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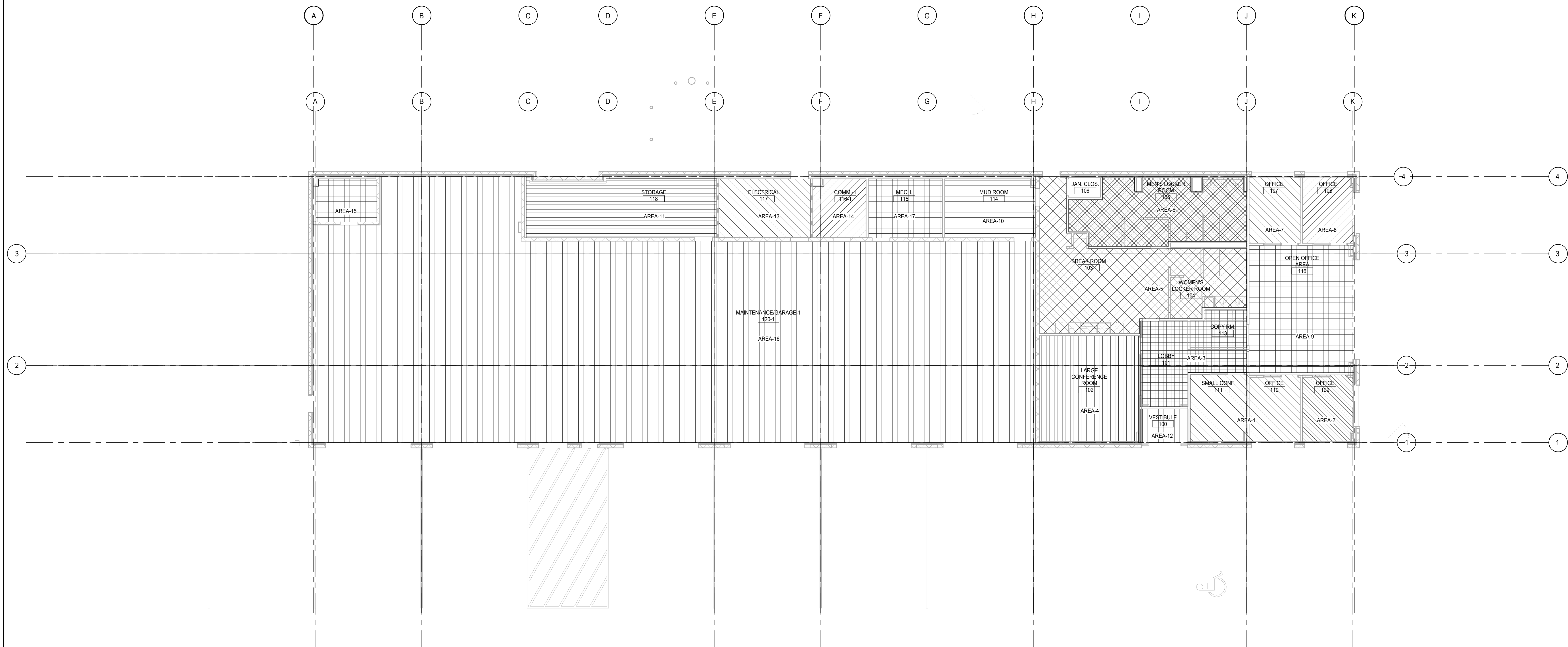
CITY OF CHESTER  
DEPARTMENT OF  
PUBLIC WORKS  
OFFICE & GARAGE

SHEET NUMBER: M000

ZONING SCHEDULE		
TAG	SERVED BY	SERVES
VAV-1	AHU-1	AREA-1
VAV-2	AHU-1	AREA-2
VAV-3	AHU-1	AREA-3
VAV-4	AHU-1	AREA-4
VAV-5	AHU-1	AREA-5
VAV-6	AHU-1	AREA-6
VAV-7	AHU-1	AREA-7
VAV-8	AHU-1	AREA-8
VAV-9	AHU-1	AREA-9
VAV-10	AHU-1	AREA-10
VAV-11	AHU-1	AREA-11
CUH-1	CUH-1	AREA-12
AC-1	AC-1	AREA-13
AC-2	AC-2	AREA-14
EUH-1	EUH-1	AREA-15
MAU-1	MAU-1	AREA-16
AC-3	AC-3	AREA-17

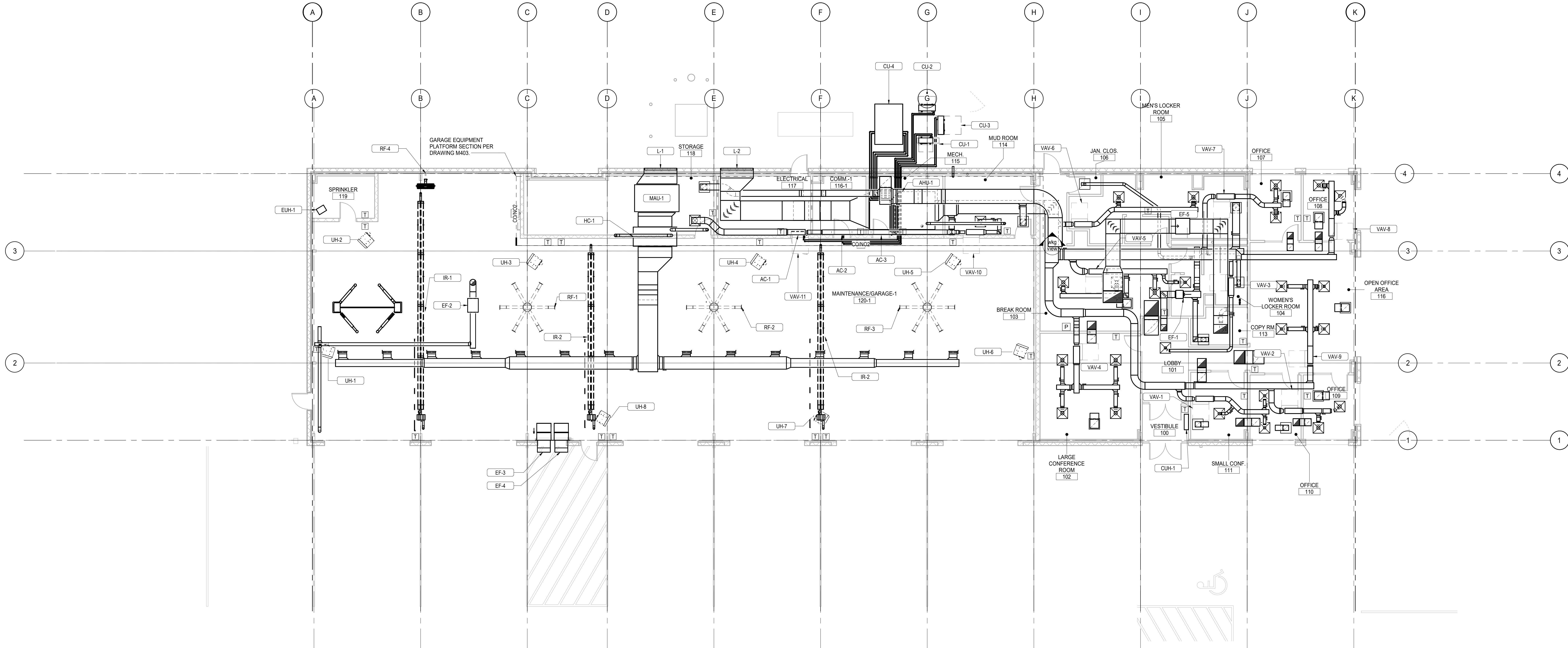
## GENERAL NOTES

- A. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL DUCTWORK TAKEOFFS TO AIR DEVICES FOR AIRFLOW BALANCING.
- B. TRANSITION AS REQUIRED FROM BRANCH DUCT TO DIFFUSER NECK. COORDINATE BETWEEN PLANS, SCHEMATICS, AND DETAILS.
- C. ALL SUPPLY AND RETURN DUCT ELBOWS SHALL BE 1-1/2 TIMES THE THROAT RADIUS. SQUARE ELBOWS WITH TURNING VANES AS INDICATED IN SMACNA MAY BE USED ONLY WHERE INSTALLATION CONDITIONS ARE INADEQUATE FOR RADIUS ELBOWS.
- D. EXPOSED DUCTWORK IN OPEN CEILING AREAS SHALL BE INTERNALLY INSULATED WITH 1-1/2" THICK CLOSED CELL FOAM INSULATION. FOR INTERNALLY INSULATED DUCTWORK, SIZES SHOWN ON PLAN SHALL BE DIMENSIONS OF INSIDE DUCT OPENING TO ACCOUNT FOR INSULATION THICKNESS.
- E. ALL DUCT DIMENSIONS ARE NET FREE AREA. INSULATION THICKNESS OF DUCTS SHALL BE CONSIDERED SEPARATELY. MAKE ALLOWANCE FOR INSULATION AND SEAMS WHEN VERIFYING CLEARANCES.
- F. ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED TO MAINTAIN INTEGRITY OF STRUCTURE AND PREVENT AIR LEAKING INTO BUILDING ASSEMBLY.
- G. ALL DUCT PENETRATIONS THROUGH RATED WALLS SHALL HAVE FIRE DAMPERS FOR FIRESTOPPING REQUIREMENTS.
- H. MOUNT THERMOSTATS AT 4'-0" A.F.F., A MINIMUM OF 8" FROM LIGHT SWITCH.
- I. ALL WORK SHALL CONFORM TO FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS AS INDICATED BY THE AUTHORITY HAVING JURISDICTION.
- J. CONTRACTORS SHALL FIELD VERIFY ALL DIMENSIONS. DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT / ENGINEER IN WRITING PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
- K. UNLESS OTHERWISE SPECIFIED, ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY. MECHANICAL CONTRACTOR SHALL PROVIDE MOST EFFICIENT ROUTING AND COORDINATE WITH OTHER TRADES.
- L. MECHANICAL CONTRACTOR SHALL PROVIDE COORDINATION SHOP DRAWINGS TO BE APPROVED PRIOR TO COMMENCEMENT OF ANY WORK.
- M. COORDINATE MECHANICAL WORK AND SCHEDULING WITH ALL OTHER TRADES.



GENERAL NOTES

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1 1ST FLOOR HVAC PLAN  
SCALE: 1/8" = 1'-0"

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SCALE: AS SHOWN  
DATE: 02/12/23  
DRAWN BY: K. RUAN  
CHECKED BY: M. SHOLOMSKAYA  
PROJECT NUMBER: COCD0004A  
DRAWING NAME: M SHOLOMSKAYA

SHEET TITLE:

1ST FLOOR HVAC PLAN

SHEET NUMBER:

M101

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



## GENERAL NOTES

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- C. ALL SUPPLY AND RETURN DUCT ELBOWS SHALL BE 1-1/2 TIMES THE THROAT RADIUS. SQUARE ELBOWS WITH TURNING VANS ARE PROHIBITED. IN SOME CASES, THE USE OF ONLY 90 DEGREE INSTALLATION CONDITIONS ARE INADEQUATE FOR RADIUS ELBOWS.
- D. EXPOSED DUCTWORK IN OPEN CEILING AREAS SHALL BE INTERNALLY INSULATED WITH 1-1/2" THICK CLOSED CELL FOAM INSULATION. FOR INTERNALLY INSULATED DUCTWORK, SIZES SHOWN ON PLAN SHALL BE DIMENSIONS OF INSIDE DUCT OPENING TO ACCOUNT FOR INSULATION THICKNESS.
- E. ALL DUCT DIMENSIONS ARE NET FIVE AREA. INSULATION THICKNESS OF DUCTS SHALL BE CONSIDERED SEPARATELY, MAKE ALLOWANCE FOR INSULATION AND SEAMS WHEN VERIFYING CLEARANCES.
- F. ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED TO MAINTAIN INTEGRITY OF STRUCTURE AND FIRE RATING OF BUILDING ASSEMBLY.
- G. ALL DUCT PENETRATIONS THROUGH RAISED WALLS SHALL HAVE FIRE DAMPERS FOR FIRESTOPPING REQUIREMENTS.
- H. MOUNT THERMOSTATS AT 4" O.D. \* A MINIMUM OF 8" FROM LIGHT SOURCE.
- I. ALL WORK SHALL CONFORM TO FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS AS INDICATED BY THE AUTHORITY HAVING JURISDICTION.
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- M. MECHANICAL CONTRACTOR SHALL PROVIDE COORDINATION SHOP DRAWINGS TO BE APPROVED PRIOR TO COMMENCEMENT OF ANY WORK.
- N. COORDINATE MECHANICAL, WORK AND SCHEDULING WITH ALL OTHER TRADES.

## KEYNOTES#

1. 12"x12" EF-1 EA DUCT UP THROUGH ROOF. TERMINATE WITH GOOSENECK AND INSECT SCREEN MINIMUM 18 INCHES ABOVE ROOF LEVEL. SEE GOOSENECK DETAIL.
2. 4" INFRARED HEAT EXHAUST DUCT THROUGH ROOF. TERMINATE MINIMUM 24" ABOVE ROOF WITH VENT CAP, STORM COLLAR, AND ADJUSTABLE ROOF FLASHING. PROVIDE CLEAN OUT CAP AT BOTTOM OF THE FITTING CONNECTION TO HEAT CAP.
3. 4" INFRARED HEAT EXHAUST AIR SUPPLY DUCT THROUGH ROOF. TERMINATE MINIMUM 18" ABOVE ROOF WITH ROOF INTAKE CAP.
4. 14" EF-2 EA DUCT UP THROUGH ROOF. TERMINATE WITH 90 DEGREE GOOSENECK AND INSECT SCREEN MINIMUM 18 INCHES ABOVE ROOF LEVEL. SEE GOOSENECK DETAIL.
5. 5" FLUE UP THROUGH ROOF.
6. 6" FLUE UP THROUGH ROOF.
7. 6" FRESH AIR INTAKE UP THROUGH ROOF.
8. 32"x20" RETURN DUCT UP THROUGH ROOF. TERMINATE WITH 90 DEGREE GOOSENECK AND BIRD SCREEN MINIMUM 18 INCHES ABOVE ROOF LEVEL. SEE GOOSENECK DETAIL.

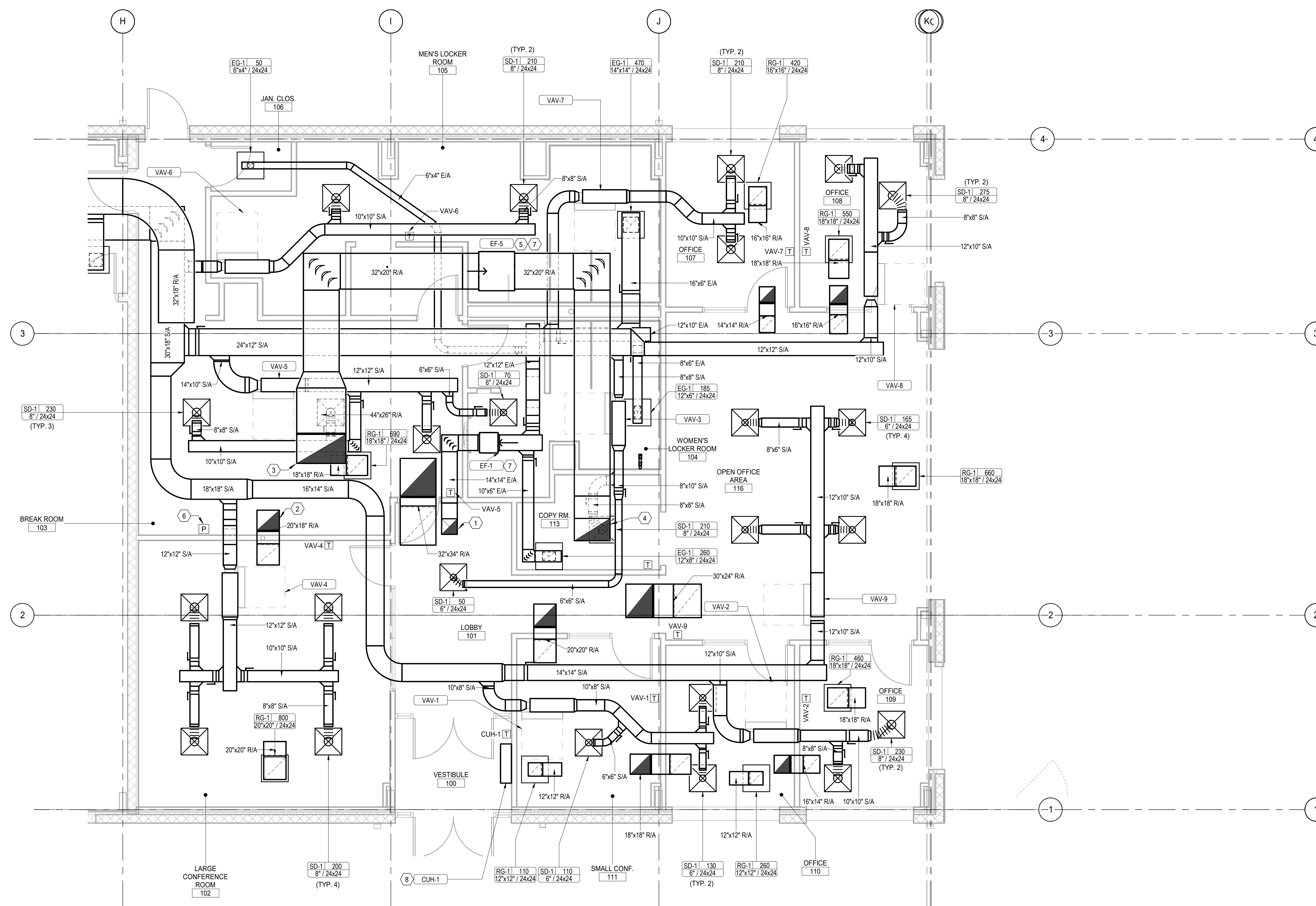
**1 ROOF MECHANICAL PLAN**  
SCALE : 1/8" = 1'-0"



KEYNOTES 

- A. SEAL ALL DUCTWORK FOR MAXIMUM OF 1% LEAKAGE OF TOTAL AIR VOLUME.
- B. PROVIDE OFFSET BLADE VOLUME DAMPERS AT ALL DUCTWORK TAKEOFFS TO AID VIBRATES FOR AIRFLOW BALANCING.
- C. TRANSITION AS REQUIRED FROM BRANCH DUCT TO DIFFUSER NECK. COORDINATE BETWEEN PLANS, SCHEMATICS, AND DETAILS.
- D. ALL SUPPLY AND RETURN DUCT ELBOWS SHALL BE 1-1/2 TIMES THE THROAT RADIUS, SQUARE ELBOWS WITH TURNING VANE AS NOTED IN SECTION MAY BE USED ONLY WHERE INSTALLATION CONDITIONS ARE INADEQUATE FOR RADIUS ELBOWS.
- E. EXPOSED DUCTWORK IN OPEN CEILING AREAS SHALL BE INTERNALLY INSULATED WITH 1-1/2" THICK CLOSED CELL FOAM INSULATION FOR INSULATION. INSULATED DUCTWORK SIZES WHERE INSTALLATION CONDITIONS ARE INADEQUATE FOR RADIUS ELBOWS SHALL BE DIMENSIONS OF INSIDE DUCT OPENING TO ACCOUNT FOR INSULATION THICKNESS.
- F. ALL DUCT DIMENSIONS ARE NET FREE AREA. INSULATION THICKNESS OF DUCTS SHALL BE CONSIDERED SEPARATELY MAKE ALLOWANCE FOR INSULATION AND SEAMS WITH VENTING CLEARANCES.
- G. ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED TO MAINTAIN INTEGRITY OF STRUCTURE AND FIRE RATING OF BUILDING ASSEMBLY.
- H. ALL DUCT PENETRATIONS THROUGH RATED WALLS SHALL HAVE FIRE DAMPERS FOR FIRESTOPPING REQUIREMENTS.
- I. MOUNT THERMOSTATS AT 4'-0" A.F.F., A MINIMUM OF 8" FROM LIGHT SWITCH.
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- N. COORDINATE MECHANICAL WORK AND SCHEDULING WITH ALL OTHER TRADES.
- O. PROVIDE INSULATED BACKPLATE FOR ALL THERMOSTATS MOUNTED ON EXTERIOR WALLS.

1. 12"x12" EA DUCT UP THROUGH ROOF. TERMINATE WITH GOOSENECK AND BIRDSCREEN.
2. TRANSFER DUCT THROUGH PARTITION. REFER TO DETAIL 8 ON DRAWING M500 FOR MORE INFORMATION. (TYPICAL).
3. 44"x20" OPEN ENDED RETURN DUCT ELBOW WITH WIRE MESH SCREEN. OPEN END SHALL FACE THE ROOF.
4. 32"x20" RETURN DUCT UP THROUGH ROOF.
5. INSTALL EXHAUST FAN ABOVE THE CEILING PER MANUFACTURER'S INSTRUCTIONS IN THE INDICATED LOCATION. COORDINATE WITH ALL OTHER TRADES TO MAINTAIN MANUFACTURER'S CLEARANCES.
6. INSTALL PRESSURE SENSOR ABOVE THE CEILING IN THE INDICATED LOCATION. COORDINATE WITH ALL OTHER TRADES. PRESSURE SENSOR SHALL MEASURE PLenum PRESSURE RELATIVE TO OUTSIDE OF BUILDING TO CONTROL RELIEF FAN. EFS.
7. SUSPEND EQUIPMENT FROM STRUCTURE. CONNECTING DIRECTLY TO ROOF IS NOT ACCEPTABLE. COORDINATE INSTALLATION WITH ALL OTHER TRADES. FOLLOW MANUFACTURER'S INSTRUCTIONS AND MAINTAIN ALL MANUFACTURER'S REQUIRED CLEARANCES.
8. INSTALL CABINET UNIT HEATER ON VESTIBULE WALL IN LOCATION INDICATED PER MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH ALL TRADES AND MAINTAIN ALL MANUFACTURER'S REQUIRED CLEARANCES.



1 1ST FLOOR ENLARGED - OFFICES  
SCALE : 1/4" = 1'-0"

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PROJECT NUMBER: COCODOO4A		DRAWING NAME:	REVIEWED BY: M. SHOLOMSKY

SHEET TITLE:

ENLARGED HVAC PLANS

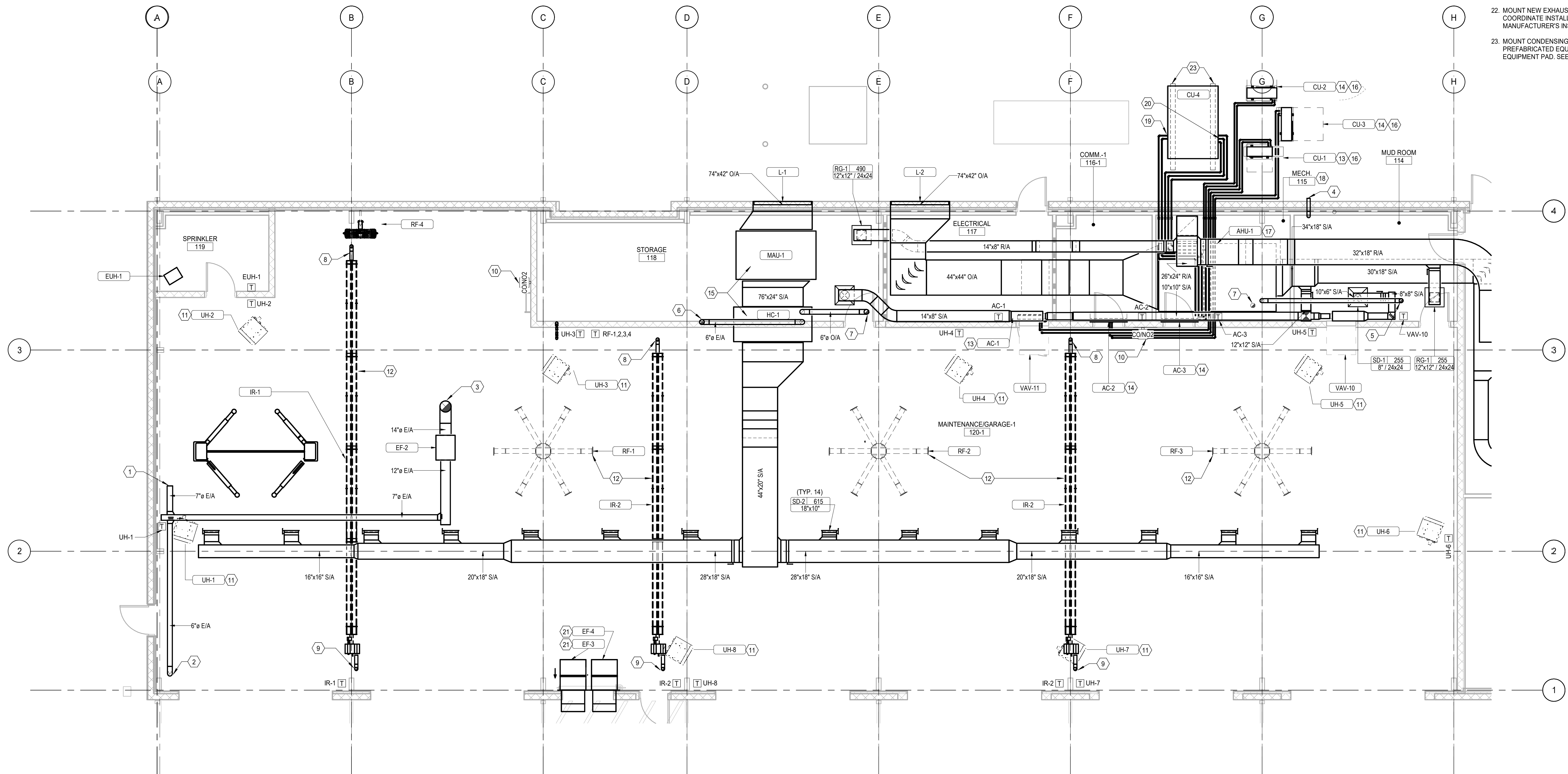
SHEET NUMBER: M401

GENERAL NOTES

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- B. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL DUCTWORK TAKEOFFS TO AIR DEVICES FOR AIRFLOW BALANCING.
- C. TRANSITION AS REQUIRED FROM BRANCH DUCT TO DIFFUSER NECK. COORDINATE BETWEEN PLANS, SCHEMATICS, AND DETAILS.
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KEYNOTES

1. PROVIDE VEHICLE EXHAUST HOSE REEL FOR CONNECTION TO VEHICLE TAIL PIPE.
2. PROVIDE DOWN DROP ASSEMBLY WITH FLEX HOSE FLANGE CONNECTION 3'-0" ABOVE FINISHED FLOOR.
3. 14" EA DUCT UP THROUGH ROOF.
4. 4" DRYER EXHAUST DUCT THROUGH EXTERIOR WALL. TERMINATE WITH 4" FAMCO MODEL WVEBA HOODED WALL VENT WITH SCREEN, DAMPER, SPRING & GASKET OR APPROVED EQUAL.
5. 5" FLUE UP THROUGH ROOF.
6. 6" FLUE UP THROUGH ROOF.
7. 6" FRESH AIR INTAKE UP THROUGH ROOF.
8. 4" INFRARED HEATER EXHAUST DUCT THROUGH ROOF. TERMINATE MINIMUM 24" ABOVE ROOF WITH VENT CAP, STORM COLLAR, AND ADJUSTABLE ROOF FLASHING. PROVIDE CLEAN OUT CAP AT BOTTOM OF TEE FITTING CONNECTION TO HEATER, (ALTERNATE #6)
9. 4" INFRARED HEATER OUTSIDE AIR SUPPLY DUCT THROUGH ROOF. TERMINATE MINIMUM 18" ABOVE ROOF WITH ROOF INTAKE CAP. (ALTERNATE #6)
10. MOUNT GAS DETECTION AT 5 FT A.F.F. IN LOCATION INDICATED PER MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH ALL OTHER TRADES.
11. MOUNT UNIT HEATERS AT 12 FT A.F.F. PER MANUFACTURER'S INSTRUCTIONS. COORDINATE INSTALLATION OF UNIT HEATERS WITH BUILDING CONDITIONS AND ALL OTHER TRADES INCLUDING GARAGE DOORS, TRACKS AND MOTORS.
12. HVLS FANS (ALTERNATE #5) AND INFRARED RADIAN HEATERS (ALTERNATE #6) ARE ADD-ALTERNATE OPTIONS.
13. 1/2" REFRIGERANT GAS PIPE AND 1/4" REFRIGERANT LIQUID PIPE CONNECTIONS TO AC-1/CU-1.
14. 5/8" REFRIGERANT GAS PIPE AND 1/4" REFRIGERANT LIQUID PIPE TO AC-2/CU-2 AND AC-3/CU-3.
15. SUSPEND MAU-1 AND HC-1 5'-5" ABOVE EQUIPMENT PLATFORM FROM STRUCTURE. CONNECTING DIRECTLY TO ROOF DECK IS NOT ACCEPTABLE. COORDINATE INSTALLATION WITH ALL OTHER TRADES. FOLLOW MANUFACTURER'S INSTRUCTIONS AND MAINTAIN ALL MANUFACTURER'S REQUIRED CLEARANCES.
16. INSTALL EQUIPMENT ON CONCRETE EQUIPMENT PAD OUTSIDE THE BUILDING PER MANUFACTURER'S INSTRUCTIONS. COORDINATE INSTALLATION WITH ALL OTHER TRADES. MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES.
17. AHU-1 MOUNTED ON EQUIPMENT PLATFORM.
18. REFER TO PLUMBING DRAWINGS AND SPECS FOR GAS-FIRED WATER HEATER VENTING REQUIREMENTS.
19. 7/8" REFRIGERANT SUCTION PIPES CONNECTING AIR HANDLING UNIT AHU-1 TO ASSOCIATED CONDENSING UNIT CU-4. FOLLOW MANUFACTURER'S INSTRUCTIONS.
20. 5/8" REFRIGERANT HOT GAS REHEAT AND REFRIGERANT LIQUID PIPES CONNECTING AIR HANDLING UNIT AHU-1 TO ASSOCIATED CONDENSING UNIT CU-4. FOLLOW MANUFACTURER'S INSTRUCTIONS.
21. MOUNT NEW EXHAUST FAN AT 11'-5" AFF TO BOTTOM OF FAN. COORDINATE INSTALLATION WITH ALL OTHER TRADES. FOLLOW MANUFACTURER'S INSTRUCTIONS.
22. MOUNT NEW EXHAUST FAN AT 17'-0" AFF TO BOTTOM OF FAN. COORDINATE INSTALLATION WITH ALL OTHER TRADES. FOLLOW MANUFACTURER'S INSTRUCTIONS.
23. MOUNT CONDENSING UNIT CU-4 ON MINIMUM 18" TALL PREFABRICATED EQUIPMENT SUPPORT RAILS SECURED TO EQUIPMENT PAD. SEE SPECIFICATIONS FOR REQUIREMENTS.



1 1ST FLOOR ENLARGED - GARAGE  
SCALE : 3/16" = 1'-0"

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Inc.

SCALE: AS SHOWN  
DATE: 02/12/23  
PROJECT NUMBER: COCD0004A  
DRAWING NAME: M  
SHEET NUMBER: M402

1ST FLOOR ENLARGED - GARAGE

ENLARGED HVAC PLANS

SHEET NUMBER: M402

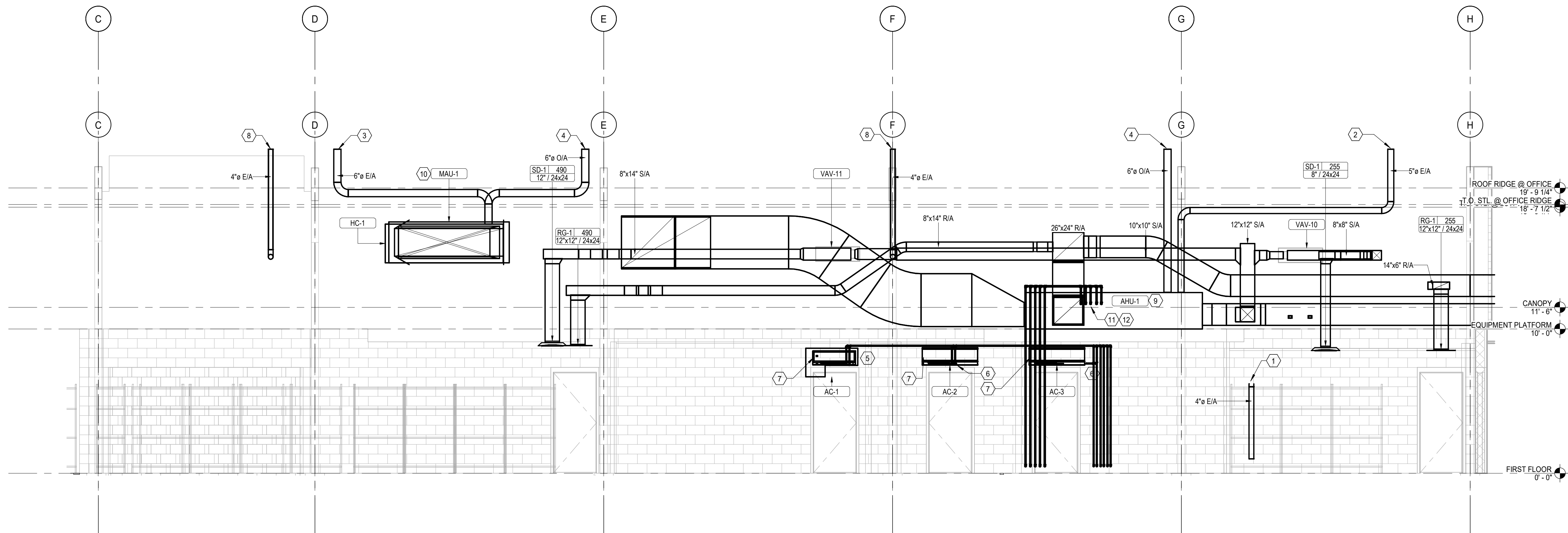
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- EXPOSED DUCTWORK IN OPEN CEILING AREAS SHALL BE INTERNALLY INSULATED WITH 1-1/2" THICK CLOSED CELL FOAM INSULATION. FOR INTERNALLY INSULATED DUCTWORK, SIZES SHOWN ON PLAN SHALL BE DIMENSIONS OF INSIDE DUCT OPENING TO ACCOUNT FOR INSULATION THICKNESS.
- ALL DUCT DIMENSIONS ARE NET FREE AREA. INSULATION THICKNESS OF DUCTS SHALL BE CONSIDERED SEPARATELY. MAKE ALLOWANCE FOR INSULATION AND SEAMS WHEN VERIFYING CLEARANCES.
- ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED TO MAINTAIN INTEGRITY OF STRUCTURE AND FIRE RATING OF BUILDING ASSEMBLY.
- ALL DUCT PENETRATIONS THROUGH RATED WALLS SHALL HAVE FIRE DAMPERS FOR FIRESTOPPING REQUIREMENTS.
- MOUNT THERMOSTATS AT 4'-0" A.F.F., A MINIMUM OF 8" FROM LIGHT SWITCH.
- ALL WORK SHALL CONFORM TO FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS AS INDICATED BY THE AUTHORITY HAVING JURISDICTION.
- CONTRACTORS SHALL FIELD VERIFY ALL DIMENSIONS. DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT / ENGINEER IN WRITING PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
- UNLESS OTHERWISE SPECIFIED, ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY. MECHANICAL CONTRACTOR SHALL PROVIDE MOST EFFICIENT ROUTING AND COORDINATE WITH OTHER TRADES.
- MECHANICAL CONTRACTOR SHALL PROVIDE COORDINATION SHOP DRAWINGS TO BE APPROVED PRIOR TO COMMENCEMENT OF ANY WORK.
- COORDINATE MECHANICAL WORK AND SCHEDULING WITH ALL OTHER TRADES.

## KEYNOTES

- 4" DRYER EXHAUST DUCT THROUGH EXTERIOR WALL. TERMINATE WITH 4" FAMCO MODEL WVEBA HOODED WALL VENT WITH SCREEN, DAMPER, SPRING & GASKET OR APPROVED EQUAL.
- 5" FLUE UP THROUGH ROOF.
- 6" FLUE UP THROUGH ROOF.
- 6" FRESH AIR INTAKE UP THROUGH ROOF.
- 1/2" REFRIGERANT GAS PIPE AND 1/4" REFRIGERANT LIQUID PIPE.
- 5/8" REFRIGERANT GAS PIPE AND 1/4" REFRIGERANT LIQUID PIPE.
- MOUNT DUCTLESS SPLIT AC UNITS CENTERED ABOVE THE DOORWAY. FOLLOW MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES. ENSURE THERE IS ADEQUATE ROOM FOR MOUNTING OF AUXILIARY DRAIN PAN BENEATH EACH UNIT WITHOUT IMPEDING DOOR SWING.
- 4" INFRARED HEATER EXHAUST DUCT THROUGH ROOF. TERMINATE MINIMUM 24" ABOVE ROOF WITH VENT CAP, STORM COLLAR, AND ADJUSTABLE ROOF FLASHING. PROVIDE CLEAN OUT CAP AT BOTTOM OF TEE FITTING CONNECTION TO HEATER.
- AHU-1 MOUNTED ON EQUIPMENT PLATFORM.
- SUSPEND MAU-1 AND HC-1 5'-5" ABOVE EQUIPMENT PLATFORM FROM STRUCTURE. CONNECTING DIRECTLY TO ROOF DECK IS NOT ACCEPTABLE. COORDINATE INSTALLATION WITH ALL OTHER TRADES. FOLLOW MANUFACTURER'S INSTRUCTIONS AND MAINTAIN ALL MANUFACTURER'S REQUIRED CLEARANCES.
- 7/8" REFRIGERANT SUCTION PIPES TO AHU-1 CU-4.
- 5/8" REFRIGERANT HOT GAS REHEAT AND REFRIGERANT LIQUID PIPES TO AHU-1 CU-4.



1 GARAGE EQUIPMENT PLATFORM  
SCALE: 1/4" = 1'-0"

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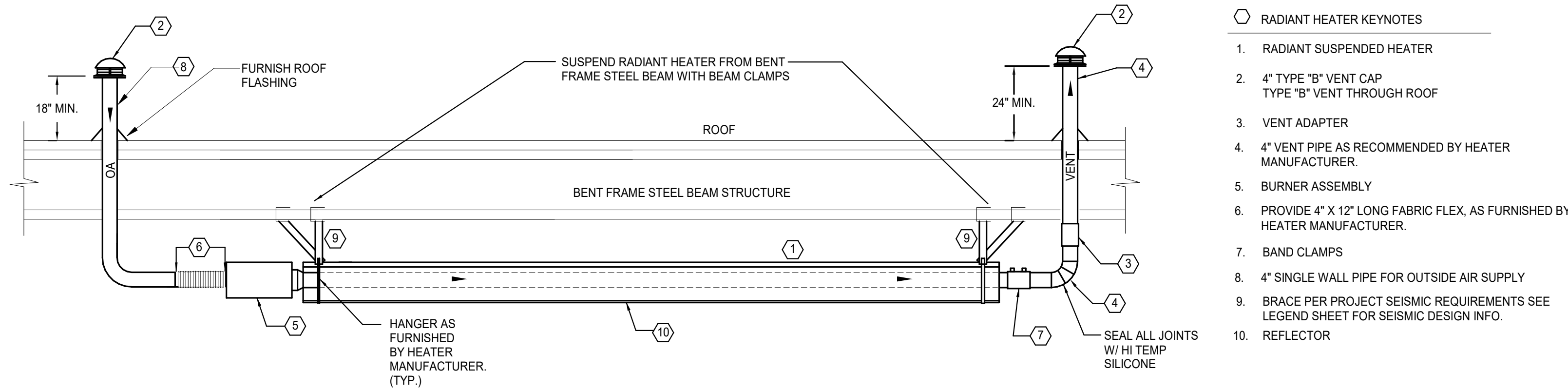
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PROJECT NUMBER: C00C0004A  
DRAWING NAME: M  
DRAWN BY: K. RUAN  
CHECKED BY: M. SPOLOMSKA  
REVIEWED BY: M. SPOLOMSKA

SHEET TITLE:  
HVAC SECTIONS

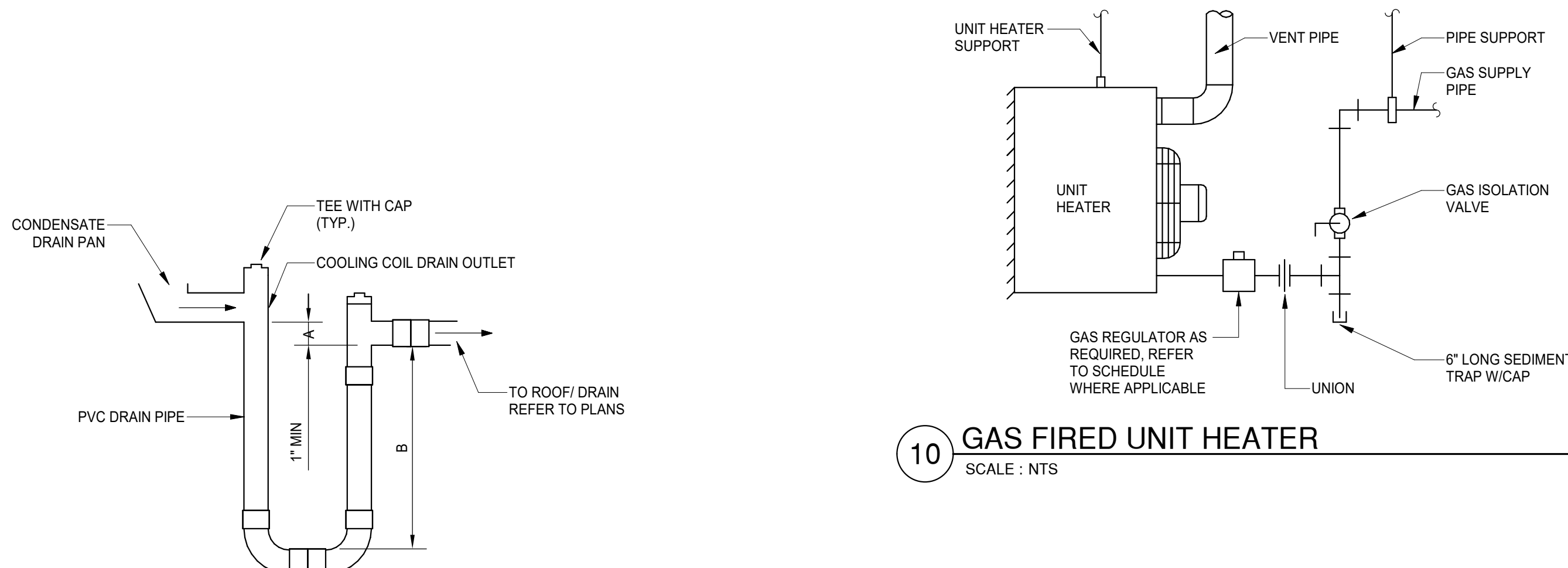
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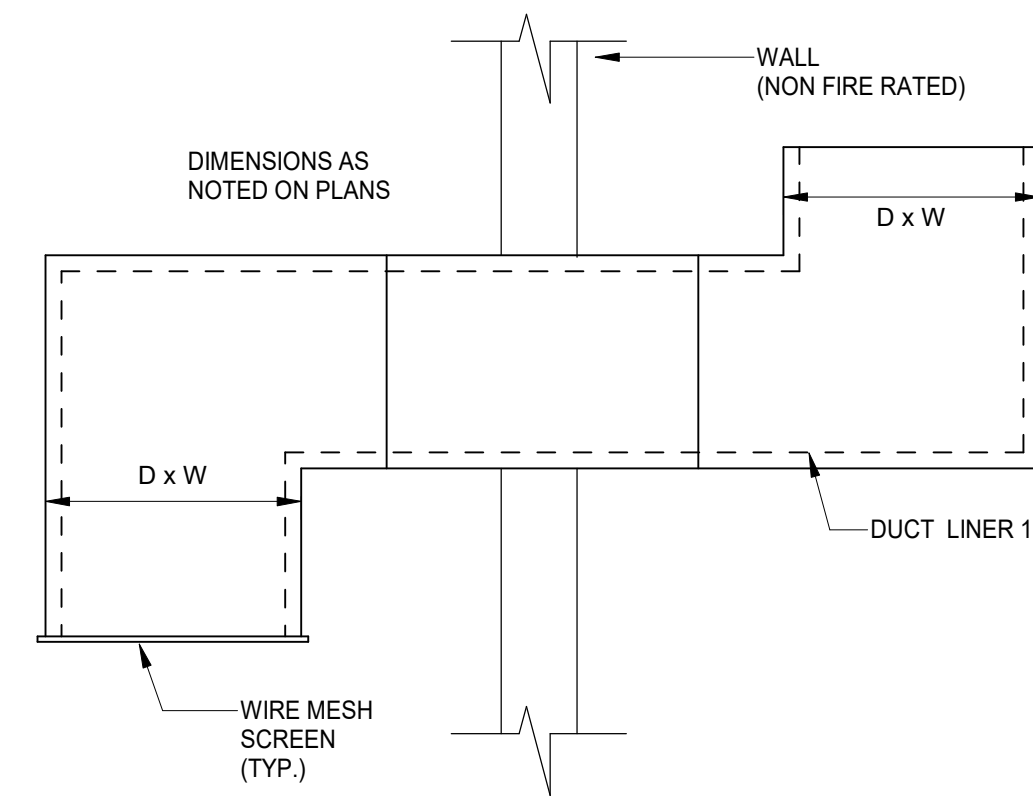


- NOTE:**
1. INSTALL RADIANT HEATERS IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS
  2. MAINTAIN REQUIRED CLEARANCE TO COMBUSTIBLES ALL AROUND
  3. DO NOT INSTALL HEATER DIRECTLY ABOVE OVERHEAD DOOR GLASS IN THE OPEN OR RAISED POSITION

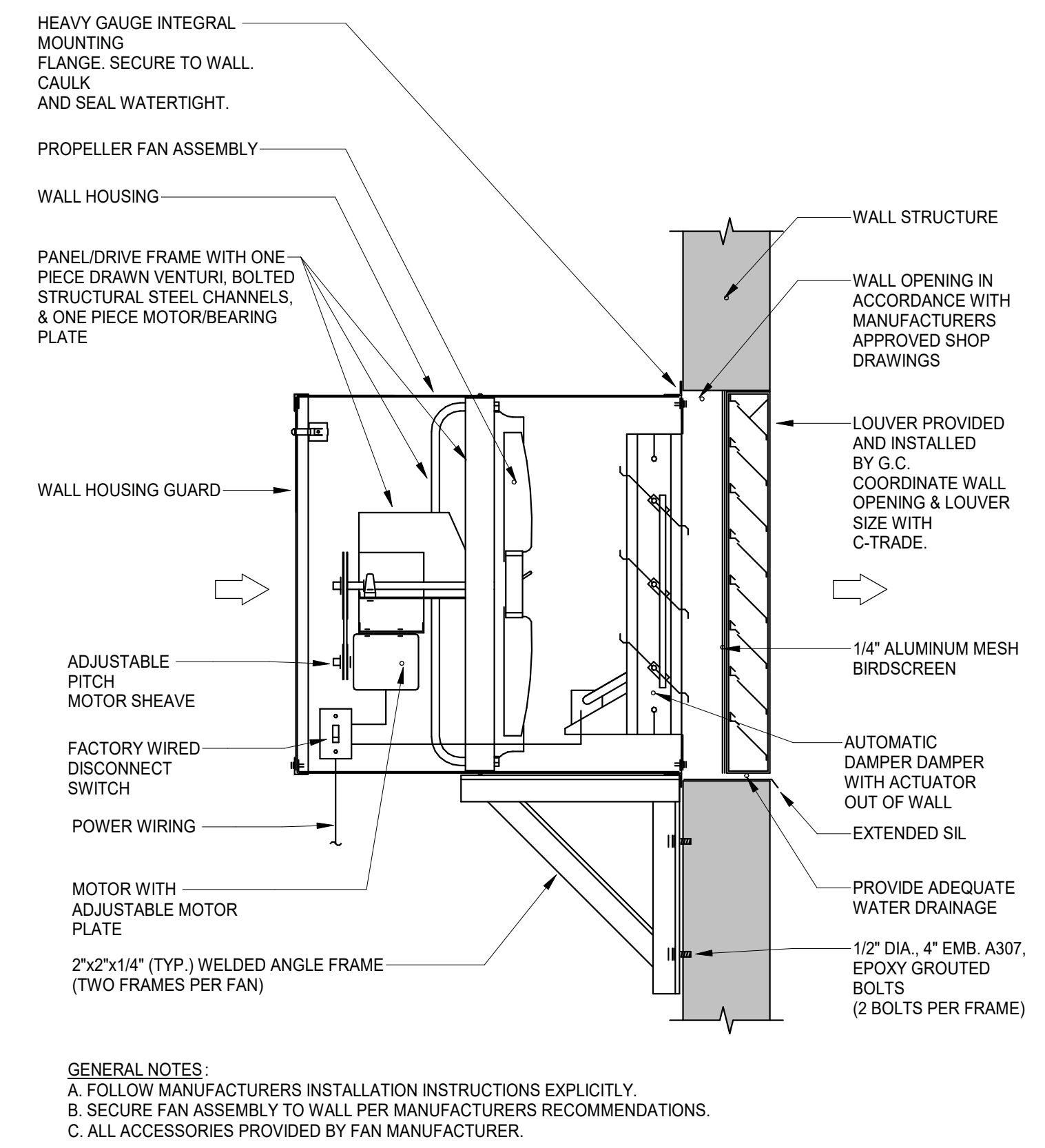
**11 GAS FIRED INFRARED HEATER DETAIL (ALTERNATE #6)**  
SCALE : NTS



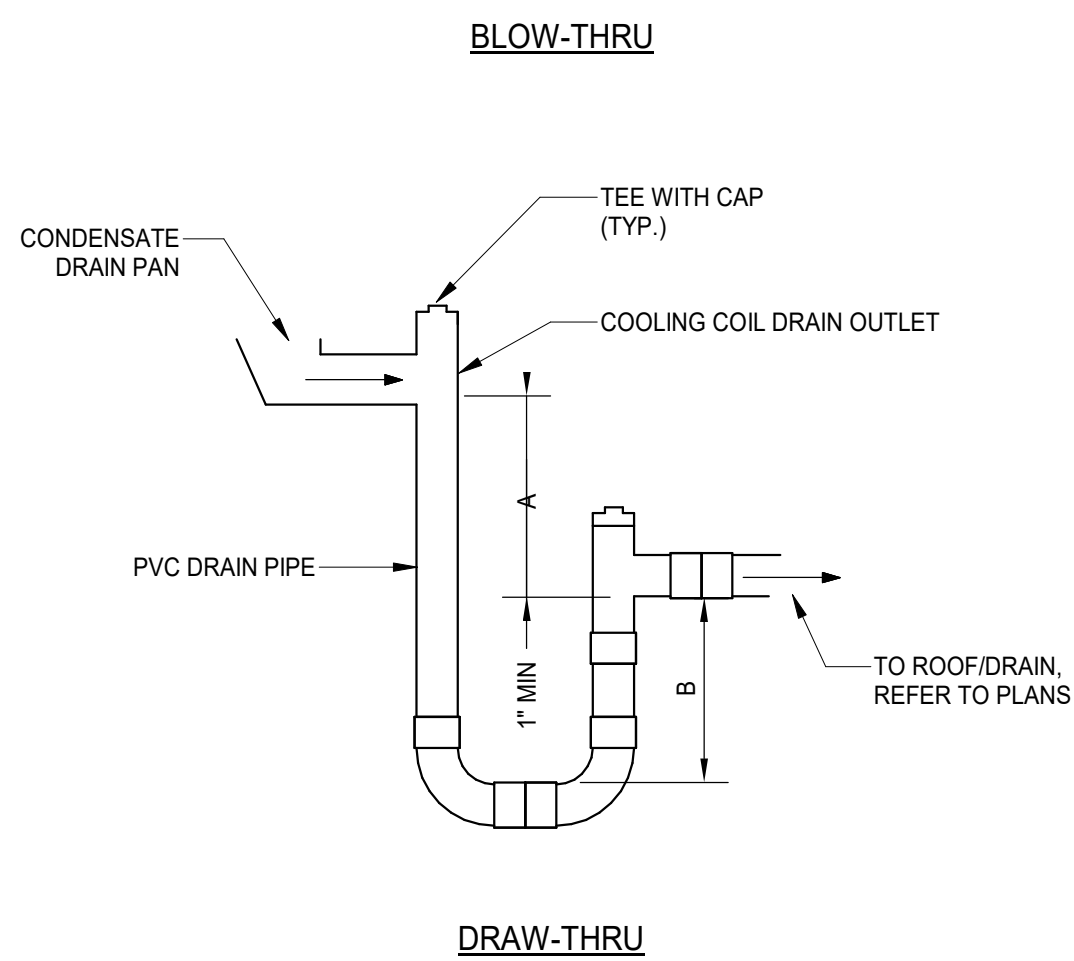
**10 GAS FIRED UNIT HEATER**  
SCALE : NTS



**9 Z TRANSFER DUCTWORK**  
SCALE : NTS



**8 WALL MOUNTED FAN**  
SCALE : NTS

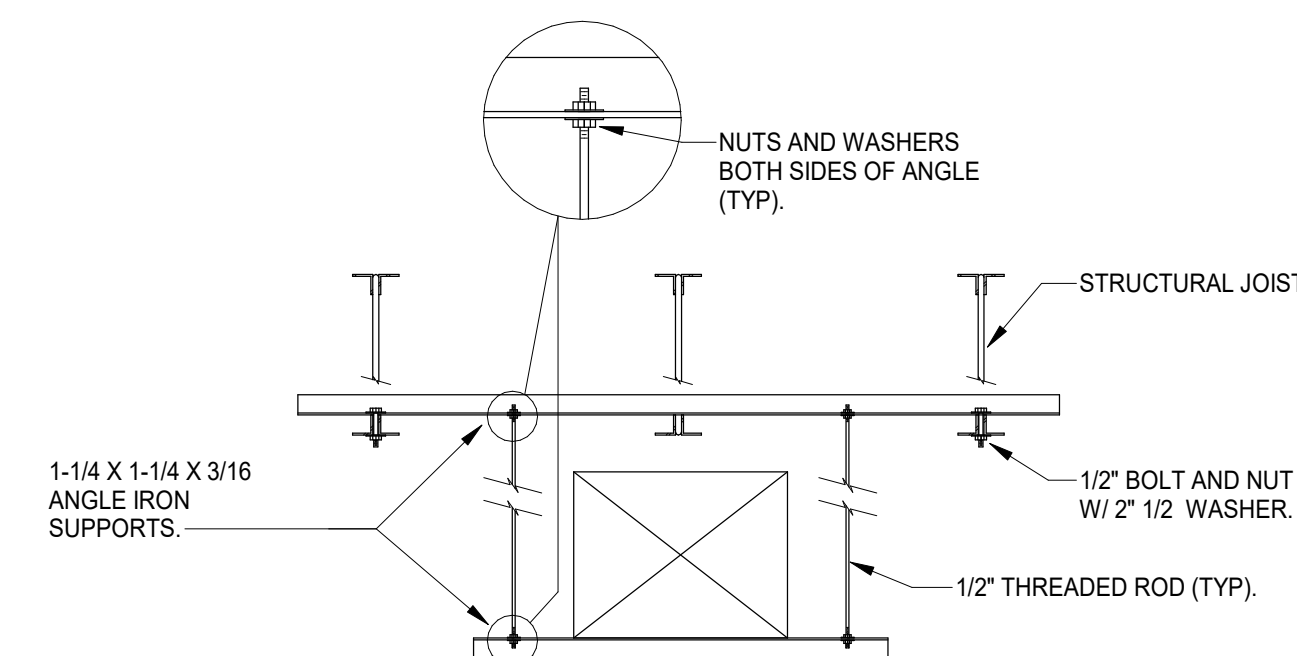


UNIT TYPE	A	B
BLOW THRU	1\"	X
DRAW THRU	X + 1	(X / 2) + 1

WHERE X = STATIC PRESSURE IN PAN.

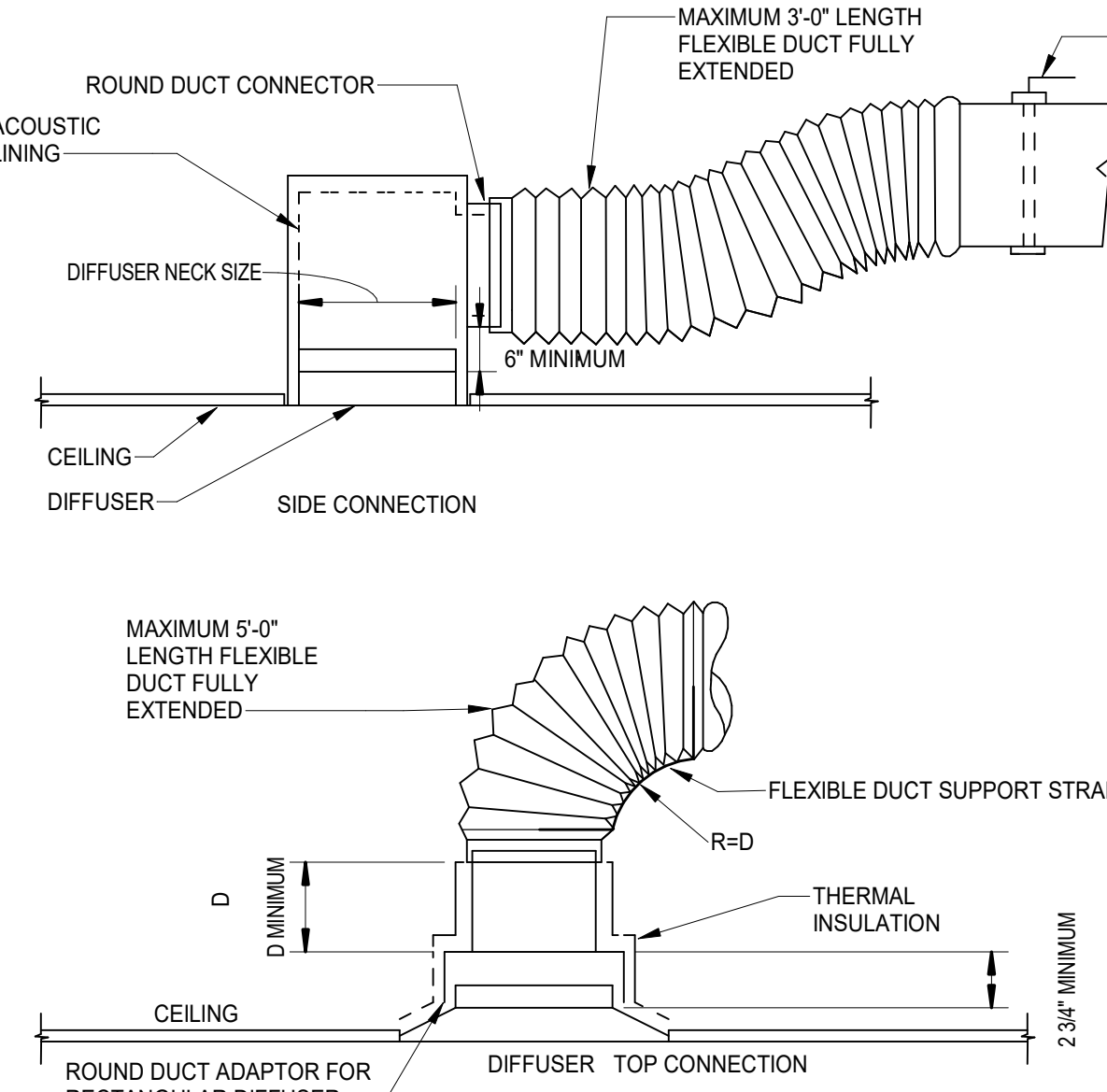
**NOTE TO DESIGNER:**  
FOR EXTERIOR PIPING PAINT FOR UV RESISTANCE OR CONSIDER COPPER

**7 TYPICAL CONDENSATE TRAP DETAIL**  
SCALE : NTS

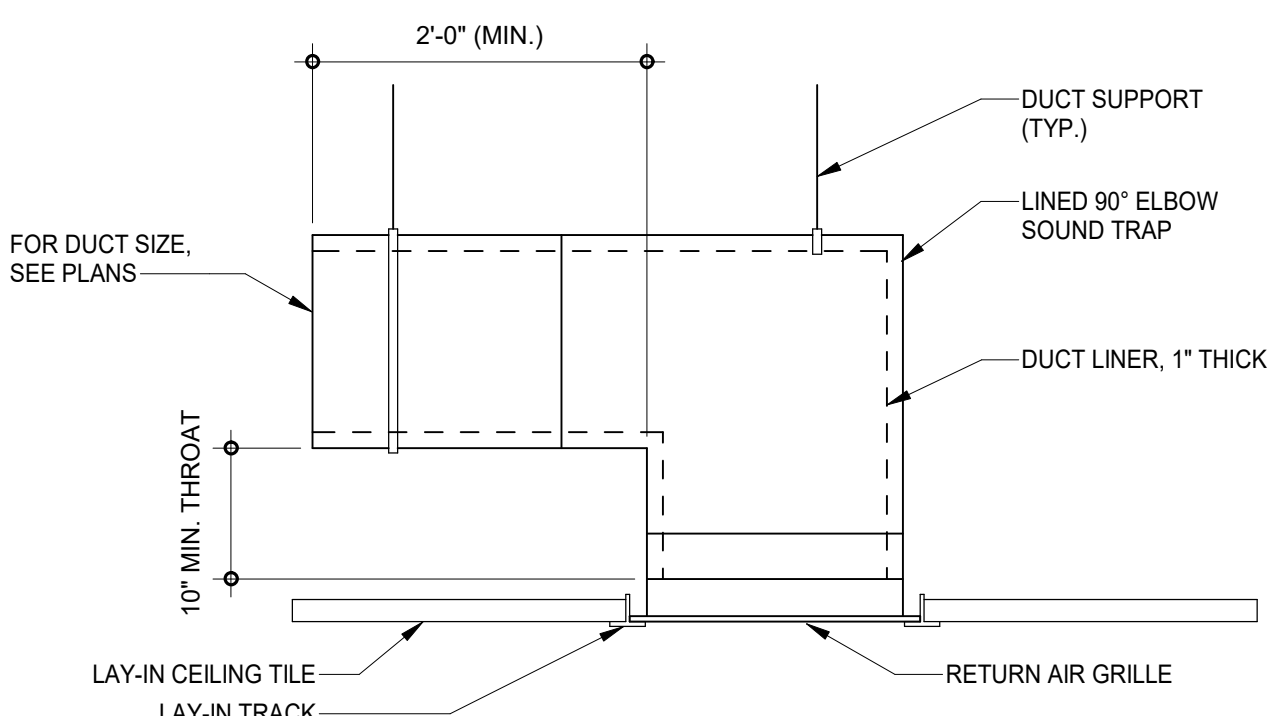
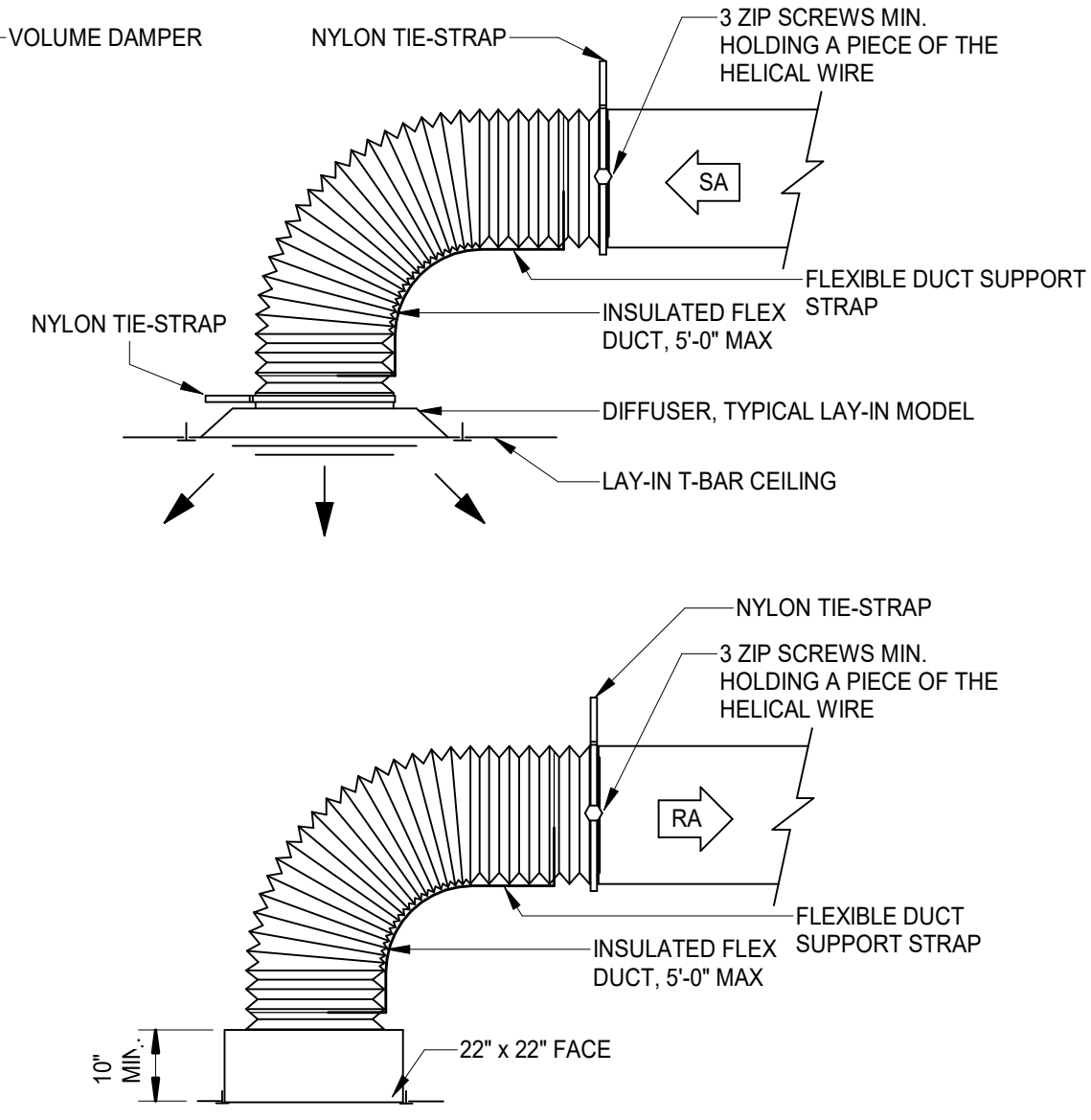


- NOTES:**
1. DUCTS SHALL NOT BE HUNG FROM OR SUPPORTED BY HUNG CEILING.
  2. FOR DUCTS NOT EXCEEDING 2 SQ. FT IN CROSS SECTIONAL AREA, HANGERS SHALL BE OF METAL NOT LESS THAN 1/16\"
  3. FOR DUCTS LARGER THAN 2 SQ. FT IN CROSS SECTIONAL AREA, HANGERS SHALL BE OF METAL NOT LESS THAN 1\"
  4. WHERE CROSS SECTIONAL AREA OF DUCT EXCEEDS 8 SQ. FT HANGERS SHALL BE SPACED NOT MORE THAN 4 FT. ON CENTERS.
  5. DUCT HANGER AND SCREW SHALL BE OF SAME MATERIAL AS DUCT.

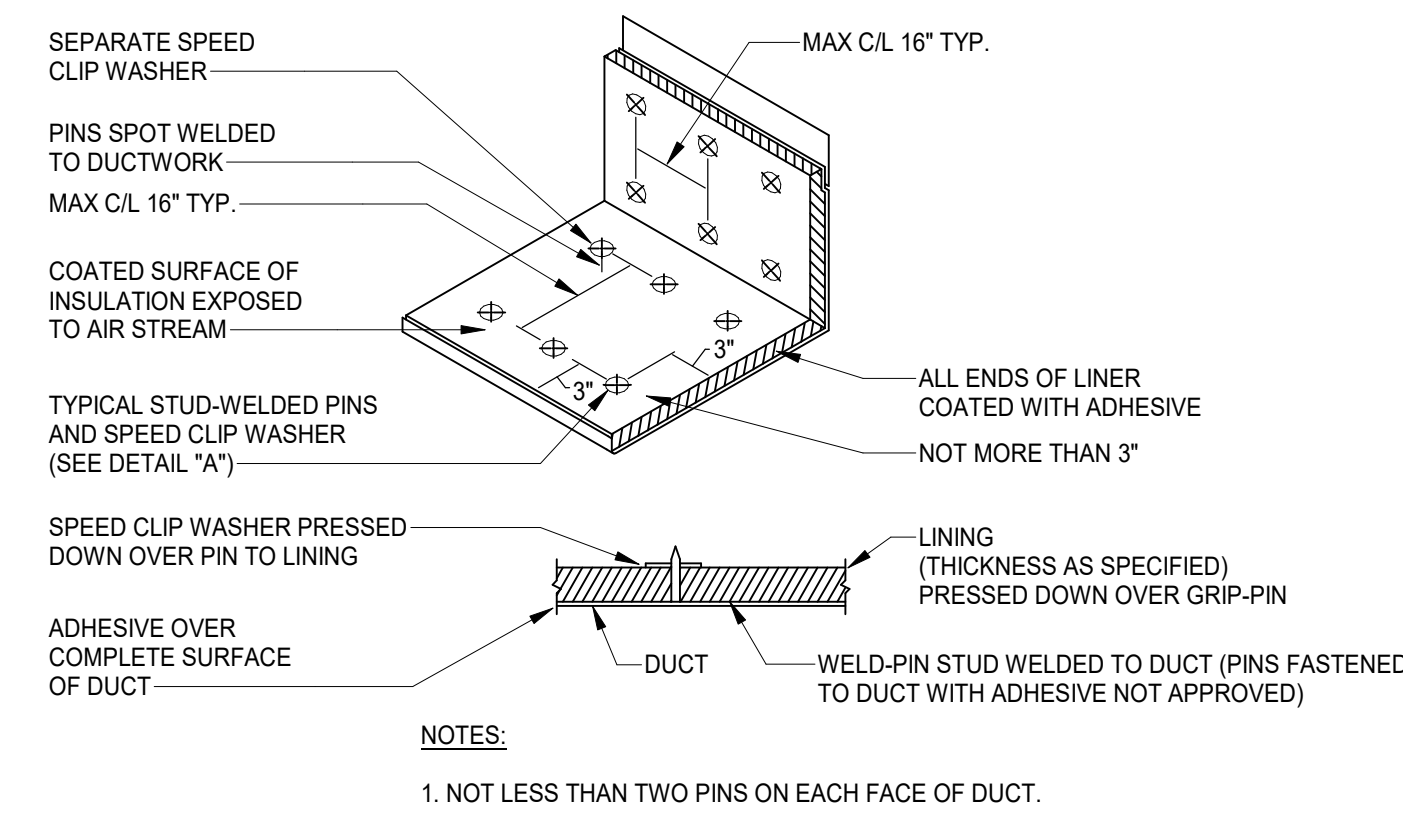
**6 DUCT HANGER**  
SCALE : NTS



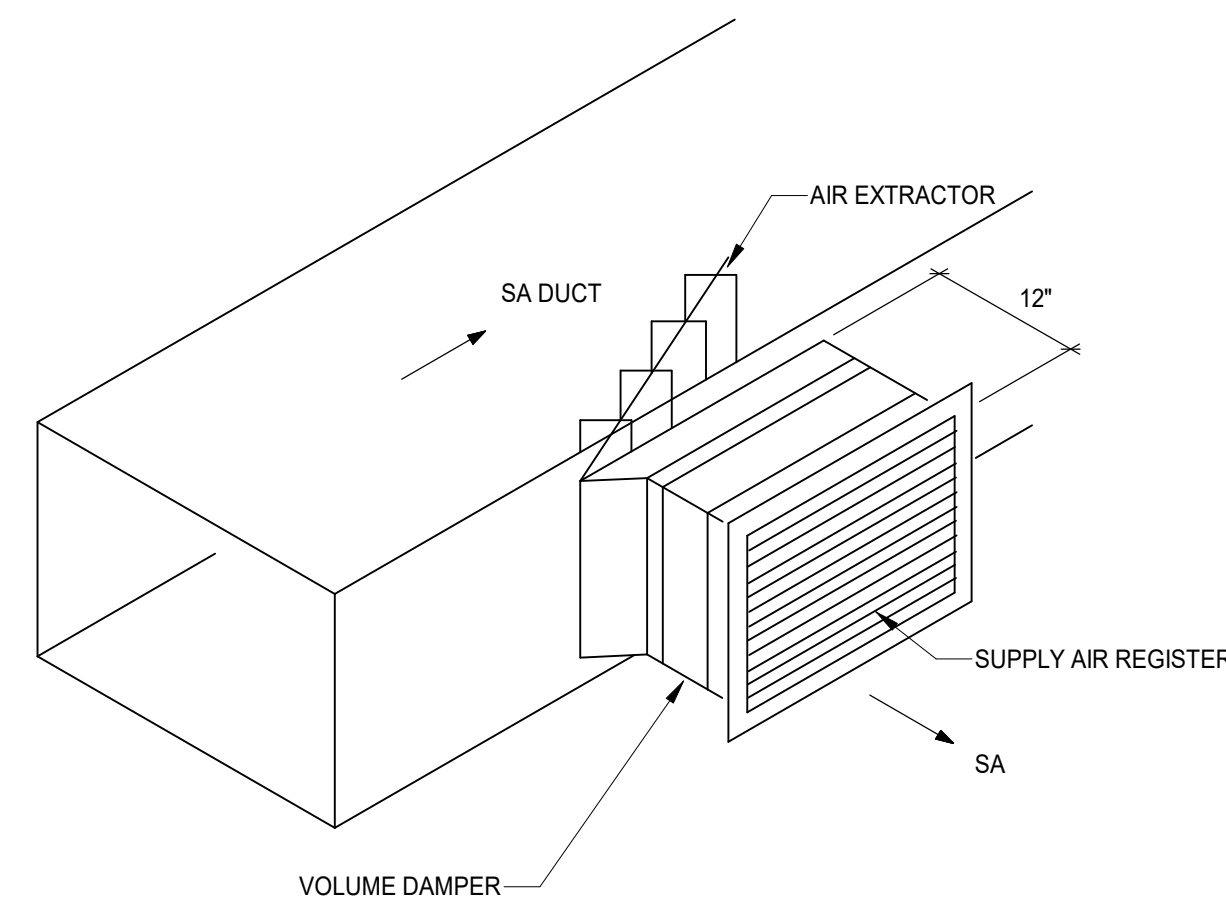
**5 AIR TERMINAL CONNECTION**  
SCALE : NTS



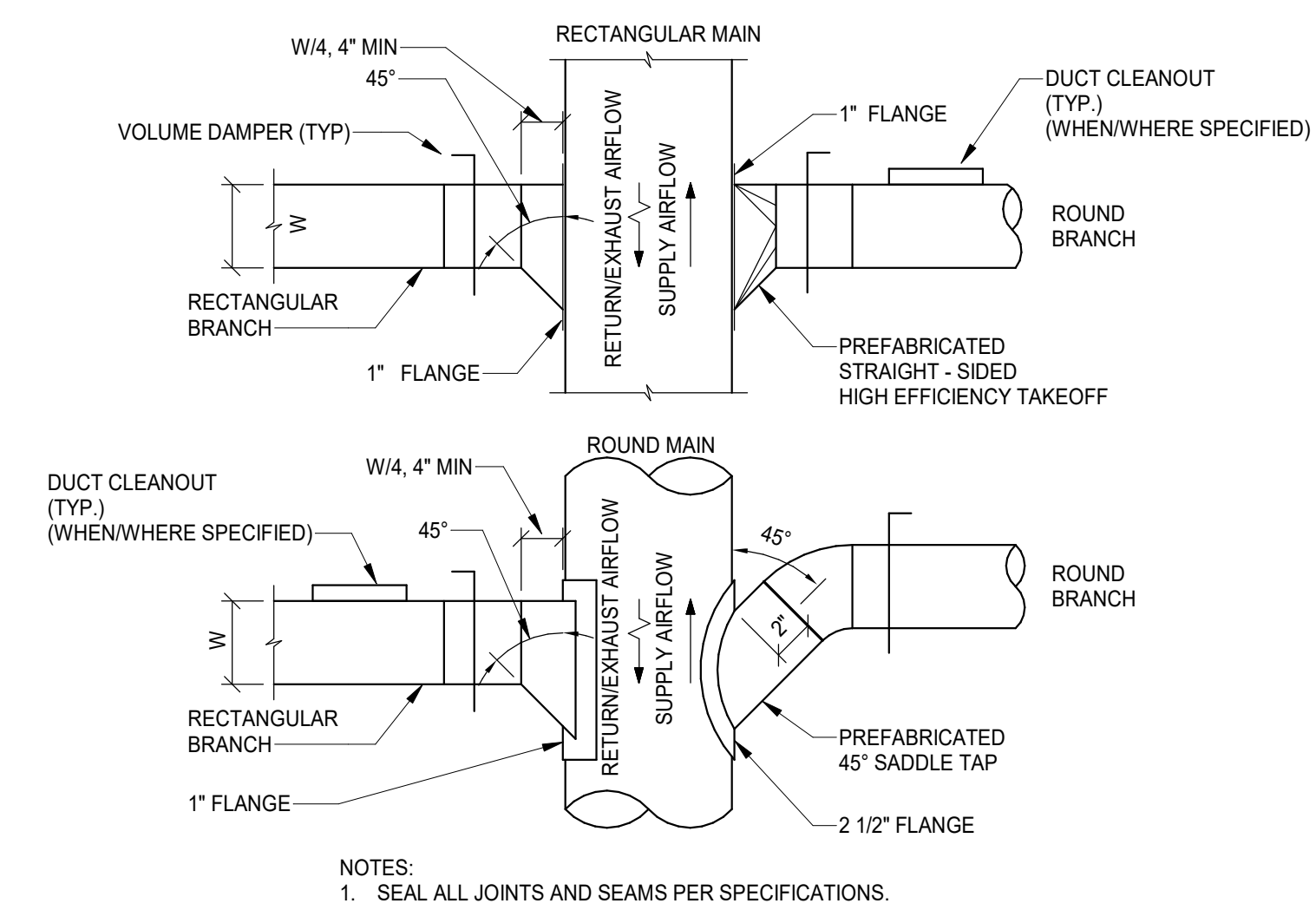
**4 RETURN GRILLE W/ SOUND/LIGHT TRAP**  
SCALE : NTS



**3 SOUND LINING INSTALLATION**  
SCALE : NTS



**2 DUCT MOUNTED SUPPLY AIR REGISTER**  
SCALE : NTS



**1 DUCT TAKEOFFS**  
SCALE : NTS

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PROJECT NUMBER: C00C0004A  
DRAWING NAME: M SHOLOMSKID

SHEET TITLE: MECHANICAL DETAILS

SHEET NUMBER: M500

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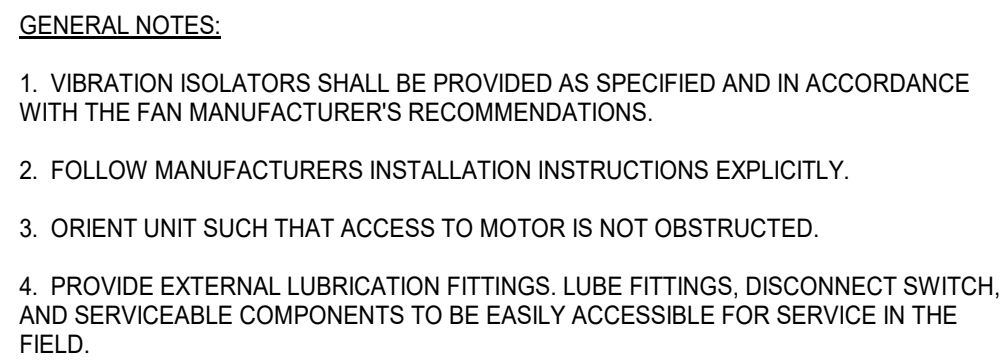
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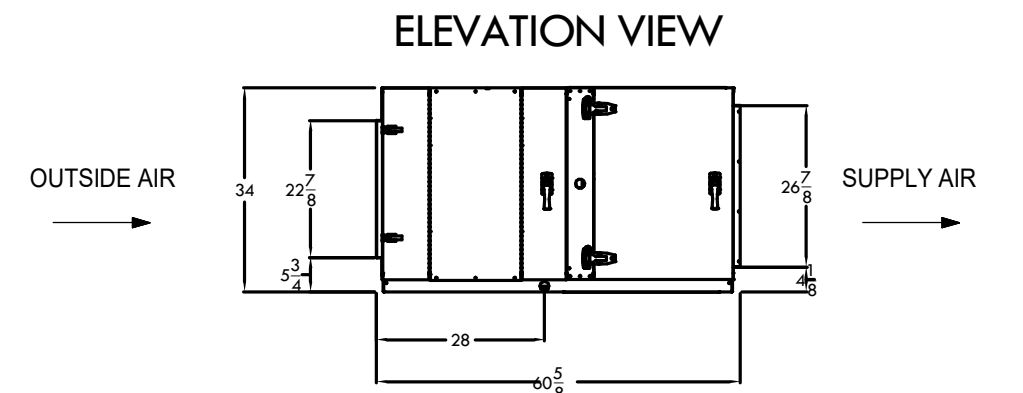
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00004A			M. SHOLOMSKA

## MECHANICAL DETAILS

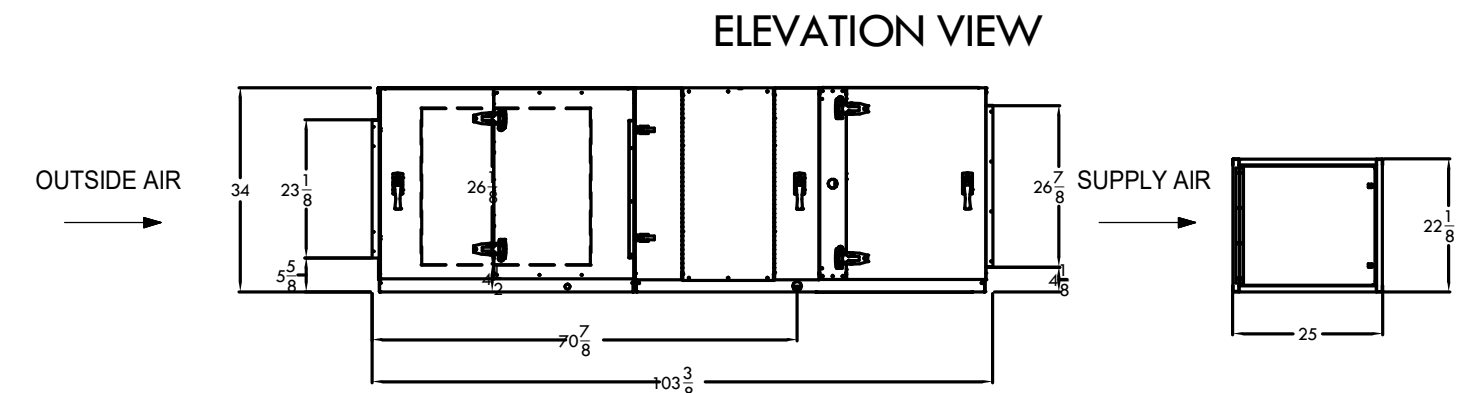
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### 3 INLINE FAN EF-3 DETAIL



## 2 MAU-1 PLAN AND SECTION DETAILS



## 1 AHU-1 PLAN AND SECTION DETAILS

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LOUVER SCHEDULE											
TAG	SERIES	LOCATION	TYPE	BASE OF DESIGN MANUFACTURER	MODEL	AIR FLOW (CFM)	DIMENSIONS (IN)		PRESSURE DROP (INWG)	FREE AREA (SF)	NOTES
							W	H			
L-1	MAU-1	GARAGE	INTAKE	GREENHECK	ESD-435	8066	74	42	0.09	11.7	1,2,3,4,5
L-2	AHU-1	GARAGE	INTAKE	GREENHECK	ESD-435	5010	74	42	0.04	11.7	1,2,3,4,5
<b>NOTES:</b> 1. PROVIDE DRAINABLE BLADE. 2. PROVIDE 1" FLANGED FRAME, FRONT. 3. PROVIDE RESECT SCREEN. 4. COORDINATE COLOR WITH ARCHITECTURAL. 5. FURNISH LOUVERS TO ARCHITECTURAL FOR INSTALLATION.											

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE										
ID	DESCRIPTION	MANUFACTURER	MODEL	QTY	MATERIAL	FINISH	SYSTEM	OPTIONS		NOTES
								DAMPER	FILTER	
								DESCRIPTION	DESCRIPTION	
EG-1	LOUVERED GRILLE	Titus	350FL	4	ALUMINUM	WHITE ENAMEL	E/A	---	---	
RG-1	LOUVERED GRILLE	Titus	350RL	10	STEEL	WHITE ENAMEL	R/A	---	---	
SD-1	PLAQUE FACE DIFFUSER	Titus	OMNI	27	STEEL	WHITE ENAMEL	S/A	---	---	
SD-2	LOUVERED DOUBLE DEFLECTION GRILLE	Titus	300RL	14	STEEL	WHITE ENAMEL	S/A	---	---	

SPLIT SYSTEM SCHEDULE																			
AIR HANDLING UNIT							OUTDOOR CONDENSING UNIT							BASIS OF DESIGN MANUFACTURER	REFRIGERANT TYPE	NOTES			
TAG	SERVES RM	MODEL	COOLING CAPACITY (TONS)	HEATING CAPACITY (BTUH)	FAN		POWER SUPPLY (V/PH/Hz)	WEIGHT (LBS)	TAG	COOLING CAPACITY (TONS)	MODEL	COMPRESSOR					WEIGHT (LBS)		
					AIR FLOW (CFM)	MOTOR						MIN CR CAPACITY	EER RATIO					POWER SUPPLY (V/PH/Hz)	
						POWER (HP)													CURRENT (FLA)
AC-1	COMM.	PKA-A19H47	1.5	19,000	425	0.5	15	208/160	37	CU-1	1.5	PLU-A18M42	11	9.9	208/160	125	MITSUBISHI	454B	12,3,4
AC-2	ELECTRICAL	PKA-A24H47	2.0	26,000	775	0.5	25	208/160	58	CU-2	2.0	PLU-A24M42	19	12.2	208/160	192	MITSUBISHI	454B	12,3,4
AC-3	MEDICAL	PKA-A30H47	3.0	38,000	920	0.5	30	208/160	58	CU-3	3.0	PLU-A30M42	25	10.8	208/160	268	MITSUBISHI	454B	12,3,4
NOTES: 1. RATING CONDITIONS: (COOLING) - INDOOR: 80F DB, 67F WB, OUTDOOR: 95F DB, 75F WB (HEATING) - INDOOR: 10F DB, 80F WB, OUTDOOR: 47F DB, 45F WB 2. PROVIDE ALL WALL MOUNTED AIR CONDITIONERS WITH CONDENSATE PUMP. 3. PROVIDE ALL SPLIT SYSTEM CONDENSING UNITS WITH LOW AMBIENT KIT FOR OPERATION DOWN TO - 20 DEGREES F. 4. PROVIDE 18" TALL MODEL MISOS OR APPROVED EQUAL STAND FOR MOUNTING CONDENSING UNIT.																			

AIR-COOLED CONDENSING UNIT SCHEDULE																						
TAG	SERVES	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	CAPACITY (MBH)	COOLING AMBIENT DESIGN TEMP		DEHUMIDIFICATION DESIGN TEMP		AIR FLOW (CFM)	FAN				COMPRESSOR			REFRIGERANT		POWER SUPPLY (V/PH/Hz)	NOTES	
						DB (F)	WB (F)	DB (F)	WB (F)		#	MOTOR (HP)	FULL LOAD CURRENT (AMP)	EFF (%)	#	FULL LOAD CURRENT (AMP)	LOCKED ROTOR CURRENT (AMP)	EFF (%)	TYPE			CHARGE (LB)
CU-4	AHU-1	EQUIPMENT PAD	AACN	CFA-016-C-A-3-LJ-0N	190.9	96.9	73.9	81.1	75.9	5510	2	8	8.3	92.23	2		12.8	R-454A	16.5	480/3/60	1,2	
<b>NOTES:</b> 1. EQUIPMENT SHALL BE FULLY COMPLIANT WITH 2018 IECC ENERGY CODE REQUIREMENTS. 2. PROVIDE ELECTRICAL DISCONNECT. COORDINATE WITH ELECTRICAL CONTRACTOR.																						

AIR HANDLING UNIT SCHEDULE																						
TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	OUTSIDE AIR (CFM)	HEATING SECTION		COOLING COIL				FAN					POWER SUPPLY (VPH/Hz)	WEIGHT (AWG) (CU) (LBS)	NOTES				
					CAPACITY (MBH)	AIR TEMP (F)		CAPACITY (MBH)	REFRIGERANT	EVAPORATOR AIR TEMP (F)		#	TOTAL AIRFLOW (CFM)	ESP (INWG)	TSP (INWG)				FAN SPEED (RPM)	MOTOR HP		
						ENTERING	LEAVING			ENTERING	LEAVING											
																					DB	WB
AHU-1	EQUIPMENT PLATFORM	AACN	CFA-016-C-A-3-LJ-0N	875	148.3	62.8	85	190.8	R-454B	75.7	64	55.4	53.1	2	5510	1.3	4.35	2086	3.35	480/3/60	938 / 1660	1,2,3,4,5,6,7,8,9
<b>NOTES:</b> 1. EXTERNAL DUCT GAS-FIRED FURNACE INSTALLED AFTER SUPPLY DISCHARGE 2. SEPARATE CONDENSING UNIT 3. FULL AIR SIZE ECONOMIZER 4. VARIABLE FREQUENCY DRIVES FOR SUPPLY FANS 5. BAROMETRIC RELIEF 6. MEV-8 AND MEV-14 TRACTION 7. FANS SELECTED FOR LOADED FILTER CONDITION 8. CONDENSING UNIT SIZED FOR 95F AMBIENT 9. PROVIDE UNIT THAT COMPLIES WITH IECC 2018 ENERGY CODE REQUIREMENTS																						

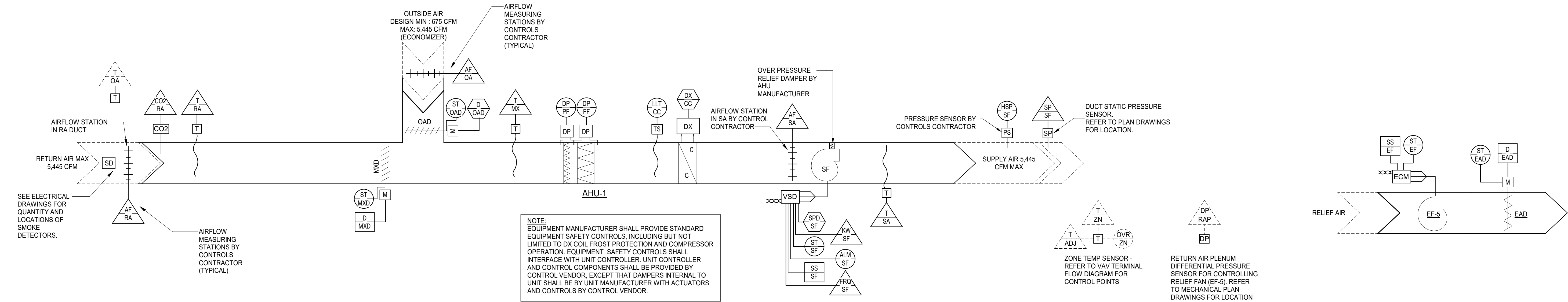
GAS-FIRED FURNACE SCHEDULE															
TAG	SERVES	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	CAPACITY (BTUH)		EFF (%)	SUPPLY GAS PRESS (INWG)	FAN				POWER SUPPLY (VPHHZ)	WEIGHT (LBS)	NOTES
					INPUT	OUTPUT			AIRFLOW (CFM)	ESP (INWG)	CURRENT (AMP)	EFF (%)			
HC-1	AHU-1	EQUIPMENT PLATFORM	HEATCO	HDS55A-B-ST-42-01	680,148	555,206	81	5	8355	0.18	5	81	120/160	1125	

MAKE-UP AIR UNIT SCHEDULE																							
TAG	SERVES	LOCATION	TYPE	BASIS OF DESIGN MANUFACTURER	MODEL	HEATING SECTION					FAN										POWER SUPPLY (V/PH/Hz)	WEIGHT (LBS)	NOTES
						CAPACITY (BTU/H)		EFF (%)	AIR TEMP (F)		#	AIRFLOW (CFM)	ESP (INWG)	TSP (INWG)	FAN SPEED (RPM)	MOTOR							
						INPUT	OUTPUT		ENTERING	LEAVING						POWER (HP)	SPEED (RPM)	CURRENT (AMP)	EFF (%)				
																				MOTOR			
MAU-1	GARAGE	EQUIPMENT PLATFORM	DX-GAS	AMON	H3-09B-3-0-0000-000	NOTE 4	NOTE 4	NOTE 4	18.6	70.8	2	8895	1.5	3.41	1868	5	3.43	1780	15	87.36	480/3/60	1125	1,2,3,4,5,6
NOTES: 1. MEV-8 AND MEV-14 FILTRATION 2. 1" 30" DIRTY FILTER MID 3. FANS SELECTED FOR LOADED FILTER CONDITION 4. VARIABLE FREQUENCY DRIVES FOR SUPPLY FANS 5. PROVIDE UNIT THAT COMPLES WITH IECC 2018 ENERGY CODE REQUIREMENTS 6. REFER TO GAS-FIRED FURNACE SCHEDULE FOR HC-1.																							

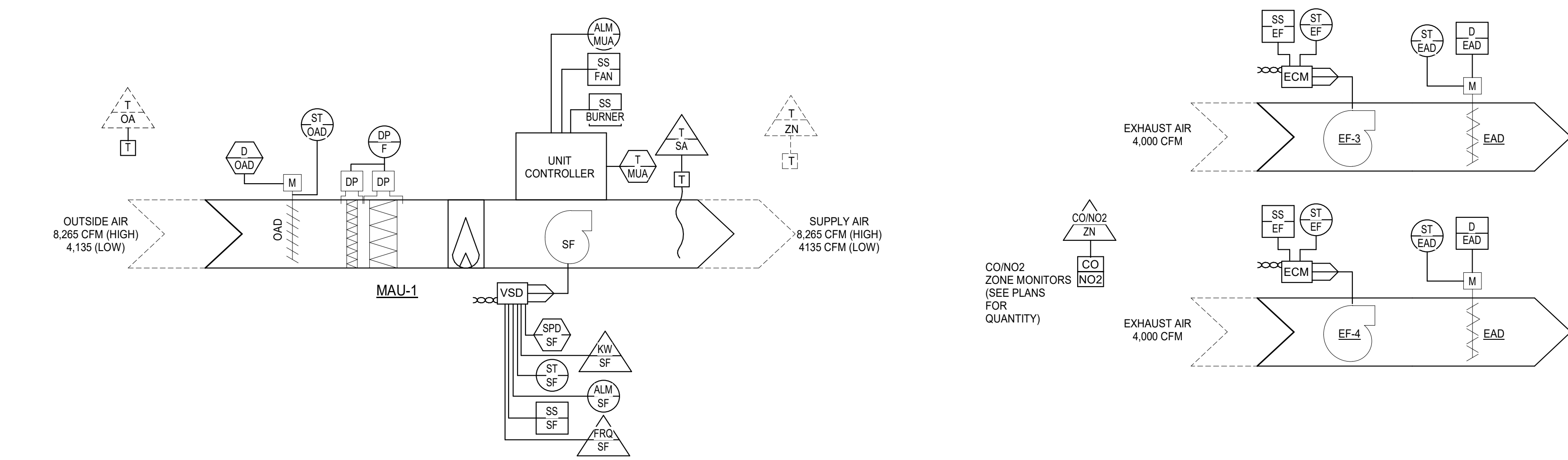
VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE																	
TAG	SERVES	TYPE	BASIS OF DESIGN MANUFACTURER	MODEL	SYSTEM	INLET SIZE (IN)	AIRFLOW (CFM)				ELECTRIC HEAT COIL					MAX DISCHARGE SOUND DATA (NC)	NOTES
							TOTAL RANGE	DESIGN MAX	DESIGN MIN	MIN REQ'D SP (INWC)	POWER (KW)	EAT (F)	MAX LAT (F)	STEPS	VOLTS/PH/Hz		
VAV-1	OFFICE, SMALL CONF.	SINGLE DUCT	TITUS	DESV	AHU-1	6	0-500	370	115	0.02	3.7	57	88.8	S	480/3/60	24	1,2,3
VAV-2	OFFICE	SINGLE DUCT	TITUS	DESV	AHU-1	7	0-650	460	140	0.02	4.2	57	85.4	S	480/3/60	25	1,2,3
VAV-3	LOBBY, COPY RM.	SINGLE DUCT	TITUS	DESV	AHU-1	6	0-500	260	80	0.09	1.5	57	75.3	S	480/3/60	21	1,2,3
VAV-4	LARGE CONF.	SINGLE DUCT	TITUS	DESV	AHU-1	9	0-1050	800	240	0.03	5.7	57	79.5	S	480/3/60	28	1,2,3
VAV-5	BREAK RM., WOMEN'S LOCKER RM.	SINGLE DUCT	TITUS	DESV	AHU-1	8	0-900	760	230	0.03	6.1	57	82.2	S	480/3/60	28	1,2,3
VAV-6	MEN'S LOCKER RM.	SINGLE DUCT	TITUS	DESV	AHU-1	7	0-650	420	130	0.08	4.4	57	89.7	S	480/3/60	25	1,2,3
VAV-7	OFFICE	SINGLE DUCT	TITUS	DESV	AHU-1	7	0-650	420	130	0.01	3.0	57	79.1	S	480/3/60	25	1,2,3
VAV-8	OFFICE	SINGLE DUCT	TITUS	DESV	AHU-1	7	0-650	550	165	0.02	4.4	57	82.4	S	480/3/60	26	1,2,3
VAV-9	OPEN OFFICE AREA	SINGLE DUCT	TITUS	DESV	AHU-1	8	0-900	660	200	0.02	6.8	57	89.3	S	480/3/60	29	1,2,3
VAV-10	MUD ROOM	SINGLE DUCT	TITUS	DESV	AHU-1	6	0-500	255	80	0.02	2.6	57	89.7	S	480/3/60	21	1,2,3
VAV-11	STORAGE	SINGLE DUCT	TITUS	DESV	AHU-1	7	0-650	490	150	0.02	5.1	57	89.9	S	480/3/60	25	1,2,3
NOTES:																	
1. UNIT IS EXISTING, NOT FOR PURCHASE. PERFORMANCE SHOWN FOR COMMISSIONING, TESTING, AND BALANCING PURPOSES ONLY.																	
2. CONTROLS CONTRACTOR TO PROVIDE 24V WIRING TO CONTROLLER AND ACTUATOR.																	
3. IN THE 'STEPS' COLUMN, CODE 'S' DENOTES A MODULATING SCR HEATER.																	

GAS-FIRED UNIT HEATER SCHEDULE																			
TAG	SERVES	LOCATION	BASIS OF DESIGN MANUFACTURER	MODEL	MOUNTING HEIGHT (AFF (FT))	CAPACITY (BTUH)			COMB EFF (%)	VENT SIZE (IN)	FAN						POWER SUPPLY (V/PH/Hz)	WEIGHT (LBS)	NOTES
						INPUT	OUTPUT (HIGH FIRE RATE)				AIRFLOW (CFM)	MOTOR							
												POWER (HP)		SPEED (RPM)	CURRENT (AMP)				
UH-1	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-2	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-3	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-4	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-5	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-6	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-7	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
UH-8	GARAGE	GARAGE	REZNOR	UDXC	12	45,000	37,350	83	4	629	0.03	0.06	1500	2.4	115/160	77.5	1		
NOTES: 1. SET DOWNWARD LOUVER ANGLE TO 55 DEGREES.																			

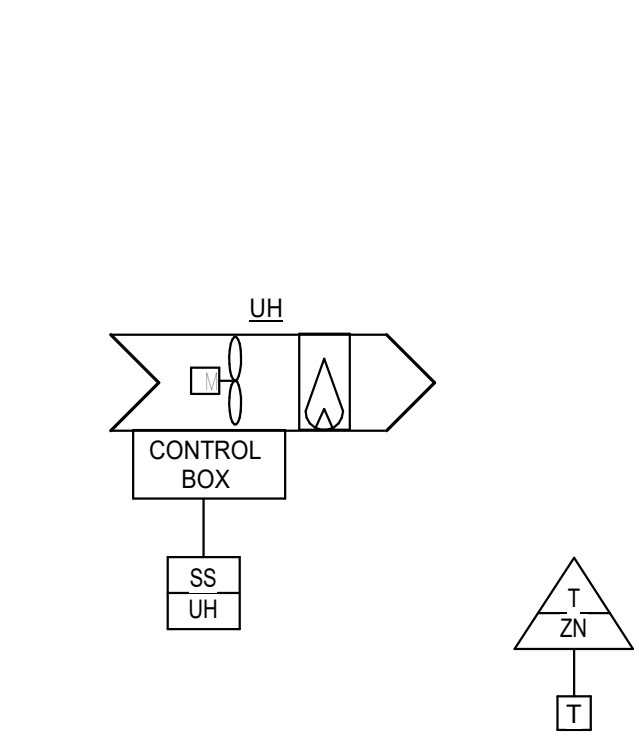




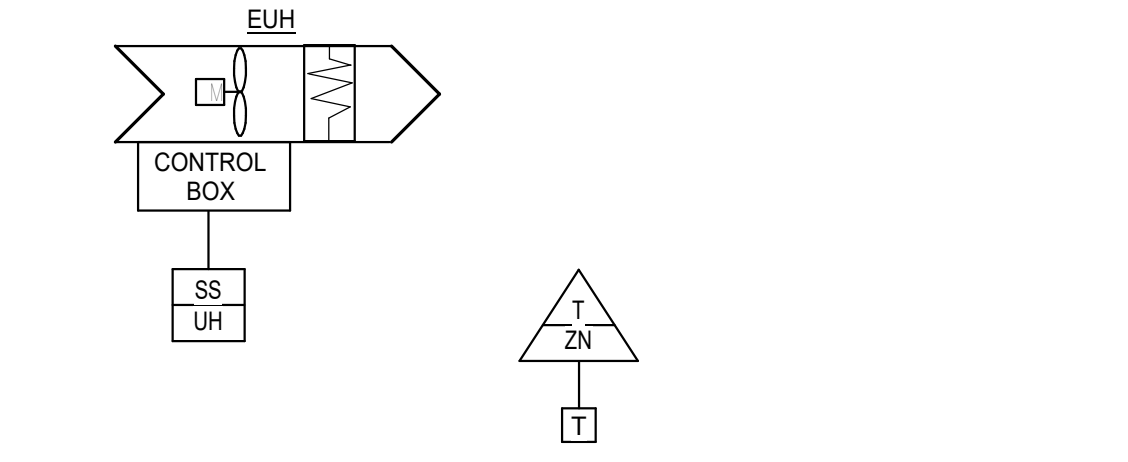
1 AHU-1 ADMIN AIR HANDLER CONTROL DIAGRAM



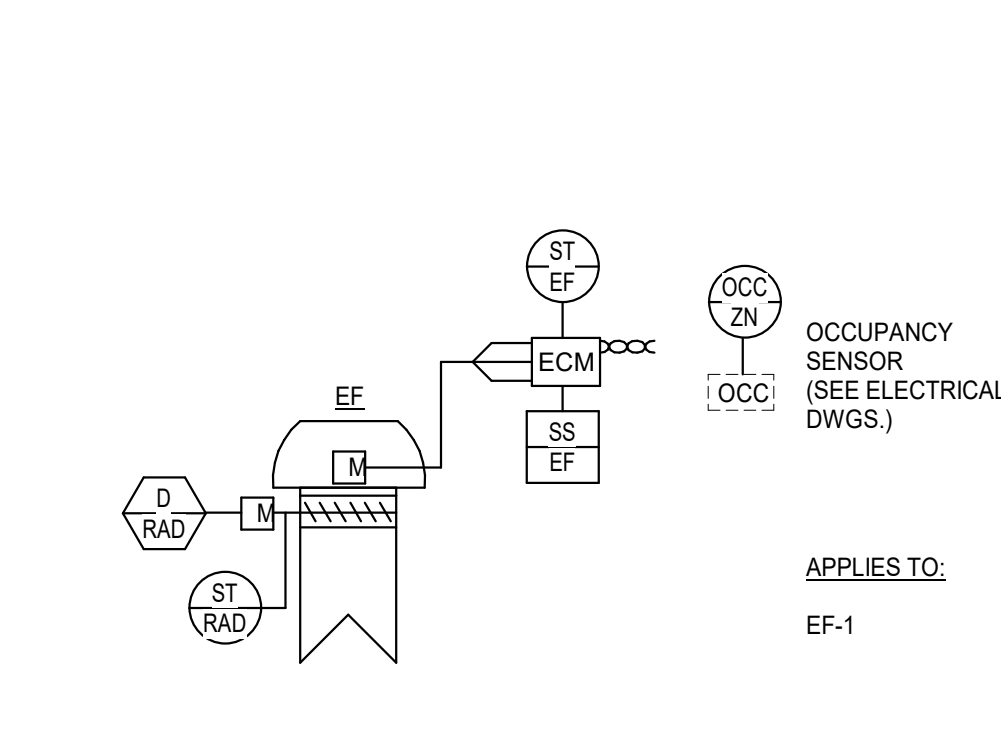
2 MAU-1 MAKE-UP AIR HANDLER AND EMERGENCY EXHAUST FLOW DIAGRAM



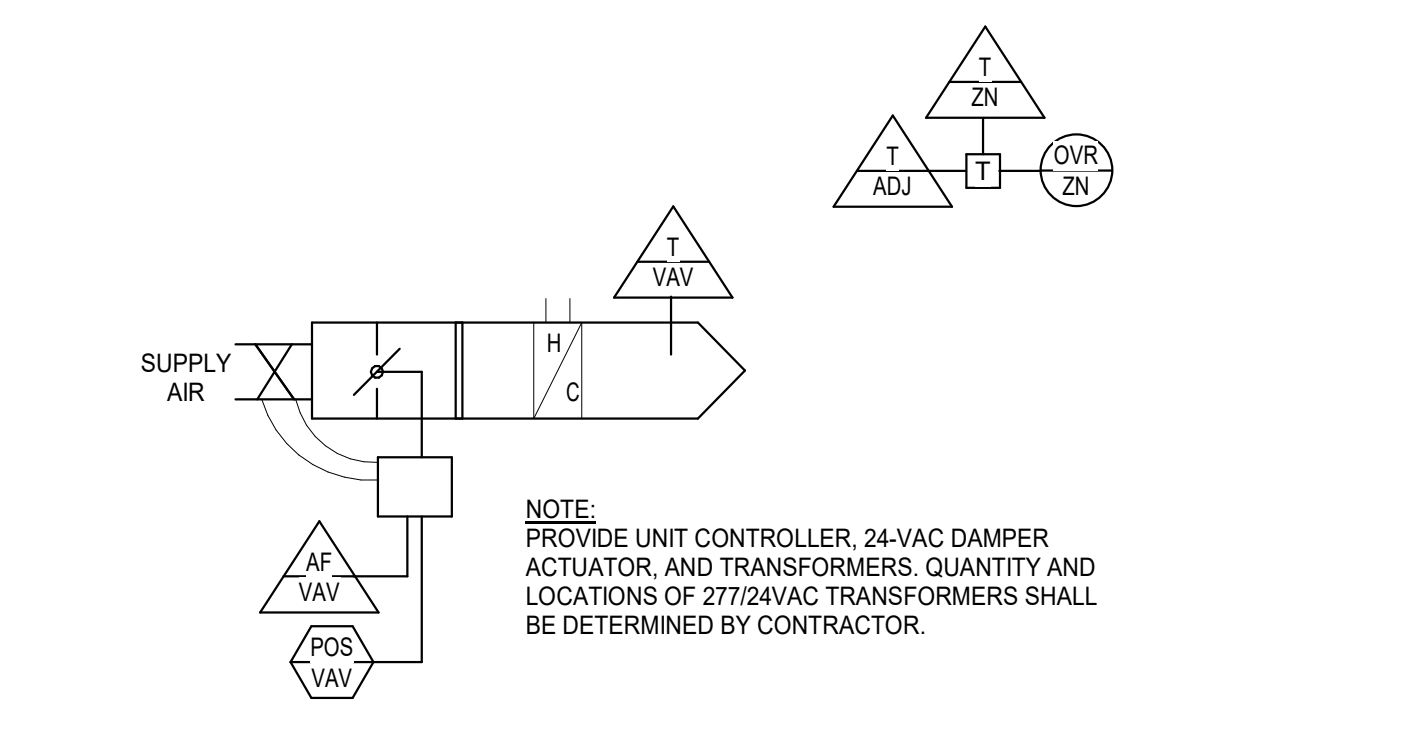
3 GAS FIRED UNIT HEATER CONTROL DIAGRAM



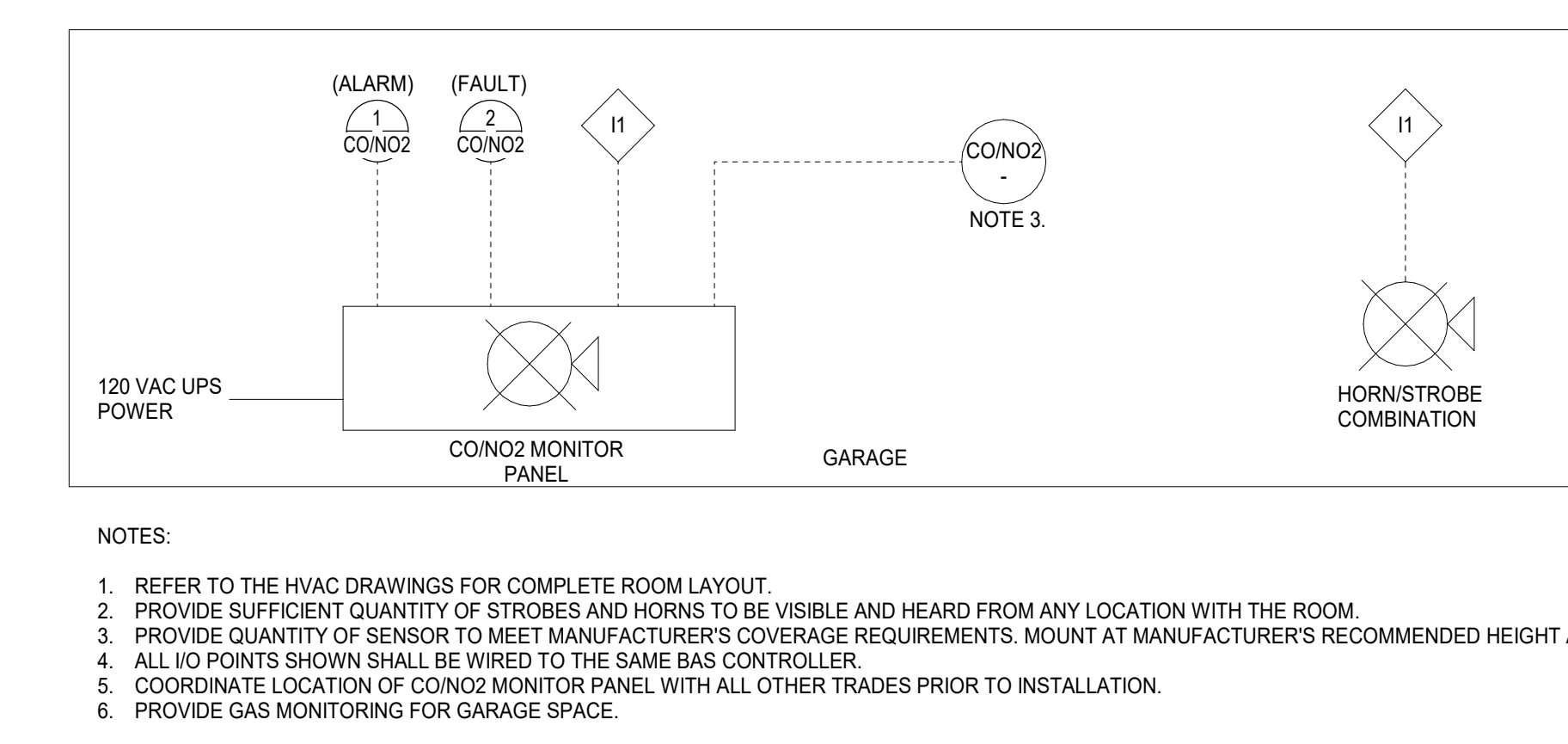
4 ELECTRIC UNIT HEATER CONTROL DIAGRAM



5 GENERAL EXHAUST FAN CONTROL DIAGRAM



6 VAV TERMINAL UNIT WITH HEATING CONTROL DIAGRAM



7 TYPICAL CO/NO2 MONITORING

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AS SHOWN	02/12/23	K. RUAN	M. SHOLOMSKAY

PROJECT NUMBER:	DRAWING NAME:
COC000044	M. SHOLOMSKAY

SHEET TITLE:

MECHANICAL CONTROL DIAGRAMS

SHEET NUMBER:

M701







## GENERAL NOTES

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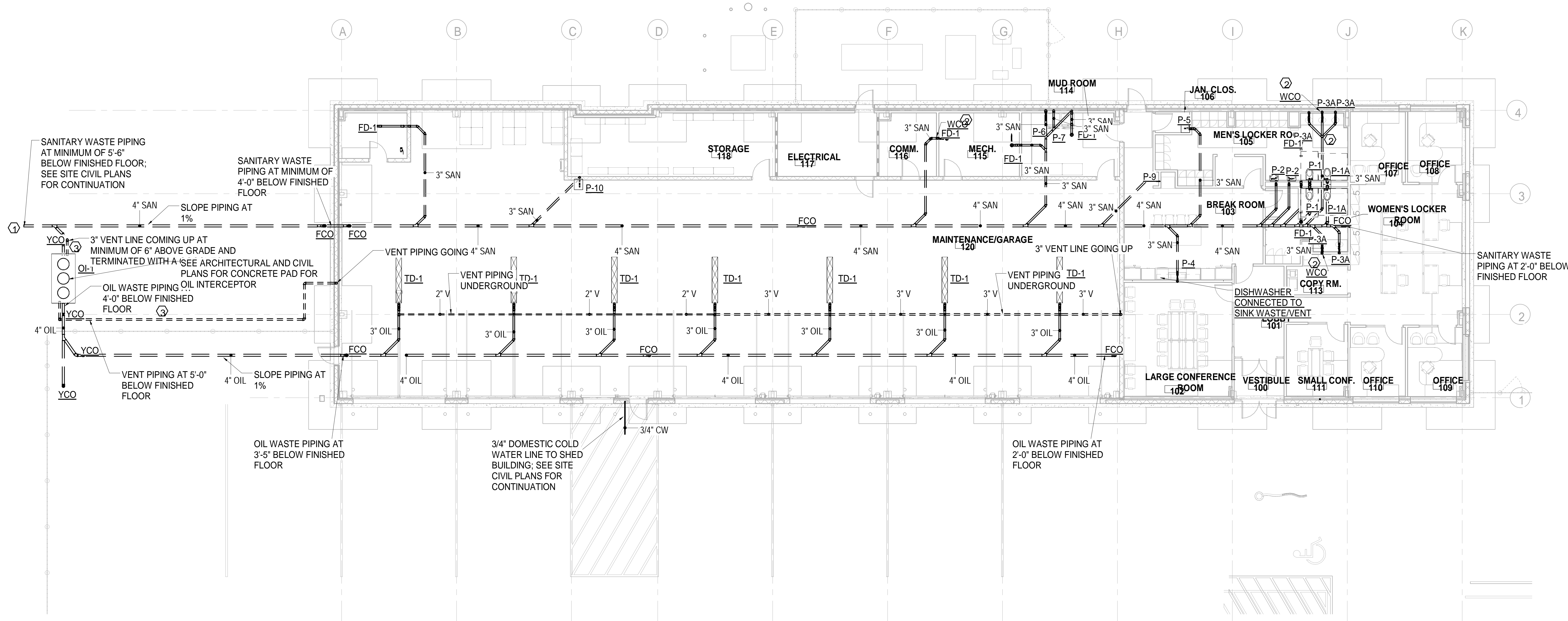


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## KEYNOTES

- SEE SITE CIVIL PLANS FOR CONTINUATION OF 4" SANITARY WASTE LINE.
- WCO TO BE FULL SIZE OF SANITARY WASTE LINE.
- VENT PIPING FROM OIL INTERCEPTOR.



## 1 UNDERFLOOR PLUMBING PLAN

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

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Scale: AS SHOWN DATE: 04/28/25 APP: TM

Project Number: COCDOO04A Drawing Name: Approved

Sheet Title: UNDERFLOOR PLUMBING PLAN

Sheet Number: P100

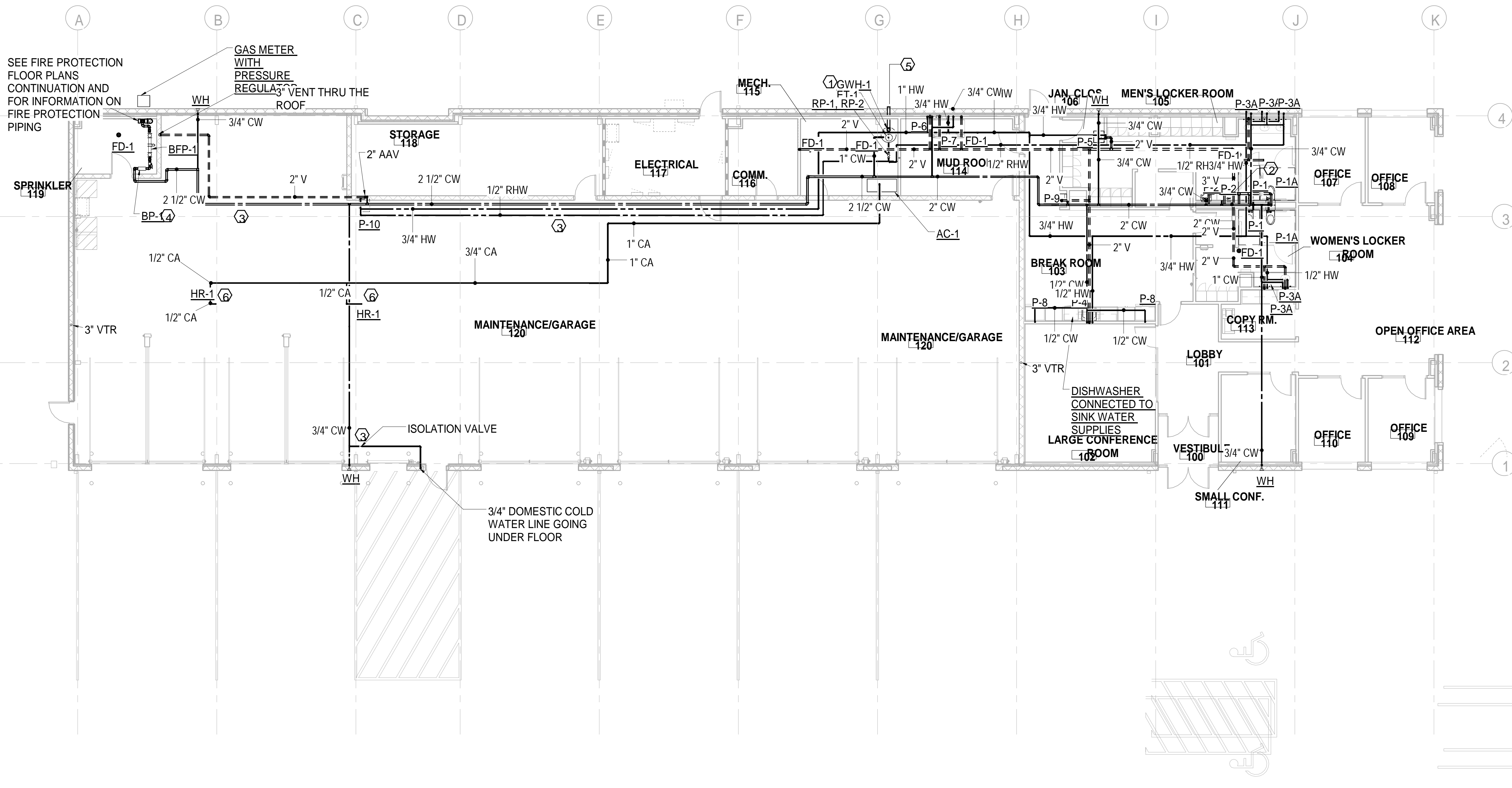


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## KEYNOTES

1. ROUTE 1" COLD WATER LINE DOWN TO WATER HEATER AND 1" HOT WATER LINE UP FROM WATER HEATER.
2. 4" VENT GOING UP TO THE ROOF (4" VTR).
3. PROVIDE HEAT TRACE CABLE TO ALL EXPOSED DOMESTIC COLD WATER PIPING AT SWIFT. PROVIDE HEAT TRACE CONTROLLER IN SPRINKLER ROOM IN AN ACCESSIBLE LOCATION ONLY WHEN ALTERNATE OPTION OF INFRARED HEATER IS CHOSEN.
4. FLOOR MOUNTED BOOSTER PUMP.
5. ROUTE 4" FLUE VENT FROM WATER HEATER TO EXTERIOR WALL.
6. SUSPEND HOSE REEL FROM STRUCTURE AT 5' AFF.



## 1 PLUMBING FLOOR PLAN

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

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Phone: 215-861-9021CED Architects, Inc. 1910  
Bergmann Architectural Associates,  
Inc.SCALE: AS SHOWN  
DATE: 04/28/25  
PROJECT NUMBER: COCD0004A  
DRAWN BY: APP  
DRAWING NAME:  
CHECKED BY: TM  
REVIEWED BY:  
APPROVED:

SHEET TITLE:

PLUMBING FLOOR PLAN

SHEET NUMBER:

P101

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.








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PROJECT NUMBER: COCDOOO4A		DRAWING NAME:	REVIEWED BY: Approv

SHEET TITLE:

SALT SHED BLIND

## SALT SHED PLUMB

## FLOOR PLAN

D100

P103

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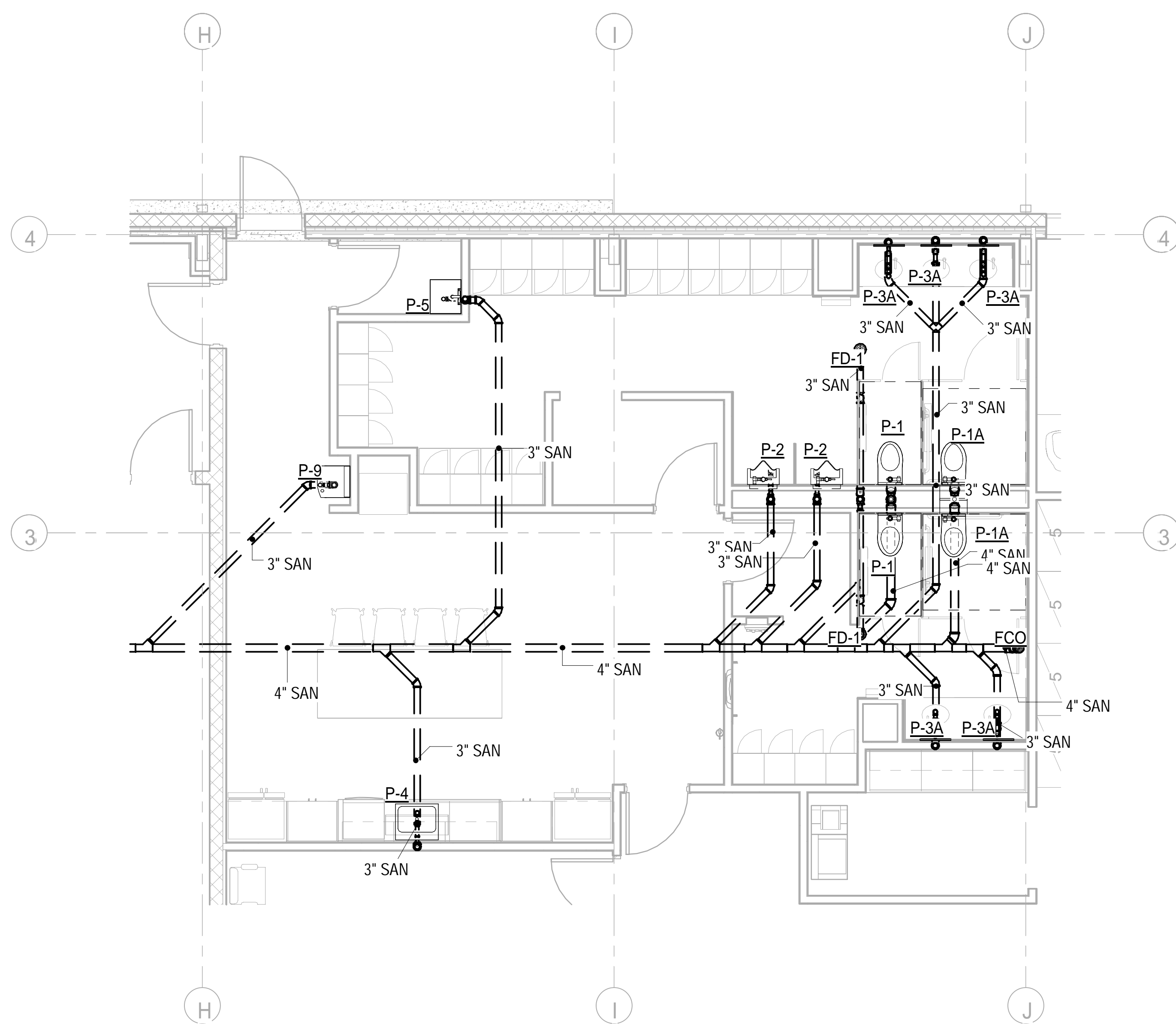
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Bergmann Architectural Associates, Inc.

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DRAWN BY: APP  
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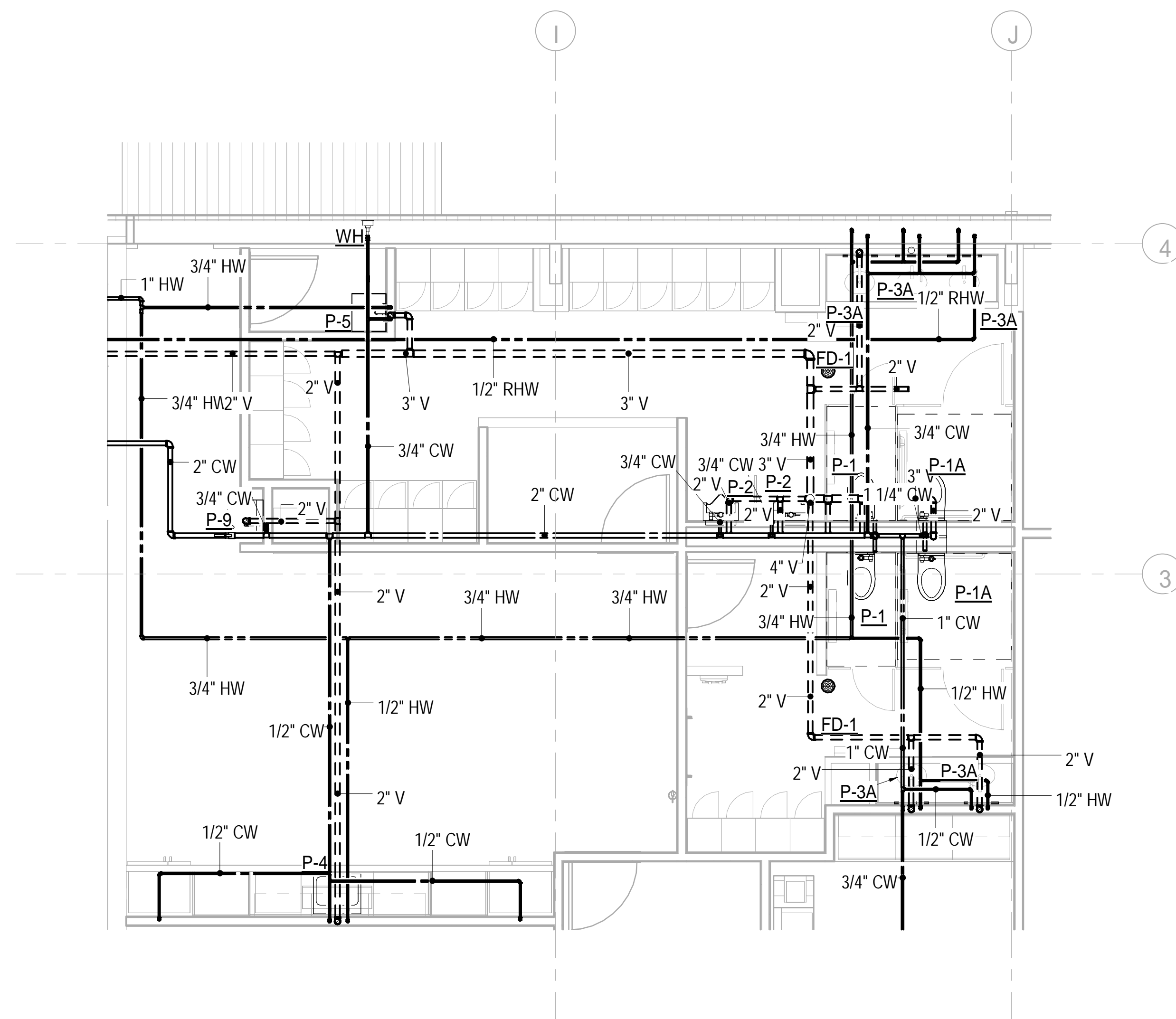
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SHEET NUMBER: P401

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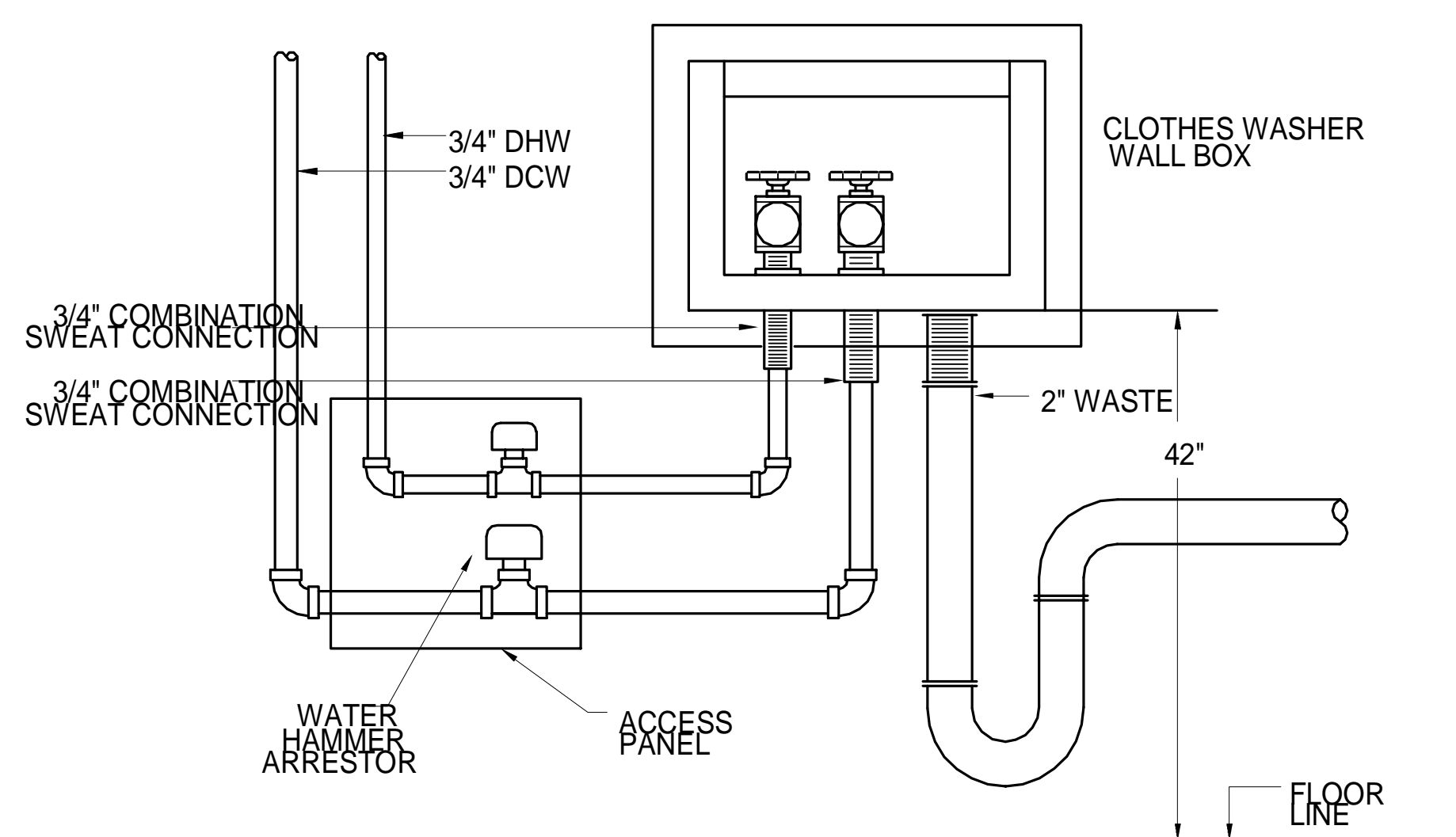


1 ENLARGED SANITARY WASTE PIPING PLAN  
SCALE: 1/4" = 1'-0"

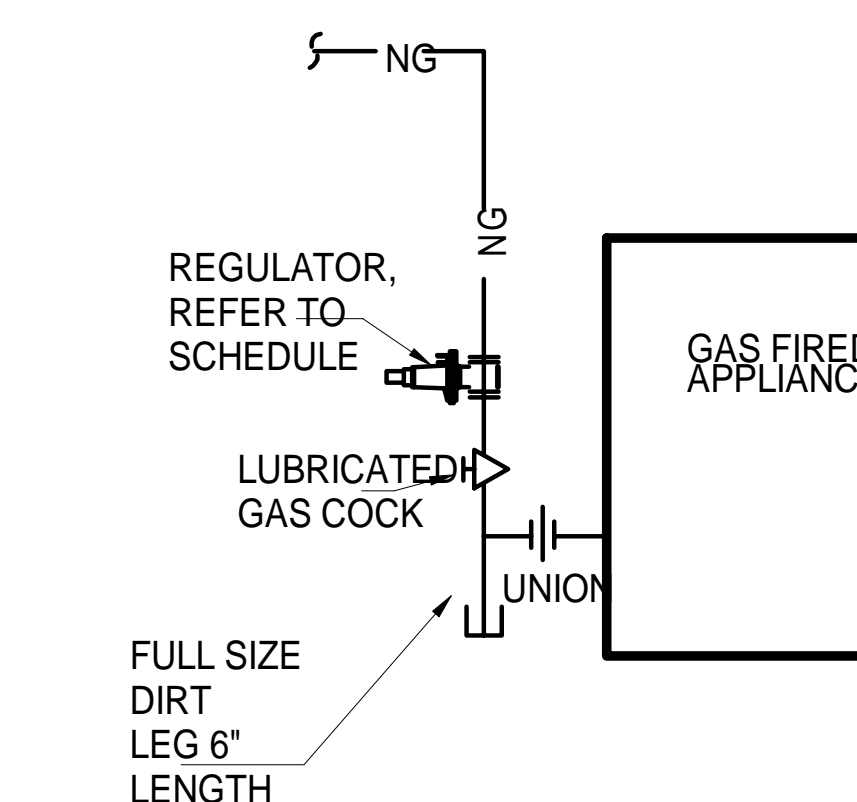


2 ENLARGED DOMESTIC WATER PIPING PLAN  
SCALE: 1/4" = 1'-0"

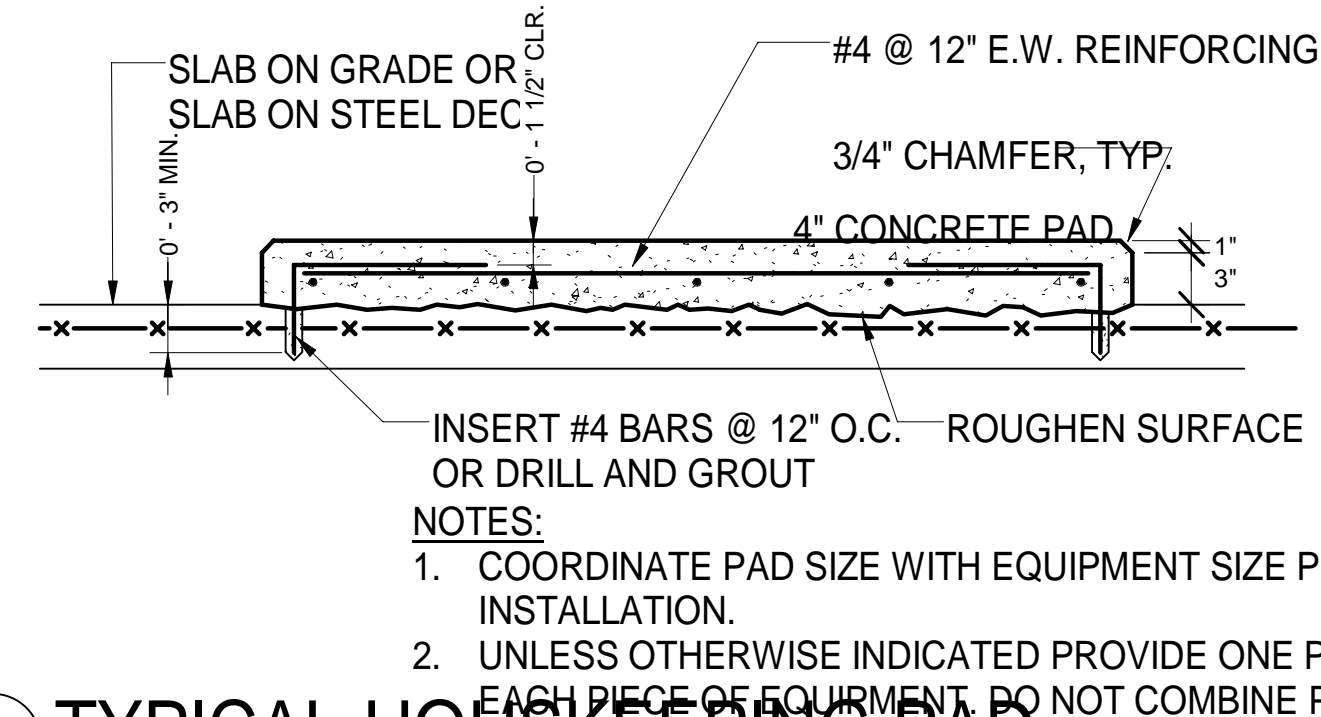




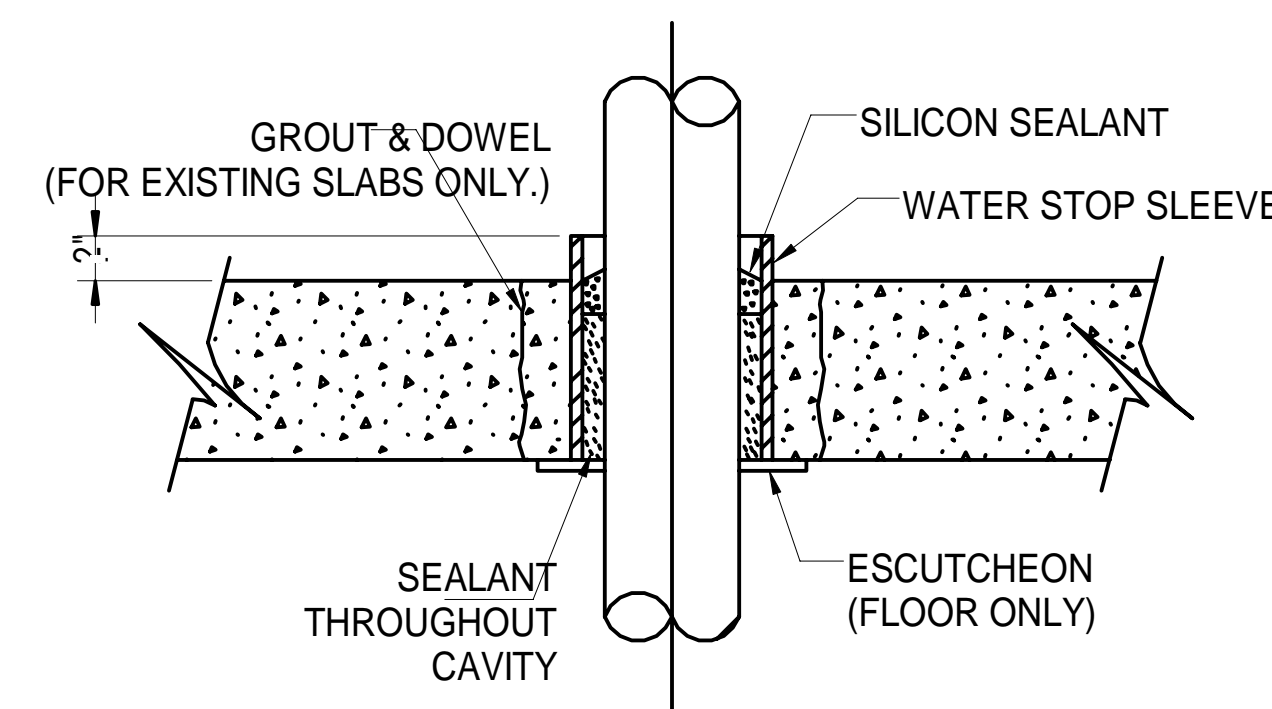
13 UTILITY WALL BOX FOR CLOTHES WASHER  
SCALE: NTS



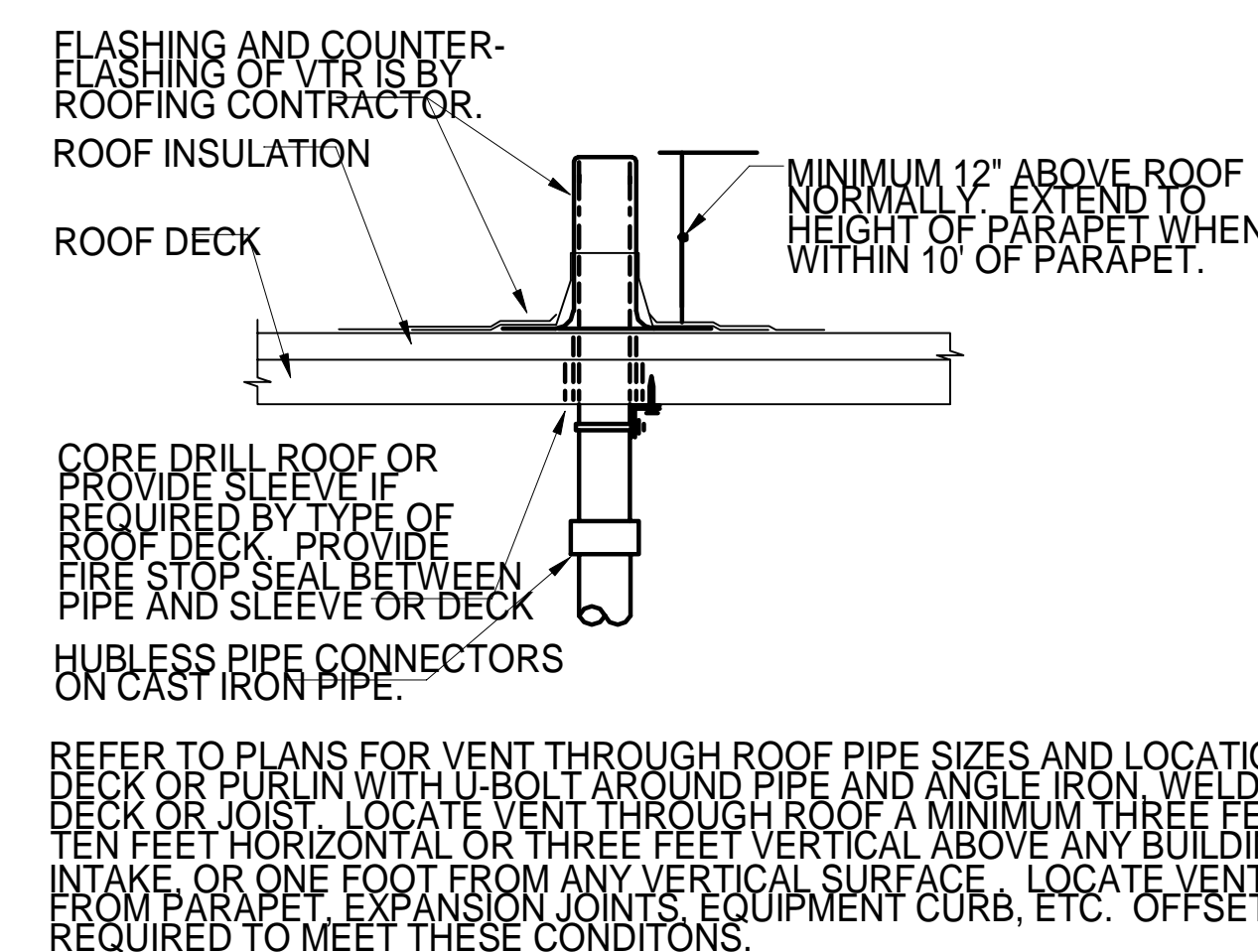
12 GAS CONNECTION DETAIL  
SCALE: NTS



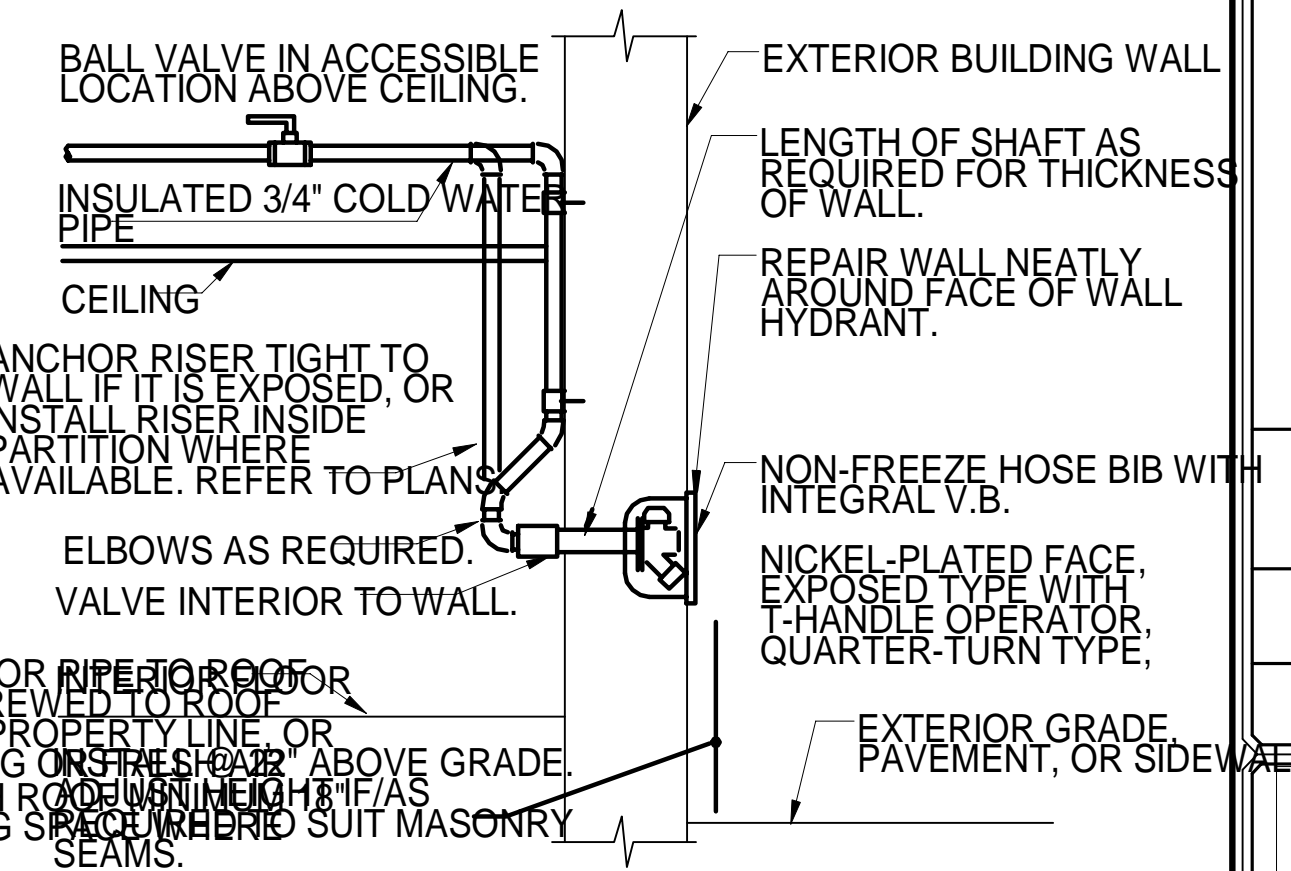
15 TYPICAL HOUSEKEEPING PAD  
SCALE: NTS



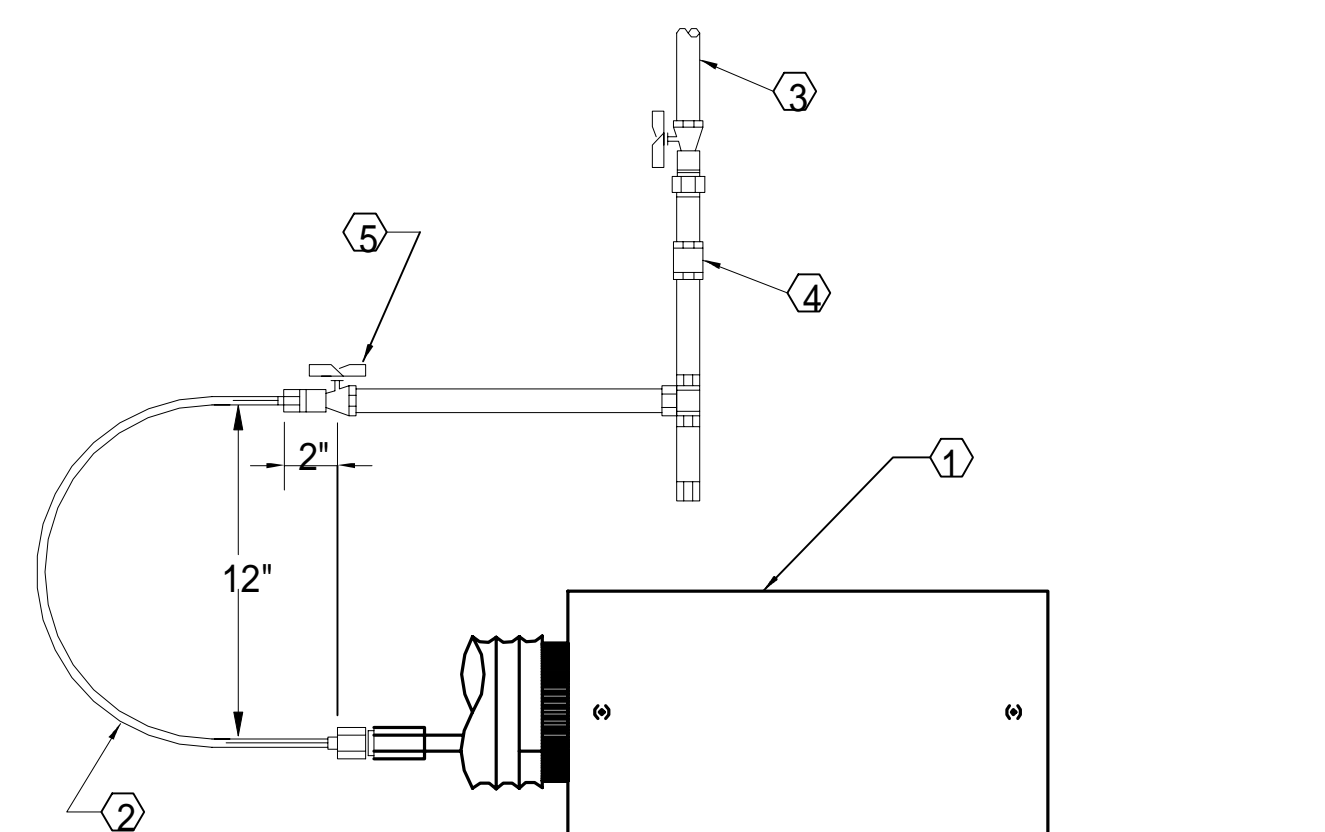
14 PIPE THRU NON-RATED FLOOR/SLAB DETAIL  
SCALE: NTS



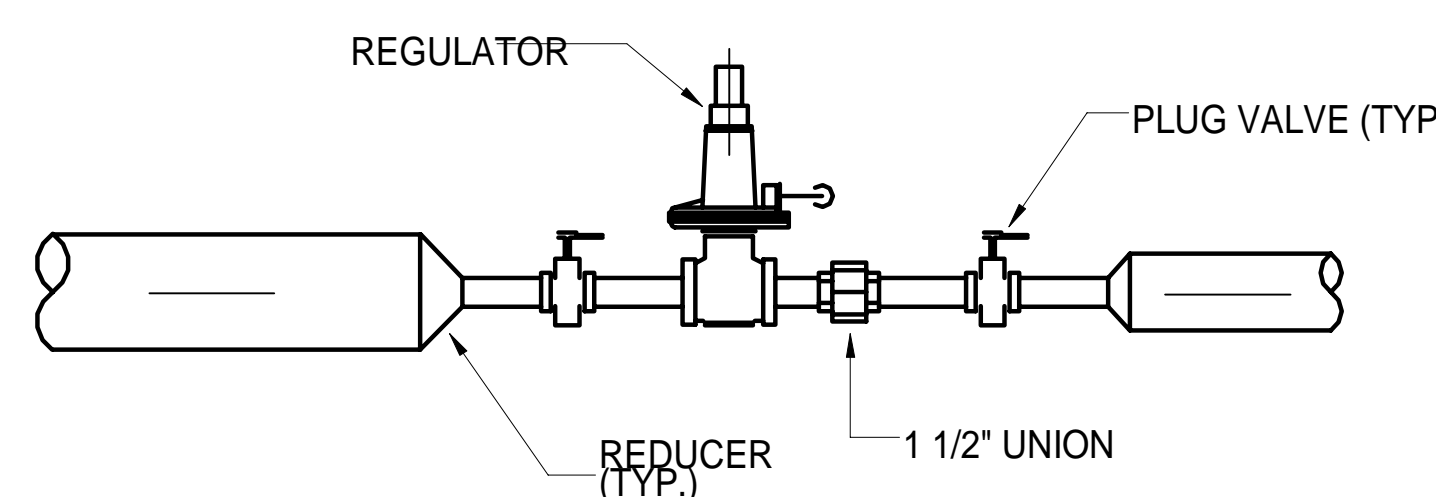
11 SANITARY VENT THRU ROOF DETAIL  
SCALE: NTS



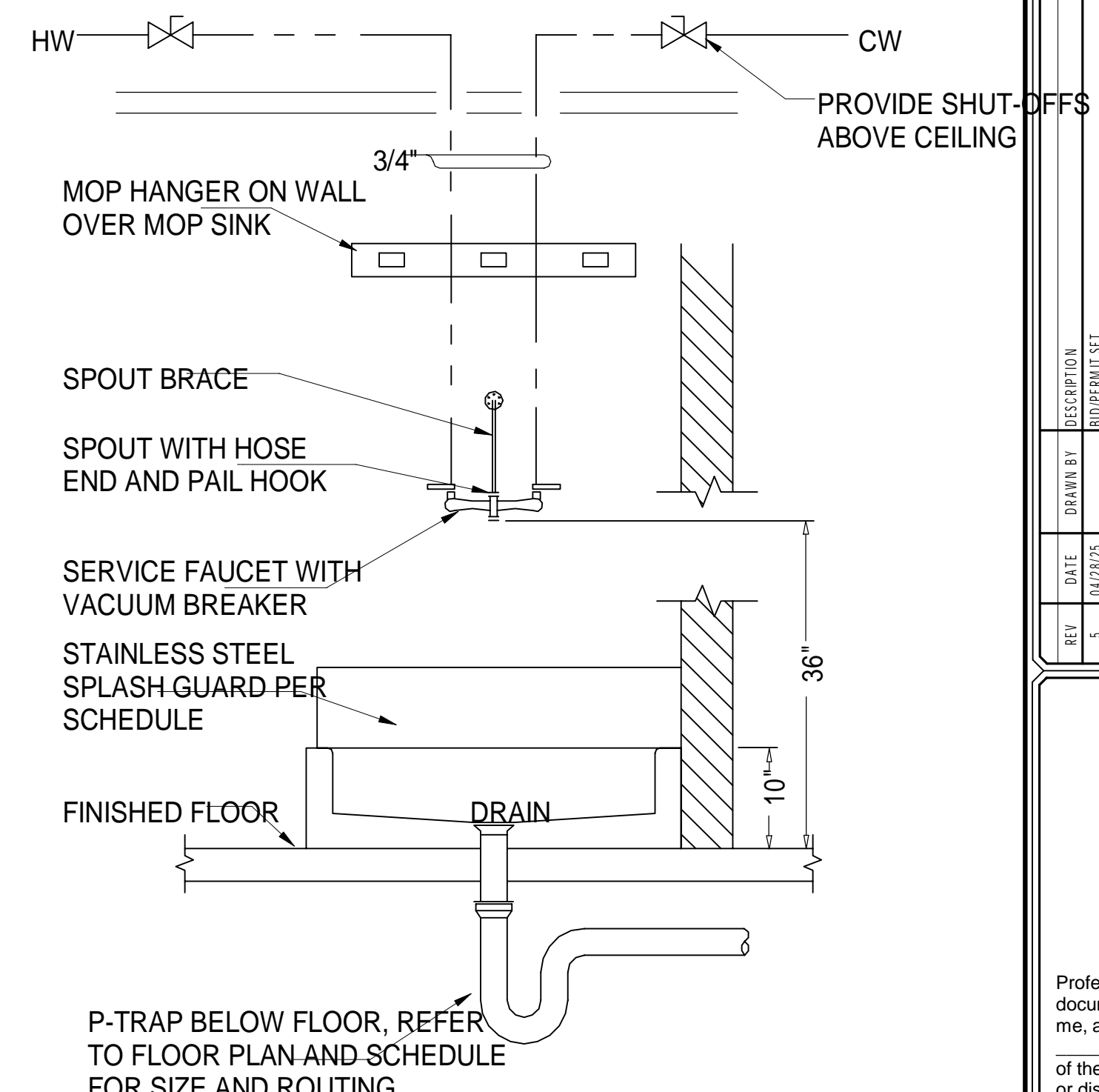
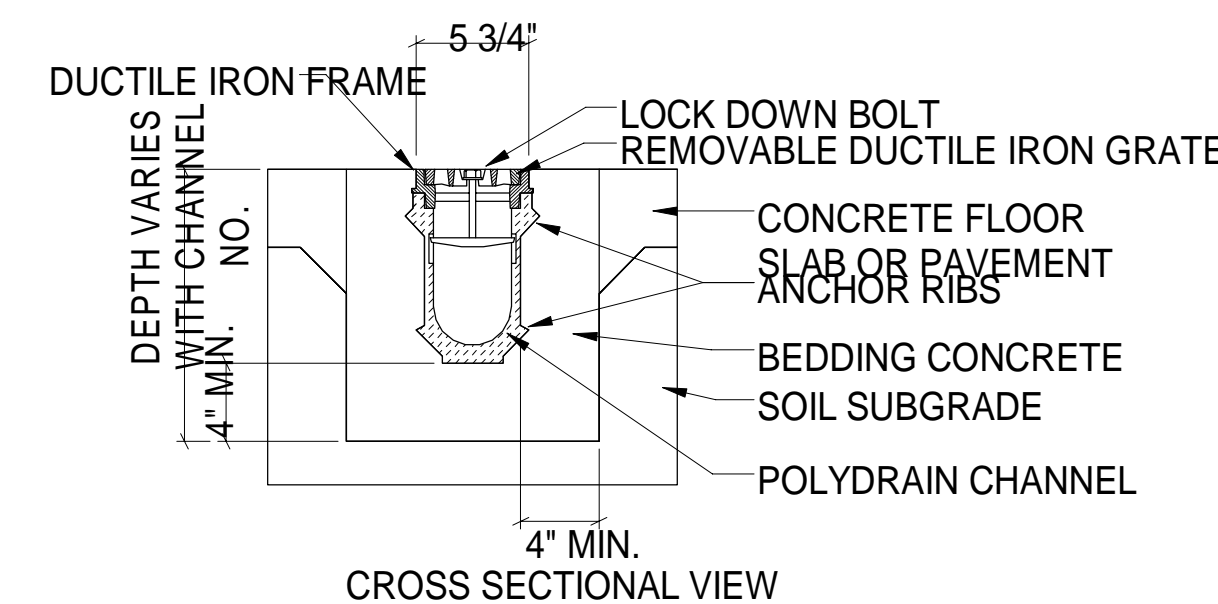
10 NON-FREEZE WALL HYDRANT DETAIL  
SCALE: NTS



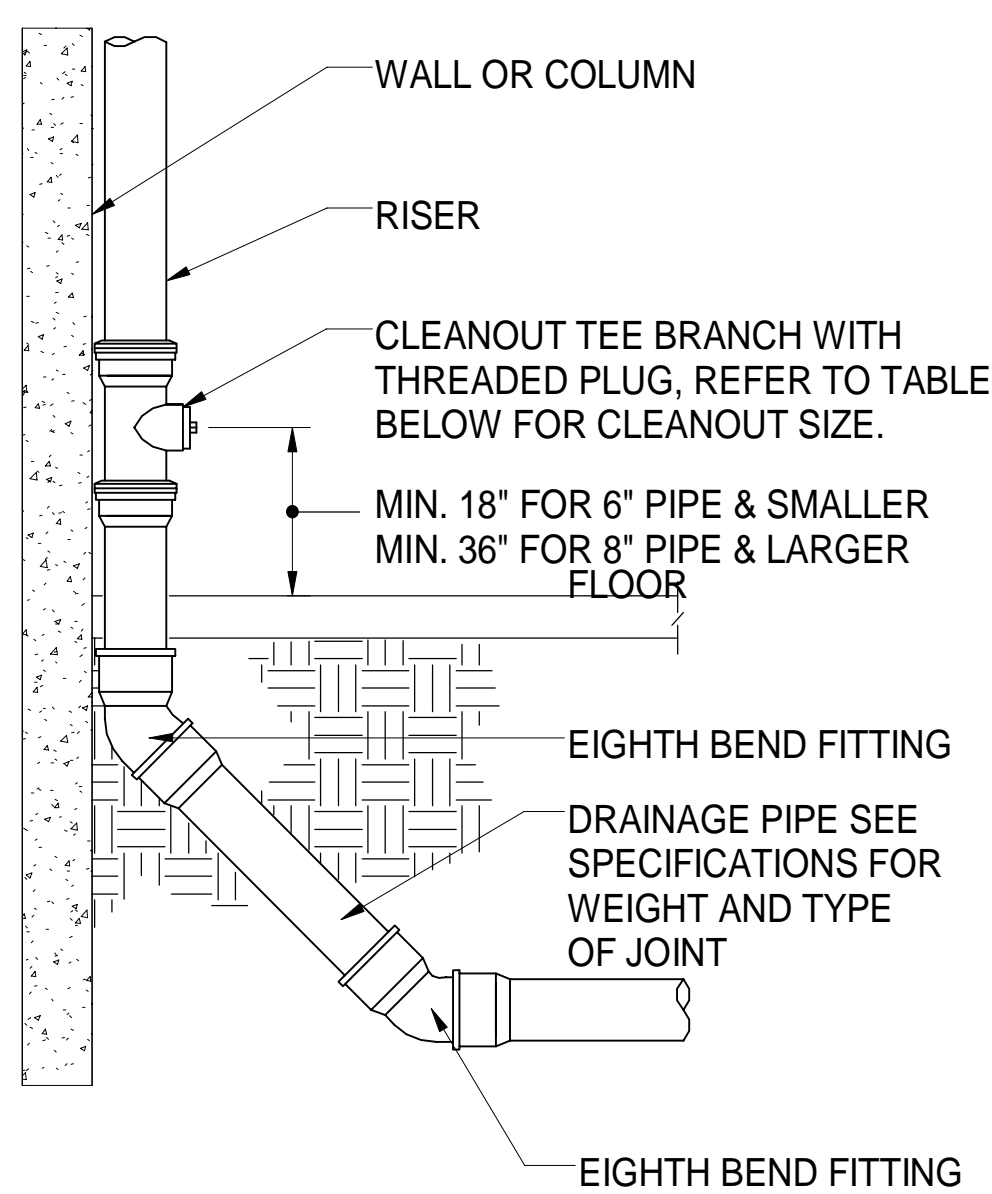
9 INFRARED HEATER GAS CONNECTION DETAIL (ALTERNATIVE)  
SCALE: NTS



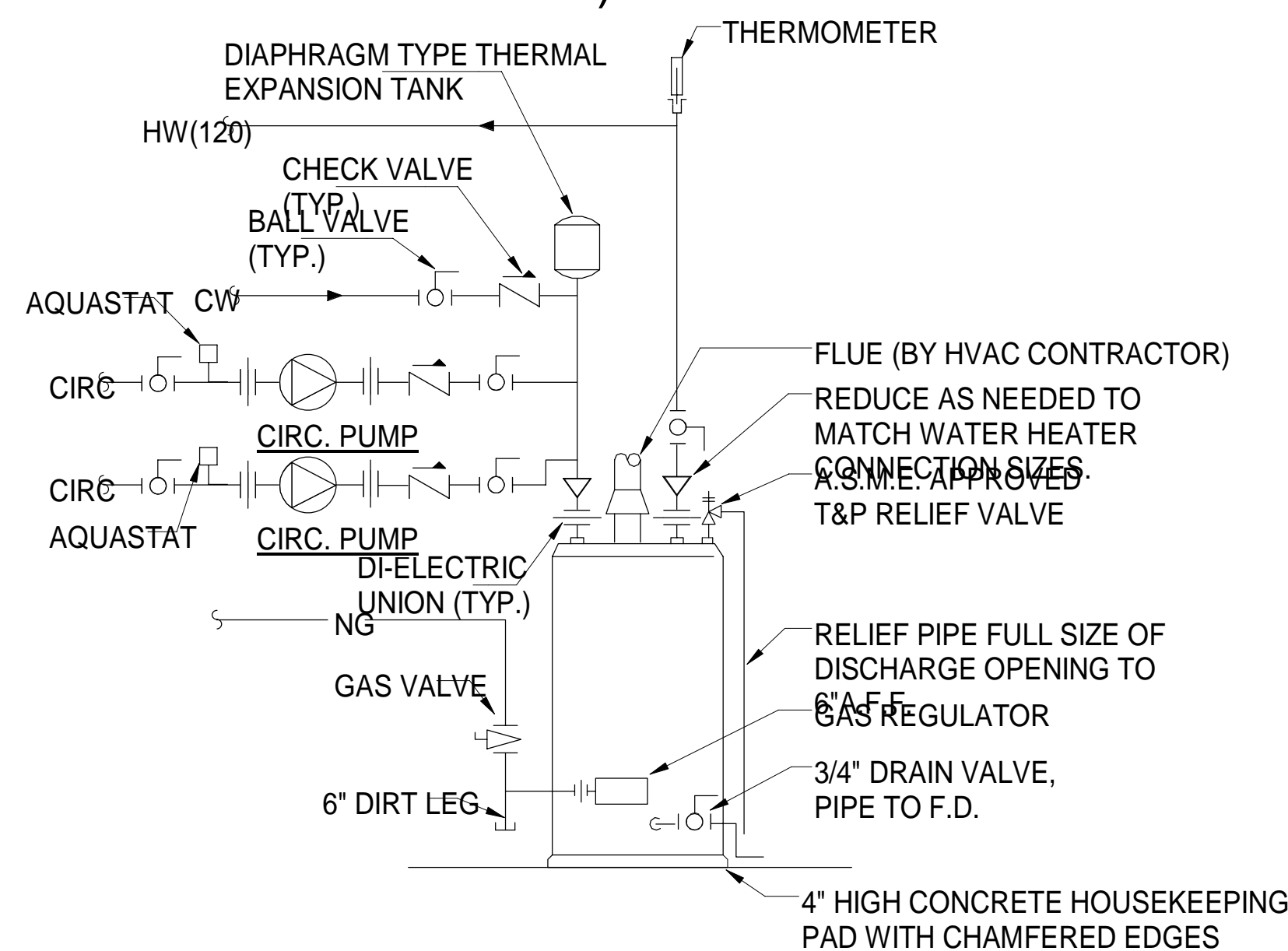
8 NATURAL GAS REGULATOR CONNECTION DETAIL  
SCALE: NTS



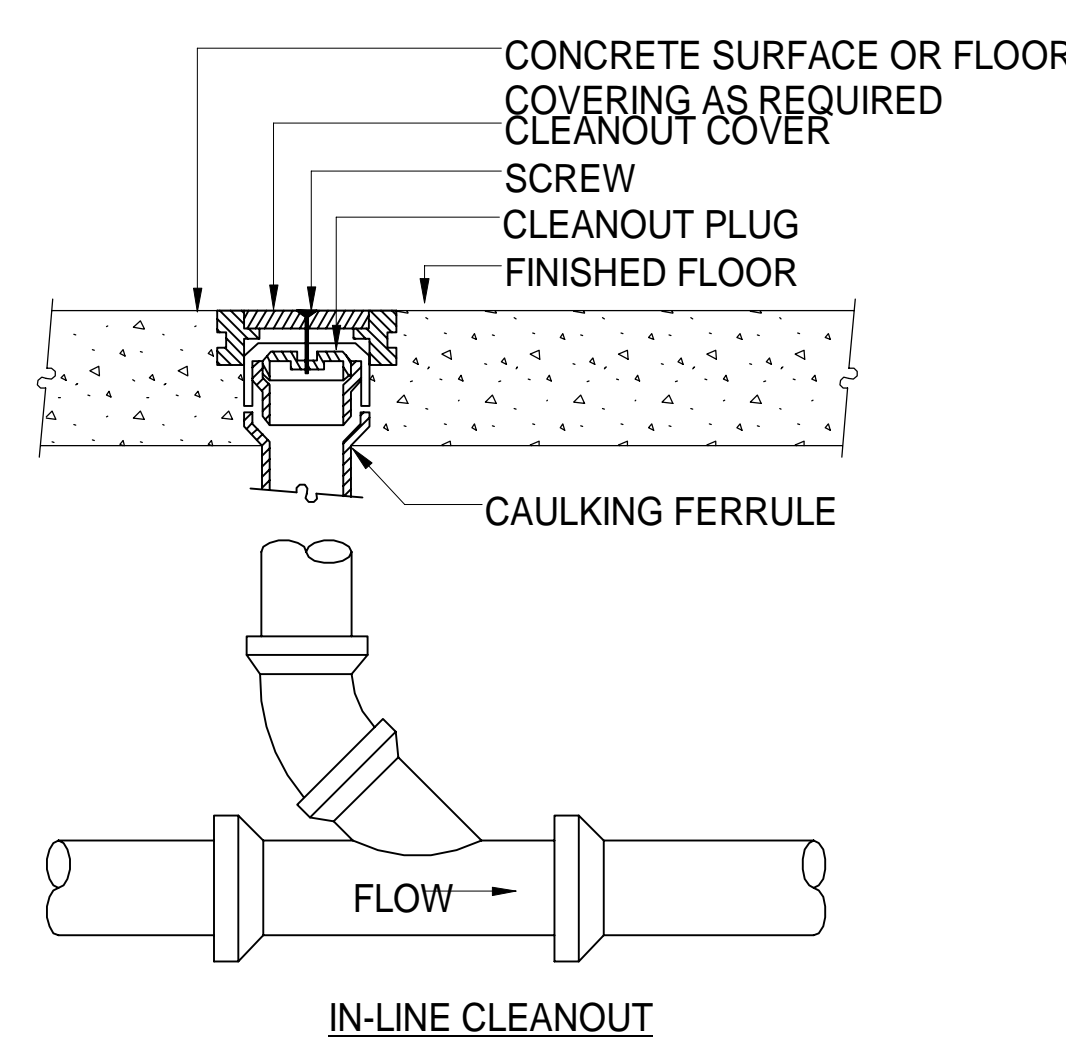
6 FLOOR MOUNTED MOP SINK DETAIL  
SCALE: NTS



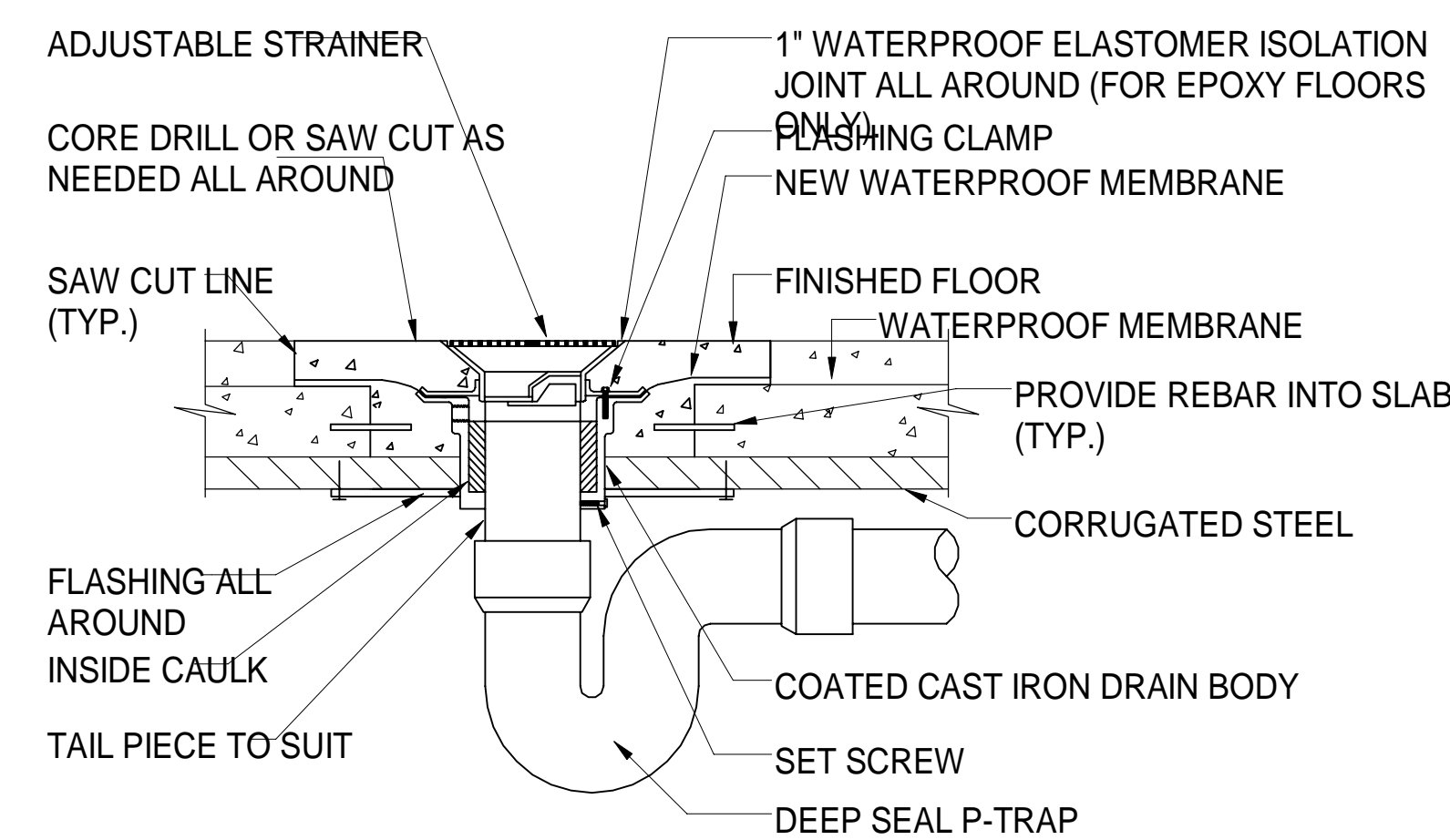
5 WALL CLEANOUT DETAIL  
SCALE: NTS



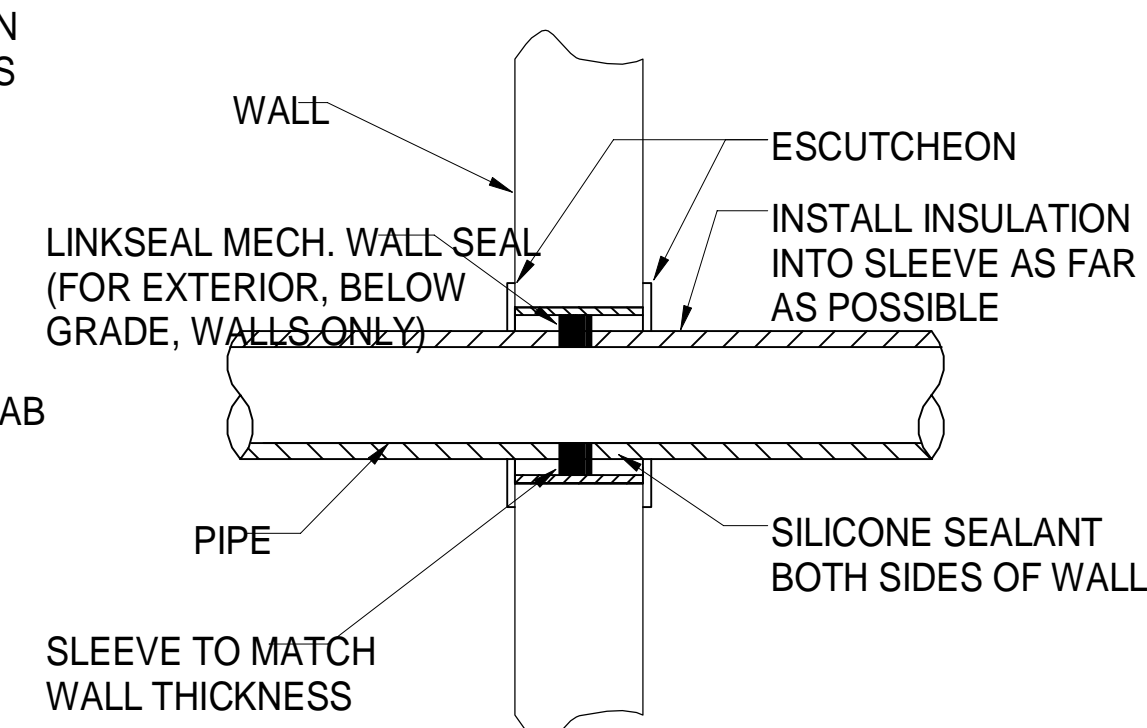
4 GAS WATER HEATER WITH RECIRCULATION PUMPS DETAIL  
SCALE: NTS



3 FLOOR CLEANOUT DETAIL  
SCALE: NTS



2 FLOOR DRAIN DETAIL  
SCALE: NTS



1 PIPE THRU WALL DETAIL  
SCALE: NTS

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PLUMBING DETAILS

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SHEET NUMBER:

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GENERAL SYMBOLS		ABBREVIATIONS		GENERAL NOTES		BUILDING CODE																																															
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JOINT</div></div><div><div><div></div><div></div></div><div>CENTERLINE</div></div><div><div><div></div><div></div></div><div>CEILING</div></div><div><div><div></div><div></div></div><div>CLEANOUT</div></div><div><div><div></div><div></div></div><div>COLUMN</div></div><div><div><div></div><div></div></div><div>COMBINATION</div></div><div><div><div></div><div></div></div><div>CONCRETE</div></div><div><div><div></div><div></div></div><div>CONDENSATE</div></div><div><div><div></div><div></div></div><div>CONNECTION</div></div><div><div><div></div><div></div></div><div>CONSTRUCTION</div></div><div><div><div></div><div></div></div><div>CONTINUOUS</div></div><div><div><div></div><div></div></div><div>CONTRACTOR</div></div><div><div><div></div><div></div></div><div>COORDINATE</div></div><div><div><div></div><div></div></div><div>CENTER</div></div><div><div><div></div><div></div></div><div>CUBIC 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DRAWINGS</div></div><div><div><div></div><div></div></div><div>DETAIL</div></div></div><div><div><div><div><div></div><div></div></div><div>INTERIOR</div></div><div><div><div></div><div></div></div><div>INVERT</div></div><div><div><div></div><div></div></div><div>IRON PIPE SIZE</div></div><div><div><div></div><div></div></div><div>INFRARED</div></div></div><div><div><div><div><div></div><div></div></div><div>JOINT</div></div><div><div><div></div><div></div></div><div>JOIST</div></div><div><div><div></div><div></div></div><div>JOINT</div></div></div><div><div><div><div><div></div><div></div></div><div>RELATIVE HUMIDITY</div></div><div><div><div></div><div></div></div><div>RELIEF AIR</div></div><div><div><div></div><div></div></div><div>ROOM</div></div><div><div><div></div><div></div></div><div>ROUGH OPENING</div></div><div><div><div></div><div></div></div><div>REDUCED PRESSURE 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PRESSURE</div></div><div><div><div></div><div></div></div><div>SPACES</div></div><div><div><div></div><div></div></div><div>SPECIFICATION</div></div><div><div><div></div><div></div></div><div>SQUARE</div></div><div><div><div></div><div></div></div><div>SHORT SLOTTED</div></div><div><div><div></div><div></div></div><div>STAINLESS STEEL</div></div><div><div><div></div><div></div></div><div>STD</div></div><div><div><div></div><div></div></div><div>STANDARD</div></div><div><div><div></div><div></div></div><div>STRUCTURAL, STRUCTURE</div></div><div><div><div></div><div></div></div><div>SYMMETRICAL</div></div><div><div><div></div><div></div></div><div>SYSTEM</div></div></div><div><div><div><div><div></div><div></div></div><div>T</div></div><div><div><div></div><div></div></div><div>T-STAT</div></div><div><div><div></div><div></div></div><div>TEMPERATURE CONTROL PANEL</div></div><div><div><div></div><div></div></div><div>TEMPERATURE 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CLOSET</div></div><div><div><div></div><div></div></div><div>WH</div></div><div><div><div></div><div></div></div><div>WATER HEATER</div></div><div><div><div></div><div></div></div><div>WM</div></div><div><div><div></div><div></div></div><div>WIRE MESH</div></div><div><div><div></div><div></div></div><div>WT</div></div><div><div><div></div><div></div></div><div>WEIGHT</div></div></div><div><div><div><div><div></div><div></div></div><div>BY EXECUTING THE CONSTRUCTION AGREEMENT, THE CONTRACTOR REPRESENTS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, CORRELATED HIS OBSERVATIONS WITH ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND IS AWARE OF THE OWNER'S INTENDED USE OF THE PROJECT AREA. ANY AREAS WHERE ADDITIONAL INFORMATION IS REQUIRED ARE TO BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER, IN WRITING.</div></div><div><div><div><div><div></div><div></div></div><div>CONTRACTOR:</div></div><div><div><div><div><div></div><div></div></div><div>INSTALL WORK SUBSTANTIALLY AS INDICATED ON THE DRAWINGS. VERIFY EXACT LOCATION AND ELEVATIONS AT THE SITE. DO NOT SCALE THE DRAWINGS. MAKE NECESSARY CHANGES IN ELEVATION, FITTINGS OR OFFSETS TO ACCOMMODATE OBSTACLES OR INTERFERENCES. ALL DIMENSIONS ARE TO BE FIELD VERIFIED BEFORE START OF WORK.</div></div><div><div><div><div><div></div><div></div></div><div>THE CONTRACTOR IS TO PROTECT FURNISHINGS, EQUIPMENT, ETC., AND PROPERLY STORE MATERIAL AS REQUIRED UNTIL COMPLETION OF THE PROJECT.</div></div><div><div><div><div><div></div><div></div></div><div>CONTRACTOR TO VERIFY ALL MEASUREMENTS BEFORE ORDERING MATERIALS OR DOING ANY WORK. NO EXTRA COMPENSATION OR CHANGE ORDERS WILL BE ISSUED DUE TO DIFFERENCES BETWEEN THE ACTUAL MEASUREMENT AND THE DIMENSIONS ON THE DRAWINGS. CONTRACTOR SHALL LAY OUT ALL EQUIPMENT PRIOR TO FABRICATION OR INSTALLATION TO ASSURE PROPER FIT AND AVOIDANCE OF OBSTRUCTIONS, AND SHALL THOROUGHLY COORDINATE WORK WITH ALL TRADES AND DETERMINE EXACT ROUTE AND LOCATION OF EACH ELEMENT AND PIECE OF EQUIPMENT BEFORE FABRICATION AND INSTALLATION.</div></div><div><div><div><div><div></div><div></div></div><div>CONTRACTOR TO BE RESPONSIBLE FOR KEEPING THE GENERAL WORK AREA CLEAN AND FREE FROM DIRT AND CONSTRUCTION MATERIALS, AND FOR CLEANING THE AREA AT THE END OF EACH DAY. ANY AND ALL DAMAGE TO THE EXISTING WALLS, CEILINGS, FLOOR, ETC., THAT OCCURS DURING THE WORK, SHALL BE REPAIRED AND PATCHED. IF THE SPECIFIC METHOD OF REPAIR IS IN QUESTION, THE CONTRACTOR IS TO CONFER WITH THE OWNER'S REPRESENTATIVE BEFORE COMMENCING THE REPAIR.</div></div><div><div><div><div><div></div><div></div></div><div>THE CONTRACTOR SHALL MAINTAIN ON THE SITE FOR THE OWNER A COMPLETE SET OF CONTRACT DOCUMENTS AND ALL COPIES OF APPROVED SHOP DRAWINGS, ALL CHANGE ORDERS, FIELD ORDERS, AND BULLETINS, PROGRESSIVELY FILED AND UPDATED TO REFLECT THE LATEST CHANGES. THE CONTRACTOR IS TO PROVIDE AS-BUILT DRAWINGS AT THE COMPLETION OF THE PROJECT.</div></div><div><div><div><div><div></div><div></div></div><div>CONTRACTOR ACKNOWLEDGES HE HAS VERIFIED WITH THE OWNER'S REPRESENTATIVE ALL OF THE DETAILS OF THE WORK TO BE PERFORMED INCLUDING THE ACCURACY OF ALL CONTRACT DRAWINGS AND SPECIFICATIONS. ALL MATERIALS AND EQUIPMENT ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.</div></div><div><div><div><div><div></div><div></div></div><div>ALL DEFECTS IN EQUIPMENT OR MATERIALS, OR ERRORS IN THE DRAWINGS DISCOVERED DURING THE PERFORMANCE OF THE WORK SHALL BE REPORTED PROMPTLY TO THE OWNER'S REPRESENTATIVE. IN NO EVENT SHALL THE WORK PROCEED UNTIL DEFECTS AND/OR ERRORS HAVE BEEN RESOLVED.</div></div><div><div><div><div><div></div><div></div></div><div>THE PLANS ARE DIAGRAMMATIC AND INDICATE ONLY THE SIZE AND GENERAL ARRANGEMENT OF PIPING AND EQUIPMENT. EXACT LOCATION OF ALL ELEMENTS SHALL BE DETERMINED AS WORK PROGRESSES, IN COOPERATION AND COORDINATION WITH THE WORK OF ALL OTHER TRADES. IT IS NOT INTENDED TO SHOW EVERY ITEM OF WORK OR MINOR PIECE OF EQUIPMENT, BUT THE CONTRACTOR SHALL FURNISH AND INSTALL WITHOUT ADDITIONAL REMUNERATION ANY COMPONENT NECESSARY TO COMPLETE THE SYSTEM IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE.</div></div><div><div><div><div><div></div><div></div></div><div>PIPING PENETRATION FIRE WALLS AND FLOORS SHALL BE FIRESTOPPED. REFER TO THE ARCHITECTURAL DRAWINGS FOR FIRE WALL AND FLOOR LOCATION.</div></div><div><div><div><div><div></div><div></div></div><div>ALL PHYSICAL ATTRIBUTES OF EQUIPMENT AND DEVICES ARE BASED ON THOSE MANUFACTURERS LISTED IN THE SPECIFICATIONS AND/ OR THE EQUIPMENT SCHEDULES. THE RESPECTIVE CONTRACTORS ARE RESPONSIBLE FOR ALL CHANGES BROUGHT ABOUT BY USE OF ITEMS BY OTHER MANUFACTURERS. THE ARCHITECT/ENGINEER HAS RESERVED THE RIGHT TO REJECT ITEMS BY OTHER MANUFACTURERS IF THOSE ITEMS DO NOT MATCH THE PHYSICAL ATTRIBUTES OF THE MANUFACTURERS LISTED.</div></div><div><div><div><div><div></div><div></div></div><div>CODES AND REGULATIONS:</div></div><div><div><div><div><div></div><div></div></div><div>THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK, BOTH ON AND OFF SITE. IF ANY OF THE CONTRACT DOCUMENTS ARE AT VARIANCE THEREWITH IN ANY RESPECT, CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING.</div></div><div><div><div><div><div></div><div></div></div><div>CONTRACTOR REPRESENTS AND WARRANTS COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS, ORDINANCES AND REGULATIONS APPLICABLE TO THIS ORDER, INCLUDING THE BUILDING CODE, AND THE LOCAL GOVERNING BODY.</div></div><div><div><div><div><div></div><div></div></div><div>FINAL COMPLETION:</div></div><div><div><div><div><div></div><div></div></div><div>PERFORM ALL OF THE WORK REQUIRED TO COMPLETE THE PROJECT, INCLUDING THE SATISFACTORY OPERATION OF ALL EQUIPMENT, AND THE CORRECTION OF ALL UNACCEPTABLE OR INCOMPLETE PORTIONS OF THE PROJECT TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE. SETTLE ALL CLAIMS AND SECURE THE RELEASE OF ALL MECHANICS LIEN OR LIENS OF A LIKE NATURE, AND SECURE THE ISSUANCE BY AN APPROPRIATE GOVERNMENT AUTHORITY OF A CERTIFICATE OF OCCUPANCY. REMOVE ALL RUBBISH, SURPLUS MATERIALS, SCAFFOLDING, AND EQUIPMENT FROM THE SITE WHETHER OR NOT LEFT BY OR BELONGING TO THE CONTRACTOR. WRITING.</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>		<div><div><div><div><div></div><div></div></div><div>DELAWARE COUNTY</div></div><div><div><div><div><div></div><div></div></div><div>COMPLIANCE WITH THE FOLLOWING CODES</div></div><div><div><div></div><div></div></div><div>IS HEREBY A REQUIREMENT OF THESE DOCUMENTS. USE THE LATEST VERSIONS UNLESS NOTED OTHERWISE:</div></div><div><div><div></div><div></div></div><div>1. BUILDING CODE OF PENNSYLVANIA</div></div><div><div><div></div><div></div></div><div>2. FIRE CODE OF PENNSYLVANIA</div></div><div><div><div></div><div></div></div><div>3. NATIONAL FIRE CODE NFPA 13</div></div><div><div><div></div><div></div></div><div>4. NATIONAL FIRE CODE NFPA 20</div></div><div><div><div></div><div></div></div><div>5. NATIONAL FIRE CODE NFPA 318</div></div><div><div><div></div><div></div></div><div>6. NATIONAL ELECTRIC CODE</div></div><div><div><div></div><div></div></div><div>7. PLUMBING CODE OF PENNSYLVANIA</div></div><div><div><div></div><div></div></div><div>8. MECHANICAL CODE OF PENNSYLVANIA</div></div><div><div><div></div><div></div></div><div>9. ENERGY CONSERVATION CONSTRUCTION CODE OF PENNSYLVANIA</div></div><div><div><div></div><div></div></div><div>10. CODES, POLICIES &amp; PLAN REVIEW CONDITIONS OF THE LOCAL MUNICIPALITY</div></div><div><div><div></div><div></div></div><div>11. REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION</div></div></div></div></div></div>																																																	
<div><div><div><div><div></div><div></div></div><div>FIRE PROTECTION DRY</div></div><div><div><div></div><div></div></div><div>FIRE PROTECTION OTHER</div></div><div><div><div></div><div></div></div><div>FIRE PROTECTION PRE-ACTION</div></div><div><div><div></div><div></div></div><div>FIRE PROTECTION WET</div></div><div><div><div></div><div></div></div><div>COMBINATION FIRE &amp; DOMESTIC</div></div></div><div><div><div><div><div></div><div></div></div><div>48"x18" S/A</div></div><div><div><div></div><div></div></div><div>OBSTRUCTION FROM DUCTWORK 48" AND GREATER</div></div></div><div><div><div><div><div></div><div></div></div><div>PIPING BEING DEMOLISHED</div></div><div><div><div></div><div></div></div><div>EXISTING PIPE</div></div></div><div><div><div><div><div></div><div></div></div><div>PIPE DROP</div></div><div><div><div></div><div></div></div><div>PIPE RISE</div></div><div><div><div></div><div></div></div><div>PIPE TEE</div></div><div><div><div></div><div></div></div><div>CAP</div></div></div><div><div><div><div><div></div><div></div></div><div>PLUG</div></div><div><div><div></div><div></div></div><div>PIPE TEE UP</div></div><div><div><div></div><div></div></div><div>PIPE TEE DOWN</div></div></div><div><div><div><div><div></div><div></div></div><div>DOMESTIC WATER METER</div></div><div><div><div></div><div></div></div><div>MOTORIZED CONTROL VALVE</div></div><div><div><div></div><div></div></div><div>THREE WAY MOTORIZED CONTROL VALVE</div></div><div><div><div></div><div></div></div><div>PRESSURE REDUCING VALVE</div></div><div><div><div></div><div></div></div><div>SOLENOID VALVE</div></div><div><div><div></div><div></div></div><div>BUTTERFLY VALVE</div></div></div><div><div><div><div><div></div><div></div></div><div>DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER</div></div><div><div><div></div><div></div></div><div>REDUCED PRESSURE DETECTOR ASSEMBLY BACKFLOW PREVENTER</div></div></div></div></div></div></div></div></div></div>		<div><div><div><div><div></div><div></div></div><div>FIRE PROTECTION DESIGN CRITERIA</div></div><table><thead><tr><th>CRITERIA SYMBOL</th><th>HAZARD CLASSIFICATION</th><th>AREA DESCRIPTION</th><th>SYSTEM TYPE</th><th>DENSITY (GPM/SQ.FT)</th><th>REMOTE AREA (SQ.FT)</th><th>HOSE ALLOW (GPM)</th><th>TEMP</th><th>MAX HEAD SPACING (SQ.FT)</th><th>REMARKS</th></tr></thead><tbody><tr><td>LT</td><td>LIGHT</td><td>MUD RM; RESTROOMS/LOCKER PIPE RM; OFFICES; LOBBY;</td><td>WET PIPE</td><td>0.1</td><td>1500</td><td>100</td><td>225</td><td></td><td></td></tr><tr><td>O1</td><td>ORDINARY GROUP 1</td><td>BREAK RM; SPRINKLER RM; STORAGE; MECH RM; COMM. RM</td><td>WET PIPE</td><td>0.15</td><td>1500</td><td>250</td><td>130</td><td></td><td></td></tr><tr><td>OH2</td><td>ORDINARY GROUP 2</td><td>-</td><td>WET PIPE</td><td>0.2</td><td>1500</td><td>250</td><td>130</td><td></td><td></td></tr><tr><td>OH2</td><td>ORDINARY GROUP 2</td><td>MAINTENANCE RYRY GARAGE</td><td>WET PIPE</td><td>0.2</td><td>1950</td><td>250</td><td>130</td><td></td><td></td></tr></tbody></table></div></div>		CRITERIA SYMBOL	HAZARD CLASSIFICATION	AREA DESCRIPTION	SYSTEM TYPE	DENSITY (GPM/SQ.FT)	REMOTE AREA (SQ.FT)	HOSE ALLOW (GPM)	TEMP	MAX HEAD SPACING (SQ.FT)	REMARKS	LT	LIGHT	MUD RM; RESTROOMS/LOCKER PIPE RM; OFFICES; LOBBY;	WET PIPE	0.1	1500	100	225			O1	ORDINARY GROUP 1	BREAK RM; SPRINKLER RM; STORAGE; MECH RM; COMM. RM	WET PIPE	0.15	1500	250	130			OH2	ORDINARY GROUP 2	-	WET PIPE	0.2	1500	250	130			OH2	ORDINARY GROUP 2	MAINTENANCE RYRY GARAGE	WET PIPE	0.2	1950	250	130		
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SCALE: AS SHOWN

DATE: 04/28/25

DRAWN BY: APP

CHECKED BY: TM

PROJECT NUMBER: C0C0C004A

DRAWING NAME: REVIEWED BY: TM

SHEET TITLE: FIRE PROTECTION SYMBOLS, ABBREVIATIONS, LEGEND & GENERAL NOTES

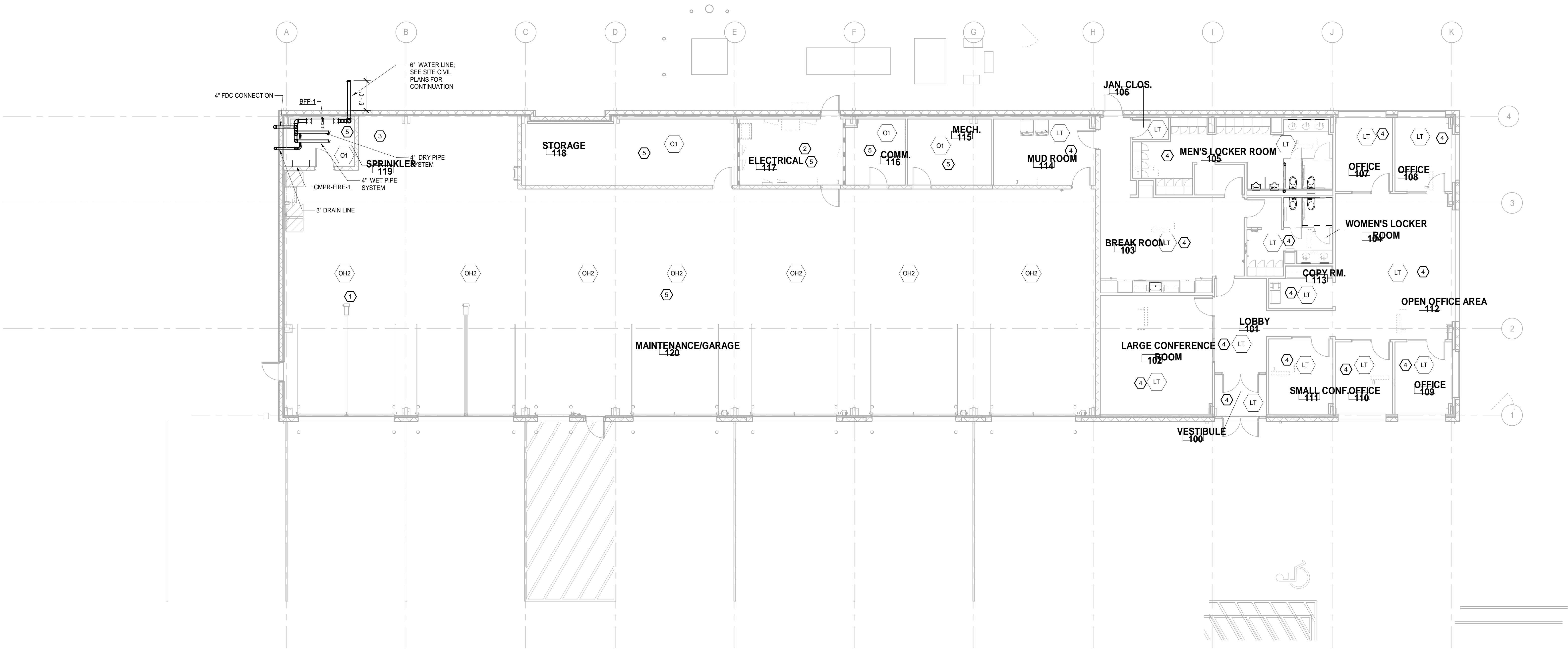
SHEET NUMBER: F000

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



AIR COMPRESSOR SCHEDULE														
TAG	CONFIGURATION	PRESSURE (PSI)	CFM @ 10 PSI	CFM @ 175 PSI	ELECTRICAL DATA			OUTLET SIZE	MANUFACTURER	MODEL	WEIGHT (LBS.)	FLUID WEIGHT (LBS.)	NOTES	
					VOLTS	HZ	PH							
CMPR-FIRE-1	HORIZONTAL	40	7.6	-	115	60	1	2	1/2" NPT	C-AIRE	S550M-LD1-208	193	125.1	1, 2
NOTES:														
1. OIL-FREE COMPRESSOR														
2. PROVIDE WITH AUTOMATIC AIR MAINTENANCE DEVICE														

FIRE PROTECTION FIXTURE SCHEDULE						
DESIGNATION	FIXTURE	FIXTURE DESCRIPTION	CONNECTION SCHEDULE			
			WASTE	VENT	CW	HW
BFP-1	FIRE PROTECTION WATER BACKFLOW PREVENTER	A) WATTS LP967RPA SERIES; 6" LEAD-FREE REDUCED PRESSURE DETECTOR ASSEMBLY BACKFLOW PREVENTER WITH FLOOD SENSOR ON RELIEF VALVE FOR FLOOD DETECTION; 304 STAINLESS STEEL HOUSING & SLEEVE	-	-	6"	-



GENERAL NOTES

- FIRE PROTECTION CONTRACTOR TO COORDINATE WITH OTHER DISCIPLINE DRAWINGS SUCH AS PLUMBING, MECHANICAL, ELECTRICAL, ARCHITECTURAL, STRUCTURAL AND CIVIL PRIOR TO PERFORMING ANY WORK.

KEYNOTES

- PER NFPA 13 SECTION 19.1.7.1, HVLS FANS IN GARAGE AREA SHALL BE CENTED APPROPRIATELY BETWEEN FOUR ADJACENT SPRINKLER AND VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR SHALL BE A MINIMUM OF 36" (ONLY APPLICABLE WHEN ALTERNATIVE OPTION OF INFRARED HEATERS IS CHOSEN - ALT OPTION #6).
- NO SPRINKLER IN THIS ROOM.
- ANY WET FIRE PROTECTION PIPING IN THE MAINTENANCE GARAGE MUST BE HEAT TRACED AT 5 WFT. HEAT TRACE CONTROLLER SHALL BE PLACED IN SPRINKLER ROOM IN AN ACCESSIBLE LOCATION (ONLY APPLICABLE WHEN ALTERNATIVE OPTION OF INFRARED HEATERS IS CHOSEN - ALT OPTION #6).
- THIS ROOM SHALL HAVE CONCEALED TYPE SPRINKLER HEADS.
- THIS ROOM SHALL HAVE PENDANT/UPRIGHT TYPE SPRINKLER HEADS.

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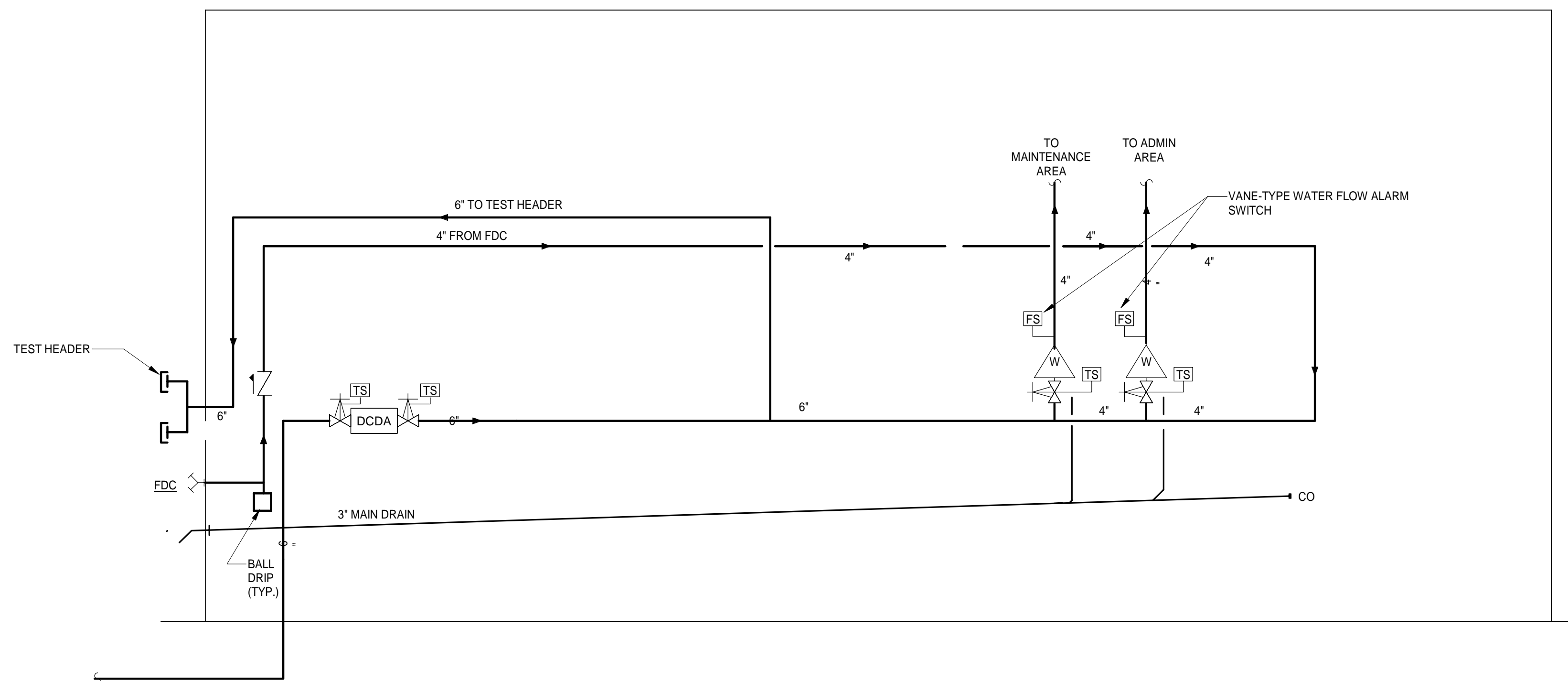
SHEET TITLE:  
**FIRE PROTECTION FLOOR  
PLAN & SCHEDULES**

SHEET NUMBER:  
**F101**

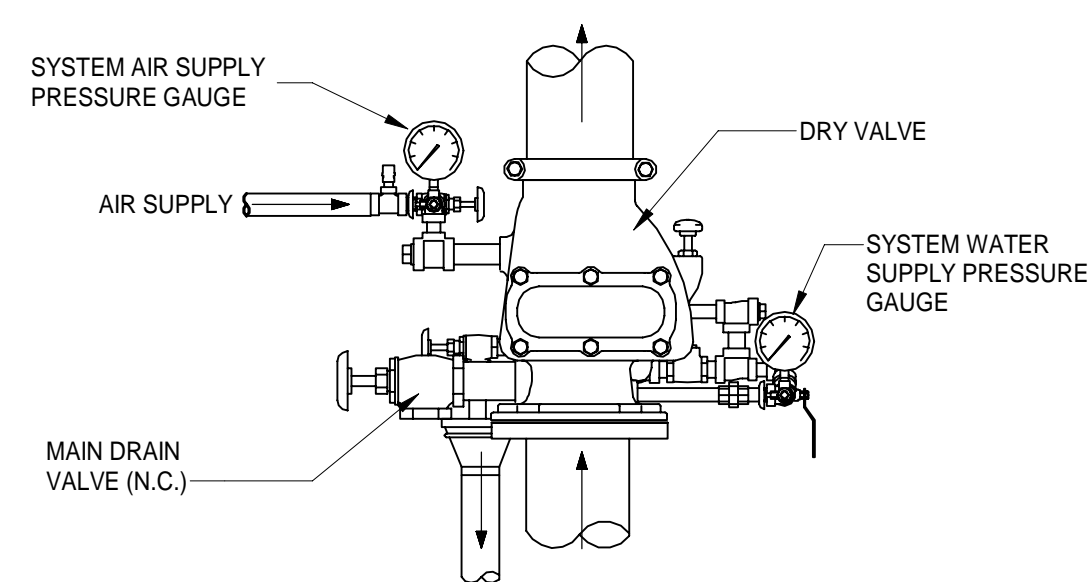
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1 FIRE PROTECTION PLAN  
SCALE : 1/8" = 1'-0"

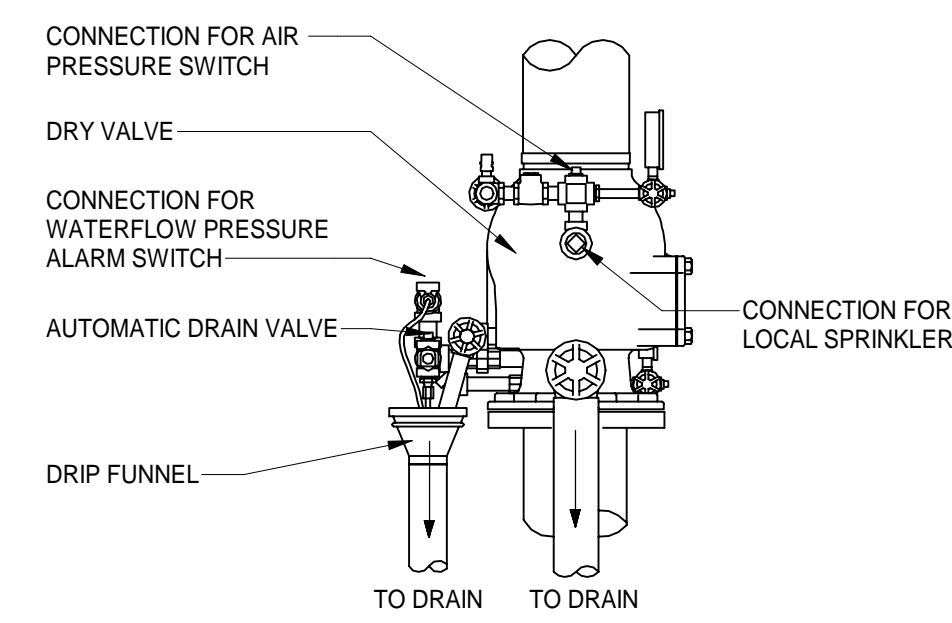




8 **FP RISER**  
SCALE : NTS



FRONT VIEW

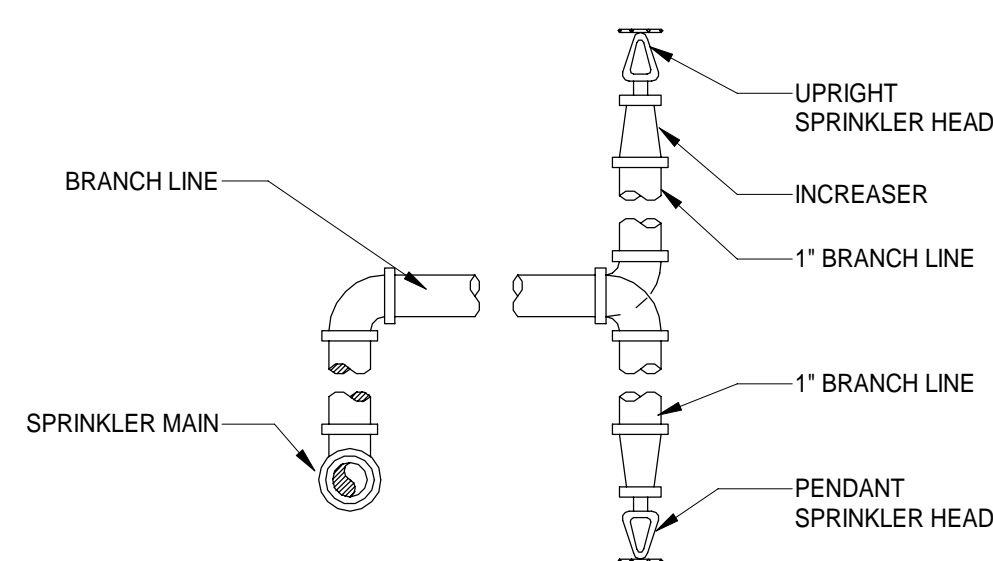


SIDE VIEW

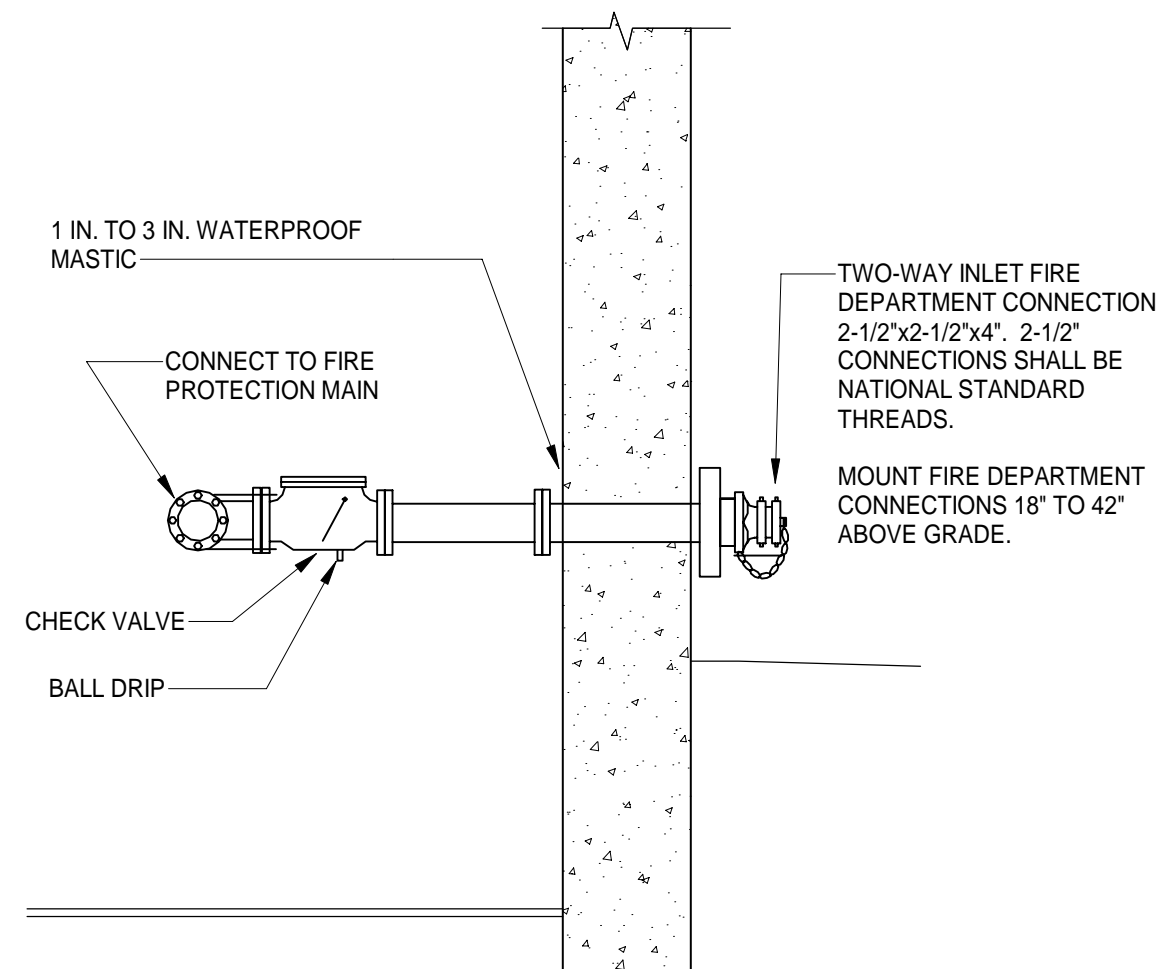
**NOTE:**

NOT ALL COMPONENTS ARE REPRESENTED. REFER TO MANUFACTURER'S DATA SHEETS FOR COMPLETE LISTING OF REQUIRED COMPONENTS.

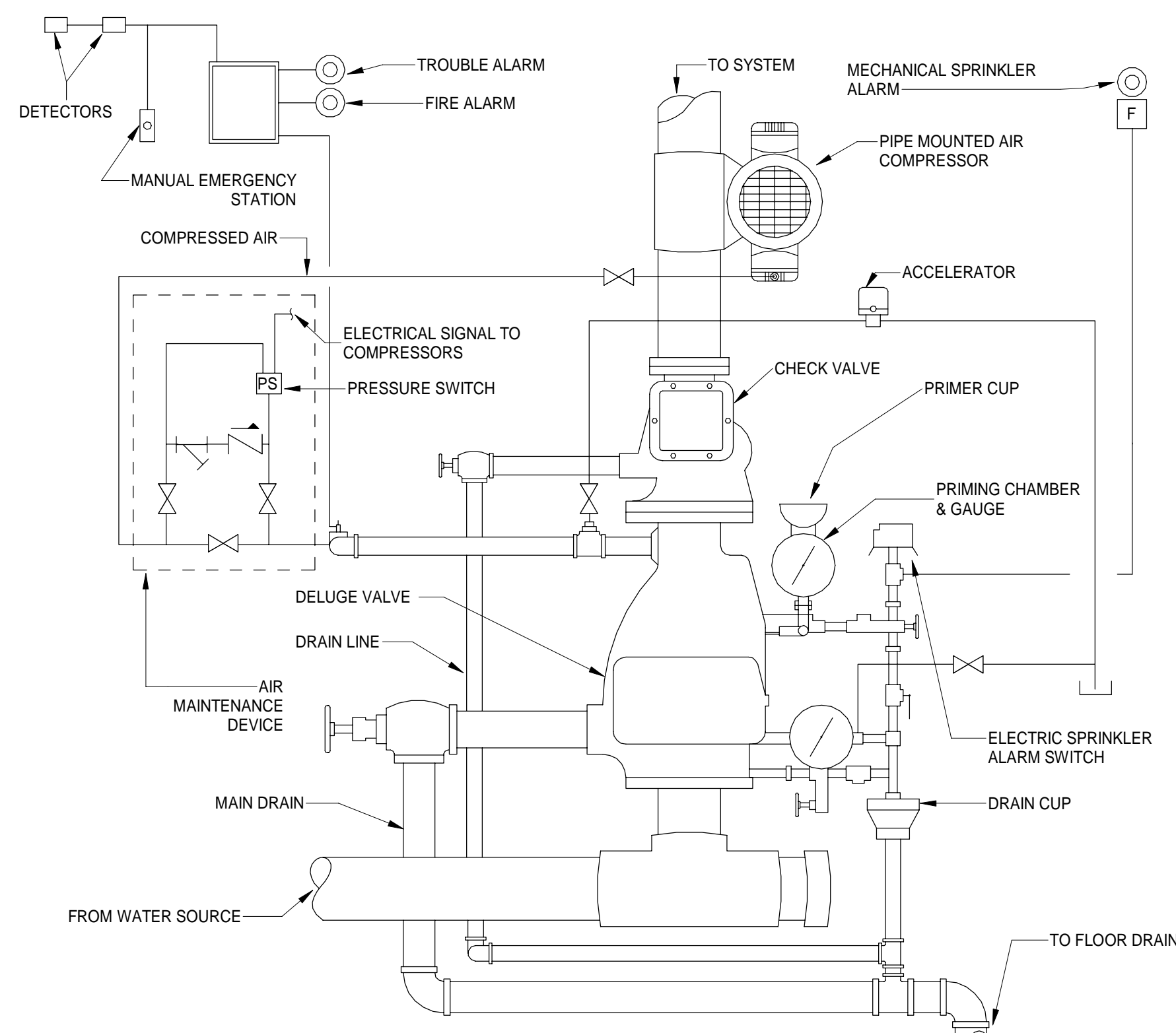
7 **DRY PIPE ALARM CHECK VALVE**  
SCALE : NTS



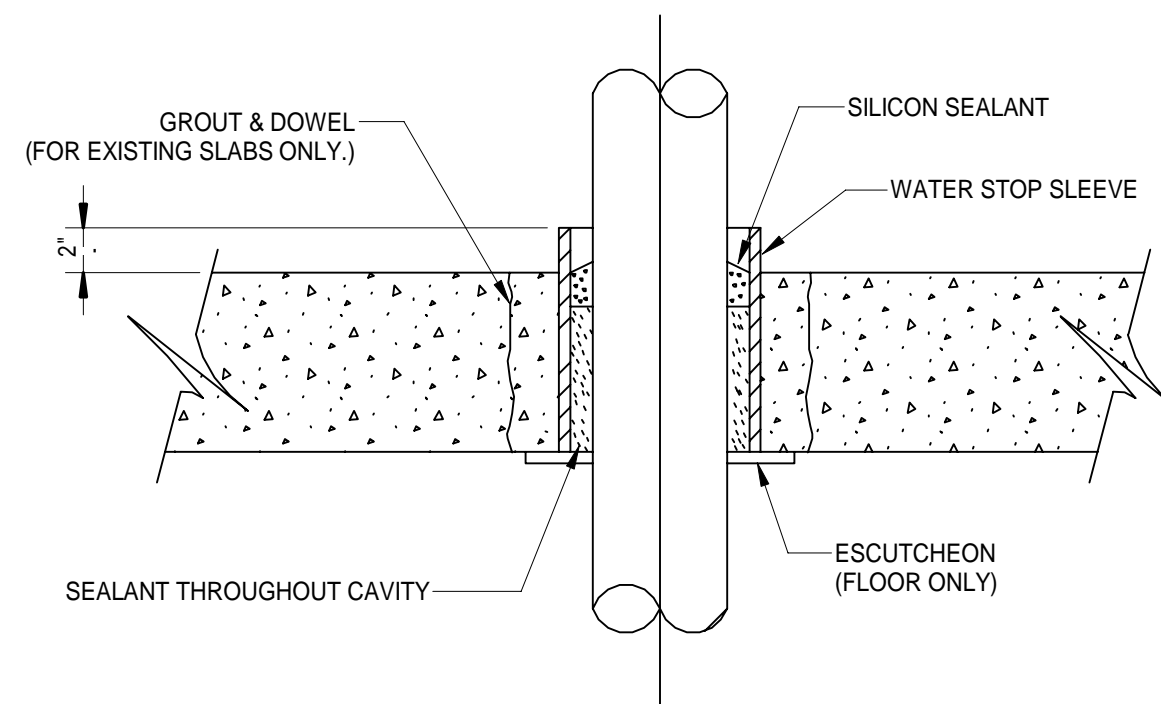
6 **SPRINKLER HEAD INSTALLATION**  
SCALE : NTS



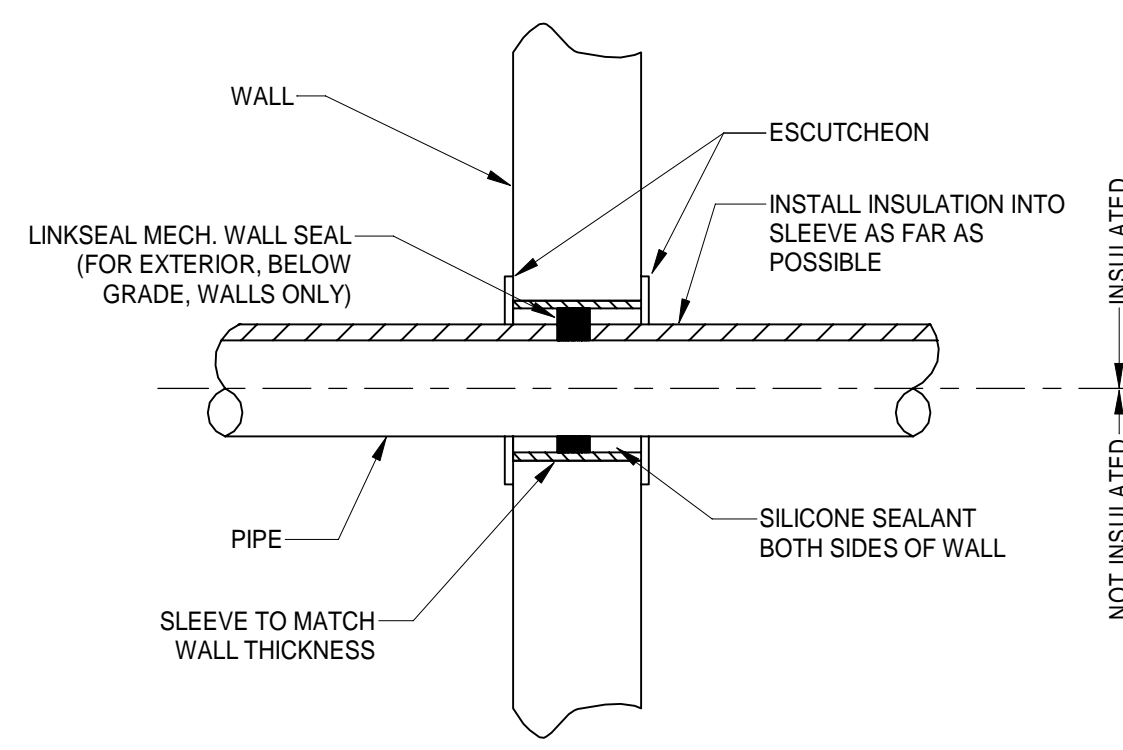
5 **FIRE DEPARTMENT CONNECTION**  
SCALE : NTS



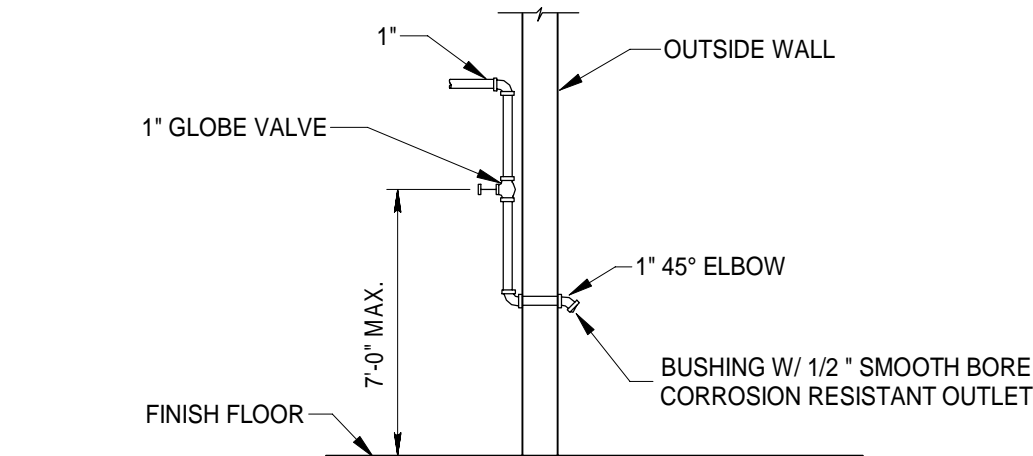
3 **DRY PIPE VALVE**  
SCALE : NTS



2 **PIPE THRU NON-RATED FLOOR/SLAB**  
SCALE : NTS



1 **PIPE THRU NON-RATED WALL**  
SCALE : NTS



4 **INSPECTORS TEST WITH FDC CONNECTIONS**  
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SHEET TITLE:

FIRE PROTECTION DETAILS

SHEET NUMBER: F601





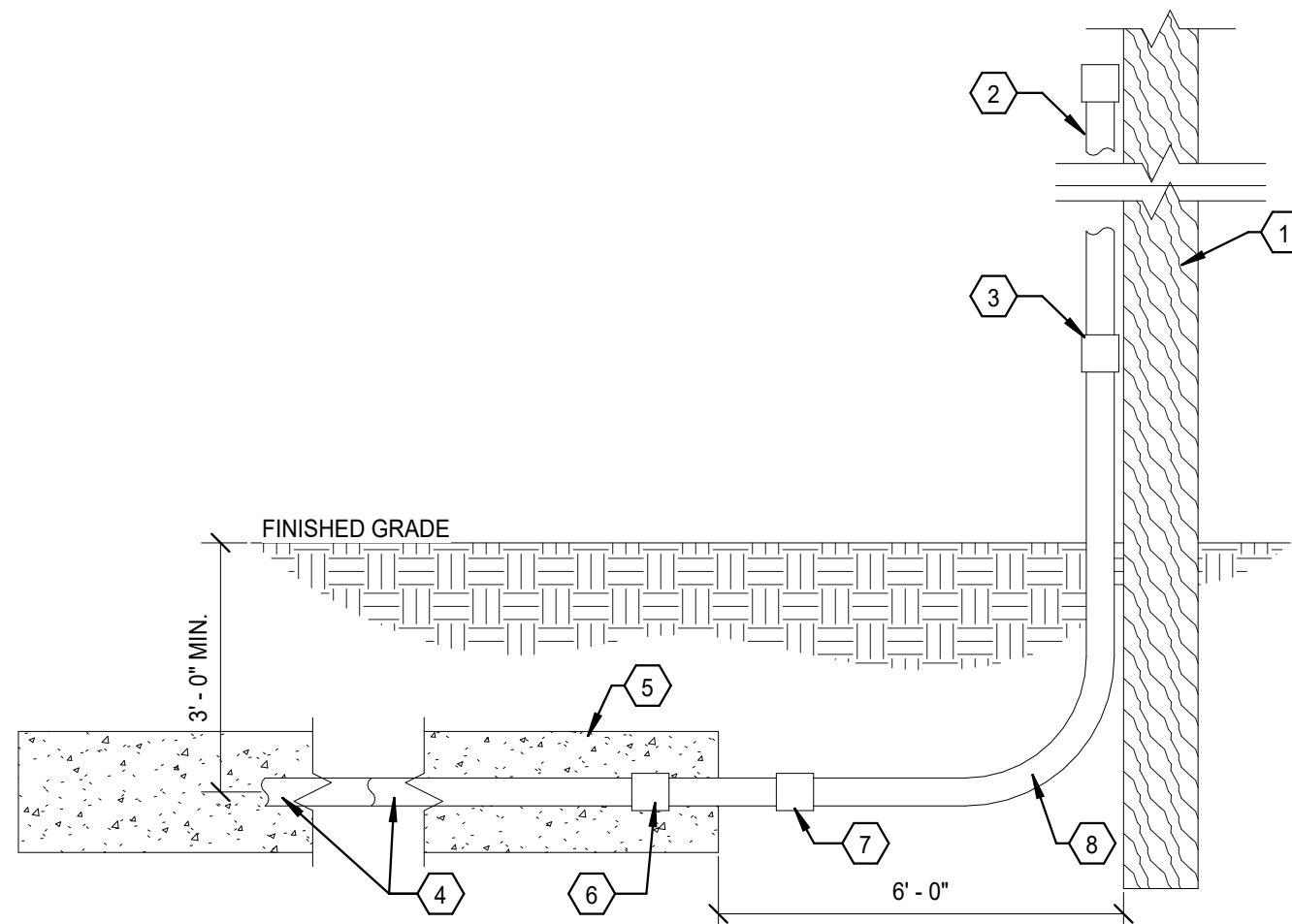




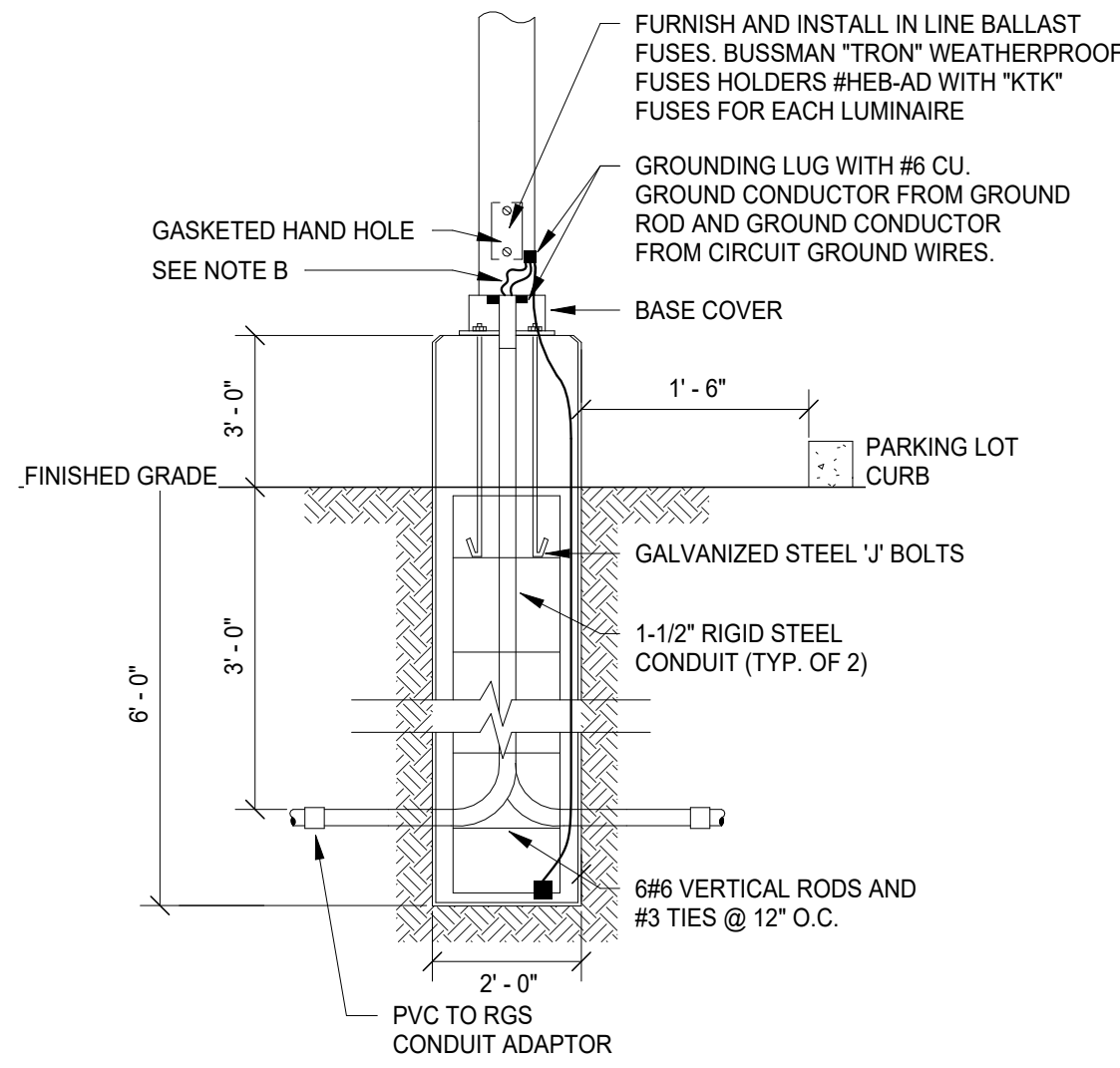


KEYNOTES: ⑦

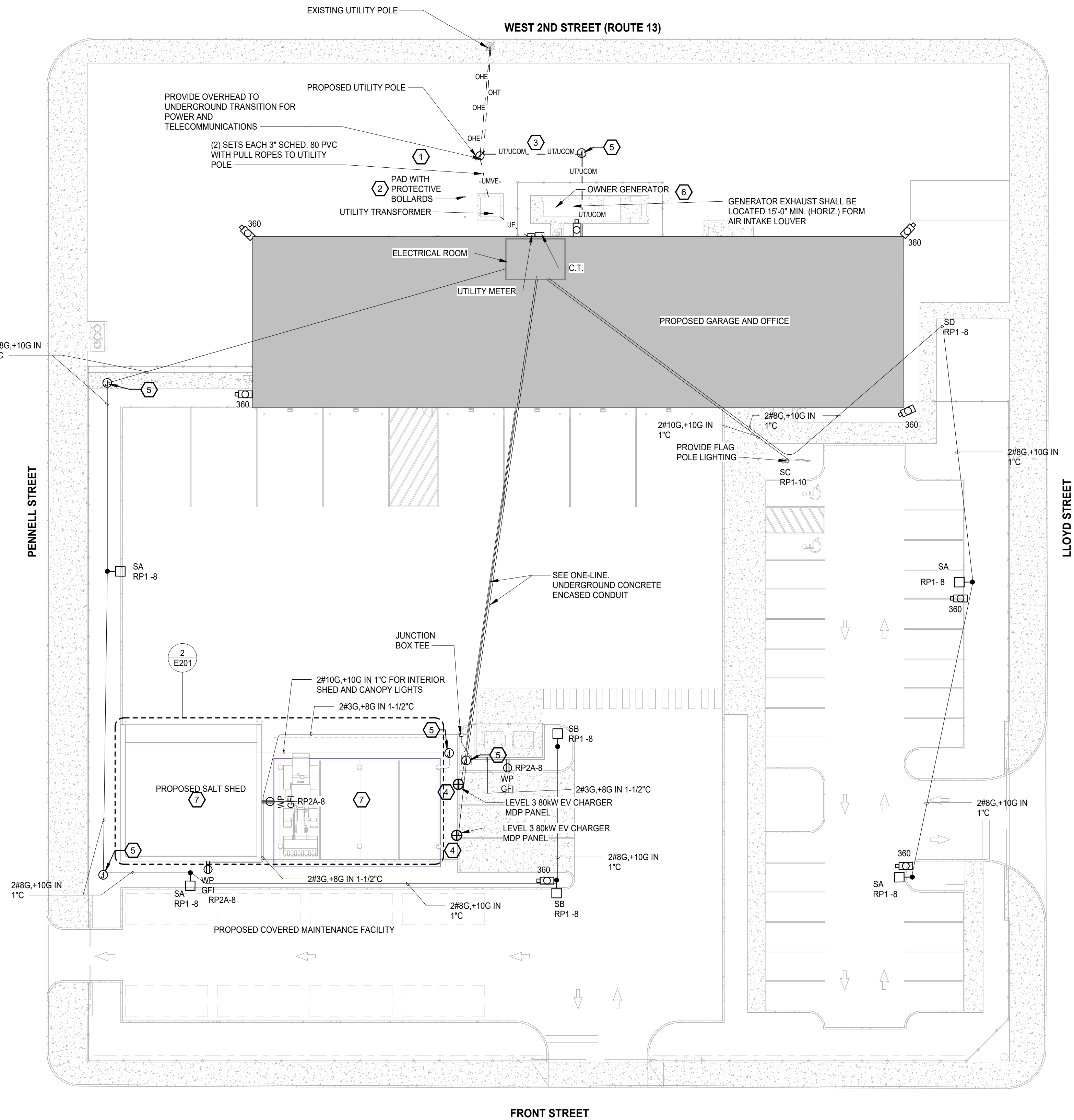
- POLE BY UTILITY COMPANY.
- TERMINATE RACEWAY AT HEIGHT DICTATED BY UTILITY COMPANY.
- TERMINATE AND CAP SPARE RACEWAY.
- TWO 4-INCH PVC, SCHEDULE 40 CONDUITS.
- CONCRETE ENCASEMENT, MINIMUM 3-INCH COVER ALL SIDES. ENCASEMENT SHALL RUN FROM 6-FEET OFF OF POLE TO RACEWAY TERMINATION AT TRANSFORMER PAD (BY OTHERS).
- PVC TO RGS CONDUIT ADAPTER.
- TWO 4-INCH RGS CONDUITS.
- 90-DEGREES X 36-INCHES RADIUS SWEEP ELBOWS.



UTILITY POLE CONDUIT RISER  
SCALE : N.T.S.

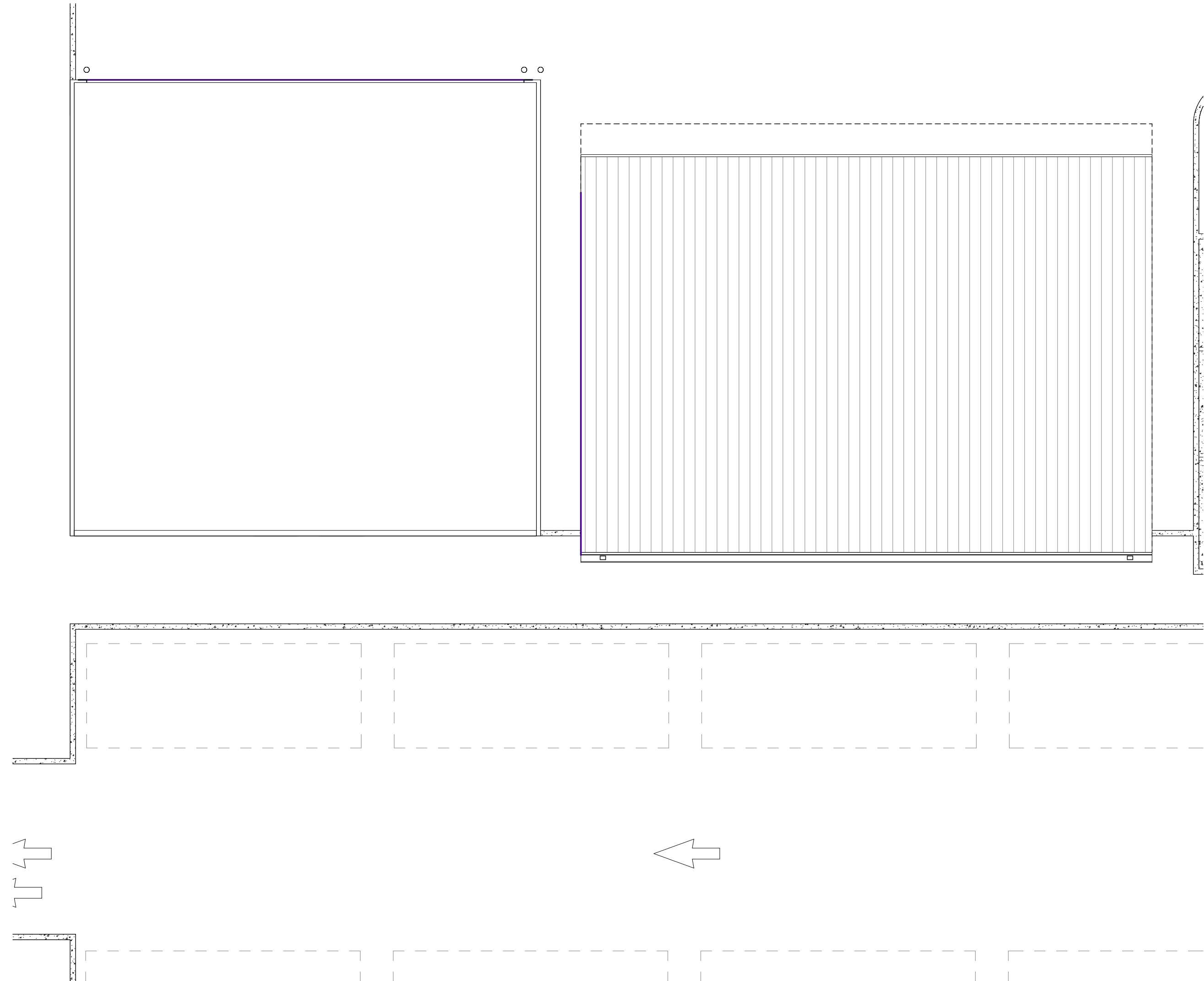


TYPICAL LIGHT POLE BASE - PARKING LOT DETAIL  
SCALE : N.T.S.



ELECTRICAL SITE PLAN  
SCALE : 1" = 20'-0"

SITE LUMINAIRE SCHEDULE								
TAG	LAMP	MANUFACTURER	MODEL NUMBER	BALLAST/DRIVER	MOUNTING	LUMENS	INPUT WATTAGE	DESCRIPTION
SA	LED	BEACON	RAR1-160L-100-4K-4F SSS-B-25-40-A-1-B3-X-VM1	0-10V DIMMING	POLE	11,865	97.2	AREA LIGHT, TYPE 4F DISTRIBUTION, POLE MOUNTED 25FT ABOVE GRADE
SB	LED	BEACON	RAR-160L-100-4K-7-50W-U SSS-B-25-40-A-1-B3-X-VM1	0-10V DIMMING	POLE	12,155	87.9	AREA LIGHT, TYPE 50W DISTRIBUTION, POLE MOUNTED 25FT ABOVE GRADE
SC	LED	KIRLIN	LWR-5000L-277-41K-X-DIA-35	0-10V DIMMING	SURFACE	5000	57.4	WEATHERPROOF FLAGPOLE UPLIGHT, VERIFY FLAGPOLE DIAMETER PRIOR TO ORDERING
SD	LED	BEACON	VPB-24L-15-3K7-3-42	0-10V DIMMING	GROUND	1683	15	LED VIPER BOLLARD, FINISH TBD BY ARCHITECT.



POWER PLAN - ROOF PV  
SCALE : 1/8" = 1'-0"

GENERAL NOTES:

- SEE DRAWING E001 FOR ADDITIONAL GENERAL NOTES.
- CONTRACTOR SHALL CALL DIG AUTHORITY AT LEAST 3 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO CONSTRUCTION.
- THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS PLAN HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS. THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND / OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY.
- IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD, OR PROVIDE SHEETING AND BRACING.
- WHEN ANY EXISTING UTILITY REQUIRES ADJUSTMENT OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY COMPANY AND COORDINATE THE WORK ACCORDINGLY. THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR FOR ANY COSTS CAUSED BY DELAYS IN CONSTRUCTION DUE TO THE ADJUSTMENT OR RELOCATION OF UTILITIES.
- MAKE NECESSARY ARRANGEMENTS WITH THE STATES ELECTRIC AND GAS COMPANY THROUGH THE DIRECTOR'S REPRESENTATIVE, FOR THE PERMANENT AND TEMPORARY ELECTRICAL SERVICES AND PAY ALL CHARGES AND FEES.
- PROVIDE 200A, 120/240V, 1 PHASE TEMPORARY ELECTRIC SERVICE TO SITE. REFER TO SPECIFICATION SECTION 015000 FOR ADDITIONAL INFORMATION.
- SEE SINGLE LINE DIAGRAMS AND PANEL SCHEDULES FOR MORE INFORMATION.
- COORDINATE ALL SITE LIGHTING LOCATIONS WITH CIVIL PRIOR TO ROUGH IN.

SITE KEYNOTES ⑦

- PROVIDE UNDERGROUND PRIMARY CONDUITS PER POWER UTILITY COMPANY'S SPECIFICATION AND REQUIREMENTS. PRIMARY CONDUCTORS WILL BE PROVIDED BY THE POWER UTILITY COMPANY. COORDINATE EXACT ROUTING AND STUB-UP LOCATION WITH THE POWER UTILITY COMPANY AND CLEARLY MARK STUB-UP LOCATION. STUB-UP LOCATIONS INDICATED ARE BASE ON INFORMATION THAT WAS AVAILABLE DURING DESIGN. SUBMIT A LINEAL FOOT UNIT PRICE WITH THE BID FOR ADDITIONAL CONDUIT, OF EACH SIZE AND TYPE INDICATED. IN THE EVENT FINAL UTILITY COMPANY DIRECTED STUB-UP LOCATION DIFFERS FROM WHAT IS INDICATED.
- PROVIDE TRANSFORMER PAD, TRANSFORMER PAD SHALL MEET ALL POWER UTILITY COMPANY SPECIFICATIONS AND REQUIREMENTS. PAD-MOUNT TRANSFORMER WILL BE PROVIDED BY THE POWER UTILITY COMPANY.
- PROVIDE #QUANTITY OF 4" UNDERGROUND PVC CONDUIT WITH PULL STRINGS PER LOW VOLTAGE (TELEPHONE, CABLE TV, FIBEROPTIC) UTILITY COMPANY'S SPECIFICATIONS AND REQUIREMENTS FOR LOW VOLTAGE SERVICE. COORDINATE EXACT ROUTING AND STUB-UP LOCATION WITH THE LOW VOLTAGE UTILITY COMPANY AND CLEARLY MARK STUB-UP LOCATION. STUB-UP LOCATIONS INDICATED ARE BASED ON INFORMATION THAT WAS AVAILABLE DURING DESIGN. SUBMIT A LINEAL FOOT UNIT PRICE WITH THE BID FOR ADDITIONAL CONDUIT, OF EACH SIZE AND TYPE INDICATED. IN THE EVENT THE FINAL UTILITY COMPANY DIRECTED STUB-UP LOCATION DIFFERS FROM WHAT IS INDICATED.
- ALTERNATIVE: PROVIDE ALL NECESSARY CONDUITS, WIRES, CONNECTIONS AND ACCESSORIES FOR A FULLY FUNCTIONAL LEVEL 3 80kW EV CHARGER. SEE SINGLE LINE DIAGRAMS AND SITE/CIVIL DRAWINGS FOR MORE INFORMATION. REFER TO CIVIL PLANS FOR EXACT LOCATION AND FOUNDATION DESIGN. COORDINATE WITH THE MANUFACTURER FOR ALL FINAL ELECTRICAL REQUIREMENTS FOR LEVEL 3 80kW EV CHARGER PRIOR TO INSTALLATION. EC TO INSTALL BREAKER, CONDUIT & WIRING TO CHARGER LOCATIONS.
- PROVIDE 3'-0" X 3'-0" PRECAST UNDERGROUND HANDHOLE, ACCEPTABLE PRODUCTS A.C. MILLER CONCRETE PRODUCTS AND ROTUNDO PRE-CAST. GENERATOR PROVIDED BY OWNER ON NEW CONCRETE PAD, EC SHALL WIRE AND INSTALL GENERATOR. PROVIDE ALL ACCESSORIES FOR A FULLY FUNCTIONAL SYSTEM. COORDINATE ELECTRICAL REQUIREMENTS WITH MANUFACTURER AND IN FIELD PRIOR TO INSTALLATION. PROVIDE UNDERGROUND FEEDERS TO BUILDING ELECTRICAL ROOM. SEE SINGLE LINE DIAGRAMS FOR MORE INFORMATION.
- REFER TO ALTERNATE #1 FOR SALT SHED WORK SCOPE & ALTERNATE #2 FOR PARKING CANOPY WORK SCOPE IN SPEC SECTION 012300.

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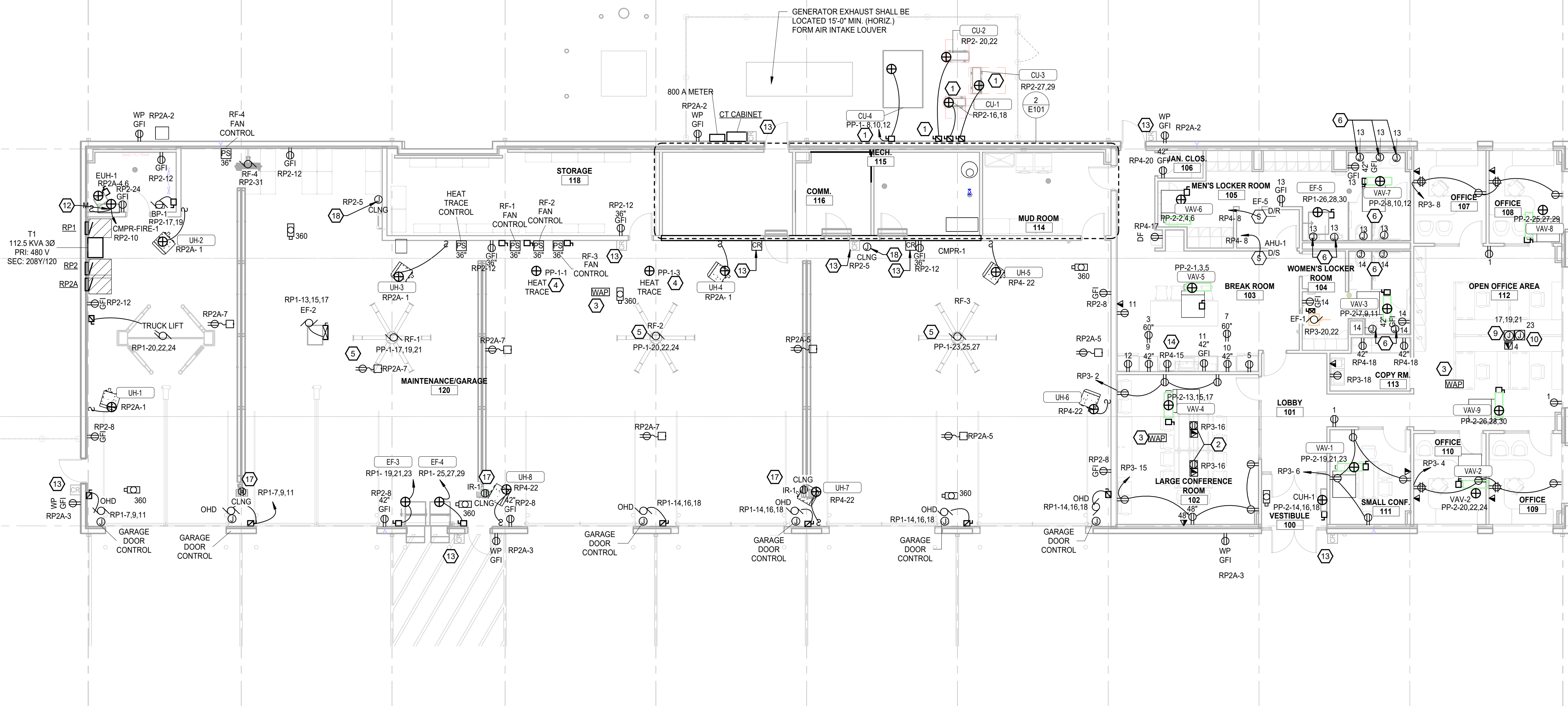
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SHEET TITLE  
SITE PLAN  
SHEET NUMBER  
ES002

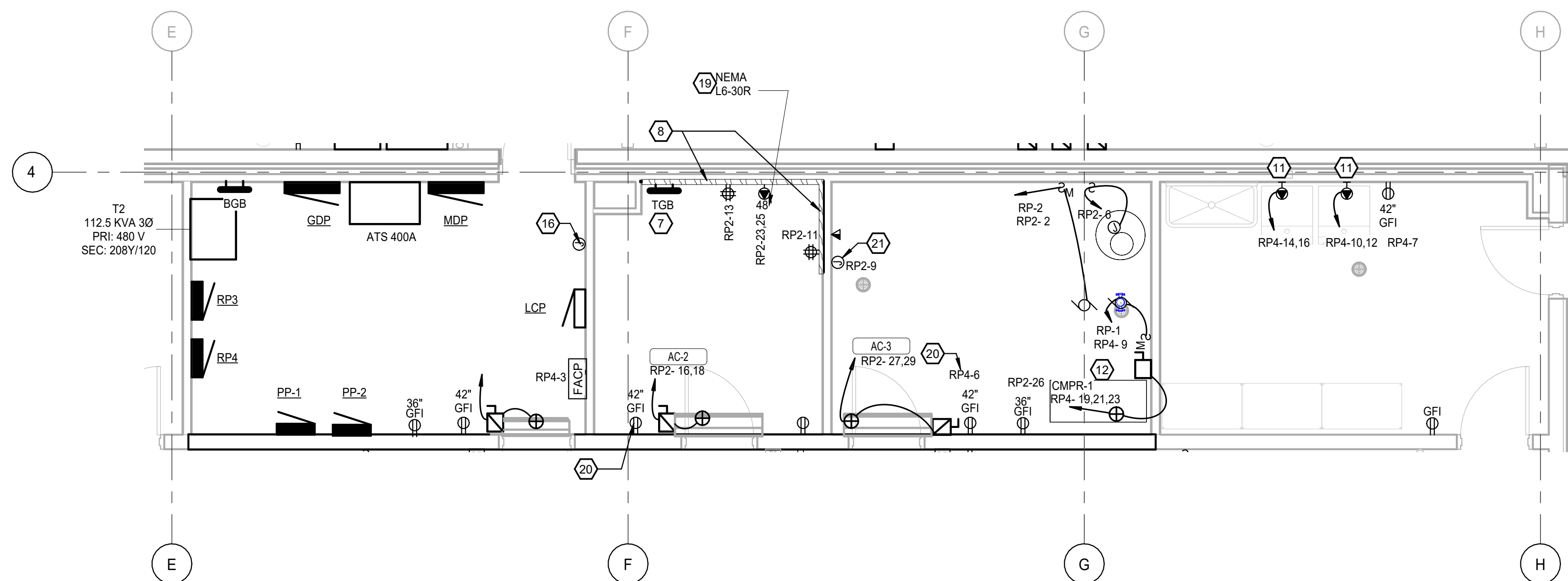
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## FIRST FLOOR POWER PLAN

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



## FIRST FLOOR POWER PLAN - ROOMS 114, 115, 116, 117

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

## POWER KEYNOTES

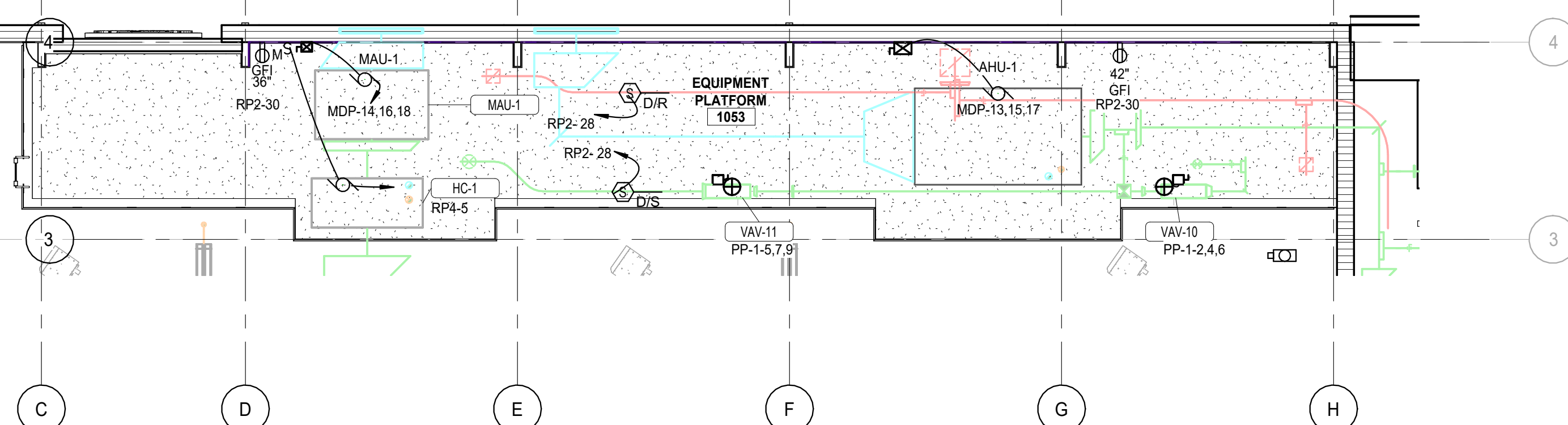
1. PROVIDE NEMA 3R DISCONNECT AND MOUNT ON SEPARATE SUPPORTS. PROVIDE AC POWER FEED DISCONNECT TO FAN UNIT IN 3/4" CONDUIT. PROVIDE NEMA 1-14-30R DISCONNECT SWITCH FOR FAN UNIT AND MOUNT ADJACENT TO FAN UNIT. PROVIDE 3/4" CONDUIT DISCONNECT BETWEEN CONDENSER AND FAN UNIT INSIDE. PROVIDE ALL AC AND DC CABLEING BETWEEN INDOOR AND OUTDOOR UNIT PER MANUFACTURER. WIRING DIAGRAMS. UNIT EQUIPPED WITH ACCESSORY CONDENSATE PUMP. CIRCUIT CONDENSATE PUMP TO CIRCUIT SERVING INSIDE UNIT. IN ACCORDANCE WITH MANUFACTURER'S WIRING DIAGRAMS. PROVIDE IN-LINE FUSE PER MANUFACTURER'S REQUIREMENTS. SEAL ALL PENETRATIONS TO MAINTAIN WALL SYSTEM. PENETRATIONS AND EXPOSED CONDUIT SHALL BE RIGID CONDUIT WITH LFG FOR FINAL CONNECTION.
2. PROVIDE RECESSED CONCRETE ON GRADE FLOORBOX EQUAL TO WIREMOLD RFA2R300G. PROVIDE 1 DUPEXES, BARRIER KIT, OPENINGS FOR LOW VOLTAGE DEVICES, BLANK COVERS, AND FBTK COVER ASSEMBLY. COMMUNICATION DEVICES BY OTHERS. PROVIDE 1/4-INCH CONDUIT FOR POWER AND 1-1/2-INCH CONDUIT FOR LOW VOLTAGE. ROUTE LOW VOLTAGE CONDUIT TO TELECOM BOARD. PROVIDE ALL NECESSARY COMPONENTS FOR A COMPLETE AND NEAT INSTALLATION.
3. WIRELESS ACCESS POINT (WAP) CEILING MOUNTED. PROVIDE CONDUIT / RACEWAY AND BACKBOX, DEVICE AND DATA CABLEING PROVIDED BY OTHERS.
4. ALTERNATIVE: PROVIDE WITH THE INFRARED HEATER AND IN PLACE OF UNIT HEATERS. PROVIDE HEAT TRACE FOR THE FOLLOWING PIPING ASSOCIATED WITH PIPING IN GARAGE. VERIFY LOCATION AND CHARACTERISTICS OF PIPING IN THE FIELD WITH MECHANICAL CONTRACTOR. PROVIDE ITT-15 CONTROLLER(S) OR APPROVED EQUAL WITH CTR CABLE, RTFC POWER CONNECTION KIT(S), RTST SPLICE BOX(S), RTES END SEAL(S), AND RTBA POWER CONNECTION KIT(S). LINE-SENSING T-STAT ALONG WITH REQUIRED ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REFER TO ALTERNATIVE #6 IN SPEC. SECTION 012300.
5. PROVIDE DISCONNECT AND FAN CONTROL WIRING FOR FUTURE HIGH-VOLUME LOW SPEED CEILING FAN REFER TO MECHANICAL EQUIPMENT SCHEDULE AND MECHANICAL PLANS FOR MORE INFORMATION. OUTLET BOXES FOR CEILING FANS SHALL BE LISTED FOR CEILING FAN USE OR CAPABLE OF SUPPORTING MOUNTING BRACKETS FOR CEILING FANS. OUTLET BOX SHALL ALSO BE LISTED TO SUPPORT CEILING FAN WEIGHT. COORDINATE WEIGHT OF CEILING FAN WITH MANUFACTURER.
6. PROVIDE RECESSED BOXES FOR AUTOMATIC VALVES (FAUCET, URINAL, AND LAVATORIES). PROVIDE CONDUIT AND WIRE FROM AUTOMATIC VALVES TO TRANSFORMER LOCATED ABOVE ACCESSIBLE CEILING. COORDINATE LOCATIONS OF JUNCTION BOXES IN FIELD WITH PLUMBING CONTRACTOR. MANUAL FLUSH HANDLES, PIPING, AND VALVES SHALL NOT BLOCK SENSORS.
7. PROVIDE GROUND BAR. REFER TO DETAILS AND SPECIFICATIONS. ALL METAL COMPONENTS INCLUDING RACKS, CABLE TRAY, AND EQUIPMENT IN ROOM SHALL BE GROUNDED TO THE GROUND BAR. PROVIDE #30 TO MAIN SERVICE GROUND POINT.
8. PROVIDE A 4'-0" X 8'-0" X 3/4" UL-LABELED FIRE-RETARDANT PLYWOOD BACKBOARD FOR TELECOMMUNICATIONS EQUIPMENT. PROVIDE GROUND BAR MOUNTED ON BACKBOARD WITH EQUIPMENT GROUNDING CONDUCTOR CONNECTED TO POWER SYSTEM'S GROUNDING ELECTRODE SYSTEM.
9. PROVIDE NEW FURNITURE CONNECTIONS FOR DATATEL AND POWER OUTLETS IN FURNITURE SYSTEM. COORDINATE ELECTRICAL REQUIREMENTS AND LOCATION WITH EQUIPMENT VENDOR AND ARCHITECT PRIOR TO INSTALLATION.
10. PROVIDE DEDICATED CIRCUIT FOR FURNITURE SYSTEM IF REQUIRED BY FURNITURE MANUFACTURER.
11. PROVIDE ALL NECESSARY CONDUITS, WIRES, CONNECTIONS, AND ACCESSORIES FOR A FULLY FUNCTIONAL WASHER/DRYER UNIT. PROVIDE NEMA 14-30R RECEPTACLE AND CONNECT TO INDICATED CIRCUIT WITH 3/4", 4#10, 1#10GND. ROUTE CONCEALED. COORDINATE WITH MANUFACTURER FOR ALL FINAL ELECTRICAL REQUIREMENTS FOR INTERCOM PRIOR TO INSTALLATION. COORDINATE LOCATION AND MOUNTING HEIGHTS OF OUTLET WITH ARCHITECT PRIOR TO ROUGH-IN.
12. PROVIDE ALL NECESSARY CONDUITS, WIRES, CONNECTIONS, AND ACCESSORIES FOR A FULLY FUNCTIONAL AIR COMPRESSOR. PROVIDE HARDWIRED CONNECTIONS FOR AIR COMPRESSOR AND CONNECT TO INDICATED CIRCUIT WITH 3/4", 1#10GND IN 3/4". ROUTE CONCEALED. COORDINATE WITH MANUFACTURER FOR ALL FINAL ELECTRICAL REQUIREMENTS FOR AIR COMPRESSOR PRIOR TO INSTALLATION. COORDINATE LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
13. PROVIDE BACKBOX, CONDUIT AND / OR RACEWAY FOR CARD READER. COORDINATE FINAL LOCATION WITH OWNER AND VENDOR PRIOR TO ROUGH-IN.
14. PROVIDE ALL NECESSARY DISCONNECTS, CONDUIT, WIRE, CONNECTIONS, AND ACCESSORIES FOR A FULLY FUNCTIONAL DISHWASHER. COORDINATE WITH MANUFACTURER FOR ALL ELECTRICAL REQUIREMENTS FOR DISHWASHER PRIOR TO INSTALLATION.
15. PROVIDE GENERATOR REMOTE ANNUNCIATOR. CONTRACTOR SHALL FIELD LOCATE THE ANNUNCIATOR PER OWNER'S REPRESENTATIVE.
16. ALTERNATIVE: PROVIDE CEILING RECEPTACLE FOR LINEAR INFRARED HEATER IN PLACE OF UNIT HEATERS. COORDINATE WITH MECHANICAL CONTRACTOR ON ALL REQUIREMENTS PRIOR TO ROUGH-IN.
17. PROVIDE 120V CIRCUIT TO NOVO DETECTOR BY MECHANICAL CONTRACTOR. COORDINATE FINAL LOCATION AND ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
18. PROVIDE NEMA 14-30R RECEPTACLE ON A DEDICATED CIRCUIT FOR IT RACK. COORDINATE RECEPTACLE NEMA CONFIGURATION AND ELECTRICAL REQUIREMENTS WITH IT VENDOR PRIOR TO PURCHASE AND INSTALLATION. PROVIDE A 2P-30A BREAKER TO MATCH EXISTING PANEL CHARACTERISTIC AND 2# 10 & 1#10GND - 3/4" C. ROUTE CONCEALED. PROVIDE AND CONNECT TO BREAKER AND RECEPTACLE. COORDINATE EXACT MOUNTING REQUIREMENTS WITH VENDOR PRIOR TO INSTALLATION.
19. PROVIDE DUPLEX RECEPTACLE FOR CONDENSATE PUMP. COORDINATE WITH MANUFACTURER FOR ALL ELECTRICAL REQUIREMENTS FOR CONDENSATE PUMP PRIOR TO INSTALLATION. COORDINATE RECEPTACLE MOUNTING HEIGHT AND LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
20. PROVIDE ALL NECESSARY DISCONNECTS, CONDUIT, WIRE, CIRCUITS, CONNECTIONS, AND ACCESSORIES FOR A FULLY FUNCTIONAL BMS. COORDINATE WITH MANUFACTURER FOR ALL ELECTRICAL REQUIREMENTS FOR HEAT TRACE PRIOR TO INSTALLATION. COORDINATE MOUNTING HEIGHT AND LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.

## GENERAL NOTES:

- A. PROVIDE 2-INCH CONDUIT SLEEVE AND SEAL AS REQUIRED PER ARCHITECTURAL CODE PLANS INTO ALL SPACES WITH LOW VOLTAGE DEVICES. OPEN OFFICES SHALL BE PROVIDED WITH A MINIMUM OF (4) SLEEVES AND TRAINING ROOMS WITH A MINIMUM OF (3) SLEEVES.
- B. ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT INCLUDED SWITCHBOARDS, DISTRIBUTION PANELS, VFDs, AND TRANSFORMERS SHALL BE MOUNTED ON A 4-INCH CONCRETE PAD THAT EXTENDS 4-INCHES OUT FROM EQUIPMENT.
- C. COORDINATE ALL DEVICE LOCATIONS AND CIRCUIT ROUTING WITHIN MILLWORK WITH MILLWORK VENDOR PRIOR TO ROUGH-IN.
- D. COORDINATE ALL KITCHEN EQUIPMENT REQUIREMENTS AND DEVICE LOCATIONS WITH THE FOODSERVICE CONTRACTOR PRIOR TO ROUGH-IN. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE DISCONNECTING MEANS FOR, AND TO MAKE THE FINAL CONNECTION TO, ANY HARDWIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE TO PROVIDE AN APPROPRIATE CORD AND PLUG FOR ANY CORD-AND-PLUG CONNECTED EQUIPMENT THAT IS NOT EQUIPPED WITH AN INTEGRAL CORD AND PLUG.
- E. ANY LOADS WITHOUT PANEL NAME CALLED OUT ARE CIRCUITED BACK TO PANEL RP-3.
- F. ELECTRICAL CONTRACTOR SHALL PROVIDE HANDLE TIES FOR ALL SINGLE POLE CIRCUIT BREAKERS THAT SERVE CIRCUITS THAT COMPRISE A MULTIWIRE BRANCH CIRCUIT TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS IN THE MULTIWIRE BRANCH CIRCUIT IF REQUIRED.
- G. REFER TO DRAWING E802 FOR MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
- H. TELECOM, A.V., LOW VOLTAGE, AND SECURITY IS DONE BY OTHERS. COORDINATE WITH DIVISIONS FOR FINAL LOCATION, CONDUIT SIZES AND ELECTRICAL REQUIREMENTS.
- I. TELECOM, A.V., AND SECURITY: INSTALL CONDUIT WITH NO MORE THAN (2) 90° BENDS BETWEEN PULL BOXES, AND NO MORE THAN 100'-0" BETWEEN PULL BOXES. PULL BOXES SHALL BE INSTALLED FOR STRAIGHT THRU PULLS ONLY.
- J. ALL COMMUNICATIONS CABLES SHALL BE INSTALLED IN CONDUIT CABLE TRAY OR SUPPORTED BY CABLE HOOKS. PROVIDE BUSHINGS AT THE ENDS OF ALL CONDUIT WHERE STUBBED ABOVE ACCESSIBLE CEILINGS OR WHERE DROPPED INTO CABLE TRAY. PROVIDE CABLE HOOKS ABOVE ACCESSIBLE CEILINGS FOR CABLE INSTALLATION WHERE NOT INSTALLED IN CONDUIT OR CABLE TRAY.

## EQUIPMENT PLATFORM- POWER

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



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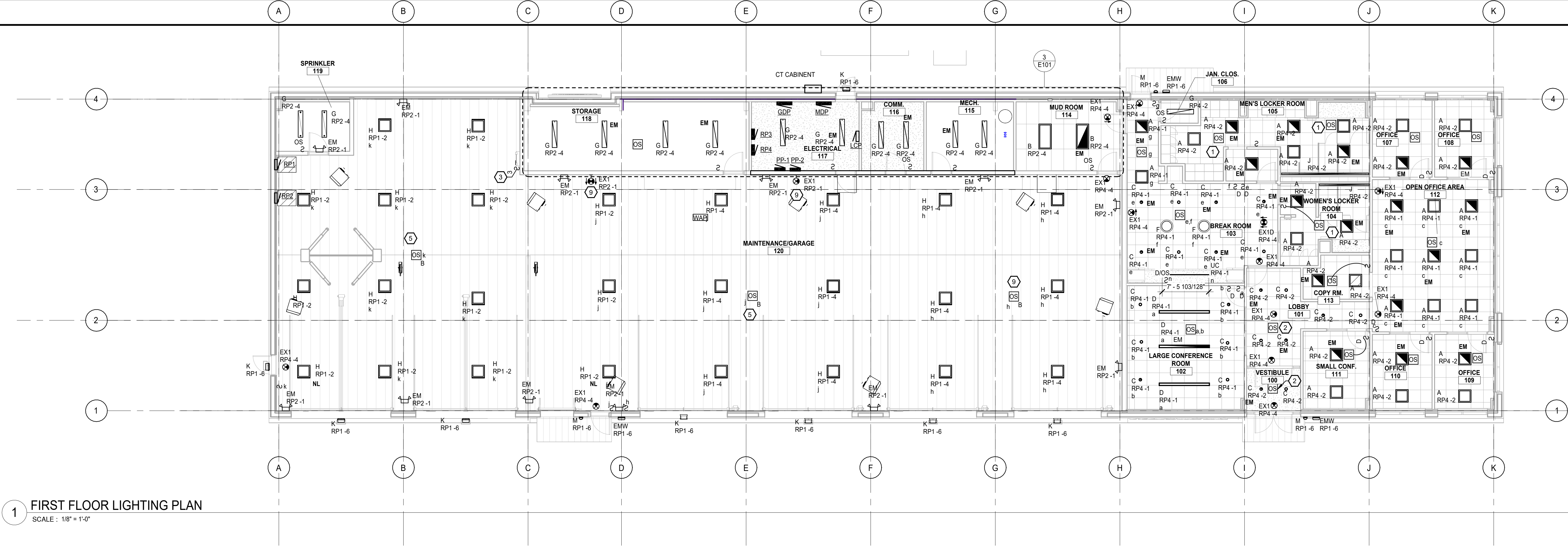
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POWER PLAN

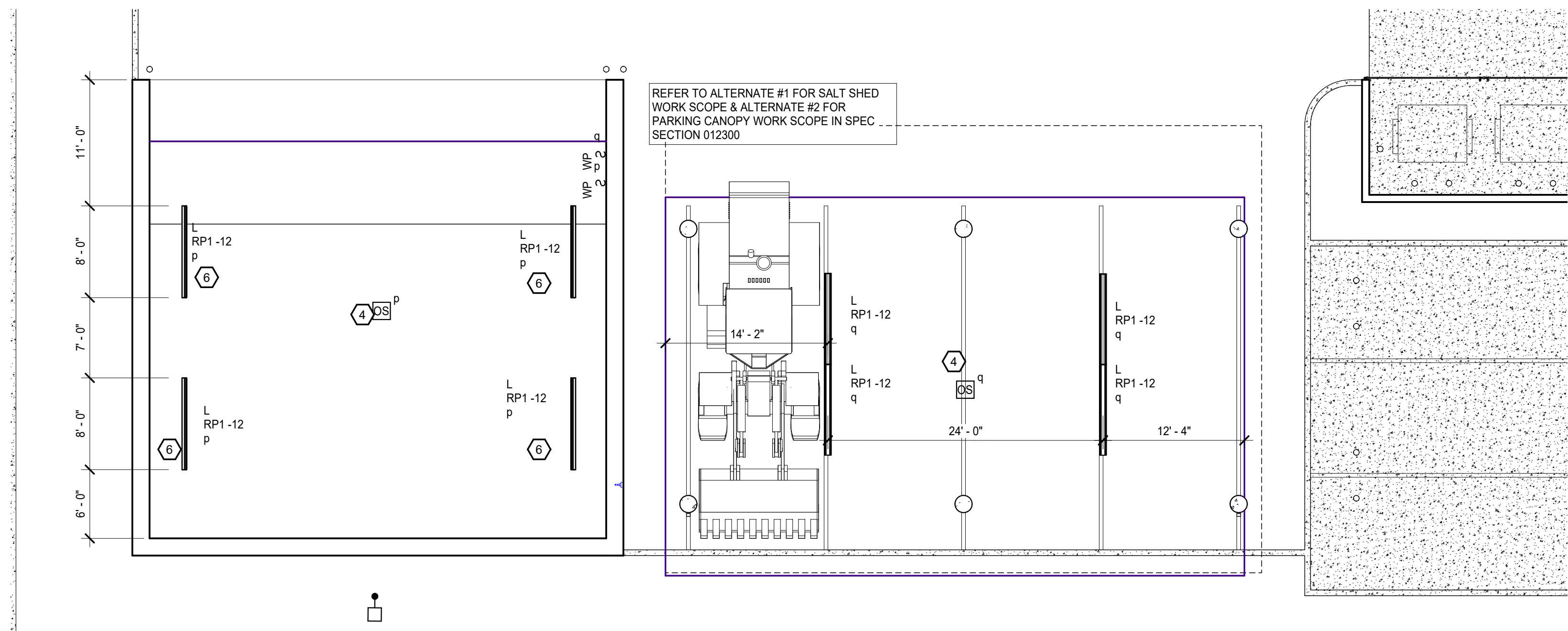
SHEET NUMBER

E101

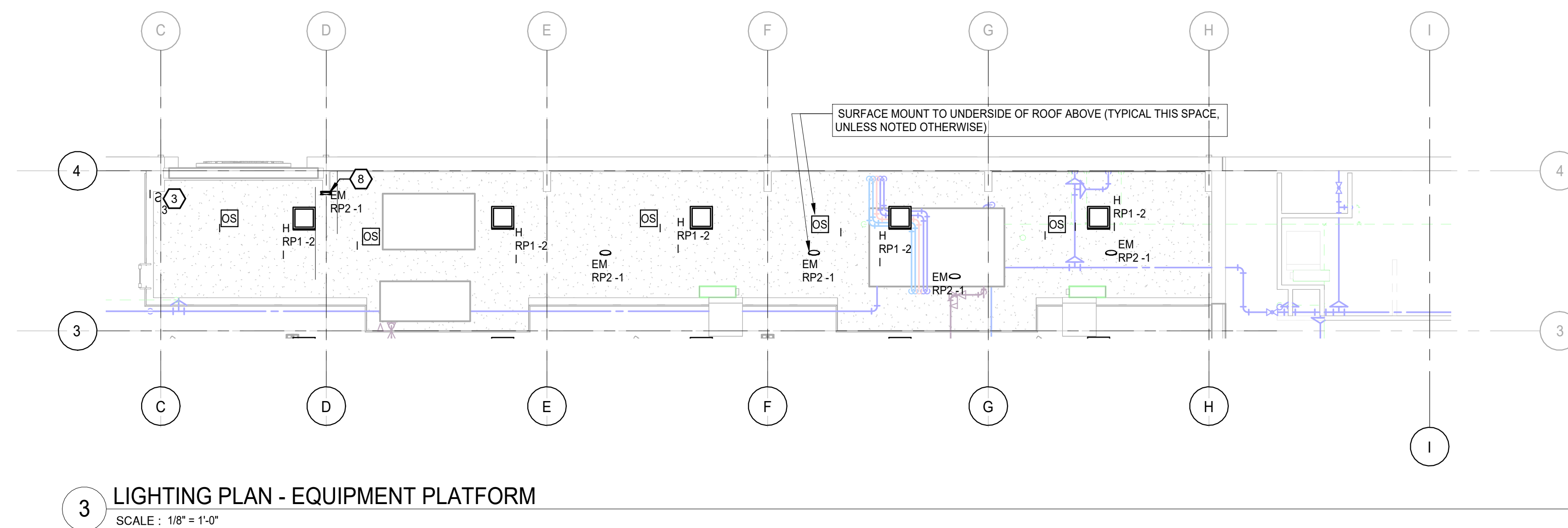




1 FIRST FLOOR LIGHTING PLAN  
SCALE : 1/8" = 1'-0"



2 SALT SHED LIGHTING PLAN  
SCALE : 1/8" = 1'-0"



3 LIGHTING PLAN - EQUIPMENT PLATFORM  
SCALE : 1/8" = 1'-0"

LUMINAIRE SCHEDULE										
TYPE	LAMP	MANUFACTURER	MODEL NUMBER	BALLAST/DRIVER	MOUNTING	LUMENS	INPUT WATTAGE	DESCRIPTION		NOTE
A	LED	WILLIAMS	BP-22-LS-SCS-DIM-UNV	0-10V DIMMING	RECESSED	4351	40 W	2X2 BACKLIT FLAT PANEL, SELECTABLE LUMENS AND CCT, SET TO HIGH OUTPUT AND 3500K		
B	LED	WILLIAMS	BP-24-LS-SCS-DIM-UNV	0-10V DIMMING	RECESSED	5361	49 W	2X4 BACKLIT FLAT PANEL, SELECTABLE LUMENS AND CCT, SET TO HIGH OUTPUT AND 3500K		
C	LED	WILLIAMS	4FDR-LS-SCS-XX-DIM-UNV	0-10V DIMMING	RECESSED	1638	18 W	4IN ROUND RECESSED DOWNLIGHT, SELECTABLE LUMENS AND CCT, SET TO 18W AND 3500K		
D	LED	WILLIAMS	MX4RX-8FT-L8-835-F-(L5)-DIM-UNV	0-10V DIMMING	RECESSED	4074	30 W	4IN WIDE RECESSED LINEAR SLOT, NOMINAL 500LM/FT, 8FT LONG		
EM	LED	COMPASS	CU2HLHOSDB	-	SURFACE	1300	6 W	HIGH OUTPUT EMERGENCY LIGHT, BLACK FINISH, DAMP LOCATION LISTED, PROVIDE WITH SELF-DIAGNOSTICS BATTERY.		
EMW	LED	COMPASS	CSDEL2LED	-	SURFACE	-	2 W	WET LOCATION LED EMERGENCY LIGHT, GASKETED POLYCARBONATE SHIELD FOR OUTDOOR USE, 90 MINUTE NICKEL CADMIUM BATTERY	9	
EX1	LED	WILLIAMS	EXIT/E1 - SF- R-CP- BLK- EM- SDT-D	-	SURFACE/SUSPENDED	-	4 W	EDGE-LIT EXIT, SINGLE FACE, DAMP LOCATION LISTED, SELF-DIAGNOSTICS, BLACK FINISH WITH RED LETTERS, BATTERY BACK UP	1,4,5	
EX1D	LED	WILLIAMS	EXIT/E1 - DF- R-MP- BLK- EM- SDT-D	-	SURFACE/SUSPENDED	-	3 W	EDGE-LIT EXIT, DOUBLE FACE, DAMP LOCATION LISTED, SELF-DIAGNOSTICS, BLACK FINISH WITH RED LETTERS, BATTERY BACK UP	1,4,5	
F	LED	WILLIAMS	RNDP-2-L25/835- FXA - AC3082X24-DIM1-UNV	0-10V DIMMING	PENDANT	2528	24 W	LED 2FT DIA ROUND ARCHITECTURAL PENDANT		
G	LED	WILLIAMS	75R-4-L50-835-(L40)-DIM-UNV	0-10V DIMMING	SURFACE/SUSPENDED	4036	27 W	3IN WIDE LINEAR STRIP WITH ROUND LENS, NOMINAL 400LM/FT, 4FT LONG	6	
H	LED	WILLIAMS	GS-2-120-835-CA-DIM-UNV	0-10V DIMMING	SURFACE	12210	85 W	14IN X 20IN SLIM HIGH BAY, CLEAR ACRYLIC LENS, LLF USED FOR 3500K	7	
J	LED	WILLIAMS	PX-G-46-XX-L7835-GLCAP-RCAP-DI-M-UNV	0-10V DIMMING	SURFACE	700 LM/FT	7 W/FT	LED PERIMETER WALL GRAZER, DAMP LOCATION LISTED, 3500K, REFER TO ARCHITECT PLANS FOR LENGTHS		
K	LED	BEACON	RWL-148L-20-4K7-4W-UNV-EM	0-10V DIMMING	SURFACE	2671	20 W	EXTERIOR WALL PACK WITH EMERGENCY BATTERY BACK UP, WET LOCATION LISTED.	3	
L	LED	WILLIAMS	96-8-L130-840-HA-FR-DIM-UNV	0-10V DIMMING	SURFACE/SUSPENDED	13026	96 W	8 FT VAPOR TIGHT LED STRIP LIGHT, IP65 RATING, 4000K		
M	LED	G LIGHTING	GL-5400-A-W-TBL	0-10V DIMMING	SURFACE	1895	13 W	EXTERIOR WALL SCONCE, WET LOCATION LISTED	8	
UC	LED	LUMINI	FOT-AS-SO-30K-E-M-R-E-F-XX	0-10V DIMMING	SURFACE	310FT	4.8W/FT	STRIP-LED TAPE IN HOUSING-SEE LENGTHS ON PLAN, IP66 RATED, BLACK	10	

LUMINAIRE SCHEDULE NOTES:  
1. REFER TO FLOOR PLANS FOR CHEVRON ARROW AND LIT FACE QUANTITIES AND ORIENTATION.  
2. MOUNT SUCH THAT BOTTOM OF FIXTURE IS AT 8'-0" AFF.  
3. MOUNT SUCH THAT BOTTOM OF FIXTURE IS AT 15'-0" AFF OR ABOVE VEHICLE BAY DOOR.  
4. MOUNT SUCH THAT BOTTOM OF FIXTURE IS AT 9'-0" AFF. PROVIDE HARD STEM PENDANT LENGTHS AS REQUIRED.  
5. PROVIDE WIRE GUARD FOR FIXTURES LOCATED IN GARAGE.  
6. SURFACE MOUNT TO CEILING.  
7. SURFACE MOUNT TO UNDERSIDE OF ROOF.  
8. MOUNT SUCH THAT BOTTOM OF FIXTURE IS AT 5'-6" AFF.  
9. MOUNT SUCH THAT BOTTOM OF FIXTURE IS AT 6'-4" AFF.  
10. MOUNT TO UNDER SIDE OF CABINET. PROVIDE ALL ACCESSORIES FOR A FULLY FUNCTIONAL FIXTURE.

#### GENERAL NOTES:

- LUMINAIRES MARKED 'E' ARE EXISTING LUMINAIRES THAT ARE TO REMAIN IN PLACE. ALL EXISTING LUMINAIRES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REPAIRED TO A LIKE-NEW CONDITION. THOROUGHLY CLEANED, AND RELAXED. ANY EXISTING LUMINAIRE THAT ARE DAMAGED BEYOND REPAIR SHALL BE REPLACED WITH AN IDENTICAL LUMINAIRE.
- CONNECT ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS AHEAD OF ANY CONTROL METHODS. PROVIDE UL924 DEVICE TO ALLOW FOR EMERGENCY LIGHTING TO BE CONTROLLED WITH LIGHTS UNDER NORMAL POWER, BUT FULLY ENERGIZE IF NORMAL POWER IS LOST. CONTRACTOR SHALL FIELD-ADJUST LIGHT LOCATIONS AND LAMP ROTATION/ANGLE TO PROVIDE 1-FOOT CANDLE MINIMUM AT THE PATH OF EGRESS
- SEE SHEET E802 FOR LIGHTING CONTROL SEQUENCE OF OPERATIONS.
- ALL CEILING MOUNTED OCCUPANCY SENSORS SHALL BE LOW VOLTAGE TYPE. PROVIDE WITH POWER PACKS AND PROVIDE COMPATIBLE LOW-VOLTAGE SWITCHES WITH SWITCH TYPES AS SHOWN.
- PROVIDE NEUTRAL CONDUCTOR FROM THE LIGHTING CIRCUIT SERVING A SPACE TO ALL ASSOCIATED SWITCH BOXES.
- SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR MORE INFORMATION
- LINE-VOLTAGE ELECTRONIC SWITCHES (OCCUPANCY SENSOR, VACANCY, DIMMING, ETC.) SHALL BE EQUIPPED WITH A NEUTRAL.
- HALF SHADED LIGHT FIXTURES OR FIXTURES LABELED "EM" HAVE EMERGENCY BATTERY BACK UP OR WIRED TO LIGHTING INVERTER.
- CENTER EMERGENCY/EXIT LIGHTS ABOVE DOORS, UNLESS THERE ARE NOT LOCATED BY DOOR.
- ALL EXTERIOR LIGHTING SHALL BE CONTROLLED THROUGH PHOTOCELL CONNECTED TO LIGHTING CONTACTOR. EXTERIOR LIGHTING AUTOMATICALLY SHUT OFF FROM NOT LATER THAN 1 HOUR AFTER BUSINESS CLOSING TO NOT EARLIER THAN 1 HOUR BEFORE BUSINESS OPENING UNLESS DIRECTED BY OWNER.
- ADJUST MOUNTING HEIGHTS/SUSPENSION LENGTHS ON ALL CEILING DEVICES TO AVOID BEING BLOCKED BY CONDUITS, DUCTWORKS, AND PIPING.

#### LIGHTING KEYNOTES

- PROVIDE ULTRASONIC CEILING 360 DEGREE OCCUPANCY SENSOR FOR LOCKER ROOM ALONG WITH MANUAL OVERRIDE SWITCH. CONNECT ALL LIGHTING IN SPACE TO OCCUPANCY SENSOR. SET CONTROLS TO OCCUPANCY WITH MANUAL ON AND A TIME DELAY OF 15 MINUTES OF UNOCCUPANCY.
- PROVIDE OCCUPANCY SENSOR SUITED FOR CORRIDOR TYPE APPLICATION THAT IS COMPATIBLE WITH LIGHTING FIXTURES IF REQUIRED BY CODE. SET TO REDUCE LIGHTING POWER TO 50 PERCENT OF FULL POWER WITHIN 20 MINUTES AFTER OCCUPANTS HAVE LEFT THE SPACE.
- SWITCH CONTROL LIGHTS FOR EQUIPMENT PLATFORM
- PROVIDE OCCUPANCY SENSOR SUITED FOR OUTDOOR USE THAT IS COMPATIBLE WITH LIGHTING FIXTURES IF REQUIRED BY CODE. SET TO REDUCE LIGHTING POWER TO 50 PERCENT OF FULL POWER WITHIN 20 MINUTES AFTER OCCUPANTS HAVE LEFT THE SPACE. MOUNT TO CEILING UNLESS IT CONFLICTS WITH RANGE. PROVIDE HARD STEM PENDANT IF REQUIRED. COORDINATE INSTALLATION IN FIELD TO AVOID OTHER RCP ELEMENTS.
- MOUNT TO INSIDE OF ROOF WALL AT 16 FT A.F.F. PROVIDE WALL MOUNTING BRACKET AND ACCESSORIES WHEN REQUIRED.
- SURFACE MOUNT TO BEAM AT 5 FT A.F.F.
- MOUNT EXIT SIGN TO SIDE OF WALL AT 7 FT A.F.F.

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SCALE: AS SHOWN  
DATE: 04/28/25  
DRAWN BY: DFC  
CHECKED BY: DJR  
PROJECT NUMBER: CCCC0000A  
DRAWING NAME: LIGHTING PLAN  
REVIEWED BY: DJR

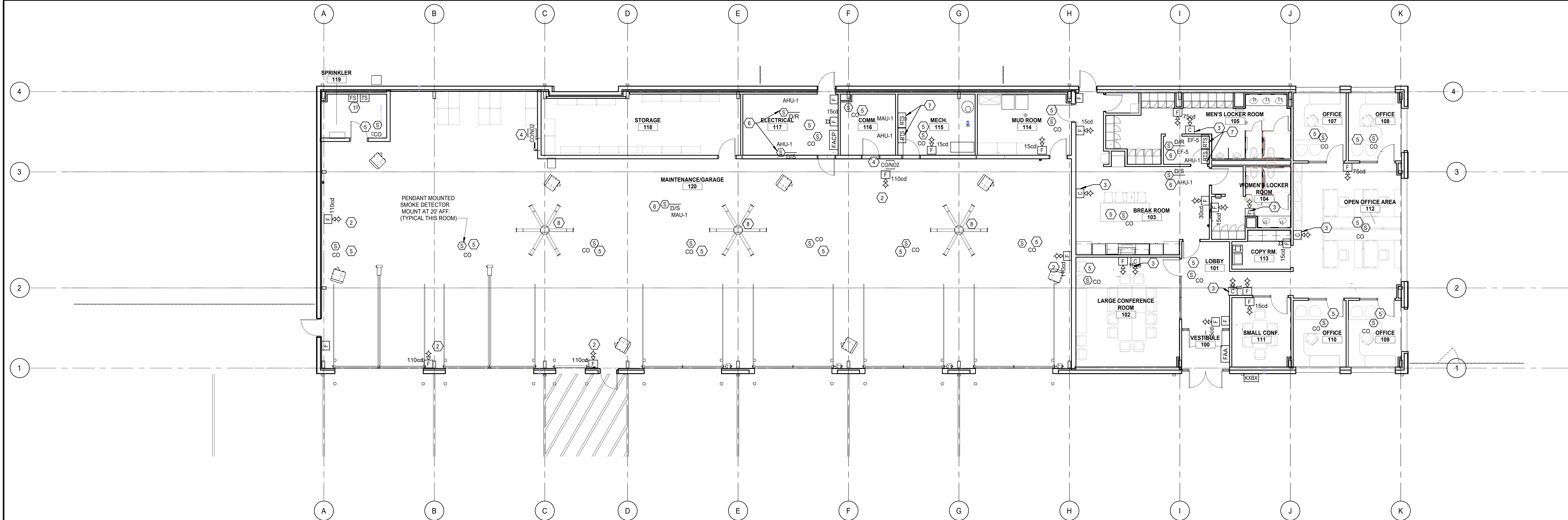
LIGHTING PLAN

SHEET NUMBER

E201

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.





1 01 - FIRST FLOOR FIRE ALARM PLAN  
SCALE : 1/8" = 1'-0"

GENERAL NOTES:

- PROVIDE COMPLIANCE WITH 2015, IFC 510 BY INCORPORATING THE COST FOR TESTING AND A NEW RADIO COVERAGE SYSTEM DURING BIDDING PHASE. COMPLETE TESTING TO VERIFY GENERAL BUILDING IS IN COMPLIANCE WITH MINIMUM SIGNAL STRENGTH STANDARDS WITHOUT AN ADDITIONAL COVERAGE SYSTEM ADDED. WHEN TESTING FINDS AN EMERGENCY RESPONDER RADIO COVERAGE SYSTEM IS NOT REQUIRED, THE COST FOR THE NEW RADIO COVERAGE SYSTEM SHALL BE RETURNED TO THE OWNER AS A CREDIT. WHEN TESTING DETERMINES A NEW RADIO COVERAGE SYSTEM IS REQUIRED, PROVIDE SYSTEM WITH BATTERY BACK UP. TEST IN ACCORDANCE WITH NFPA, IFC AND OBTAIN AHJ APPROVAL.

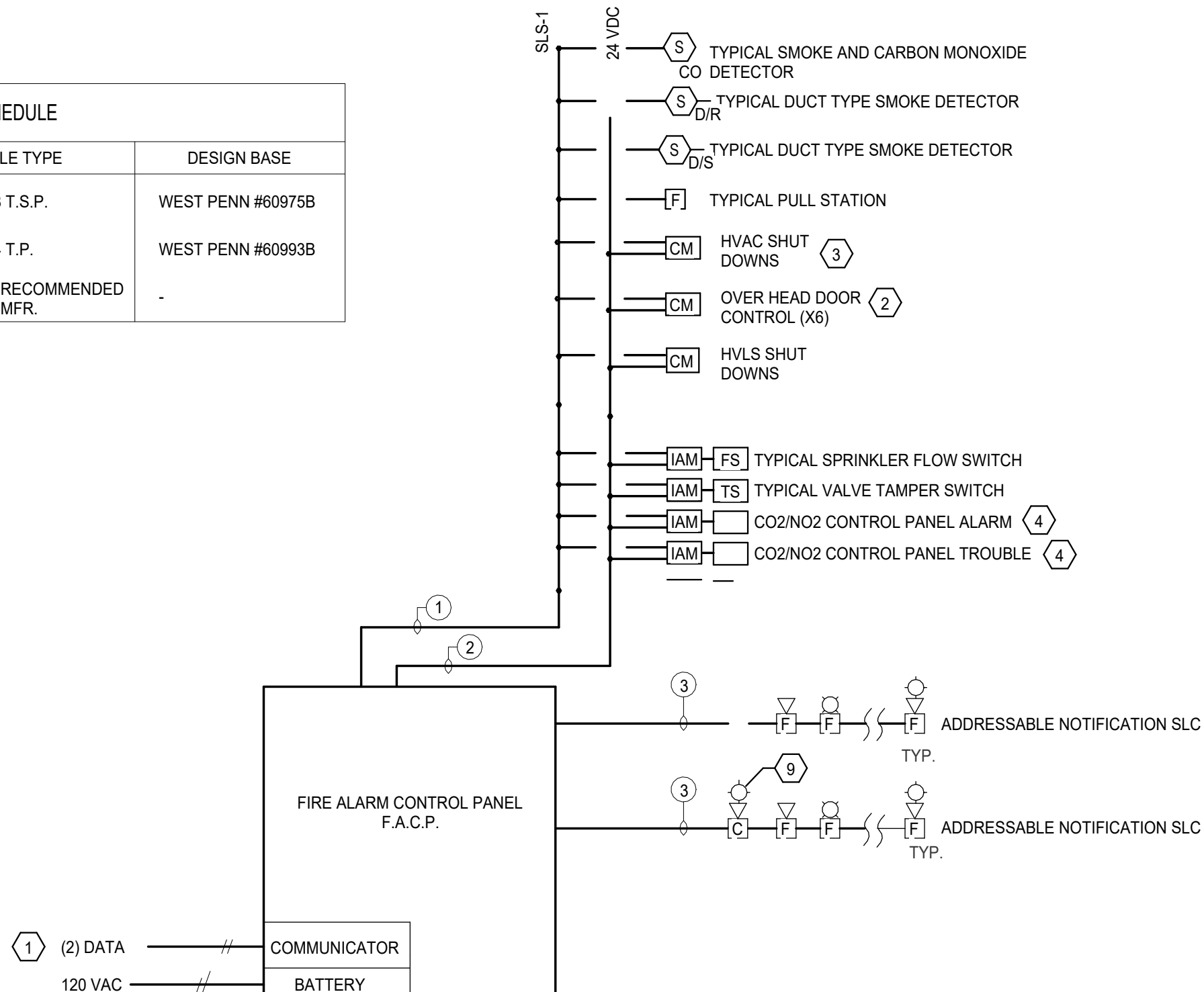
FIRE ALARM KEYNOTES:

- COORDINATE FINAL LOCATION AND QUANTITY OF FLOW AND TAMPER SWITCHES WITH FIRE PROTECTION CONTRACTOR.
- FIRE ALARM DEVICES IN TRUCK GARAGE AND MAINTENANCE BAY SHOWN ON WALLS TO BE SURFACED MOUNTED WITH SURFACE MOUNTED CONDUIT. CONDUIT TO BE GRS FROM DEVICE TO SFT ABOVE DEVICE AND TO TRANSITION TO EMT UP HIGH.
- PROVIDE CARBON MONOXIDE HORN/STROBE NOTIFICATION APPLIANCES WHERE SHOWN: UL 1480 LISTED, MULTI-TAPPED, WALL MOUNT TYPE, WITH WHITE HOUSING, RED LETTERING, AND AMBER STROBE UPON DETECTION. CO NOTIFICATION SHALL SOUND IN A TEMPORAL 4 PATTERN, WITH AUDIBLE NOTIFICATION DISTINCT FROM BUILDING FIRE ALARM.
- PROVIDE FIRE ALARM MONITOR MODULE AND 120V CIRCUIT TO NO/CO MONITORING PANEL. MONITOR HIGH LEVEL ALARM ON CO MONITORING PANEL. SEND SUPERVISORY SIGNAL TO FACP AND SOUND CO NOTIFICATION APPLIANCES IN NOTE #3 ON HIGH LEVEL ALARM.
- PROVIDE COMBINATION SMOKE/CO SENSOR COMPATIBLE WITH FIRE ALARM SYSTEM AND MOUNT ON CEILING. UPON DETECTION SEND SUPERVISORY SIGNAL AND ANY TROUBLE SIGNALS FROM CO LOOP TO FACP AND SOUND CO NOTIFICATION APPLIANCES INDICATED IN NOTE #3.
- PROVIDE DUCT DETECTOR IN AIR DUCT WITHIN 5'-0" OF FIRE/SMOKE DAMPER. DETECTOR SHALL SHUTDOWN ASSOCIATED AIR HANDLER UNIT AND CLOSE ASSOCIATED DAMPER WHEN ALARMED. COORDINATE INSTALLATION WITH MECHANICAL CONTRACTOR. SEE ASSOCIATED POWER PLAN FOR 120V, 1-PH CIRCUIT.
- PROVIDE A REMOTE KEYED TEST STATION WITH VISUAL STATUS ANNUNCIATOR WHEN DUCT SMOKE DETECTOR IS INSTALLED IN A CONCEALED LOCATION GREATER THAN 10'-0" ABOVE FINISHED FLOOR OR WHEN DUCT SMOKE DETECTOR'S STATUS INDICATORS ARE NOT READILY VISIBLE. COORDINATE LOCATION OF REMOTE KEYED TEST STATION WITH AHJ AND OWNER PRIOR TO ROUGH-IN. ALL FINAL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR. PROVIDE LABEL ON TEST STATION INDICATING DUCT DETECTOR AND ASSOCIATED SYSTEM.
- PROVIDE CONTROL MODULES AS REQUIRED TO ALLOW SHUTDOWN OF HVLS FANS IN THE EVENT OF AN ALARM SIGNAL. ALL HVLS FANS SHALL BE INTERLOCKED TO SHUTDOWN IMMEDIATELY UPON RECEIVING A WATERFLOW SIGNAL FROM THE ALARM SYSTEM IN ACCORDANCE WITH NFPA 72.

SYSTEM INPUTS		SYSTEM OUTPUTS		CONTROL UNIT ANNUNCIATION @ FACP											FIRE ALARM SYSTEM OPERATION MATRIX								CONTROL			REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN	REARMING FAN

2 Fire Alarm Riser Matrix  
SCALE : 1" = 10'-0"

1 FIRE ALARM CABLE SCHEDULE			
NO.	DESCRIPTION	CABLE TYPE	DESIGN BASE
1	SIGNALING LINE CIRCUIT	#18 T.S.P.	WEST PENN #60975B
2	24 VDC FROM FACP	#14 T.P.	WEST PENN #60993B
3	ADDRESSABLE NOTIFICATION SIGNALING LINE CIRCUIT	AS RECOMMENDED BY MFR.	-



3 FIRE ALARM RISER DIAGRAM  
SCALE : NTS

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REV	DATE	DESCRIPTION	BY	CHK
1	04/28/25	01 - FIRST FLOOR FIRE ALARM PLAN	DFC	

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed electrical engineer under the laws of the state, commonwealth or district of: PENNSYLVANIA  
License No. PE070719  
Expiration Date: 06/30/2025

CITY OF CHESTER  
DEPARTMENT OF  
PUBLIC WORKS

PENNELL ST. & W  
2ND ST.  
CHESTER, PA 19013

PHILADELPHIA  
2 Penn Center, Suite 700  
Philadelphia, PA 19102  
Phone: 215-881-9021  
Colliers Engineering & Design, Inc.

SCALE: AS SHOWN DATE: 04/28/25 DRAWN BY: DFC CHECKED BY: DJR  
PROJECT NUMBER: CCCC00004A DRAWING NAME: FIRE ALARM PLAN REVIEWED BY: DJR

SHEET TITLE: FIRE ALARM PLAN

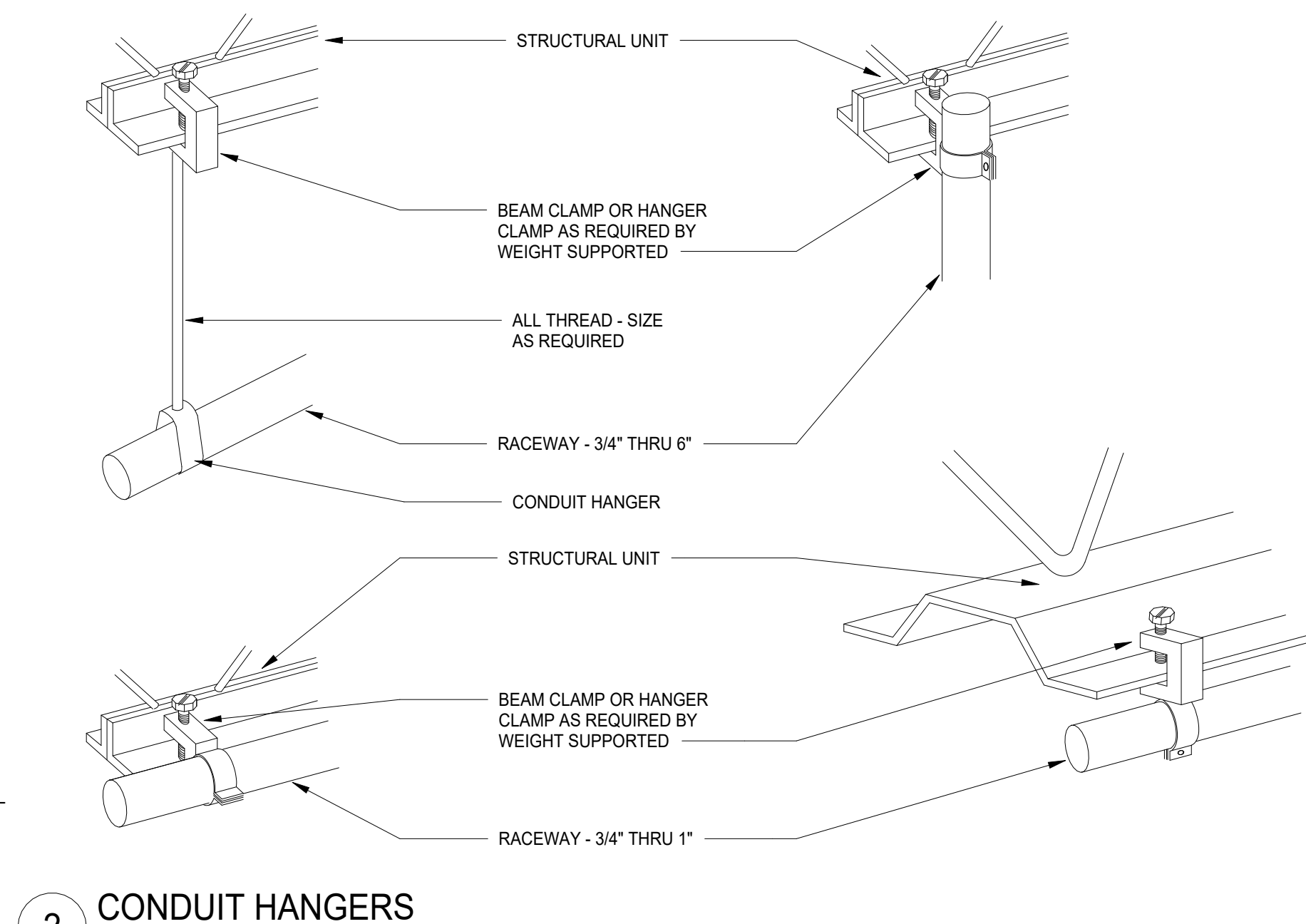
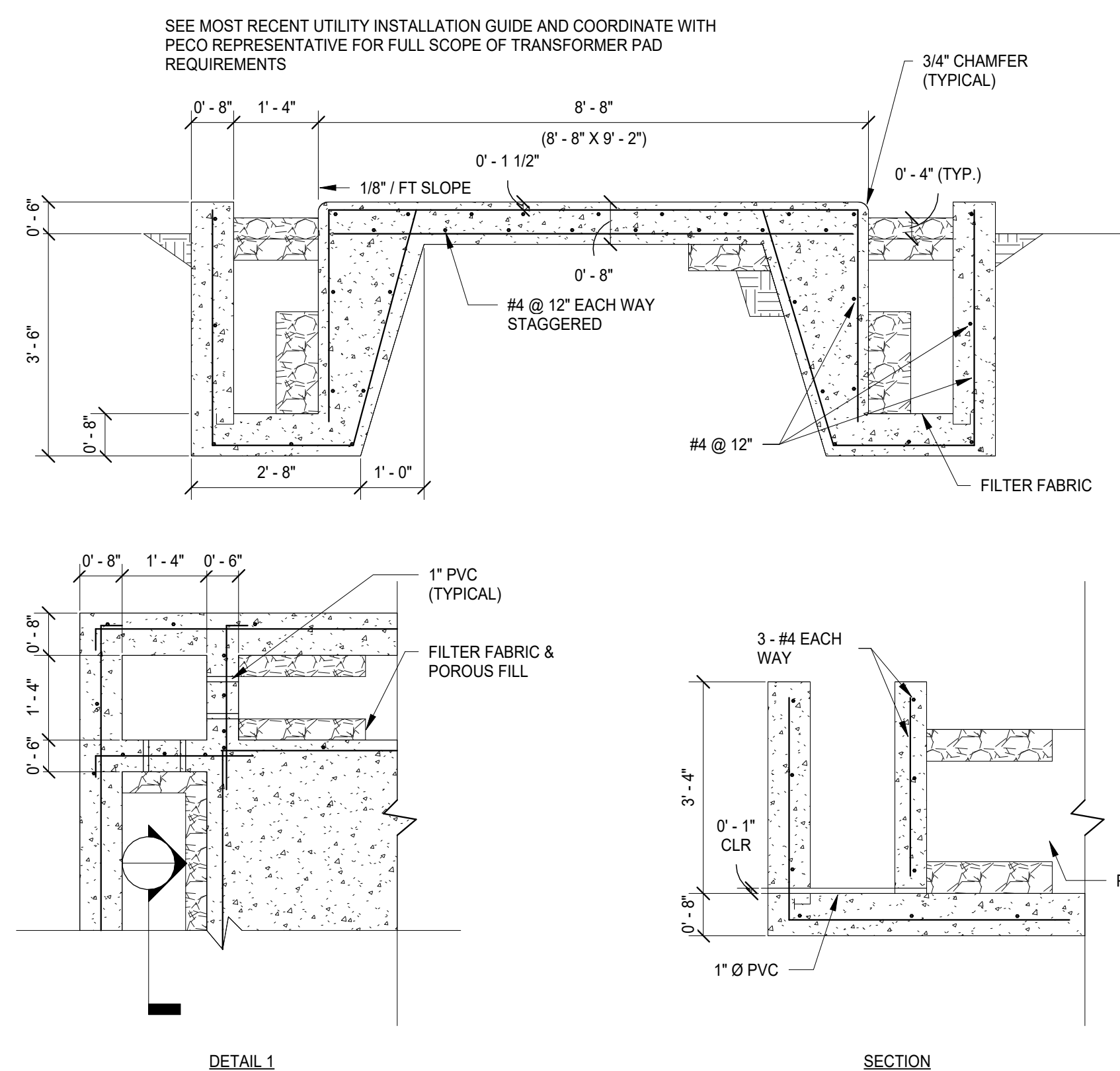
SHEET NUMBER: E401

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

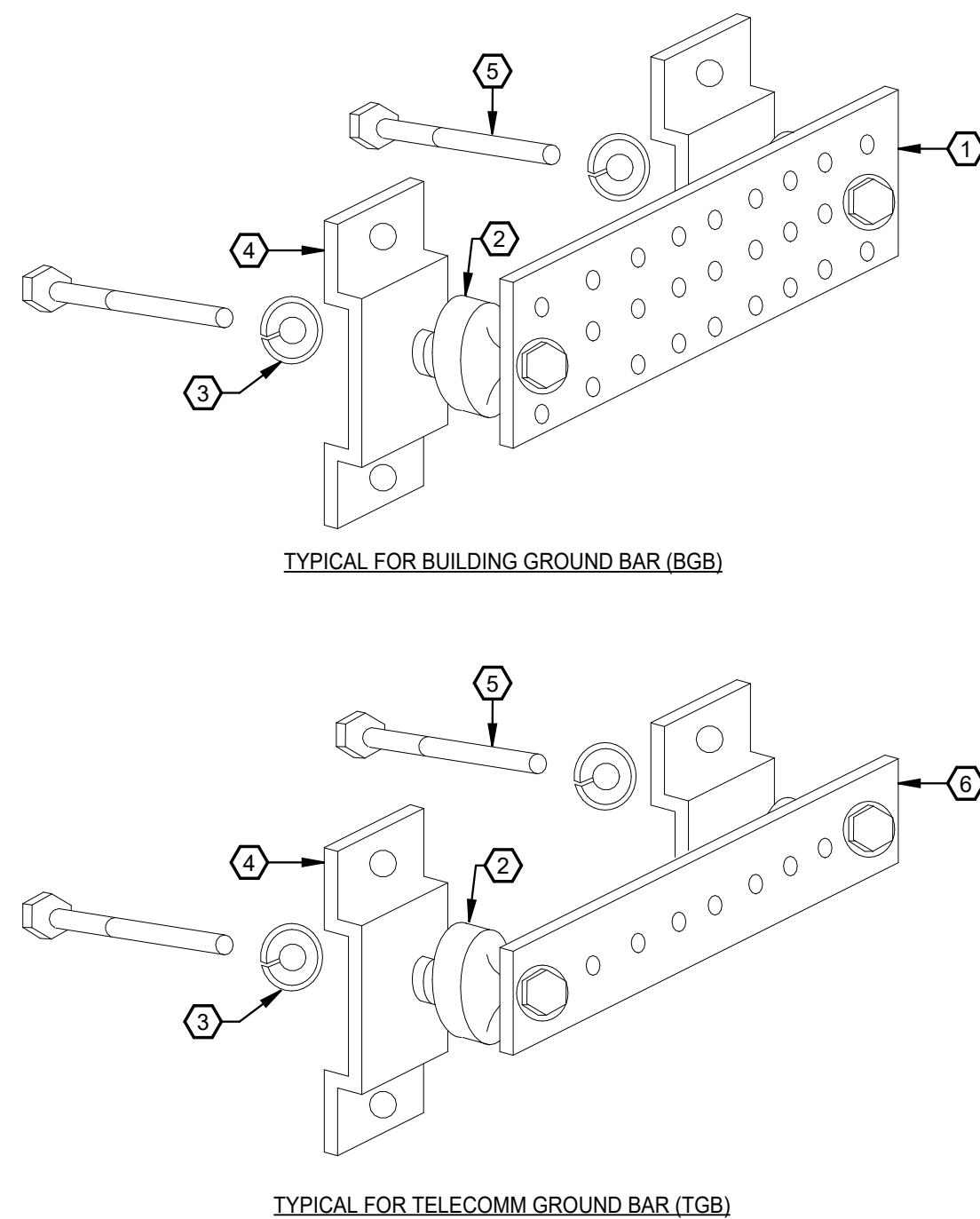






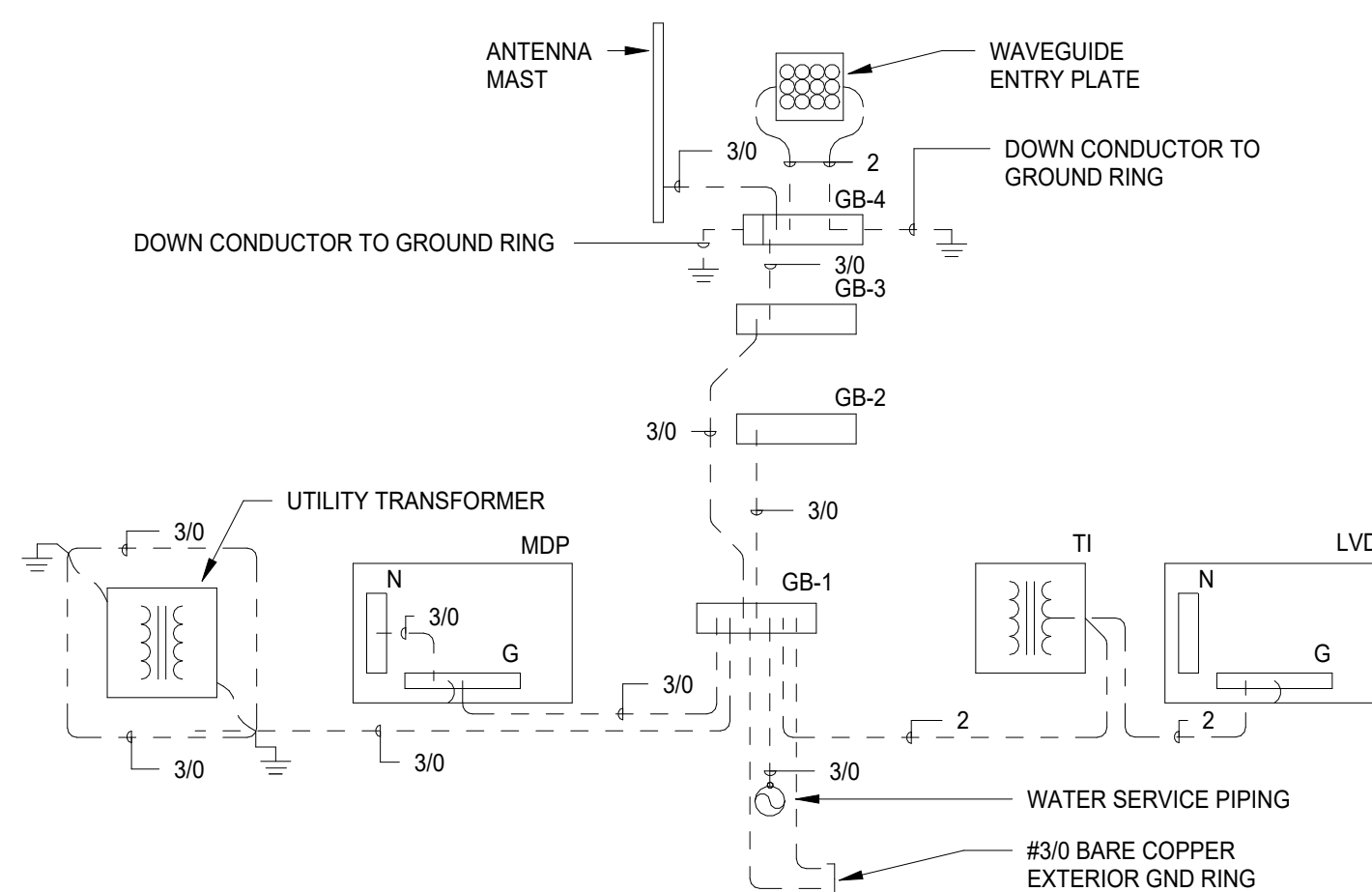
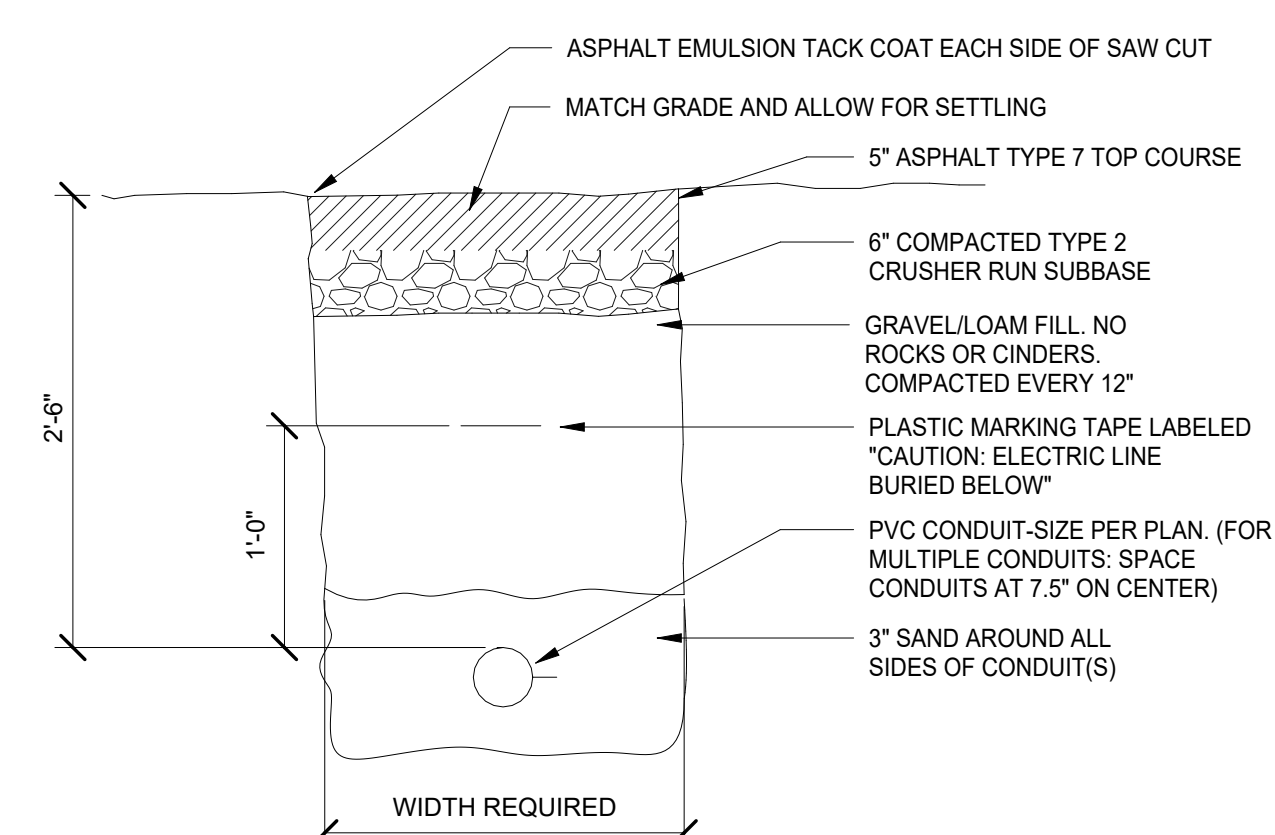
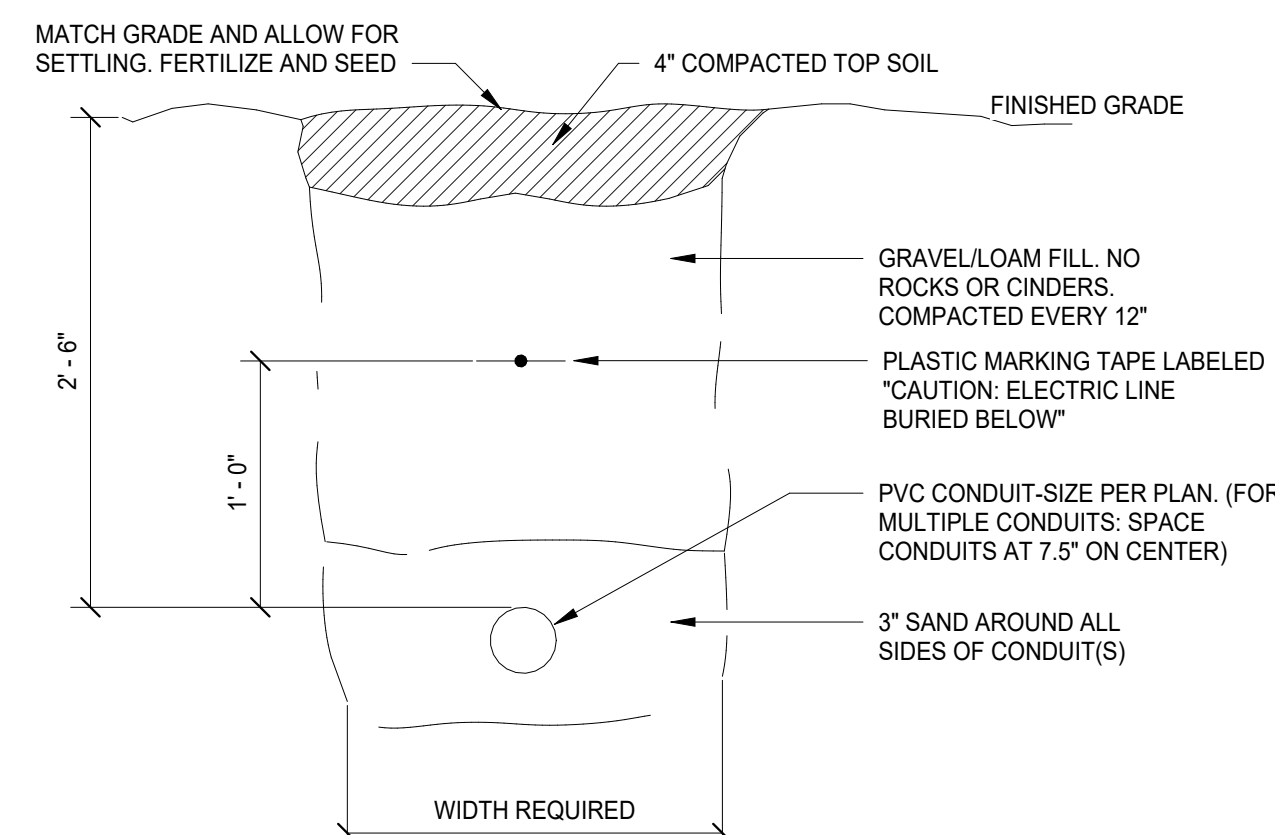


GENERAL NOTES:

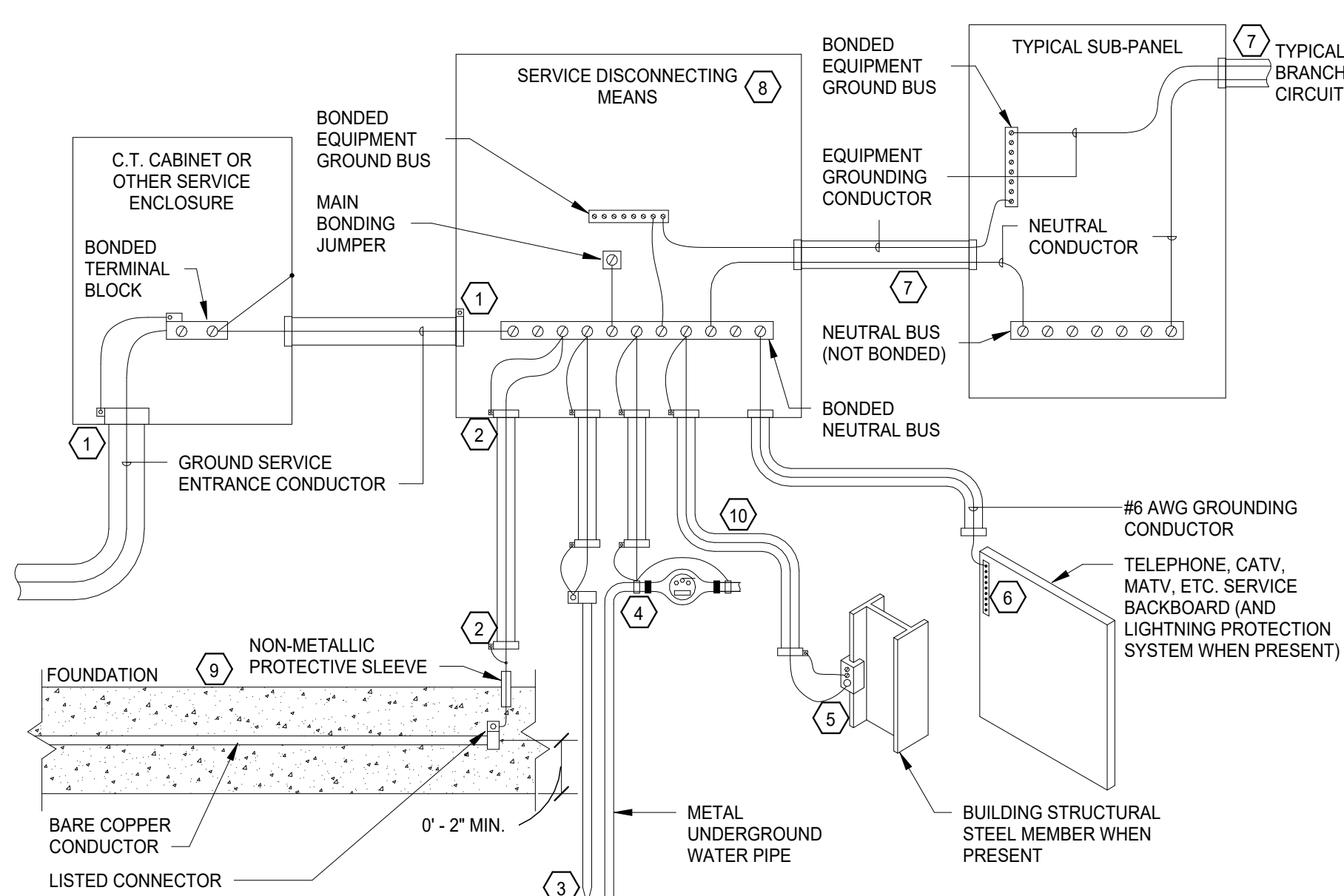


GENERAL NOTES:

KEYNOTES: 

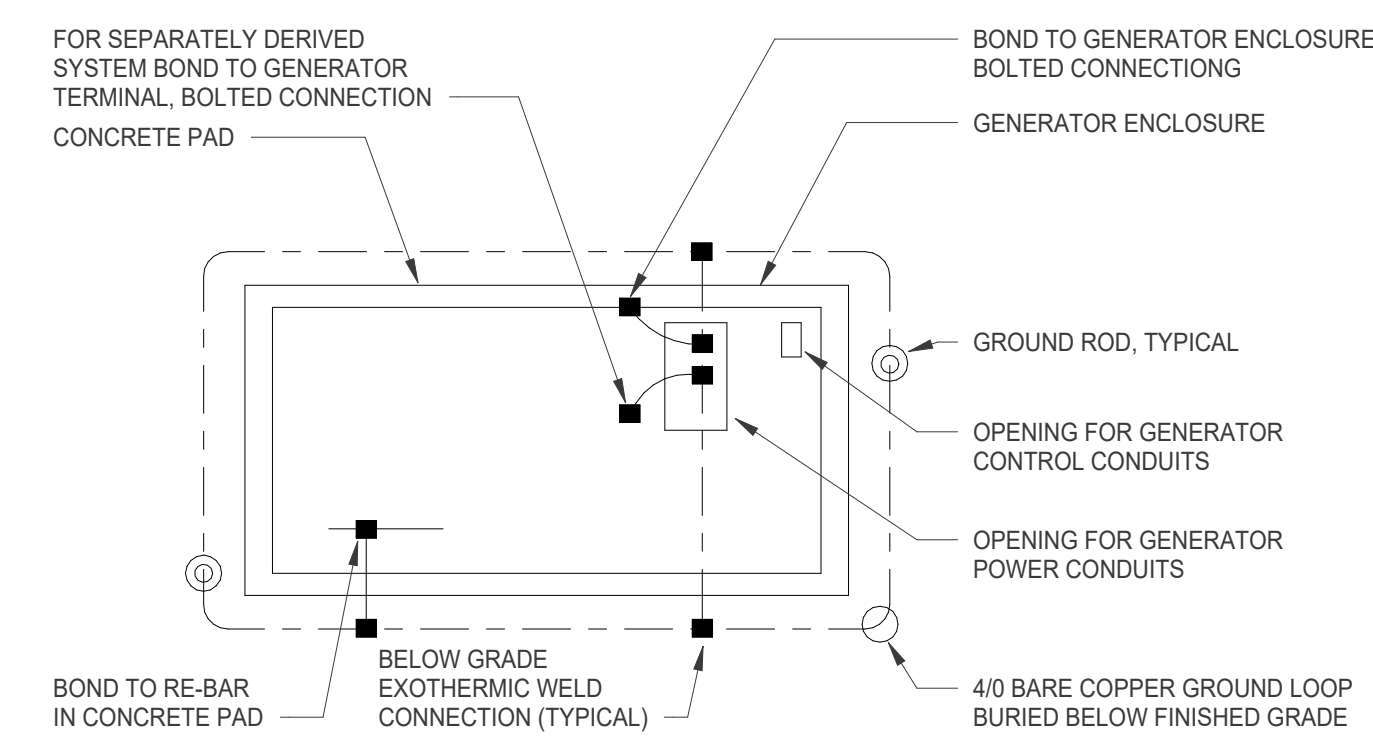
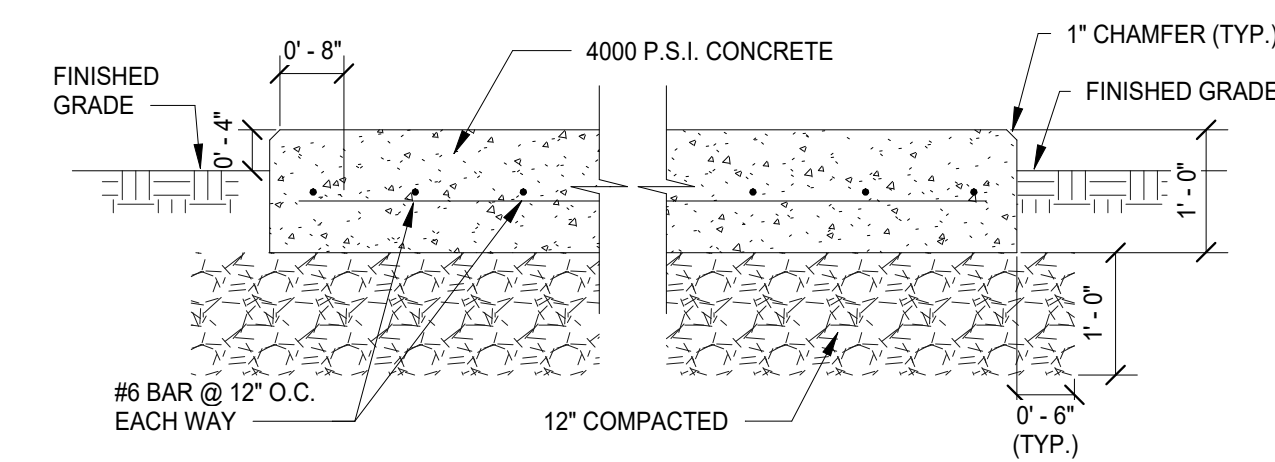
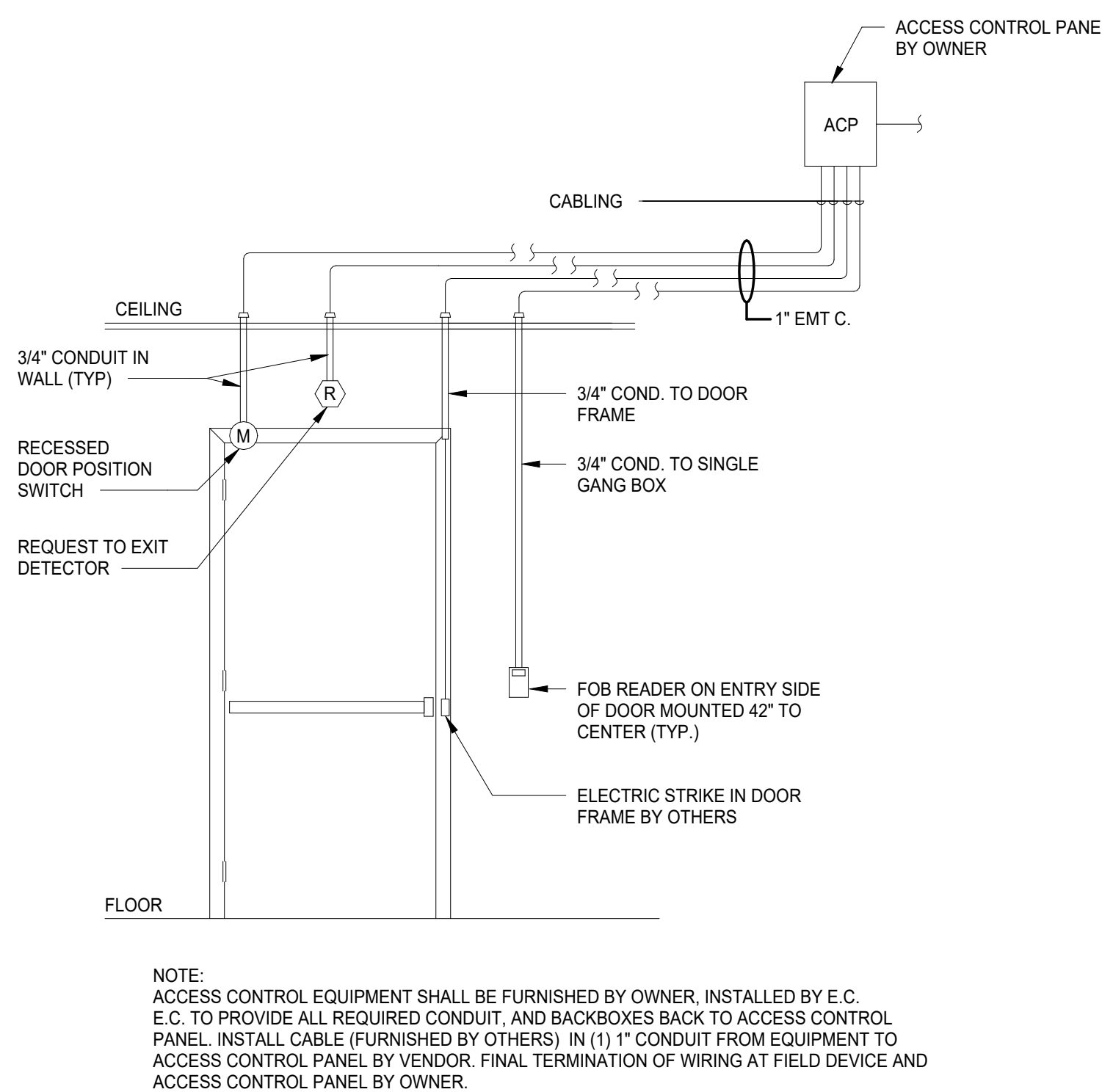


GENERAL NOTES:



GENERAL NOTES:

KEYNOTES: 





Branch Panel: MDP				Volts: 480Y/277			A.I.C. Rating: 22,000 AMPS SYMMETRICAL				
Location: ELECTRICAL 117				Phases: 3			Mains Type: MCB				
Supply From: UTILITY				Wires: 4			Mains Rating: 800 A				
Mounting: SURFACE							MCB Rating: 800 A				
Enclosure: NEMA1											
Notes:											
CKT	Circuit Description	Trip	Poles	PHASE A	PHASE B	PHASE C	Poles	Trip	Circuit Description	CKT	
1	PP-1	250 A	3	40686 37606						2	
3				40686 35987					4		
5					33761 35229				6		
7									8		
9	T2	175 A	3	14074 29618	19616 29618		3	200 A	80KW EV CHARGER 1	10	
11						11990 29618				12	
13	AHU-1	25 A	3	4711 2106	4711 2106		3	40 A	MAU-1	14	
15					4711 2106				16		
17									18		
19					29618 0					20	
21	80KW EV CHARGER 2	200 A	3		29618 0		3	30 A	SPD	22	
23						29618 0				24	
25				0 0						26	
27	PV SYSTEM FOR REFERENCE ONLY	200 A	3		0 0		3	30 A	DEMAND METER	28	
29						0 0				30	
31				0 0						32	
33	Spare	100 A	3		0 0		3	100 A	Spare	34	
35						0 0				36	
Total Load:				158419 VA	162342 VA	147033 VA					
Total Amps:				578 A	592 A	531 A					
Load Classification											
Connected Load				Demand Factor		Estimated...		Panel Totals			
Equipment				188501 VA		100.00%		188501 VA			
HVAC				65277 VA		100.00%		65277 VA		Total Conn. Load: 467794 VA	
Heating				25766 VA		100.00%		25766 VA		Total Est. Demand: 464317 VA	
Kitchen Equipment - Non-Dwelling Unit				9984 VA		100.00%		9984 VA		Total Conn.: 563 A	
Lighting				6301 VA		125.00%		7877 VA		Total Est. Demand: 558 A	
Lighting - Exterior				623 VA		125.00%		779 VA			
Other				2760 VA		100.00%		2760 VA			
MTR				94161 VA		102.87%		96859 VA			
RCPT				25616 VA		69.37%		17908 VA			
LITES				7 VA		125.00%		9 VA			
SPEC				4992 VA		100.00%		4992 VA			
AC				43605 VA		100.00%		43605 VA			
Notes:											

Branch Panel: PP-1										Location: ELECTRICAL 117										Volts: 480Y/277										A.I.C. Rating: 22,000 AMPS SYMMETRICAL											
										Supply From: MDP										Phases: 3										Mains Type: MCB											
										Mounting: SURFACE										Wires: 4										Mains Rating: 250 A											
										Enclosure: NEMA1																				MCB Rating: 250 A											
Notes:																																									
CKT	Circuit Description										Trip	Poles	PHASE A					PHASE B					PHASE C					Poles	Trip	Circuit Description										CKT	
1	HEAT TRACE										30 A	1	6925 1517																											2	
3	HEAT TRACE										30 A	1						6925 1517																						4	
5																							3598 1517						3	VAV-10										6	
7	VAV-11										20 A	3	3598 8581																											8	
9																		3598 8581											3	40 A										CU-4	10
11	Spare										20 A	1											0 8581																	12	
13	Spare										20 A	1	0 0																1	20 A										Spare	14
15	Spare										20 A	1						0 0											1	20 A										Spare	16
17																							729 0						1	20 A										Spare	18
19	RF-1 FAN										20 A	3	729 729																											20	
21																		729 729											3	20 A										RF-2 FAN	22
23																							729 729																	24	
25	RF-3 FAN										20 A	3	729 0																1	20 A										Spare	26
27																		729 0											1	20 A										Spare	28
29	Spare										20 A	1											0 0						1	20 A										Spare	30
31	Spare										20 A	1	0 0																1	20 A										Spare	32
33	Spare										20 A	1						0 0											1	20 A										Spare	34
35	Spare										20 A	1											0 0						1	20 A										Spare	36
37													0 0																											38	
39	Spare										20 A	3						0 0											1	20 A										Spare	40
41																							0 0						1	20 A										Spare	42
											Total Load:					40686 VA					40686 VA					33761 VA															
											Total Amps:					151 A					151 A					122 A															
Load Classification											Connected Load					Demand Factor					Estimated...					Panel Totals															
Equipment											10795 VA					100.00%					10795 VA																				
HVAC											51144 VA					100.00%					51144 VA					Total Conn. Load: 115133 VA															
Heating											16341 VA					100.00%					16341 VA					Total Est. Demand: 115680 VA															
MTR											6559 VA					108.33%					7108 VA					Total Conn.: 138 A															
AC											30293 VA					100.00%					30293 VA					Total Est. Demand: 139 A															
Notes:																																									

Branch Panel: PP-2				Location: ELECTRICAL 117				Volts: 480Y/277				A.I.C. Rating: 22,000 AMPS SYMMETRICAL			
				Supply From: PP-1				Phases: 3				Mains Type: MLO			
				Mounting: SURFACE				Wires: 4				Mains Rating: 400 A			
				Enclosure: NEMA1											
Notes:															
CKT	Circuit Description	Trip	Poles	PHASE A	PHASE B	PHASE C	Poles	Trip	Circuit Description	CKT					
1				2181 1774						2					
3	VAV-5	20 A	3		2181 1774			3	20 A	VAV-6	4				
5						2181 1774				6					
7				667 2810						8					
9	VAV-3	15 A	3		667 2810			3	20 A	VAV-7	10				
11						667 2810				12					
13				2070 830						14					
15	VAV-4	15 A	3		2070 830			3	15 A	CUH-1	16				
17						2070 830				18					
19				1664 2070						20					
21	VAV-1	15 A	3		1664 2070			3	20 A	VAV-2	22				
23						1664 2070				24					
25				2109 1702						26					
27	VAV-8	15 A	3		2109 1702			3	20 A	VAV-9	28				
29						2109 1702				30					
31	Spare	20 A	1	0 0				1	20 A	Spare	32				
33	Spare	20 A	1		0 0			1	20 A	Spare	34				
35	Spare	20 A	1			0 0		1	20 A	Spare	36				
37	Spare	20 A	1	0 0				1	20 A	Spare	38				
39	Spare	20 A	1		0 0			1	20 A	Spare	40				
41	Spare	20 A	1			0 0		1	20 A	Spare	42				
Total Load:				17879 VA	17879 VA	17879 VA									
Total Amps:				65 A	65 A	65 A									
Load Classification															
Connected Load				Demand Factor				Estimated...				Panel Totals			
HVAC				51144 VA				100.00%				51144 VA			
Heating				2491 VA				100.00%				2491 VA			
MTR				0 VA				0.00%				0 VA			
												Total Conn. Load: 53636 VA			
												Total Est. Demand: 53636 VA			
												Total Conn.: 65 A			
												Total Est. Demand: 65 A			
Notes:															

<div>Branch Panel: RP3</div> <div>Location: ELECTRICAL 117 Supply From: T2 Mounting: SURFACE Enclosure: NEMA1</div> <div>Volts: 208Y/120 Phases: 3 Wires: 4</div> <div>A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MCB Mains Rating: 400 A MCB Rating: 400 A</div>				
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LIGHTING CONTROLS SEQUENCE OF OPERATIONS

GENERAL NOTES

- ALL SWITCHES WITH "LV" ARE LOW VOLTAGE CONTROL STATIONS. PROVIDE ON/OFF BUTTONS, PRE-PROGRAMMED SCENES, INTEGRAL OCCUPANCY SENSING, AND/OR DIMMING CONTROL AS DESCRIBED BELOW PER SPACE.
- ALL EMERGENCY FIXTURES SHALL BE PROGRAMMED TO FUNCTION WITH AREA NORMAL LIGHTS, UNLESS NOTED AS NIGHT LIGHTS. UPON LOSS OF POWER, EMERGENCY FIXTURES SHALL ILLUMINATE TO 100% OF RATED POWER.
- COORDINATE COMMISSIONING OF SYSTEM PER LIGHTING, LIGHTING CONTROL, AND COMMISSIONING SPECIFICATIONS WITH OWNER'S AGENT AS REQUIRED PER STATE OF NEW JERSEY ENERGY CODE.
- TIME OF DAY CONTROL FOR SPACES SHALL BE SETTABLE VIA BUILDING MANAGEMENT SYSTEM (BMS).
- DAYLIGHT HARVESTING: SEE DRAWINGS FOR PRIMARY AND SECONDARY ZONES. ALL LIGHTS IN THESE AREAS SHALL INCLUDE INTEGRATED OCCUPANCY AND PHOTOSENSING DEVICES FOR AUTOMATIC CONTROL.
  - EACH FIXTURE/SENSOR SHALL BE CALIBRATED INDIVIDUALLY.
  - TARGET SET POINT FOR LIGHTING IS 50 FOOTCANDLES (WHEN NO DAYLIGHT IS PRESENT).
  - LIGHTS IN PRIMARY AND SECONDARY ZONES SHALL BE PROGRAMMED FOR CONTINUOUS DIMMING FROM LOW TO HIGH END.
  - ONCE LIGHT LEVELS HAVE INCREASED/DECREASED MORE THAN 15%, FIXTURES SHALL RESPOND AND ADJUST TO SET POINT.
  - PROGRAM DELAY, 10-MINUTES, TO TRANSITION TO SET POINT TO AVOID CLOUDS AND OTHER TEMPORARY NATURAL LIGHT BLOCKAGE.
  - PROGRAM FADE TIME TO SET POINT OVER 5-MINUTES.

FUNCTIONAL DESCRIPTIONS

- EXTERIOR FIXTURES:
  - BUILDING LUMINAIRES SHALL TURN ON 30-MINUTES PRIOR TO SUNSET AND REMAIN ON UNTIL MIDNIGHT. BETWEEN MIDNIGHT AND 6AM, FIXTURES SHALL REMAIN OFF. AT 6AM FIXTURES SHALL TURN ON AT 100% AND REMAIN ON UNTIL 30-MINUTES AFTER SUNRISE.
  - BUILDING EGRESS LUMINAIRES BE PROGRAMMED TO TURN ON 30-MINUTES PRIOR TO SUNSET AND STAY ON 30-MINUTES AFTER SUNRISE. UPON LOSS OF POWER, BATTERY SHALL POWER LIGHT FIXTURES.
- SITE LIGHTING FIXTURES:
  - PARKING AREAS:
    - FIXTURES SHALL REDUCE WATTAGE TO 50% WHEN UNOCCUPIED FOR MORE THAN 15 MINUTES.
- LARGER STORAGE SPACES:
  - LIGHTING TO COME ON AUTOMATICALLY AT 100% UPON ENTRANCE TO SPACE.
  - LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF.
  - EMERGENCY LIGHTS SHALL FUNCTION WITH NORMAL LIGHTS. UPON POWER OUTAGE, EMERGENCY LIGHT SHALL ILLUMINATE AT 100%.

D. SWITCHES SHALL INCLUDE BUTTONS:

  - ALL ON
  - ALL OFF
- PRIVATE OFFICES:
  - LIGHTING SHALL BE TURNED ON MANUALLY TO THE LAST APPLIED USER DIMMING SETTING.
  - LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF.
  - EMERGENCY LIGHTS SHALL FUNCTION WITH NORMAL LIGHTS. UPON POWER OUTAGE, EMERGENCY LIGHT SHALL ILLUMINATE AT 100%.

D. SWITCHES SHALL INCLUDE BUTTONS:

  - ALL ON
  - DIM UP
  - DIM DOWN
  - ALL OFF
- CONFERENCE ROOMS, MEETING ROOMS, OPEN OFFICES:
  - MULTI PURPOSE ROOMS: LIGHTING TO COME ON AUTOMATICALLY AT 50% UPON ENTRANCE TO SPACE VIA CEILING OCCUPANCY SENSOR.
  - TWO ZONE SYSTEM SHALL BE USED. ONE SECTION OF THE ROOM WILL CONTROL ALL LIGHTING IN THAT SECTION.
  - MEETING ROOMS: SPACE SHALL BE PROGRAMMED TO TURN LIGHTS ON TO 50% UPON ENTRANCE INTO SPACE.
  - LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF.

E. SWITCHES SHALL INCLUDE:

  - ALL ON
  - DIM UP
  - DIM DOWN
  - ALL OFF
- LOBBY: :
  - LIGHTING TO COME ON AUTOMATICALLY AT 100% PER BUILDING NORMAL OCCUPANCY, 6AM AND STAY ON UNTIL 6PM.
  - EMERGENCY LIGHTS NOTED AS NL SHALL REMAIN ON AT 50% AFTER BUILDING HOURS

C. DIMMER SWITCHES SHALL INCLUDE:

  - ALL ON
  - DIM UP
  - DIM DOWN
  - ALL OFF

D. MOMENTRAY CONTACT OVERRIDE SWITCH

  - 100% ON ADJUSTABLE TIMED OVERRIDE

- CORRIDORS/VESTIBULES:
  - LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN DIM TO 50 PERCENT. AFTER 30 MINUTES OF NO ACTIVITY TURN OFF
  - FIXTURES SHOWN INDICATED AS 'NL' SHALL WIRED AS NIGHT LIGHTS.

C. SWITCHES SHALL INCLUDE:

  - ON
  - OFF

D. MOMENTRAY CONTACT OVERRIDE SWITCH

  - ADJUSTABLE TIMED OVERRIDE
- STORAGE, JANITOR CLOSET:
  - LIGHTING TO COME ON AUTOMATICALLY AT 100% UPON ENTRANCE TO SPACE.
  - LIGHTING SHALL REMAIN ON UNTIL 15-MINUTES AFTER NO ACTIVITY AND THEN TURN OFF.

C. EMERGENCY LIGHTS SHALL FUNCTION WITH NORMAL LIGHTS. UPON POWER OUTAGE, EMERGENCY LIGHT SHALL ILLUMINATE AT 100%.

D. SWITCHES SHALL INCLUDE:

  - ON
  - OFF
- LOCKER ROOMS, RESTROOMS:
  - LIGHTING TO COME ON AUTOMATICALLY AT 100% UPON ENTRANCE TO SPACE VIA CEILING STYLE OCCUPANCY SENSOR.
  - PROVIDE ROOM CONTROLLER AND LV SWITCH.
  - LIGHTING SHALL REMAIN ON UNTIL 20-MINUTES AFTER NO ACTIVITY AND THEN GO OFF.

D. FIXTURES SHOWN AS EMERGENCY SHALL BE WIRED AS NIGHT LIGHTS.

E. SWITCHES SHALL INCLUDE:

  - ON
  - OFF
- ELECTRICAL, MECHANICAL, IT ROOMS:
  - PROVIDE MANUAL ON/OFF.

LIGHTING CONTROLS - SEQUENCE OF OPERATIONS

ELECTRICAL MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT TAG	DESCRIPTION	LOAD		VOLTAGE	PHASE	CIRCUIT BREAKER	CONDUIT & WIRE	FUSED DISCONNECT SWITCH	NON-FUSED DISCONNECT SWITCH	MANUAL MOTOR STARTER	COMBINATION STARTER WITH H-O-A	VFD WITH INTEGRAL DISCONNECT	FULL VOLTAGE CONTACTOR	NOTES
		HP	AMPS WATTS											
AHU-1	AIR HANDLING UNIT		19 15138	480V	3	25A / 3P	(3) #10 & (1) #10G IN 3/4"C		X	X				2
IR-1	INFRARED HEATER	-	4.8 576	120V	1	20A/1P	(2) #12 & (1) #12G IN 3/4"C		X					1
EF-1	EXHAUST FAN	1/2	5 1040	208V	1	15A / 2P	(2) #12 & (1) #12G IN 3/4"C		X					1
EF-2	EXHAUST FAN	10	4.3 3648	480V	3	20A / 2P	(3) #12 & (1) #12G IN 3/4"C		X					1
EF-3	EXHAUST FAN	2	5.9 2832	480V	3	15A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
EF-4	EXHAUST FAN	2	5.9 2832	480V	3	15A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
EF-5	EXHAUST FAN	5	8.9 7390	480V	3	15A / 3P	(3) #12 & (1) #12G IN 3/4"C		X	X				1
RF-1	FAN	1	2.625 2179.8	480V	3	20A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
RF-2	FAN	1	2.625 2179.8	480V	3	20A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
RF-3	FAN	1	2.625 2179.8	480V	3	20A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
RF-4	DIRECTIONAL FAN	2/3	6.9125 829.5	120V	1	15A/1P	(2) #12 & (1) #12G IN 3/4"C		X					1
CUH-1	CABINET UNIT HEATER		3 2494	480V	3	20A / 3P	(3) #12 & (1) #12G IN 3/4"C		X					1
MAU-1	MAKEUP AIR UNIT	10	19 15796	480V	3	40A/3P	(3) #10 & (1) #10G IN 3/4"C		X	X				1
RP-1	RECIRCULATION PUMP	1/6		120V	1	20A/1P	(2) #12 & (1) #12G IN 3/4"C		X	X				1
RP-2	RECIRCULATION PUMP	1/6		120V	1	20A/1P	(2) #12 & (1) #12G IN 3/4"C		X	X				1
BP-1	BOOSTER PUMP	5	16.7 1580	208V	3	20A/3P	(4) #12 & (1) #12G IN 3/4"C		X					1
GW-1	GAS WATER HEATER	-	4 480	120V	1	20A/1P	(2) #12 & (1) #12G IN 3/4"C		X					1
AC-1UCU-1	SPLIT SYSTEM	0.5	15 3120	208V	1	30A/ 2P	(2) #10 & (1) #10G IN 3/4"C	X						1,4
AC-2UCU-2	SPLIT SYSTEM	0.5	19 3952	208V	1	30A/ 2P	(2) #10 & (1) #10G IN 1"C	X						1,4
AC-3UCU-3	SPLIT SYSTEM		25 5200	208V	1	30A/ 2P	(2) #10 & (1) #10G IN 1"C	X						1,4
EUH	ELECTRIC UNIT HEATER		24 5 kW	208V	1	30A /3P	(3) #10 & (1) #10G IN 3/4"C		X					1
VAV-1	VARIABLE AIR VOLUME	-		5kW	480V	3	20A / 3P		X					1
VAV-2	VARIABLE AIR VOLUME	-		6kW	480V	3	20A / 3P		X					1
VAV-3	VARIABLE AIR VOLUME	-		2kW	480V	3	20A / 3P		X					1
VAV-4	VARIABLE AIR VOLUME	-		6kW	480V	3	20A / 3P		X					1
VAV-5	VARIABLE AIR VOLUME	-		6kW	480V	3	20A / 3P		X					1
VAV-6	VARIABLE AIR VOLUME	-		5kW	480V	3	20A / 3P		X					1
VAV-7	VARIABLE AIR VOLUME	-		8kW	480V	3	20A / 3P		X					1
VAV-8	VARIABLE AIR VOLUME	-		6kW	480V	3	20A / 3P		X					1
VAV-9	VARIABLE AIR VOLUME	-		5kW	480V	3	20A / 3P		X					1
VAV-10	VARIABLE AIR VOLUME	-		5kW	480V	3	20A / 3P		X					1
VAV-11	VARIABLE AIR VOLUME	-		10kW	480V	3	20A / 3P		X					1
CU-4	CONDENSING UNIT		31 24.6kW	480V	3	40A/3P	(3) #8 & (1) #10G IN 3/4"C		X					1
CMPR-1	AIR COMPRESSOR	7.5	25.3 9.10kW	208V	3	50A / 3P	(3) #8 & (1) #10G IN 3/4"C		X	X				1
CMPR-FIRE-1	AIR COMPRESSOR	2	4 2.88kW	120V	1	30A/1P	(2) #10 & (1) #10G IN 3/4"C		X	X				1
UH-1	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UH-2	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UH-3	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UH-4	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UH-5	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UH-6	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UN-7	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1
UN-8	UNIT HEATER		2.43 291.6	120V	1	15A / 1P	(2) #12 & (1) #12G IN 3/4"C		X					1

ELECTRICAL MECHANICAL EQUIPMENT CONNECTION NOTES:

- LOCAL DISCONNECT SWITCH PROVIDED BY E.C. AT UNIT. E.C. SHALL LOCATE AND INSTALL SWITCH AND PROVIDE POWER CONNECTION. PROVIDE DISCONNECT SWITCH SIZED TO ADEQUATELY MEET EQUIPMENT LOAD/CIRCUIT BREAKER INDICATED AND NEMA RATING FOR ENVIRONMENT.
- FACTORY MOUNTED DISCONNECT SWITCH BY MANUFACTURER. EC TO PROVIDE POWER CONNECTION.
- E.C. SHALL PROVIDE MOTOR RATED SAFETY TOGGLE SWITCH WITH THERMAL OVERLOADS. PROVIDE DISCONNECT SWITCH SIZED TO ADEQUATELY MEET EQUIPMENT LOAD/CIRCUIT BREAKER INDICATED AND NEMA RATING FOR ENVIRONMENT.
- INDOOR UNIT TO BE POWERED FROM OUTDOOR UNIT.
- PACKAGED CONTROL UNIT BY MANUFACTURER.
- TO BE PLUGGED INTO RECEPTACLE ADJACENT TO UNIT.

GENERAL NOTES:

- SEE PANEL SCHEDULES FOR CIRCUITS THAT ARE TO BE CONTROLLED BY EACH CONTACTOR.
- NEUTRAL CONDUCTOR NOT SHOWN FROM PANEL THRU CONTACTOR TO LIGHT FIXTURES.
- PROVIDE A MINIMUM OF 2 SPARE CONTACTOR POLES PER CONTACTOR.
- ALL CONTACTORS SHALL BE PROVIDED WITH NORMALLY CLOSED CONTACTS. THE CONTACTORS SHALL BE DELIVERED FROM THE FACTORY WITH NORMALLY CLOSED CONTACTS OR WITH FIELD-CONVERTIBLE CONTACTS. THE CONTRACTOR SHALL FIELD-CONVERT CONTACTORS TO NORMALLY CLOSED WHEN FIELD-CONVERTIBLE NORMALLY OPEN CONTACTS ARE PROVIDED.
- ANY LOCAL SWITCHING INDICATED ON THE PLANS SHALL BE ON THE LOAD SIDE OF THE CONTACTOR.
- THE ELECTRICAL CONTRACTOR SHALL PROGRAM ALL TIMECLOCKS AND INDIVIDUAL DIGITAL TIMECLOCK CHANNELS COORDINATE ALL ON, OFF, AND HOLIDAY SETTINGS WITH THE OWNER. INTERIOR CONTROL ZONES SHALL HAVE THE ASTRONOMIC FUNCTION FOR THE CHANNEL TURNED OFF. EXTERIOR CONTROL ZONES SHALL HAVE THE ASTRONOMIC FUNCTION FOR THE CHANNEL TURNED ON.
- MOUNT TIMECLOCK, RELAYS, AND CONTACTORS ADJACENT TO THE ASSOCIATED PANELBOARD(S). ALL CONTACTORS AND RELAYS SHALL BE PROVIDED WITH INDIVIDUAL ENCLOSURES.
- COORDINATE MOUNTING LOCATION OF OVERRIDE SWITCH WITH THE OWNER.

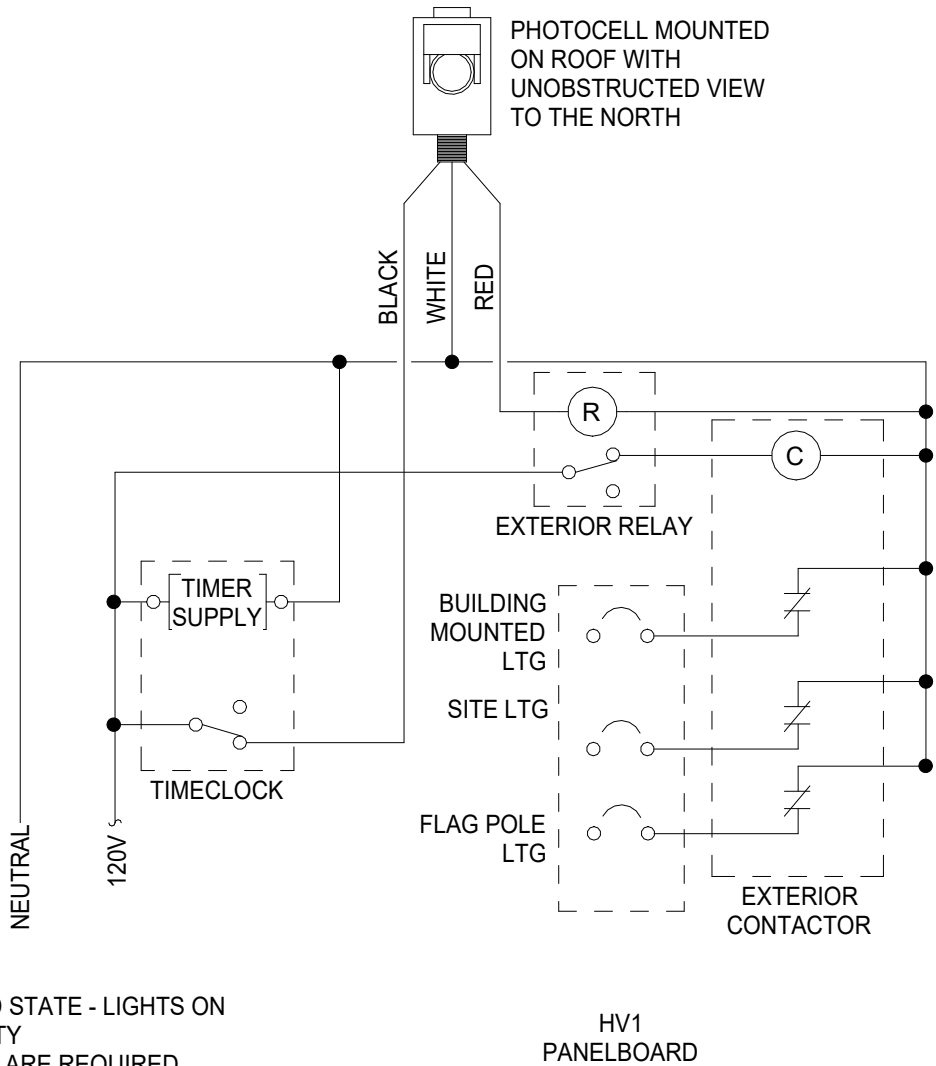


DIAGRAM SHOWN IN ENERGIZED STATE - LIGHTS ON  
LIGHTS NOT SHOWN FOR CLARITY  
(2) MANUAL OVERRIDE SWITCHES ARE REQUIRED.

LIGHTING CONTROL WIRING DIAGRAM

SCALE : NTS

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Formerly Known as BERGMANN

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