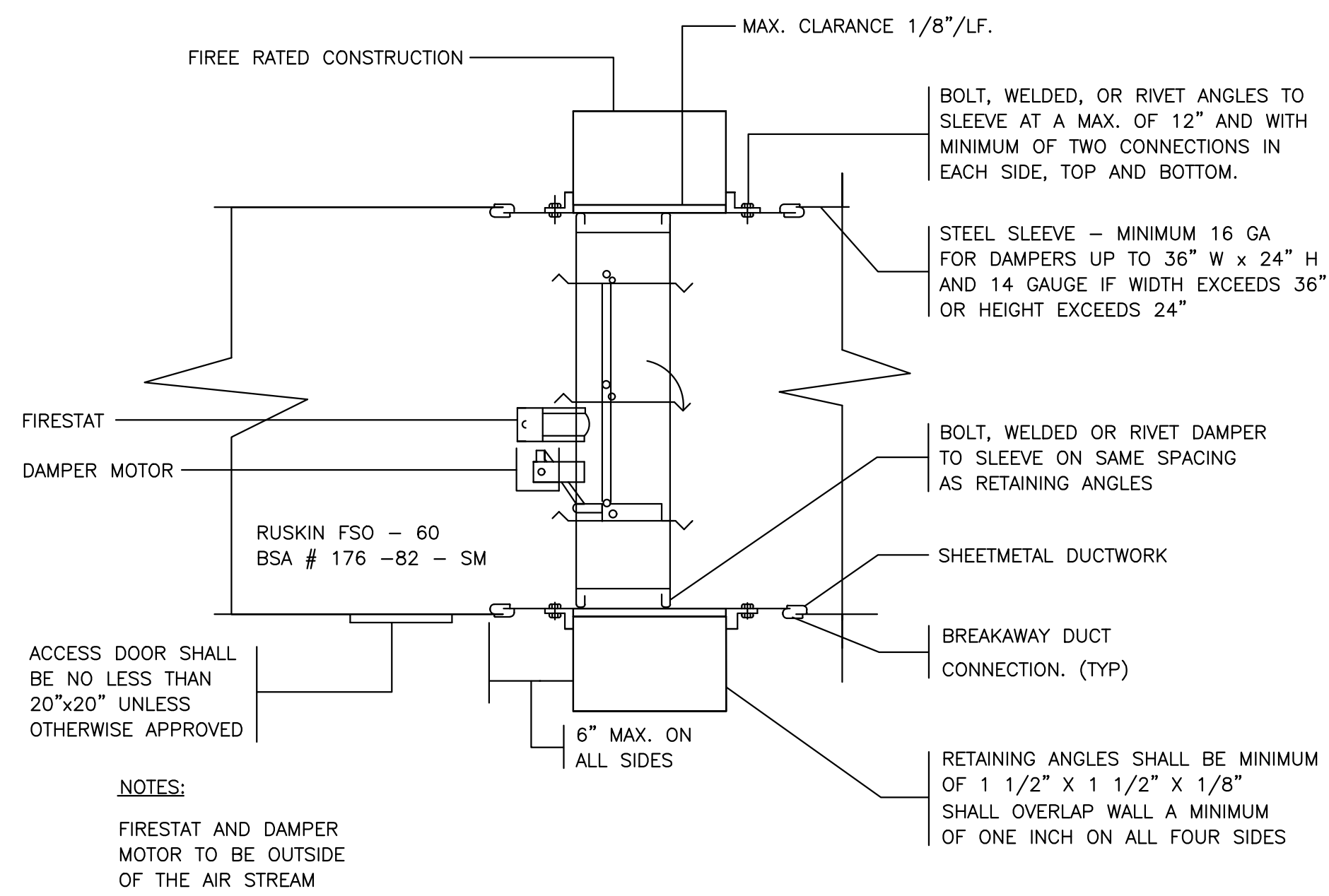


MECHANICAL FLOOR PLAN - FIRST FLOOR 1/4" = 1'-0" **A**

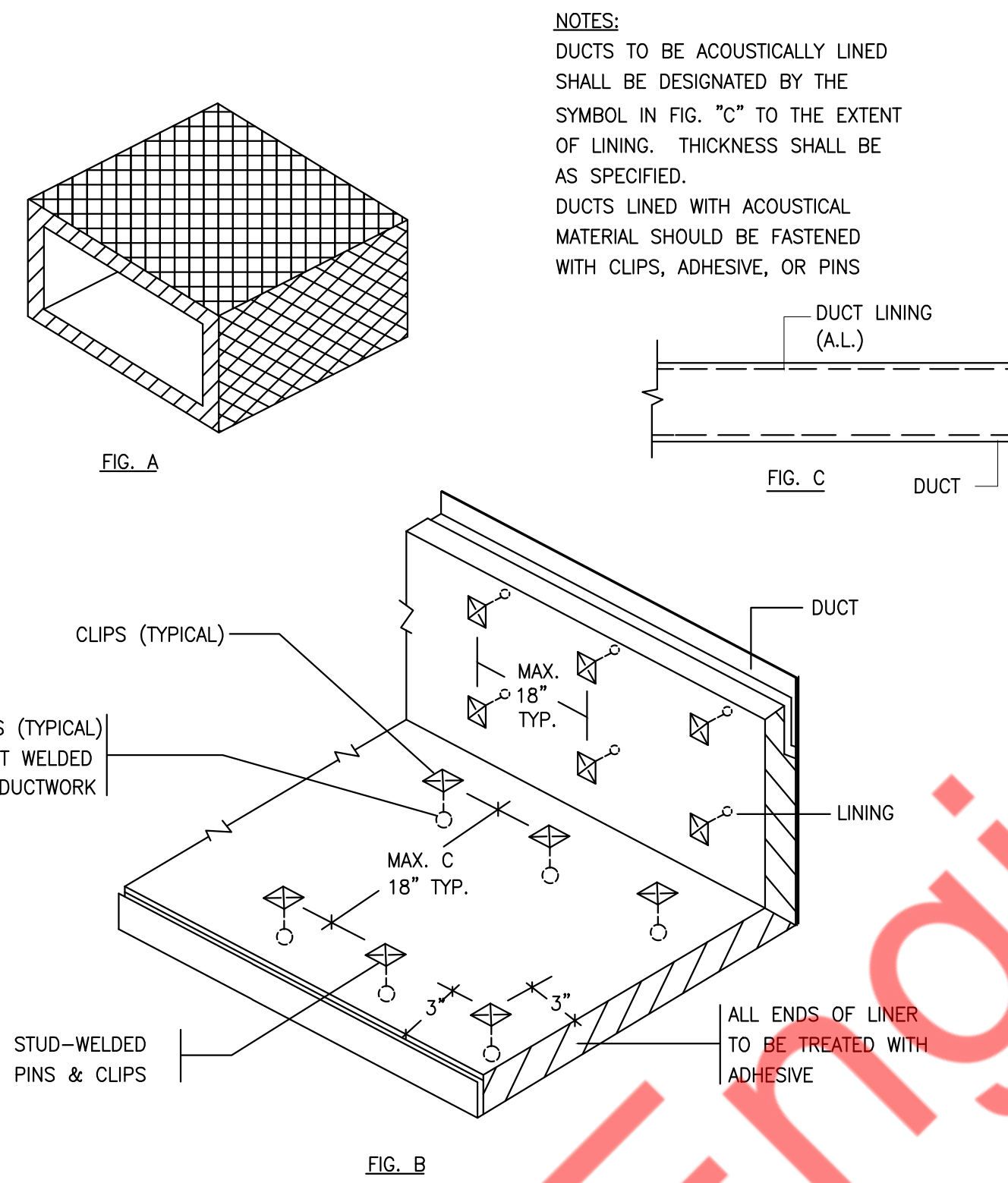
1. CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN ON PLAN.
2. NEW DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA PIPING, DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
3. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
4. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
5. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
6. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
7. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
8. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
9. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
10. NEW DUCTWORK IN CONCEALED AREAS MAY BE RECTANGULAR WITH EQUIVALENT CROSS SECTIONAL FLOW AREA.
11. PROVIDE R-8 INSULATION FOR OAI DUCT AND R-6 INSULATION FOR SUPPLY AND RETURN DUCT.
12. PROVIDE FIRE OR FIRE-SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS COORDINATE WITH ELECTRICAL ENGINEER FOR POWER REQUIREMENT FOR FSD.
13. PROVIDE CHORD OPERATED DAMPERS IN INACCESSIBLE CEILING.
14. OUTDOOR AIR INTAKE. EXHAUST OPENINGS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. THE DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 4 CFM/FT² OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE (249 PA) AND SHALL BE LABELED BY AN APPROVED AGENCY WHEN TESTED IN ACCORDANCE WITH AMCA 500D.
15. ALL EQUIPMENT SHALL MAINTAIN MINIMUM CLEARANCE FROM THE COMBUSTIBLE MATERIAL AS PER MANUFACTURE RECOMMENDATION.
16. CONTRACTOR TO COORDINATE POWER REQUIREMENT FOR ALL MD'S AND FSD'S WITH ELECTRICAL CONTRACTOR.
17. THE LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED MORE THAN 14 FEET.
18. WSHP'S SHALL BE LOCKED DURING HEAT PUMP MODE. ONLY FANS INSIDE THE WSHP'S SHALL RUN DURING THE HEATING MODE. HEATING SHALL BE PROVIDED BY DUCT HEATERS AS SHOWN ON THE PLANS.

1. CONNECT 1-1/4" CD FROM AC TO NEAREST PLUMBING DRAIN WITH AIR GAP FITTING. INSTALL CONDENSATE DRAIN WITH 1% TOWARD SINK. PROVIDE CONDENSATE PUMP AS/IF REQUIRED.
2. CONNECT NEW CONDENSER WATER SUPPLY AND RETURN PIPING TO EXISTING WATER SUPPLY AND RETURN PIPING. CONTRACTOR TO FIELD VERIFY THE EXISTING PIPING TIE-IN LOCATION AND CONDITION AND REPLACE IF REQUIRED.
3. PROVIDE AN AUXILIARY DRAIN PAN WITH WATER LEAKAGE SENSOR IN ORDER TO SHUT-OFF THE UNIT IN CASE OF WATER LEAKAGE. THE PAN SHALL HAVE A DEPTH OF NOT LESS THAN 1.5 INCHES. SHALL BE NOT LESS THAN 3 INCHES LARGER THAN THE UNIT, OR THE COIL DIMENSIONS IN WIDTH AND LENGTH AND SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL. METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0236 INCH (NO. 24 GAGE) FOR GALVANIZED SHEET METAL PANS, 0.0179 INCH (NO. 26 GAGE) FOR STAINLESS STEEL PANS, OR 0.0320 INCH (NO. 20 GAGE) FOR ALUMINUM PANS. NON-METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0625 INCH.
4. EXISTING EXHAUST LOUVER TO REMAIN AS IT IS AND TO BE REUSED. TERMINATE 3 FEET AWAY FROM THE OPENING INTO THE BUILDING, 10 FEET FROM PROPERTY LINE, 10 FEET ABOVE GRADE, AND 10 FEET FROM ANY OUTSIDE AIR INTAKE LOCATION.
5. EXISTING OUTSIDE AIR INTAKE LOUVER TO REMAIN AS IT IS AND TO BE REUSED. CONTRACTOR TO FIELD VERIFY THAT THE LOCATION OF ANY EXHAUST SOURCE FROM ADJACENT TENANTS SHOULD BE AT LEAST 10 FEET AWAY FROM THE OUTSIDE AIR INTAKE.
6. LOCATE THERMOSTAT CONTROLS ON WALL IN OFFICE AT 48" A.F.F. COORDINATE LOCATION WITH LIGHT SWITCHES AND OTHER WALL MOUNTED ACCESSORIES. RUN 24 VAC POWER AND SIGNAL CONDUCTORS IN TWO (2) SEPARATE TWO (2) CONDUCTOR CABLES, 18 AWG.
7. INSTALL NEW CEILING MOUNTED EXHAUST FAN. INTERCONNECT EXHAUST FAN WITH WSHP-2. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
8. CONTRACTOR TO COORDINATE FINAL LOCATION OF EQUIPMENT WITH ARCHITECT/OWNER.

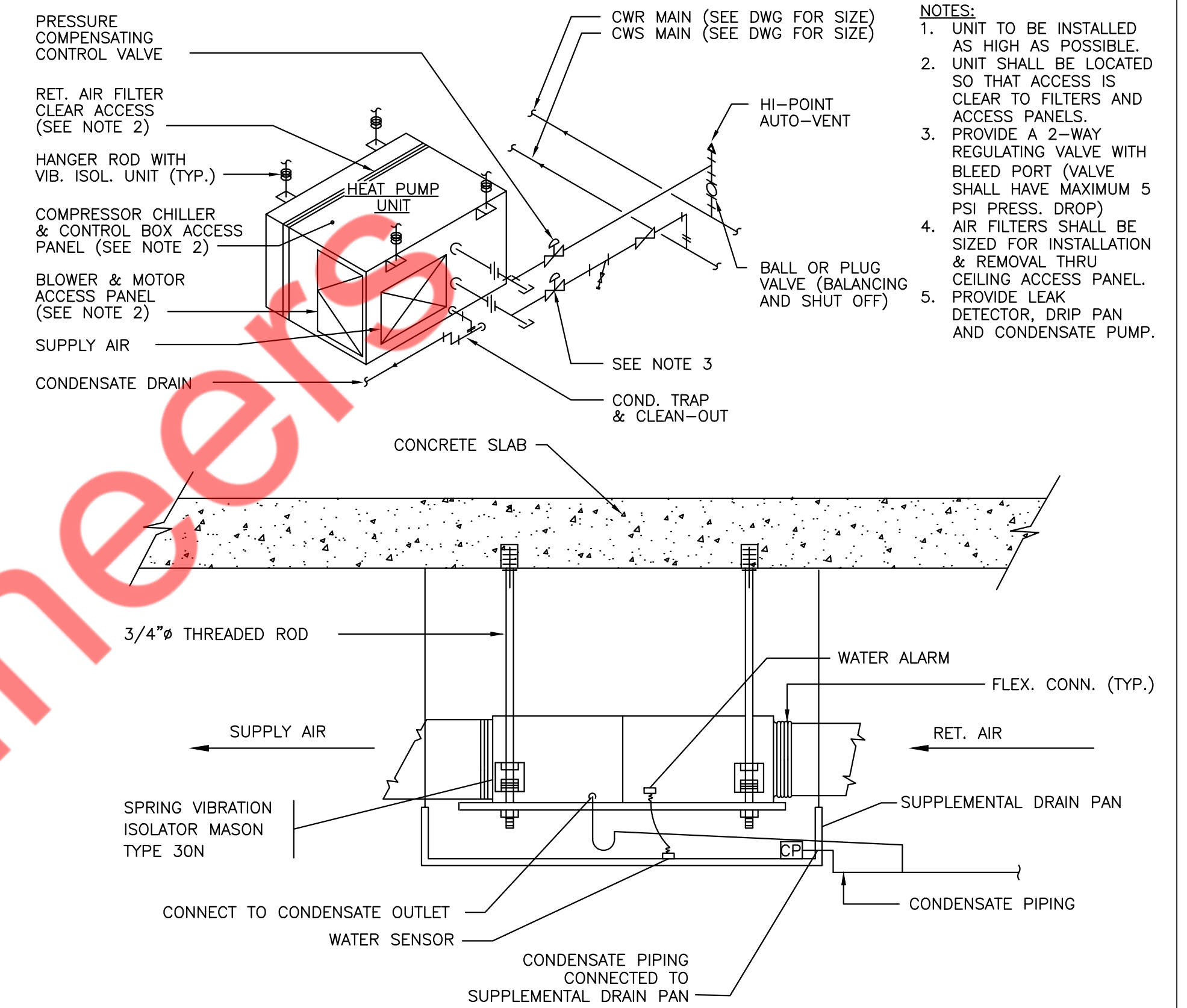
9. PROVIDE REMOTE TEMP SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
10. MD TO INTERLOCK WITH RESPECTIVE UNITS AND FAN.
11. EDH TO BE INTERLOCK WITH RESPECTIVE UNITS.
12. PROVIDE MOTORIZED ISOLATION VALVE ON SUPPLY AND RETURN OF CONDENSER WATER PIPING THAT CLOSE UPON LEAK DETECTION OR WHEN NOT IN OPERATION.



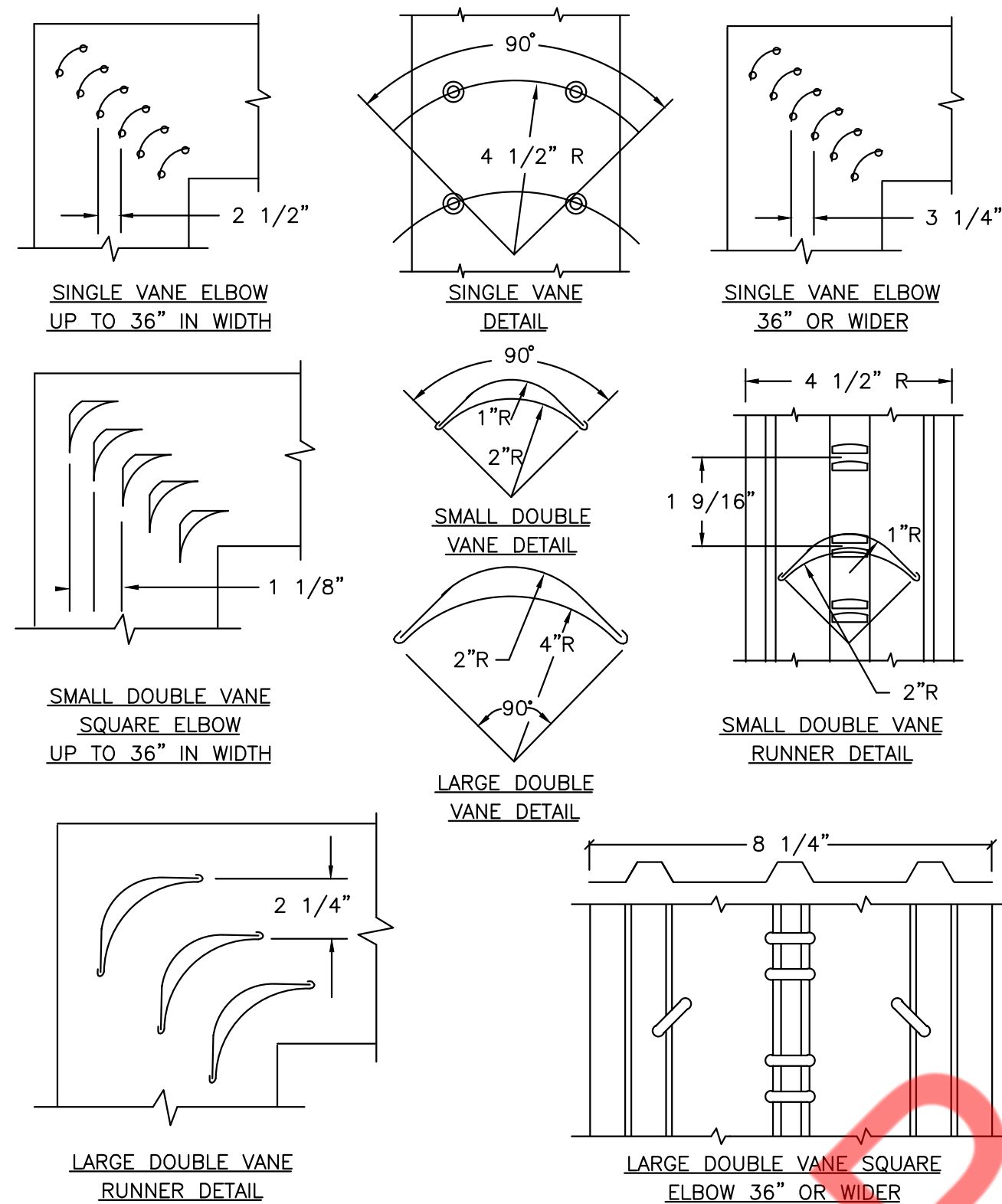
1 FIRE AND SMOKE DAMPER DETAIL
M-500 N.T.S



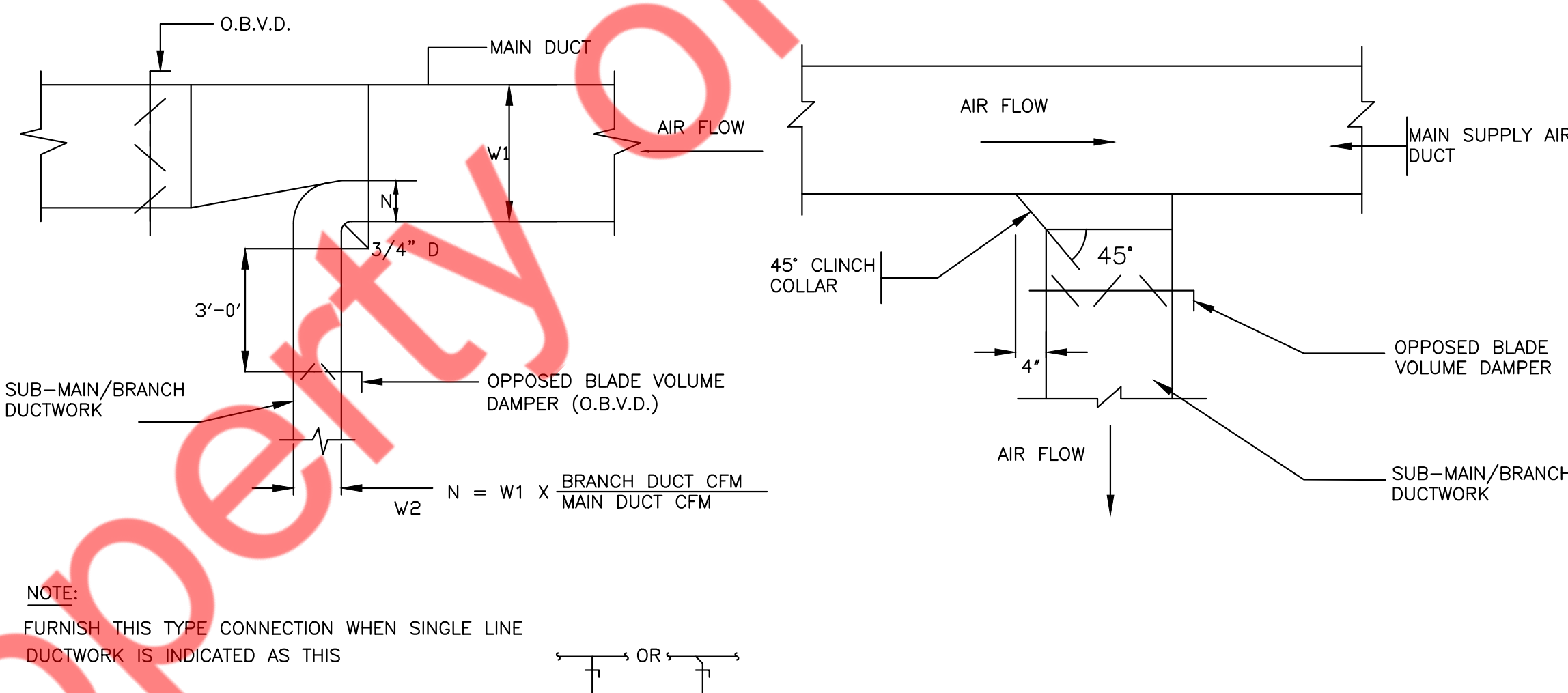
2 ACOUSTICAL TREATMENT DUCT LINING
M-500 N.T.S



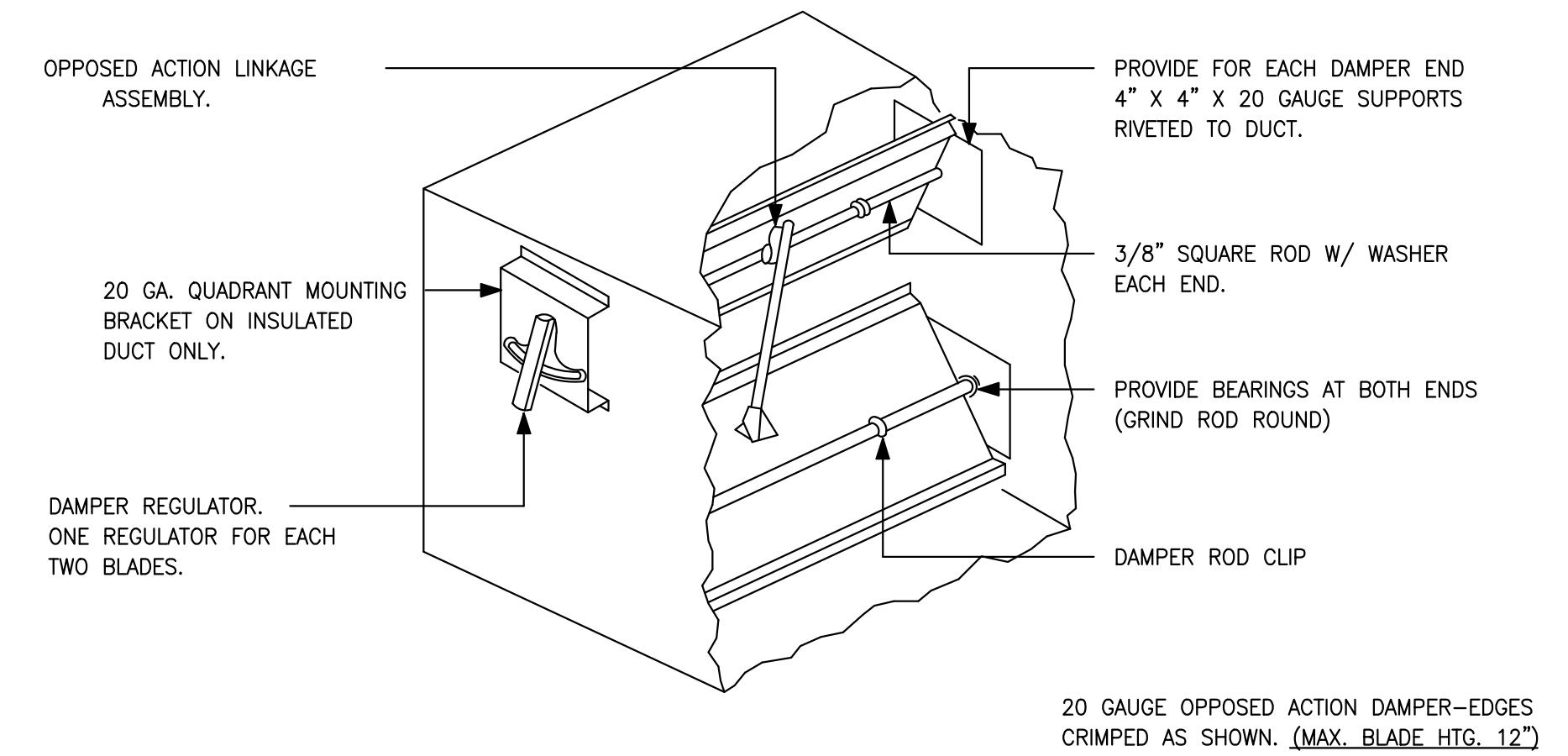
3 WATER SOURCE HEAT PUMP DETAIL
M-500 N.T.S



4 LOW VELOCITY DUCTWORK ELBOWS
M-500 N.T.S



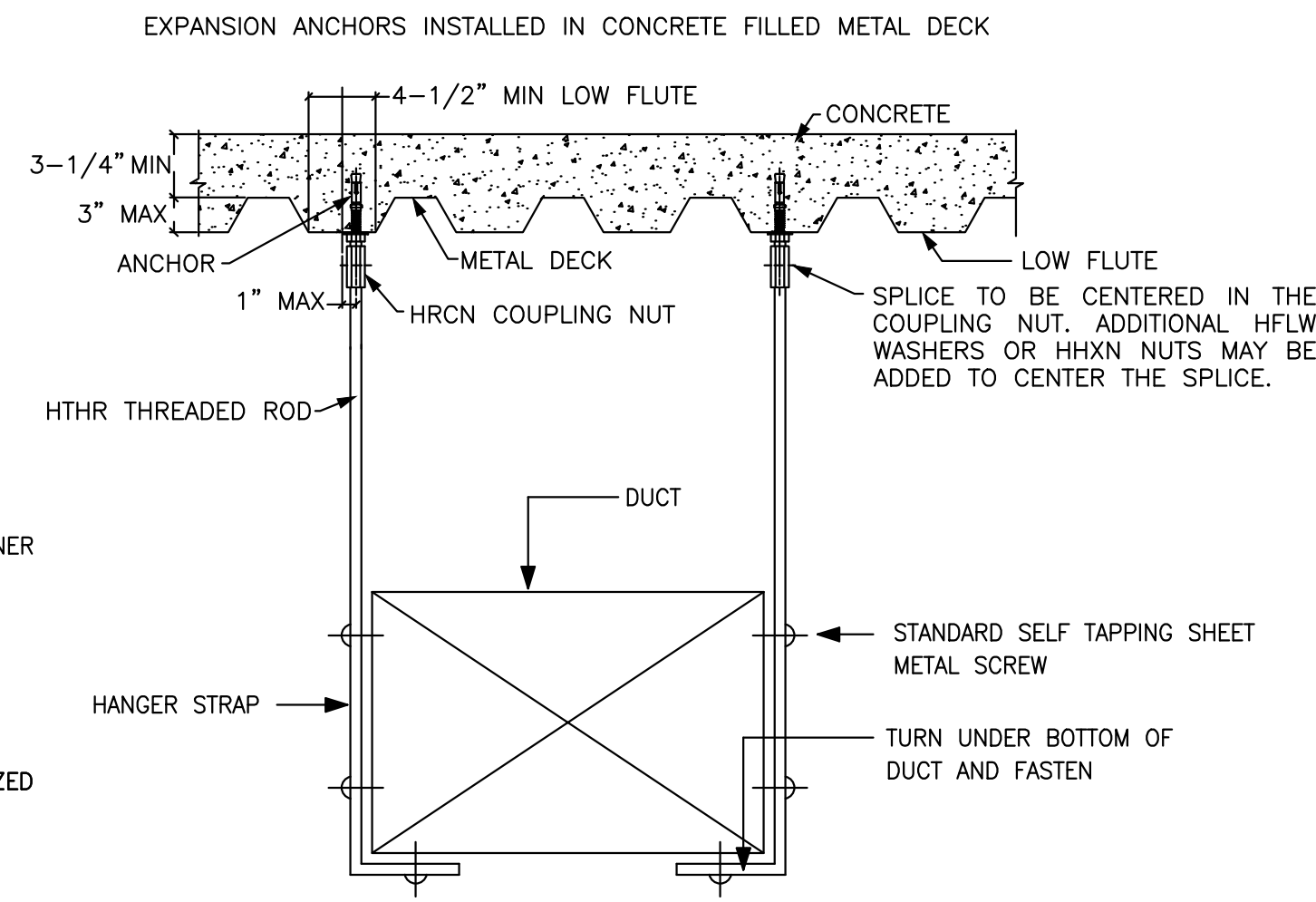
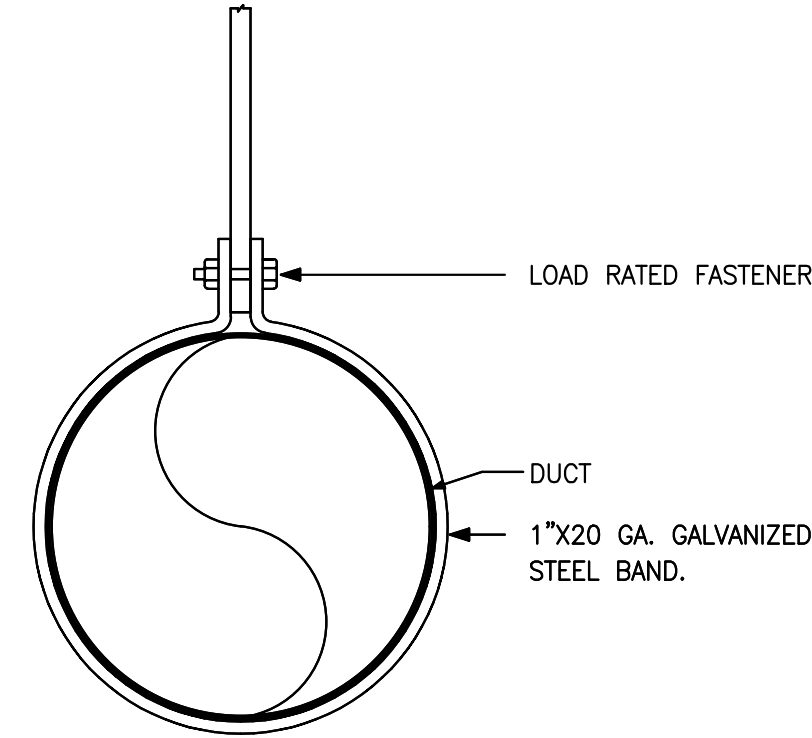
5 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
M-500 N.T.S



6 LOW PRESSURE BALANCING DAMPER
M-500 N.T.S

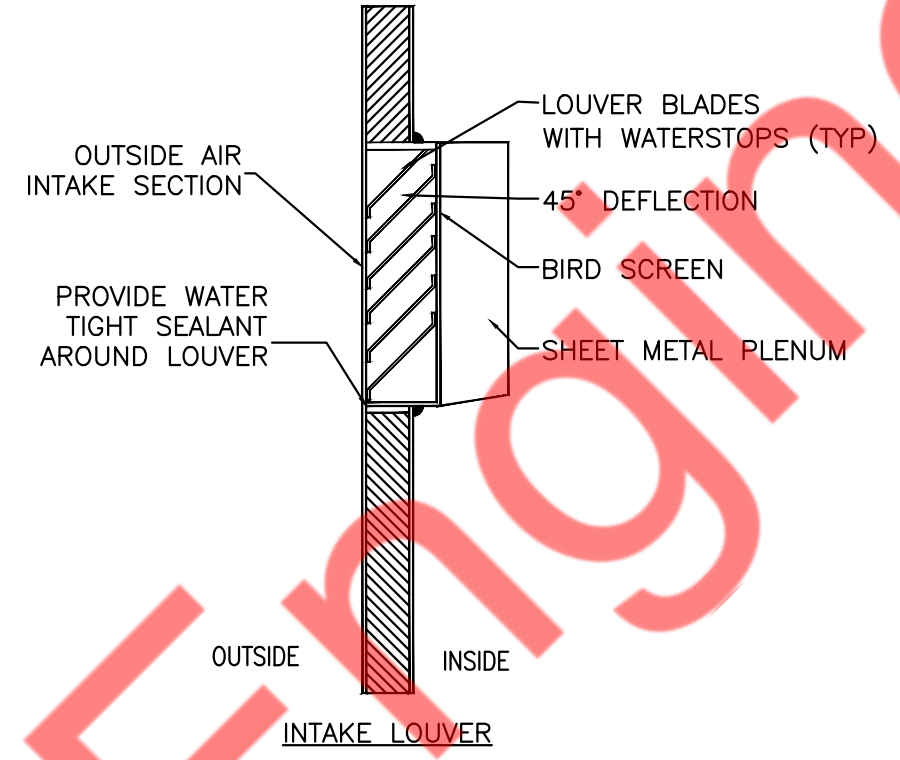
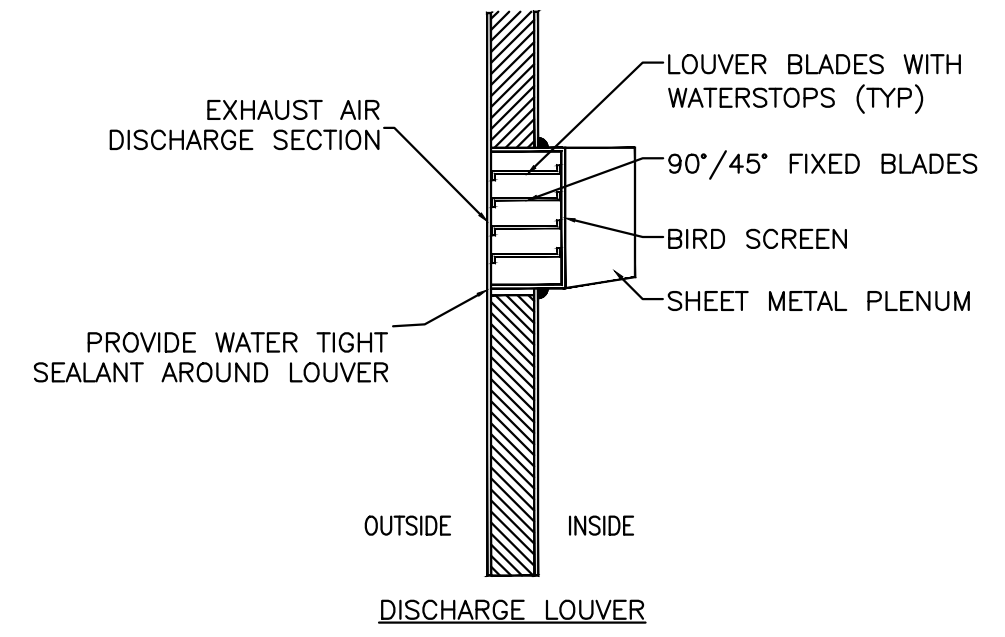
NOTES :

1. DUCT CONSTRUCTION SHALL CONFORM TO LOW PRESSURE MATCHA CONSTR. STD.
2. DUCTS SHALL BE FABRICATED WITH LONGITUDINAL SEAMS.
3. PROVIDE ONE PRIME-COAT PAINT FOR ROUND DUCTS INSTALLED IN EXPOSED AREAS.

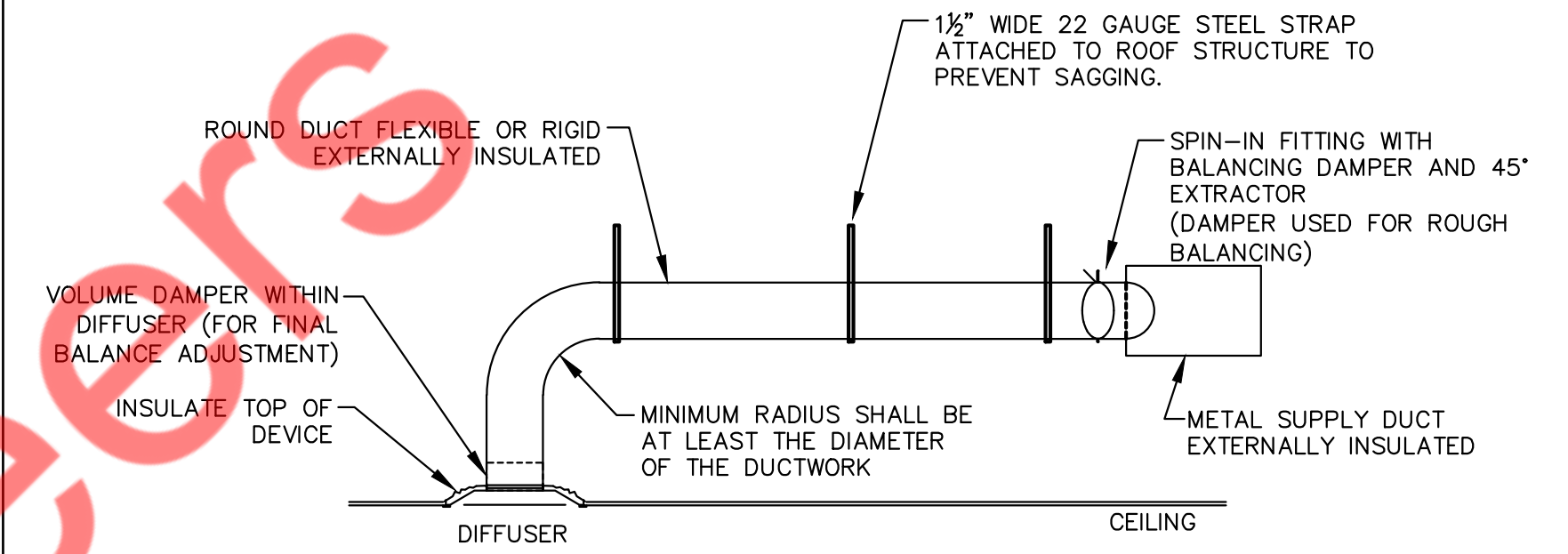


DUCT HANGER SCHEDULE		
DUCT CROSS SECTIONAL AREA	STRAP HANGER SIZE	MAX. SPACING
UNDER 2 SQ. FT.	1" X 1/16"	6'-0" O.C.
2 TO 4 SQ. FT.	1" X 1/8"	8'-0" O.C.
4 TO 8 SQ. FT.	1" X 1/8"	6'-0" O.C.
OVER 8 SQ. FT.	1" X 1/8"	4'-0" O.C.

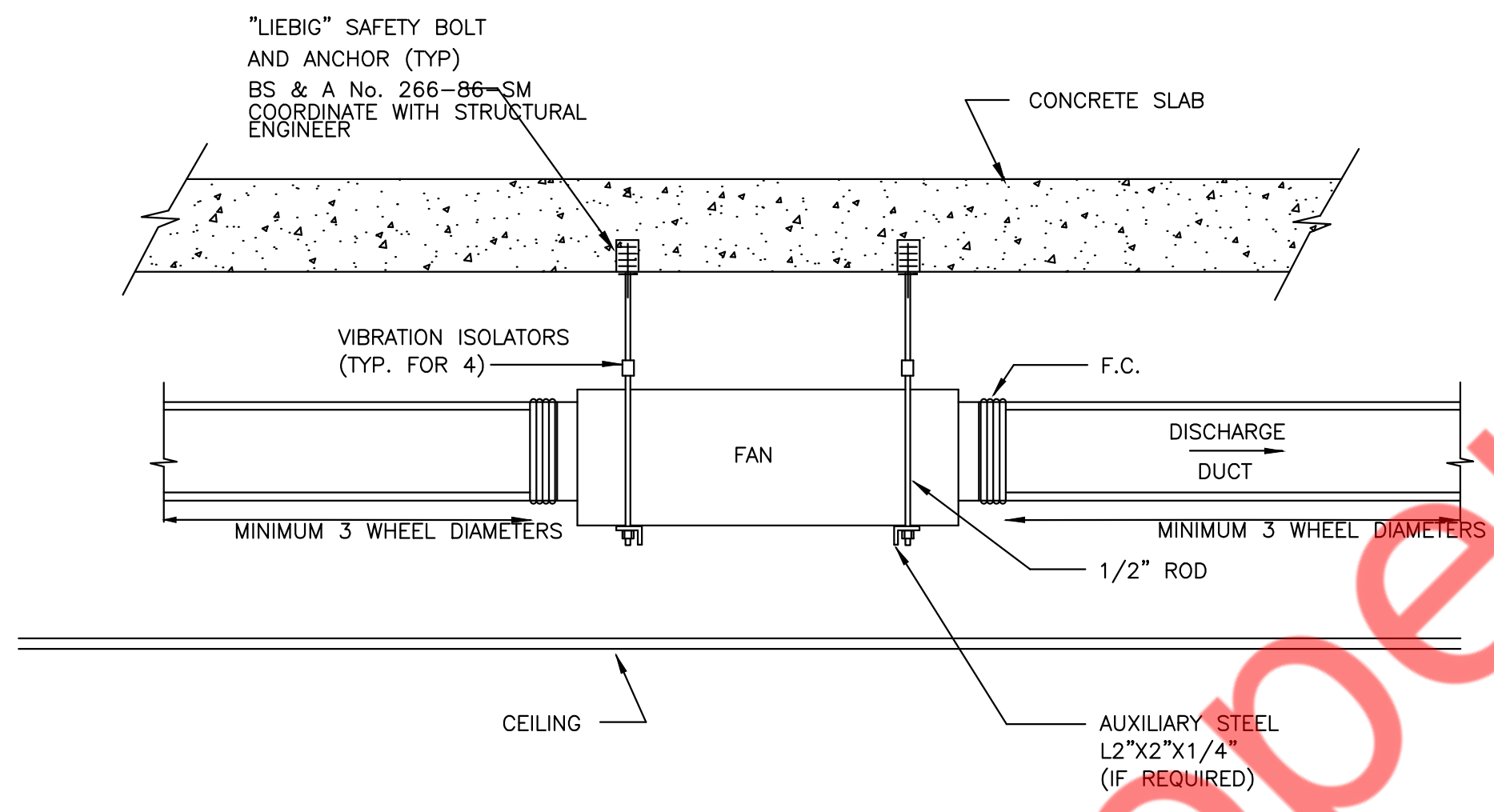
1 METHOD OF HANGING DUCTWORK
M-501 N.T.S.



2 LOUVER DETAILS
M-501 N.T.S.

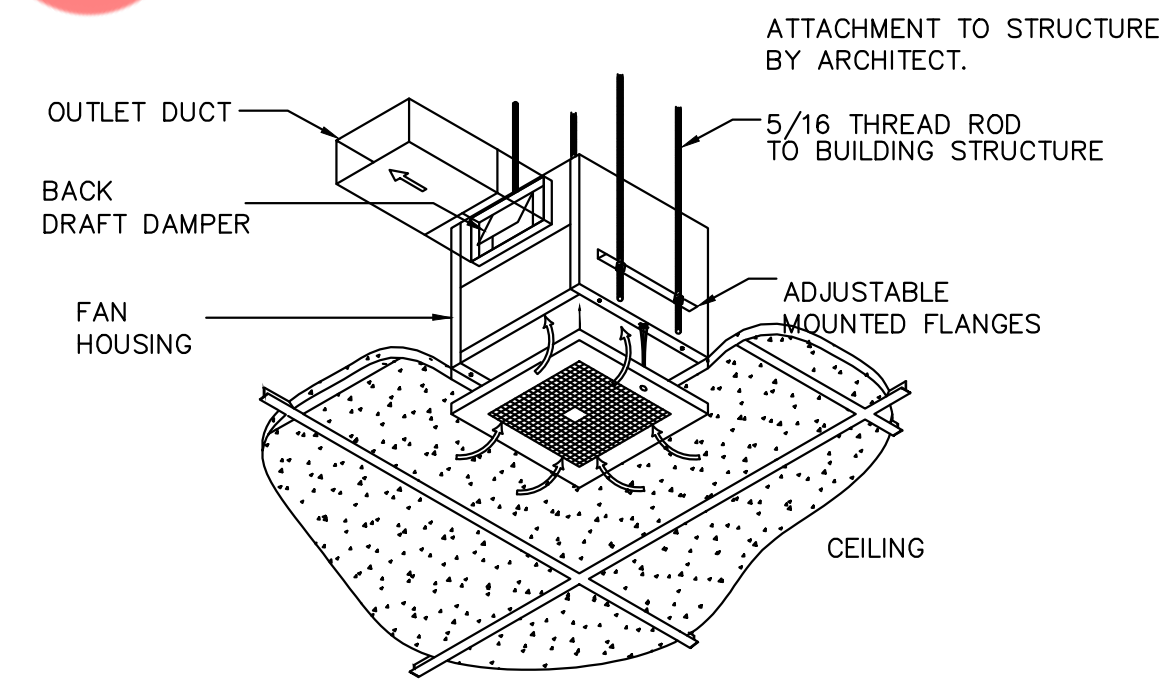


3 CEILING DIFFUSER DETAILS
M-501 N.T.S.

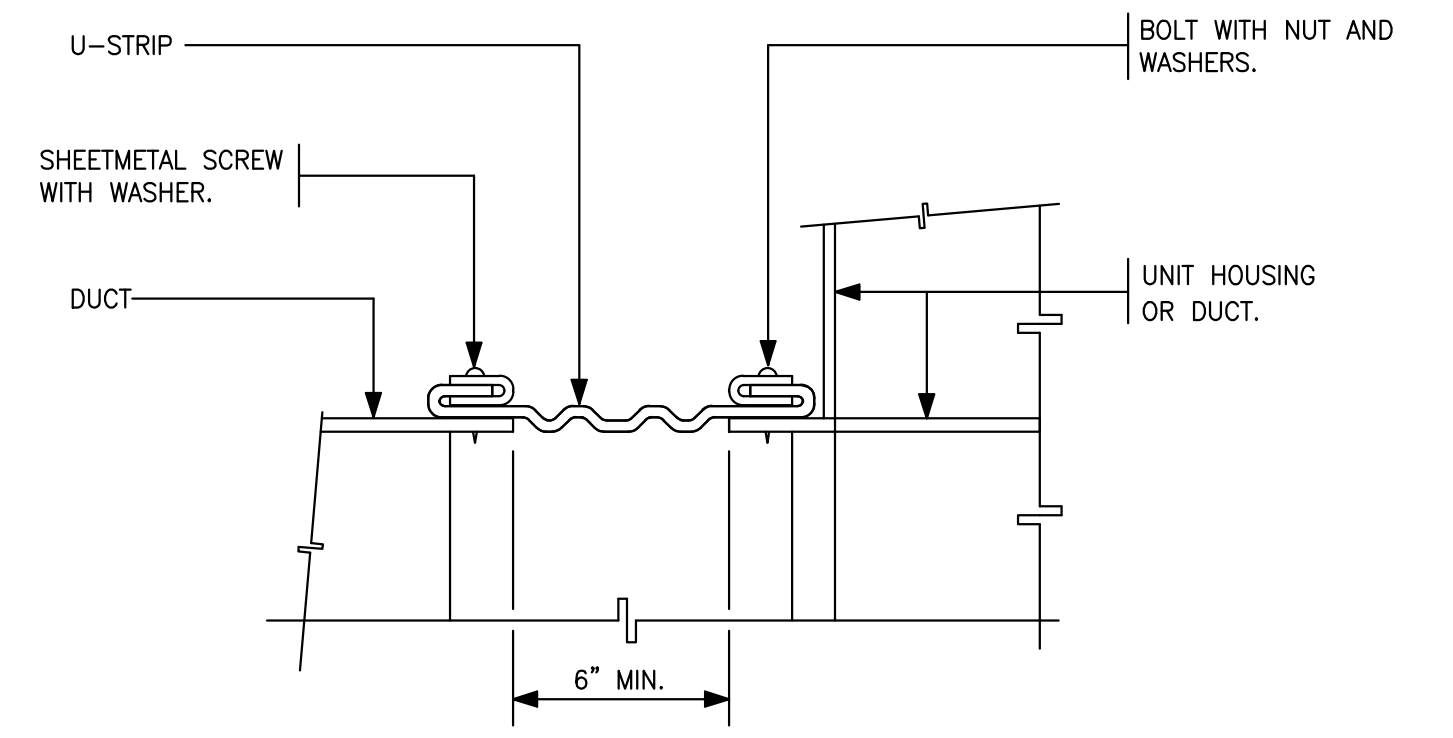


NOTE:
1. DUCT LENGTH TO BE MINIMUM THREE WHEEL DIAMETER ON DISCHARGE AND INLET.

4 INLINE FAN DETAIL
M-501 N.T.S.



5 CEILING MOUNTED EXHAUST FAN DETAIL
M-501 N.T.S.



6 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
M-501 N.T.S.

WATER SOURCE HEAT PUMP UNIT SCHEDULE														BASIS OF DESIGN: TRANE (OR EQUIVALENT)		
TAG	TYPE OF UNIT	SERVING	TONANGE	SUPPLY AIRCFM	OUTSIDE AIR CFM	ESP (IN OF WC)	FLUID PROPERTIES		COOLING CAPACITY (MBH)	ELECTRICAL			EFFICIENCY	DIMENSION (LXWXH)	WEIGHT (LBS)	MODEL
							WATER FLOW RATE (GPM)	WATER PRESSURE DROP (FT OF W.C)		V/ PH/ HZ	MCA (A)	MOP (A)				
WSHP-1	CEILING SUSPENDED	SEE PLAN	7.5	3000	300	1	22.5	25.7	92.7	208/ 3/ 60	35.23	45	14	41"X80"X24"	676	GEHE0903 (OR EQUIVALENT)
WSHP-2	CEILING SUSPENDED	SEE PLAN	7.5	3000	400	1	22.5	25.7	92.7	208/ 3/ 60	35.23	45	14	41"X80"X24"	676	GEHE0903 (OR EQUIVALENT)

NOTES:

- 1) PROVIDE MERV 8 FILTER AT RETURN OF WSHP
- 2) SUPPLY CFM BASED ON HIGH CFM.
- 3) PROVIDE MOUNTING BRACKET AND ALL ASSOCIATED ACCESSORIES.
- 4) CEILING MOUNTED UNIT TO BE PROVIDED WITH THE APPROXIMATE FBM FILTER BOX.
- 5) ALL CONDENSER WATER PIPING SHALL BE DONE AS PER MANUFACTURERS RECOMMENDATION.
- 6) WSHP UNIT TO BE INSTALLED WITH VIBRATION ISOLATOR (RESILIENTLY SUPPORTED) TO MINIMIZE SOUND AND VIBRATION TO SPACE.
- 7) WSHP UNIT TO BE INSTALLED WITH SECONDARY DRAIN PAN AS WELL AS WATER BUG SENSOR TO SHUT DOWN CORRESPONDING EQUIPMENT AND TO NOTIFY THE OPERATOR/OWNER IN EVENT OF WATER LEAKAGE.
- 8) PROVIDE WATER SIDE ECONOMIZER.
- 9) CONTRACTOR TO MAKE SURE THAT ALL WSHP UNITS ARE RECEIVING CONDENSER WATER AS PER AMOUNT MENTIONED IN THE TABLE ABOVE. THE CONTRACTOR TO CONSIDER ALL THE WATER-SIDE PRESSURE DROPS IN ALL UNITS. IF THERE IS NO ENOUGH GPM AVAILABLE FROM THE MAIN INCOMING WATER LINES, INFORM ENGINEER IMMEDIATELY (BEFORE BID). IF EXISTING WATER LINES DO NOT HAVE ENOUGH STATIC, INFORM TO ENGINEER.
- 10) WSHPs SHALL BE LOCKED DURING HEAT PUMP MODE. ONLY FANS INSIDE THE WSHPs SHALL RUN DURING THE HEATING MODE. HEATING SHALL BE PROVIDED BY DUCT HEATERS AS SHOWN ON THE PLANS.

ELECTRIC DUCT HEATER SCHEDULE											MAKE:- GREENHECK (OR EQUIVALENT)	
UNIT ID	LOCATION	DUCT HEATER DIMENSIONS (IN)			QTY.	ELECTRICAL DATA					MODEL	HEATER TYPE
		W	H	D		KW	V	PH	Hz	Amps (A)		
EDH-1	SEE PLAN	20	18	6	1	25	208	3	60	69.25	IDHE	SLIP IN
EDH-2	SEE PLAN	20	18	6	1	25	208	3	60	69.25	IDHE	SLIP IN

NOTES:

- 1) INSTALL ELECTRIC DUCT HEATER AS PER MANUFACTURER'S RECOMMENDATION.
- 2) PROVIDE T-STAT AND WIRE TO DUCT HEATER.
- 3) PROVIDE DISCONNECT SWITCH, VAPOR BARRIER, DUST TIGHT BOX AND FAN INTERLOCK SWITCH.
- 4) PROVIDE DUCT HEATER WITH SCR CONTROL AND THERMOSTAT.

FAN SCHEDULE															
UNIT ID	MANUFACTURER	MODEL	CFM	TYPE	DRIVE	FAN RPM	E.S.P. (IN. W.G.)	MOTOR			SERVICE	NOTES / ACCESSORIES	WEIGHT (LBS)	SONES	
								HP	VOLTS (V)	PHASE					FLA (A)
EF-1	GREENHECK	SP-A90-130-VG	70	CEILING	-	887	0.8	-	115	1	0.4	RESTROOM	2,3,5	12	2.5
OAF-1	GREENHECK	SQ-7-M1-VG	700	INLINE	DIRECT	3133	1.15	0.5	208	1	4	WSHP-1,2	1,2,3,4,6	72	12.6

NOTES / ACCESSORIES:

1. VARIABLE SPEED CONTROL
2. SPEED CONTROL SWITCH
3. AMCA SEAL & UL CERTIFIED
4. THERMAL OVERLOAD PROTECTION
5. GRAVITY BACKDRAFT DAMPER
6. PROVIDE MERV-8 FILTER.

MECHANICAL AIR TERMINAL DEVICES SCHEDULE							
TAG	SIZE	DESCRIPTION	CONSTRUCTION	FINISH	BASIS OF DESIGN		NOTES
					MANUFACTURER	MODEL	
CDS-1	24X24	PLAQUE FACE DIFFUSER	ALUMINUM	WHITE	TITUS	TMS	ALL
CDS-2	12X12	PLAQUE FACE DIFFUSER	ALUMINUM	WHITE	TITUS	TMS	ALL
CDR-1	24X24	PLAQUE FACE DIFFUSER	ALUMINUM	WHITE	TITUS	50FL	ALL

NOTES:

1. PROVIDE STANDARD WHITE FINISH FOR ALL AIR DEVICES UNLESS NOTED OTHERWISE ON PLAN.
2. PAINT ALL SURFACES VISIBLE THROUGH FACE OF RETURN AIR GRILLE FLAT BLACK. THIS SHALL INCLUDE PIPING, CONDUIT, DUCTWORK AND STRUCTURAL MEMBERS.
3. PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILINGS, PROVIDE FRAMES FOR SURFACE MOUNTING.
4. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
5. AIR DEVICE SHALL BE OF GALVANIZED FINISH WHEN INSTALLED ON EXPOSED DUCTWORK.

FOR ROUND NECK DIFFUSERS:

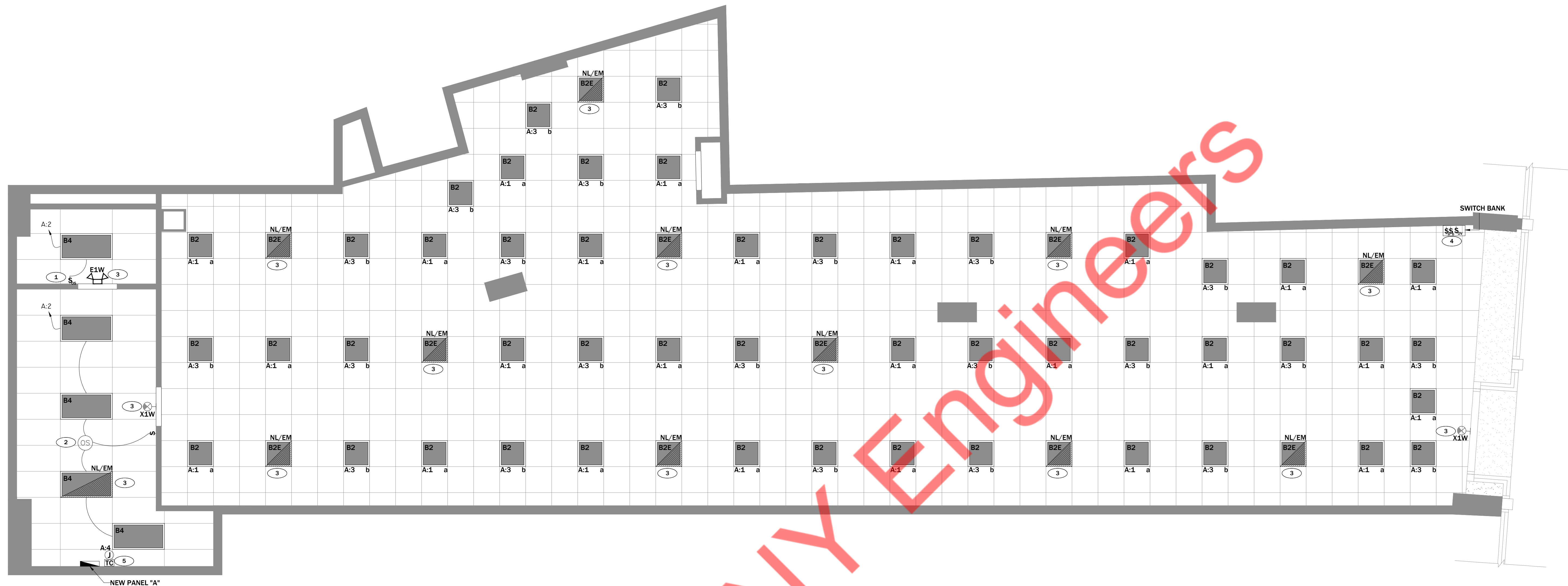
6" DIA: 0-100 CFM
8" DIA: 101-200CFM
10" DIA: 201-300 CFM
12" DIA: 300-460 CFM

AIR BALANCE					
UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR (CFM)
WSHP-1	SEE PLAN	3000	300	2700	0
WSHP-2	SEE PLAN	3000	400	2600	0
EF-1	RESTROOM	0	0	0	70
TOTAL:		6000	700	5300	70
BUILDING PRESSURE:			630	POSITIVE	

NOTES:

1. CONTRACTOR TO ADJUST MOTORIZED DAMPER ON OUTSIDE AIR TAP TO PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.

VENTILATION CALCULATION											
ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000sq.ft AS PER NYCMC 2022	NUMBER OF PEOPLE AS PER NYCMC 2022	NUMBER OF CHAIR	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER NYSCM 2020		REQ. OA (CFM)	PROVIDE D. OA (CFM)	EXHAUST CFM/Fixture	EXHAUST
						CFM/PEOPLE	CFM/SQ.FT				
ROOM	2592	15	39	0	40	7.5	0.12	611	700	0	0
OFFICE	112	5	2	3	4	5	0.06	27	700	0	0
STORAGE	129	0	0	0	0	0	0.12	0	700	0	0
TOILET	60	0	0	0	0	0	0	0	700	70	70
TOTAL								638	700		70

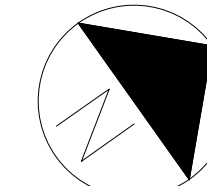
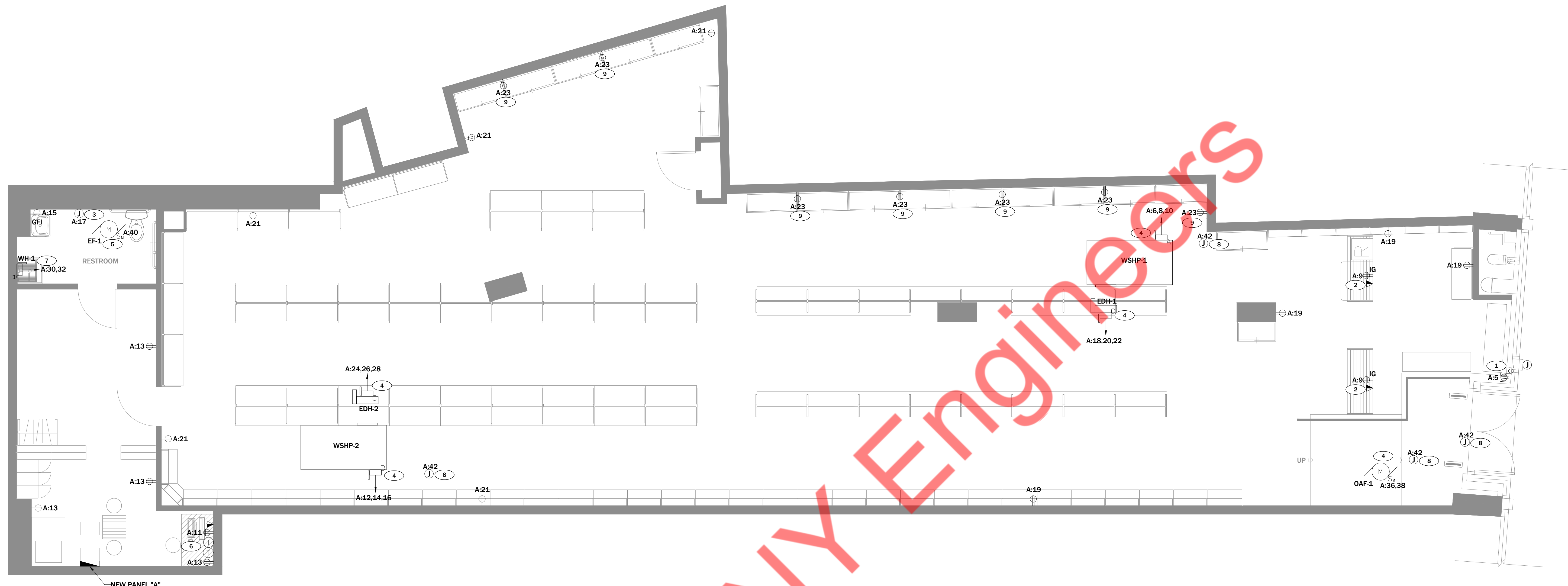


ELECTRICAL LIGHTING PLAN 1/4" = 1'-0" **A**

NO.	QTY	LOCATION	MFR / CATALOG NUMBER	DESCRIPTION	LAMP		BALLAST		MOUNTING		REMARKS
					#	TYPE	TYPE	TYPE	HT.	VOLT	
B2	48	F.O.H.	CREE C-TR-C-FP23-37L-40K-WH 29	2x2	LED						
B4	5	B.O.H.	CREE C-TR-C-FP24-50L-40K-WH- 40	2x4	LED						
B2E	11	B.O.H.	CREE C-TR-C-FP24-50L-40K-WH-EM 40	2x2	LED	EM					
E1W	1	RESTROOM	ELITE ELM-LED-809-W	EMERGENCY LIGHT FROG EYE - WHITE				WALL	TOP @ 9'-4" U.O.N.		
X1W	2	B.O.H.	BEST LIGHTING PRODUCTS 220866-LEDS-WRL-SF-E5280	CLPU LIGHTPIPE LED EXIT & EMERGENCY COMBO				UNIVERSAL			

- A. CONFIRM LIGHTING FIXTURE QUANTITIES WITH SUPPLIER.
- B. EMERGENCY AND NORMAL LIGHTING MARKED WITH "NL" SUBSCRIPT SHALL OPERATE CONTINUOUSLY. PROVIDE UNSWITCHED CONSTANT HOT TO EMERGENCY BALLAST.
- C. EMERGENCY LIGHTING NOT MARKED WITH "NL" SUBSCRIPT SHALL OPERATE UNDER CONTROL OF LIGHTING SWITCH AS INDICATED. PROVIDE UNSWITCHED CONSTANT HOT TO EMERGENCY BALLAST AND SWITCHED HOT TO NORMAL BALLAST.
- D. ALL CONDUITS ENTERING OR LEAVING COOLER/FREEZER SHALL BE PROVIDED WITH SEAL-OFF FITTING WITH COMPOUND PER NEC 300-(7a).
- E. CONTRACTOR TO FIELD VERIFY CEILING TYPE AND PROVIDE PROPER MOUNTING HARDWARE.
- F. ALL FIXTURES SUPPLIED WITH LAMPS.
- G. ALL EXTERIOR NON-EMERGENCY LIGHT FIXTURES, BUILDING SIGNS, AND EXTERIOR SIGNS SHALL BE CONTROLLED THROUGH PHOTOCELL AND LIGHTING CONTROL RELAYS.
- H. CONTRACTOR SHALL PROVIDE DIMMING SYSTEM WHEN REQUIRED BY LOCAL ENERGY CODE. BASE BID ACCORDINGLY

- ① WALL MOUNTED OCCUPANCY SENSOR EQUAL TO WATTSTOPPER WS-250. SET OFF TIME TO 15 MINUTES FOR RESTROOM. SET DIP SWITCH TO AUTOMATIC ON.
- ② LOW VOLTAGE OCCUPANCY SENSOR EQUAL TO WATTSTOPPER DT-305. PROVIDE LOW VOLTAGE OCCUPANCY SENSOR EQUAL TO WATTSTOPPER BZ POWER PACK(S) AS REQUIRED. SET OFF TIME FOR 15 MINUTES.
- ③ CONNECT ALL EMERGENCY EGRESS AND NIGHT LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
- ④ LOCATION OF LIGHTING SWITCH BANK. E.C. TO VERIFY EXACT LOCATION WITH ARCHITECT/OWNER PRIOR ROUGH-IN. PROVIDE OVERRIDE SWITCH AS PER IECC C405.2.2.1.
- ⑤ CO-ORDINATE LOCATION OF ET1125C SERIES 24-HOUR ELECTRONIC TIME SWITCH (3.1"X5.3"X8") WITH ARCHITECT/OWNER. SEE DETAIL #6 ON E-401.00 FOR ADDITIONAL INFORMATION.



ELECTRICAL POWER PLAN 1/4" = 1'-0" **A**

- A. VERIFY MOUNTING HEIGHTS OF ALL RECEPTACLES WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
- B. E.C. TO PROVIDE CORD & PLUG CONNECTIONS FOR EQUIPMENT AS REQUIRED.
- C. ALL CIRCUITS FOR P.O.S. (POINT OF SALE) EQUIPMENT SHALL BE CONNECTED TO THE SAME PHASE OF POWER IN THE PANEL. ALL BRANCH CIRCUIT BREAKERS SUPPLYING P.O.S. EQUIPMENT SHALL HAVE LOCKING HANDLES DEVICES.

- ① SHOW WINDOW RECEPTACLE. E.C. TO PROVIDE SHOW WINDOW RECEPTACLES AS PER NEC 210.62.
- ② E.C. TO VERIFY THE MOUNTING HEIGHT, LOCATION & DETAILS FOR POS RECEPTACLES WITH ARCHITECT/OWNER PRIOR TO ROUGH IN.
- ③ JUNCTION BOX FOR HAND DRYER. COORDINATE MOUNTING HEIGHT TO COMPLY WITH ADA.
- ④ E.C. TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR IN FIELD. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD.
- ⑤ EF-1 SHALL BE INTERLOCKED WITH WSHP-2. E.C. SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE NECESSARY WIRING AND CONTROLS AS REQUIRED. BASE BID ACCORDINGLY.
- ⑥ E.C. TO PROVIDE BACK BOX AND CONDUIT PULL STRING FOR MECHANICAL UNIT. CONFIRM FINAL LOCATION WITH MECHANICAL DRAWING PRIOR TO ROUGH-IN.
- ⑦ WATER HEATER DISCONNECT. E.C. TO FIELD COORDINATE EXACT LOCATION AND POWER REQUIREMENTS WITH PLUMBING CONTRACTOR.
- ⑧ JUNCTION BOX FOR MOTORIZED /FIRE SMOKE DAMPER. E.C. TO FIELD VERIFY EXACT LOCATION OF MOTORIZED/FIRE SMOKE DAMPER WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- ⑨ RECEPTACLE FOR SHELVES LIGHTS. E.C. TO COORDINATE WITH ARCHITECT/LIGHTING MANUFACTURER FOR EXACT ELECTRICAL REQUIREMENT OF LIGHTS & MAKE POWER PROVISION ACCORDINGLY. BAS BID ACCORDINGLY.

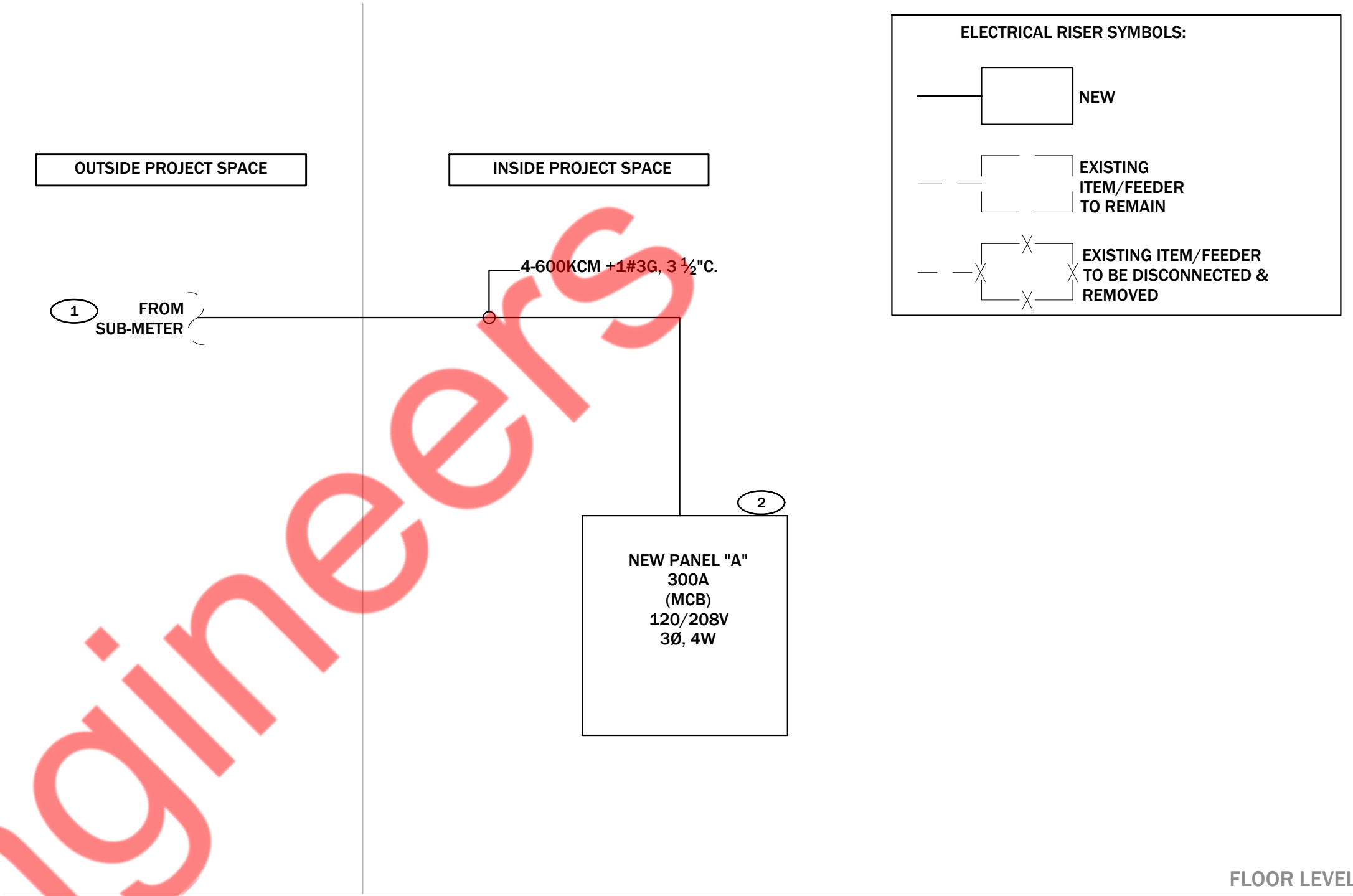
PANEL: A (NEW)										MOUNTING: SURFACE				
208Y/120		VOLTS,		3		PHASE,		4		WIRE				
MAIN CB: 300 A		MLO:		BUS:		400 A		MIN,		PANEL LOCATION: BOH				
NOTE:										FED FROM: DISCONNECT SWITCH				
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	LIGHTING- FOH	L	0.90	2#12, #12G, 3/4"C	1.15			2#12, #12G, 3/4"C	0.25	L	LIGHTING- OFFICE, STORAGE, RESTROOM	20	2
3	20	LIGHTING- FOH	L	0.90	2#12, #12G, 3/4"C		1.90		2#12, #12G, 3/4"C	1.00	L	TIME CLOCK/LIGHTING CONTACTOR	20	4
5	20	SHOW WINDOW RECEPTACLE	R	1.20	2#12, #12G, 3/4"C			5.43		4.23	H			6
7	20	EXTERIOR SIGNAGE	L	1.00	2#12, #12G, 3/4"C	5.23			3#8, #10G, 3/4"C	4.23	H	WSHP-1	3P-45	8
9	20	POS	R	0.90	2#12, #12G, 3/4"C		5.13			4.23	H			10
11	20	OFFICE RECEPTACLE	R	0.36	2#12, #12G, 3/4"C			4.59		4.23	H			12
13	20	BOH GENERAL RECEPTACLE	R	0.72	2#12, #12G, 3/4"C	4.95			3#8, #10G, 3/4"C	4.23	H	WSHP-2	3P-45	14
15	20	RESTROOM RECEPTACLE	R	0.18	2#12, #12G, 3/4"C		4.41			4.23	H			16
17	20	RESTROOM HAND DRYER	M	1.00	2#12, #12G, 3/4"C			9.33		8.33	H			18
19	20	FOH GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C	9.23			3#3, #8G, 1"C	8.33	H	EDH-1	3P-100	20
21	20	FOH GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C		9.23			8.33	H			22
23	20	SHELVES LIGHTING RECEPTACLE	R	1.26	2#12, #12G, 3/4"C			9.59		8.33	H			24
25	20	SPARE				8.33			3#3, #8G, 1"C	8.33	H	EDH-2	3P-100	26
27	20	SPARE					8.33			8.33	H			28
29	20	SPARE						2.25	2#10, #10G, 3/4"C	2.25	O	WH-1	2P-30	30
31		SPACE				2.25				2.25	O			32
33		SPACE					0.00							34
35		SPACE						0.42	2#12, #12G, 3/4"C	0.42	M	OAF-1	2P-20	36
37		SPACE				0.42				0.42	M			38
39		SPACE					0.05		2#12, #12G, 3/4"C	0.05	M	EF-1	20	40
41		SPACE						0.10	2#12, #12G, 3/4"C	0.10	M	MD/FSD	20	42
43		SPACE				0.00						SPARE	20	44
45		SPACE					0.00					SPARE	20	46
47		SPACE						0.00				SPARE	20	48
TOTAL CONNECTED LOAD (KVA)						31.55	29.05	31.70						

PANEL BOARD SCHEDULE GENERAL NOTES	
1.	PROVIDE A "TYPE" WRITTEN DIRECTORY OF ALL CIRCUITS IN EACH PANEL.
2.	P.O.S. SYSTEM, COMPUTER, PRINTERS, MONITORS, CREDIT CARDS AND MODEM TO BE ON ISOLATED GROUND.

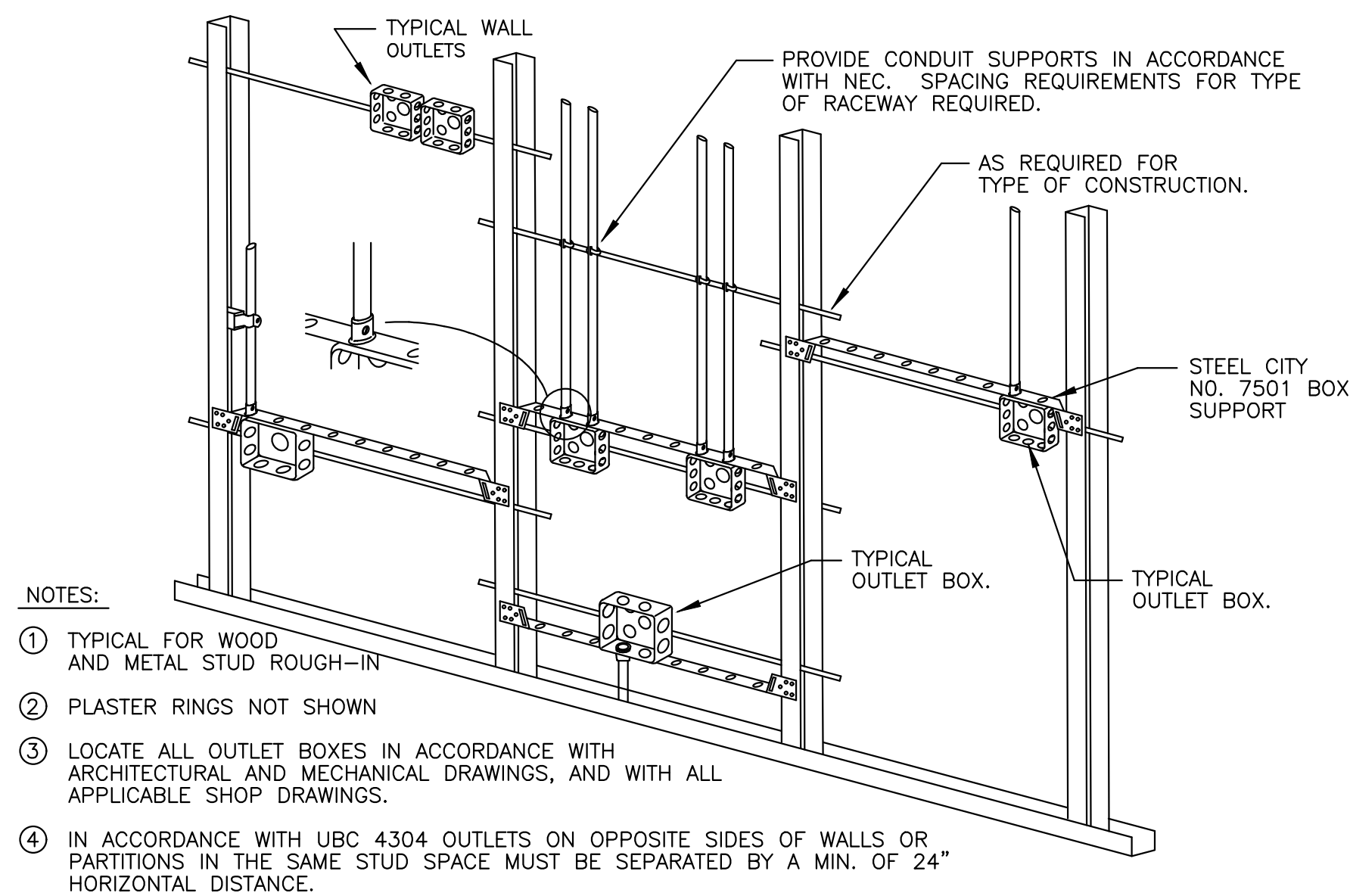
ELECTRICAL PANEL SCHEDULE ABBREVIATIONS	
L	= LIGHTING
R	= RECEPTACLE
H	= HVAC
M	= MOTOR
E	= EQUIPMENT
O	= OTHER

ELECTRICAL RISER GENERAL NOTES:	
1.	E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
2.	E.C. SHALL VERIFY FAULT CURRENT (Isc) AVAILABLE WITH UTILITY COMPANY AND CALCULATE EXACT A.I.C. RATING PRIOR TO BID.
3.	PROVIDE SEPARATE GROUND CONDUCTOR IN ALL CONDUITS.
4.	E.C SHALL VERIFY EXACT SCOPE OF WORK WITH THE ARCHITECT/OWNER.
5.	E.C. SHALL DEMOLISH ALL THE EXISTING ELECTRICAL PANELS WHICH ARE NOT REUSED FOR THIS PROJECT SPACE AND RETURN TO THE OWNER/AS REQUIRED BY THE OWNER. BASE BID ACCORDINGLY.

ELECTRICAL RISER KEY NOTES:	
1	EXISTING 300A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FEEDER FROM THE EXISTING SUB METER TO REMAIN. E.C. SHALL COORDINATE WITH THE LANDLORD/OWNER FOR EXACT POWER DISTRIBUTION. E.C. SHALL VERIFY EXACT RATING, LOCATION AND OPERABLE CONDITION OF EXISTING METER IN FIELD. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES.
2	NEW 300A(MCB), 208Y/120V, 3PH, 4W, ELECTRICAL PANEL "A". E.C. SHALL CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL.



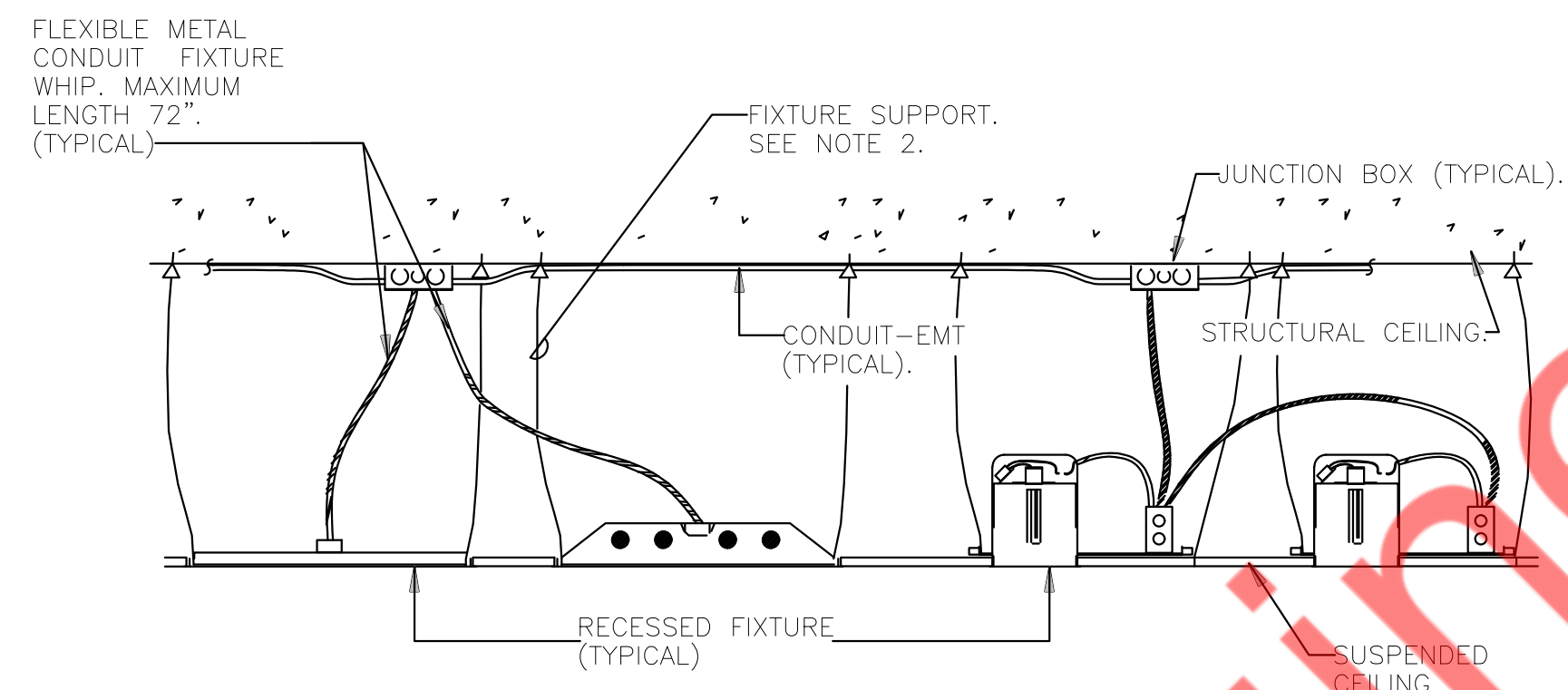
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NOTES:

- ① TYPICAL FOR WOOD AND METAL STUD ROUGH-IN
- ② PLASTER RINGS NOT SHOWN
- ③ LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
- ④ IN ACCORDANCE WITH UBC 4304 OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 24" HORIZONTAL DISTANCE.

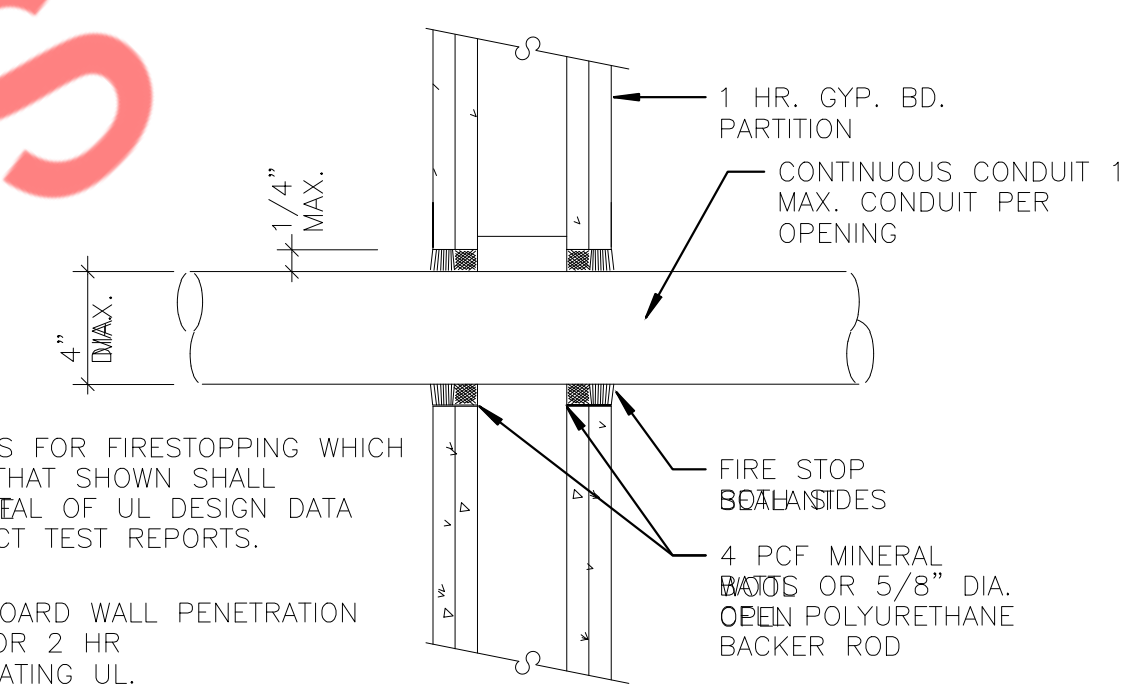
1 DETAIL TYPICAL ROUGH-IN REQUIREMENTS
E-401.00 NTS



NOTES:

1. MC CABLE IS ACCEPTABLE WHERE CONCEALED ABOVE CEILINGS OR IN WALLS. MC CABLE SHALL NOT ENTER PANELBOARDS.
2. SUPPORT FIXTURES DIRECTLY FROM STRUCTURE.
 - A. FOR LINEAR FIXTURES: MINIMUM TWO 2.5mm (0.1") #10AWG GALVANIZED STEEL WIRES AT DIAGONAL CORNERS (WITHIN 4" OF FIXTURE CORNER) DIRECTLY FROM STRUCTURE.
 - B. FOR DOWNLIGHTS: WIRE FROM STRUCTURE.

2 TYPICAL RECESSED FIXTURE INSTALLATION DETAIL
E-401.00 NTS

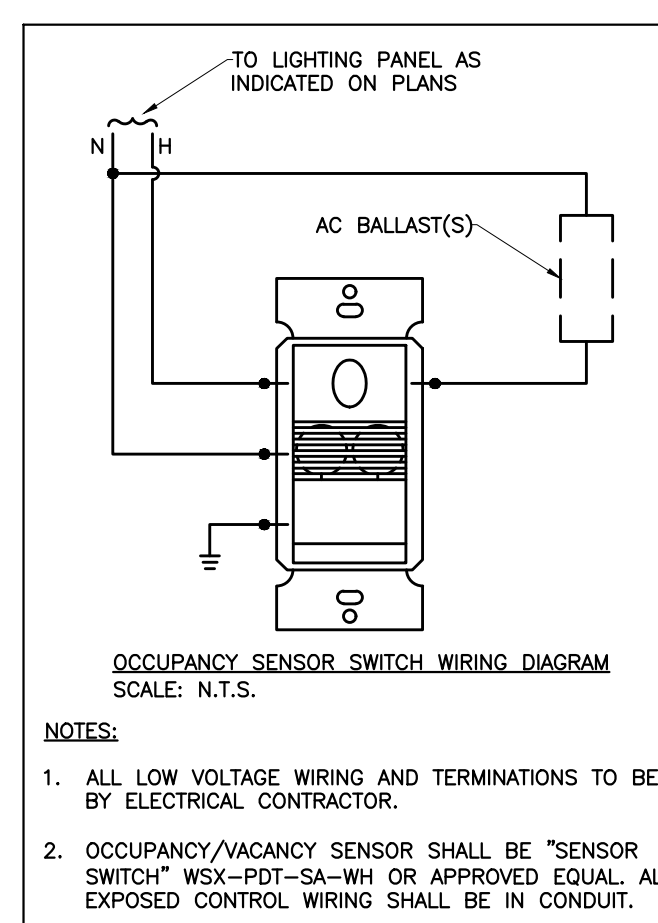


DESIGNS FOR FIRESTOPPING WHICH DIFFER FROM THAT SHOWN SHALL BE SUBJECT TO SUBMITTAL OF UL DESIGN DATA AND PRODUCT TEST REPORTS.

NOTE:

THIS DETAIL USED IN BOTH 1 HR. AND 2 HR. PARTITIONS. THIS DETAIL USED FOR WOOD HAND PLASTER/STUD PARTITIONS, DESIGNATED AS IF. FIELD VERIFY CONDITIONS.

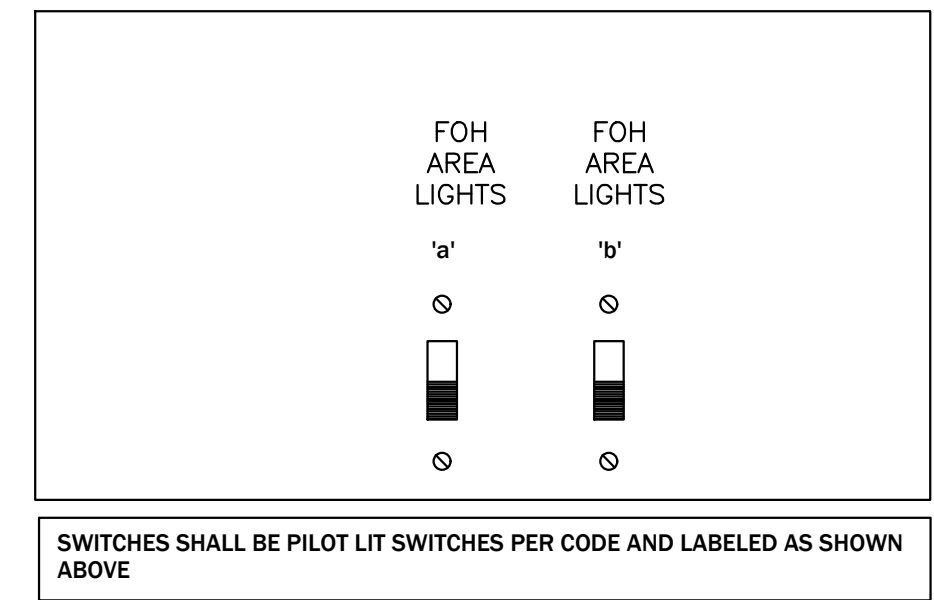
3 FIRE RATED - CONDUIT PENETRATION DETAIL
E-401.00 NTS



NOTES:

1. ALL LOW VOLTAGE WIRING AND TERMINATIONS TO BE BY ELECTRICAL CONTRACTOR.
2. OCCUPANCY/VACANCY SENSOR SHALL BE "SENSOR SWITCH" WSX-PDT-SA-WH OR APPROVED EQUAL. ALL EXPOSED CONTROL WIRING SHALL BE IN CONDUIT.

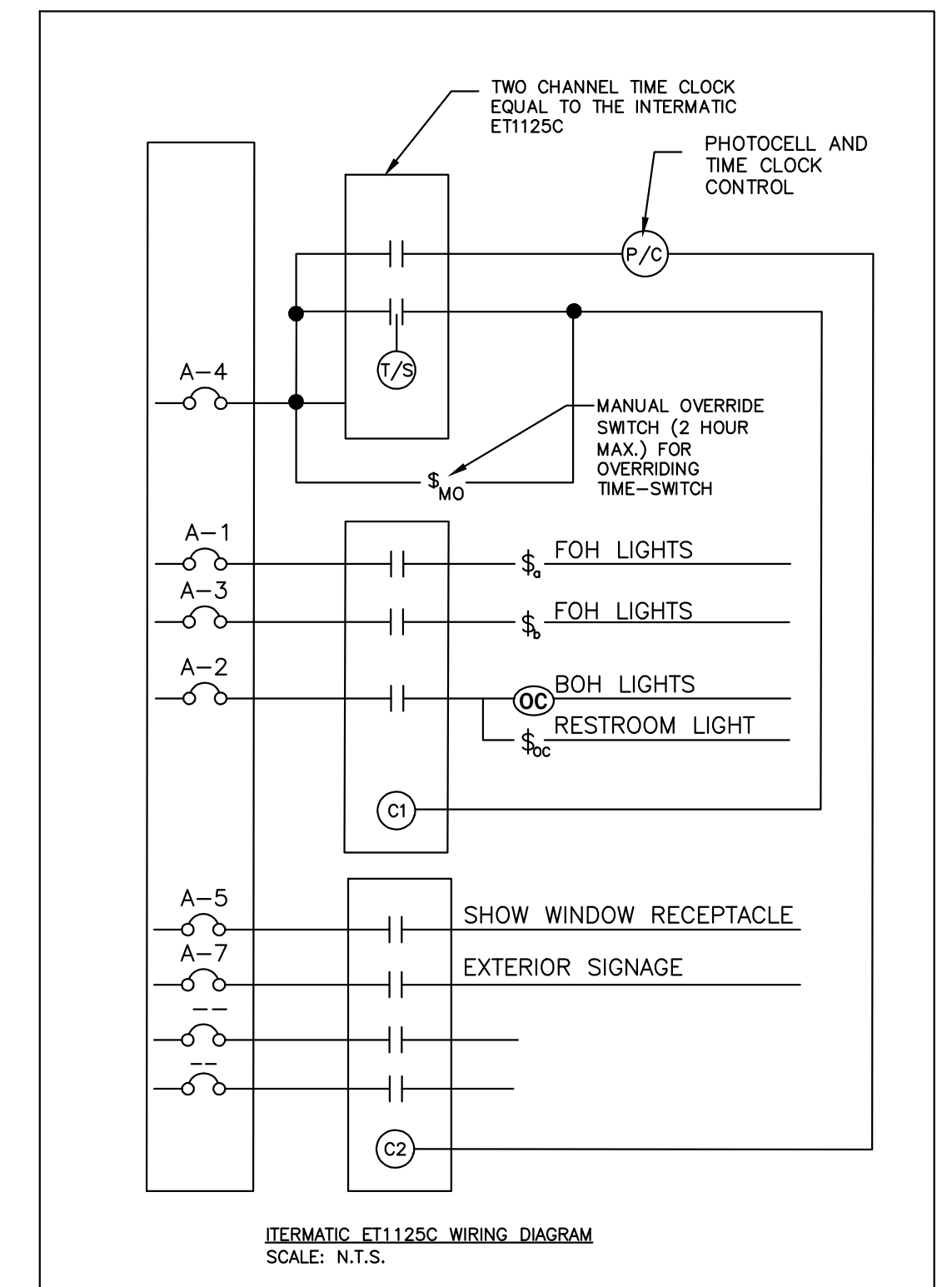
4 OCCUPANCY SENSOR SWITCH
E-401.00 NTS



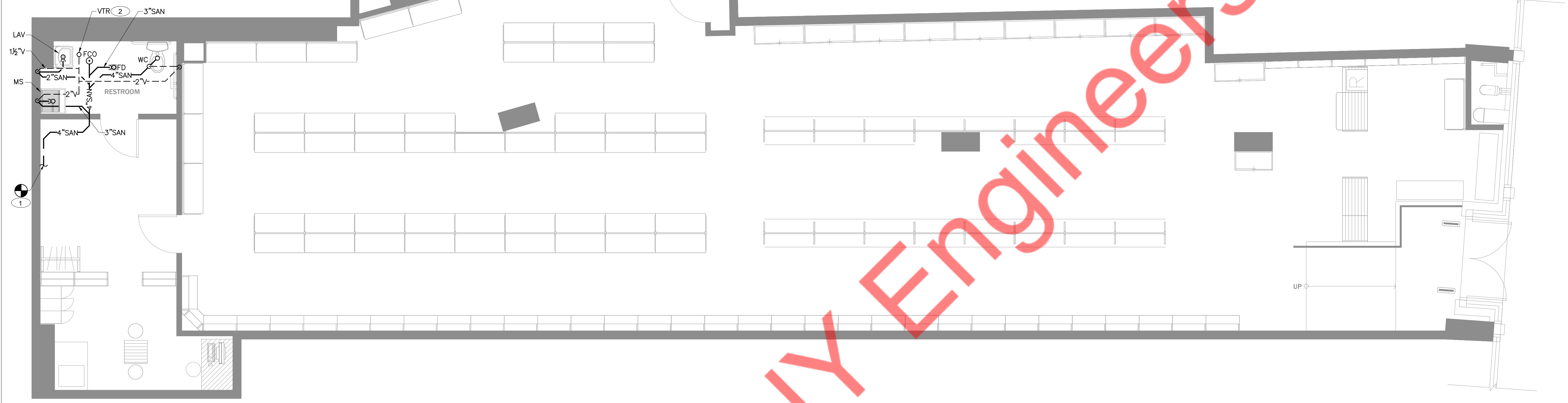
5 LIGHTING CONTROL DIAGRAM
E-401.00 NTS

ITERMATIC ET1125C 24-HOUR ELECTRONIC TIME SWITCH:

- A. ITERMATIC TIMER BOX SHALL BE LOCATED AS CLOSE TO PANELBOARD AS PRACTICAL. PROVIDE WIRING FROM LOW VOLTAGE SWITCH TO RELAY CABINET REQUIRED FOR EACH RELAY AS REQUIRED.
- B. PROGRAM LIGHTING SCHEDULE AND HOURS OF OPERATION WITH OWNER.
- C. PROVIDE LOW VOLTAGE OVERRIDE SWITCH AS INDICATED ON DRAWINGS. ITERMATIC ET1125C SERIES. LOW-VOLTAGE OVERRIDE SWITCH CONTROLS SHALL INITIATE AN OVERRIDE OF A MAXIMUM TIME OF NO MORE THAN TWO (2) HOURS.
- D. PROVIDE TWO (2) HOUR TRAINING ON PROGRAMMING OF SYSTEM & SYSTEM OPERATION.

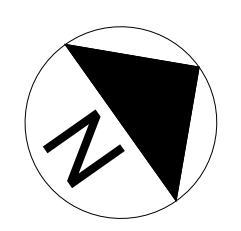


6 LCP WIRING DIAGRAM
E-401.00 NTS



1 WASTE AND VENT PLAN - FIRST FLOOR

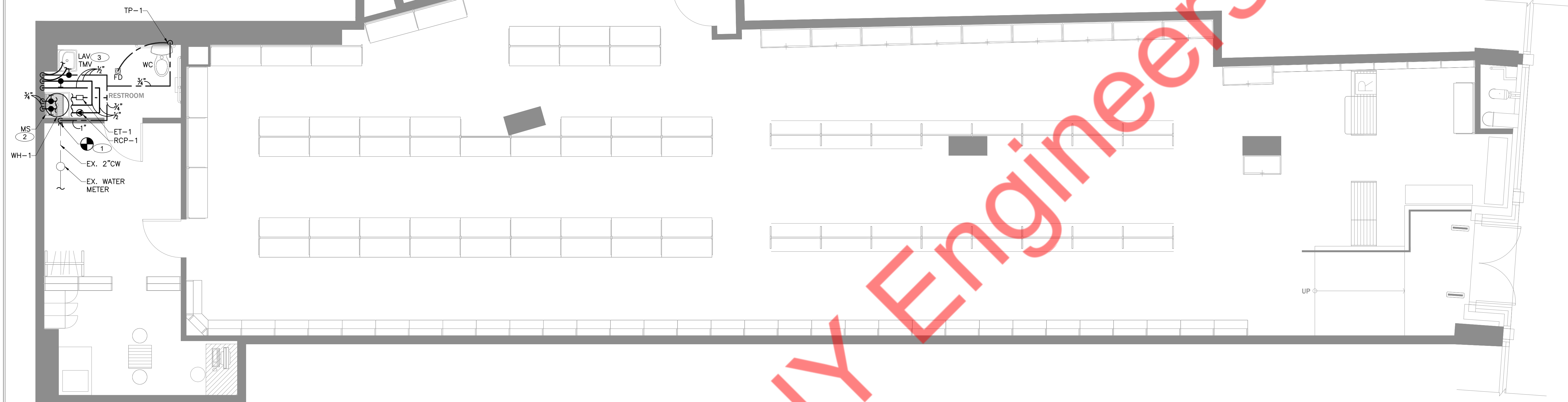
1/4" = 1'-0"



WASTE AND VENT PIPING PLAN 1/4" = 1'-0" A

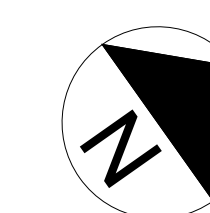
- A. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
- B. HORIZONTAL VENT PIPES FORMING BRANCH VENTS, RELIEF VENTS OR LOOP VENTS SHALL BE LOCATED NOT LESS THAN 6 INCHES ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST FIXTURE BEING SERVED.
- B. REFER TO SHEET P-601.00 FOR SANITARY RISER DIAGRAM.

- 1 CONNECT NEW 4" SANITARY WASTE PIPE TO EXISTING WASTE PIPING IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION & INVERT OF EXISTING PIPING.
- 2 4" VENT UP THROUGH ROOF. MAINTAIN 10' DISTANCE FROM FRESH AIR INTAKE UNIT.



1 WATER AND GAS PLAN - FIRST FLOOR

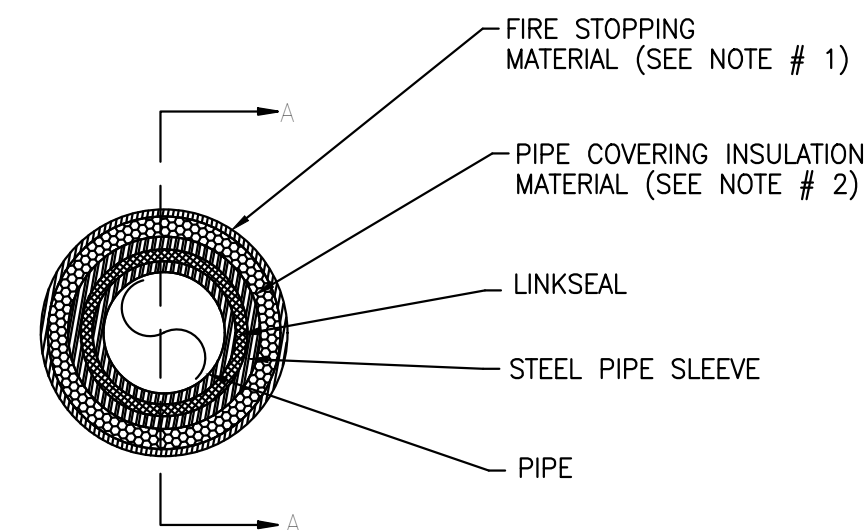
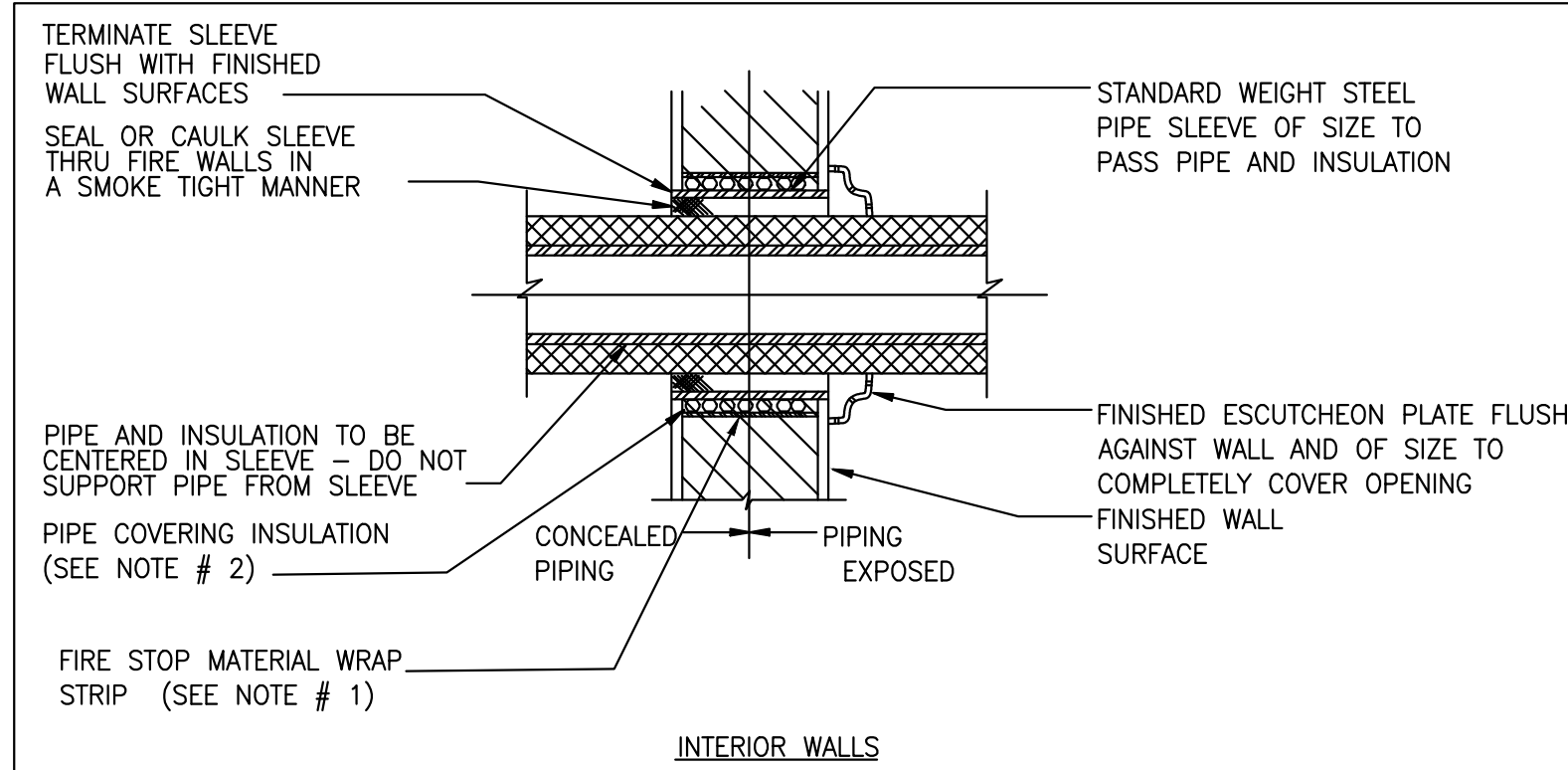
1/4"=1'-0"



WATER PIPING PLAN 1/4" = 1'-0" A

- A. REFER TO SHEET P-601.00 FOR WATER RISER DIAGRAM.
- B. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
- C. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 85 PSI.
- D. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2020 NYC ENERGY CONSERVATION CODE. REFER SHEET P-001.00.

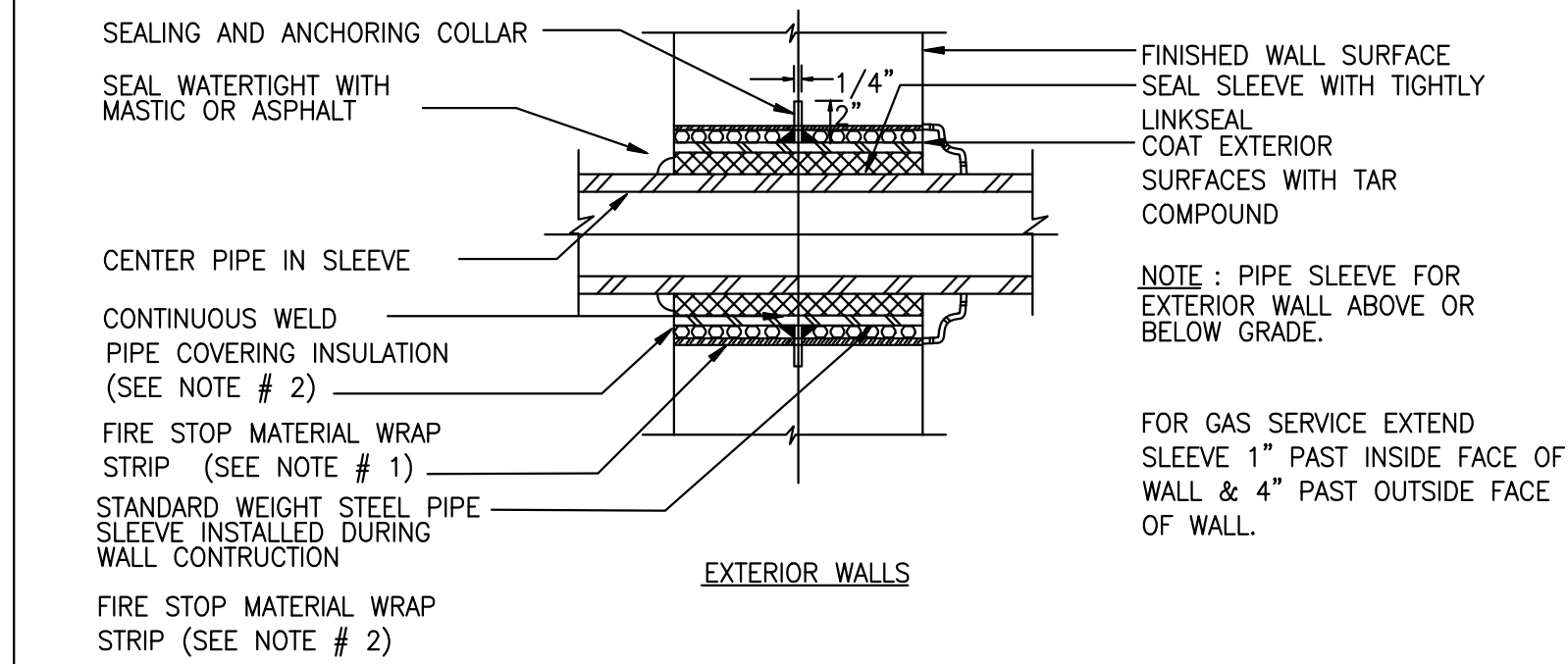
- 1 CONNECT NEW 1" CW TO EXISTING 2" CW MAIN LINE. CONTRACTOR TO FIELD VERIFY THE SIZE AND LOCATION OF EXISTING WATER METER PRIOR TO CONSTRUCTION.
- 2 WATER HEATER (WH-1). PIPE CONDENSATE LINE, T&P DISCHARGE AND DRAIN PAN TO MOP SINK. REFER DETAIL 2/P502.00.
- 3 PROVIDE A TEMPERING MIXING VALVE FOR LAVATORY. SET TEMPERTAURE TO A MAXIMUM OF 110°F.



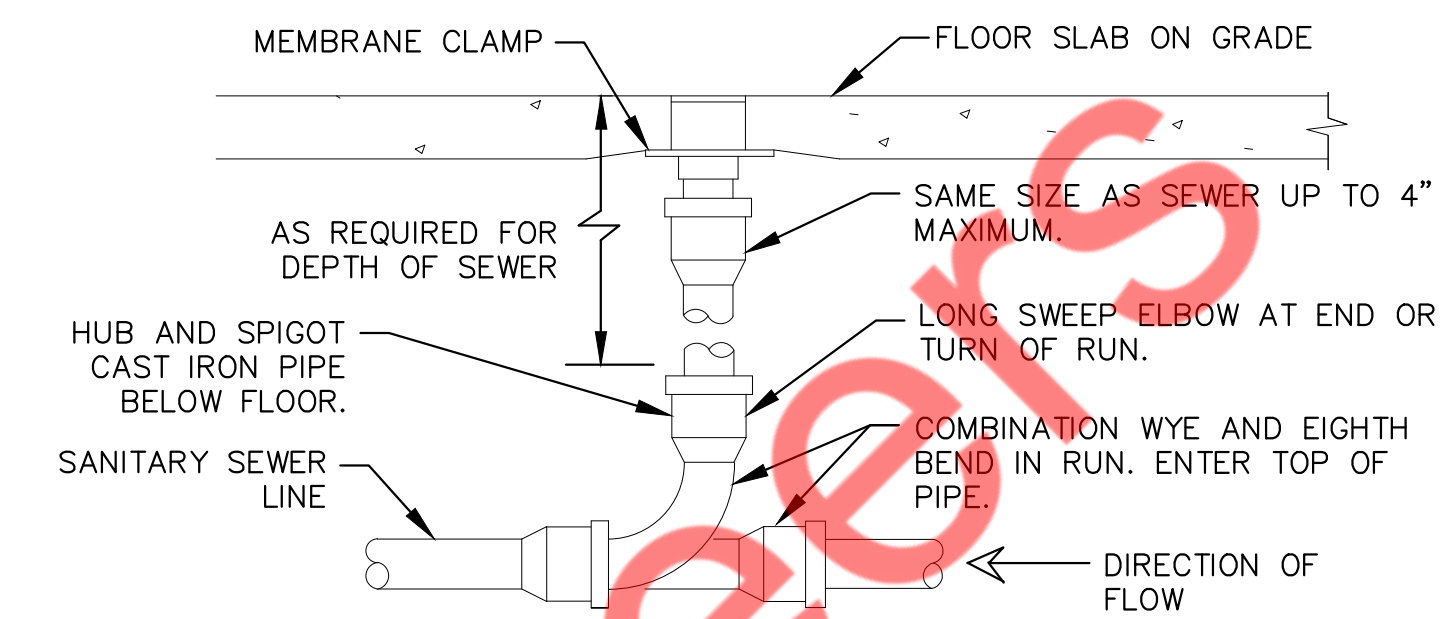
PIPE SLEEVE VIEW

NOTES:

- FIRESTOP MATERIAL WRAP STRIP SHALL BE 1/4" THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL SUPPLIED IN 2 IN. WIDE STRIPS AND WRAP AROUND THE PIPE AS PER UL MATERIAL LISTED 3M COMPANY FS-195+ OR FILL CAVITY WITH CAULK OR SEALANTY MIN. 1/8" DIA. CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED OF THE WRAP STRIP LAYER APPROX. 3/4" FROM WALL SURFACE. AS PER UL LISTED 3M COMPANY CP25WB+, IC 15WB+, FIRE DAM 150+CAULK.
- PIPE COVERING INSULATION SHALL BE 2" THICK HOLLOW CYLINDRICAL HEAVY DENSITY GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKETED. AS PER UL CLASSIFICATION AND MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.



PIPE SLEEVE THRU WALL SECTION



COMMENTS:

- LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND/OR WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER FCO REQUIREMENTS.
- ROUND SECURED GASKETED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORiated FOR UNFINISHED FLOORS). PROVIDE GASKETED PLASTIC PLUG IN CAST IRON BODY. USE TEFLON JOINT COMPOUND ON PLUG THREADS. CLEAN THE TOP OF EXPOSED FCO AFTER INSTALLATION.

1 PIPE SLEEVE THRU WALL SECTION
P-501.00 N.T.S.

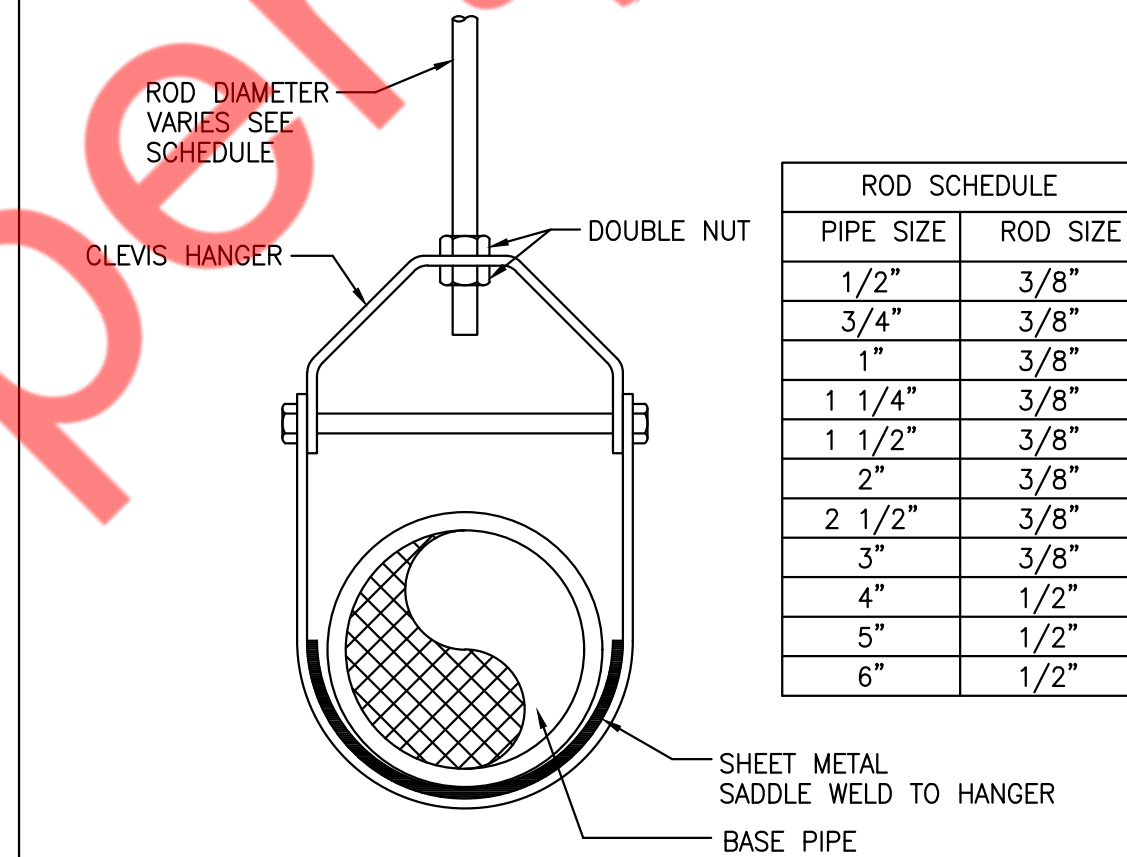
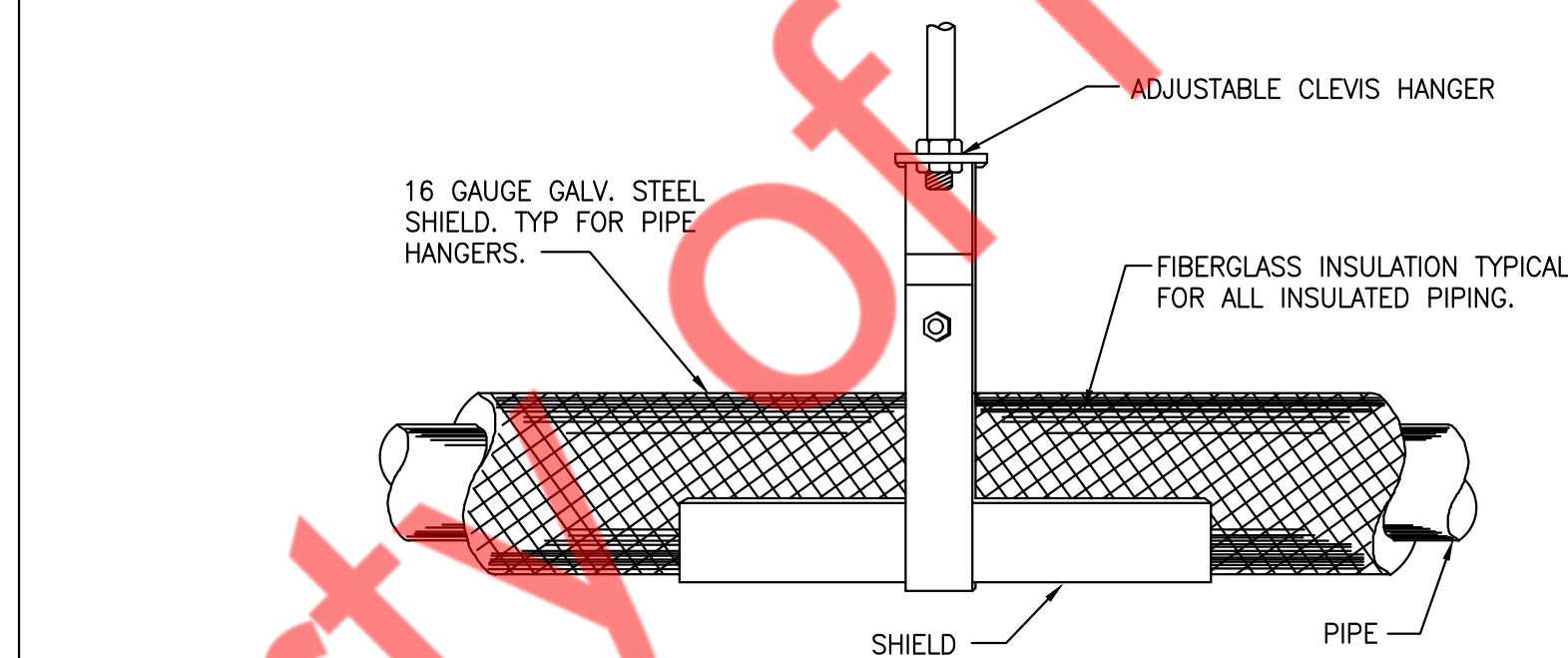
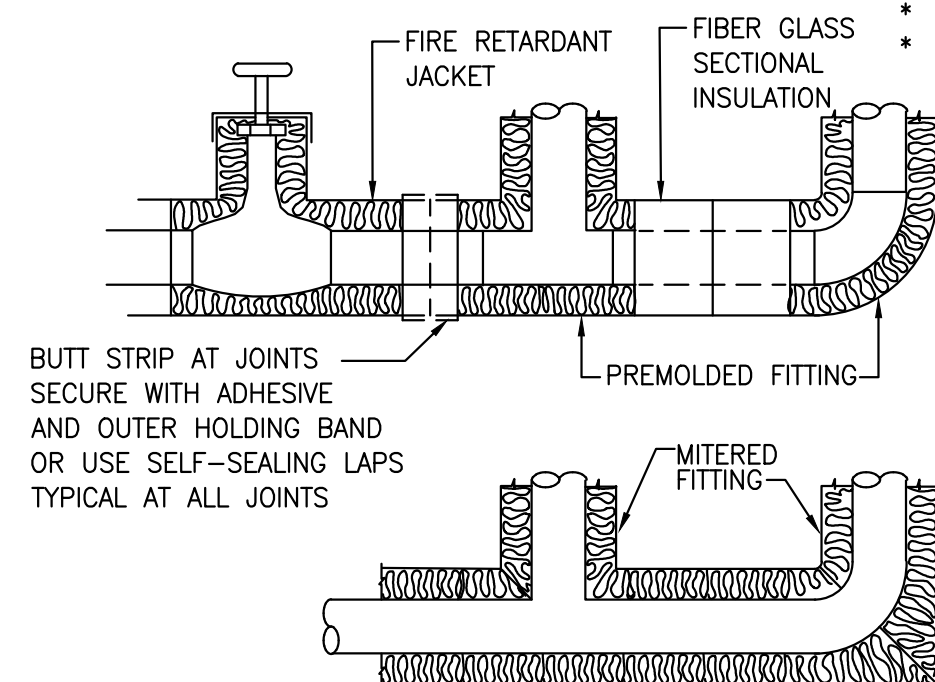
2 FLOOR CLEANOUT DETAIL
P-501.00 N.T.S.

CONCEALED VALVES AND FITTINGS

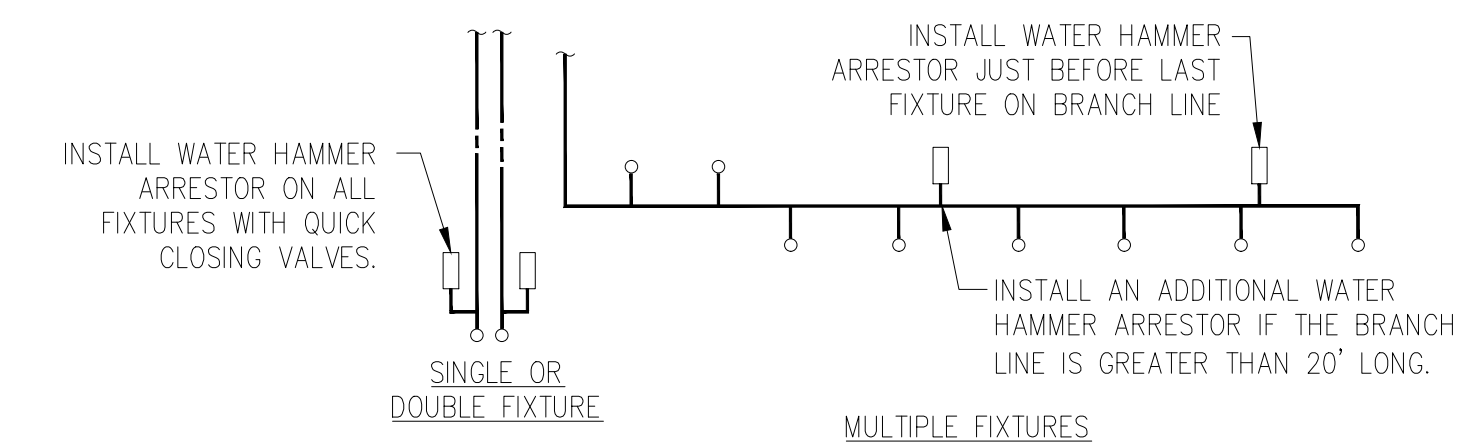
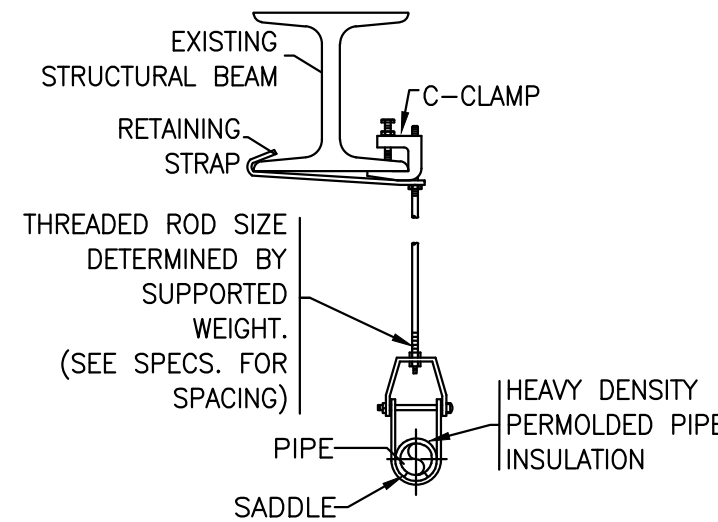
- WRAP WITH 1-INCH THICK, 1-POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS
- SECURE WITH WIRE OR TAPE.
- VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

CONCEALED VALVES AND FITTINGS

- PREMOLDED FIBER GLASS OR RADIAL MITERED PIPE INSULATION
- SKIM COAT OF INSULATION CEMENT
- COAT OF MASTIC
- WRAP WITH FIBER GLASS REINFORCING CLOTH.
- FINISH COAT OF MASTIC
- OVERLAP 2-INCHES ON PIPE INSULATION.



ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"



PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	154-330

WATER SUPPLY FIXTURE UNIT (WSFU)		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	5	--
URINAL	4	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3

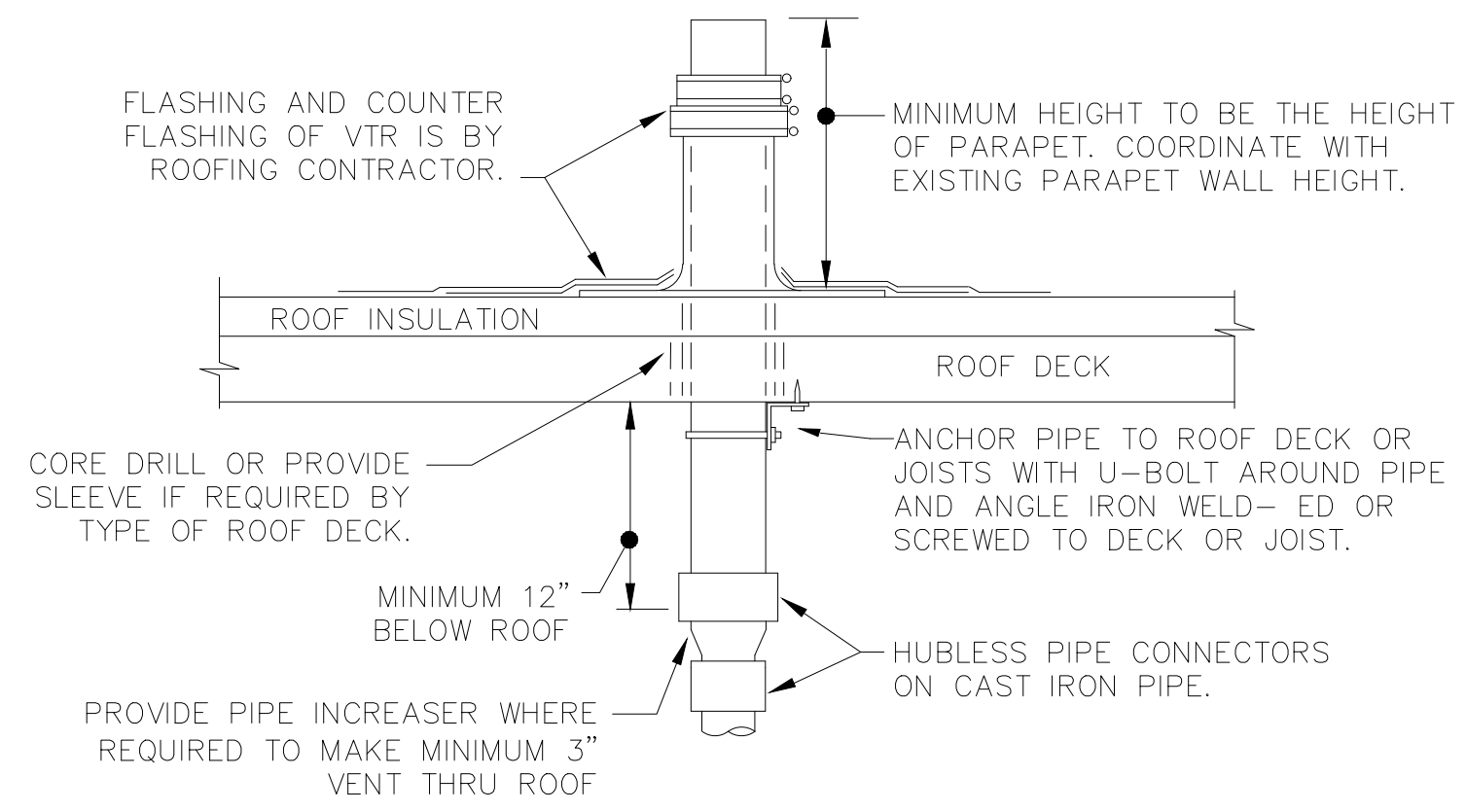
COMMENTS:

- WATER HAMMER ARRESTORS SHALL BE HAVE PISTON AND O-RING CONSTRUCTION WITH PDI #WH-201, ASSE # 1010 AND ANSI # A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. SIZE THE UNITS AS SHOWN PER THE TABLES SHOWN ABOVE.

3 INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS
P-501.00 N.T.S.

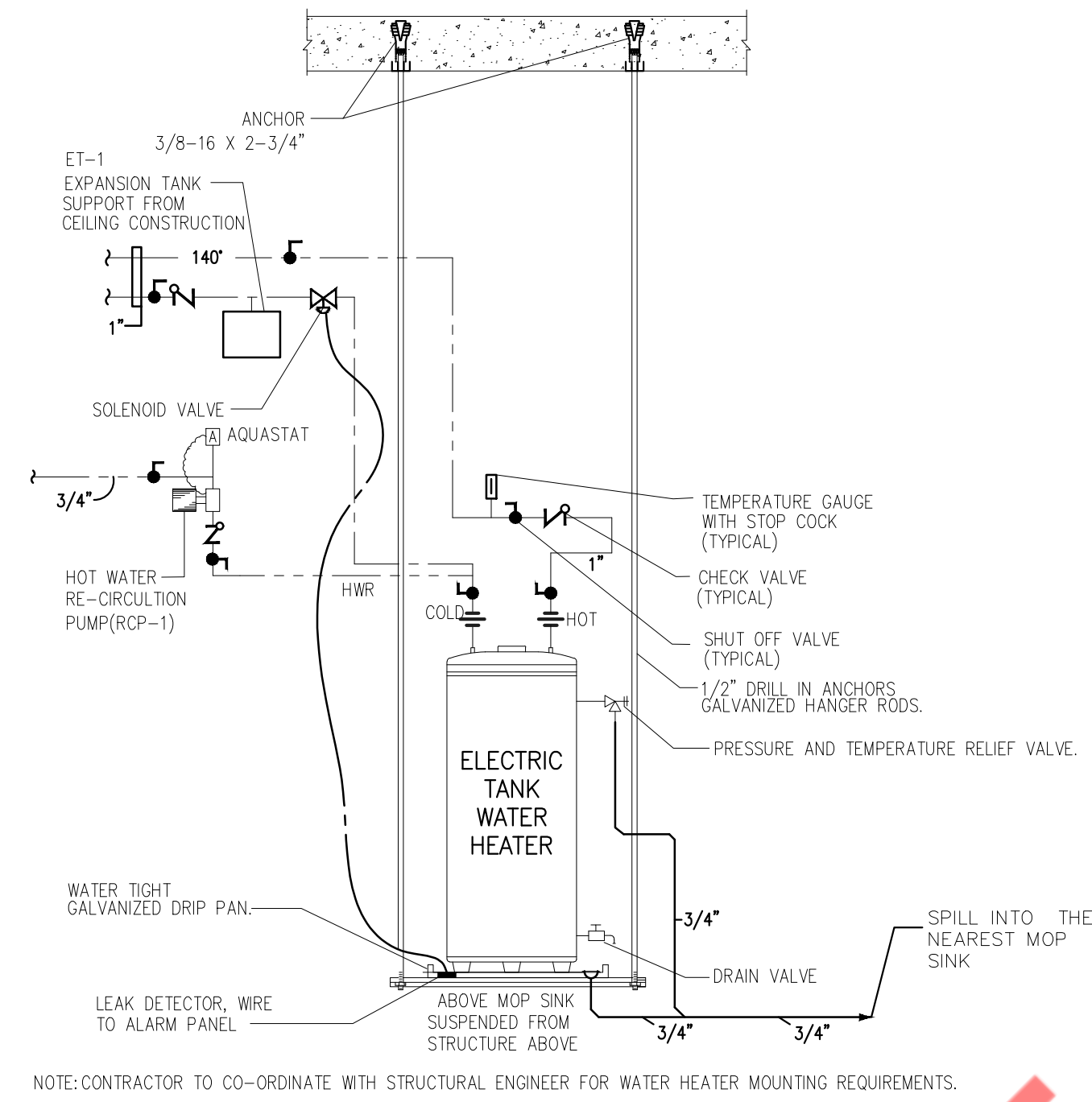
4 HANGER DETAIL
P-501.00 N.T.S.

5 WATER HAMMER ARRESTOR DETAIL
P-501.00 N.T.S.

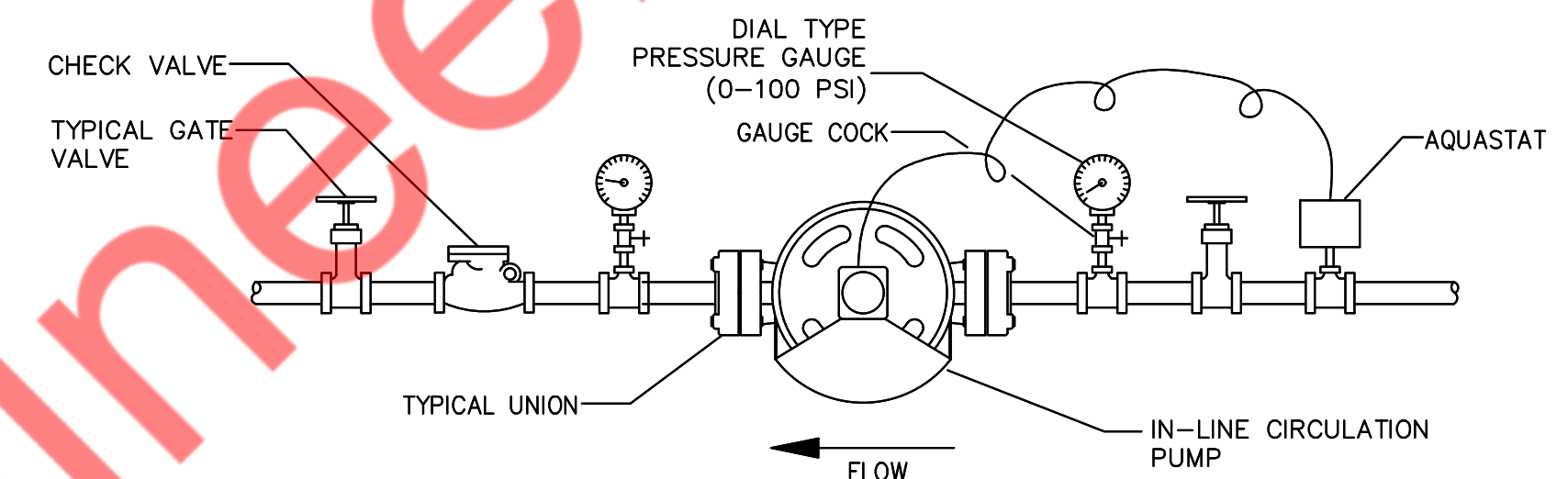


COMMENTS:
 1. REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE, OR TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, OR ONE FOOT FROM ANY VERTICAL SURFACE. LOCATE VTR MINIMUM 18" FROM PARAPET, EXPANSION JOINT, EQUIPMENT CURB, ETC. OFFSET IN CEILING SPACE WHERE REQUIRED TO MEET THESE CONDITIONS.

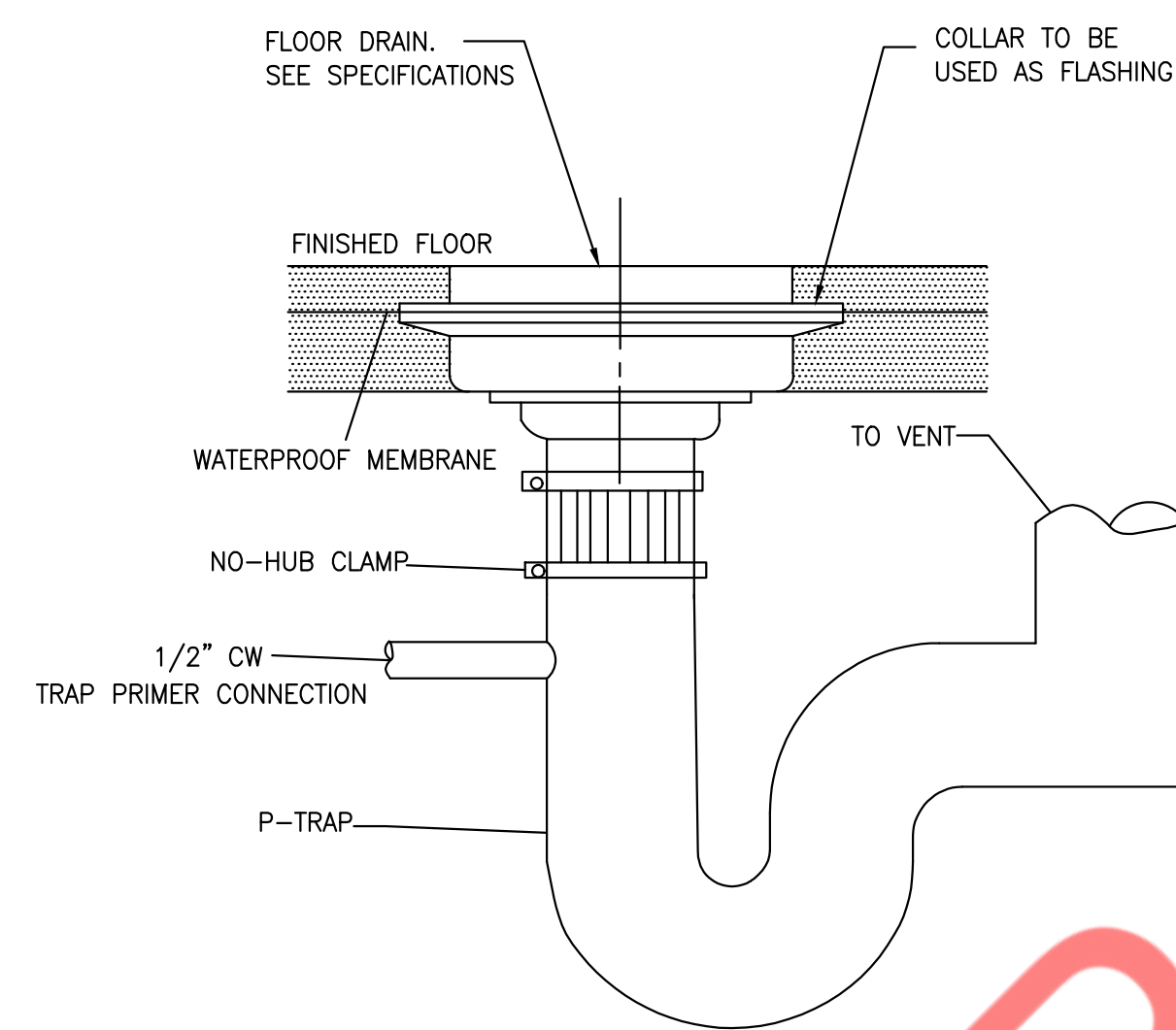
1 VENT THROUGH ROOF DETAIL
 P-502.00 N.T.S



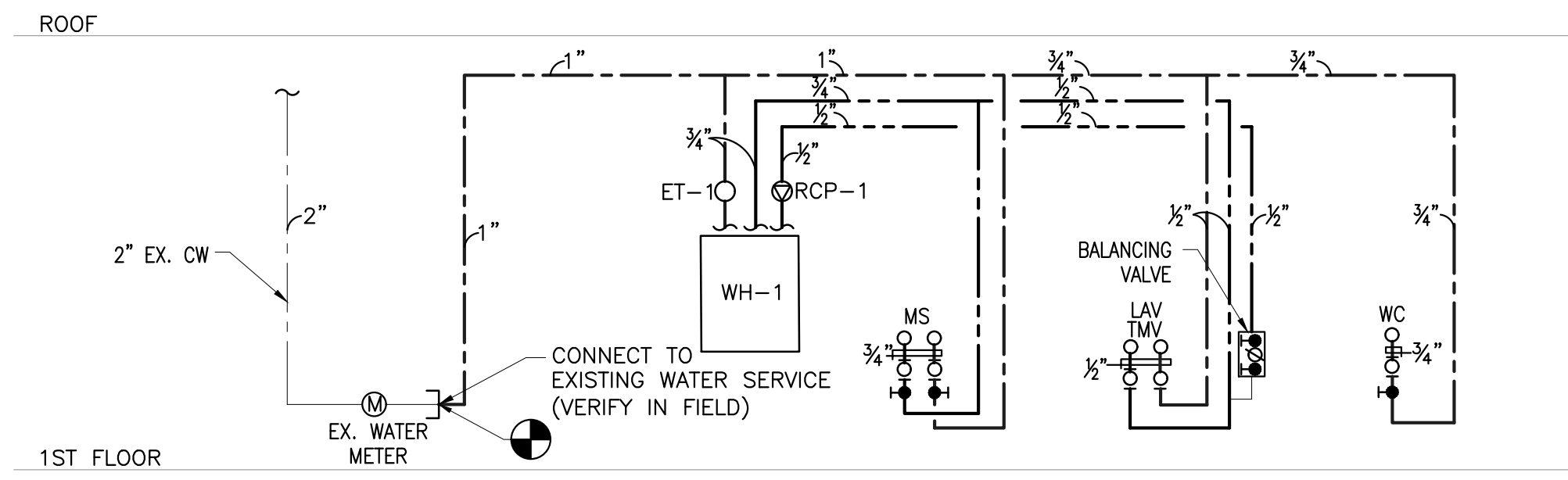
2 HOT WATER HEATER INSTALLATION FLOOR MOUNTED DETAIL
 P-502.00 N.T.S



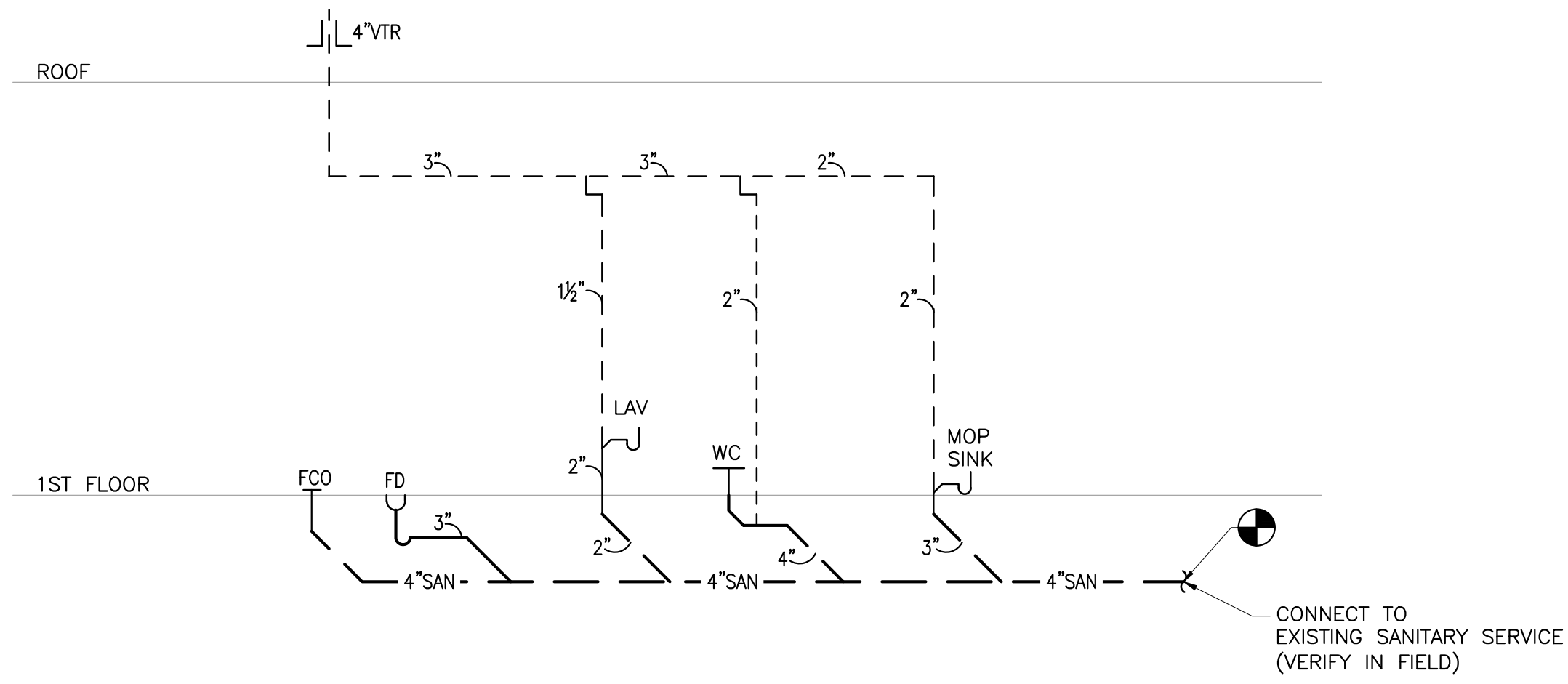
3 INLINE RECIRCULATING PUMP DETAIL
 P-502.00 N.T.S



4 FLOOR DRAIN DETAIL
 P-502.00 N.T.S



① **PLUMBING WATER RISER DIAGRAM**
NTS



② **PLUMBING SANITARY RISER DIAGRAM**
NTS

PLUMBING FIXTURE SCHEDULE								
LEGEND	PLUMBING FIXTURE	CONNECTION SIZE - INCHES						REMARKS
		TRAP	SOIL/WASTE	VENT	COLD WATER	HOT WATER	THERMOSTATIC MIXING VALVE	
WC	WATER CLOSET	-	4"	2"	3/4"	-	-	FLUSH TANK
LAV	LAVATORY	2"	2"	1 1/2"	1/2"	1/2"	PROVIDE	P-TRAP
MS	MOP SINK	3"	3"	2"	3/4"	3/4"	PROVIDE	P-TRAP

NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURES SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.

FIXTURE BRANCH CONNECTION SCHEDULE		
FIXTURE TYPE	WASTE	VENT
FLOOR DRAIN	3"	2"
FLOOR CLEANOUT	--	--

ELECTRIC WATER HEATER SCHEDULE												
TAG No.	QUANTITY	ELEMENTS	SERVING	STORAGE GALLONS	RECOVERY CAP. (GPH @ RISE)	TYPE	ELECTRICAL				MANUFACTURER & MODEL NO.	REMARKS
							VOLTS	PHASE	HERTZ	INPUT KW		
WH-1	1	1	BOOK STORE	20	20 GPH @ 90°F	ELECTRIC WATER HEATER	208	1	60	4.5	A.O.SMITH DEL-20	-DIMENSIONS 21.7"DIA X 22.2"H

EXPANSION TANK SCHEDULE					
ITEM	QUANTITY	SERVICE	GALLONS	MAKE	REMARKS
EXPANSION TANK (ET-1)	1	HOT WATER	2	AMTROL ST-5	DIMENSIONS- 12"(H)x8"(DIA.) SHIPPING WEIGHT- 5 LBS

THERMOSTATIC MIXING VALVE									
TAG No.	LOCATION	SERVICE	PIPE SIZE (INCHES)	CAPACITY RANGE (GPM)		TEMP. RANGE (°F)		MANUFACTURER & MODEL NO.	REMARKS
				MIN.	MAX.	MIN.	MAX.		
TMV	LAVATORY	HOT WATER	1	0.1	45	100	160	ACORN MODEL MV17-2	-BRASS BODY -ASSE 1017 LISTED -CSA APPROVED

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SPRINKLER SPECIFICATIONS

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE NEW YORK CITY.
- B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH, AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- C. UPON REVIEW OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER SYSTEM INSTALLATION. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OF MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.
- D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.
- E. NECESSARY SHUT-DOWNS OF BASE BUILDING SPRINKLER SYSTEM MUST BE COORDINATED WITH BUILDING MANAGEMENT. SHUT-DOWNS OF BASE BUILDING SYSTEMS SHALL TAKE PLACE AFTER OR BEFORE NORMAL BUSINESS HOURS AND SHALL BE CONSIDERED OVERTIME WORK. THE CONTRACTOR MUST GIVE BUILDING MANAGEMENT AND NEW YORK CITY FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT-DOWN OF SPRINKLER, OR OTHER SYSTEMS.

1.02 WORK INCLUDED

- A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.
- ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, N.F.P.A. STANDARD 13, N.Y.S. FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
 - THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.
 - PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH N.Y.S. BUILDING DEPARTMENT AND NFPA STANDARDS.

1.03 SHOP DRAWINGS AND SUBMITTALS

- A. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:
- PIPE AND FITTINGS
 - VALVES
 - HANGERS AND SUPPORTS
 - TESTS
 - SPRINKLER HEADS
- A. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. CONTRACTOR SHALL SUBMIT CALCULATIONS WITH SHOP DRAWINGS. CALCULATIONS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF NFPA #13, AND NYS BUILDING CODE.
- B. ADD APPROPRIATE HOSE ALLOWANCE.

1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES

- A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS WITH THE BUILDING DEPARTMENT AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.
- B. ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.

1.05 INSPECTION AND TESTING

- A. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE FIRE DEPARTMENT INSPECTOR.
- B. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF TWO HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER NFPA.
- C. THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR INSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT, AND FIRE DEPARTMENT.

PART 2 - MATERIALS

2.01 GENERAL

- A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPES, FITTINGS, VALVES, DRAINAGE SYSTEM, HANGERS AND SUPPORTS, ALL MISCELLANEOUS WORK ITEMS, SUCH AS SIGNS, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS AND MATERIAL ITEMS NECESSARY FOR COMPLETE AND APPROVED TYPE SYSTEM THAT IS READY FOR FUTURE EXTENSION.
- B. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE NEW YORK CITY BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES AND INSTALLATION. PIPING PENETRATING FIRE RATED PARTITIONS SHALL HAVE OPENING SEALED WITH U.L. APPROVED FIRESTOP SEALANT.

2.02 SPRINKLER PIPING

- A. ALL SPRINKLER PIPING ON BASEMENT, 1ST LEVEL & VERTICAL RISERS SHALL BE SCHEDULE 40, THREADED IN ACCORDANCE WITH NFPA 13-2016. PIPE SHALL BE UL/FM APPROVED.
- B. STEEL PIPE SHALL BE BETHLEHEM STEEL CO., ALLIED TUBE, BERGER INDUSTRIES OR APPROVED EQUIVALENT.
- C. AS PER NFPA 13, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 6.4.1. FITTING SHALL BE UL/FM APPROVED. CONTRACTOR.
- D. NONMETALLIC PIPES & FITTINGS USED IN MULTIPURPOSE PIPING SYSTEMS NOT EQUIPPED WITH A FIRE DEPARTMENT CONNECTION SHALL BE DESIGNED TO WITHSTAND A WORKING PRESSURE OF NOT LESS THAN 130PSI AT 120°F.

2.03 CUTTING AND PATCHING

- DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.
- FOR REPLACEMENT OF THE WORK REMOVED, MATCH EXISTING IN NATURE, CONSTRUCTION AND FINISH.
- MAINTAIN THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH COVERED BY THE WORK. REMOVE ALL SURPLUS MATERIALS, TOOLS ETC. AND LEAVE PREMISES CLEAN.

2.04 FIRE STOPPING

INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED DIRECTIONS AND PER FIRE TESTED DESIGNS THAT HAVE BEEN ACCEPTED BY THE APPROPRIATE CODE AUTHORITY HAVING JURISDICTION.

2.05 PHASING

PHASING SHALL BE COORDINATED BETWEEN THE SPRINKLER CONTRACTOR AND GENERAL CONTRACTOR. SPRINKLER INSTALLATION SHALL BE PHASED IN A MANNER WHICH WILL ALLOW FULL OCCUPANCY OF THE EXISTING FACILITY WHILE THE INSTALLATION IS IN PROGRESS.

2.05 ALTERNATES/SUBSTITUTIONS

CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY CONTRACTOR PROPOSED SUBSTITUTIONS OF THE MATERIALS OR METHODS OF INSTALLATION FROM THAT SPECIFIED. THESE ALTERATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.

2.06 LEAK DAMAGE

THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY LOSS OR DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, IT'S CONTENTS ETC. CAUSED BY LEAKS IN THE EQUIPMENT. BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO THE WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.

2.07 INSERTS, HANGERS, ETC.

- A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE 2022.
- B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.
- C. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON-SYSTEM COMPONENTS.
- D. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER-FILLED PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.
- E. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.
- F. WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.
- G. MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1-1/4" SIZES NOR 15' FOR SIZES 1-1/2" AND LARGER.
- H. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAYBE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS, IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4" OR LESS IN DIAMETER.

2.08 ESCUTCHEONS

PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW.

2.09 AS-BUILT DRAWINGS

PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

2.10 SPRINKLER HEADS

- A. SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (135/165 DEG. F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.

- B. SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:

- SPRINKLER HEADS IN FINISHED CEILINGS WITH CONCEALED PIPING SHALL BE AUTOMATIC TYCO MODEL TY3251.
- DRY SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3255.
- PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA 13-2016.
- SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.

2.11 PRESSURE GAUGE

- A. ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-300 P.S.I. RANGE, 5 PSI INTERVALS.

PART 3 - EXECUTION

3.01 GUARANTEE

- A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.

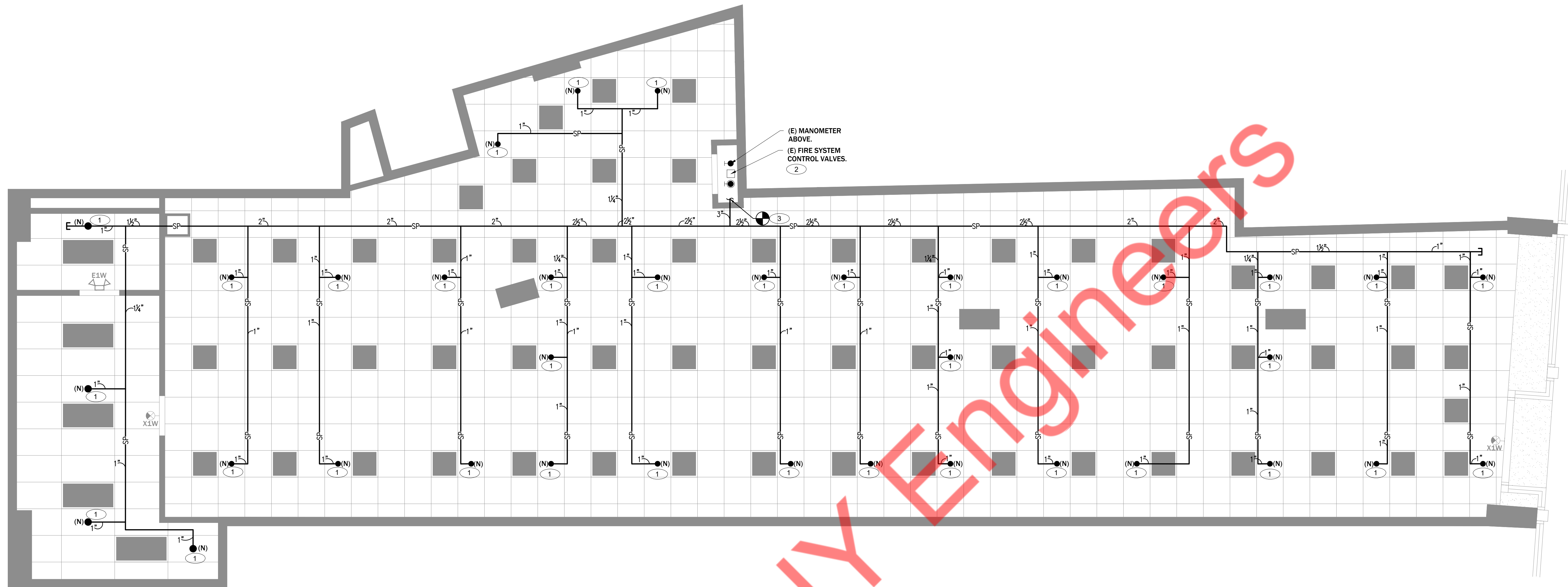
3.02 INSTALLATION

A. PIPING

- SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.
- PIPE SHALL BE REMOVED BY REAMING.
- BEFORE INSTALLING PIPE, THOROUGHLY CLEAN THE INSIDE FREE OF CUTTING AND FOREIGN MATTER. CUT ALL PIPE SQUARE AND SMOOTH AND MAKE UP ALL JOINTS TO REQUIRED LIMITS.

B. PIPE JOINTS

- THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLON COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.



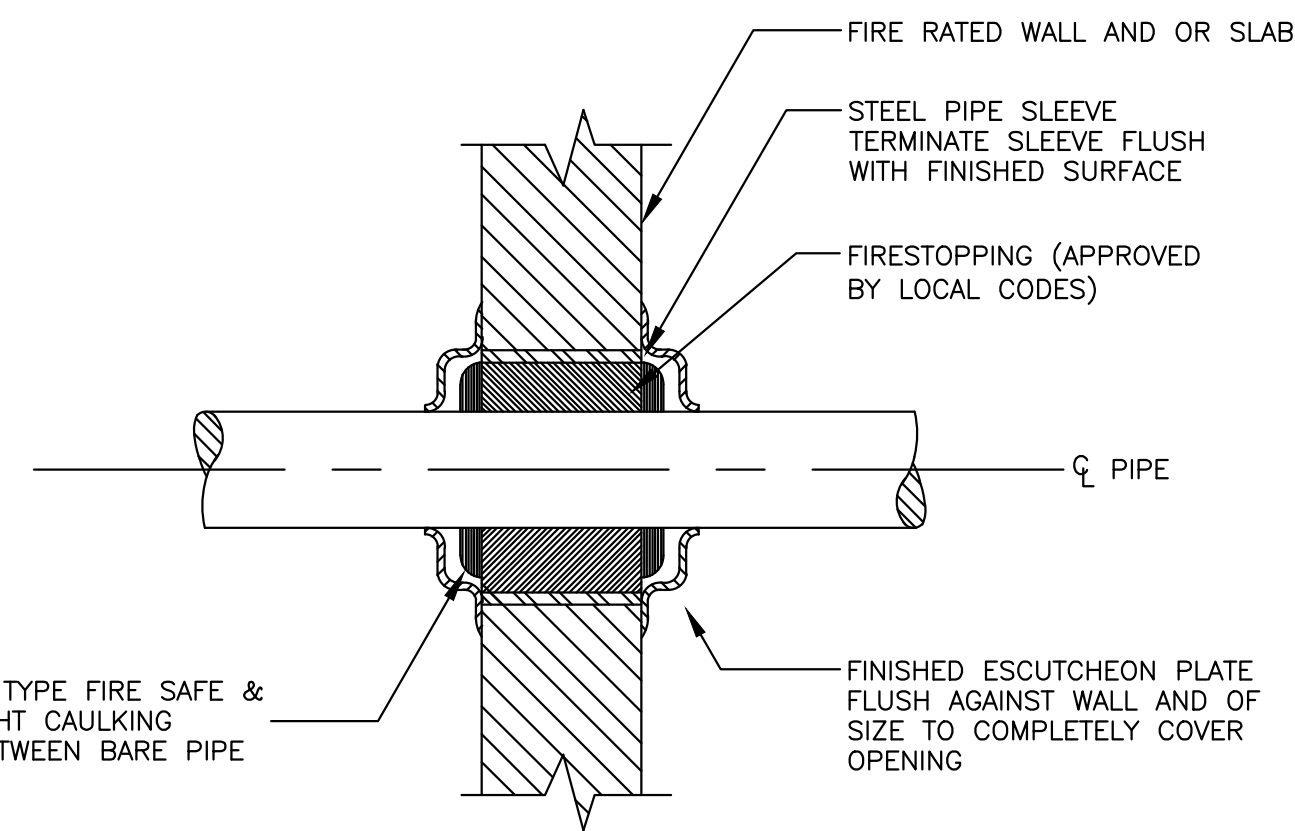
SPRINKLER PLAN - FIRST FLOOR 1/4" = 1'-0" A

1. CONTRACTOR TO FIELD VERIFY TO INSTALL ALL SPRINKLER HEADS TO BE MAX. 12" FROM CEILING.
2. ALL NEW SPRINKLER HEADS LOCATION TO BE COORDINATED WITH LIGHTING AND DIFFUSERS TO AVOID CONFLICT.
3. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED WITH EXISTING & NEW SERVICES.
4. ANY WORK SHOWN ON THE DRAWINGS AND NOT PARTICULARLY DESCRIBED IN THE SPECIFICATIONS OR DETAILS, OR ANY WORK WHICH MAY BE DEEMED NECESSARY TO COMPLETE THE CONTRACT SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THIS CONTRACT.
5. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, SPRINKLER DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE. THE DRAWINGS INDICATE SIZE, CONNECTION POINTS, AND ROUTED OF PIPES. IT IS NOT INTENDED, HOWEVER, THAT ALL OFFSETS, RISES AND DROPS ARE SHOWN. PROVIDE PIPING AS REQUIRED TO FIT STRUCTURE. AVOID OBSTRUCTIONS, AND RETAIN CLEARANCES, HEADROOM OPENINGS AND PASSAGEWAYS. ALL SPRINKLER PIPING AT CEILING SHALL BE ROUTED TIGHT TO EXISTING SLAB AS REQUIRED.
6. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION IF REQUIRED AS PER STRUCTURAL REQUIREMENT.
7. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED WITH EXISTING & NEW SERVICES.
8. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING SYSTEM AND RELOCATE HEADS WHEREVER SHOWN.
9. ALL PENDANT SPRINKLERS MUST BE SPACED AS FOLLOWS -
 1. MAXIMUM 7.5' FROM WALL
 2. MAXIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 15'.
 3. MINIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 6'.
 4. COVERAGE AREA PER SPRINKLER SHALL BE MAX. 150 SQ. FT.
10. ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.
11. AUXILIARY DRAIN SHALL BE PROVIDED AT THE TRAPPED SECTIONS.
12. ALL EXISTING SPRINKLER SYSTEM AT THIS FLOOR TO BE DEMOLISHED UNLESS OTHERWISE NOTED.
13. FOR SPRINKLER WORK ONLY.

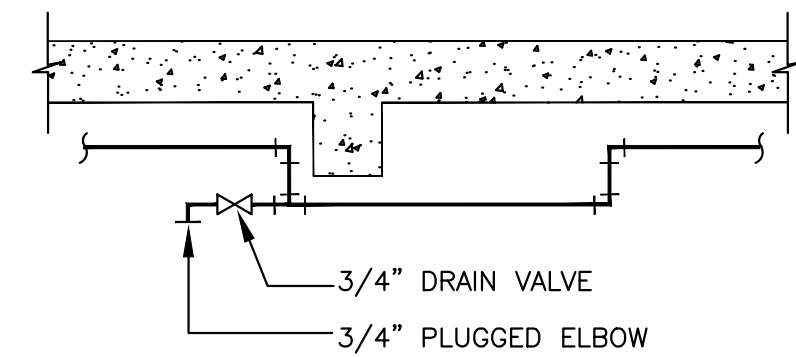
- 1 ALL BRANCH TAKE-OFF FOR EACH SPRINKLER TO BE MIN. 1".
- 2 EXISTING FLOW CONTROL ASSEMBLY TO REMAIN.
- 3 CONNECT NEW 3" WET SPRINKLER PIPE TO EXISTING 4" SPRINKLER PIPE. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION AND PRESSURE OF EXISTING FIRE PROTECTION SYSTEM.

SPRINKLER COUNT	
NEW CONCEALED SPRINKLER HEAD	36

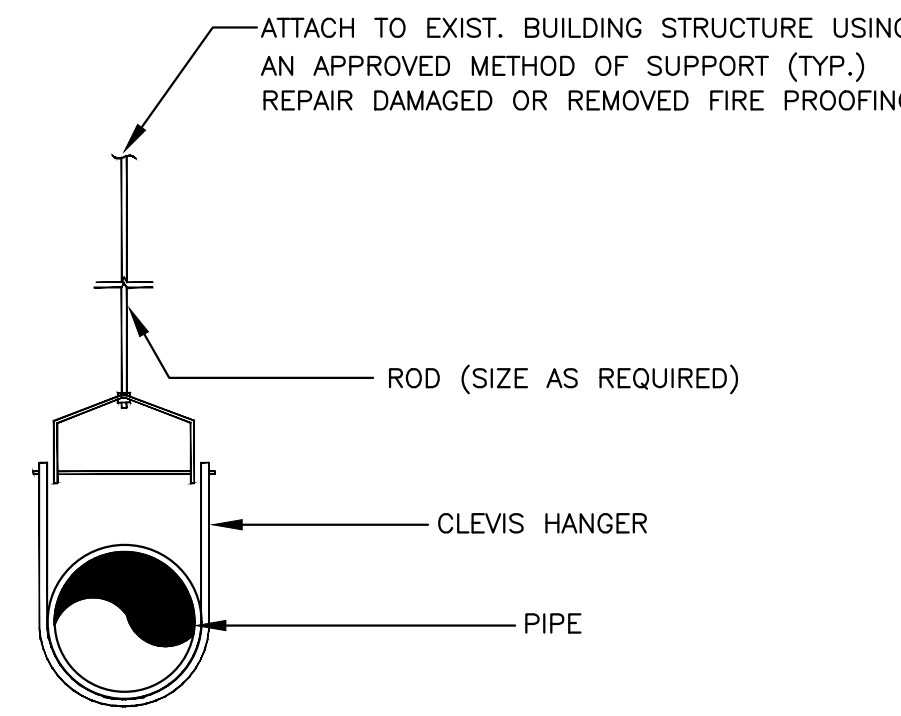
HAZARD CLASSIFICATION AND DESIGN DENSITY:	
AREA : OFFICE, RESTROOM, STORAGE	
OCCUPANCY : LIGHT HAZARD	
MINIMUM DESIGN DENSITY : 0.1 GPM/SQ.FT	
AREA : BOOK STORE	
OCCUPANCY : ORDINARY HAZARD	
MINIMUM DESIGN DENSITY : 0.15 GPM/SQ.FT	



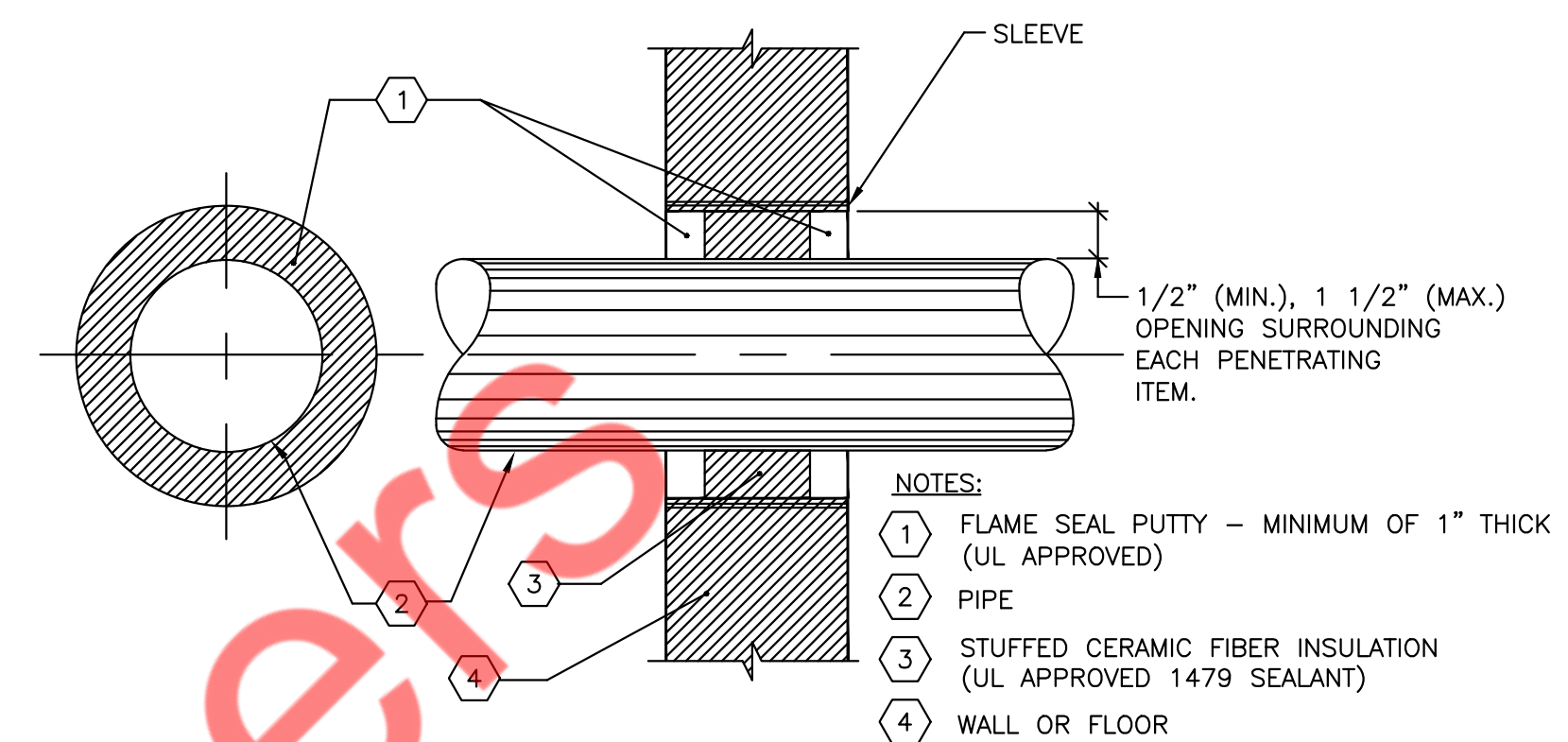
1 PIPE THRU RATED WALL TYPICAL DETAIL
SP-501.00 N.T.S.



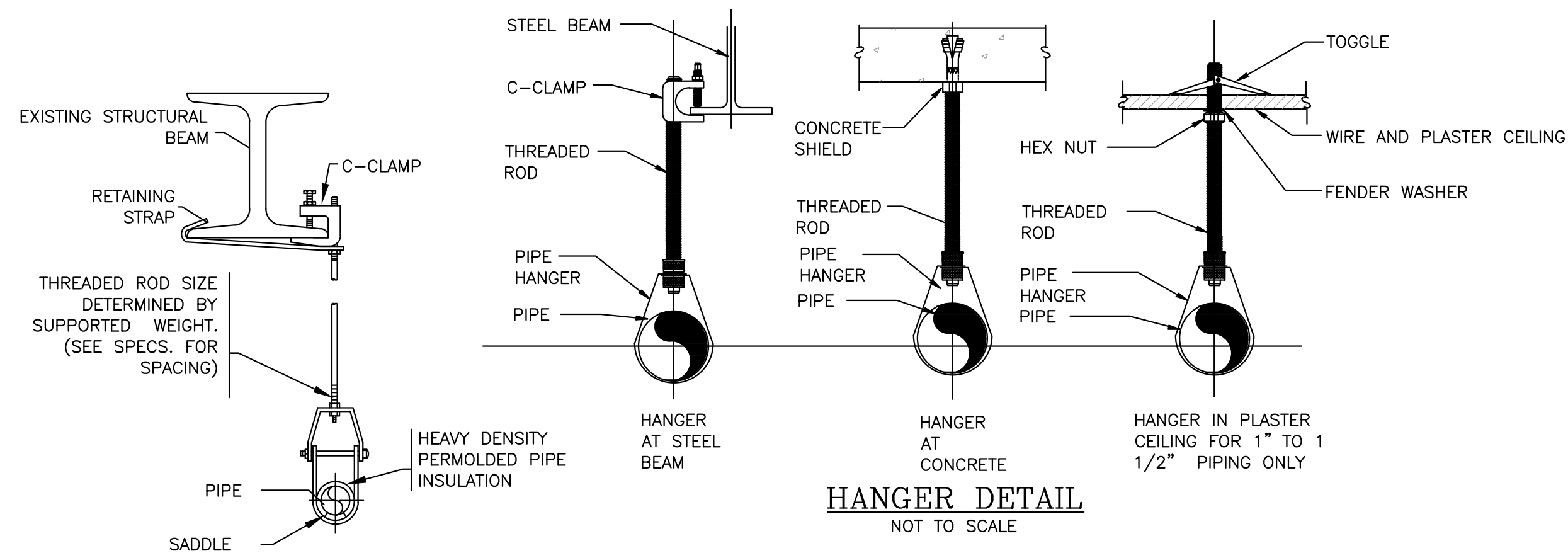
2 TYPICAL DRAIN CONNECTION FOR TRAPPED LINES ON WET PIPE SPRINKLER SYSTEMS
SP-501.00 N.T.S.



3 HANGER DETAILS TYPICAL
SP-501.00 N.T.S.



4 FIRE STOPPING DETAIL FOR FIRE/SMOKE RATED WALL/FLOOR OPENINGS
SP-501.00 N.T.S.

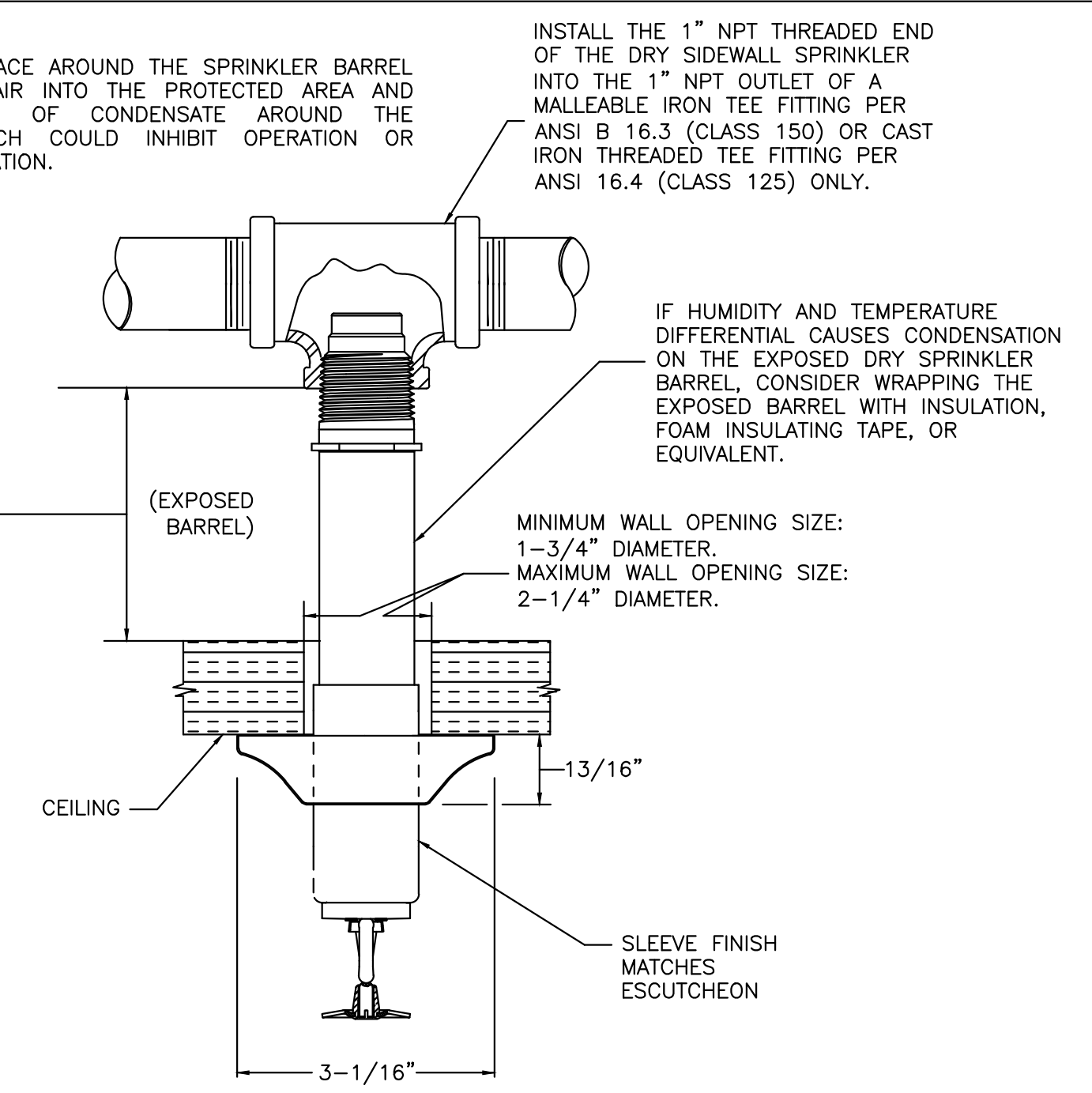


ROD SCHEDULE					
PIPE SIZE	ROD SIZE	SPACING	PIPE SIZE	ROD SIZE	SPACING
1"	3/8"	5'-8'	2 1/2"	1/2"	10'-12'
1 1/4"	3/8"	6'-10'	3"	1/2"	10'-12'
1 1/2"	3/8"	8'-10'			
2"	3/8"	10'-12'			

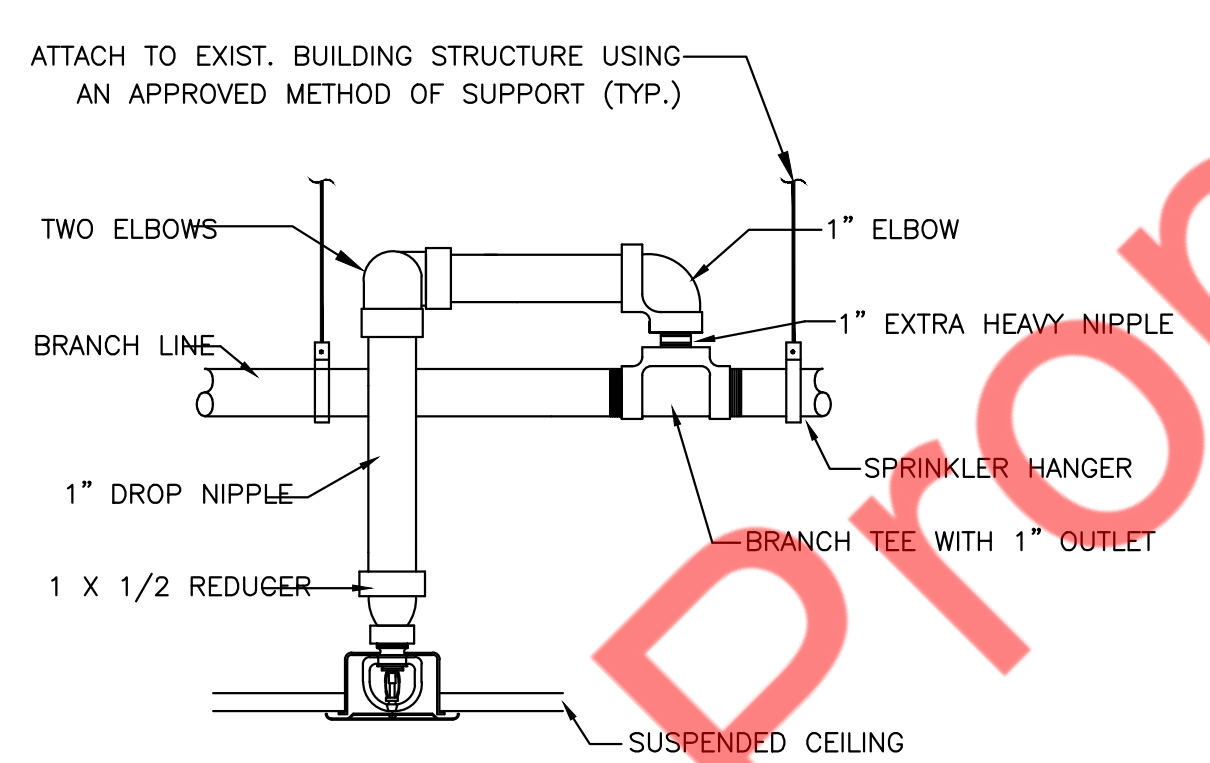
5 TYPICAL HANGER DETAIL AND ROD SCHEDULE
SP-501.00 N.T.S.

AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4	0	0
10°F (-12°C)	8	1	0
0°F (-18°C)	12	3	0
-10°F (-23°C)	14	4	1
-20°F (-29°C)	14	6	3
-30°F (-34°C)	16	8	4
-40°F (-40°C)	18	8	4
-50°F (-46°C)	20	10	6
-60°F (-51°C)	20	10	6

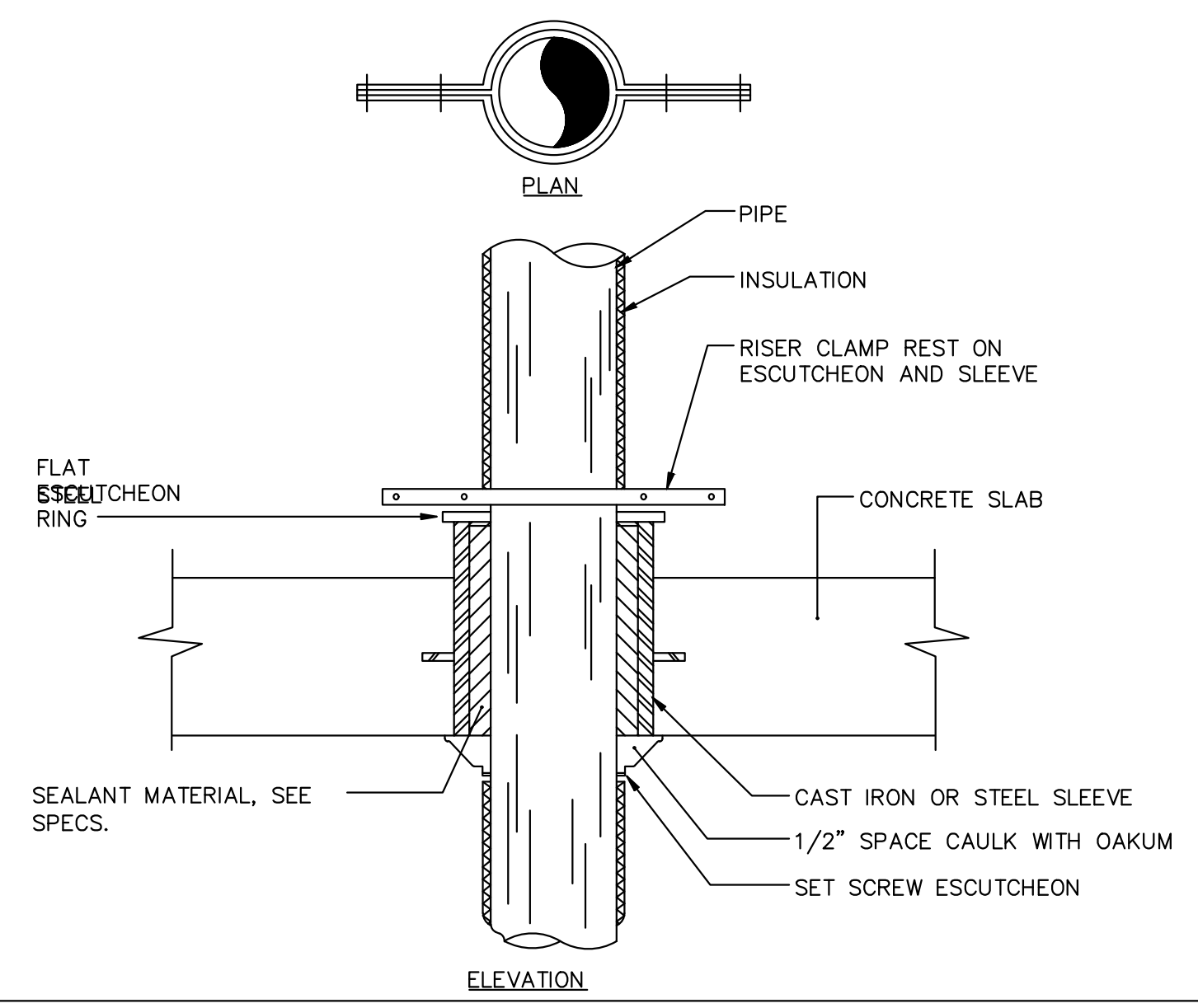
* THE PROTECTED AREA REFERS TO THE AREA BELOW THE CEILING. THE AMBIENT TEMPERATURE IS THE TEMPERATURE AT THE DISCHARGE END OF THE SPRINKLER. FOR PROTECTED AREA TEMPERATURES THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.
** THE MINIMUM REQUIRED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. EXPOSED MINIMUM BARREL LENGTHS ARE INCLUSIVE UP TO 30 MPH WIND VELOCITIES.



6 DRY PENDANT SPRINKLER INSTALLATION DETAILS
SP-501.00 N.T.S.



7 SPRINKLER HEAD IN SUSPENDED CEILING DETAIL
SP-501.00 N.T.S.



8 SPRINKLER RISER CLAMP DETAIL
SP-501.00 N.T.S.