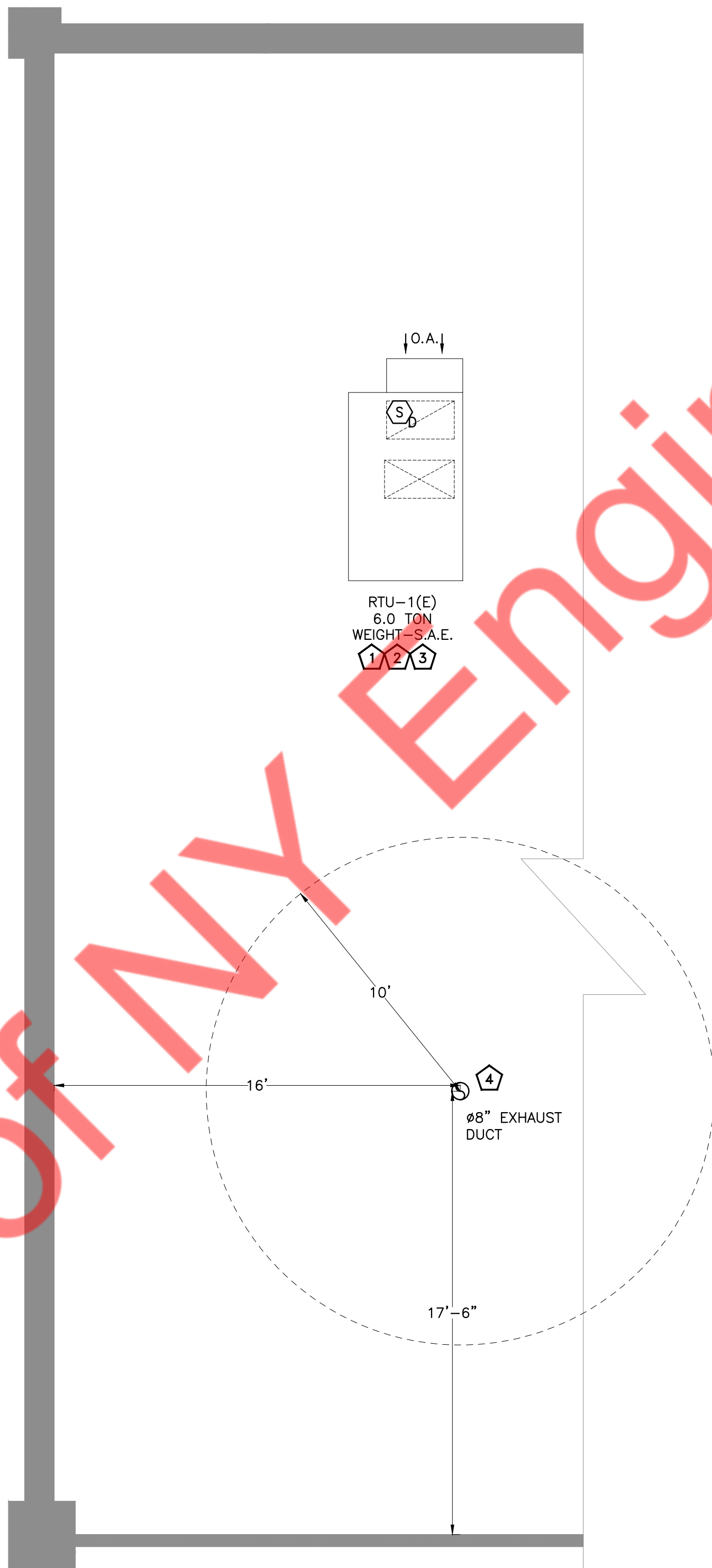


1 MECHANICAL FLOOR PLAN
M1.0/SCALE: 1/4" = 1'-0"



2 MECHANICAL ROOF PLAN
M1.0/SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

- ALL WORK SHALL COMPLY WITH ALL LOCAL CODE & STATE CODE & AUTHORITIES HAVING JURISDICTION.
- COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
- EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
- PROVIDE MINIMUM R-6 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN AIR DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UP TO 10 FT. FROM HVAC UNIT.
- CONTRACTOR TO FIELD VERIFY EXISTING DUCTWORK, ASSOCIATED ACCESSORIES AND EXISTING HVAC EQUIPMENT. ALL EXISTING DUCTWORK, ASSOCIATED ACCESSORIES AND EXISTING HVAC EQUIPMENT TO BE REUSED.
- ALL ITEMS TO BE RE-USED OR RELOCATED SHALL BE CLEANED, REPAIRED, AND RESTORED TO LIKE NEW CONDITION PRIOR TO RE-USE.
- PROVIDE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED AND IN STRICT ACCORDANCE WITH OSHA AND ICR REGULATIONS.
- KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
- MATERIAL FROM EXISTING SYSTEM WHICH IS RENDERED USELESS SHALL BE REMOVED AND DISPOSED OF OFF SITE.
- REPAIR/ REPLACE EXISTING EQUIPMENT/ MATERIALS NOT SCHEDULED OR NOTED TO BE DEMOLISHED BUT BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS, MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITIONS AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.

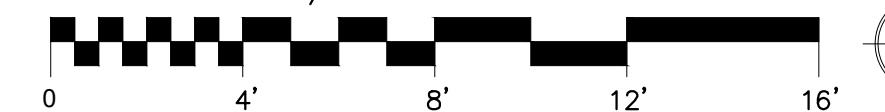
MECHANICAL FLOOR PLAN KEY NOTES:

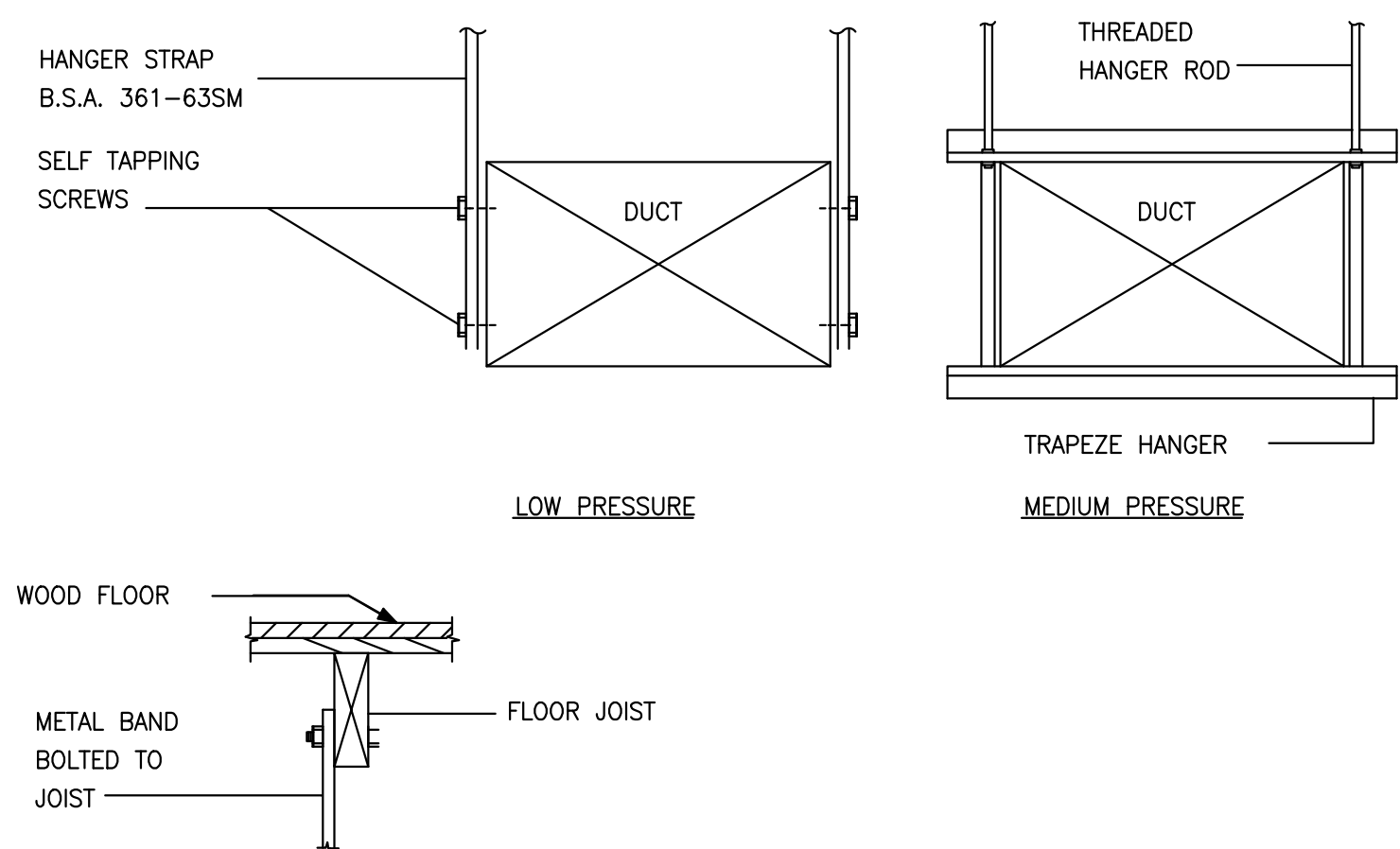
- EXISTING T-STAT CONTROL TO REMAIN AS IS. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION & WORKING CONDITION. REPLACE AS/IF REQUIRED.
- EXISTING SUPPLY/RETURN DIFFUSERS TO REMAIN AS IS. VERIFY SIZE, LOCATION AND COORDINATE WITH ARCHITECTURAL SHEETS INCLUDING REFLECTED CEILING PLAN FOR RELOCATIONS. CLEAN AND REFURBISH TO "LIKE NEW" CONDITION EXTEND/MODIFY DUCTWORK AS REQUIRED AT RELOCATED DIFFUSERS. PROVIDE VOLUME DAMPER OR COLLAR DAMPER, VERIFY IN FIELD PRIOR TO BID. EXTEND EXISTING FLEX/METAL DUCTWORK AS/IF REQUIRED DUE TO RELOCATION OF THE DIFFUSERS.
- EXISTING TOILET EXHAUST SYSTEM TO REMAIN AS IS.
- RELOCATE EXISTING SUPPLY/RETURN DIFFUSERS AS SHOWN. VERIFY SIZE, LOCATION AND COORDINATE WITH ARCHITECTURAL SHEETS INCLUDING REFLECTED CEILING PLAN FOR RELOCATIONS. CLEAN AND REFURBISH TO "LIKE NEW" CONDITION EXTEND/MODIFY DUCTWORK AS REQUIRED AT RELOCATED DIFFUSERS. PROVIDE VOLUME DAMPER OR COLLAR DAMPER, VERIFY IN FIELD PRIOR TO BID. EXTEND EXISTING FLEX/METAL DUCTWORK AS/IF REQUIRED DUE TO RELOCATION OF THE DIFFUSERS.
- EXISTING SMOKE DETECTOR TO REMAIN AS IS. IF EXISTING SMOKE DETECTOR IS NOT IN GOOD CONDITION TO REUSE, THEN INSTALL NEW ONE. SMOKE DETECTOR SHALL BE FURNISHED/INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR TO SHUT DOWN CORRESPONDING RTU UNDER ALARM CONDITIONS.
- PROVIDE NEW INLINE TYPE EXHAUST FAN. CONTRACTOR TO INSTALL FAN AS PER MANUFACTURER'S RECOMMENDATION.
- EXISTING VENT FROM WATER HEATER TO REMAIN AS IS. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION & WORKING CONDITION. REPLACE AS/IF REQUIRED.

MECHANICAL ROOF PLAN KEY NOTES:

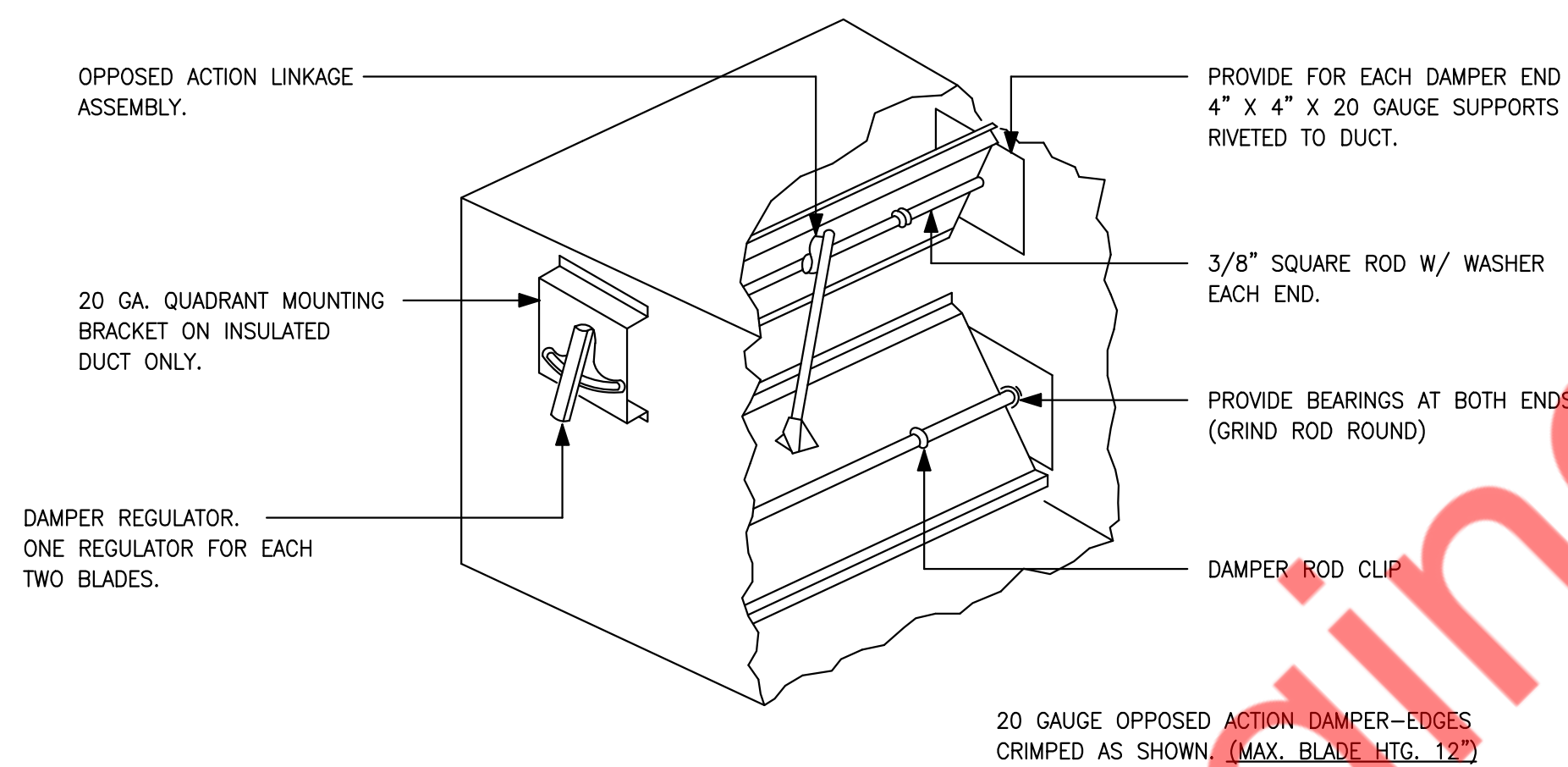
- COORDINATE FINAL LOCATION OF EQUIPMENT IN FIELD.
- CONTRACTOR TO FIELD VERIFY EXISTING RTU LOCATION & PENETRATION.
- EXISTING CONDENSATE DRAIN FROM EXISTING RTU TO REMAIN AS IS. CONTRACTOR TO FLUSH THE EXISTING DRAIN LINES.
- EXHAUST DUCT UP THROUGH ROOF. TERMINATE WITH GOOSENECK & WIRE-MESH. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.

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



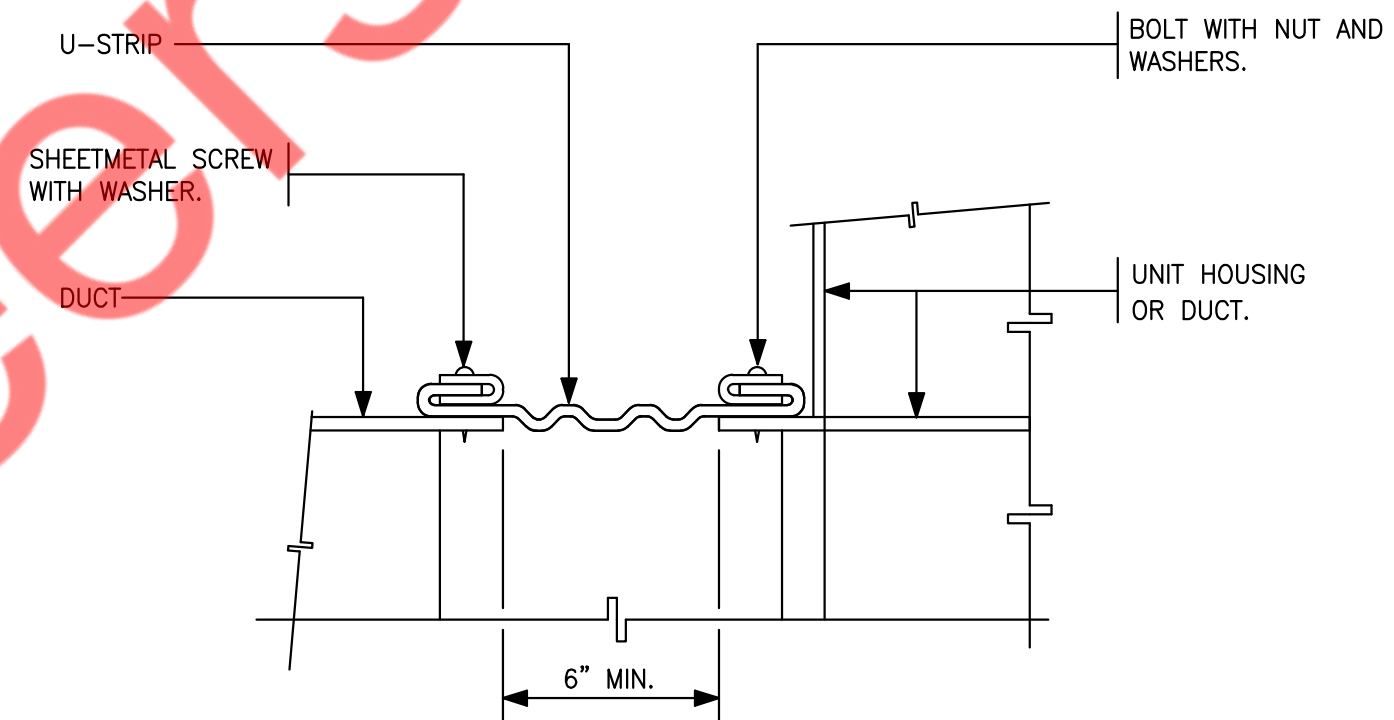


1 METHOD OF HANGING DUCTWORK
M5.0 N.T.S

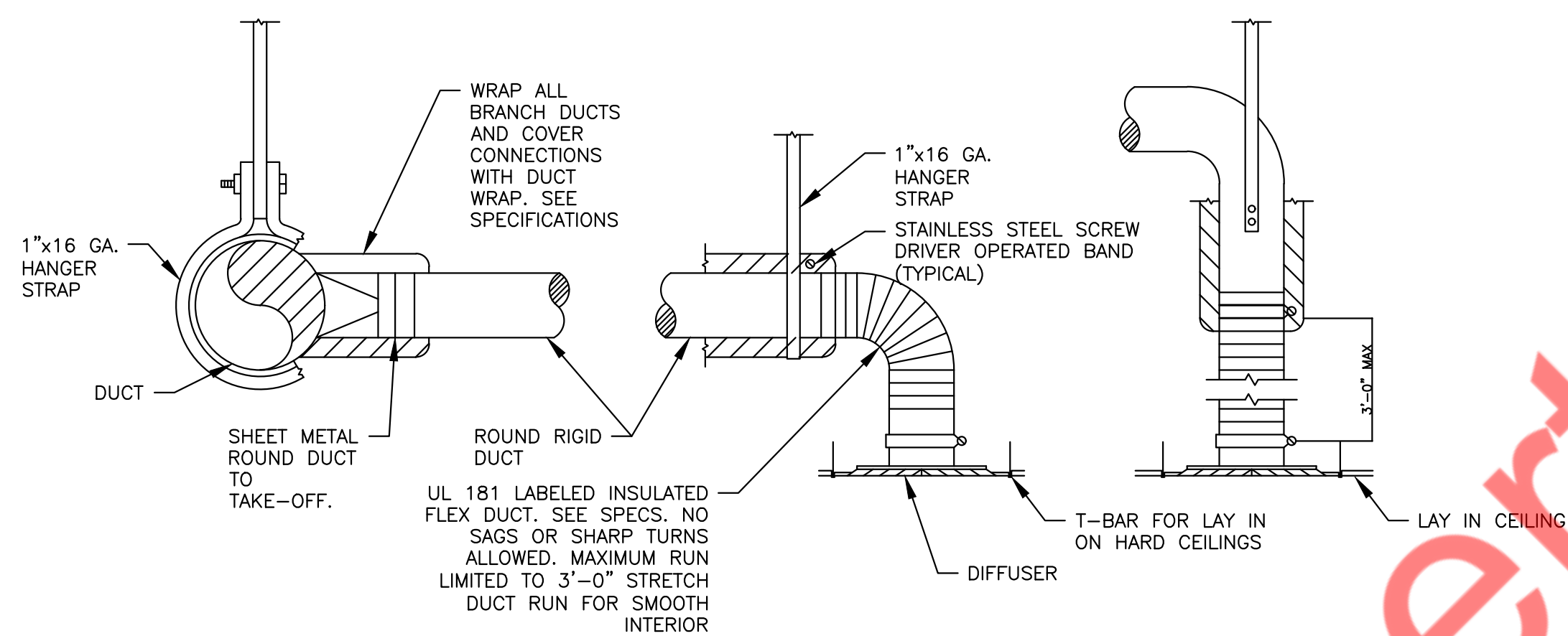


NOTE: 1. FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH.

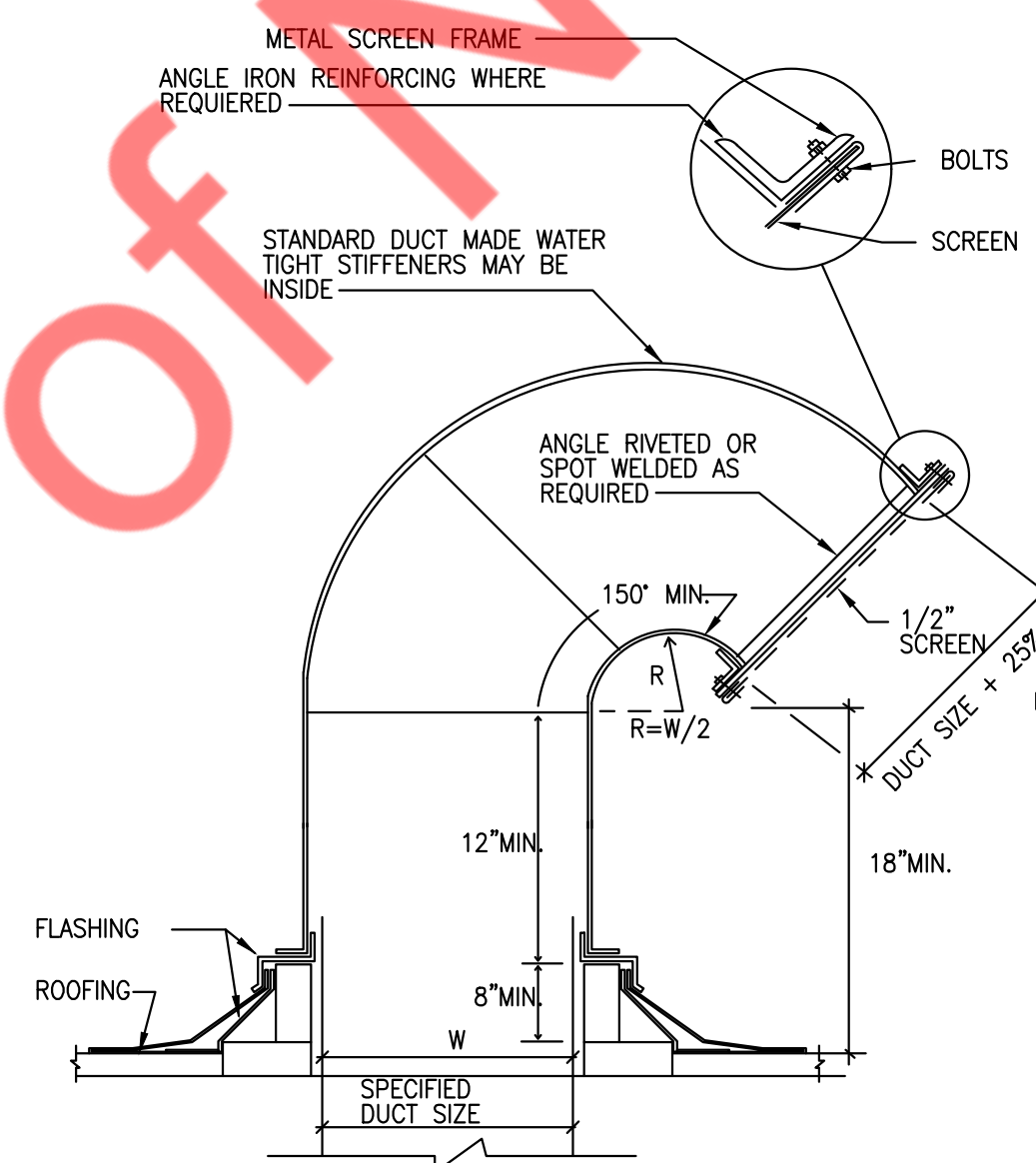
2 LOW PRESSURE BALANCING DAMPER
M5.0 N.T.S



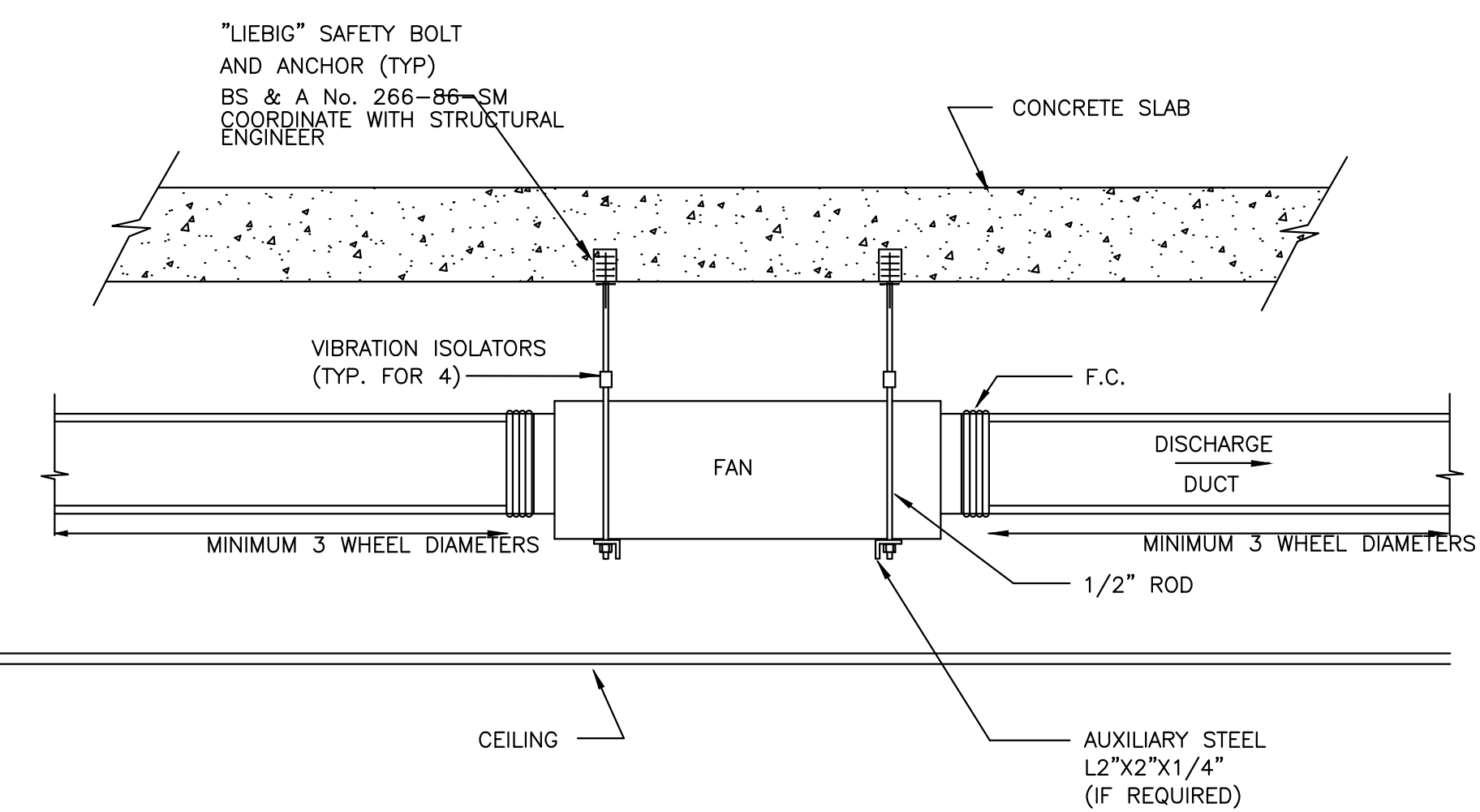
3 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
M5.0 N.T.S



4 TYPICAL DIFFUSER CONNECTION DETAIL
M5.0 N.T.S



5 TYPICAL DETAIL OF ROOF GOOSENECK
M5.0 N.T.S



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

6 INLINE FAN SUPPORT DETAILS
M5.0 N.T.S

EXISTING ROOF TOP UNIT SCHEDULE																							
UNIT ID	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN DATA			GAS HEAT		COOLING DATA					ELECTRICAL DATA				EER	SEER	THERMAL EFFICIENCY (%)	OPERATING WEIGHT (LBS)	REMARK	
				TOTAL SUPPLY CFM	OUTSIDE AIR CFM	EXTERNAL STATIC PRESSURE (IN. W.G.)	INPUT MBH	OUTPUT MBH	TOTAL MBH	SENSIBLE MBH	AMBIENT TEMP. DB (°F)	ENTERING TEMP. DB / WB (°F)	STAGES	VOLTS	PHASE	MCA(A)	MOC(P)(A)						
RTU-1(E)	S.A.E.	S.A.E.	6 (V.I.F.)	2400 (V.I.F.)	300	S.A.E.	150 (V.I.F.)	S.A.E.	S.A.E.	S.A.E.	S.A.E.	S.A.E.	S.A.E.	S.A.E.	208-230 (V.I.F.)	3 (V.I.F.)	S.A.E.	50 (V.I.F.)	S.A.E.	S.A.E.	S.A.E.	S.A.E.	EXISTING
NOTES FOR EXISTING RTU :																							
1. S.A.E. - SAME AS EXISTING, V.I.F.- VERIFY IN FIELD.																							
2. EXISTING RTU WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.																							
3. CONTRACTOR TO CONFIRM IF EXISTING RTU IS WORKING AT 100% RATED CAPACITY.																							
4. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF RTU ON SITE.																							
5. IF REQUIRED, PROVIDE NEW THERMOSTATS COMPATIBLE WITH EXISTING RTU. COORDINATE FINAL LOCATION WITH ARCHITECT/OWNER.																							
6. CONTRACTOR TO REBALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON EXISTING RTU TO MATCH VALUES MENTIONED IN ABOVE TABLE.																							
7. REPLACE ALL THE FILTERS, IF REQUIRED. PROVIDE MINIMUM MERV-8 FILTERS.																							

VENTILATION CALCULATION												
ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000 SQFT AS PER IMC 2018	NUMBER OF PEOPLE AS PER IMC 2018	NUMBER OF CHAIR	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER IMC 2018		REQ. OA (CFM)	PROVIDED OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR /FIXT.)	TOTAL EXHAUST (CFM)	PROVIDED EXHAUST (CFM)
						CFM/PEOPLE	CFM/SQ.FT					
DINING	412	70	29	19	19	7.5	0.12	192	300	0	0	0
KITCHEN	272	20	6	2	2	7.5	0.12	48		0.7	190.4	200
CORRIDOR	95	0	0	0	1	0	0.06	6		0	0	0
TOILET	52	0	0	0	0	0	0	0		70	70	75
SCULLERY & STORAGE	320	0	0	0	0	0	0.12	38		0	0	0
TOTAL	1151	-	35	-	22	-	-	284		300	-	260

MECHANICAL FAN SCHEDULE												
TAG	QUANTITY	FLOW RATE CFM	STATIC PRESSURE EXTERNAL IN W.G.	SPEED RPM	ELECTRIC DATA			MAXIMUM LOUDNESS DBA	WEIGHT LBS	BASIS OF DESIGN		
					WATTS (W)	V/PH/Hz	S.A.E.			S.A.E.	MANUFACTURER	MODEL
EF-1(E)	1	75 (V.I.F.)	S.A.E.	S.A.E.	V.I.F.	V.I.F.	S.A.E.	S.A.E.	S.A.E.	S.A.E.	S.A.E.	1-3
EF-2(N)	1	200	0.6	1343	46	115/60/1	2.6 SONES	45	GREENHECK	CSP-A390-VG		4-5
NOTES:												
1. S.A.E. - SAME AS EXISTING, V.I.F.- VERIFY IN FIELD.												
2. EXISTING FAN WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.												
3. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF FAN ON SITE.												
4. PROVIDE ALL NECESSARY ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS.												
5. INTERLOCK EF-2(N) WITH RTU-1(E).												

AIR TERMINAL DEVICES SCHEDULE							
TAG	SIZE (IN.)	DESCRIPTION	CONSTRUCTION	NECK SIZE (IN.)	BASIS OF DESIGN		NOTES
					MANUFACTURER	MODEL	
S-1(E)	24X24	SUPPLY AIR DIFFUSER	S.A.E.	S.A.E.	TITUS	TDCA (S.A.E.)	S.A.E.
S-2(E)	24X24	SUPPLY AIR DIFFUSER	S.A.E.	S.A.E.	TITUS	TDCA (S.A.E.)	S.A.E.
S-3(E)	12X8	SUPPLY AIR DIFFUSER	S.A.E.	S.A.E.	TITUS	TDCA (S.A.E.)	S.A.E.
S-4(E)	12X12	SUPPLY AIR DIFFUSER	S.A.E.	S.A.E.	TITUS	TDCA (S.A.E.)	S.A.E.
S-5(E)	18X8	SUPPLY AIR GRILLE	S.A.E.	S.A.E.	TITUS	S300FL (S.A.E.)	S.A.E.
R-1(E)	24X24	RETURN AIR GRILLE	S.A.E.	S.A.E.	TITUS	510 (S.A.E.)	S.A.E.
E-1(N)	24X24	EXHAUST AIR GRILLE	ALUMINUM	8X8	TITUS	50F	ALL
NOTES :- S.A.E: SAME AS EXISTING							
1. 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.							
2. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.							
3. COORDINATE FINAL COLOR/FINISH WITH ARCHITECT/OWNER.							
4. AIR DEVICE SHALL BE OF GALVANIZED FINISH WHEN INSTALLED ON EXPOSED DUCTWORK.							
5. MAXIMUM NOISE CRITERION RATING < 35 DBA.							

AIR BALANCE TABLE					
UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR (CFM)
RTU-1(E)	SEE PLAN	2400 CFM	300 CFM	2100 CFM	0 CFM
EF-1(E)	RESTROOM	-	-	-	75 CFM
EF-2(N)	KITCHEN	-	-	-	200 CFM
TOTAL:		2400 CFM	300 CFM	2100 CFM	275 CFM
BUILDING PRESSURE:				25 CFM	POSITIVE
NOTES:					
1. CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPER ON RTU TO MATCH VALUES MENTIONED IN ABOVE TABLE.					

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ELECTRICAL SYMBOLS LIST

GENERAL NOTES
(APPLY TO ALL "E" DRAWINGS)

ELECTRICAL SPECIFICATIONS

Table containing 'SWITCHES AND CONTROLS' and 'WIRING SYSTEMS' sections with various electrical symbols and their descriptions.

Table containing 'POWER AND TELECOMMUNICATION' section with symbols for junction boxes, duplex receptacles, and electrical floor boxes.

Table containing 'MOTORS AND CONTROLS' section with symbols for AC indoor/outdoor unit motors, disconnect switches, and thermal overload switches.

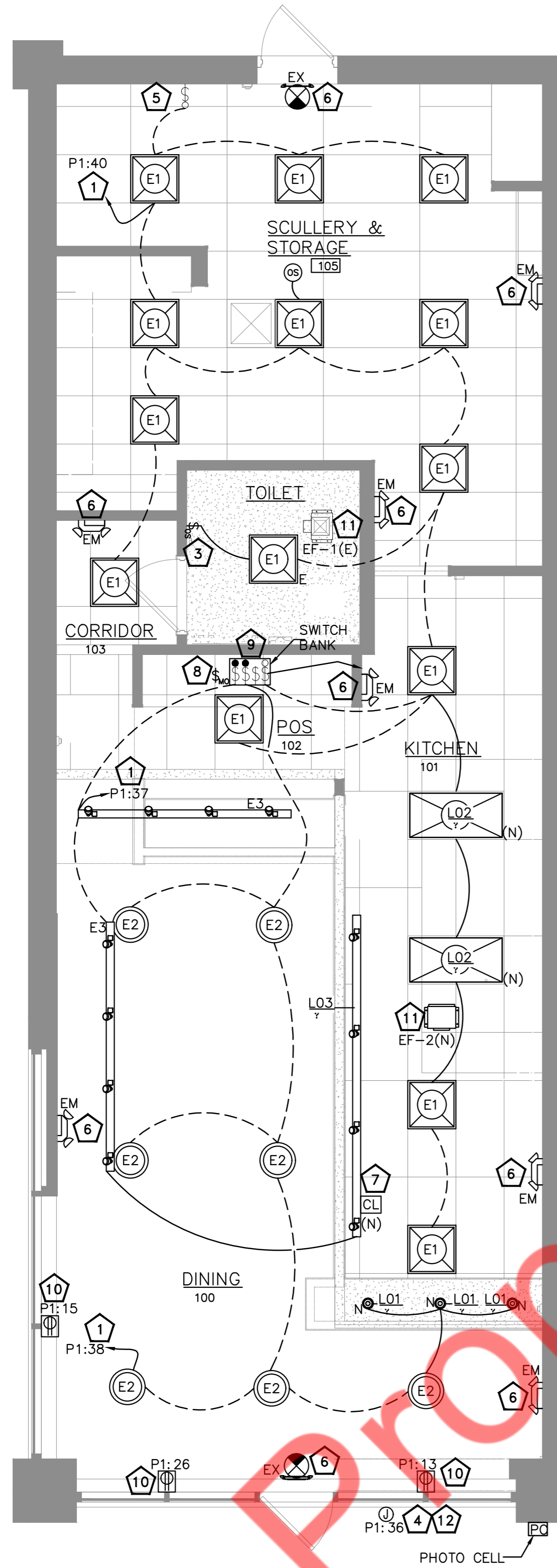
Table containing 'ANNOTATION' section with symbols for mounting heights, keyed note references, and detail references.

Table containing 'ELECTRICAL ABBREVIATIONS' section listing various abbreviations such as AMPERES, AIR CONDITIONING UNIT, AMPERE FRAME/AMP FUSE, etc.

- 27 numbered general notes covering topics such as: work performance standards, site visits, permit requirements, fire-rated construction, support of building structure, wire slack, conduit installation, and coordination with other trades.

- 27 numbered electrical specifications covering general requirements, definitions of terms like 'provide', 'install', and 'furnish', and specific instructions for work execution and equipment standards.

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LIGHTING FIXTURE SCHEDULE						
TYPE	DESCRIPTION	MAKE	MODEL	WATTAGE S	QTY	REMARK
L01	6" CAN LIGHT	PRESCOLITE	LBRA-6RD-H/LBRA-6 RD-T-10LCS9-WH (6" CAN)	13.3	3	-
L02	2'X4' LED PANEL	COLUMBIA LIGHTING	CBT24-A-LSCS-EDD(2X4)	48	2	-
L03	MONOPOINT TRACK HEAD	LUMENTURE	T50-30H-1100-40-S-J	14	4	-
E1	TROFFER LIGHT 2'X2'	EXISTING	EXISTING	-	14	EXISTING TO REMAIN
E2	LIGHTING PENDANTS ZERO LENS	EXISTING	EXISTING	-	7	EXISTING TO REMAIN
E3	MONOPOINT TRACK HEAD	EXISTING	EXISTING	-	8	EXISTING TO REMAIN
EM	EMERGENCY LIGHT	EXISTING	EXISTING	-	7	EXISTING TO REMAIN
EX	EMERGENCY EXIT SIGN WITH LIGHT	EXISTING	EXISTING	-	2	EXISTING TO REMAIN

LIGHT FIXTURE SCHEDULE GENERAL NOTE:

- A. VERIFY FINAL SELECTION WITH ARCHITECT/OWNER PRIOR TO BID.
- B. ALL THE FIXTURE SHALL BE LED TYPE.
- C. FIXTURES SELECTED SHALL BE OPERABLE AT 120V.

ELECTRICAL SYMBOLS

- ⊕ DUPLEX RECEPTACLE
- ⊕ QUADPLEX RECEPTACLE
- ⊕ GCFI DUPLEX RECEPTACLE
- ⊕ COUNTER DUPLEX RECEPTACLE
- ⊕ LIGHT SWITCH
- ⊕ SWITCH W/ DIMMER
- ⊕ SWITCH W/ MOTION DETECTOR
- ⊕ 3-WAY SWITCH
- ⊕ 3-WAY SWITCH W/ DIMMER
- ⊕ LIGHT FIXTURE TAG SWITCHING SYSTEM
- ⊕ SWITCH NUMBER
- ⊕ MANUAL OVERRIDE SWITCH
- ⊕ CURRENT LIMITER
- ⊕ SWITCH W/ OCCUPANCY SENSOR
- ⊕ CEILING MOUNTED OCCUPANCY SENSOR

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

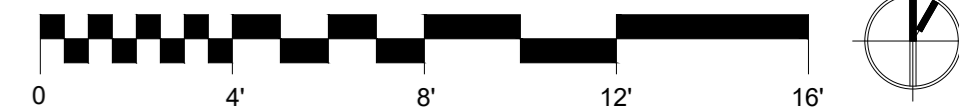
- A. COORDINATE FINAL FIXTURE MAKE AND MODEL WITH ARCHITECT.
- B. ALL LIGHT FIXTURES NOT ON THE OCCUPANCY SENSOR / OTHER AUTOMATIC CONTROL SHALL BE CONTROLLED BY TIMER-CONTROLLED LIGHTING CONTACTOR(S)
- C. CONTRACTOR TO PROVIDE MANUAL SWITCHING AS PER IECC, C405.2.5 AND LIGHTING CONTROL PER C405.2.2.
- D. TAG (N) SHOWN NEAR LIGHT FIXTURE INDICATE NEW LIGHTING FIXTURES AND OTHER LIGHT FIXTURE ARE EXISTING TO REMAIN. E.C. SHALL VERIFY OPERABLE CONDITION IN THE FIELD. REPLACE IF FOUND INOPERABLE.

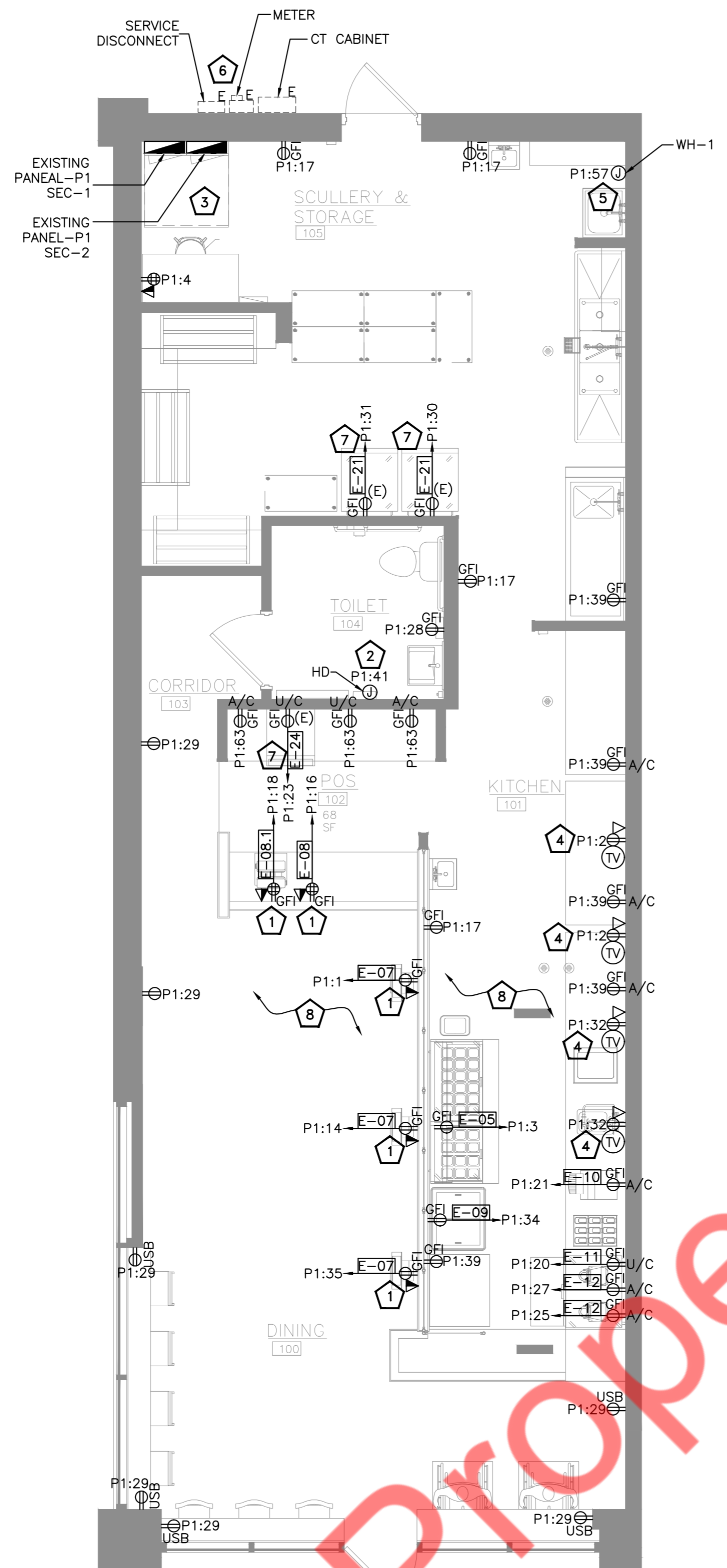
ELECTRICAL LIGHTING PLAN KEYED NOTES:

1. EXISTING LIGHTING FIXTURES ALONG WITH THEIR CIRCUITS AND CONTROLS SHALL REMAIN. E.C. TO VERIFY OPERABLE CONDITIONS IN THE FIELD. REPLACE IF FOUND INOPERABLE.
2. NOT IN USE.
3. SWITCH WITH OCCUPANCY SENSOR. E.C. TO COORDINATE EXACT LOCATION IN FIELD.
4. REUSE EXISTING OR PROVIDE NEW DISCONNECT SWITCH FOR EXTERIOR SIGNAGE CONTROLLED WITH TIMECLOCK. ALSO COORDINATE EXACT LOCATION WITH SIGNAGE PROVIDER.
5. E.C. SHALL VERIFY THE AVAILABILITY OF TIME CLOCK & LIGHTING CONTACTOR & ALSO CHECK OPERABLE CONDITION OF TC & LC. REPLACE IF FOUND INOPERABLE.
6. EMERGENCY EGRESS LIGHTING AND EXIT SIGN FIXTURES ALONG WITH THEIR CIRCUITS AND CONTROLS SHALL REMAIN. E.C. TO VERIFY OPERABLE CONDITIONS IN THE FIELD. REPLACE IF FOUND INOPERABLE.
7. COORDINATE WITH LIGHTING VENDOR AND PROVIDE CURRENT LIMITER FOR TRACK LIGHTS.
8. MANUAL OVERRIDE SWITCH. THE OVERRIDE SWITCH, WHEN INITIATED, SHALL PERMIT THE CONTROLLED LIGHTING TO REMAIN ON FOR NOT MORE THAN 2 HOURS
9. E.C. SHALL COORDINATE EXACT LOCATION OF THE SWITCH BANK IN THE FIELD.
10. PROVIDE CEILING MOUNTED RECEPTACLE FOR SHOW WINDOW AS REQUIRED BY CODE. VERIFY WITH LOCAL ENERGY AGENCY. VERIFY EXACT LOCATION WITH ARCHITECT.
11. EXHAUST FAN SHALL BE INTERLOCKED WITH RTU-1(E)
12. E.C. SHALL VERIFY AVAILABILITY OF EXISTING JUNCTION BOX FOR EXTERIOR TO SIGNAGE. E.C. TO VERIFY OPERABLE CONDITIONS IN THE FIELD. REPLACE IF FOUND INOPERABLE. PROVIDE NEW IF EXISTING IS NOT AVAILABLE.

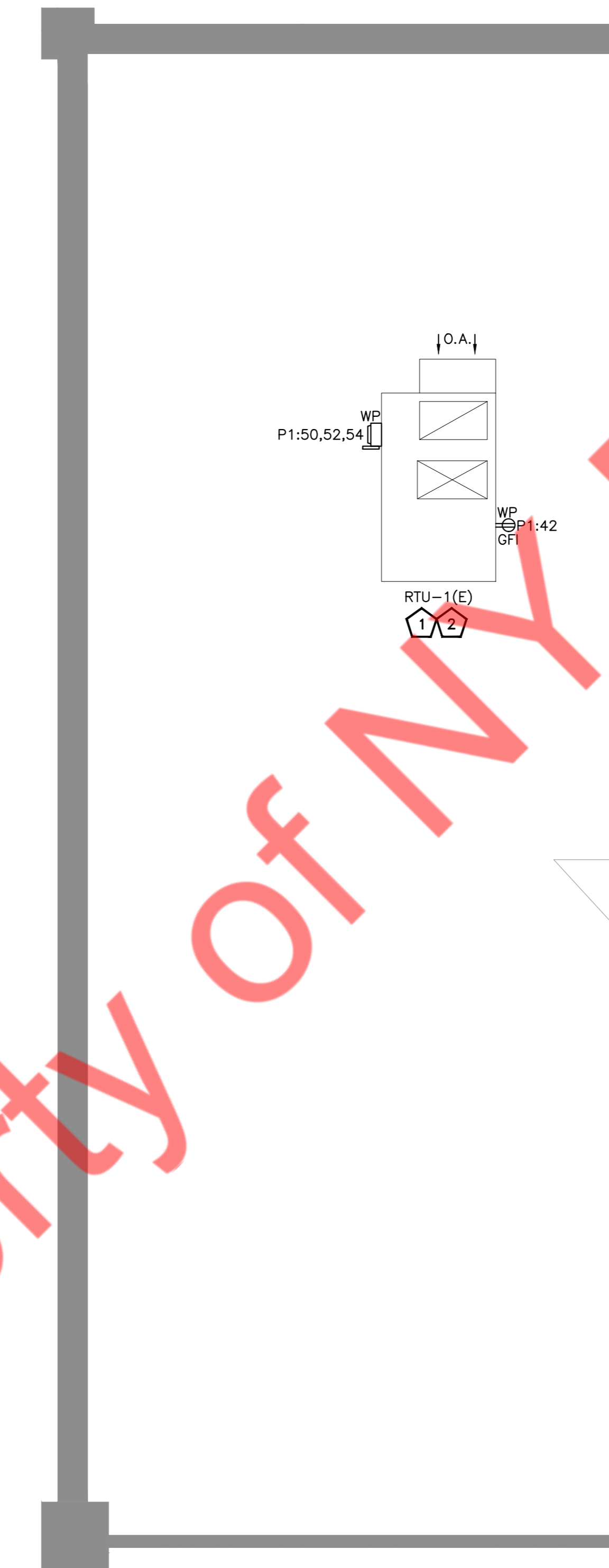
1 ELECTRICAL LIGHTING PLAN
E2.0 SCALE: 1/4" = 1'-0"

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





1 ELECTRICAL POWER PLAN
E2.1 SCALE: 1/4" = 1'-0"



2 ELECTRICAL ROOF POWER PLAN
E2.2 SCALE: 1/4" = 1'-0"

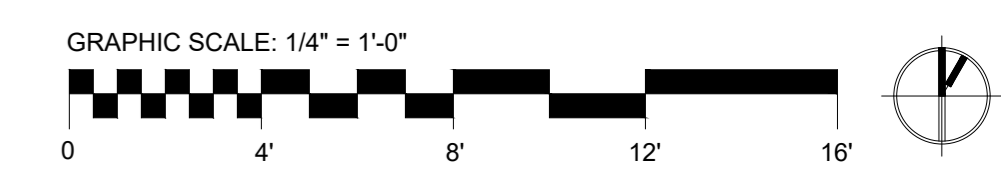
ELECTRICAL EQUIPMENT SCHEDULE									
1 - COORDINATE EXACT MAKE/MODEL NUMBER WITH THE OWNER/ARCHITECT.									
2 - COORDINATE EXACT POWER REQUIREMENT WITH THE EQUIPMENT VENDOR.									
3 - COORDINATE EXACT CONNECTION TYPE WITH THE VENDOR PRIOR TO ROUGH IN.									
4 - COORDINATE MOUNTING HEIGHT OF THE RECEPTACLE OR DISCONNECTION WITH THE ARCHITECT/OWNER.									
5 - PROVIDE CIRCUIT BREAKER, WIRING, JUNCTION BOX, RECEPTACLES, DISCONNECTS AS REQUIRED.									
6 - SELECT EQUIPMENT RATED FOR SERVICE VOLTAGE ELSE PROVIDE THE ADAPTER/TRANSFORMER AS NEEDED.									
EQP TAG	EQUIPMENT DESCRIPTION	MAKE	MODEL	VOLTS	PHASE	AMPS	CONNECTION TYPE	REMARK	NOTES
E05	SANDWICH UNIT, REFRIGERATED	CONTINENTAL REFRIGERATOR	SW72N30M-FB	115	1	15	NEMA 5-15P		4
E07	TOUCH DYNAMIC EDGE ULTRA KIOSK 22" W/ FLOOR MOUNT STAND	TOUCH DYNAMIC	EU38A0MH0NN XXNN	-	-	-	-		2,3,4
E08	RAZOR ALL IN ONE 15.6" POS	TOUCH DYNAMIC	LI-R3C8A0-475EEB-QU06	-	-	-	-		2,3,4
E08.1	RAZOR DISPLAY	TOUCH DYNAMIC	RZ-LCM-01	-	-	-	-		2,3,4
E09	CHEST FREEZER	EXCELLENCE INDUSTRIES	HB-7HCD	115	1	1.3	-		4
E10	CONVEYOR TOASTER	STAR MANUFACTURING	QCS2-500	120	1	14.3	NEMA 5-15P		4
E11	FREEZER, UNDERCOUNTER	BEVERAGE AIR	UCFD36AHC-2	115	1	4	NEMA 5-15P		4
E12	BLENDER, BAR	VITAMIX	036019-ABAB	120	1	15	-		2,4,5
E21	REACH-IN FREEZER	EXISTING	EXISTING					EXISTING TO REMAIN	-
E24	ICE MACHINE	EXISTING	EXISTING					EXISTING TO REMAIN	-

- POWER PLAN GENERAL NOTES:
- EXACT LOCATION OF MECHANICAL, PLUMBING, KITCHEN, FURNITURE SYSTEMS, OWNER FURNISHED EQUIPMENT ETC. THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL, PLUMBING, AND/OR ARCHITECTURAL DRAWINGS. E.C. TO COORDINATE EXACT LOCATIONS WITH RESPECTIVE CONTRACTORS AND/OR VENDORS PRIOR TO ANY ROUGH-INS.
 - REVIEW AND COORDINATE WITH ALL TRADES CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR EQUIPMENT WITH ELECTRICAL CONNECTIONS. COORDINATE EXACT MOUNTING LOCATIONS WITH THE SPECIFIC TRADE AND ARCHITECT.
 - MINIMUM CONDUCTOR SIZE FOR 120V BRANCH CIRCUITS SHALL BE 12-AWG. FOR 120V BRANCH CIRCUITS WITH HOME-RUN OVER 100 LINEAR FEET, A MINIMUM WIRE SIZE OF 10-AWG SHALL BE PROVIDED FROM FIRST JUNCTION/OUTLET BOX TO BRANCH CIRCUIT PANEL BOARD. FOR 120V BRANCH CIRCUITS WITH HOME RUN OVER 150 LINEAR FEET, A MINIMUM OF 8-AWG SHALL BE PROVIDED FROM FIRST JUNCTION/OUTLET BOX TO BRANCH CIRCUIT PANEL BOARD.
 - ALL WIRING SHALL BE IDENTIFIED BY PANEL BOARD AND CIRCUIT NUMBERS IN ALL CABINETS, JUNCTION BOXES, WIRING TROUGHS, ENCLOSURES, SPLICE OR TERMINATION POINTS ETC.
 - ALL 120V, 15A AND 20A RECEPTACLES IN KITCHEN AREA SHALL BE "GFCI" IN ACCORDANCE WITH NEC ARTICLE 210.8(B).
 - GFI SHOWN WITH THE RECEPTACLE INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE GFI BREAKER IN THE CIRCUIT SHOWN ON PLAN. IF RECEPTACLE IS NOT AVAILABLE OR IT IS NOT ACCESSIBLE.
 - ELECTRICAL CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS COMBINED SHALL BE SIZED FOR A MAXIMUM OF 5 PERCENT VOLTAGE DROP.
 - EXISTING CIRCUIT CONNECTIONS FOR EXISTING MECHANICAL UNIT SHALL REMAIN. E.C. TO VERIFY OPERABLE CONDITIONS OF CIRCUIT CONNECTION AND BREAKER IN FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

- GENERAL ROOF POWER PLAN NOTES:
- E.C. SHALL VERIFY WITH THE OWNER FOR RATING AND OPERABLE CONDITION OF THE EXISTING ELECTRICAL CIRCUITS AND CONTROLS OF THE EXISTING MECHANICAL UNITS IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
 - ALL THE ELECTRICAL ELEMENT VIZ. CONDUITS, WIRING, AND DISCONNECT SWITCHES SHALL BE RATED FOR THE EXTERIOR USE.
 - THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.
 - GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI BREAKER IN THE PANEL FOR THE INDICATED CIRCUIT IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE.

- POWER PLAN KEYED NOTES:
- ELECTRICAL CONTRACTOR TO VERIFY THE MOUNTING HEIGHT, LOCATION & DETAILS FOR POS RECEPTACLES WITH ARCHITECT/ OWNER PRIOR TO ROUGH IN.
 - PROVIDE JUNCTION BOX AND CIRCUIT FOR HAND DRYER AND LOCKOUT IN THE PANEL.
 - E.C. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT/ OWNER FOR EXACT LOCATION OF PANELS IN THE FIELD. 3' CLEAR SPACE SHALL BE PROVIDED IN FRONT OF THE PANEL AS PER CODE.
 - E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF TV RECEPTACLE & POWER REQUIREMENTS, PROVIDE ACCORDINGLY.
 - EXISTING WATER HEATER ALONG WITH ITS CIRCUIT AND CONTROL TO REMAIN. E.C. SHALL IDENTIFY THE EXACT CIRCUIT IN THE PANEL BOARD AND REUSE. VERIFY THE OPERABLE CONDITION IN THE FIELD.
 - E.C TO COORDINATE EXACT LOCATION IN FIELD.
 - EXISTING EQUIPMENT SHALL REMAIN CONNECTED TO THE EXISTING CIRCUIT. E.C. SHALL VERIFY THE OPERABLE CONDITION OF THE ELECTRICAL CIRCUIT AND CONTROL IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
 - COORDINATE MOUNTING OF ALL THE ELECTRICAL RECEPTACLE IN FIELD.

- ELECTRICAL POWER PLAN KEYED WORK NOTES:
- EXISTING (E) MECHANICAL UNITS SHALL REMAIN CONNECTED TO THE EXISTING CIRCUIT. E.C. TO VERIFY THE OPERABLE CONDITION OF THE ELECTRICAL CIRCUIT AND CONTROLS IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
 - E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENT OF THE HVAC UNIT IN THE FIELD. PROVIDE CIRCUIT AND CONTROLS AS REQUIRED.



ELECTRICAL PANEL SCHEDULE

PANEL:	P1	(EXISTING)											MOUNTING:	SURFACE
208Y/120	VOLTS		PHASE	3		AIC RATING (in kA)	65kA			DEMAND LOAD	43.53		PANEL LOCATION:	SCULLERY & STORAGE
400A	MCB		WIRE	4						DEMAND CURRENT	120.98		FED FROM:	EXISTING PANEL MDP
NOTE:														
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	EQ7_TOUCH DYNAMIC EDGE ULTRA KIOSK STAND	E	0.18	2#12, #12G, 3/4"C	0.78			2#12, #12G, 3/4"C	0.60	R	TV MENU DISPLAY RECEPTACLE	20	2
3	20	EQ5_SANDWICH UNIT, REFRIGERATED	E	1.80	2#12, #12G, 3/4"C	2.16			2#12, #12G, 3/4"C	0.36	R	SCULLERY & STORAGE AREA QUAD RECEPTACLE	20	4
5		SPACE	L	1.40	2#12, #12G, 3/4"C			1.40				SPACE	30/3P	6
7						0.00						SPACE	30/3P	8
9	30/3P	SPACE						0.00				SPACE	30/3P	10
11								0.00				SPACE	30/3P	12
13	20*	SHOW WINDOW RECEPTACLE	L	1.40	2#12, #12G, 3/4"C	1.58			2#12, #12G, 3/4"C	0.18	E	EQ7_TOUCH DYNAMIC EDGE ULTRA KIOSK STAND	20	14
15	20*	SHOW WINDOW RECEPTACLE	L	1.80	2#12, #12G, 3/4"C	2.16			2#12, #12G, 3/4"C	0.36	E	EQ08_RAZOR ALL IN ONE 15.6" POS	20	16
17	20	GENERAL RECEPTACLE	R	0.72	EXISTING			1.08	2#12, #12G, 3/4"C	0.36	E	EQ08.1_RAZOR DISPLAY	20	18
19		SPACE				0.48			2#12, #12G, 3/4"C	0.48	E	EQ11_FREEZER, UNDERCOUNTER	20	20
21	20	EQ10_CONVEYOR TOASTER	E	1.72	2#12, #12G, 3/4"C	1.72						SPACE	30/2P	22
23	20	EQ24_ICE MACHINE	E	0.80	EXISTING			0.80				SPACE	30/2P	24
25	20	EQ12_BLENDER,BAR	E	1.80	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.40	R	SHOW WINDOW RECEPTACLE	20*	26
27	20	EQ12_BLENDER,BAR	E	1.80	2#12, #12G, 3/4"C	1.98			2#12, #12G, 3/4"C	0.18	R	RESTROOM RECEPTACLE	20	28
29	20	GENERAL RECEPTACLE DINING AREA	R	1.08	2#12, #12G, 3/4"C	1.98			EXISTING	0.90	E	EQ21_REACH-IN FREEZER	20	30
31	20	EQ21_REACH-IN FREEZER	E	0.90	EXISTING	1.50			2#12, #12G, 3/4"C	0.60	R	TV MENU DISPLAY RECEPTACLE	20	32
33	20	NETWORK SWITCH	O	0.40	EXISTING	0.56			2#12, #12G, 3/4"C	0.16	E	EQ09_CHEST FREEZER	20	34
35	20	EQ7_TOUCH DYNAMIC EDGE ULTRA KIOSK STAND	E	0.18	2#12, #12G, 3/4"C			2.08	EXISTING	1.90	L	SIGNAGE JB	20	36
37	20	LIGHTING	L	1.90	EXISTING	3.50			EXISTING	1.60	L	LIGHTING	20	38
39	20	KITCHEN GENERAL RECEPTACLE	R	0.72	2#12, #12G, 3/4"C	2.32			EXISTING	1.60	L	LIGHTING	20	40
41	20	HAND DRYER RESTROOM	R	1.00	2#12, #12G, 3/4"C	1.18			EXISTING	0.18	R	ROOFTOP RECEPTACLE	20	42
						15.79	15.65	13.27						

PANEL:	P1	(EXISTING)											MOUNTING:	SURFACE
208Y/120	VOLTS		PHASE	3		AIC RATING (in kA)	65kA			DEMAND LOAD	14.24		PANEL LOCATION:	SCULLERY & STORAGE
400A	MLO		WIRE	4						DEMAND CURRENT	39.57		FED FROM:	PANEL P1 SEC. II
NOTE:														
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						
43						0.00						SPACE	20/3P	44
45	20/3P**	SPACE					0.00					SPACE	20/3P	46
47								0.00				SPACE	20/3P	48
49						4.40				4.40	H	EXISTING RTU	50/3P	50
51	20/3P	SPACE						4.40		4.40	H	EXISTING RTU	50/3P	52
53								4.40		4.40	H	EXISTING RTU	50/3P	54
55		SPACE				0.00						SPACE	35/2P**	56
57	20*	WH-1	O	0.50	2#12, #12G, 3/4"C			0.50				SPACE	60/3P	58
59								0.00				SPACE	60/3P	60
61	60/2P	SPACE				0.00						SPACE	60/3P	62
63	20	KITCHEN GENERAL RECEPTACLE	R	0.54	2#12, #12G, 3/4"C			0.54				SPACE	60/3P	64
65	20	SPACE						0.00				SPACE	60/3P	66
67	20	SPACE				0.00						SPACE	60/3P	68
69	20	SPACE						0.00				SPACE	60/3P	70
71								0.00				SPACE	35/2P**	72
73						0.00						SPACE	35/2P**	74
75								0.00				SPACE	20	76
77								0.00				SPACE	20	78
79						0.00						SPACE	20	80
81								0.00				SPACE	20	82
83								0.00				SPACE	20	84
						4.40	5.44	4.40						

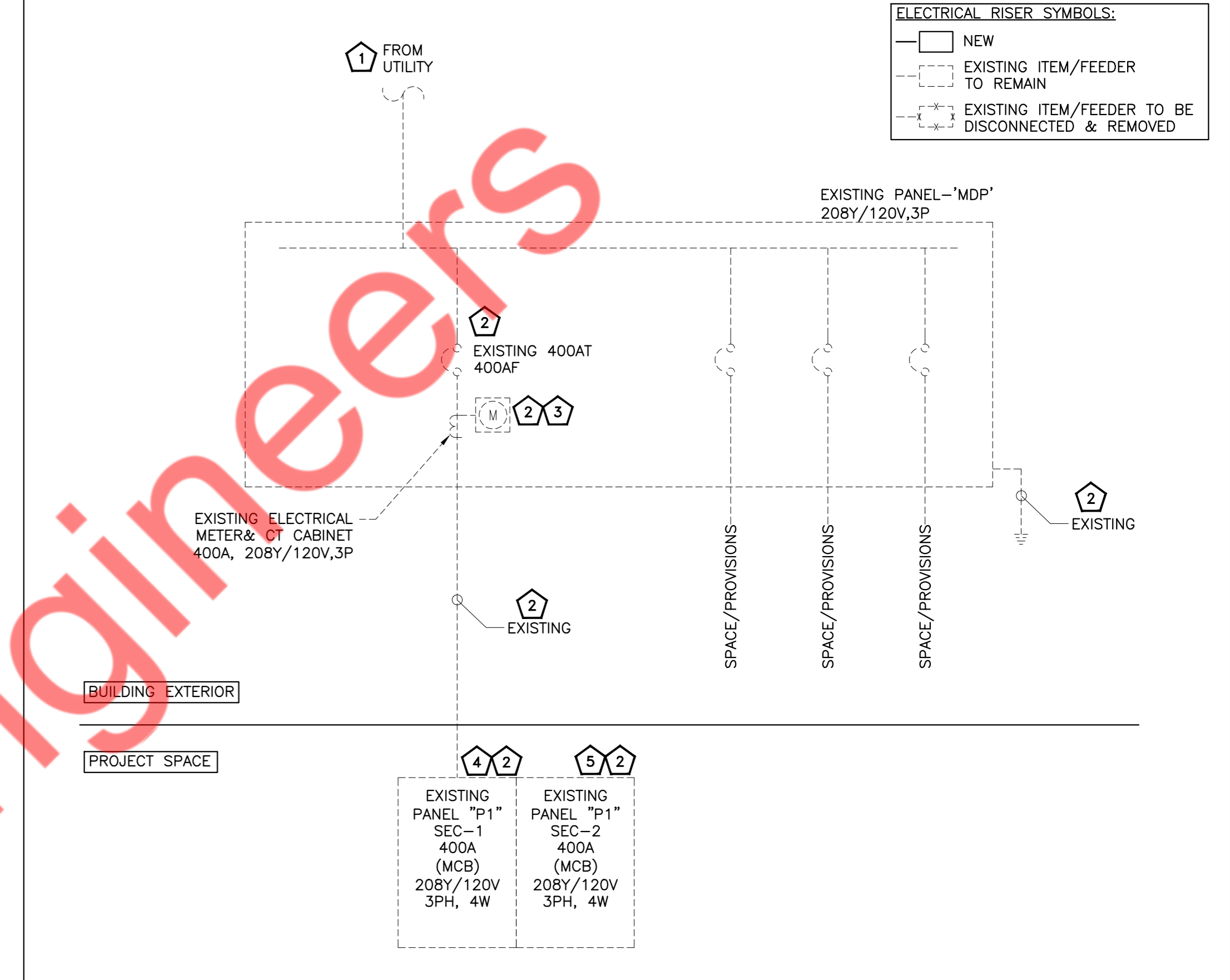
PANEL SCHEDULE GENERAL NOTES:

- ELECTRICAL CONTRACTOR SHALL VERIFY THE BREAKER AND CABLE RATING WITH EQUIPMENT SUPPLIER/OWNER AND ACCORDINGLY UPDATE THE BREAKER RATING CABLE SIZE IN FIELD.
- GFI MARKED ON THE POWER PLAN INDICATES THAT THE CIRCUIT SHALL BE GFCI PROTECTED. E.C. SHALL PROVIDE GFCI BREAKER FOR THE GFI MARKED RECEPTACLES, IF EITHER RECEPTACLE IS NOT ACCESSIBLE OR NOT AVAILABLE.
- PROVIDE HACR BREAKER FOR HAVC UNITS. COORDINATE WITH HVAC DRAWINGS.
- PROVIDE LOCKING DEVICES ON CIRCUIT BREAKER WHERE EVER REQUIRED.
- E.C. TO VERIFY SCOPE OF WORK WITH OWNER/ARCHITECT. PRIOR TO BID.
- VERIFY EXACT POWER DISTRIBUTION IN FIELD.

PANEL SCHEDULE ABBREVIATIONS:

- L=LIGHTING
R=RECEPTACLE
H=HVAC
M=MOTOR
O=OTHER
- (*) - MODIFIED BREAKER
(**) - EXISTING TO REMAIN

ELECTRICAL RISER DIAGRAM



ELECTRICAL RISER KEYED WORK NOTES: (#)

- EXISTING 400A, 208Y/120V, 3PH, 4W ELECTRICAL SERVICE FEEDER FROM UTILITY FOR THE PROJECT SPACE TO REMAIN. VERIFY LOCATION, RATING, AND OPERABLE CONDITION IN THE FIELD. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY. BEFORE BID.
- E.C. SHALL VERIFY THE EXACT LOCATION, RATING, AND OPERABLE CONDITION OF EVERY EQUIPMENT MARKED EXISTING IN THE FIELD. INFORM THE ENGINEER OF RECORD OF ANY DISCREPANCY, BEFORE BIDDING.
- EXISTING ELECTRICAL METER AND CT CABINET FOR PROJECT SPACE. E.C. SHALL COORDINATE EXACT LOCATION WITH UTILITY/OWNER/ARCHITECT.
- EXISTING ELECTRICAL PANEL P1 SECTION-1 400A 208Y/120V, 3P,4W
- EXISTING ELECTRICAL PANEL P1 SECTION-2 400A 208Y/120V, 3P,4W

ELECTRICAL RISER GENERAL NOTE:

- E.C. SHALL VERIFY THE EXACT POWER DISTRIBUTION AND SCOPE OF WORK WITH THE ARCHITECT/OWNER BEFORE BID.
- THE ELECTRICAL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE NEC, LOCAL CODES AND AHJ.
- COORDINATE THE EXACT LOCATION OF ALL THE NEW ELECTRICAL COMPONENTS SHOWN ON THE RISER. AND ENSURE THE CLEAR WORKING AND DEDICATED SPACE HAS BEEN PROVIDED AS PER NEC 110.26.
- COORDINATE AVAILABLE FAULT CURRENT (AIC RATING) WITH UTILITY/LANDLORD/OWNER.
- ENSURE THE COMBINED VOLTAGE DROP OF THE FEEDER AND BRANCH CIRCUIT SHALL NOT EXCEED 5% PER CODE.
- THE PART OF RISER MARKED AS EXISTING IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY THAT THE RISER MATCHES THE SITE CONDITION.
- SPARE AMPS AVAILABLE IN THE EXISTING ELECTRICAL SERVICE ARE MORE THAN THE NEWLY ADDED DEMAND AMPS.
- PLEASE REFER POWER PLAN FOR PROPOSED LOCATION OF THE ELECTRICAL METER, SERVICE DISCONNECT, PANELS AND TRANSFORMERS. INFORM ENGINEER ON RECORD OF ANY DISCREPANCY.
- ADDITION OR ALTERATION TO THE EXISTING SYSTEM SHALL NOT BE DONE WITHOUT THE WRITTEN CONSENT OF THE OWNER.

PLUMBING SYMBOLS LIST

— GSAN —	GREASE SANITARY SEWER (UNDERFLOOR)
— SAN —	SANITARY SEWER (UNDERFLOOR)
— EX.GSAN —	EXISTING GREASE SANITARY SEWER (UNDERFLOOR)
— EX.SAN —	EXISTING SANITARY SEWER (UNDERFLOOR)
----	VENT PIPING
----	COLD WATER PIPING
----	HOT WATER PIPING
----	HOT WATER RETURN PIPING
---	FILTER PIPING
---	EXISTING COLD WATER PIPING
—○	P--TRAP
—○	PIPE UP
—○	PIPE DROP
—○—	CLEANOUT
— —	PLUGGED OUTLET/CLEANOUT
—●	POINT OF CONNECTION

PLUMBING ABBREVIATIONS

CO	CLEANOUT
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SAN	SANITARY
V	VENT
W	WASTE
LAV	LAVATORY
WC	WATER CLOSET
TYP.	TYPICAL
DN	DOWN
AFF	ABOVE FINISH FLOOR
FD	FLOOR DRAIN
SQ. FT.	SQUARE FEET
BFP	BACK FLOW PREVENTER
WH-1	WATER HEATER
N.I.C.	NOT IN SCOPE
ET-1	EXPANSION TANK
RCP-1	HOT WATER CIRCULATION PUMP

PLUMBING DRAWING LIST

PO.1	PLUMBING SYMBOLS & SPECIFICATIONS
P1.0	PLUMBING WATER, GAS AND SANITARY FLOOR PLAN
P5.0	PLUMBING DETAILS
P6.0	PLUMBING SCHEDULE AND RISERS

BUILDING DEPARTMENT PLUMBING NOTES

- ALL PLUMBING SYSTEMS (SANITARY, WASTE, VENT, WATER) AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF 2018 INTERNATIONAL PLUMBING CODE.
- INSTALLATION OF UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 702.2
- PROTECTION OF PIPING AND PLUMBING SYSTEM COMPONENTS AS PER SECTION PC 305.
- TRENCHING, EXCAVATION AND BACKFILL AS PER SECTION PC 306.
- RODENT PROOFING AS PER PC 304
- MATERIALS USED IN PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 303, PC 605, PC 702, PC 902, PC 1102.
- EQUIPMENT CONNECTIONS AND JOINING OF PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTERS 4, 5, 6, 7 AND 9.
- DEEP SEAL TRAPS FOR FLOOR DRAINS SHALL BE PROVIDED AS PER PC 1002, AND CLEAN-OUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 708
- DRAINAGE PIPE CLEANOUTS AS PER SECTION PC 708.
- VERTICAL AND HORIZONTAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 308
- WATER SUPPLY SYSTEMS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 SECTION PC 601-603, 604, 606, 607, 608, 610
- THE SANITARY DRAINAGE SYSTEM SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 SECTION PC 701, 704, 705, 706, 707, 708, 711.
- VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 9 SECTIONS PC 901 THROUGH PC 912 THROUGH PC 917
- INSPECTION AND TESTING OF PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION PC 107.

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

- A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.
- B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.
- C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.
- D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.
- E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

- F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.
- G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.
- H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.
- I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.
- J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

- K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

- A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.
- PIPE AND FITTINGS
 - VALVES
 - HANGERS AND SUPPORTS
 - PLUMBING PIPING LAYOUT
 - TESTS
 - PLUMBING FIXTURES
 - WATER HEATERS & ACCESSORIES
 - MIXING VALVES
 - ALL SCHEDULED PLUMBING EQUIPMENT
- B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

- C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

- D. REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL BE LIMITED TO THE INITIAL REVIEW, AND A SECOND REVIEW OF ANY REQUIRED RESUBMITTED DATA. IF THE ENGINEER IS REQUIRED TO REVIEW SHOP DRAWINGS FOR A THIRD (OR MORE) SUBMISSION OF THE SAME ITEM, THE CONTRACTOR SHALL BE LIABLE FOR COMPENSATING THE ENGINEER FOR THESE SUBSEQUENT REVIEWS AS PER THE ENGINEER'S CURRENT HOURLY RATE SCHEDULE.

- E. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

- F. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

- G. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

- H. RECORD AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

- A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

- B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.05 DEFINITIONS

- A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.
- B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.
- C. PROVIDE: TO FURNISH AND INSTALL.
- D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

1.06 DRAWINGS

- A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

- B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

- C. REFER TO PLUMBING EQUIPMENT/FITTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

- D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

- E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

- F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.07 PRODUCTS

A. SANITARY AND VENT PIPING:

- ABOVE GRADE AND UNDERGROUND PIPING SHALL BE POLYVINYL CHLORIDE (PVC) PIPE AS PER ASTM D2665, ASTM F891, ASTM F1488, CSA B181.2 AS PER IPC 2018, TABLE 702.1 AND TABLE 702.2. OR PIPING SHALL BE DUCTILE CAST IRON PIPE WITH STAINLESS STEEL COUPLINGS AND ELASTOMERIC GASKETS WITH A MINIMUM 4 BANDS PER COUPLING.
- SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 3" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.
- ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.

B. DOMESTIC WATER PIPING:

- ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE. PEX PIPING IS AN ACCEPTABLE SUBSTITUTE AS PER ASTM F876 AWWA C904 AND CSA B137.5
- FITTINGS IN DOMESTIC WATER PIPING SHALL BE WROUGHT COPPER OR CAST BRASS.
- JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.
- THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.
- COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.
- ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE-RETARDANT, FACTORY-APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY-APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY WITH INTERNATIONAL ENERGY CONSERVATION CODE 2018, SECTION C403.11.3 REFER BELOW TABLE.

MINIMUM PIPE INSULATION THICKNESS						
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY BTU·IN./ (H·FT·2°F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8
141-200	0.25-0.29	125	1.5	1.5	2	2 2
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5 1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0 1.0

- WATER DISTRIBUTION SYSTEM AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018 C404.7, HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED-WATER SUPPLY PIPE BACK TO THE HEATED-WATER SOURCE THROUGH A COLD-WATER SUPPLY PIPE SHALL BE A DEMAND RECIRCULATION WATER SYSTEM. PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:
 - THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF USER OF A FIXTURE OR APPLIANCE. SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.
 - THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

- AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018, C404.6.1 HEATED-WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH A CIRCULATION PUMP. THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE. CONTROLS FOR CIRCULATING HOT WATER SYSTEM PUMPS SHALL START THE PUMP BASED ON THE IDENTIFICATION OF A DEMAND FOR HOT WATER WITHIN THE OCCUPANCY. THE CONTROLS SHALL AUTOMATICALLY TURN OFF THE PUMP WHEN THE WATER IN THE CIRCULATION LOOP IS AT THE DESIRED TEMPERATURE AND WHEN THERE IS NO DEMAND FOR HOT WATER.
- HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018 C404.5.1. THE HW PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER FOLLOWING TABLE.

NOMINAL PIPE SIZE (INCHES)	MIXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAW	OTHER FIXTURES
½"	2'	43'
¾"	0.5'	21'
1"	0.5'	13'
1¼"	0.5'	8'
1½"	0.5'	6'
2" OR LARGER	0.5'	4'

- SEAL ALL JOINTS BETWEEN SEGMENTS OF INSULATION.
- PROVIDE SHIELDS BETWEEN HANGERS AND INSULATION.

1.08 GAS PIPING:

- GAS PIPING SHALL BE SIZED IN ACCORDANCE WITH PIPE SIZING TABLES OR SIZING EQUATIONS IN ACCORDANCE WITH SECTION 402.4.
- METALLIC PIPE SHALL COMPLY WITH SECTIONS 403.4.1 THROUGH 403.4.4.
- PIPING SYSTEM INSTALLATION SHALL COMPLY WITH REQUIREMENTS OF 2018 INTERNATIONAL FUEL GAS CODE, SECTION 404.
- AS PER 2018 INTERNATIONAL FUEL GAS CODE, SECTION 404.6; GAS PIPING SHALL NOT PENETRATE FOUNDATION WALL OF A BUILDING, GAS PIPING SHALL ENTER AND EXIST A BUILDING AT A POINT ABOVE GRADE AND THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL SHALL BE SEALED.
- PIPING INSTALLED UNDERGROUND BENEATH BUILDINGS IS PROHIBITED EXCEPT WHERE THE PIPING IS ENCASED IN A CONDUIT OF WROUGHT IRON OR STEEL PIPE DESIGNED TO WITHSTAND THE SUPERIMPOSED LOADS. THE CONDUIT SHALL BE PROTECTED FROM CORROSION IN ACCORDANCE WITH SECTION 404.11 AND SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 404.11.1 OR 404.11.2 OF 2021 INTERNATIONAL FUEL GAS CODE.
- AS PER 2018 INTERNATIONAL FUEL GAS CODE, SECTION 404.12; UNDERGROUND PIPING SYSTEMS SHALL BE INSTALLED A MINIMUM DEPTH OF 12 INCHES BELOW GRADE.
- THE GAS PIPING IS ENCASED IN A CONDUIT OF WROUGHT IRON OR STEEL PIPE TO WITH STAND THE SUPERIMPOSED LOADS.
- SHUTOFF VALVES SHALL BE LOCATED IN PLACES SO AS TO PROVIDE ACCESS FOR OPERATION AND SHALL BE INSTALLED SO AS TO BE PROTECTED FROM DAMAGE.

C. HANGERS AND SUPPORTS:

- HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.
- SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.
- ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS.
- PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

D. VALVES:

- PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT-OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT-OFF DUTY.
- ALL FIXTURES WITH THE EXCEPTION OF FLUSHMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.
- ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.
- ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.
- ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.
- PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.
- INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.
- INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.
- IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.
- REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

- VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

- IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

- PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

- PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

- PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

- ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.
- ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

- WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

- AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

- INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

2. INSTALLATION

2.01 GENERAL

- ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

- EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

- EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

- COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

- REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

- REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

- PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

- COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

- NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

- PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZED CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

- THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

- WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

3. TESTING

- AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

- TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

- THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

- THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

- ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

- WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR, AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

- ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

- ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

- ALL EQUIPMENT WILL BE FACTORY TESTED.

- CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

- REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

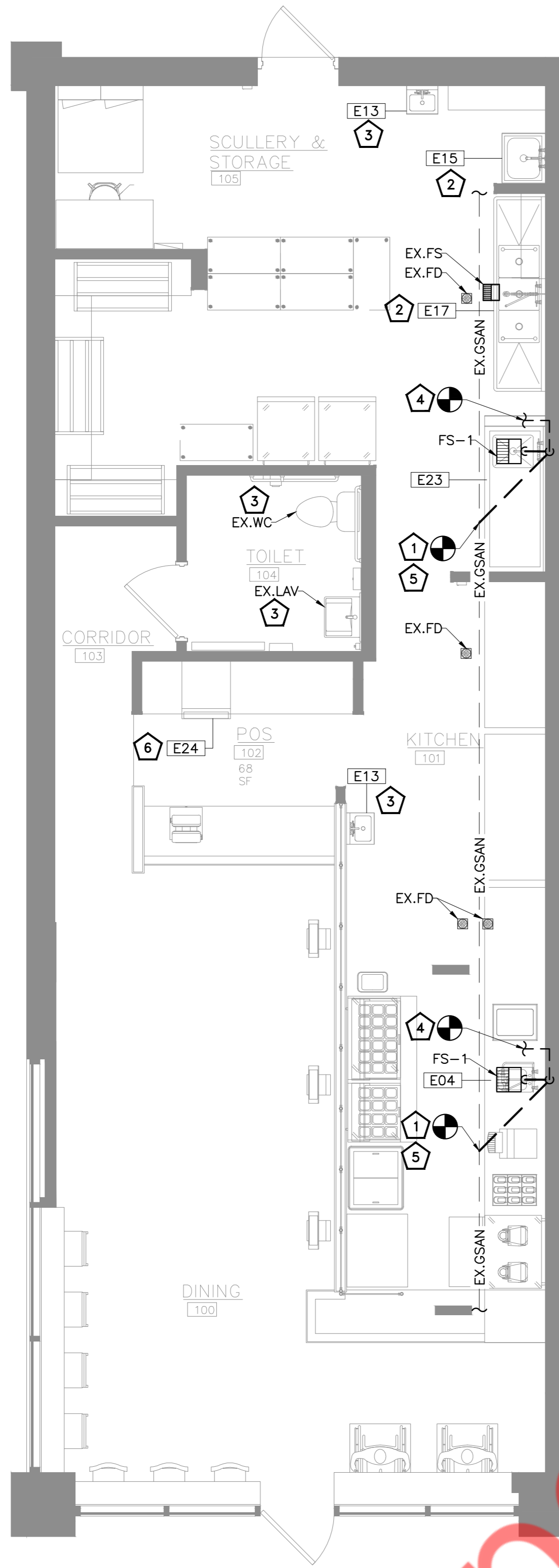
L. TESTING REQUIREMENTS

- TEST ALL DOMESTIC WATER PIPING HYDROSTATICALLY TO 125 PSIG.
- HYDROSTATIC TEST PRESSURES SHALL REMAIN CONSTANT WITH NO VARIATION FOR 120 MINUTES.
- TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
- THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

- REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

- THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.

- WARRANTY
- EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.



- SANITARY AND VENT PLAN NOTES:**
- 1 EXTEND AND CONNECT NEW 3" GREASE SANITARY LINE PIPING TO EXISTING GREASE SANITARY LINE. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION AND INVERT LEVEL OF EXISTING GREASE SANITARY LINE ON SITE.
 - 2 EXISTING PLUMBING EQUIPMENT WITH EXISTING GREASE SANITARY AND VENT PIPING WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
 - 3 EXISTING PLUMBING FIXTURE WITH EXISTING SANITARY AND VENT PIPING WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
 - 4 EXTEND AND CONNECT NEW 2" VENT LINE TO EXISTING VENT LINE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF VENT LINE ON SITE.
 - 5 CONTRACTOR TO FIELD VERIFY EXISTING GREASE INTERCEPTOR SIZE AND LOCATION. PROVIDE NEW IF NOT EXISTING.
 - 6 EXISTING ICE MACHINE WITH EXISTING SANITARY AND VENT PIPING WITH ASSOCIATED ACCESSORIES AND FITTINGS TO REMAIN. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.



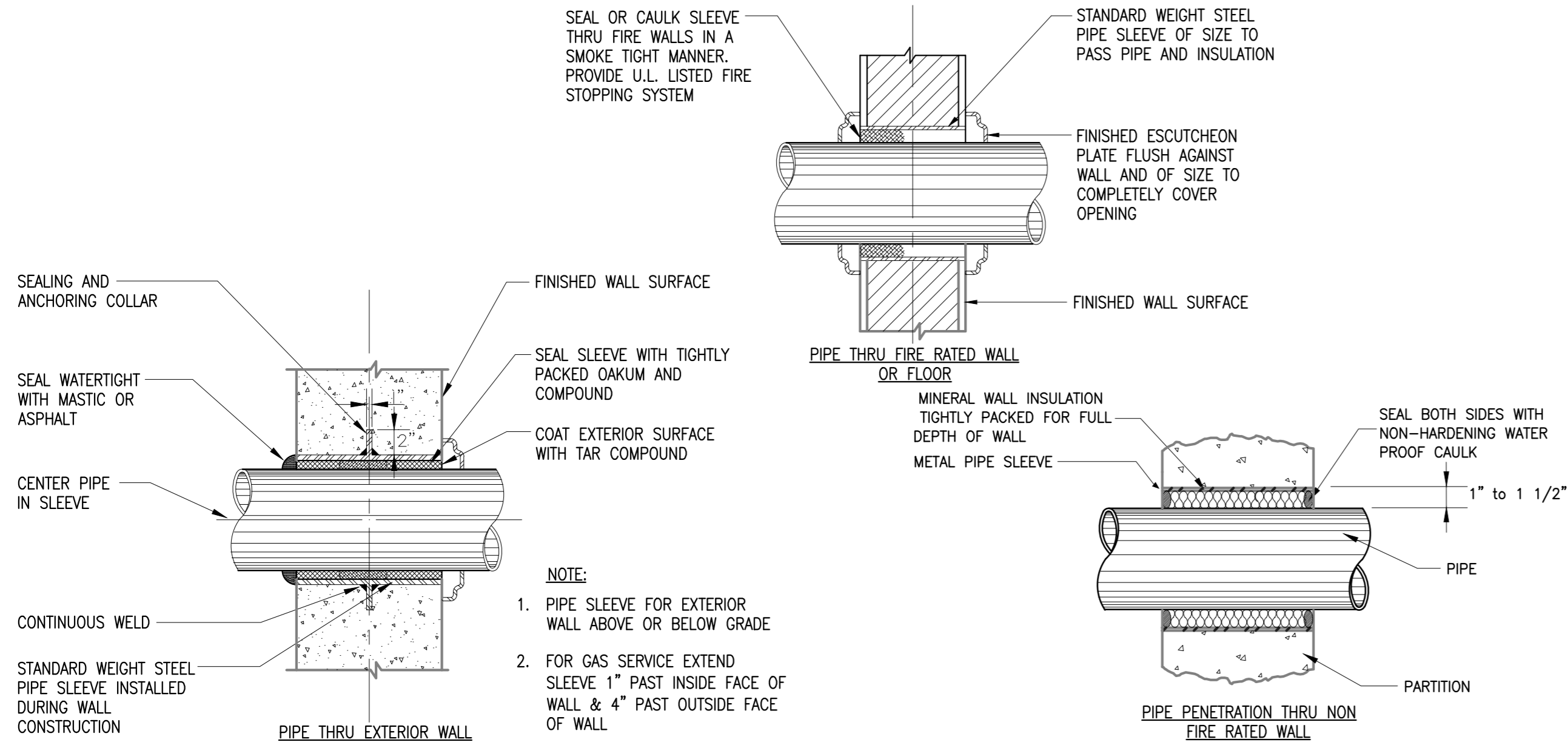
- GENERAL NOTES:**
1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE (REFER SHEET P0.1)
 2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
 3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
 4. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, CLEANOUTS & SHUT-OFF VALVES AS REQUIRED.
 5. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.
 6. PROVIDE TRAP PRIMER FOR FLOOR DRAIN AS PER LOCAL JURISDICTION.

- DOMESTIC WATER AND GAS PLAN NOTES:**
- 1 EXTEND AND CONNECT NEW 3/4" CW & 3/4" HW LINE TO EXISTING CW & HW LINE RESPECTIVELY. CONTRACTOR TO FIELD VERIFY EXISTING CW & HW LINE SIZE AND LOCATION, UPGRADE IF REQUIRED.
 - 2 EXISTING PLUMBING FIXTURE WITH EXISTING WATER LINE TO BE REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING WATER LINE CONDITION AND REPLACE IF REQUIRED.
 - 3 EXISTING WATER HEATER WITH ASSOCIATED PIPING AND EQUIPMENTS TO BE REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING WATER HEATER AND ASSOCIATED EQUIPMENTS CONDITION. REPLACE IF REQUIRED.
 - 4 CONTRACTOR TO FIELD VERIFY EXISTING WATER METER, EXISTING RPZ AVAILABILITY, CONDITION, SIZE AND LOCATION. PROVIDE NEW IF NOT EXISTING. UPGRADE CW SERVICE IF REQUIRED. BASE BID ACCORDINGLY.
 - 5 EXISTING ICE MACHINE WITH EXISTING WATER LINE TO BE REMAIN. CONTRACTOR TO FIELD VERIFY EXISTING WATER LINE CONDITION AND REPLACE IF REQUIRED.
 - 6 EXISTING RTU TO REMAIN WITH EXISTING GAS PIPING. CONTRACTOR TO FIELD VERIFY THE GA PIPING FOR EXISTING RTU-1(E) AND ENSURE GAS PIPING IN A GOOD WORKING CONDITION, REPAIR AND REPLACE IF REQUIRED.
 - 7 CONTRACTOR TO MAKE SURE THAT SUFFICIENT GAS PRESSURE SHOULD BE PROVIDED TO GAS RTU. PROVIDE PRESSURE REGULATOR IF REQUIRED AT AN ACCESSIBLE LOCATION.
 - 8 CONTRACTOR TO CHECK AND FIELD VERIFY IF EXISTING WATER HEATER HAS MINIMUM 40 GALLON STORAGE AND 65 MBH GAS CAPACITY. IF NOT, REPLACE EXISTING WATER HEATER WITH A NEW ONE. PROVIDE A SUBMITTAL OF NEW WATER HEATER BEFORE BID AND/OR INSTALLATION FOR A/E REVIEW.

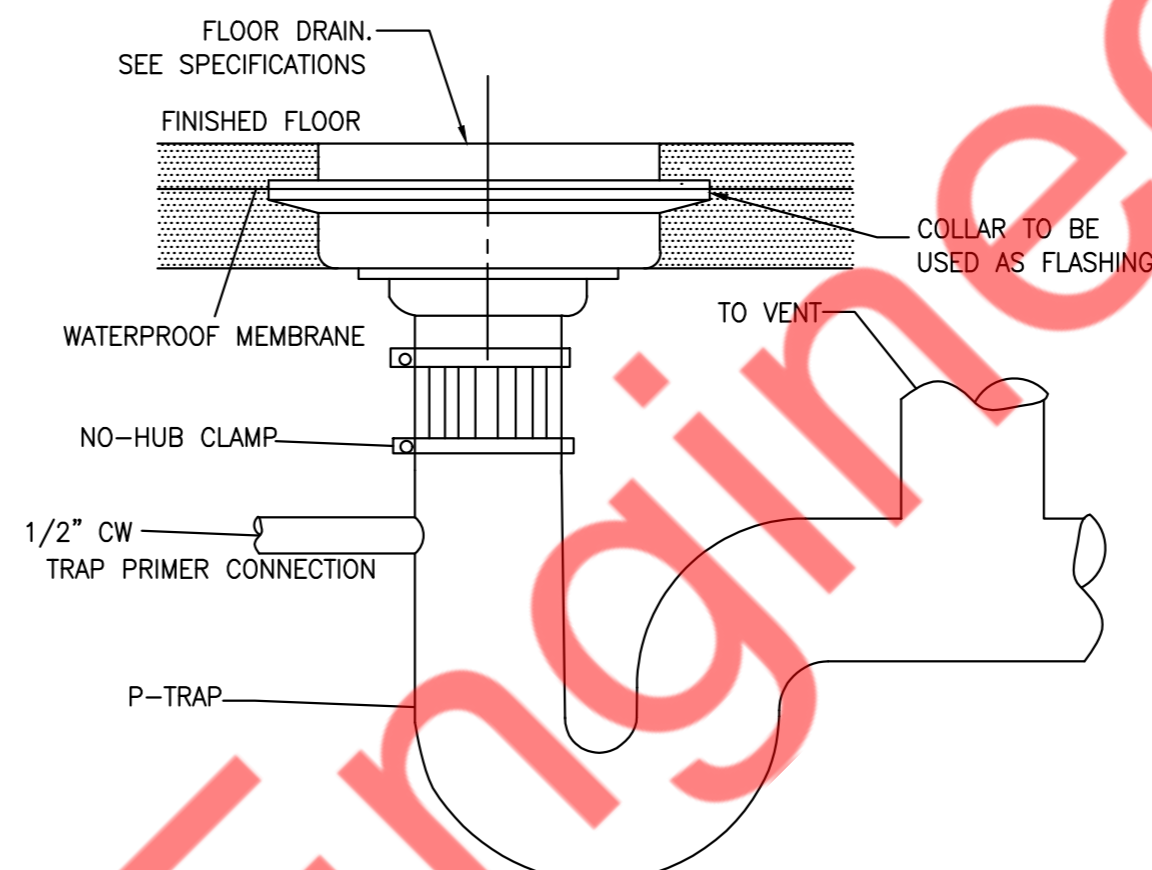
2 PLUMBING SANITARY PLAN
P1.0 SCALE: 1/4" = 1'-0"

1 PLUMBING WATER AND GAS PLAN
P1.0 SCALE: 1/4" = 1'-0"

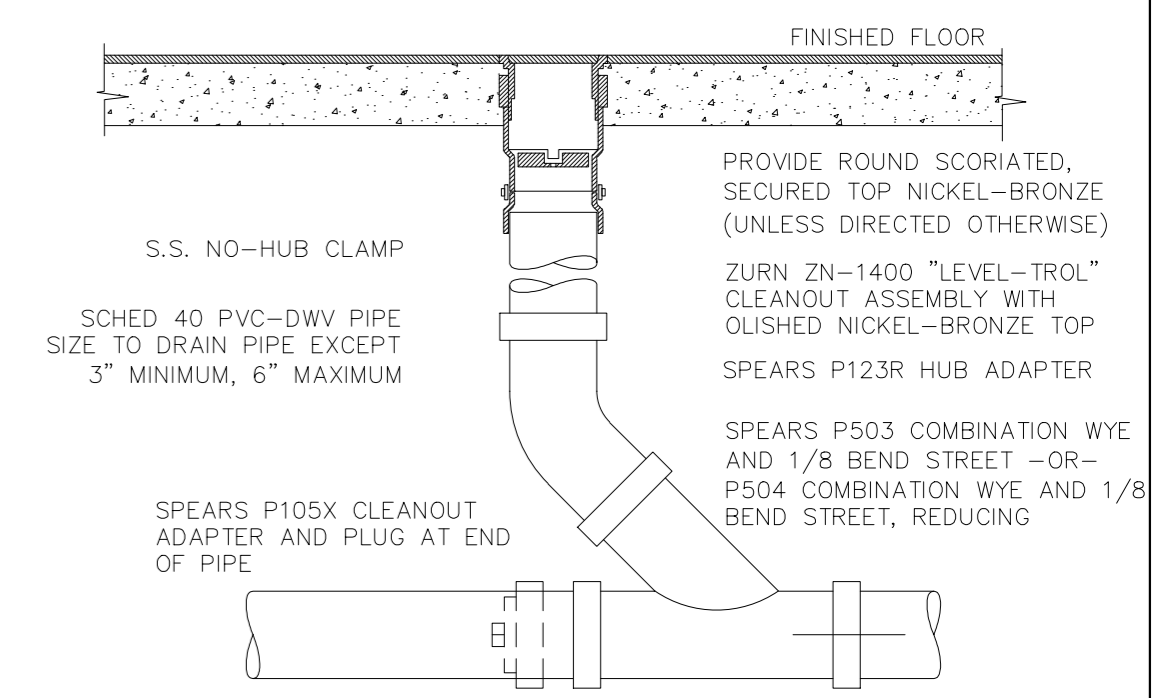
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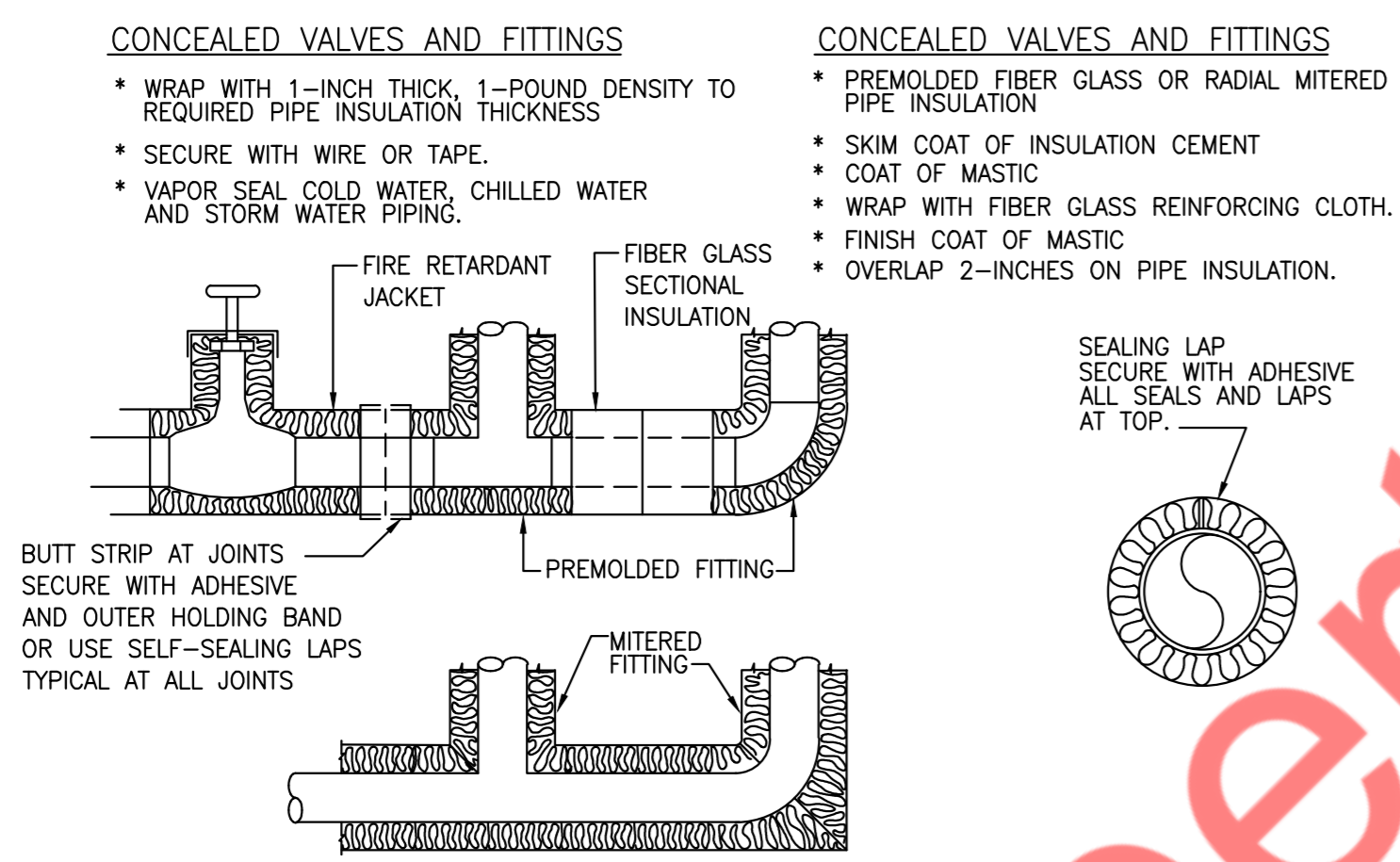
1 PIPE SLEEVE THRU WALL SECTION
P5.0 N.T.S



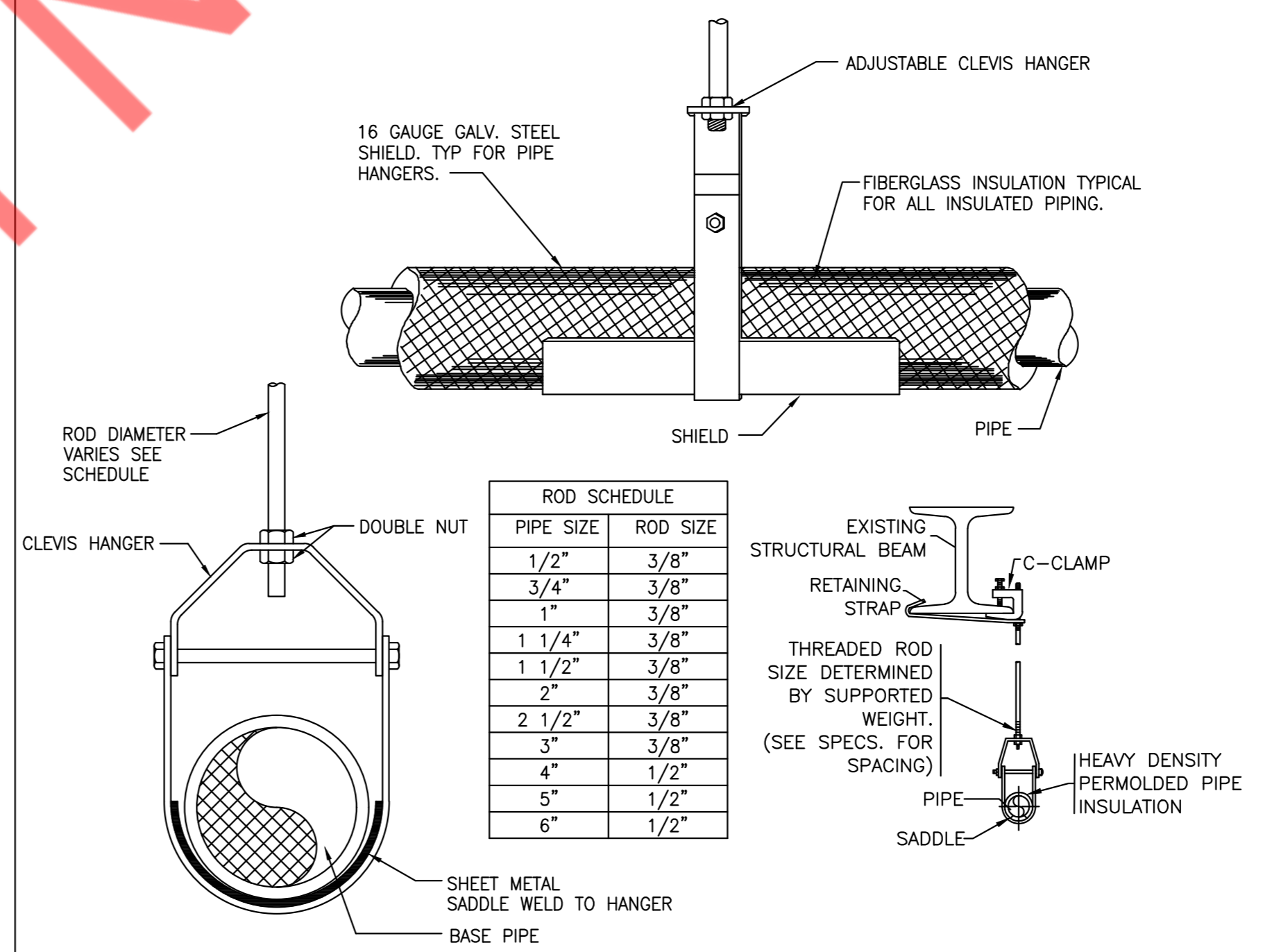
2 FLOOR DRAIN DETAIL
P5.0 N.T.S



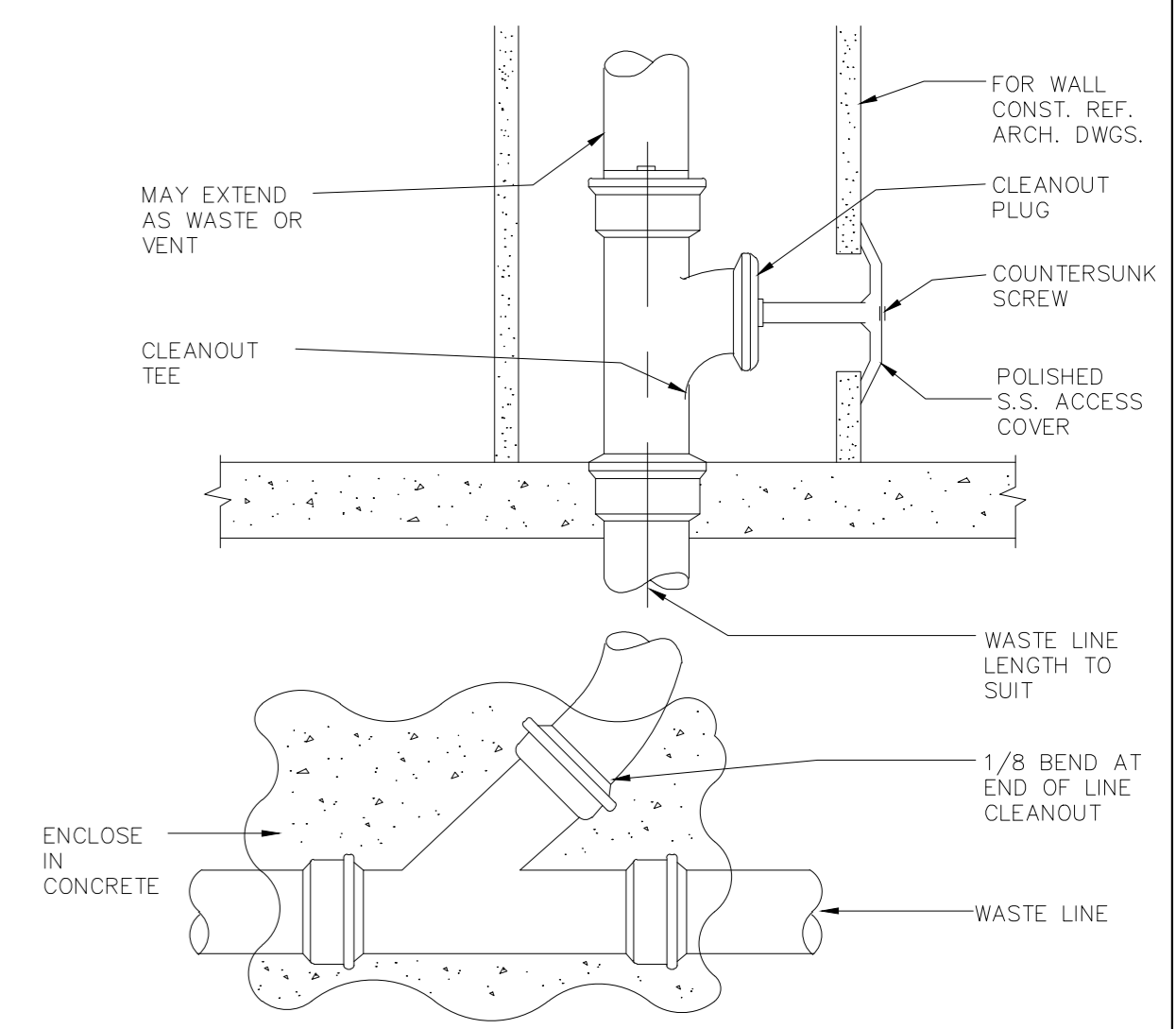
3 FLOOR CLEANOUT DETAIL
P5.0 N.T.S



4 INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS
P5.0 N.T.S



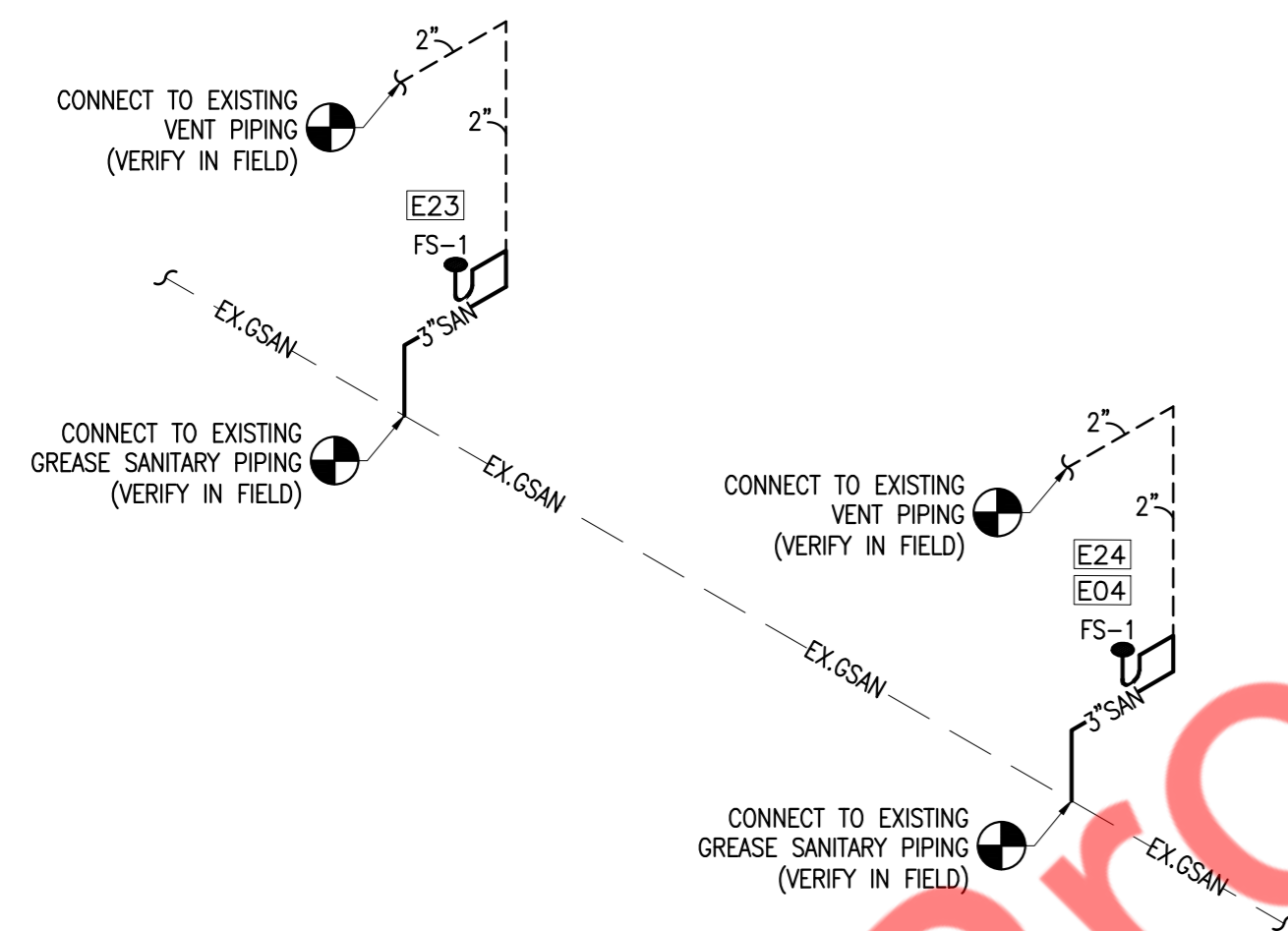
5 HANGER DETAIL
P5.0 N.T.S



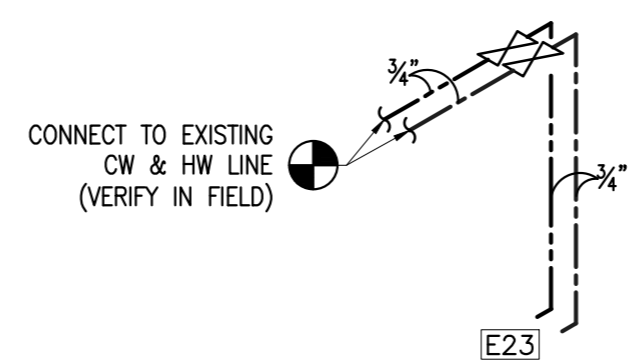
6 WALL CLEAN OUT DETAIL
P5.0 N.T.S

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	WASTE	VENT	CW	HW	FIXTURE DESCRIPTION/ REMARKS
EX.WC	WATER CLOSET	E	E	E	-	EXISTING TO REMAIN.
EX.LAV	LAVATORY	E	E	E	E	EXISTING TO REMAIN.
EX.FD	FLOOR DRAIN	E	E	E	E	EXISTING TO REMAIN.
EX.FS	FLOOR SINK	E	E	E	E	EXISTING TO REMAIN.
EX.WH	WATER HEATER	E	E	E	E	EXISTING TO REMAIN.
FS-1	FLOOR SINK	3"	2"	-	-	FLOOR SINK, J-R SMITH 3100 SERIES, CAST IRON FLANGED RECEPTOR, NICKLE BRONZE RIM AND SECURED GRATE, ALUMINUM DOME STRAINER, AND TRAP PRIMER CONNECTION
E04	DUMP SINK	2"	-	3/4"	3/4"	MANUFACTURER - JOHN BOOS, MODEL -1B18244, COORDINATE W/ ARCHITECTURAL. INDIRECT DRAIN TO ADJACENT FLOOR SINK.
E13	HAND SINK	E	E	E	E	EXISTING TO REMAIN.
E15	MOP SINK	E	E	E	E	EXISTING TO REMAIN.
E17	3 COMPARTMENT SINK	E	E	E	E	EXISTING TO REMAIN.
E23	WORKTABLE WITH SINK ON LEFT	2"	-	3/4"	3/4"	EXISTING TO RELOCATED
E24	ICE MACHINE	E	E	E	E	EXISTING TO RELOCATED



2 PLUMBING SANITARY RISER
P6.0 SCALE: N.T.S.



1 PLUMBING WATER RISER
P6.0 SCALE: N.T.S.

