

PSU NEUBERGER HALL ROOF MAINTENANCE

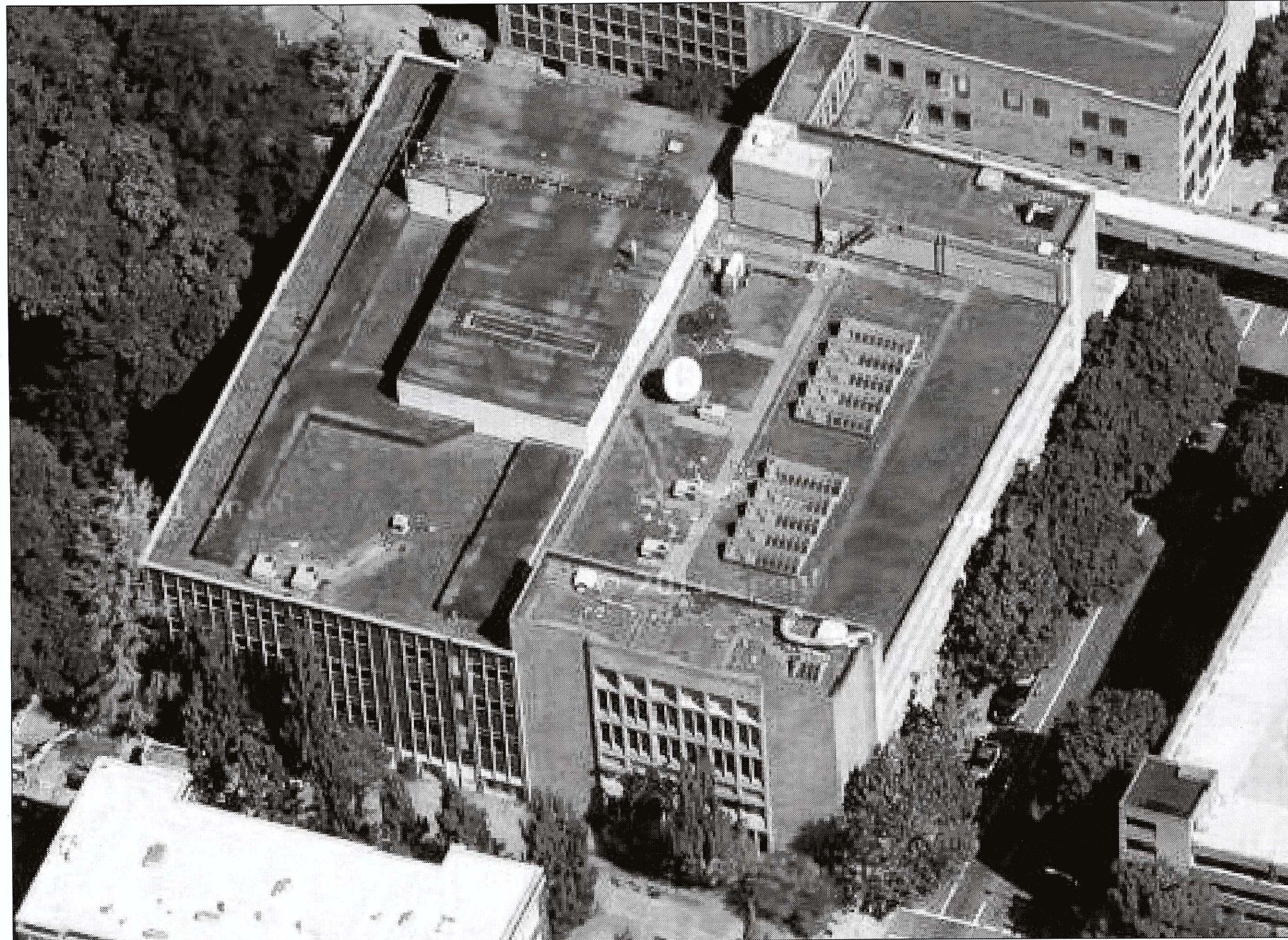
724 SW HARRISON STREET, PORTLAND, OR 97201



CARLETON HART ARCHITECTURE
 322 NW 8th Avenue Portland, Oregon 97209
 t 503.243.2252 | f 503.243.3261 | carletonhart.com

NEUBERGER HALL ROOF MAINTENANCE
 PORTLAND STATE UNIVERSITY
 724 SW HARRISON ST, PORTLAND OR 97201
 CONSTRUCTION SET

AERIAL IMAGE



PROJECT INFORMATION:

PROJECT DESCRIPTION:

INCREASE INSULATION AND WATERPROOF THE MAIN DECK AND MECHANICAL PENTHOUSE AREAS OF THE BUILDING. INCREASE INSULATION AND RE-ROOF THE MECHANICAL ROOF AND PLENUM AREAS WITH SBS ROOFING. THE WORK INCLUDES DISPOSAL OF EXISTING BALLAST, PREPARATION OF DECKS, CUTTING AND RAISING METAL SIDING, INSTALLATION OF MEMBRANE OR WATERPROOFING, INSTALLATION OF NEW SCUPPERS AND OVERFLOW SCUPPERS TO IMPROVE DRAINAGE, INSTALLATION OF FLASHING AND NEW GUTTERS/DOWNSPOUTS AND METAL COUNTER FLASHING. INSTALLATION OF A FALL RESTRAINT SYSTEM, NEW METAL RAMP WITH A LANDING, REPAINTING OF EXISTING METAL LADDERS AND INSTALLATION OF CONCRETE-COATING RIGID INSULATION. ALTERNATES INCLUDE NEW HVAC EQUIPMENT, REPLACING EXISTING SKYLIGHTS, ADDING AN ACCESS LADDER, RE-ROOFING ADJACENT SKYBRIDGES AND REMOVING EXISTING EXTERIOR ACCESS LADDERS.

ADDRESS & LOT DESCRIPTION:

724 SW HARRISON STREET
 PORTLAND OREGON

LOCATED WITHIN THE PORTLAND STATE UNIVERSITY CAMPUS, NEXT TO THE SOUTH PARK BLOCKS.

BUILDING AREA:

AREA OF WORK: 40,494 SF
 GROSS BUILDING AREA: 154,200 SF

ZONING CODE INFORMATION:

ZONING: CXd: CENTRAL COMMERCIAL, DESIGN OVERLAY
 PLAN DISTRICT: CC: CENTRAL CITY PLAN DISTRICT

ENERGY CODE COMPLIANCE:

ROOF: R-20_{ci} AT LOWEST POINT OF INSULATION
 EXISTING SKYLIGHT AREA: 4.6% OF ROOF AREA, EXCEEDS CURRENT CODE
 NEW SKYLIGHT ALTERNATE: U-FACTOR 0.38 MAX, SHGC 0.39 MAX

COMMERCIAL BUILDING PERMIT:

TYPE: COMMERCIAL BUILDING PERMIT
 PERMIT APPLICATION#: 11-144602 FA. IVR #: 3076878

DEFERRED SUBMITTALS:

CONTRACTOR SHALL PROVIDE COMPLETE DESIGN AND DOCUMENTATION AS REQUIRED FOR SUBMISSION AND APPROVAL OF ARCHITECT, OWNER, AND GOVERNING BUILDING DEPARTMENT.

- ENERGY CALCULATIONS FOR ACCEPTED ALTERNATES

SHEET INDEX:

- A0.01 COVER SHEET
- ARCHITECTURAL:**
 - D1.01 DEMOLITION PLAN
 - A1.01 OVERALL ROOF PLAN
 - A1.02 PARTIAL ROOF PLAN NW
 - A1.03 PARTIAL ROOF PLAN NE
 - A1.04 PARTIAL ROOF PLAN SW
 - A1.05 PARTIAL ROOF PLAN SE
 - A5.01 DETAILS
 - A5.02 DETAILS
 - A5.03 DETAILS
 - A5.04 DETAILS
- STRUCTURAL:**
 - S0.01 DRAWING LIST AND ABBREVIATIONS
 - S0.02 GENERAL STRUCTURAL NOTES
 - S0.03 SPECIAL INSPECTIONS AND TESTING
 - S1.01 ROOF FRAMING PLAN
 - S3.00 DETAILS
 - S4.00 CONCRETE REPAIR
- ELECTRICAL:**
 - E0.01 COVER SHEET ELECTRICAL
 - E2.03 PARTIAL ROOF PLAN - NE - POWER
 - E2.04 PARTIAL ROOF PLAN - SW - POWER
 - E2.05 PARTIAL ROOF PLAN - SE - POWER
- MECHANICAL:**
 - M0.01 COVER SHEET - HVAC
 - M2.03 PARTIAL ROOF PLAN - NE - HVAC
 - M2.04 PARTIAL ROOF PLAN - SW - HVAC
 - M2.05 PARTIAL ROOF PLAN - SE - HVAC
 - M3.01 DETAILS AND SCHEDULES - HVAC

ABBREVIATIONS:

A.B.	ANCHOR BOLT	ELEC.	ELECTRICAL	H.M.	HOLLOW METAL	REF.	REFERENCE
A.D.	AREA DRAIN	ELEV.	ELEVATION OR ELEVATOR	HT.	HEIGHT	REQ.	REQUIRED OR REQUIREMENTS
ADJ.	ADJUSTABLE	E.P.	ELECTRICAL PANEL	INFO.	INFORMATION	REV.	REVERSE OR REVISED
A.F.F.	ABOVE FINISH FLOOR	EQ.	EQUAL	INSUL.	INSULATION	R.O.	ROUGH OPENING
AGG.	AGGREGATE	EQUIP.	EQUIPMENT	INT.	INTERIOR	S.	SOUTH
ALT.	ALTERNATE	E.W.	EACH WAY	JT.	JOINT	S.A.M.	SELF ADHERED MEMBRANE
AL.	ALUMINUM	EX.	EXISTING	LT.	LIGHT	SECT.	SECTION
A.P.	ACCESS PANEL	EXP.	EXPOSED OR EXPANSION	L.W.C.	LIGHT WEIGHT CONCRETE	SHT.	SHEET
B.	BOTTOM	EXT.	EXTERIOR	MANF.	MANUFACTURER	SIM.	SIMILAR
BD.	BOARD	F.D.	FLOOR DRAIN	MATL.	MATERIAL	SPEC.	SPECIFICATION
BLDG.	BUILDING	FDN.	FOUNDATION	MAX.	MAXIMUM	STD.	STANDARD
BLKG.	BLOCKING	FIN.	FINISH	MECH.	MECHANICAL	STL.	STEEL
B.O.F.	BOTTOM OF FOOTING	F.F.	FINISHED FLOOR	M.O.	MASONRY OPENING	STRUCT.	STRUCTURAL
B.U.	BUILT UP	F.F.E.	FINISHED FLOOR ELEVATION	MIN.	MINIMUM	SUSP.	SUSPENDED
C.I.P.	CAST IN PLACE	FLASHG.	FLASHING	MTL.	METAL	T.	TOP OF TREAD
C.J.	CONTROL JOINT	F.O.B.	FACE OF BRICK	N.	NORTH	T.B.R.	TO BE REMOVED
CLR.	CLEAR	F.O.C.	FACE OF CONCRETE	N.I.C.	NOT IN CONTRACT	T/G	TONGUE AND GROOVE
C.M.U.	CONCRETE MASONRY UNIT	F.O.F.	FACE OF FINISH	NO.	NUMBER	T.O.C.	TOP OF CURB
COL	COLUMN	F.O.I.C.	FURNISHED BY OWNER/ INSTALLED BY CONTRACTOR	NOM	NOMINAL	T.O.F.	TOP OF FRAMING
CONC.	CONCRETE	F.O.I.O.	FURNISHED BY OWNER/ INSTALLED BY OWNER	N.T.S.	NOT TO SCALE	T.O.P.	TOP OF PLATE
CONN.	CONNECTION	F.O.M.	FACE OF MASONRY	OA	OVERALL	T.O.PLY.	TOP OF PLYWOOD
CONT	CONTINUOUS	F.O.S.	FACE OF STUD	O.C	ON CENTER	T.O.S.	TOP OF SLAB
C.P.	CEMENT PLASTER	F.R.T.	FIRE RETARDENT TREATED	OPG	OPENING	T.O.W.	TOP OF WALL
CTSK.	COUNTERSINK	FRMG.	FRAMING	OPP.	OPPOSITE	T.S.	TUBE SECTION
DBL.	DOUBLE	FT.	FOOT OR FEET	P.	PAINT	TYP.	TYPICAL
DET.	DETAIL	FUT.	FUTURE	PREFIN.	PREFINISHED	U.O.N.	UNLESS OTHERWISE NOTED
DIA.	DIAMETER	GA	GAUGE	PLY.	PLYWOOD	V.B.	VAPOR BARRIER
DIM.	DIMENSION	GALV.	GALVANIZED	PRPT.	PARAPET	W.	WEST
DN.	DOWN	GL	GLASS	P.T.	PRESSURE TREATED	WD	WOOD
DS.	DOWNSPOUT	GYP.	GYPNUM	R.	RADIUS OR RISER	WRB	WATER RESISTIVE BARRIER
DWG.	DRAWING	H.B.	HOSE BIB	RD.	ROOF DRAIN	W.R.G.B.	WATER RESISTANT GYP. BOARD
E.	EAST					WT.	WEIGHT
EA.	EACH						
E.J.	EXPANSION JOINT						

PROJECT TEAM:

OWNER:
 PORTLAND STATE UNIVERSITY
 202 UNIVERSITY SERVICES BUILDING
 617 SW MONTGOMERY STREET
 PORTLAND, OR 97201
 503.725.8944
 CONTACT: FRANCIS MCBRIDE

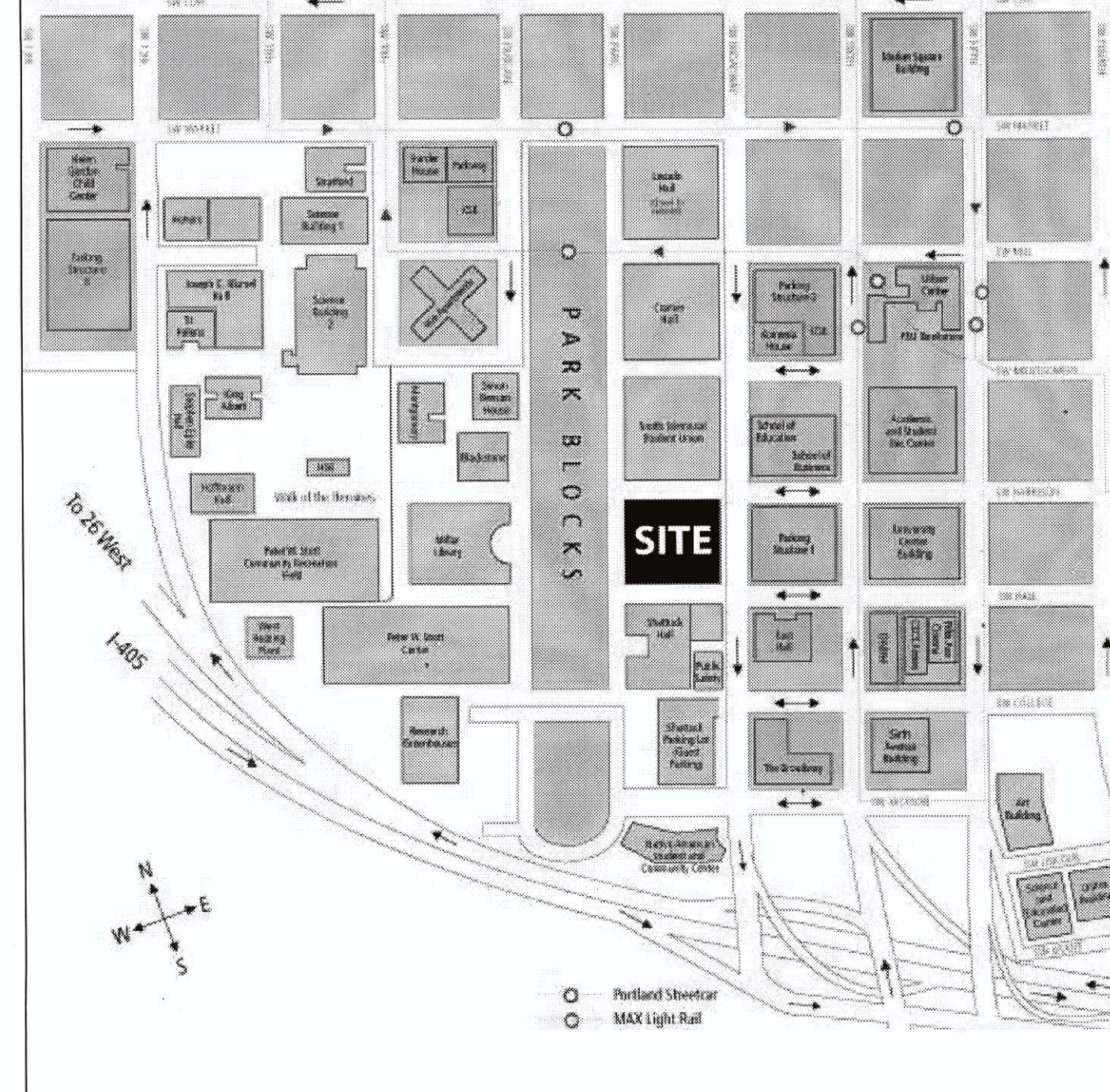
ARCHITECT:
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 503.206.3181
 CONTACT: SCOTT PALMER

STRUCTURAL:
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 CONTACT: JEFF DIEPHUIS

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 503.382.2266
 CONTACT: STEVEN DACUS

ELECTRICAL:
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 708 SW 3RD AVE. SUITE 400
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 CONTACT: CHRIS LARSON

VICINITY MAP (NOT TO SCALE)



COVER SHEET

PROJ. NO.
 21046.01
 02.24.12

A0.01

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DEMOLITION PLAN
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D1.01

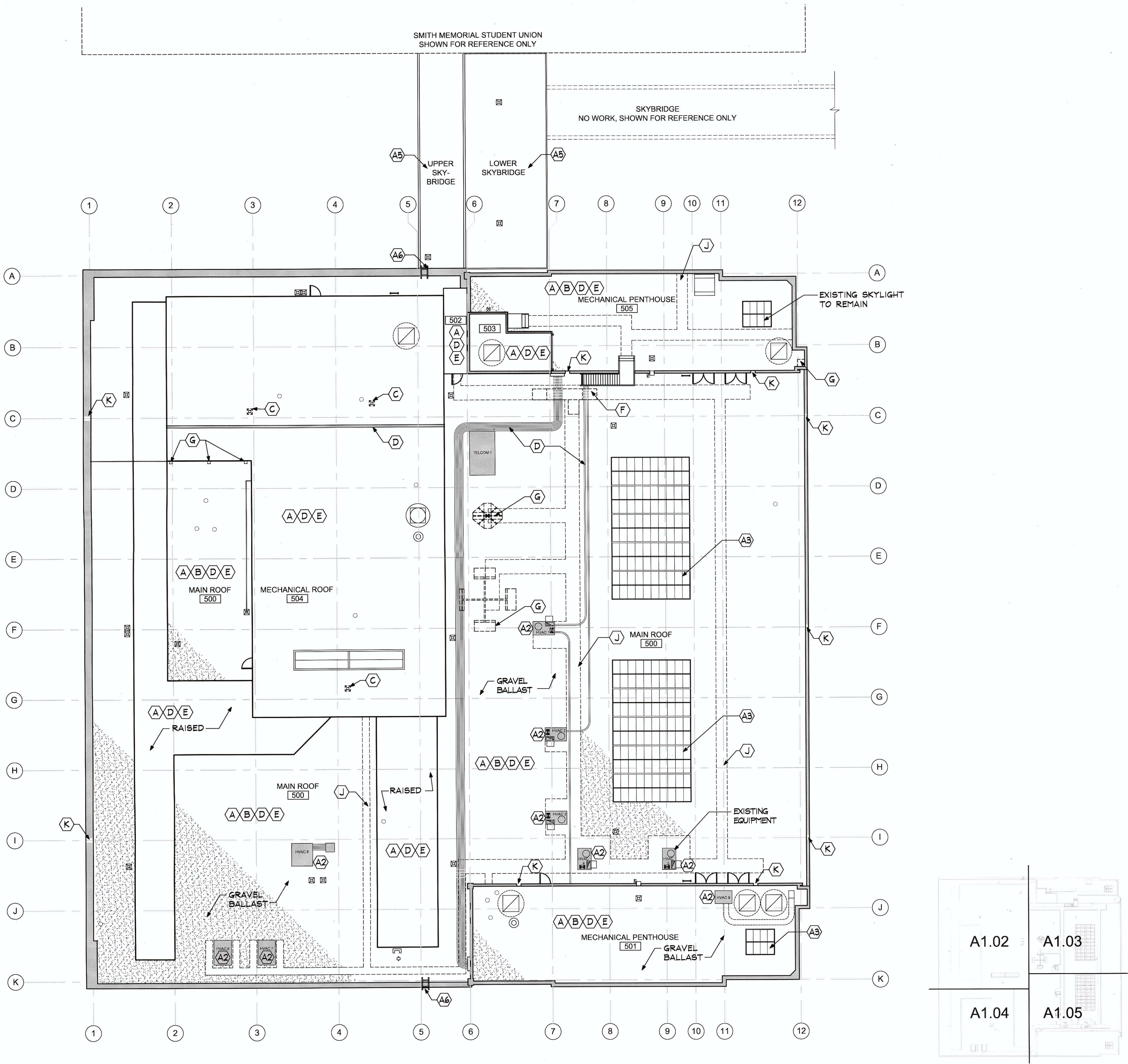
LEGEND		GENERAL NOTES
PLUMBING VENTS SEE DETAILS 1/A5.02 AND 1/A5.04		1. CONTRACTOR TO INDEPENDENTLY VERIFY TYPE, LOCATION AND CONDITION OF ALL ROOFTOP EQUIPMENT, PENETRATIONS & STRUCTURES 2. ALL EXISTING EQUIPMENT & ACCESSORIES TO REMAIN UNLESS OTHERWISE NOTED. 3. SEE SPECIFICATIONS FOR REQUIREMENTS RELATED TO TEMPORARY DISCONNECTION, RELOCATION AND REINSTALLATION OF ROOFTOP MECHANICAL EQUIPMENT. 4. EXISTING GRAVEL BALLAST TO BE REMOVED. 5. INSTALL NEW STAINLESS STEEL ROOF DRAIN SCREENS AT ALL ROOF DRAINS AND OVERFLOWS 6. G.C. TO COORDINATE WORK AROUND TELCOM EQUIPMENT WITH TELCOM PROVIDER'S CONTRACTORS. 7. RAISE EXISTING CURBS AS NECESSARY TO MEET MANUFACTURER'S REQUIREMENTS
VENTS SEE DETAILS 6/A5.03 AND 2/A5.04		
EXHAUST VENTS SEE DETAILS 7/A5.03 AND 3/A5.04		
EXHAUST VENTS SEE DETAIL 7/A5.03		
LG. EXHAUST VENT SEE DETAILS 7/A5.03 AND 3/A5.04		
FIRE DEPARTMENT CONNECTION SEE DETAIL 6/A5.03		
DRAIN OR OVERFLOW MODIFY EXISTING SEE DETAIL 2/A5.02		
SCUPPER SEE DETAILS 4/A5.02, 7/A4.02 AND 8/A4.02		
THROUGH DECK CONDUIT SEE DETAIL 6/A5.03		
CONDUIT SEE DETAIL 5/A5.02		
THROUGH WALL DRAIN SEE DETAIL 8/A5.03		
FAN WITH CURB SEE DETAIL 3/A5.04 (SIM.)		
FIRE MAIN INDICATOR SEE DETAIL 6/A5.03		

DEMOLITION NOTES

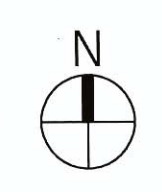
- (A) REMOVE AND DISPOSE EXISTING MEMBRANE (ALL LAYERS) IN ENTIRE ROOF AS DESIGNATED.
- (B) REMOVE AND DISPOSE ALL EXISTING FIBERBOARD INSULATION
- (C) REMOVE EXISTING DRAIN LOCATION, PATCH AREA.
- (D) TEMPORARILY PROVIDE SUPPORT OF ALL CONDUIT, WATER LINES AND EQUIPMENT
- (E) CLEAN EXISTING DECK; SEE SPECIFICATIONS
- (F) REMOVE AND SALVAGE EXISTING RAMP FOR REUSE
- (G) REMOVE AND DISPOSE ABANDONED EQUIPMENT
- (H) REMOVE AND DISPOSE ALL COUNTER FLASHING
- (J) REMOVE AND DISPOSE ALL EXISTING PAVERS
- (K) CUT PARAPET FOR NEW SCUPPER

ALTERNATES

- (A1) WATERPROOF MAIN ROOF DECK AND PENTHOUSE ROOFS WITH HOT FLUID APPLIED RUBBERIZED ASPHALT WATERPROOFING
- (A2) REMOVE AND REPLACE ROOF TOP MECHANICAL UNITS
- (A3) REMOVE AND REPLACE SKYLIGHTS
- (A4) ADD ADDITIONAL ROOF ACCESS LADDER
- (A5) WATERPROOF EXISTING SKY BRIDGE ROOFS
- (A6) REMOVE 2 EXISTING ACCESS LADDERS ON EXTERIOR OF BUILDING



1 DEMOLITION PLAN
 SCALE: 1/16" = 1'-0"



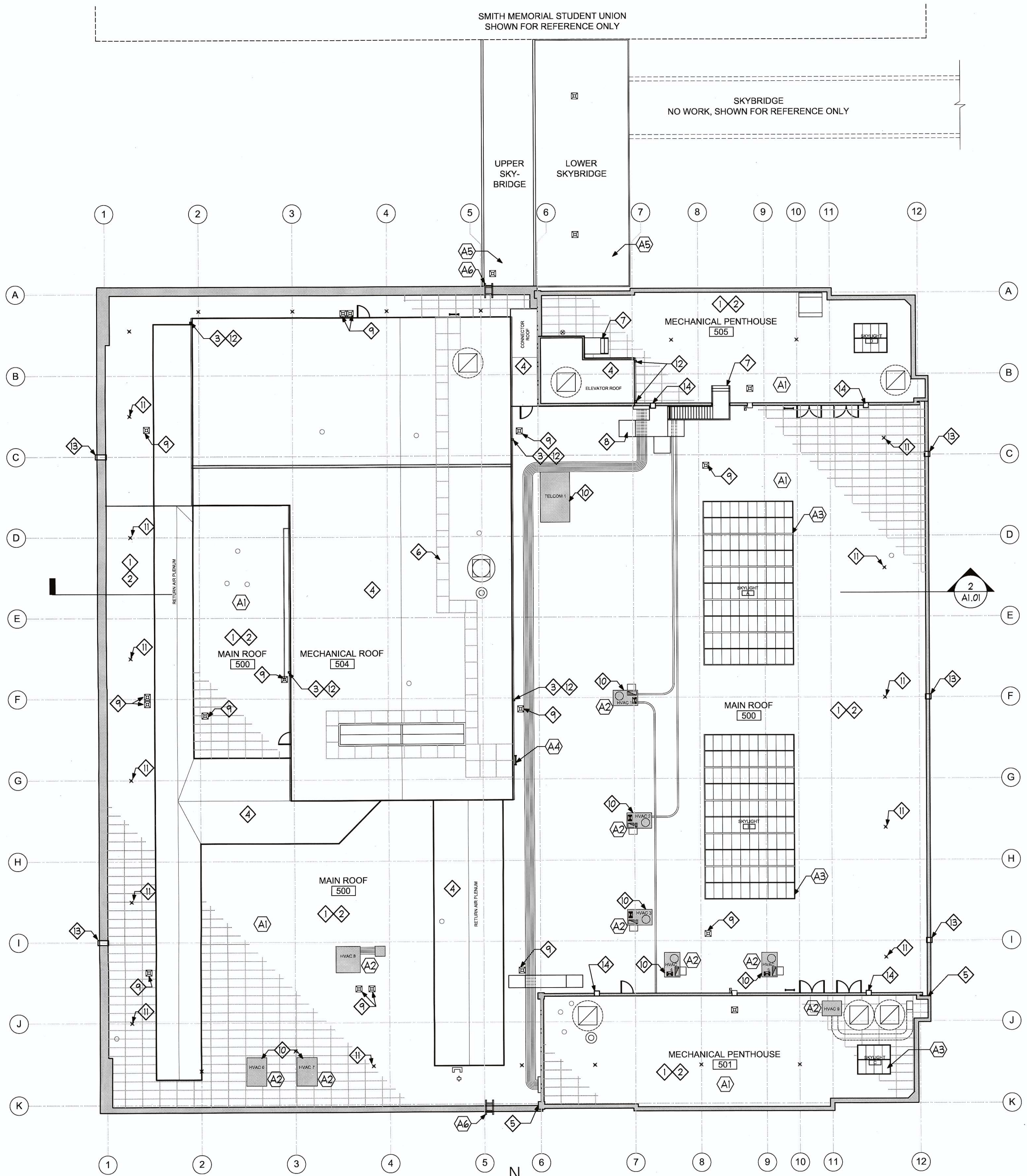
2 KEY PLAN
 SCALE: NTS

LEGEND		GENERAL NOTES
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DRAIN OR OVERFLOW MODIFY EXISTING SEE DETAIL 2/A5.02		
SCUPPER SEE DETAILS 4/A5.02, 7/A4.02 AND 8/A4.02		KEY NOTES <ol style="list-style-type: none"> PROVIDE AND INSTALL NEW WATERPROOFING, SEE SPECIFICATIONS PROVIDE AND INSTALL INSULATION WITH CONCRETE TOPPING, SEE SPECIFICATIONS PROVIDE AND INSTALL NEW GUTTER AND DOWNSPOUTS PROVIDE AND INSTALL NEW TAPERED INSULATION, COVER BOARD AND SBS MODIFIED ROOF MEMBRANE, SEE SPECIFICATIONS REPAIR CONCRETE, SEE STRUCTURAL PROVIDE AND INSTALL NEW WALKPADS TEMPORARILY REMOVE AND REPLACE STAIR PROVIDE AND INSTALL NEW RAMP AND LANDING EXISTING ROOF DRAIN TO REMAIN. REPLACE EXIST. THREADED STUDS AND NUTS WITH TYPE 304 STAINLESS STL HARDWARE. REPLACE EXIST. FLASHING CLAMP WITH GALV. CAST IRON FLASHING CLAMP. DRILL AND RE-TAP FOR STUDS AS REQ. REPLACE EXISTING STRAINER WITH GALV. CAST IRON DOME STRAINER RAISE EXISTING CURB AS NECESSARY TO MEET ROOFING MANUFACTURER'S UPTURN REQUIREMENTS PROVIDE AND INSTALL FALL RESTRAINT SYSTEM PROVIDE AND INSTALL SPLASH BLOCK INSTALL NEW OVERFLOW SCUPPER INSTALL NEW SCUPPER
THROUGH DECK CONDUIT SEE DETAIL 6/A5.03		
CONDUIT SEE DETAIL 5/A5.02		
THROUGH WALL DRAIN SEE DETAIL 8/A5.03		
FAN WITH CURB SEE DETAIL 3/A5.04 (SIM.)		
FIRE MAIN INDICATOR SEE DETAIL 6/A5.03		
ALTERNATES		
ROOF PLAN		
PROJ NO. 21046.01		
02.24.12		
CONSTRUCTION SET		
A1.01		

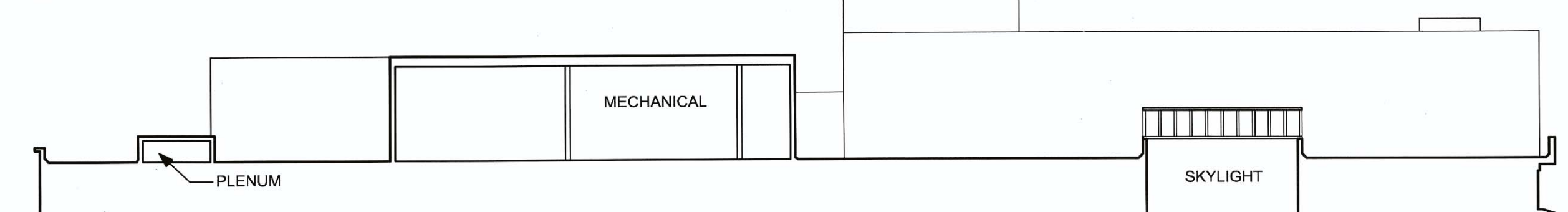


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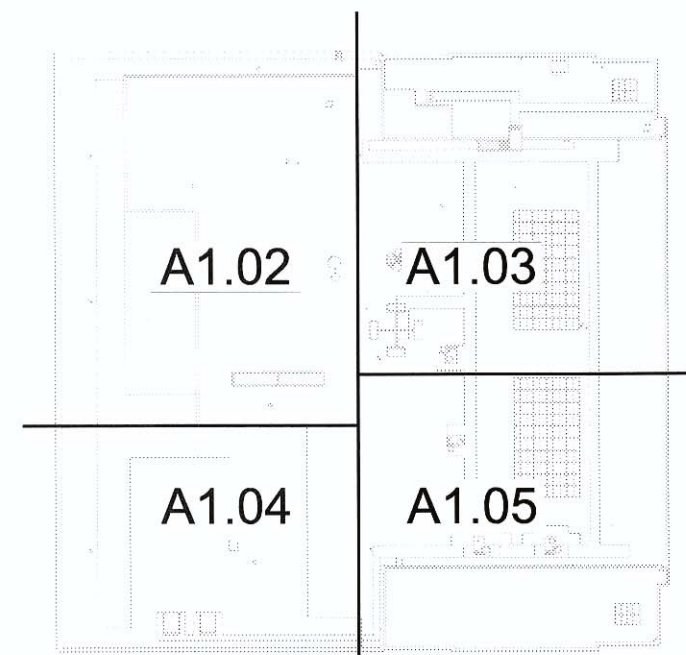
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1 ROOF PLAN
 SCALE: 1/16" = 1'-0"



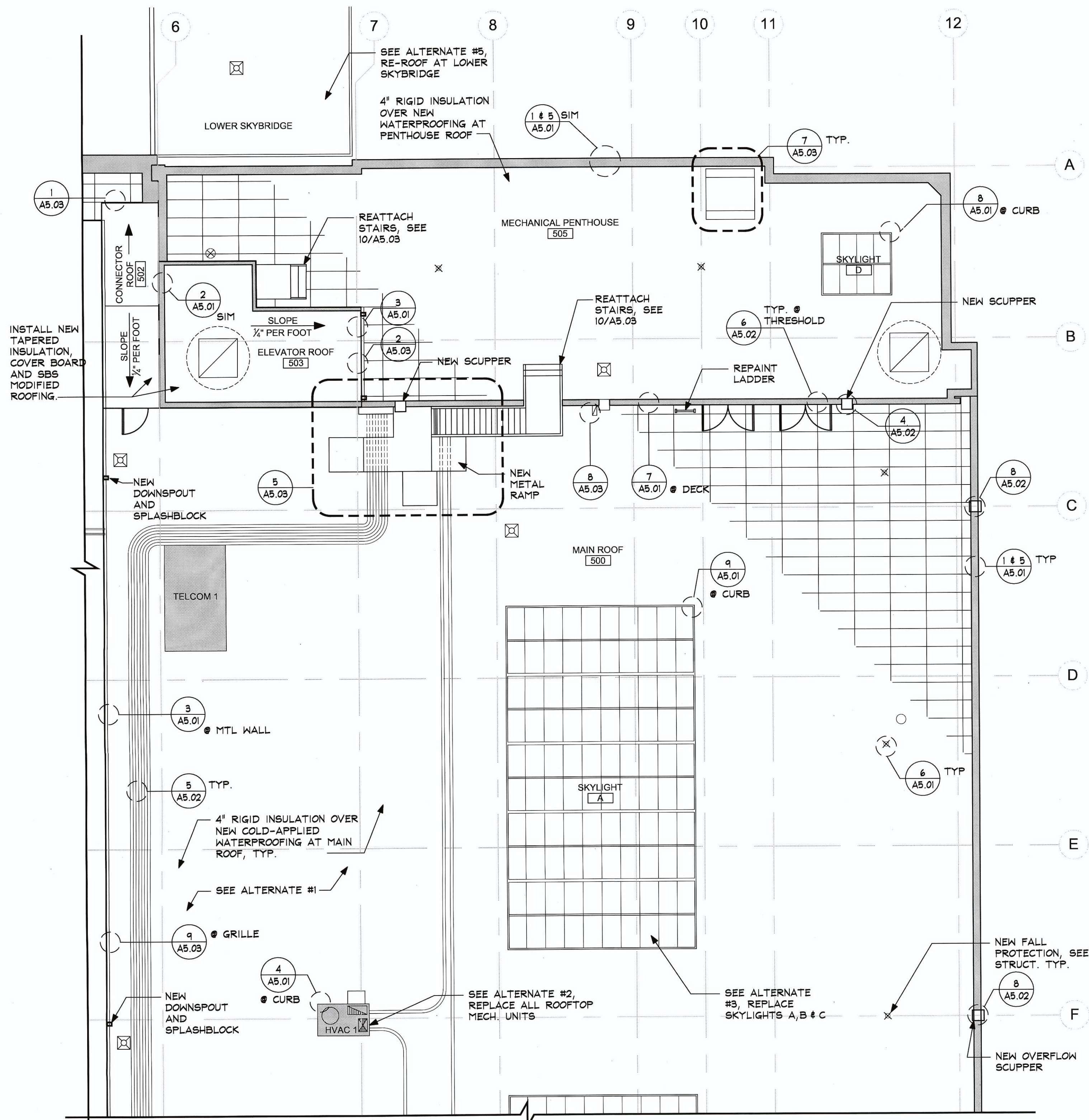
2 ROOF ELEVATION
 SCALE: 1/16" = 1'-0"



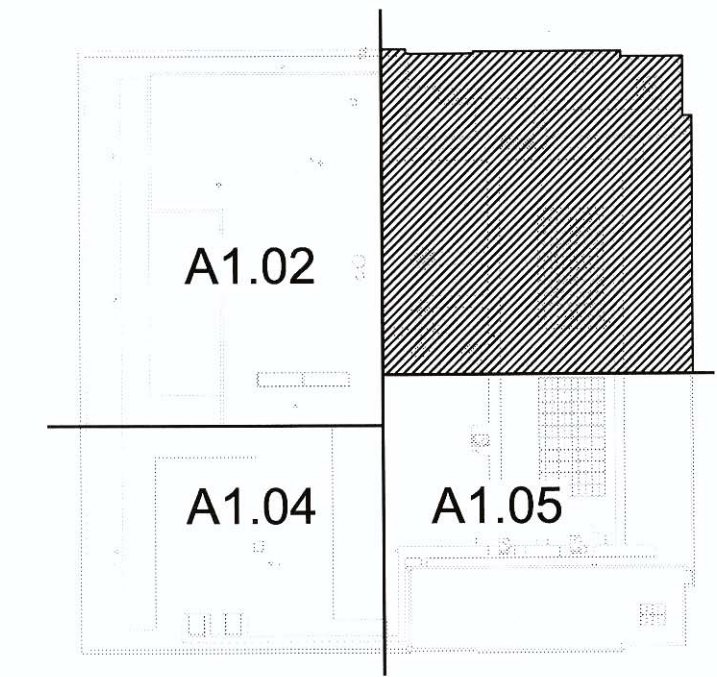
3 KEY PLAN
 SCALE: NTS

SEE SHEETS FOR DETAIL CALLOUTS

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



2 KEY PLAN
SCALE: NTS

LEGEND	
PLUMBING VENTS SEE DETAILS 1/A5.02 AND 1/A5.04	
VENTS SEE DETAILS 6/A5.03 AND 2/A5.04	
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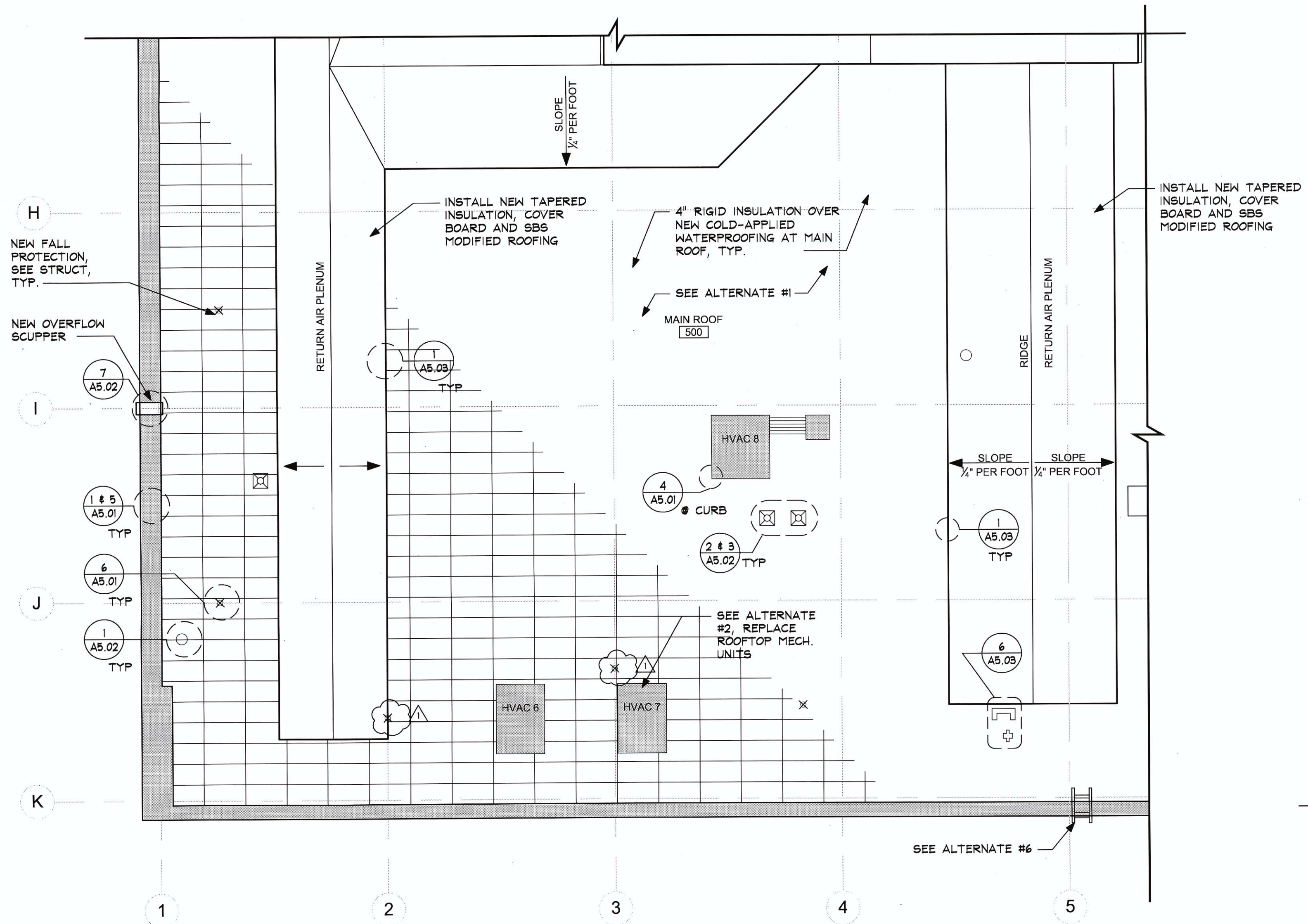
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PARTIAL ROOF PLAN
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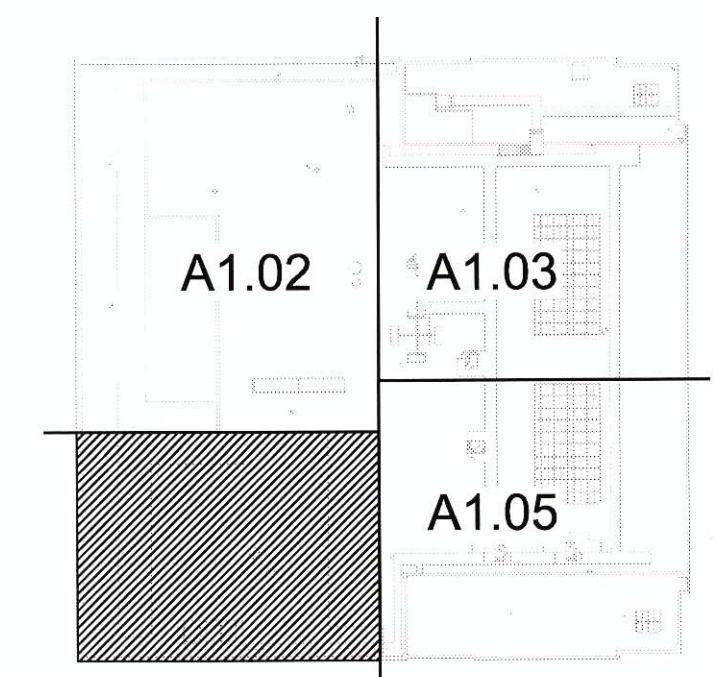
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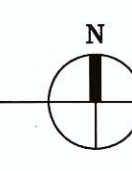
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FIRE MAIN INDICATOR SEE DETAIL 6/A5.03	



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



2 KEY PLAN
SCALE: NTS



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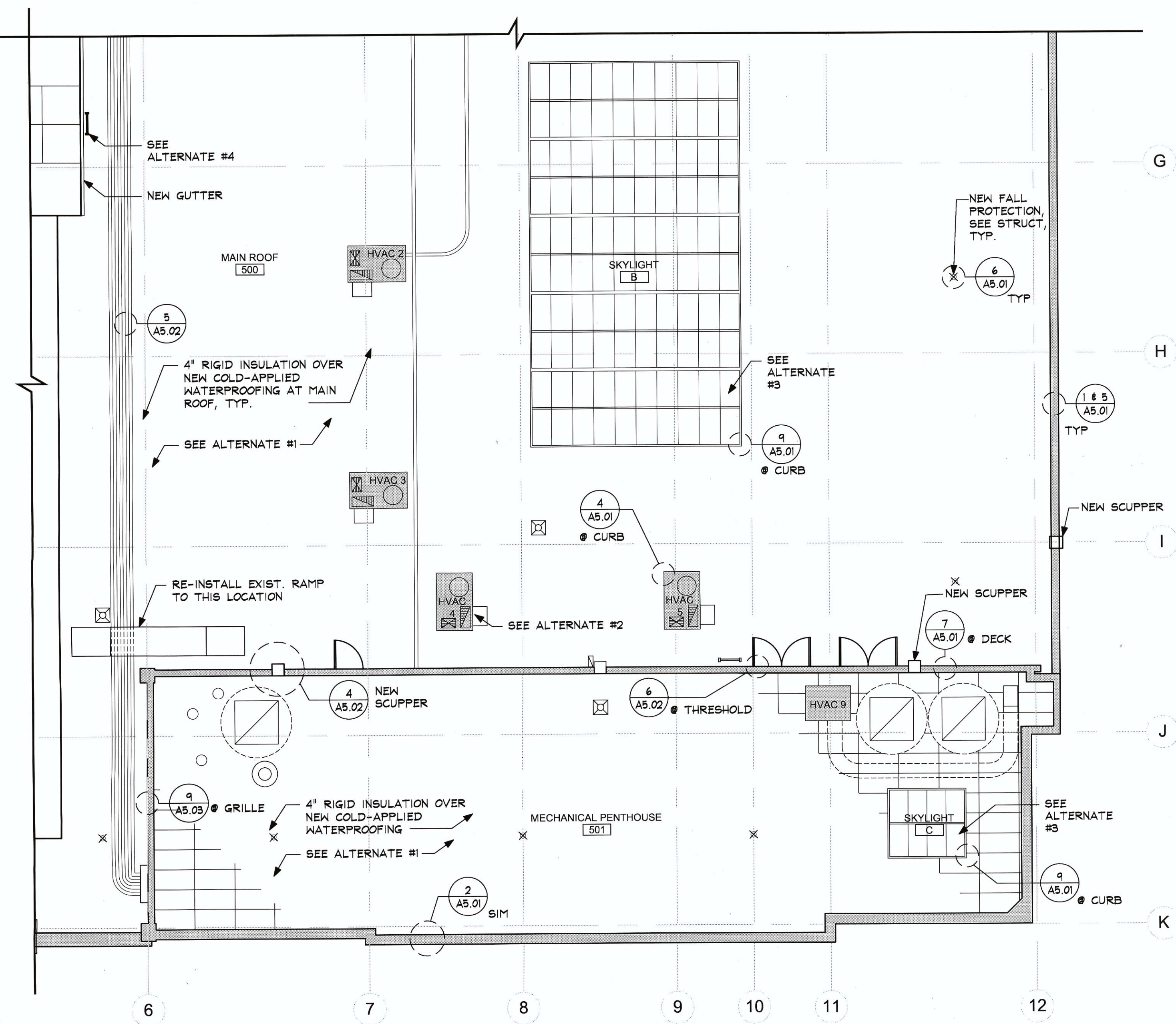
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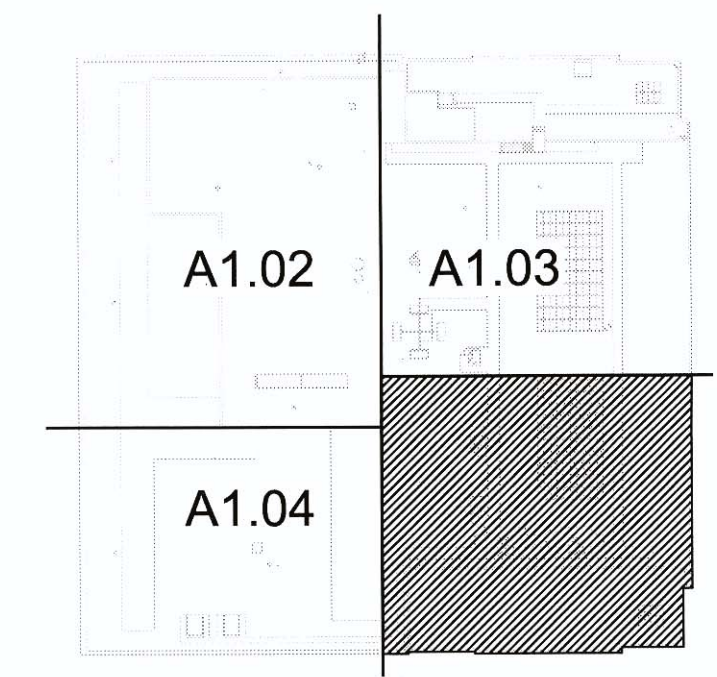
PARTIAL ROOF PLAN
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A1.05

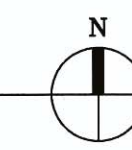
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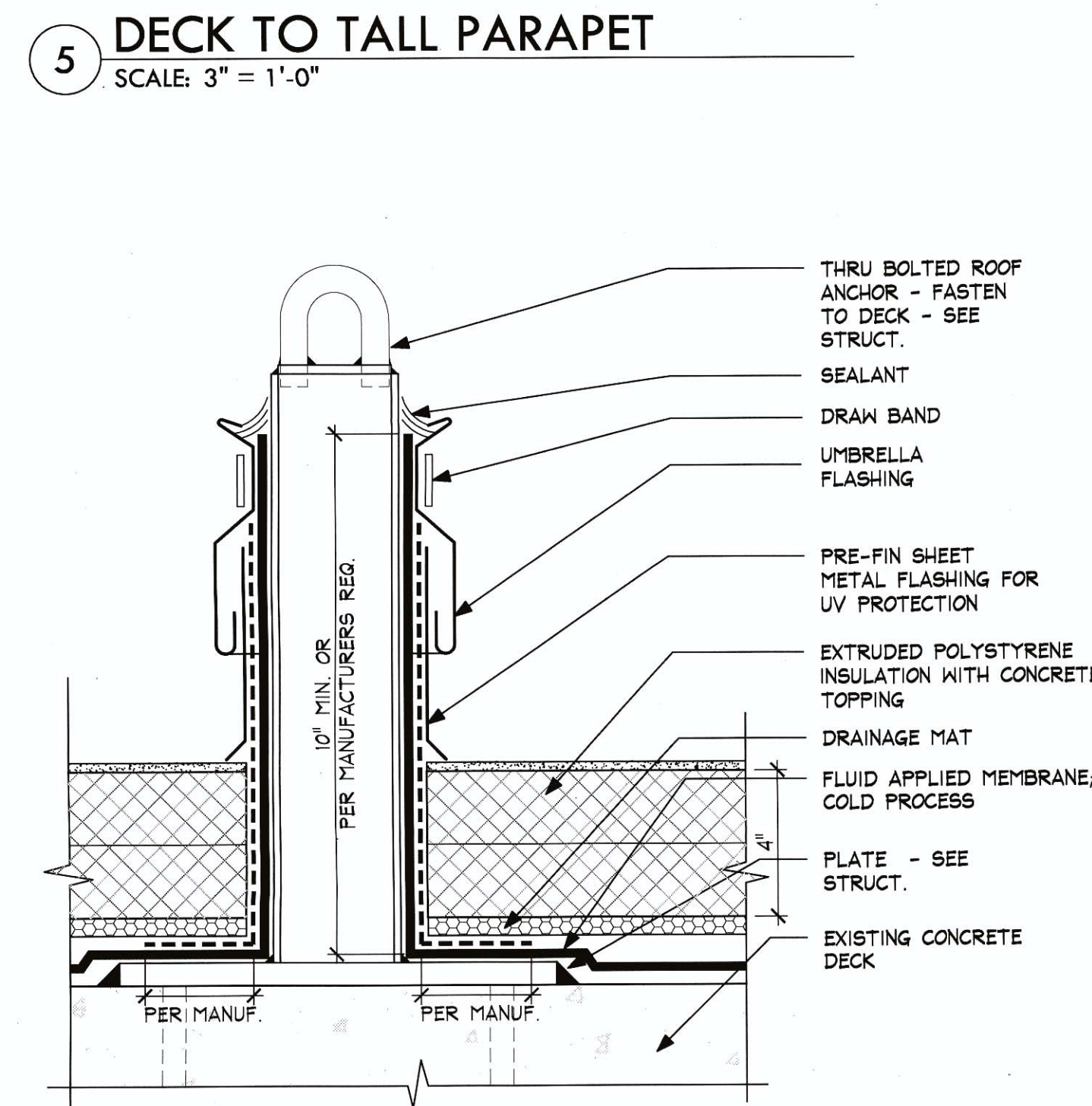
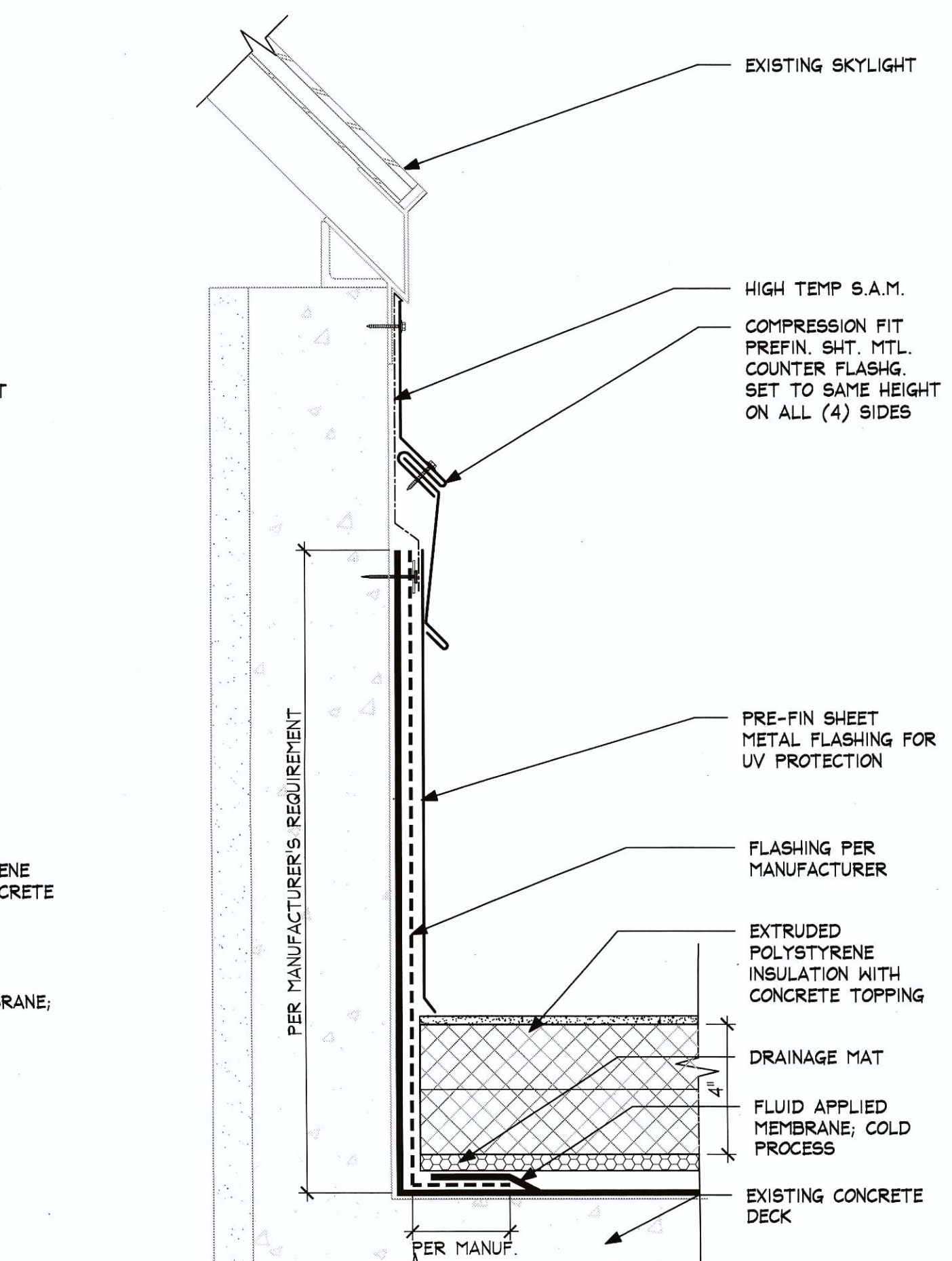
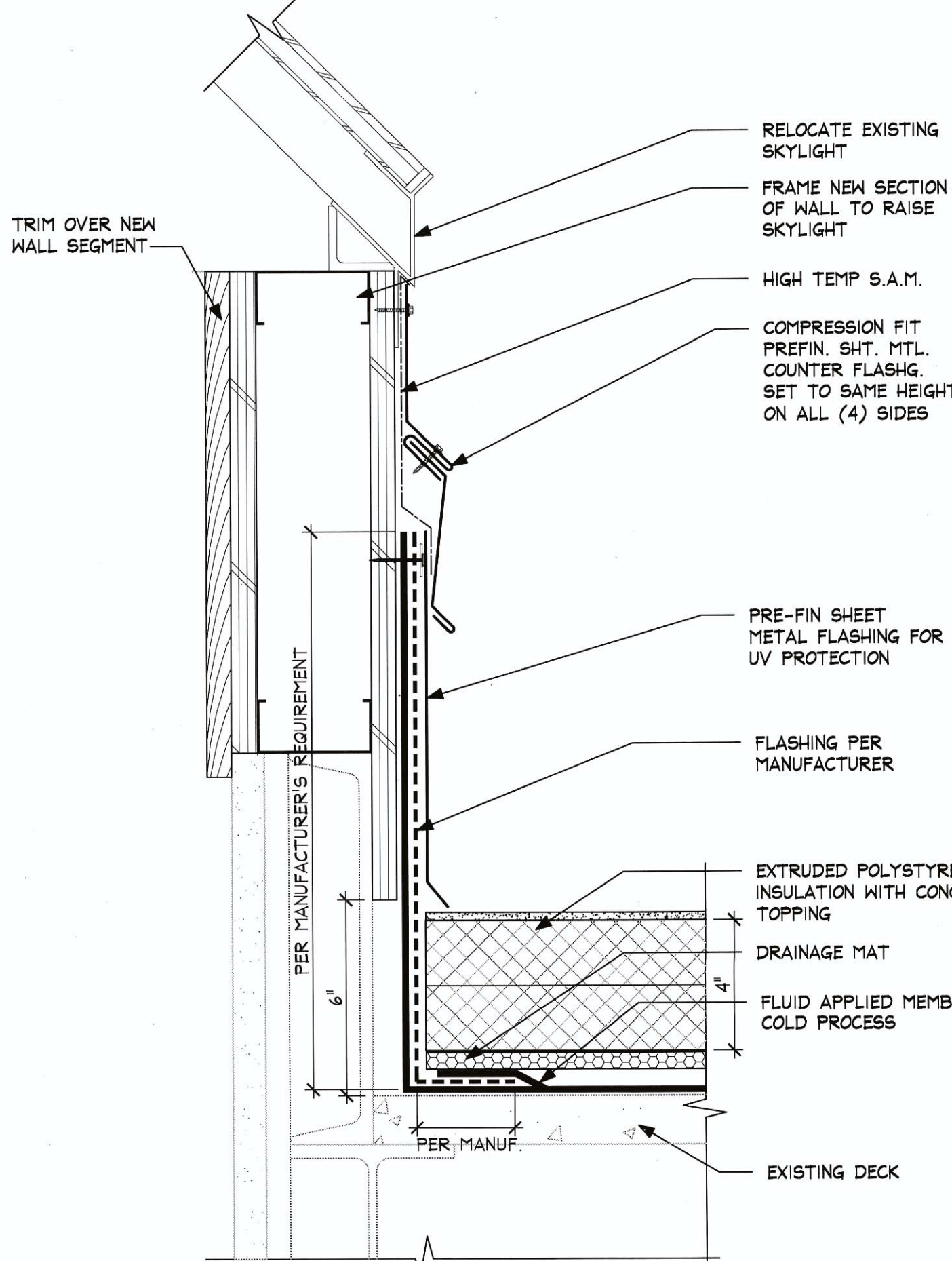
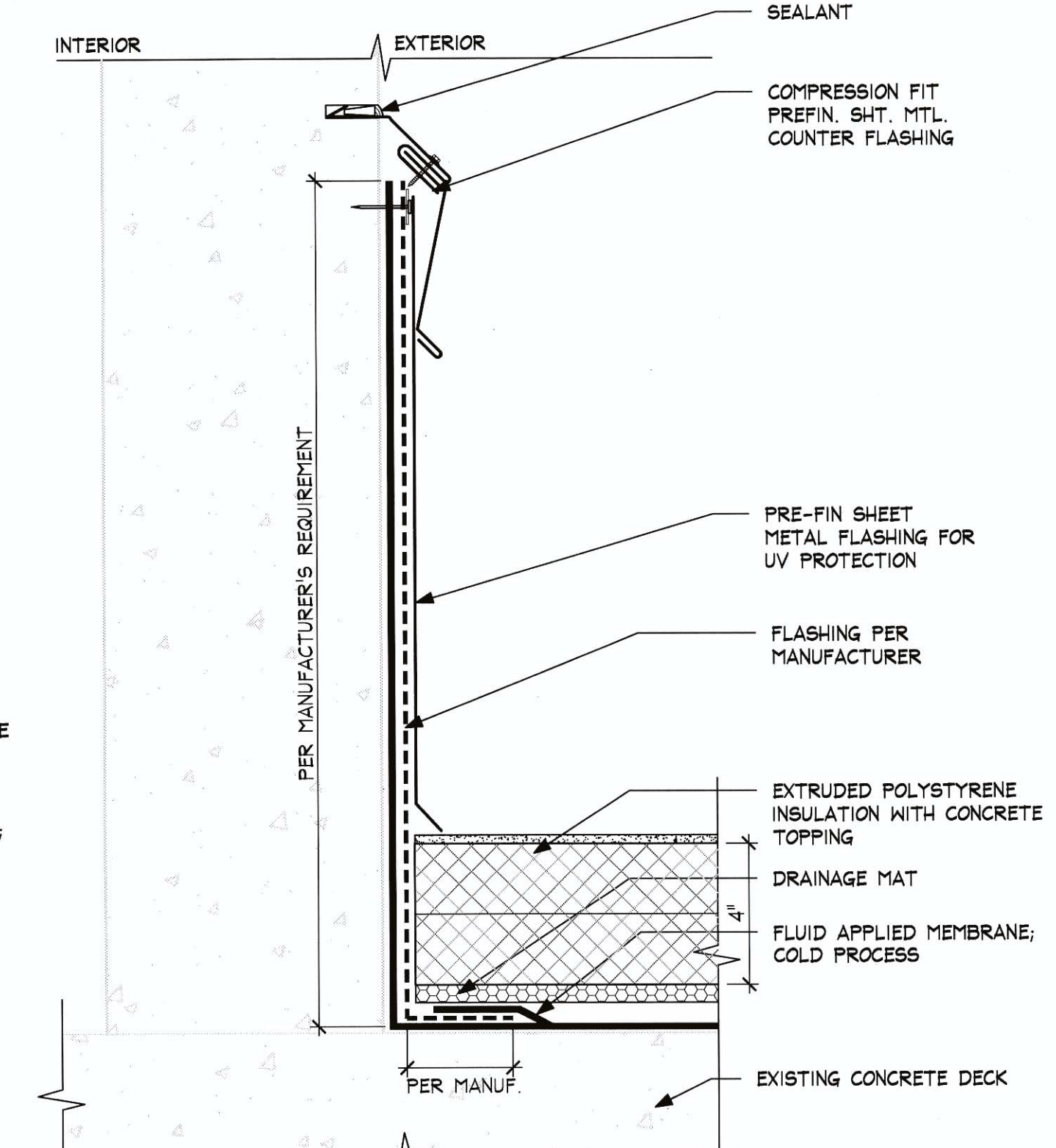
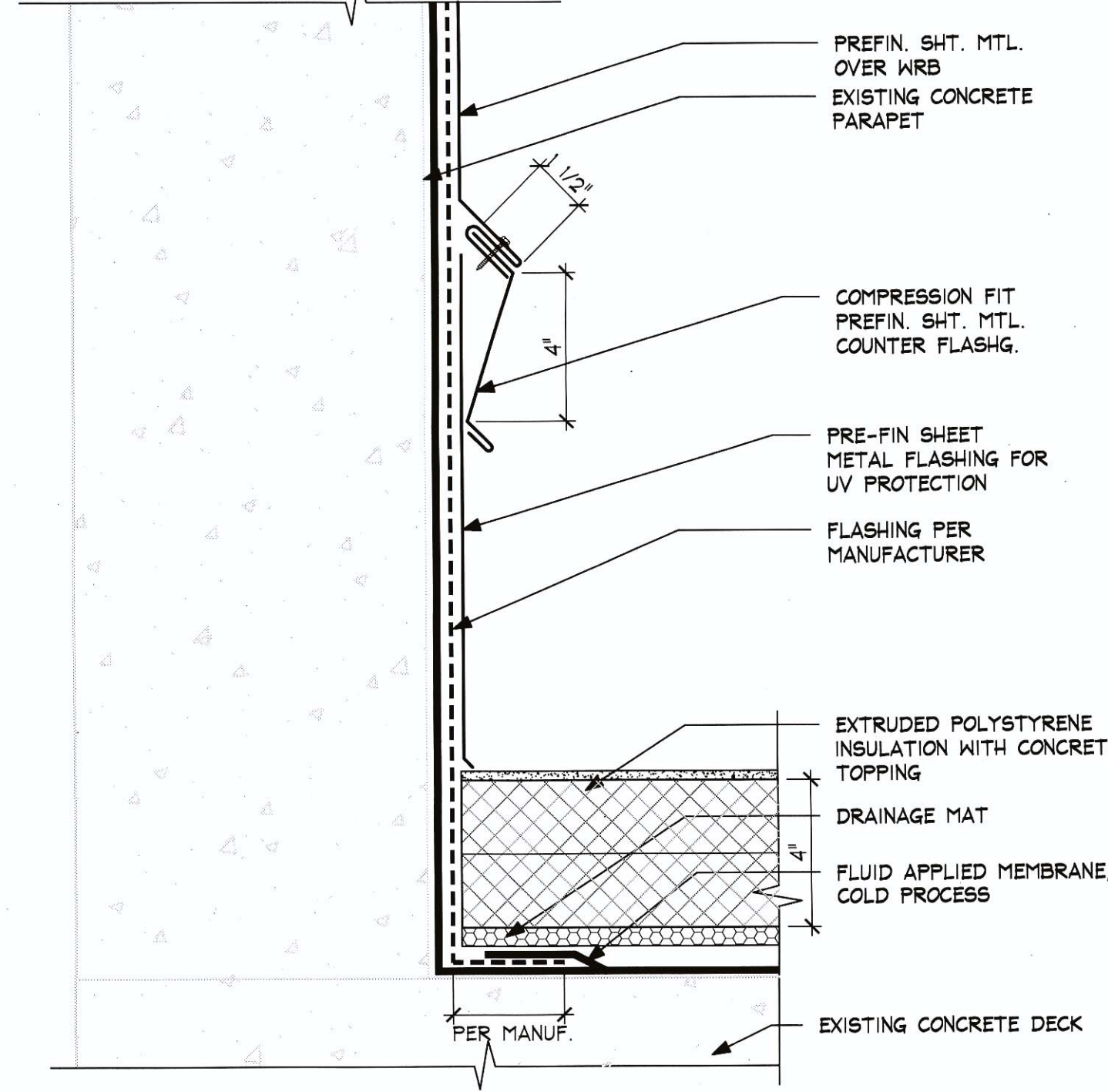
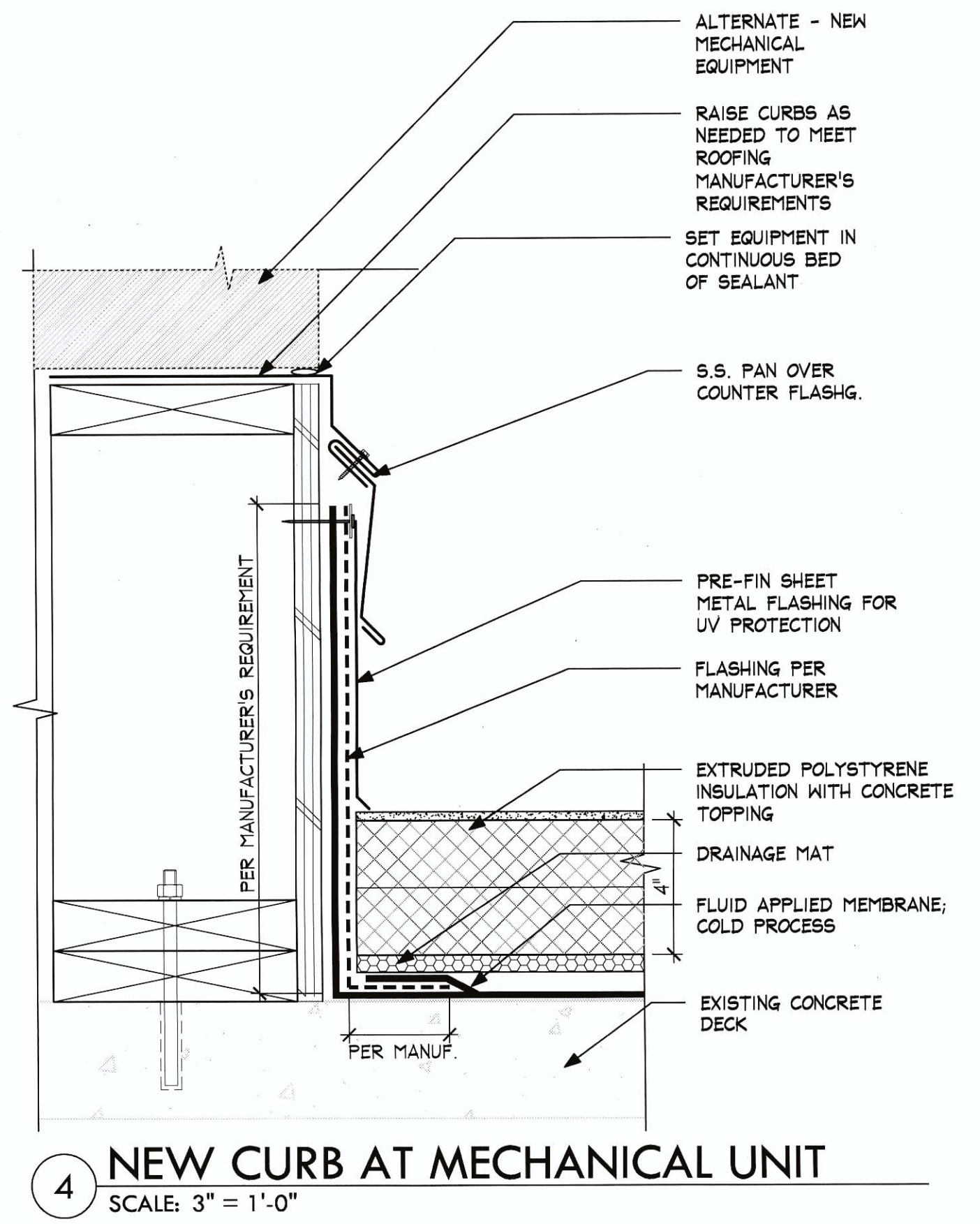
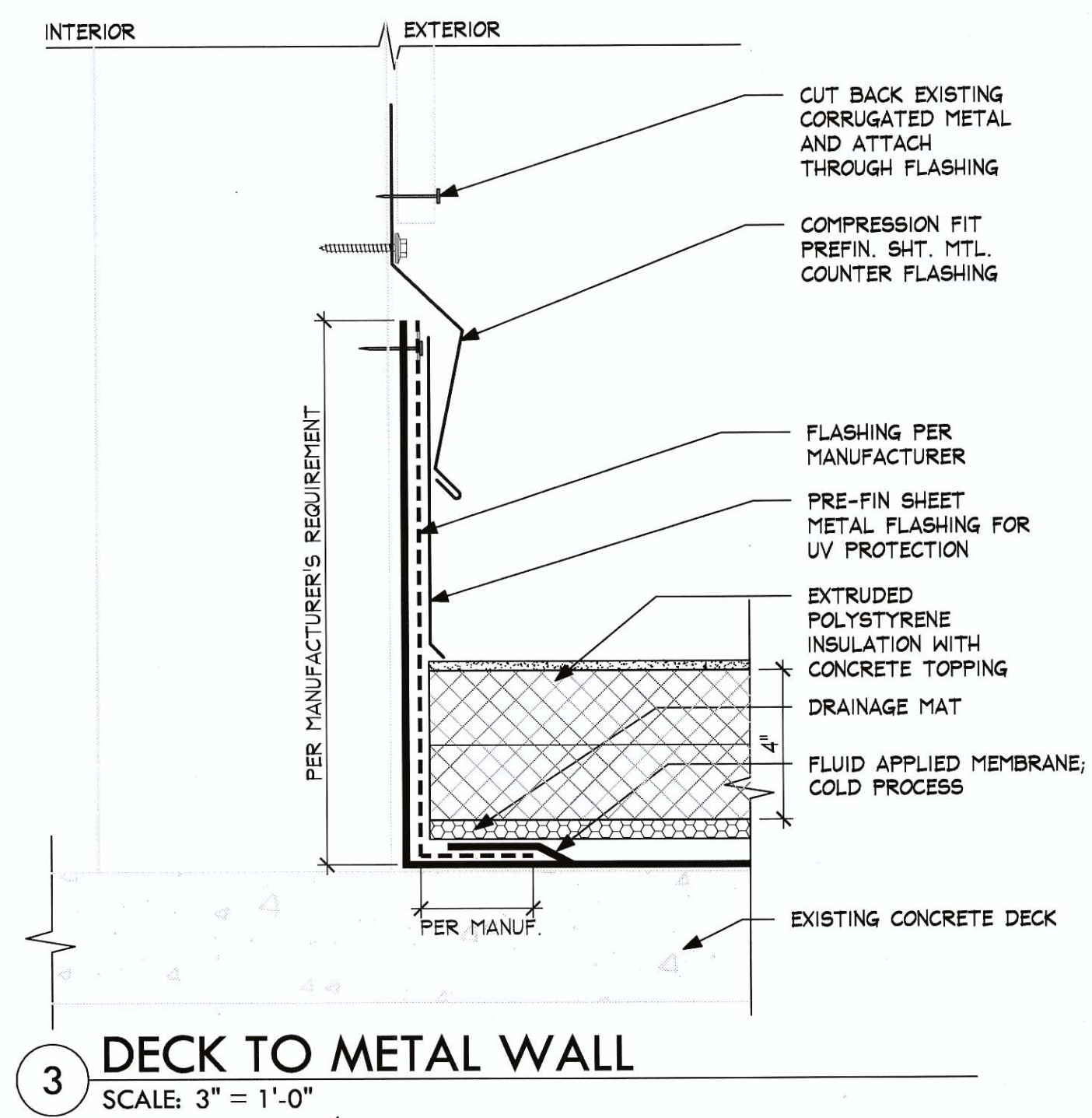
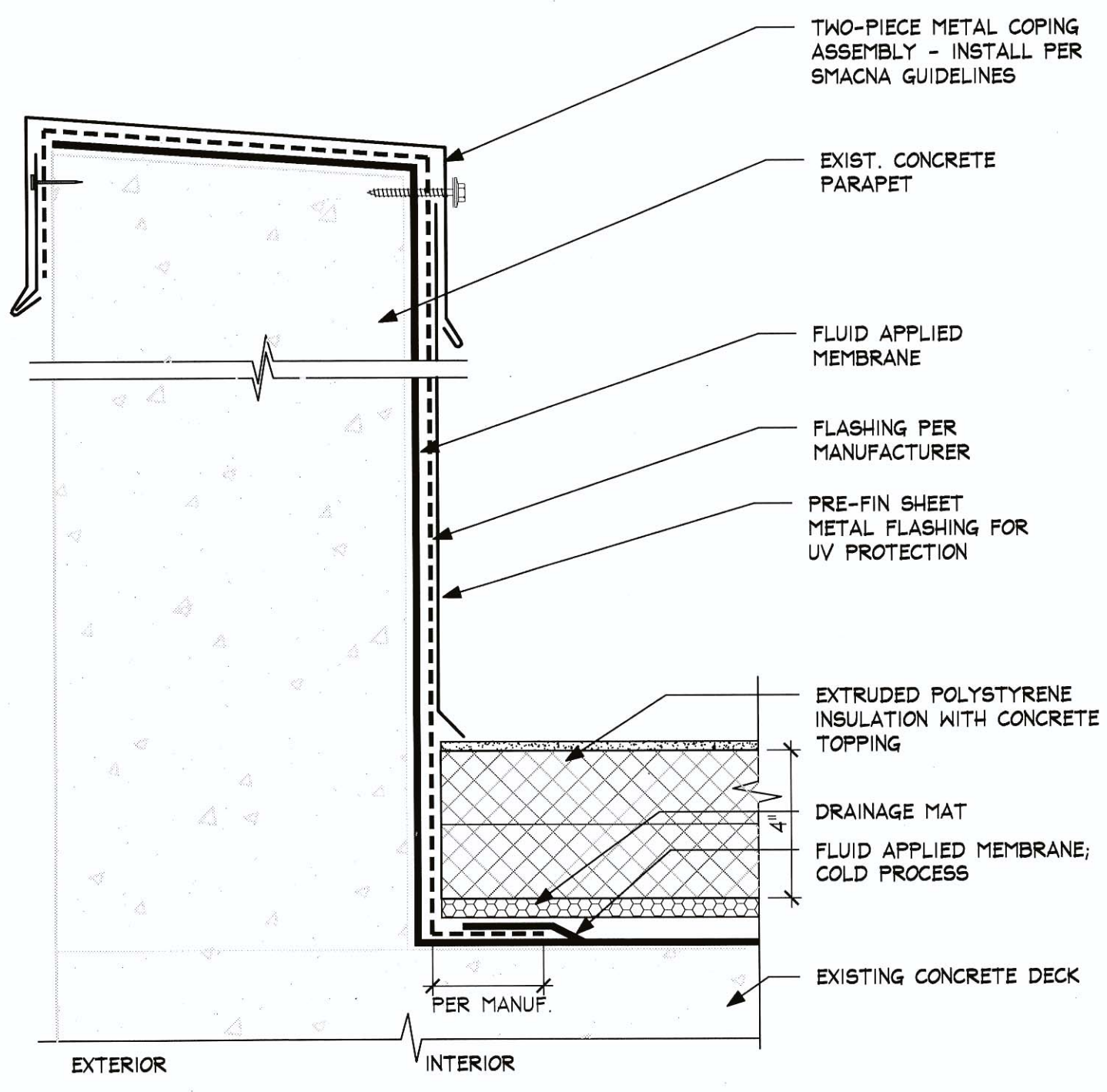
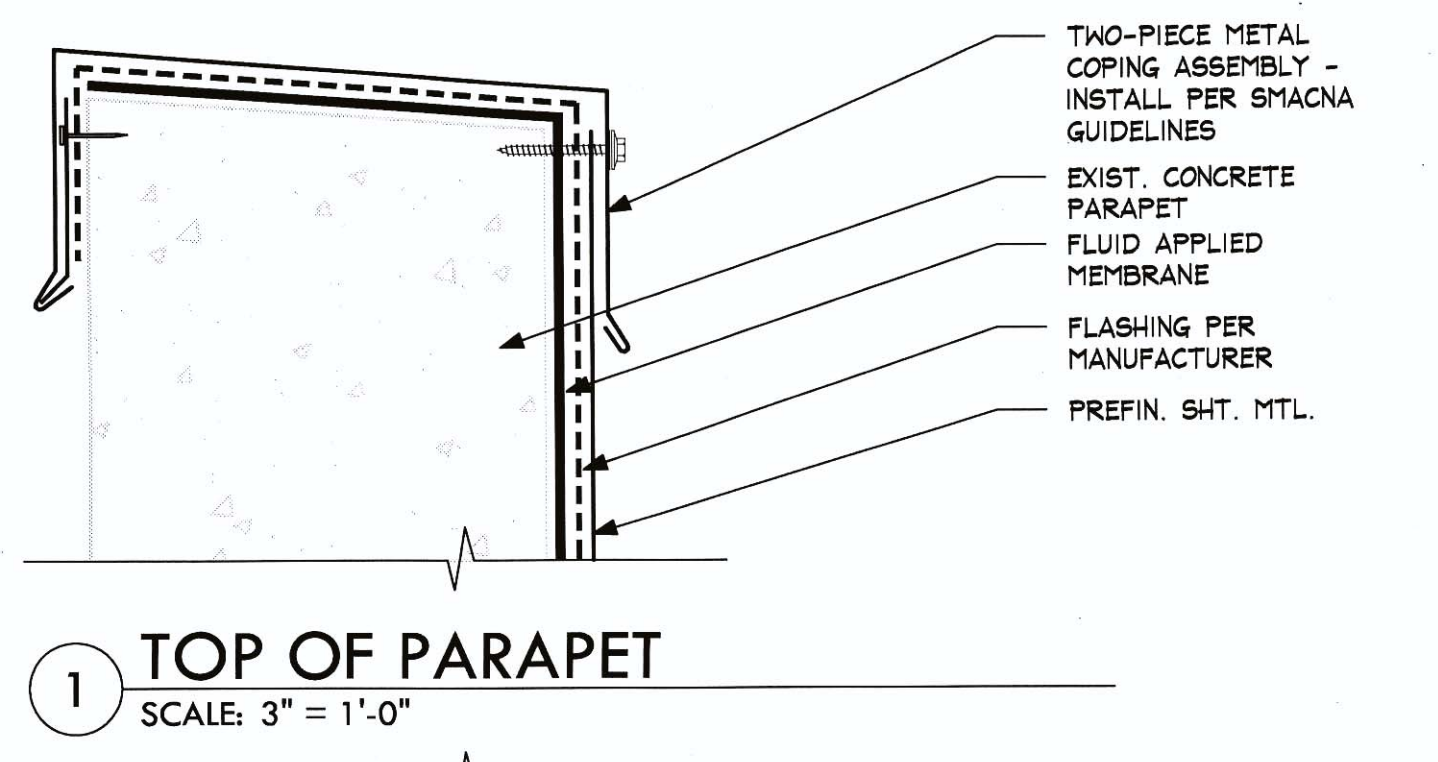
1 PARTIAL ROOF PLAN - SE
 SCALE: 1/8" = 1'-0"



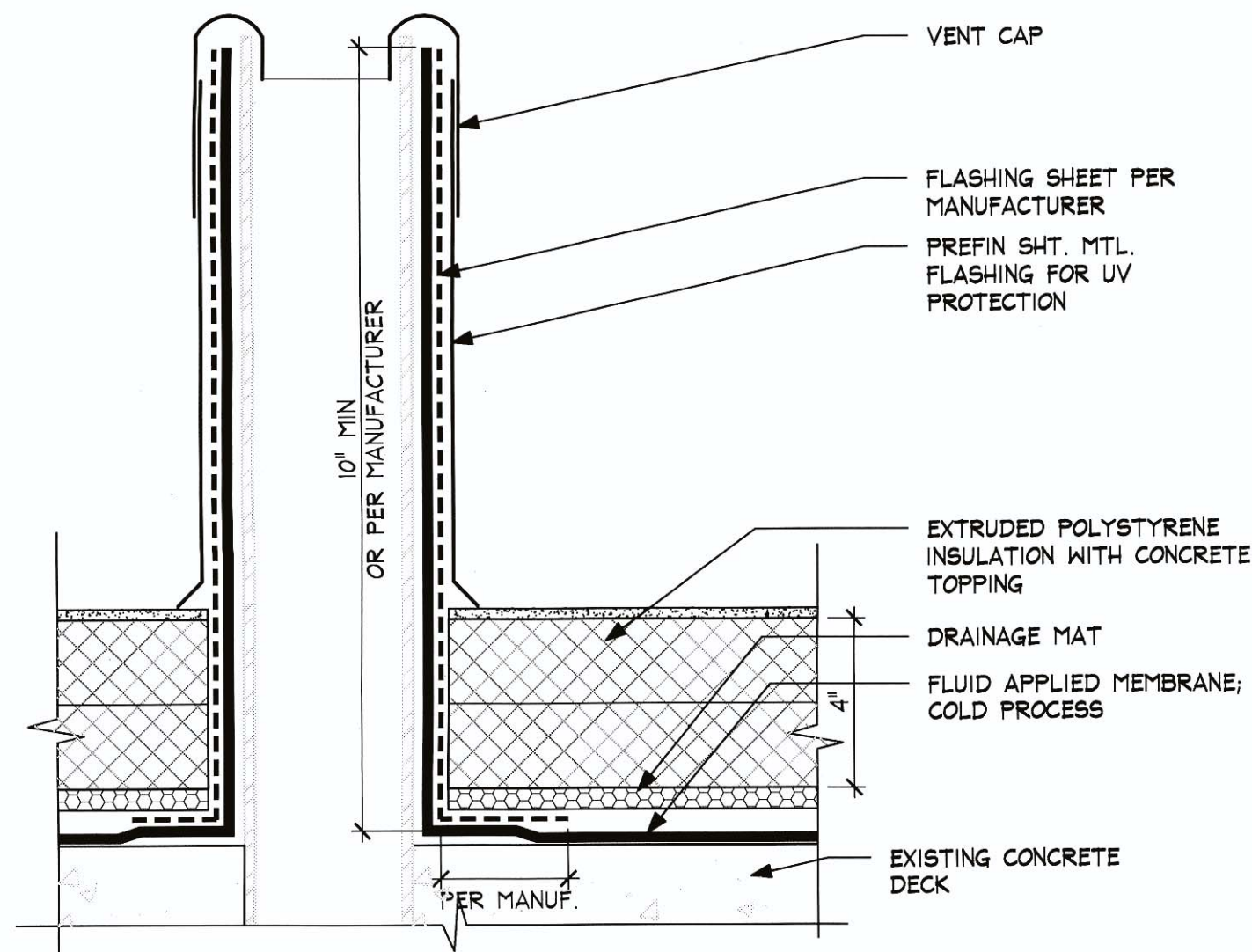
2 KEY PLAN
 SCALE: NTS



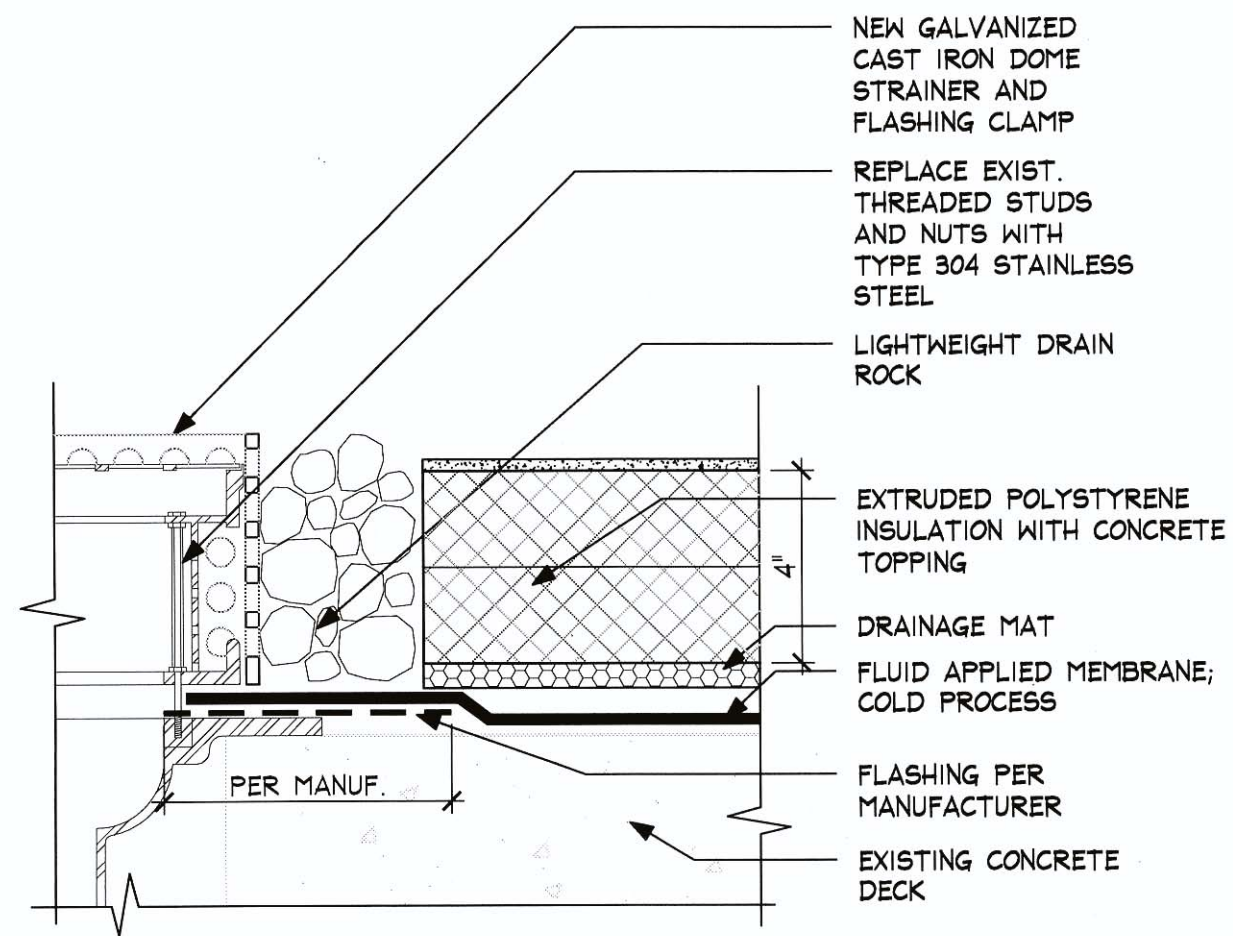
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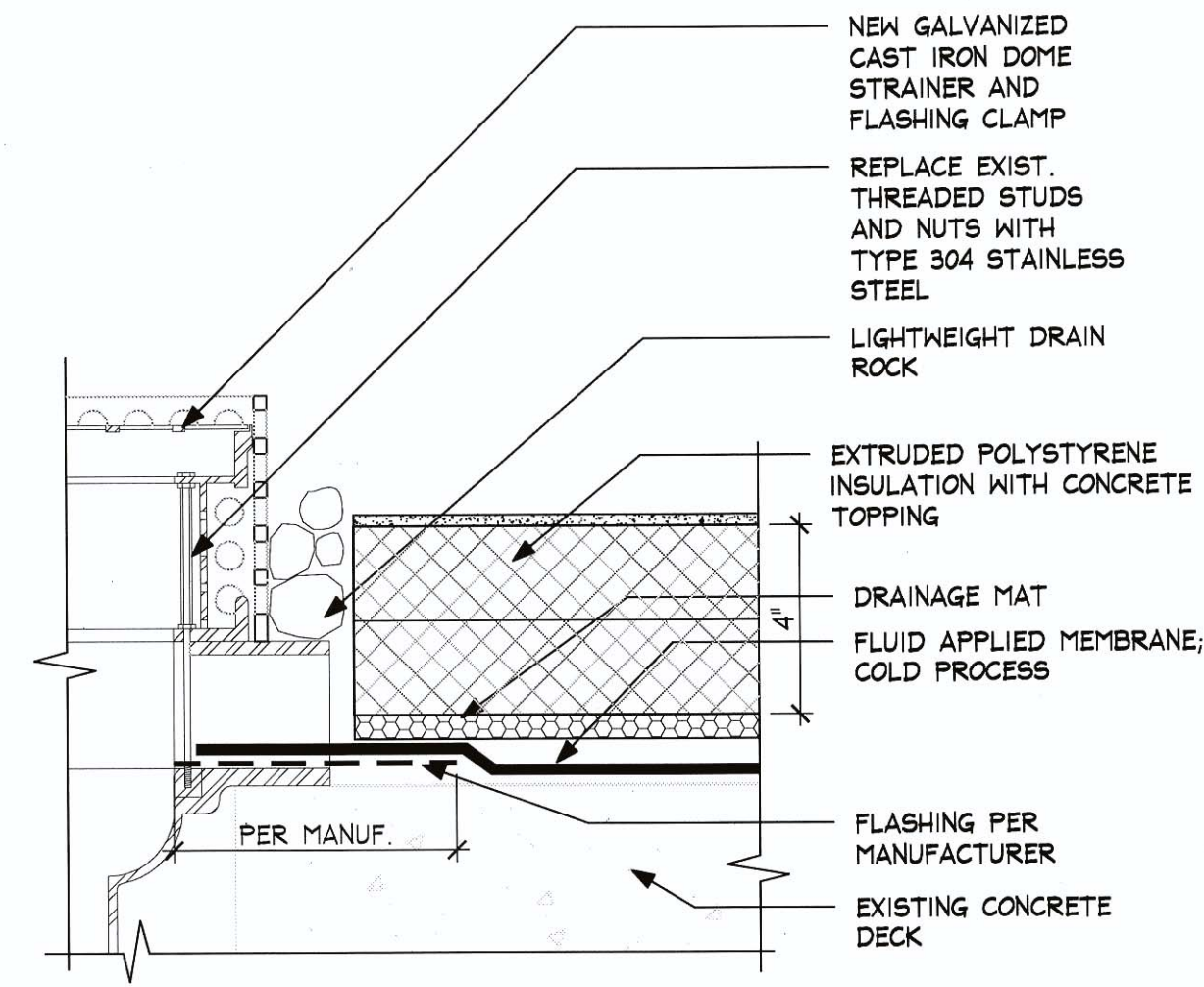
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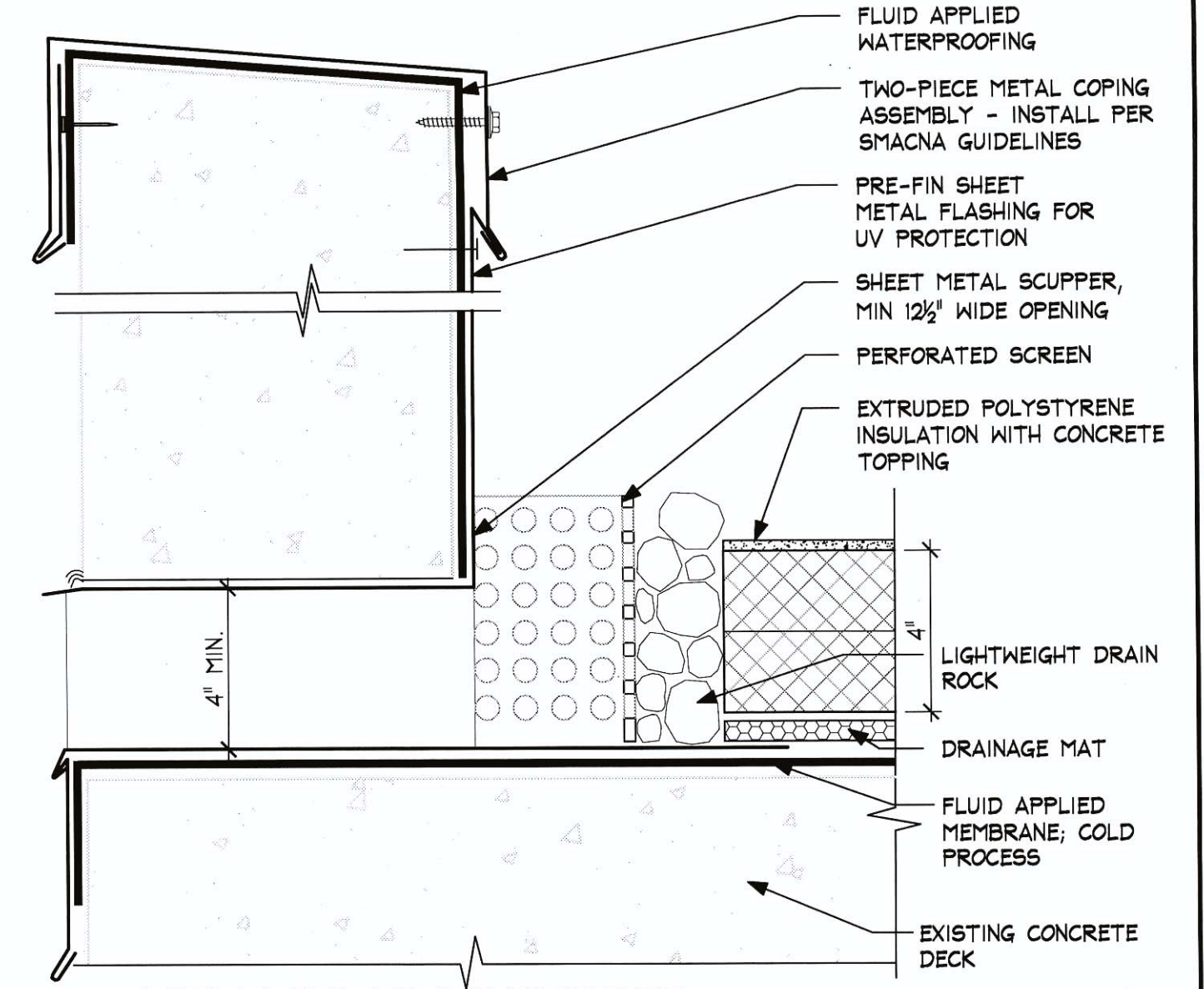
1 WASTE STACK
SCALE: 3" = 1'-0"



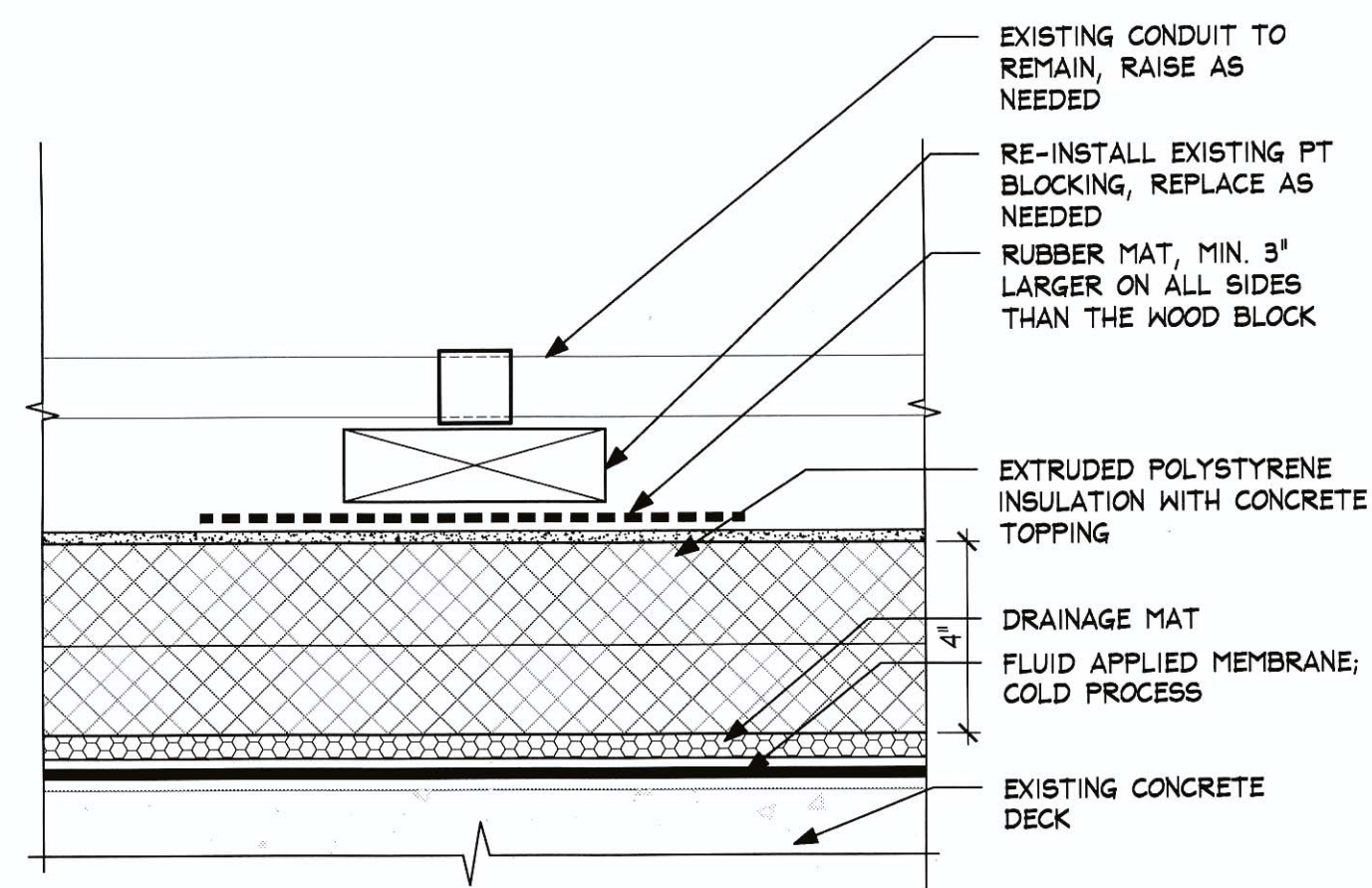
2 ROOF DRAIN
SCALE: 3" = 1'-0"



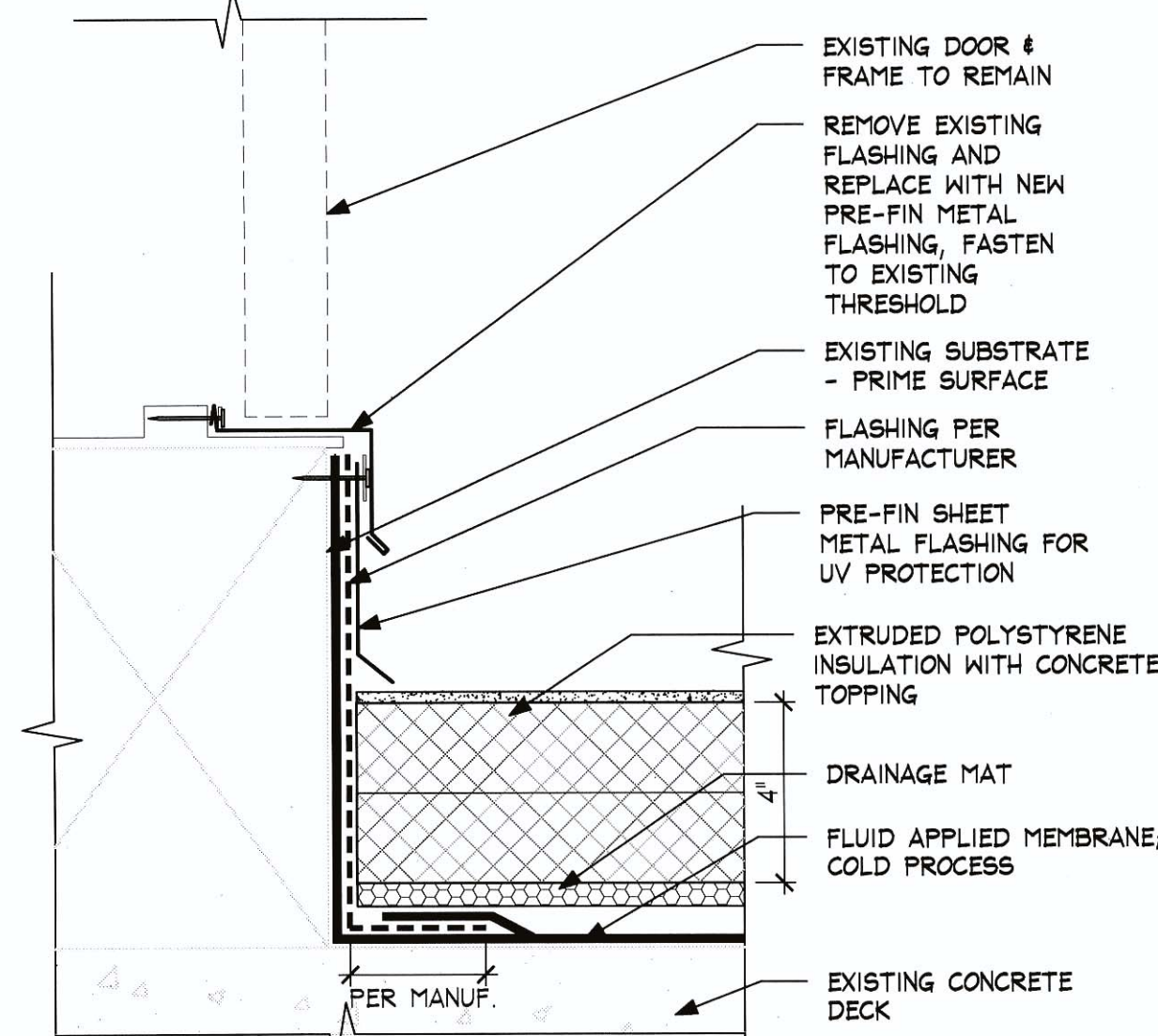
3 OVERFLOW
SCALE: 3" = 1'-0"



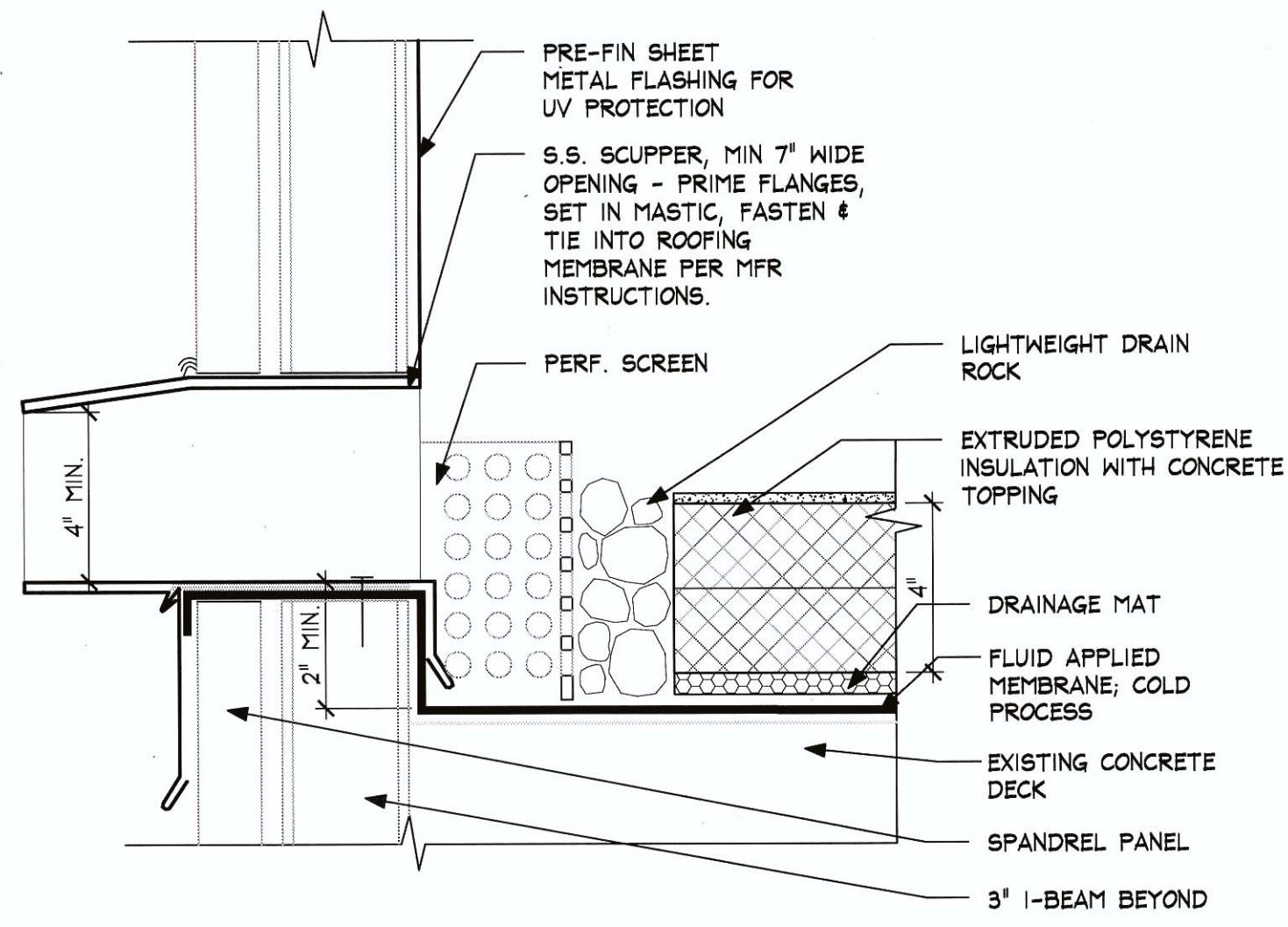
4 NEW DRAIN SCUPPER
SCALE: 3" = 1'-0"



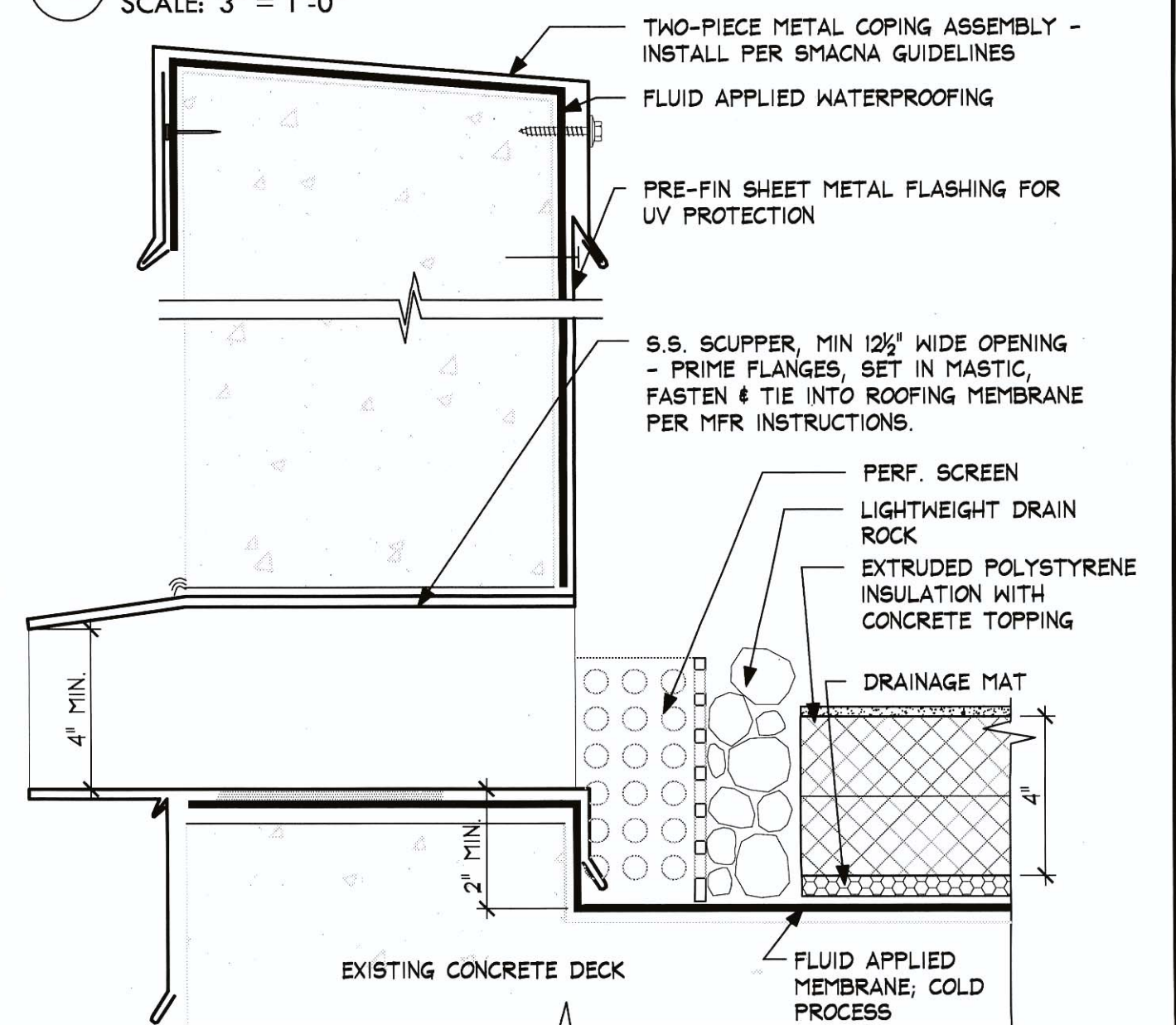
5 SUPPORT AT SURFACE CONDUIT
SCALE: 3" = 1'-0"



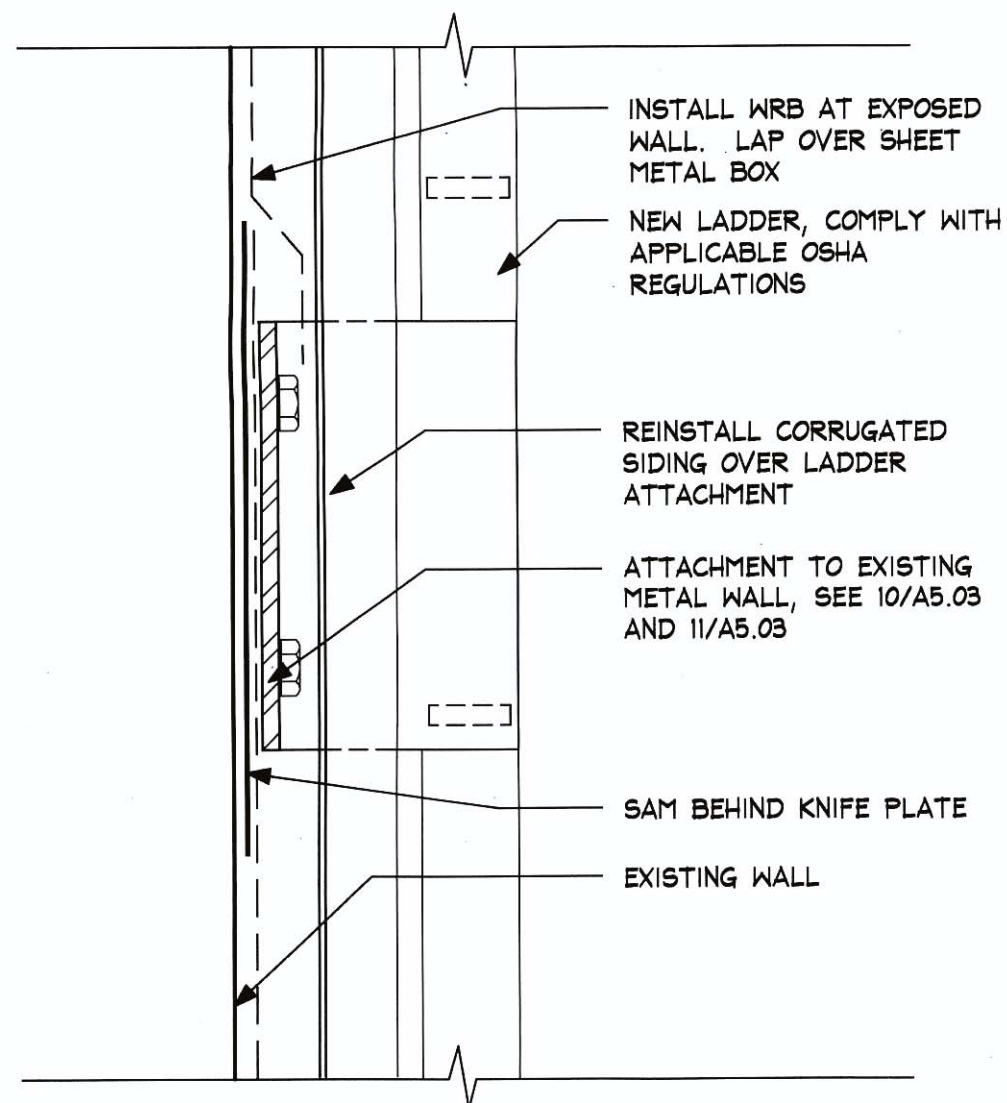
6 DOOR THRESHOLD @ PENTHOUSE - TYP
SCALE: 3" = 1'-0"



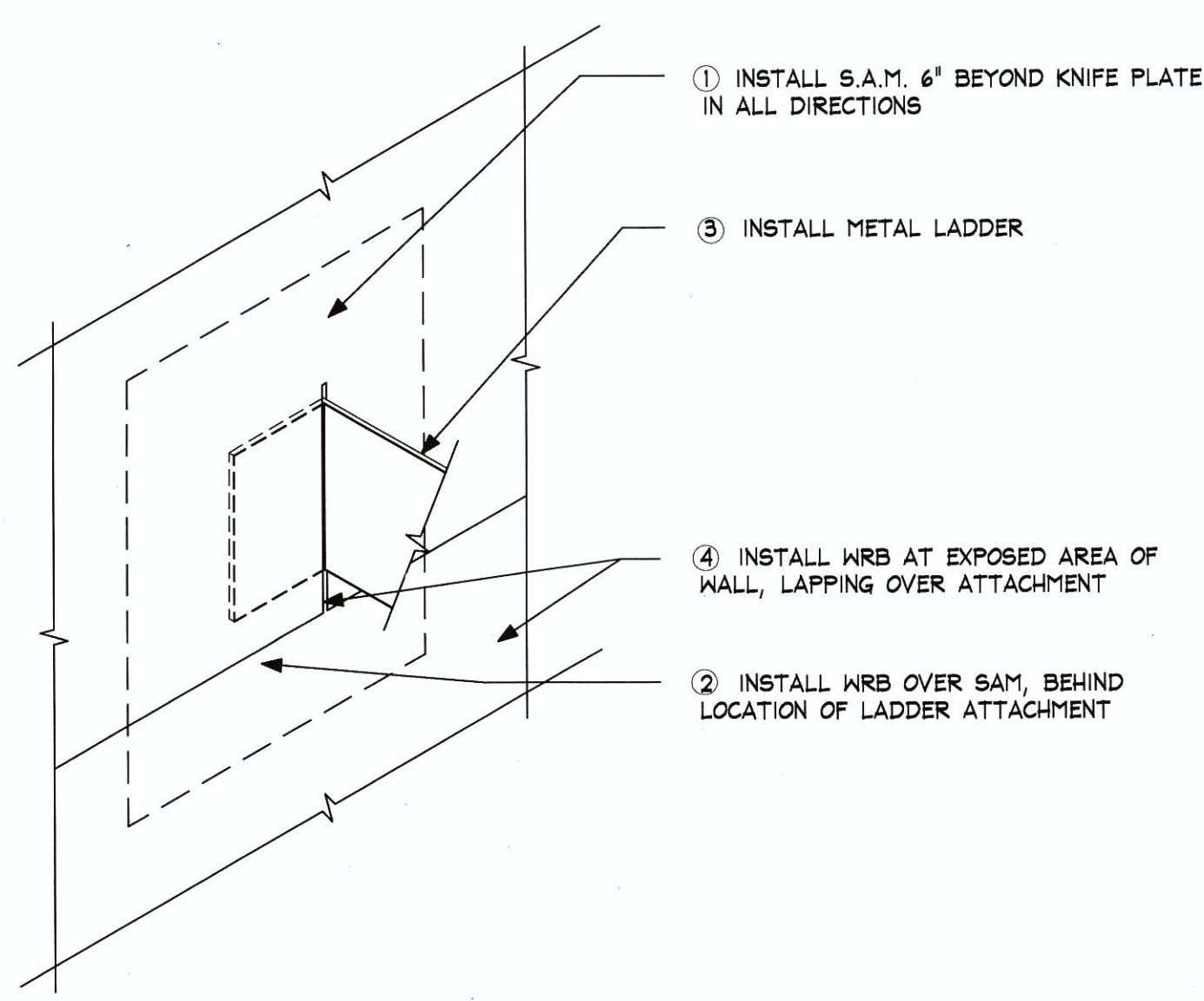
7 NEW OVERFLOW SCUPPER - WEST ROOF
SCALE: 3" = 1'-0"



8 NEW OVERFLOW SCUPPER - EAST ROOF
SCALE: 3" = 1'-0"

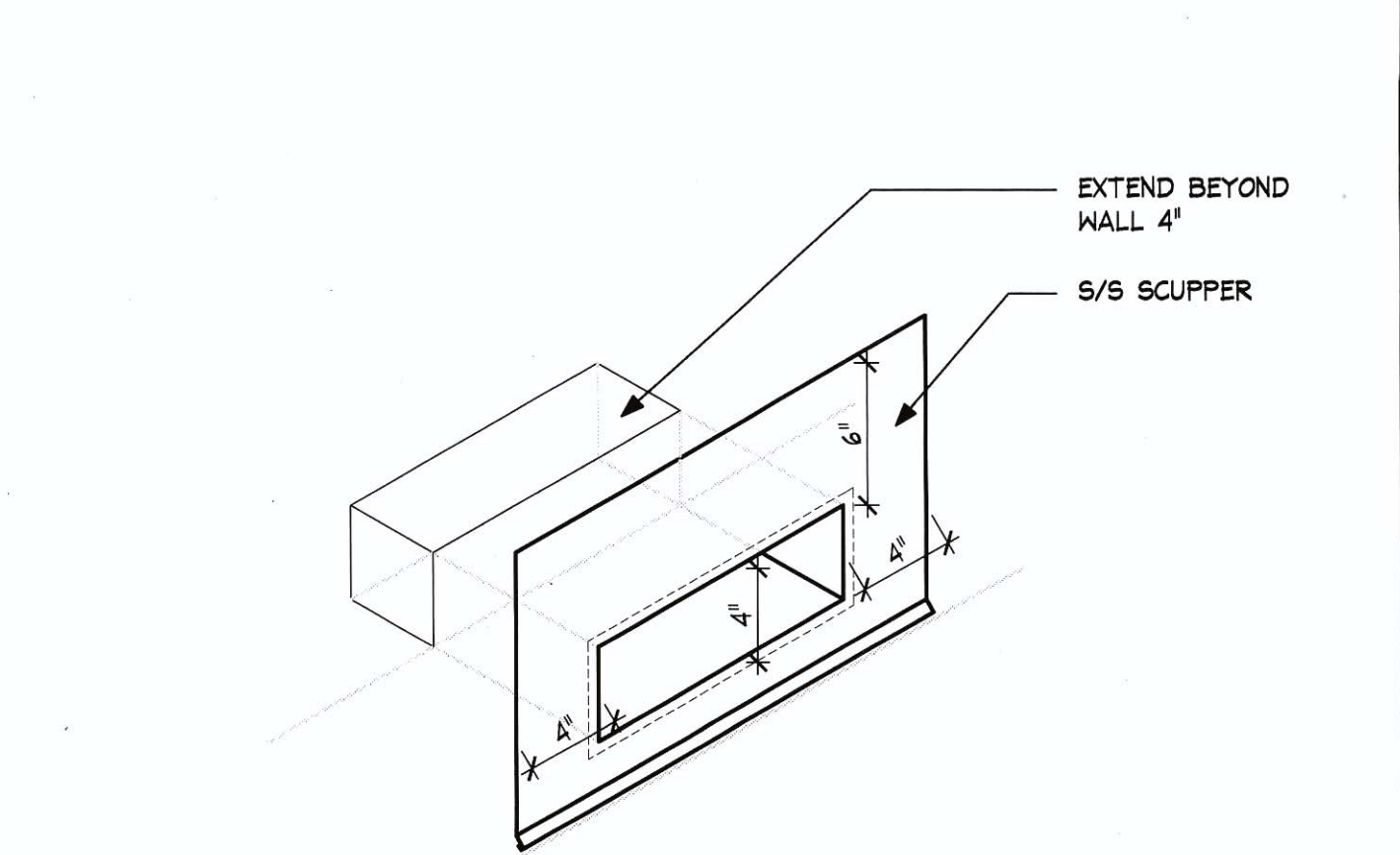


9 NEW LADDER - ALTERNATE #4
SCALE: 3" = 1'-0"

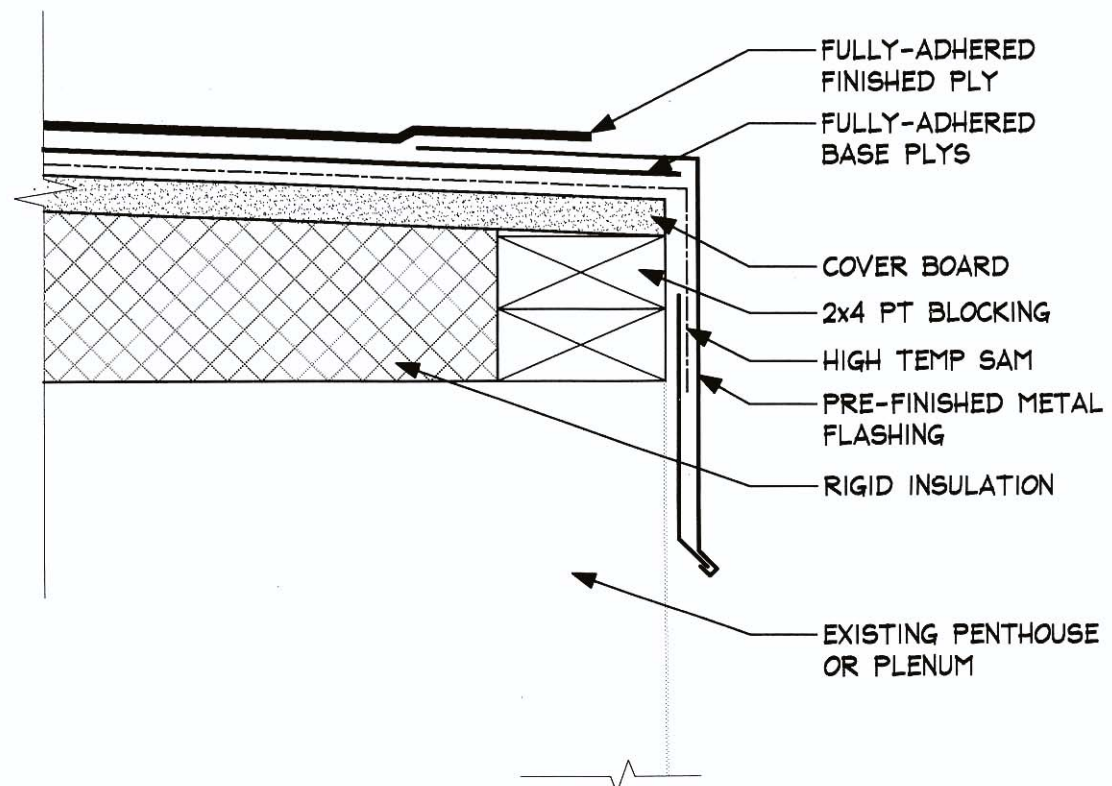


10 FLASHING AT LADDER ATTACHMENT
SCALE: 3" = 1'-0"

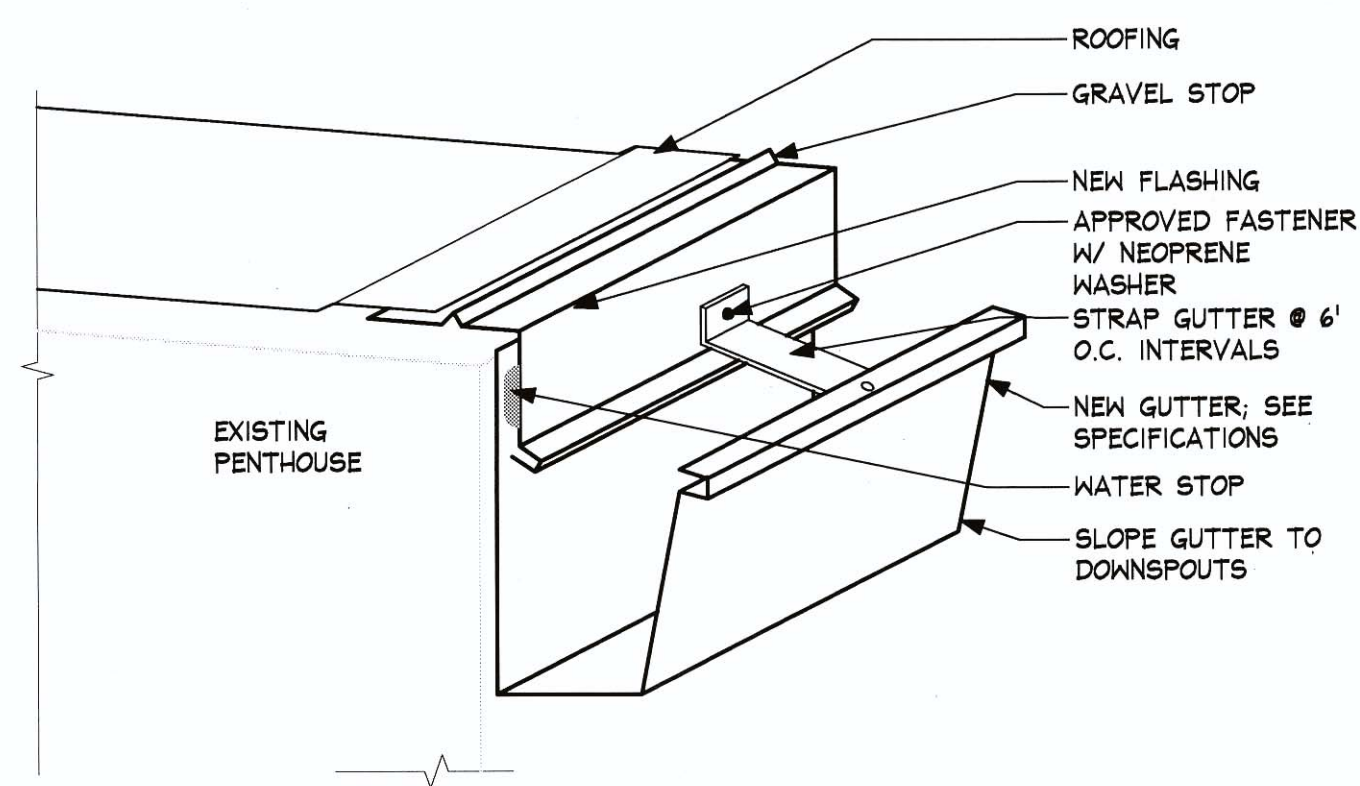
11 NOT USED
SCALE:



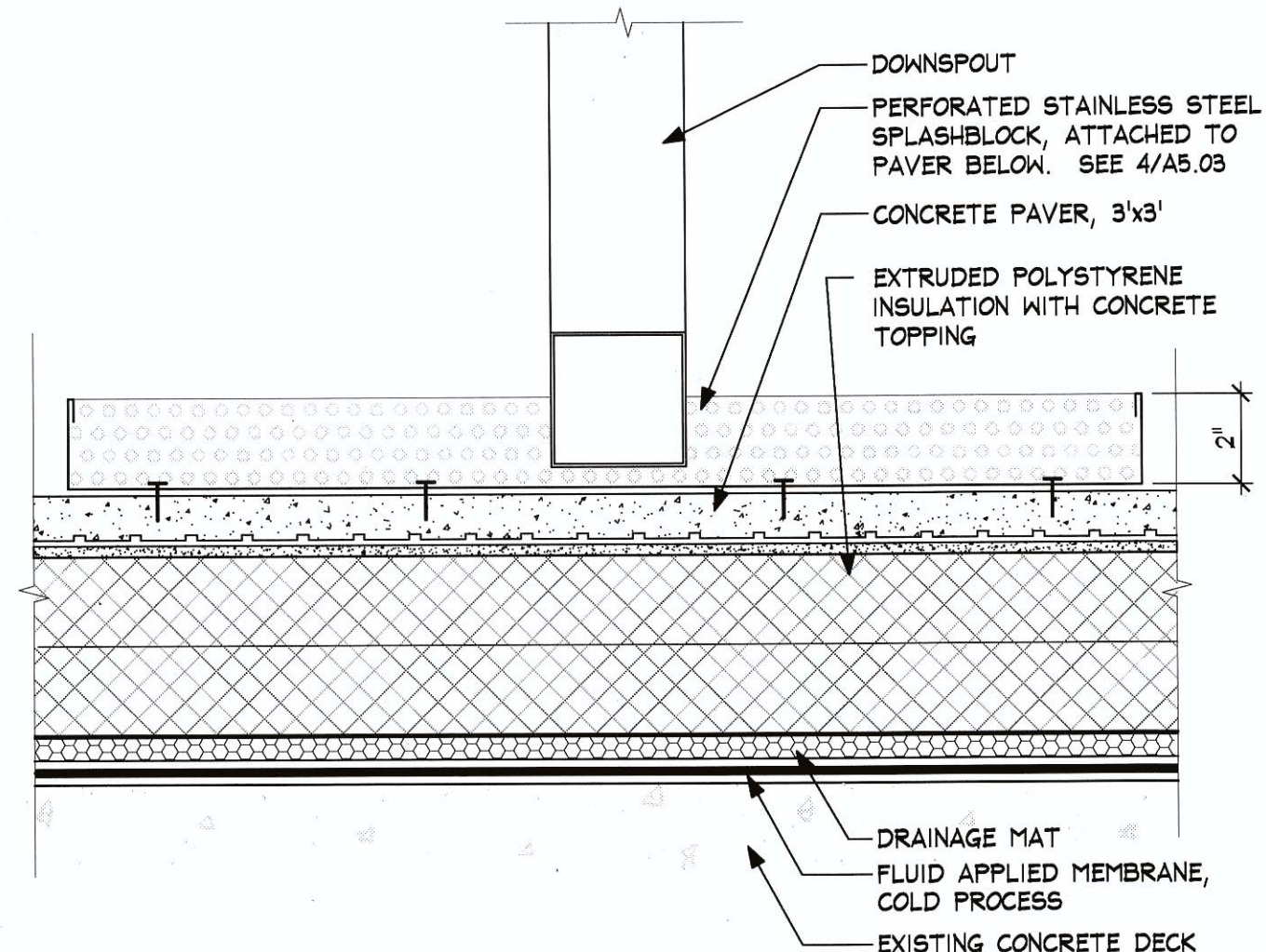
12 SCUPPER INSERT
SCALE: N.T.S.



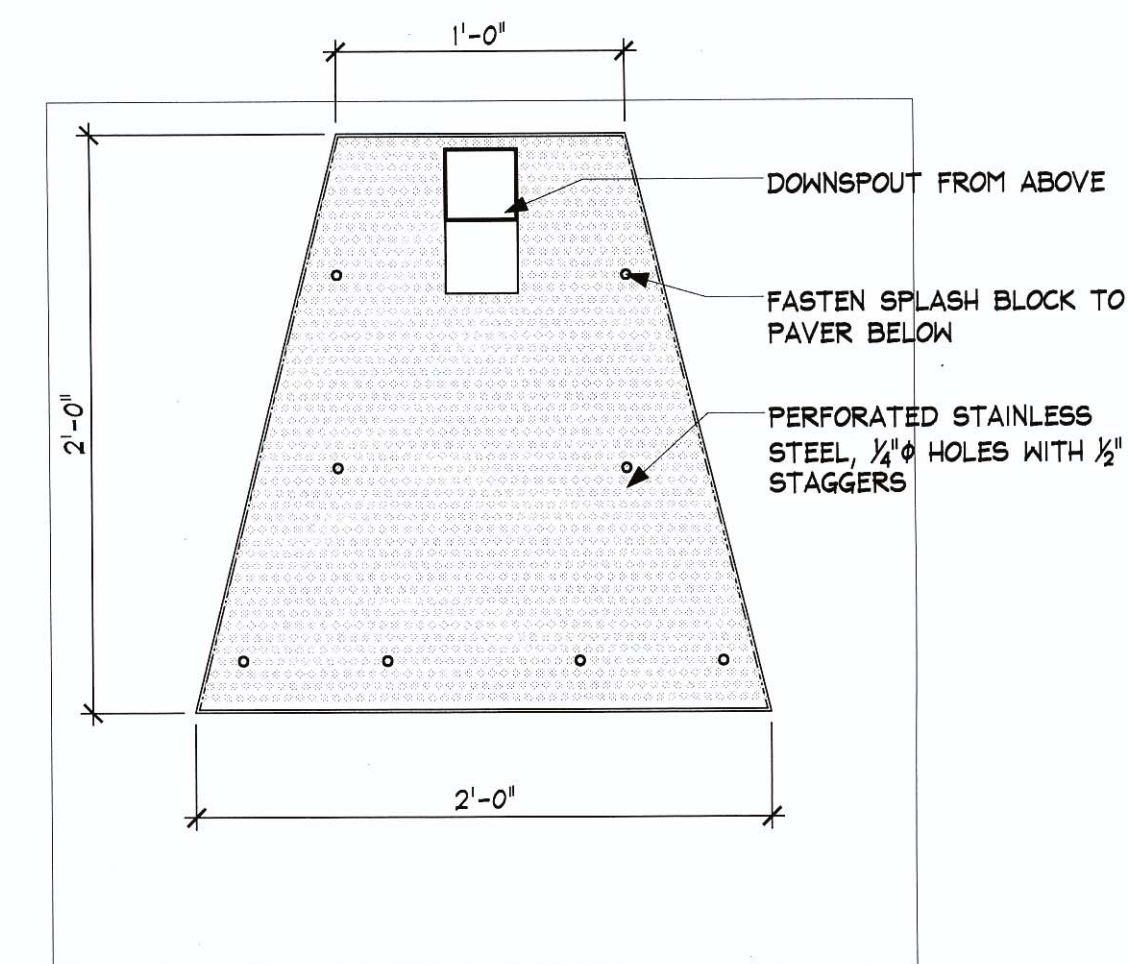
1 PENTHOUSE / PLENUM ROOF EDGE
SCALE: 3" = 1'-0"



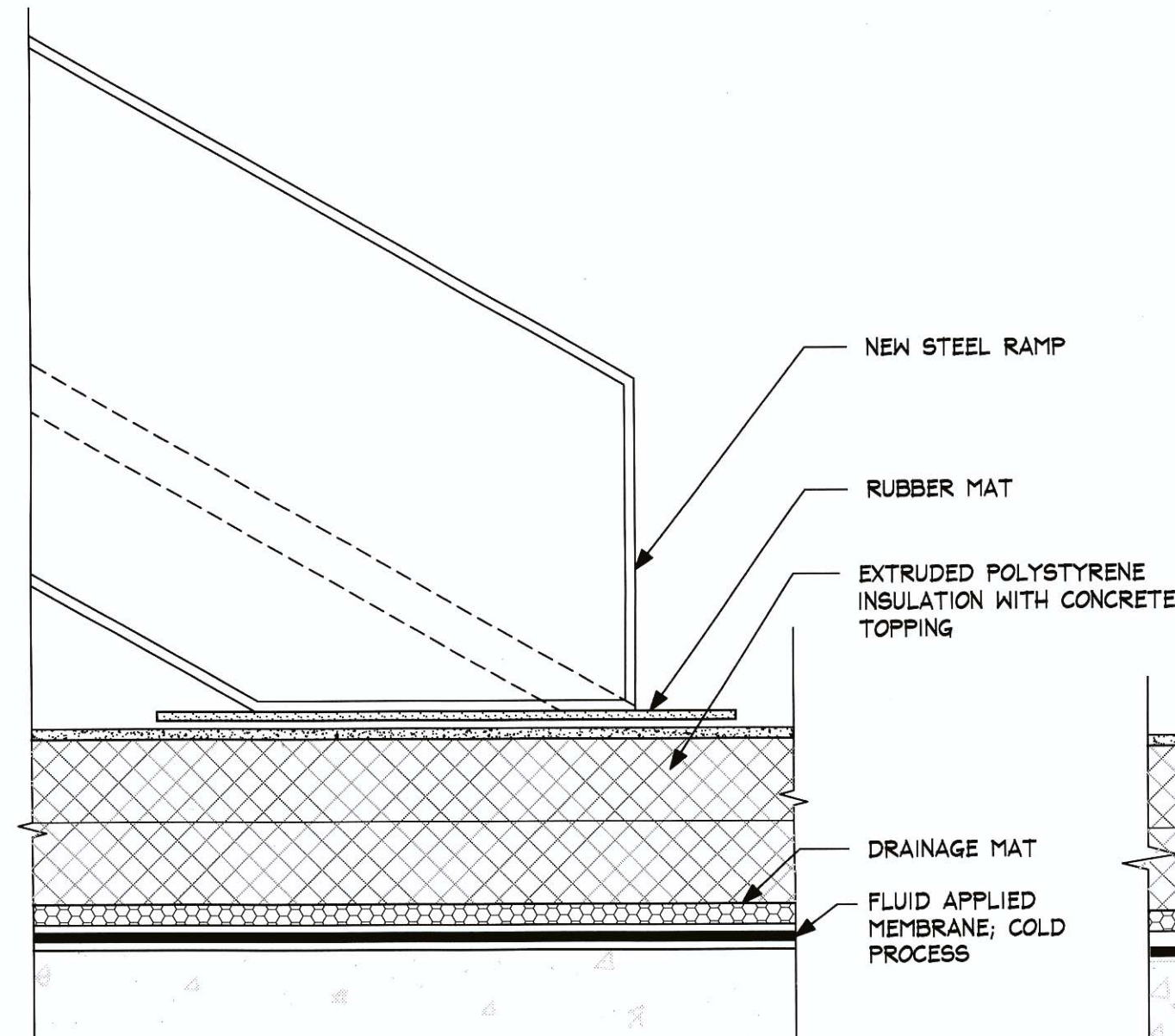
2 GUTTER @ PENTHOUSE ROOF EDGE
SCALE: 3" = 1'-0"



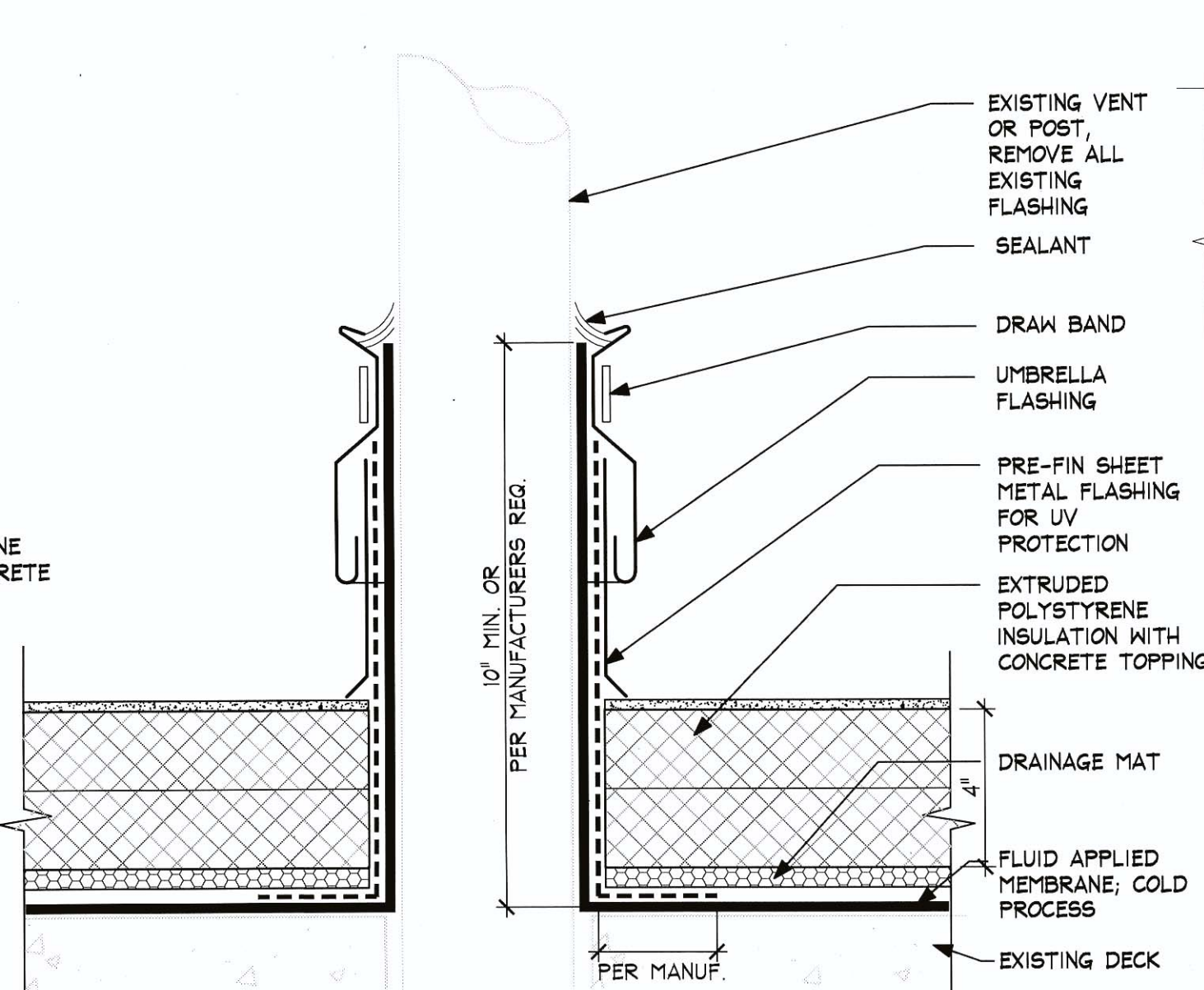
3 DOWNSPOUT & SPLASHBLOCK
SCALE: 3" = 1'-0"



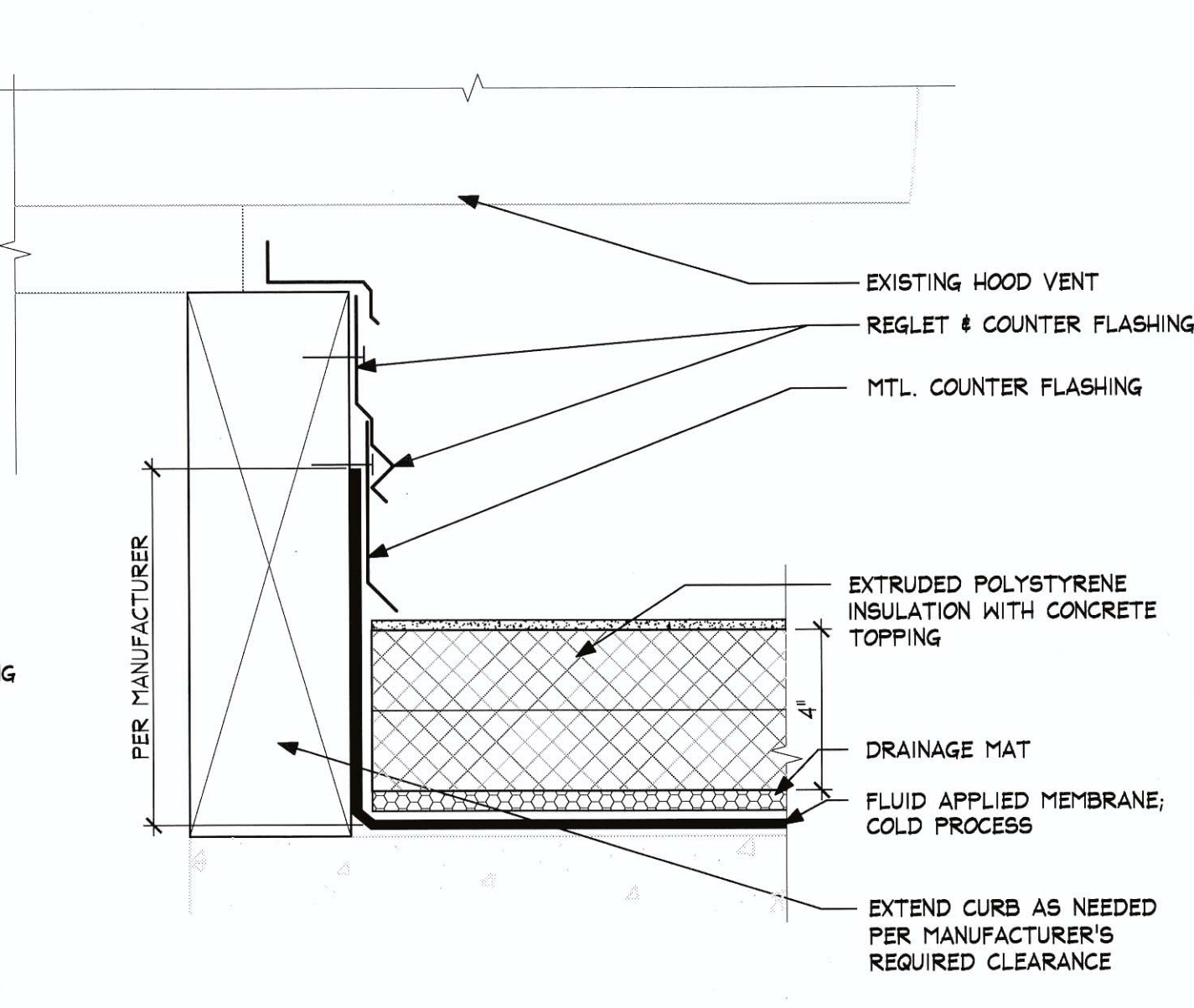
4 SPLASHBLOCK PLAN
SCALE:



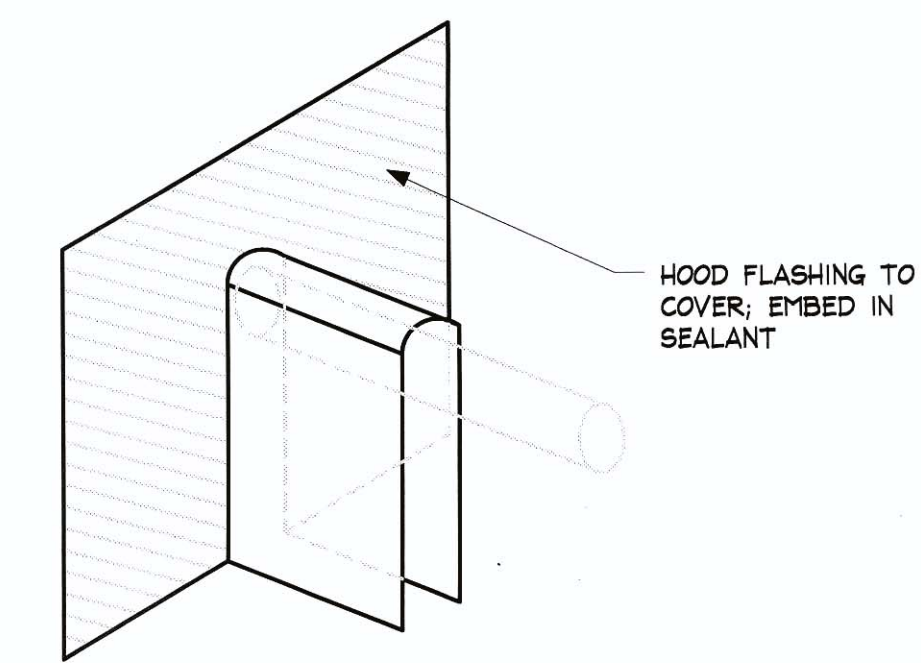
5 RAMP
SCALE: 3" = 1'-0"



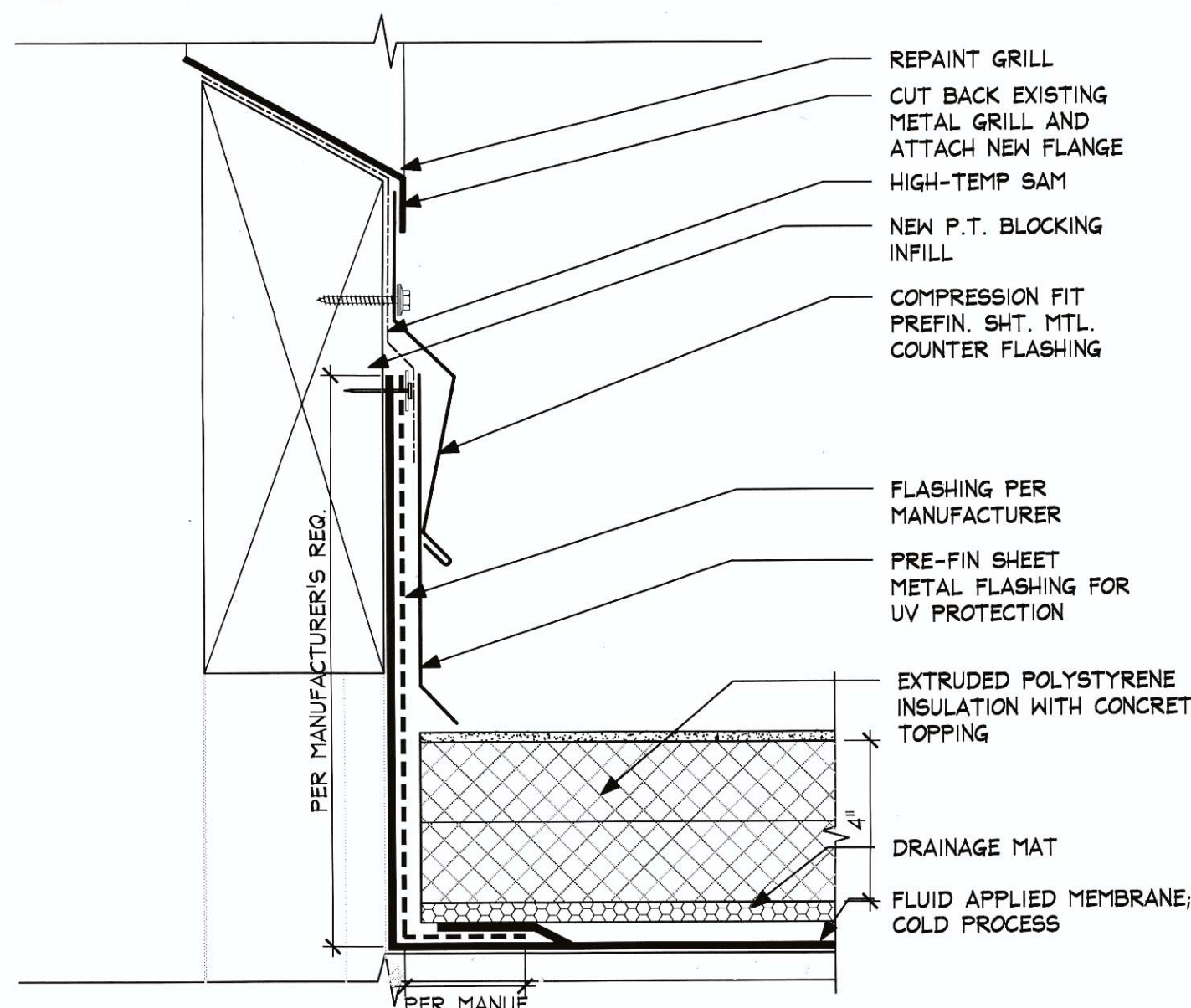
6 SMALL VENT OR POST
SCALE: 3" = 1'-0"



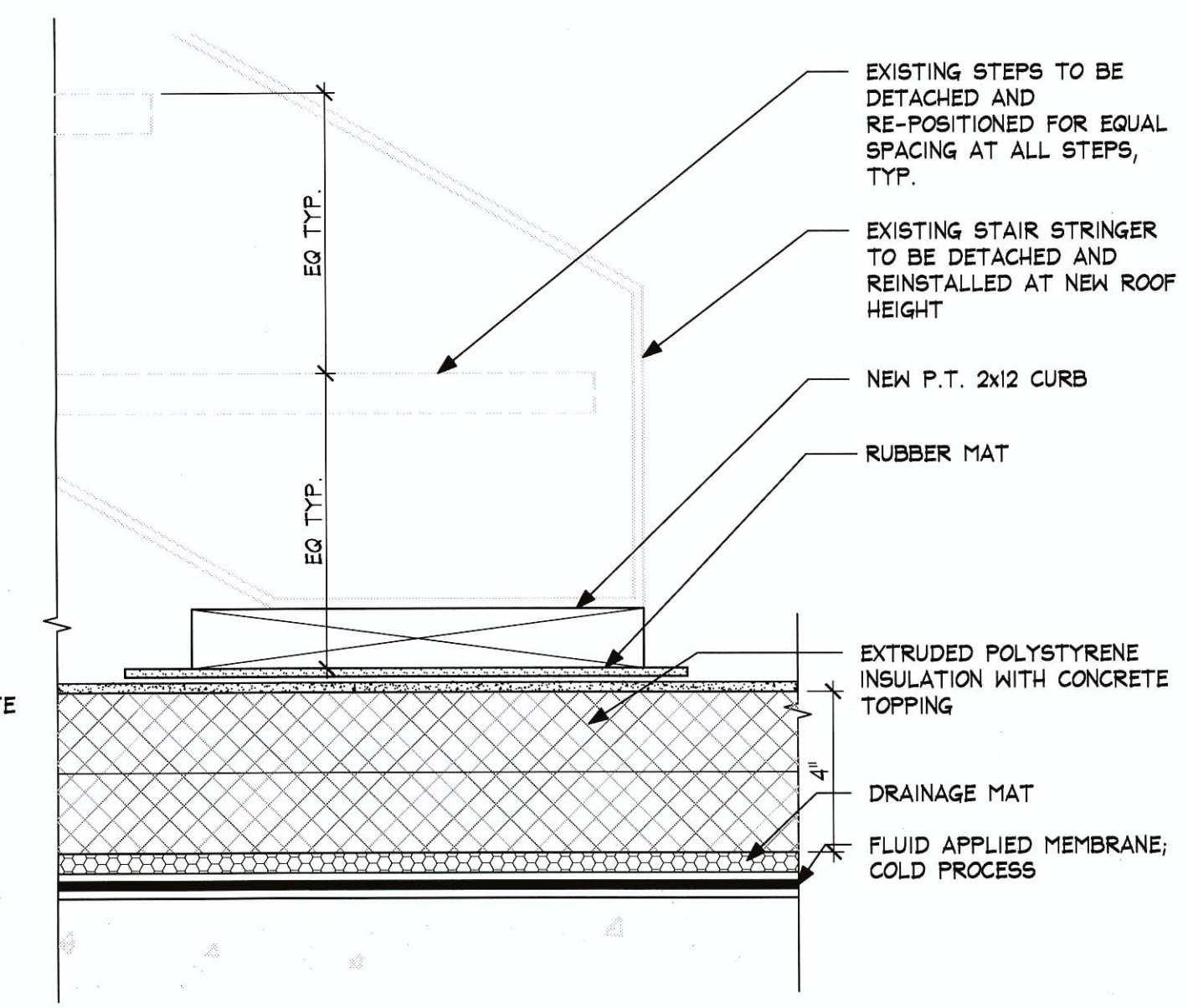
7 LARGE VENT
SCALE: 3" = 1'-0"



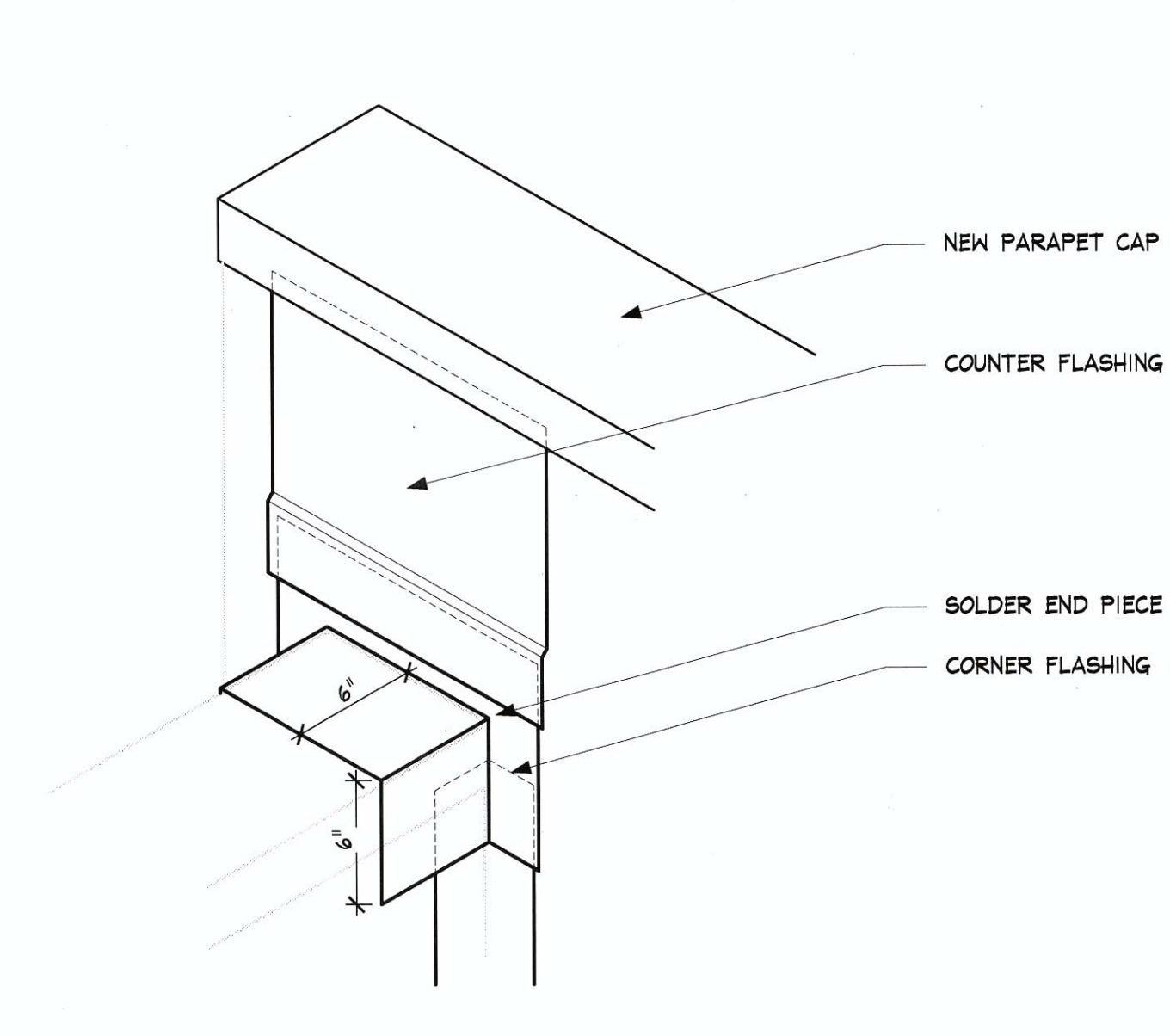
8 THROUGH WALL DRAIN
SCALE: 3" = 1'-0"



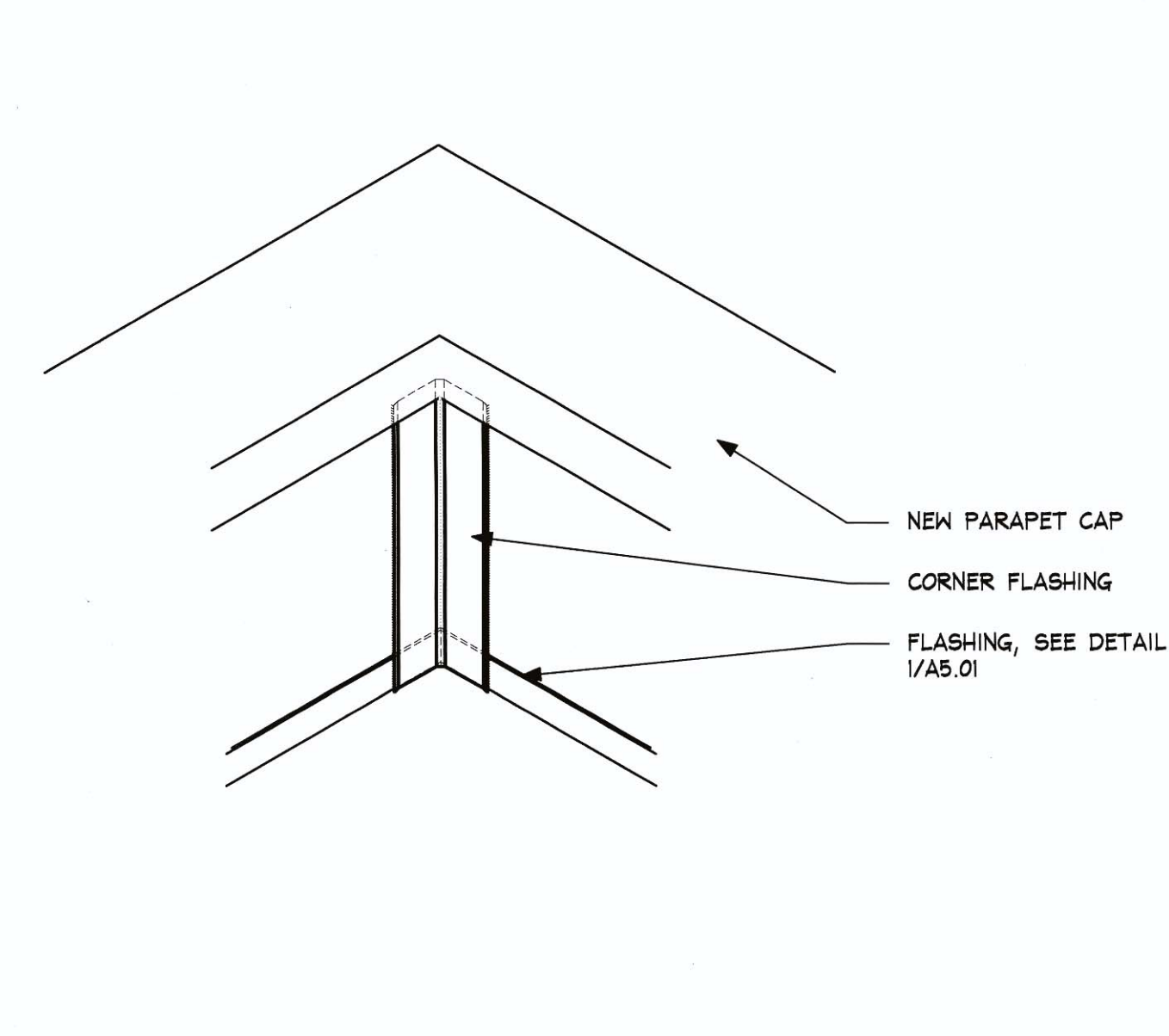
9 CURB AT EXHAUST GRILL
SCALE: 3" = 1'-0"



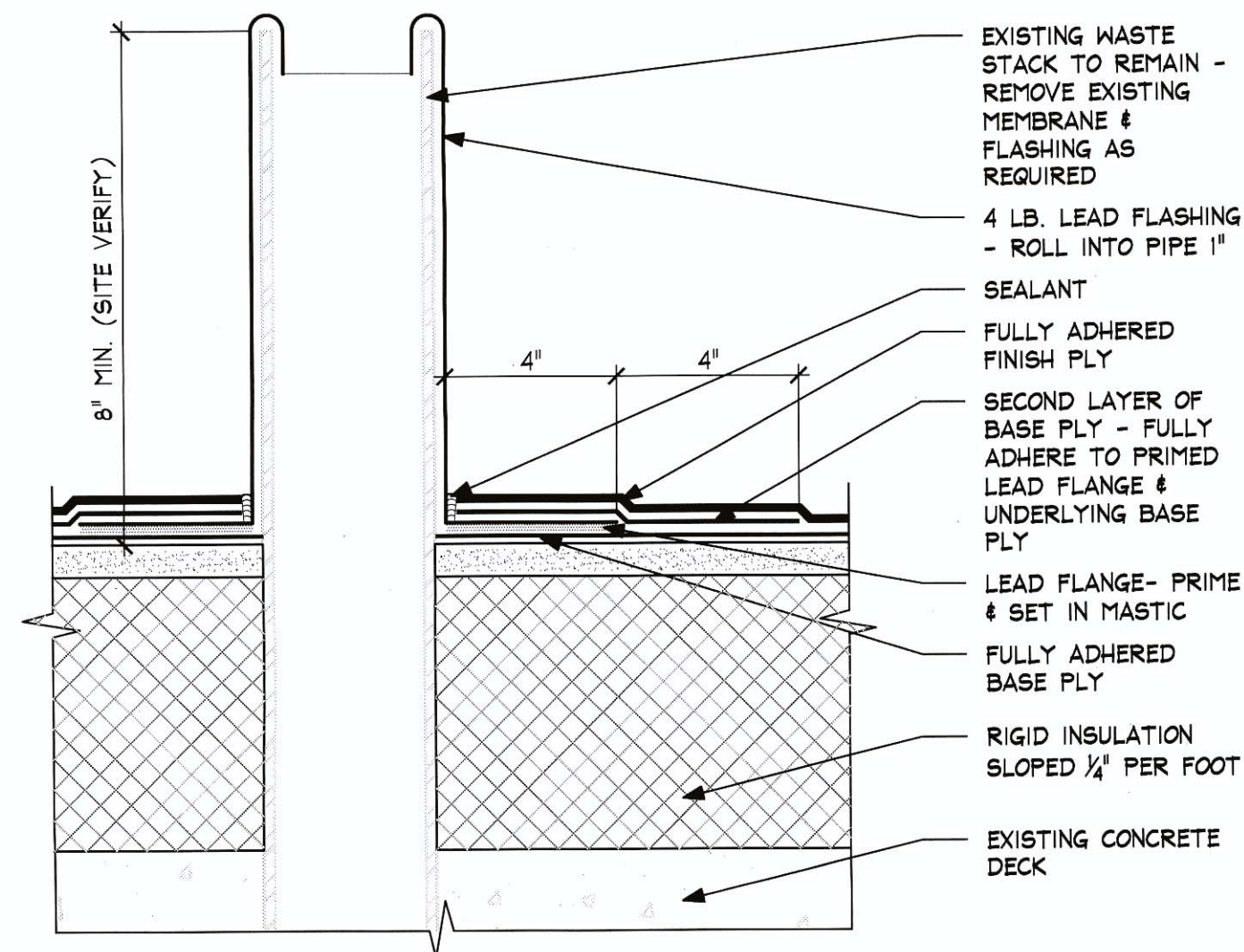
10 STAIR REATTACHMENT
SCALE: 3" = 1'-0"



11 PARAPET TO WALL FLASHING
SCALE: N.T.S.

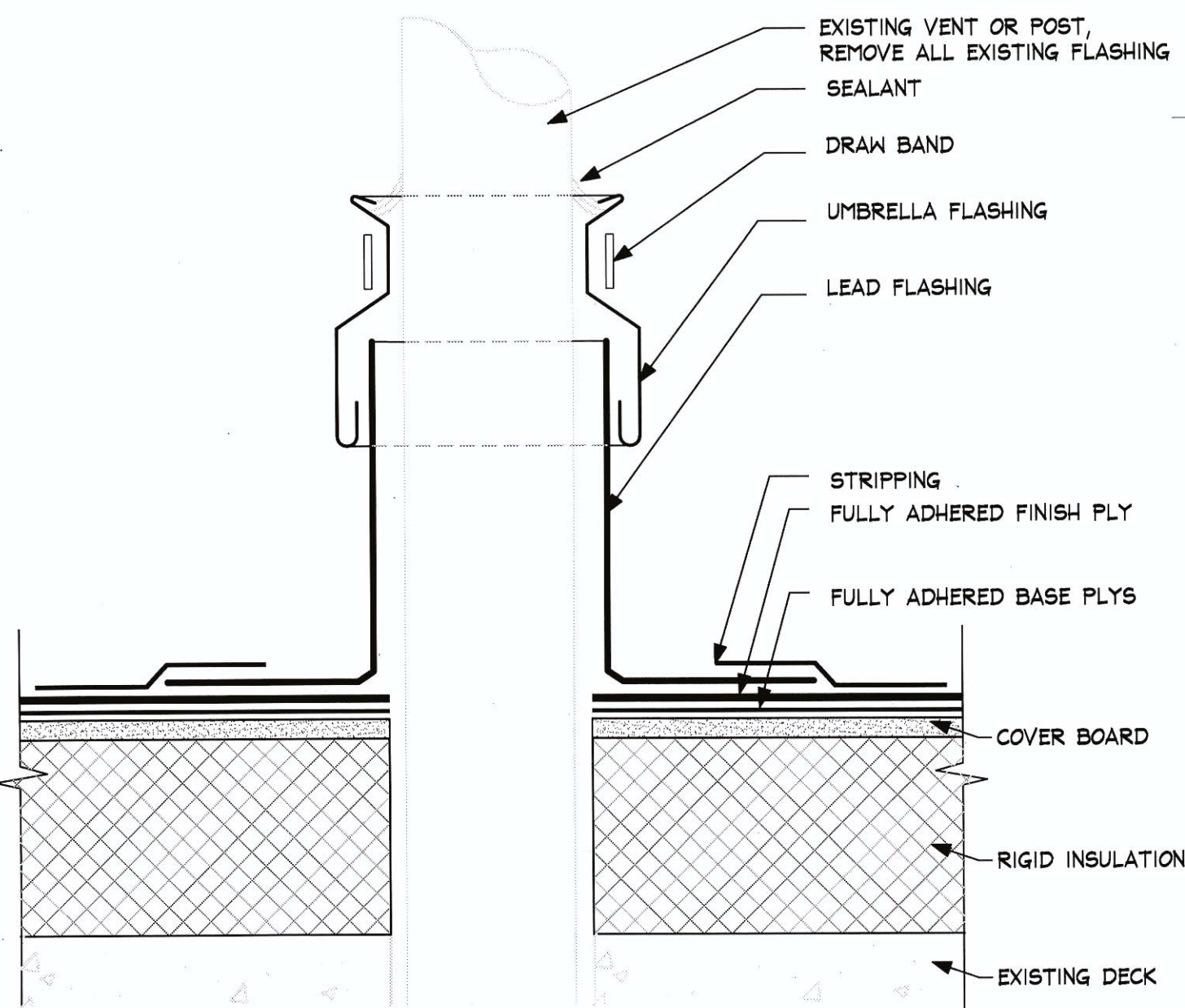


12 PARAPET CORNER FLASHING
SCALE: N.T.S.

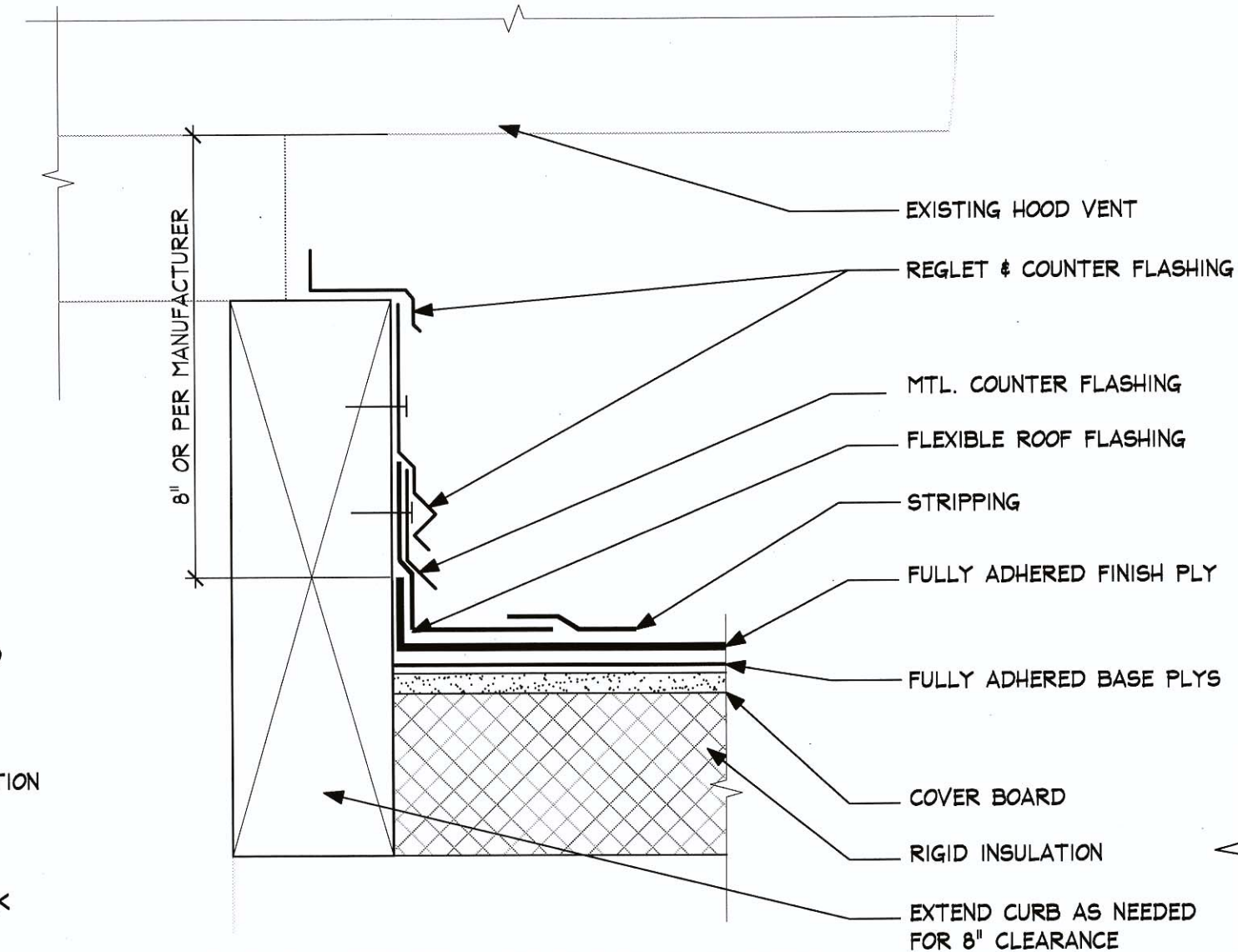


EXISTING WASTE STACK TO REMAIN - REMOVE EXISTING MEMBRANE & FLASHING AS REQUIRED
 4 LB. LEAD FLASHING - ROLL INTO PIPE 1"
 SEALANT
 FULLY ADHERED FINISH PLY
 SECOND LAYER OF BASE PLY - FULLY ADHERE TO PRIMED LEAD FLANGE & UNDERLYING BASE PLY
 LEAD FLANGE- PRIME & SET IN MASTIC
 FULLY ADHERED BASE PLY
 RIGID INSULATION SLOPED 1/4" PER FOOT
 EXISTING CONCRETE DECK

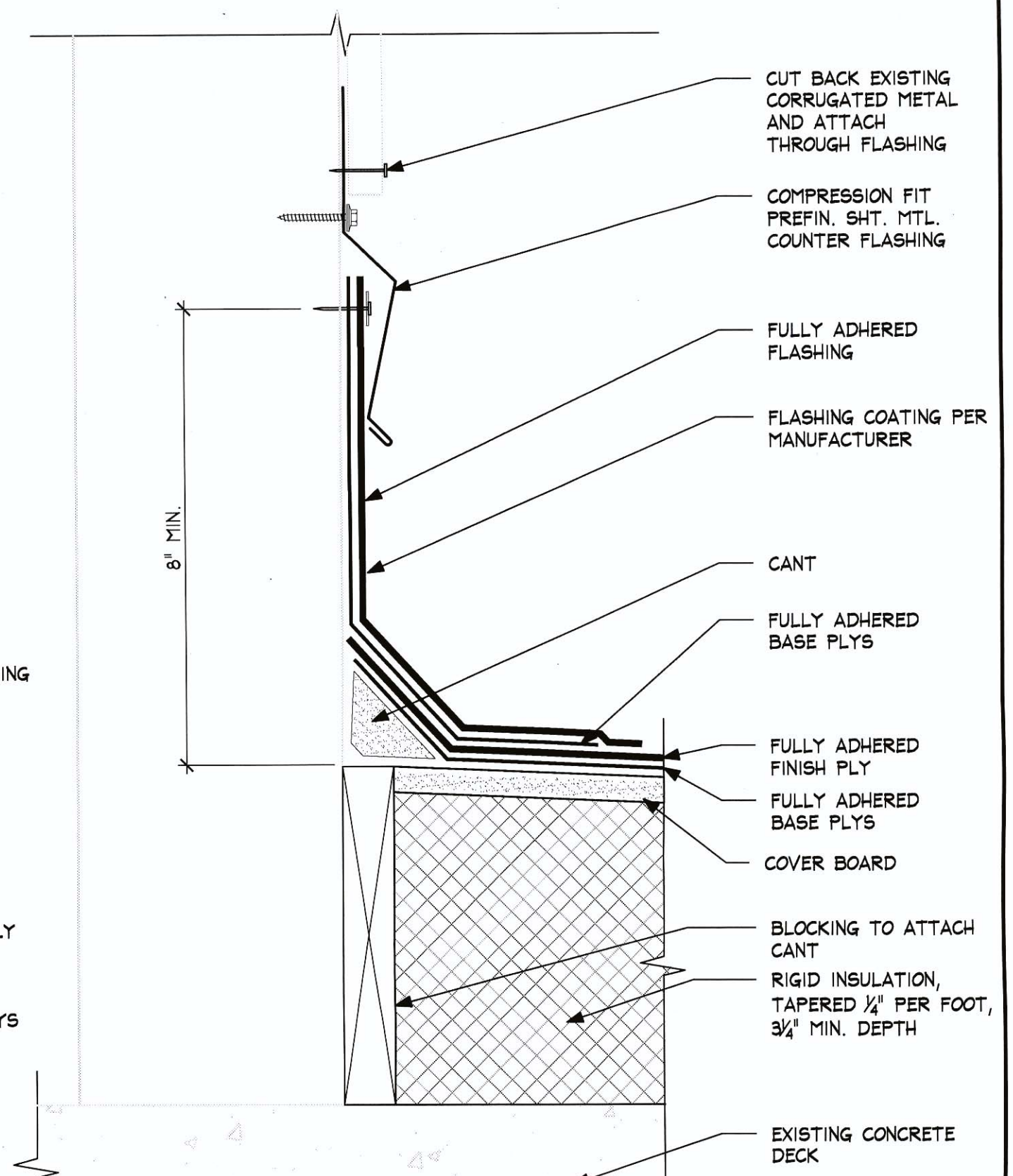
1 WASTE STACK AT SBS ROOF
 SCALE: 3" = 1'-0"



2 SMALL VENT AT SBS ROOF
 SCALE: 3" = 1'-0"



3 LARGE VENT AT SBS ROOF
 SCALE: 3" = 1'-0"



4 DECK TO METAL WALL - SBS ROOF
 SCALE: 3" = 1'-0"



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CONSTRUCTION SET

ROOF DETAILS

PROJ NO.
 21046.01

02.24.12

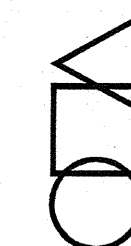
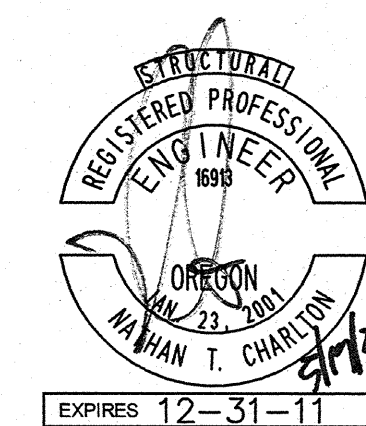
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A5.04

DRAWING LIST	
Sheet Number	Sheet Title
S0.01	DRAWING LIST AND ABBREVIATIONS
S0.02	GENERAL STRUCTURAL NOTES
S0.03	SPECIAL INSPECTIONS AND TESTING
S1.01	ROOF FRAMING PLAN
S3.00	DETAILS
S4.00	CONCRETE REPAIR

ABBREVIATIONS

A.B.	ANCHOR BOLT	FT.	FOOT	P/C	PRECAST
ACI	AMERICAN CONCRETE INSTITUTE	FTG.	FOOTING	PCF	POUNDS PER CUBIC FOOT
ADD'L.	ADDITIONAL	GA.	GAUGE	PDF	POWDER DRIVEN FASTENER
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL	GALV.	GALVANIZED	PSI	POUNDS PER SQUARE INCH
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION INCORPORATED	GL	GLULAM	P/T	POST-TENSIONED
ALT.	ALTERNATE	HORIZ.	HORIZONTAL	P.T.	PRESSURE TREATED
ALUM.	ALUMINUM	HSS	HOLLOW STRUCTURAL SECTION	PVC	POLYVINYL CHLORIDE
APA	AMERICAN PLYWOOD ASSOCIATION	IBC	INTERNATIONAL BUILDING CODE	R, RAD.	RADIUS
ARCH.	ARCHITECT	ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	RCSC	RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	ICC	INTERNATIONAL CODE COUNCIL	REF.	REFERENCE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	I.D.	INSIDE DIAMETER	RET.	RETURN
AWS	AMERICAN WELDING SOCIETY	IN.	INCH	REINF.	REINFORCING
BLDG.	BUILDING	INT.	INTERIOR	REQ'D.	REQUIRED
BOT.	BOTTOM	K	KIPS	REQ'MTS.	REQUIREMENTS
C.G.	CENTER OF GRAVITY	KSF	KIPS PER SQUARE FOOT	SCHED.	SCHEDULE
C.I.P.	CAST IN PLACE	KSI	KIPS PER SQUARE INCH	S.C.	SLIP CRITICAL
C.J.	CONTROL JOINT	LBS.	POUND	SIM.	SIMILAR
C.J.P.	COMPLETE JOINT PENETRATION	LL	LIVE LOAD	SLRS	SEISMIC LOAD RESISTING SYSTEM
CL	CENTERLINE	LLH	LONG LEG HORIZONTAL	S.O.G.	SLAB ON GRADE
CLR.	CLEAR	LLV	LONG LEG VERTICAL	SPEC.	SPECIFICATION
CMU	CONCRETE MASONRY UNIT	LOC.	LOCATION	SQ.	SQUARE
COL.	COLUMN	LONG.	LONGITUDINAL	SS	STAINLESS STEEL
CONC.	CONCRETE	LVF	LOW VELOCITY FASTENER	SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
CONN.	CONNECTION	MAX.	MAXIMUM	STD.	STANDARD
CONST.	CONSTRUCTION	MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION	STRUCT.	STRUCTURAL
CONT.	CONTINUOUS	MECH.	MECHANICAL	SYM.	SYMMETRICAL
DBA	DEFORMED BAR ANCHOR	MFR.	MANUFACTURER	THRU	THROUGH
DET.	DETAIL	MIN.	MINIMUM	T&G	TONGUE AND GROOVE
DIA., Ø	DIAMETER	MISC.	MISCELLANEOUS	TJ	TRUSS JOIST
DIAG.	DIAGONAL	MPH	MILES PER HOUR	TRANS.	TRANSVERSE
D.L.	DEAD LOAD	MT	MAGNETIC PARTICLE TESTING	TS	LIGHT GAUGE TUBE STEEL
DWG.	DRAWING	(N)	NEW	TYP.	TYPICAL
ELEC.	ELECTRICAL	N.I.C.	NOT IN CONTRACT	UBC	UNIFORM BUILDING CODE
EL.	ELEVATION	NOM.	NOMINAL	U.N.O.	UNLESS NOTED OTHERWISE
EQ.	EQUAL	NO.	NUMBER	UT	ULTRASONIC TESTING
EXIST., (E)	EXISTING	N.T.S.	NOT TO SCALE	VERT.	VERTICAL
EXP.	EXPANSION	O.C.	ON CENTER	V.I.F.	VERIFY IN FIELD
EXT.	EXTERIOR	O.D.	OUTSIDE DIAMETER	W/	WITH
FDN.	FOUNDATION	OPP.	OPPOSITE	WF	WIDE FLANGE
FIN.	FINISH	OWJ	OPEN WEB JOIST	W/O	WITHOUT
FLR.	FLOOR	PAF	POWDER ACTUATED FASTENER	W.P.	WORK POINT
		PART.	PARTITION	WPS	WELDING PROCEDURE SPECIFICATION
				WWF	WELDED WIRE FABRIC



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BID / PERMIT SET

DRAWING LIST AND ABBREVIATIONS

PROJ NO.
21046.01

05.23.11

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S0.01

GENERAL STRUCTURAL NOTES

STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THESE DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.

THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

CODE REQUIREMENTS:

CONFORM TO THE 2010 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2009 INTERNATIONAL BUILDING CODE (IBC).

TEMPORARY CONDITIONS:

THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

EXISTING CONDITIONS:

ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SIGNIFICANT DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

ASSUMED FUTURE CONSTRUCTION:

VERTICAL: NONE
HORIZONTAL: NONE

DESIGN CRITERIA:

DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE OSSC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWABLES WERE USED FOR DESIGN, WITH LIVE LOADS (L.L.) REDUCED PER OSSC:

DESIGN CRITERIA	
GRAVITY SYSTEM CRITERIA	
ROOF LIVE LOAD	20 PSF L.L. (ALSO SEE SNOW LOAD CRITERIA BELOW)
SNOW CRITERIA	
DESIGN ROOF SNOW LOAD	25 PSF MINIMUM IN ACCORDANCE WITH OSSC
SNOW DRIFT	PER OSSC AS SHOWN ON PLANS
GROUND SNOW LOAD	P_g = 10 PSF IN ACCORDANCE WITH 2007 SNOW LOAD ANALYSIS FOR OREGON
FLAT ROOF SNOW LOAD	P _f = 11 PSF
SNOW EXPOSURE FACTOR	C _e = 1.0
SNOW LOAD IMPORTANCE FACTOR	I = 1.1
THERMAL FACTOR	C _t = 1.0
WIND CRITERIA	
BASIC WIND SPEED	
MAIN WIND FORCE RESISTING SYSTEM	95 MPH (3-SECOND GUST) PER OSSC
COMPONENTS AND CLADDINGS	95 MPH (3-SECOND GUST) PER OSSC
EXPOSURE	B
IMPORTANCE FACTOR	I _w = 1.15
GUST/INTERNAL PRESSURE	GCP _i = +/- 0.18
SEISMIC CRITERIA	
OCCUPANCY CATEGORY	II
SEISMIC DESIGN CATEGORY	D
SITE CLASS	D
IMPORTANCE FACTOR	I _E = 1.25
MCE SPECTRAL ACCELERATION	S _s = 0.98 S ₁ = 0.35
SITE COEFFICIENT	F _a = 1.11 F _v = 1.71
DESIGN SPECTRAL ACCELERATION	S _{DS} = 0.73 S _{DT} = 0.39

STRUCTURAL OBSERVATION:

THE STRUCTURAL ENGINEER OF RECORD (SER) WILL PERFORM STRUCTURAL OBSERVATION BASED ON THE REQUIREMENTS OF THE OSSC AT THE STAGES OF CONSTRUCTION LISTED BELOW. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SER TO PERFORM THESE OBSERVATIONS.

STRUCTURAL OBSERVATION PROGRAM			
ITEM	OBSERVED BY (2)		COMMENTS
	AOR	SER	
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES		X	REF. NOTES 1, 3, 4

FOOTNOTES:

- CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SER IN ADVANCE.
- SER - STRUCTURAL ENGINEER OF RECORD.
AOR - ARCHITECT OF RECORD.
- A FIELD REPORT WILL BE SUBMITTED TO THE BUILDING DEPARTMENT FOLLOWING EACH SITE VISIT.
- STRUCTURAL OBSERVATION IS FOR THE GENERAL CONFORMANCE OF THE STRUCTURAL DRAWING, SPECIAL INSPECTION IS STILL REQUIRED.

SPECIAL INSPECTION:

SPECIAL INSPECTION WILL BE PROVIDED BY THE OWNER BASED ON THE REQUIREMENTS OF THE OSSC AS SUMMARIZED IN THE SPECIAL INSPECTION AND TESTING PROGRAM ON SHEET S0.02. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

SUBMITTALS:

SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING:

SUBMITTALS			
ITEM	SUBMITTAL (1, 3)	DEFERRED SUBMITTAL (2, 3)	COMMENTS
CONCRETE MIX DESIGNS	X		
STRUCTURAL STEEL	X		
STEEL WELDING PROCEDURES	X	X	
CURTAIN WALL, WINDOW WALL AND OTHER GLAZING SYSTEMS	X	X	
SKYLIGHTS, CANOPIES, AWNINGS	X	X	

FOOTNOTES:

- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION OF STRUCTURAL ITEMS. IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER.
- DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON, AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE OSSC AND AS NOTED UNDER "DESIGN CRITERIA".
- FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

CONCRETE:

CONCRETE WORK SHALL CONFORM TO CHAPTER 19 OF THE OSSC. CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28-DAY CYLINDER TESTS PER ASTM C39, AND SHALL BE AS FOLLOWS:

CONCRETE STRENGTHS			
f _c (PSI)	ABSOLUTE WATER-CEMENT RATIO BY WEIGHT		USE
	NON AIR-ENTRAINED	AIR-ENTRAINED	
3,000	.54	.46	ALL USES, UNLESS NOTED OTHERWISE

VERIFY WATER/CEMENT RATIO WITH FLOOR COVERING MANUFACTURER FOR CONCRETE FLOORS WITH MOISTURE SENSITIVE FLOOR COVERINGS.

MINIMUM CEMENT CONTENT PER CUBIC YARD SHALL BE AS FOLLOWS:

CEMENT CONTENT	
f _c (PSI)	MINIMUM CEMENT PER CUBIC YARD
3,000	470 LBS.

FLYASH CONFORMING TO ASTM C618 (INCLUDING TABLE 2A) TYPE F OR TYPE C, MAY BE USED TO REPLACE UP TO 20% OF THE CEMENT CONTENT, PROVIDED THAT THE MIX STRENGTH IS SUBSTANTIATED BY TEST DATA.

THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS, ALONG WITH TEST DATA COMPLIANT WITH OSSC SECTION 1905, A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE. NO WATER MAY BE ADDED TO CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE CONCRETE MIX DESIGN.

A WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494, USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, SHALL BE INCORPORATED IN CONCRETE DESIGN MIXES. A HIGH-RANGE WATER-REDUCING (HRWR) ADMIXTURE CONFORMING TO ASTM C494, TYPE F OR G, MAY BE USED IN CONCRETE MIXES PROVIDING THAT THE SLUMP DOES NOT EXCEED 10". AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260 SHALL BE USED IN CONCRETE MIXES FOR EXTERIOR HORIZONTAL SURFACES EXPOSED TO WEATHER. THE AMOUNT OF ENTRAINED AIR SHALL BE 5% ± 1% BY VOLUME.

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, FOR DEFORMED BARS, UNLESS OTHERWISE NOTED. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE.

REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315. LAP ALL REINFORCING BARS PER THE TYPICAL LAP SPLICE LENGTH SCHEDULE, EXCEPT AS NOTED ON DRAWINGS. USE LAP LENGTH FOR SMALLER BAR WHEN SPLICING DIFFERENT BAR SIZES.

TYP. WALL AND SLAB LAP SPLICE LENGTH SCHEDULE (IN.)		
BAR SIZE	3000 P.S.I.	
	CASE 1	CASE 2
#3	16	16
#4	20	18
#5	28	24
#6	37	28
#7	60	40
#8	74	46
#9	90	57
#10	108	70
#11	127	83

NOTES:

- CASE 1 APPLIES TO BAR WITH CLEAR COVER < 1 1/2".
CASE 2 APPLIES TO BAR WITH CLEAR COVER ≥ 1 1/2".
- FOR CENTER-TO-CENTER SPACING LESS THAN 4d_b MULTIPLY LAP LENGTHS ABOVE BY 1.3.
- FOR TOP BARS, CAST ABOVE 12" OF CONCRETE, MULTIPLY LAP LENGTHS ABOVE BY 1.3.

REINFORCING STEEL SHALL HAVE PROTECTION AS FOLLOWS:

REINFORCING STEEL	
USE	COVER
WALL BARS: INTERIOR FACES	3/4"
WALL BARS: EXPOSED TO EARTH OR WEATHER	1-1/2" (#5 AND SMALLER)

EPOXY REPAIR ADHESIVE:

EPOXY REPAIR ADHESIVE SHALL CONFORM TO ASTM C881 AND SHALL BE A TWO-COMPONENT, LIQUID EPOXY WITH NON-SAG CONSISTENCY AND A LONG POT LIFE. THE EPOXY ADHESIVE SHALL BE SUITABLE FOR USE ON DRY OR DAMP SURFACES. MINIMUM SLANT SHEAR STRENGTH SHALL BE 5,000 PSI, AND MINIMUM TENSILE STRENGTH SHALL BE 4,000 PSI. HOLE SIZES AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED ICC REQUIREMENTS. DO NO CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL BE:

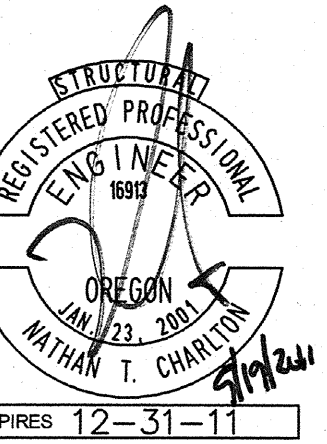
STRUCTURAL STEEL	
ASTM A36	CHANNELS, PLATES AND ANGLES, EXCEPT AS NOTED
ASTM A53, GRADE B (FY=35 KSI)	PIPES

DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" WITH "COMMENTARY" AND THE "CODE OF STANDARD PRACTICE", WITH EXCEPTIONS NOTED IN SPECIFICATIONS.

BOLTS SHALL CONFORM TO THE ASTM AND RCSC SPECIFICATIONS FOR JOINTS USING A325 OR A490 HIGH STRENGTH BOLTS. BOLTS SHALL BE SNUG-TIGHT UNLESS NOTED OTHERWISE.

WELDING SHALL CONFORM TO THE AWS CODES FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH A WELDED PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D1.1 AND APPROVED BY THE STRUCTURAL ENGINEER. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER.

WELDS SHALL BE MADE USING E70XX ELECTRODES AND SHALL BE 3/16" MINIMUM, UNLESS OTHERWISE NOTED. WELDING SHALL BE BY AWS CERTIFIED WELDERS MEETING CITY OF PORTLAND STANDARDS.



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GENERAL STRUCTURAL NOTES

PROJ NO. 21046.01

05.23.11

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SPECIAL INSPECTIONS AND TESTING

SPECIAL INSPECTIONS

TABLE 1 - REQUIRED STRUCTURAL SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY (NOTE 5)		
			Continuous	Periodic	
FABRICATORS					
FABRICATORS	1704.2		X		WHERE FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE REQUIRED BY TABLE 2 AND AS REQUIRED ELSEWHERE IN THE SPECIAL INSPECTION PROGRAM. REFERENCE SECTION 1704.2.2 FOR APPROVED FABRICATOR EXCEPTION.
CONCRETE					
VERIFYING USE OF REQUIRED MIX DESIGN(S)	1704.4 1904 1905.2-4 1913.2 1913.3	ACI 318 1.3.2.A ACI 318, CHAPTER 4 ACI 318 5.2-5.4		X	
CONCRETE PLACEMENT, NON-SHRINK GROUT	1704.4 1905.9-10	ACI 318 1.3.2.D ACI 318 5.9-5.10	X		
STEEL					
FABRICATION OF STRUCTURAL ELEMENTS	1704.2			X	REFER TO INSPECTION OF FABRICATOR REQUIREMENTS
MATERIAL VERIFICATION OF WELD FILLER METALS	1704.3.1	AISC 360 A3.5		X	MANUFACTURER'S CERTIFIED TEST REPORTS
VERIFYING USE OF PROPER WPS'S				X	COPY OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS				X	COPY OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS			X		ALL WELDS VISUALLY INSPECTED PER AWS D1.1 6.9
MULTIPASS FILLET WELDS			X		
SINGLE PASS FILLET WELDS GREATER THAN 5/16"	1704.3.1 1704.4	AWS D1.1 SECTION 6	X		
PLUG AND SLOT WELDS			X		
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"				X	
WELDING STAIR AND RAILING SYSTEMS		AWS D1.1 SECTION 6		X	ALL WELDS VISUALLY INSPECTED PER AWS D1.1 6.9
POST INSTALLED CONCRETE ANCHORS					
EXPANSION ANCHORS INSTALLATION IN HARDENED CONCRETE AND COMPLETED MASONRY	1703.4.2 1704.15 1912.1	ICC EVALUATION REPORT ACI 318: 3.8.6, 21.1.8	X	X (NOTE 6)	INSPECTION REQUIREMENTS PER ICC EVALUATION REPORT
EPOXY ANCHORS INSTALLATION IN HARDENED CONCRETE AND COMPLETED MASONRY			X		INSPECTION REQUIREMENTS PER ICC EVALUATION REPORT

TESTING

TABLE 2 - REQUIRED TESTING for SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	TESTING				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous	Periodic	
CONCRETE					
CONCRETE STRENGTH		ASTM C39			FABRICATE SPECIMENS AT TIME FRESH CONCRETE IS PLACED
CONCRETE SLUMP	1903	ASTM C143			
CONCRETE AIR CONTENT	1704.4 1905.6	ASTM C231			
CONCRETE TEMPERATURE		ASTM C1064			
SHOTCRETE STRENGTH	1704.4 1913.10	ASTM C39			EACH 50 CY NOR LESS THAN EACH 5000 SF OF WALL PLACED EACH DAY

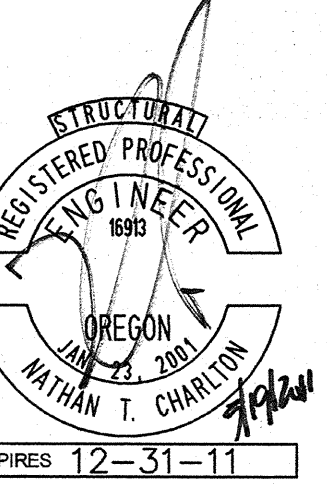
STATEMENT OF SPECIAL INSPECTION NOTES:

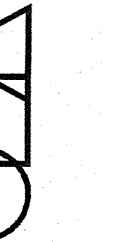
- SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1704 OF THE 2010 OSSC. REFER TO TABLES 1 THROUGH 2 FOR SPECIAL INSPECTION AND TABLES 6 AND 7 FOR TESTING REQUIREMENTS.
- SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (MATERIALS), ASTM D3740 (SOILS), ASTM C1077 (CONCRETE), ASTM A880 (STEEL), AND ASTM E543 (NON-DESTRUCTIVE). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE ARCHITECT A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE CERTIFIED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER SECTION 6.1.4.1.1 OF AWS D1.1.
- THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS.
- THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, ARCHITECT, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.
- CONTINUOUS INSPECTION: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

PERIODIC INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

6. WHERE PERIODIC INSPECTION IS ALLOWED IN ACCORDANCE WITH AN EXPANSION ANCHOR'S ICC EVALUATION REPORT, INSPECTIONS SHALL BE AS FOLLOWS:

- FOR ALL ANCHORS, PRIOR TO CONCEALMENT, VERIFY: ANCHOR TYPE, ANCHOR DIMENSIONS, ANCHOR SPACING AND EDGE DISTANCES.
- FOR EACH ANCHOR TYPE AND SIZE, INSPECTOR SHALL BE ONSITE TO CONTINUOUSLY INSPECT A MINIMUM OF THE FIRST 10 ANCHORS INSTALLED BY EACH INSTALLER FOR CONFORMANCE WITH ICC EVALUATION REPORT. PROVIDED ALL ANCHORS ARE INSTALLED CORRECTLY PER MANUFACTURER'S INSTRUCTIONS, PROVIDE PERIODIC INSPECTION ON A MINIMUM OF 10% OF THE NEXT 1000 ANCHORS BY EACH INSTALLER AND A MINIMUM OF 5% OF THE REMAINING ANCHORS BY EACH INSTALLER.
 - INSPECTIONS SHALL OCCUR A MINIMUM OF ONCE PER WEEK AT A RANDOM TIME WHILE ANCHOR INSTALLATION IS ONGOING. ANY NON-COMPLIANCE ISSUES SHALL RESET THE INSPECTION REQUIREMENTS TO TEN (10) CONTINUOUS INSPECTIONS. NON-COMPLIANT ANCHORS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD FOR REVIEW AND SHALL BE BROUGHT INTO COMPLIANCE BY EITHER TESTING OR RE-INSTALLATION.
 - INSPECTION REPORTS SHALL IDENTIFY NAMES OF INSTALLERS.
 - SPECIAL INSPECTOR SHALL PROVIDE DOCUMENTATION AT THE END OF ANCHOR INSTALLATIONS STATING THAT THE MINIMUM NUMBER OF ANCHORS WERE INSPECTED.




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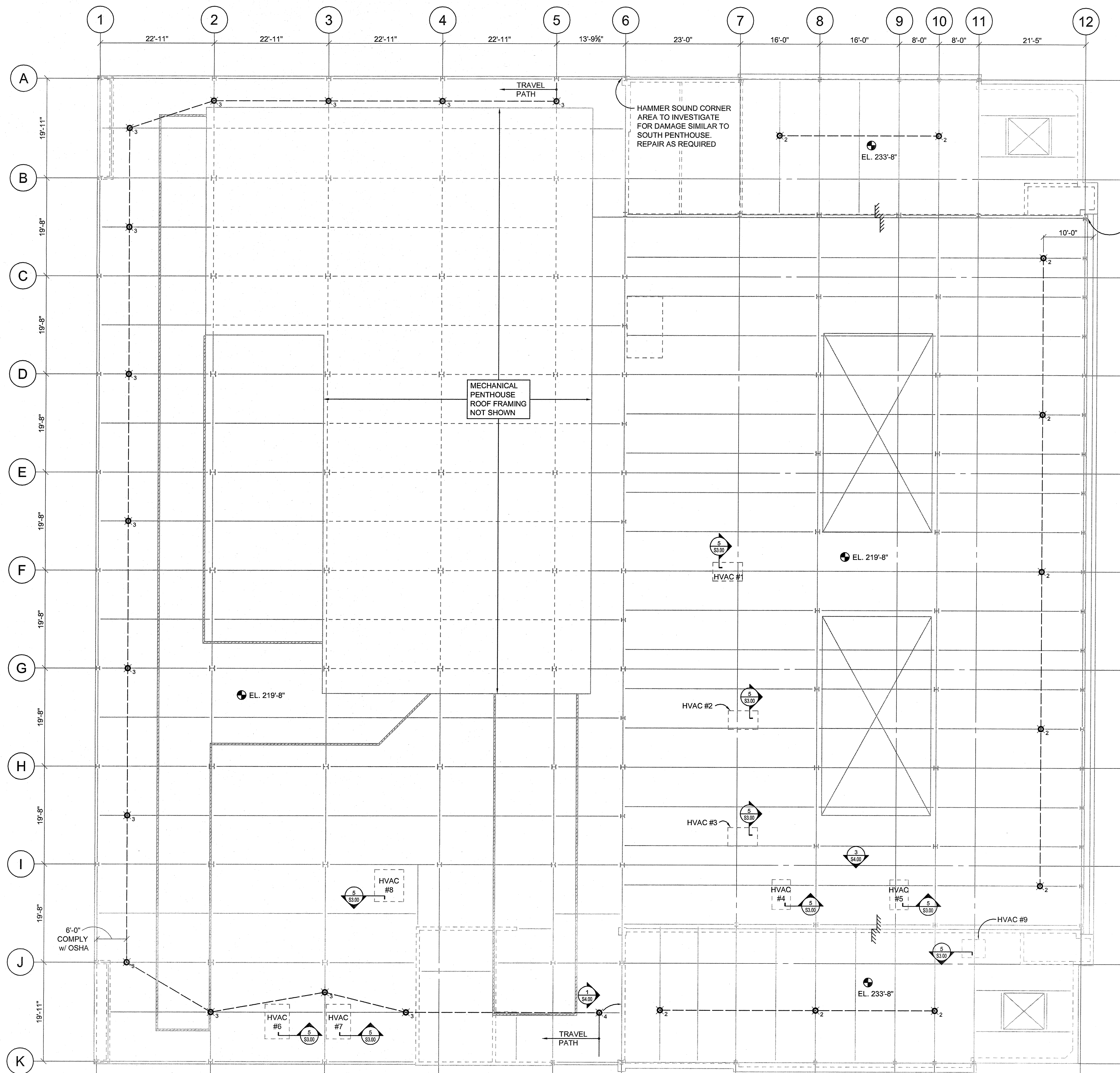
SPECIAL INSPECTIONS
AND TESTING

PROJ NO.
21046.01

05.23.11

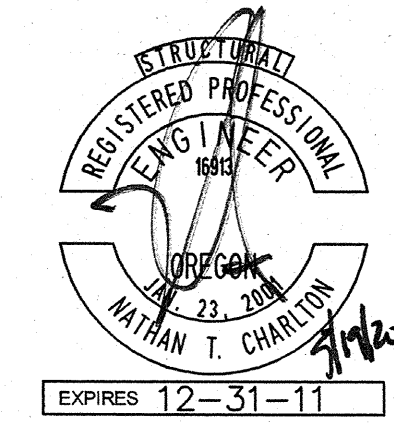
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- FRAMING PLAN NOTES:**
- INDICATES EXISTING FRAMING.
 - INDICATES NEW FALL PROTECTION ANCHOR REF. X/S3.00 FOR DETAIL.
 - EL. XXX'-X" INDICATES APPROXIMATE EXISTING TOP OF STRUCTURE ELEVATION.
 - INDICATES BIDDER DESIGNED FALL RESTRAINT SYSTEM. COMPLY WITH OSHA REGULATIONS REGARDING TRAVEL PATH AND BUILDING PARAPET STAND OFF DISTANCES.

1 ROOF FRAMING PLAN
3/32"=1'-0"



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ROOF FRAMING PLAN

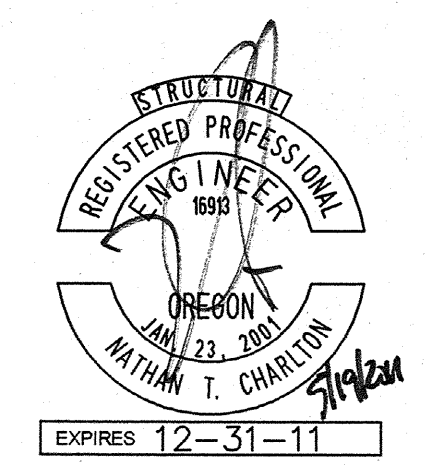
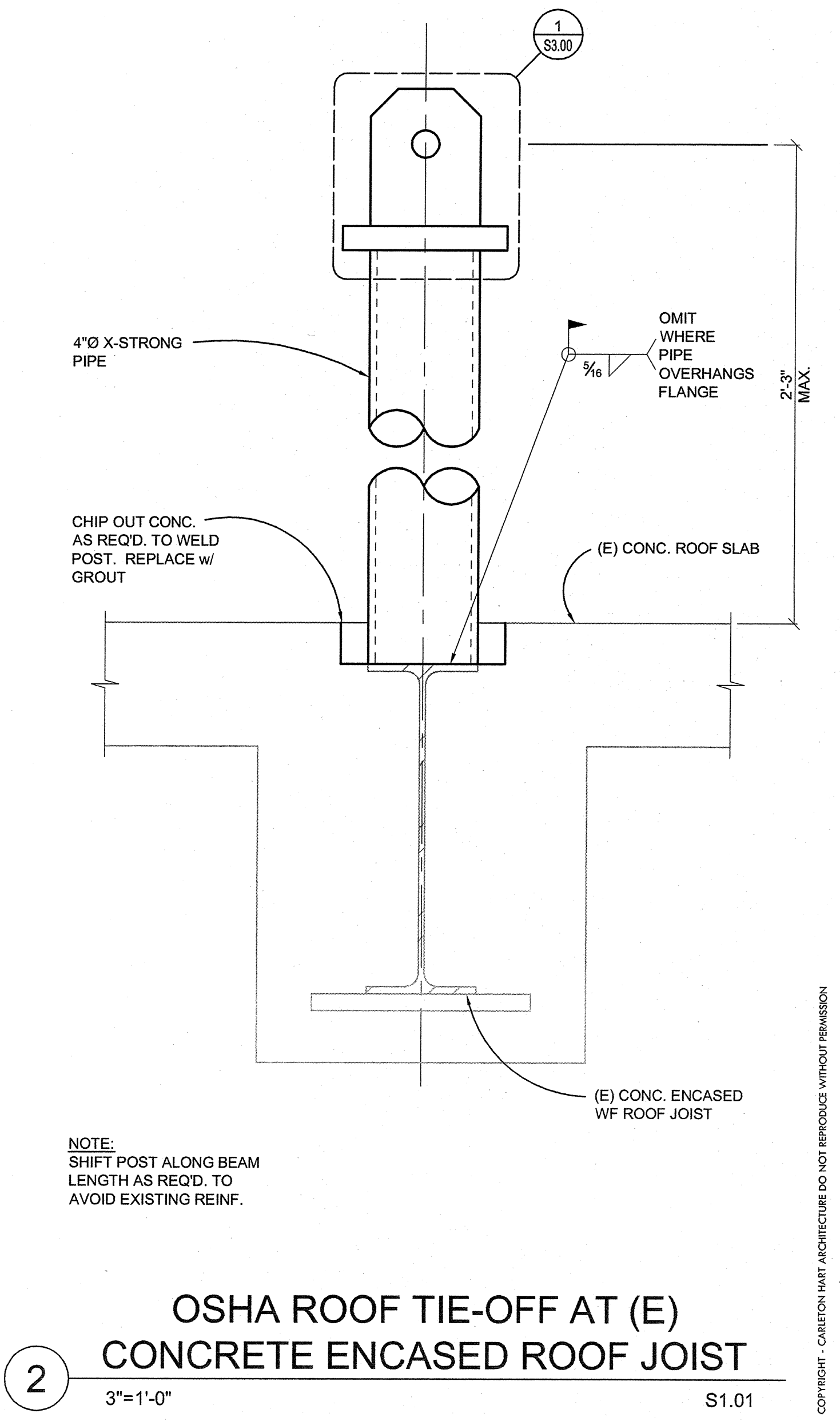
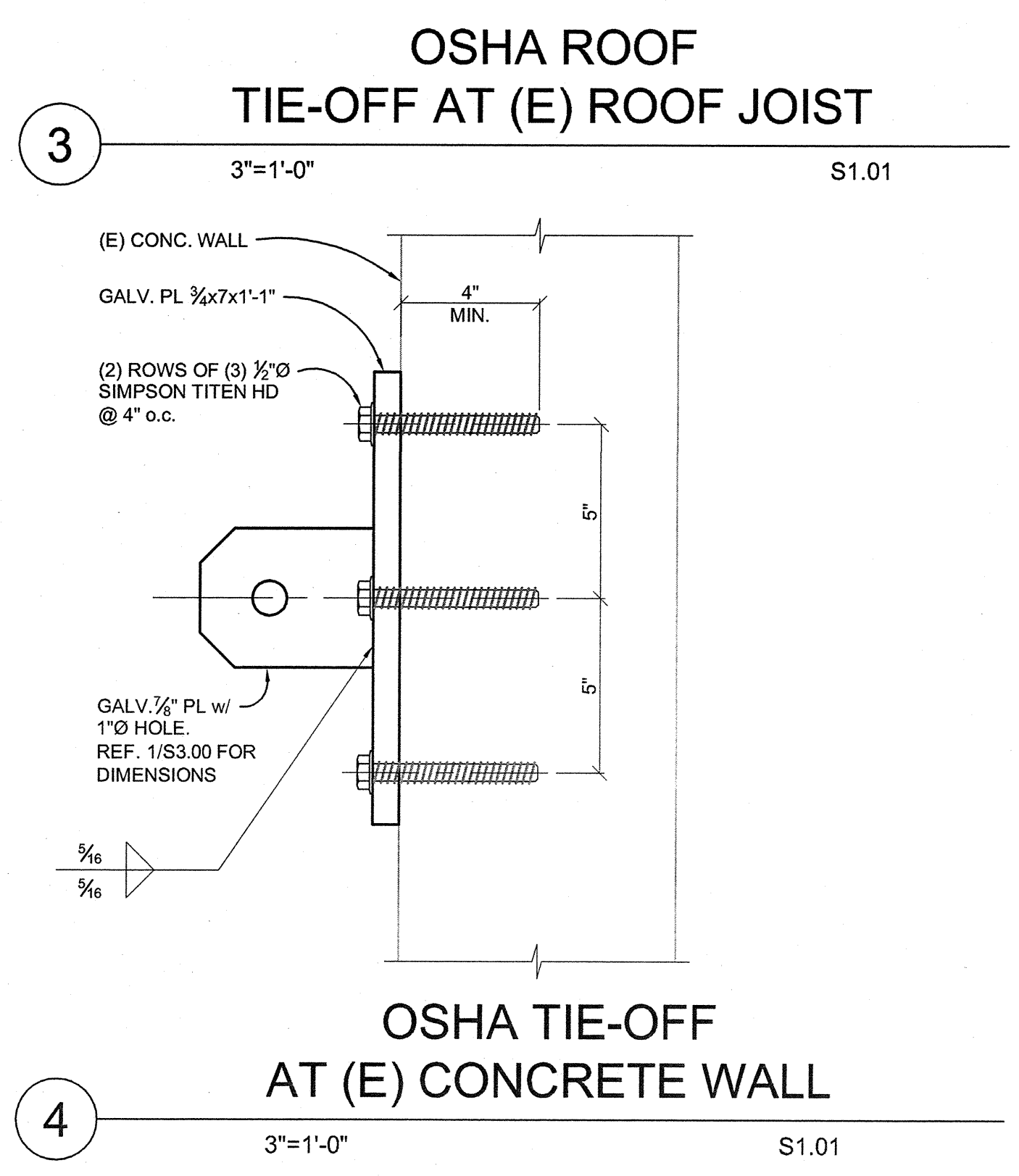
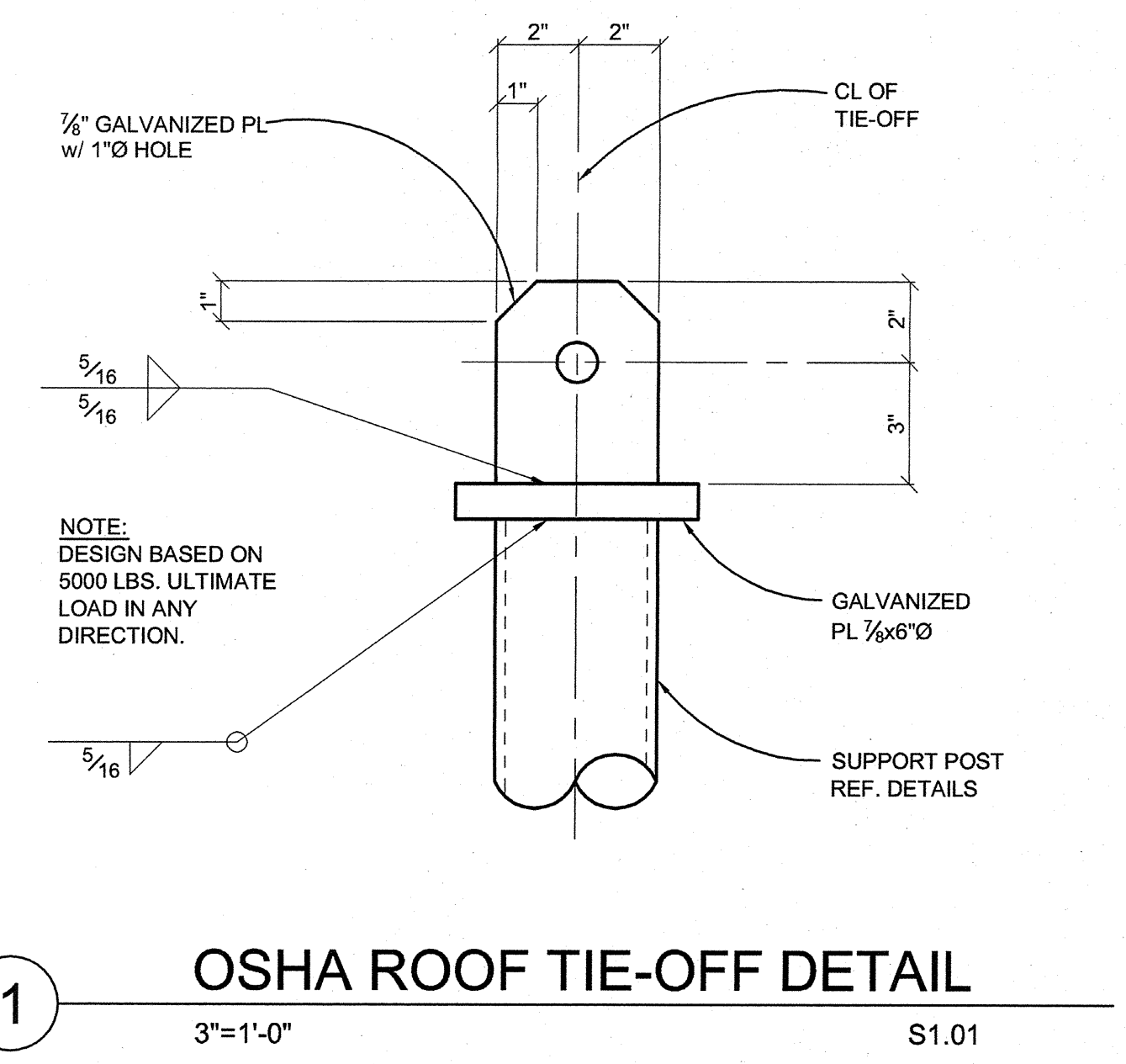
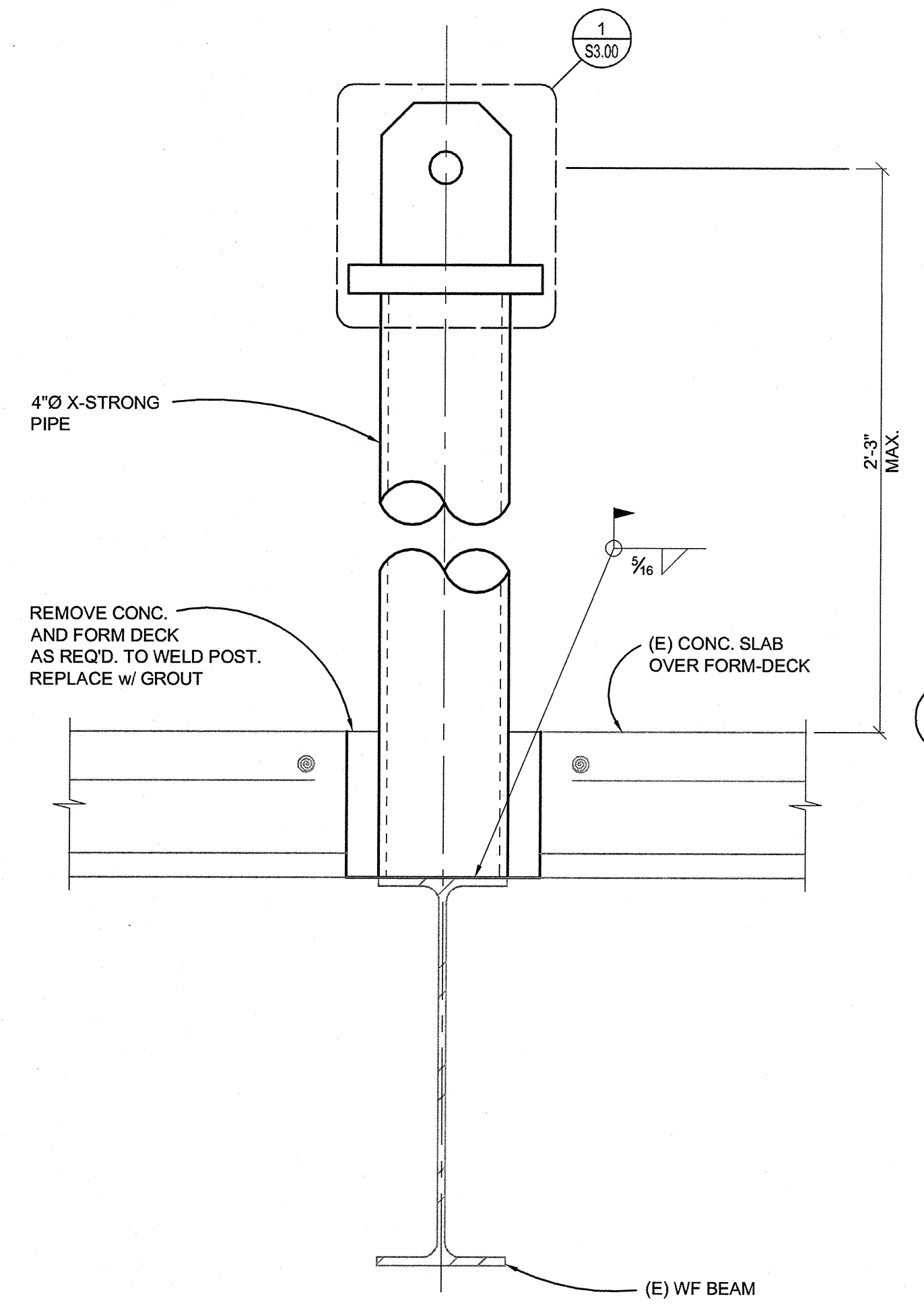
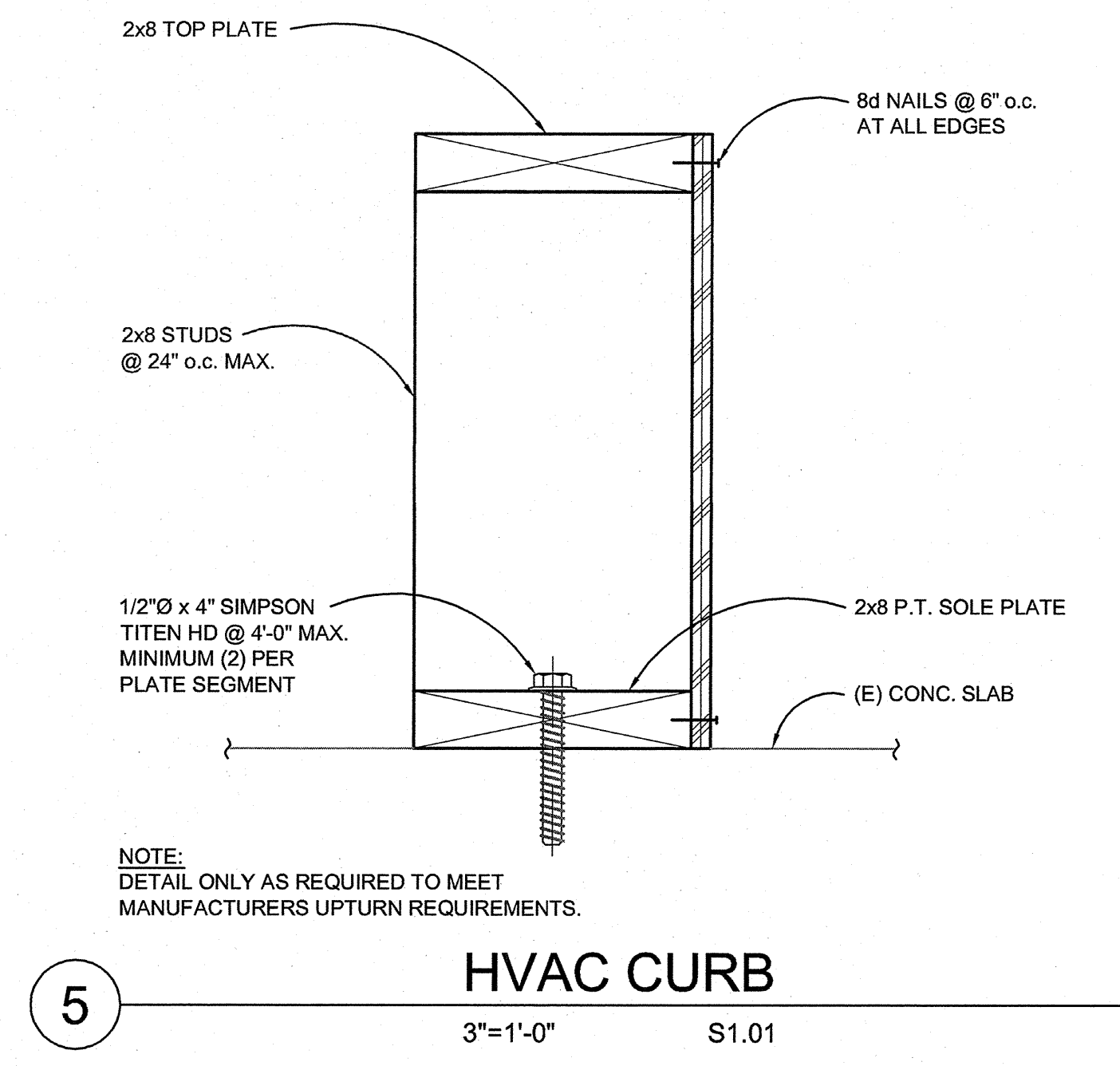
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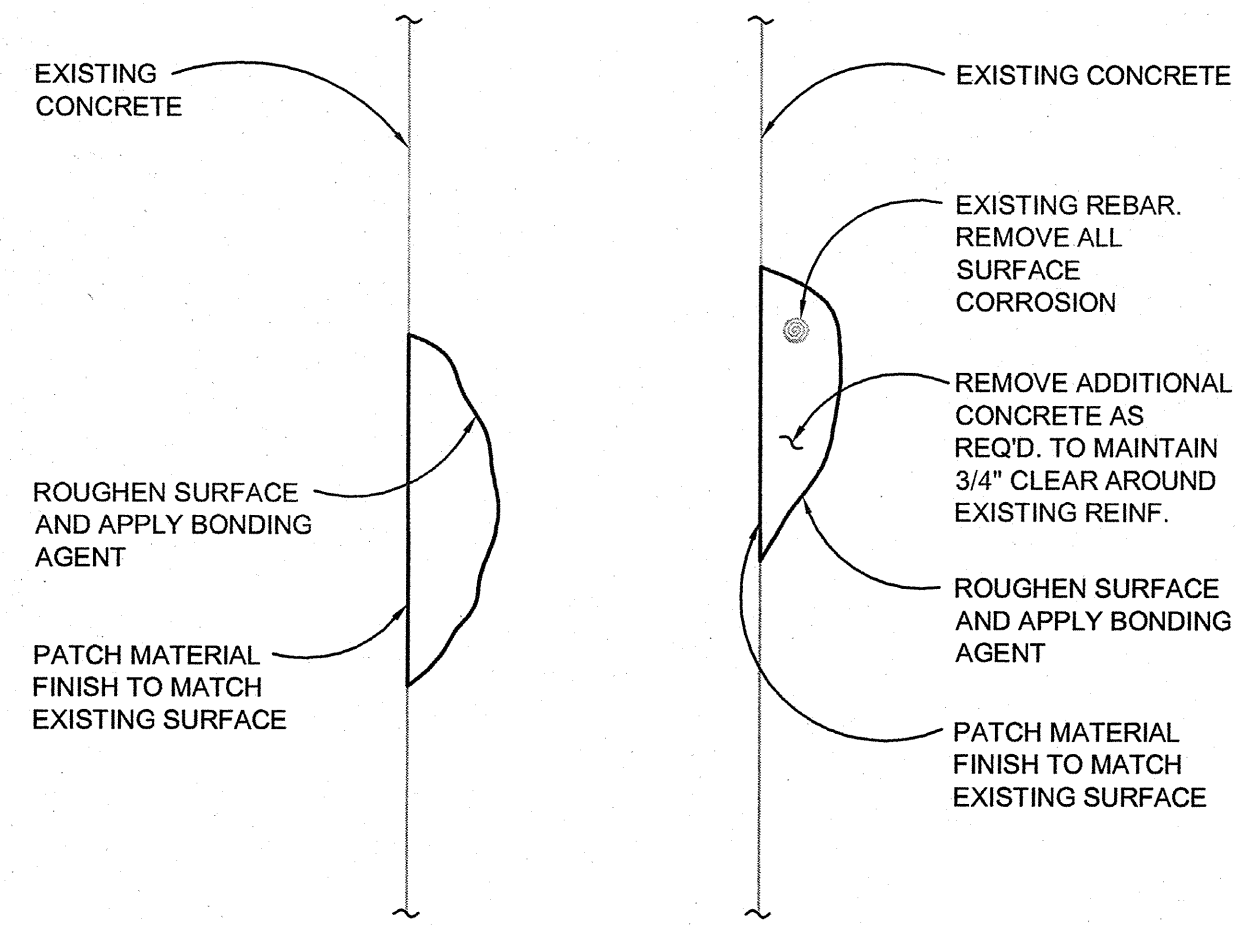
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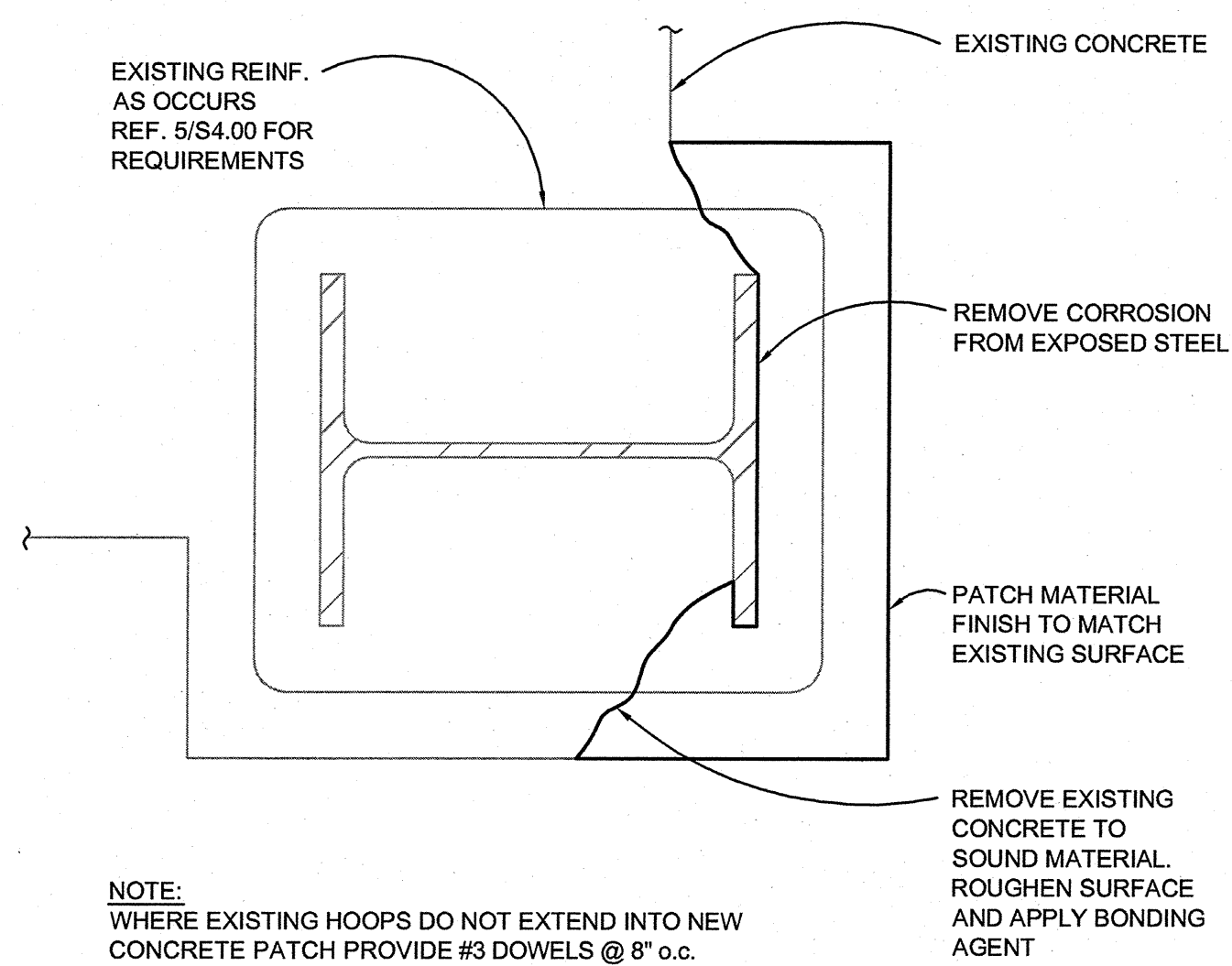
DETAILS
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S3.00

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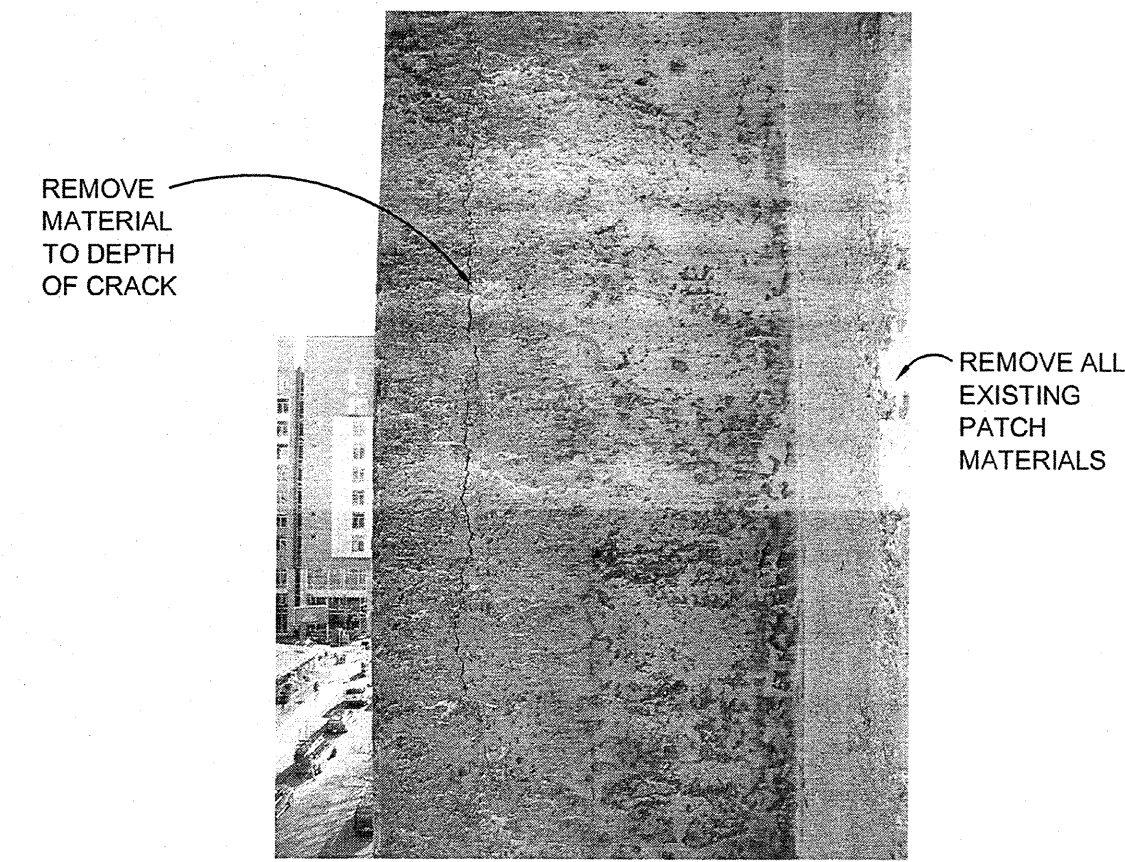


5 TYPICAL CONCRETE PATCH
3"=1'-0" S4.00



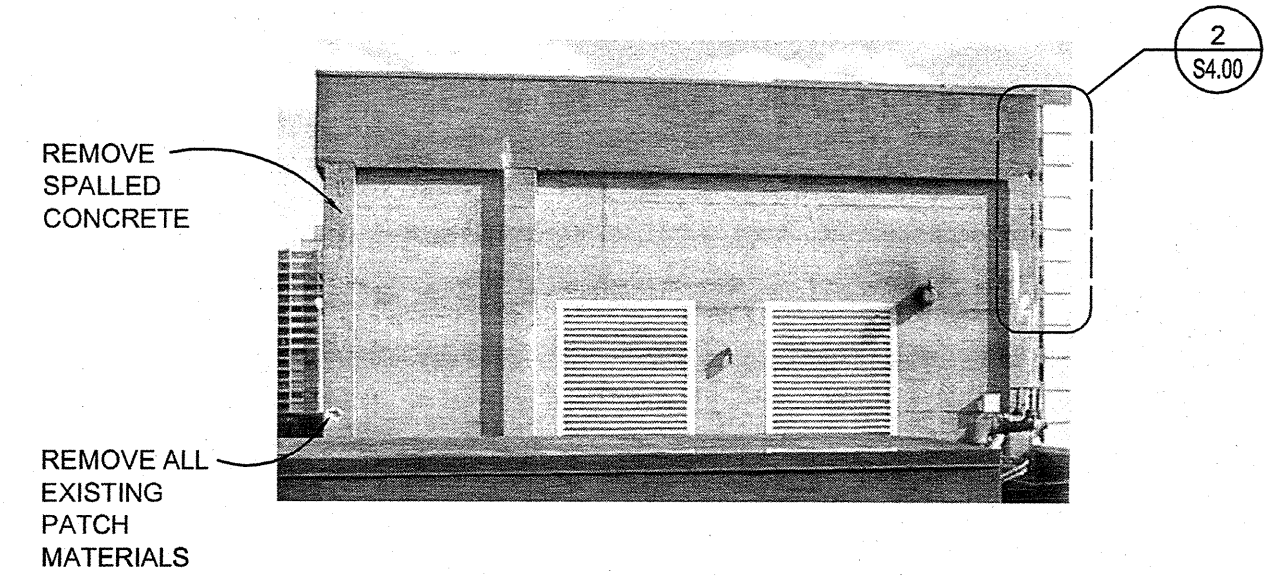
NOTE:
WHERE EXISTING HOOPS DO NOT EXTEND INTO NEW CONCRETE PATCH PROVIDE #3 DOWELS @ 8" o.c. DRILL AND EPOXY TO EXISTING CONCRETE w/ 3" MIN. EMBEDMENT.

6 CONCRETE PATCH AT ENCASED WF
3"=1'-0" S4.00



NOTE:
AT EXPOSED STEEL WIRE BRUSH TO REMOVE CORROSION BEFORE PATCHING.

4 NE CORNER OF SOUTH PENTHOUSE
N.T.S.

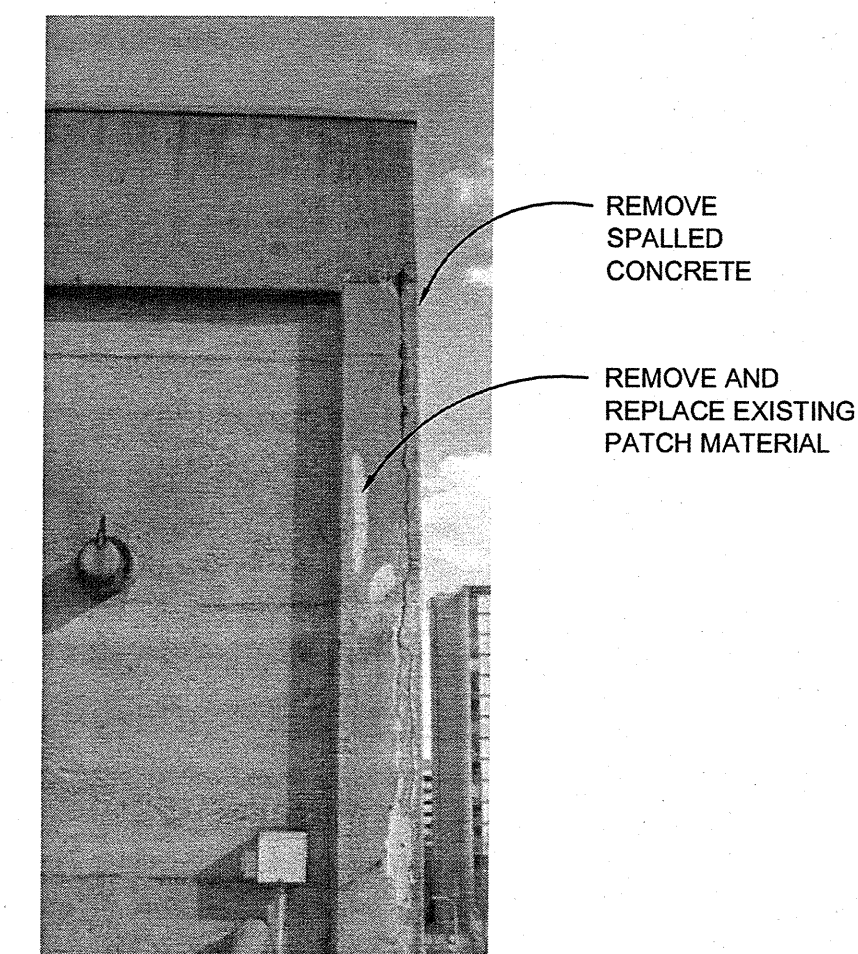


NOTES:

- REFER TO TYPICAL REPAIR DETAILS 5 AND 6/S4.00 FOR ALL WORK.
- HAMMER SOUND ENTIRE WALL FOR DELAMINATED CONCRETE. REMOVE TO SOUND MATERIAL AND PATCH.
- AT EXPOSED STEEL WIRE BRUSH TO REMOVE CORROSION BEFORE PATCHING.

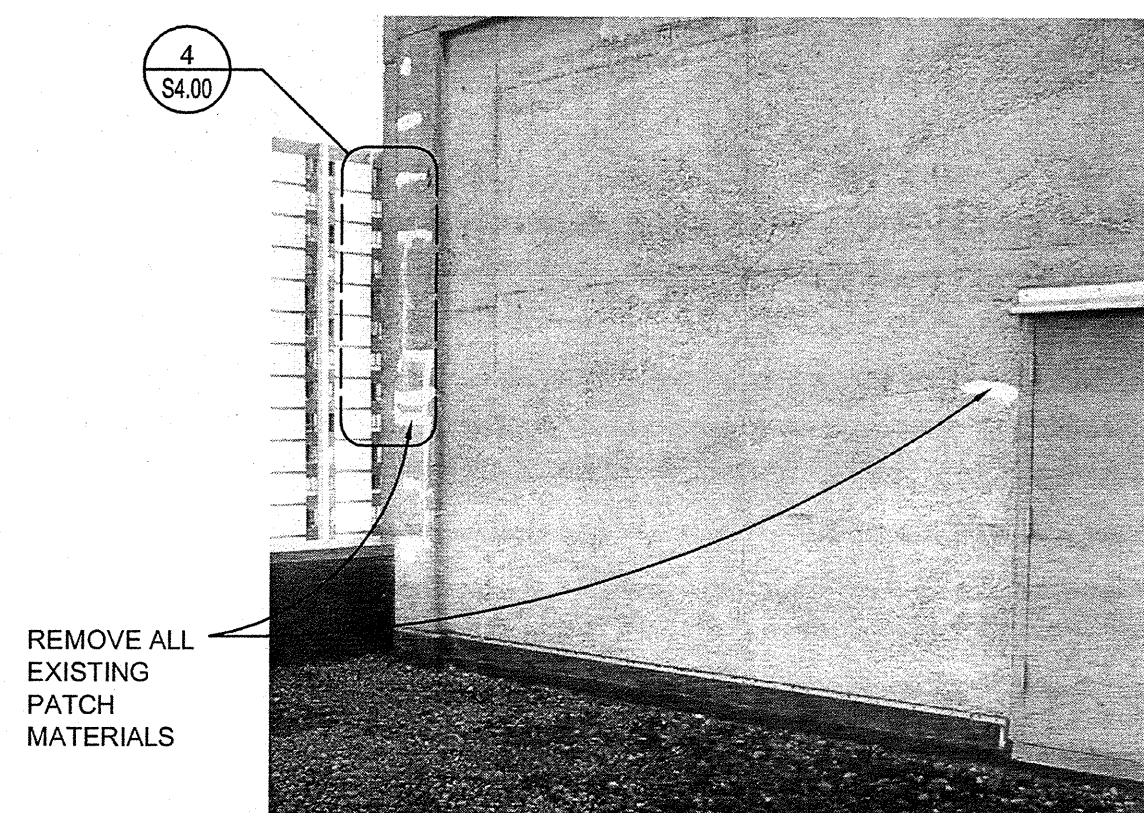
WEST ELEVATION
SOUTH PENTHOUSE

1
N.T.S.



NOTE:
AT EXPOSED STEEL WIRE BRUSH TO REMOVE CORROSION BEFORE PATCHING.

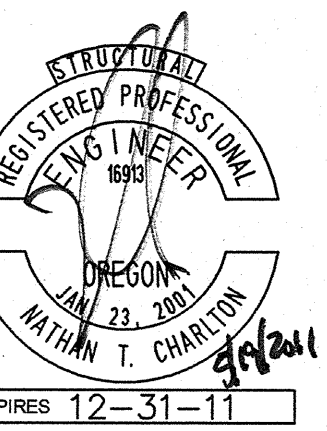
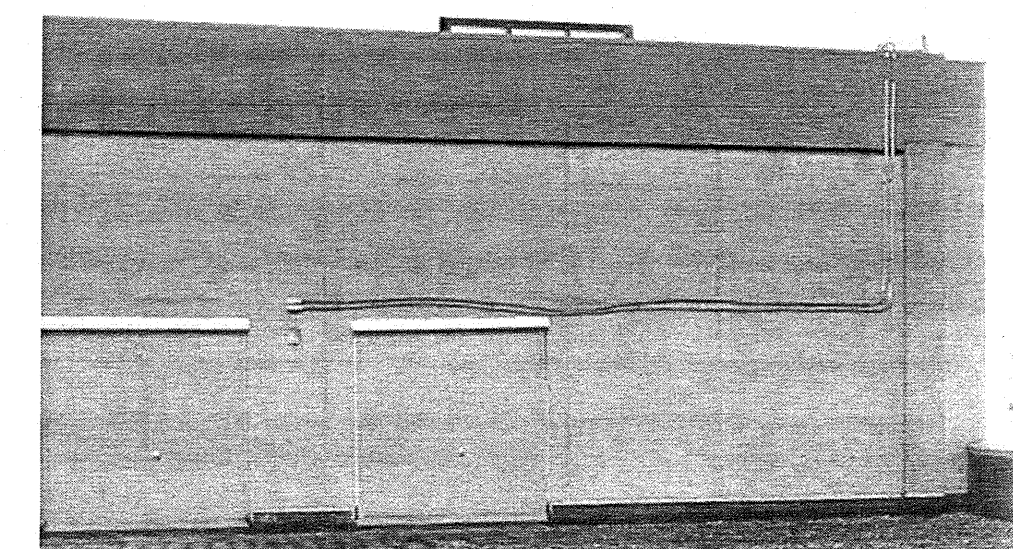
2 SW CORNER OF SOUTH PENTHOUSE
N.T.S.



NOTES:

- REFER TO TYPICAL REPAIR DETAILS 5 AND 6/S4.00 FOR ALL WORK.
- HAMMER SOUND ENTIRE WALL FOR DELAMINATED CONCRETE. REMOVE TO SOUND MATERIAL AND PATCH.
- AT EXPOSED STEEL WIRE BRUSH TO REMOVE CORROSION BEFORE PATCHING.

3 NORTH WALL OF SOUTH PENTHOUSE
N.T.S.



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CONCRETE REPAIR

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
ELECTRICAL SYMBOL LIST

NOTE: This is a standard symbol list and not all items listed may be used.

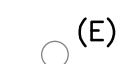
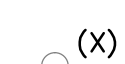
Abbreviations

(E)	EXISTING
(N)	NEW
(X)	DEMOLISH
A	AMPERES, AMBER
AFF	ABOVE FINISHED FLOOR
AIC	AVAILABLE INTERRUPTING CAPACITY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT, CLOSE, CONTROL
CU	COPPER
F	FUSE
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
KVA	KILOVOLT AMPERES
KW	KILOWATT
M	MOTOR
MCA	MINIMUM CIRCUIT AMPS
MOC	MAXIMUM OVERCURRENT PROTECTION
N	NEUTRAL
PH	PHASE
TYP	TYPICAL
WP	WEATHERPROOF

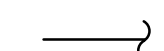

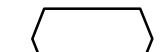
Connections / Equipment

	HEAVY DUTY FUSED DISCONNECT SWITCH
	MOTOR CONNECTION
	NON-FUSED DISCONNECT SWITCH

General

	THIN LINE SYMBOL WITH (E) NEXT TO SYMBOL INDICATES EXISTING ELECTRICAL LUMINAIRE, OUTLET, ENCLOSURE, OR EQUIPMENT TO REMAIN. MAINTAIN EXISTING ELECTRICAL CONTINUITY.
	THIN LINE SYMBOL WITH (X) NEXT TO SYMBOL INDICATES EXISTING ELECTRICAL LUMINAIRE, OUTLET, ENCLOSURE, OR EQUIPMENT TO BE REMOVED COMPLETE. MAINTAIN ELECTRICAL CONTINUITY TO OUTLETS, REROUTE ELECTRICAL CLEAR OF CONSTRUCTION


Miscellaneous

	CONDUIT/WIRING CONTINUATION
	FLEXIBLE CONDUIT
	MECHANICAL EQUIPMENT CONNECTION ITEM. REFER TO SCHEDULE

Reference Symbols

	KEYED NOTES
---	-------------

Switches and Receptacles

	DUPLEX RECEPTACLE (MULTIPLE LETTERS INDICATE MULTIPLE OPTIONS)
G = GROUND FAULT CIRCUIT INTERRUPTER	
W = WEATHERPROOF CONTINUOUS USE COVER,	
GFCI PROTECTED, WITH WEATHER-RESISTANT RECEPTACLE	

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

ITEM	DESCRIPTION	LOCATION	VOLTS / PHASE	LOAD	MCA	MOC	WIRE / CONDUIT	CIRCUIT	NOTES
CU-1	CONDENSING UNIT	ROOFTOP	208/3		34.4	45	403		1
FC-1	FAN COIL	ROOM 249A	208/3		5	15	203		1
HP-1	HEAT PUMP	ROOFTOP	208/3		95.5	100	1003		1
HP-2	HEAT PUMP	ROOFTOP	208/3		77.7	80	803		1
HP-3	HEAT PUMP	ROOFTOP	208/3		95.5	100	1003		1
HP-4	HEAT PUMP	ROOFTOP	208/3		95.5	100	1003		1
HP-5	HEAT PUMP	ROOFTOP	208/3		77.7	80	803		1
HP-6	HEAT PUMP	ROOFTOP	208/3		152	175	1753		1
HP-7	HEAT PUMP	ROOFTOP	208/3		152	175	1753		1

GENERAL MECHANICAL EQUIPMENT CONNECTION SCHEDULE NOTES

- THE ABOVE INFORMATION IS FOR A SPECIFIC MANUFACTURER. ACTUAL MANUFACTURER FOR EQUIPMENT MAY BE DIFFERENT. COORDINATE WITH MECHANICAL EQUIPMENT SUBMITTALS FOR LOADS AND OVER CURRENT PROTECTION REQUIREMENTS PRIOR TO INSTALLATION OF WIRING.
- MOC = MAXIMUM OVER CURRENT PROTECTION
MCA = MINIMUM CIRCUIT AMPACITY

MECHANICAL EQUIPMENT CONNECTION SCHEDULE NOTES

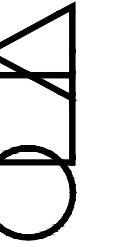
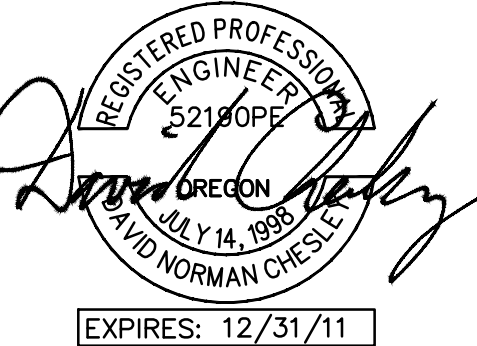
- FIELD VERIFY EXISTING CONDUCTOR AND CONDUIT SIZES, AS WELL AS UNIT REQUIREMENTS. PROVIDE NEW CONDUCTORS AND/OR RACEWAY AS NEEDED TO MEET OESC REQUIREMENTS.

COPPER FEEDER SCHEDULE

203	3 #12 CU, 1 #12 CU GND., IN 3/4" C.
403	3 #8 CU, 1 #10 CU GND., IN 3/4" C.
803	3 #2 CU, 1 #8 CU GND., IN 1-1/4" C.
1003	3 #1 CU, 1 #8 CU GND., IN 1-1/4" C.
1753	3 #2/0 CU, 1 #6 CU GND., IN 2" C.

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

ITEM	DESCRIPTION	LOCATION	NEW LOAD (KVA)	EXISTING LOAD (KVA)	NOTES
CU-1	CONDENSING UNIT	ROOFTOP	9.9		
FC-1	FAN COIL	ROOM 249A	1.44		
HP-1	HEAT PUMP	ROOFTOP	27.5		
HP-2	HEAT PUMP	ROOFTOP	22.38		
HP-3	HEAT PUMP	ROOFTOP	27.5		
HP-4	HEAT PUMP	ROOFTOP	27.5		
HP-5	HEAT PUMP	ROOFTOP	22.38		
HP-6	HEAT PUMP	ROOFTOP	43.78		
HP-7	HEAT PUMP	ROOFTOP	43.78		



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COVER SHEET -
ELECTRICAL

PROJ NO.
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SHEET INDEX

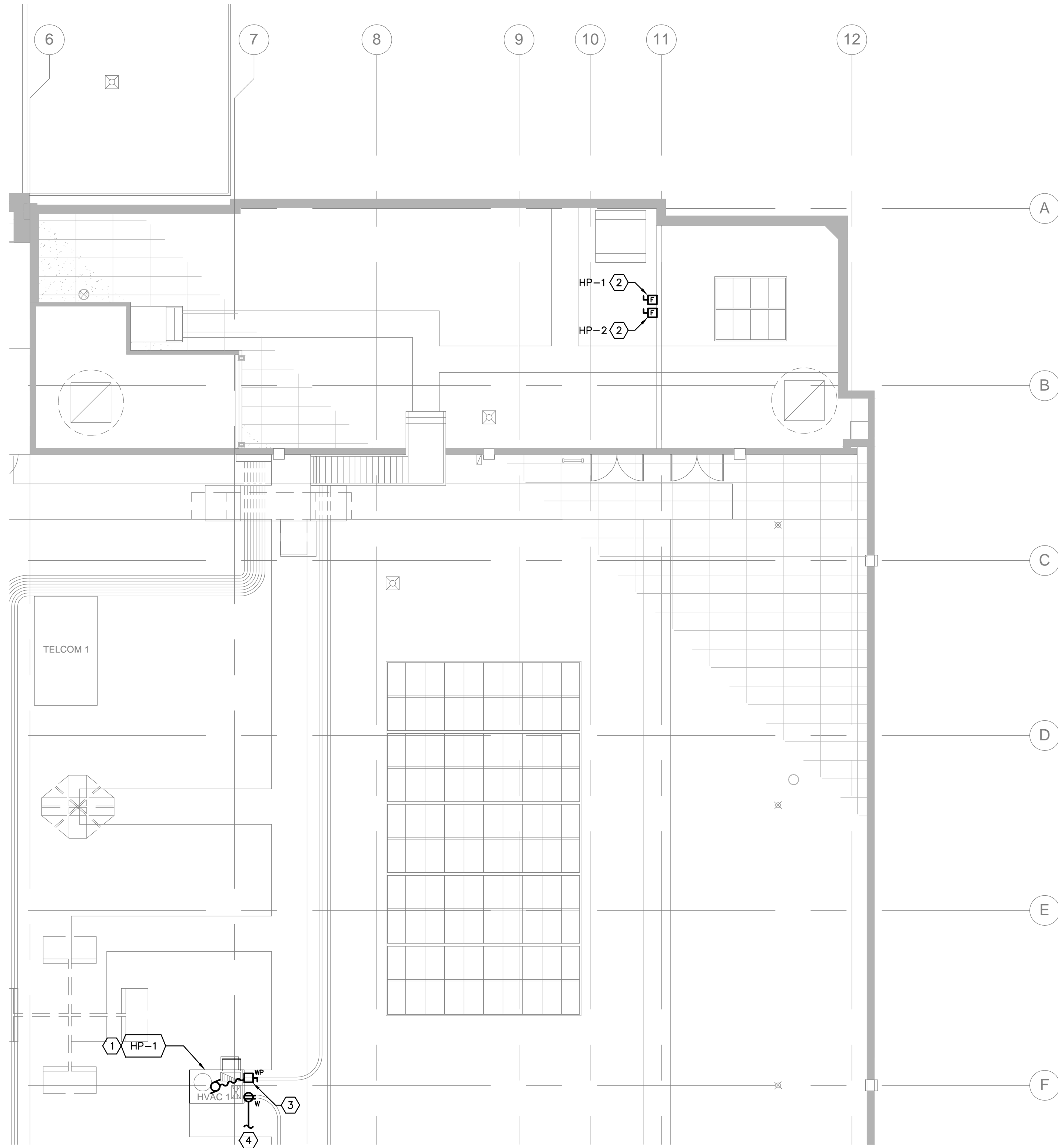
E0.01	COVER SHEET - ELECTRICAL
E2.03	PARTIAL ROOF PLAN - NE - POWER
E2.04	PARTIAL ROOF PLAN - SW - POWER
E2.05	PARTIAL ROOF PLAN - SE - POWER

PROJECT **2011-0134**
CONTACT **Chris Larson**

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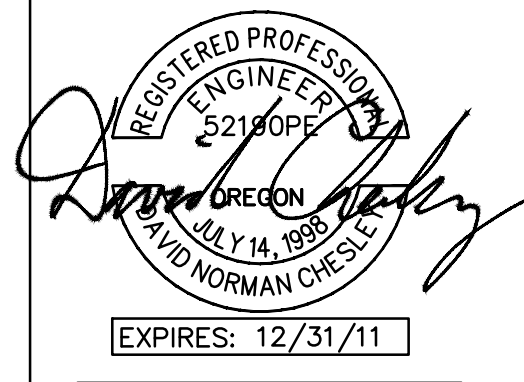
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E0.01



SHEET KEYNOTES

- 1 EXISTING HEAT PUMP UNIT TO BE REPLACED WITH NEW UNIT IN SAME LOCATION.
- 2 REMOVE AND REPLACE EXISTING FUSED DISCONNECT WITH NEW FUSED DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD. VERIFY EXACT FUSING REQUIREMENTS WITH MECHANICAL SHOP DRAWINGS AND ADJUST FUSE SIZE AS NEEDED. IF CONDUCTORS (AND/OR RACEWAY) ARE UNDERSIZED FOR NEW FUSE, THEN PROVIDE NEW FEEDER TO MEET OESC REQUIREMENTS.
- 3 REMOVE AND REPLACE EXISTING NON-FUSED DISCONNECT WITH NEW WEATHERPROOF DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD.
- 4 CONNECT TO EXISTING ROOFTOP MAINTENANCE RECEPTACLE CIRCUIT.

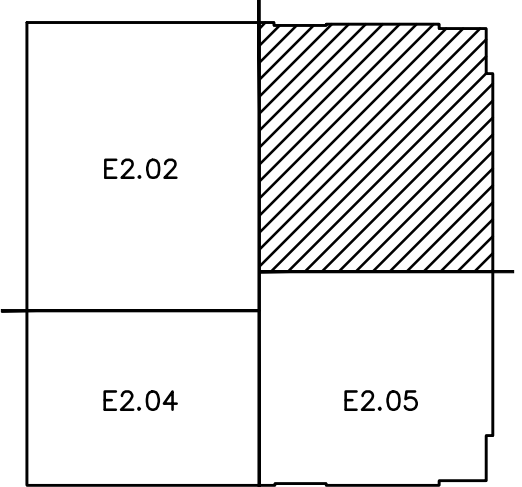


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NEUBERGER HALL ROOF MAINTENANCE
 PORTLAND STATE UNIVERSITY
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BID / PERMIT SET

KEY PLAN



PARTIAL ROOF
 PLAN - POWER

PROJ NO.
 21046.01
 05.23.11

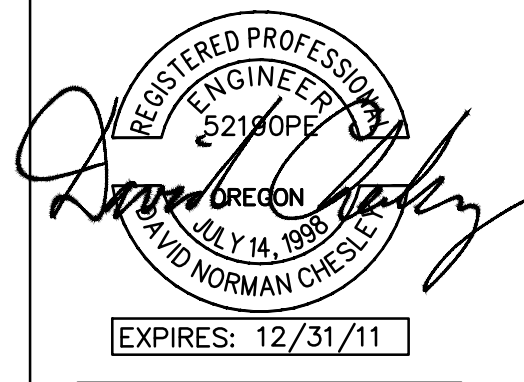
1 PARTIAL ROOF PLAN - NE - POWER
 0 4' 8' 16'
 SCALE: 1/8"=1'-0"

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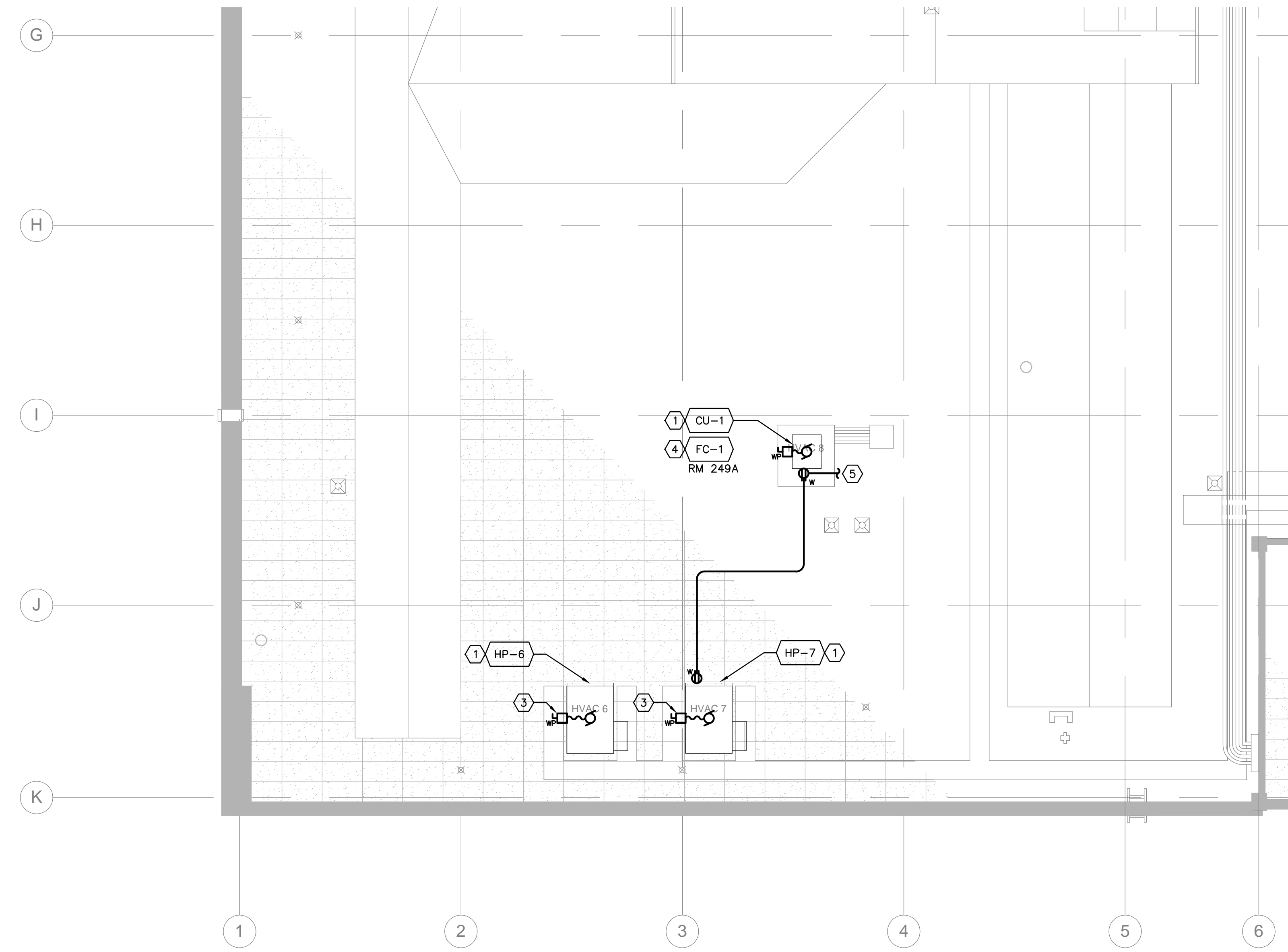
E2.03



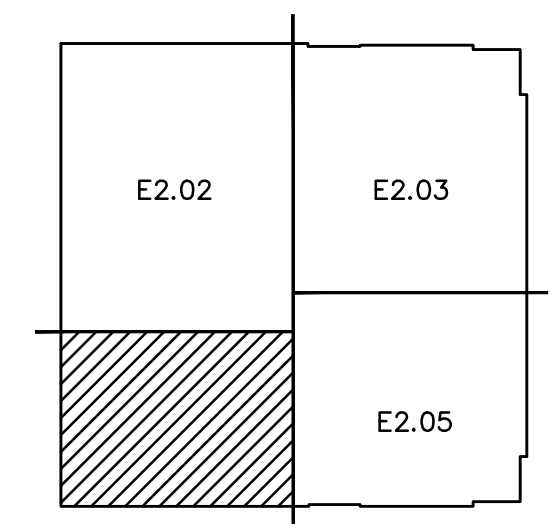
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SHEET KEYNOTES

- EXISTING ROOF TOP UNIT TO BE REPLACED WITH NEW UNIT IN SAME LOCATION.
- REMOVE AND REPLACE EXISTING FUSED DISCONNECT WITH NEW FUSED DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. FIELD VERIFY DISCONNECT LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD. VERIFY EXACT FUSING REQUIREMENTS WITH MECHANICAL SHOP DRAWINGS AND ADJUST FUSE SIZE AS NEEDED. IF CONDUCTORS (AND/OR RACEWAY) ARE UNDERSIZED FOR NEW FUSE, THEN PROVIDE NEW FEEDER TO MEET OESC REQUIREMENTS.
- REMOVE AND REPLACE EXISTING NON-FUSED DISCONNECT WITH NEW WEATHERPROOF DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD.
- EXISTING FAN COIL IN CEILING SPACE ABOVE ROOM 249A TO BE REPLACED. FIELD VERIFY EXISTING UNIT'S OVERCURRENT PROTECTION AND FEEDER SIZE. VERIFY EXACT REQUIREMENTS OF NEW FAN COIL WITH MECHANICAL SHOP DRAWINGS AND ADJUST OVERCURRENT PROTECTION SIZE AS NEEDED. IF CONDUCTORS (AND/OR RACEWAY) ARE UNDERSIZED FOR NEW UNIT, THEN PROVIDE NEW FEEDER TO MEET OESC REQUIREMENTS.
- CONNECT TO EXISTING ROOFTOP MAINTENANCE RECEPTACLE CIRCUIT.



KEY PLAN



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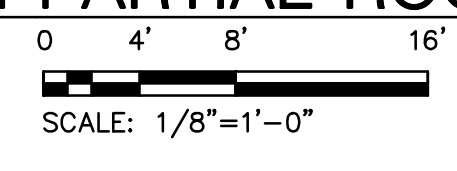
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 PLAN - POWER

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1 PARTIAL ROOF PLAN - SW - POWER



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E2.04

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SHEET KEYNOTES

- 1 EXISTING HP-4 FED FROM 100A BUS PLUG DISCONNECT IN 4TH FLOOR IT/ELECTRICAL CLOSET. VERIFY EXACT OVERCURRENT PROTECTION REQUIREMENTS OF NEW ROOF TOP UNIT WITH MECHANICAL SHOP DRAWINGS AND ADJUST DISCONNECT SIZE AS NEEDED. IF CONDUCTORS (AND/OR RACEWAY) ARE UNDERSIZED FOR NEW OVERCURRENT PROTECTION, THEN PROVIDE NEW FEEDER TO MEET OESC REQUIREMENTS.
- 2 EXISTING HEAT PUMP UNIT TO BE REPLACED WITH NEW UNIT IN SAME LOCATION.
- 3 REMOVE AND REPLACE EXISTING FUSED DISCONNECT WITH NEW FUSED DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD. VERIFY EXACT FUSING REQUIREMENTS WITH MECHANICAL SHOP DRAWINGS AND ADJUST FUSE SIZE AS NEEDED. IF CONDUCTORS (AND/OR RACEWAY) ARE UNDERSIZED FOR NEW FEEDER, THEN PROVIDE NEW FEEDER TO MEET OESC REQUIREMENTS.
- 4 REMOVE AND REPLACE EXISTING NON-FUSED DISCONNECT WITH NEW WEATHERPROOF DISCONNECT TO SERVE NEW ROOF TOP UNIT AT EXISTING LOCATION. MAINTAIN CONTINUITY OF EXISTING FEEDER AND SAFE OFF (LOCK) BREAKER DURING CONSTRUCTION AT PANELBOARD
- 5 CONNECT TO EXISTING ROOFTOP MAINTENANCE RECEPTACLE CIRCUIT.



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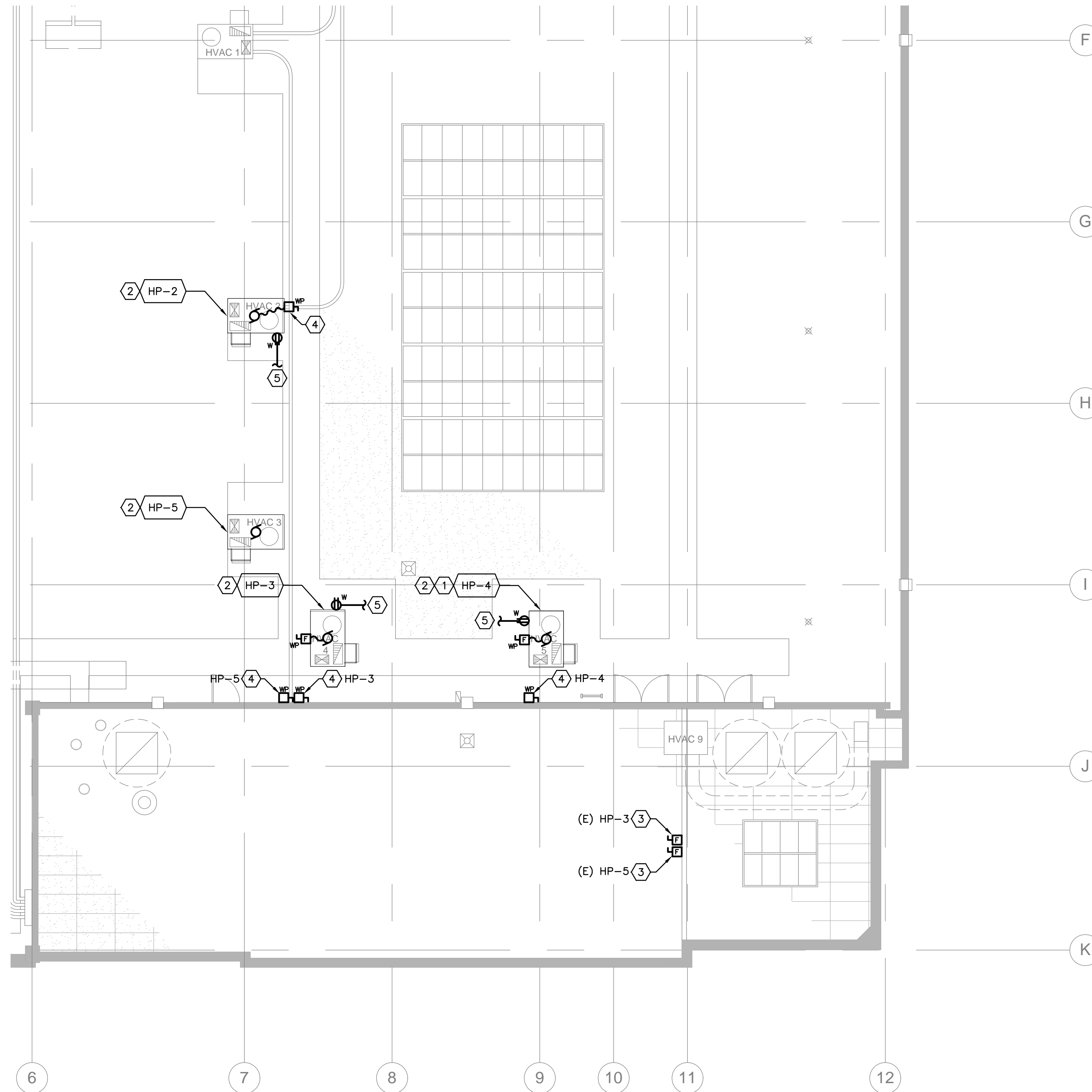
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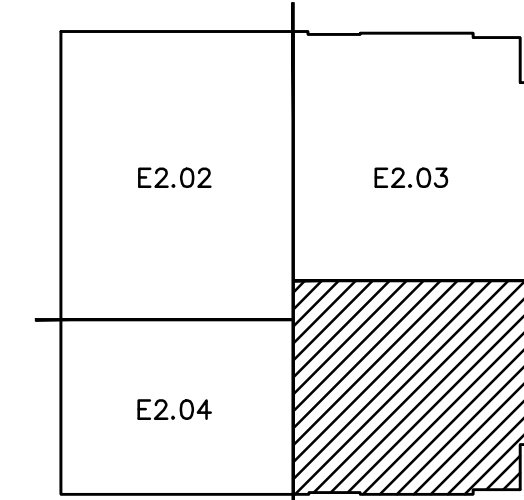
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 PLAN - POWER

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KEY PLAN



1 PARTIAL ROOF PLAN - SE - POWER

0 4' 8' 16'

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

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E2.05

MECHANICAL SYMBOL LIST

NOTE: This is a standard symbol list and not all items listed may be used.

Abbreviations

(E)	EXISTING
(X)	DEMOLISH
A/C	AIR CONDITION(ED)
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BDD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
CD	CEILING DIFFUSER
CD	CONDENSATE DRAIN
CONT.	CONTINUATION
COP	COEFFICIENT OF PERFORMANCE
CU	CONDENSING UNIT
CV	CHECK VALVE
CW	COLD WATER
D	DROP
DB	DECIBEL
DB	DRY BULB
DIA	DIAMETER
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATING
EF	EXHAUST FAN
EFF	EFFICIENT
ELECT	ELECTRICAL
EWI	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FT	FEET
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER
HTG	HEATING
HTR	HEATER
HWC	HOT WATER COIL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS.	POUNDS
LH	LATENT HEAT
MA	MIXED AIR
MAX	MAXIMUM
MBH	THOUSAND BTU'S PER HOUR
MD	MOTORIZED DAMPER
MIN	MINIMUM
N/A	NOT APPLICABLE

NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
R	RISE
RA	RETURN AIR
RET	RETURN
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATING
SF	SQUARE FEET
SH	SENSIBLE HEAT
SOV	SHUT OFF VALVE
SP	STATIC PRESSURE
T, TEMP	TEMPERATURE
TD	TEMPERATURE DIFFERENCE
TH	TOTAL HEAT
TP	TOTAL PRESSURE
V	VOLT
W/	WITH
W	WATT
WB	WET BULB
WC	WATER COLUMN

Piping Systems

—RL—	REFRIGERANT LIQUID
—RS—	REFRIGERANT SUCTION

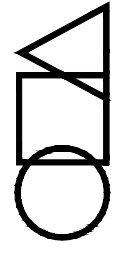
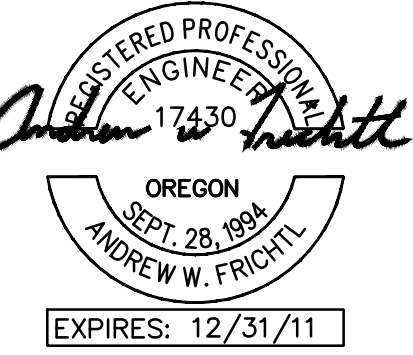
SHEET INDEX

M0.01	COVER SHEET – HVAC
M2.03	PARTIAL ROOF PLAN – NE – HVAC
M2.04	PARTIAL ROOF PLAN – SW – HVAC
M2.05	PARTIAL ROOF PLAN – SE – HVAC
M3.01	DETAILS & SCHEDULES – HVAC

PROJECT 2011-0134
CONTACT Steve Dacus

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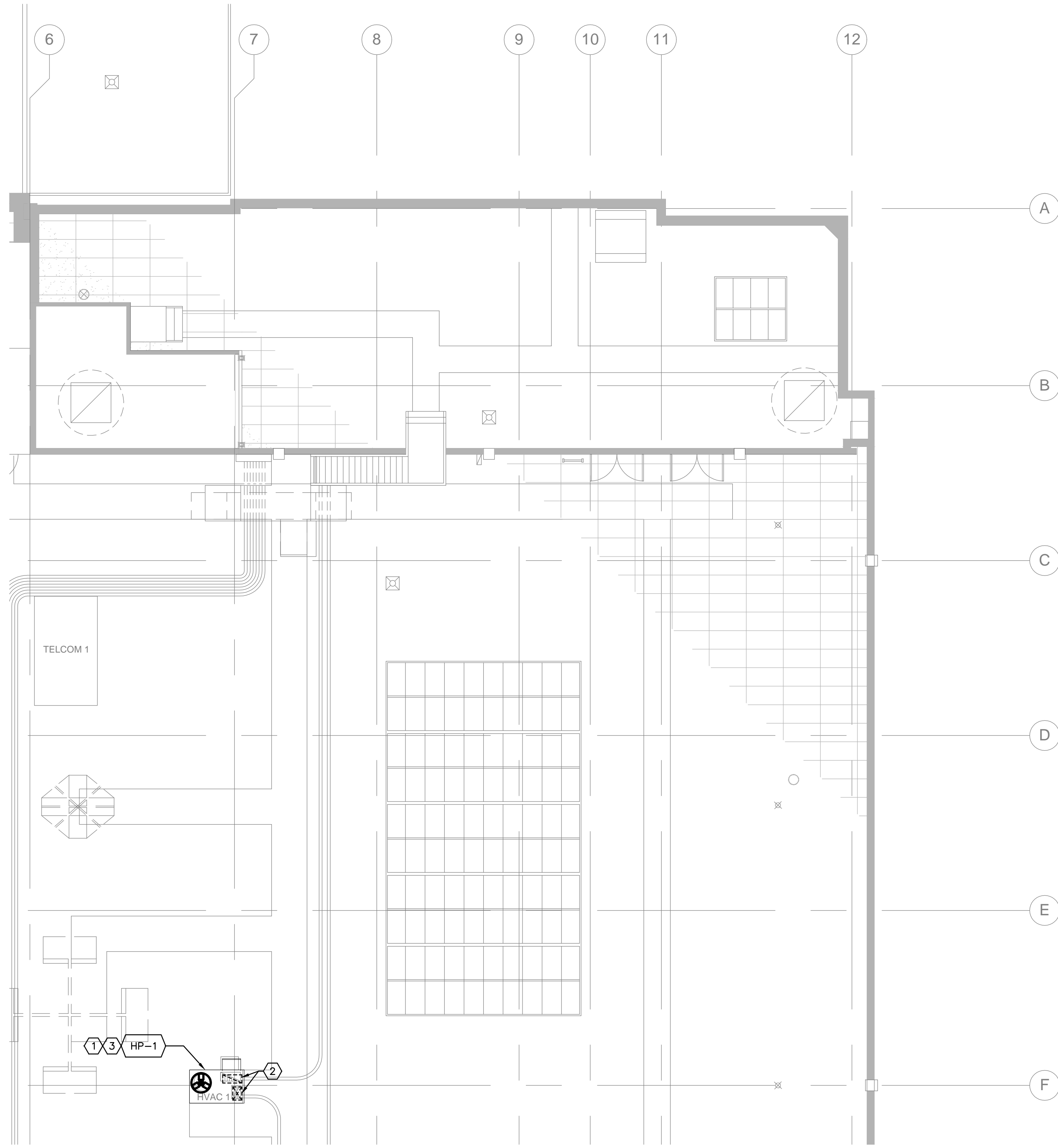
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COVER SHEET -
HVAC

PROJ NO.
21046.01

05.23.11

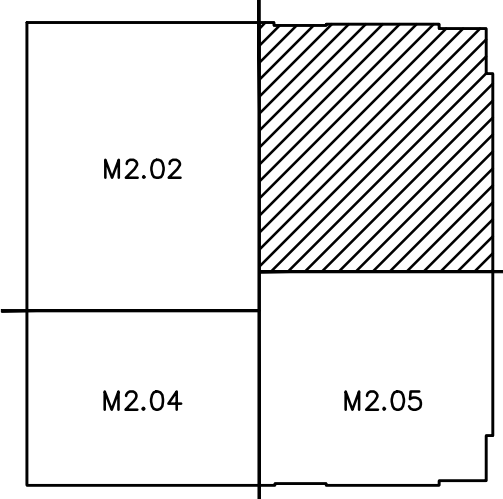
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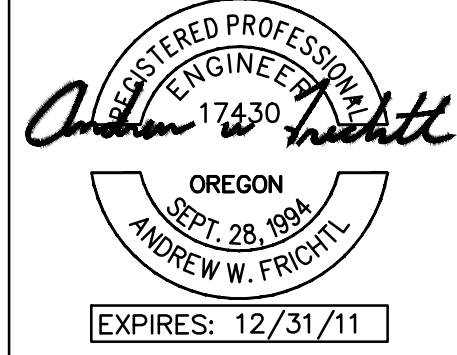
SHEET KEYNOTES

- 1 DEMOLISH EXISTING ROOFTOP HEAT PUMP. EXISTING UNIT CURB TO REMAIN. INSTALL NEW ROOFTOP HEAT PUMP UNIT ON EXISTING ROOF CURB.
- 2 EXISTING VERTICAL SUPPLY AND RETURN MAINS EXTENDING TO ROOFTOP REMAIN FOR RECONNECTION TO NEW ROOFTOP UNITS.
- 3 SALVAGE EXISTING UNIT CONTROLLER TO OWNER.

KEY PLAN



1 PARTIAL ROOF PLAN - NE - HVAC
 0 4' 8' 16'
 SCALE: 1/8"=1'-0"



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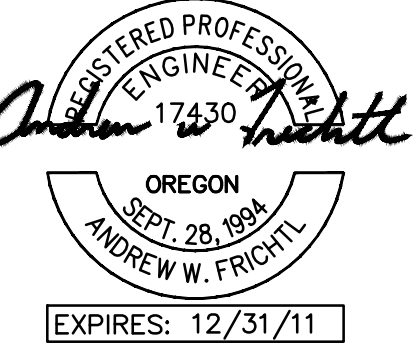
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PARTIAL ROOF
 PLAN - HVAC
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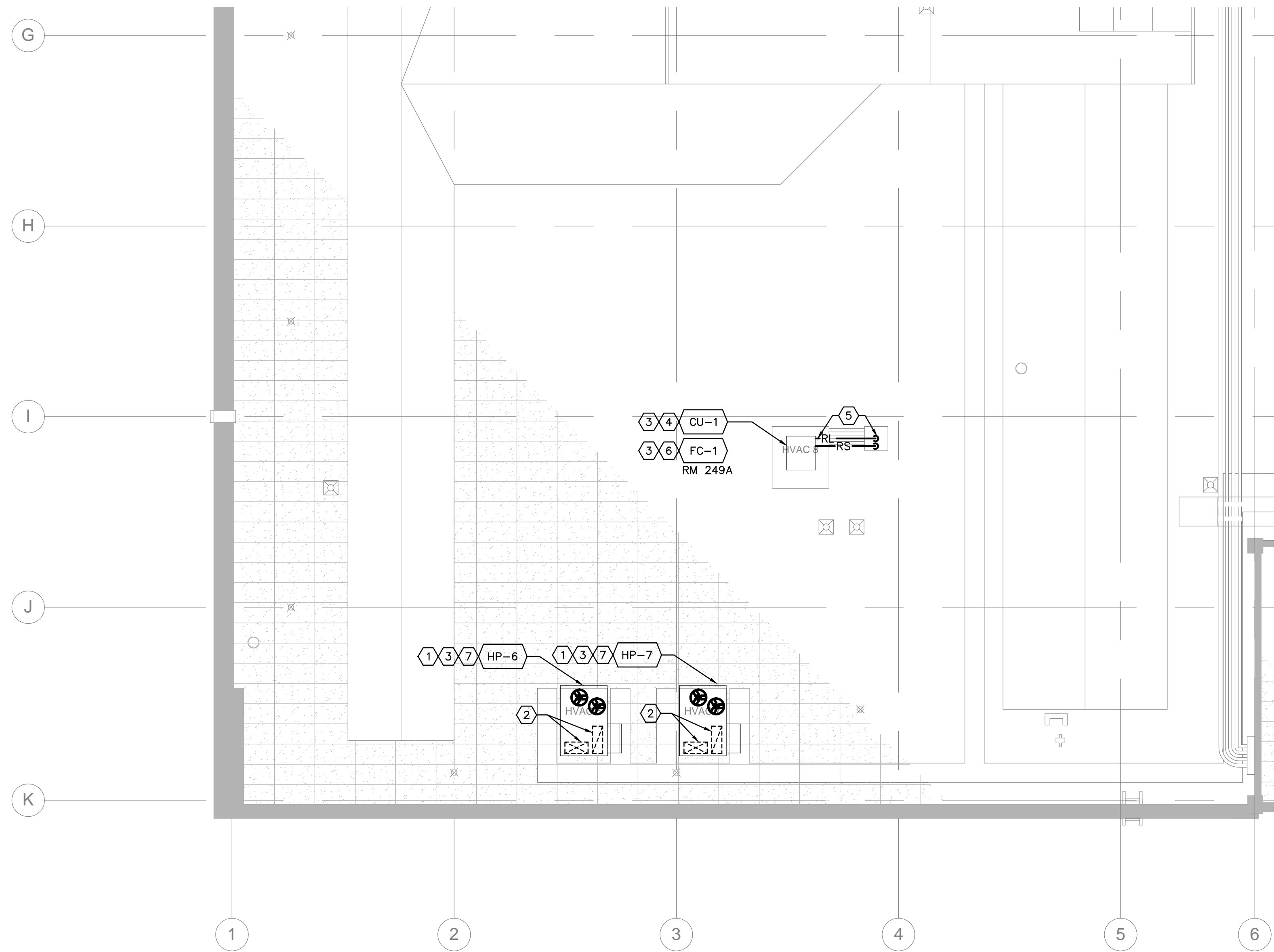
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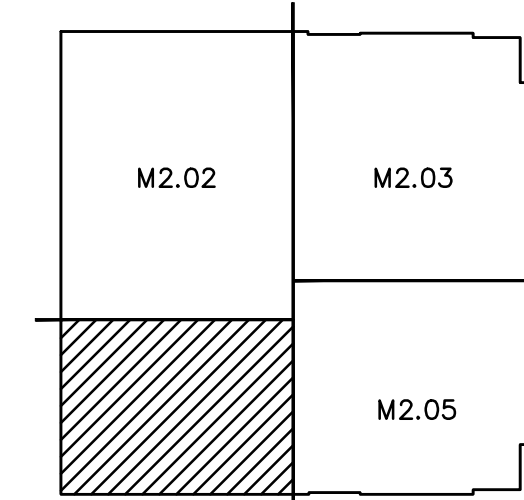
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SHEET KEYNOTES

- 1 DEMOLISH EXISTING ROOFTOP HEAT PUMP. EXISTING UNIT CURB TO REMAIN. INSTALL NEW ROOFTOP HEAT PUMP UNIT ON EXISTING ROOF CURB. NEW UNIT TO BE CONTROLLED BY SIEMENS BUILDING AUTOMATION SYSTEM.
- 2 EXISTING VERTICAL SUPPLY AND RETURN MAINS EXTENDING TO ROOFTOP REMAIN FOR RECONNECTION TO NEW ROOFTOP UNITS.
- 3 SALVAGE EXISTING UNIT CONTROLLER TO OWNER.
- 4 DEMOLISH EXISTING CONDENSING UNIT. CONCRETE CURB TO REMAIN. INSTALL NEW CONDENSING UNIT ON EXISTING CURB. REFER TO DETAIL 1/M3.01 FOR UNIT INSTALLATION.
- 5 DEMOLISH EXISTING SUCTION AND LIQUID REFRIGERANT PIPING EXTENDING FROM CONDENSING UNIT TO FAN COIL LOCATED IN ROOM. PROVIDE NEW REFRIGERANT PIPING PER MANUFACTURER'S PIPE SIZE AND INSTALLATION RECOMMENDATIONS.
- 6 REPLACE EXISTING FAN COIL UNIT LOCATED IN RM 249A ABOVE CEILING WITH NEW. PROVIDE TEMPORARY COOLING OF CLASSROOM 251 WHILE UNIT IS INACTIVE DURING REPLACEMENT.
- 7 REMOVE EXISTING STANDALONE THERMOSTAT WITH REMOTE SENSOR AND SALVAGE TO OWNER. INSTALL NEW DDC SPACE TEMPERATURE SENSOR AT SAME LOCATION AS EXISTING REMOTE SENSOR IN CLASSROOM.



KEY PLAN



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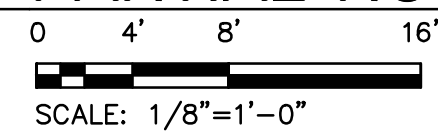
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PARTIAL ROOF
 PLAN - HVAC

PROJ NO.
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1 PARTIAL ROOF PLAN - SW - HVAC



PROJECT **2011-0134**
 CONTACT **Steve Dacus**

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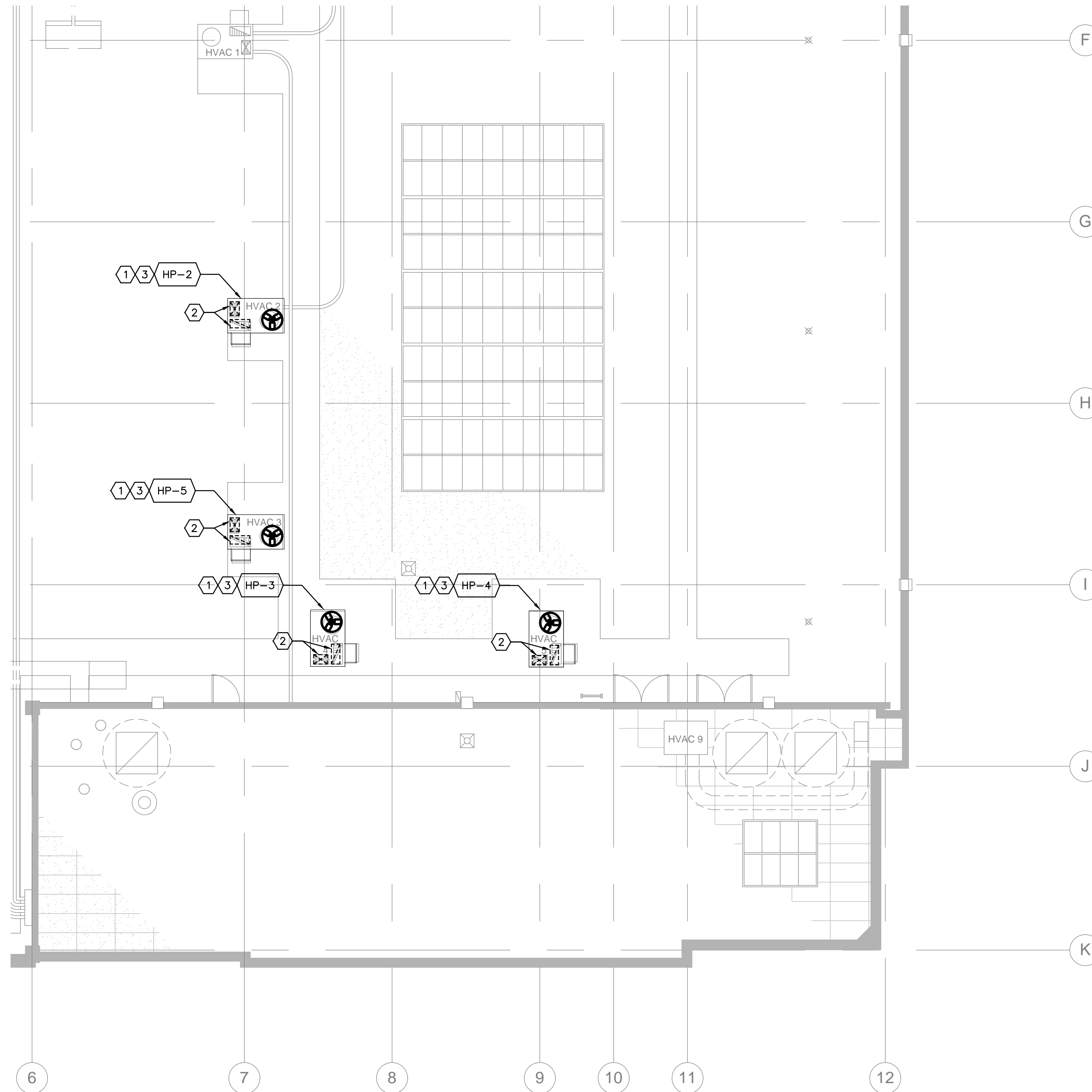
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M2.04

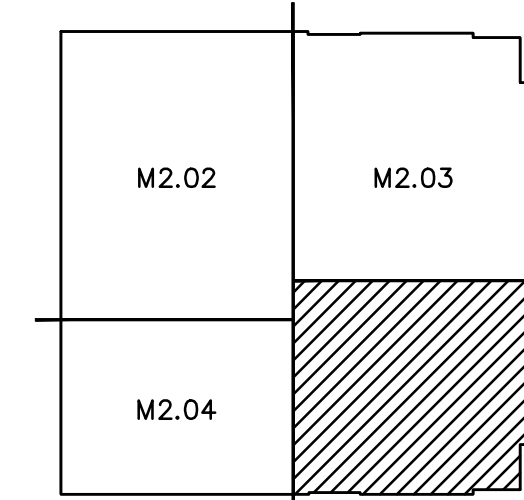
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SHEET KEYNOTES

- 1 DEMOLISH EXISTING ROOFTOP HEAT PUMP. EXISTING UNIT CURB TO REMAIN. INSTALL NEW ROOFTOP HEAT PUMP UNIT ON EXISTING ROOF CURB.
- 2 EXISTING VERTICAL SUPPLY AND RETURN MAINS EXTENDING TO ROOFTOP REMAIN FOR RECONNECTION TO NEW ROOFTOP UNITS.
- 3 SALVAGE EXISTING UNIT CONTROLLER TO OWNER.



KEY PLAN



1 PARTIAL ROOF PLAN - SE - HVAC

0 4' 8' 16'

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

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PARTIAL ROOF
 PLAN - HVAC

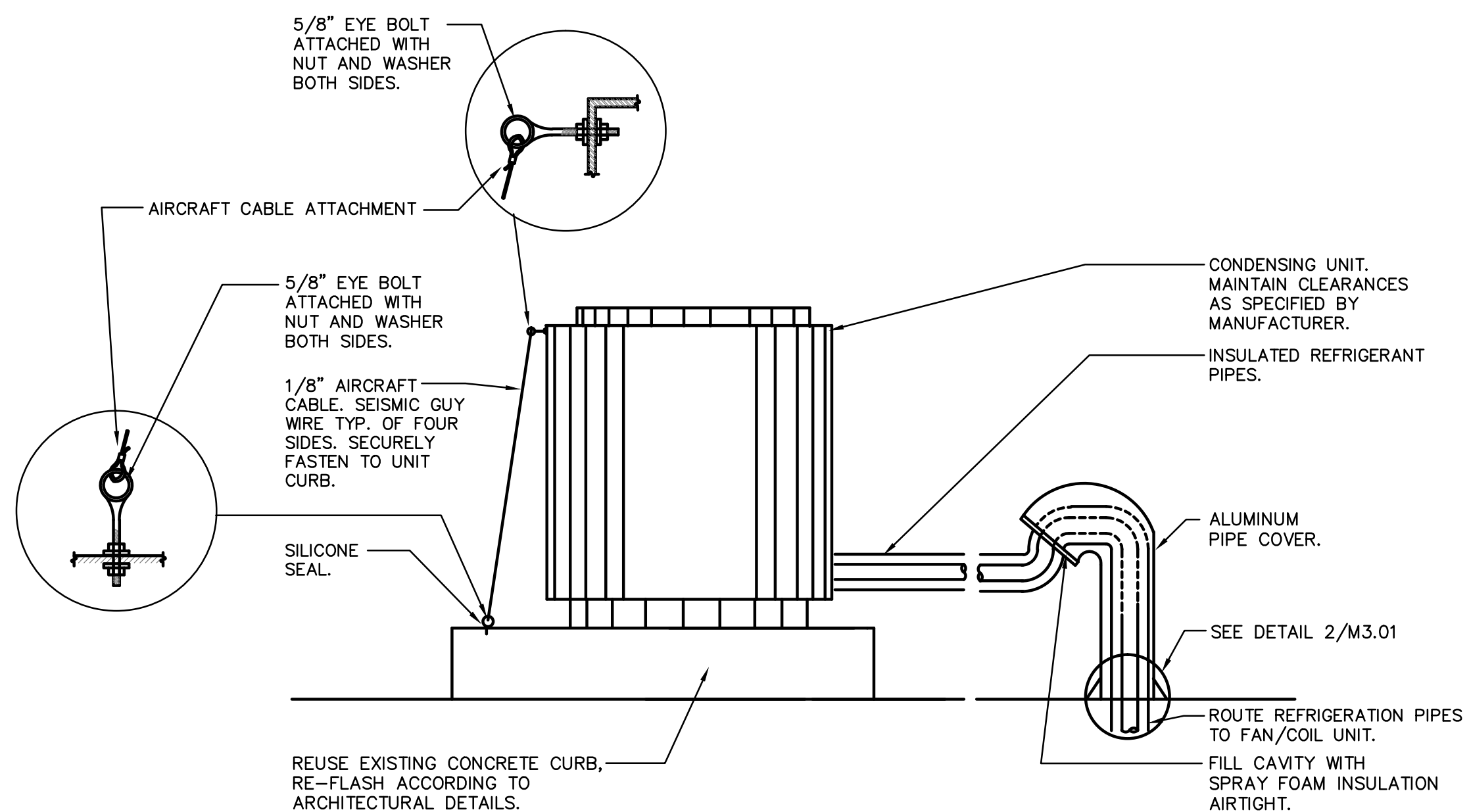
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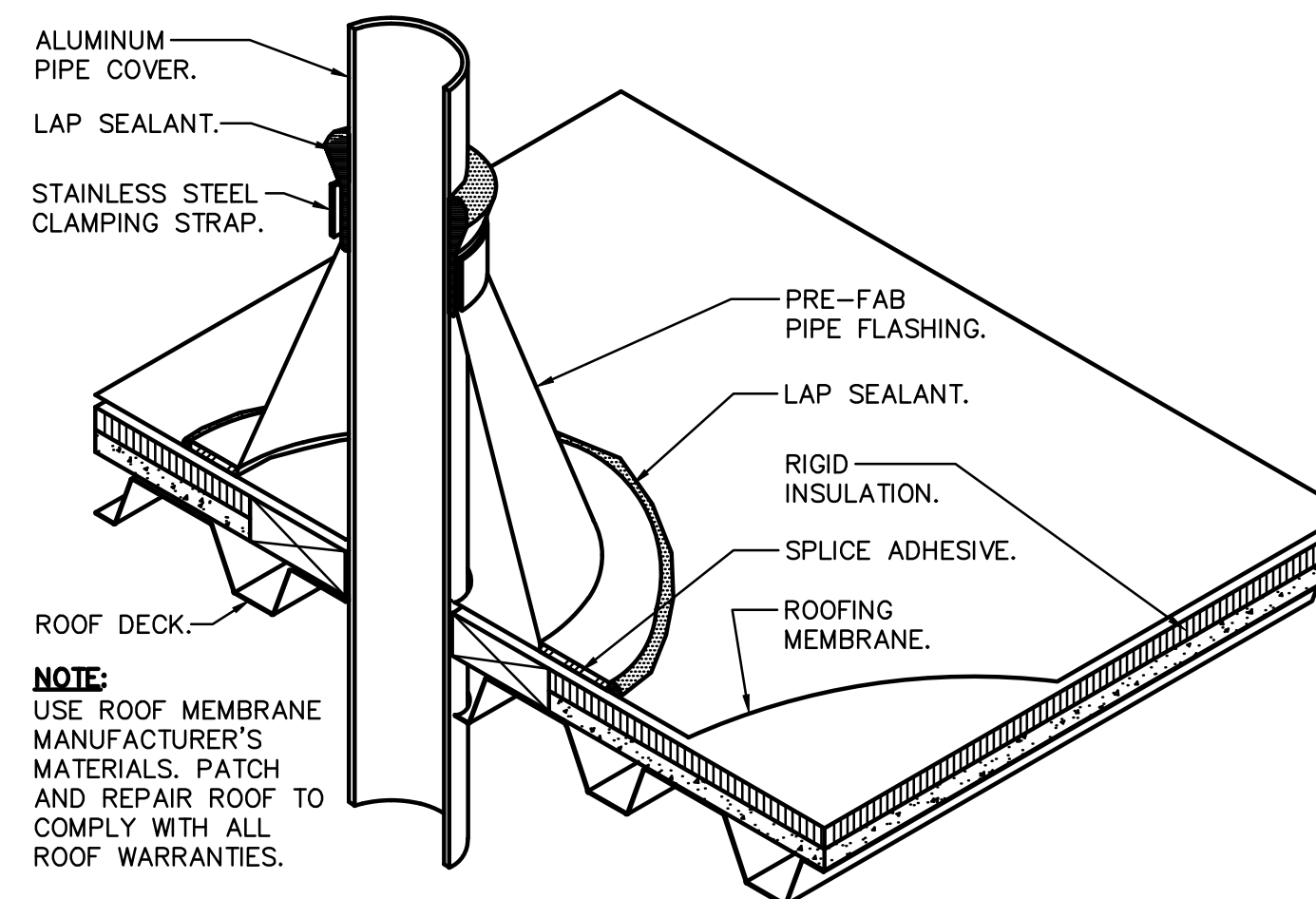
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M2.05



1 ROOFTOP CONDENSING UNIT CURB
NO SCALE

NOTE:
PLATFORM CONSTRUCTION TO BE COORDINATED WITH ARCHITECT.



2 REFRIGERANT PIPING COVER PENETRATION
NO SCALE



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DETAIL/SCHEDULES - HVAC

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ROOFTOP HEAT PUMP UNIT SCHEDULE

SYMBOL	NOM. TONS	AREA SERVED	AIR FLOW (CFM)	MIN OSA (CFM)	FAN ESP. (INH2O)	COOLING				MIN. EFF. SEER (EER)	HEAT PUMP HEATING (MBH)	AUX. HEATING (KW)	BASIS OF DESIGN	MAX WT (LBS)	ELECTRICAL			REMARKS
						GROSS TOTAL (MBH)	GROSS SENS. (MBH)	ENT. AIR							VOLT/PH	MCA	MOCP	
								(°F DB)	(°F WB)									
HP-1	5	RM 450	2,000	600	0.50	59.3	43.1	80.0	67.0	15	55.3	19.9	CARRIER WEATHERMAKER 50HCQA06	690	208/3	95.5	100	1,2,4
HP-2	4	RM 446	1,600	480	0.50	47.3	36.8	80.0	67.0	15.8	46.1	15.8	CARRIER WEATHERMAKER 50HCQA05	660	208/3	77.7	80	1,4
HP-3	5	RM 439	2,000	600	0.50	59.3	43.1	80.0	67.0	15	55.3	19.9	CARRIER WEATHERMAKER 50HCQA06	690	208/3	95.5	100	1,2,4
HP-4	5	RM 437	2,000	600	0.50	59.3	43.1	80.0	67.0	15	55.3	19.9	CARRIER WEATHERMAKER 50HCQA06	690	208/3	95.5	100	1,2,4
HP-5	4	RM 448	1,600	480	0.50	47.3	36.8	80.0	67.0	15.8	46.1	15.8	CARRIER WEATHERMAKER 50HCQA05	660	208/3	77.7	80	1,4
HP-6	7.5	RM 461	3,000	900	0.50	92.1	69.4	80.0	67.0	(12.1)	85.4	31.8	CARRIER WEATHERMAKER 50HCQA08	1,055	208/3	152.0	175	1,2,3,4
HP-7	7.5	RM 465	3,000	900	0.50	92.1	69.4	80.0	67.0	(12.1)	85.4	31.8	CARRIER WEATHERMAKER 50HCQA08	1,055	208/3	152.0	175	1,2,3,4

NOTES:
 1. PROVIDE AIR ECONOMIZER.
 2. PROVIDE SMOKE DETECTOR AT RETURN. SEE SPECIFICATIONS.
 3. PROVIDE POWER EXHAUST CAPABLE OF MAINTAINING 0.25 IN.H2O E.S.P.
 4. OUTSIDE AIR TEMPERATURE FOR COOLING = 95F. INTEGRATED HEATING AT 47F AMBIENT.
 5. BALANCE NEW AIRFLOWS TO MEET DUCT TRAVERSES OF EXISTING SUPPLY AND OUTSIDE AIRFLOWS. SCHEDULED AIRFLOWS PROVIDED FOR UNIT SELECTION PURPOSES ONLY.

CONDENSING UNIT SCHEDULE

SYMBOL	AREA SERVED	RELATED FAN	NOM. TONS	COOLING CAP. (MBH)	MIN. CL.Q. EFF.	BASIS OF DESIGN	MAX. WT. (LBS)	ELECTRICAL		
								VOLT/PH	MCA	MOCP
CU-1	SERVER RM 249A	FC-1	7.5	90.0	11.2 EER	TRANE TTA 090	300	208/3	34.4	45

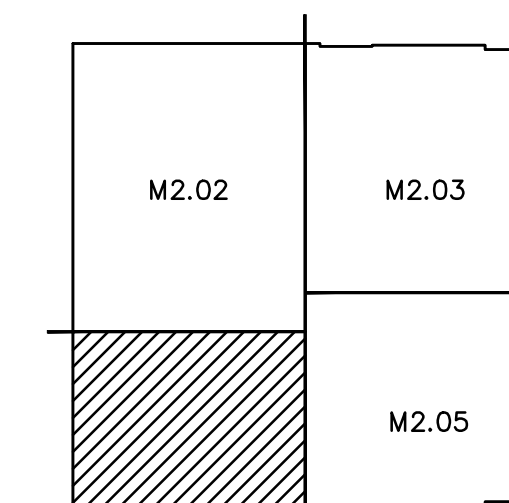
NOTES:
COOLING CAPACITY AT 95F AMBIENT.

FAN COIL SCHEDULE

SYMBOL	AREA SERVED	NOM. TONS	COND. UNIT	AIR FLOW (CFM)	MIN OSA (CFM)	FAN ESP. (INH2O)	COOLING				BASIS OF DESIGN	MAX. WT. (LBS)	ELECTRICAL			
							TOTAL (MBH)	SENS. (MBH)	ENT. AIR				VOLT/PH	FAN HP	MCA	MOCP
									(°F DB)	(°F WB)						
FC-1	SERVER RM 249A	7.5	CU-1	3,000	-	0.50	93.5	71.7	80.0	67.0	TRANE TWE 090	400	208/3	2	5.0	15

NOTES:
PROVIDE SMOKE DETECTOR AT RETURN. SEE SPECIFICATIONS.

KEY PLAN



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M3.01