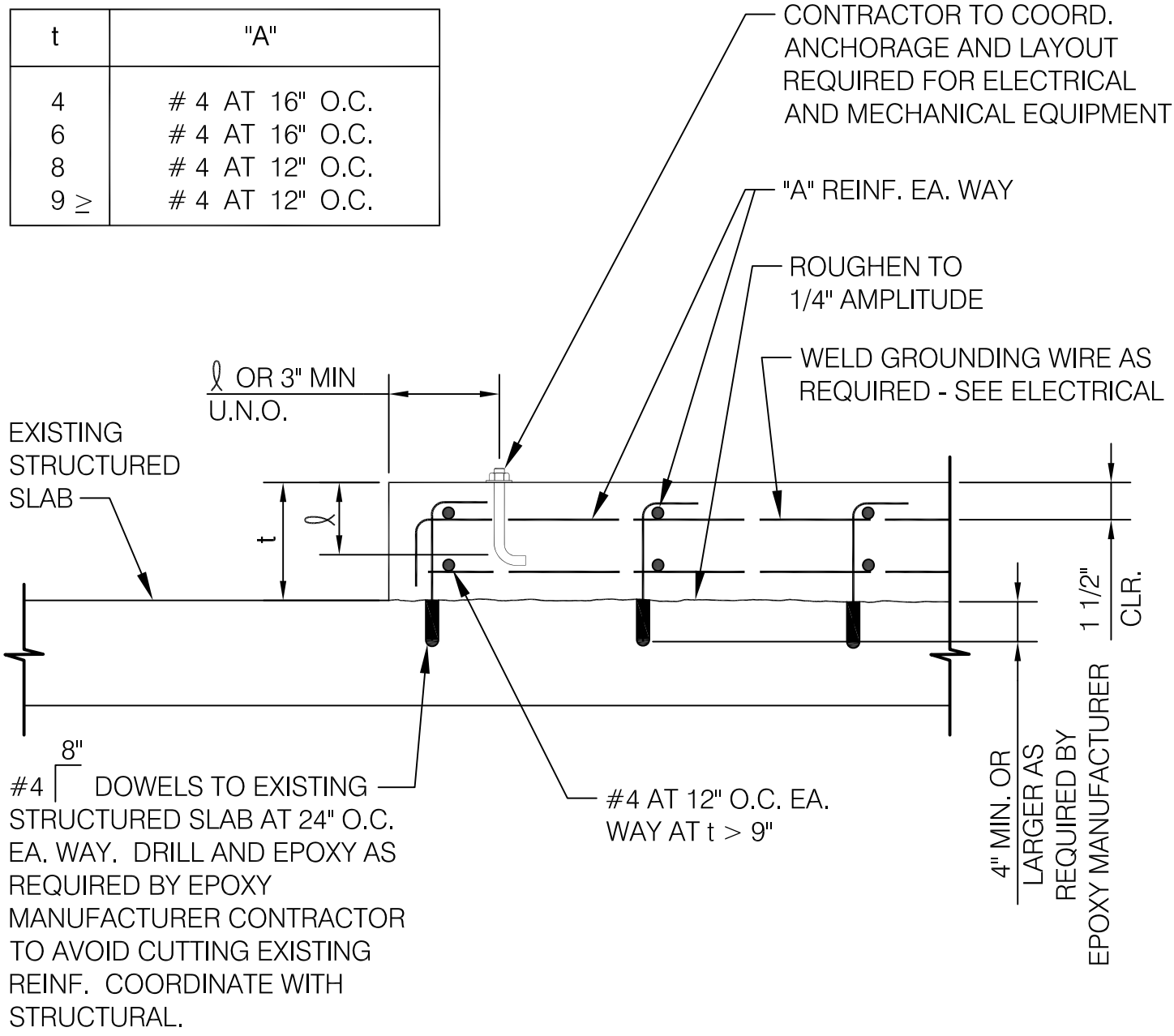
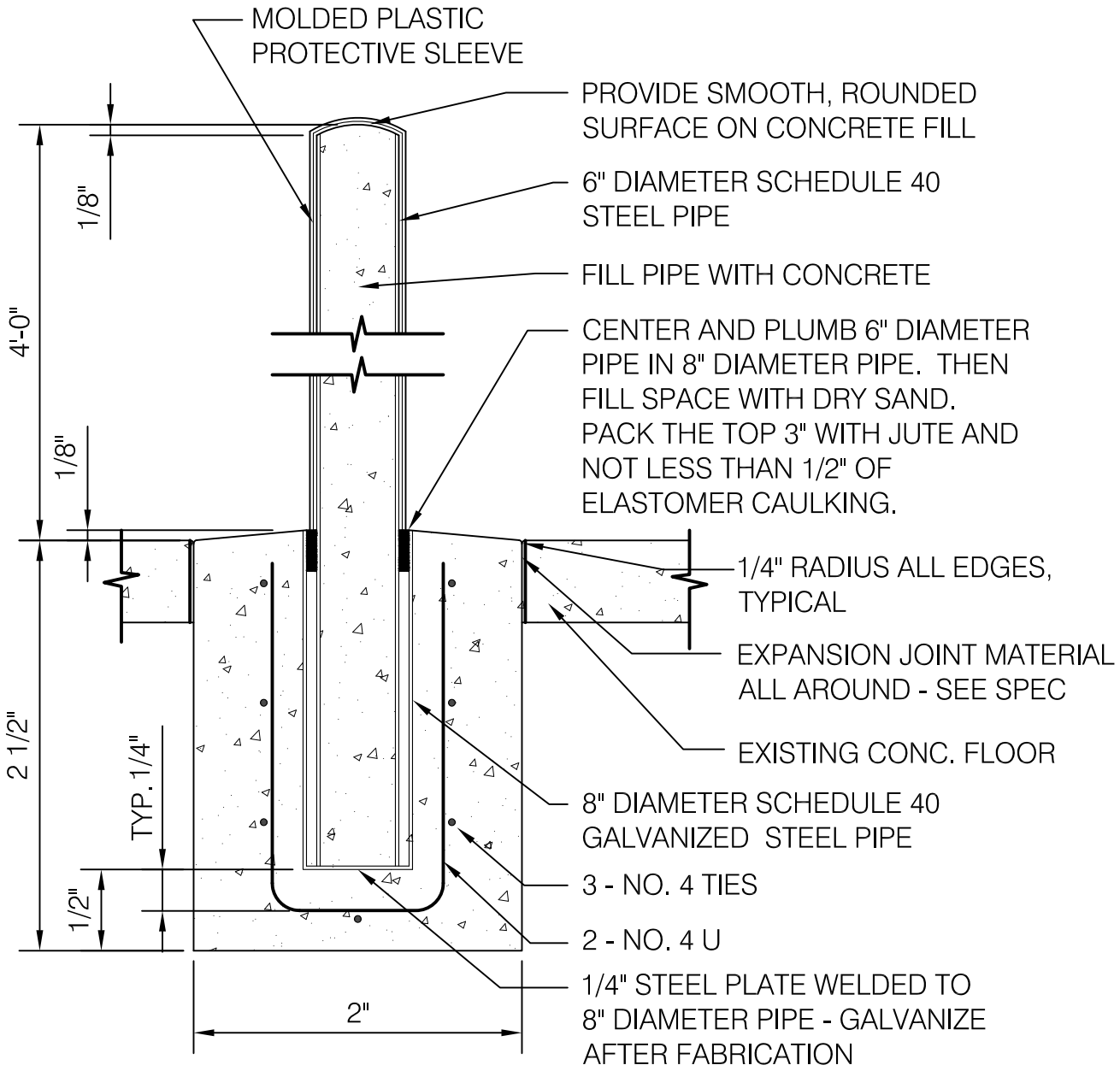
t	"A"
4	# 4 AT 16" O.C.
6	# 4 AT 16" O.C.
8	# 4 AT 12" O.C.
9 ≥	# 4 AT 12" O.C.



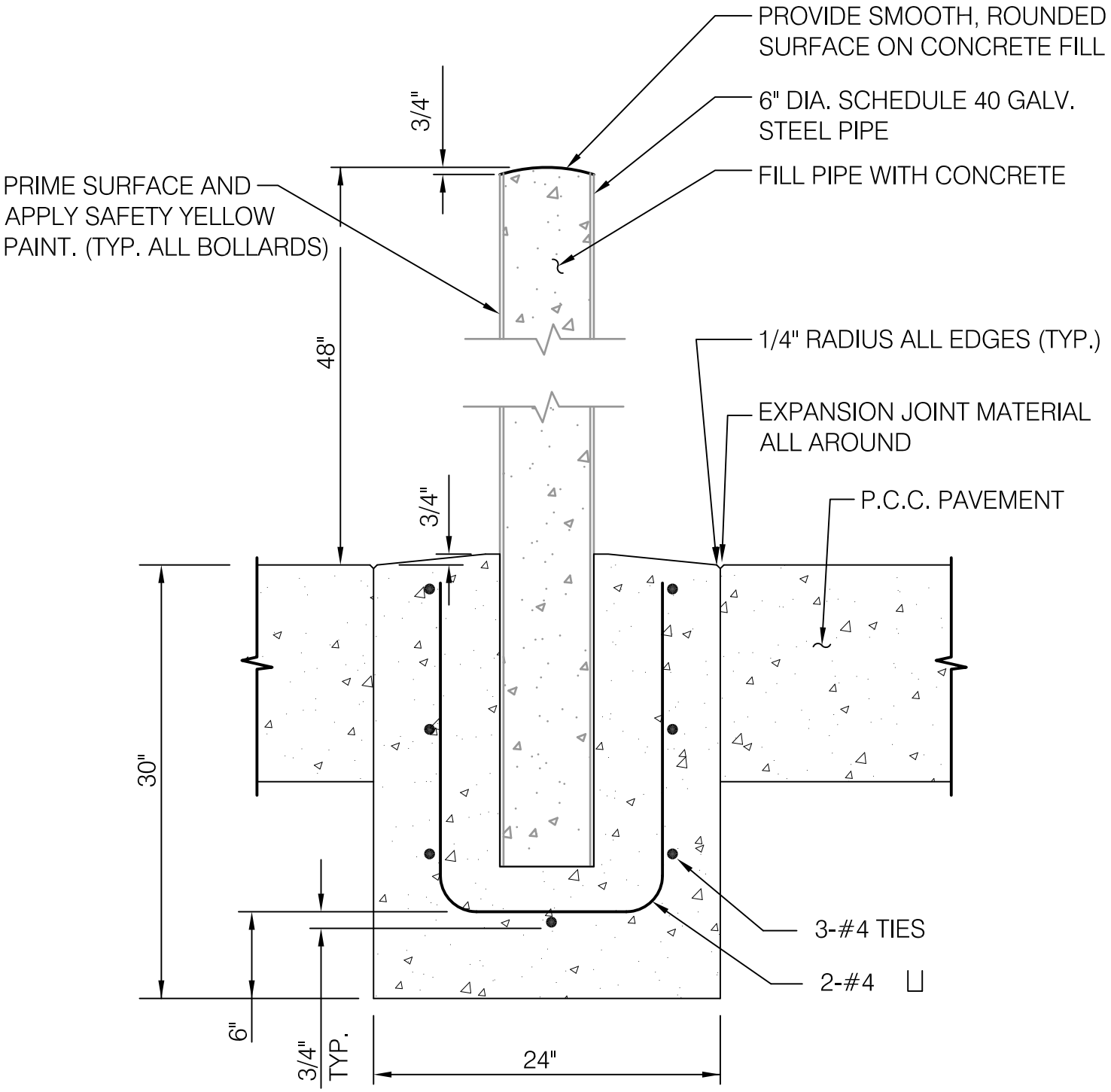
0301 HOUSEKEEPING PAD ON CONCRETE

SCALE: NTS



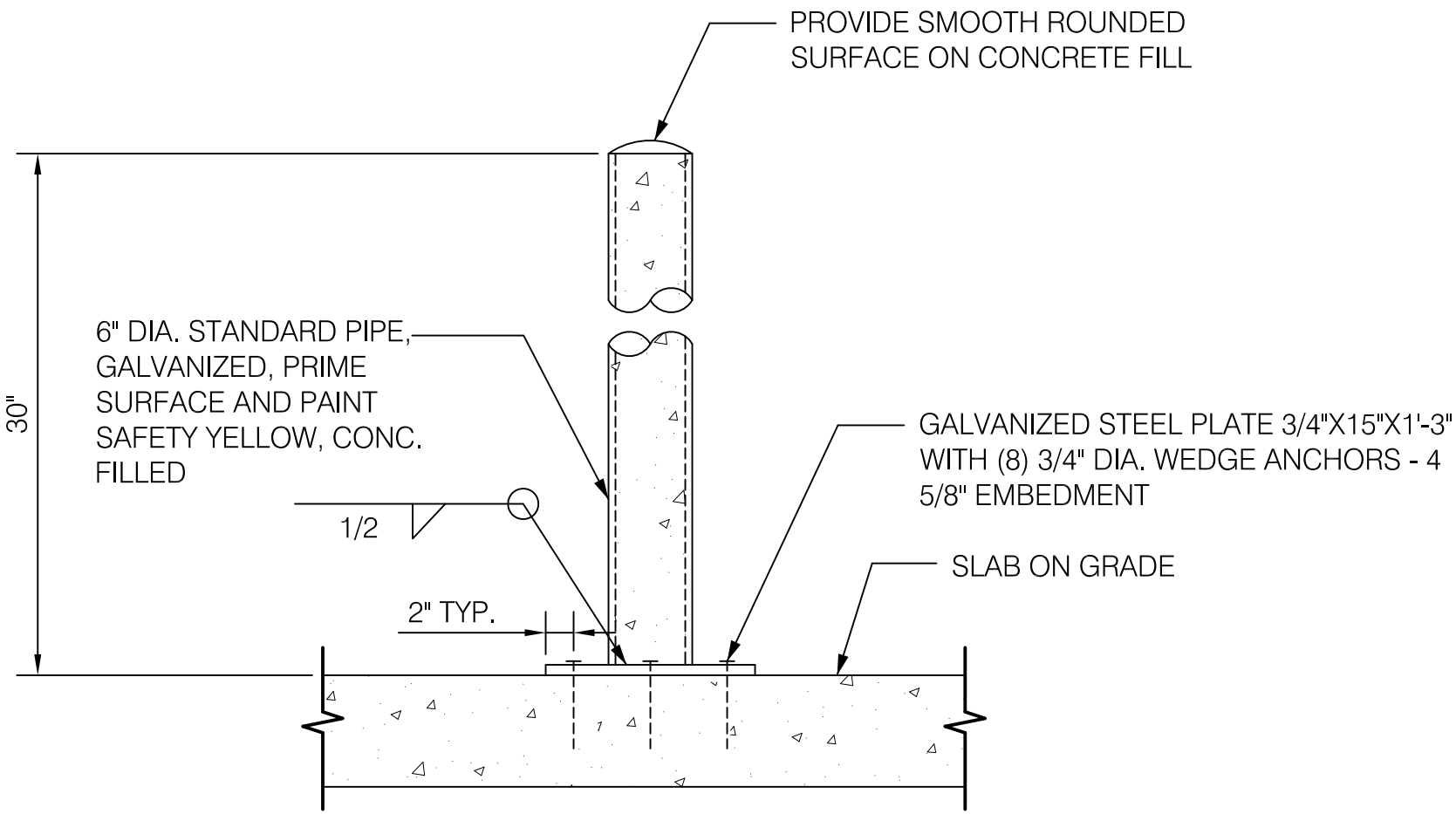
0501 BOLLARD - REMOVABLE

SCALE: NTS



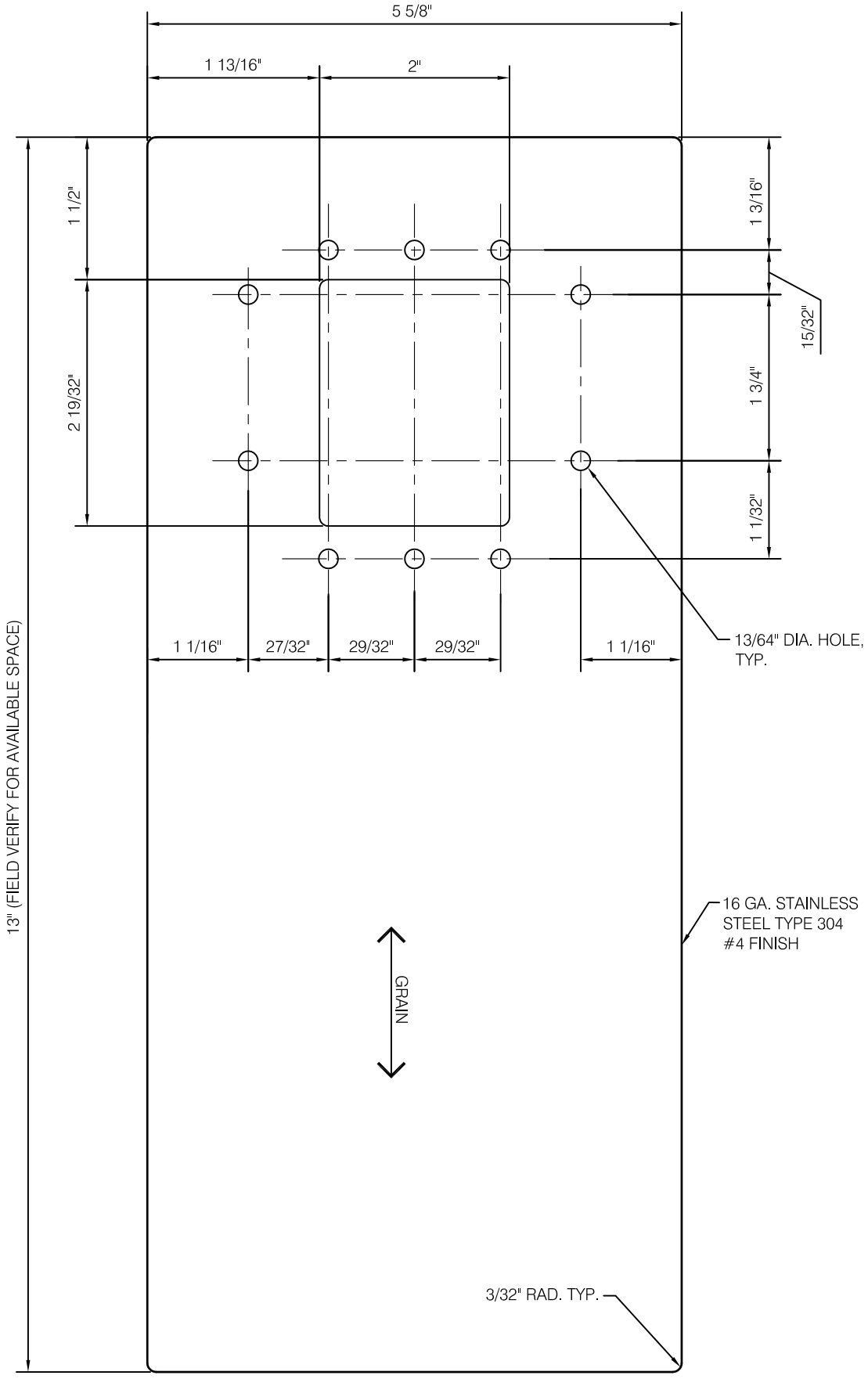
0502 BOLLARD - EMBEDDED

SCALE: NTS



0503 BOLLARD - BOLT DOWN

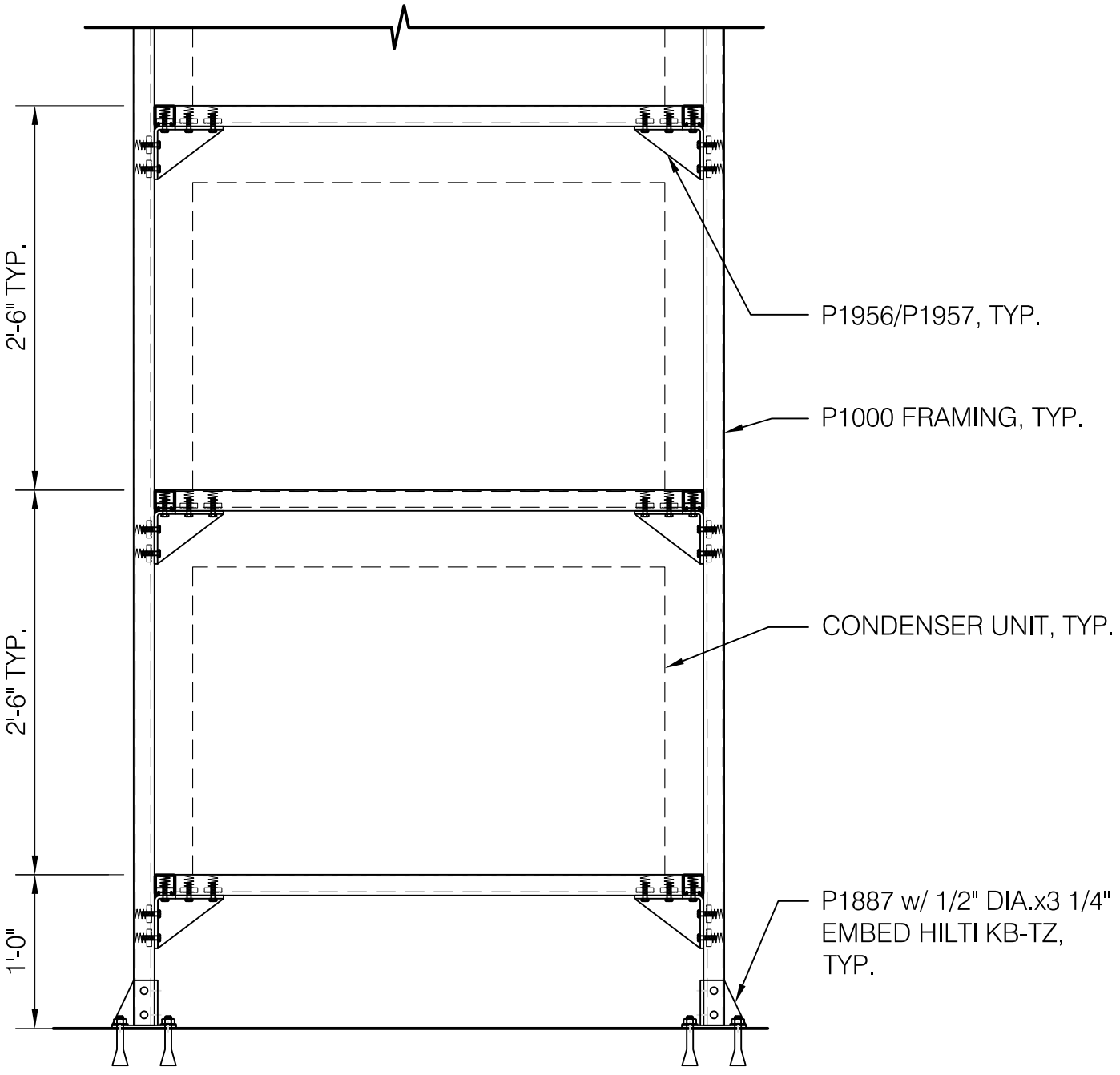
SCALE: NTS



0504 CARD SWIPE BACKPLATE

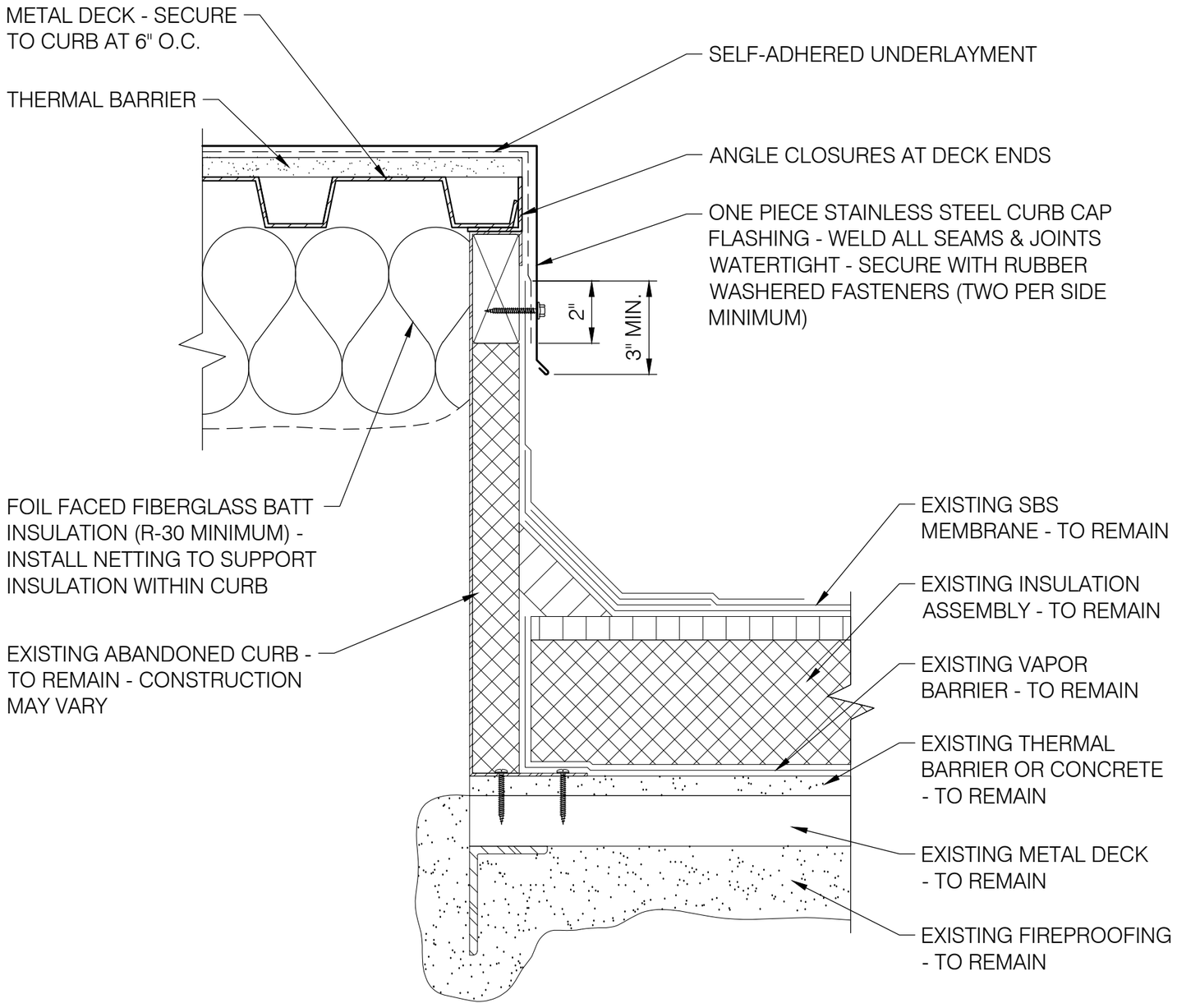
SCALE: NTS

NOTE: PROVIDE BOLLARD PROTECTION AT OUTSIDE CORNERS OF RACK



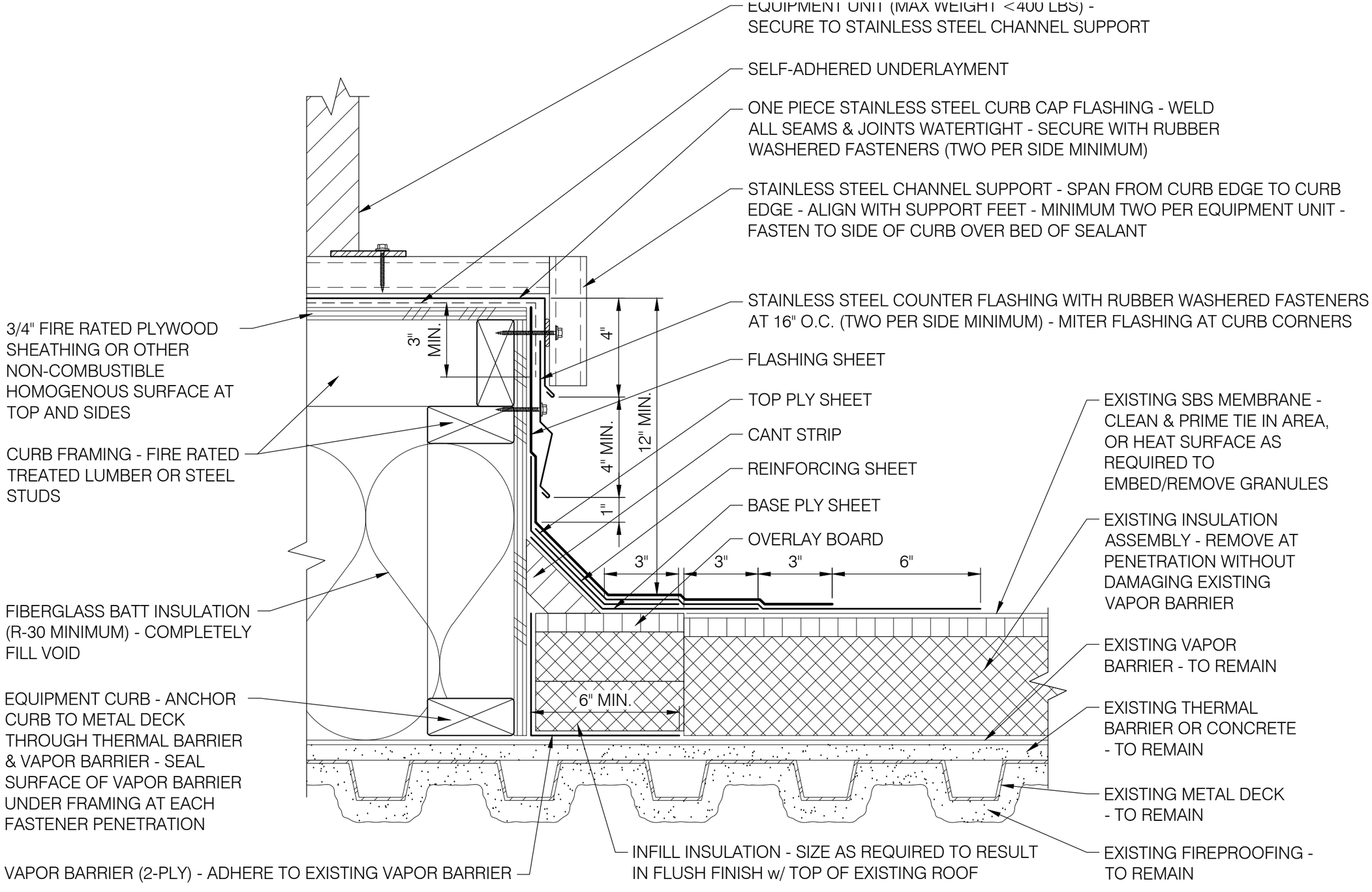
0511 CONDENSER RACK

SCALE: 1" = 1'-0"



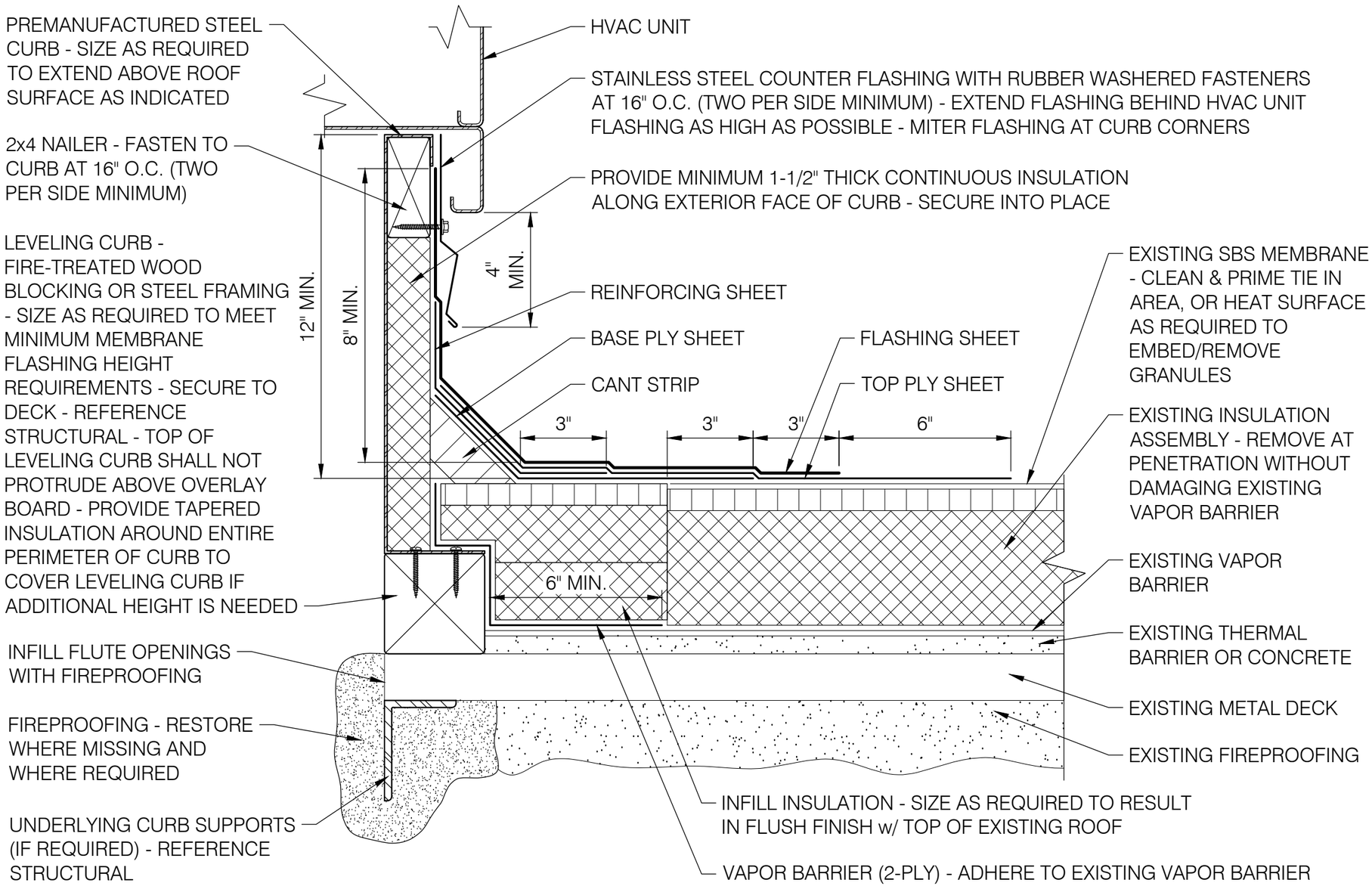
0701 SBS CURB - CAP

SCALE: 3" = 1'-0"



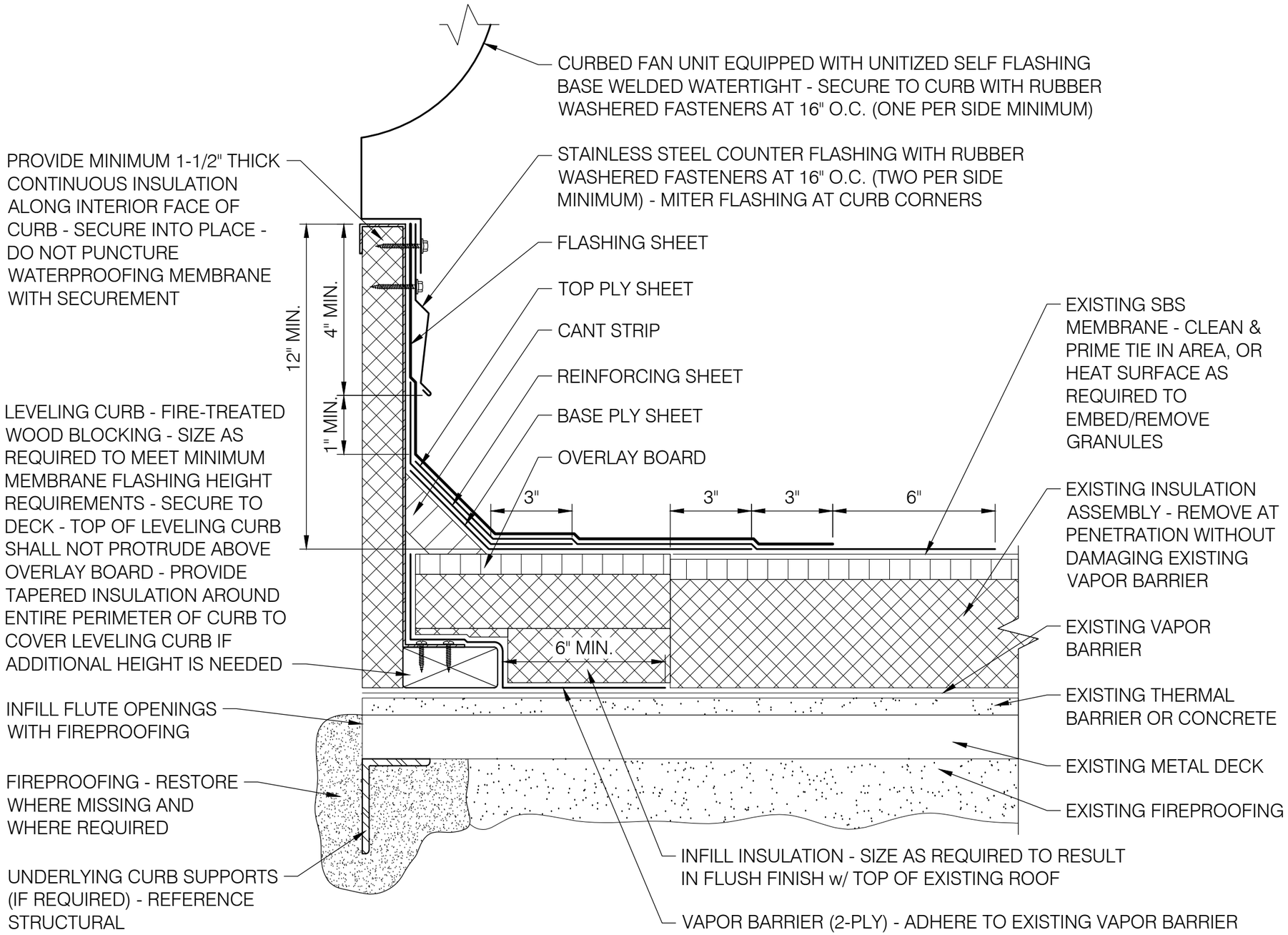
0702 SBS CURB - EQUIPMENT < 400 LBS.

SCALE: 3" = 1'-0"



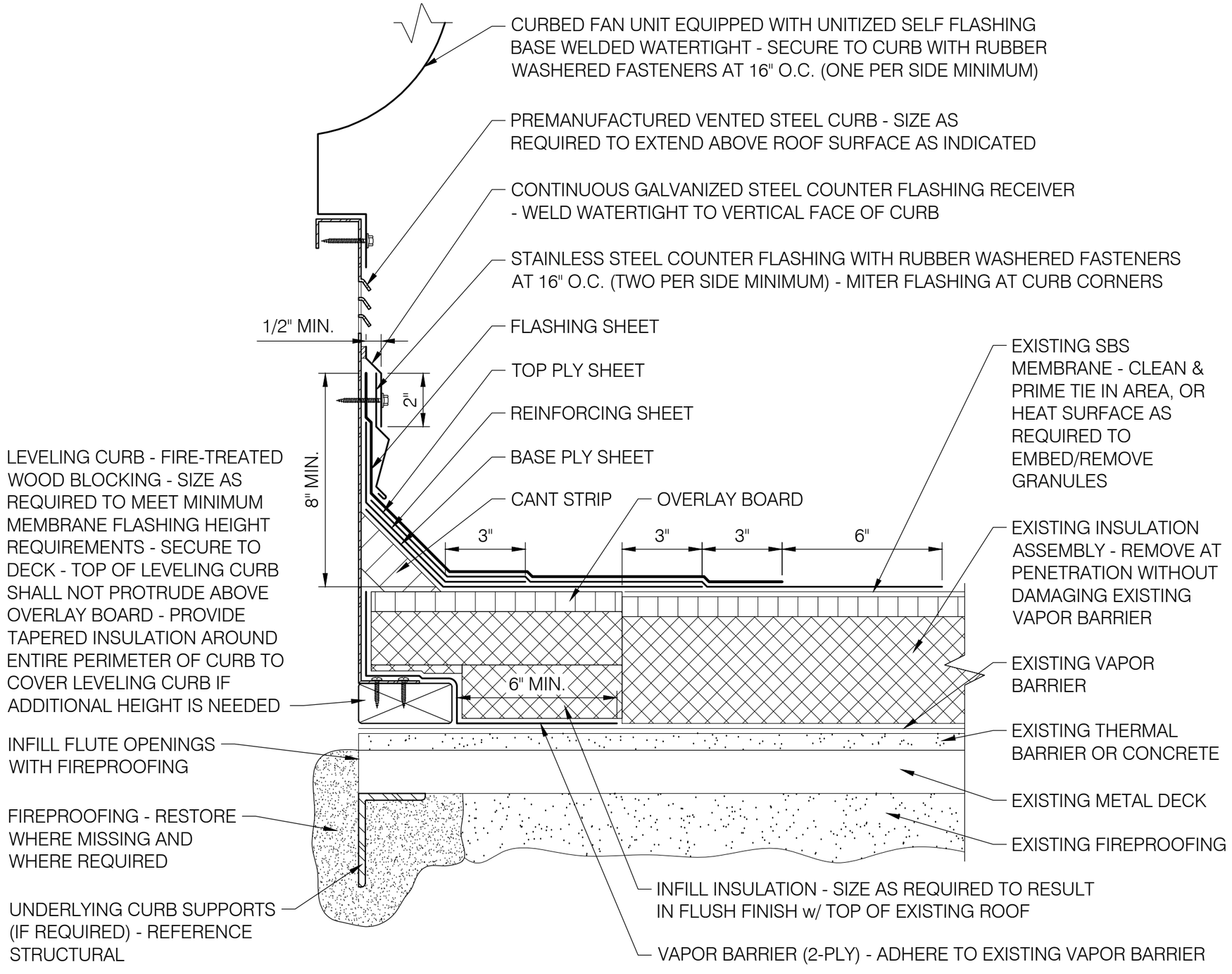
0703 SBS CURB - HVAC UNIT

SCALE: 3" = 1'-0"



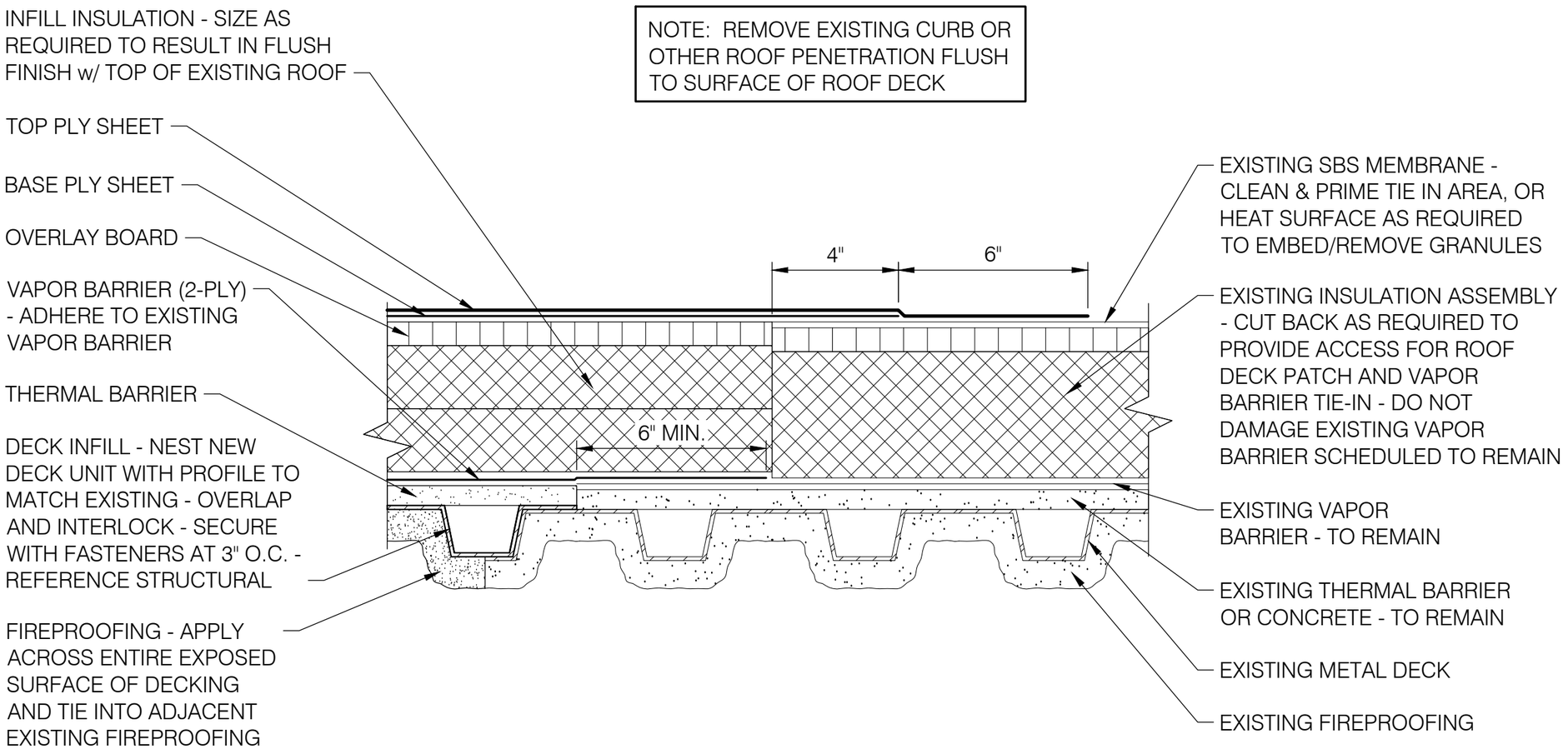
0704 SBS CURB - UNVENTED FAN UNIT

SCALE: 3" = 1'-0"



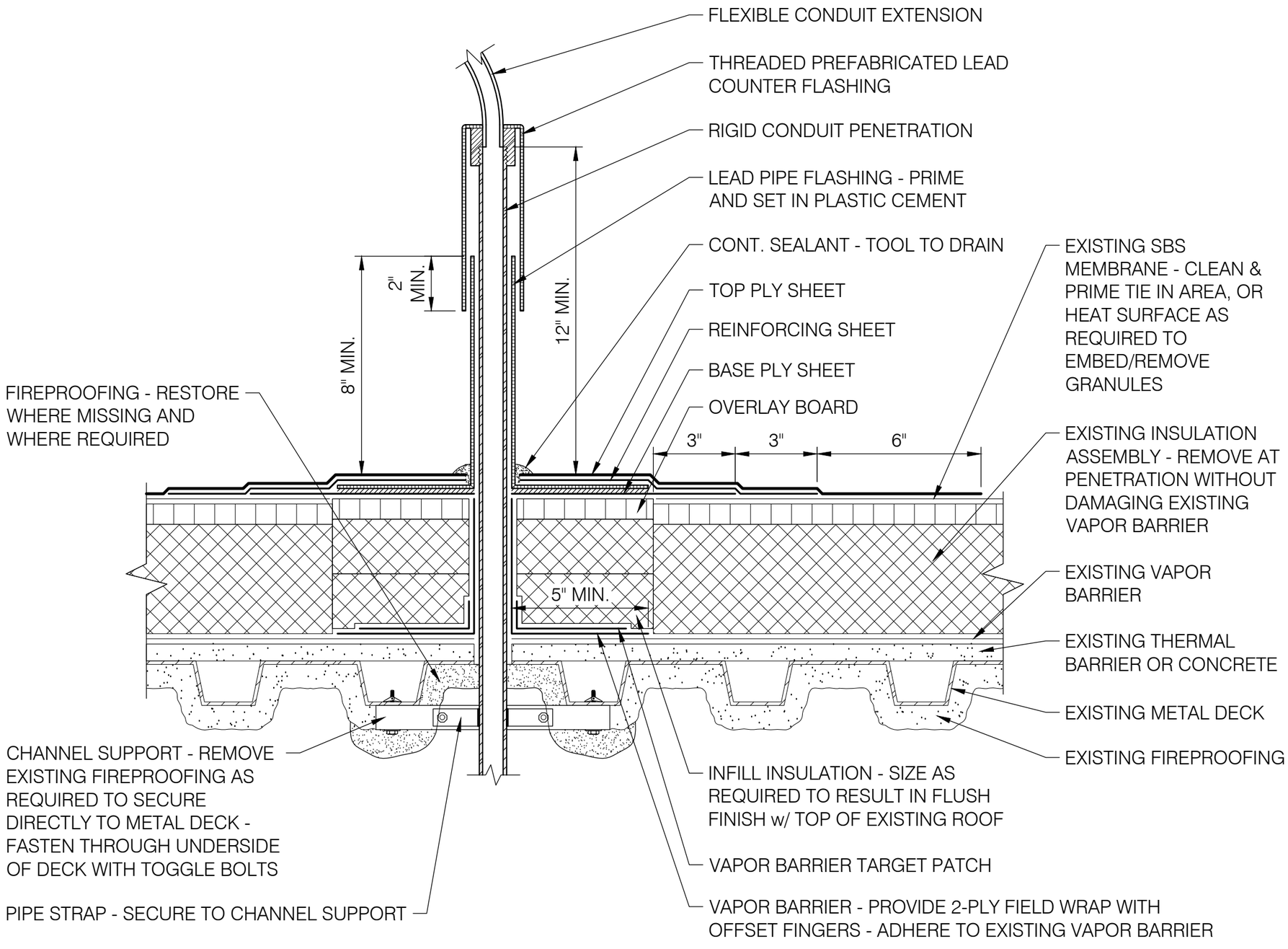
0705 SBS CURB - VENTED FAN UNIT

SCALE: 3" = 1'-0"



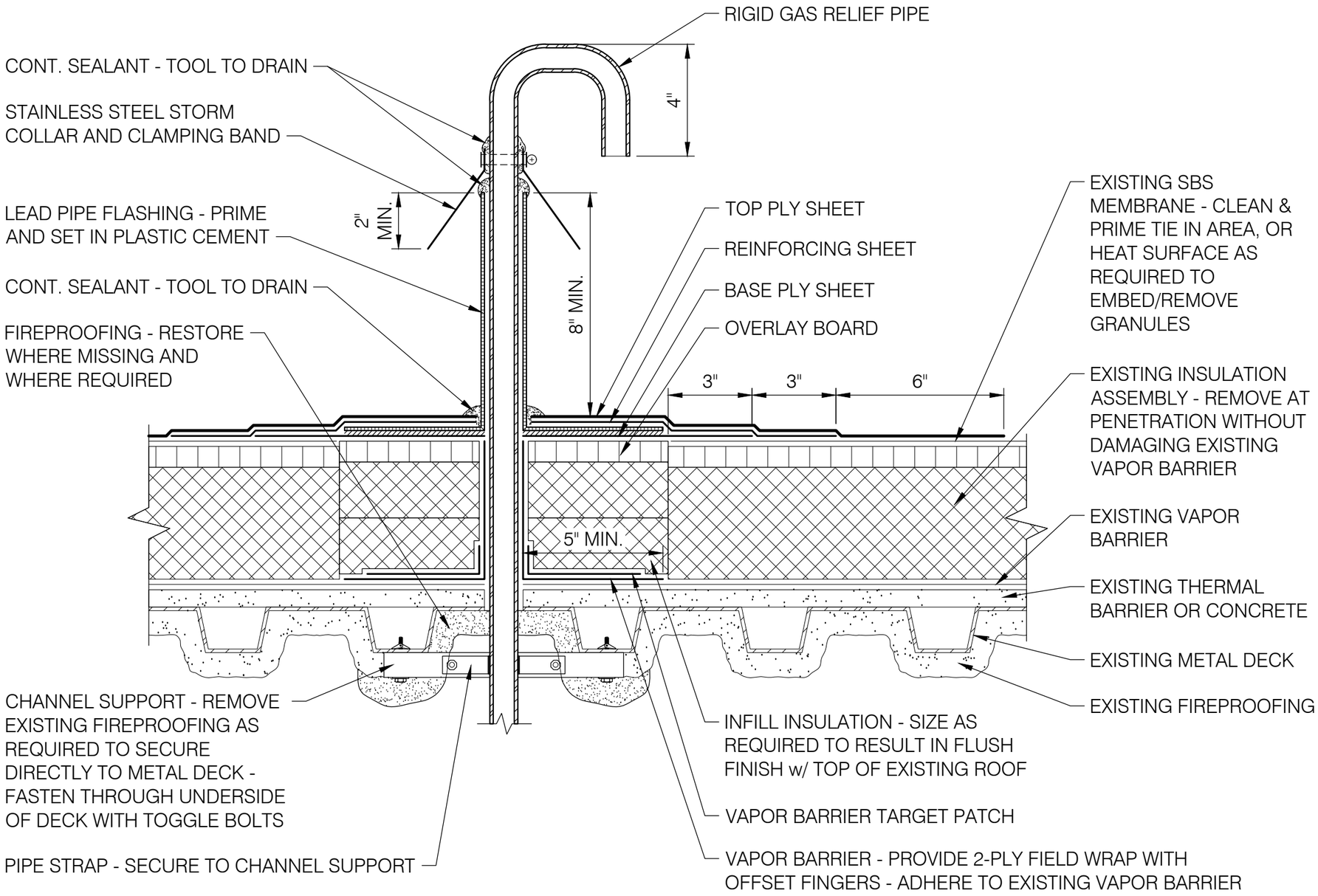
0706 SBS DECK INFILL

SCALE: 3" = 1'-0"



0707 SBS FLASHING - ELECTRICAL CONDUIT

SCALE: 3" = 1'-0"



0708 SBS FLASHING - GAS RELIEF VENT

SCALE: 3" = 1'-0"

FIELD VERIFY

STAINLESS STEEL CAP FLASHING - SOLDER WATERTIGHT - SECURE w/ ONE RUBBER WASHERED FASTENER PER SIDE

STAINLESS STEEL HOOD - SOLDER WATERTIGHT - SECURE w/ ONE RUBBER WASHERED FASTENER PER SIDE

6"

1'-4"

3"

DOWNWARD SLOPING CONDUIT LINES AT FLASHING OPENING

SLOPE

ONE-PIECE STAINLESS STEEL FLASHING - SOLDER WATERTIGHT

STAINLESS STEEL BASE - SOLDER WATERTIGHT, SET IN PLASTIC CEMENT, AND SECURE FLANGE TO NAILERS AT 3" O.C., STAGGERED

INFILL AREA WITH EXPANDABLE FOAM

CONT. SEALANT - TOOL TO DRAIN

TOP PLY SHEET

REINFORCING SHEET

BASE PLY SHEET

OVERLAY BOARD

3" 3" 6"

FIRE RATED TREATED WOOD NAILERS AS REQUIRED TO MATCH THICKNESS OF INSULATION ASSEMBLY - SECURE TO STEEL DECKING AT 6" O.C.

6" MIN.

CHANNEL SUPPORT - REMOVE EXISTING FIREPROOFING AS REQUIRED TO SECURE DIRECTLY TO METAL DECK - FASTEN THROUGH UNDERSIDE OF DECK WITH TOGGLE BOLTS

PIPE STRAP - SECURE TO CHANNEL SUPPORT

FIREPROOFING - RESTORE WHERE MISSING AND WHERE REQUIRED

INFILL INSULATION - SIZE AS REQUIRED TO RESULT IN FLUSH FINISH w/ TOP OF EXISTING ROOF

VAPOR BARRIER (2-PLY) - ADHERE TO EXISTING VAPOR BARRIER

EXISTING SBS MEMBRANE - CLEAN & PRIME TIE IN AREA, OR HEAT SURFACE AS REQUIRED TO EMBED/REMOVE GRANULES

EXISTING INSULATION ASSEMBLY - REMOVE AT PENETRATION WITHOUT DAMAGING EXISTING VAPOR BARRIER

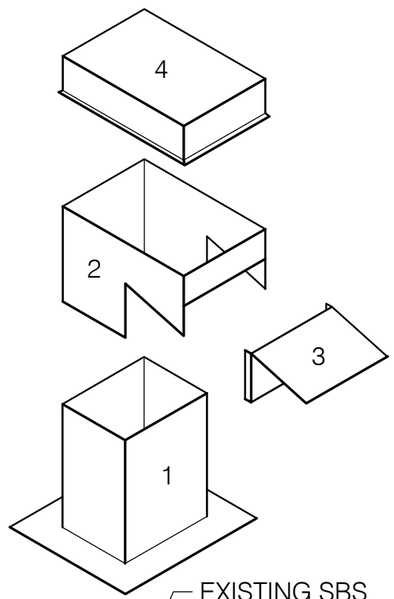
EXISTING VAPOR BARRIER

EXISTING THERMAL BARRIER OR CONCRETE

EXISTING METAL DECK

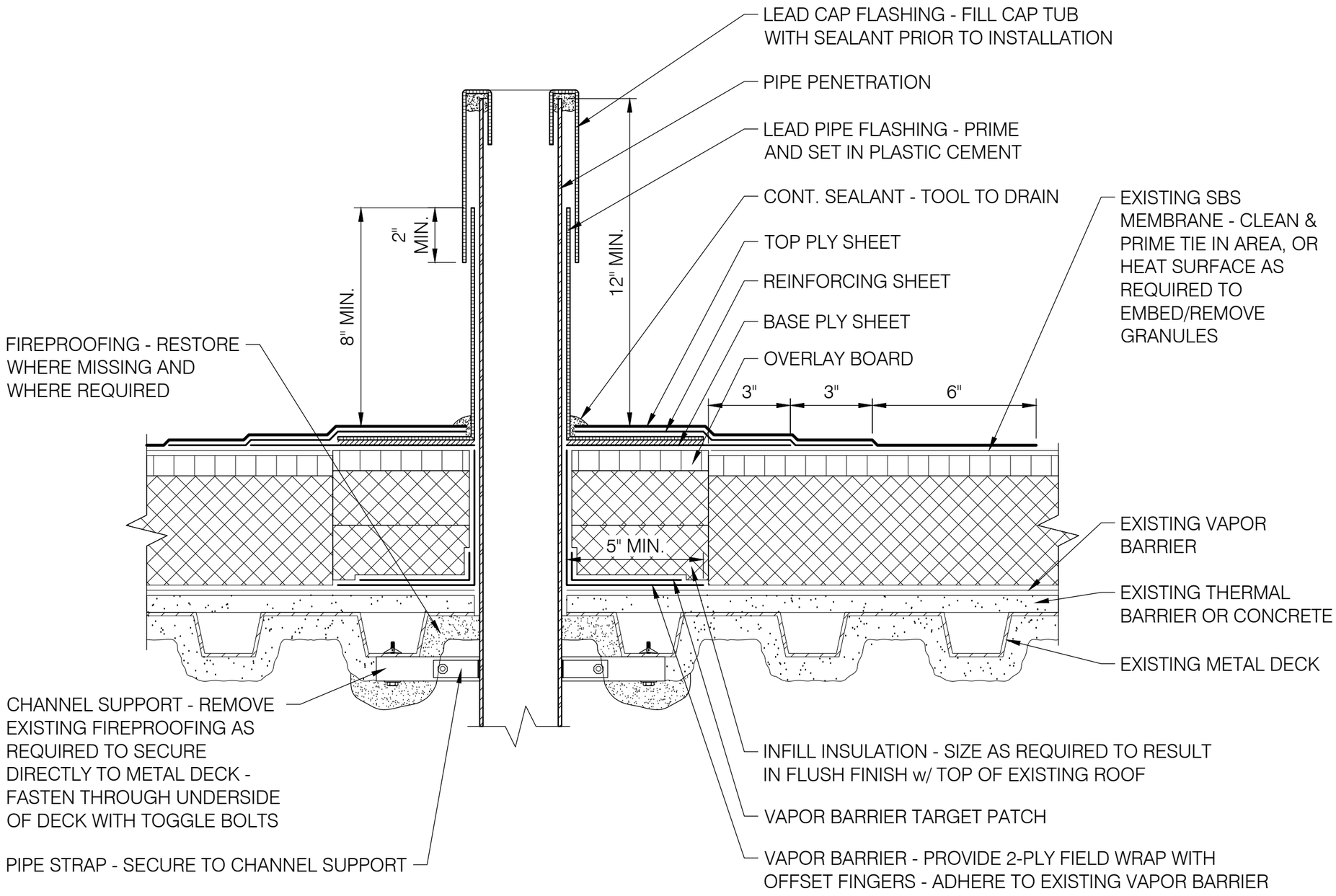
EXISTING FIREPROOFING

MULTI PIPE FLASHING
INSTALLATION SEQUENCE



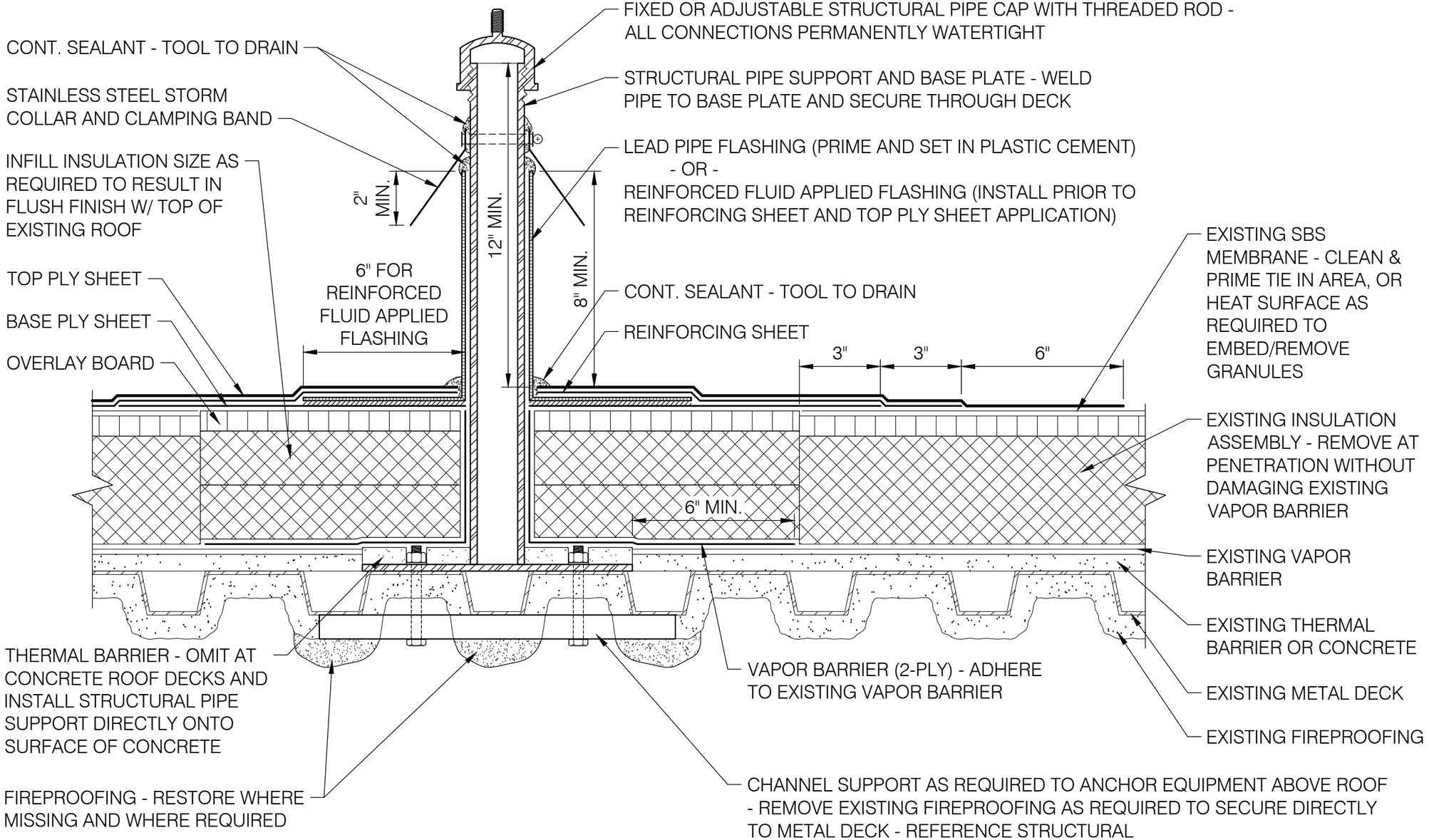
0709 SBS FLASHING - MULTIPLE PIPE PENETRATION

SCALE: 3" = 1'-0"



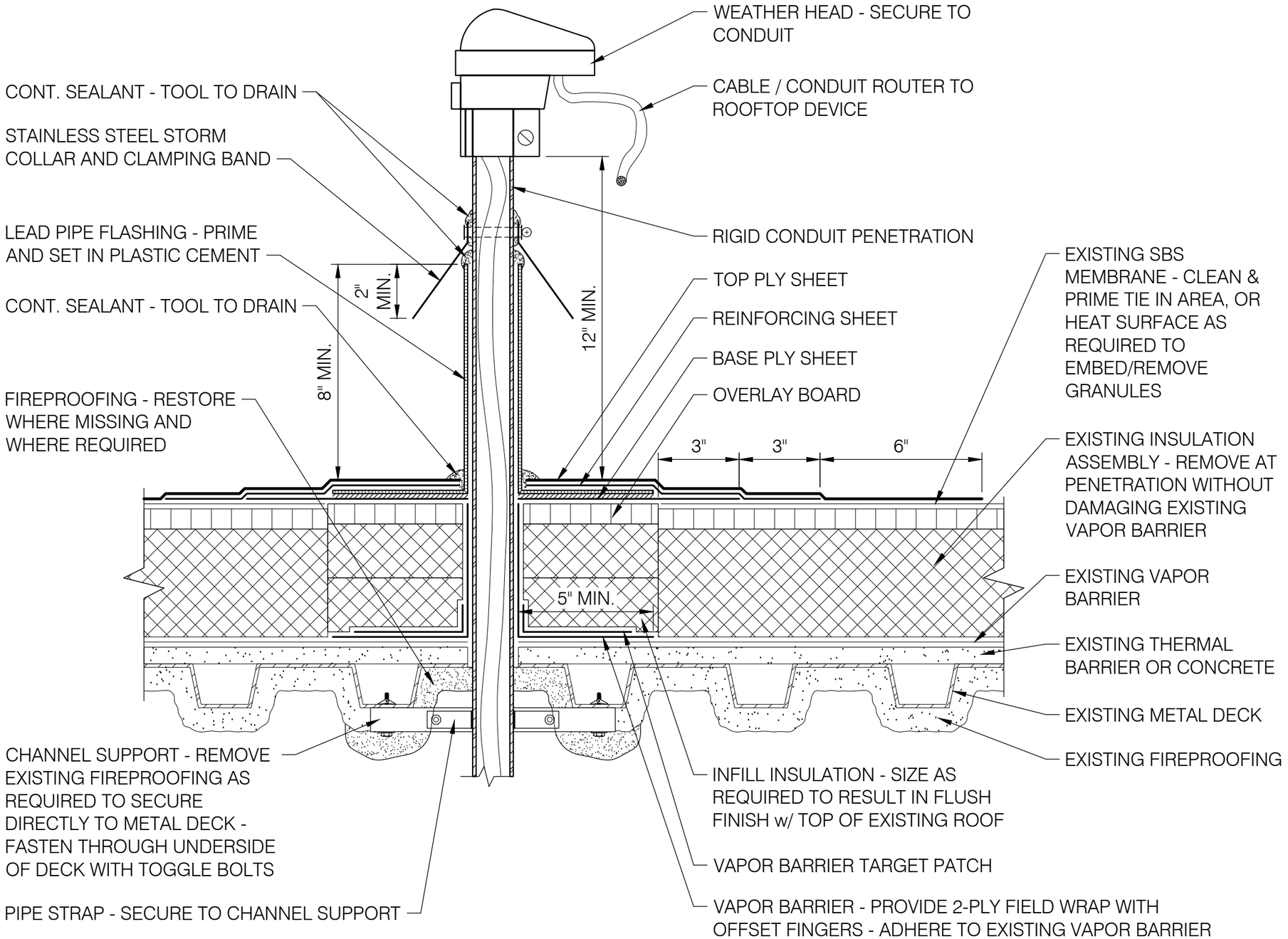
0710 SBS FLASHING - PLUMBING VENT FLASHING

SCALE: 3" = 1'-0"



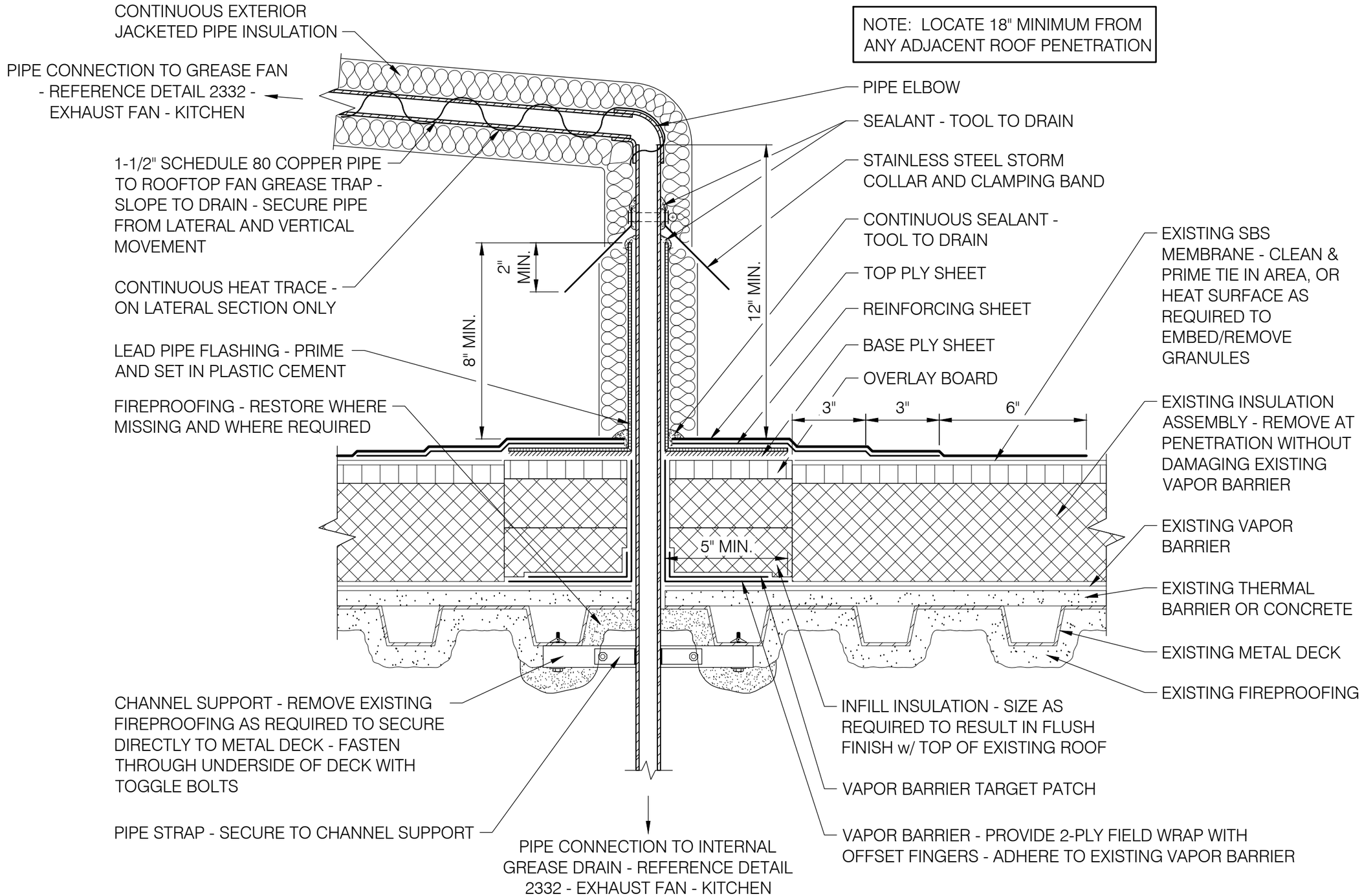
0711 SBS FLASHING - STRUCTURAL PIPE SUPPORT

SCALE: 3" = 1'-0"



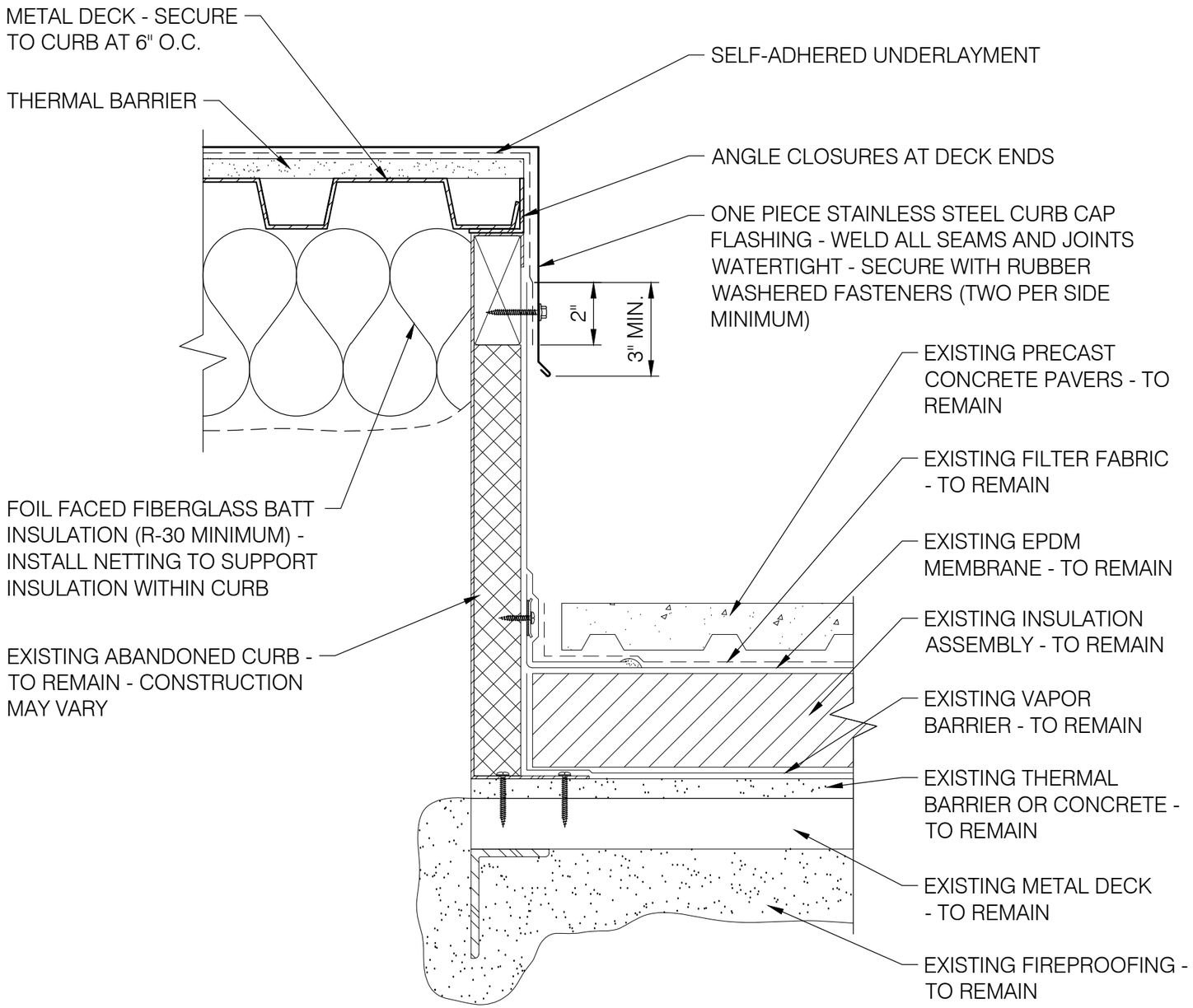
0712 SBS FLASHING - WEATHERHEAD MAST

SCALE: 3" = 1'-0"



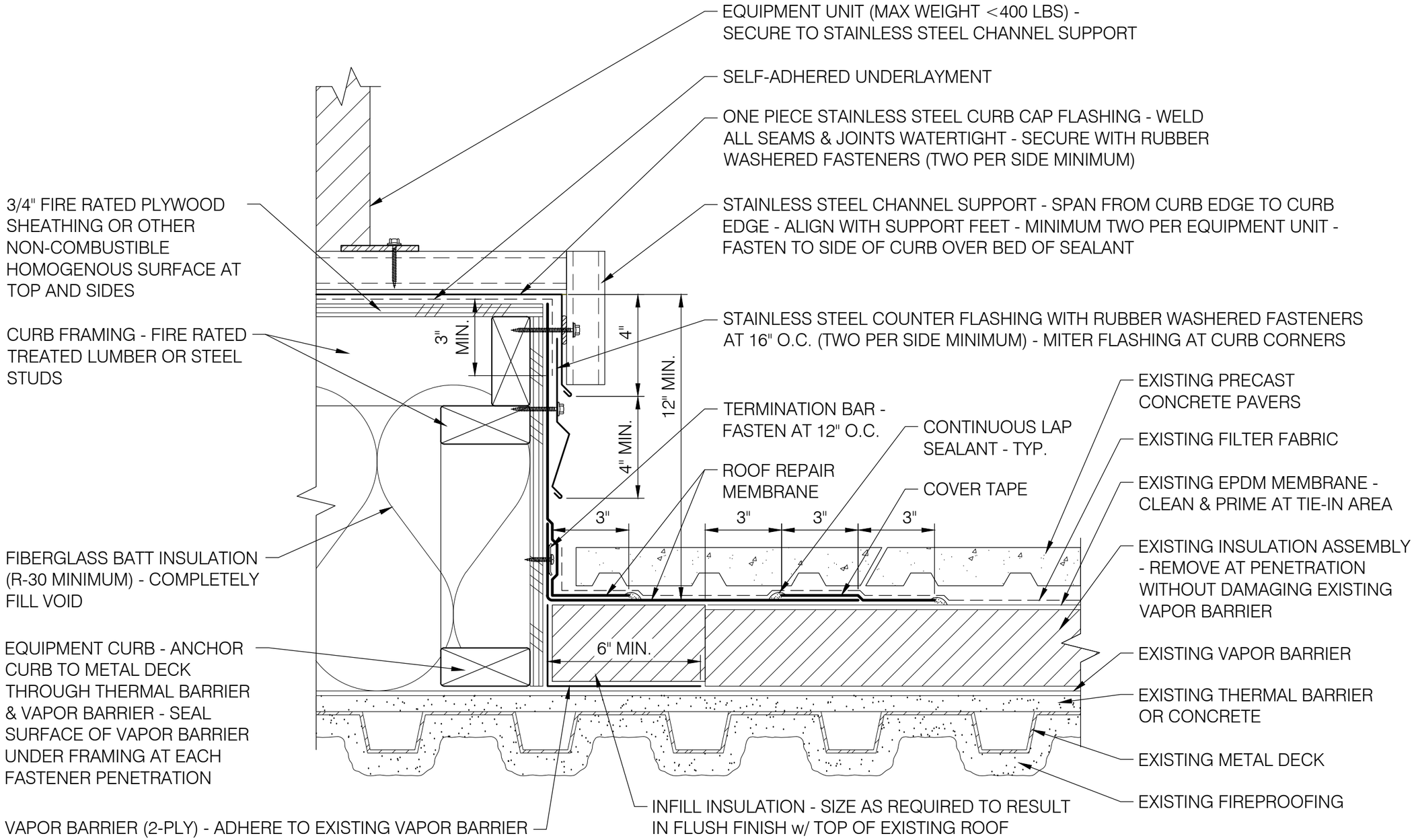
0714 SBS FLASHING - GREASE DRAIN LINE

SCALE: 3" = 1'-0"



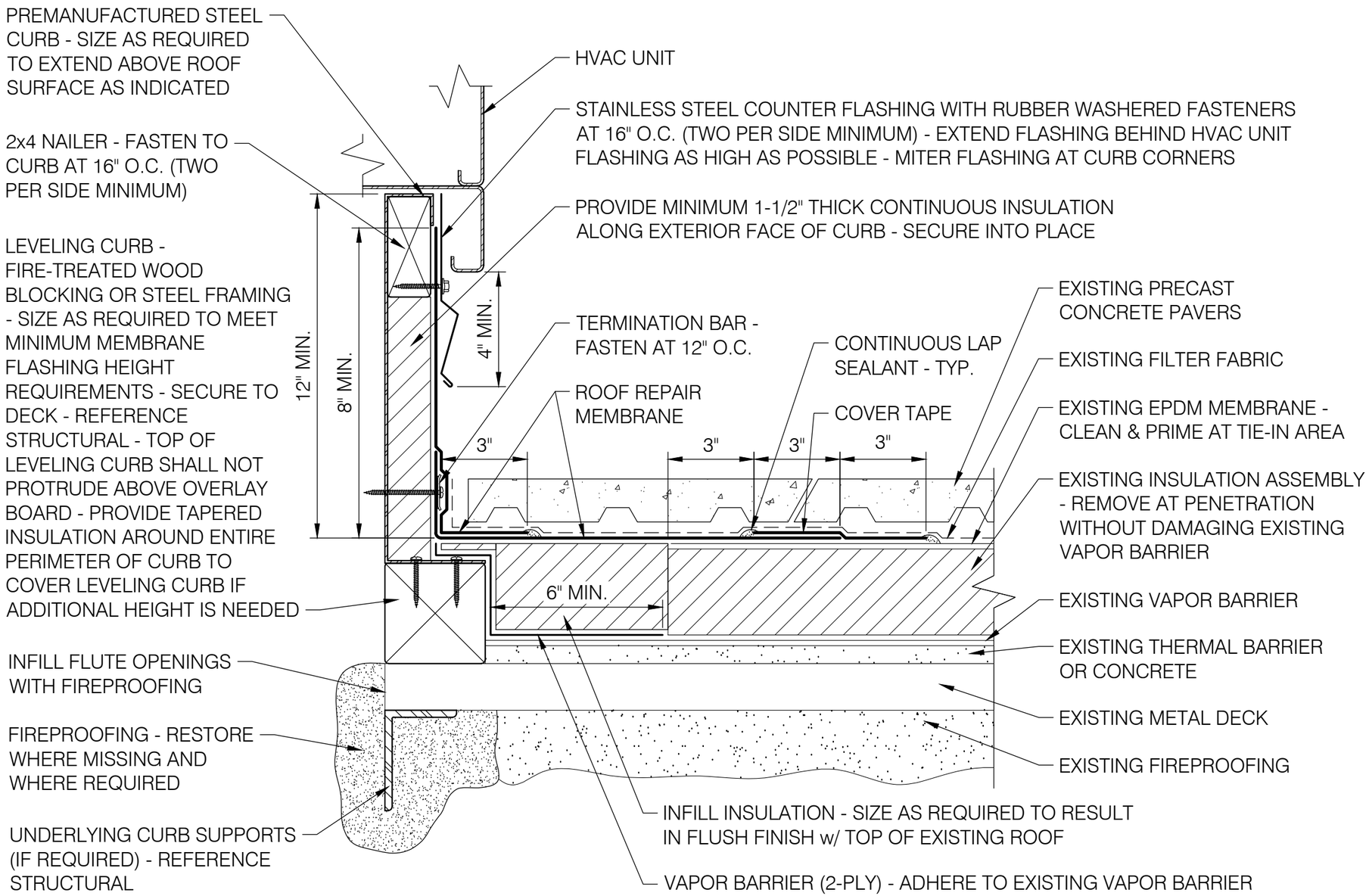
0721 EPDM CURB CAP

SCALE: 3" = 1'-0"



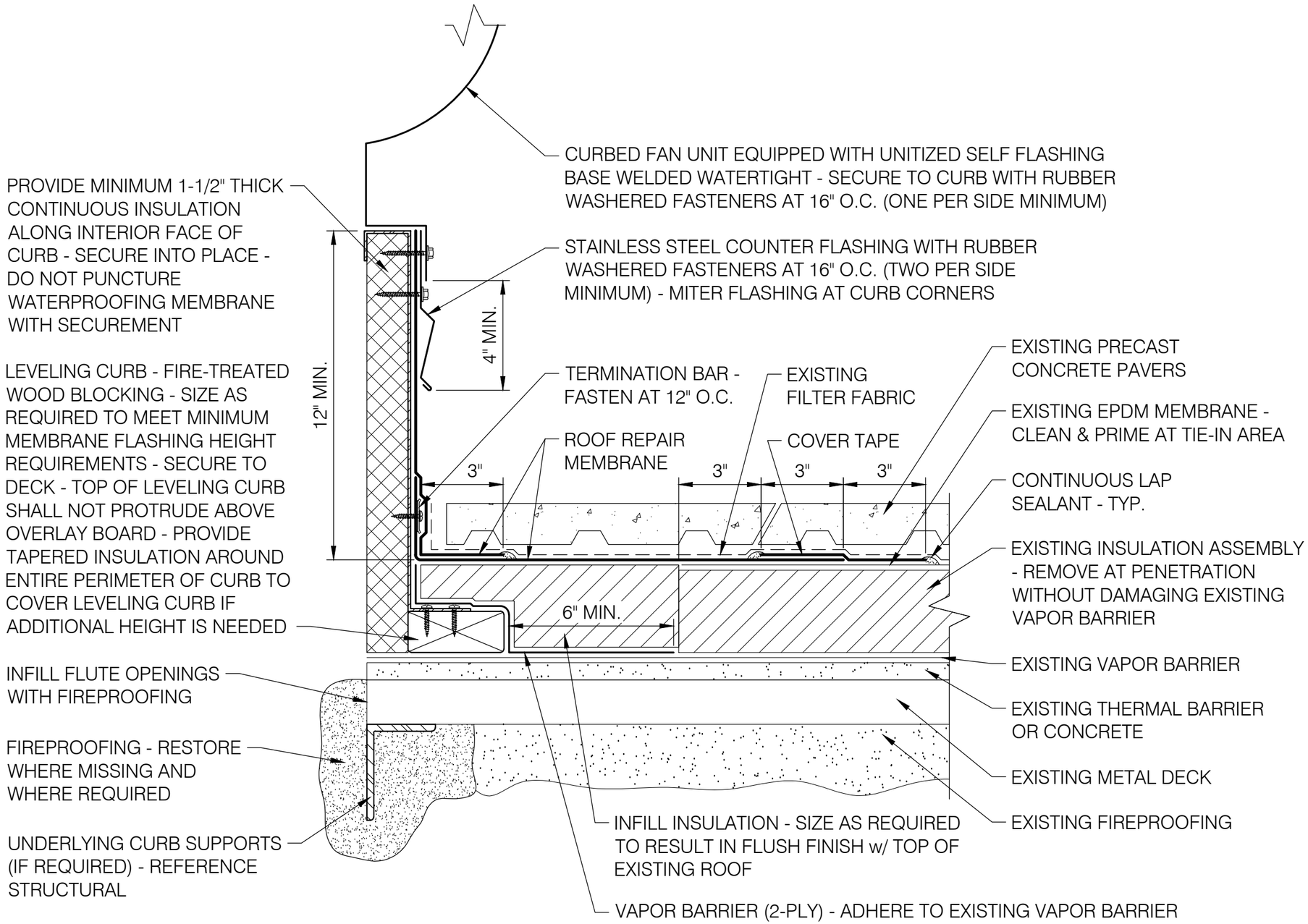
0722 EPDM CURB - EQUIPMENT < 400 LBS.

SCALE: 3" = 1'-0"



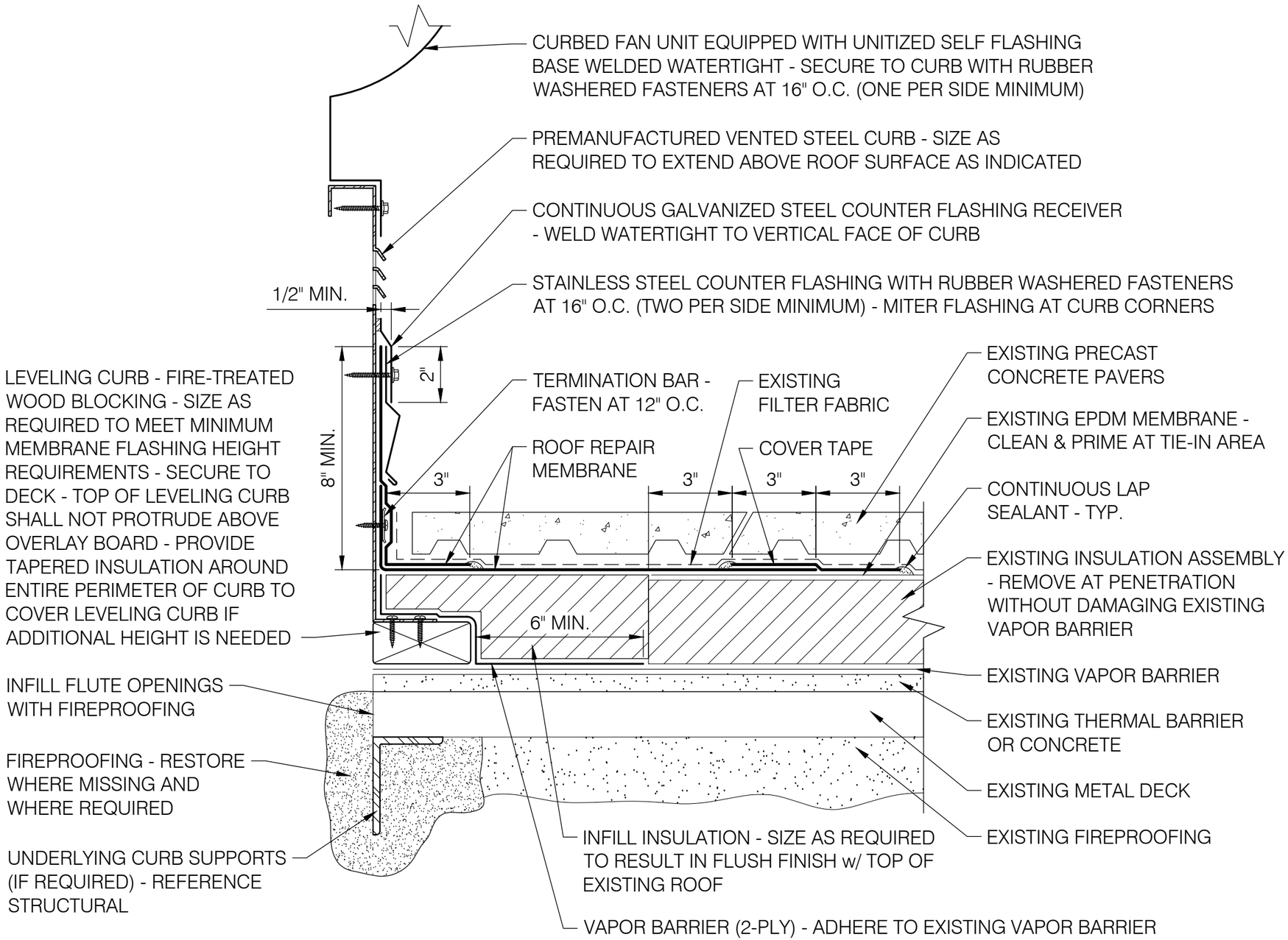
0723 EPDM CURB - HVAC UNIT

SCALE: 3" = 1'-0"



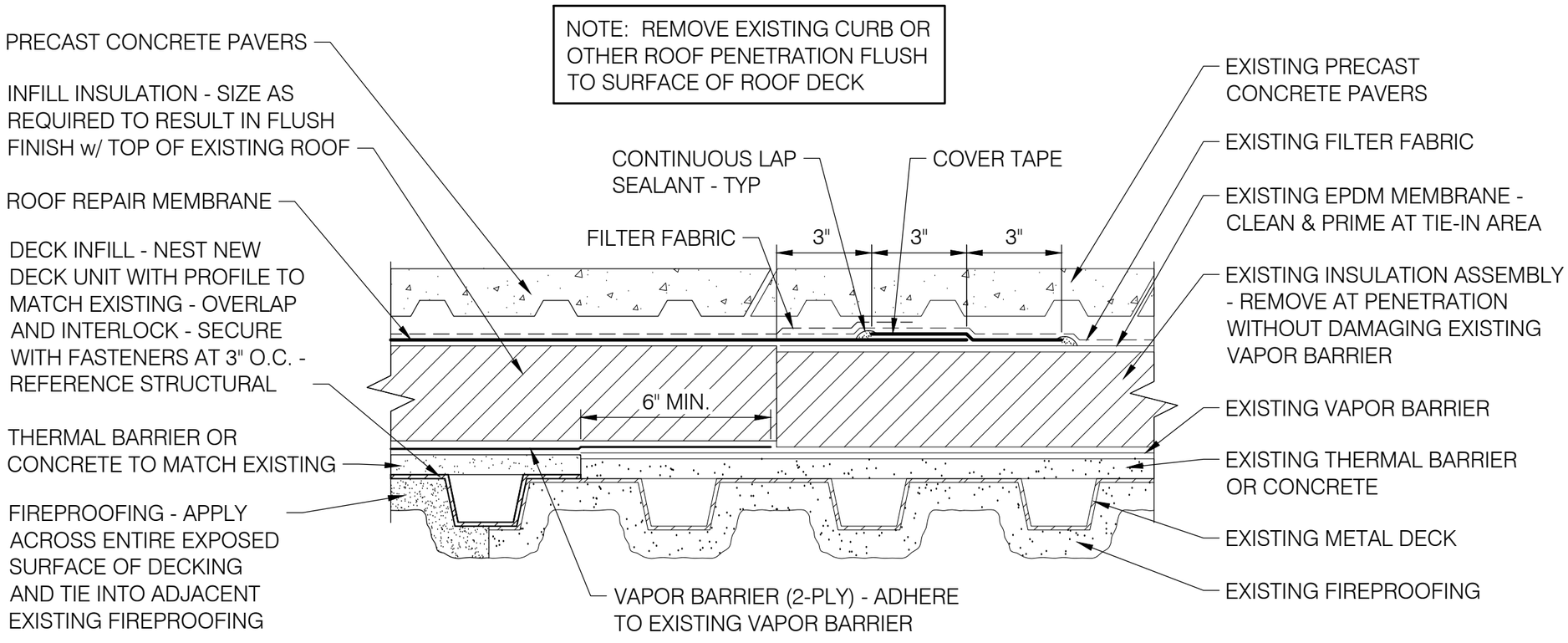
0724 EPDM CURB - UNVENTED FAN UNIT

SCALE: 3" = 1'-0"



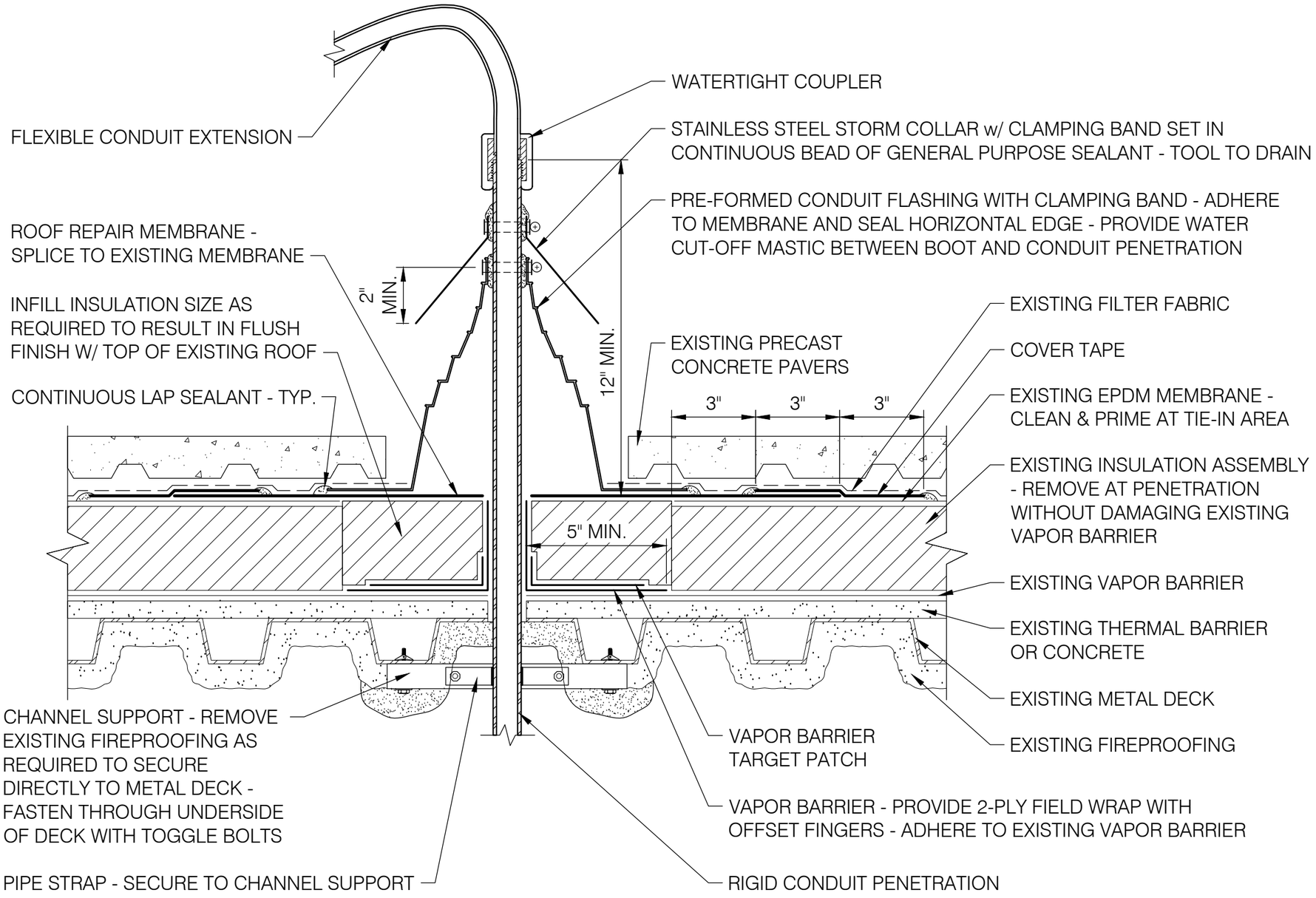
0725 EPDM CURB - VENTED FAN UNIT

SCALE: 3" = 1'-0"



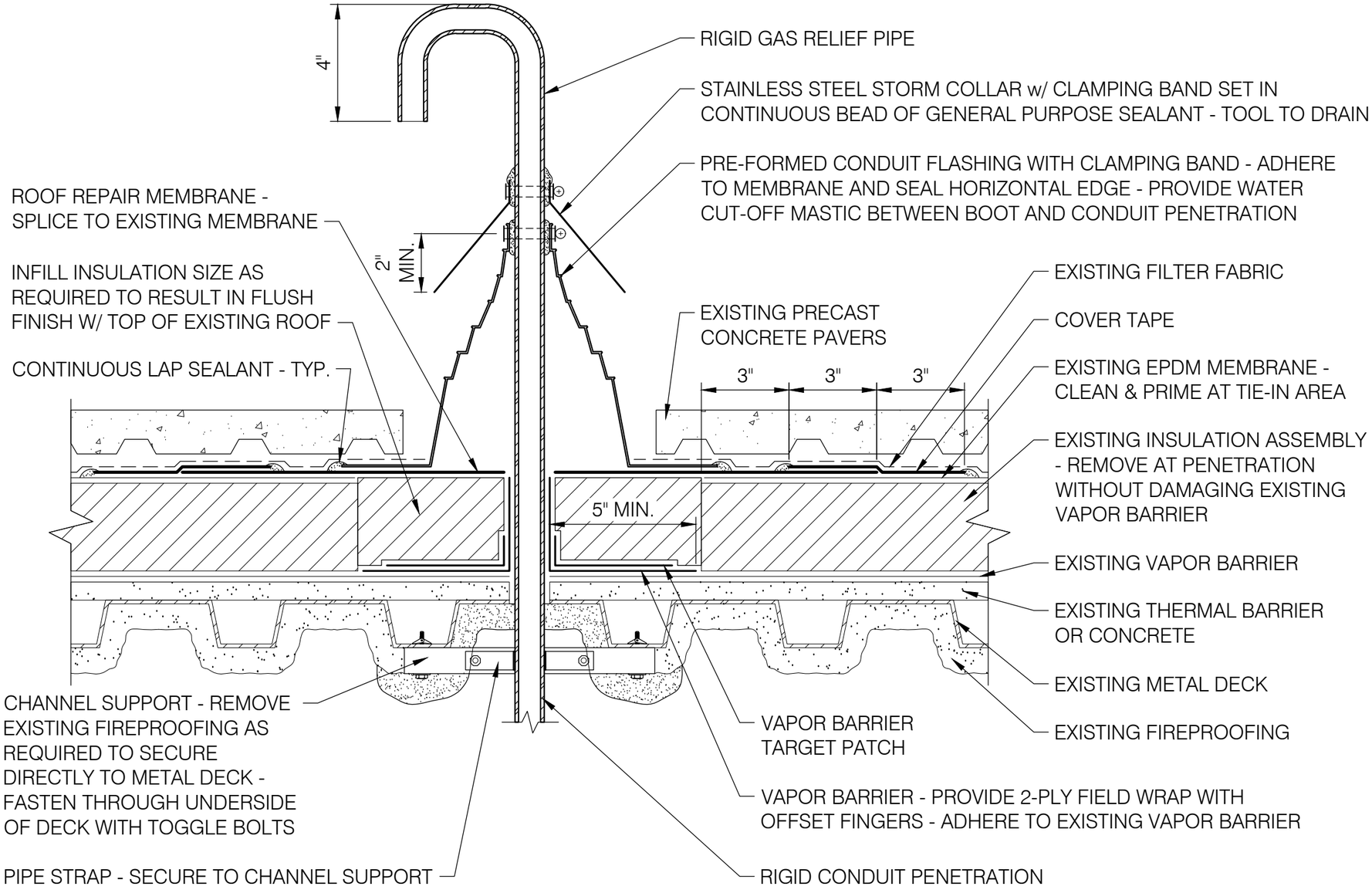
0726 EPDM DECK INFILL (METAL)

SCALE: 3" = 1'-0"



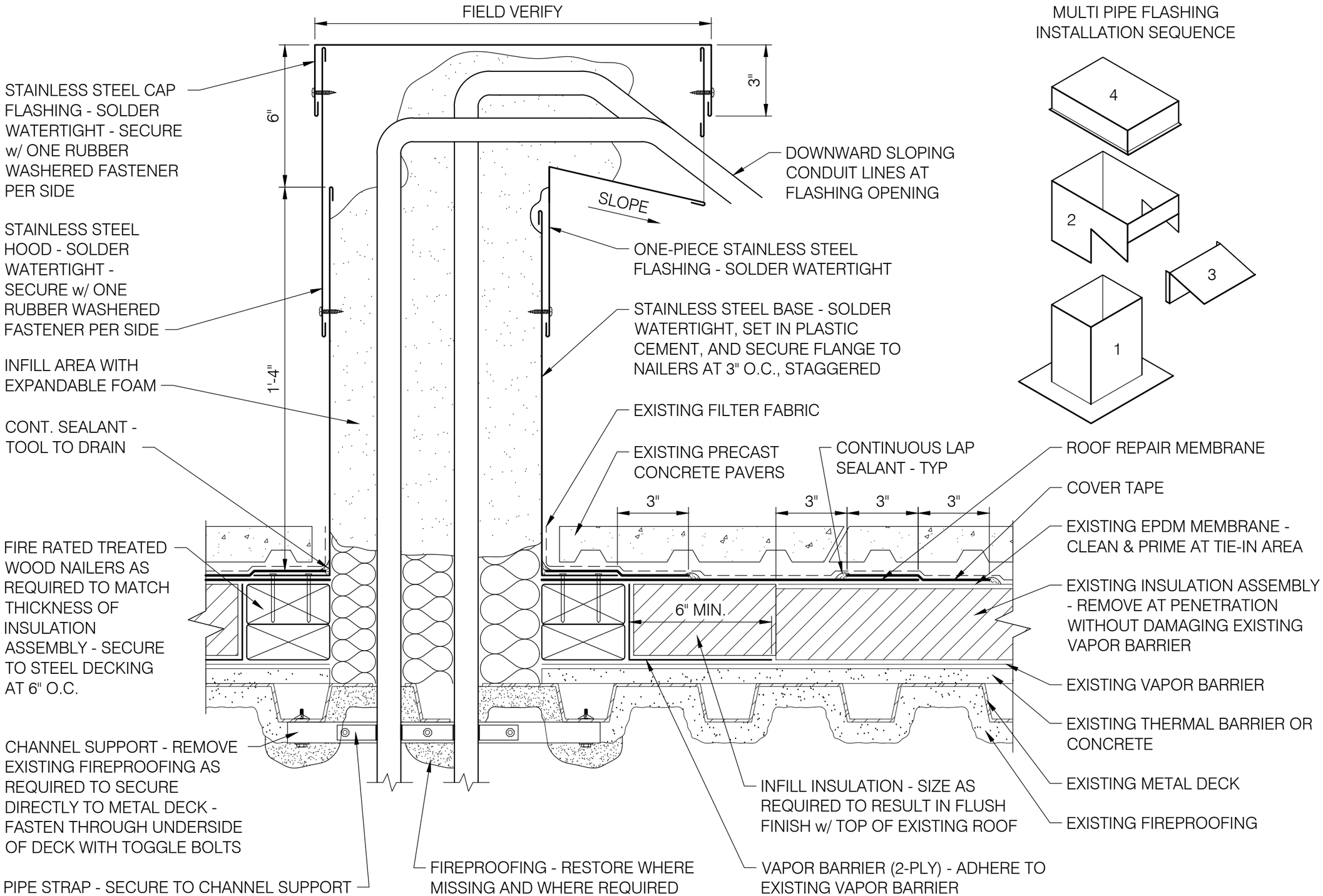
0727 EPDM FLASHING - ELECTRICAL CONDUIT

SCALE: 3" = 1'-0"



0728 EPDM FLASHING - GAS RELIEF VENT

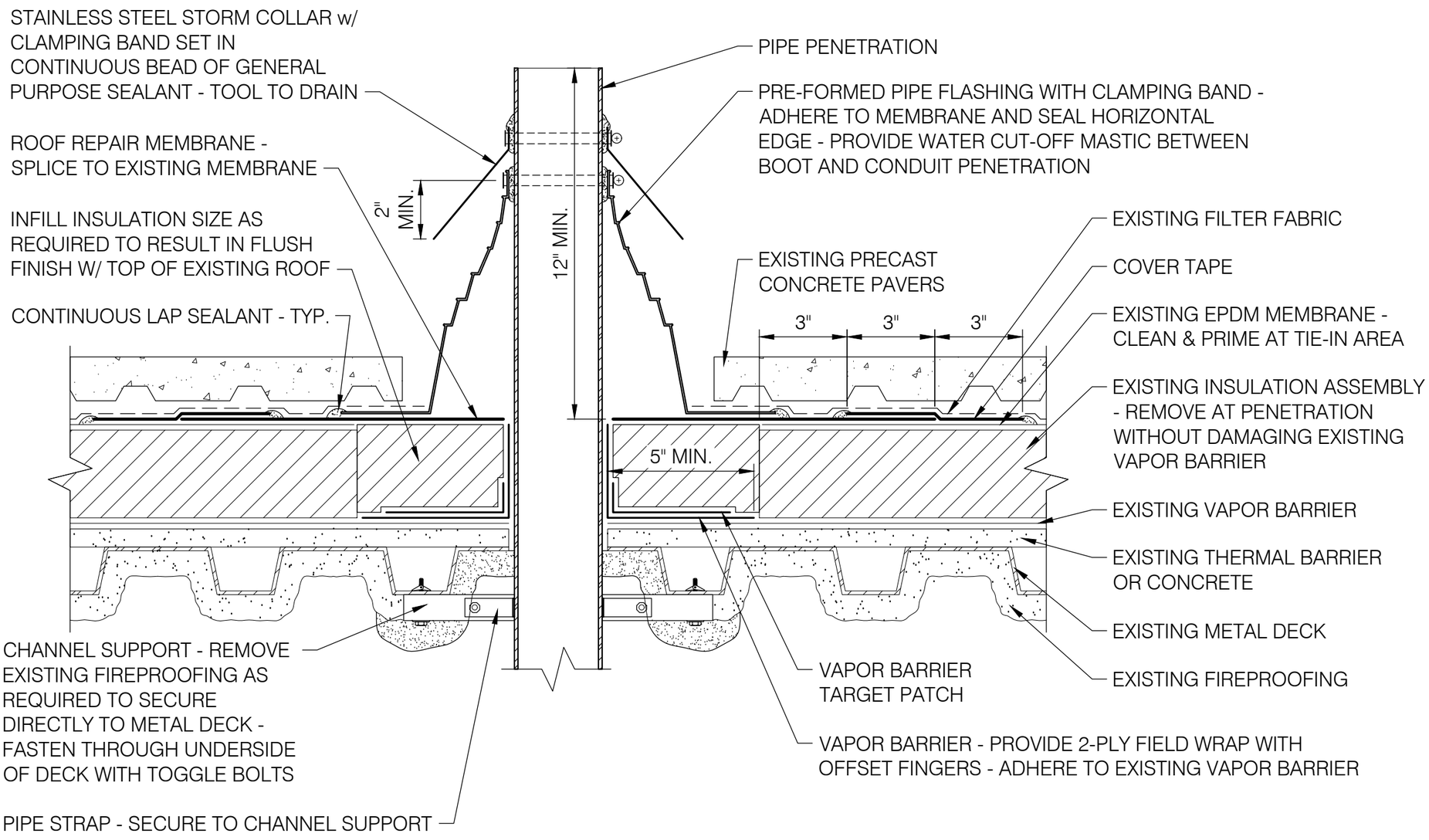
SCALE: 3" = 1'-0"



MULTI PIPE FLASHING
INSTALLATION SEQUENCE

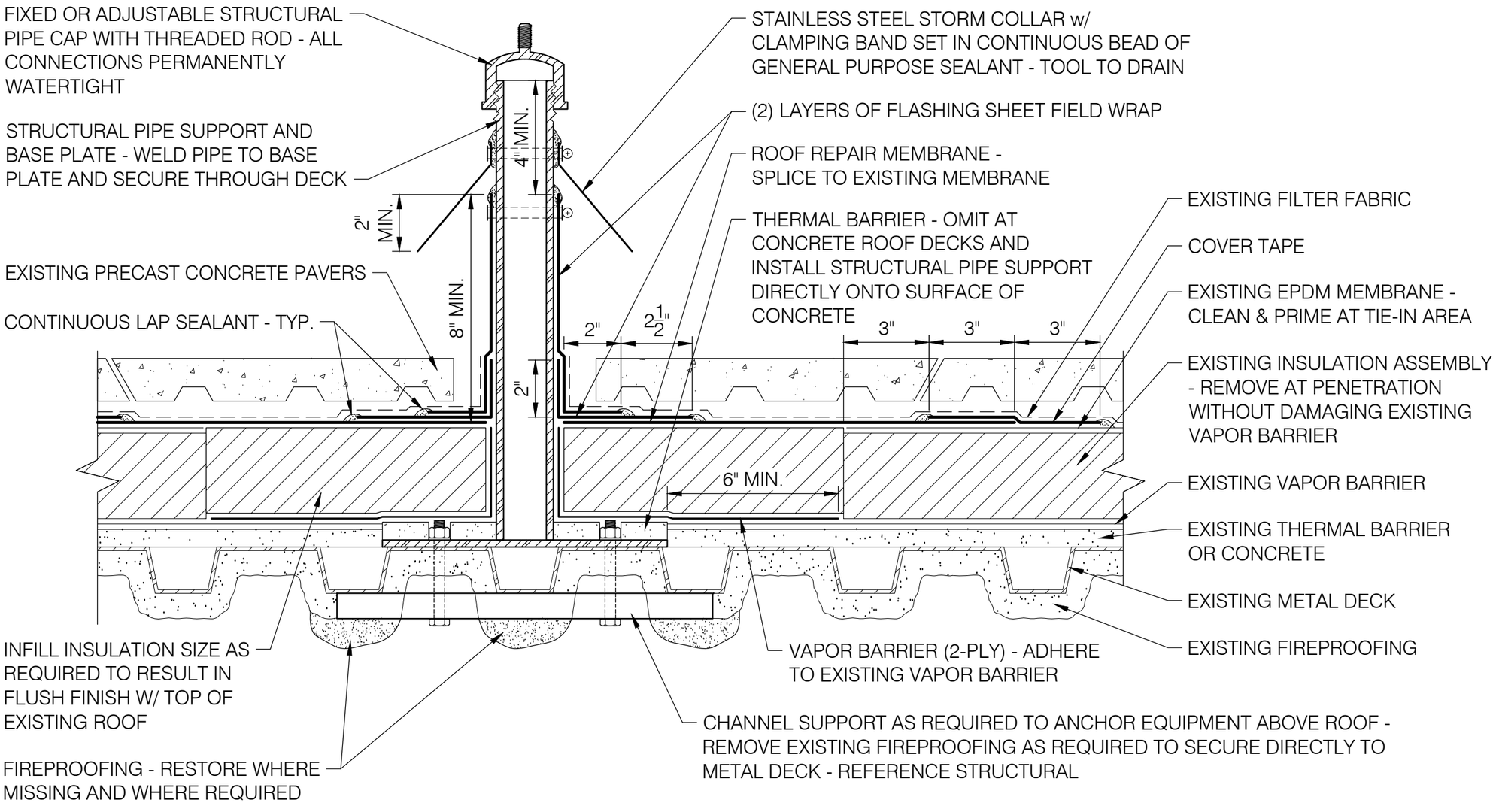
0729 EPDM FLASHING - MULTIPLE PIPE PENETRATION

SCALE: 3" = 1'-0"



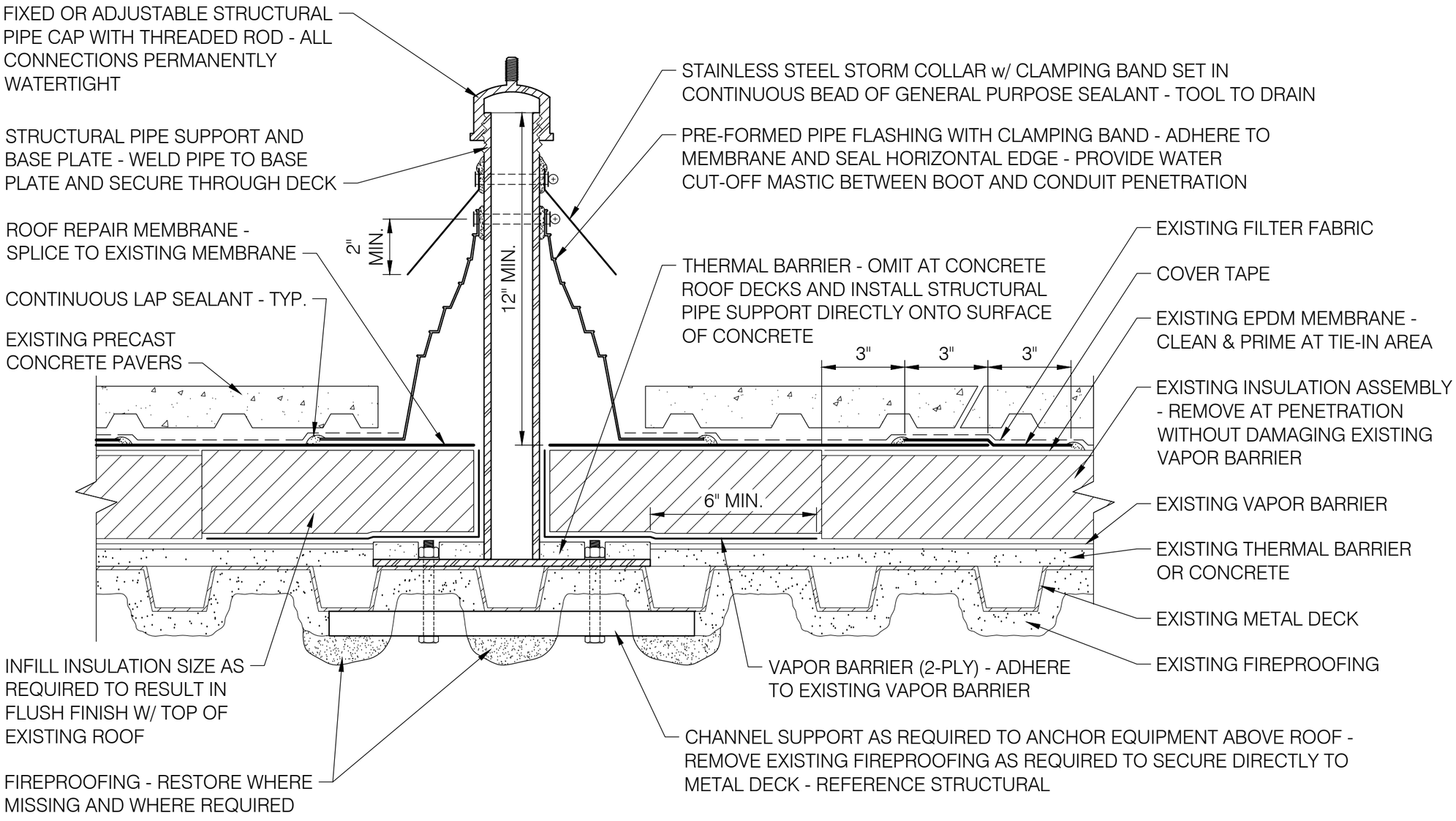
0730 EPDM FLASHING - PLUMBING VENT

SCALE: 3" = 1'-0"



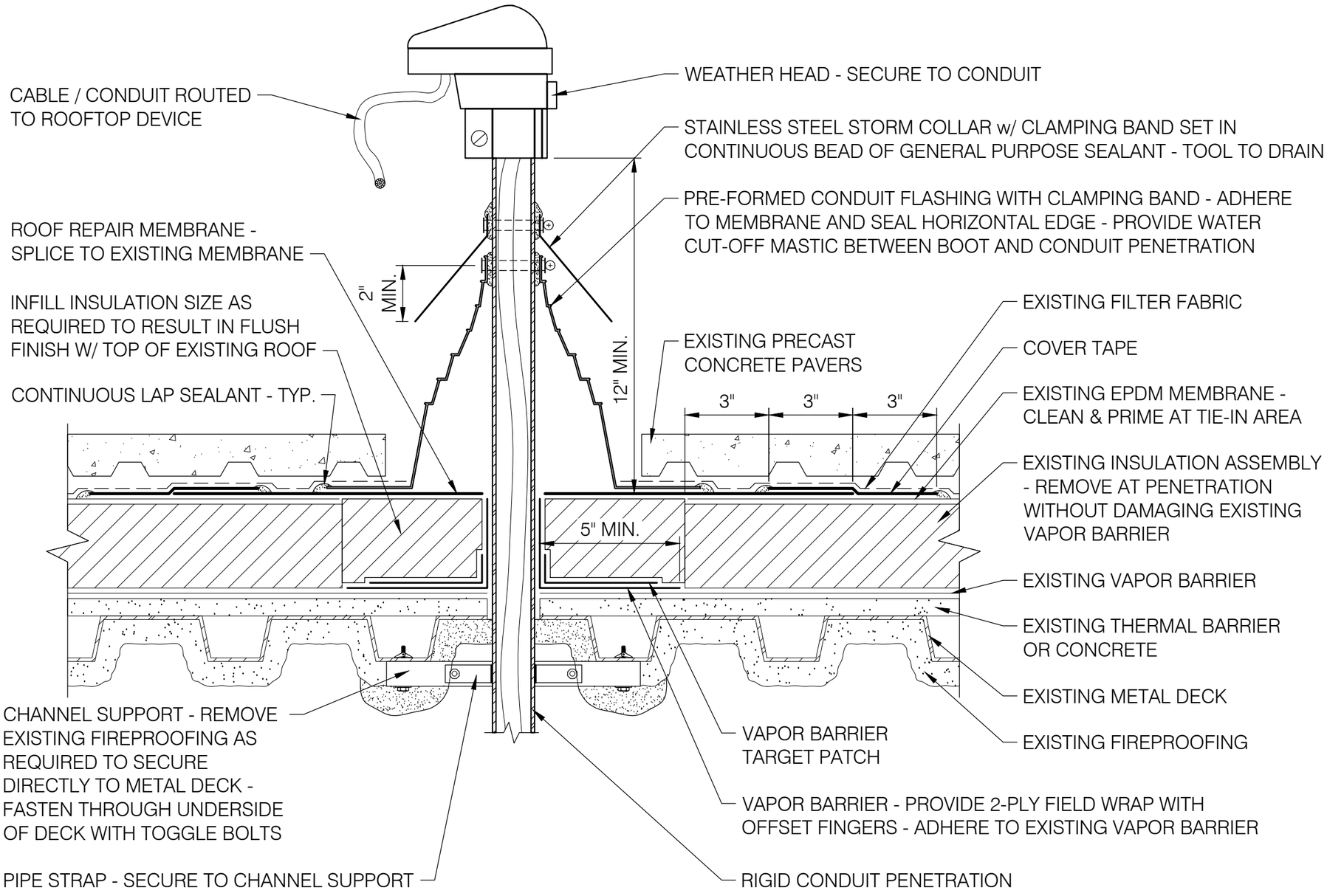
0731 EPDM FLASHING - STRUCTURAL PIPE SUPPORT (FIELD WRAP)

SCALE: 3" = 1'-0"



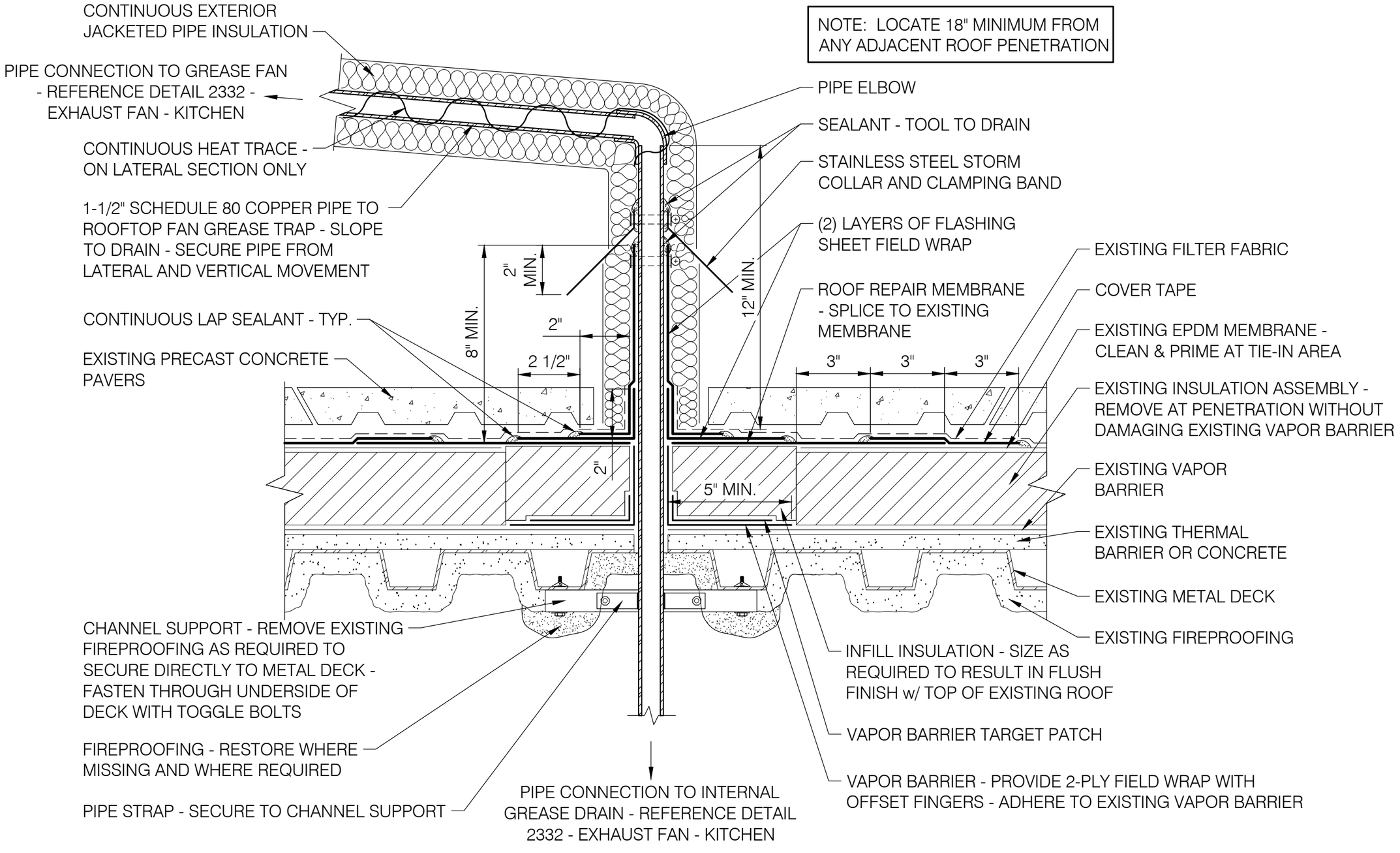
0732 EPDM FLASHING - STRUCTURAL PIPE SUPPORT (PREFORMED)

SCALE: 3" = 1'-0"



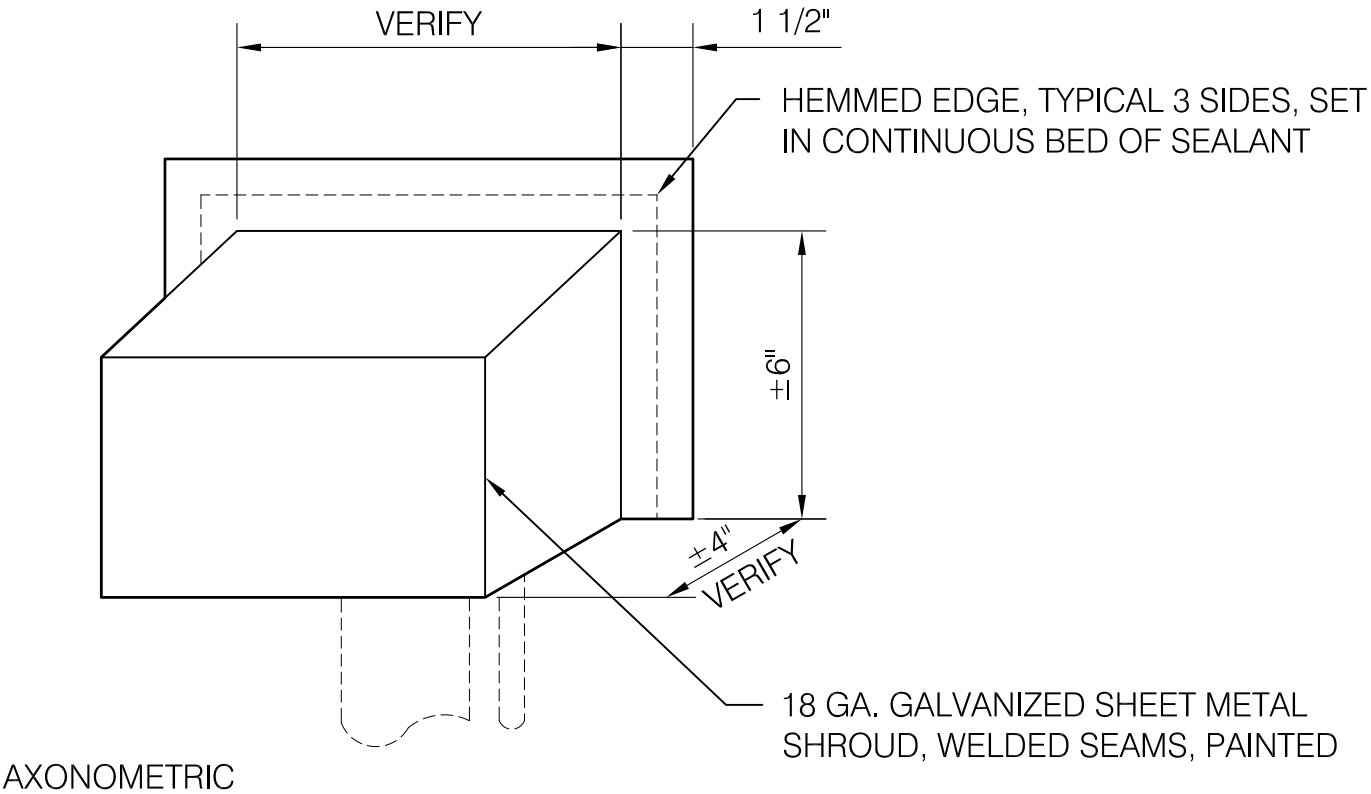
0733 EPDM FLASHING - WEATHERHEAD MAST

SCALE: 3" = 1'-0"

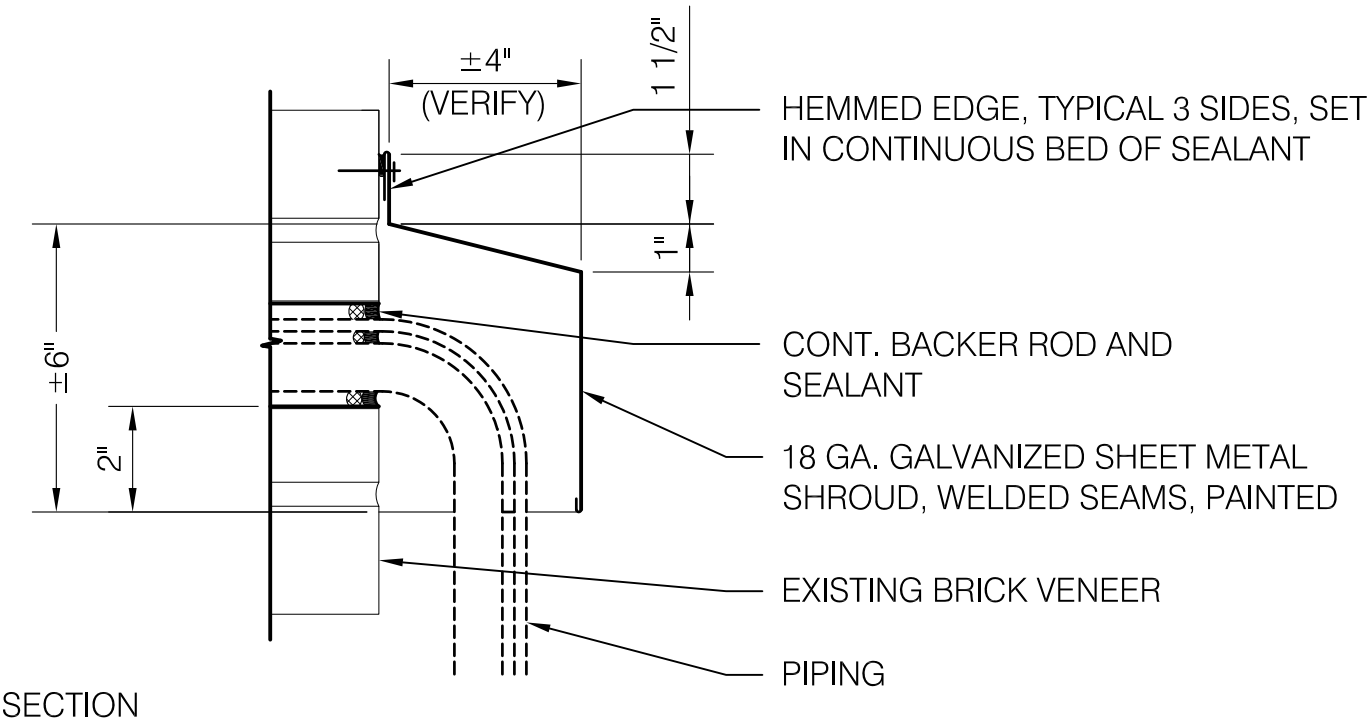


0734 EPDM FLASHING - GREASE DRAIN LINE

SCALE: 3" = 1'-0"



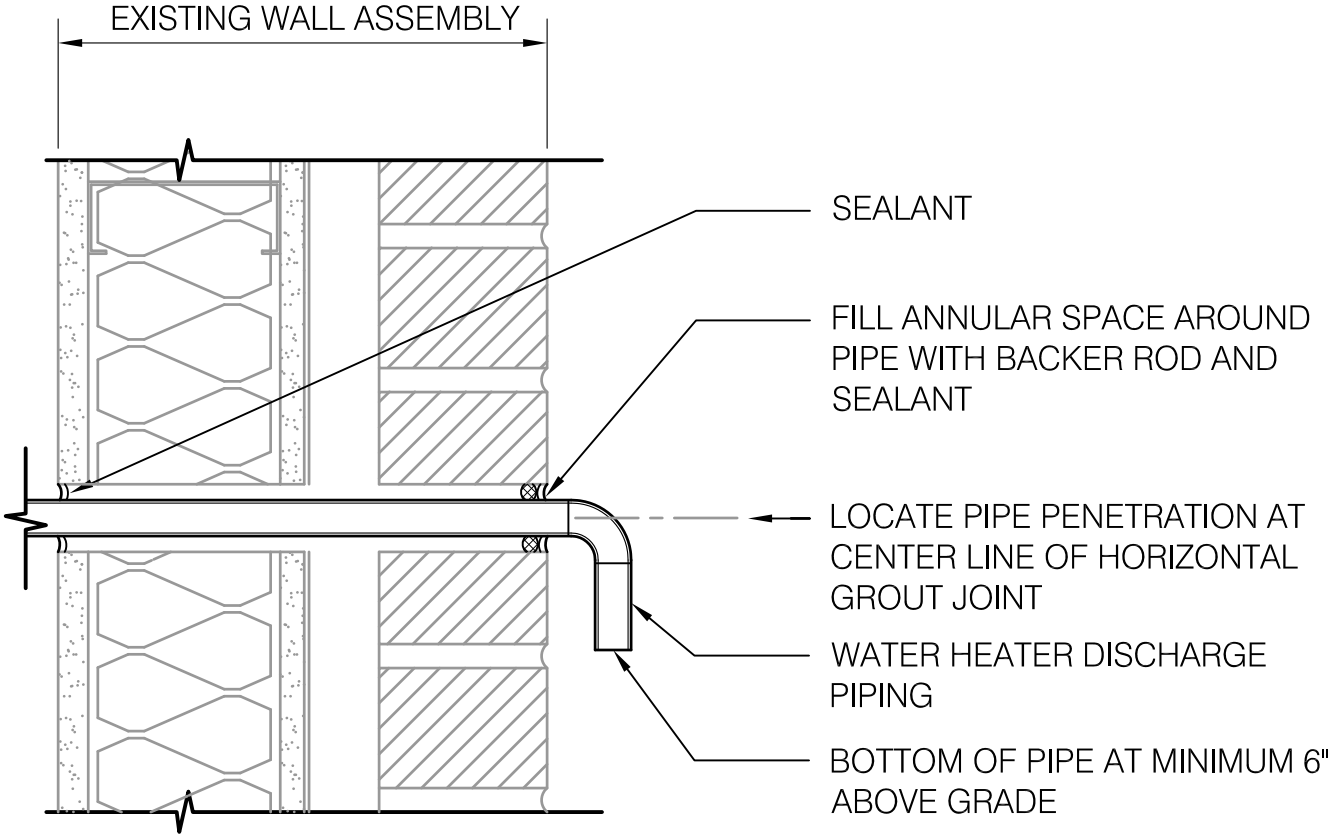
AXONOMETRIC



SECTION

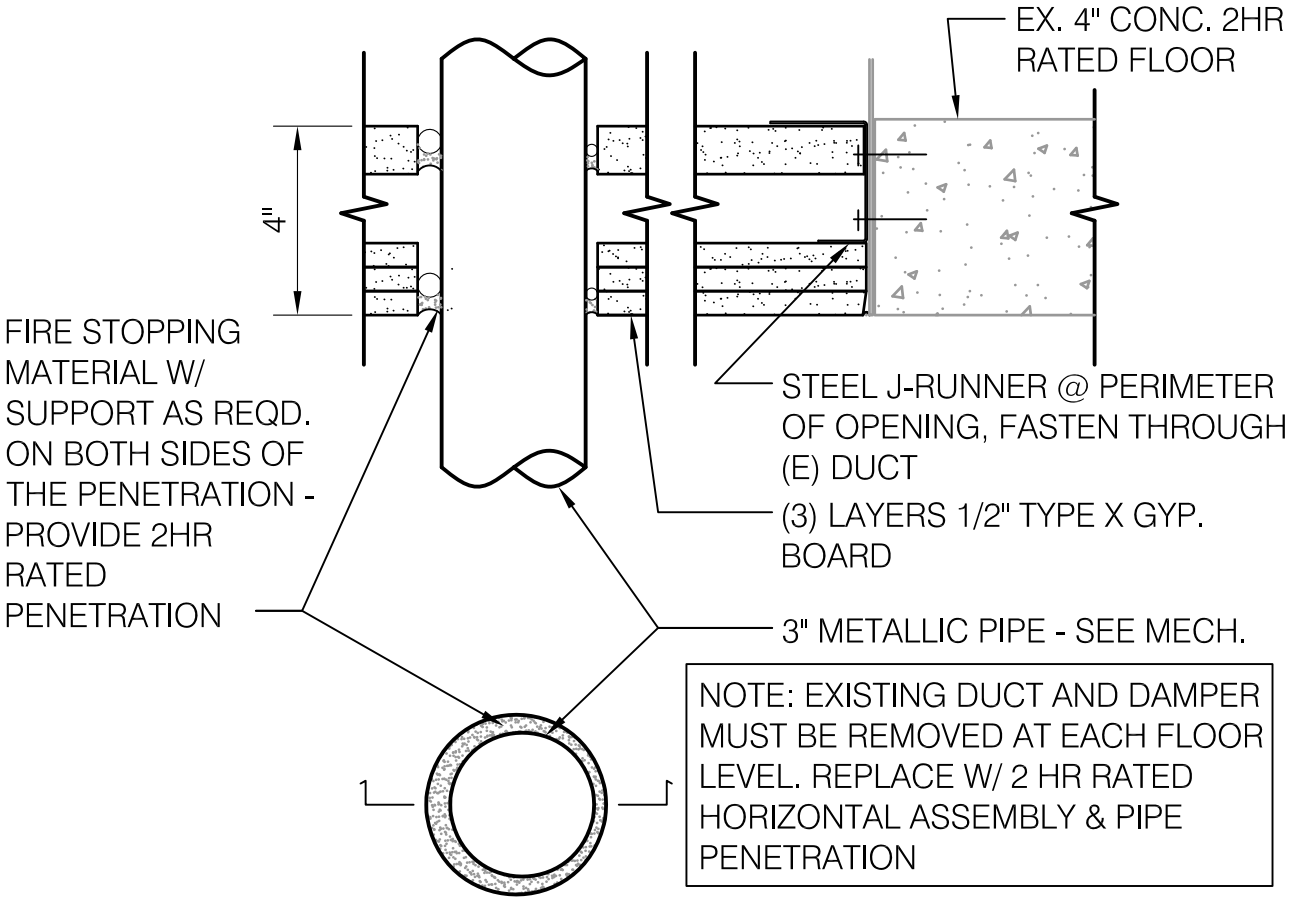
0741 EXTERIOR PIPE SHROUD

SCALE: 3" = 1'-0"



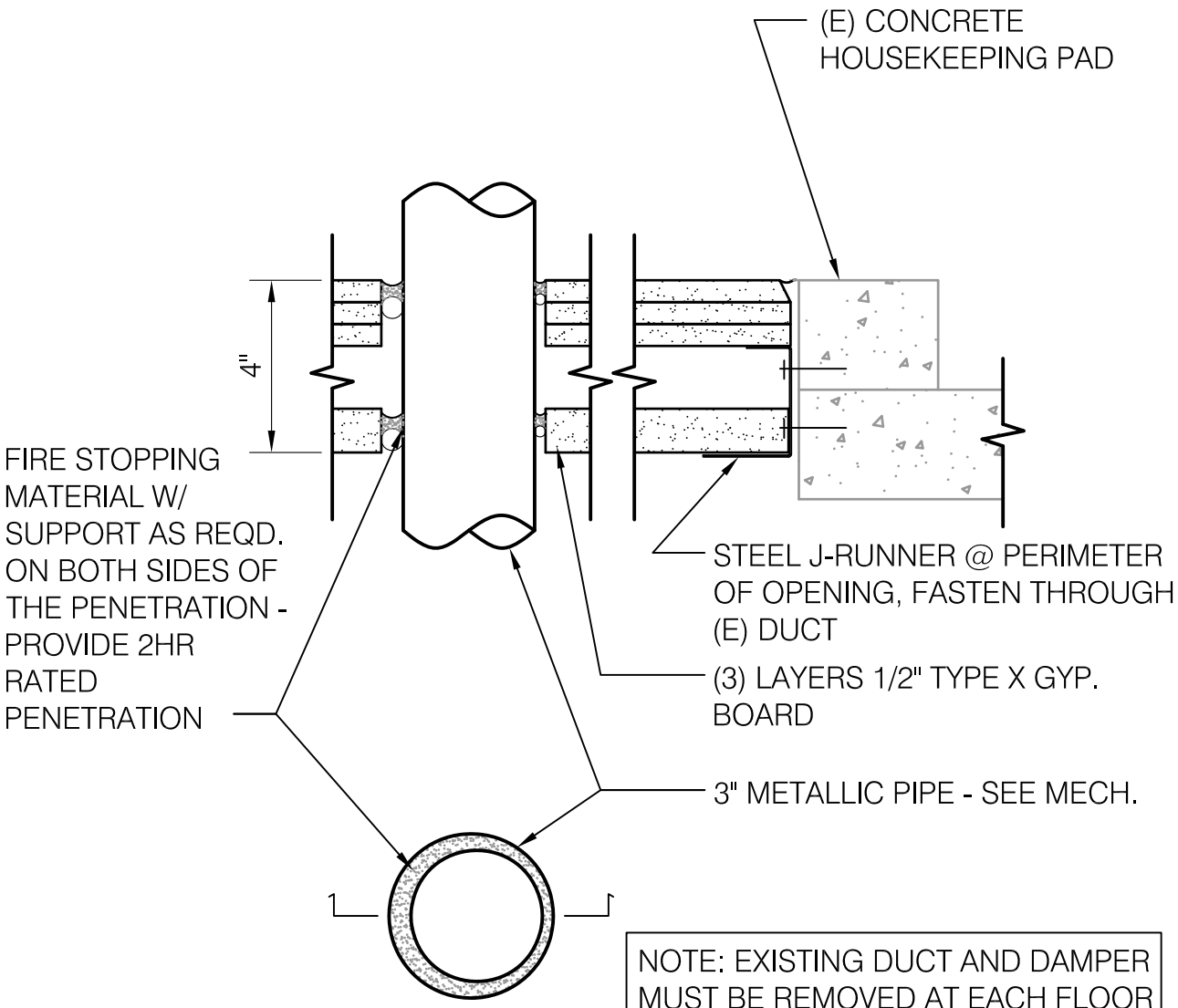
0742 EXTERIOR CONDENSATE PIPE PENETRATION

SCALE: 3" = 1'-0"



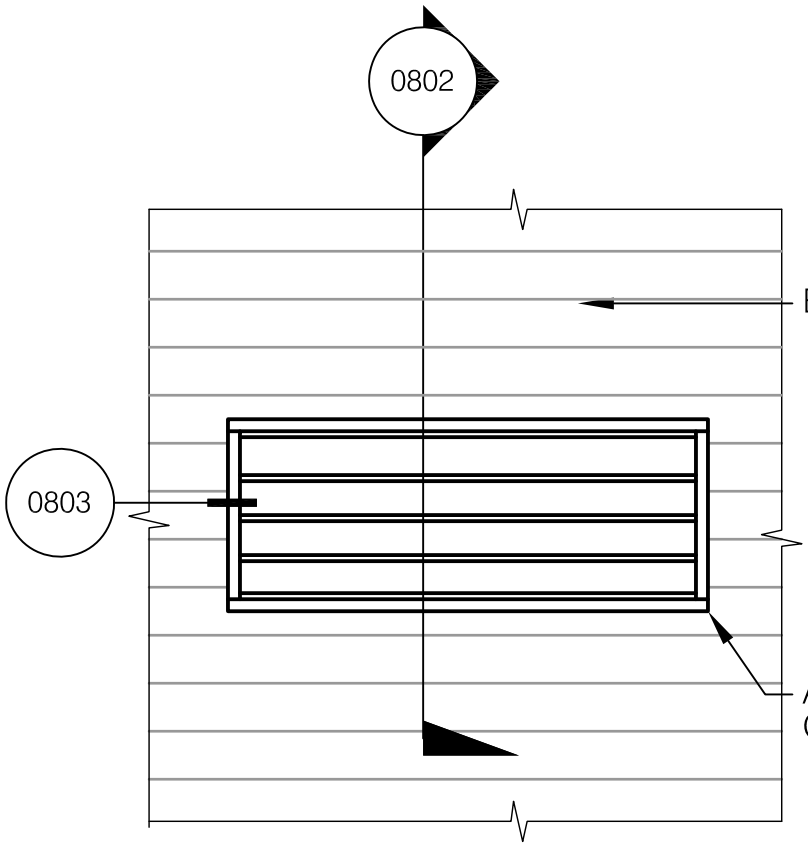
0751 FLOOR PENETRATION ENPLANING

SCALE: 3" = 1'-0"



0752 FLOOR PENETRATION MEZZANINE

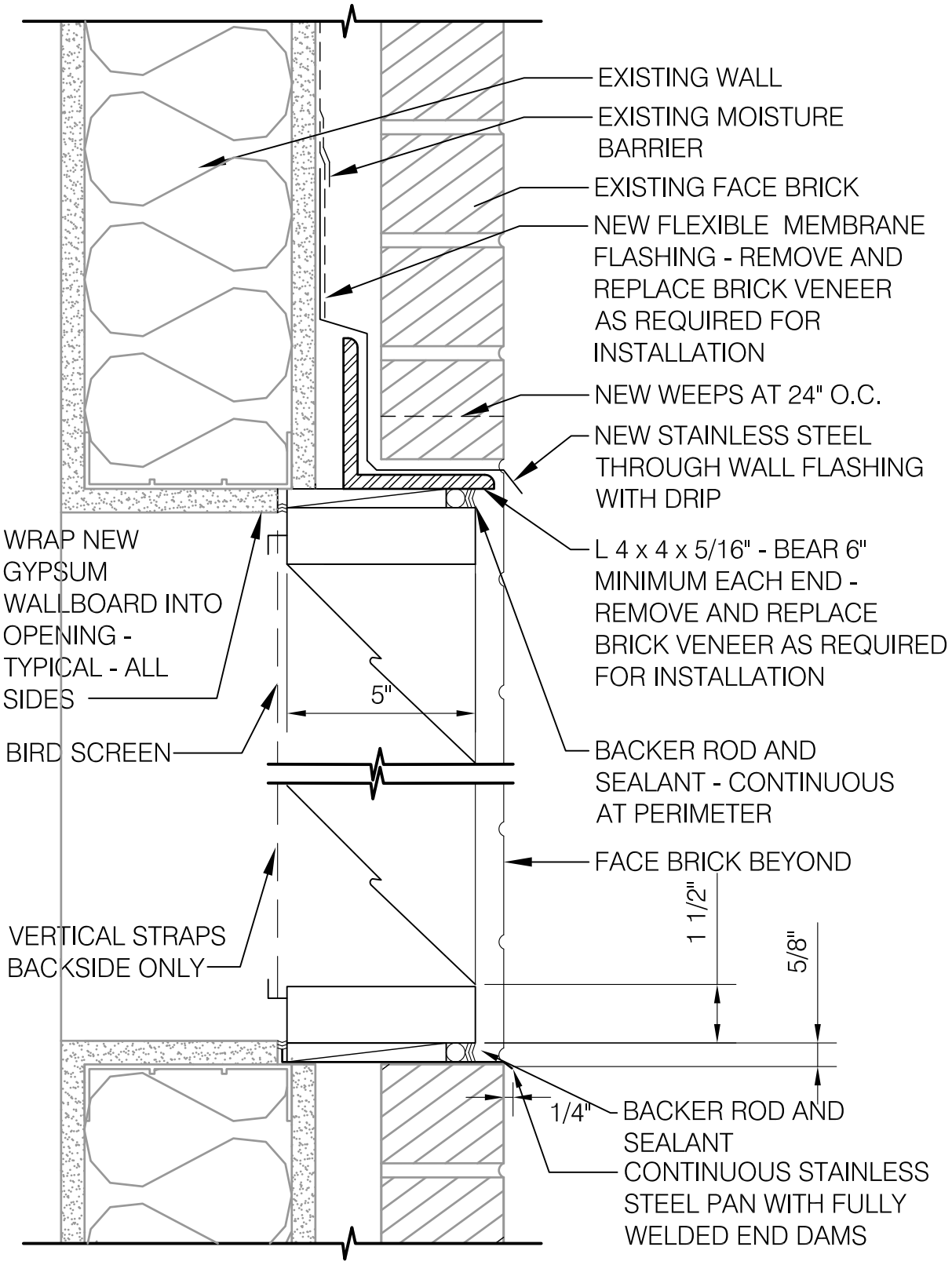
SCALE: 3" = 1'-0"



NOTE:
LOUVER DIMENSIONS PER MECHANICAL AND ARCHITECTURAL.

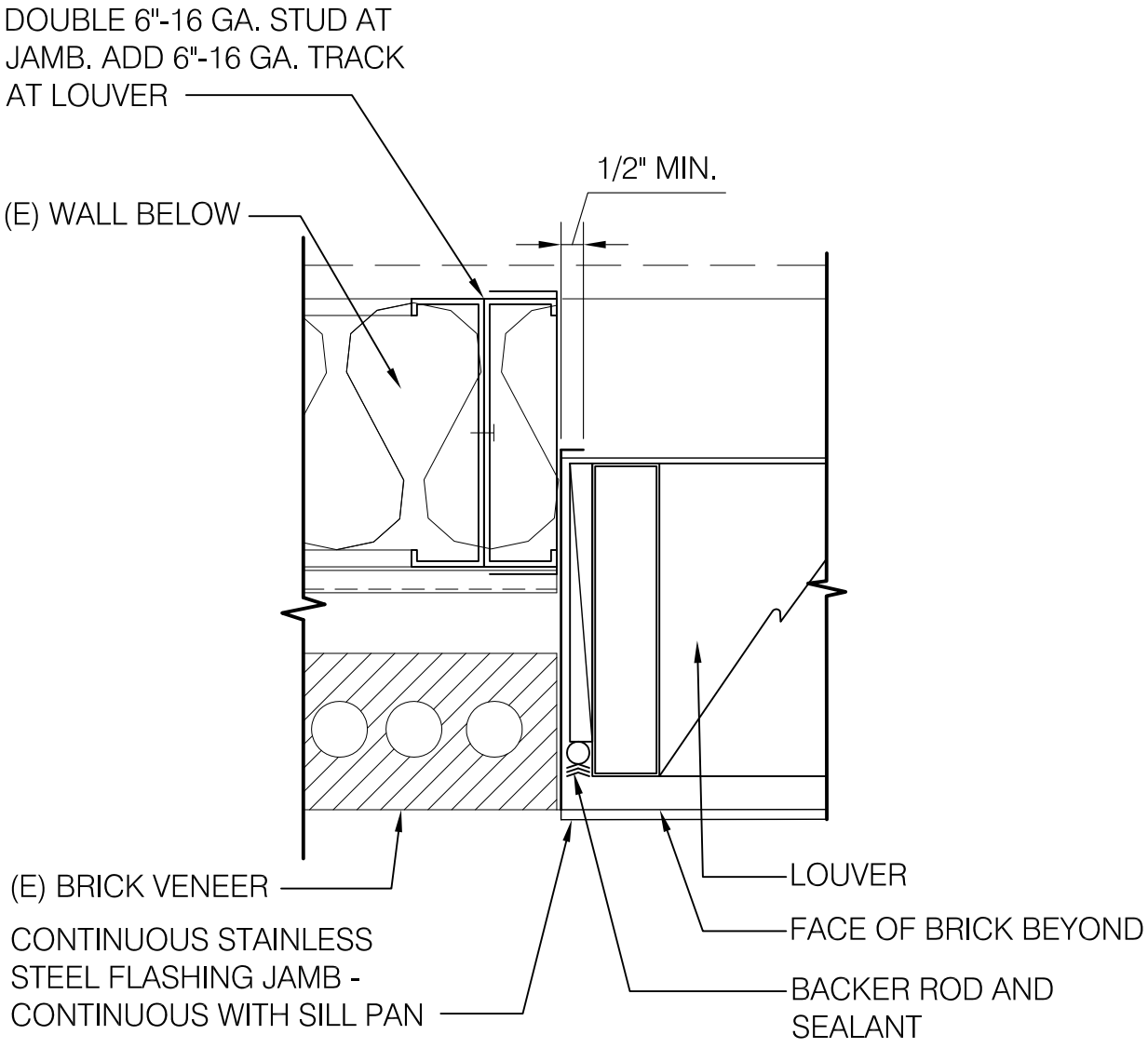
0801 LOUVER ELEVATION

SCALE: 3" = 1'-0"



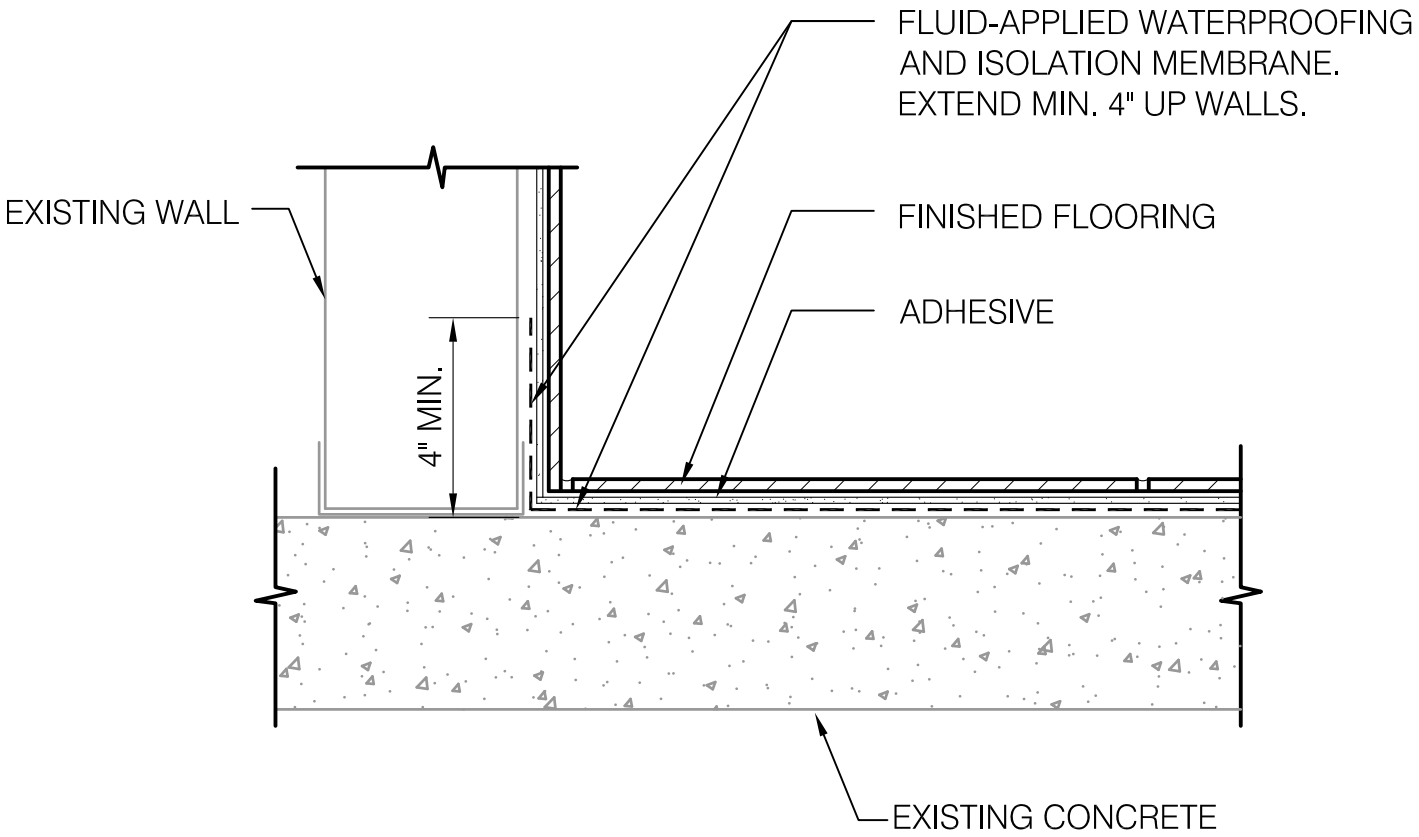
0802 LOUVER HEAD/SILL

SCALE: 3" = 1'-0"



0803 LOUVER JAMB

SCALE: 3" = 1'-0"



0901 WATERPROOFING MEMBRANE AT FINISHED FLOOR

SCALE: 3" = 1'-0"

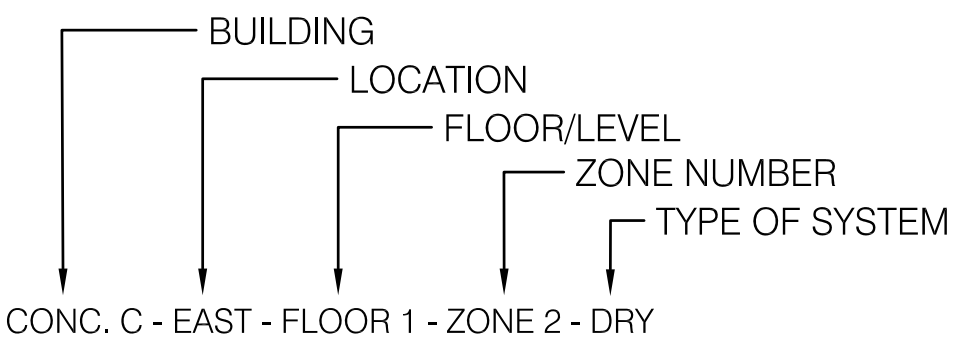
FIRE PROTECTION SYMBOLS:

SYMBOL	DESCRIPTION
FDC	FDC INTERTIE
F	FIRE PROTECTION
SPR	FIRE SPRINKLER (WET)
DP	DRY PIPE SPRINKLER
PA	PREACTION SPRINKLER
FDC	FIRE DEPARTMENT CONNECTION
SO	STANDPIPE OUTLET
SOC	STANDPIPE OUTLET CABINET
F	FLOW SWITCH
P	PRESSURE SWITCH
S	SUPERVISED SHUT-OFF VALVE
DPV	DRY PIPE VALVE ASSEMBLY
PAV	PREACTION VALVE ASSEMBLY
	FIRE SPRINKLER ZONE BOUNDARY

2181 FIRE PROTECTION SYMBOLS
SCALE: NTS

FIRE SPRINKLER ZONE IDENTIFICATION:

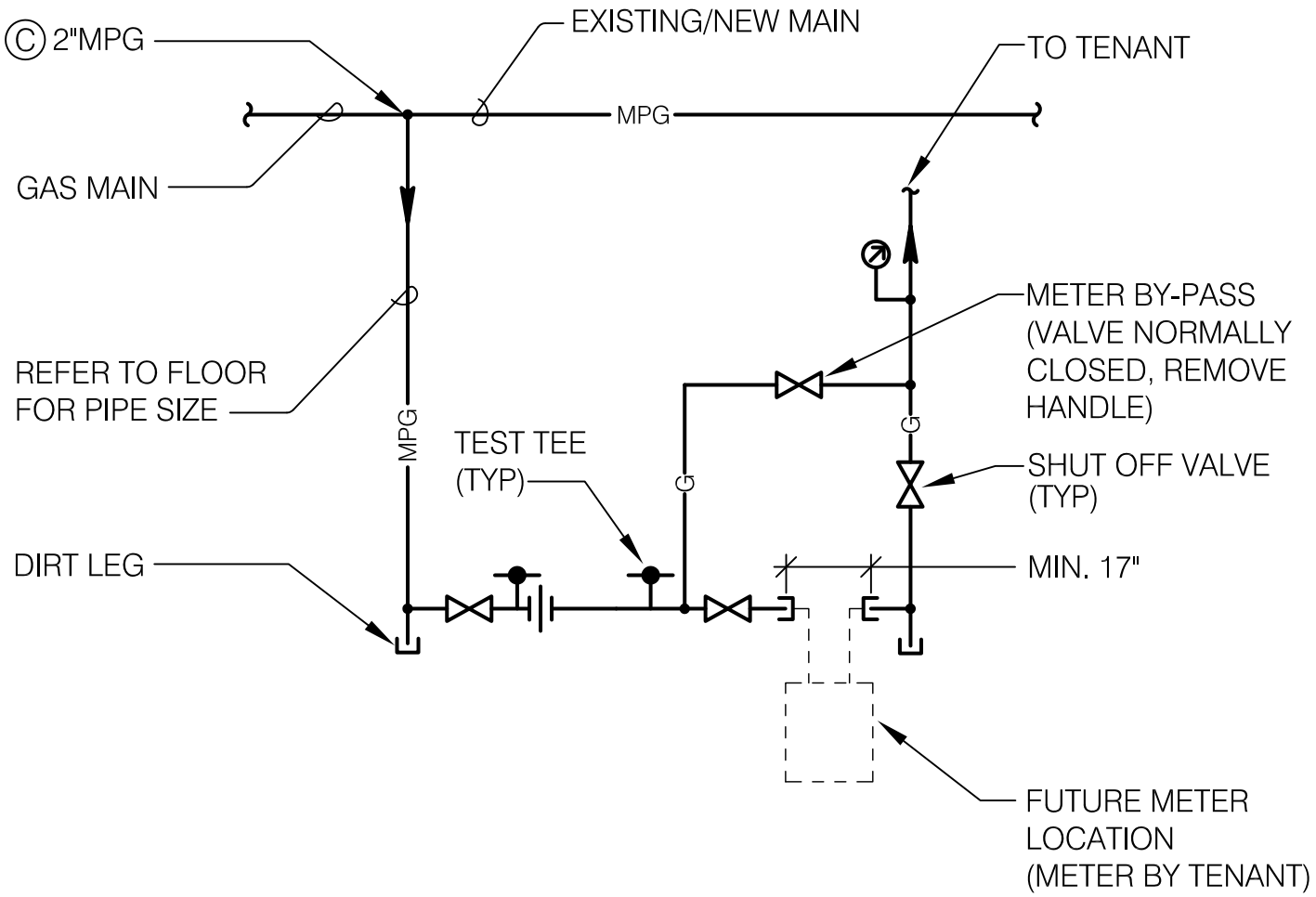
FULL ZONE IDENTIFICATION



ABBREVIATED ZONE IDENTIFICATION

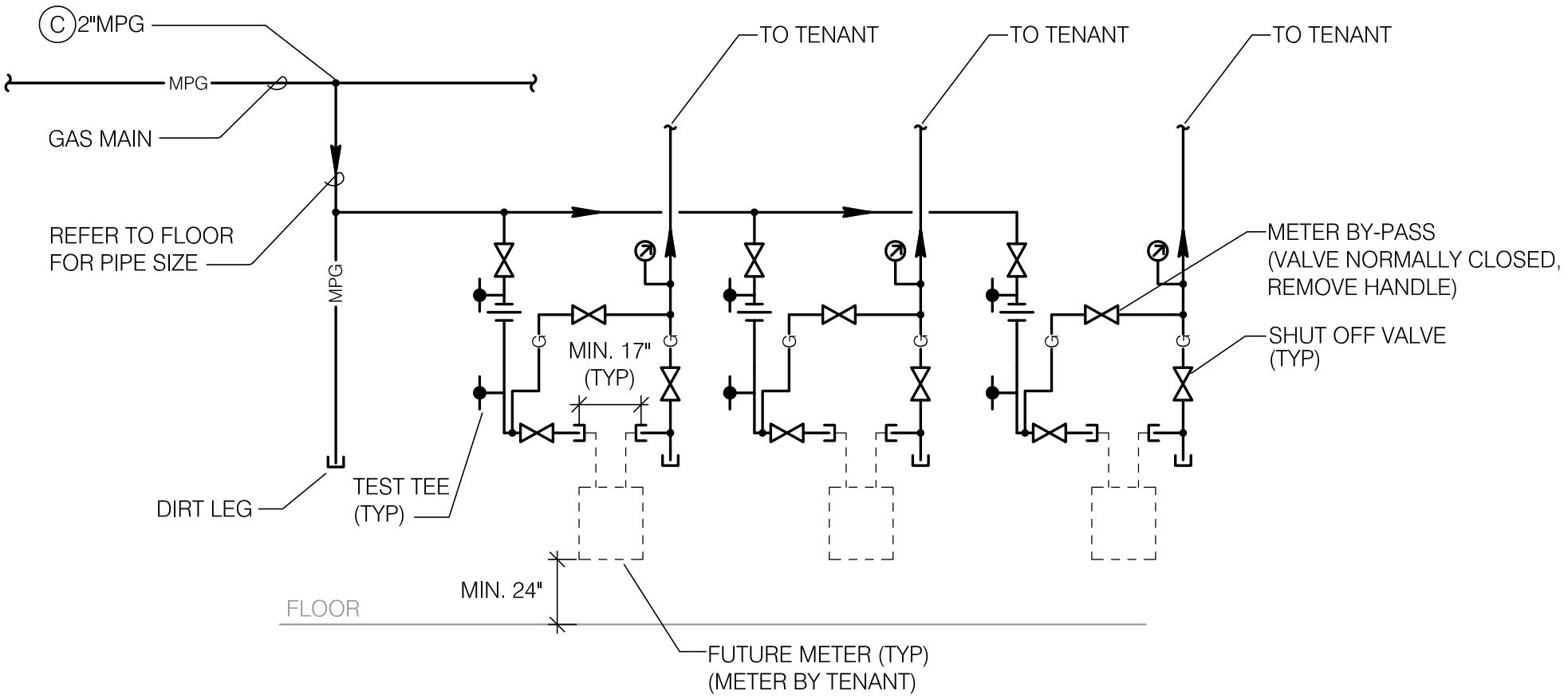
C-E-1-2-D

2181 FIRE PROTECTION ZONE IDENTIFICATION
SCALE: NTS



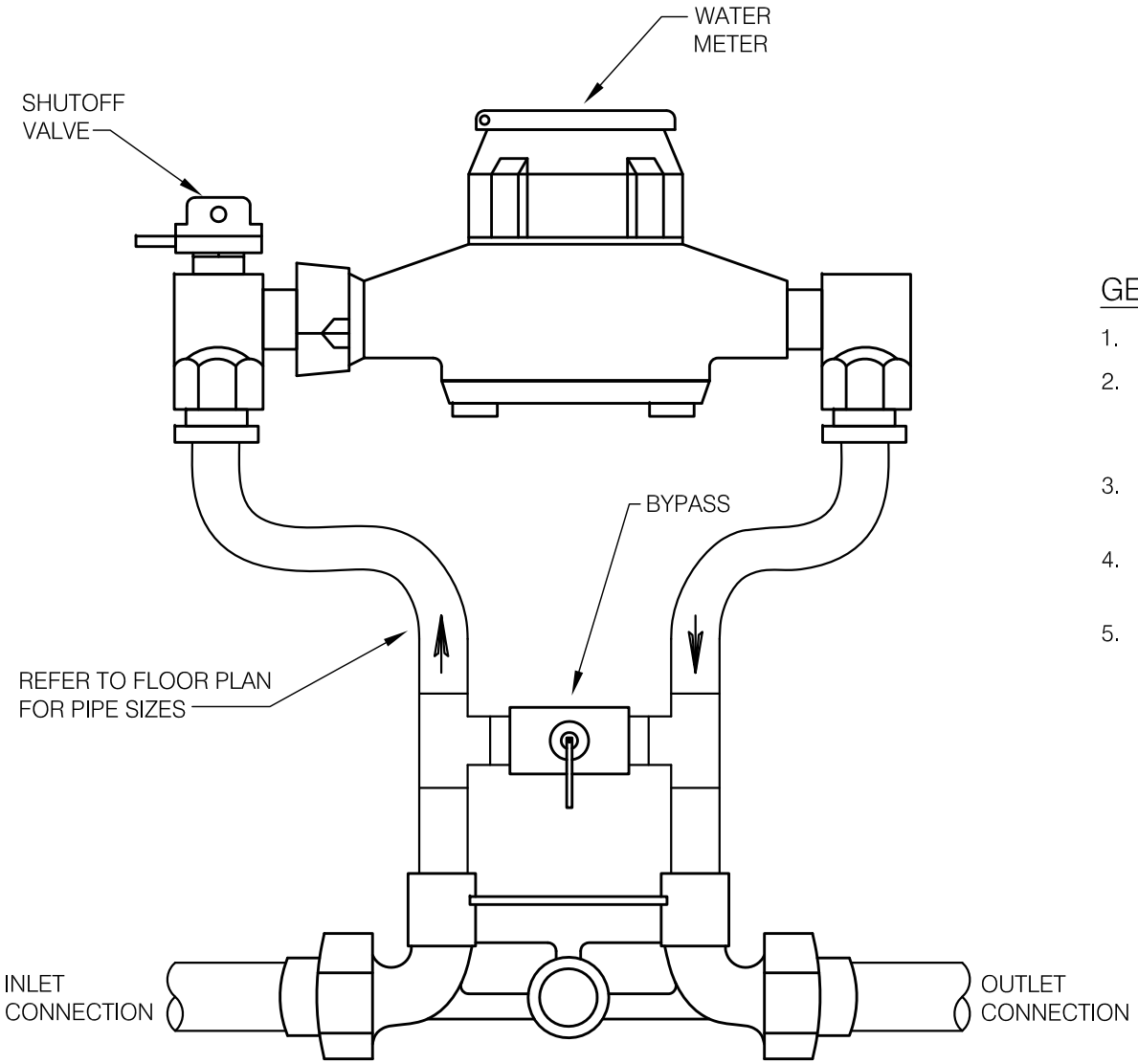
2201 GAS METER 1

SCALE: NTS



2202 GAS METER 2

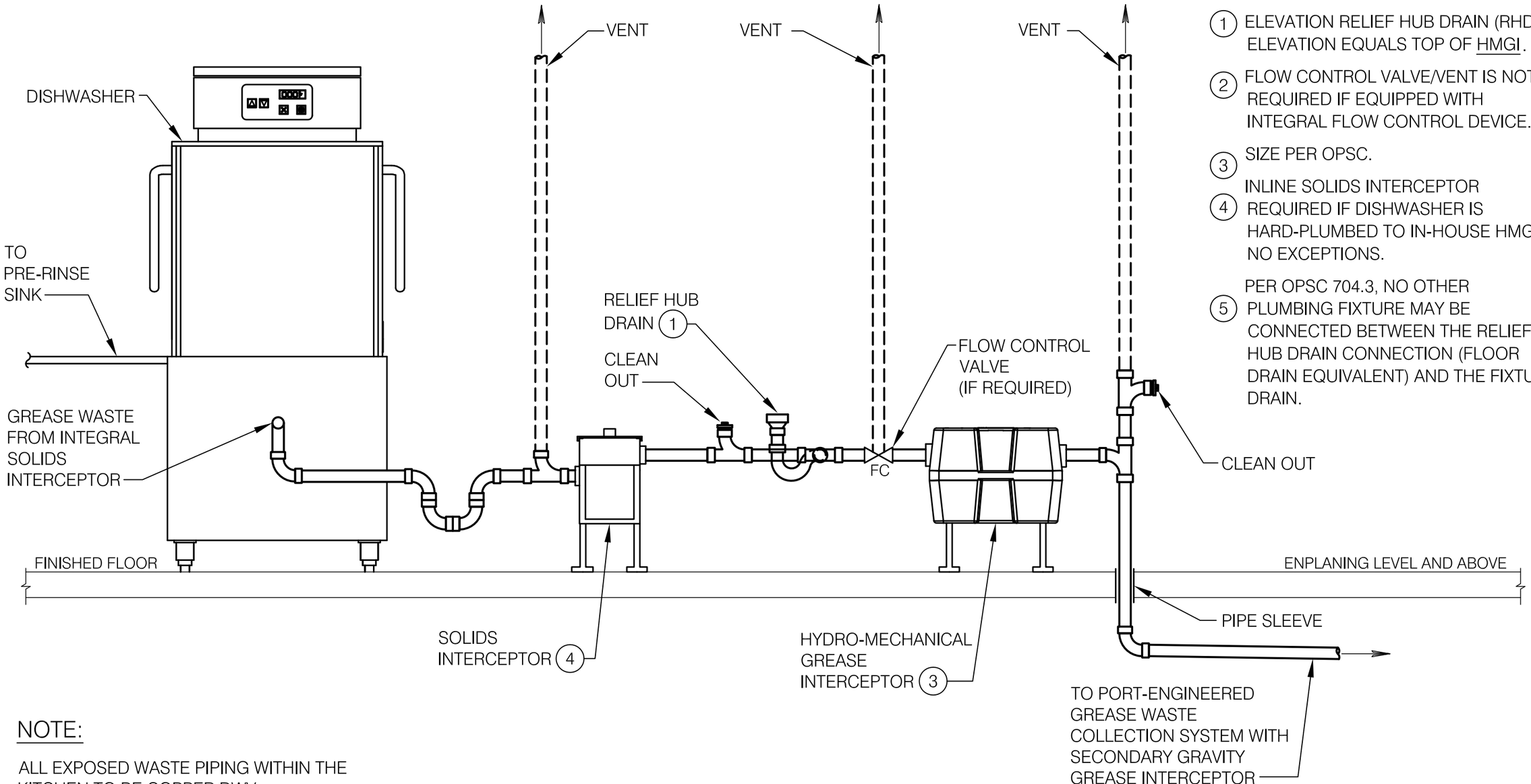
SCALE: NTS



GENERAL NOTES:

1. POSITION METER IN HORIZONTAL PLANE.
2. METER TO BE IN ACCESSIBLE LOCATION FOR READING, SERVICING, AND/OR TESTING, 4'-6' A.F.F. PROVIDE LEAK TIGHT, PERMANENT SETTING TO ENSURE
3. METER CAN BE SERVICED WITHOUT NEGATIVELY AFFECTING KITCHEN PLUMBING.
4. PROVIDE PERMANENT ELECTRICAL GROUNDING TO PREVENT ACCIDENTAL SHOCK
5. PROVIDE HIGH QUALITY INLET SHUTOFF VALVE TO ALLOW METER MAINTENANCE. LOCATION OF METER MAY ALSO DICTATE A METER VALVE ON OUTLET SIDE TO PREVENT WATER DRAIN BACK WHEN METER IS REMOVED.

2203 WATER METER
SCALE: NTS



KEY NOTES:

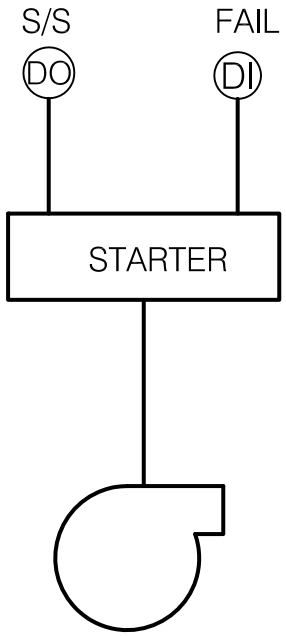
1. ELEVATION RELIEF HUB DRAIN (RHD). ELEVATION EQUALS TOP OF HMGI.
2. FLOW CONTROL VALVE/VENT IS NOT REQUIRED IF EQUIPPED WITH INTEGRAL FLOW CONTROL DEVICE.
3. SIZE PER OPSC.
4. INLINE SOLIDS INTERCEPTOR REQUIRED IF DISHWASHER IS HARD-PLUMBED TO IN-HOUSE HMGI, NO EXCEPTIONS.
5. PER OPSC 704.3, NO OTHER PLUMBING FIXTURE MAY BE CONNECTED BETWEEN THE RELIEF HUB DRAIN CONNECTION (FLOOR DRAIN EQUIVALENT) AND THE FIXTURE DRAIN.

NOTE:

ALL EXPOSED WASTE PIPING WITHIN THE KITCHEN TO BE COPPER DWV.

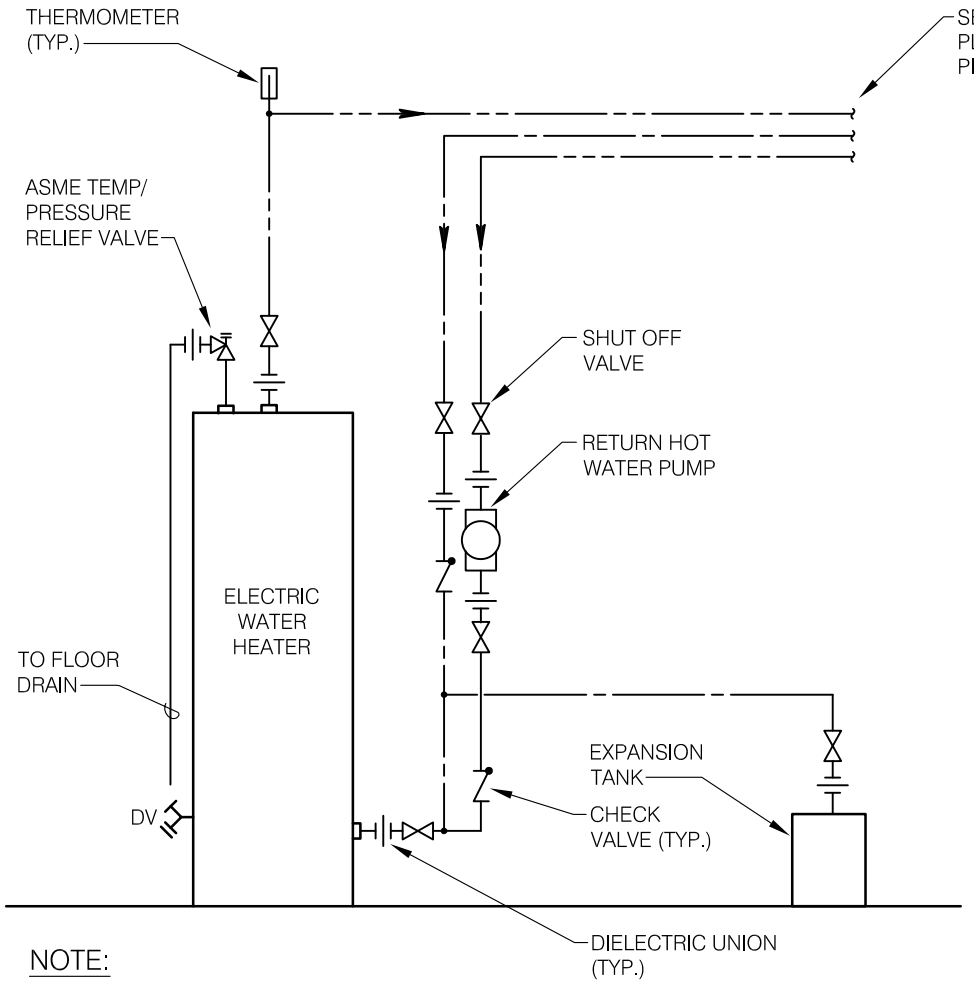
2204 COMMERCIAL DISHWASHER

SCALE: NTS



2205 DOMESTIC HOT WATER PUMP

SCALE: NTS

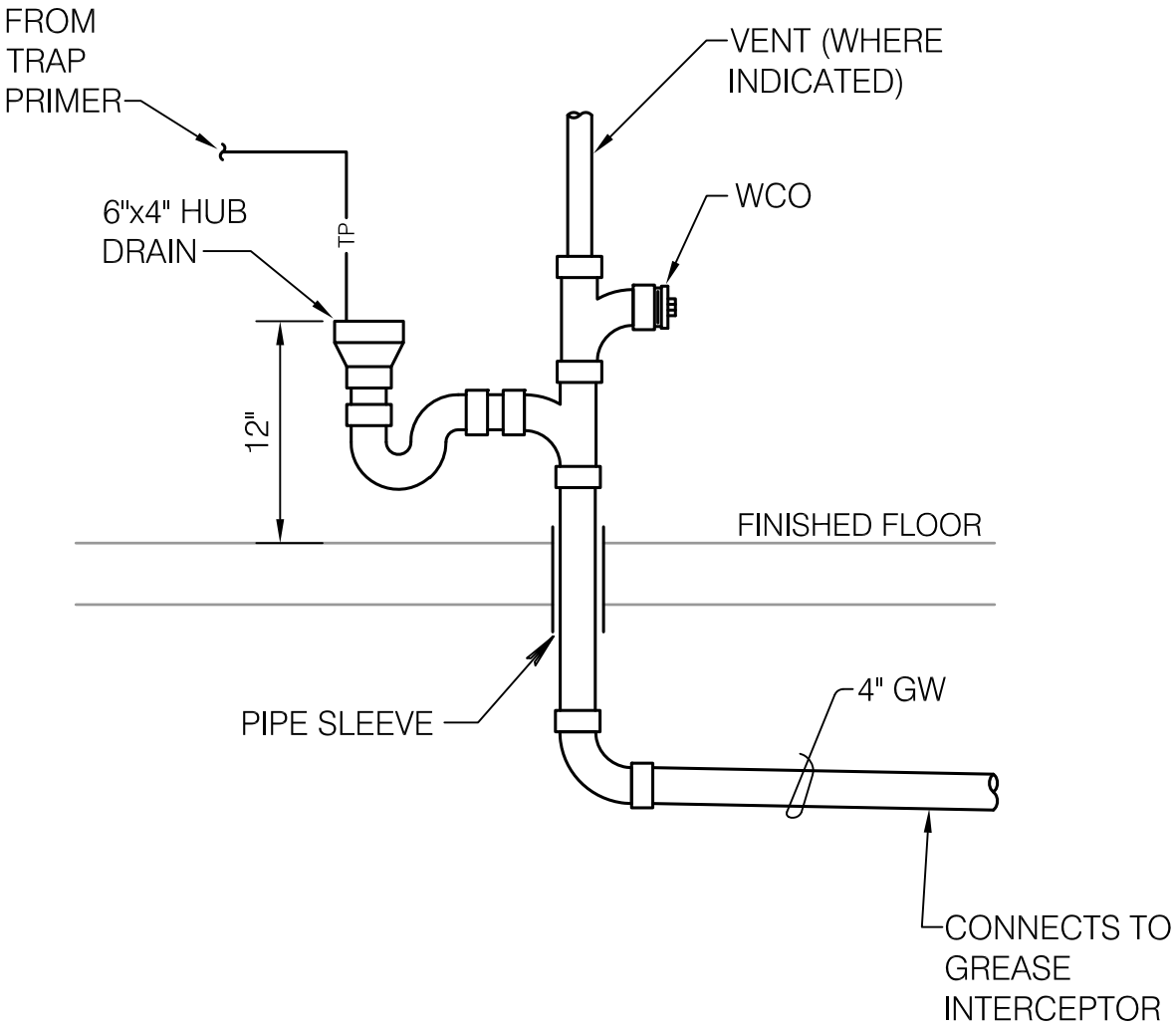


NOTE:

SEE SPECIFICATION FOR SEISMIC RESTRAINT REQUIREMENTS.

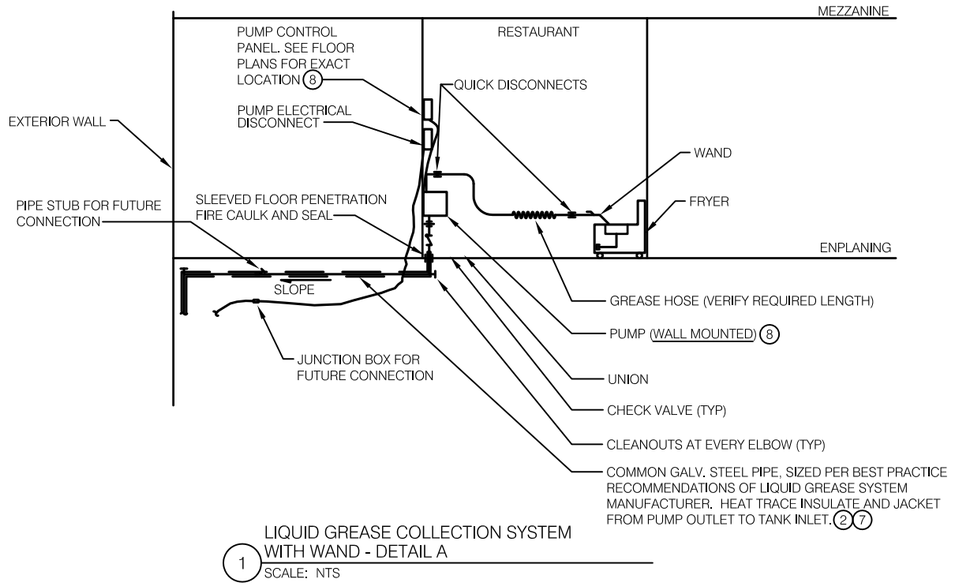
2206 ELECTRIC WATER HEATER

SCALE: NTS

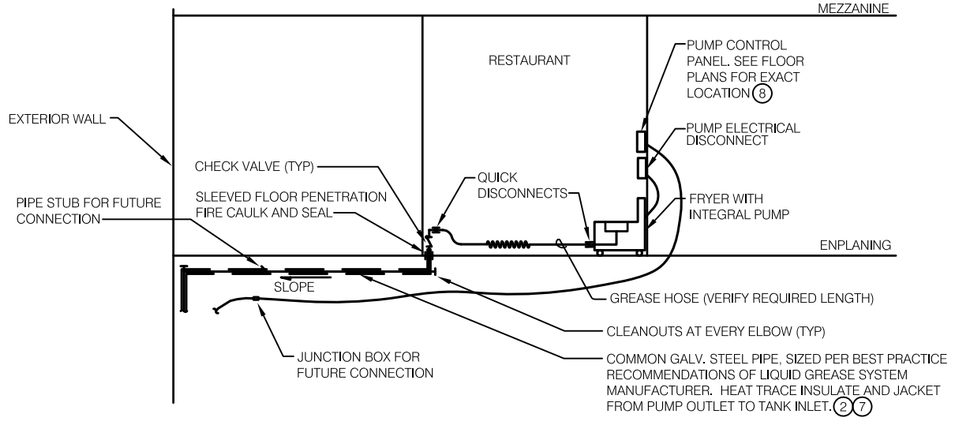


2207 HUB DRAIN

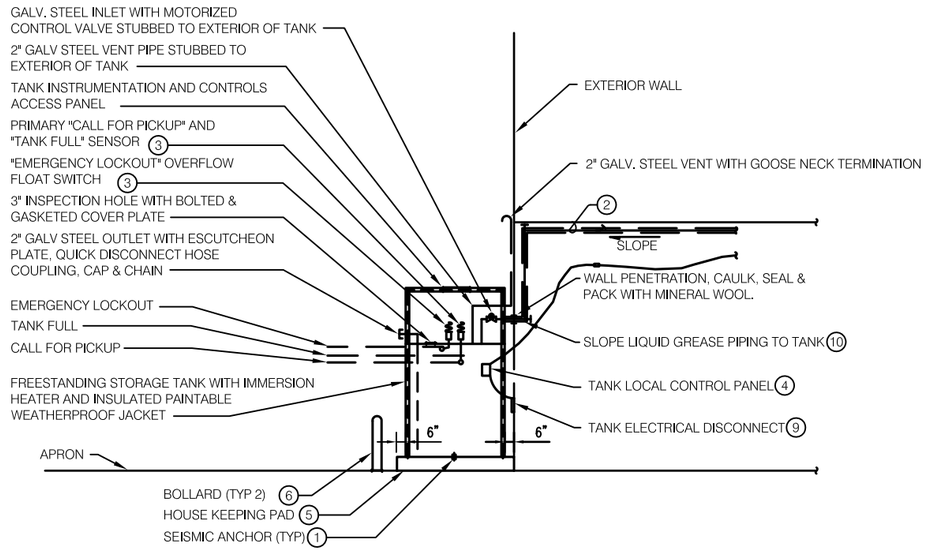
SCALE: NTS



1 LIQUID GREASE COLLECTION SYSTEM WITH WAND - DETAIL A
SCALE: NTS



3 LIQUID GREASE COLLECTION SYSTEM WITH DIRECT CONNECTION TO FRYER - DETAIL A
SCALE: NTS



2 LIQUID GREASE COLLECTION SYSTEM WITH EXTERIOR HOLDING TANK - DETAIL B
SCALE: NTS

NOTES:

1. PROVIDE CUSTOM LIQUID GREASE COLLECTION SYSTEM WITH STAND ALONE PUMP STATION, STORAGE TANK, CONTROLS, WIRING PIPE AND FITTINGS, VALVES AND ACCESSORIES, AS INDICATED ON THE DRAWINGS AND AS SPECIFIED IN SECTION 221319. 2. BASIS OF DESIGN: FRONTLINE INTERNATIONAL MODEL 4280-NA, LIQUID GREASE COLLECTION SYSTEM.

KEY NOTES:

(1) SEISMIC ANCHORS: PROVIDE PER REQUIREMENTS OF SECTION 220545.

(2) HEAT TRACE CABLE FOR LIQUID GREASE FLOW MAINTENANCE: PROVIDE PER REQUIREMENTS OF SECTION 220520, ARTICLE 2.3 AND 3.3.

(3) PRIMARY LIQUID LEVEL SENSOR AND OVERFLOW FLOAT SWITCH: MOUNT INDEPENDENTLY OF OTHER ELECTRICAL DEVICES, CONDUIT AND WIRING. PROVIDE MEANS FOR QUICK DISCONNECT OF LIQUID LEVEL SENSOR AND FLOAT SWITCH AND REMOVAL OF LIQUID LEVEL SENSOR AND FLOAT SWITCH, WITHOUT DISCONNECTION OR RELOCATION OF OTHER ELECTRICAL DEVICES AND WIRING.

(4) TANK CONTROL PANEL: MOUNT IN WEATHERPROOF NEMA ENCLOSURE ON EXTERIOR OF TANK. PROVIDE TANK CONTROL PANEL WITH "POWER", "CALL FOR PICKUP", "TANK FULL" AND "EMERGENCY LOCKOUT" INDICATION LIGHTS.

(5) HOUSEKEEPING PAD: PROVIDE PER PDX TECHNICAL GUIDELINE SPECIFICATIONS AND STANDARD DETAILS.

(6) BOLLARD (BOLT-IN-PLACE): PROVIDE PER PDX TECHNICAL GUIDELINE SPECIFICATIONS AND STANDARD DETAILS.

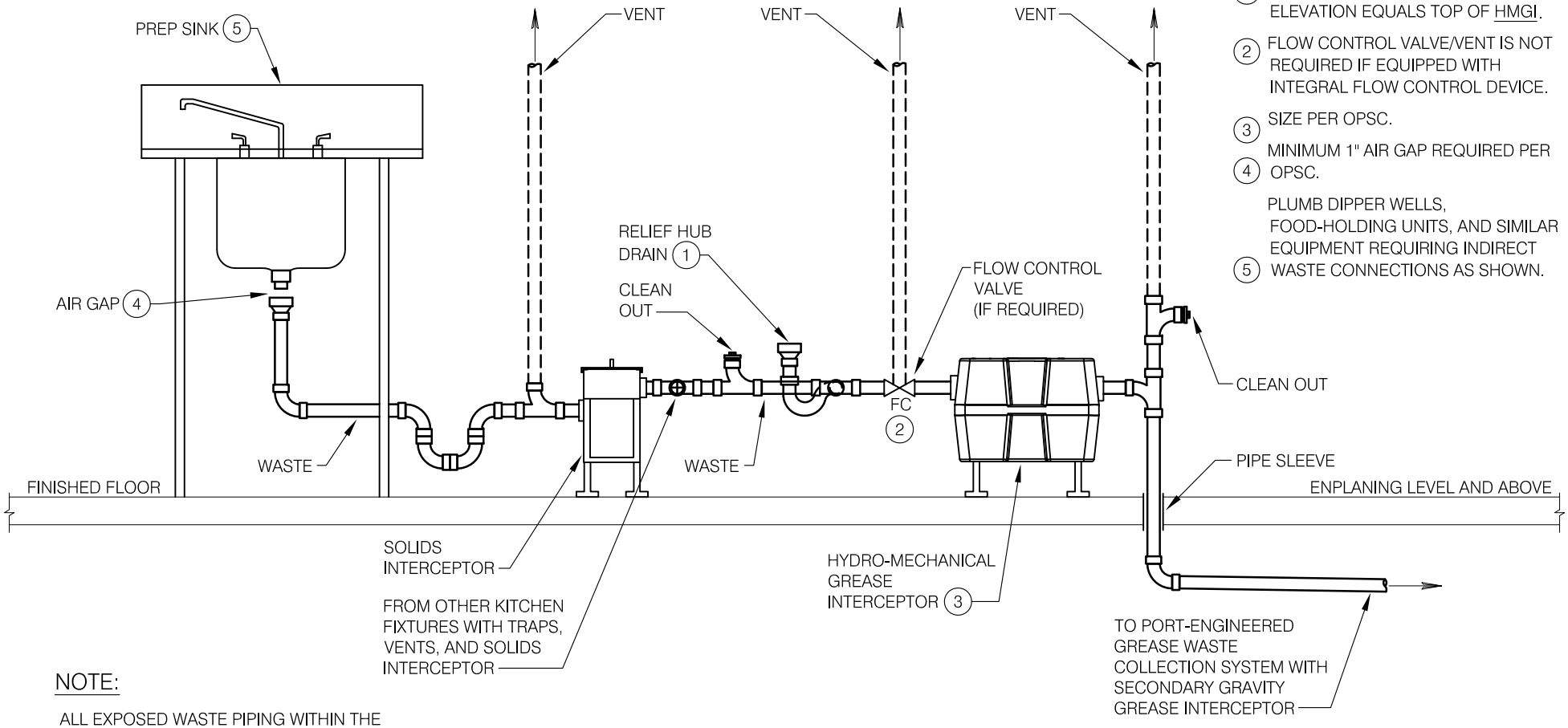
(7) PIPE INSULATION AND JACKETING: PROVIDE PER REQUIREMENTS OF SECTIONS 221319 AND 220719.

(8) PUMP CONTROL PANEL: PROVIDE WITH PUMP ON/OFF SWITCH, PUMP "POWER" INDICATION LIGHT, AND TANK REMOTE "CALL FOR PICKUP" AND "TANK FULL" INDICATION LIGHTS.

(9) TANK ELECTRICAL DISCONNECT: WALL MOUNT ADJACENT TO TANK IN WEATHERPROOF NEMA ENCLOSURE.

(10) PROVIDE ECCENTRIC REDUCERS AT REDUCTIONS IN PIPE SIZE.

2208 LIQUID GREASE COLLECTION SYSTEMS
SCALE: NTS



KEY NOTES:

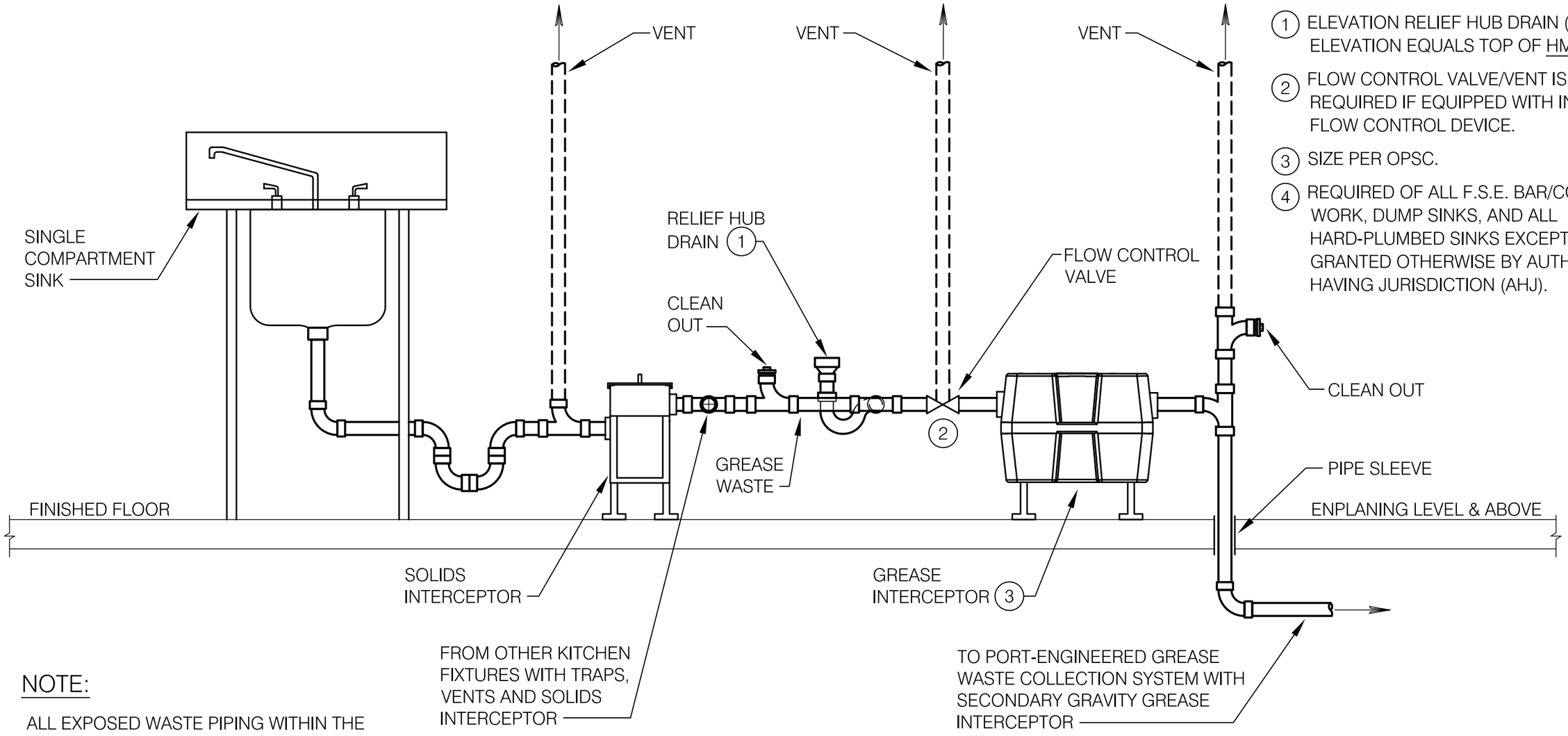
1. ELEVATION RELIEF HUB DRAIN (RHD). ELEVATION EQUALS TOP OF HMGI.
2. FLOW CONTROL VALVE/VENT IS NOT REQUIRED IF EQUIPPED WITH INTEGRAL FLOW CONTROL DEVICE.
3. SIZE PER OPSC.
4. MINIMUM 1" AIR GAP REQUIRED PER OPSC.
5. PLUMB DIPPER WELLS, FOOD-HOLDING UNITS, AND SIMILAR EQUIPMENT REQUIRING INDIRECT WASTE CONNECTIONS AS SHOWN.

NOTE:

ALL EXPOSED WASTE PIPING WITHIN THE KITCHEN TO BE COPPER DWV.

2211 SINK - FOOD PREP OR INDIRECTLY DRAINED EQUIPMENT

SCALE: NTS



KEY NOTES:

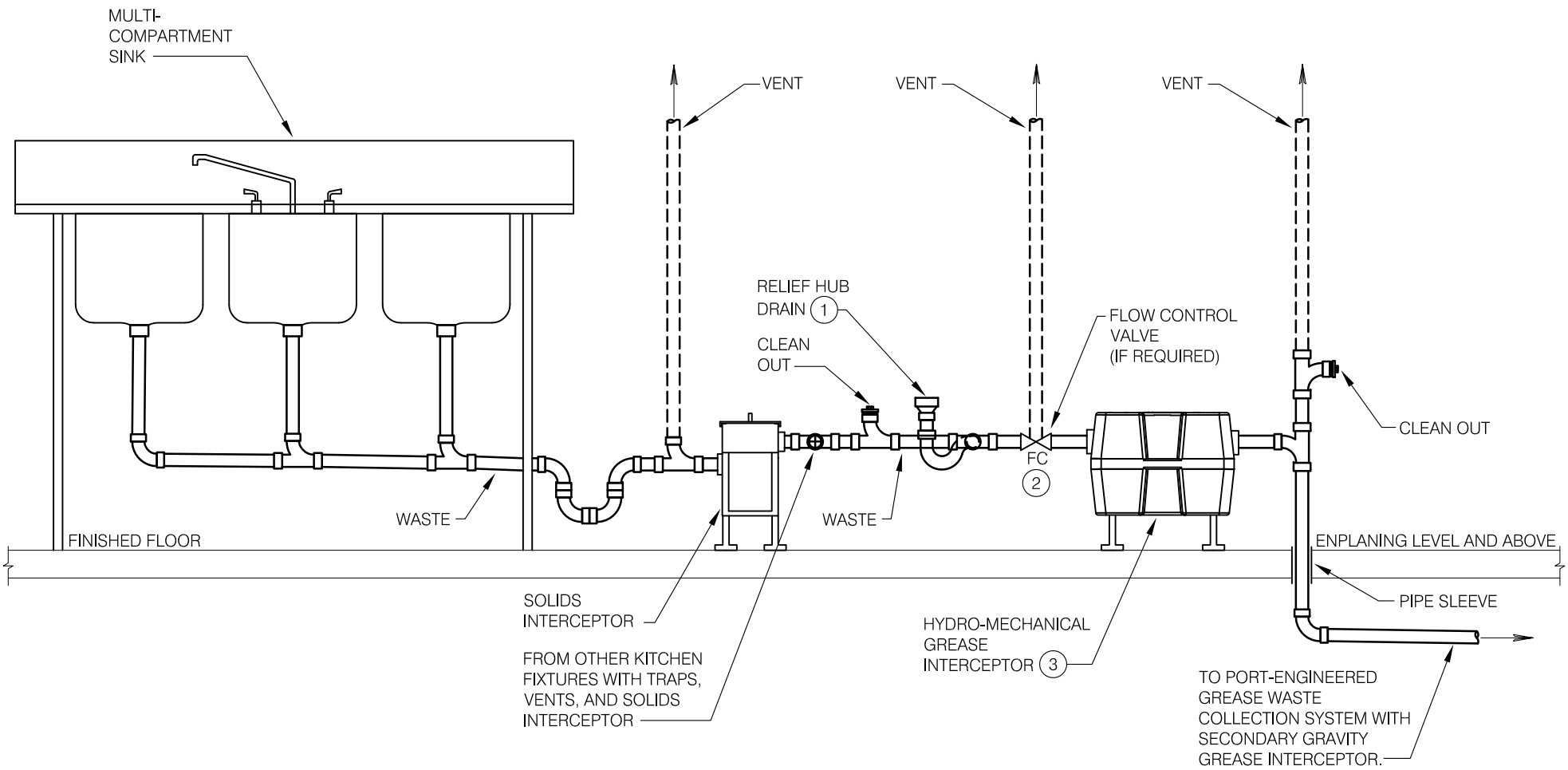
1. ELEVATION RELIEF HUB DRAIN (RHD). ELEVATION EQUALS TOP OF HMGI
2. FLOW CONTROL VALVE/VENT IS NOT REQUIRED IF EQUIPPED WITH INTEGRAL FLOW CONTROL DEVICE.
3. SIZE PER OPSC.
4. REQUIRED OF ALL F.S.E. BAR/COUNTER WORK, DUMP SINKS, AND ALL HARD-PLUMBED SINKS EXCEPT AS GRANTED OTHERWISE BY AUTHORITY HAVING JURISDICTION (AHJ).

NOTE:

ALL EXPOSED WASTE PIPING WITHIN THE KITCHEN TO BE COPPER DWV.

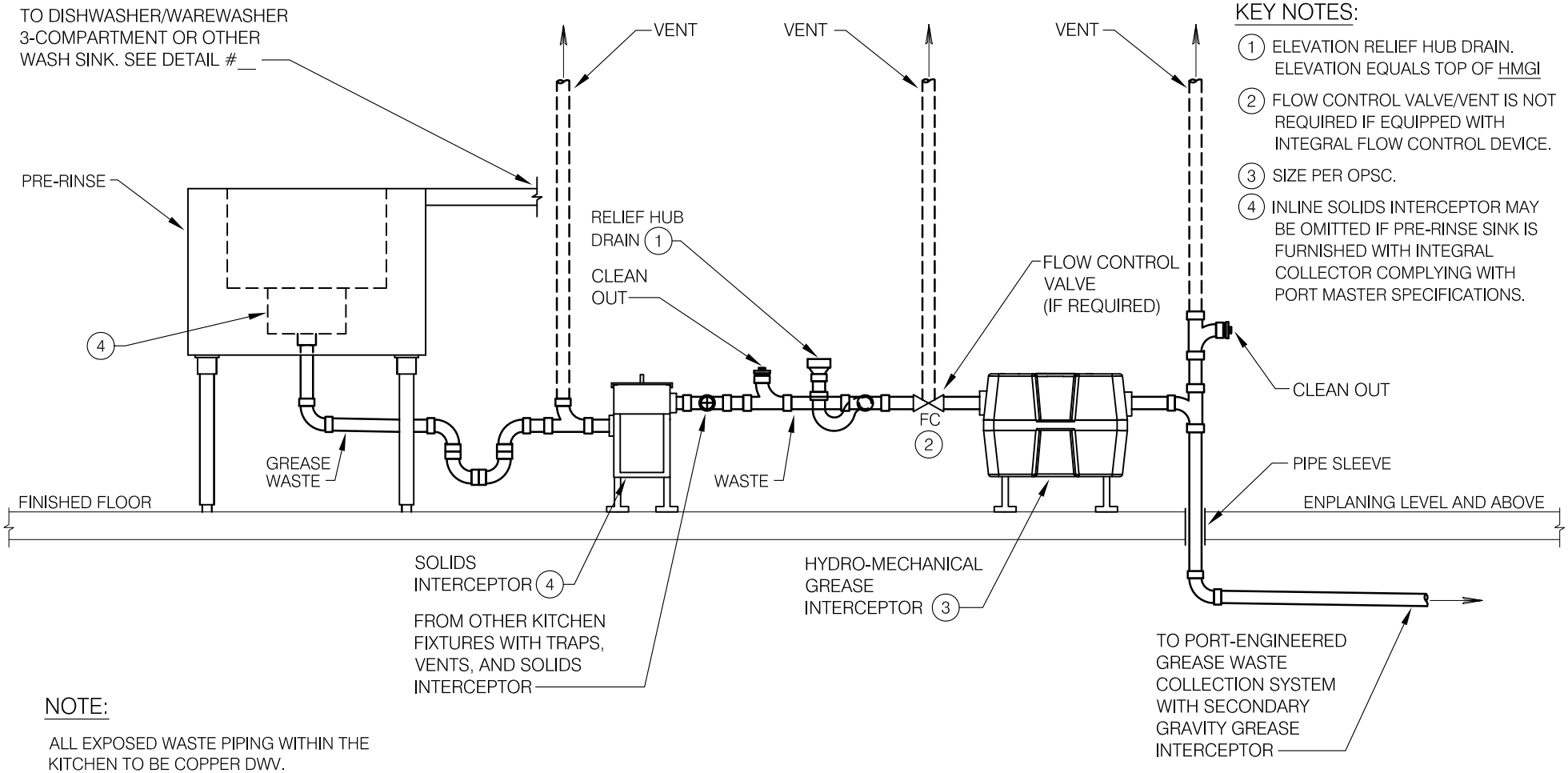
2212 SINK - HAND BAR COUNTER WORK DUMP (4)

SCALE: NTS



2213 SINK - MULTI COMPARTMENT 4

SCALE: NTS



KEY NOTES:

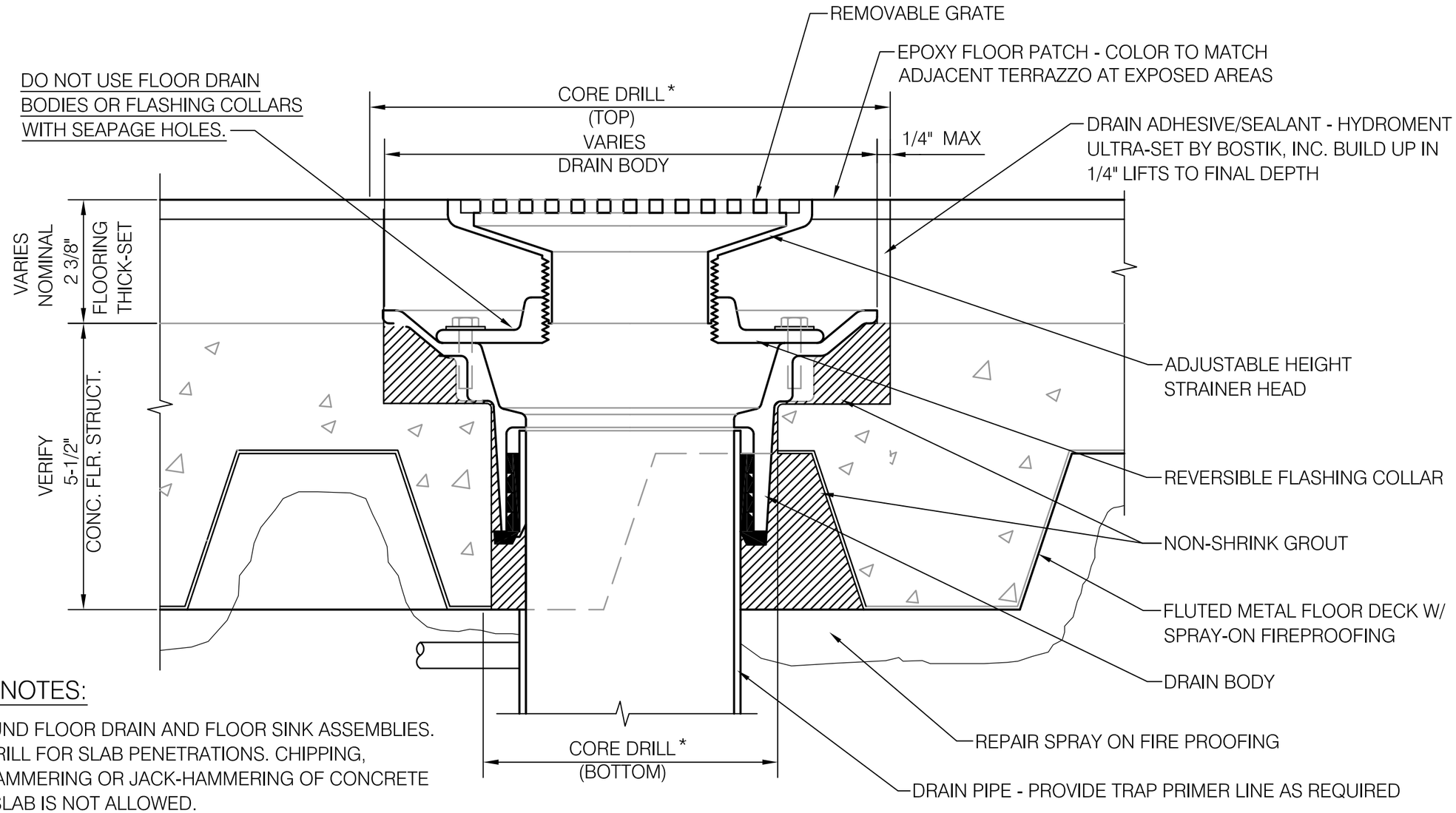
1. ELEVATION RELIEF HUB DRAIN. ELEVATION EQUALS TOP OF HMGI
2. FLOW CONTROL VALVE/VENT IS NOT REQUIRED IF EQUIPPED WITH INTEGRAL FLOW CONTROL DEVICE.
3. SIZE PER OPSC.
4. INLINE SOLIDS INTERCEPTOR MAY BE OMITTED IF PRE-RINSE SINK IS FURNISHED WITH INTEGRAL COLLECTOR COMPLYING WITH PORT MASTER SPECIFICATIONS.

NOTE:

ALL EXPOSED WASTE PIPING WITHIN THE KITCHEN TO BE COPPER DWV.

2214 SINK - PRE RINSE

SCALE: NTS



GENERAL NOTES:

A. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.

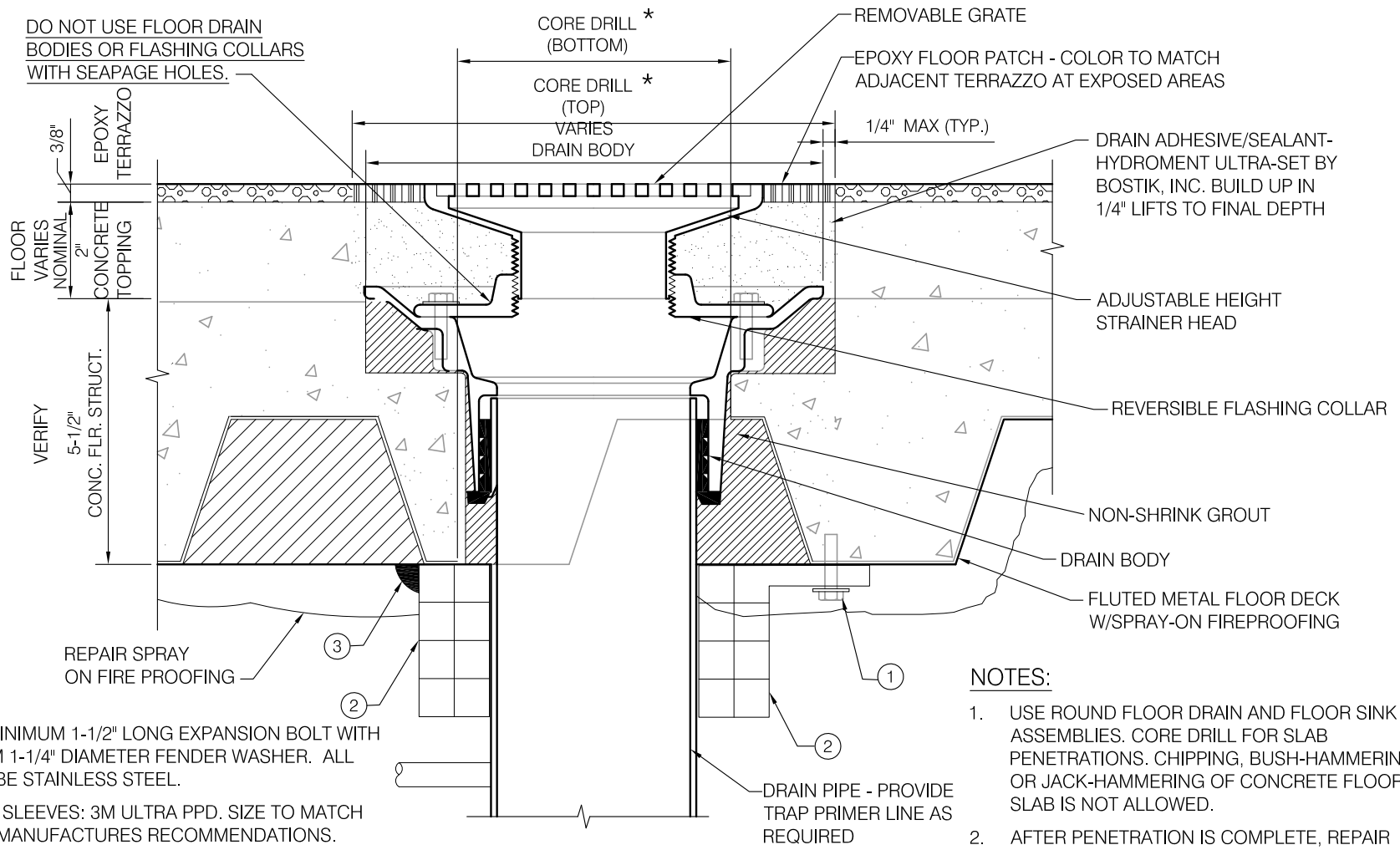
B. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.

C. FLOOR SINKS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.

* CORE DRILL TWO HOLES TO PROVIDE "SEAT" FOR FLOOR DRAIN BODY

2221 FLOOR DRAIN - COMPOSITE FLOOR - METALLIC PIPE

SCALE: NTS



KEY NOTES:

1. 1/4" DIAMETER BY MINIMUM 1-1/2" LONG EXPANSION BOLT WITH NUTS AND MINIMUM 1-1/4" DIAMETER FENDER WASHER. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. INTUMESCENT PIPE SLEEVES: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS. INSTALL BOLTS AT ALL BOLT CONNECTION POINTS. SEE SECTION 078400, FIRE STOPPING.
3. FILL ANY VOIDS BETWEEN DECK AND INTUMESCENT SLEEVE PROVIDE MINIMUM ¼" BEAD AROUND THE INTUMESCENT SLEEVE. SEE SECTION 078400 FIRE STOPPING.

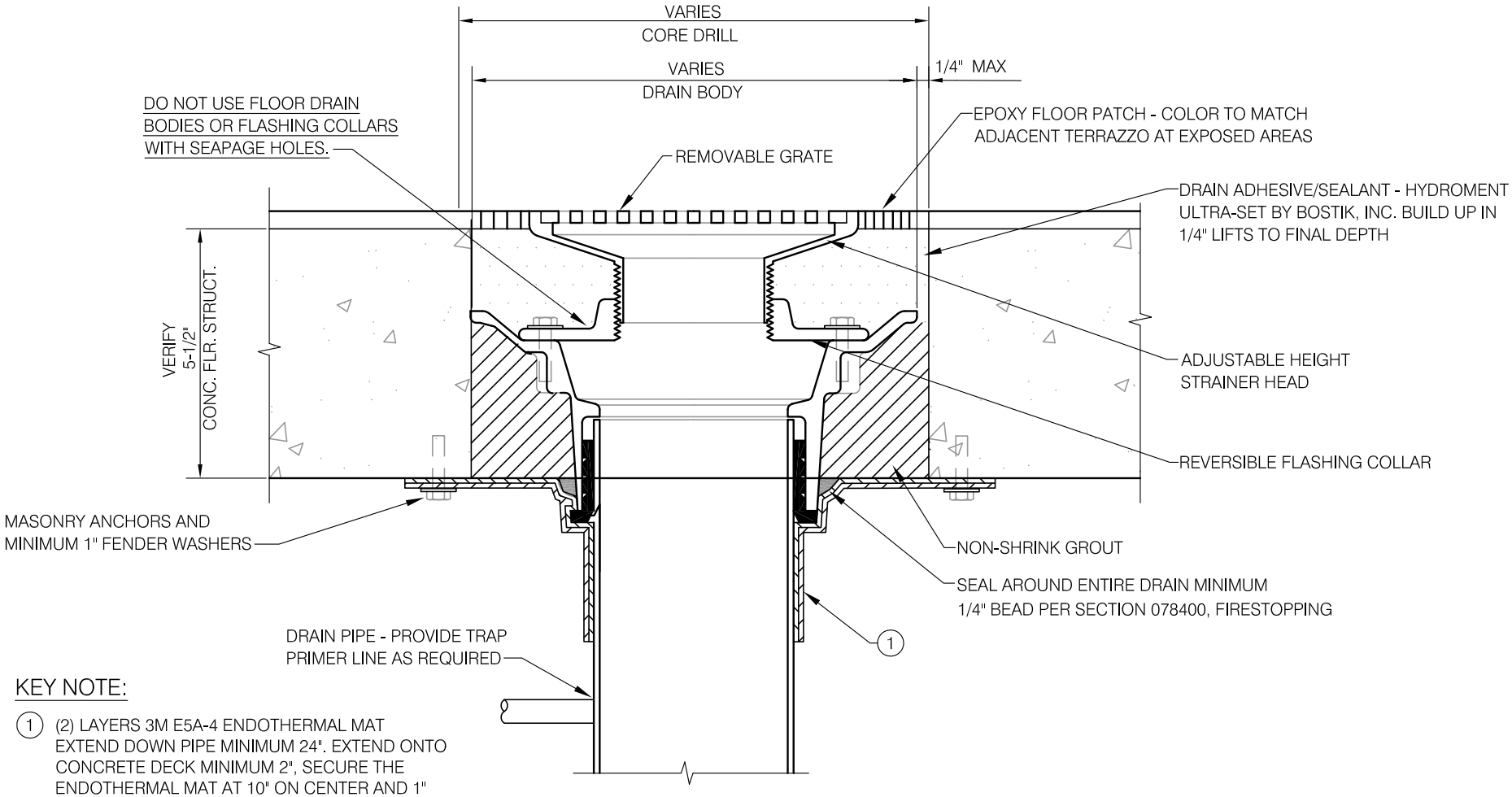
* CORE DRILL TWO HOLES TO PROVIDE "SEAT" FOR THE FLOOR DRAIN BODY

NOTES:

1. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.
3. FLOOR DRAINS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.
4. FOR USE WITH PVDF PIPE ONLY.

2222 FLOOR DRAIN - COMPOSITE FLOOR - PVDF PIPE

SCALE: NTS

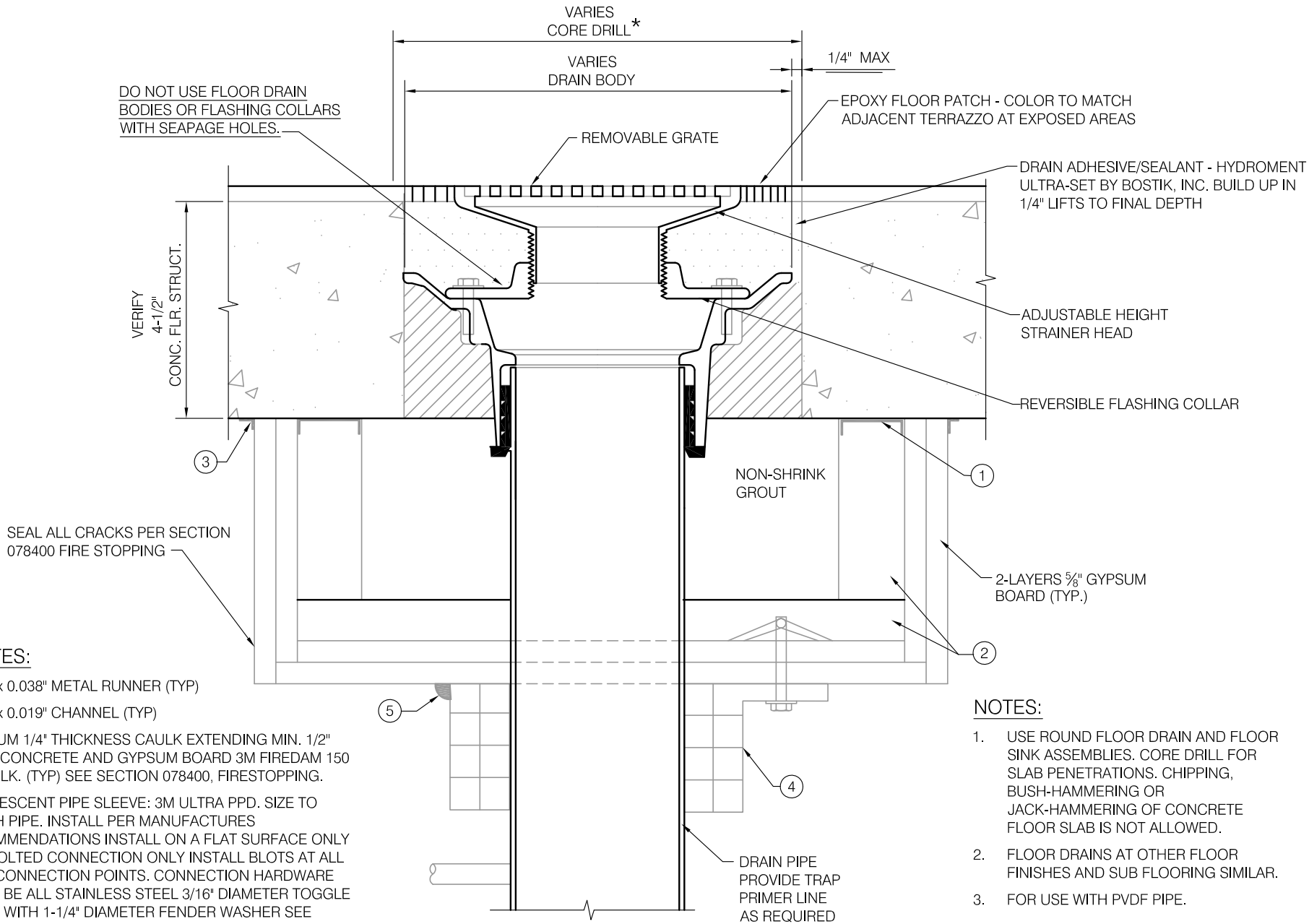


KEY NOTE:

(1) (2) LAYERS 3M E5A-4 ENDOTHERMAL MAT EXTEND DOWN PIPE MINIMUM 24". EXTEND ONTO CONCRETE DECK MINIMUM 2", SECURE THE ENDOTHERMAL MAT AT 10" ON CENTER AND 1" FROM EACH SEAM WITH STAINLESS STEEL BANDING. ALL SEAMS, BOTH LONGITUDINALLY AND CIRCUMFERENTIALLY, ARE TO BE TAPED WITH 3M T-49 TAPE.

2223 FLOOR DRAIN - CONCRETE FLOOR - METALLIC PIPE

SCALE: NTS



KEY NOTES:

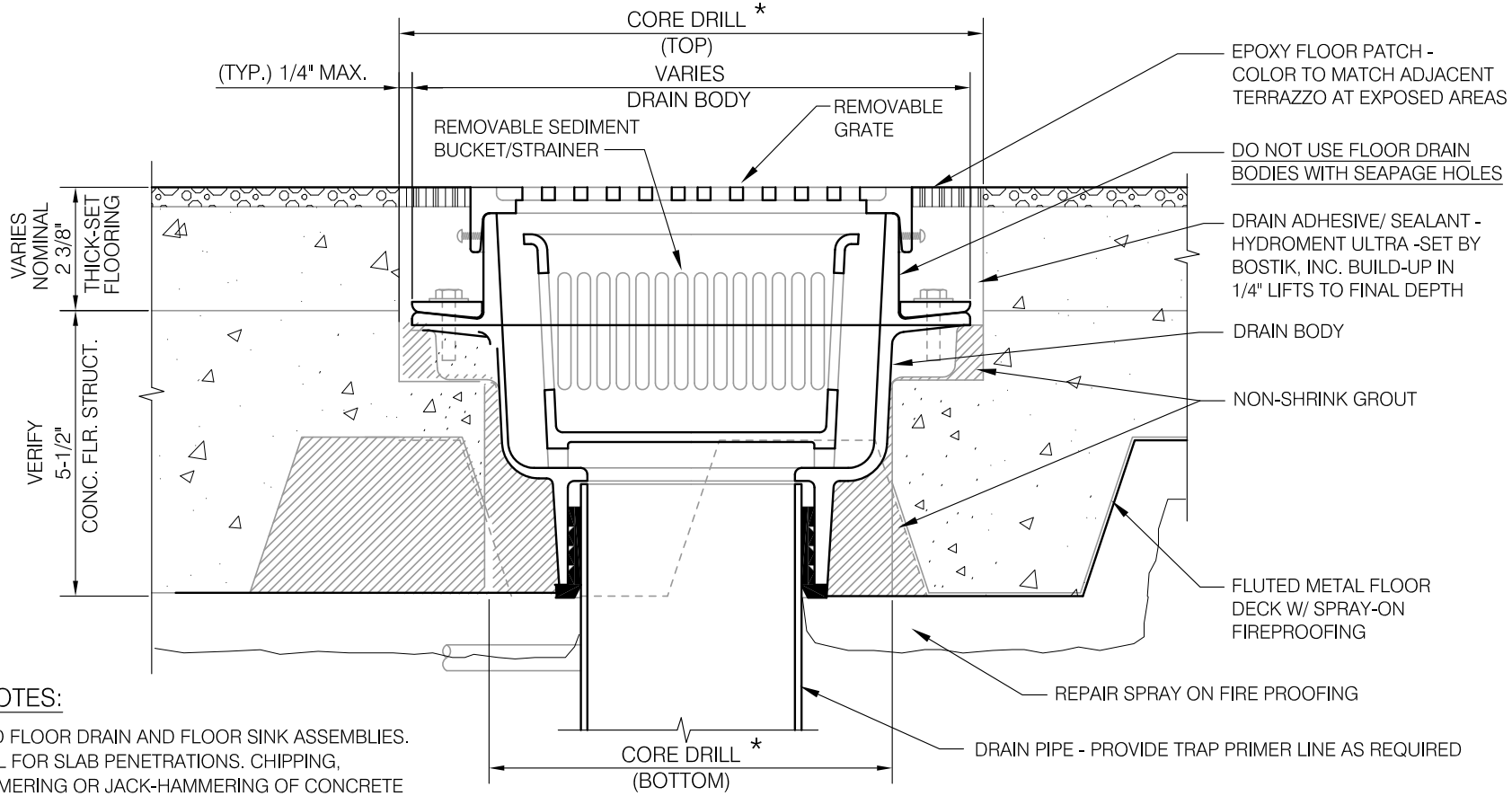
1. 3-5/8" x 0.038" METAL RUNNER (TYP)
2. 3-5/8" x 0.019" CHANNEL (TYP)
3. MINIMUM 1/4" THICKNESS CAULK EXTENDING MIN. 1/2" ONTO CONCRETE AND GYPSUM BOARD 3M FIREDAM 150 + CAULK. (TYP) SEE SECTION 078400, FIRESTOPPING.
4. INTUMESCENT PIPE SLEEVE: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS INSTALL ON A FLAT SURFACE ONLY USE BOLTED CONNECTION ONLY INSTALL BLOTS AT ALL BOLT CONNECTION POINTS. CONNECTION HARDWARE SHALL BE ALL STAINLESS STEEL 3/16" DIAMETER TOGGLE BOLTS WITH 1-1/4" DIAMETER FENDER WASHER SEE SECTION 078400, FIRESTOPPING.
5. PROVIDE MINIMUM 1/2" BEAD CAULK AT INTERFACE WITH INUMESCENT SLEEVE PER SECTION 078400 FIRESTOPPING.

NOTES:

1. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FLOOR DRAINS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.
3. FOR USE WITH PVDF PIPE.

2224 FLOOR DRAIN - CONCRETE FLOOR - PVDF PIPE

SCALE: NTS



GENERAL NOTES:

A. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.

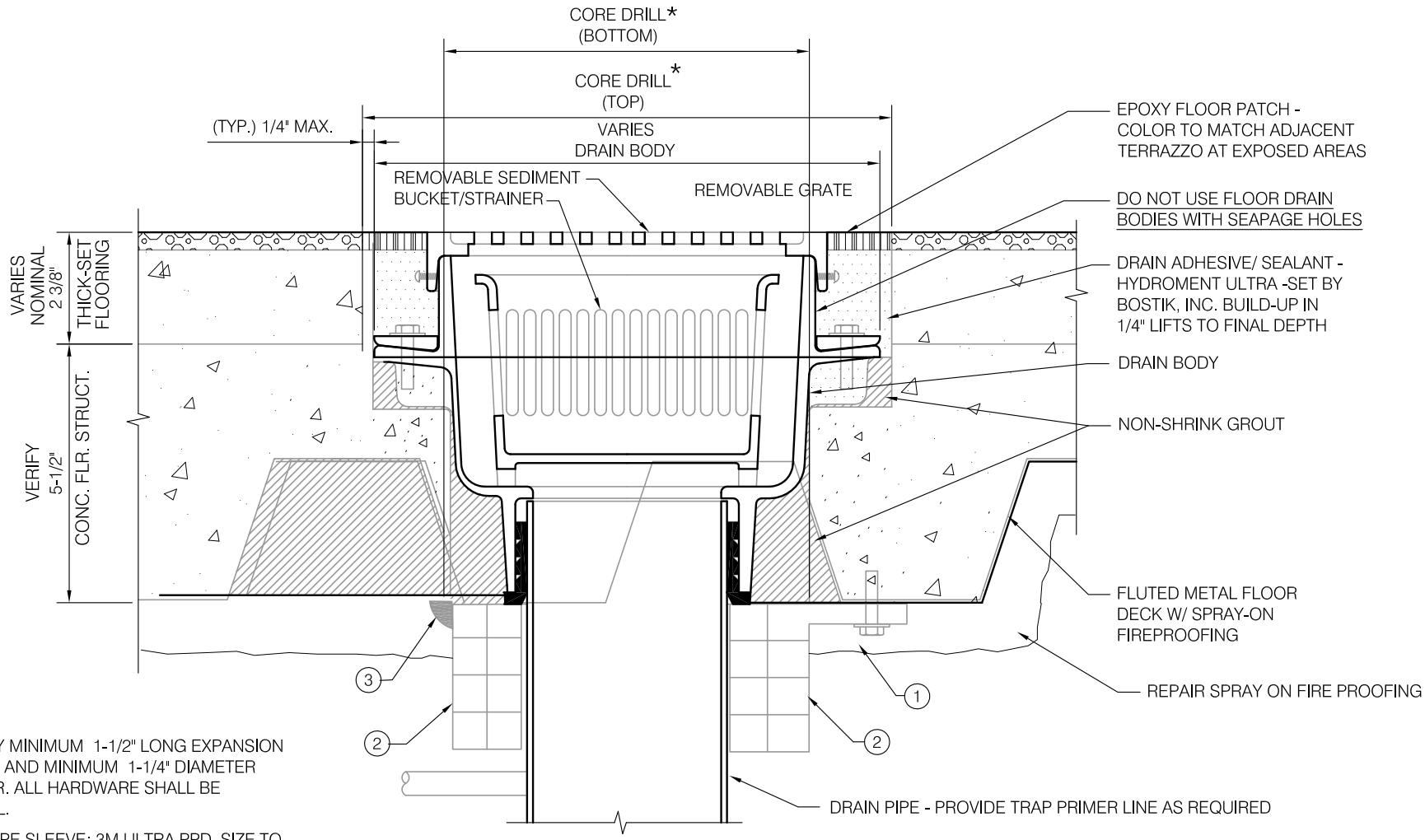
B. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.

C. FLOOR SINKS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.

*CORE DRILL TWO HOLES TO PROVIDE "SEAT" FOR FLOOR SINK BODY

2231 FLOOR SINK - COMPOSITE FLOOR - METALLIC PIPE

SCALE: NTS



KEY NOTES:

1. 1/4" DIAMETER BY MINIMUM 1-1/2" LONG EXPANSION BOLT WITH NUTS AND MINIMUM 1-1/4" DIAMETER FENDER WASHER. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. INTUMESCENT PIPE SLEEVE: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS INSTALL ON A FLAT SURFACE ONLY. USE BOLTED CONNECTION ONLY, INSTALL BOLTS AT ALL BOLT CONNECTION POINTS. SEE SECTION 078400, FIRE STOPPING.
3. FILL ANY VOIDS BETWEEN DECK AND INTUMESCENT SLEEVE PROVIDE MINIMUM 1/4" BEAD AROUND THE INTUMESCENT SLEEVE

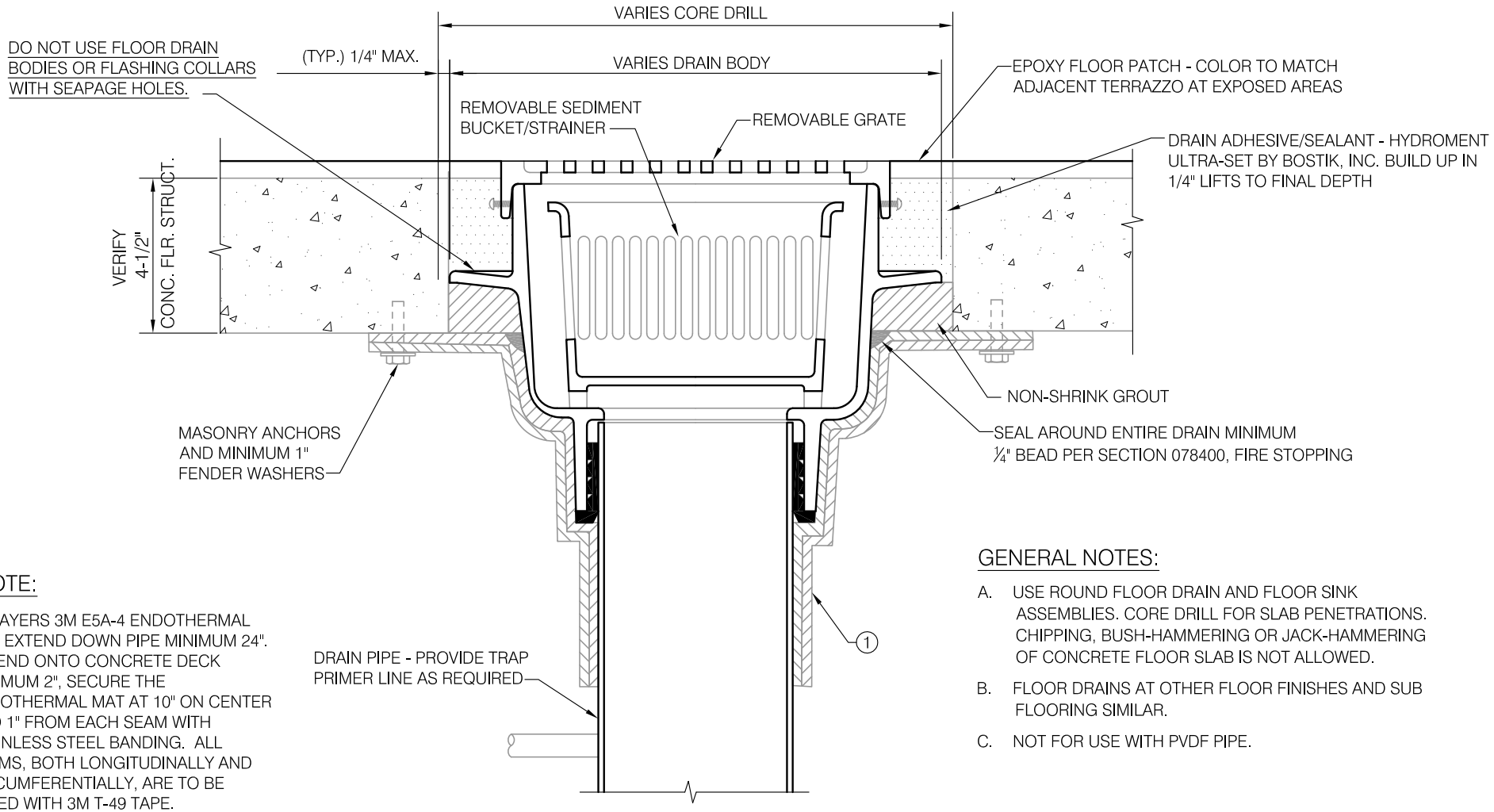
* CORE DRILL TWO HOLES TO PROVIDE "SEAT" FOR FLOOR SINK BODY

NOTES:

1. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.
3. FLOOR SINKS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR
4. FOR USE WITH PVDF PIPE ONLY.

2222 FLOOR SINK - COMPOSITE FLOOR - PVDF PIPE

SCALE: NTS



KEY NOTE:

(1) (2) LAYERS 3M E5A-4 ENDOTHERMAL MAT EXTEND DOWN PIPE MINIMUM 24". EXTEND ONTO CONCRETE DECK MINIMUM 2", SECURE THE ENDOTHERMAL MAT AT 10" ON CENTER AND 1" FROM EACH SEAM WITH STAINLESS STEEL BANDING. ALL SEAMS, BOTH LONGITUDINALLY AND CIRCUMFERENTIALLY, ARE TO BE TAPED WITH 3M T-49 TAPE.

GENERAL NOTES:

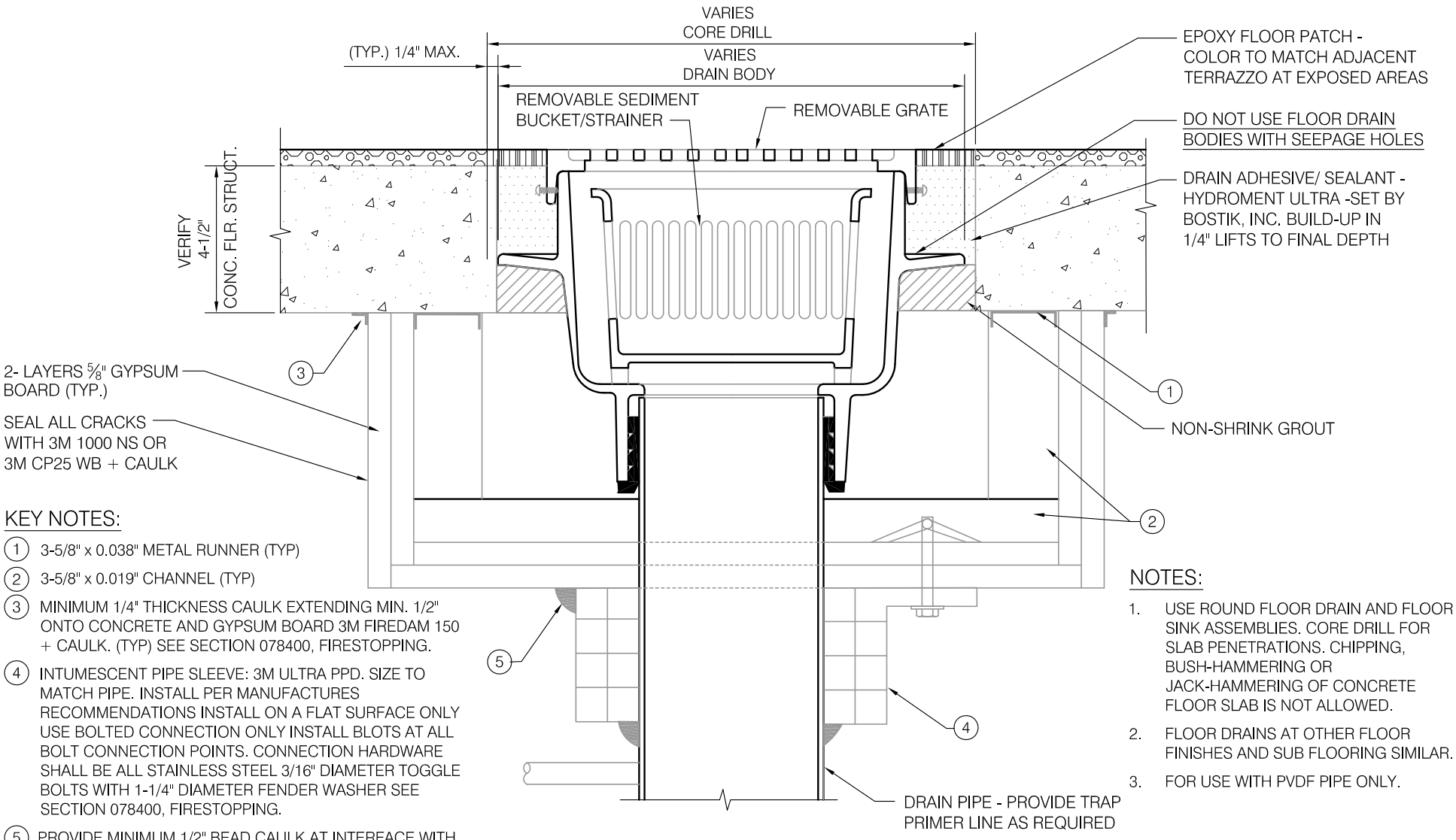
A. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.

B. FLOOR DRAINS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.

C. NOT FOR USE WITH PVDF PIPE.

2233 FLOOR SINK - CONCRETE FLOOR - METALLIC PIPE

SCALE: NTS



KEY NOTES:

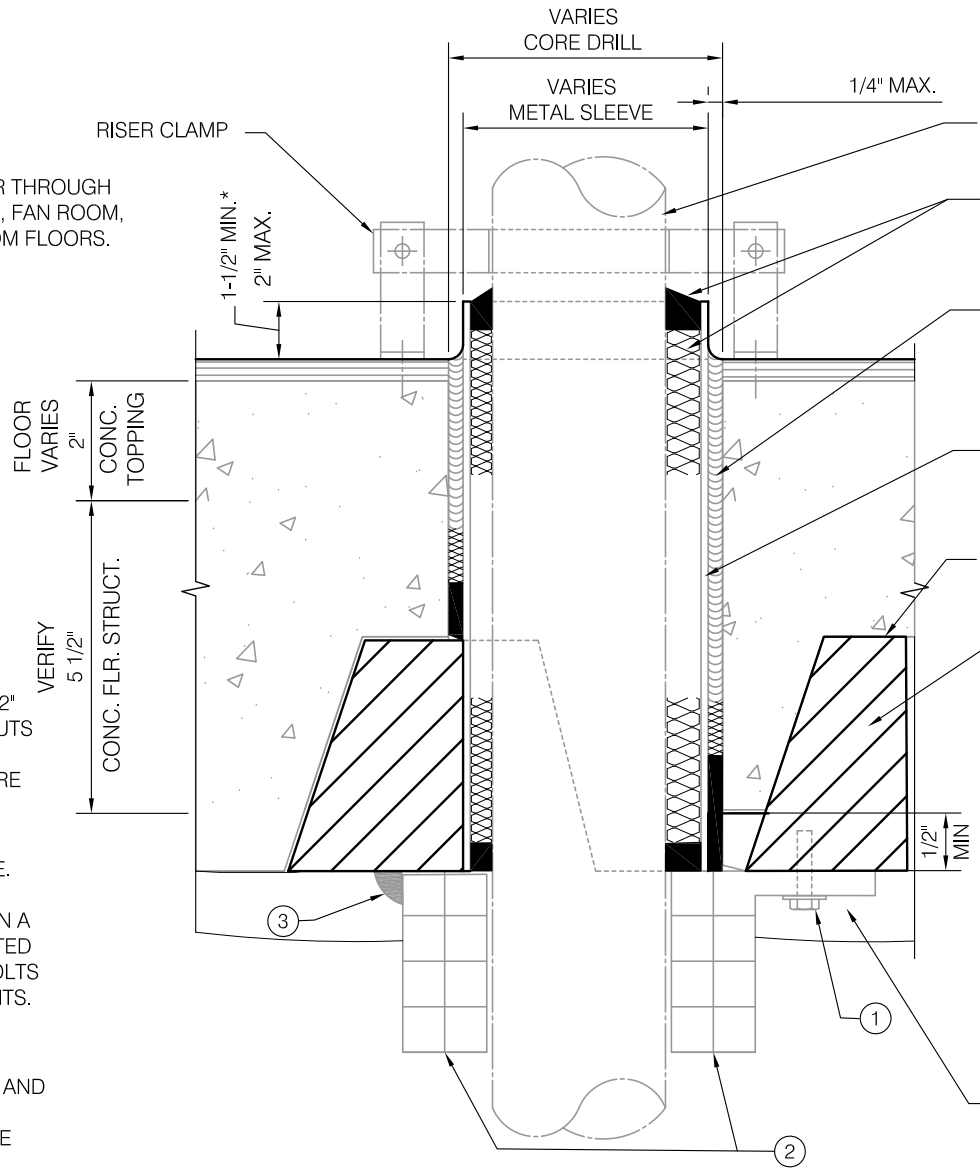
1. 3-5/8" x 0.038" METAL RUNNER (TYP)
2. 3-5/8" x 0.019" CHANNEL (TYP)
3. MINIMUM 1/4" THICKNESS CAULK EXTENDING MIN. 1/2" ONTO CONCRETE AND GYPSUM BOARD 3M FIREDAM 150 + CAULK. (TYP) SEE SECTION 078400, FIRESTOPPING.
4. INTUMESCENT PIPE SLEEVE: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS INSTALL ON A FLAT SURFACE ONLY USE BOLTED CONNECTION ONLY INSTALL BLOTS AT ALL BOLT CONNECTION POINTS. CONNECTION HARDWARE SHALL BE ALL STAINLESS STEEL 3/16" DIAMETER TOGGLE BOLTS WITH 1-1/4" DIAMETER FENDER WASHER SEE SECTION 078400, FIRESTOPPING.
5. PROVIDE MINIMUM 1/2" BEAD CAULK AT INTERFACE WITH INUMESCENT SLEEVE 3M CP25WB + CAULK OR 3M 1000 NS, SEE SECTION 078400, FIRESTOPPING.

NOTES:

1. USE ROUND FLOOR DRAIN AND FLOOR SINK ASSEMBLIES. CORE DRILL FOR SLAB PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FLOOR DRAINS AT OTHER FLOOR FINISHES AND SUB FLOORING SIMILAR.
3. FOR USE WITH PVDF PIPE ONLY.

2234 FLOOR SINK - CONCRETE FLOOR - PVDF PIPE

SCALE: NTS



* EXTEND 2" ABOVE FINISHED FLOOR THROUGH FOOD SERVICE, JANITORIAL ROOM, FAN ROOM, AND MECHINCAL EQUIPMENT ROOM FLOORS.

KEY NOTES:

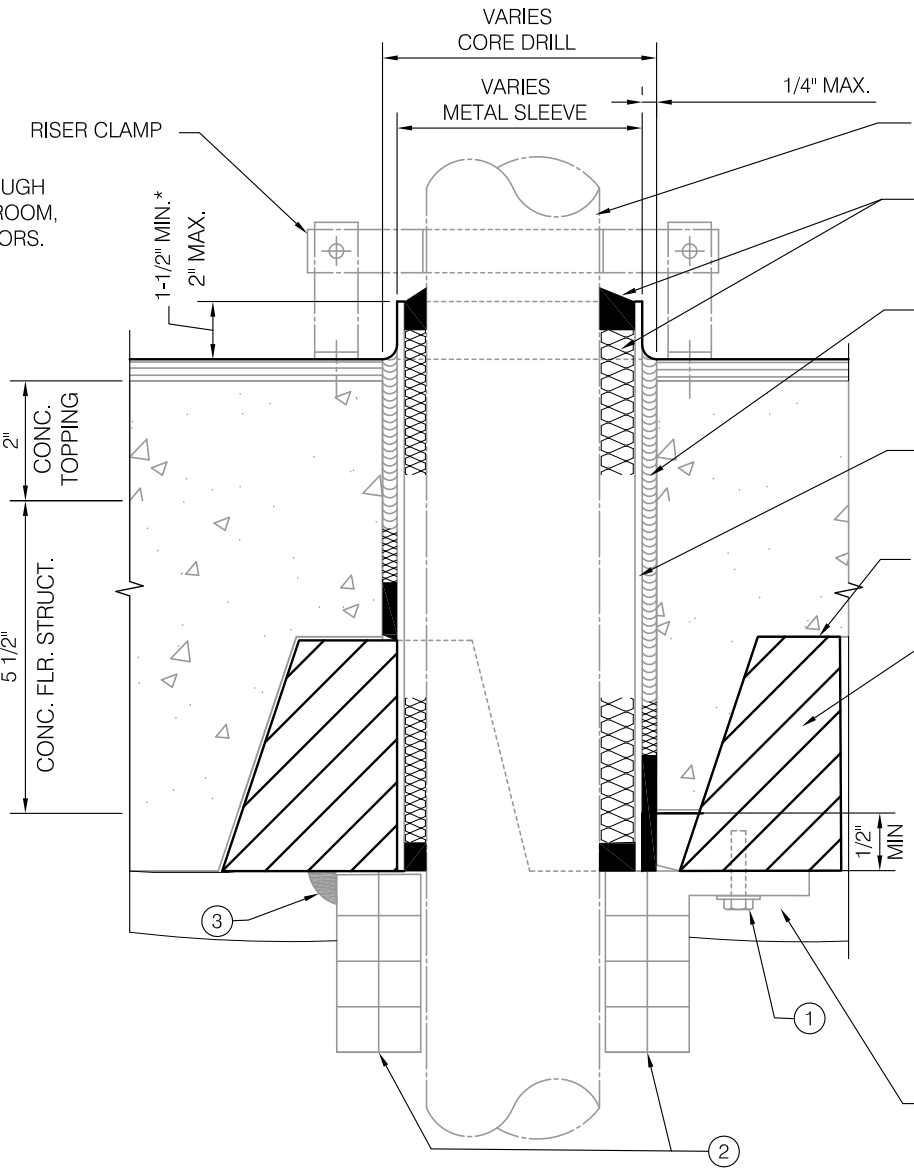
1. 1/4" DIAMETER BY MINIMUM 1-1/2" LONG EXPANSION BOLT WITH NUTS AND MINIMUM 1-1/4" DIAMETER FENDER WASHER. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. INTUMESCENT PIPE SLEEVE: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS INSTALL ON A FLAT SURFACE ONLY. USE BOLTED CONNECTION ONLY, INSTALL BOLTS AT ALL BOLT CONNECTION POINTS. SEE SECTION 078400, FIRE STOPPING.
3. FILL ANY VOIDS BETWEEN DECK AND INTUMESCENT SLEEVE PROVIDE MINIMUM 1/4" BEAD AROUND THE INTUMESCENT SLEEVE

NOTES:

1. CORE DRILL FOR ROUND PENETRATIONS AND SAW-CUT FOR SQUARE OR RECTANGULAR PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FOR USE WITH PVDF PIPE ONLY.
3. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.

2241 FLOOR PENETRATION - COMPOSITE FLOOR - METALLIC PIPE

SCALE: NTS



* EXTEND 2" ABOVE FINISHED FLOOR THROUGH FOOD SERVICE, JANITORIAL ROOM, FAN ROOM, AND MECHINCAL EQUIPMENT ROOM FLOORS.

KEY NOTES:

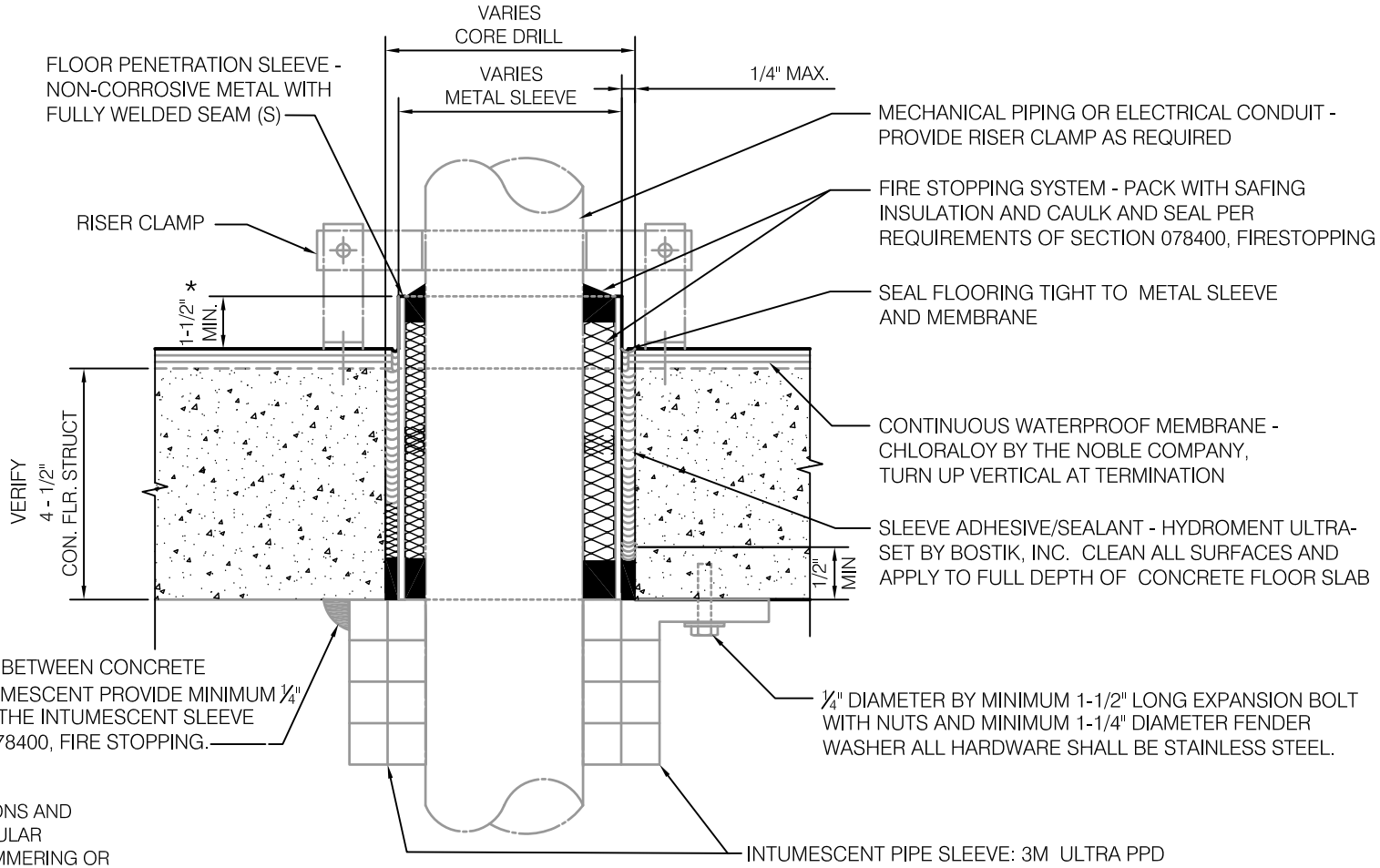
1. 1/4" DIAMETER BY MINIMUM 1-1/2" LONG EXPANSION BOLT WITH NUTS AND MINIMUM 1-1/4" DIAMETER FENDER WASHER. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. INTUMESCENT PIPE SLEEVE: 3M ULTRA PPD. SIZE TO MATCH PIPE. INSTALL PER MANUFACTURES RECOMMENDATIONS INSTALL ON A FLAT SURFACE ONLY. USE BOLTED CONNECTION ONLY, INSTALL BOLTS AT ALL BOLT CONNECTION POINTS. SEE SECTION 078400, FIRE STOPPING.
3. FILL ANY VOIDS BETWEEN DECK AND INTUMESCENT SLEEVE PROVIDE MINIMUM 1/4" BEAD AROUND THE INTUMESCENT SLEEVE

NOTES:

1. CORE DRILL FOR ROUND PENETRATIONS AND SAW-CUT FOR SQUARE OR RECTANGULAR PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FOR USE WITH PVDF PIPE ONLY.
3. AFTER PENETRATION IS COMPLETE, REPAIR FIRE PROOFING AT UNDERSIDE OF METAL FLOOR DECK.

2242 FLOOR PENETRATION - COMPOSITE FLOOR - PVDF PIPE

SCALE: NTS



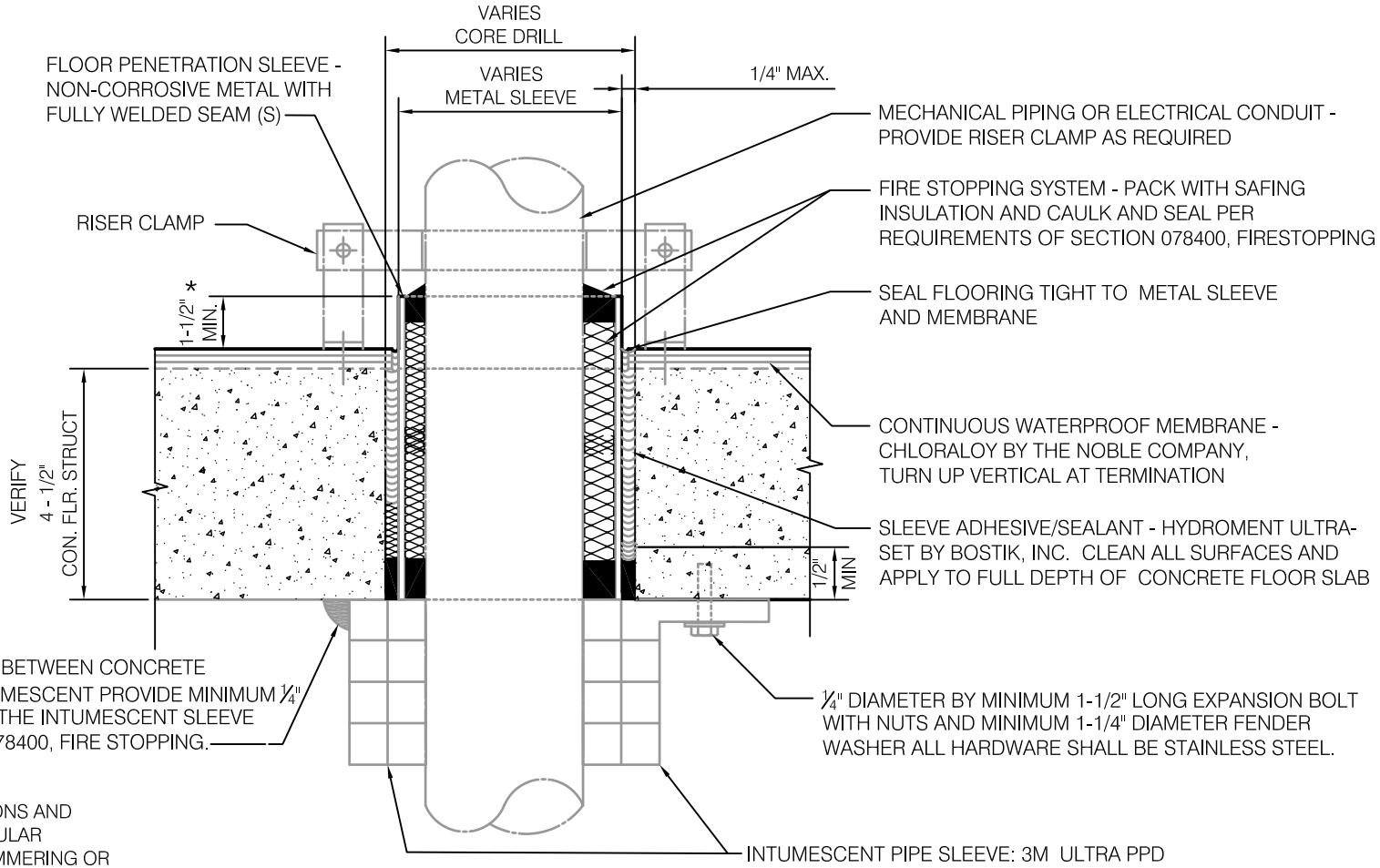
* EXTEND 2" ABOVE FINISHED FLOOR THROUGH FOOD SERVICE, JANITORIAL ROOM, FAN ROOM, AND MECH. ROOM FLOORS

NOTES:

1. CORE DRILL FOR ROUND PENETRATIONS AND SAW-CUT FOR SQUARE OR RECTANGULAR PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FOR USE WITH PVDF PIPE ONLY.
3. AT TERRAZZO FLOORING OMIT WATER PROOF MEMBRANE AND EXTEND SLEEVE ADHESIVE/SEALANT TO TOP OF TERRAZZO.

2243 FLOOR PENETRATION - CONCRETE FLOOR - METALLIC PIPE

SCALE: NTS



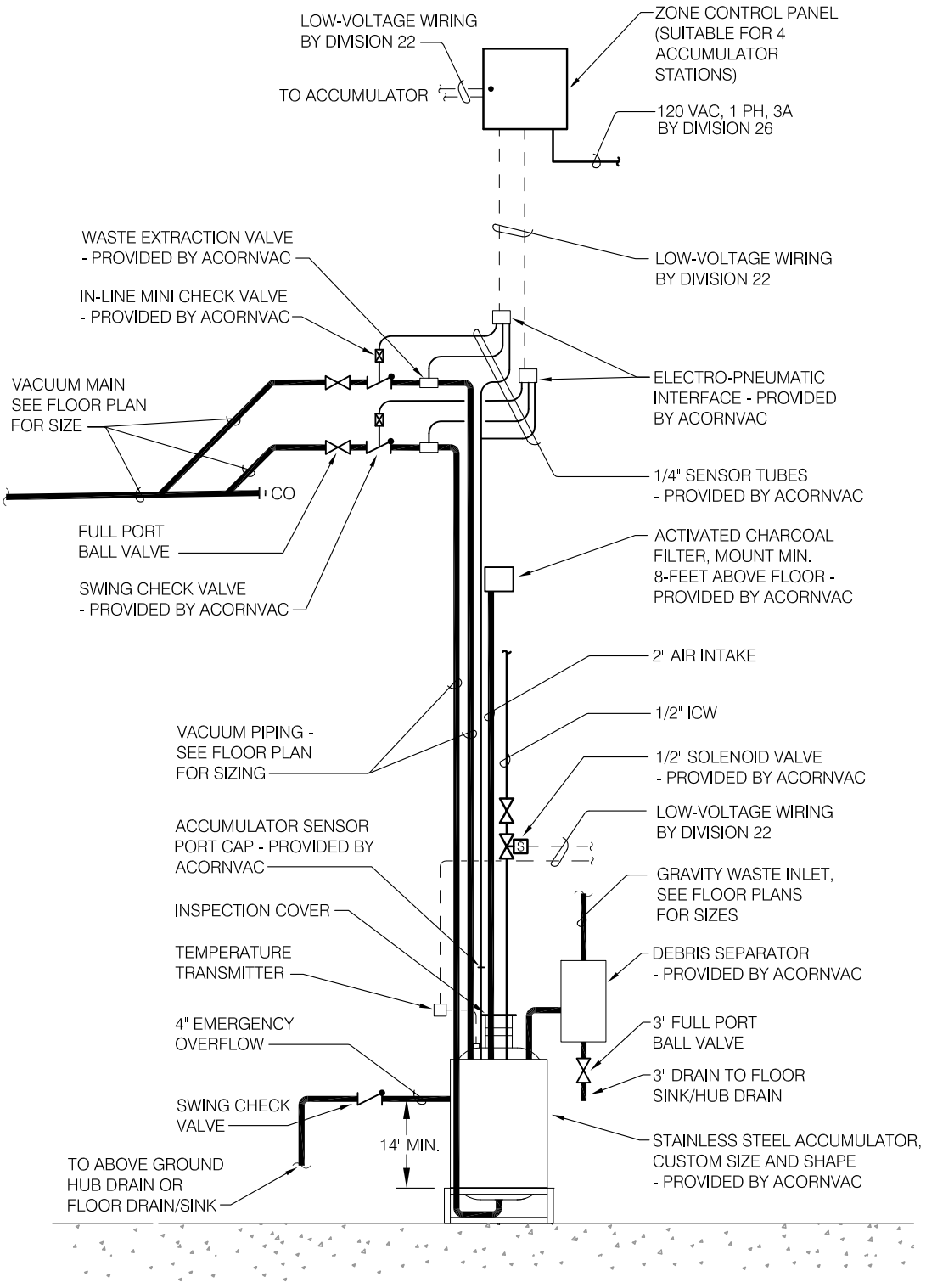
* EXTEND 2" ABOVE FINISHED FLOOR THROUGH FOOD SERVICE, JANITORIAL ROOM, FAN ROOM, AND MECH. ROOM FLOORS

NOTES:

1. CORE DRILL FOR ROUND PENETRATIONS AND SAW-CUT FOR SQUARE OR RECTANGULAR PENETRATIONS. CHIPPING, BUSH-HAMMERING OR JACK-HAMMERING OF CONCRETE FLOOR SLAB IS NOT ALLOWED.
2. FOR USE WITH PVDF PIPE ONLY.
3. AT TERRAZZO FLOORING OMIT WATER PROOF MEMBRANE AND EXTEND SLEEVE ADHESIVE/SEALANT TO TOP OF TERRAZZO.

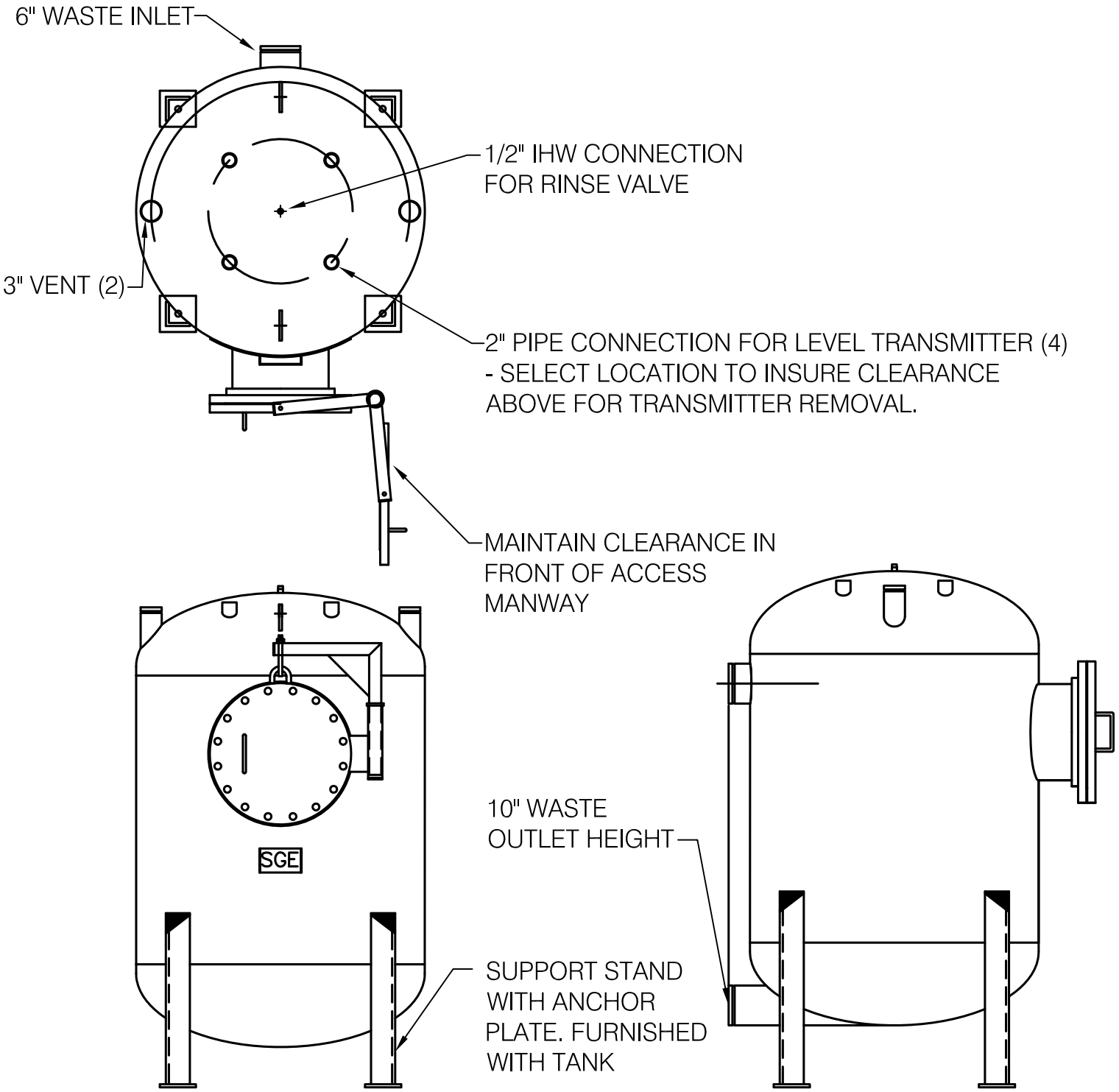
2244 FLOOR PENETRATION - CONCRETE FLOOR - PVDF PIPE

SCALE: NTS



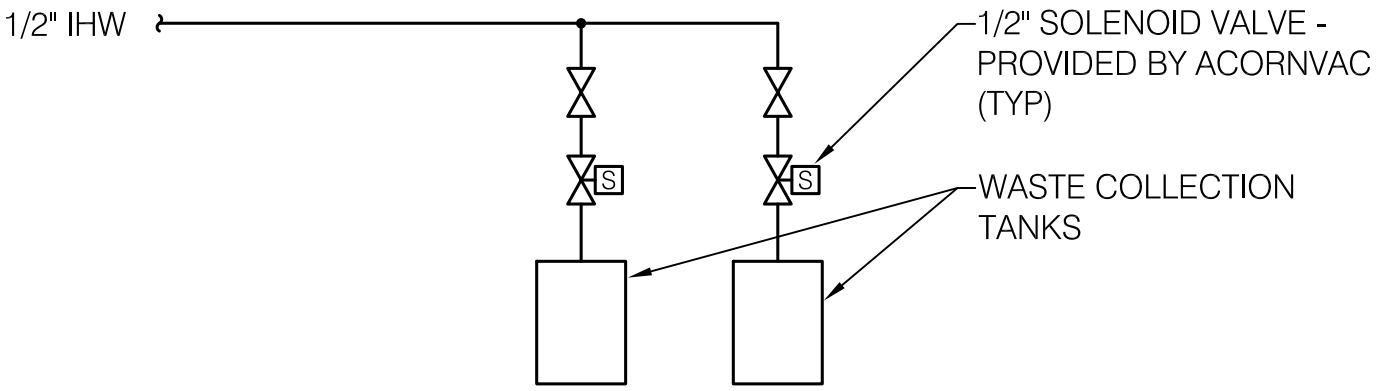
2251 VACUUM WASTE ACCUMULATOR CONNECTION DIAGRAM

SCALE: NTS



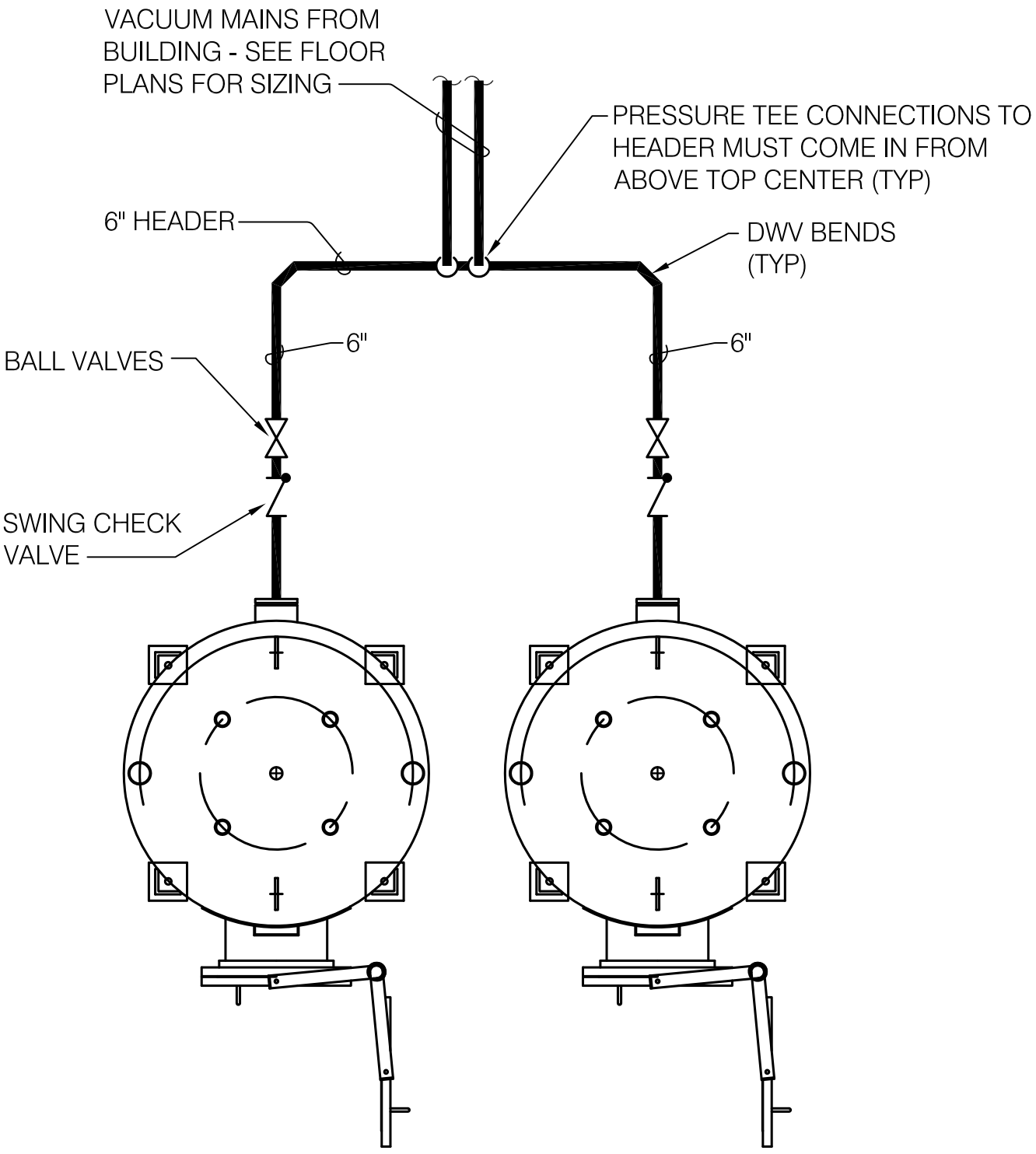
2252 VACUUM WASTE COLLECTION TANK ASSEMBLY

SCALE: NTS



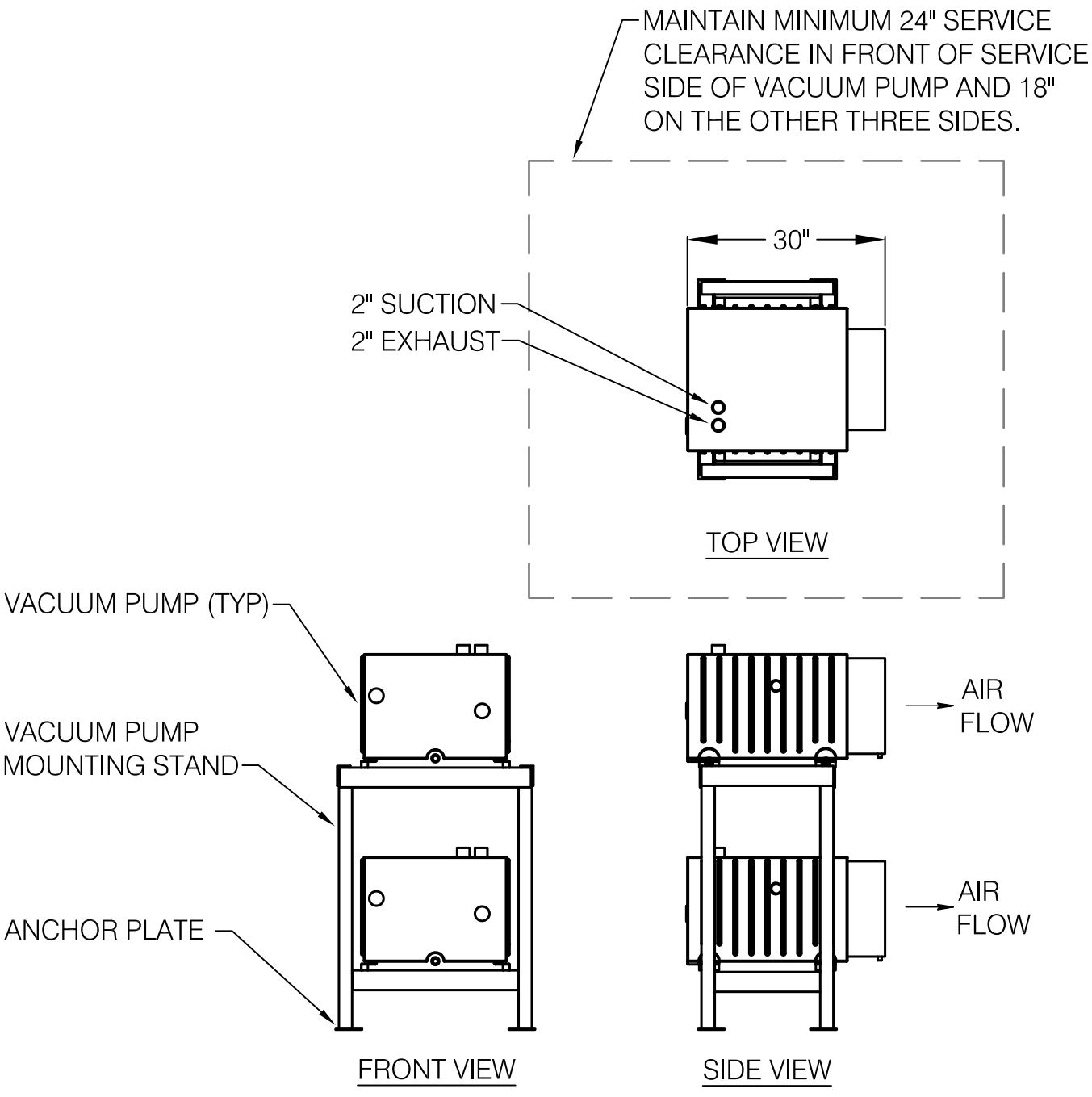
2253 VACUUM WASTE COLLECTION TANK HW CONNECTION DIAGRAM

SCALE: NTS



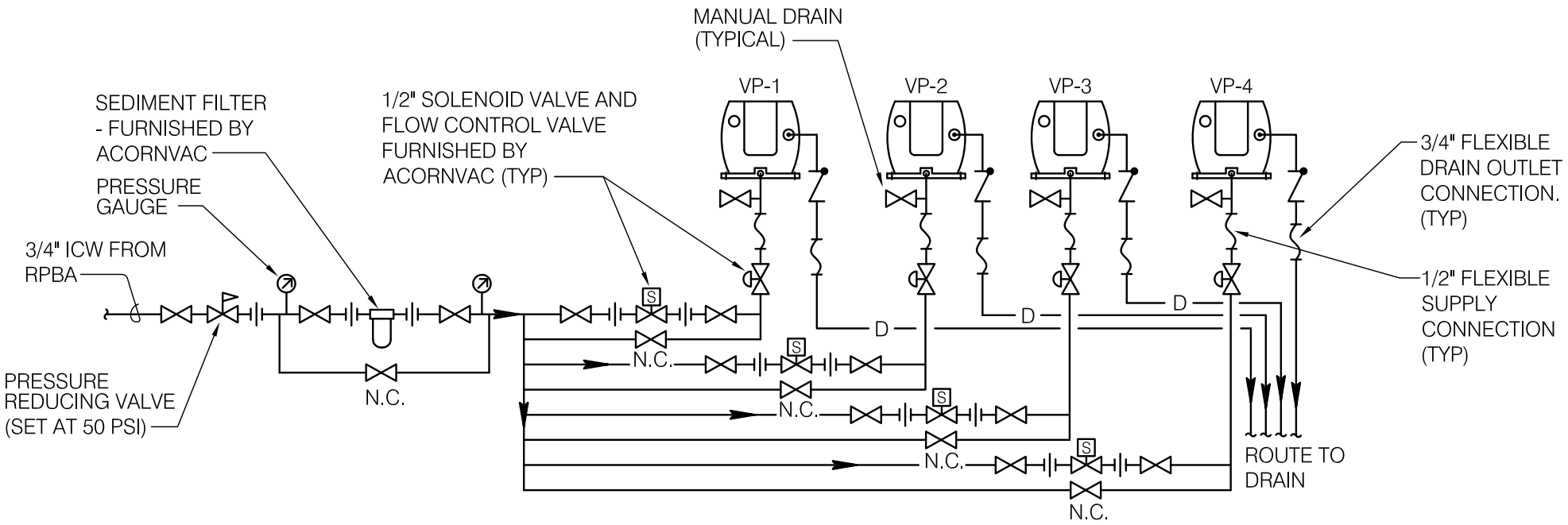
2254 VACUUM WASTE COLLECTION TANK INLET CONNECTION DIAGRAM

SCALE: NTS



2255 VACUUM WASTE PUMP ASSEMBLY

SCALE: NTS



2256 VACUUM WASTE PUMP WATER SUPPLY CONNECTION DIAGRAM

SCALE: NTS

PLUMBING PIPING:

SYMBOL	ABBREV.	DESCRIPTION
———	W	WASTE (ABOVE GRADE OR FLOOR)
– – – – – – – – – –	W	WASTE (BELOW GRADE OR FLOOR)
– – – – – – – – – –	SS	SANITARY SEWER, BY OTHERS, SEE CIVIL DRAWINGS
——— GW ———	GW	GREASE WASTE (ABOVE GRADE OR FLOOR)
- - - - - GW - - - - -	GW	GREASE WASTE (BELOW GRADE OR FLOOR)
——— PW ———	GPW	PUMPED WASTE (ABOVE GRADE OR FLOOR)
- - - - - PW - - - - -	PW	PUMPED WASTE (BELOW GRADE OR FLOOR)
——— SD ———	SD	STORM DRAIN (ABOVE GRADE OR FLOOR)
- - - - - SD - - - - -	SD	STORM DRAIN (BELOW GRADE OR FLOOR)
——— OD ———	OD	OVERFLOW DRAIN (ABOVE GRADE OR FLOOR)
- - - - - OD - - - - -	OD	OVERFLOW DRAIN (BELOW GRADE OR FLOOR)
——— D ———	D	DRAIN (CONDENSATE/INDIRECT)
– – – – – – – – – –	V	VENT
—— – ——— – ——	CW	COLD WATER
——--——--——--——	HW	HOT WATER
——---——---——---——	RHW	RECIRCULATING HOT WATER
——— TW ———	TW	TEMPERED WATER
——— NP ———	NP	NON POTABLE COLD WATER
———NP HW———	NP HW	NON POTABLE HOT WATER
——— MPG(5) ———	MPG(5)	NATURAL GAS - MED. PRESSURE (TEMP. 5 PSIG)
——— MPG(2) ———	MPG(2)	NATURAL GAS - MED. PRESSURE (2 PSIG)
——— G ———	G	NATURAL GAS - LOW PRESSURE (UNDER 1 PSIG)
- – – – – GV - – – – –	GV	GAS VENT
- – – – – LV - – – – –	LV	LOCAL VENT
——— PSD ———	PSD	PUMPED STORM DRAIN (ABOVE GRADE OR FLOOR)
––––– PSD –––––	PSD	PUMPED STORM DRAIN (BELOW GRADE OR FLOOR)
——--—— HTW ——--——	HTW	140° HOT WATER
——---——RHTW——---——	RHTW	140° RECIRCULATING HOT WATER
——---—— RTW ——---——	RTW	RECIRCULATING TEMPERED WATER
——-—— LP ——-——	LP	LOW PRESSURE COLD WATER
——-—— LP ——-——	LP	LOW PRESSURE HOT WATER
——---—— LP ——---——	LP	LOW PRESSURE RECIRCULATING HOT WATER
——-—— HP ——-——	HP	HIGH PRESSURE COLD WATER
——--—— HP ——--——	HP	HIGH PRESSURE HOT WATER
——---—— HP ——---——	HP	HIGH PRESSURE RECIRCULATING HOT WATER
——-—— DWS ——-——	DWS	DRINKING WATER SUPPLY (CHILLED)
——— DWR ———	DWR	DRINKING WATER RETURN (CHILLED)
——— IW ———	IW	ICE WATER
——— WW ———	WW	WELL WATER
——— ICW ———	ICW	INDUSTRIAL COLD WATER
——— PT ———	PT	PNEUMATIC TUBE
——— LGW ———	LGW	LIQUID GREASE WASTE

2262 PIPING SYMBOLS

SCALE: NTS

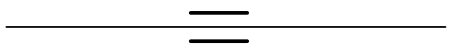
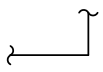
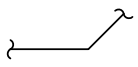
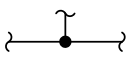
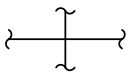
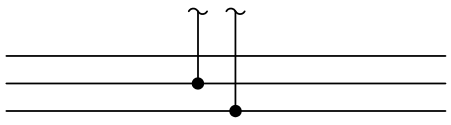
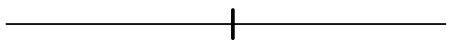
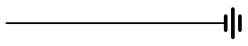
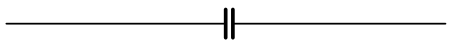
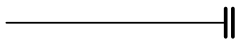
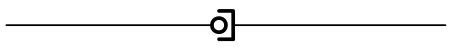
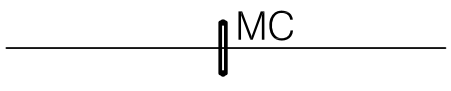
PLUMBING SYMBOLS:

PREFERRED SYMBOL		DESCRIPTION
	TB	THRUST BLOCK
	CO	CLEANOUT
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	CTG	CLEANOUT TO GRADE
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	RD	ROOF DRAIN
	OD	OVERFLOW DRAIN
	TD	TRENCH DRAIN

2263 PLUMBING SYMBOLS

SCALE: NTS

MISCELLANEOUS FITTINGS AND SYMBOLS:

SYMBOL	DESCRIPTION
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	PIPE SLEEVE
	REDUCER
	ANCHOR
	ELBOW (90°)
	ELBOW (90°)
	TEE
	CROSS
	PIPING CONNECTIONS
	JOINT OR COUPLING POINT
	UNION
	FLANGED CONNECTION
	CAP
	PLUG OR BLIND FLANGE
	RISER
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	HORIZONTAL TEE
	FLEXIBLE CONNECTION
	BALL JOINT
	MECHANICAL COUPLING

2264 FITTING SYMBOLS

SCALE: NTS

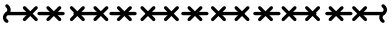
STANDARD PLUMBING ABBREVIATIONS:

AF	AIRFOIL
AFF	ABOVE FINISHED FLOOR
AHP	APPARATUS HOUSING PLENUM
ALT	ALTERNATIVE
AL	ALUMINUM
APD	AIR PRESSURE DROP
APPROX	APPROXIMATELY
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
BDD	BACKDRAFT DAMPER
BI	BACKWARD INCLINED
BLDG	BUILDING
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CLG	CEILING OR COOLING
CONC	CONCRETE
CONN	CONNECT(ION)
CONT	CONTINUE(ED)(UATION)
CL	CENTERLINE
DDC	DIRECT DIGITAL CONTROL
DEFL	DEFLECTION
DN	DOWN
DP	DEW POINT
DWDI	DOUBLE WIDTH DOUBLE INLET
DWG	DRAWING
EA	EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
EFT	ENTERING FLUID TEMPERATURE
ELEC	ELECTRIC(AL)
ELEV	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXTRACTOR
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
F	DEGREES FAHRENHEIT
FC	FORWARD CURVED
FIG	FIGURE
FILT	FILTER
FLEX	FLEXIBLE
FPD	FLUID PRESSURE DROP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET/FOOT
FTR	FINNED TUBE RADIATOR
FU	FIXTURE UNIT
FUT	FUTURE
FV	FACE VELOCITY
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GLY	GLYCOL
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HORIZ	HORIZONTAL
HP	HORSEPOWER
HTG	HEATING
ID	INSIDE(DIAMETER/DIMENSION)
IE	INVERT ELEVATION
IN	INCH(ES)
INSUL	INSULATION
ISOL	ISOLAT(OR)(ION)
KW	KILOWATT
KWH	KILOWATT HOUR
L	LENGTH
LAT	LEAVING AIR TEMP
LB	POUND
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LFT	LEAVING FLUID TEMPERATURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OAD	OUTSIDE AIR DAMPER
OC	ON CENTER DISTANCE
OSA	OUTSIDE AIR
PH	PHASE
PP	POLYPROPYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVS	PVC COATED STEEL
R (RAD)	RADIUS
RA	RETURN AIR
RAD	RETURN AIR DAMPER
REV	REVISION
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	SMOKE DAMPER
SECT	SECTION
SENS	SENSIBLE
SIM	SIMILAR
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SF	SQUARE FOOT(FEET)
SQ IN	SQUARE INCH(ES)
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTUR(E)(AL)
SWP	SINGLE WALL PLENUM
SWSI	SINGLE WIDTH SINGLE INLET
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VOLTS
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WIDTH
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WTD	WATER TEMPERATURE DROP
WTR	WATER TEMPERATURE RISE
W/	WITH
W/O	WITHOUT

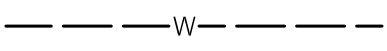
2265 STANDARD ABBREVIATIONS

SCALE: NTS

DEMOLITION LEGEND:

SYMBOL	DESCRIPTION
	REMOVE EXISTING PIPE

NEW AND EXISTING WORK LEGEND:

SYMBOL	DESCRIPTION
	EXISTING WASTE (BELOW GRADE OR FLOOR)
	EXISTING COLD WATER
	NEW WASTE (BELOW GRADE OR FLOOR)
	NEW COLD WATER

2266 WORK LEGEND

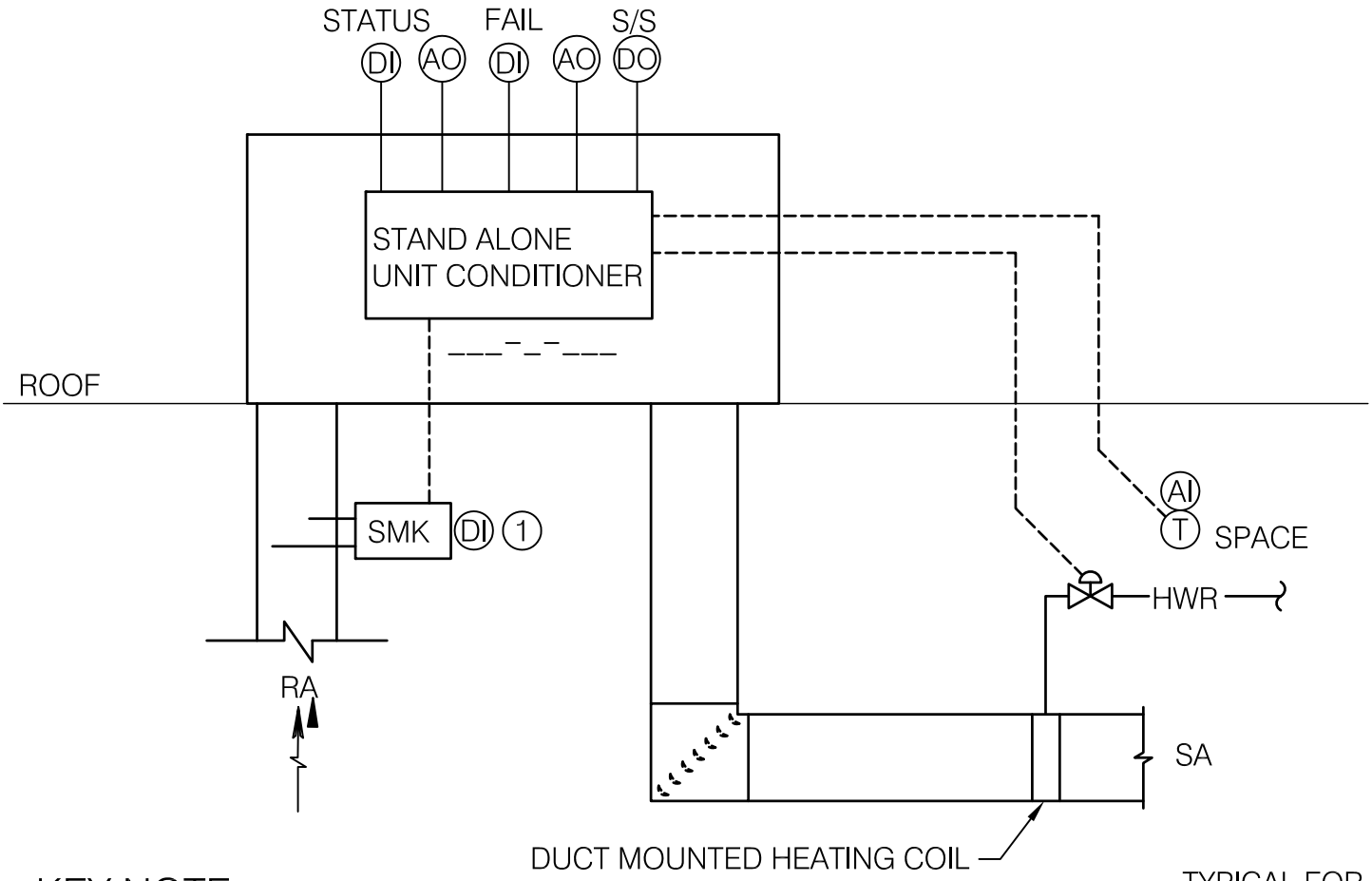
SCALE: NTS

MISCELLANEOUS SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
(1)	KEY NOTE
(E)	EXISTING TO REMAIN
(X)	REMOVE EXISTING
(C)	CONNECT TO EXISTING
(K)	CAP EXISTING / CAP FOR FUTURE
(A)	ACCESS PANEL
(B)	RUN IN BEAM SPACE
(R)	EXISTING TO BE RELOCATED
(D)	ABANDON IN PLACE

2291 MISCELLANEOUS SYMBOLS

SCALE: NTS



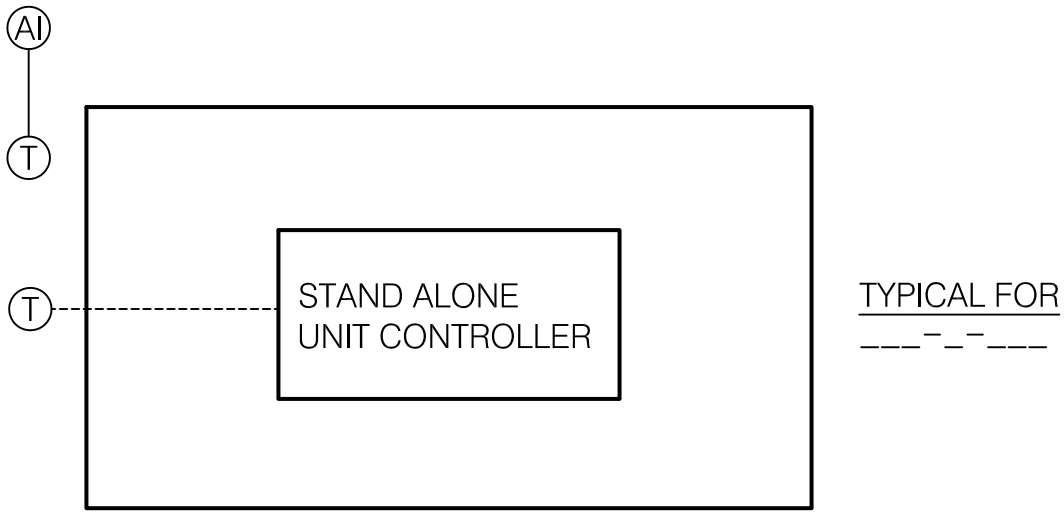
TYPICAL FOR

KEY NOTE:

(1) PROVIDE PER SECTION 606 OF THE LATEST EDITION OF THE STATE OF OREGON MECHANICAL SPECIALTY CODE.

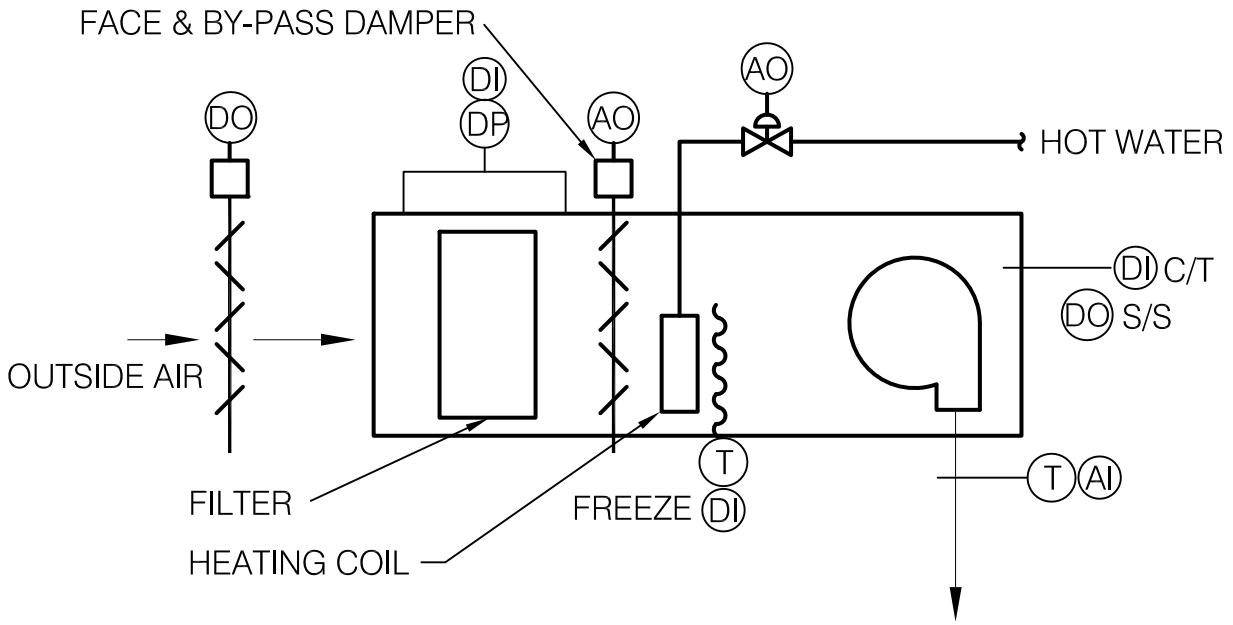
2301 AIR CONDITIONING UNIT - SINGLE ZONE ROOFTOP

SCALE: NTS



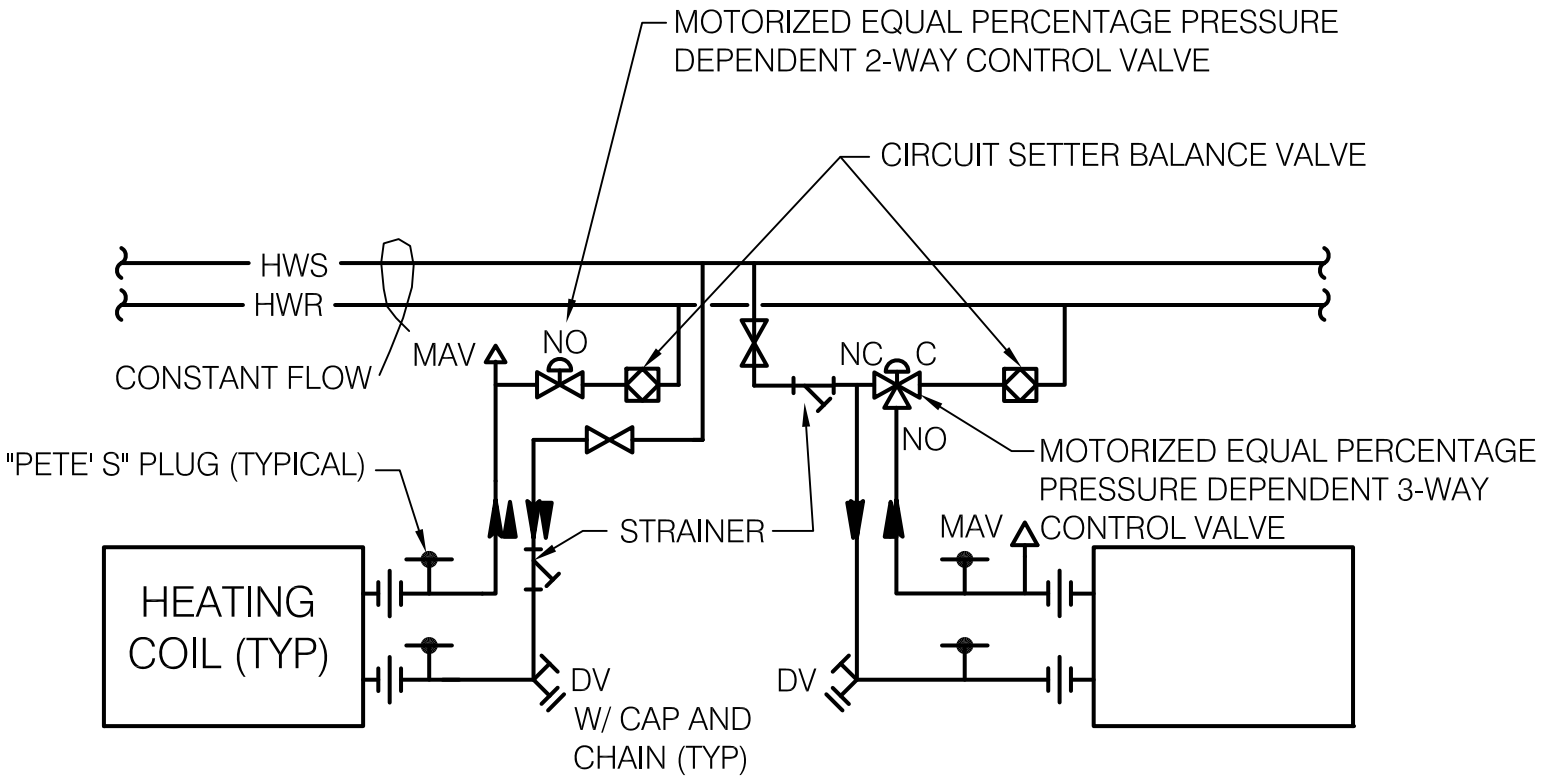
2302 AIR CONDITIONING UNIT - STANDALONE

SCALE: NTS



2311 AIR HANDLING UNIT - CONSTANT VOLUME

SCALE: NTS



2-WAY VALVE

TYPICAL EXCEPT WHERE NOTED

3-WAY VALVE

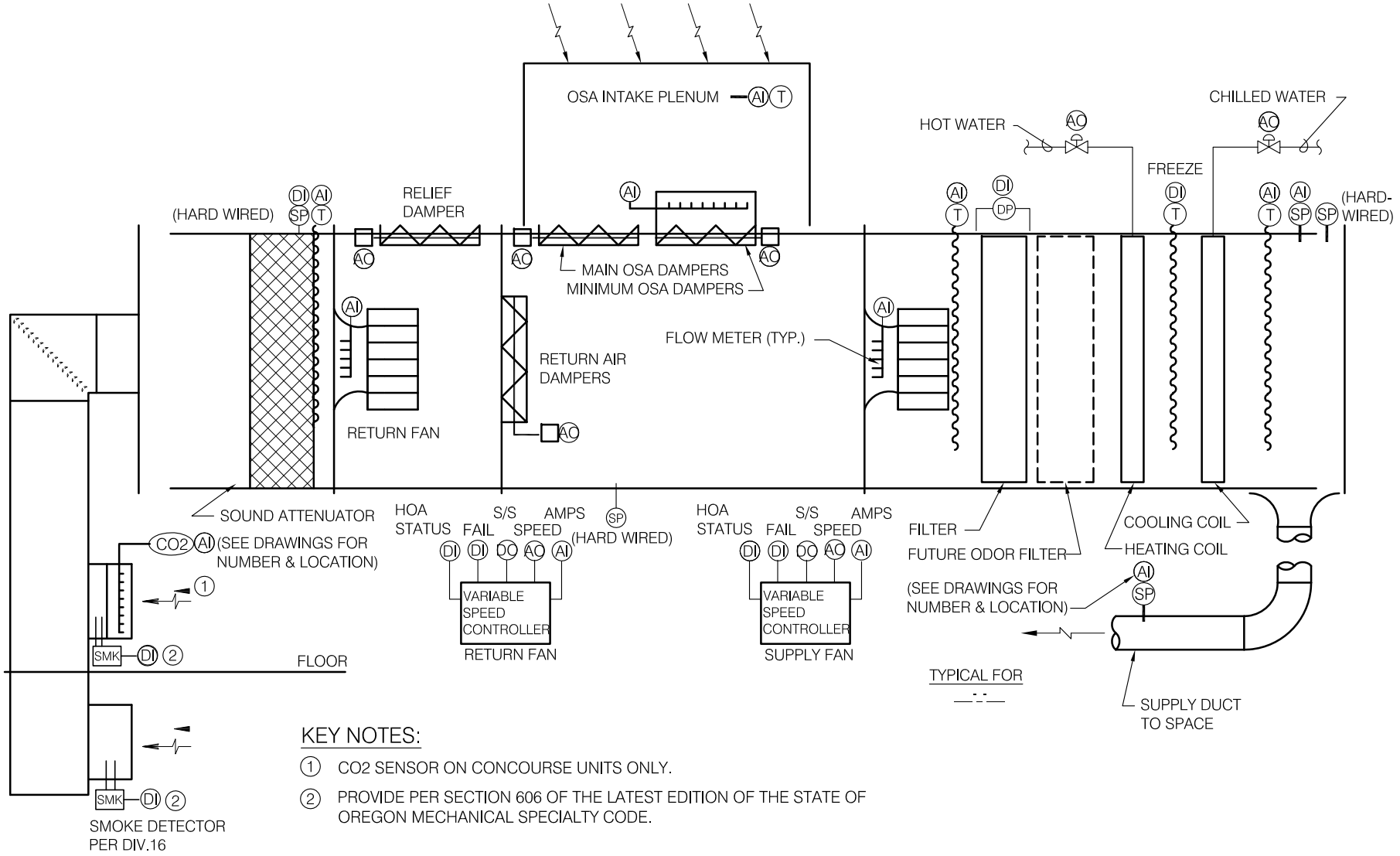
USE ONLY WHERE NOTED

NOTES:

1. SEE SECTION 230900 FOR CONTROL VALVE SPECIFICATIONS.
2. CONSTANT FLOW SYSTEM.

2312 AIR HANDLING UNIT - CONSTANT VOLUME HEATING COIL PIPING

SCALE: NTS

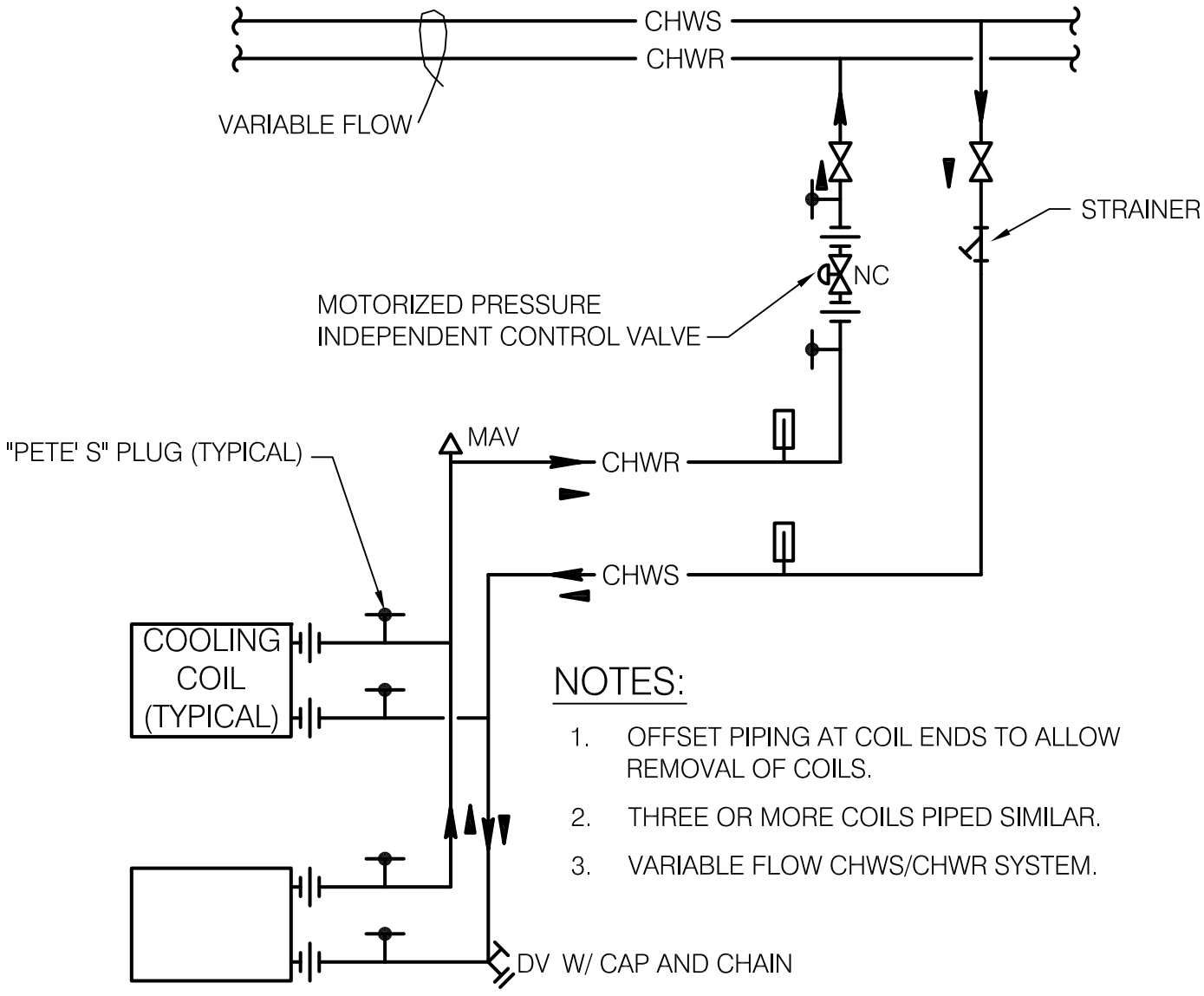


KEY NOTES:

1. CO_2 SENSOR ON CONCOURSE UNITS ONLY.
2. PROVIDE PER SECTION 606 OF THE LATEST EDITION OF THE STATE OF OREGON MECHANICAL SPECIALTY CODE.

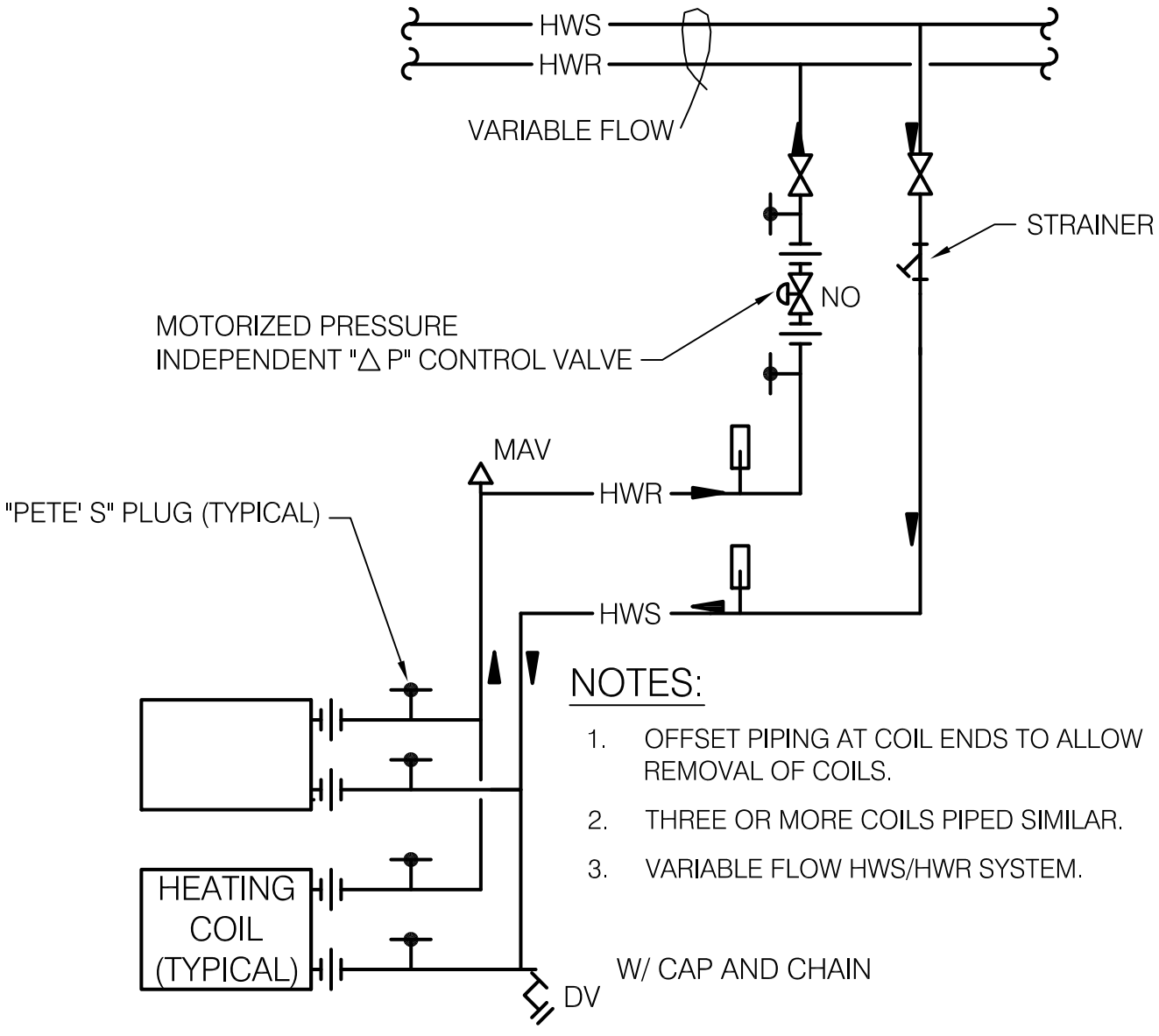
2313 AIR HANDLING UNIT - VARIABLE VOLUME

SCALE: NTS



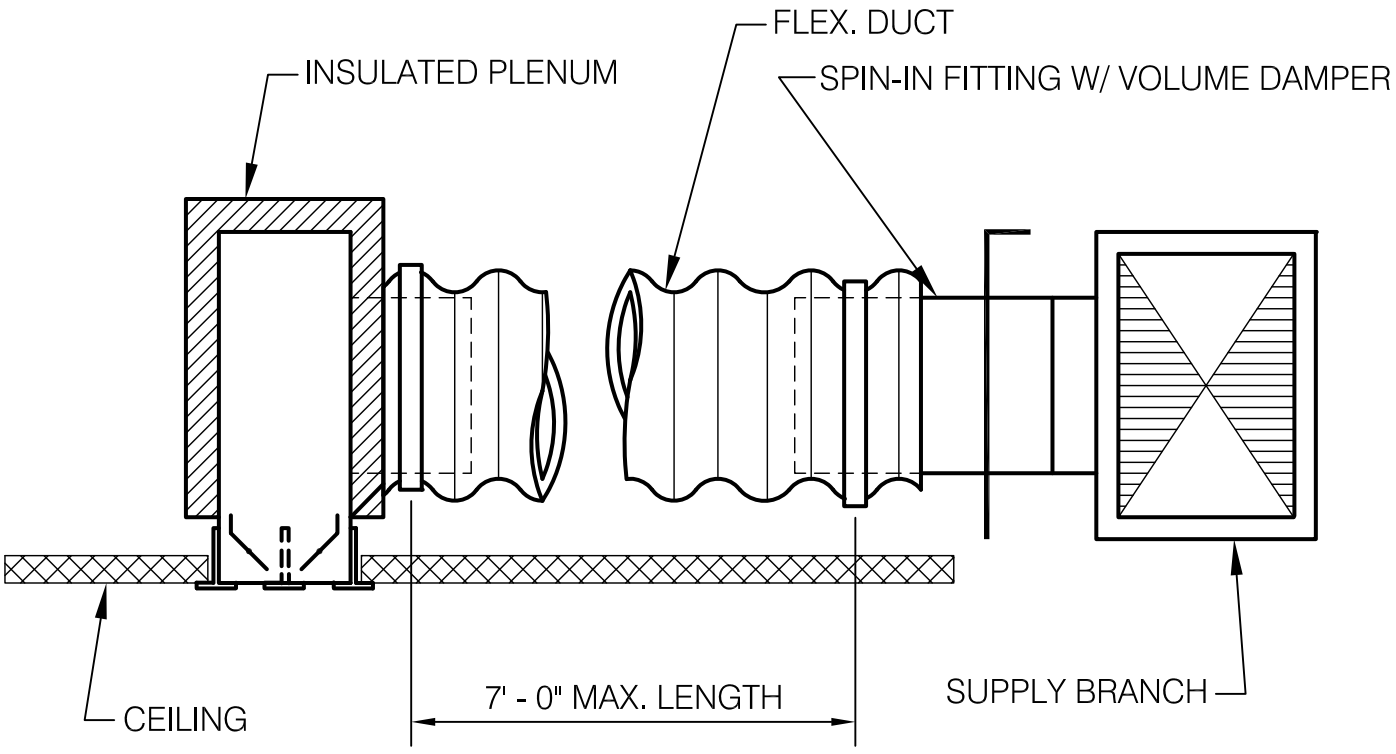
2314 AIR HANDLING UNIT - VARIABLE VOLUME COOLING COIL PIPING

SCALE: NTS



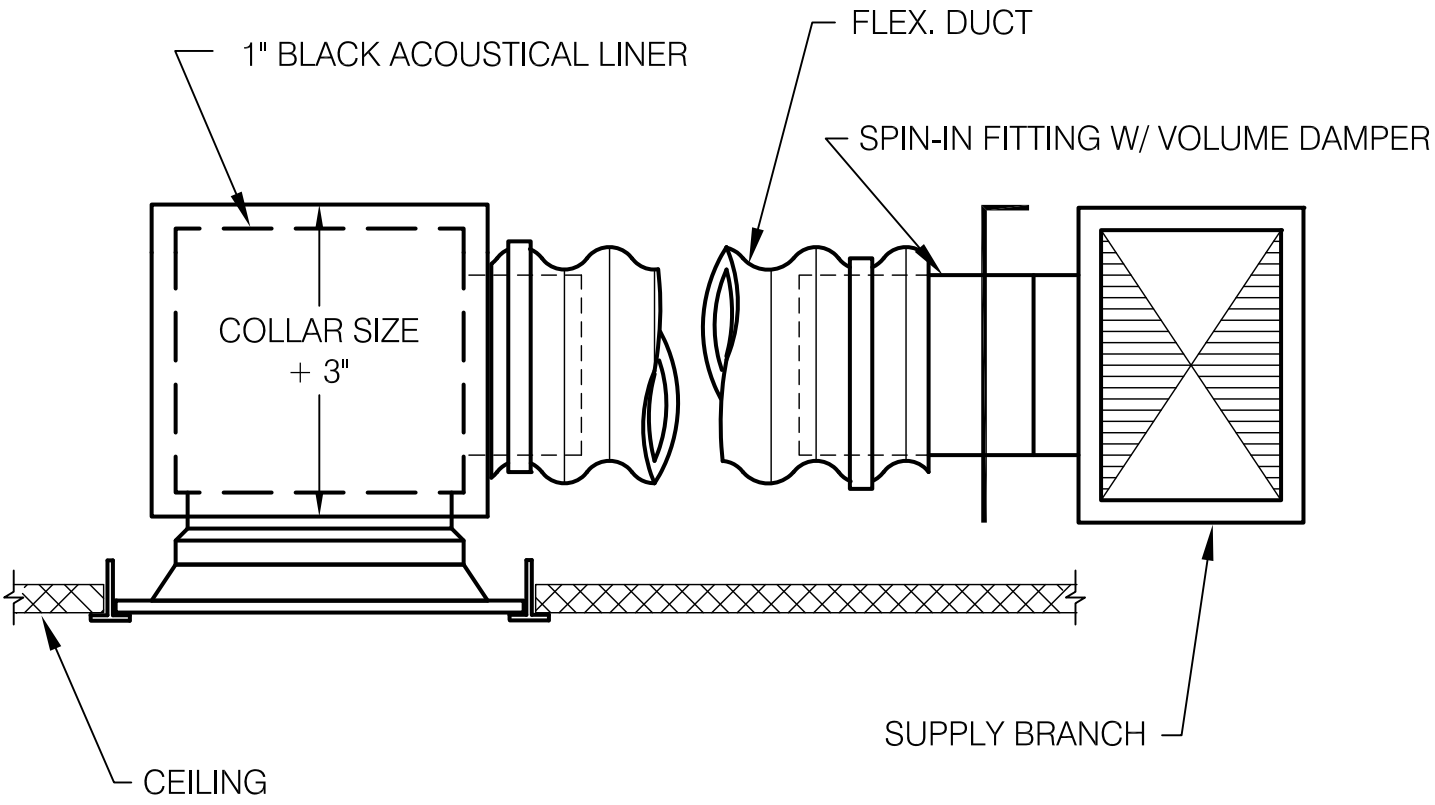
2315 AIR HANDLING UNIT - VARIABLE VOLUME HEATING COIL PIPING

SCALE: NTS



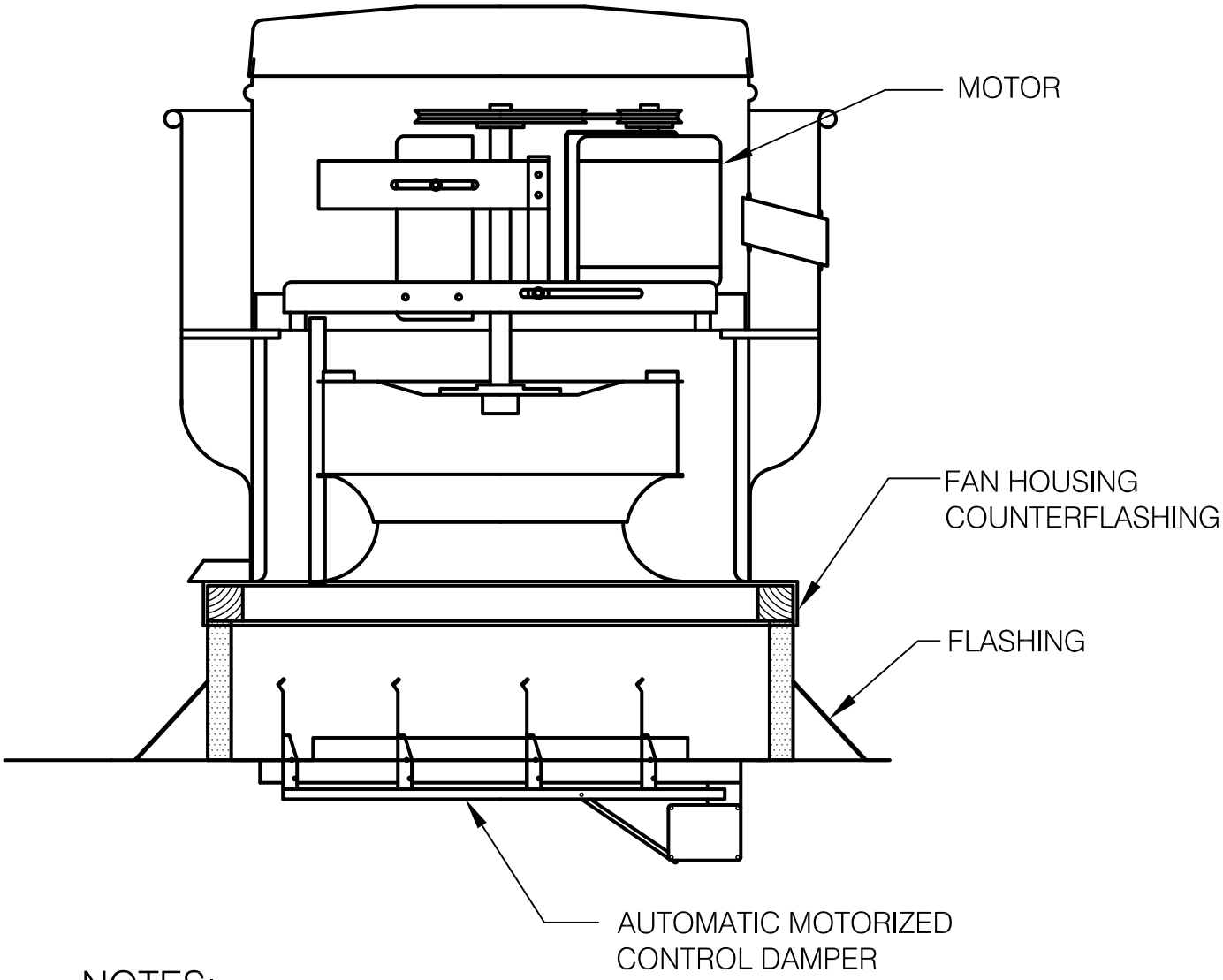
2321 DIFFUSER - SLOT

SCALE: NTS



2322 DIFFUSER - TBAR

SCALE: NTS

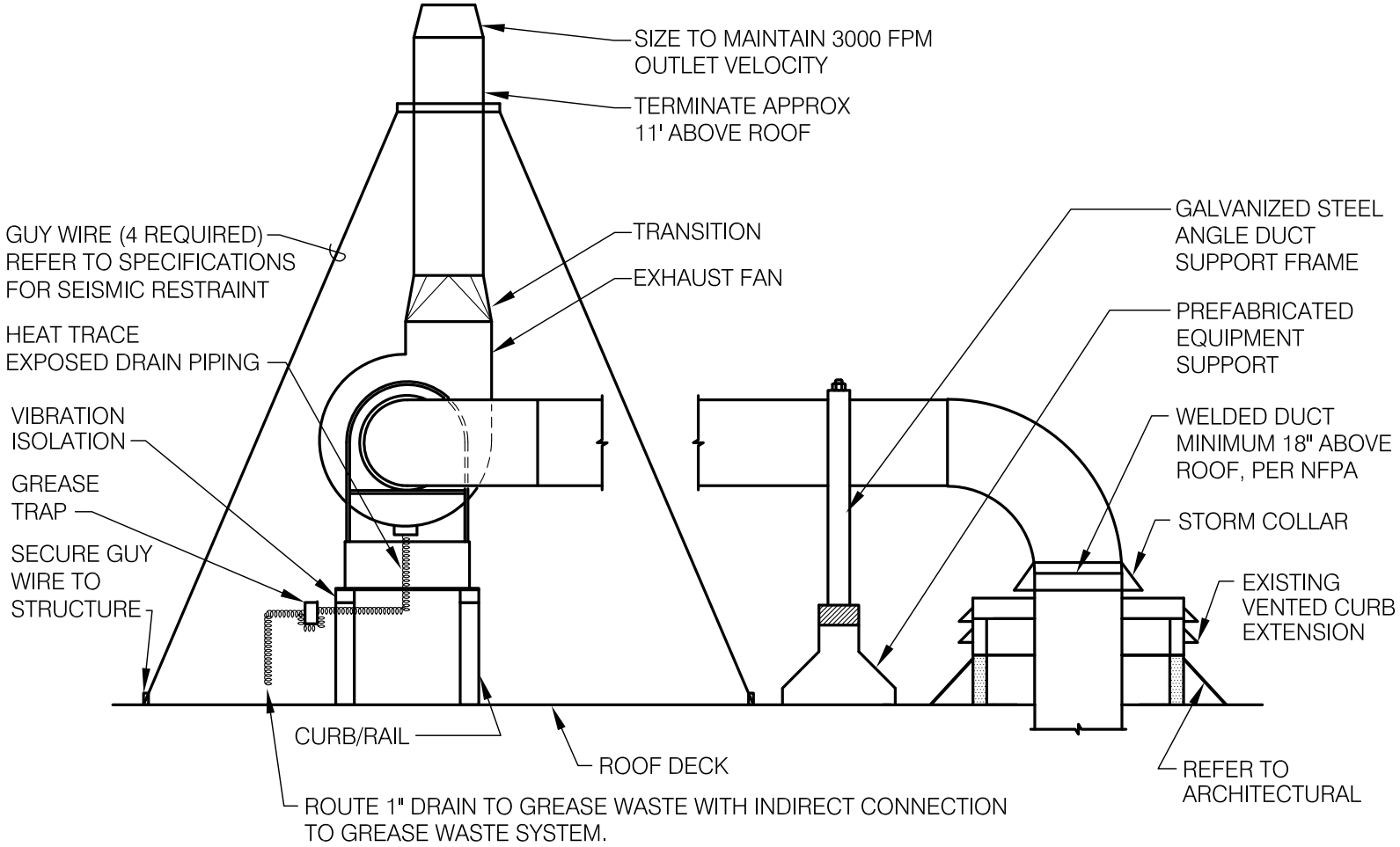


NOTES:

1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.
2. REFER TO ROOF DETAILS FOR PENETRATION.

2331 EXHAUST FAN - DISHWASHER

SCALE: NTS

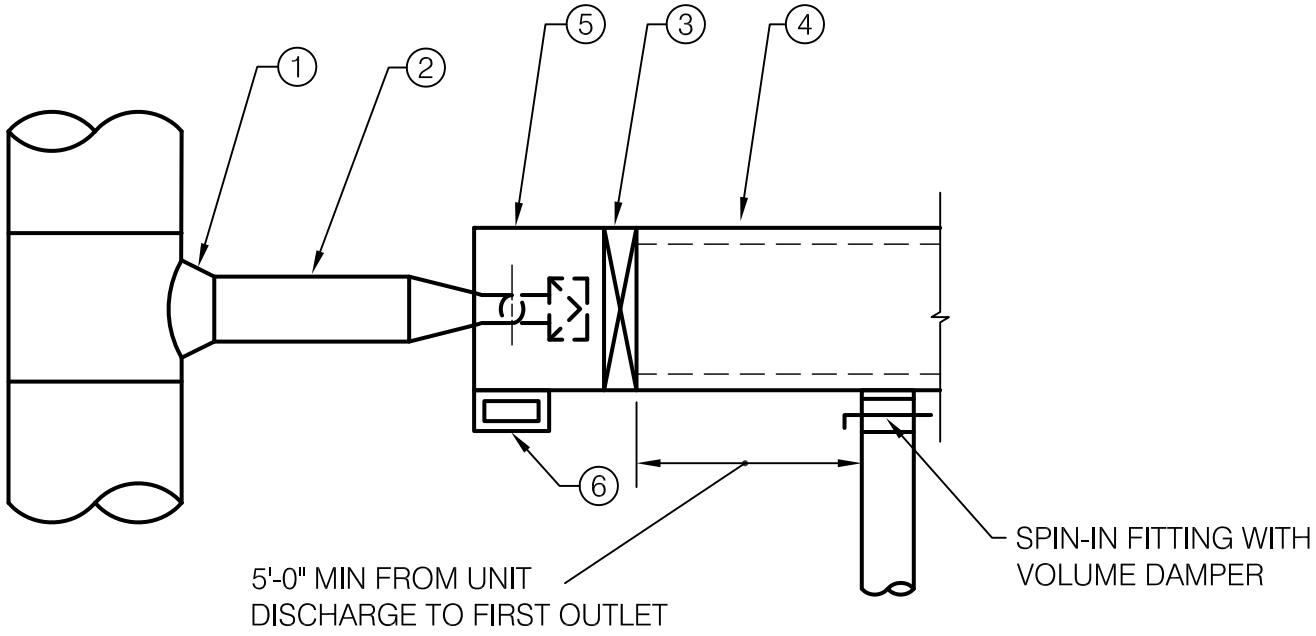


NOTES:

1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.
2. PROVIDE THREE DUCT DIAMETERS OF STRAIGHT DUCT (MINIMUM 3') PRIOR TO FAN INLET. SLOPE DUCT TO EXHAUST FAN INLET.
3. SUPPORT ROOF MOUNTED DUCTWORK AND EXHAUST STACK PER SPECIFICATION SECTION 233113.
4. PROVIDE DISCONNECT AT FAN ON THE ROOF.
5. DUCT SUPPORT TO BE PROVIDED BY MECHANICAL CONTRACTOR.

2332 EXHAUST FAN - KITCHEN

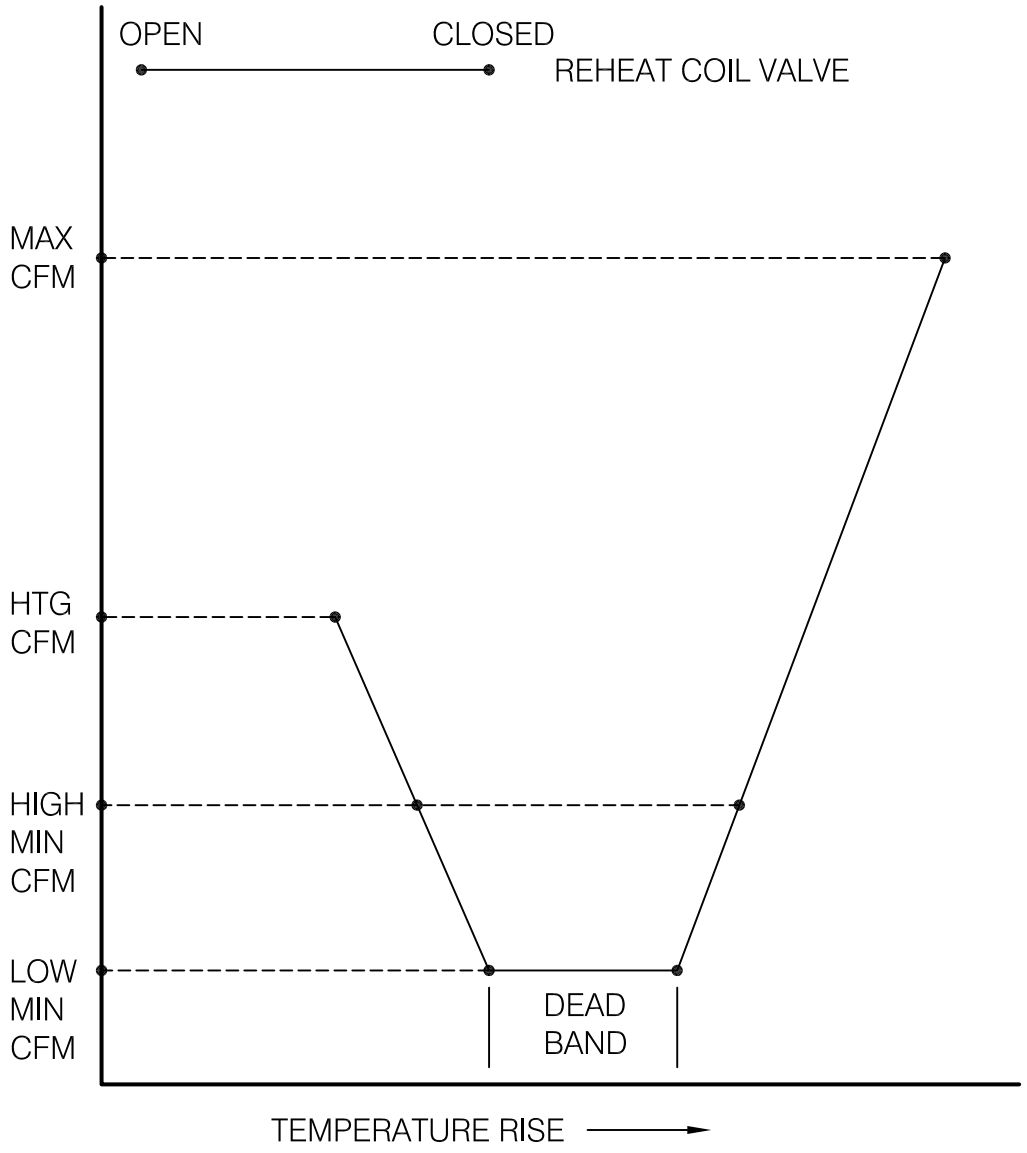
SCALE: NTS



KEY NOTES:

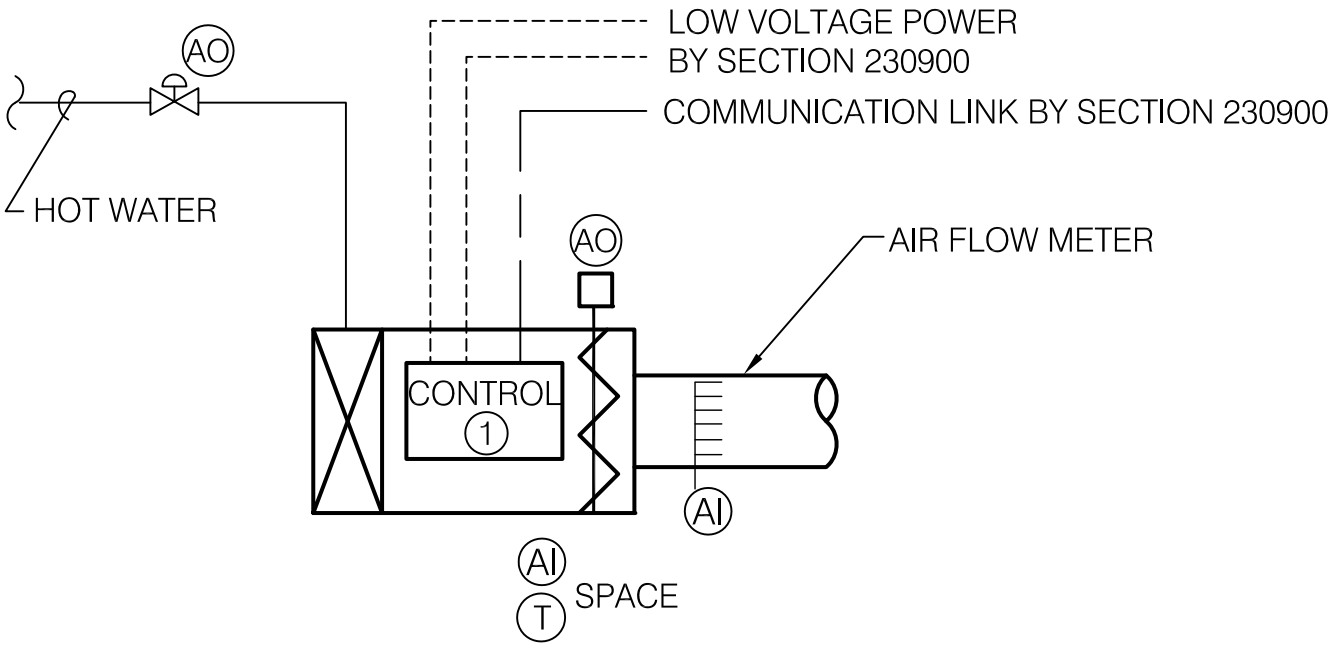
1. CONICAL TAP AT LO-LOSS FITTING, AS SHOWN ON FLOOR PLANS.
2. INLET DUCT MINIMUM LENGTH = 3'-0" OR 3X INLET DIAMETER; WHICHEVER IS LARGER. IF UNDER 10'-0" IN LENGTH, DUCT SIZE TO BE SAME SIZE AS TERMINAL UNIT INLET. IF LENGTH IS 10'-0" OR OVER, DUCT SIZE TO BE AS SHOWN ON PLAN.
3. HEATING COIL WHERE INDICATED. SEE PLANS FOR COIL CONNECTION ORIENTATION.
4. DISCHARGE DUCT TO BE 1" LINED SHEET METAL, MINIMUM 5'-0" LONG, SAME SIZE AS TERMINAL UNIT OUTLET, OR AS SHOWN ON PLAN, WHICHEVER IS LARGER. PROVIDE SOUND LINING AND SOUND TRAP AS INDICATED IN DRAWINGS AND SPECIFICATIONS.
5. TERMINAL UNIT.
6. ACTUATOR CONTROLLER, MOUNT CONTROLLER IN NEMA 1 ENCLOSURE.

2341 TERMINAL UNIT
SCALE: NTS



2342 TERMINAL UNIT - SEQUENCE OF OPERATION

SCALE: NTS

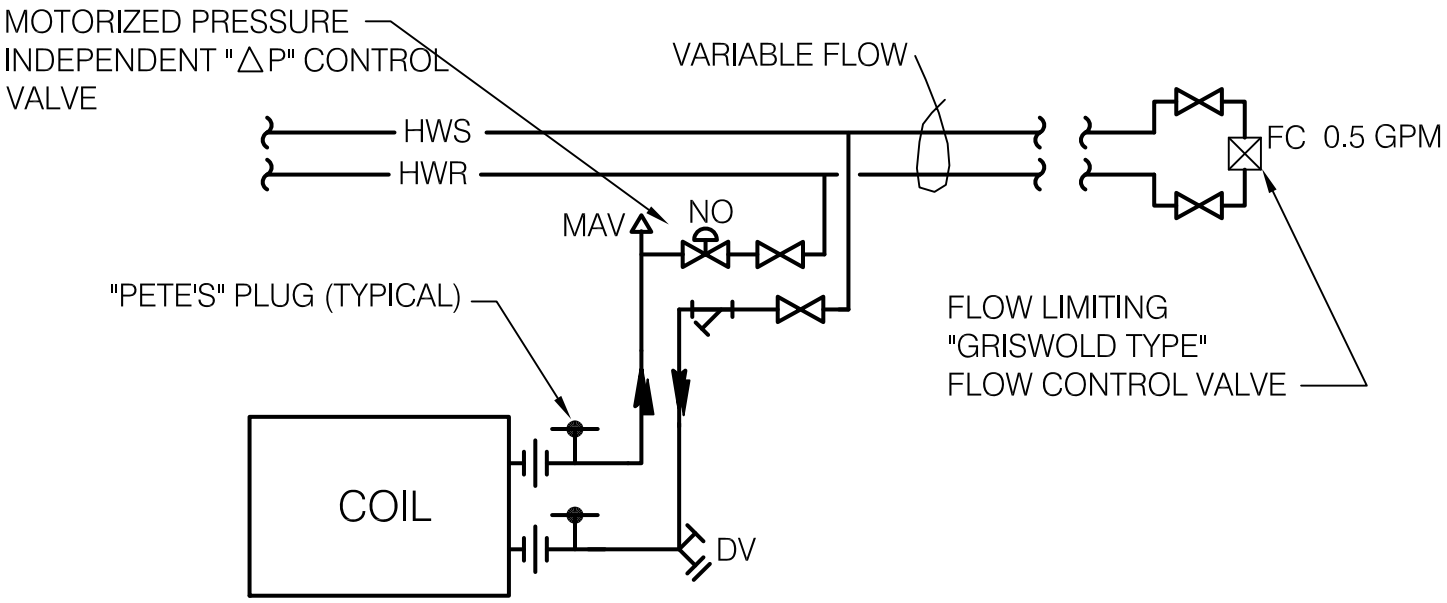


KEY NOTE:

1. CONTROLLER MOUNTED IN NEMA 1 ENCLOSURE SUITABLE FOR AIR PLENUM APPLICATIONS.

2343 TERMINAL UNIT - VARIABLE VOLUME HEATING COIL

SCALE: NTS



2-WAY VALVE

TYPICAL EXCEPT WHERE NOTED

BY-PASS VALVE

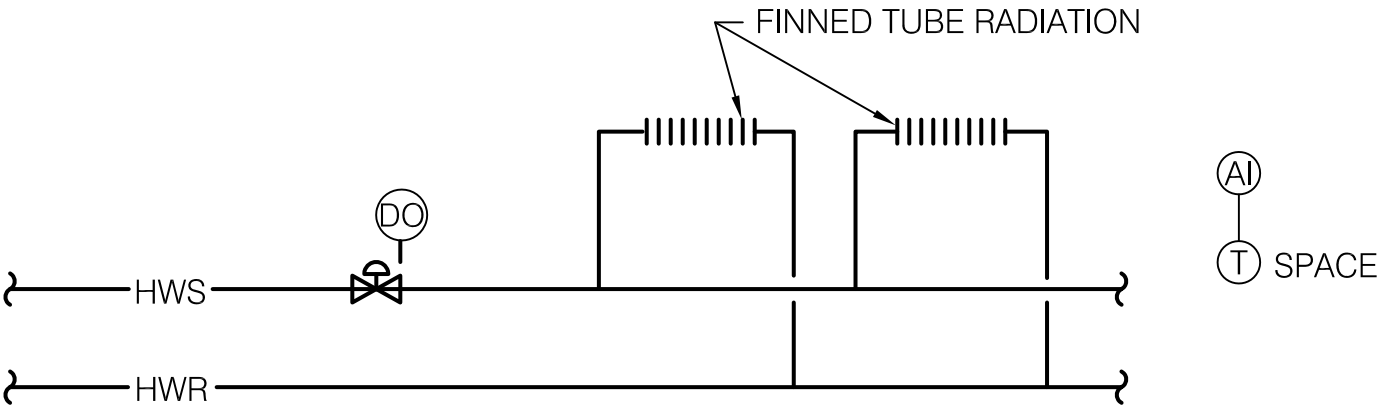
USE ONLY WHERE NOTED, AND AFTER LAST COIL ON PIPING RUN.

NOTES:

1. TYPICAL OF REHEAT COILS.
2. VARIABLE FLOW HWS/HWR SYSTEM.
3. CABINET UNIT HEATERS, UNIT HEATERS, AND FIN TUBE RADIATION, USE TWO POSITION MOTORIZED VALVES WITH FLOW LIMITING GRISWOLD TYPE FLOW CONTROL VALVE.

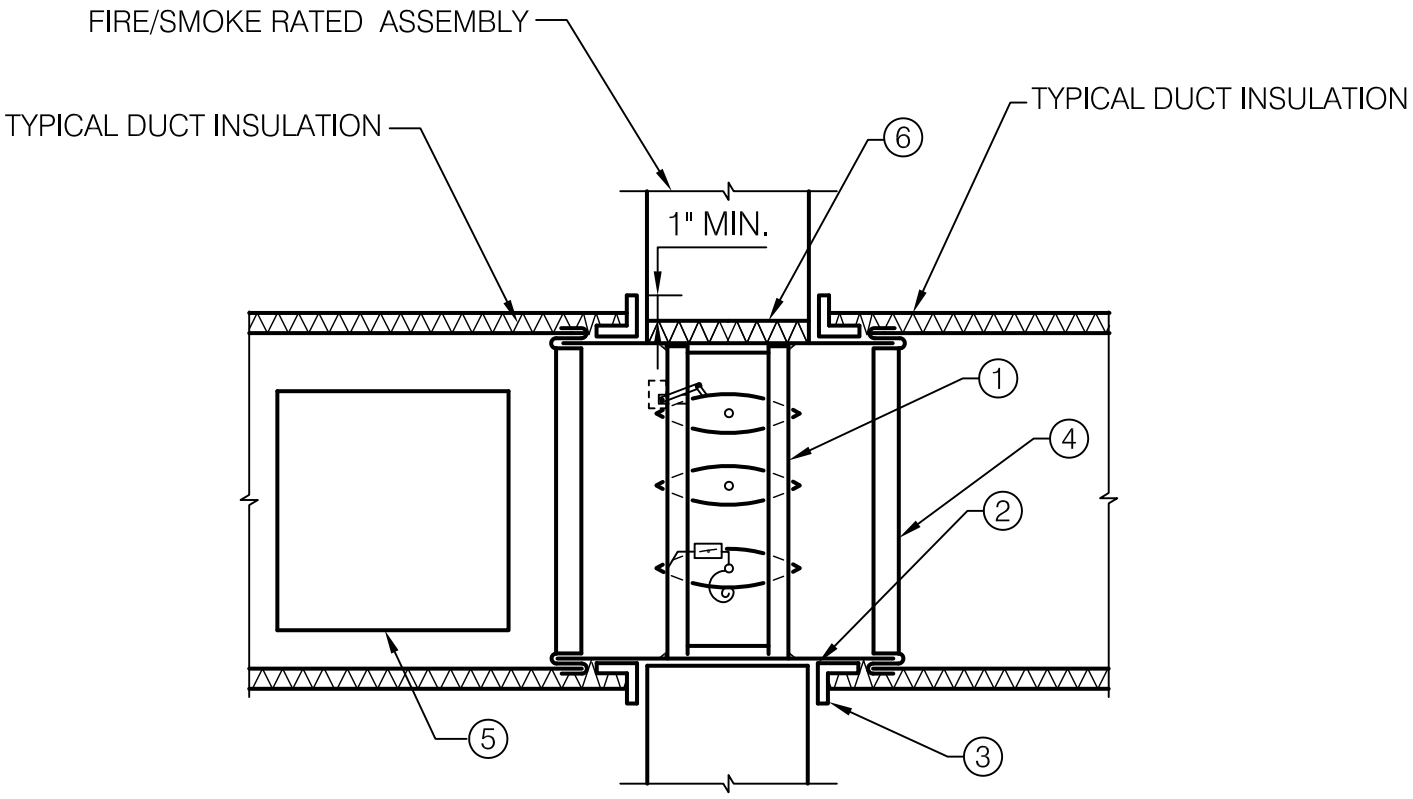
2344 TERMINAL UNIT - VARIABLE VOLUME REHEAT COIL PIPING

SCALE: NTS



2351 FINNED TUBE RADIATION

SCALE: NTS



KEY NOTES:

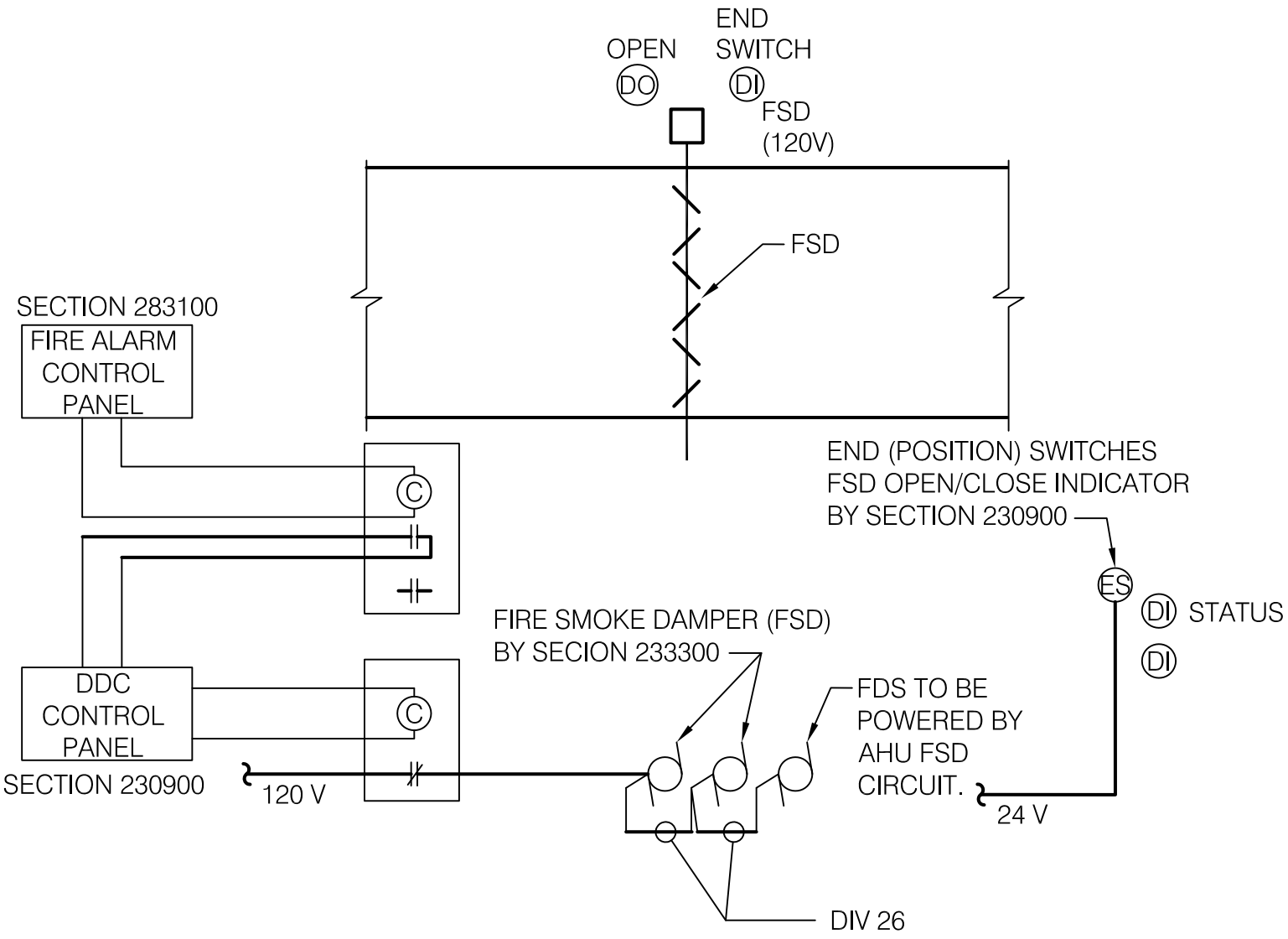
1. COMBINATION FIRE AND SMOKE DAMPER (VERTICAL RETURN/ EXHAUST TYPE SHOWN, HORIZONTAL & SUPPLY SIMILAR).
2. GALVANIZED STEEL SLEEVE-GAUGE NOT LESS THAN CONNECTING DUCT. FASTEN TO DAMPER FRAME AND PERIMETER ANGLES. BETWEEN DAMPER FRAME & SLEEVE.
3. CAULK PERIMETER ANGLES-14 GA. GALVANIZED STEEL, 1-1/2" x 1-1/2" MIN. TO PROVIDE 1" MIN. OVERLAP OF OPENING ON ALL 4 SIDES. DO NOT FASTEN TO PARTITION.
4. AIR TIGHT, BREAKAWAY DUCT CONNECTION.
5. ACCESS PANEL-SIZE & LOCATION TO PERMIT SERVICING FUSIBLE ROD AND LINK.
6. PROVIDE 1/4" TO 1/2" CLEARANCE ON HEIGHT & WIDTH, OR AS SPECIFIED BY DAMPER MANUFACTURER. FILL OPENING WITH FIRESTOP MATERIAL.

NOTE:

1. REFER TO FIRE ALARM FOR DETECTOR.

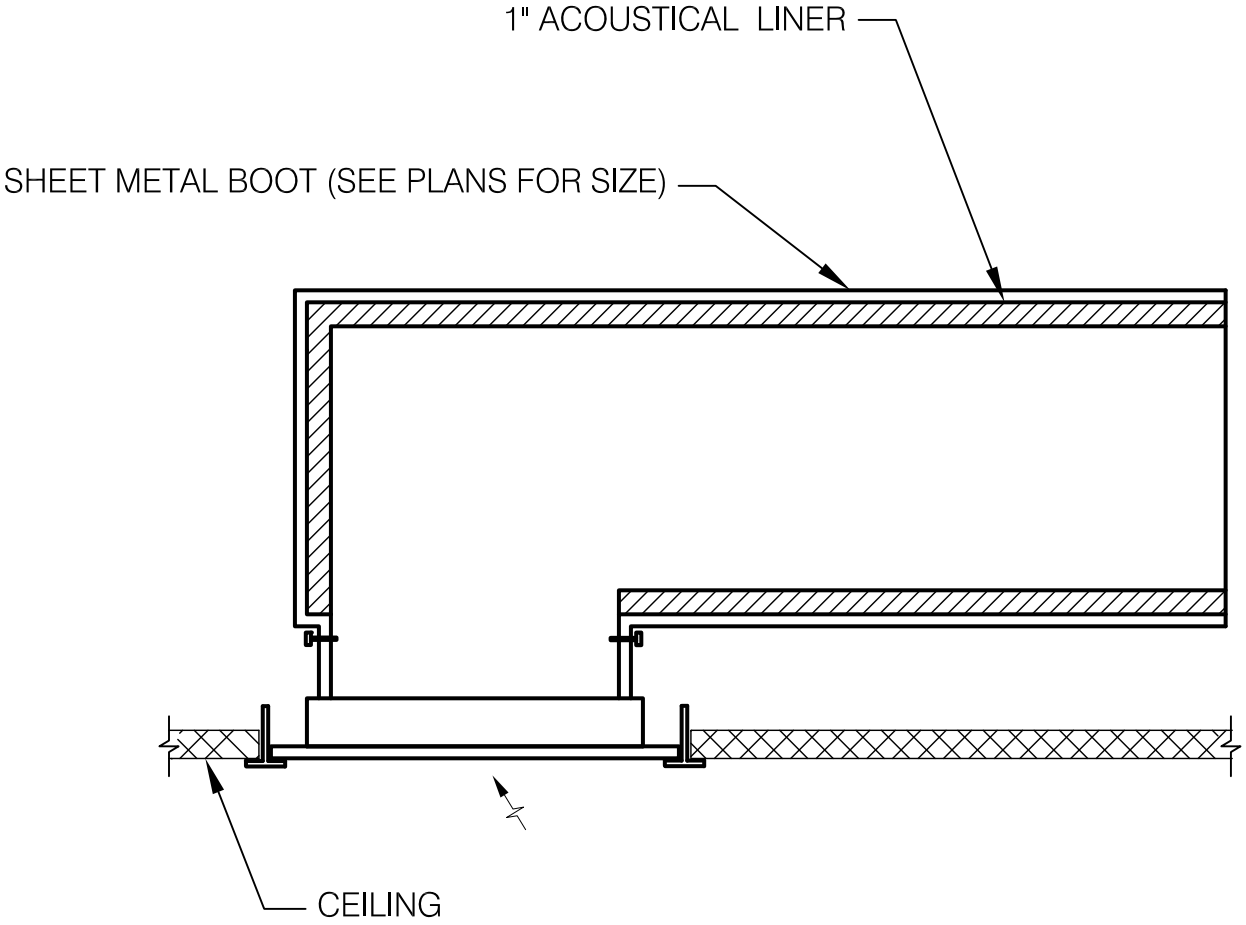
2352 FIRE SMOKE DAMPER

SCALE: NTS



2353 FIRE SMOKE DAMPER CONTROL

SCALE: NTS

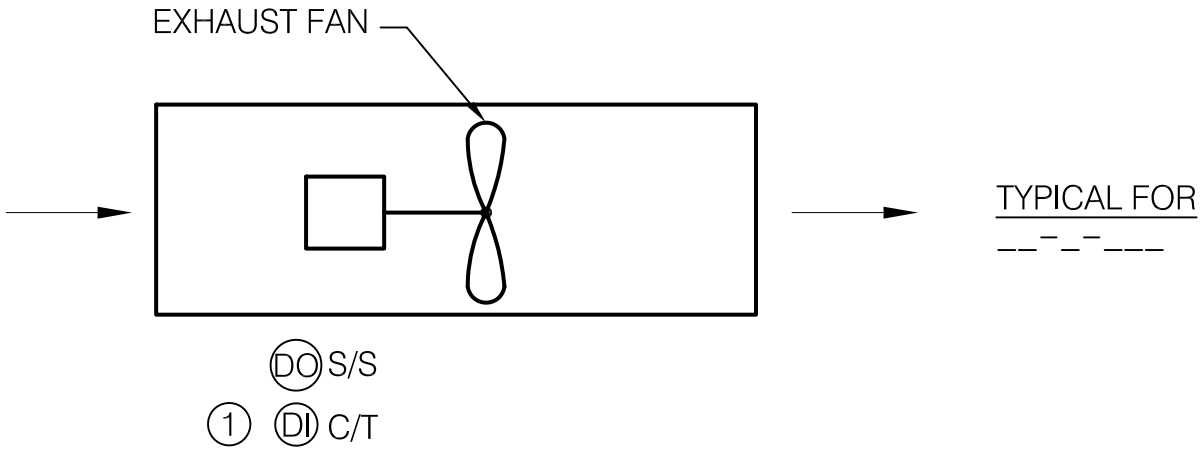


NOTE:

1. SHEET METAL BOOT LENGTH TO BE SUFFICIENT TO ELIMINATE LINE OF SIGHT FROM DIFFUSER TO END OF BOOT.

2354 RETURN AIR BOOT

SCALE: NTS



KEY NOTE:

1. PROVIDE CURRENT TRANSFORMER IN FAN POWER CIRCUIT TO MONITOR OPERATION OF EXHAUST AT ANY POINT IN TIME. ADD EXHAUST AIR CFM (A VARIABLE) TO DDC EQUATION USED TO CONTROL RETURN AIR CFM TO AIR HANDLING UNIT SERVING AREA IN WHICH EXHAUST FAN IS LOCATED. OBTAIN ACTUAL EXHAUST FAN CFM VALUE FROM THE AIR BALANCER.

2355 SUPPLY OR EXHAUST FAN

SCALE: NTS

CONTROL SYMBOLS:

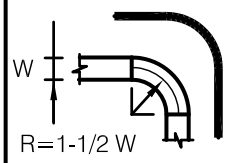
SYMBOL	DESCRIPTION
	DAMPER WITH OPERATOR
	2-WAY PRESSURE INDEPENDENT CONTROL VALVE (UNLESS INDICATED OTHERWISE)
	3-WAY CONTROL VALVE
	DIGITAL OUTPUT FROM DDC PANEL
	DIGITAL INPUT TO DDC PANEL
	ANALOG OUTPUT FROM DDC PANEL
	ANALOG INPUT TO DDC PANEL
	DIFFERENTIAL PRESSURE SWITCH
	VELOCITY PRESSURE TRANSMITTER
	DAMPER END SWITCH
	AIR MONITORING STATION
	VELOCITY PRESSURE PROBE
	DUCT SMOKE DETECTOR
	WATER FLOW METER WITH ELECTRONIC TRANSMITTER
	PUSH BUTTON SWITCH
	DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER
	ELECTRONIC HUMIDITY TRANSMITTER
	DUCT MOUNTED HIGH LIMIT HUMIDISTAT
	ELECTRONIC TEMPERATURE SENSOR
	FLOW SWITCH
	ELECTRONIC SENSOR WITH AVERAGING
	DUCT STATIC PRESSURE SENSOR/TRANSMITTER
	CARBON DIOXIDE SENSOR
	PRESSURE TRANSMITTER

2361 CONTROL SYMBOLS

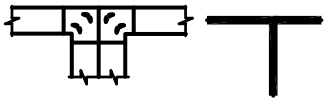
SCALE: NTS

DUCT DETAILS (LOW VELOCITY):

RADIUS ELBOW

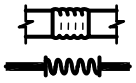


MITER ELBOWS & TEES

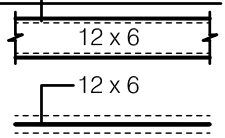


TURNING VANES IN ALL ELBOWS AND TEES

FLEX CONNECTION

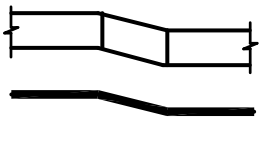


ACOUSTICAL LINER

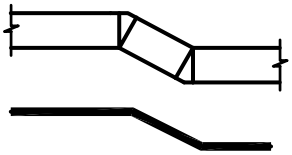


SIZE SHOWN IS CLEAR AIR PASSAGE

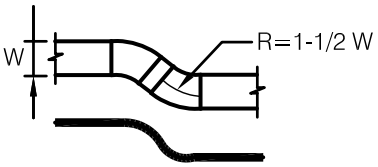
DUCT OFFSETS



LESS THAN 15°

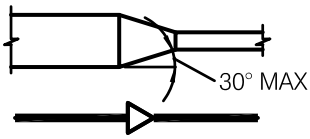


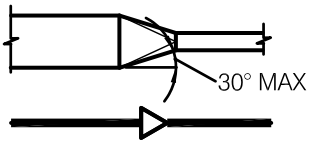
15° TO 30°



GREATER THAN 30°

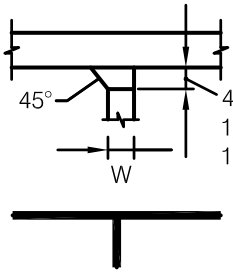
TRANSITIONS

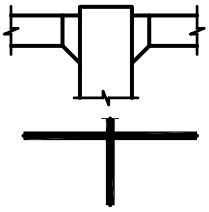


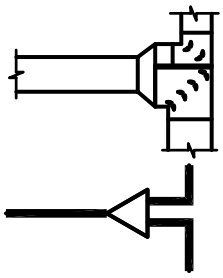


RECTANGULAR TO ROUND

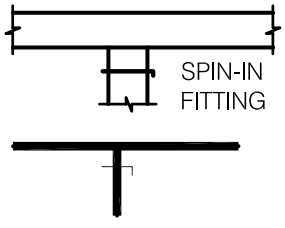
RECTANGULAR DUCT FITTINGS

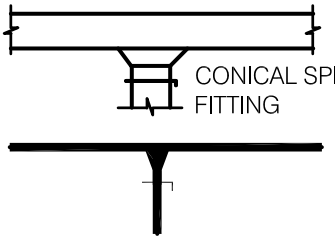






RECTANGULAR TO ROUND FITTINGS





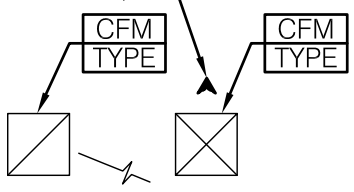
2362 LOW VELOCITY DUCT DETAILS

SCALE: NTS

DUCT LEGEND:

CEILING DIFFUSERS & GRILLES

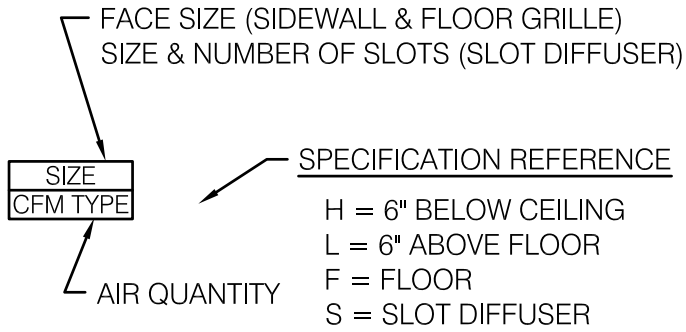
FLOW DIRECTION (NONE SHOWN IF 4-WAY)



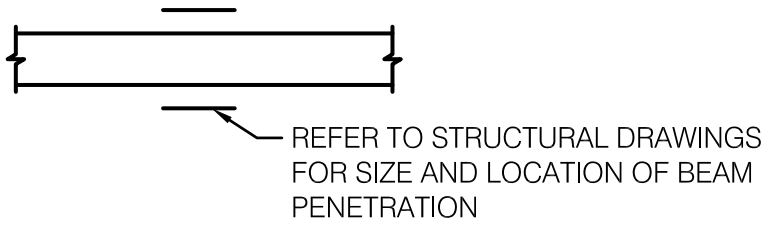
RETURN/ EXHAUST SUPPLY

SEE SPECS FOR TYPE
SEE SCHEDULE FOR SIZE

SIDEWALL, SLOTS & FLOOR GRILLES



BEAM PENETRATION

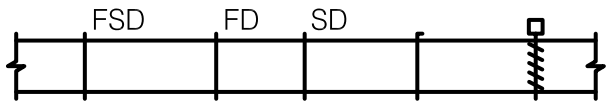


ROOM SENSORS

- (T) WALL TEMPERATURE
- (T) PENDANT TEMPERATURE
- (H) WALL HUMIDITY

DUCT SECTIONS

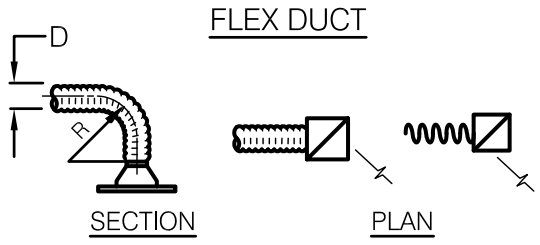
DAMPERS



LOW PRESSURE DUCTWORK:

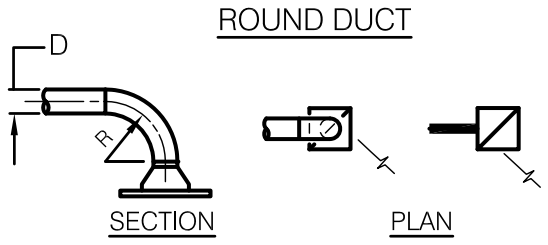
RETURN OR EXH. GRILLE CONNECTION

FLEX DUCT



R=2D FOR FLEX

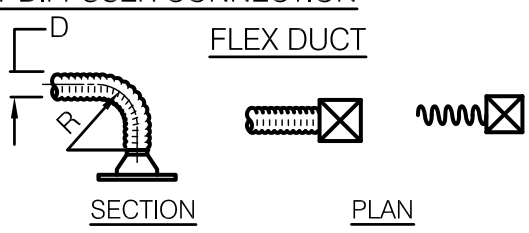
ROUND DUCT



R=1-1/2D FOR ROUND

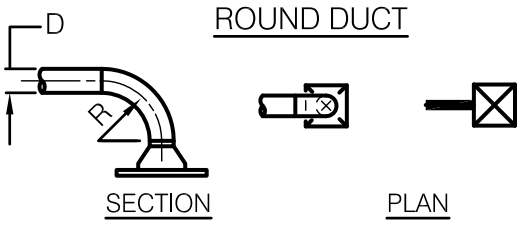
SUPPLY DIFFUSER CONNECTION

FLEX DUCT



R=2D FOR FLEX

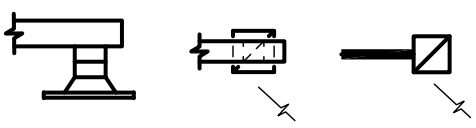
ROUND DUCT



R=1-1/2D FOR ROUND

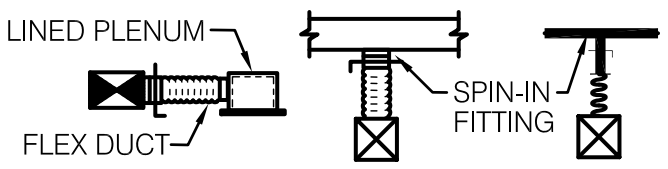
RETURN OR EXHAUST GRILLE

RECTANGULAR DUCT

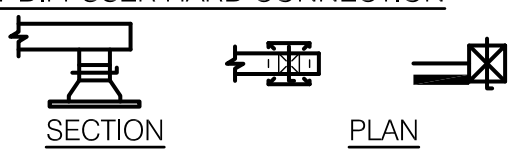


SUPPLY DIFFUSER SIDE FLEX CONNECTION

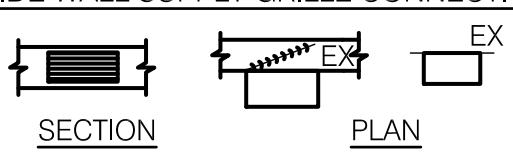
SQUARE NECK



SUPPLY DIFFUSER HARD CONNECTION

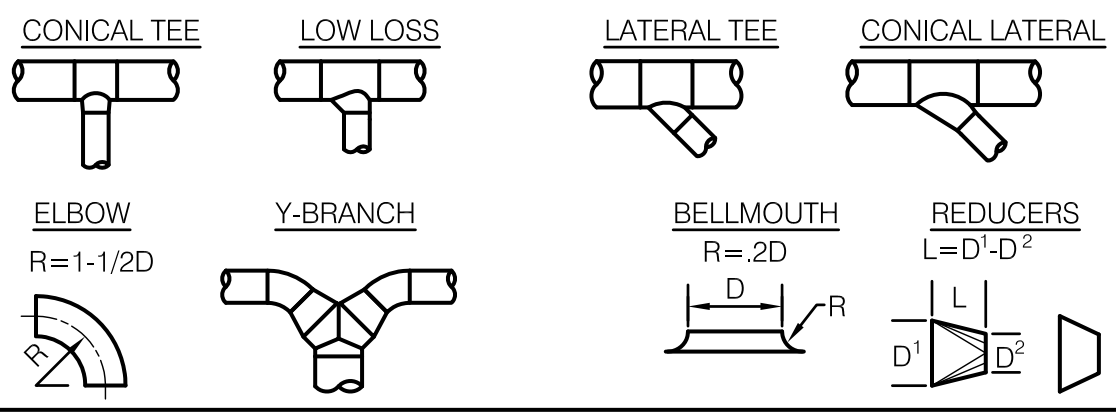


SIDE WALL SUPPLY GRILLE CONNECTION



MEDIUM PRESSURE DUCTWORK:

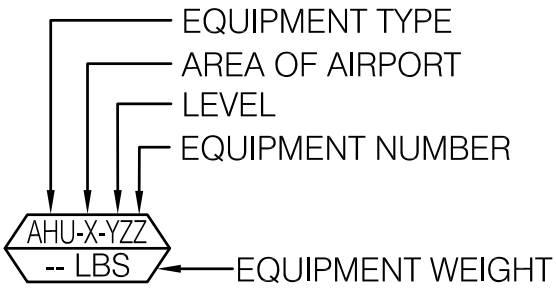
BRANCH FITTINGS



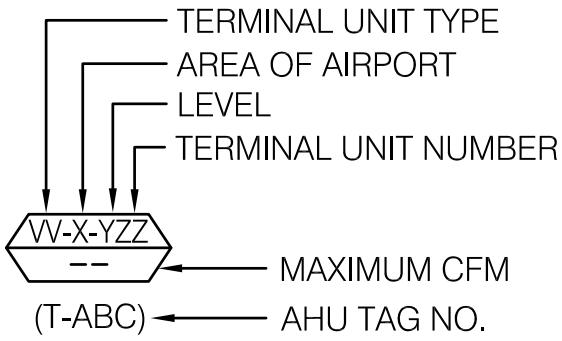
2363 DUCT LEGEND
SCALE: NTS

EQUIPMENT LEGEND:

EQUIPMENT



TERMINAL UNITS



AREA OF AIRPORT

A	CONCOURSE A
B	CONCOURSE B
C	CONCOURSE C
D	CONCOURSE D
E	CONCOURSE E
T	TERMINAL

LEVEL

1	DEPLANING LEVEL
2	ENPLANING LEVEL
3	MEZZANINE LEVEL/ROOF
4	PENTHOUSE/ROOF
5	ROOF

BOX TYPE SPECIFICATION REFERENCE

DD	DUAL DUCT
VV	VARIABLE VOLUME
VVR	VARIABLE VOLUME REHEAT
CV	CONSTANT VOLUME
CVR	CONSTANT VOLUME REHEAT
FPC	FAN POWERED CONSTANT
FPV	FAN POWERED VARIABLE
FPD	FAN POWERED DUAL DUCT

2364 EQUIPMENT LEGEND

SCALE: NTS

HVAC PIPING:

SYMBOL	ABBREV.	DESCRIPTION
LPS	LP	SLOW PRESSURE STEAM
LPR	LPR	LOW PRESSURE RETURN
MPS	MPS	MEDIUM PRESSURE STEAM
MPR	MPR	MEDIUM PRESSURE RETURN
HPS	HPS	HIGH PRESSURE STEAM
HPR	HPR	HIGH PRESSURE RETURN
D	D	DRAIN (CONDENSATE/INDIRECT)
PC	PC	PUMPED CONDENSATE
SV	SV	STEAM VENT
OFL	OFL	OVERFLOW
ICW	ICW	INDUSTRIAL COLD WATER (MAKE-UP)
CHWS	CHWS	CHILLED WATER SUPPLY
CHWR	CHWR	CHILLED WATER RETURN
HWS	HWS	HEATING WATER SUPPLY
HWR	HWR	HEATING WATER RETURN
HTWS	HTWS	HIGH TEMP. HOT WATER SUPPLY
HTWR	HTWR	HIGH TEMP. HOT WATER RETURN
RS	RS	REFRIGERANT SUCTION
RL	RL	REFRIGERANT LIQUID
RHG	RHG	REFRIGERANT HOT GAS
RRV	RRV	REFRIGERANT RELIEF VENT

2365 PIPING SYMBOLS

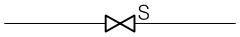
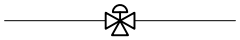
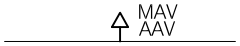
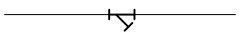
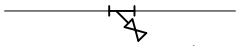
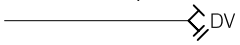
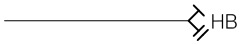
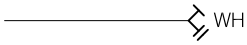
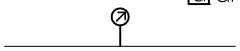
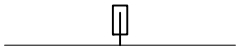
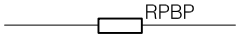
SCALE: NTS

STANDARD MECHANICAL ABBREVIATIONS:

AF	AIRFOIL
AFF	ABOVE FINISHED FLOOR
AHP	APPARATUS HOUSING PLENUM
ALT	ALTERNATIVE
AL	ALUMINUM
APD	AIR PRESSURE DROP
APPROX	APPROXIMATELY
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
BDD	BACKDRAFT DAMPER
BI	BACKWARD INCLINED
BLDG	BUILDING
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CLG	CEILING OR COOLING
CONC	CONCRETE
CONN	CONNECT(ION)
CONT	CONTINUE(ED)(UATION)
CL	CENTERLINE
DDC	DIRECT DIGITAL CONTROL
DEFL	DEFLECTION
DN	DOWN
DIA	DIAMETER
DP	DEW POINT
DTA	DRIP TRAP ASSEMBLY
DWDI	DOUBLE WIDTH DOUBLE INLET
DWG	DRAWING
EA	EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
EFT	ENTERING FLUID TEMPERATURE
ELEC	ELECTRIC(AL)
ELEV	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXTRACTOR
EXH	EXHAUST
EXIST	EXISTING EXP EXPANSION
F	DEGREES FAHRENHEIT
FC	FORWARD CURVED
FIG	FIGURE
FILT	FILTER
FLEX	FLEXIBLE
FPD	FLUID PRESSURE DROP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET/FOOT
FU	FIXTURE UNIT
FUT	FUTURE
FV	FACE VELOCITY
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GLY	GLYCOL
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HORIZ	HORIZONTAL
HP	HORSEPOWER
HTG	HEATING
ID	INSIDE(DIAMETER/DIMENSION)
IE	INVERT ELEVATION IN INCH(ES)
INSUL	INSULATION
ISOL	ISOLAT(OR)(ION)
KW	KILOWATT
KWH	KILOWATT HOUR L LENGTH
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LFT	LEAVING FLUID TEMPERATURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NIM	NOT IN MECHANICAL
NO	NORMALLY OPEN
OAD	OUTSIDE AIR DAMPER
OC	ON CENTER DISTANCE
OSA	OUTSIDE AIR
OV	OVAL
PH	PHASE
PP	POLYPROPYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVS	PVC COATED STEEL
R (RAD)	RADIUS
RA	RETURN AIR
RAD	RETURN AIR DAMPER
REV	REVISION
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	SMOKE DAMPER
SECT	SECTION
SENS	SENSIBLE
SIM	SIMILAR
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SF	SQUARE FOOT(FEET)
SQ IN	SQUARE INCH(ES)
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTUR(E)(AL)
SWP	SINGLE WALL PLENUM
SWSI	SINGLE WIDTH SINGLE INLET
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VOLTS
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VTR	VENT THROUGH ROOF
W	WIDTH
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
W/	WITH
W/O	WITHOUT

2366 STANDARD ABBREVIATIONS
SCALE: NTS

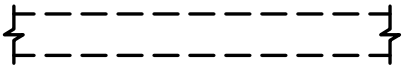
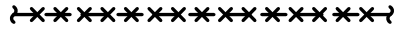
MISCELLANEOUS HVAC VALVES AND COCKS:

SYMBOL	DESCRIPTION
	SHUT-OFF VALVE
	GLOBE VALVE
	SHUT-OFF VALVE W/ TAMPER SWITCH
	TRIPLE DUTY VALVE
	CHECK VALVE
	2-WAY PRESSURE INDEPENDENT CONTROL VALVE (UNLESS INDICATED OTHERWISE)
	3-WAY CONTROL VALVE
	BALANCING VALVE
	FLOW CONTROL VALVE
	SOLENOID VALVE
	MANUAL AIR VENT / AUTOMATIC AIR VENT
	RELIEF VALVE
	STRAINER
	STRAINER W/ BLOWDOWN
	DRAIN VALVE
	HOSE BIBB
	WALL HYDRANT
	GROUND HYDRANT
	PRESSURE GAUGE
	PRESSURE/TEMPERATURE TEST PLUG
	THERMOMETER
	FLOW SWITCH
	TEMPERATURE TRANSMITTER
	SHOCK ARRESTOR
	VACUUM BREAKER
	WATER FLOW METER
	REDUCED PRESSURE BACKFLOW PREVENTER
	DETECTOR DOUBLE CHECK ASSEMBLY
	UNDERGROUND GATE VALVE W/BOX
	OUTSIDE SCREW & YOKE

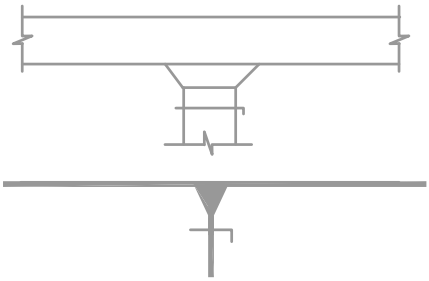
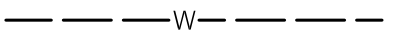
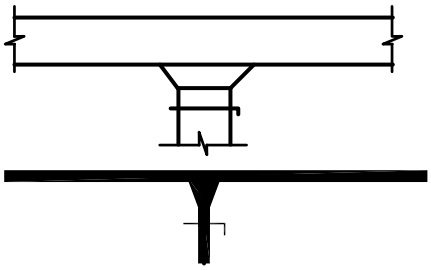
2367 MISCELLANEOUS VALVES AND COCKS

SCALE: NTS

DEMOLITION LEGEND:

SYMBOL	DESCRIPTION
	REMOVE EXISTING DUCT
	
	REMOVE EXISTING PIPE

NEW AND EXISTING WORK LEGEND:

SYMBOL	DESCRIPTION
	EXISTING WASTE (BELOW GRADE OR FLOOR)
	EXISTING COLD WATER
	EXISTING DUCT WORK
	NEW WASTE (BELOW GRADE OR FLOOR)
	NEW COLD WATER
	NEW DUCT WORK

2368 WORK LEGEND

SCALE: NTS

DESIGN CONDITIONS - PORTLAND, OR				
SPACE	WINTER		SUMMER	
	TEMPERATURE	HUMIDITY	TEMPERATURE	HUMIDITY
OUTDOOR	25.2F DB	9.6F DP / 9.0 HR / 29.8F MCDB	91.4F DB / 67.3F MCWB	63.2F DP / 87.0 HR / 75.1F MCDB
INDOOR	70F ± 2F DB	50% RH MAX, NO MINIMUM	75F ± 2F DB	50% RH MAX, NO MINIMUM

NOTE:

1. OUTDOOR CONDITIONS BASED ON ASHRAE FUNDAMENTALS 2013 99.6% AND 0.4% DATA.

2381 PDX DESIGN CONDITIONS SCHEDULE

SCALE: NTS

TERMINAL UNIT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	PRIMARY AIR					HYDRONIC COIL		MANUFACTURER & MODEL	NOTES
				INLET (IN)	MAX CFM	HEATING CFM	MIN CFM	LOW MIN CFM	MBH	GPM		
VVR-X-2XX	XXX	XXX	VVR	XX	XXXX	XXX	XXX	XXX	XX.X	X.X	XXX	(X)
VVR-X-2XX	XXX	XXX	VVR	XX	XXXX	XXX	XXX	XXX	XX.X	X.X	XXX	(X)
VVR-X-2XX	XXX	XXX	VVR	XX	XXXX	XXX	XXX	XXX	XX.X	X.X	XXX	(X)
VVR-X-XXX	XXX	XXX	VVR	XX	XXXX	XXX	XXX	XXX	XX.X	X.X	XXX	(X)
VVR-X-XXX	XXX	XXX	VVR	XX	XXXX	XXX	XXX	XXX	XX.X	X.X	XXX	(X)

NOTES:

1. PRIMARY AIR TEMPERATURE 55°F (SUMMER), 65°F (WINTER). NOTE: CONCOURSE E EXTENSION PRIMARY SUPPLY AIR TEMPERATURE IS 60° F NOMINAL.
2. AIR PRESSURE DROP THROUGH TERMINAL UNIT TO BE NO GREATER THAN 0.25 IN.WG.
3. HYDRONIC HEATING COIL SIZED BASED ON 180°F ENTERING WATER TEMPERATURE AND 140°F LEAVING WATER TEMPERATURE.
4. HEATING COIL SIZED BASED ON A MINIMUM 75°F LEAVING AIR TEMPERATURE AT 55°F ENTERING AIR TEMPERATURE.

KEY NOTES:

(1) CO2 SENSOR LOCATED ADJACENT TO THERMOSTAT.

(2) OCCUPANCY SENSOR LOCATED WITHIN SPACE.

(3) 2-WAY DELTA P CONTROL VALVE ON REHEAT COIL.

(4) REBALANCE EXISTING TERMINAL UNIT.

KEY:

VV = VARIABLE AIR VOLUME TERMINAL UNIT

VVR = VARIABLE AIR VOLUME TERMINAL UNIT WITH REHEAT COIL

FPS = FAN POWERED SERIES BOX

FPP = FAN POWERED PARALLEL BOX

2382 TERMINAL UNIT SCHEDULE

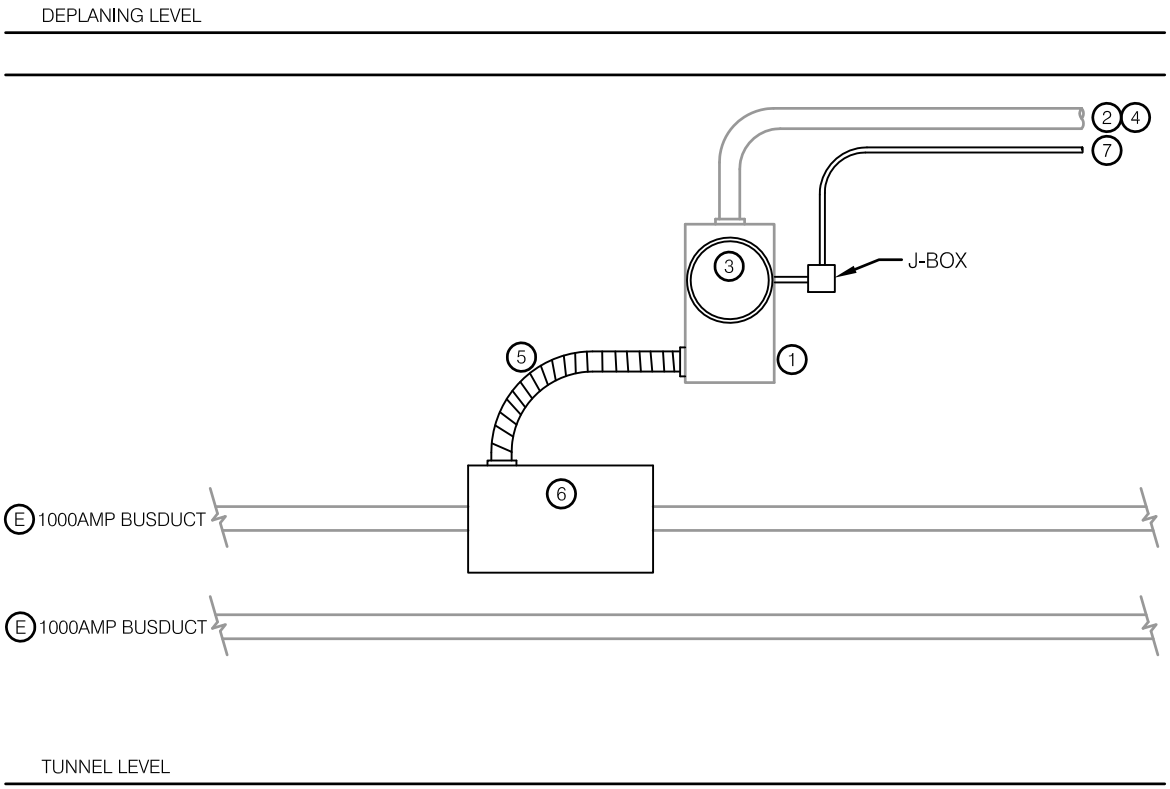
SCALE: NTS

MISCELLANEOUS SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
(1)	KEY NOTE
(E)	EXISTING TO REMAIN
(X)	REMOVE EXISTING
(C)	CONNECT TO EXISTING
(K)	CAP EXISTING / CAP FOR FUTURE
(A)	ACCESS PANEL
(B)	RUN IN BEAM SPACE
(R)	EXISTING TO BE RELOCATED
(D)	ABANDON IN PLACE

2391 MISCELLANEOUS SYMBOLS

SCALE: NTS



2601 METERING - BUSDUCT
SCALE: NTS

NOTES:

1. TENANT SHALL COORDINATE WITH THE PORT FOR THE CONNECTION TO THE BUSDUCT AND WHICH BUSDUCT TO USE.
2. ITEMS SHOWN AS SCREENED BACK LINES ARE EXISTING.

KEY NOTES:

(1) EXISTING, METERING SOCKET ENCLOSURE, WALL MOUNTED ABOVE THE EXISTING BUSDUCTS.

(2) EXISTING, 2" CONDUIT TO RESPECTIVE RETAIL SPACES.

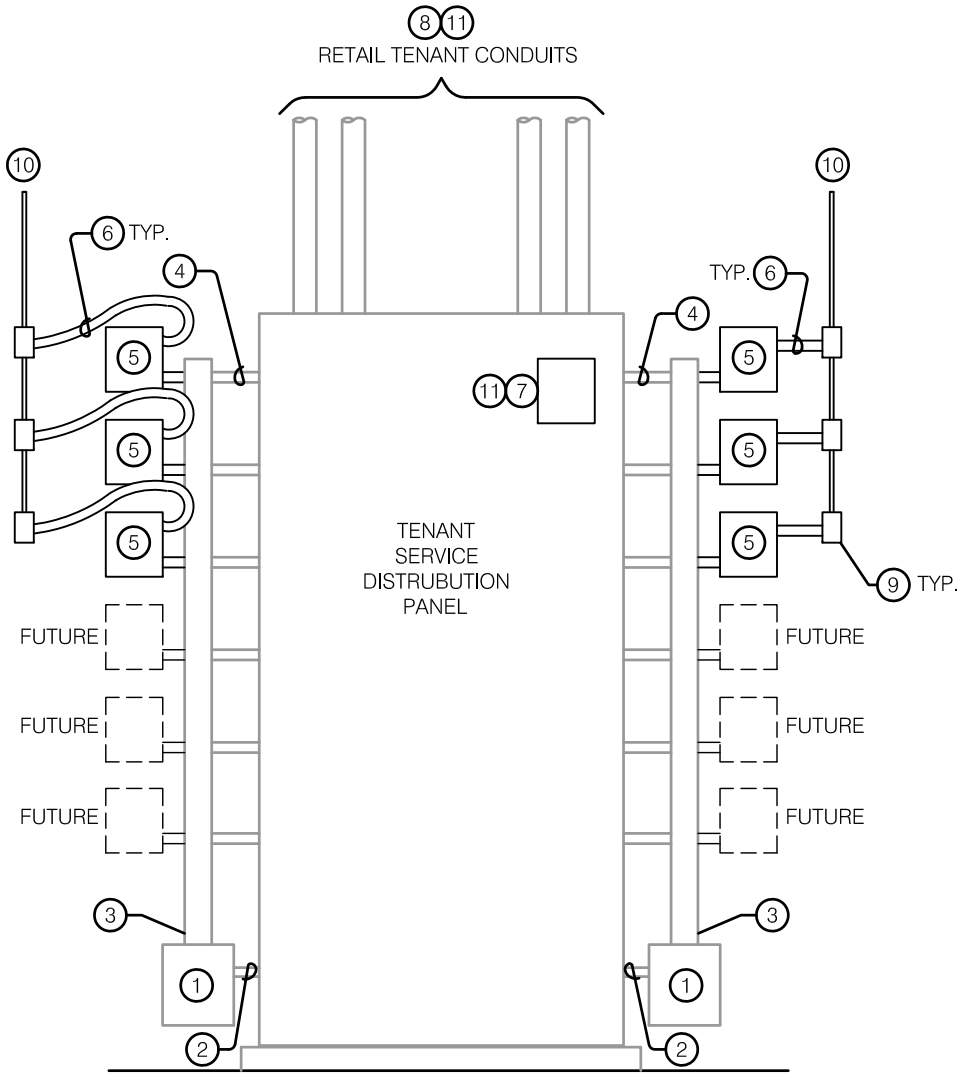
(3) BY TENANT: PROVIDE METER PER TENANT STANDARDS.

(4) BY TENANT: PROVIDE CONDUCTOR FROM THE METER ENCLOSURE TO THE LEASE SPACE.

(5) BY TENANT: PROVIDE SEALTIGHT FLEX CONDUIT AND CONDUCTORS BETWEEN THE METER ENCLOSURE AND BUSPLUG UNIT.

(6) BY TENANT: PROVIDE BUSDUCT PLUG-IN OVERCURRENT EQUIPMENT.

(7) BY TENANT: PROVIDE DATA CONDUIT AND 2/C #18 SH CABLE TO TERMINAL REVENUE METERING SYSTEM.



2602 METERING - DISTRIBUTION PANEL
SCALE: NTS

NOTES:

1. TENANT SHALL COORDINATE WITH THE PORT FOR THE CONNECTION TO THE DISTRIBUTION PANEL, AND WHICH BREAKER LOCATION TO USE.
2. ITEMS SHOWN AS SCREENED BACK LINES ARE EXISTING.

KEY NOTES:

(1) EXISTING, DIN RAIL WITH FIVE SETS OF 3 PHASE & NEUTRAL FUSE BLOCKS AND 1/2 AMP SLOW BLOW FUSES, IN NEMA 1 ENCLOSURE. BUSSMANN CH SERIES OR EQUAL.

(2) EXISTING, 3/4" C, 4#12, 1#12G AND CONNECT TO 20/3 BREAKER IN SERVICE PANEL.

(3) EXISTING, 4x4 GUTTER WITH HINGED COVER.

(4) EXISTING, 3/4" CONDUIT. CENTER CONDUIT ON EACH 3 POLE SPACE IN SERVICE PANEL AND TERMINATE IN GUTTER FOR FUTURE TENANT METER WIRING.

(5) BY TENANT: PROVIDE METER, WITH CT'S AND CONNECTIONS TO THE FUSE BLOCK FOR METER POWER.

(6) BY TENANT: PROVIDE A FLEX CONDUIT CONNECTION TO THE METERING COMPARTMENT.

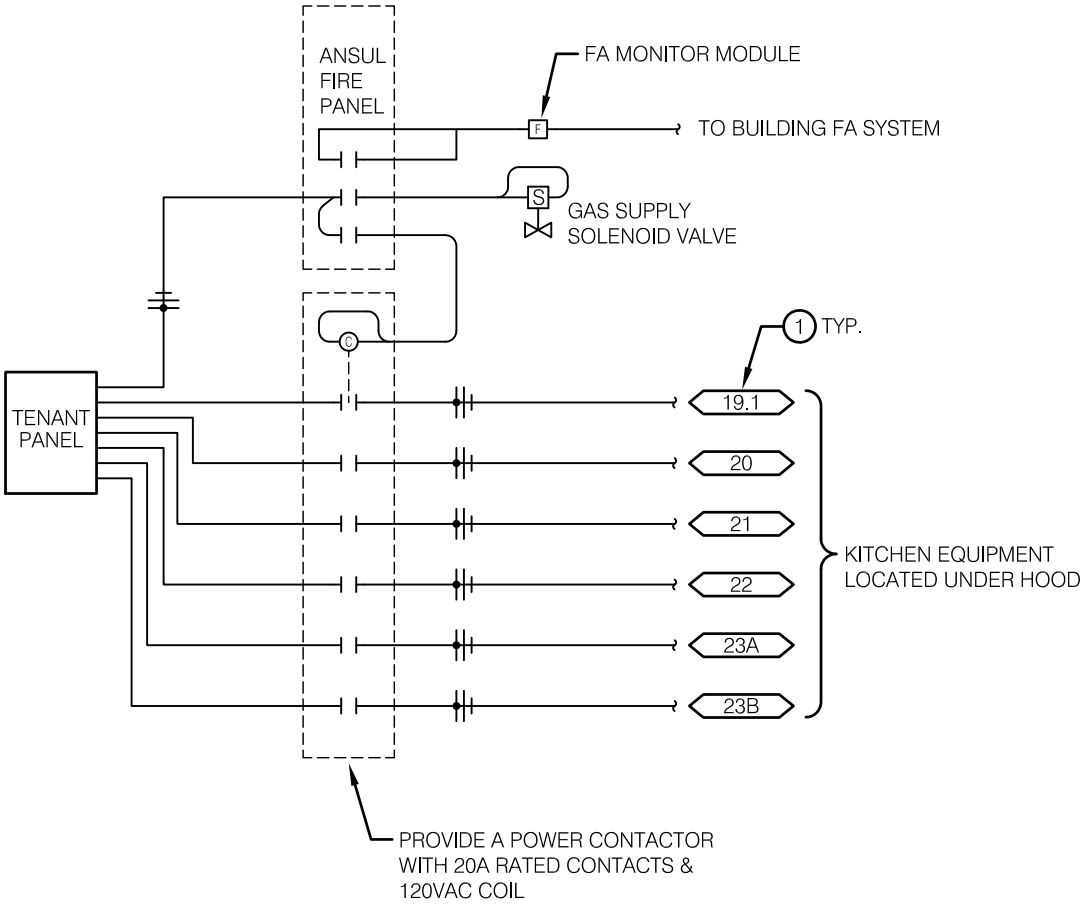
(7) TENANT SPACE CIRCUIT BREAKER AND METER SHALL LINE UP HORIZONTALLY, TYPICAL.

(8) EXISTING, 2" CONDUIT ROUTED TO RESPECTIVE RETAIL SPACES.

(9) BY TENANT: PROVIDE J-BOX FOR FUTURE METERING SYSTEM CONNECTION POINT.

(10) BY TENANT: PROVIDE DATA CONDUIT, 2/C #18 SH CABLE AND CONNECTION TO THE TERMINAL REVENUE METERING SYSTEM.

(11) BY TENANT: PROVIDE CIRCUIT BREAKER, AND SERVICE CONDUCTORS TO LEASE SPACE.

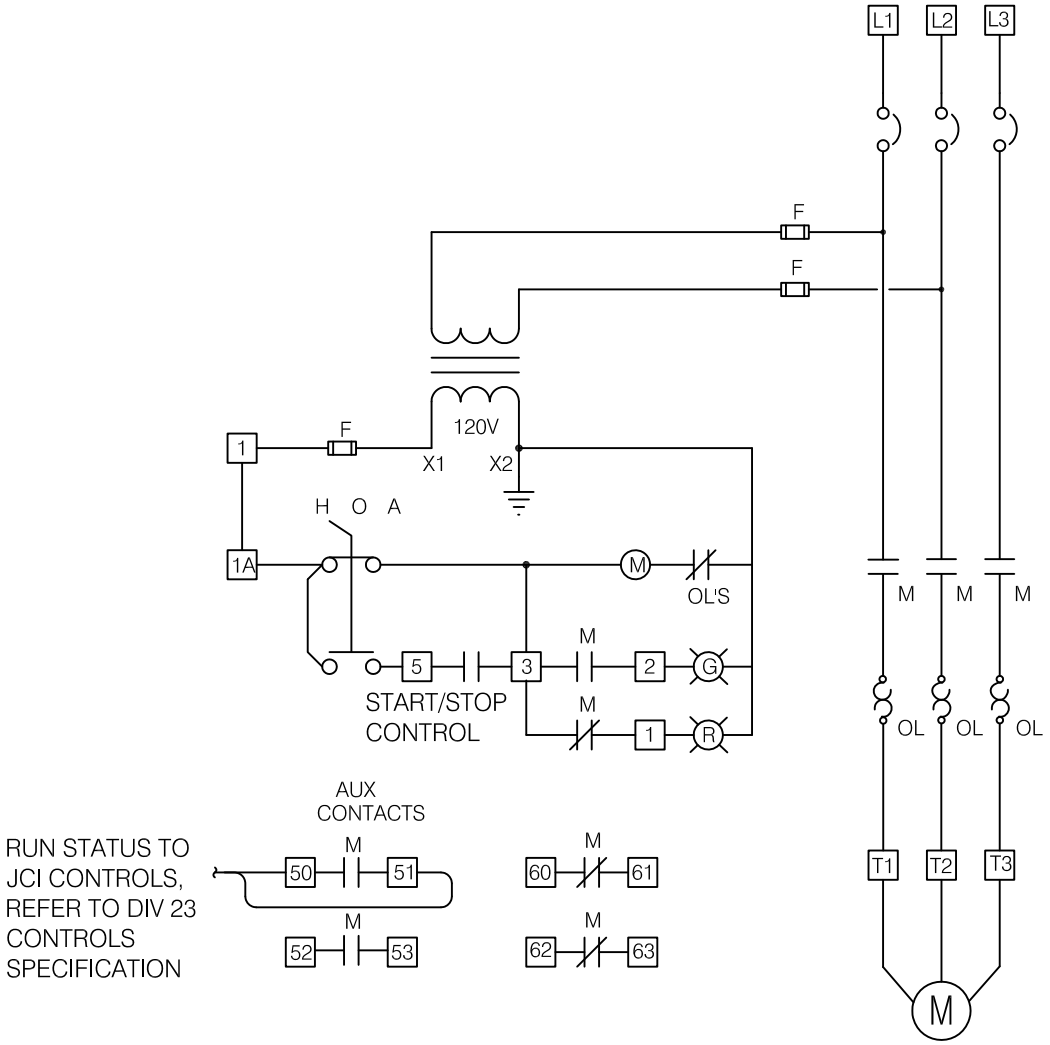


KEY NOTES:

(1) MATCH EQUIPMENT ID TAG SHOWN ON THE KITCHEN EQUIPMENT SCHEDULE AND PLANS.

2611 WIRING DIAGRAM - KITCHEN HOOD SHUTDOWN

SCALE: NTS

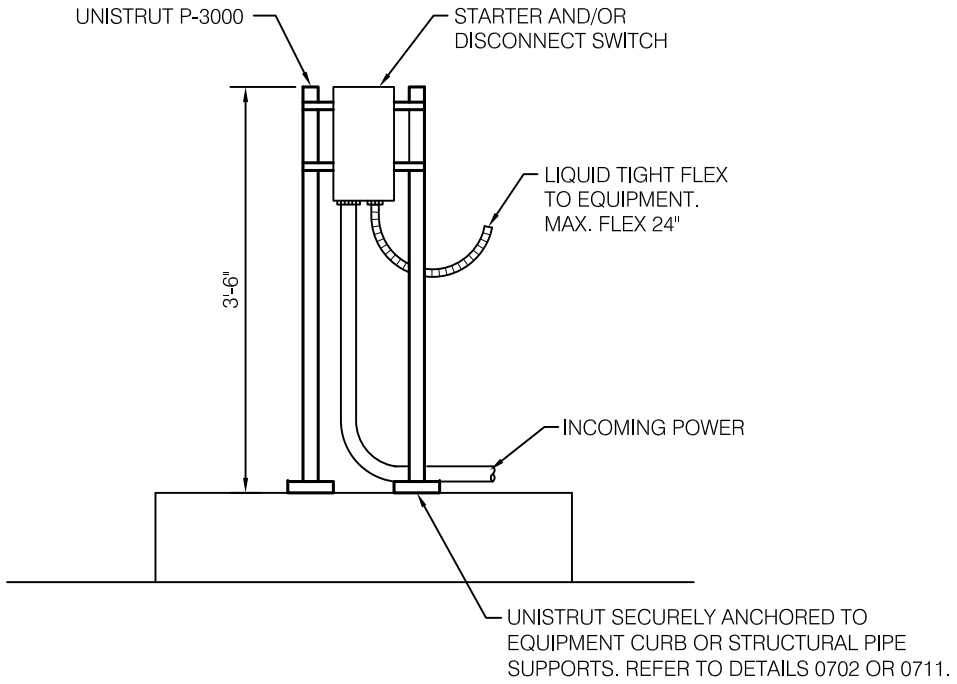


2612 WIRING DIAGRAM - MOTOR STARTER

SCALE: NTS

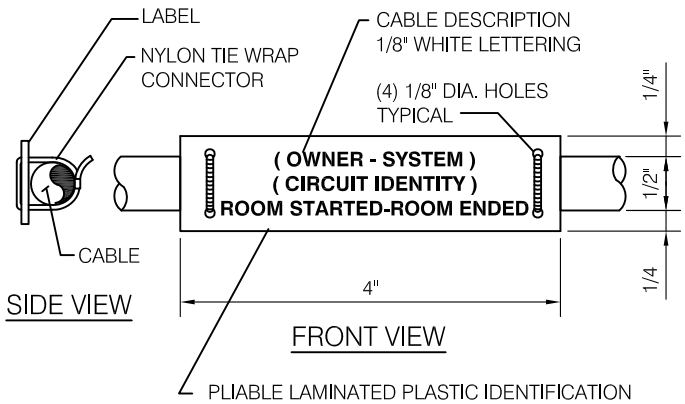
NOTES:

1. FOR WALL MOUNTED APPLICATIONS, DO NOT MOUNT THE DISCONNECT OR STARTER DIRECTLY TO THE WALL, PROVIDE A STRUT MOUNTING RACK, SIMILAR TO DETAIL ON THE WALL, AND MOUNT EQUIPMENT ONTO THE STRUT RACK.

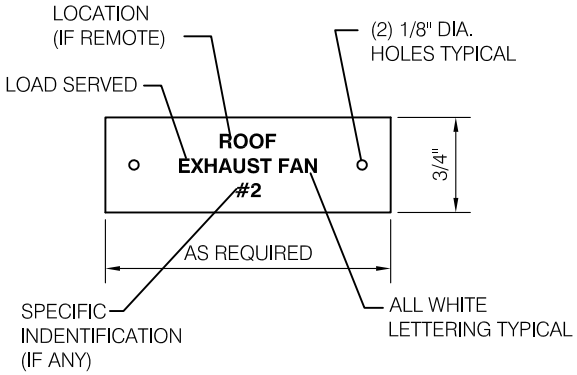


2621 FREESTANDING DISCONNECT RACK

SCALE: NTS



X CONDUIT AND INTERDUCT IDENTIFICATION
SCALE: NTS



X EQUIPMENT IDENTIFICATION
SCALE: NTS

DB#000001

X CABLE LABEL
SCALE: NTS

NOTES:

1. USE LAMINATED LABELS AT ALL INTERIOR AND PROTECTED LOCATIONS. USE PROFESSIONALLY ENGRAVED, WHITE ENAMEL FILLED BRASS LABELS IN ALL AREAS EXPOSED TO WEATHER AND/OR SUNLIGHT, AND IN ENVIRONMENTAL AIR HANDLING SPACES.
2. COLOR CODE FOR LABELS SHALL BE AS FOLLOWS:

PORT	BLUE
FAA	YELLOW
AIRLINES	GREEN
TELCO	RED
OTHER TENANTS	BLACK
EMERGENCY	WHITE WITH RED LETTERS

3. INSTALL CONDUIT AND INNERDUCT LABELS AT A MAXIMUM SPACING OF 50 FEET AND AT ENTRANCES OF ALL JUNCTION BOXES, DUCT BANKS, DISTRIBUTION PANELS, MOTOR CONTROL CENTERS, PANELBOARDS, ETC. PROVIDE A MINIMUM OF ONE LABEL PER ROOM OR SPACE.
4. INSTALL EQUIPMENT LABELS WITH STAINLESS STEEL #4 SCREWS.
5. SYSTEM EXAMPLES: POWER, FIRE ALARM, HVAC, COMMUNICATIONS, SIGNAL, TELEPHONE, REVENUE CONTROL.
6. LABEL CABLES WITH PREPRINTED LABEL. LABELS SHALL BE COMPUTER GENERATED WRAPAROUND WITH A REFERENCE NUMBER PREFACED WITH THE LETTERS DB. AT A MINIMUM, LABEL END, AND 3 EVENLY SPACED INTERMEDIATE POINTS
7. COMPLETE INSTALLATION OF LABELS PRIOR TO CEILING INSTALLATION.

2661 ELECTRICAL IDENTIFICATION
SCALE: NTS

ELECTRICAL MOTORIZED AND HVAC EQUIPMENT SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	SWITCH - DISCONNECT
	SWITCH - DISCONNECT FUSED
	ENCLOSED CIRCUIT BREAKER
	MAGNETIC CONTACTOR
	ADJUSTABLE SPEED DRIVE
	SWITCH - MOTOR STARTER
	MAGNETIC MOTOR STARTER
	SWITCH - COMBINATION MAGNETIC STARTER AND DISCONNECT
	AUTOMATIC TEMPERATURE CONTROL PANEL
	EQUIPMENT CONTROL PANEL
	RELAY
	SWITCH TOGGLE DISCONNECT
	SWITCH - THERMAL MOTOR

2662 ELECTRICAL MOTORIZED AND HVAC EQUIPMENT SYMBOLS

SCALE: NTS

EQUIPMENT NAMING CONVENTION:

POWER CLASSIFICATION:
- BLANK - NORMAL POWER
- E - EMERGENCY POWER
- S - LEGALLY REQUIRED / OPTIONAL STANDBY POWER
- U - UNINTERRUPTIBLE POWER

VOLTAGE:
- 2 - 208Y/120V
- 4 - 480Y/277V
- 5 - 4160Y/2400V
- 15 - 12470Y/7200V

EQUIPMENT:
- D - MAIN DISTRIBUTION PANEL
- S - SUB DISTRIBUTION PANEL
- B - BUSWAY
- M - MOTOR CONTROL CENTER
- A - AUTOMATIC TRANSFER SWITCH
- P - POWER PANEL
- L - LIGHTING PANEL
- T - TRANSFORMER
- C - CONTROLLER / STARTER
- U - UNINTERRUPTIBLE POWER SUPPLY

LEVEL:
- 0 - TUNNEL LEVEL
- 1 - DEPLANING LEVEL
- 2 - ENPLANING LEVEL
- 3 - MEZZANINE LEVEL
- 4 - ROOF

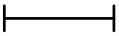
CONCOURSE/AREA:
- T - TERMINAL
- A - CONCOURSE A
- B - CONCOURSE B
- C - CONCOURSE C
- D - CONCOURSE D
- E - CONCOURSE E
- P - PARKING STRUCTURE
- U - CENTRAL UTILITY PLANT
- L - LONG TERM PARKING
- M - MAINTENANCE FACILITY
- R - ARFF
- X - EXIT PLAZA OFFICE

GRID LOCATION:
- 1A - NEAR INTERSECTION OF GRID LINES 1 AND A

IDENTIFIER:
- A - FIRST IN SERIES OF EQUIPMENT
- B - SECOND IN SERIES OF EQUIPMENT

2663 EQUIPMENT NAMING CONVENTION
SCALE: NTS

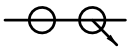
LIGHTING FIXTURE SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	LUMINAIRE - CIRCLE
	LUMINAIRE - SQUARE
	LUMINAIRE - TRIANGLE
	LUMINAIRE - STRIP
	FLUORESCENT - STRIP
	SPOTLIGHT - SINGLE HEAD
	SPOTLIGHT - DOUBLE HEAD
	EXIT LIGHT - WALL
	EXIT LIGHT - SUSPENDED
	LIGHT TRACK
	EMERGENCY REMOTE BATTERY
	EMERGENCY BATTERY AND LIGHTS
	LUMINAIRE - SINGLE POLE
	LUMINAIRE - TWIN POLE
	LUMINAIRE - ROADWAY COBRA HEAD
	BOLLARD TYPE
	MOUNTED ROUND FIXTURE - SURFACE
	MOUNTED RECTANGULAR FIXTURE - SURFACE
	MOUNTED ROUND FIXTURE - RECESSED
	MOUNTED RECTANGULAR FIXTURE - RECESSED
	MOUNTED ROUND FIXTURE - WALL

2664 LIGHTING FIXTURE SYMBOLS 1

SCALE: NTS

LIGHTING FIXTURE SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	MOUNTED RECTANGULAR FIXTURE - WALL
	MOUNTED ROUND FIXTURE - SUSPENDED
	MOUNTED RECTANGULAR FIXTURE - SUSPENDED
	MOUNTED ROUND FIXTURE - POLE ARM
	MOUNTED RECTANGULAR FIXTURE - POLE ARM
	MOUNTED ROUND FIXTURE - POLE TOP
	MOUNTED RECTANGULAR FIXTURE - POLE TOP
	MOUNTED FIXTURE - INGROUND
	ACCENT DIRECTIONAL ARROW (A)
	ACCENT DIRECTIONAL ARROW (B)
	DIRECTIONAL AIMING LINE
	TRACK MOUNTED
	EMERGENCY LUMINAIRE - ROUND
	EMERGENCY LUMINAIRE - RECTANGULAR
	LIGHTING FIXTURE - SQUARE
	LIGHTING FIXTURE - RECTANGULAR
	NIGHT LIGHT
	MOUNTING HEIGHT
	LOUVERS
	EMERGENCY FIXTURE - RECTANGULAR

2665 LIGHTING FIXTURE SYMBOLS 2

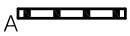
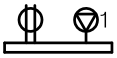
SCALE: NTS

OUTLET NOTATIONS:

PREFERRED SYMBOL	DESCRIPTION
"a"	SWITCHED OUTLET, "a" INDICATES SWITCH CONTROL.
"B"	PEDESTAL MOUNTED ON BENCH TOP.
"BF"	BELOW FLOOR
"C"	MOUNTED 6" ABOVE COUNTER OF 42" AFF - COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS`
"CLG"	CEILING MOUNTED
"D"	DEDICATED DEVICE ON INDIVIDUAL BRANCH CIRCUIT
"E"	EMERGENCY
"EXIST"	EXISTING DEVICE/EQUIPMENT
"F"	FLUSH FLOOR BOX WITH FIRE/SMOKE RATED PENETRATION
"GFCI"	GROUND FAULT CIRCUIT INTERRUPTER, PERSONAL PROTECTION
"GFPE"	GROUND FAULT PROTECTION OF EQUIPMENT
"H"	HORIZONTALLY MOUNTED
"IG"	ISOLATED GROUND RECEPTACLE WITH SEPARATE GREEN GROUND CONDUCTOR TO ISOLATED GROUND BUS IN PANEL
"M"	MODULAR FURNITURE SERVICE - PROVIDE FLEXIBLE CONNECTION, COORDINATE EXACT LOCATION WITH FURNITURE PLANS
"PED"	PEDESTAL MOUNTED WITH TWO HOUR FIRE/SMOKE RATED PENETRATION
"PT"	POKE THRU WITH TWO HOUR FIRE/SMOKE RATED PENETRATION
"S"	SURFACE MOUNTED FLOOR BOX
"SP"	SURGE PROTECTION RECEPTACLE
"T"	TAMPER RESISTANT SAFETY RECEPTACLE
"TL"	TWIST-LOCK
"W"	WALL MOUNTED DEVICE AT 48" AFF UNLESS OTHERWISE INDICATED
"WP"	WEATHERPROOF RECEPTACLE WITH "NRTL" LISTED COVER PLATE FOR WET LOCATION WITH PLUG INSTALLED - MOUNTED 48" AFF UNLESS OTHERWISE INDICATED
"+XX"	DIMENSIONED HEIGHT

2666 OUTLET NOTATION SYMBOLS
SCALE: NTS

OUTLET AND RECEPTACLE SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	RECEPTACLE DUPLEX FLOOR
	RECEPTACLE DUPLEX CONVENIENCE
	EMERGENCY RECEPTACLE DUPLEX CONVENIENCE
	RECEPTACLE SINGLE CONVENIENCE
	EMERGENCY RECEPTACLE SINGLE CONVENIENCE
	RECEPTACLE DOUBLE DUPLEX CONVENIENCE
	EMERG. RECEPTACLE DOUBLE DUPLEX CONVENIENCE
	MULTI-OUTLET ASSEMBLY (A)
	MULTI-OUTLET ASSEMBLY (B)
	SPECIAL RECEPTACLE - ROUND
	SPECIAL RECEPTACLE - SQUARE
	CLOCK HANGER OUTLET
	FLUSH MOUNTED FLOOR BOX
	JUNCTION BOX - ROUND
 12X12X18	JUNCTION BOX - SQUARE

2667 OUTLET AND RECEPTACLE SYMBOLS

SCALE: NTS

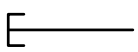
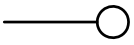
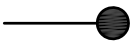
POWER DISTRIBUTION EQUIPMENT SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	PANEL - RECESSED
	PANEL - SURFACE
	PANEL - DISTRIBUTION
	PANEL - EMERGENCY FEEDER DISTRIBUTION
	PANEL - EMERGENCY FEEDER
	MOTOR CONTROL CENTER
	TRANSFORMER - DRY TYPE
	TRANSFORMER - PAD MOUNT
	TRANSFORMER - CURRENT CABINET
	GENERATOR
	METER - SINGLE
	METER - SINGLE AND SOCKET
	SWITCH - TRANSFER

2668 POWER DISTRIBUTION EQUIPMENT SYMBOLS

SCALE: NTS

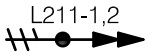
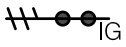
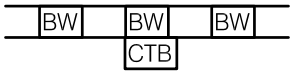
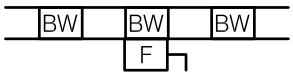
RACEWAY SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
———	CONDUIT
———	CONDUIT - CONCEALED
	RACEWAY - NONRIGID
——— NE ———	NORMAL/EMERGENCY CIRCUIT
——— EB ———	EMERGENCY BATTERY WIRING
——— HT ———	HEAT TRACE
——— WT ———	KEEP WARM TRACE
——— P ———	UNDER FLOOR POWER RACEWAY
——— T ———	UNDER FLOOR TELECOMMUNICATIONS RACEWAY
——— PT ———	UNDER FLOOR POWER AND TELECOMMUNICATIONS RACEWAY
——— S ———	UNDER FLOOR SIGNAL RACEWAY
——— PTD ———	UNDER FLOOR POWER, TELEPHONE AND DATA RACEWAY
——— UCP ———	UNDER CARPET CABLE POWER
——— UCT ———	UNDER CARPET CABLE TELEPHONE
——— UCD ———	UNDER CARPET CABLE DATA
	CONDUIT STUB
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
SZ 2C,4#1&1#6GND	CONDUIT CALLOUT
(2)SZ 2C,4#1&1#6GND	MULTI CONDUIT CALLOUT

2669 RACEWAY SYMBOLS 1

SCALE: NTS

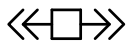
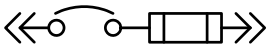
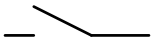
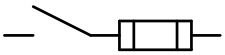
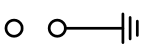
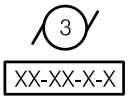
RACEWAY SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	HOME RUN TO PANELBOARD
	FLEXIBLE CONNECTION
	DIRECT CONNECTION
	BRANCH CIRCUIT
	UNDERFLOOR RACEWAY JUNCTION BOX
	POWER POLE
	TELECOM POLE
	TELECOM/POWER POLE
	PULL BOX
	CABLE TRAY
	CABLE TRAY - CONCEALED
	PLUG-IN DEVICE
	CABLE TAP BOX
	BUSWAY WITH CABLE TAP BOX
	BUSWAY WITH PLUG-IN DEVICE
	BUSWAY FEED UP
	BUSWAY FEED DOWN
	BUSWAY EXPANSION JOINT
	WIREWAY

2670 RACEWAY SYMBOLS 2

SCALE: NTS

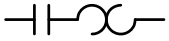
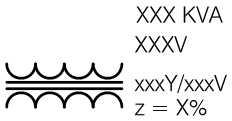
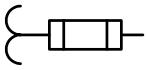
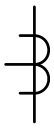
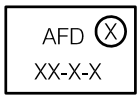
SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	CAPACITOR
	CB - OPEN
	CB - ENCLOSED
	CB - PRIMARY DRAW OUT
	CB - LOW VOLTAGE DRAW OUT
	CB - LOW VOLTAGE DRAW OUT WITH FUSE
	CONTACT - NORMALLY OPEN
	CONTACT - NORMALLY CLOSED
	CURRENT XFMR CABINET
	FUSE - CUTOUT
	SWITCH - DISCONNECT UNFUSED
	SWITCH - DISCONNECT FUSED
	FUSE
	OVERLOAD RELAY
	GROUND
	KIRK-KEY INTERLOCK SYSTEM
	LIGHTNING ARRESTER
	MOTOR AND LABEL
	MOTOR OPERATOR
	NETWORK PROTECTOR

2671 SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS 1

SCALE: NTS

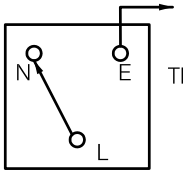
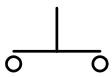
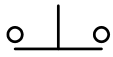
SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	PANELBOARD
	POTHEAD
	STRESS CONE
	RESISTOR
	SHUNT TRIP
	MAGNETIC STARTER
	GROUND FAULT CIRCUIT INTERRUPTER
	GENERATOR
	XFMR - DRY TYPE
	XFMR - POTENTIAL
	XFMR - CURRENT
	3-PHASE 3-WIRE CONNECTION
	CORNER GROUNDED DELTA
	3-PHASE 4-WIREWYE CONNECTION
	ADJUSTABLE FREQUENCY DRIVE
	BUSDUCT OR BUSWAY

2672 SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS 2

SCALE: NTS

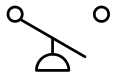
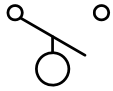
SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
XX' XXXV WIREWAY	WIREWAY
CM	METER - CUSTOMER
TWM	METER - TOTALIZING WATT HOUR
VAR	METER - VARMETER
A	METER - AMMETER
AS	METER - AMMETER PHASE SWITCH
D	METER - DEMAND
GD	GROUND DETECTOR
P	SYNCHROSCOPE
PF	METER - POWER FACTOR
Hz	METER - FREQUENCY
V	METER - VOLTMETER
VA	METER - VOLT-AMMETER
VS	METER - VOLTMETER PHASE SWITCH
WM	METER - WATTMETER
W	METER - WATTHOUR
 TRANSFER SWITCH XXA-XP	SWITCH - TRANSFER
	SWITCH - PUSH START
	SWITCH - PUSH STOP

2673 SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS 3

SCALE: NTS

SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	SWITCH - LIMIT
	SWITCH - FLOW
	SWITCH - PRESSURE
	SWITCH - FLOAT
	PILOT LIGHT
	SOLENOID

2674 SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS 4

SCALE: NTS

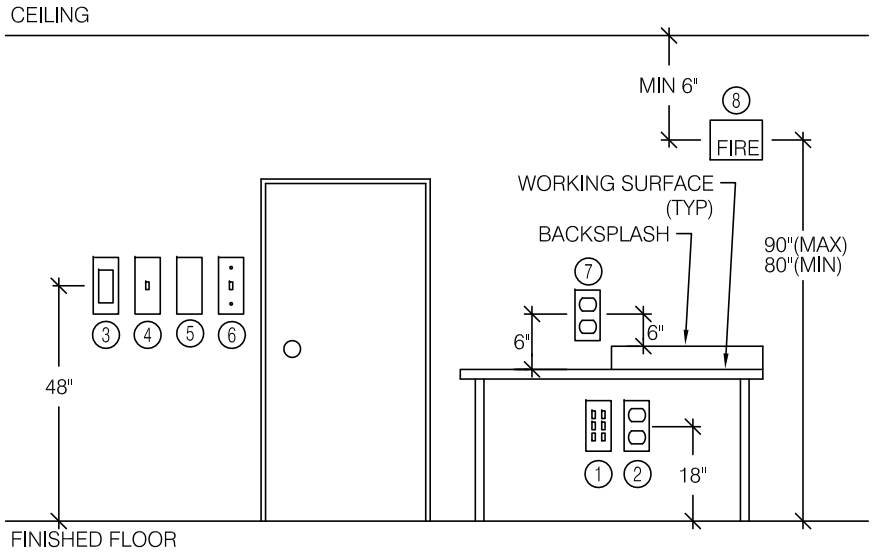
SWITCH AND SENSOR SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
$	SWITCH - SINGLE POLE
$$_{2}$$	SWITCH - DOUBLE POLE
$$_{3}$$	SWITCH - THREE WAY
$$_{4}$$	SWITCH - FOUR WAY
$$_{a}$$	SWITCH - CONTROL
$$_{CB}$$	SWITCH - CIRCUIT BREAK
$$_{DT}$$	SWITCH - SINGLE POLE/DOUBLE THROW
$$_{G}$$	SWITCH - GLOW TOGGLE
$$_{H}$$	SWITCH - HORIZONTAL
$$_{K}$$	SWITCH - KEY OPERATED
$$_{KP}$$	SWITCH - KEY OPERATED WITH PILOT LIGHT
$$_{LV}$$	SWITCH - LOW VOLTAGE
$$_{LM}$$	SWITCH - LOW VOLTAGE MASTER SWITCH
$$_{MC}$$	SWITCH - MOMENTARY CONTACT
$$_{P}$$	SWITCH - PILOT LIGHT
$$_{T}$$	SWITCH - TIMER
$$_{WP}$$	SWITCH - SINGLE POLE WEATHERPROOF
D	SWITCH - DIMMER
M	SWITCH - OCCUPANCY SENSOR WALL MOUNTED
M P	SWITCH - OCCUPANCY SENSOR CEILING MOUNTED

2675 SWITCH AND SENSOR SYMBOLS

SCALE: NTS

MOUNTING HEIGHTS:



GENERAL NOTES:

1. LOCATE ALL FIRE ALARM DEVICES PER CODE.
2. LOCATE ALL ACCESSIBLE SWITCHES PER ADA GUIDELINES.
3. FIELD COORDINATE ALL ABOVE COUNTER DEVICES WITH MILLWORK CONTRACTOR.

NOTES:

(1) TELECOM OUTLET
(2) RECEPTACLE
(3) FIRE ALARM PULL STATION
(4) LIGHT SWITCH
(5) CARD READER
(6) WALL PHONE
(7) ABOVE COUNTER DEVICE MAINTAIN A CONSISTANT HEIGHT THROUGHOUT SPACE
(8) FIRE ALARM STROBE

2676 MOUNTING HEIGHTS
SCALE: NTS

STANDARD ELECTRICAL ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR
A	AMPERE (AMP)
AL	ALUMINUM
ARCH	ARCHITECT(URAL)
ATS	AUTOMATIC TRANSFER SWITCH
CB	CIRCUIT BREAKER
C	CONDUIT
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CT	CURRENT TRANSFORMER
CU	COPPER
DN	DOWN
EMERG	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF
EWC	ELECTRICAL WATER COOLER
FA	FIRE ALARM
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FCIC	FURNISHED BY CONTRACTOR INSTALLED BY CONTRACTOR
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR
FOIO	FURNISHED BY OWNER INSTALLED BY OWNER
FVIC	FURNISHED BY VENDER INSTALLED BY CONTRACTOR
GFP	GROUND FAULT PROTECTION
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRC	GALVANIZED RIGID CONDUIT
GRD	GROUND
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HZ	HERTZ
IC	ISOLATED GROUND
INC	INCANDESCENT
JB	JUNCTION BOX
KW	KILOWATT
KWH	KILOWATT HOUR
KV	KILOVOLT
KVA	KILOVOLT AMP
KVAR	KILOVOLT AMPS REACTIVE
LA	LIGHTNING ARRESTOR
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MH	METAL HALIDE
MLO	MAIN LUGS ONLY
MV	MERCURY VAPOR
MTS	MANUAL TRANSFER SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT CIRCUIT
PA	PUBLIC ADDRESS
PE	PHOTO ELECTRIC CELL
PF	POWER FACTOR
PNL	PANELBOARD
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
SDP	SUB-DISTRIBUTION PANEL
STR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
TC	TIME CLOCK
TD	TIME DELAY
TP	TAMPERPROOF
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUPTABLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
V	VOLTAGE
VA	VOLT AMPERES
W	WATTS
WP	WEATHER PROOF
XFMR	TRANSFORMER

2677 STANDARD ABBREVIATIONS

SCALE: NTS

Directions:

1. The kitchen equipment descriptions and electrical characteristics will be provided by the project kitchen consultant
2. The electrical designer will copy only the kitchen equipment items with electrical requirements into the schedule.
3. The kitchen equipment tags will match the tags provided on the kitchen consultants documents.
4. Provide a corresponding equipment tag on the kitchen plans, using a oval symbol.
5. Provide the standard hood fire suppression monitoring and shutdown detail on the drawings
6. Fill out the blue portion below and insert into the design drawing package.

Project:	**XYZ**	**Orig. Date:**	**1/1/1111**
		Revised:	**1/1/1111**
Architect:	**XYZ**	**By:**	**XYZ**
Kitchen Consultant:	**XYZ**	**Chk By:**	**XYZ**

KITCHEN EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS				FEEDER CHARACTERISTICS					PANEL INFORMATION		EQUIPMENT CONNECTION		NOTES
EQUIPMENT ID TAG	DESCRIPTION	LOCATION	LOAD (KW)	LOAD (AMPS)	VOLTS	PHASE	CONDUIT	PHASE CONDUCTORS	GROUND CONDUCTORS	OCP	DISCONNECT	PANEL	CIRCUIT	TYPE	LOCATION	
1	REMOTE REFRIGERATION SYSTEM			150.0	208	3	2"	3#3/0	1#6	200/3				HARDWIRE		
3	SODA RACK			10.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
14	FOOD WASTE COLLECTOR			3.2	208	3	3/4"	3#12	1#12	20/3				HARDWIRE		
18	DISHWASHER			55.0	208	3	1-1/4"	3#1	1#6	125/3				HARDWIRE		
29	MOBILE HEATED CABINET			16.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
34	WALK-IN FREEZER			10.0	120	1	3/4"	2#12	1#12	20/1				HARDWIRE		
35	EVAPORATOR COIL			1.8	208	1	3/4"	3#12	1#12	20/2				HARDWIRE		
36	WALK IN FREEZER			10.0	120	1	3/4"	2#12	1#12	20/1				HARDWIRE		
37	EVAPORATOR COIL			1.8	208	1	3/4"	3#12	1#12	20/2				HARDWIRE		
41	WALK-IN COOLER			10.0	120	1	3/4"	2#12	1#12	20/1				HARDWIRE		
43	EVAPORATIVE COIL			2.0	120	1	3/4"	2#12	1#12	20/1				HARDWIRE		
45	WORK TABLE			15.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
47	WORK TABLE			15.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
48	MEAT SLICER			5.6	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
51	WORK TABLE			15.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		
52	WORK TABLE			15.0	120	1	3/4"	2#12	1#12	20/1				NEMA 5-20R		

GENERAL NOTES: (SOME MAY NOT BE USED ON THIS SHEET

A. REFER TO THE KITCHEN CONSULTANT DOCUMENTS FOR FURTHER DETAILS, NOTES AND ELECTRICAL INSTALLATION INSTRUCTIONS.
B. ALL RECEPTACLES WITHIN THE KITCHEN AREA SHALL BE GFCI TYPE PER NEC.

NOTES: (SOME MAY NOT BE USED ON THIS SHEET

1. PROVIDE CONTROLS INTERLOCK CONNECTION BETWEEN THE HOOD CONTROL PANEL AND THE HOOD EXHAUST FAN STARTER AS RECOMMENDED BY THE HOOD MANUFACTURE
2. PROVIDE CONTROLS INTERLOCK CONNECTION BETWEEN THE DISHWASHER CONTROL PANEL AND THE HOOD EXHAUST FAN STARTER AS RECOMMENDED BY THE DISHWASHER MANUFACTURE
3. PROVIDE POWER AND GAS SHUTOFF FOR EQUIPMENT LOCATED UNDER THE HOOD, REFER TO DETAIL _____
4. PROVIDE FIRE ALARM SYSTEM MONITORING OF THE HOOD FIRE SUPRESSION PANEL, REFER TO DETAIL _____
5. FOR EACH PIECE OF HARDWIRED EQUIPMENT, PROVIDE SUITABLE DISCONNECTING MEANS IN ACCESSIBLE, CONCEALED SEPARATE LOCATIO

WITHIN LINE OF SIGHT OF EQUIPMENT. DISCONNECT MAY BE OMITTED IF EQUIPMENT HAS SUITABLE INTEGRAL DISCONNECTING MEAN

PAE CONSULTING ENGINEERS, INC.

Project:	**XXX**	**Orig. Date: 1/1/1111**	
Architect:	**XXX**	**Revised: 1/1/1111**	
		By:	

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS							CONNECTION CHARACTERISTICS				FEEDER CHARACTERISTICS			PANEL INFORMATION	SCCR	NOTES
TAG	DESCRIPTION	LOCATION	KW	HP	FLA	MCA	MOCP	VOLTS	PHASE	VFD	1-POINT CONNECT	STARTER DIVISION	DISCONNECT DIVISION	CONDUIT DIA (INCH)	PHASE CONDUCTORS	GROUND CONDUCTOR	PANEL NAME	AVAILABLE FAULT AT EQUIPMENT (AMPS)	
DELETE THIS ROW AFTER COMPLETE			**COLUMNS TO BE COMPLETED BY MECHANICAL**							**COLUMNS TO BE COMPLETED BY ELECTRICAL**									
EXAMPLE INPUTS (FOR REFERENCE)	**DELETE THIS ROW AFTER COMPLETE**		0.75 10	1/4 2-1/2 5 15	110.3	137.5	150	120 208 277 480	1 3	YES NO	YES NO	23 26	23 26	1/2 3	1#12 2#6 3#10	1#8 1#10 1#12	4P1A EM2P1A MCC1A	10,473	NOTE 1 NOTES 1, 4
DUCT SMOKE DETECTORS	AT FSD'S																		
DUCT SMOKE DETECTORS	AT (RTU)(AHU) - (SUPPLY)(RETURN)																		
FSD	FIRE SMOKE DAMPER																		
DDC PANEL	CONTROL PANEL - 1st floor																		
AC-1	AIR COMPRESSOR FOR CONTROLS																		
AHU-	AIR HANDLING UNIT																		
	-SUPPLY FAN																		
	-RETURN/RELIEF FAN																		
	-LIGHTS																		
	-RECEPTACLES																		

GENERAL NOTES: (SOME MAY NOT BE USED ON THIS SHEET)

1. REFER TO ONE-LINE DIAGRAM OR PANEL SCHEDULES FOR OVERCURRENT PROTECTION CHARACTERISTICS AND CIRCUIT NUMBERS.
2. COORDINATE ALL EQUIPMENT CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR PRIOR TO THE INSTALLATION OF ANY ELECTRICAL WORK.
3. COMBINATION STARTER/DISCONNECTS AND DISCONNECT SWITCHES SHALL BE LOCATED WITHIN SIGHT OF AND ADJACENT TO EQUIPMENT SERVED. COORDINATE INSTALLATION WITH EQUIPMENT INSTALLER.
4. NOT ALL EQUIPMENT IDENTIFIED HERE IS SHOWN ON FLOOR PLANS. REFER TO DRAWINGS IN OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.

NOTES: (SOME MAY NOT BE USED ON THIS SHEET)

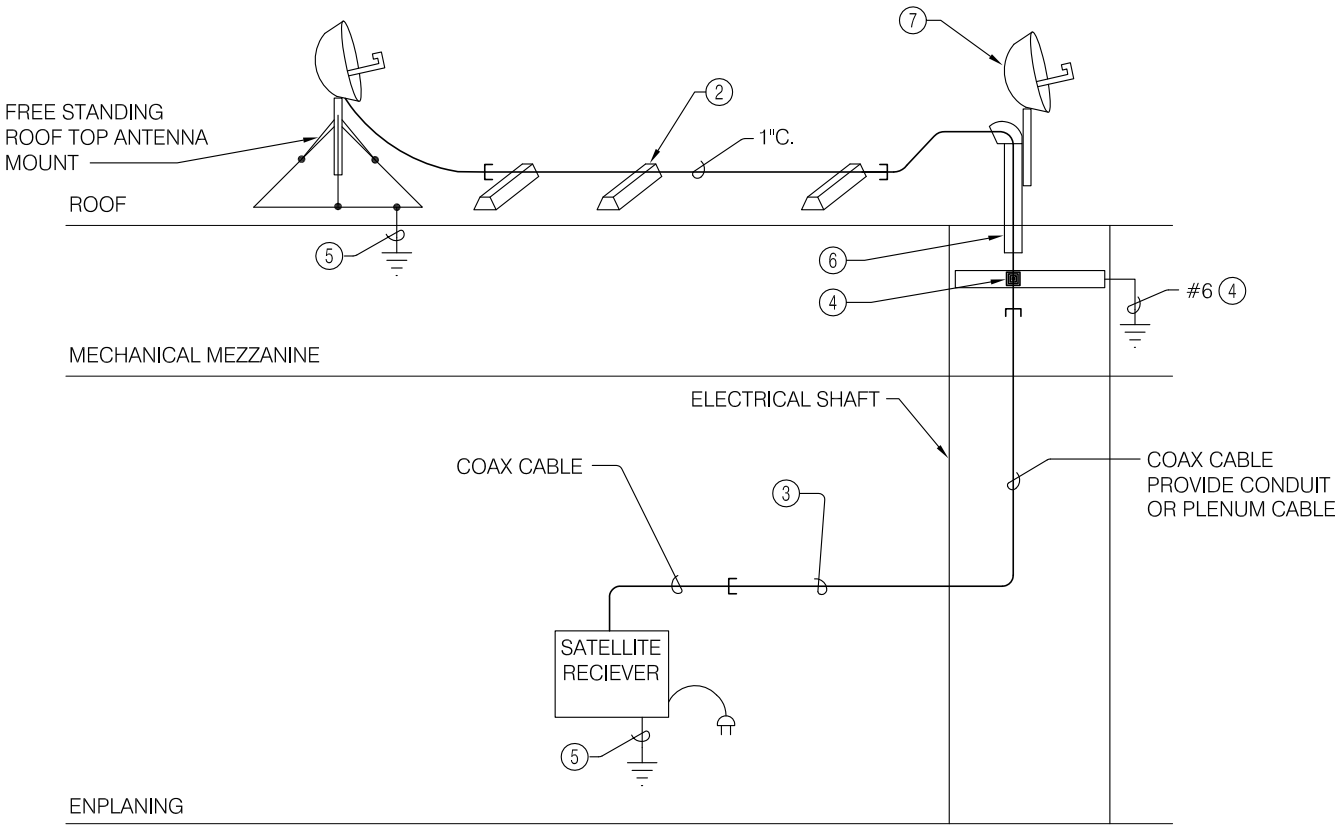
1. XXX
2. XXX
3. XXX

MISCELLANEOUS SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
①	KEY NOTE
Ⓔ	EXISTING TO REMAIN
Ⓧ	REMOVE EXISTING
Ⓒ	CONNECT TO EXISTING
Ⓚ	CAP EXISTING / CAP FOR FUTURE
Ⓐ	ACCESS PANEL
Ⓑ	RUN IN BEAM SPACE
Ⓡ	EXISTING TO BE RELOCATED
Ⓓ	ABANDON IN PLACE

2691 MISCELLANEOUS SYMBOLS

SCALE: NTS



2701 SATELLITE DISH INSTALLATION

SCALE: NTS

KEY NOTES:

1. PROVIDE A FREE STANDING, NON-PENETRATING, ROOF TOP ANTENNA MOUNTING BASE. PROVIDE A RUBBER ROOF PROTECTION MAT OF THE SAME MANUFACTURER. PROVIDE A MINIMUM OF 40 LBS CMU BLOCK BALLAST ON EACH SIDE. LEVEL MAST STRUCTURE USING EXTRA RUBBER MAY MATERIAL ON THE LOW SIDE.
2. PROVIDE NON-PENETRATING ROFF TOP CONDUIT SUPPORTS, B-LINE C SERIES, ERICO OR EQUAL.
3. PROVIDE A 1" CONDUIT FOR COAX CABLES WITHIN SHAFT AND CEILING SPACE.
4. PROVIDE A COPPER GROUND BAS WITH LIGHTNING PROTECTORS FOR ANTENNA COAX CABLE. MOUNT ON INSULATED STAND-OFF'S TO THE WALL OF THE ELECTRICAL SHAFT, AS CLOSE TO THE BUILDING ENTRY POINT AS POSSIBLE. PROVIDE A #6 GROUND CONDUCTOR TO STRUCTURAL STEEL.
5. PROVIDE A #6 GROUND CONDUCTOR FROM THE ANTENNA MAST AND RECEIVER TO THE BUILDING STRUCTURAL STEEL.
6. PROVIDE A MINIMUM OF TWO ATTACHMENT POINTS FOR CONDUIT MAST. REFER TO THE STANDARD DETAIL FOR ROOF WEATHERHEAD PENETRATION.
7. ALTERNATE MOUNTING LOCATION FOR DISH, PROVIDE ATTACHMENT TO WEATHERHEAD CONDUIT.

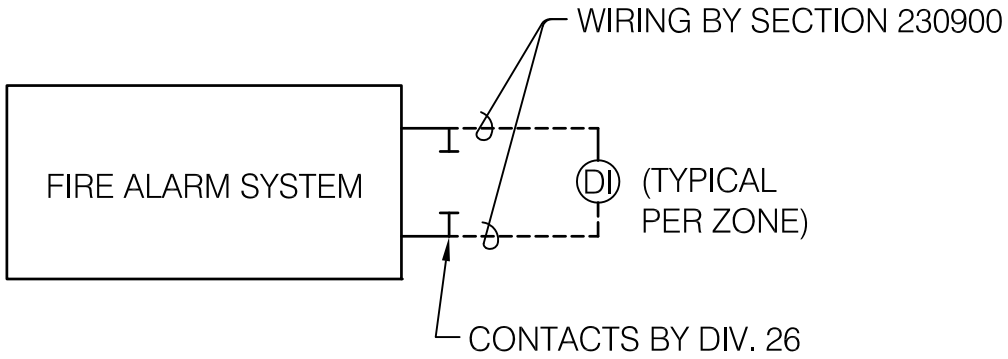
TELECOM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
▽	OUTLET - DATA
▽$_F$	OUTLET - DATA FLOOR
◥▼	OUTLET - DATA / TELEPHONE
▽▼$_F$	OUTLET - DATA / TELEPHONE FLOOR
▼	OUTLET - TELEPHONE
▼$_W$	OUTLET - TELEPHONE WALL
▼$_F$	OUTLET - TELEPHONE FLOOR
	EQUIPMENT RACK
	EQUIPMENT RACK - WALL
	EQUIPMENT RACK - FREE STANDING
	TERMINAL CABINET WIT PLYWOOD BACKING
	PLYWOOD BACKBOARD

2761 TELECOM SYMBOLS

SCALE: NTS

OUTLET JACK NUMBER	LOCATION	ITEM SERVED	NETWORK ROOM # OR TERMINATION BOARD ID	CABLE TYPE	NEW PATCH PANEL REQUIRED	ROW	RACK	PATCH PANEL	PORT	CABLE NAME	NOTES
1	POINT OF SALE	KIOSK - 1	D2630	CAT 6	NO	C	2	AA	05	CCD.2M-C2AA05	
2	POINT OF SALE	KIOSK - 1	D2630	CAT 6	NO	C	2	AA	06	CCD.2M-C2AA06	



NOTE:

1. REFER TO ELECTRICAL PLANS FOR FIRE ALARM CONTROL PANEL LOCATION.

2801 FIRE ALARM SYSTEM INTERFACE

SCALE: NTS

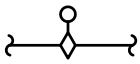
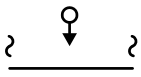
FIRE ALARM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
FCP	FIRE ALARM CONTROL PANEL
FSA	FIRE SYSTEM ANNUNCIATOR
FSA	FIRE ALARM TRANSPONDER
ESR	ELEVATOR STATUS/RECALL
FAC	FIRE ALARM COMMUNICATOR
HCP	HALON CONTROL PANEL
HVA	CONTROL PANEL FOR HVAC
	FIRE EMERGENCY BATTERY ONE LIGHT
	FIRE EMERGENCY BATTERY TWO LIGHTS
	FIRE EMERGENCY BATTERY THREE LIGHTS
	FIRE EXIT SIGN ONE SIDE
	FIRE EXIT SIGN TWO SIDED
	COMBINATION SIGN ONE LIGHT
	COMBINATION SIGN TWO LIGHTS
H	FIRE STATION - HALON
C	FIRE STATION - CARBON DIOXIDE
D	FIRE STATION - DRY CHEMICAL
F	FIRE STATION - FOAM
W	FIRE STATION - WET CHEMICAL
P	FIRE STATION - PULL STATION

2861 FIRE ALARM SYMBOLS 1

SCALE: NTS

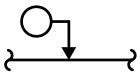
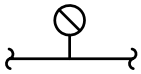
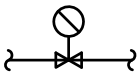
FIRE ALARM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	FIRE PHONE ACCESSIBLE
	FIRE PHONE JACK
	FIRE PHONE HAND SET
	ABORT SWITCH
	AUTOMATIC DETECTION DEVICE
	FIRE DETECTOR COMBINATION RATE OF RISE AND FIXED TEMPERATURE
	FIRE DETECTOR RATE COMPENSATION
	FIRE DETECTOR FIXED TEMPERATURE
	FIRE DETECTOR RATE OF RISE ONLY
	FIRE DETECTOR SMOKE
	FIRE DETECTOR PHOTOELECTRIC PRODUCTS
	FIRE DETECTOR IONIZATION PRODUCTS
	FIRE DETECTOR BEAM TRANSMITTER
	FIRE DETECTOR BEAM RECEIVER
	FIRE DETECTOR SMOKE IN DUCT
	GAS DETECTOR
	FLAME DETECTOR
	FLOW DETECTOR/SWITCH
	PRESSURE DETECTOR/SWITCH

2862 FIRE ALARM SYMBOLS 2

SCALE: NTS

FIRE ALARM SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
	FIRE DETECTOR LEVEL
	FIRE DETECTOR TAMPER
	FIRE DETECTOR VALVE AND TAMPER
	FIRE HORN
	FIRE HORN MINI-HORN
	FIRE BELL
	FIRE WATER MOTOR ALARM
	FIRE HORN AND LIGHT
	FIRE HORN WITH BUILT-IN LIGHT

2863 FIRE ALARM SYMBOLS 3

SCALE: NTS

SECURITY SYMBOLS:

PREFERRED SYMBOL	DESCRIPTION
C WP	CCTV CAMERA
CCTV	CCTV COAXIAL CABLE AND POWER OUTLET
MTV	CCTV MONITOR OUTLET
B	DOOR BELL
B	DOOR BUZZER
B	DOOR CHIME
DR	ELECTRIC DOOR OPENER
ES	ELECTRIC DOOR STRIKE
IC	INTERCOM
MI	INTERCOM MASTER
MD	MOTION DETECTOR
ML	SECURITY DOOR ALARM MAGNETIC LOCK
CR WP	SECURITY CARD READER
SCP	SECURITY CONTROL PANEL
DC	SECURITY DOOR CONTACTS
	SECURITY EXIT PUSH BUTTON
K	SECURITY KEYPAD

2864 SECURITY SYMBOLS

SCALE: NTS