOR SLAB
BWV	BACK WATER VALVE
CB	CATCH BASIN
CI	CAST IRON
CO	CLEAN OUT
CV	CONTROL VALVE
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DN	DOWN
DWH	DOMESTIC WATER HEATER
E.T.C.	ELECTRICAL TRADES CONTRACTOR
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FD	FLOOR DRAIN
FC	FINAL CONNECTIONS
FDC	FIRE DEPT. CONNECTION
FF	FINISH FLOOR
FHV	FIRE HOSE VALVE
FT	FEET
GAL	GALLON
GD	GARBAGE DISPOSAL
GI	GREASE INTERCEPTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIB
HD	HEAD (FT)
HP	HORSE POWER
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
LAV	LAVATORY
LT	LAUNDRY TRAY
MA	MEDICAL AIR
MAX	MAXIMUM
MGC	MEDICAL GAS CONSOLE
MH	MAN HOLE
MIN	MINIMUM
MS	MOP SINK
M.T.C.	MECHANICAL TRADES CONTRACTOR
NTS	NOT TO SCALE
ORD	OVERFLOW ROOF DRAIN
OXY	OXYGEN
P	PUMP
PD	PRESSURE DROP
PVC	POLY-VINYL-CHLORIDE
RC	RAIN CONDUCTOR
RD	ROOF DRAIN
RI	ROUGH-IN
REQ'D	REQUIRED
SAN	SANITARY
SHWR	SHOWER
SK	SINK
SP	STAND PIPE
SQ. FT.	SQUARE FEET
SS	SERVICE SINK
ST	STORM
S&W	STOP & WASTE
STR	STRAINER
SV	STACKED VENT
TYP.	TYPICAL
UR	URINAL
VB	VACUUM BREAKER
VS	VENT STACK
V.F.D	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
W	WASTE
WB	WET BULB
WC	WATER CLOSET
WH	WALL HYDRANT
WS	WASTE STACK
W&V	WASTE AND VENT
X-CW	EXIST. CW PIPING
	ITEM
	EXISTING

GENERAL PLUMBING NOTES

1. ALL PLUMBING WORK SHALL CONFORM TO MICHIGAN PLUMBING CODE, LATEST APPLICABLE EDITION.
2. INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
3. ALL PIPE SIZES SHOWN ARE SERVICE SIZE. SIZE SLEEVES FOR 1" CLEAR SPACE BETWEEN PIPE AND SLEEVE FOR INSTALLATION OF MECHANICAL SEAL.
4. CONTRACTOR SHALL DEMOLISH & REMOVE EXISTING PIPING, FITTINGS, & EQUIPMENT AS REQUIRED FOR NEW INSTALLATIONS. VALVE & CAP PIPING TO REMAIN.
5. FIELD VERIFY LOCATIONS OF EXISTING PIPING THAT MAY CONFLICT WITH NEW CONSTRUCTION AND RELOCATE AS NEEDED.
6. NOTIFY OWNER OF ANY PIPING DEMOLITION THAT MAY AFFECT NORMAL OPERATION OF OTHER AREAS.
7. 1% SLOPE FOR ALL RAIN CONDUCTOR PIPING.
8. THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
10. ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
11. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODES AND REGULATIONS ENFORCED BY LOCAL BUILDING OFFICIALS.
12. IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
13. DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

PLUMBING SYMBOLS LEGEND

PLUMBING PIPING

CW	COLD WATER
CW	COLD WATER BELOW FINISH SLAB
HW	HOT WATER
HW	HOT WATER BELOW FINISH SLAB
HWR	HOT WATER RETURN
HWR	HOT WATER RETURN BELOW FINISH SLAB
SW	SOFTENED WATER
SW	SOFTENED WATER BELOW FINISH SLAB
SWR	SOFTENED WATER RETURN
SWR	SOFTENED WATER RETURN BELOW FINISH SLAB
TW	TEMPERED WATER
TW	TEMPERED WATER BELOW FINISH SLAB
TWR	TEMPERED WATER RETURN
TWR	TEMPERED WATER RETURN BELOW FINISH SLAB
DI	DEIONIZED WATER
DI	DEIONIZED WATER BELOW FINISH SLAB
RO	REVERSE OSMOSIS WATER
RO	REVERSE OSMOSIS WATER RETURN BELOW FINISH SLAB
FP	FIRE PROTECTION
G	GAS (NATURAL)
LP	GAS (LIQUID PETROLEUM)
ARV	ACID RESISTANT
ARW	VENT ACID RESISTANT WASTE
ARW	ACID RESISTANT WASTE BELOW FINISH SLAB
RC	RAIN CONDUCTOR
ST	STORM BELOW FINISH SLAB
ORC	OVERFLOW RAIN CONDUCTOR
ORC	OVERFLOW RAIN CONDUCTOR BELOW FINISH SLAB
SAN	SANITARY WASTE
SAN	SANITARY WASTE BELOW FINISH SLAB
V	VENT PIPING
V	VENT PIPING BELOW FINISH SLAB
CA	COMPRESSED AIR
02	OXYGEN
NO	NITROUS OXIDE
N2	NITROGEN
MA	MEDICAL AIR
VAC	VACUUM
	DEMOLITION

PLUMBING VALVES

- GATE VALVE
- GAS COCK
- CHECK VALVE
- BALANCE COCK
- CIRCUIT SETTER
- TWO-WAY CONTROL VALVE
- THREE-WAY CONTROL VALVE
- GLOBE VALVE
- BALL VALVE
- OS&Y VALVE
- SOLENOID VALVE
- EXPANSION VALVE WITH THERMOSTATIC BULB
- PLUG VALVE
- BUTTERFLY VALVE
- RELIEF VALVE
- HOSE & DRAIN END VALVE
- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- TRIPLE DUTY VALVE
- GAS PRESSURE REGULATOR
- STRAINER (BLOW-OFF)

MISCELLANEOUS NOTES

- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- X — INDICATES PLAN NOTE
- X — INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
  - XX — DETAIL NUMBER
  - XXXX — PAGE LOCATION INDICATES
- DIRECTION OF DETAIL SECTION

PLUMBING EQUIPMENT

- FLOW DIRECTION
- PIPING DROP
- PIPING RISE
- FLOOR CLEANOUT
- INLINE PIPING DROP
- INLINE PIPING RISE
- PIPING TEE
- PIPING ELBOW
- INLINE CLEANOUT
- PLUMBING TRAP
- THERMOMETER
- CONNECTION
- PUMP
- UNION
- PIPE ANCHOR
- PIPE GUIDE
- FLOOR DRAIN & FLOOR SINK
- BACK FLOW PREVENTER
- FLANGE END CONNECTION
- WALL HYDRANT & HOSE BIBB
- REGULAR & OVERFLOW ROOF DRAIN
- PIPE CAP
- PIPE BREAK
- M — WATER METER
- M — GAS METER
- P — PRESSURE GAUGE
- FIRE HYDRANT
- SPRINKLER HEAD (PENDANT)
- SPRINKLER HEAD (UPRIGHT)
- SPRINKLER HEAD (SIDEWALL)
- FIRE DEPARTMENT CONNECTION
- PIPING FLEXIBLE CONNECTOR
- SIGHT GLASS
- PIPE EXPANSION
- COMPENSATOR FLOW SENSOR DEVICE
- FLOW METER
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- SS — SUPERVISORY SWITCH INVERTED
- BT — BUCKET TRAP
- FT — FLOAT & THERMOSTATIC TRAP

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	MIN ROUGH-IN CONNECTION SIZE				FAUCET TYPE	FIXTURE SIZE	ACCESSORIES AND COMMENTS
		CW	HW	SAN	VENT			
RD-1	ROOF DRAIN	-	-	-	-	-	-	MATCH EXISTING RAIN CONDUCTOR PIPE SIZE
ORD-1	OVERFLOW ROOF DRAIN	-	-	-	-	-	-	SEE PLAN FOR OVER FLOW RAIN CONDUCTOR PIPE SIZE, 2" OVERFLOW RING

MATRIX CONSULTING ENGINEERS, INC
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24159.00

MCSA GROUP, INC.
Architecture ● Park & Recreation Planning ● Landscape Architecture
Downtown Planning ● Interior Design ● Sports Facility Planning
529 Greenwood Avenue S.E. ● East Grand Rapids, MI 49506
(616)451-3346 ● www.mcsagroup.com

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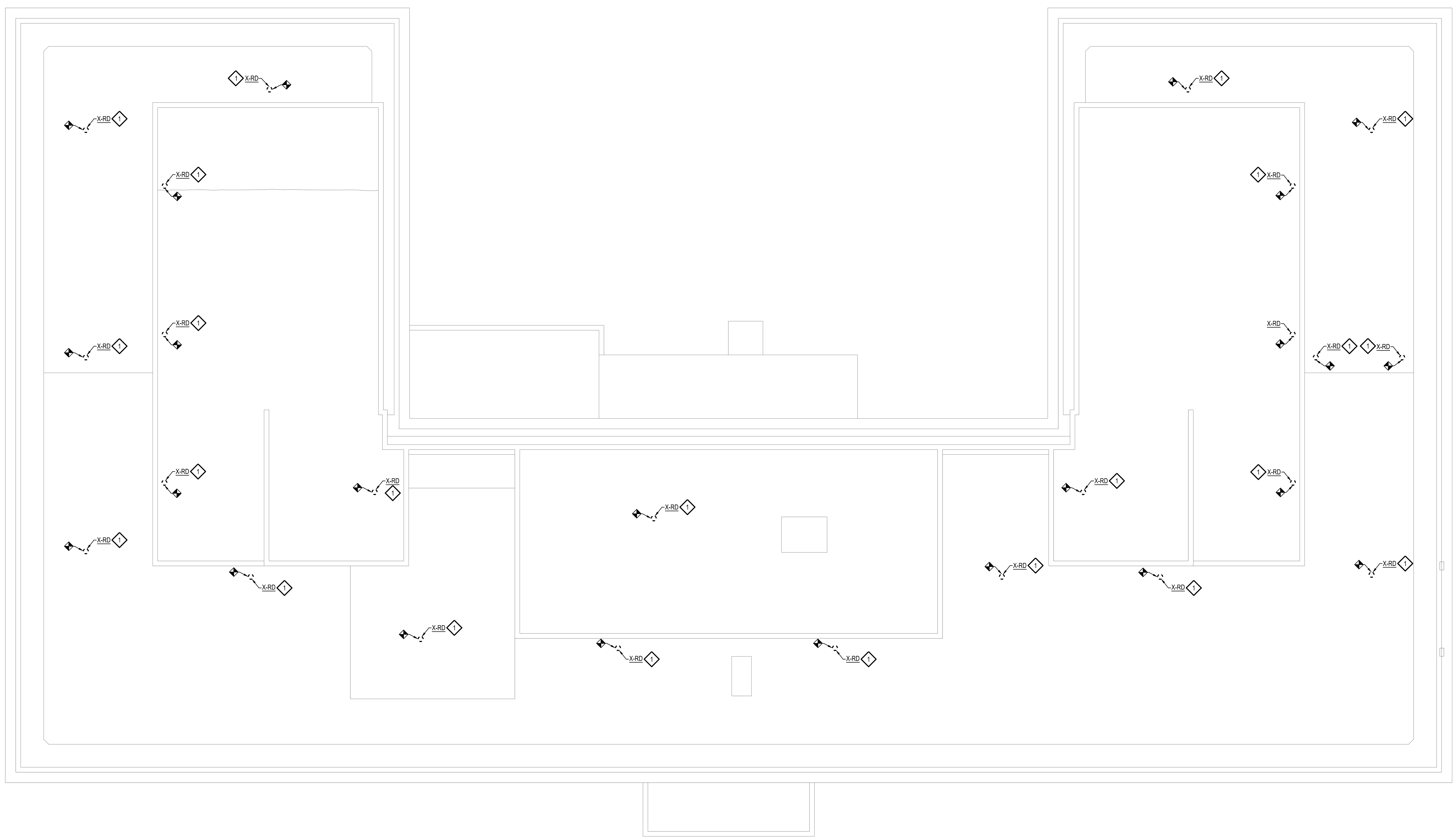
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

PLUMBING SYMBOLS, NOTES, AND ABBREVIATIONS

DTMB – ELLIOTT – LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE
P-100	STATE FILE #171/24097.SDW ARCHITECT PROJECT#A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024



ROOF PLAN - PLUMBING DEMOLITION

0 1 5 10 20 26

SCALE: 3/32" = 1'-0"

GENERAL DEMOLITION NOTES

1. ALL EXISTING RAIN CONDUCTOR PIPING TO REMAIN.

PLUMBING DEMOLITION NOTES

◇1 DISCONNECT, REMOVE, AND DEMO EXISTING ROOF DRAIN AND ALL ASSOCIATED ACCESSORIES. EXISTING VERTICAL RAIN CONDUCTOR PIPING RISER TO REMAIN AND BE RE-USED.

MATRIX
CONSULTING ENGINEERS, INC
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
PHONE: (517) 487-2511
admin@matrixceinc.com
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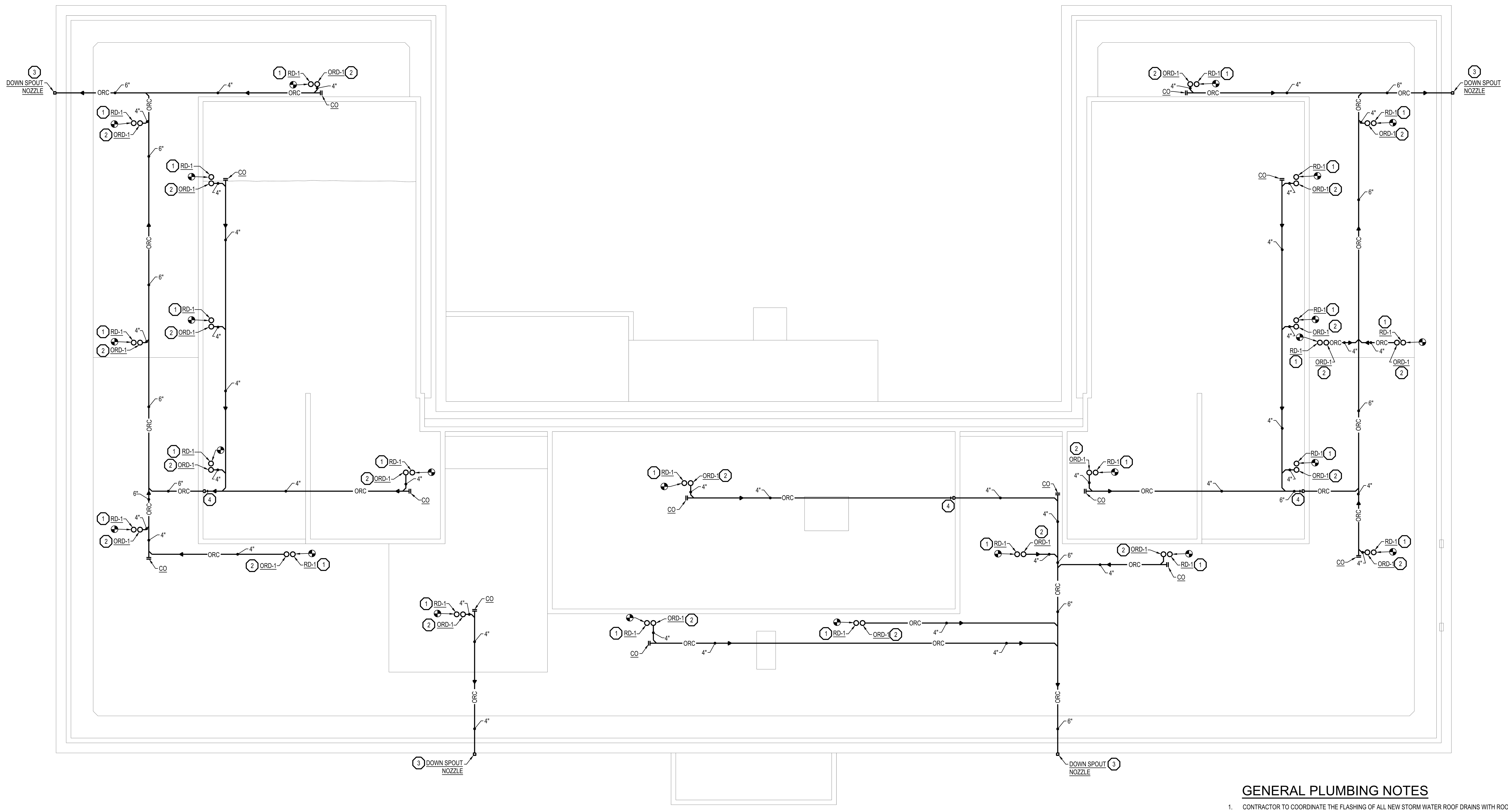
ROOF PLAN - PLUMBING DEMOLITION

DTMB - ELLIOTT - LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE
P-300	STATE FILE #171/24097.SDW ARCHITECT PROJECT#A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024



ROOF PLAN - PLUMBING NEW

0 1 5 10 20 26

SCALE: 3/32" = 1'-0"

GENERAL PLUMBING NOTES

1. CONTRACTOR TO COORDINATE THE FLASHING OF ALL NEW STORM WATER ROOF DRAINS WITH ROOFING CONTRACTOR.
2. INSTALL NEW OVERFLOW RAIN CONDUCTOR PIPING AND ALL ASSOCIATED ACCESSORIES IN THE LOCATION SHOWN. ALL NEW OVERFLOW RAIN CONDUCTOR PIPING TO BE ROUTED IN EXISTING MECHANICAL/PENTHOUSE SPACE. CONNECT NEW OVERFLOW RAIN CONDUCTOR PIPING TO THE OVERFLOW ROOF DRAINS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR THE LOCATIONS OF NEW OVERFLOW RAIN CONDUCTOR PIPING DOWN SPOUT NOZZLE.
3. ROUTE ALL NEW OVERFLOW RAIN CONDUCTOR PIPING AS HIGH AS POSSIBLE IN MECHANICAL/PENTHOUSE SPACES.
4. CONTRACTOR TO PATCH ALL NEW CEILING/WALL PENETRATIONS FOR NEW OVERFLOW RAIN CONDUCTOR PIPING AS REQUIRED TO MATCH EXISTING. ALL EXTERIOR WALL PENETRATIONS ARE TO BE SEALED WATER TIGHT.
5. CONTRACTOR TO PATCH ALL NEW PENETRATIONS THOUGHT AIR HANDLING UNIT PLENUMS AS REQUIRED TO MATCH EXISTING AND SEAL AIR TIGHT.

PLUMBING KEY NOTES

(1) INSTALL ROOF DRAIN AND ALL ASSOCIATED ACCESSORIES IN THE LOCATION SHOWN PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONNECT NEW ROOF DRAIN TO THE EXISTING RAIN CONDUCTOR PIPING RISER. MODIFY EXISTING RAIN CONDUCTOR PIPING RISER AS REQUIRED FOR NEW CONNECTION.

(2) INSTALL NEW OVER FLOW ROOF DRAIN AND ALL ASSOCIATED ACCESSORIES IN THE LOCATION SHOWN PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONNECT NEW ROOF DRAIN TO NEW OVERFLOW RAIN CONDUCTOR PIPING RISER. INSTALL NEW OVER FLOW ROOF DRAINS WITH 2" WATER DAM RING.

(3) INSTALL OVERFLOW RAIN CONDUCTOR PIPING DOWNSPOUT NOZZLE AND ALL ASSOCIATED ACCESSORIES IN THE LOCATION SHOWN PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE EXACT LOCATION FOR THE NEW DOWN SPOUT NOZZLES WITH THE ARCHITECTURAL DRAWINGS. OVERFLOW DOWNSPOUT NOZZLE WITH REMOVABLE STAINLESS STEEL SCREEN BASED ON ZURN MODEL NUMBER #Z199 OR APPROVED EQUIVALENT.

(4) INSTALL CLEANOUT AT WYE FITTING AT THE BOTTOM OF THE RISER.

STATE OF MICHIGAN CRAIG A. TRIERWEILER ENGINEER NO. 49255 LICENSED PROFESSIONAL ENGINEER

MATRIX CONSULTING ENGINEERS, INC
1601 E. CESAR E. CHAVEZ AVE. LANSING, MI 48906
PHONE: (517) 487-2511
admin@matrixceinc.com
Matrix Project No. 24159.00

DTMB – ELLIOTT – LARSEN BUILDING
REPLACE ROOF
320 S. Walnut Street, Lansing, MI

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE
P-400	STATE FILE #171/24097.SDW ARCHITECT PROJECT#A1245	☐ PRELIMINARY ☒ CONSTRUCTION ☐ FINAL RECORD	12-9-2024

ROOF PLAN - PLUMBING NEW

STATE OF MICHIGAN
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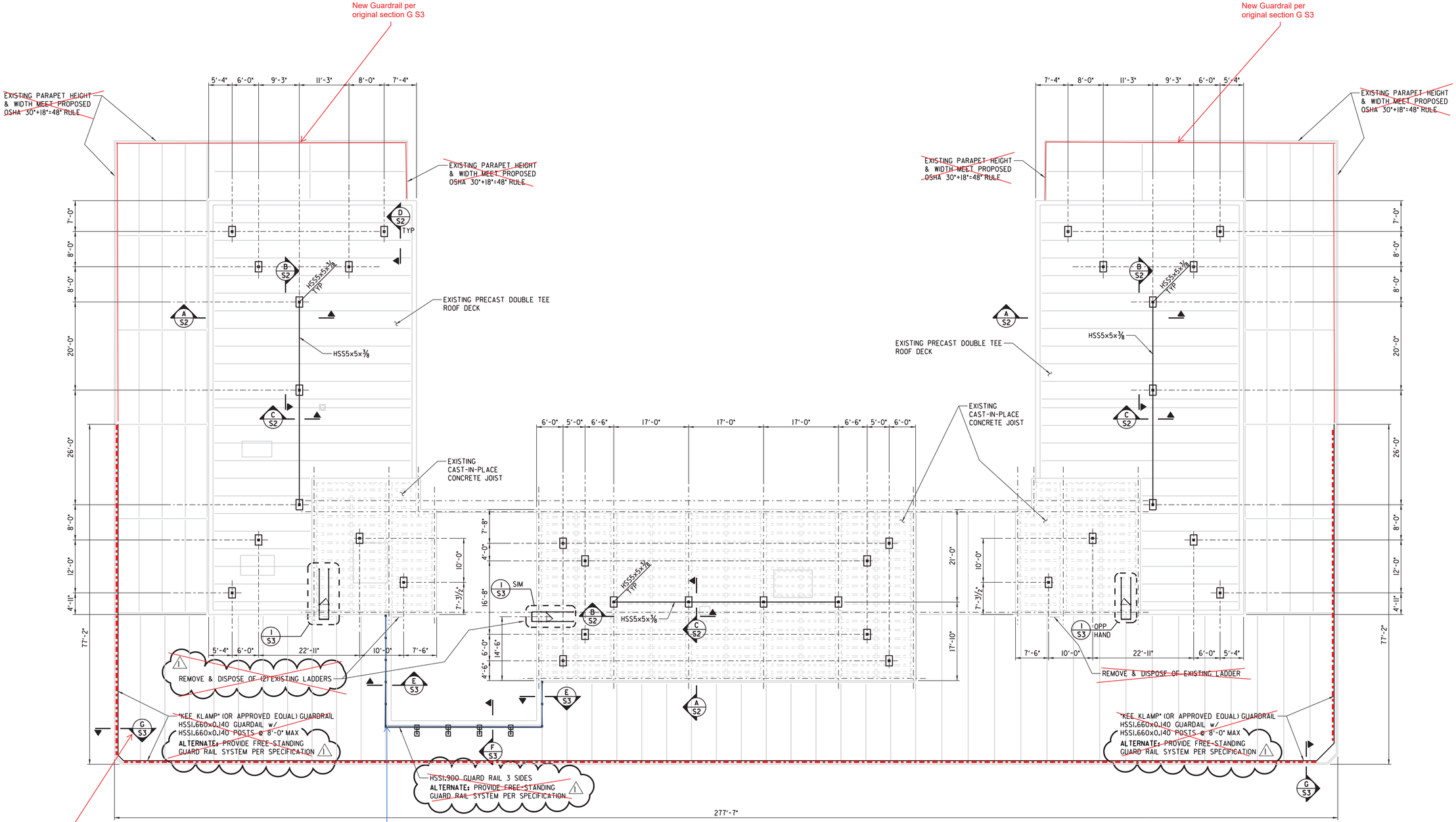


UPPER & LOWER ROOF PLAN

SCALE: 3/32" = 1'-0"

NORTH

NOTE ALL NEW GUARDRAIL TO BE HOT-DIPPED GALVANIZED

REVISIONS

NO.	DATE	DESCRIPTION	BY
	12-9-2024	Guardrail modifications re-issued	
	7-25-2024	Guardrail modifications	
1	2-13-06	BID ADDENDUM	RSN
0	1-20-06	RELEASED FOR BID	RSN

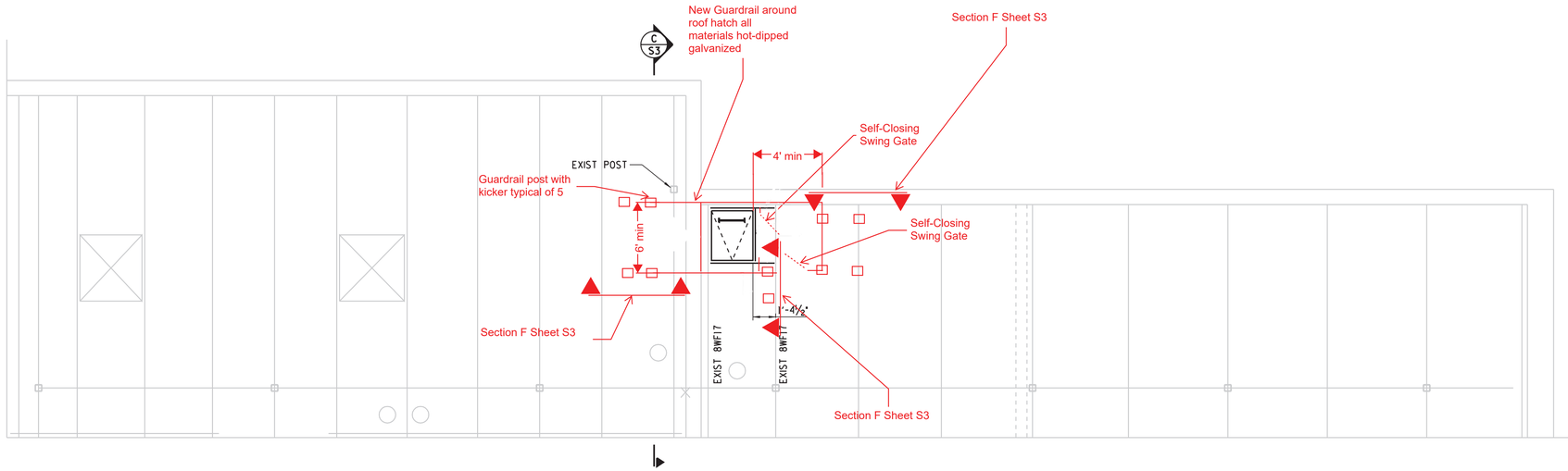
STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF FACILITIES
OKEY ENELI, DIRECTOR

LJB Inc.
Engineers | Architects | Planners
2133 University Park Drive
Suite 250
Okemos, MI 48864
(517) 349-9200 tel
(517) 349-8530 fax
ljbinc.com

LEWIS CASS BUILDING
LANSING, MICHIGAN
FALL PROTECTION FOR ROOF ACCESS

SHEET TITLE: ROOF PLAN

DESIGNED	RSN	JOB NO.	AOO MI-22753
DRAWN	NSR	SHEET NO.	S1
CHECKED	RSN		
DATE	5-3-05		OF



WEST LOW ROOF PLAN

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

NORTH

GENERAL NOTES

1. THE CONTRACTOR SHALL CONDUCT ALL OPERATIONS IN STRICT ACCORDANCE WITH THE SAFETY REQUIREMENTS IMPOSED BY THE OWNER AND OSHA. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.

2. THIS STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER IT IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCES; AND TO ENSURE THE STABILITY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS, DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING. GUYS, OR TIE-DOWNS THAT MIGHT BE NECESSARY. SUCH MATERIAL IS NOT SHOWN ON DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY.

3. THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE OWNER'S PROPERTY AND DISPOSE OF ACCORDING TO LOCAL REGULATIONS.

4. ENGINEERING DRAWINGS: ALL DEVIATIONS FROM THE ENGINEERING DRAWINGS SHALL BE SUBMITTED IN WRITTEN FORM TO THE OWNER OR THEIR REPRESENTATIVE FOR APPROVAL.

5. EXISTING UTILITIES AND ALL OTHER OBSTRUCTIONS TO WORK SHALL BE TEMPORARILY REMOVED BY THE CONTRACTOR AND REINSTALLED (INCLUDING NECESSARY MODIFICATIONS) BY THE CONTRACTOR AFTER COMPLETION OF WORK. ANY TEMPORARY SHUTDOWN OF BUILDING UTILITIES MUST BE COORDINATED WITH AND HAVE PRIOR APPROVAL OF THE FACILITY MANAGER.

6. SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER OR THEIR REPRESENTATIVE BEFORE SHOP WORK IS PERMITTED TO COMMENCE. ALL DEVIATIONS FROM THE ENGINEERING DRAWINGS SHALL BE CIRCLED AND NOTED ON THE SHOP DRAWINGS.

7. DIMENSIONS PERTAINING TO EXISTING CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ANY FABRICATIONS, CONSTRUCTION OR ERECTION.

LEAD PAINT

1. THE PAINT ON THE EXISTING STEEL SHOULD BE CONSIDERED TO CONTAIN LEAD, UNLESS DETERMINED OTHERWISE BY CHEMICAL TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SUCH TESTS. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL,STATE, AND FEDERAL REGULATIONS INCLUDING, BUT NOT LIMITED TO, THE GENERAL INDUSTRY STANDARD FOR LEAD (29 CFR 1910.1025) AND THE STANDARD FOR LEAD IN CONSTRUCTION WORK (29 CFR 1926.62).

ROOF FLASHINGS AND REPAIRS

ALL FLASHING DETAILS AND ROOF REPAIRS ARE TO BE IN ACCORDANCE WITH THE EXISTING ROOFING SYSTEM MANUFACTURER'S REQUIREMENTS. CONTRACTOR SHALL MAINTAIN CURRENT ROOF WARRANTY. WARRANTY IS HELD BY KOPPERS, INC. AND EXTENDS TO AUGUST 15, 2026.

STRUCTURAL STEEL

THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS", AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", WITH THE FOLLOWING SUPPLEMENTAL REQUIREMENTS:

1. STRUCTURAL STEEL SHALL BE NEW. UNLESS NOTED OTHERWISE: W AND WT SHAPES SHALL CONFORM TO ASTM A992 WITH A MINIMUM YIELD STRESS (Fy) OF 50,000 PSI. OTHER ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36 WITH A MINIMUM YIELD STRESS OF 36,000 PSI. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B, WITH A MINIMUM YIELD STRESS (Fy) OF 46,000 PSI FOR SQUARE AND RECTANGULAR SHAPES. ROUND SHAPES SHALL CONFORM TO ASTM A53, GRADE B, WITH A MINIMUM YIELD STRESS (Fy) OF 35,000 PSI .

2. STEEL SURFACES WITH AN INTERIOR EXPOSURE SHALL BE PREPARED IN ACCORDANCE WITH SSPC-SP2. SHOP APPLY ONE COAT OF A RUST INHIBITING UNIVERSAL METAL PRIMER (KEM KROMIK UNIVERSAL METAL PRIMER BY SHERWIN WILLIAMS OR SIMILAR APPROVED) NOMINAL D.F.T. 3.0 - 4.0 MILS. SITE APPLY TWO COATS OF A MEDIUM ALKYD BASED ALL-PURPOSE ENAMEL (INDUSTRIAL ENAMEL BY SHERWIN WILLIAMS OR SIMILAR APPROVED) NOMINAL D.F.T. 2.0 - 4.0 MILS PER COAT.

3. SPLICING OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD.

4. WELDING SHALL CONFORM TO THE CURRENT AWS D1.1 "STRUCTURAL WELDING CODE-STEEL". WELDING ELECTRODES SHALL BE E70XX.

5. WELDS SHALL BE MADE ONLY BY CERTIFIED WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TESTS AS PRESCRIBED IN THE CURRENT AWS D1.1 "STRUCTURAL WELDING CODE-STEEL". PROOF OF CERTIFICATION SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL BEFORE ANY WELDING IS PERMITTED TO BEGIN.

6. ANY FIELD WELDING, GRINDING OR CUTTING OF NEW OR EXISTING STRUCTURAL STEEL OR STEEL DECKING WITHIN THE BUILDING INTERIOR AND OR NEAR OUTSIDE AIR INTAKESMUST BE COORDINATED WITH AND HAVE PRIOR APPROVAL OF THE FACILITY MANAGER, MAY NEED TO BE COMPLETED AFTER HOURS AND MAY REQUIRE SHUTDOWN OF AIR HANDLERS AND SMOKE DETECTORS PRIOR TO THIS WORK BEING PERFORMED.

7. FOLLOWING ERECTION; CLEAN FIELD WELDS, BOLTED CONNECTIONS AND DAMAGED AREAS OF SHOP PAINT. APPLY PAINT TO EXPOSED AREAS USING THE SAME MATERIAL AS USED FOR SHOP PAINTING. THE PREPARATION OF SURFACES AND THE APPLICATION OF PAINT MUST COMPLY WITH MANUFACTURER'S RECOMMENDATIONS.

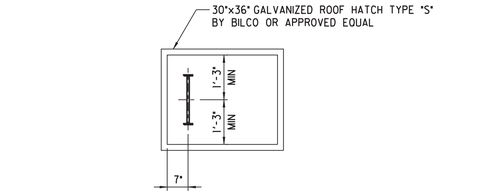
PERSONAL PROTECTIVE EQUIPMENT SPECIFICATIONS

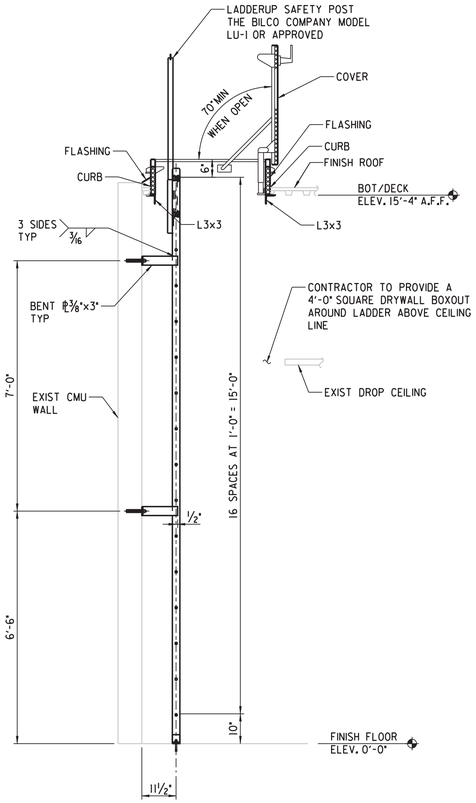
PPE TO BE PROVIDED UNDER THIS CONTRACT:

1. (1) MSA FP SURE-CLIMB SLIDER w/ CARABINER P/N 10040010 w/ DYNA-BRAKE SHOCK-ABSORBING LANYARD, 3'-0" LENGTH.

2. (1) UNIRAIL RAIL CARRIAGE.

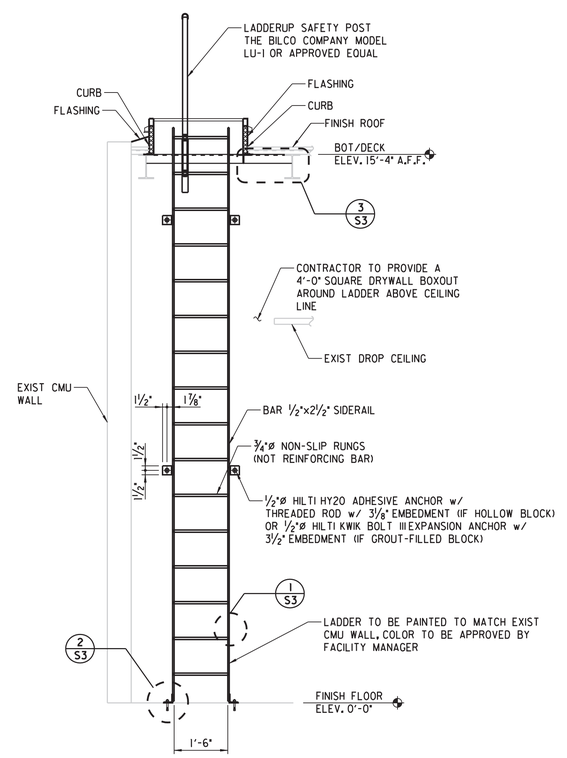
NOTE ALL NEW GUARDRAIL TO BE HOT-DIPPED GALVANIZED





SECTION A S2

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



SECTION B S2

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

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
0	07-14-09	RELEASED FOR REVIEW	CJG
	01-07-10	AS BUILT	CJG
	7-25-2024	Guardrail modifications	
	12-9-2024	Guardrail modifications re-issued	

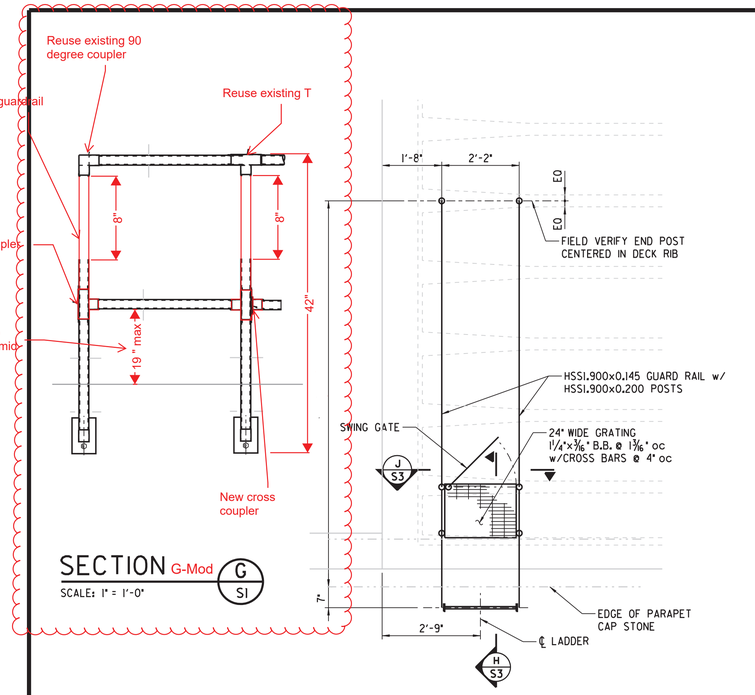
STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF FACILITIES
George N. Hakim, DIRECTOR

LJB Inc.
2133 Linden Park Drive
Suite 250
Okemos, MI 48864
(517) 349-9289 tel
(517) 349-9290 fax
ljbinc.com

LEWIS CASS BUILDING
LANSING, MICHIGAN
FALL PROTECTION AT
EAST LOW ROOF &
WEST LOW ROOF

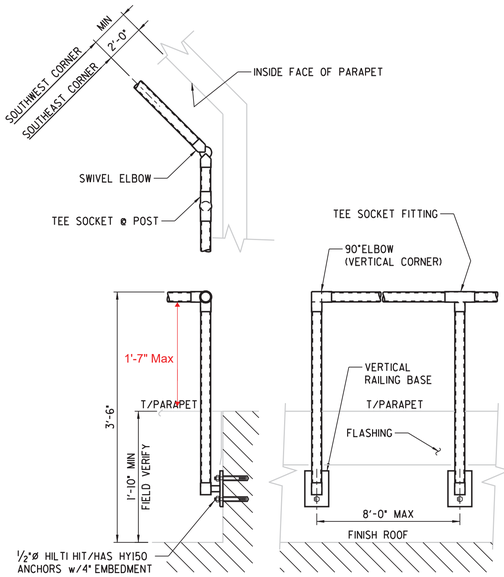
SHEET TITLE
WEST LOW ROOF PLAN

DESIGNED	JKL	JOB NO.	A05
DRAWN	PJW		0101075
CHECKED	RSN	SHEET NO.	
DATE	07-09-09		S2 OF



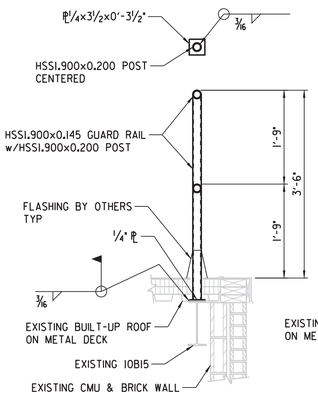
SECTION G-Mod G SI
SCALE: 1" = 1'-0"

DETAIL I SI
SCALE: ½" = 1'-0"

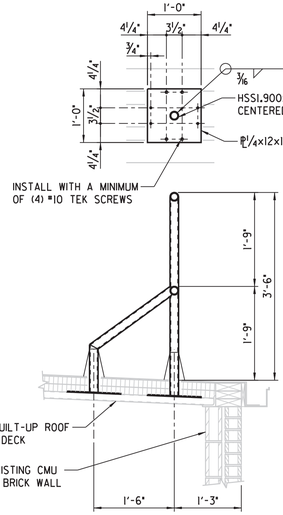


GUARD RAIL CONNECTORS BY KEE KLAMP OR APPROVED EQUAL

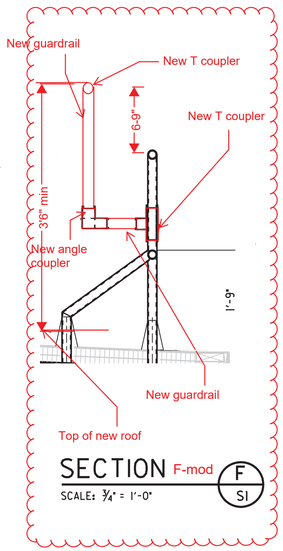
SECTION G SI
SCALE: 1" = 1'-0"



SECTION E SI
SCALE: ¾" = 1'-0"



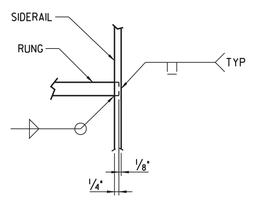
SECTION F SI
SCALE: ¾" = 1'-0"



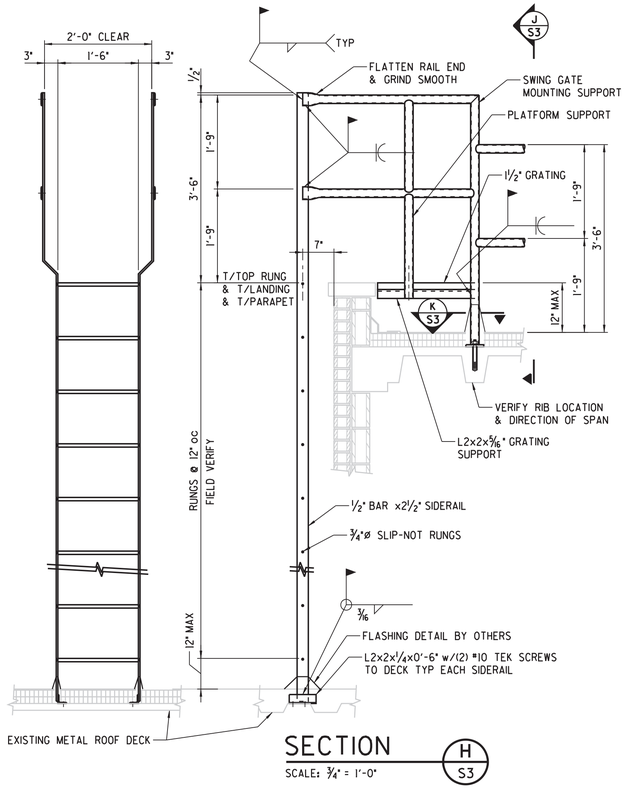
SECTION F-mod F SI
SCALE: ¾" = 1'-0"

⚠1
~~SECTIONS E, F & G ALTERNATE:~~
~~PROVIDE FREE-STANDING GUARD RAIL SYSTEM PER SPECIFICATION~~

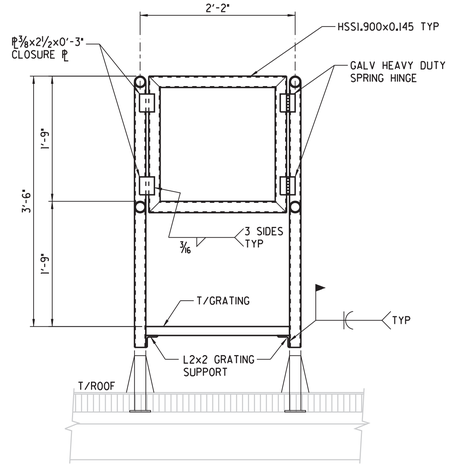
NOTE ALL NEW GUARDRAIL TO BE HOT-DIPPED GALVANIZED



LADDER RUNG DETAIL
SCALE: 3" = 1'-0"

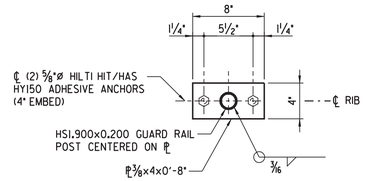


SECTION H S3
SCALE: ¾" = 1'-0"



SECTION J S3
SCALE: 1" = 1'-0"

ALL STEEL TO BE GALVANIZED U.N.O.



SECTION K S3
SCALE: 1½" = 1'-0"

NO.	DATE	DESCRIPTION	BY
		REVISIONS	
	12-9-2024	Guardrail modifications re-issued	
	7-25-2024	Guardrail modifications	
1	2-13-06	BID ADDENDUM	RSN
0	1-20-06	RELEASED FOR BID	RSN

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OFFICE OF FACILITIES
OKEY ENELI, DIRECTOR

LJB Inc.
2133 University Park Drive
Suite 250
Okemos, MI 48864
(517) 349-9289 tel
(517) 349-9503 fax
ljbinc.com

LEWIS CASS BUILDING
LANSING, MICHIGAN
FALL PROTECTION FOR
ROOF ACCESS

SHEET TITLE
SECTIONS & DETAILS

DESIGNED	RSN	JOB NO.	A00
DRAWN	NSR		MI-22753
CHECKED	RSN	SHEET NO.	
DATE	5-3-05		S3 OF