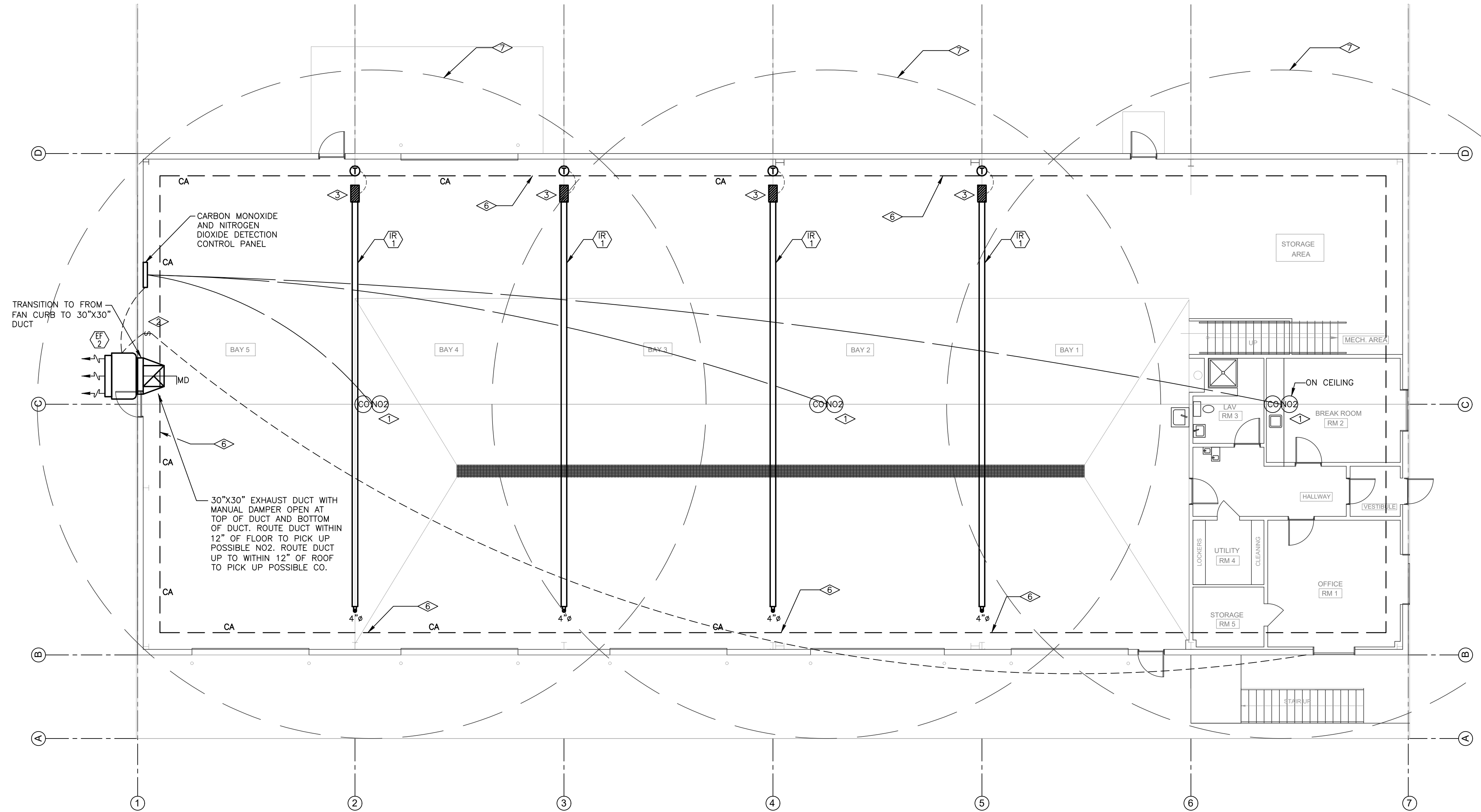


MECHANICAL - MEZZANINE FLOOR PLAN

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

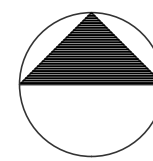


NORTH



MECHANICAL - SHOP FLOOR PLAN

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



NORTH

MECHANICAL GENERAL NOTES:

- DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS AND SIZES MAY VARY DURING FIELD COORDINATION & INSTALLATION OF MECHANICAL, PLUMBING, & ELECTRICAL. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK. VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
- ALL REFRIGERANT LINES ARE TO BE LIMITED TO 75' EQUIVALENT LINE LENGTH. ALL REFRIGERANT LINES SHALL BE INSULATED PER IECC REQUIREMENTS. ALL REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATION.
- INDOOR HEAT PUMPS SHALL BE PROVIDED WITH AUXILIARY CONDENSATE PUMP, 240V/1PH/60HZ "SPEN-PUMP". CONDENSATE SHALL BE ROUTED THROUGH 3/4" TYPE L COPPER TO NEAREST PLUMBING FIXTURE GROUP. DISCHARGE INDIRECTLY THROUGH AIR GAP SIZED PER IPC.

FLAG NOTES:

- MACURCO CM-6, TX-6-ND CARBON MONOXIDE & NITROGEN DIOXIDE SENSORS. SENSORS TO BE INTERLOCKED WITH EF-2 AND LR-1. EXHAUST FANS SHALL TURN ON AT DETECTION OF 10PPM FOR CO & 50 PPB FOR NO2. ALARMS SHALL BE TRIGGERED AT DETECTION OF 25 PPM FOR CO & 100 PPB FOR NO2. LOUVERS TO OPEN UPON ACTIVATION OF EXHAUST FAN. LOUVERS ARE TO FAIL OPEN. INSTALL CO & NO2 DETECTORS PER MANUFACTURER'S INSTRUCTIONS, EACH SENSOR COVERS A CIRCULAR AREA OF APPROXIMATELY 5,000 SQ. FT. RADIUS OF 39'. INSTALL PER MANUFACTURER'S REQUIREMENTS.
- EF-2 TO BE INTERLOCKED WITH VARIABLE SPEED WALL MOUNTED SWITCH.
- INFRARED HEATER, MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FROM ALL COMBUSTIBLES. INSTALL INFRARED HEATER PER MANUFACTURER'S RECOMMENDATIONS.
- ROUTE COMPRESSED AIR TO MEZZANINE
- COMPRESSED AIR FROM LOOP BELOW. PROVIDED WITH QUICK CONNECT FITTING.
- COMPRESSED AIR DROP.
- CIRCLE TO SHOW THE EFFECTIVE RANGE OF CO AND NO2 SENSORS.

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**TOWN OF HOTCHKISS
PUBLIC WORKS FACILITY**

TBD BARROW MESA RD
HOTCHKISS, COLORADO

DATE:	ISSUED FOR:
03/21/19	REVISED 50% DD

DATE:	03/21/19
JOB NO:	18-159
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	M1-1

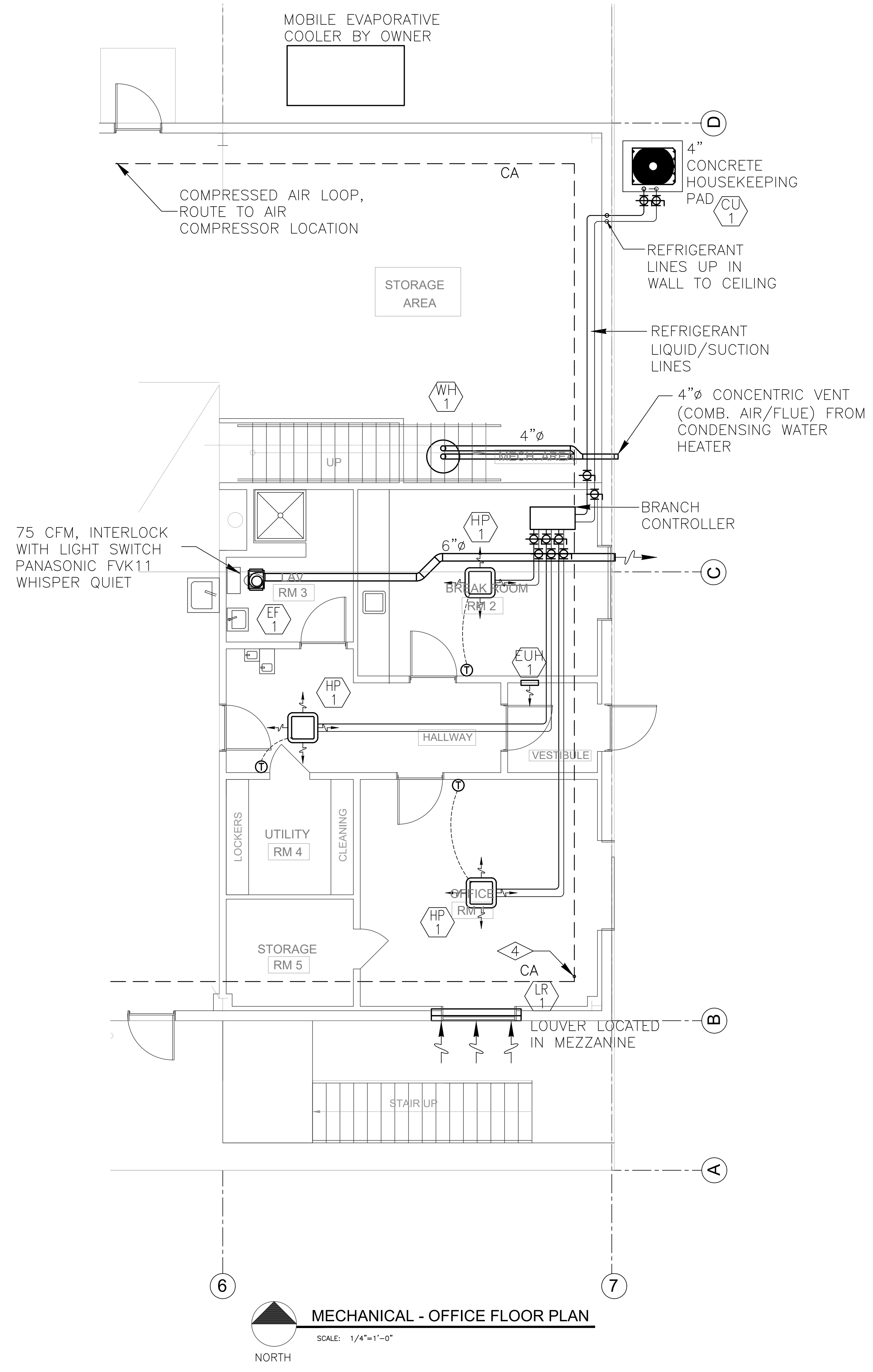
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MECHANICAL - OFFICE FLOOR PLAN
 SCALE: 1/4"=1'-0"
 NORTH

MECHANICAL PROVISIONS

1. SCOPE OF WORK

- A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
- B. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND ALL OTHER REGULATION GOVERNING WORK OF THIS NATURE.
- C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.
- D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.

2. PERMITS

- A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.

3. SHOP DRAWINGS

- A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.

4. FLEXIBLE DUCT WORK

- A. FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERAL BASE. FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L., CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50.
- B. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN 6 LINEAR FEET PER RUN.
- C. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.

5. REFRIGERENT

- A. PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY POSSIBLE CONDENSATION.
- B. INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION. SHALL BE TYPE "K" CONDUIT TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.

6. DUCTWORK

- A. THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "SMACNA" APPLICABLE MANUALS.
- B. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED OTHERWISE.
- C. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS.
- D. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS, SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.
- E. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE.
- F. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
- G. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
- H. ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT SHALL BE INTERNALLY LINED WITH A 1/2" ACOUSTICAL DUCT LINER UNLESS OTHERWISE NOTED ON THE DRAWINGS.

7. DRAINAGE PIPING

- A. (CONDENSATE) SHALL BE SCHEDULE 40 PVC OR TYPE L COPPER PER ASTM B306 PIPE WITH SOLVENT JOINTS.
- B. PITCH HORIZONTAL LINES 1" IN 10'-0". CONDENSATE DRAINS SHALL BE ROUTED TO FLOOR DRAIN, ROOF DRAIN OR INDIRECT WASTE DRAIN.

8. HVAC CONTROLS

- A. CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.

9. ELECTRICAL

- A. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF WIRING FOR EACH HVAC UNIT.

10. PIPE SUPPORTS

- A. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAP TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING TO BE SUPPORTED EVERY 4 FEET.

11. GAS PIPING

- A. PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS.
- WHERE GAS PIPE CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE RUNOUT, A 100% SHUT-OFF VALVE AND A UNION. GAS PIPING CONTAINING PRESSURE GREATER THAN 9" W.G. SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED JOINTS.

12. MISCELLANEOUS

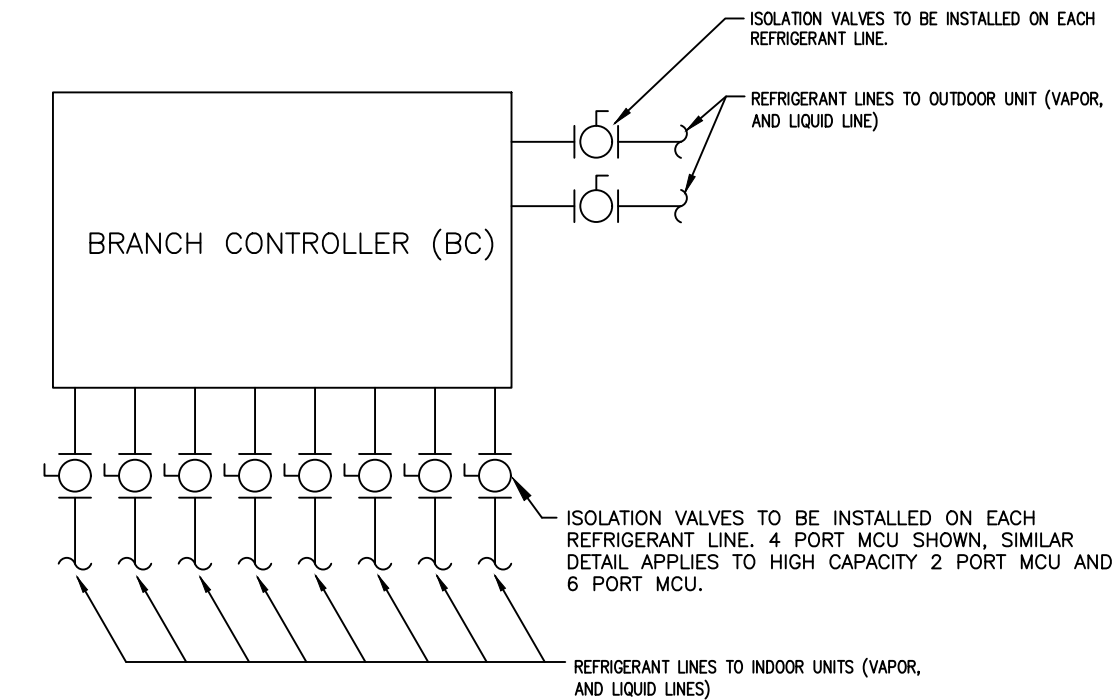
- A. ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A SEALANT OF HIGH QUALITY AND LONG LIFE, TO PREVENT INFILTRATION OF OUTSIDE AIR INTO CONDITIONED SPACE.
- B. COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS.
- C. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
- D. THE MECHANICAL PLANS ARE INTENDED TO BE DIAGNOSTIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT.
- E. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE.

13. TESTING AND BALANCING

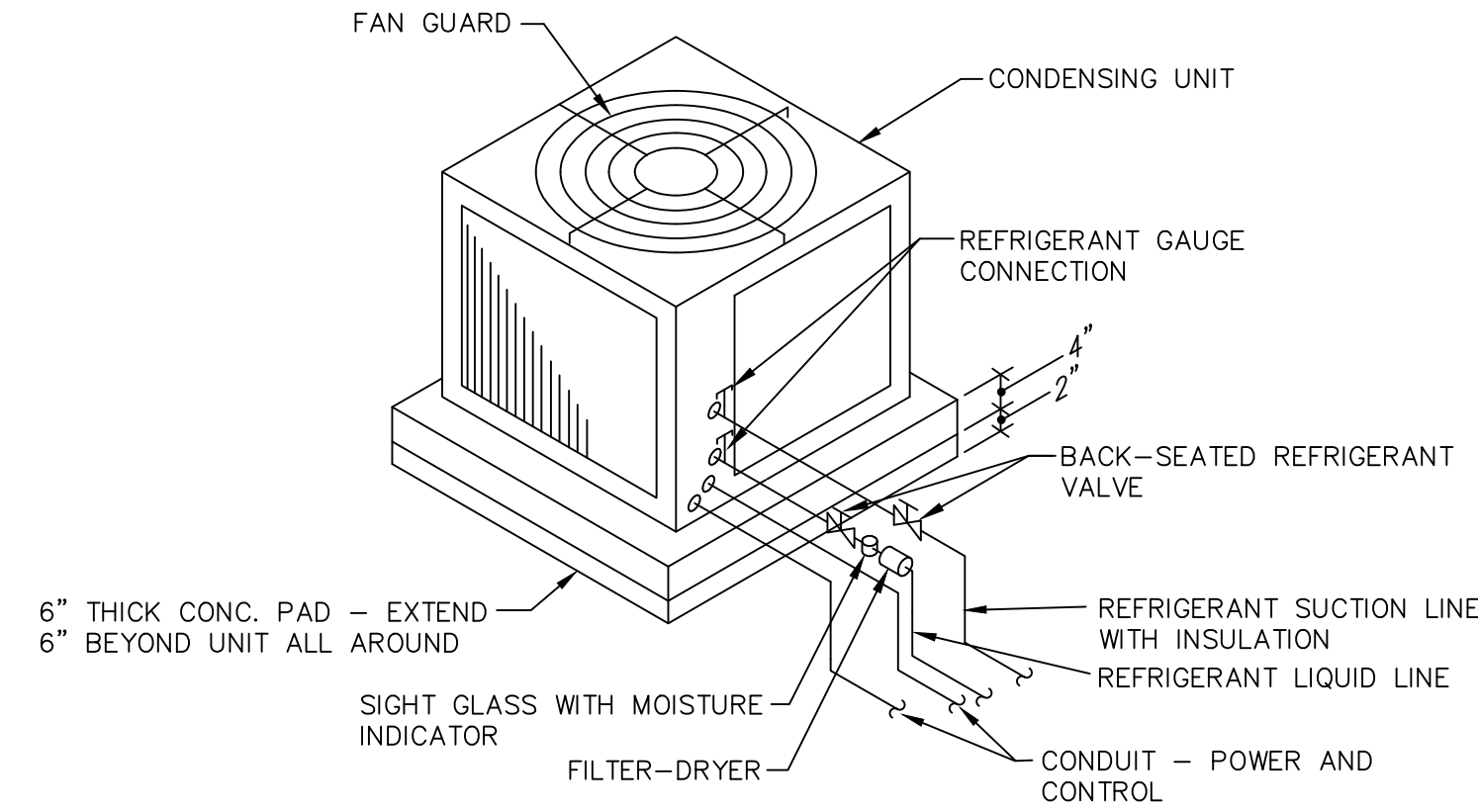
- A. THE HVAC SYSTEM SHALL BE TESTED AND AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.

14. GUARANTEE

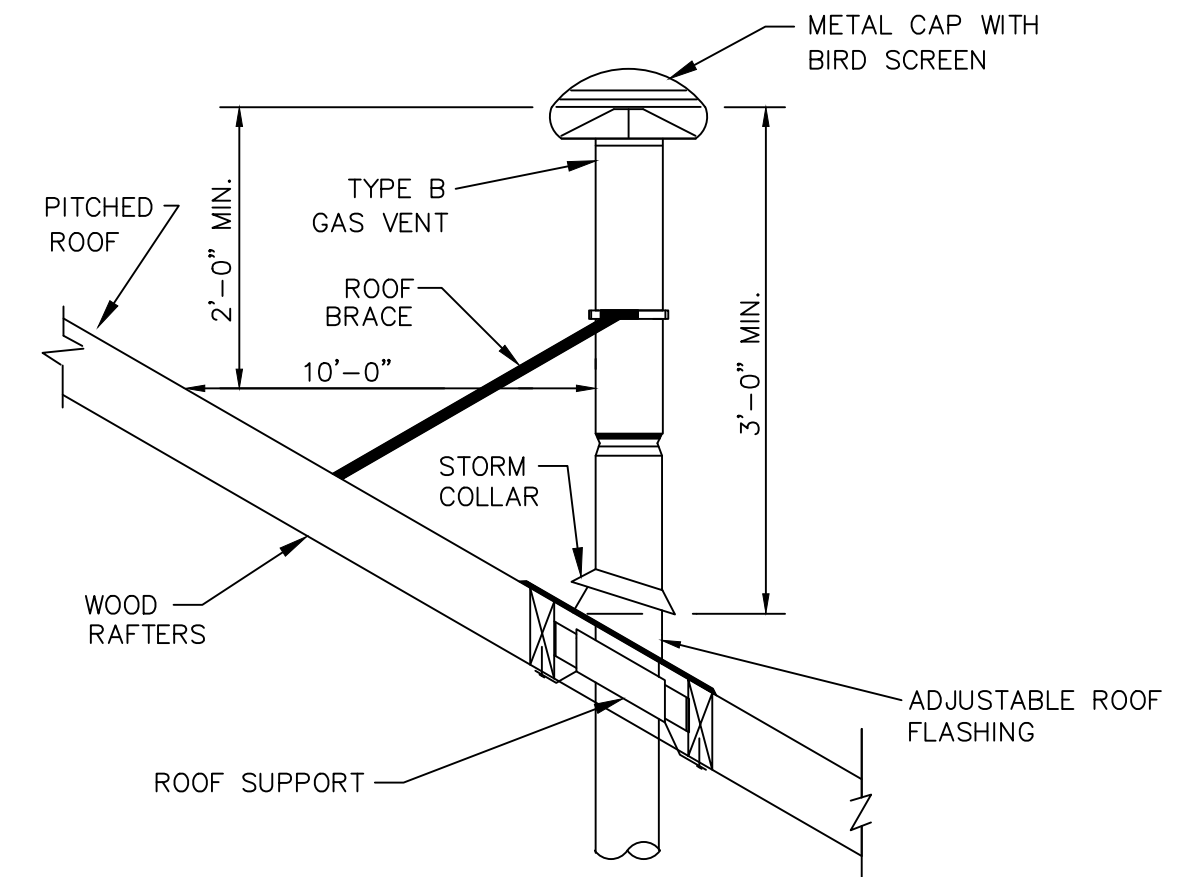
- A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE(1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE.
- B. FOR THE SAME PERIOD, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.



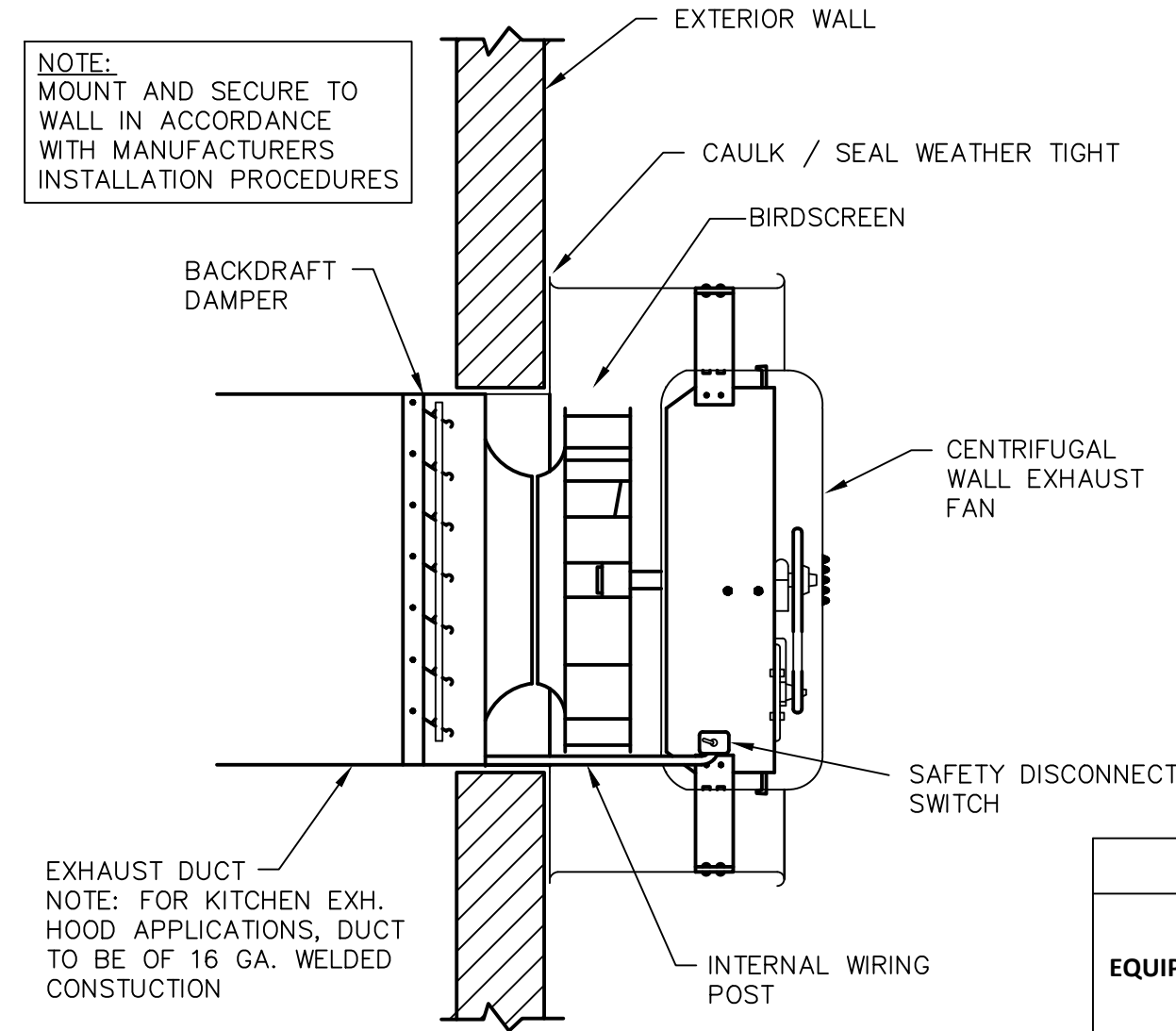
TYPICAL BRANCH CONTROLLER UNIT VALVE LAYOUT
NOT TO SCALE



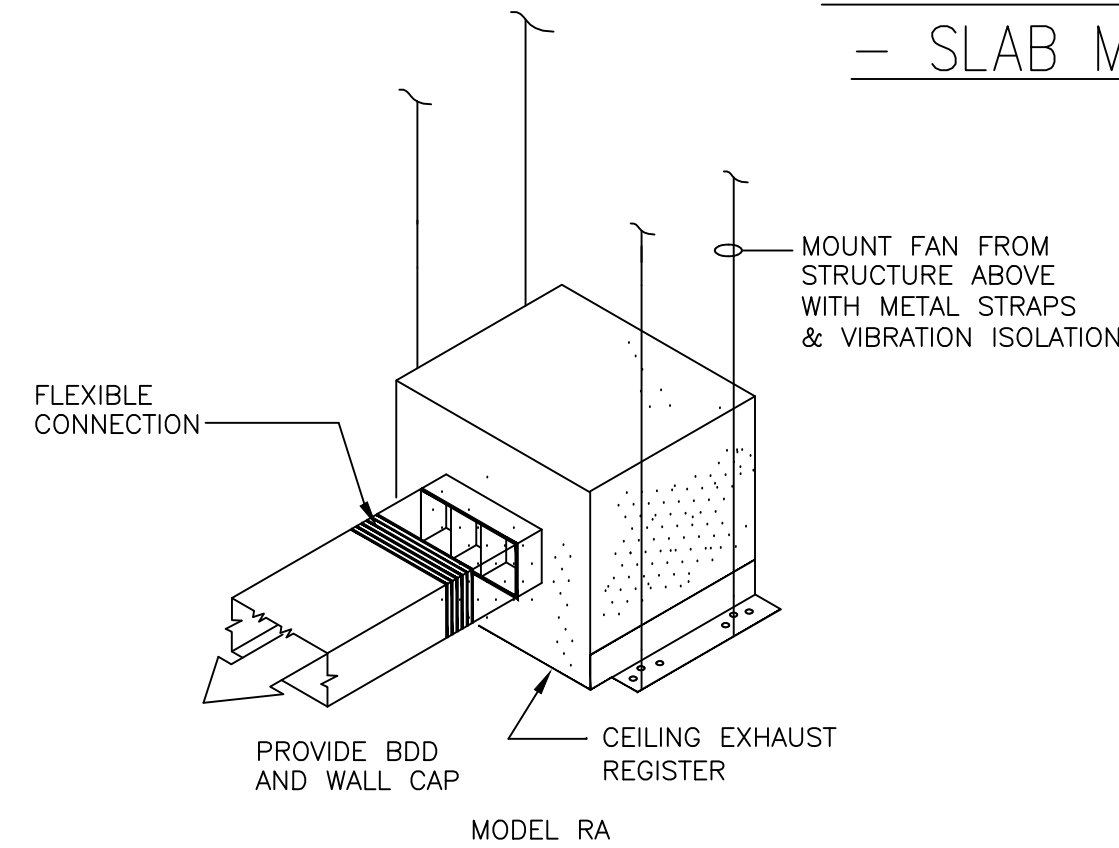
AIR-COOLED CONDENSING UNIT
- SLAB MOUNTED AT GRADE
N.T.S.



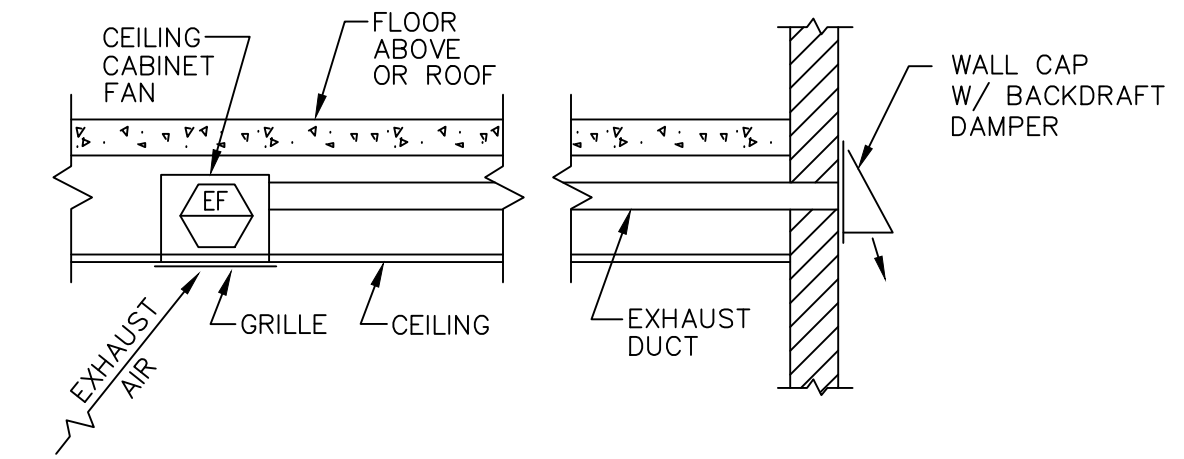
GAS VENT THROUGH PITCHED
ROOF DETAIL
NOT TO SCALE



CENTRIFUGAL WALL EXHAUST
FAN DETAIL
N.T.S.



CEILING EXHAUST FAN DETAIL
NOT TO SCALE



CEILING MOUNTED EXHAUST FAN DETAIL
- SIDEWALL DISCHARGE
N.T.S.

RADIANT HEATER SCHEDULE													
EQUIPMENT NO.	SERVICE	HEATING			IGNITION TYPE	TUBE LENGTH(FT)	TUBE DIAMETER	MIN. EFFICIENCY	V./PH./HZ.	ELECTRICAL		MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
		FUEL TYPE	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)						AMPS			
IR-1	BAY	NATURAL GAS	205	164	DIRECT SPARK	50	4"	78%	120/1/60	1.0		SUPERIOR RADIANT PRODUCTS, UXR-205	NOTE-1

NOTES:
1. PROVIDE WITH TERMINATION VENT KIT, POWER DISCONNECT, GAS SHUT-OFF VALVE, REFLECTORS, WALL MOUNTED INFRARED SENSOR/THERMOSTAT, HEAT TREATED ALUMINIZED STEEL HEAT EXCHANGER AND BURNER CONTROLS.

AIR CONDITIONING EQUIPMENT SCHEDULE												
EQUIPMENT NO.	SERVICE	NOMINAL COOLING CAPACITY (BTU/HR.)	NOMINAL HEATING CAPACITY (BTU/HR.)	CFM	EER (EFFICIENCY)	REFRIGERANT PIPING		ELECTRICAL		MANUFACTURER & MODEL	OPTIONS/ACCESSORIES	
						LIQUID	SUCTION	MCA (AMPS)	V./PH./HZ.			
HP-1	OFFICE	12,000	13,000	335	12	1/4	3/8	0.3	208-230/1/60	mitsubishi - SLZ-KF12NA	NOTE-1	

NOTES:
1. PROVIDE WITH WALL MOUNTED 7-DAY PROGRAMMABLE THERMOSTAT, POWER DISCONNECT, CONDENSATE PUMP, OUTSIDE AIR SENSOR, GRILLE, DRAIN PAN LEVEL SENSOR, VIBRATION ISOLATION MOUNTING KIT.

AIR COOLED CONDENSING UNIT SCHEDULE												
EQUIPMENT NO.	SERVICE	NOMINAL COOLING CAPACITY (BTUH)	NOMINAL HEATING CAPACITY (BTUH)	SEER	REFRIG. PIPING		V/PH/HZ	MOCP (A)	ELECTRIC MCA (A)	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES	
					LIQUID	VAPOR						
CU-1	OFFICE	48,000	54,000	19	3/8	5/8"	208-230/1/60	50	42	MITSUBISHI - MXZ-8C48NAHZ	NOTE-1	

NOTES:
1. PROVIDE LINE SET AS RECOMMENDED BY MANUFACTURER, POWER DISCONNECT, CONCRETE HOUSEKEEPING PAD, HYPER-HEAT OPERATION, 18" TALL ANGLE IRON STAND, VIBRATION ISOLATION, 5 PORT BRANCH BOX. SEER = 18.9, EER = 12.0, HSPF = 11.

EXHAUST FAN SCHEDULE												
EQUIPMENT NO.	SERVICE	LOCATION	CFM	EXTERNAL STATIC PRESS (IN. W.G.)	MOTOR				MANUFACTURER & MODEL	OPTIONS/ACCESSORIES		
					WATTS	HP	RPM	VOLT/PH/HZ				
EF-1	RESTROOM	CEILING	75	0.25	10.00		814	115/1/60	PANASONIC FV-05-11VK1	NOTE - 1		
EF-2	RESTROOM	SIDEWALL	9272	0.375	-	3/4	305	115/1/60	GREENHECK - CUBE-420	NOTE - 2		

NOTES:
1. PROVIDE WITH POWER DISCONNECT, VIBRATION ISOLATION, GRAVITY BACKDRAFT DAMPER, INTERLOCK OPERATION WITH LIGHTSWITCH, EXHAUST TERMINATION WITH UL LISTED CAP.
2. PROVIDE WITH POWER DISCONNECT, HINGED CURB, BIRD SCREEN, ALUMINUM CONSTRUCTION, PERMATECTOR COATED, MECHANICAL BACKDRAFT DAMPER, MOTOR STARTER, VARIABLE SPEED BELT DRIVEN MOTOR, INTERLOCK OPERATION WITH WALL MOUNTED CO & NO2 MACURACO DETECTION CONTROL PANEL (FAN SHALL RAMP UP TO FULL SPEED AFTER RECEIVING SIGNAL FROM CONTROL PANEL), INTERLOCK OPERATION WITH WALL MOUNTED VARIABLE SPEED SWITCH.

LOUVER SCHEDULE								
EQUIPMENT NO.	SERVICE	WIDTH (IN)	HEIGHT (IN)	THICKNESS OF LOUVER	MATERIAL	INSECT/BIRD SCREEN	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
LR-1	OUTSIDE/EXHAUST	72"	72"	4"	STEEL	1/2" BIRD	GREENHECK FDS-402	NOTE - 1, 2

NOTES:
1. DRAINABLE LOUVER, PROVIDE BIRDSCREEN AND KYNAR FINISH WITH COLOR TO BE SELECTED BY THE ARCHITECT.
2. PROVIDE LOW LEAKAGE MOTORIZED DAMPER IN SLEEVE BEHIND LOUVER. INTERLOCK DAMPER OPERATION WITH EF-2. LOUVER SHALL OPEN WHEN EF-2 IS ENERGIZED.

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M1-3

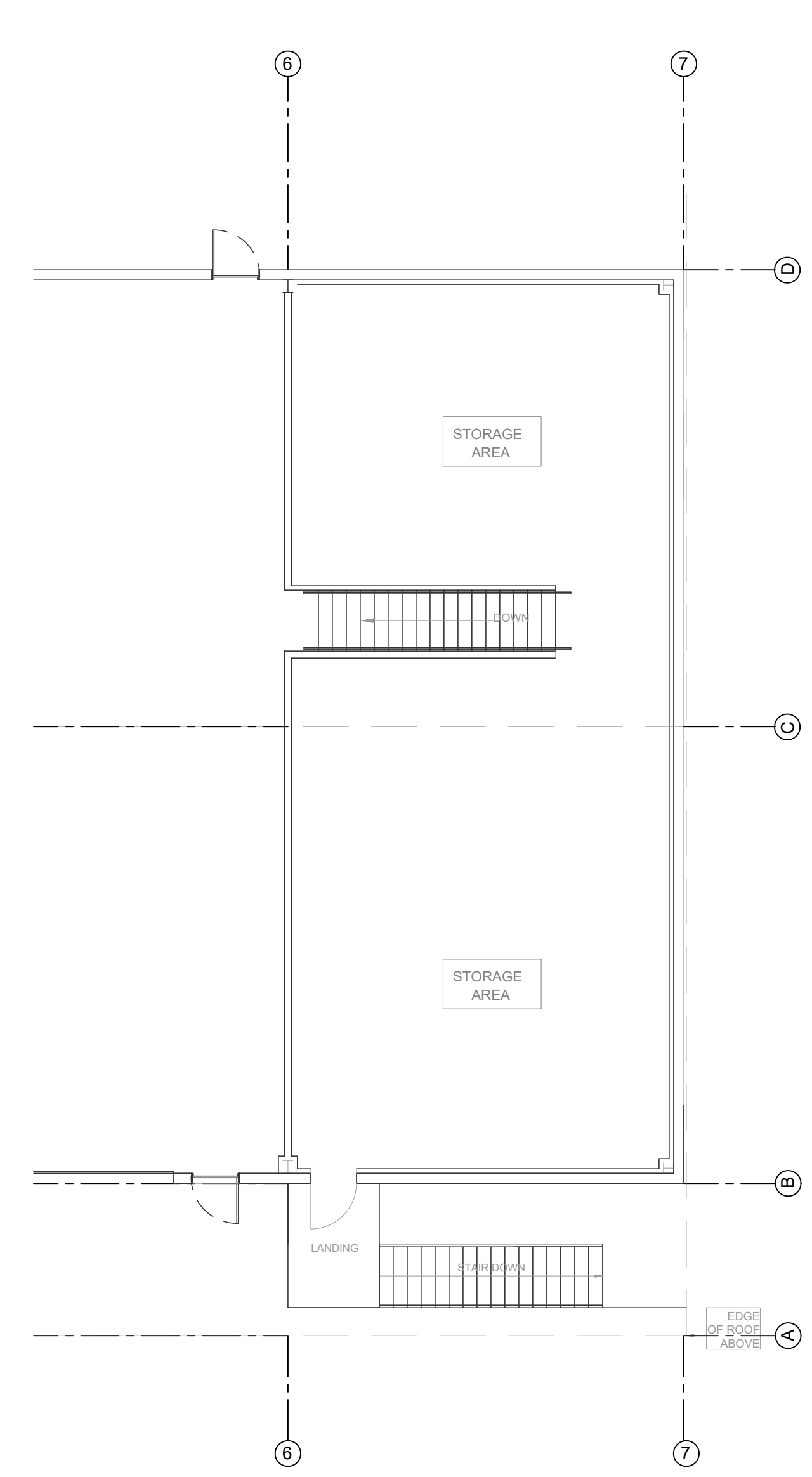
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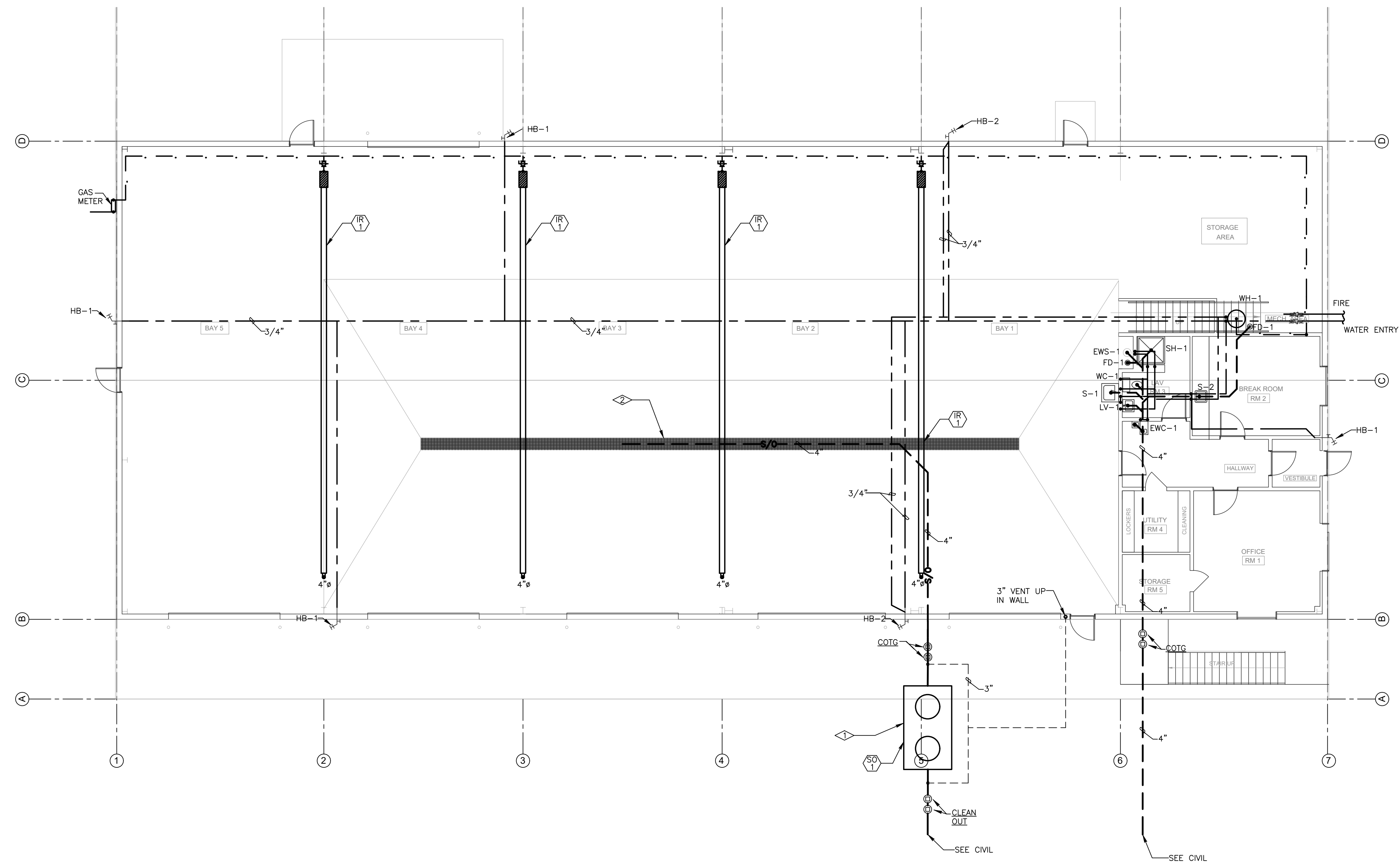
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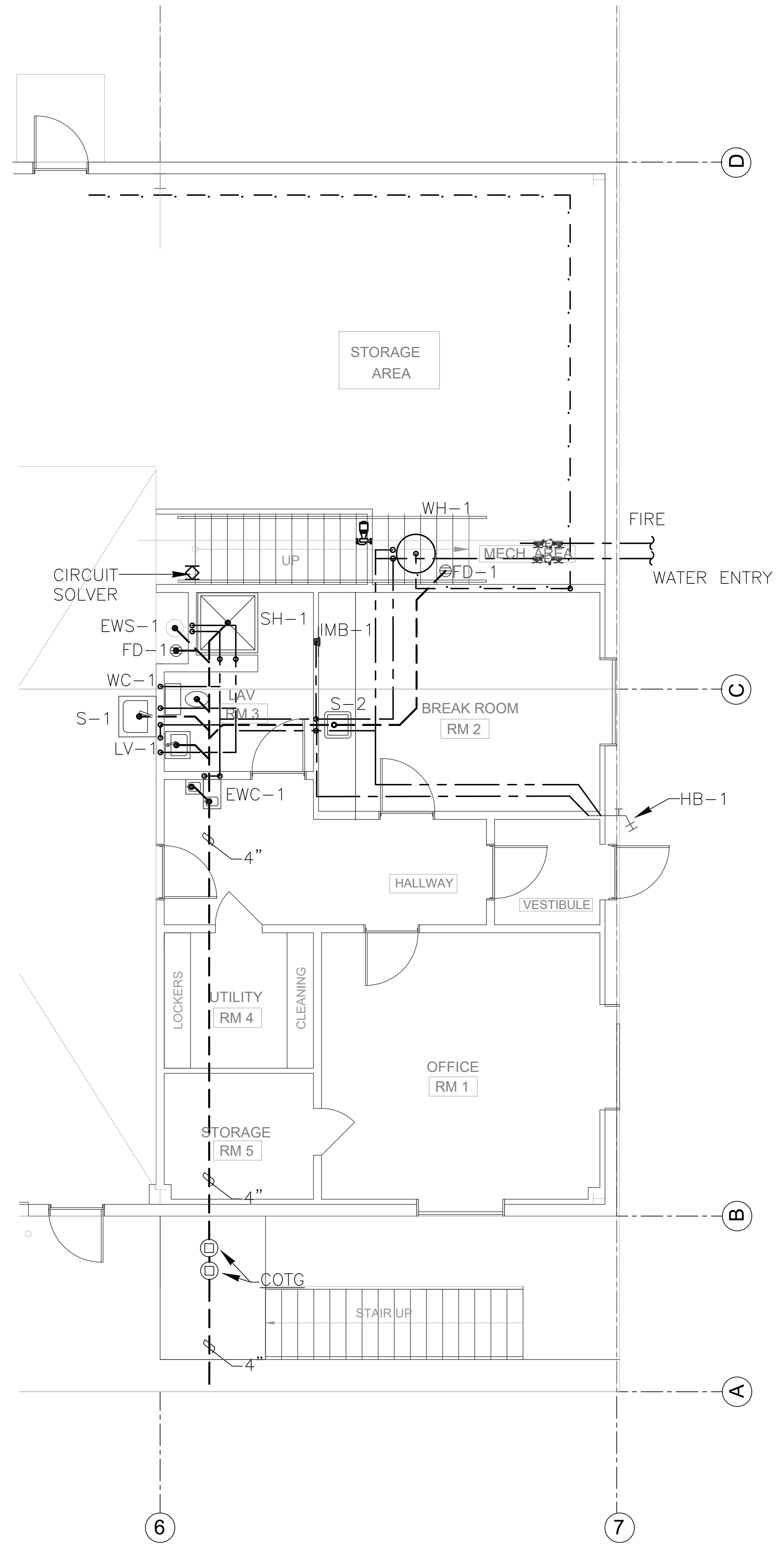


PLUMBING - MEZZANINE FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH



PLUMBING - SHOP FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH

- FLAG NOTES:**
1. SAND OIL INTERCEPTOR LOCATION TO BE COORDINATED WITH SITE PLAN.
 2. TRENCH DRAIN TO BE PROVIDED BY GENERAL CONTRACTOR. GRATE TO BE TRAFFIC RATED AND SLOPED PER IPC.
 - 3.



PLUMBING - OFFICE FLOOR PLAN
 SCALE: 1/4"=1'-0"
 NORTH

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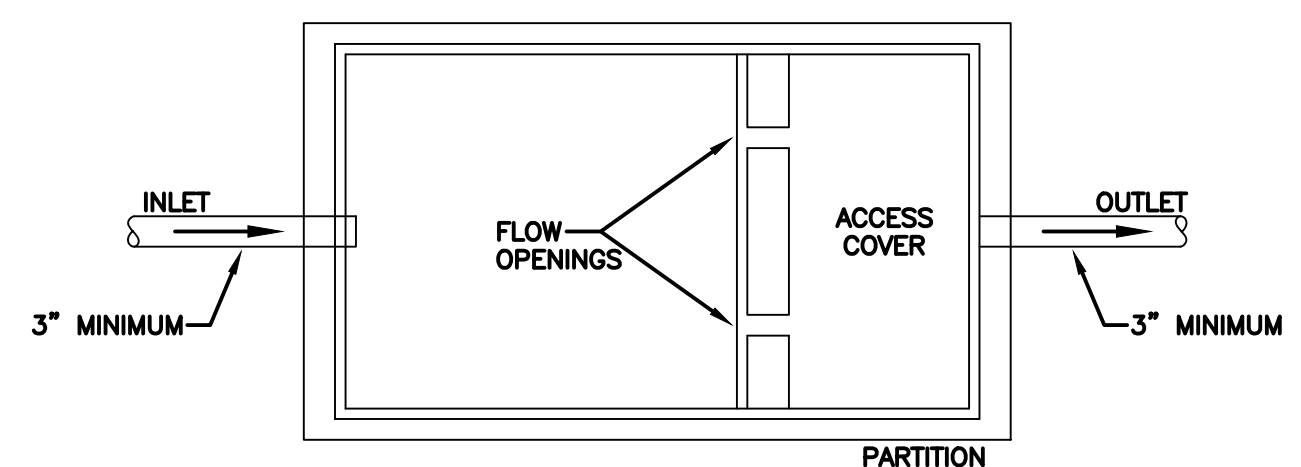
PLUMBING FIXTURE SCHEDULE									
FIXTURE NO.	DESCRIPTION	MANUFACTURER	MODEL	TRIM	PIPING CONNECTIONS				OPTIONS-ACCESSORIES
					S/W	VENT	C.W.	HW	
EWC-1	ELECTRIC WATER COOLER	ELKAY	LZWS-LRPB M28K		1-1/2"	1-1/2"	1/2"	1/2"	HIGH-LOW, 304 SS SATIN FINISH, WITH BOTTLE FILLER.
EWS-1	EYE WASH SHOWER	GUARDIAN	GBF1909SS H		-	-	3/4"	3/4"	FLOOR MOUNTED, PROVIDE WITH MIXING VALVE, FLOOR DRAIN, HAND PADLE OPERATION. WATER DELIVERED SHOWER SHALL BE TEPID MINIMUM 60°F TO 100°F.
FD-1	FLOOR DRAIN	ZURN	Z300	BRONZE	4"	2"	-	-	PROVIDE NICKEL BRONZE STRAINER, MECHANICAL TRAP SEAL SIMILAR TO J.R. SMITH QUAD CLOSE.
HB-1	FREEZE PROOF HOSE BIB	WOODFORD	B67		-	-	3/4"	1/2"	PROVIDE LOCKING BOX WITH ANTI-SIPHON AND VACUUM BREAKER, FREEZE PROOF.
HB-2	FREEZE PROOF HOSE BIB	WOODFORD	V22		-	-	3/4"	1/2"	PROVIDE LOCKING BOX WITH ANTI-SIPHON AND VACUUM BREAKER, FREEZE PROOF.
LV-1	WALL MOUNTED BATHROOM SINK	AMERICAN STANDARD-REGALYN	4867.008		1 1/2"	1 1/2"	1/2"	1/2"	GRID DRAIN, P TRAP, LOCAL MIXING VALVE, WALL HANGER KIT.
S-1	1 COMPARTMENT SINK ADA WALL HUNG SINK	JUST	JH-ADA-362 0-S-CP		1-1/2"	1-1/2"	1/2"	1/2"	SINK STRAINER, P-TRAP, LOCAL MIXING VALVE, ADDITIONAL ACCESSORIES COORDINATE WITH OWNER.
S-2	1 COMPARTMENT SINK COUNTER MOUNTED	JUST	SLN-1815-A -GR		1-1/2"	1-1/2"	1/2"	1/2"	SINK STRAINER, P-TRAP, LOCAL MIXING VALVE, ADDITIONAL ACCESSORIES COORDINATE WITH OWNER.
SH-1	ADA SHOWER ENCLOSURE	CHICAGO FAUCETS	SH-PB1-00-013		1-1/2"	1-1/2"	1/2"	1/2"	TERRAZO BASIN, PRESSURE BALANCED MIXING VALVE POLYPROPYLENE WALLS, CURTAIN ROD, SIONGLE LEVER VALVE, GRID FLOOR DRAIN, GRAB BARS, SEAT.
SO-1	SAND/ OIL INTERCEPTOR				4"	2"	-	-	4000 PSI CONCRETE, K-25 TRAFFIC RATED.
WC-1	ADA WATER CLOSET	AMERICAN STANDARD-CHAMPION	2034.314	1.6 GPF FLUSH TANK WATER CLOSET	4"	2"	3/4"	-	VACUUM BREAKER, COORDINATE COLOR WITH OWNER, PROVIDE ELONGATED SEAT.

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS COMPLETED OR NOT, THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.

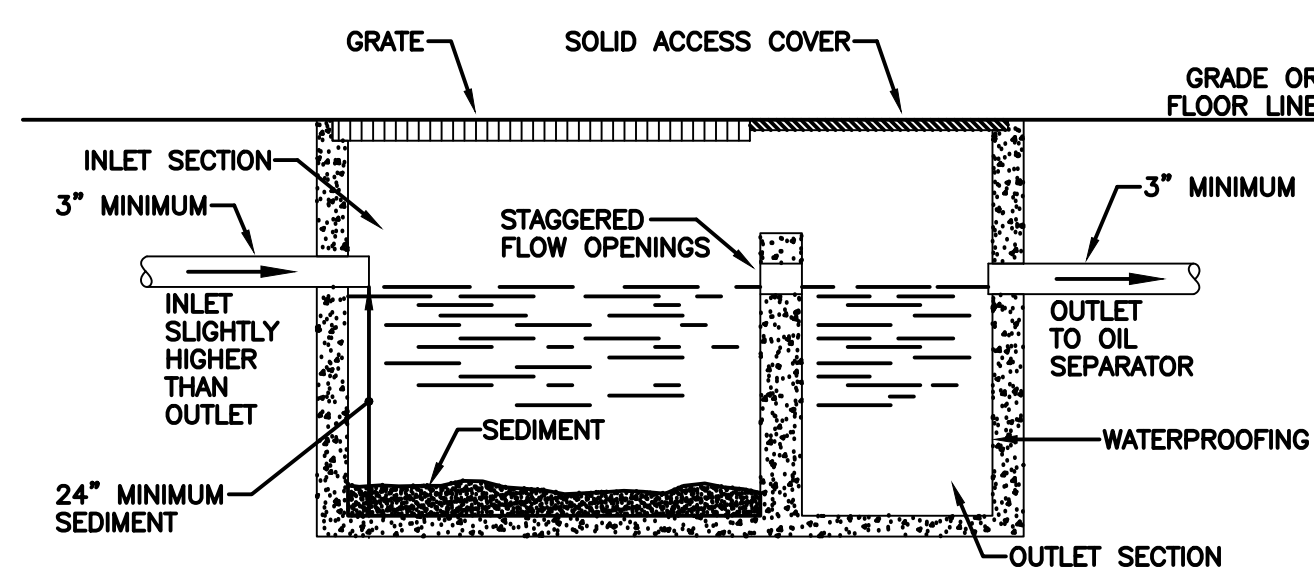
Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: 970-241-8709

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PLAN VIEW

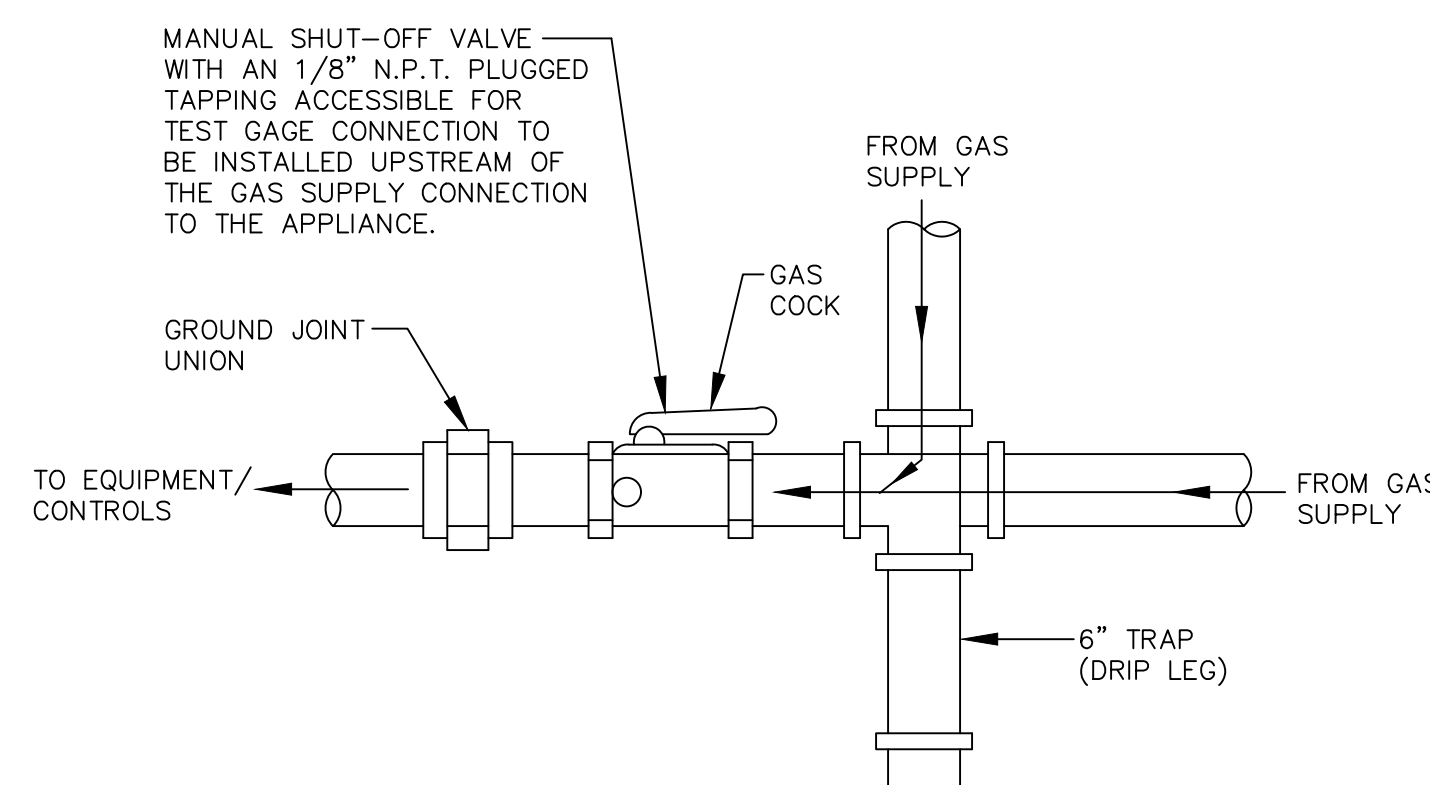


SECTION VIEW

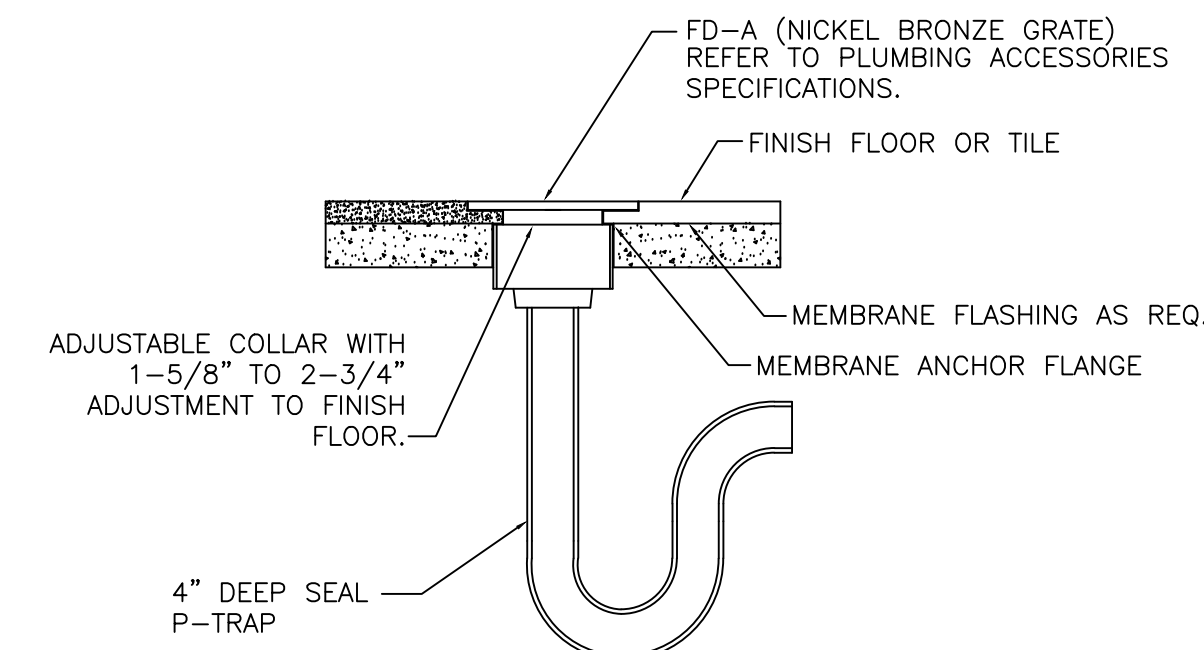
SAND INTERCEPTOR FOR USE WITH OIL INTERCEPTOR DETAIL NOT TO SCALE

GAS FIRED WATER HEATER SCHEDULE							
EQUIPMENT NO	CAPACITY (GAL)	RECOVERY @100 DEG F. RISE	BTU PER HR.	GAS CONN.	WATER CONN.	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
WH-1	80	145	150	1/2"	3/4"	BRADFORD WHITE- PDV-80S-150-3N	NOTE-1

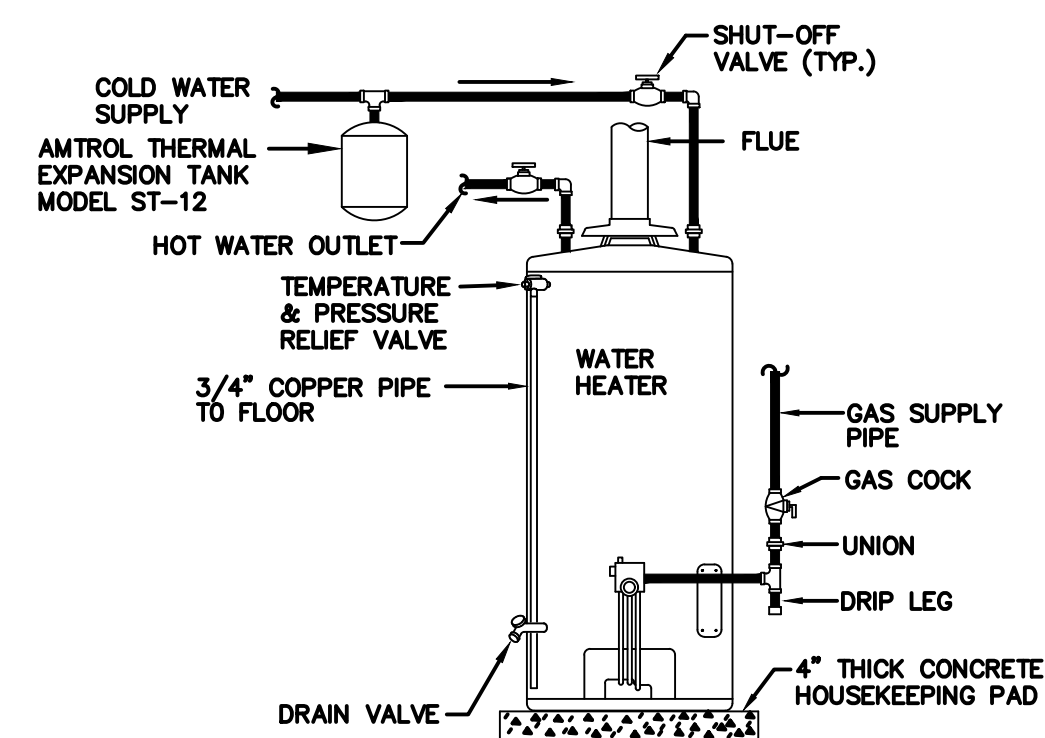
NOTES:
1. ASME RELIEF VALVE, POWER VENTED, HOUSEKEEPING PAD, PIPE DISCHARGE FROM WATER HEATER 3/4" TYPE L COPPER FULL SIZE TO NEAREST FLOOR DRAIN. 80% EFFICIENT AT STANDARD CONDITIONS.



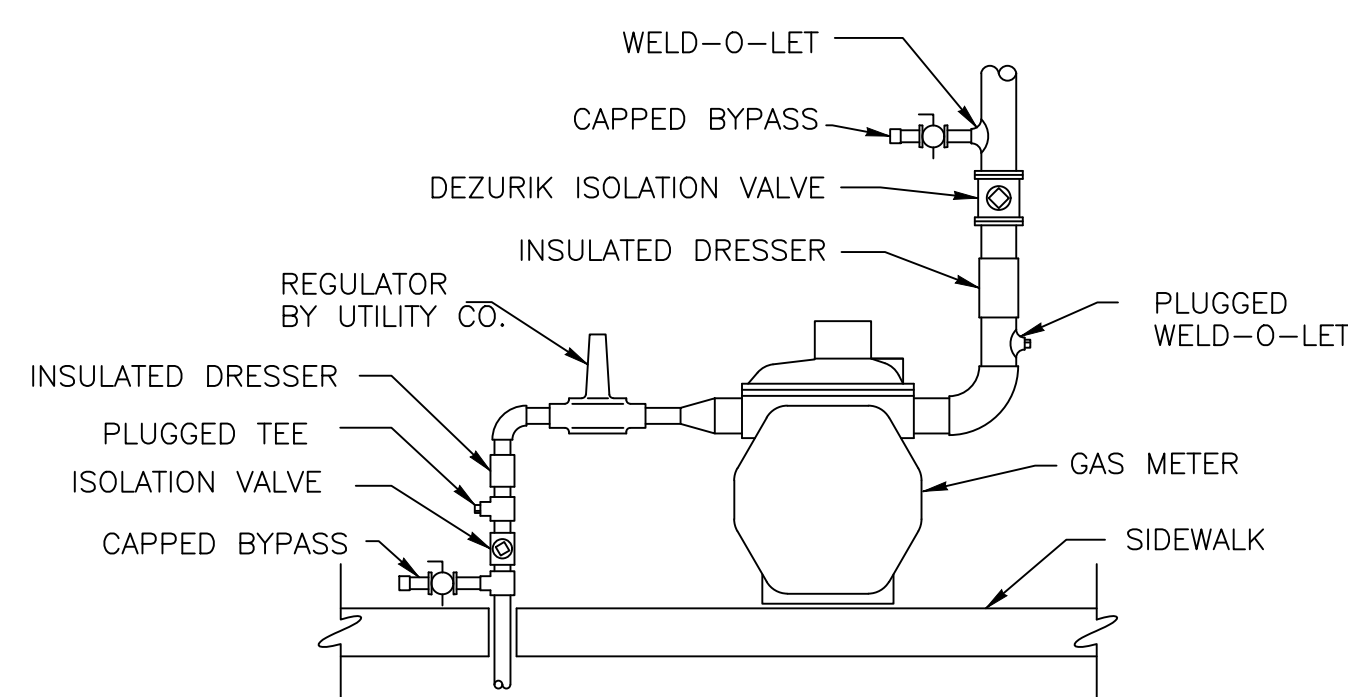
GAS CONNECTION TO EQUIPMENT DETAIL NOT TO SCALE



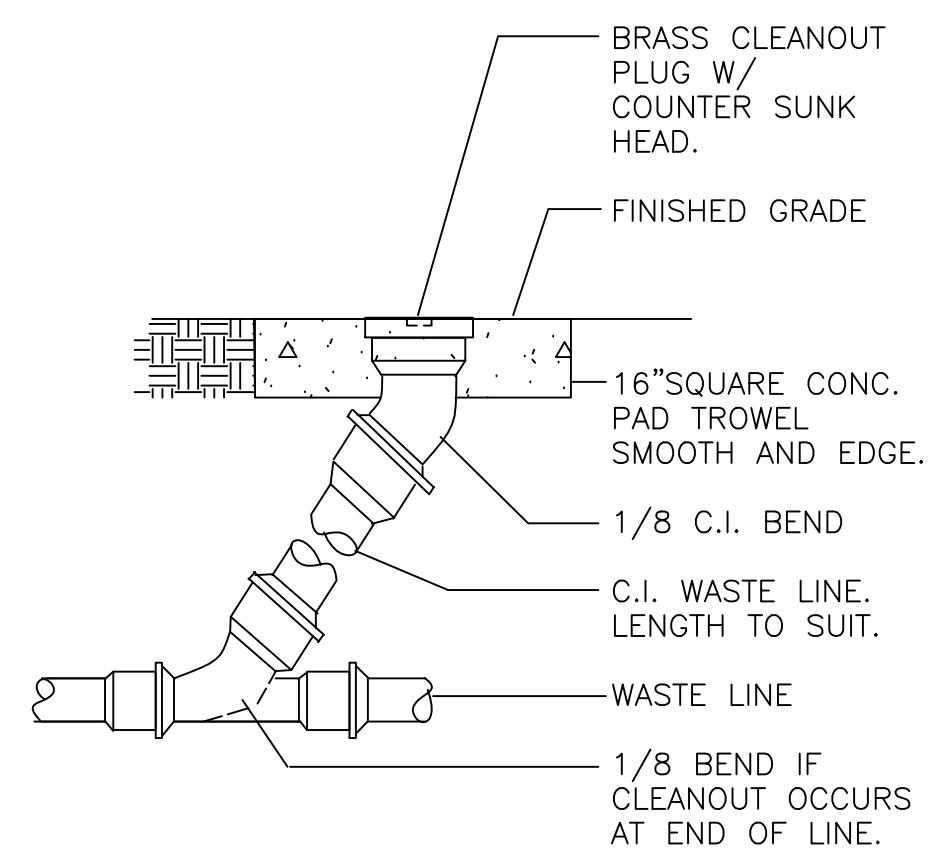
TOILET AREA FLOOR DRAIN NOT TO SCALE



GAS WATER HEATER DETAIL NOT TO SCALE



GAS METER DETAIL NOT TO SCALE



CLEANOUT TO GRADE NOT TO SCALE

**TOWN OF HOTCHKISS
PUBLIC WORKS FACILITY**
TBD BARROW MESA RD
HOTCHKISS, COLORADO

DATE:	ISSUED FOR:
03/21/19	REVISED 50% DD

DATE:	03/21/19
JOB NO.:	18-159
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	

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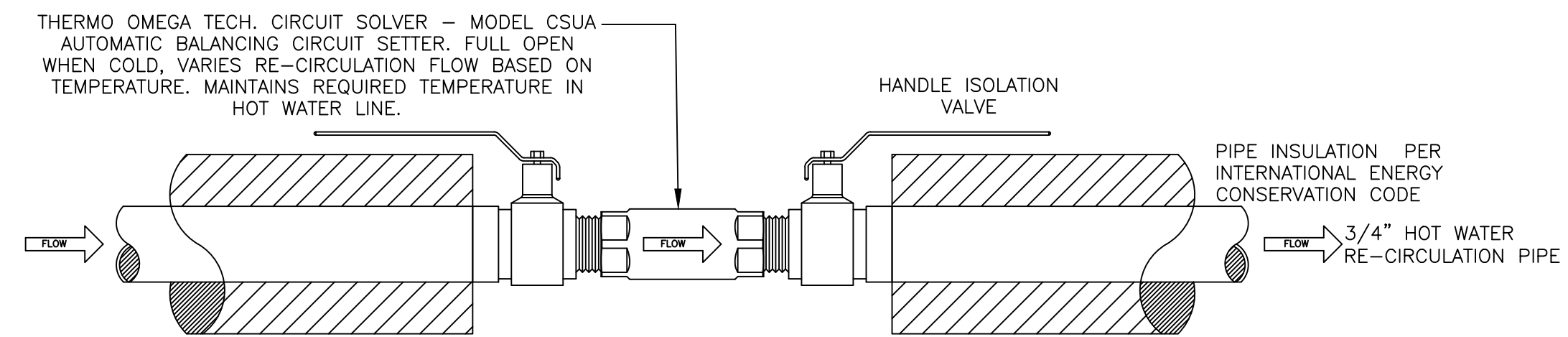
AAV	AUTOMATIC AIR VENT	DN	DOWN	FTR	FINNED TUBE RADIATION	NC	NORMALLY CLOSED	RM	ROOM
ABV	ABOVE	DWG	DRAWING	FV	FACE VELOCITY	NEG	NEGATIVE	ROD	ROOF OVERFLOW DRAIN
ADR	AREA DRAIN (SEE SYMBOLS)	DX	DIRECT EXPANSION	FXC	FLEXIBLE CONNECTION	NIC	NOT IN CONTRACT	RPM	REVOLUTIONS PER MINUTE
AFF	ABOVE FINISHED FLOOR	EA	EACH	GA	GAUGE	No	NUMBER	SA	SUPPLY AIR
ALUM	ALUMINUM	EAT	ENTERING AIR TEMPERATURE	GAL	GALLON	NO	NORMALLY OPEN	SAD	SUPPLY AIR DIFFUSER
AP	ACCESS PANEL	EC	ELECTRICAL CONTRACTOR	GALV	GALVANIZED	NOM	NOMINAL	SCH	SCHEDULE
ATC	AUTOMATIC TEMPERATURE CONTROL	ECC	ECCENTRIC	GC	GENERAL CONTRACTOR	NTS	NOT TO SCALE	SCHM	SCHEMATIC
AVER	AVERAGE	EFF	EFFICIENCY	GPM	GALLONS PER MINUTE	OA	OUTSIDE AIR	SH	SENSIBLE HEAT
AWT	AVERAGE WATER TEMPERATURE	EJ	EXPANSION JOINT	GR	GRILLE	OB	OFF BOTTOM	SP	STATIC PRESSURE
BDD	BACK DRAFT DAMPER	EL	ELEVATION	GRS/LB	GRAINS PER POUND	OD	OUTSIDE DIMENSION	SPEC	SPECIFICATION
BFP	BACK FLOW PREVENTOR	ELEC	ELECTRIC	HT	HEIGHT	OC	ON CENTER	SQ	SQUARE
BLDG	BUILDING	ELEV	ELEVATOR	H ₂ O	WATER	OCC	OCCUPIED	SS	STAINLESS STEEL
BLW	BELOW	ENT	ENTERING	HB	HOSE BIBB	OGH	OUTSIDE GROUND HYDRANT	STD	STANDARD
BSMT	BASEMENT	EQ	EQUAL	HD	HEAD (SEE SCHEDULES)	OPG	OPENING	STL	STEEL
BTU	BRITISH THERMAL UNIT	EQUIP	EQUIPMENT	HP	HORSEPOWER	OT	OFF TOP	STM	STEAM
CAP	CAPACITY	EQUIV	EQUIVALENT	HR	HOUR	OZ	OUNCE	STR	STRUCTURAL
CBV	CIRCUIT BALANCING VALVE	ER	EXHAUST REGISTER	HTR	HEATER	PART	PARTIAL	SUCT	SUCTION
CFM	CUBIC FEET PER HOUR	ES	END SWITCH	HZ	HERTZ	PDR	PLENUM DRAIN	SYS	SYSTEM
CFM	CUBIC FEET PER MINUTE	EWT	ENTERING WATER TEMPERATURE	ID	INTERNAL DIAMETER	PD	PRESSURE DROP (SEE SCHEDULE)	TAD	TRANSFER AIR DUCT
CHP	CONCRETE HOUSEKEEPING PAD	EX	EXHAUST	IN	INCHES	PERF	PERFORATED	TDH	TOTAL DYNAMIC HEAD
CI	CAST IRON	EXPAN	EXPANSION	INCL	INCLUDING	PH	PHASE	TEMP	TEMPERATURE
CL	CENTER LINE	EXT	EXTERNAL	INT	INTERNAL	PNEU	PNEUMATIC	THT	TOTAL HEAT
CLG	CEILING	*F	DEGREES FAHRENHEIT	INV	INVERT	POS	POSITIVE	TP	TOTAL PRESSURE
CMU	CONCRETE MASONRY UNIT	FA	FROM ABOVE	KW	KILOWATT	PRESS	PRESSURE	TT	TEMPERATURE TRANSMITTER
CO	CLEAN OUT	FB	FROM BELOW	L	LENGTH	PS	PRESSURE SWITCH	TYP	TYPICAL
COL	COLUMN	FC	FAIL CLOSED	LAT	LEAVING AIR TEMPERATURE	PSI	POUNDS PER SQUARE INCH	UC	UNDERCUT
COMP	COMPRESSOR	FCV	FLOW CONTROL VALVE	LB	POUND	PT	PRESSURE TRANSMITTER	UNOCC	UNOCCUPIED
CON	CONCENTRIC	FD	FLOOR DRAIN	LD	LINEAR DIFFUSER	PV	PLUG VALVE	V	VOLTS
CONC	CONCRETE	F/D	FIRE DAMPER	LIN	LINEAR	PVC	POLYVINYL CHLORIDE	VA	VALVE
COND	CONDENSATE	FIN	FINISHED	LIQ	LIQUID	QUAN	QUANTITY	VB	VACUUM BREAKER
CONN	CONNECTION	FL	FLANGE	LRA	LOCK ROTOR AMPS	R	REGISTER	VEL	VELOCITY
CONT'N	CONTINUATION	FLA	FULL LOAD AMPS	LVG	LEAVING	RA	RETURN AIR	VI	VIBRATION ISOLATOR
CONTR	CONTRACTOR	FLEX	FLEXIBLE	LVR	LOUVER	RD	ROOF DRAIN	VOLT	VOLTAGE
DA	DIRECT ACTING	FLR	FLOOR	LWT	LEAVING WATER TEMPERATURE	REL	ROUNDED ENTRANCE/EXIT	VTR	VENT THRU ROOF
DAMP	DAMPER	FO	FAIL OPEN	MC	MECHANICAL CONTRACTOR	RE	RELIEF	W	WIDTH
DB	DRY BULB	FP	FIRE PROTECTION	MBH	THOUSANDS OF BTU PER HOUR REQD	REQD	REQUIRED	W/O	WITHOUT
DEPT	DEPARTMENT	FPM	FEET PER MINUTE	MED	MEDIUM	RET	RETURN	WB	WET BULB
DIA	DIAMETER	FPS	FEET PER SECOND	MFR	MANUFACTURER	RH	RELATIVE HUMIDITY	WC	WATER COLUMN
DIAG	DIAGRAM	FRICT	FRICTION	MH	MANHOLE	RICW	RUN IN CASEWORK	WG	WATER GAUGE
DIFF	DIFFERENTIAL	FS	FLOW SWITCH	MIN	MINIMUM	RIE	RUN IN ENCLOSURE		
DISCH	DISCHARGE	F/S/D	FIRE/SMOKE DAMPER WITH ACCESS DOOR	MISC	MISCELLANEOUS	RIW	RISE IN WALL		
DIV	DIVISION	MTD	MOUNTED	MTD	MOUNTED	RLA	RATED LOAD AMPS		
DIW	DOWN IN WALL	FT	FEET						
DL	DOOR LOUVER								

ABBREVIATIONS (CONTINUED)

AC	AIR CONDITIONING UNIT	ESP	EXTERNAL STATIC PRESSURE	NC	NORMALLY CLOSED
AD	ACCESS DOOR	ET	EXPANSION TANK	NO	NORMALLY OPEN
AFF	ABOVE FINISHED FLOOR	EWT	ENTERING WATER TEMPERATURE	NIC	NOT IN CONTRACT
AH	AIR HANDLER (SPLIT REFRIG)	EWC	ELECTRIC WATER COOLER	NK	NECK
AHU	AIR HANDLING UNIT	FA	FREE AREA	OA	OUTSIDE AIR
AL	ACOUSTICAL LINING	FX	FLEXIBLE CONNECTION	OAI	OUTSIDE AIR INTAKE
AP	ACCESS PANEL	FC	FAN COIL UNIT	OAT	OUTSIDE AIR TEMPERATURE
BB	ELECTRIC BASEBOARD RADIATION	FD	FIRE DAMPER	OC	ON CENTER
B	BOILER	FLR	FLOOR	OD	OUTSIDE DIAMETER
BDD	BACK DRAFT DAMPER	FOB	FLAT ON BOTTOM	OBD	OPPOSED BLADE DAMPER
BFC	BELOW FINISHED CEILING	FOT	FLAT ON TOP	PBD	PARALLEL BLADE DAMPER
BOB	BOTTOM OF BEAM	FOP	FUEL OIL PUMP	PRV	PRESSURE REDUCING VALVE
BOD	BOTTOM OF DUCT	FP	FIRE PUMP	PTAC	PACKAGED TERMINAL AIR CONDITIONER
BOP	BOTTOM OF PIPE	FPM	FEET PER MINUTE	RA	RETURN AIR
C	CHILLER	FTR	FINNED TUBE RADIATION	RAG	RETURN AIR GRILLE
CD	CEILING DIFFUSER	GC	GENERAL CONTRACTOR	RAR	RETURN AIR REGISTER
CFM	CUBIC FEET PER MINUTE	GPH	GALLONS PER HOUR	RCP	REFLECTED CEILING PLAN
CHWP	CHILLED WATER PUMP	GPM	GALLONS PER MINUTE	RHC	REHEAT COIL
CHWR	CHILLED WATER RETURN	HD	HAND DAMPER	RF	RETURN FAN
CHWS	CHILLED WATER SUPPLY	HP	HEAT PUMP	SA	SUPPLY AIR
CO	CLEAN OUT	HV	HEATING AND VENTILATING UNIT	SAR	SUPPLY AIR REGISTER
CP	CONDENSATE PUMP	HWC	HOT WATER CONVERTER	SCG	SMOKE CONTROL GRILLE
CWR	CONDENSER WATER RETURN	HWP	HOT WATER PUMP	SD	SMOKE DAMPER
CWS	CONDENSER WATER SUPPLY	HWR	HEATING HOT WATER RETURN	SEF	SMOKE EXHAUST FAN
CT	COOLING TOWER	HWS	HEATING HOT WATER SUPPLY	SF	SUPPLY FAN
CU	CONDENSING UNIT	HX	HEAT EXCHANGER	SP	STATIC PRESSURE
CUH	CABINET UNIT HEATER	HZ	HERTZ	TG	TRANSFER GRILLE
CVB	CONSTANT VOLUME BOX	ID	INSIDE DIAMETER	TYP	TYPICAL
CWP	CONDENSER WATER PUMP	LAT	LEAVING AIR TEMPERATURE	UH	UNIT HEATER
DB	DRY BULB	LWT	LEAVING WATER TEMPERATURE	UON	UNLESS OTHERWISE NOTED
DS	DUCT SILENCER	LD	LINEAR DIFFUSER	VAV	VARIABLE AIR VOLUME UNIT
DWP	DOMESTIC WATER PUMP	LF	LINEAR FEET	VD	VOLUME DAMPER
EAT	ENTERING AIR TEMPERATURE	MC	MECHANICAL CONTRACTOR	VTR	VENT THRU ROOF
EC	ELECTRICAL CONTRACTOR	MTD	MOUNTED	WB	WET BULB
EF	EXHAUST FAN	MOD	MOTOR OPERATED DAMPER	WMS	WIRE MESH SCREEN
EJ	EXPANSION JOINT	MUA	MAKE-UP AIR UNIT		
ER	EXHAUST REGISTER				

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	SOIL OR WASTE PIPE (BELOW GROUND)	⬆	VACUUM BREAKER
- - - -	SOIL OR WASTE PIPE (ABOVE GROUND)	⊙ RD	ROOF DRAIN
- - - - V	VENT PIPE (V)	⊙	PRESSURE GAUGE
---	COLD WATER PIPE (CW)	⊙	TEMPERATURE GAUGE
---	HOT WATER PIPE (HW)	M	WATER METER
---	HOT WATER RETURN (HWR)	⊙	PRESSURE REDUCING VALVE
- T -	TEMPERED HOT WATER LINE (THW)	⊙	GAS COCK
G	NATURAL GAS PIPE	VTR	VENT THROUGH ROOF
SD	STORM DRAIN PIPE	LAV	LAVATORY
FD	FLOOR DRAIN	WC	WATER CLOSET
CO	CLEAN-OUT(FLOOR)	URN	URINAL
CO	CLEAN-OUT(WALL)	DF	DRINKING FOUNTAIN
WH	HOT WATER HEATER	SH	SHOWER
⊙	GATE VALVE	A.D.	ACCESS DOOR
⊙	CHECK VALVE	SS	SAFETY SHOWER
⊙	TEMP./PRESS. RELIEF VALVE		
⊙	FIXTURE ISOLATION VALVE		



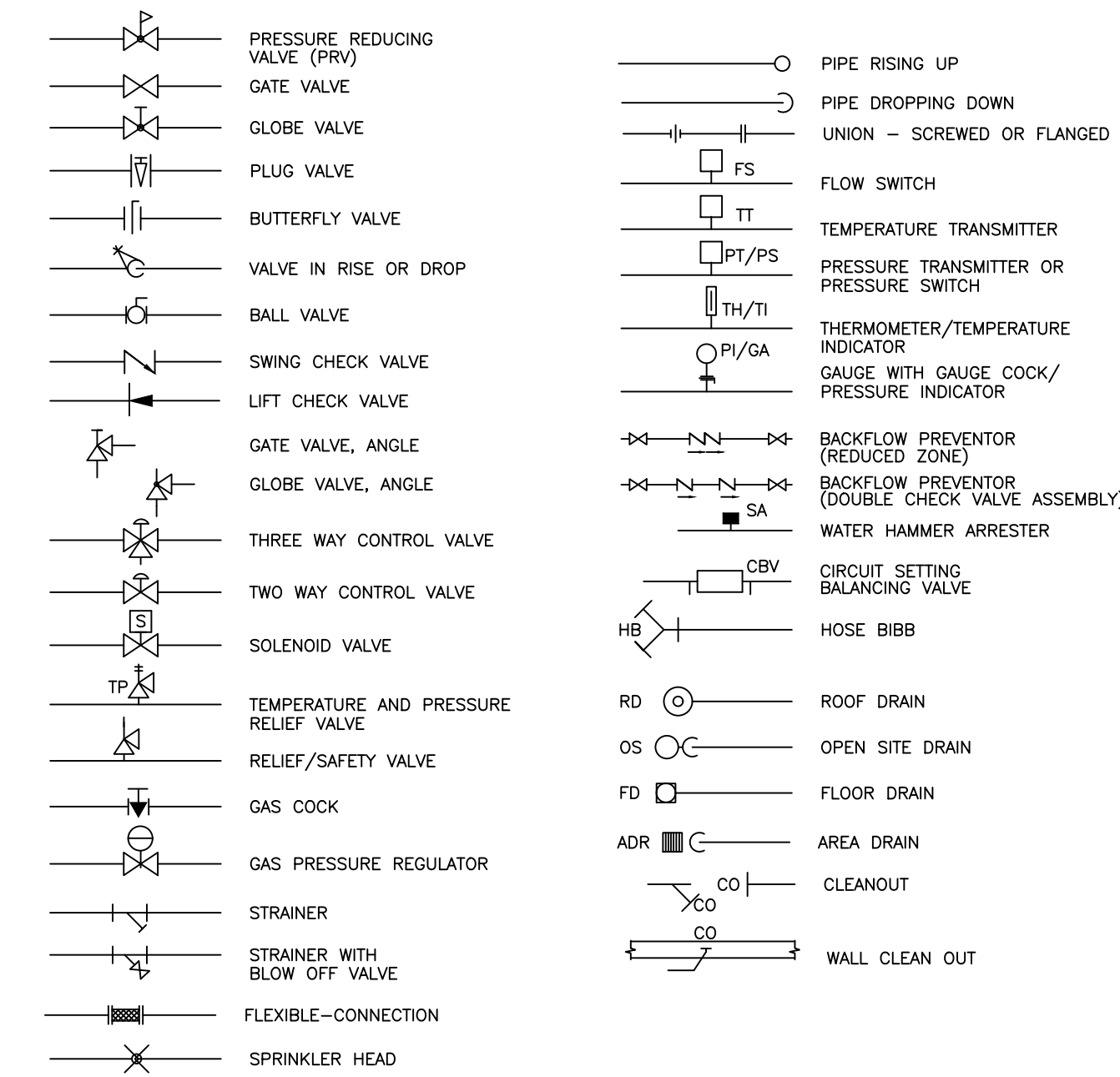
CIRCUIT SOLVER - AUTOMATIC CIRCUIT SETTER DETAIL
NOT TO SCALE

PLUMBING LEGEND

LINE DESIGNATIONS

(E)(NAME)	EXISTING PIPING TO REMAIN	G	NATURAL GAS
(NAME)	EXISTING PIPING TO BE REMOVED	PG	PROPANE GAS
---	DOMESTIC COLD WATER (CW)	DIS	DISTILLED WATER SUPPLY
- - - -	DOMESTIC HOT WATER (HW)	DIR	DISTILLED WATER RETURN
- - - - -	DOMESTIC HOT WATER RECIR. (HWR)	DES	DEIONIZED WATER SUPPLY
---	SANITARY DRAIN BELOW GRADE	DER	DEIONIZED WATER RETURN
- - - - -	SANITARY VENT	WFS	WATER FOR INJECTION SUPPLY
D	EQUIPMENT DRAIN	WFR	WATER FOR INJECTION RETURN
LW	LAB WASTE	USPS	USP PURIFIED WATER SUPPLY
LV	LAB VENT	PHWR	PROCESS HOT WATER RECIRC.
F	FIRE MAIN	PW	PUMPED WASTE
PS	PURE STEAM	PV	PROCESS VENT
PSC	PURE STEAM CONDENSATE	HE	HELIUM
CA	COMPRESSED AIR	N2	NITROGEN
SP	SPRINKLER PIPE	O2	OXYGEN
ST	STORM WATER	H2	HYDROGEN
OD	OVERFLOW STORM WATER	N2O	NITROUS OXIDE
HPS	HIGH PRESSURE STEAM	MA	MEDICAL AIR
HPC	HIGH PRESSURE CONDENSATE	VAC	VACUUM
LPS	LOW PRESSURE STEAM	DC	DECONTAMINATION PIPING
LPC	LOW PRESSURE CONDENSATE		
TWS	TOWER WATER SUPPLY		
TWR	TOWER WATER RETURN		

PIPING ELEMENTS/VALVING



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Grand Junction, CO 81501
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**TOWN OF HOTCHKISS
PUBLIC WORKS FACILITY**
TBD BARROW MESA RD
HOTCHKISS, COLORADO

DATE:	ISSUED FOR:
03/21/19	REVISED 50% DD

DATE:	03/21/19
JOB NO:	18-159
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	

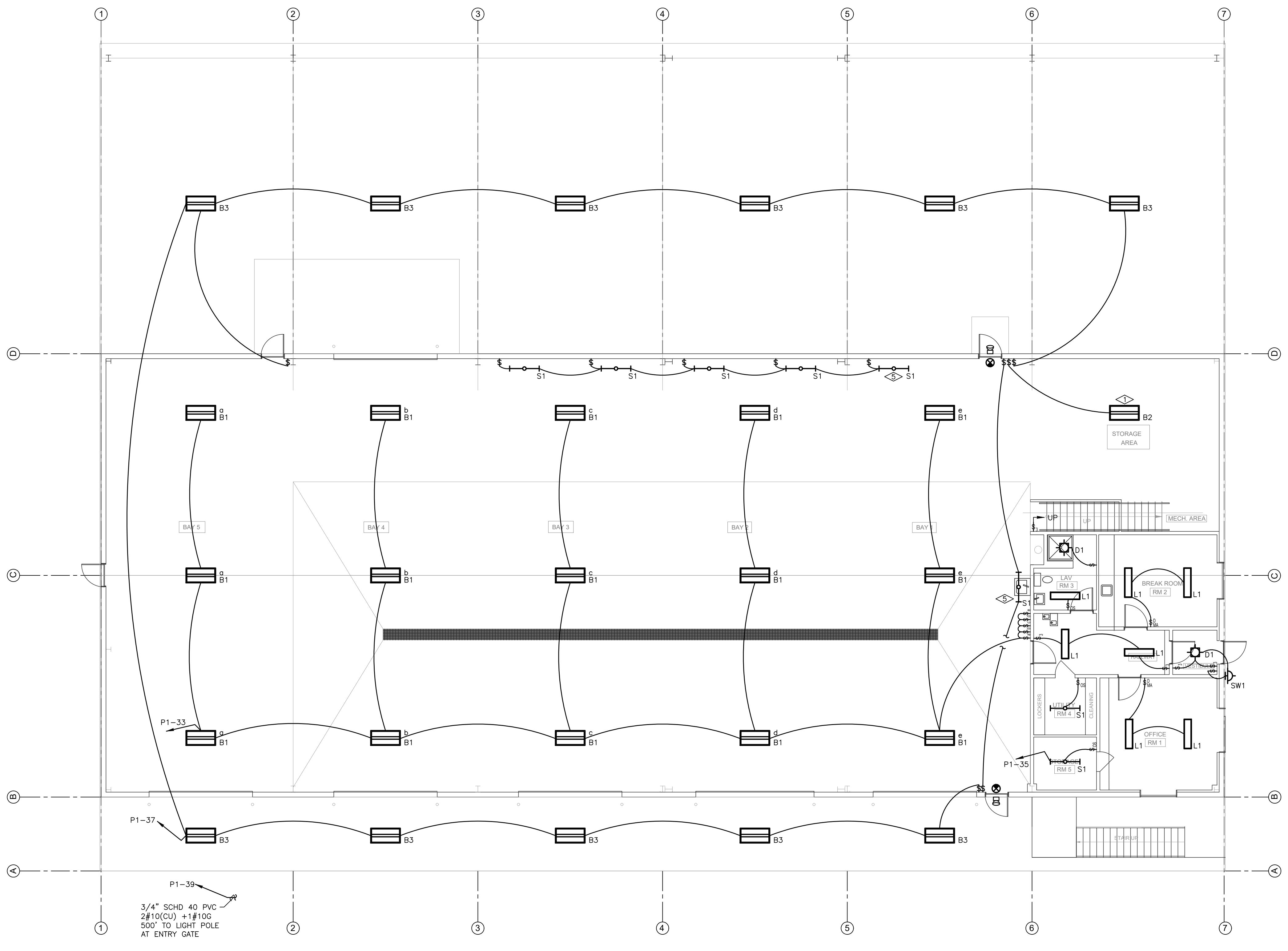
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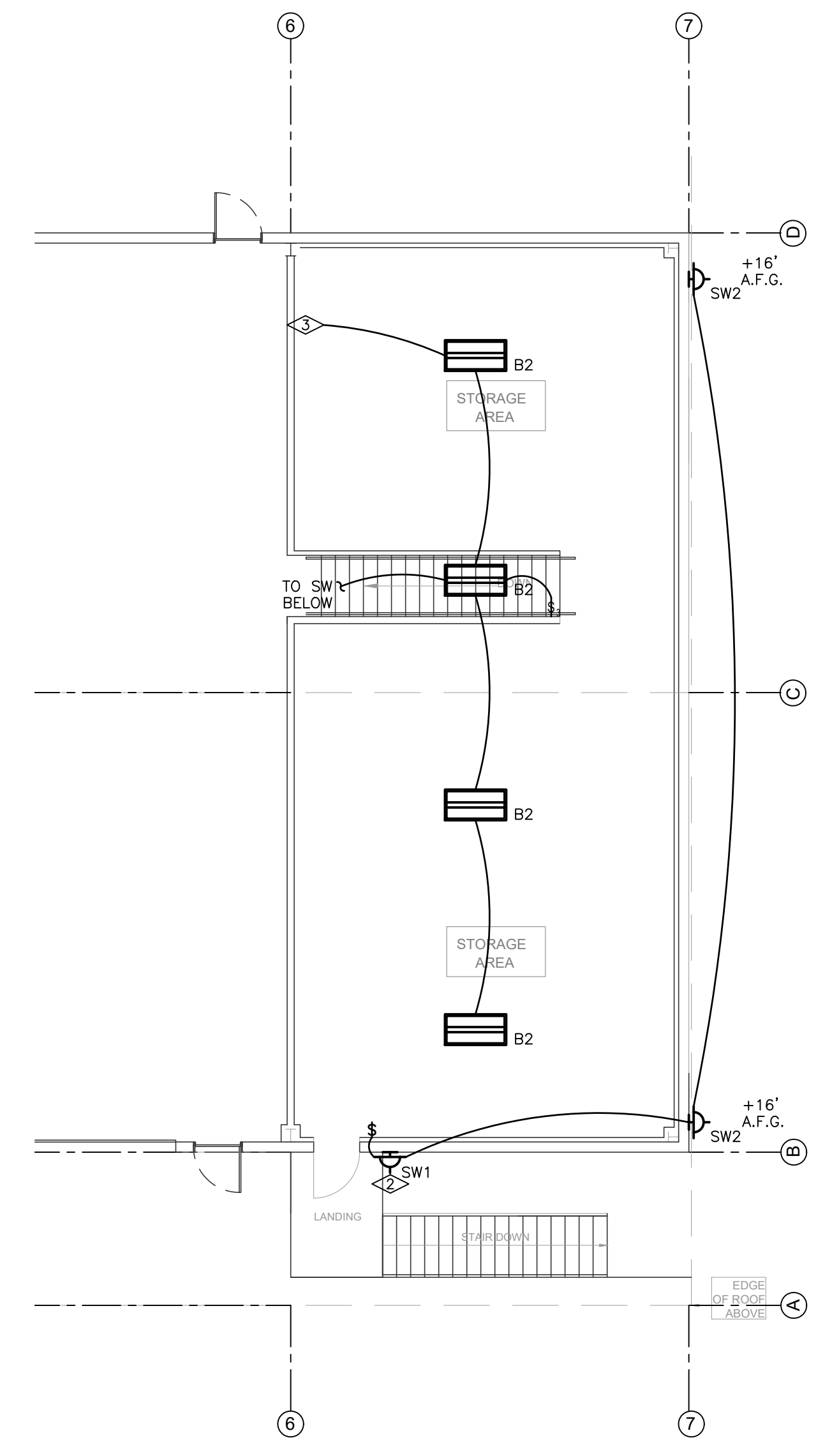
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 DRAWN BY: BCE
 CHECKED BY: BCE
 SCALE: AS SHOWN
 SHEET NUMBER: E1-1



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

- FLAG NOTES:**
- ◊ FIXTURE LOCATED ON THE UNDERSIDE OF THE MEZZANINE LEVEL.
 - ◊ SW1 FIXTURE LOCATED 7' ABOVE SECOND FLOOR LANDING. CIRCUITED WITH THE OFFICE AREA LIGHTING P1-35.
 - ◊ CONTINUED FROM BAY LIGHTING CIRCUIT P1-33
 - ◊ CONTINUE TO FRONT DOOR LIGHT TO BE CIRCUITED WITH OFFICE AREA LIGHTING P1-35
 - ◊ PROVIDE SUPPORT BRACKETS TO SUSPEND TYPE S1 FIXTURES 8 FT A.F.F. LOCATED OVER WORKBENCHES, COORDINATE WITH OWNER FOR EXACT LOCATIONS; CIRCUIT WITH OFFICE AREA LIGHTING: P1-35.



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

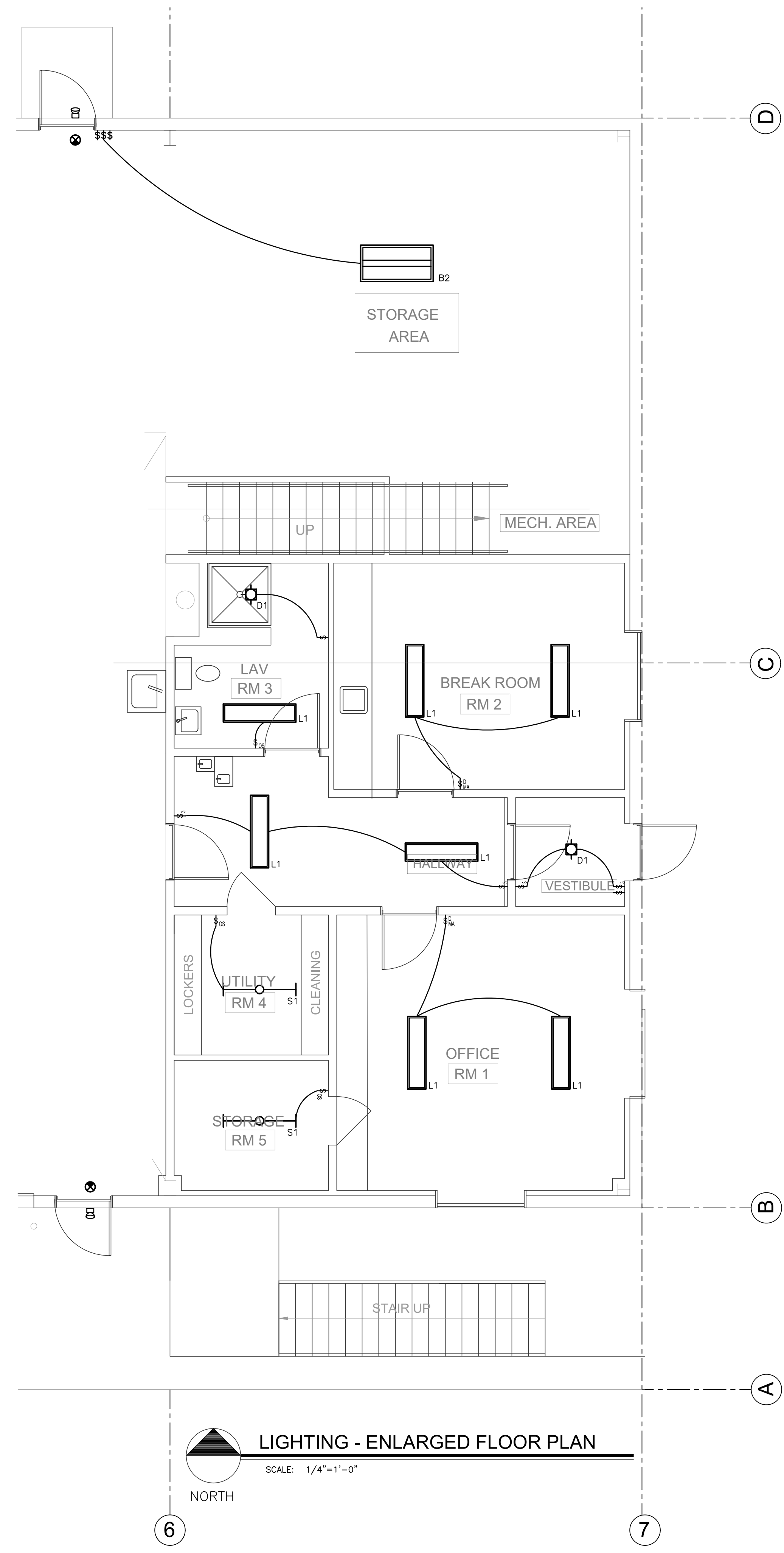
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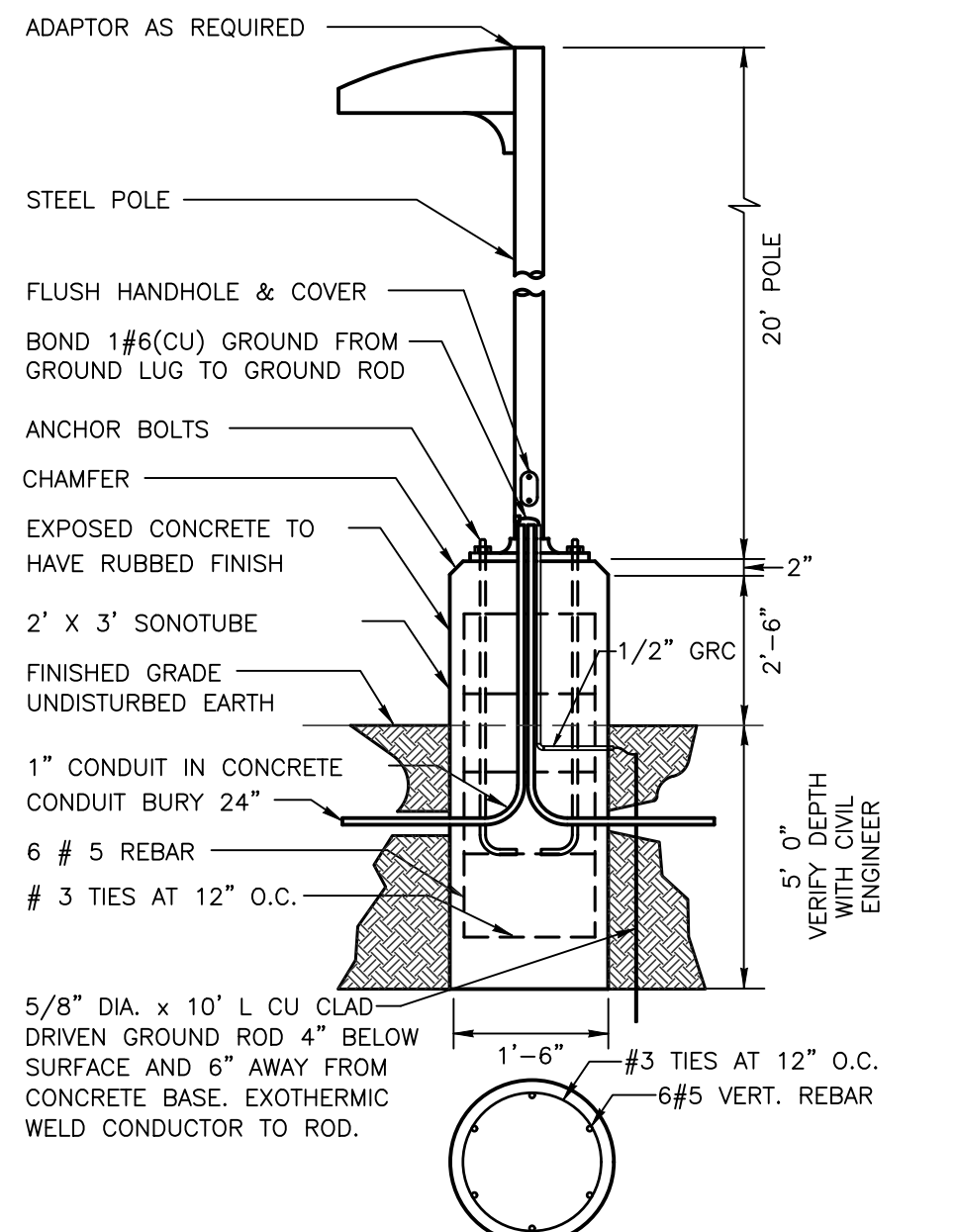
LIGHTING - ENLARGED FLOOR PLAN
SCALE: 1/4"=1'-0"
NORTH

GENERAL LIGHTING NOTES

- LUMINAIRES:**
 - LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE AND SHALL NOT BE SUPPORTED FROM THE T-BAR CEILING GRID.
 - THE ELECTRICAL CONTRACTOR IS TO CONFIRM THE LIGHT FIXTURES ORDERED WILL BE COMPATIBLE WITH THE CEILING TYPES AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING THE FIXTURES.
 - COORDINATE THE LOCATION OF LIGHTING EQUIPMENT INCLUDING BUT NOT LIMITED TO THE LUMINAIRES, SWITCHES AND CONTROL COMPONENTS WITH THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND ALL OTHER TRADES AS REQUIRED.
 - VERIFY LUMINAIRE MOUNTING REQUIREMENTS AND OVERALL HEIGHT OF ALL PENDANT MOUNTED FIXTURES PRIOR TO ORDERING.
 - ALL LIGHT FIXTURES NEED TO BE COMPATIBLE WITH THE SWITCHES AND CONTROLS BEING PROVIDED.
 - THE LIGHTING PACKAGE SHALL BE APPROVED BY BOTH ARCHITECTS AND ENGINEERS AS APPROVED EQUAL BEFORE BID. NO LIGHT FIXTURE SHALL BE ORDERED UNTIL THE LIGHT FIXTURE SUBMITTAL PACKAGE HAS BEEN APPROVED IN WRITING BY THE ARCHITECT, GENERAL CONTRACTOR AND ELECTRICAL ENGINEER. COORDINATE LUMINAIRE MOUNTING REQUIREMENTS PRIOR TO PLACING ORDER.
- EMERGENCY AND EXIT LIGHTS:**
 - PROVIDE EMERGENCY AND EXIT SIGNS AS PER ALL LOCAL CODES.
 - EXIT SIGNS CONNECTED TO A REMOTE EMERGENCY HEAD REQUIRES EXTRA BATTERY CAPACITY TO OPERATE THE REMOTELY LOCATED EMERGENCY HEAD FOR EGRESS AWAY FROM THE BUILDING.
 - REFER TO THE PLANS FOR THE NUMBER OF FACES REQUIRED AT EACH EXIT. FIELD ADJUST THE LOCATION OF THE EXIT SIGNS FOR THE BEST VISIBILITY POSSIBLE.
 - ALL LIGHTING FIXTURES DENOTED WITH "EM" SHALL BE PROVIDED WITH AN ENGINEER APPROVED EMERGENCY LED DRIVER OR BALLAST TO OPERATION THE FIXTURE IN AN EMERGENCY MODE TO MEET ALL CURRENT LOCAL CODES AND WILL BE CIRCUITED TO THE UNSWITCHED SIDE OF THE LIGHTING CIRCUIT.
 - ALL LIGHT FIXTURES DESIGNATED WITH "EM" OR SPECIFIED WITH AN EM FUNCTION SHALL BE PROVIDED WITH ONE OF THE FOLLOWING:
 - INTEGRAL TEST SWITCH;
 - REMOTE INFRARED HAND HELD DEVICE;
 - INTEGRAL ELECTRONIC DEVICE THAT AUTOMATICALLY PERFORMS CODE REQUIRED TESTS.
 - ALL STAIRWELLS AND PATHS OF EGRESS TO THE EXTERIOR DOORS, AND THE EXTERIOR PATH OF EGRESS AWAY FROM THE BUILDING SHALL RECEIVE EMERGENCY LIGHTING PER CODE.
- LIGHTING CONTROLS:**
 - ALL LIGHTS IN: RESTROOMS, STORAGE CLOSETS, JANITORS CLOSETS AND STAIRWELLS ARE TO BE SWITCHED WITH A MOTION SENSOR ON/OFF SWITCH WITH A TIME DELAY. SET THE TIME DELAY LENGTH AS DIRECTED BY THE OWNER.
 - EXCEPTION: IN AREAS WHERE THE SWITCH IS LOCATED OUTSIDE THE AREA THE LIGHT IS LOCATED IN.
 - OFFICES WITH MORE THAN ONE FIXTURE WILL BE SWITCHED WITH A MANUAL ON/AUTO OFF DIMMING SWITCH.
 - SWITCHING FOR LIGHTS IN LARGE COMMON AREA ARE AS SHOWN ON PLAN.
- GENERAL NOTES:**
 - FIELD COORDINATION DURING CONSTRUCTION IS IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES.
- WIRING:**

ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWING. FIELD VERIFY ALL CONDITIONS PRIOR TO CONSTRUCTION.

 - ALL WIRE IS TO BE #12 UNLESS NOTED OTHERWISE.
 - ALL BRANCH CIRCUITS WITH HOME RUNS OVER 50 FEET, WILL BE SIZED ONE SIZE LARGER.
 - ALL ELECTRICAL WORK TO COMPLY WITH LATEST EDITION OF NEC AND ALL APPLICABLE LOCAL CODES.



ENTRY GATE LIGHT - POLE DETAIL
NOT TO SCALE

- NOTES:**
- DIMENSION FOR ANCHOR BOLT SPACING BY POLE MANUFACTURER.
 - CONTRACTOR SHALL INSTALL A FUSE AND WEATHERPROOF FUSEHOLDER AT EACH POLE BASE.
 - BASE HOLE SHALL BE DRILLED INTO NATURAL, UNDISTURBED SOIL OR PROPERLY COMPACTED FILL.

LIGHTING LEGEND

NOTES:
SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR, THE ITEM SHALL BE PROVIDED AND INSTALLED.

A LOWER CASE LETTER NEXT TO LIGHT FIXTURE OR SWITCH INDICATES A SWITCH DESIGNATION.
AN UPPER CASE LETTER NEXT TO A SWITCH INDICATES THE TYPE OF SWITCH. SEE THE LIST BELOW
AN UPPER CASE LETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. REFER TO THE LUMINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS.

ELECTRICAL EQUIPMENT

	BRANCH CIRCUIT PANELBOARD
	CIRCUITRY HOMERUN: PANEL LA - CIR. #7
	CONDUIT OR WIRE CONCEALED IN WALL/CLG.
	CONDUIT OR WIRE UNDERFLOOR/UNDERGND.
	CEILING JUNCTION BOX - SURFACE/FLUSH
	WALL JUNCTION BOX - SURFACE/FLUSH

SWITCHES

	SINGLE POLE SWITCH
	TWO POLE SWITCH
	THREE-WAY SWITCH
	FOUR-WAY SWITCH
	DIMMER SWITCH
	3 WAY DIMMER SWITCH - (4D INDICATES A 4WAY DIMMER)
	WALL MOUNTED DUAL TECHNOLOGY VACUITY SENSOR SWITCH
	LOW VOLTAGE LIGHT SWITCH
	MANUAL ON / AUTO OFF LIGHT SWITCH
	MANUAL ON / AUTO OFF DIMMING LIGHT SWITCH
	CEILING MOUNTED MOTION SENSOR

LIGHT FIXTURES

ALL FIXTURES:
A-UPPER CASE LETTER INDICATES FIXTURE TYPE
REFERENCE LUMINAIRE SCHEDULE FOR SPECIFICATIONS
G-LOWER CASE LETTER INDICATES SWITCHING CIRCUIT.

ACTUAL FIXTURE ON PLANS MAY VARY SLIGHTLY FROM THE SYMBOL SHOWN HERE

	2'x4' LED HIGH BAY TYPE FIXTURE, SUSPENDED MOUNTED
	1'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE, GRID, FLANGE OR SURFACE MOUNTED
	2'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE, GRID, FLANGE OR SURFACE MOUNTED
	2'x2' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE, GRID, FLANGE OR SURFACE MOUNTED
	WALL BRACKET LIGHT FIXTURE
	RECESSED DOWNLIGHT CAN FIXTURE
	SURFACE CEILING OR PENDANT MOUNTED FIXTURE
	SINGLE FACE EXIT SIGN, WALL AND CEILING MOUNTED
	DOUBLE FACE EXIT SIGN, WALL AND CEILING MOUNTED
	WALL MOUNTED EMERGENCY LIGHT
	EMERGENCY EXTERIOR EGRESS FIXTURE

ABBREVIATIONS

	DRAWING KEYED NOTE
ROOM NAME	ROOM DESIGNATION, NAME AND NUMBER
NL	NIGHT/SECURITY LIGHT - DO NOT SWITCH
WP	WEATHERPROOF
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
GFCI OR GF	GROUND FAULT CIRCUIT INTERRUPTER
EM	EMERGENCY FUNCTION NON-SWITCHED FIXTURE FOR 44" MOUNTING HEIGHT - A.F.F. OR A.F.G. TO CENTERLINE
A.C.	ITEM TO BE MOUNTED ABOVE COUNTER HEIGHT

INTERIOR LUMINAIRE SCHEDULE

TYPE	MANUFACTURER CATALOG NO.	MANUFACTURER CATALOG NO.	VOLTAGE MOUNTING # OF LAMPS	BALLAST LAMP TYPE LAMP CAT. #	DESCRIPTION
B1	LITHONIA LIGHTING IBG 15000LM SEF ACL GND MVOLT G210 40K 80CRI	APPROVED EQUIVALENT	120-277V SUSPENDED CEILING 1	LED DRIVER 97W, 80CRI 14059LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LIGHTING, LM-80 80,000 HOUR LIFESPAN, DAMP LISTED 5 YEAR WARRANTY, -40°C STARTING TEMPERATURE.
B2	LITHONIA LIGHTING IBG 8000LM SEF ACL WD MVOLT G210 40K 80CRI	APPROVED EQUIVALENT	120-277V SUSPENDED CEILING 1	LED DRIVER 55W, 80CRI 7384LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LUMINAIRE LM-80 80,000 HOUR LIFESPAN, DAMP LISTED 5 YEAR WARRANTY
B3	LITHONIA LIGHTING IBG 15000LM SEF ACL GND MVOLT G210 40K 80CRI LAOZU	APPROVED EQUIVALENT	120-277V SUSPENDED CEILING 1	LED DRIVER 14059LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LIGHTING, LM-80 80,000 HOUR LIFE, DAMP LISTED, 5 YEAR WARRANTY INTEGRAL OCCUPANCY SENSOR, -40°C STARTING TEMPERATURE
D1	LITHONIA LIGHTING LDN4 40/10 L04 ARLSS MVOLT G210	APPROVED EQUIVALENT	120-277V RECESSED CEILING 1	LED DRIVER 13W, 80CRI 1000LM, 4000K	4" DIA. 5" H DOWNLIGHT LUMINAIRE WET LISTED, 5 YEAR WARRANTY
L1	LITHONIA LIGHTING BLTX 48L ADP E21 LPB40	APPROVED EQUIVALENT	120-277V SURFACE CEILING 1	LED DIMMING DRIVER 45W, 80CRI 5267LM, 4000K	12"Lx48"Wx5"H SURFACE ARCHITECTURAL LINEAR LIGHT LONG LIFE LED, DAMP LISTED 5 YEAR WARRANTY
S1	LITHONIA LIGHTING ZL1D L48 5000LM FST MVOLT 40K 80CRI	APPROVED EQUIVALENT	120-277V STRIP LIGHT 1	LED DIMMING DRIVER 41W, 80CRI 5541LM, 4000K	48"Lx24"Wx2"H RECESSED GRID LUMINAIRE LONG LIFE LED, PENDANT MOUNT KIT INTEGRATED LIGHTCLOUD CONTROLLER
	LITHONIA LIGHTING EU2C	APPROVED EQUIVALENT	120/277 SURFACE WALL/CEILING 2	NONE REQUIRED LED WITH UNIT	11"Wx3.5"Dx7.5"H IMPACT RESISTANT THERMO-PLASTIC, BATTERY
	LITHONIA LIGHTING ECC LED HO M6	APPROVED EQUIVALENT	120/277 WALL/CEILING N/A	NONE REQUIRED LED WITH UNIT	14"Wx8"H COMBO EXIT EGRESS LIGHT NICAD BATTERY, UNIVERSAL MOUNTING, 5 YEAR WARRANTY FIELD CONFIGURABLE INDICATION, REMOTE HEAD CAPABLE
	LITHONIA LIGHTING ELA LED WP M12	APPROVED EQUIVALENT	120/277 WALL/CEILING N/A	NONE REQUIRED LED WITH UNIT	6.5"Wx10.5"Hx4"D EXTERIOR EGRESS LIGHTING WET LOCATION RATED,
SW1	LITHONIA LIGHTING OLWX1 20W 40K PE	APPROVED EQUIVALENT	120-277V WALL MOUNT 1	LED DRIVER 20W, 80CRI 2697LM, 4000K	48"Lx24"Wx2"H EXTERIOR WALL PACK LONG LIFE LED, -20°C STARTING TEMPERATURE IP 65 RATED, FULL CUTOFF, 5 YEAR WARRANTY
SW2	LITHONIA LIGHTING TWH LED ALO 40K T3M MVOLT PE	APPROVED EQUIVALENT	120-277V WALL MOUNT 1	LED DRIVER 78W, 70CRI 9214LM, 4000K	16"Hx16"Wx8"D EXTERIOR WALL PACK LONG LIFE LED, -20°C STARTING TEMPERATURE IP 65 RATED, 5 YEAR WARRANTY
SP1	LITHONIA LIGHTING DSXO LED P2 40K T3S MVOLT	APPROVED EQUIVALENT	120-277V POLE MOUNT 1	LED DRIVER 78W, 70CRI 9214LM, 4000K	26"Lx13"Wx3"H POLE MOUNTED FIXTURE LONG LIFE LED, -20°C STARTING TEMPERATURE IP 66 RATED, 5 YEAR WARRANTY

- NOTES:**
- OCCUPANCY SENSORS ARE DIAGRAMMATICALLY DISPLAYED ON THE PLANS, FIELD ADJUST UNITS TO MEET THE MANUFACTURER'S RECOMMENDED SPACING REQUIREMENTS.
 - THE EXIT LIGHT SYMBOL USED IN THIS SCHEDULE IS A GENERIC SYMBOL TO INDICATE AN EXIT LIGHT FIXTURE. REFER TO THE PLANS FOR THE NUMBER OF FACES REQUIRED AT EACH EXIT. INSTALL THE NUMBER OF FACES REQUIRED AT EACH EXIT. FIELD ADJUST THE LOCATION OF THE EXIT SIGNS FOR THE BEST VISIBILITY POSSIBLE. ALL EXIT LIGHTS SHALL COMPLY WITH ALL LOCAL BUILDING CODES.
 - EXIT AND EMERGENCY EGRESS LIGHTING TO BE CIRCUITED TO THE UNSWITCHED SIDE OF THE LIGHTING CIRCUIT OF THE SPACE IN WHICH IT IS LOCATED.
 - EXTERIOR FIXTURES UNDER THE AWNING ARE TO BE CONTROLLED WITH A PHOTOCELL, PROVIDE A SNAP SWITCH IN SERIES TO CONTROL NORTH AWNING AND SOUTH AWNING INDEPENDENTLY OF EACH OTHER.
 - PROVIDE A MEANS FOR AUTOMATIC OFF CONTROL FOR THE FIXTURES IN THE SHOP AREA; SET TIME DELAY PER OWNER.

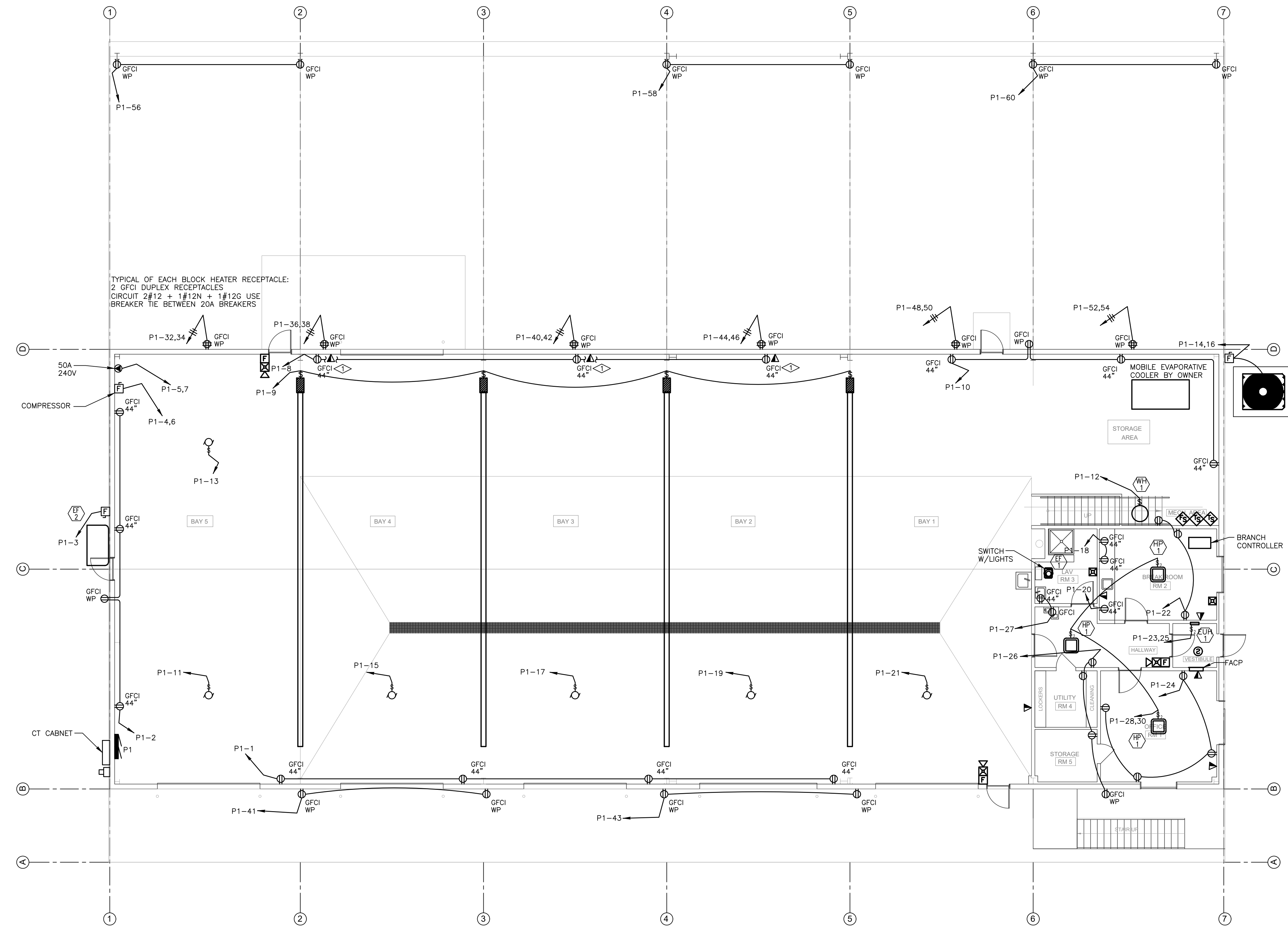
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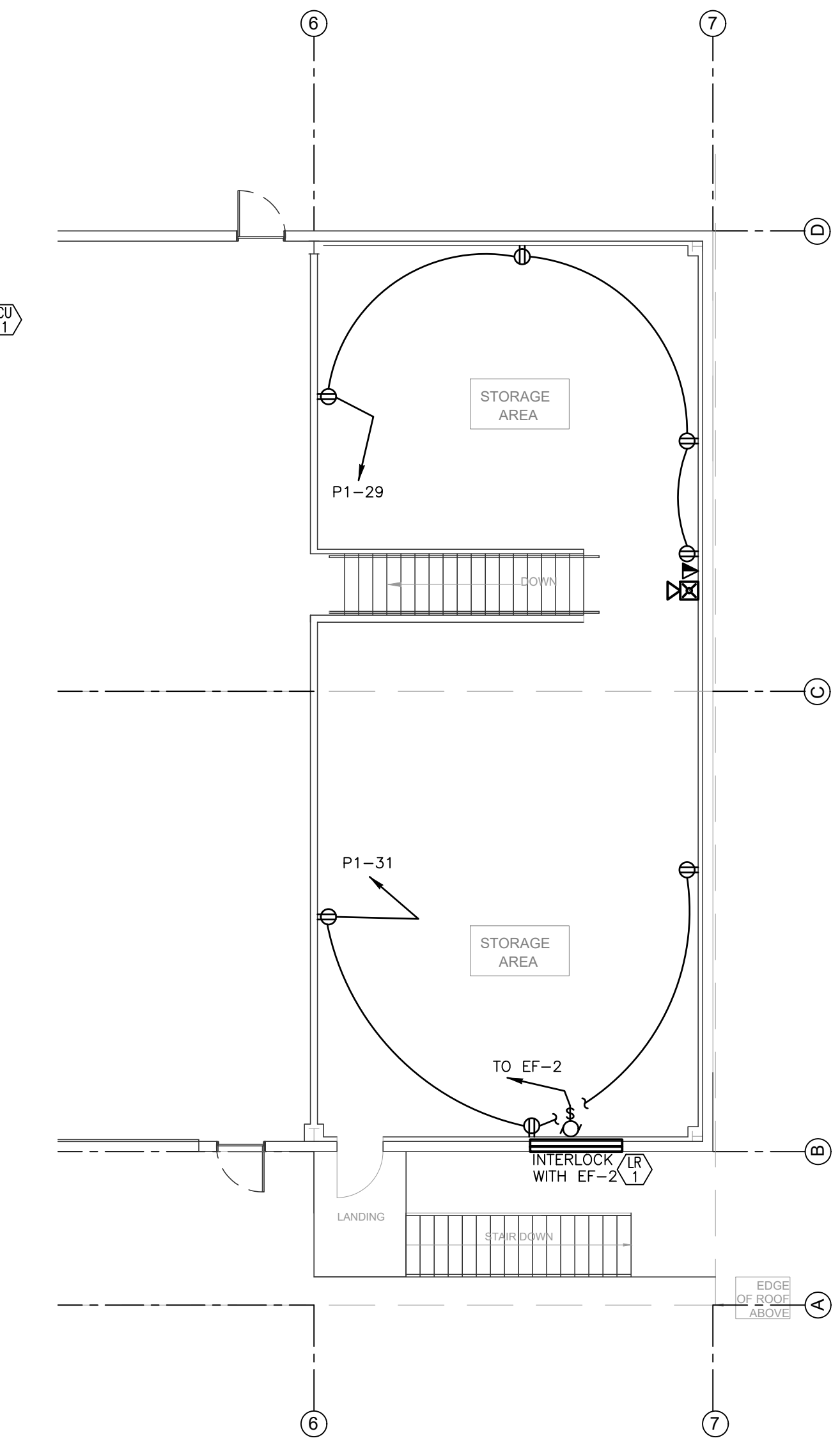
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FLAG NOTES:
 ◊ COORDINATE MOUNTING OF ELECTRICAL AND DATA OUTLETS WITH WORK BENCHES.

ELECTRICAL - SHOP FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH



ELECTRICAL - MEZZANINE FLOOR PLAN
 SCALE: 1/8"=1'-0"
 NORTH

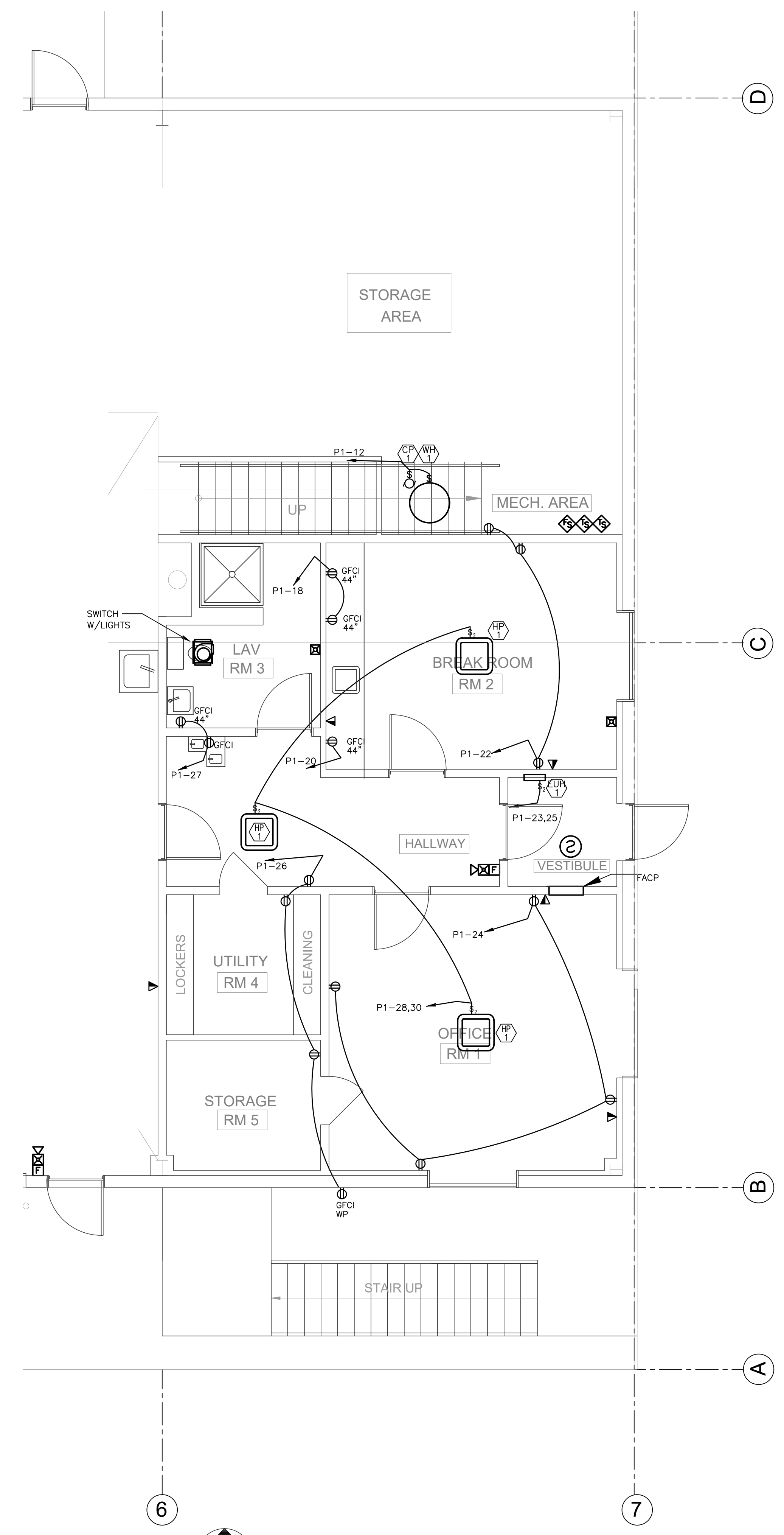
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ELECTRICAL - OFFICE FLOOR PLAN
 SCALE: 1/4"=1'-0"
 NORTH

MECHANICAL EQUIPMENT SCHEDULE												
UNIT NO	FUNCTION (NOTES)	LOAD	VOLTS	Ø	FULL LOAD AMPS	BRANCH CONDUIT SIZE	CIRCUIT NO.	WIRE SIZE	GRND WIRE SIZE	BRKR SIZE	START	DISC FUSE
CU-1	CONDENSING UNIT		240	1	42 A	3/4"	2	8	10	50A	NR	60 SO
EF-1	EXHAUST FAN		120	1	1.0A	1/2"	2	12	12	20A	NR	↓
EF-2	EXHAUST FAN	3/4HP	120	1	13.8A	1/2"	2	12	12	20A	NR	↓
HP-1	INDOOR AC EQUIPMENT		240	1	0.3A	1/2"	2	12	12	20A	NR	↓
IR-1	RADIANT HEATER		120	1	1.0A	1/2"	2	12	12	20A	NR	↓
LR-1	MOTORIZED LOUVER		120	1	1.0A	1/2"	2	12	12	20A	NR	↓

PANEL SCHEDULE - P1		TYPE: VOLTAGE: ENCLOSURE:	PANELBOARD: 120/240 NEMA1	BUS SIZE: MAIN BRKR: 600 SURFACE	PHASES: WIRES: 3 SC RATING: 22000	NEUTRAL BUS: YES	BUS: YES	
LOAD TYPE	LOAD DESCRIPTION	AMPS POLES	CKT# LOAD	Ø	CKT# LOAD	AMPS POLES	LOAD TYPE	LOAD DESCRIPTION
RECEPTACLE	SHOP OUTLETS	20A 1P	1 720	A	2 720	20A 1P	RECEPTACLE	SHOP OUTLETS
MECH YEAR ROUND	UNIT EF-2	20A 1P	3 1656	B	4 4000	50A 2P	MOTOR	AIR COMPRESSOR
PROCESS	SHOP OUTLET	50A 2P	5 4800	A	6 4000	---	MOTOR	---
PROCESS	---	---	7 4800	B	8 720	20A 1P	RECEPTACLE	SHOP OUTLETS
MECH HEATING	SHOP HEATERS	20A 1P	9 400	A	10 720	20A 1P	RECEPTACLE	SHOP OUTLETS
PROCESS	DOOR OPENER	20A 1P	11 1500	B	12 200	20A 1P	MECH YEAR ROUND	WATER HEATER & CIRC PUMP
PROCESS	DOOR OPENER	20A 1P	13 1500	A	14 5040	45A 2P	MECH YEAR ROUND	UNIT CU-1
PROCESS	DOOR OPENER	20A 1P	15 1500	B	16 5040	---	MECH YEAR ROUND	---
PROCESS	DOOR OPENER	20A 1P	17 1500	A	18 360	20A 1P	RECEPTACLE	BREAK ROOM COUNTER OUTLET
PROCESS	DOOR OPENER	20A 1P	19 1500	B	20 180	20A 1P	RECEPTACLE	BREAK ROOM COUNTER OUTLET
PROCESS	DOOR OPENER	20A 1P	21 1500	A	22 360	20A 1P	RECEPTACLE	BREAK ROOM OUTLETS
MECH HEATING	UNIT EUH-1	20A 2P	23 1000	B	24 720	20A 1P	RECEPTACLE	BREAK OUTLETS
MECH HEATING	---	---	25 1000	A	26 720	20A 1P	RECEPTACLE	CONVENIENCE OUTLETS
RECEPTACLE	BATHROOM OUTLET	20A 1P	27 360	B	28 250	20A 2P	MECH YEAR ROUND	HP UNITS
RECEPTACLE	MEZZANINE OUTLETS	20A 1P	29 540	A	30 250	---	MECH YEAR ROUND	---
RECEPTACLE	MEZZANINE OUTLETS	20A 1P	31 540	B	32 1000	20A 1P	RECEPTACLE	BLOCK HEATER 1 PROVIDE BREAKER TIE WITH P1-34
LIGHTING	SHOP LIGHTING	20A 1P	33 1400	A	34 1000	20A 1P	RECEPTACLE	BLOCK HEATER 1 PROVIDE BREAKER TIE WITH P1-32
LIGHTING	OFFICE LIGHTING	20A 1P	35 1000	B	36 1000	20A 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-38
LIGHTING	EXTERIOR LIGHTING	20A 1P	37 1200	A	38 1000	20A 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-36
LIGHTING	GATE LIGHTING	20A 1P	39 600	B	40 1000	20A 1P	RECEPTACLE	BLOCK HEATER 3 PROVIDE BREAKER TIE WITH P1-42
RECEPTACLE	EXTERIOR OUTLETS	20A 1P	41 360	A	42 1000	20A 1P	RECEPTACLE	BLOCK HEATER 3 PROVIDE BREAKER TIE WITH P1-40
RECEPTACLE	EXTERIOR OUTLETS	20A 1P	43 360	B	44 1000	20A 1P	RECEPTACLE	BLOCK HEATER 4 PROVIDE BREAKER TIE WITH P1-46
SPARE	UNALLOCATED FUTURE	20A 1P	45 200	A	46 1000	20A 1P	RECEPTACLE	BLOCK HEATER 4 PROVIDE BREAKER TIE WITH P1-44
SPARE	UNALLOCATED FUTURE	20A 1P	47 200	B	48 1000	20A 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-50
SPARE	UNALLOCATED FUTURE	20A 1P	49 200	A	50 1000	20A 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-48
SPARE	UNALLOCATED FUTURE	20A 1P	51 200	B	52 1000	20A 1P	RECEPTACLE	BLOCK HEATER 6 PROVIDE BREAKER TIE WITH P1-54
SPARE	UNALLOCATED FUTURE	20A 1P	53 200	A	54 1000	20A 1P	RECEPTACLE	BLOCK HEATER 6 PROVIDE BREAKER TIE WITH P1-52
SPARE	UNALLOCATED FUTURE	20A 1P	55 200	B	56 360	20A 1P	RECEPTACLES	AWNING POLE OUTLET
SPACE	---	---	57 0	A	58 360	20A 1P	RECEPTACLES	AWNING POLE OUTLET
SPACE	---	---	59 0	B	60 360	20A 1P	RECEPTACLES	AWNING POLE OUTLET
SPACE	---	---	61 0	A	62 200	20A 1P	SPARE	UNALLOCATED FUTURE
SPACE	---	---	63 0	B	64 200	20A 1P	SPARE	UNALLOCATED FUTURE
SPACE	---	---	65 0	A	66 0	---	SPACE	---
SPACE	---	---	67 0	B	68 0	---	SPACE	---
SPACE	---	---	69 0	A	70 0	---	SPACE	---

LOADS BY TYPE:				LOADS BY PHASE:			
LOAD TYPE	CONNECTED LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)	PHASE	CONNECTED LOAD (VA)	CONNECTED LOAD (AMPS)	BALANCE (PERCENT)
LIGHTING	4200.00	1.25	5250.00	A	34250.00	285.42	A-B: 97.7
KITCHEN	0.00	0.00	0.00	B	33446.00	278.72	B-A: 97.7
PROCESS	18600.00	1.00	18600.00	C	---	---	---
RECEPTACLES	10000.00	1.00	10000.00	TOTAL/AVERAGE	67696.00	282.07	97.7
RECEPTACLES	9380.00	0.50	4690.00				
MECH HEATING	2400.00	1.00	2400.00				
MECH COOLING	0.00	1.00	0.00				
MECH YEAR ROUND	12436.00	1.00	12436.00				
APPLIANCE	0.00	1.00	0.00				
MISCELLANEOUS	0.00	1.00	0.00				
MOTOR	8000.00	1.00	12000.00				
SPARE	1600.00	1.00	1600.00				
LARGEST MOTOR 1	ABOVE	0.25	2520.00				
TOTAL	67696.00		65496.00				

NOTES:

- THE LARGEST CONNECTED MOTOR LOAD IS INCLUDED IN MECHANICAL, PROCESS, OR MOTOR LOADS.

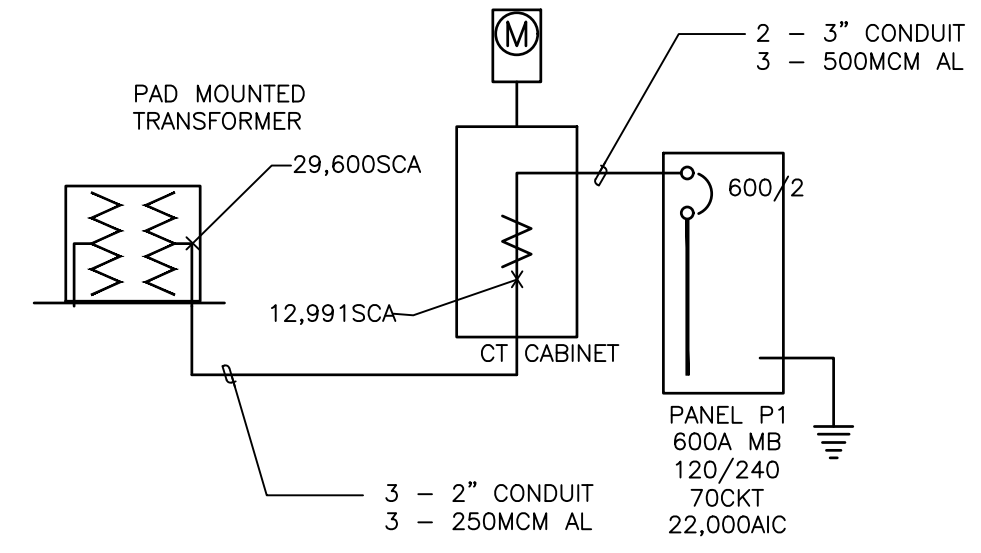
ABBREVIATIONS AND NOTATIONS	
A.C.	ABOVE COUNTER - VERIFY HEIGHT
A.F.C.	ABOVE FINISHED CEILING
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO/VIDEO
AWG	AMERICAN WIRE GAGE
CB	CIRCUIT BREAKER
CCT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COPPER
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENCY
FLA	FULL LOAD AMPS
G	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
HP	HORSEPOWER
IG	ISOLATED GROUND
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NL	NIGHT LIGHT
OCP	OVERCURRENT PROTECTION
OL	OVERLOAD
SC	SHORT CIRCUIT
TR	TAMPER RESISTANT
TTB	TELECOMMUNICATIONS TERMINAL BACKBOARD
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
WPIU	WEATHERPROOF IN-USE
XFMR	TRANSFORMER
MECHANICAL EQUIPMENT SCHEDULE NOTATION	
◇	FLAG NOTE
△	DELTA REVISION NOTE
⊗	ELECTRICAL FEEDER SIZE

SCHEMATIC WIRING SYMBOLS	
	TRANSFORMER
	ELECTRICAL POWER PANEL
	MAIN LUG ONLY/MAIN CIRCUIT BREAKER
	GROUND
	CURRENT TRANSFORMER
	CIRCUIT BREAKER, MOLDED-CASE
	FUSED DISCONNECT SWITCH
	METER

ELECTRICAL SYMBOLS	
	DUPLEX RECEPTACLE
	FOUR PLEX RECEPTACLE
	SINGLE RECEPTACLE
	SPLIT-WIRED RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE
	FLOOR RECEPTACLE
	CIRCUIT BREAKER
	JUNCTION BOX
	WALL MOUNTED J-BOX
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	BRANCH CIRCUIT PANELBOARD
	CIRCUITRY HOMERUN: POWER PANEL 1 - CIRCUIT #3
	CONDUIT OR WIRE CONCEALED IN WALL/CLG
	CONDUIT OR WIRE UNDERFLOOR/UNDERGROUND

FIRE ALARM	
	FIRE ALARM CONTROL PANEL
	MANUAL PULL STATION
	WALL MOUNTED HORN
	WALL MOUNTED SPEAKER
	ELECTROMAGNETIC DOOR HOLD OPEN
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
	SMOKE DETECTOR
	SMOKE/CARBON MONOXIDE DETECTOR
	SMOKE DETECTOR WITH PIEZO BUZZER

SYSTEMS LEGEND	
	TIB, MDF OR IDF
	TELECOMMUNICATION OUTLET
	TELEPHONE OUTLET
	DATA OUTLET
	TELEVISION OUTLET



ONE-LINE DIAGRAM

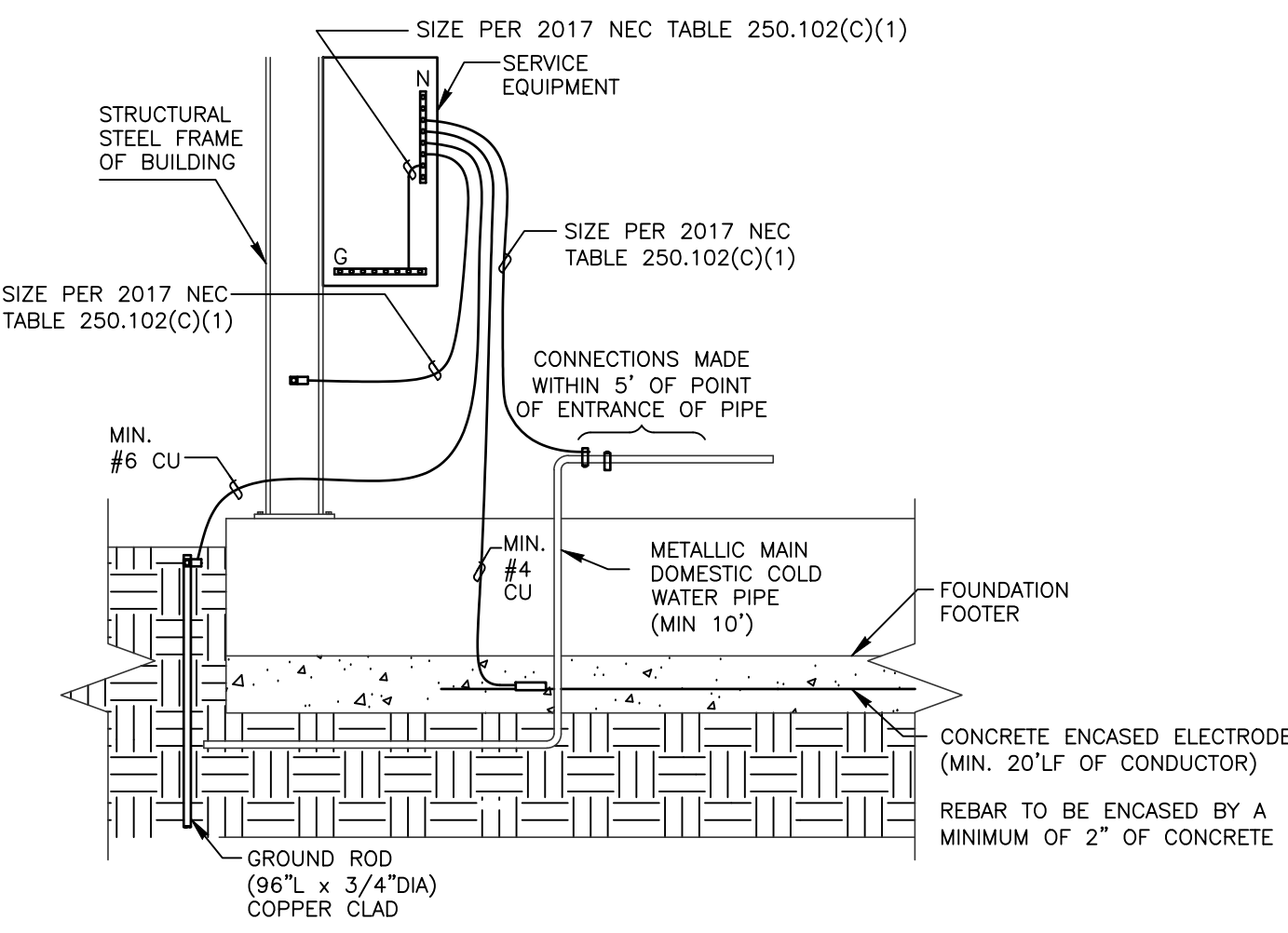
NOT TO SCALE
 PROVIDE GROUNDING AND LABELING PER NEC REQUIREMENTS
 PROVIDE A #6 COPPER CONDUCTOR TO A 10' BY 5/8" DRIVEN ROD.

KAIC CALCULATIONS:
 100KVA 120/240V 1Ø TRANSFORMER INFORMATION
 29,600 KAIC

UTILIZING POINT TO POINT METHODS:
 f FACTOR
 $f = \frac{2 \times L \times I}{N \times C \times E(L-L)}$
 L = WIRE LENGTH = 200' ESTIMATED
 I = FAULT CURRENT = 29,600 AMPS
 N = NUMBER OF CONDUCTORS PER PHASE = 3
 C = CONSTANT INVERSE IMPEDANCE PER FOOT
 250kcmil : 12862
 $E(L-L) = \text{VOLTAGE (LINE TO LINE)} = 240 \text{ VOLTS}$
 $f = \frac{400 \times 29600}{3 \times 12862 \times 240} = 3.635$

MULTIPLIER
 $M = \frac{1}{1 + f} = \frac{1}{1 + 1.219} = .439$

FAULT CURRENT
 $(F) = I(SC) \times M = 29600 \times .439 = 12991$



GROUNDING ELECTRODE SYSTEM DETAIL

SCALE: NOT TO SCALE
 NOTES:
 1. SEE ONE LINE DIAGRAM FOR GROUNDING CONDUCTOR SIZES REQUIRED.
 2. PROVIDE A MINIMUM OF TWO SEPARATE GROUND SOURCES, U.O.N. ON ONE LINE DIAGRAM.
 3. CADWELD ALL ENCASED GROUND CONNECTIONS

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**TOWN OF HOTCHKISS
 PUBLIC WORKS FACILITY**
 TBD BARROW MESA RD
 HOTCHKISS, COLORADO

DATE: 03/21/19
 ISSUED FOR: REVISED 50% DD

DATE: 03/21/19
 JOB NO: 18-159
 DRAWN BY: BCE
 CHECKED BY: BCE
 SCALE: AS SHOWN
 SHEET NUMBER:

