

LEGEND/ABBREVIATIONS

PROJECT

INDEX

MECHANICAL LEGEND			MECHANICAL LEGEND		
SYMBOL	ABBREV.	DEFINITION	SYMBOL	ABBREV.	DEFINITION
	SA	SUPPLY AIR DUCT UP, DOWN		DIA.	DIAMETER
	RA	RETURN AIR DUCT UP, DOWN		FOT	FLAT ON TOP
	EA	EXHAUST AIR DUCT UP, DOWN		FOB	FLAT ON BOTTOM
	OA	OUTSIDE AIR DUCT UP, DOWN		AFFP	AIRFOIL PLENUM FAN
		RECT. TO ROUND TRANSITION		DL	DOOR LOUVER
		FLEXIBLE CONNECTION (DUCTWORK)		AP	ACCESS PANEL
		FLEXIBLE DUCT		HPS	HIGH PRESSURE STEAM
	VD	MANUAL VOLUME DAMPER		LPS	LOW PRESSURE STEAM
	FD	FIRE DAMPER		SC	STEAM CONDENSATE
	MOD	MOTOR OPERATED DAMPER		HS(P)	HEATING SUPPLY (PRIMARY)
	SMD	SMOKE DAMPER		HS(S)	HEATING SUPPLY (SECONDARY)
	CD	COMBINATION FIRE/SMOKE DAMPER		HR(S)	HEATING RETURN (SECONDARY)
	AMS	AIR MONITORING STATION		HS	HEATING SUPPLY
	SA	SOUND ATTENUATOR		HR	HEATING RETURN
	DD	DUCT SMOKE DETECTOR		CS	CONDENSER WATER SUPPLY
		ELBOW W/ TURNING VANES		CW	CONDENSATE WATER RETURN
		RADIUS ELBOW		HPWS	HEAT PUMP WATER SUPPLY
	FPTU	FAN POWERED W/ BOX W/ HEAT COIL		HPWR	HEAT PUMP WATER RETURN
	SL	ACOUSTICAL SOUND LINING		COW	COLD WATER
		CHANGE IN DUCTWORK (RISE/DROP)		CD/COND	CONDENSATE DRAIN LINE
		POWER ROOF VENTILATOR		F&T	FLOAT AND THERMOSTATIC TRAP
		GATE VALVE		BTU	BRITISH THERMAL UNIT
		GLOBE VALVE		MTH	BTU PER HOUR (THOUSAND)
		BALL VALVE		SENS.	SENSIBLE
		MULTI-PURPOSE VALVE		WG	WATER GAUGE
		CHECK VALVE		VEL	VELOCITY
		BUTTERFLY VALVE		PFM	FEET PER MINUTE
		3-WAY MODULATING VALVE (ATC)		LF	LINEAR FOOT
		2-WAY MODULATING VALVE (ATC)		KW	KILOWATT
	PRV	PRESSURE REDUCING VALVE		MIN	MINIMUM
		NEEDLE VALVE		MAX	MAXIMUM
		PRESSURE RELIEF OR SAFETY VALVE		NC	NOISE CRITERIA
		HOSE END DRAIN VALVE		DB	DECIBEL
		STRAINER W/HOSE END DRAIN VALVE & CAP		EMS	ENERGY MANAGEMENT SYSTEM
		AUTOMATIC AIR VENT		SAF	SUPPLY AIR FAN
		FLOW METER FITTING		OAF	OUTSIDE AIR FAN
		COMBINATION SHUT-OFF/BALANCING VALVE		RAF	RETURN AIR FAN
		UNION		EAF	EXHAUST AIR FAN
		FLANGE		LBS	POUNDS
		CONCENTRIC REDUCER		TEMP	TEMPERATURE
		ECCENTRIC REDUCER		EXH	EXHAUST
		FLEXIBLE CONNECTION (PIPING)		OC	ON CENTER
		MANUAL AIR VENT		TONS	TONS OF REFRIGERATION
		THERMOMETER		SQ	SQUARE
		PRESSURE GAUGE W/NEEDLE VALVE		OAT	OUTSIDE AIR TEMPERATURE
		TEMPERATURE SENSOR (NIGHT SETBACK)		STD	STANDARD
	T'STAT	THERMOSTAT		ΔT	TEMPERATURE DIFFERENCE
		FAN SWITCH		EFF	EFFICIENCY
		STATIC PRESSURE GAUGE		ELECT. CHAR.	ELECTRICAL CHARACTERISTICS
	DP	DIFFERENTIAL PRESSURE CONTROLLER		CAP	CAPACITY
	DPT	DIFFERENTIAL PRESSURE TRANSMITTER		SB	STAND-BY
	AFC	AUTOMATIC FLOW CONTROL VALVE		FT. H <sub>2</sub> O	FEET WATER GAUGE
	FS	FLOW SWITCH		IN. H <sub>2</sub> O	INCHES WATER GAUGE
		STATIC PRESSURE CONTROLLER		ATC	AUTOMATIC TEMPERATURE CONTROL
		PIPE ALIGNMENT GUIDE		EX	EXISTING
		PIPE ANCHOR		RX	REMOVE EXISTING
		EXPANSION LOOP			CONNECT TO EXISTING
		UNIT HEATER			DEMOLITION ENDS HERE
		PITCH OF PIPE, % SLOPE		VSD	VARIABLE SPEED DRIVE
		PIPE-TURN DOWN		F	DEGREES FAHRENHEIT
		PIPE-TURN UP		CFM	CUBIC FEET PER MINUTE
		SOLENOID VALVE		GPM	GALLONS PER MINUTE
		END CAP		EAT	ENTERING AIR TEMPERATURE
		DIRECTION OF FLOW		LAT	LEAVING AIR TEMPERATURE
				EWT	ENTERING WATER TEMPERATURE
				LWT	LEAVING WATER TEMPERATURE
				DB	DRY BULB
				WB	WET BULB
				PD	PRESSURE DROP
				WPD	WATER PRESSURE DROP
				APD	AIR PRESSURE DROP
				SP	STATIC PRESSURE
				ESP	EXTERNAL STATIC PRESSURE
				PSI	POUNDS PER SQUARE INCH
				HP	HORSEPOWER
				BHP	BRAKE HORSEPOWER
				RPM	REVOLUTIONS PER MINUTE
				FPM	FEET PER MINUTE
				A	AMPS
				V	VOLTS
				H <sub>2</sub>	HERTZ
				DIFF	DIFFUSER
				REG	REGISTER
				AFF	ABOVE FINISHED FLOOR
				W/F	WITH
				FO	FLAT OVAL
				SS	STAINLESS STEEL
				HT	HEIGHT
				REQ'D	REQUIRED
				DWG	DRAWING
				No.	NUMBER
				VAV	VARIABLE AIR VOLUME
				EF	EXHAUST FAN
				FZ	FREEZE STAT
				SD	SMOKE DAMPER
				SPC	STATIC PRESSURE CONTROLLER
				AHU	AIR HANDLING UNIT
				OAT	OUTSIDE AIR TEMPERATURE
				SWT	SUPPLY WATER TEMPERATURE
				NO	NORMALLY OPEN
				NC	NORMALLY CLOSED
				C	CLOSED

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED

# PINE CREST ELEMENTARY SCHOOL EMERGENCY GENERATOR AND ELECTRICAL EQUIPMENT UPGRADE

201 WOODMOOR DR,  
SILVER SPRING, MD 20901



MONTGOMERY COUNTY PUBLIC SCHOOLS  
850 HUNGERFORD DRIVE,  
ROCKVILLE, MD 20850

MECHANICAL/ELECTRICAL/PLUMBING ENGINEERS

ALBAN ENGINEERING, INC

303 INTERNATIONAL CIRCLE  
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CS COVER SHEET

**ELECTRICAL**

- E001 - ELECTRICAL LEGEND, CONVENTIONS, AND ABBREVIATIONS
- ED101 - PARTIAL FLOOR PLAN - AREA A - DEMOLITION
- E101 - PARTIAL FLOOR PLAN - AREA A
- E102 - PARTIAL FLOOR PLAN - AREAS B&C
- E103 - PARTIAL SECOND FLOOR PLAN - AREA A
- E104 - PARTIAL SECOND FLOOR PLAN - AREAS B&C
- E601 - PANEL SCHEDULES AND PICTURES

**MECHANICAL/PLUMBING**

- MP001 - MECH/PLUMB LEGEND, CONVENTIONS, RISER, AND ABBREVIATIONS
- MPD101 - PARTIAL FLOOR PLAN - AREA A - DEMOLITION
- MP101 - PARTIAL FLOOR PLAN - AREA A
- MP701 - MECHANICAL/PLUMBING ADD ALTERNATE #1 DETAILS

NO.	DATE	DESCRIPTION

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**SCOPE OF WORK**

THE SCOPE OF WORK INCLUDES THE UPGRADE OF THE CURRENT EMERGENCY ELECTRICAL DISTRIBUTION SYSTEM INCLUDING REPLACING THE EXISTING GENERATOR, ADDING LIFE SAFETY AND NON-LIFE SAFETY PANELS/TRANSFORMERS, AND ADDING DESIRED CIRCUITS TO EMERGENCY POWER.

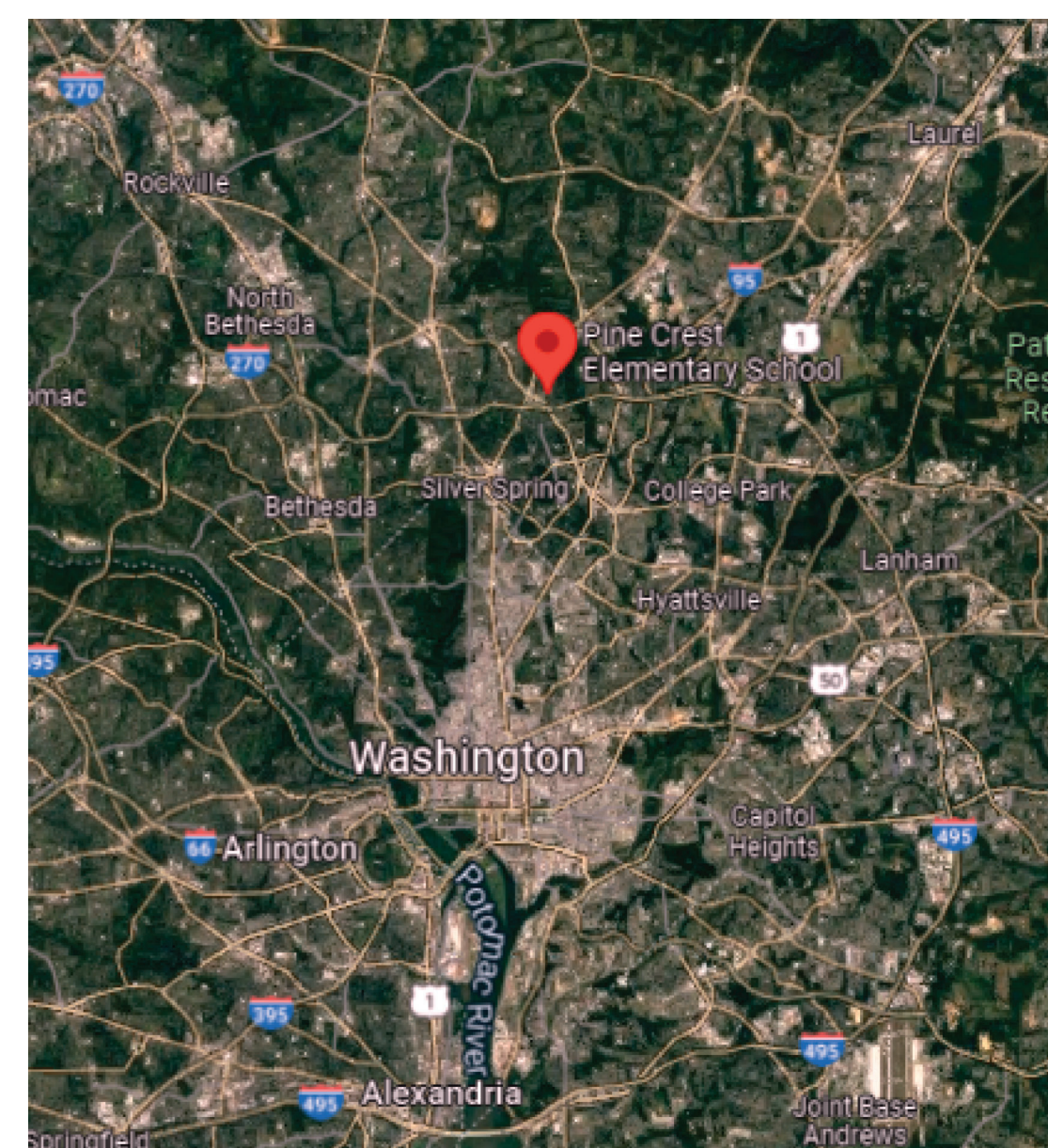
THE EXISTING GENERATOR IS TO REMAIN ACTIVE AND RUN EXISTING EMERGENCY LOADS UNTIL NEW GENERATOR IS INSTALLED.

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LOCATION MAP

NTS



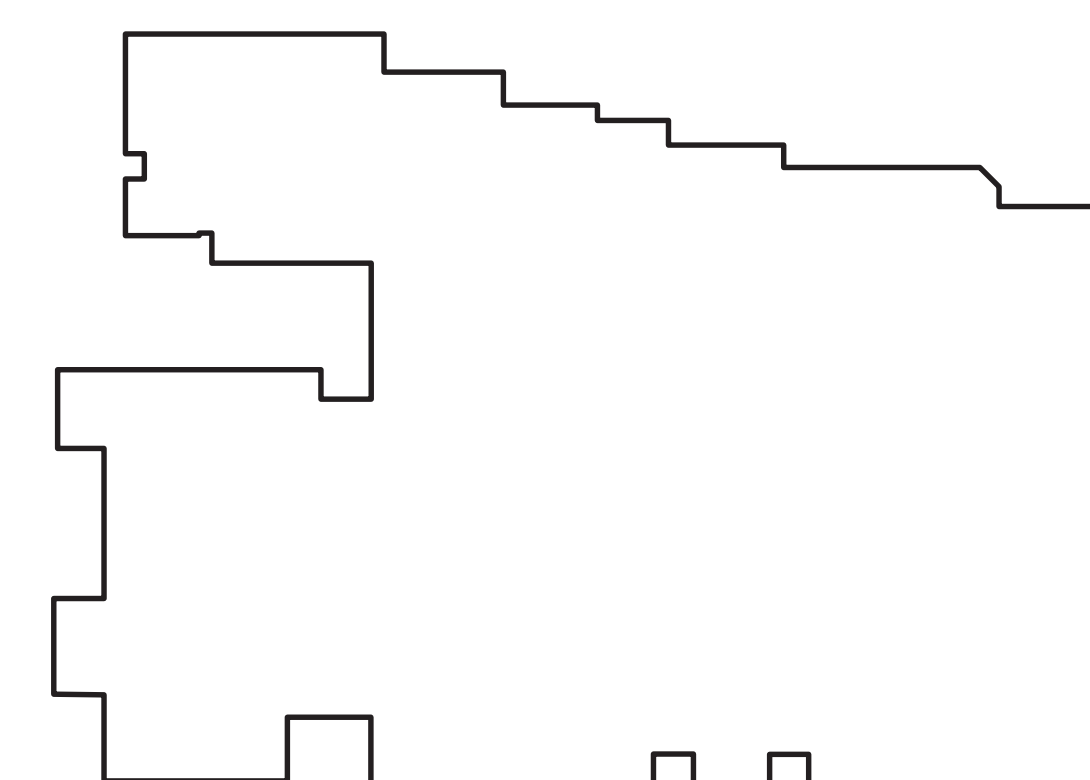
VICINITY MAP

NTS



KEY PLAN

NTS



COVER SHEET

PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN# 22077  
PROJECT MANAGER DRH  
DESIGNER BSF

CS

BID SET  
06-09-2023



**GENERAL NOTES:**

- THE ELECTRICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE DRAWINGS OF ALL OTHER TRADES ON THE PROJECT. ELECTRICAL OR SYSTEMS CONNECTIONS INDICATED ON ARCHITECTURAL, MECHANICAL, CIVIL, STRUCTURAL, KITCHEN AND ALL OTHER DRAWINGS WHICH ARE PART OF THIS PROJECT, SHALL BE CONSIDERED A PART OF THIS CONTRACT AND SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND AS SUCH SHALL NOT BE SCALED. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEVICES AND EQUIPMENT AND DIMENSIONAL INFORMATION PRIOR TO ROUGH-IN. COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN OF SERVICE EQUIPMENT AND WIRING.
- COORDINATE MOUNTING HEIGHTS OF ALL DEVICES WITH ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS AND CASEWORK DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT ROUTING OF WIRING AND CONDUITS AND SHALL BE RESPONSIBLE FOR SIZING ALL BRANCH CIRCUIT WIRING TO LIMIT VOLTAGE DROP TO 3%. CONTRACTOR SHALL SIZE CONDUIT TO ACCOMMODATE WIRING PER NEC. 20 AMPERE CIRCUITS SHALL BE SIZED AS FOLLOWS:

20 AMPERE CIRCUITS					
120 VOLT			277 VOLT		
WIRING LENGTH	WIRE SIZE	MINIMUM CONDUIT SIZE	WIRING LENGTH	WIRE SIZE	MINIMUM CONDUIT SIZE
0' - 100'	#12	3/4"	0' - 130'	#12	3/4"
101' - 200'	#10	3/4"	130' - 210'	#10	3/4"
201' - 250'	#8	3/4"	210' - 340'	#8	3/4"
251' - 300'	#6	3/4"	340' - 540'	#6	3/4"
OVER 300'	#4	1"	OVER 540'	#4	1"

NOTES:  
BRANCH CIRCUITS IN PANELBOARDS WITH 200% RATED NEUTRAL BUS AND ALL DIMMED LIGHTING CIRCUITS & ECM MOTORS SHALL HAVE DEDICATED NEUTRAL CONDUCTORS.

WIRING AND CONDUIT SIZES INDICATED IN PANEL SCHEDULES ARE MINIMUM ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT WIRING AND CONDUIT SIZES. CONTRACTOR SHALL PROVIDE SPLICE BLOCKS AND REDUCING PINS AS REQUIRED TO TERMINATE WIRING AND MAKE FINAL CONNECTIONS.

- ELECTRICAL BOXES IN FIRE RATED PARTITIONS SHALL NOT EXCEED 16 SQUARE INCHES IN AREA (IF 4"x4"). SHALL BE MADE OF STEEL, AND SHALL BE SUCH THAT THE CUMULATIVE AREA OF BOX "CUTOUTS" IN THE FIREWALL DOES NOT EXCEED 100 SQUARE INCHES PER 100 SQUARE FEET OF WALL AREA. ELECTRICAL BOXES ON OPPOSITE SIDES OF THE SAME FIREWALL SHALL BE SEPARATED BY A HORIZONTAL AND VERTICAL DISTANCE OF NOT LESS THAN 24 INCHES. THE ELECTRICAL CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS, AS NECESSARY, TO ELECTRICAL BOX LOCATIONS TO ENSURE COMPLIANCE WITH THIS REQUIREMENT SINCE BOX LOCATIONS ARE TYPICALLY NOT DIMENSIONED ON THE DRAWINGS. CONSULT ARCHITECT IF CLARIFICATION IS REQUIRED.
- NEW WALLS ARE SHADED ON THE FLOOR PLANS, EXISTING WALLS ARE NOT SHADED. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MOUNTING OF DEVICES WITH WALL TYPE.

**DEMOLITION NOTES:**

- DEMOLITION DRAWINGS ARE DIAGRAMMATIC IN NATURE; NO ATTEMPT HAS BEEN MADE TO SHOW ALL EXISTING ELECTRICAL WORK IN AREAS INDICATED TO BE RENOVATED. ALL EXISTING ELECTRICAL WORK IS TO BE REMOVED UNLESS OTHERWISE NOTED. WHEN AN ITEM IS TO BE REMOVED, REMOVE ALL ASSOCIATED ELECTRICAL WORK BACK TO POINT-OF-SOURCE.
- WHERE WORK PASSES THROUGH THE RENOVATION AREA TO SERVE OTHER PORTIONS OF THE BUILDING, OR WORK IN THE RENOVATION AREA INDICATED TO BE REMAIN, IT SHALL BE SUITABLY RELOCATED AND THE SYSTEMS RESTORED TO NORMAL. COORDINATE ANY OUTAGES WITH OWNER 7 DAYS IN ADVANCE.
- WORK INDICATED TO REMAIN SHALL BE SUITABLY PROTECTED AGAINST DAMAGE.
- TURN OVER ALL CIRCUIT BREAKERS, LIGHTING AND APPLIANCE PANELBOARD COVERS, CONTACTORS, MOTOR STARTERS, TIME CLOCKS, BATTERY PACKS, CLOCKS, SPEAKERS, ETC THAT ARE IN GOOD CONDITION TO OWNER. CONTACT OWNER FOR VERIFICATION IF ITEMS ARE IN QUESTIONABLE CONDITION.
- COORDINATE ALL DEMOLITION AND CONSTRUCTION ACTIVITIES WITH THE OWNER TO MINIMIZE DISRUPTION OF THE NORMAL DAILY FUNCTIONING OF THE OWNERS OCCUPIED AREAS.
- REMOVE AND REINSTALL ALL EXISTING CEILING MOUNTED DEVICES INDICATED TO REMAIN AS REQUIRED TO SUIT NEW CEILING INSTALLATION.
- ALL REMOVED DEVICE WALL PENETRATIONS SHALL BE PATCHED AND PAINTED TO MATCH EXISTING WALL COLOR OR WALL COLOR PER ARCHITECT'S DIRECTION.

**ELECTRICAL LEGEND:**  
(MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE UON)

**CONDUIT**

HOMERUN TO PANELBOARD; REFER TO PANEL SCHEDULES FOR MINIMUM WIRE AND CONDUIT SIZES

BRANCH CIRCUIT CONDUIT AND WIRING CONCEALED IN CEILING OR WALL SPACE, OR SURFACE MOUNTED WHERE NO CEILING OR WALL SPACE EXISTS; REFER TO PANEL SCHEDULES FOR MINIMUM WIRE AND CONDUIT SIZES

BRANCH CIRCUIT CONDUIT AND WIRING IN SLAB, UNDER FLOOR OR UNDERGROUND; REFER TO PANEL SCHEDULES FOR MINIMUM WIRE AND CONDUIT SIZES

**POWER**

DISTRIBUTION PANELBOARD, SURFACE MOUNTED AT 6'-6" AFF TO TOP OF PANEL.

PANELBOARD; RECESSED, SURFACE MOUNTED; MOUNT AT 6'-6" AFF TO TOP OF PANEL.

PANELBOARD; RECESSED, SURFACE MOUNTED; MOUNT AT 5'-6" AFF TO TOP OF PANEL.

PANELBOARD; RECESSED, SURFACE MOUNTED; MOUNT AT 5'-6" AFF TO TOP OF PANEL.

SINGLE POLE MANUAL MOTOR STARTING SWITCH WITH HOA SWITCH; MOUNT AT 48" AFF IN NEMA 1 ENCLOSURE UON

MOTOR; AS NOTED

UNIT HEATER

SAFETY DISCONNECT SWITCH; FUSED, NONFUSED IN NEMA 1 ENCLOSURE UON; MOUNT AT 48" AFF UON; RATING AND FUSING AS NOTED

ENCLOSED CIRCUIT BREAKER IN NEMA 1 ENCLOSURE UON; MOUNT AT 5'-6" TO TOP AFF UON; SIZE AS NOTED

COMBINATION TYPE MOTOR STARTER; FVNR WITH CONTROL XFMR, RED AND GREEN INDICATING LIGHTS; HOA SELECTOR SWITCH AND CIRCUIT BREAKER DISCONNECT SWITCH IN NEMA 1 ENCLOSURE UON; MOUNT AT 5'-6" TO TOP AFF UON

JUNCTION BOX; CEILING, WALL MOUNTED

TO GROUND

EPO PUSHBUTTON, UON; MOUNT 48" AFF AS INDICATED

ELECTRICAL METER

SURGE PROTECTION DEVICE

VARIABLE FREQUENCY DRIVE FURNISHED UNDER DIVISION 15, INSTALLED UNDER DIVISION 16

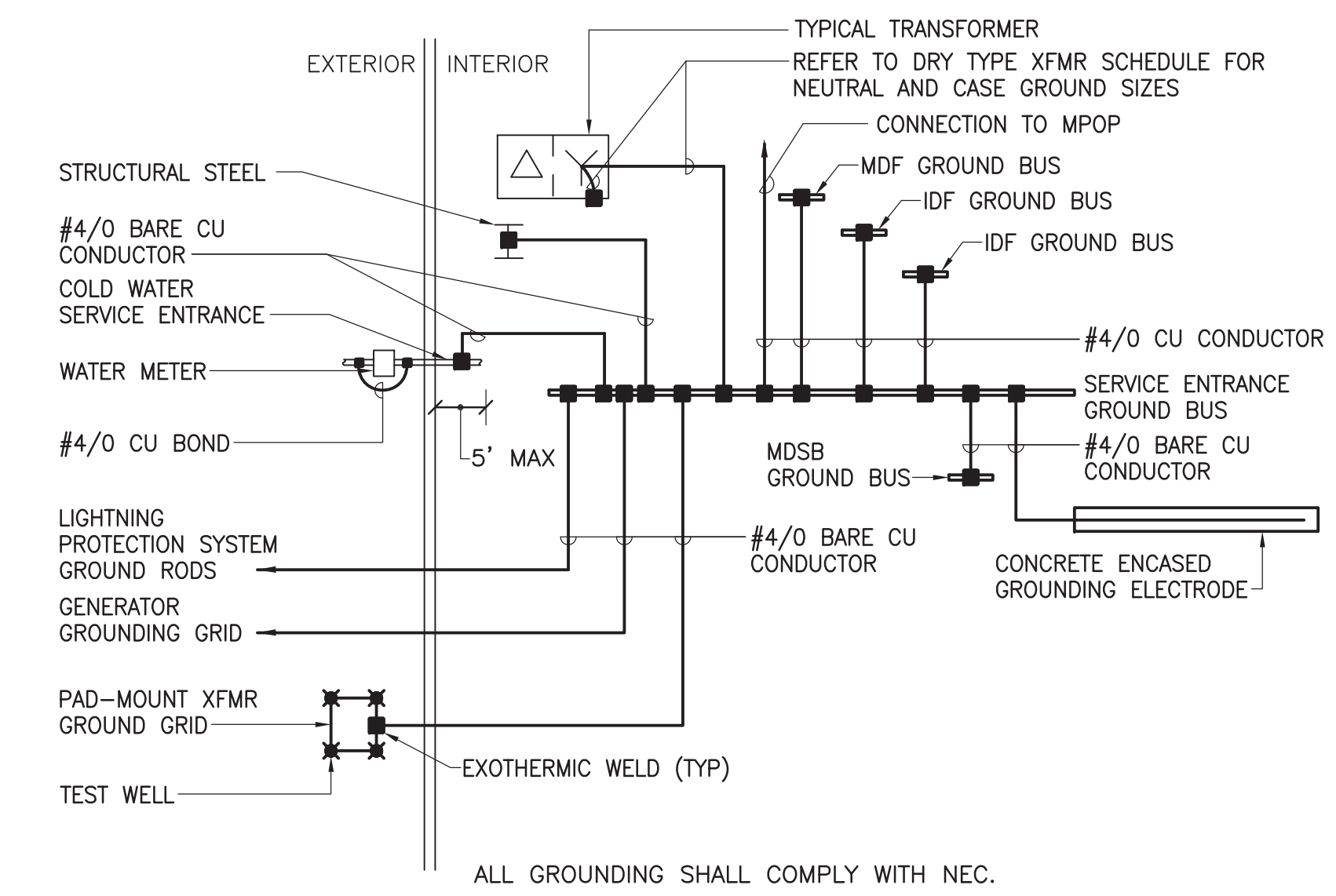
TRANSFORMER

**MISCELLANEOUS**

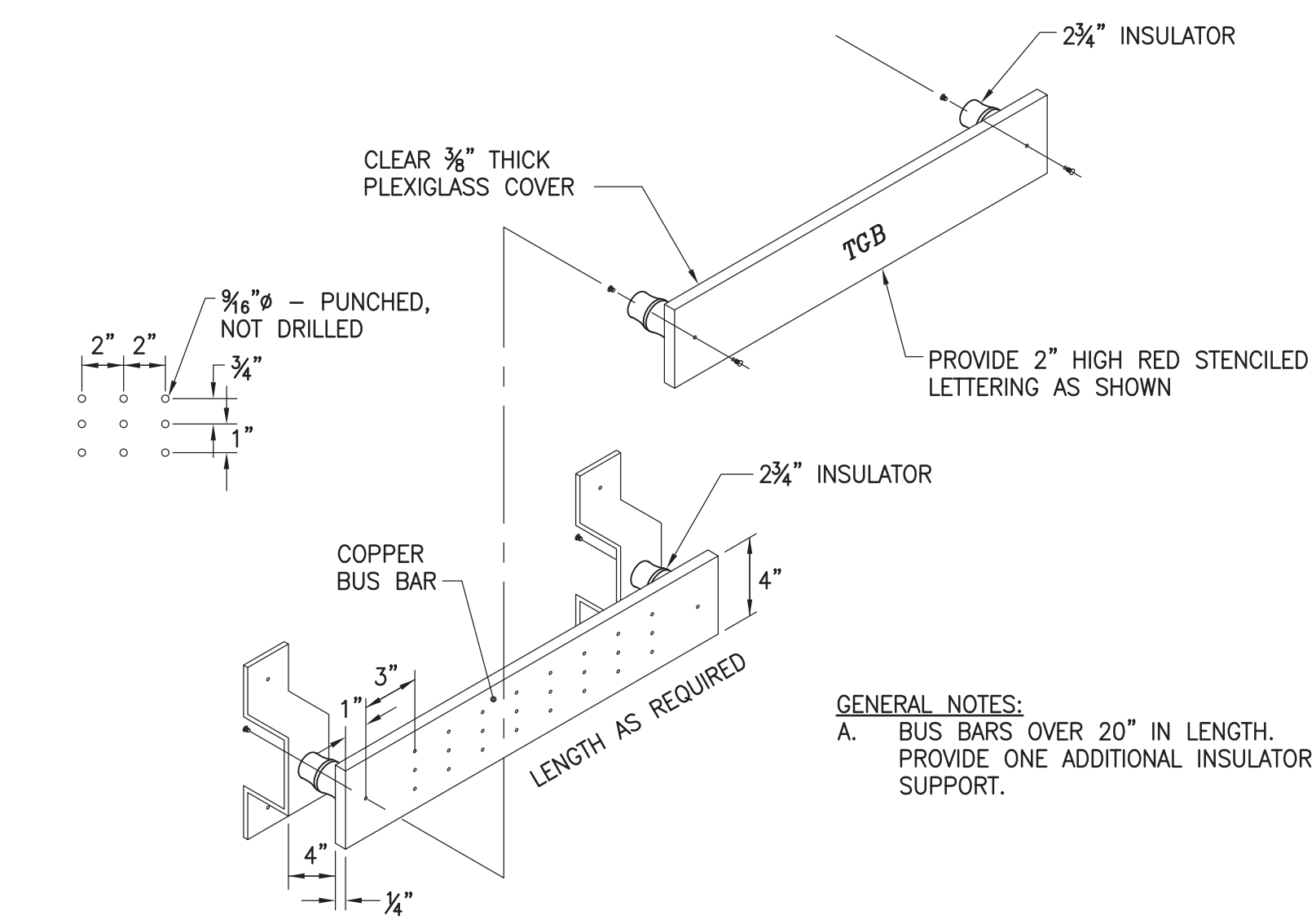
- REFERENCE TO DRAWING NOTE
- DETAIL REFERENCE: DETAIL NUMBER/DRAWING NUMBER
- ITEMS SHOWN DASHED/HEAVY ARE TO BE REMOVED
- ITEMS SHOWN SOLID/LIGHT ARE EXISTING TO REMAIN
- ITEMS SHOWN DASHED-DOTTED/LIGHT ARE TO OCCUR IN FUTURE PHASES

**ABBREVIATIONS:**

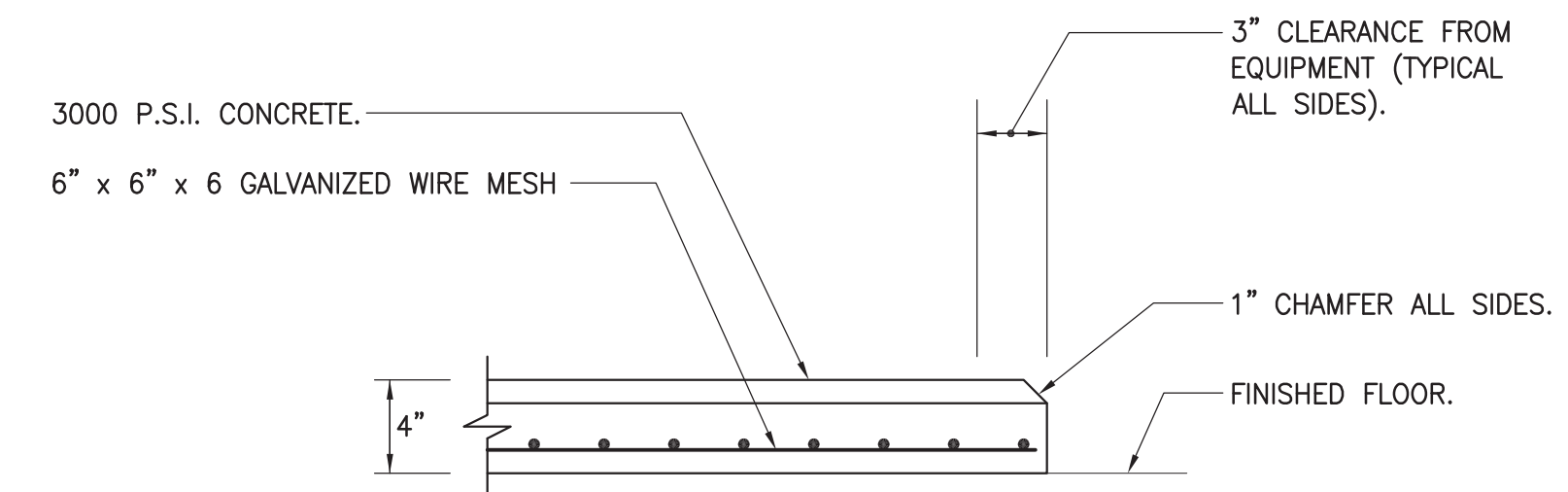
- A AMPERE, AMPERES
- AFF ABOVE FINISHED FLOOR
- AHU AIR HANDLING UNIT
- AIC AMPERE INTERRUPTING CAPACITY
- ATS AUTOMATIC TRANSFER SWITCH
- AWG AMERICAN WIRE GAUGE
- CATV CABLE TELEVISION
- CCTV CLOSED CIRCUIT TELEVISION
- C CONDUIT
- CB CIRCUIT BREAKER
- DWG DRAWING
- ECB ENCLOSED CIRCUIT BREAKER
- EF EXHAUST FAN
- EPO EMERGENCY POWER OFF
- ETR EXISTING TO REMAIN
- EWG ELECTRIC WATER COOLER
- EX EXISTING
- FAAP FIRE ALARM ANNUNCIATOR PANEL
- FACP FIRE ALARM CONTROL PANEL
- FIA FULL LOAD AMPERES
- FSS FUSED SAFETY SWITCH
- G GROUND
- GPEP GROUND FAULT EQUIPMENT PROTECTION
- GFI GROUND FAULT INTERRUPTING
- HOA HAND-OFF-AUTOMATIC
- HP HORSEPOWER
- HWH HOT WATER HEATER GENERATOR
- IDF INTERMEDIATE DISTRIBUTION FRAME
- IMC INTERMEDIATE METAL CONDUIT
- KCMIL THOUSAND CIRCULAR MILS
- KVA KILOVOLT-AMPERES
- KW KILOWATT
- LRA LOCKED ROTOR AMPERES
- MCA MINIMUM CIRCUIT AMPERES
- MCB MAIN CIRCUIT BREAKER
- MDF MAIN DISTRIBUTION FRAME
- MLO MAIN LUGS ONLY
- MPOP MAIN POINT OF PRESENCE
- MSB MAIN SWITCHBOARD
- MTD MOUNTED
- MH MOUNTING HEIGHT/MANHOLE
- NEC NATIONAL ELECTRICAL CODE
- NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
- NF/SS NONFUSED SAFETY SWITCH
- NO NUMBER
- OC ON CENTERS
- P POLE, POLES
- ∅ PHASE
- PNL PANEL
- PVC POLYVINYL CHLORIDE
- RAF RETURN AIR FAN
- RGS RIGID GALVANIZED STEEL
- RX REMOVE EXISTING
- TYP TYPICAL
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR
- UH UNIT HEATER
- V VOLT, VOLTS
- VR VANDALL RESISTANT
- WP WEATHERPROOF
- W WATTS, WIRE, WIRES
- XFMR TRANSFORMER
- TTB TELEPHONE TERMINAL BOARD
- UTP UNSHIELDED TWISTED PAIR
- UON UNLESS OTHERWISE NOTED



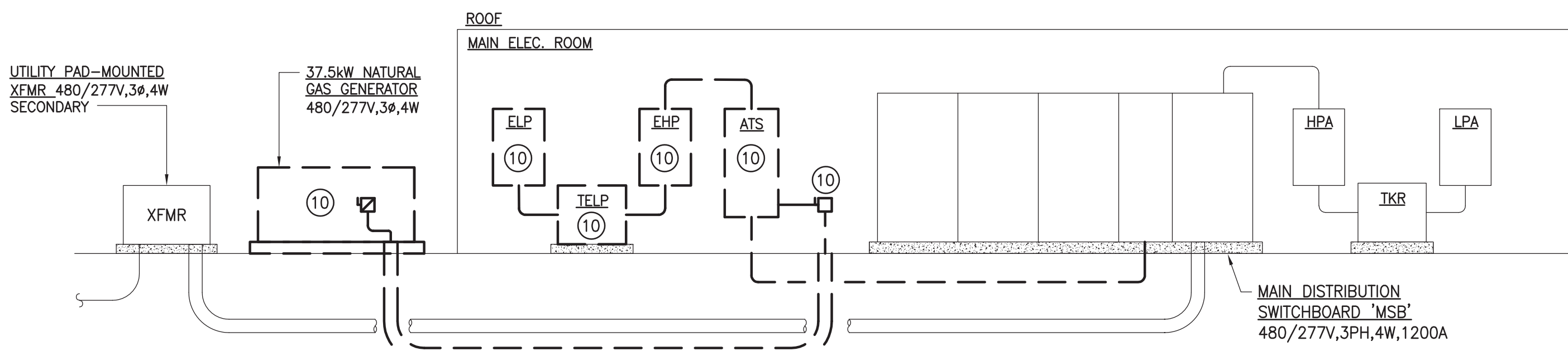
**PARTIAL GROUNDING SINGLE LINE SCHEMATIC DIAGRAM**  
SCALE: NONE



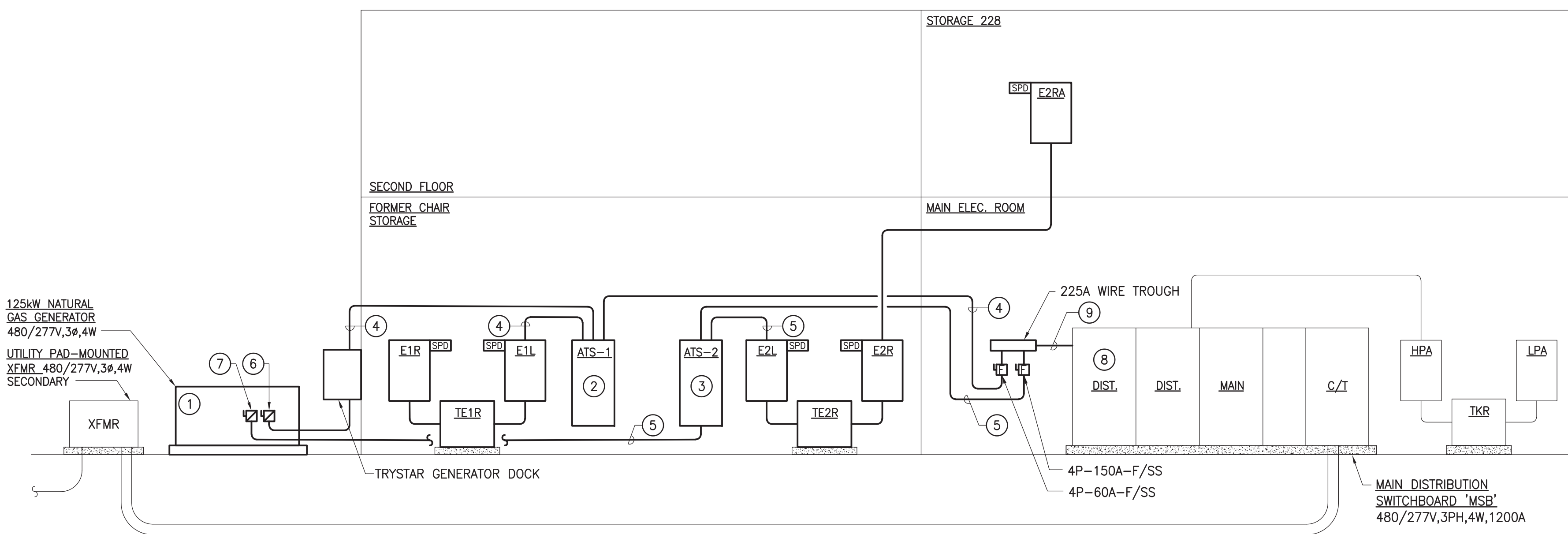
**GROUNDING BUS BAR**  
SCALE: NONE



**CONCRETE HOUSEKEEPING PAD**  
SCALE: NONE



**PARTIAL SCHEMATIC POWER RISER DIAGRAM - DEMOLITION**



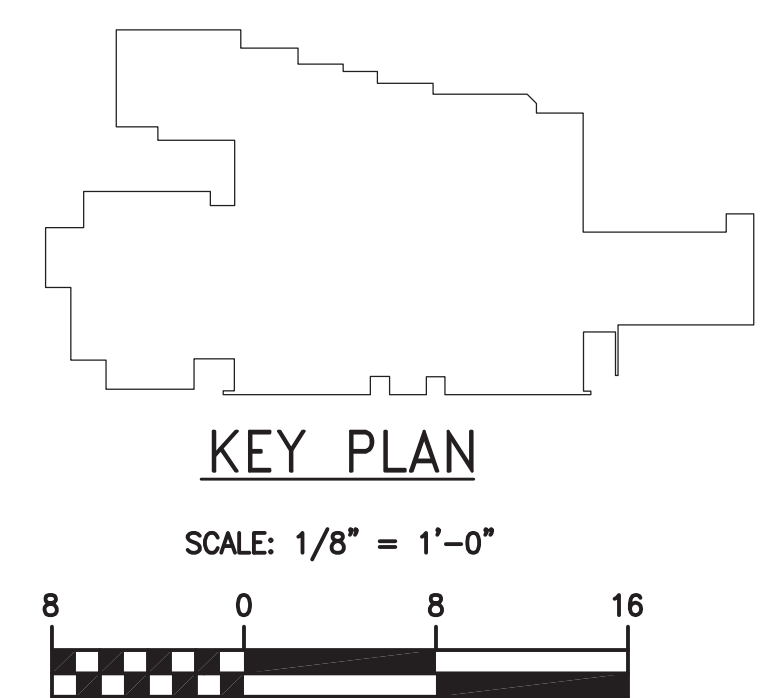
**PARTIAL SCHEMATIC POWER RISER DIAGRAM - NEW WORK**

**GENERAL NOTES:**

- REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
- PROVIDE TRANSFORMER PRIMARY DISCONNECTS, WHERE INDICATED, SIZED TO MATCH (OR EXCEED) THE RATING OF THE PRIMARY CB INDICATED ON THE DRY TYPE TRANSFORMER SCHEDULE.
- CONTRACTOR SHALL REDUCE FEEDER SIZE (IF REQUIRED) WITHIN 5'-0" OF EQUIPMENT TO ACCOMMODATE LUG SIZES.
- ALL PANELBOARDS WITH 84-POLES OR LESS SHALL BE IN A SINGLE INTERIOR BACKBOX.
- PROVIDE LABEL ON ALL TRANSFORMERS INDICATING WHERE IT IS SERVED FROM. LABEL SHALL COMPLY WITH NEC.
- PANEL CIRCUIT BREAKER KNOCKOUTS SHALL NOT BE REMOVED UNLESS NEEDED FOR USED CIRCUITS.
- MAINTAIN 3" CLEARANCES ON ALL SIDES OF THE GENERATOR.

**RISER NOTES:**

- MOUNT GENERATOR OUTPUT CIRCUIT BREAKERS WITHIN GENERATOR ENCLOSURE.
- 4P-100A, 42KA WITHSTAND RATING.
- 4P-150A, 42KA WITHSTAND RATING.
- (4) #6 + #10GW - 1". ROUTE ALONG EXTERIOR WALL TO NEW PANEL LOCATIONS.
- (4) #1/0 + #6GW - 1-1/2". ROUTE ALONG EXTERIOR WALL TO NEW PANEL LOCATIONS.
- 3P-60A ELECTRONIC TRIP LSI-TYPE CIRCUIT BREAKER (LIFE SAFETY LOADS).
- 3P-150A ELECTRONIC TRIP LSI-TYPE CIRCUIT BREAKER (STANDBY LOADS).
- CONFIRM EXISTING FUSE SIZE OF SWITCH PREVIOUSLY SERVING PORTABLES. IF FUSE IS SMALLER THAN 250A, REPLACE FUSE WITH 250A FUSE TO FEED NEW WIRE TROUGH. OTHERWISE, REUSE EXISTING FUSE IN FUSED SWITCH (OFF).
- (4) #4/0 + #4GW - 2-1/2".
- REMOVE EQUIPMENT ONCE NEW EMERGENCY INFRASTRUCTURE IS FULLY INSTALLED AND ACTIVE



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

REVISIONS	DESCRIPTION
NO.	DATE

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**ELECTRICAL LEGEND, CONVENTIONS, AND ABBREVIATIONS**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN#	22077
PROJECT MANAGER	DRH
DESIGNER	BSF

**E001**





**GENERAL NOTES:**

- REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL REDUCE FEEDER SIZE (IF REQUIRED) WITHIN 5'-0" OF EQUIPMENT TO ACCOMMODATE LUG SIZES.
- ALL PANELBOARDS WITH 84-POLES OR LESS SHALL BE IN A SINGLE INTERIOR BACKBOX.
- VERIFY APPROPRIATE BREAKERS ASSOCIATED WITH MECHANICAL EQUIPMENT TO BE ON EMERGENCY POWER ARE BEING RELOCATED TO EMERGENCY PANELS.
- RE-CIRCUIT ALL RESTROOM LIGHTING FIXTURES AND CONTROLS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- RE-CIRCUIT ALL FIRE ALARM BRANCH CIRCUITS ON NORMAL PANELS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

**DRAWING NOTES:**

- RE-CIRCUIT DEVICE/EQUIPMENT AND ASSOCIATED ELECTRICAL APPURTENANCES TO INDICATED EMERGENCY PANEL. REFER TO PANEL SCHEDULES FOR MORE INFORMATION. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- PANEL WITH CIRCUITS TO BE RELOCATED TO EMERGENCY PANELS. REFER TO PANEL SCHEDULES FOR MORE INFORMATION.
- RE-CIRCUIT ALL LIFE SAFETY BRANCH CIRCUITS (LIGHTING/FA) ON THIS PANEL TO NEW EMERGENCY E1 PANELS (AND RE-CIRCUIT ALL NON-LIFE SAFETY BRANCH CIRCUITS ON THIS PANEL TO NEW EMERGENCY E2 PANELS. REFER TO PANEL SCHEDULES FOR MORE INFORMATION. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- GENERATOR TO REMAIN ACTIVE AND RUNNING CURRENT EMERGENCY LOADS UNTIL NEW GENERATOR IS INSTALLED. ONCE NEW GENERATOR IS INSTALLED, RELOCATE REMAINING CIRCUITS TO NEW EMERGENCY PANELS AND REMOVE EXISTING GENERATOR AND EXISTING EMERGENCY EQUIPMENT.
- WALK-IN COOLER.
- WALK-IN FREEZER.

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**ALBAN ENGINEERING, INC.**  
303 INTERSTATE CIRCLE  
HUNT VALLEY, MD 21080  
www.albanengineering.com 410.842.6411

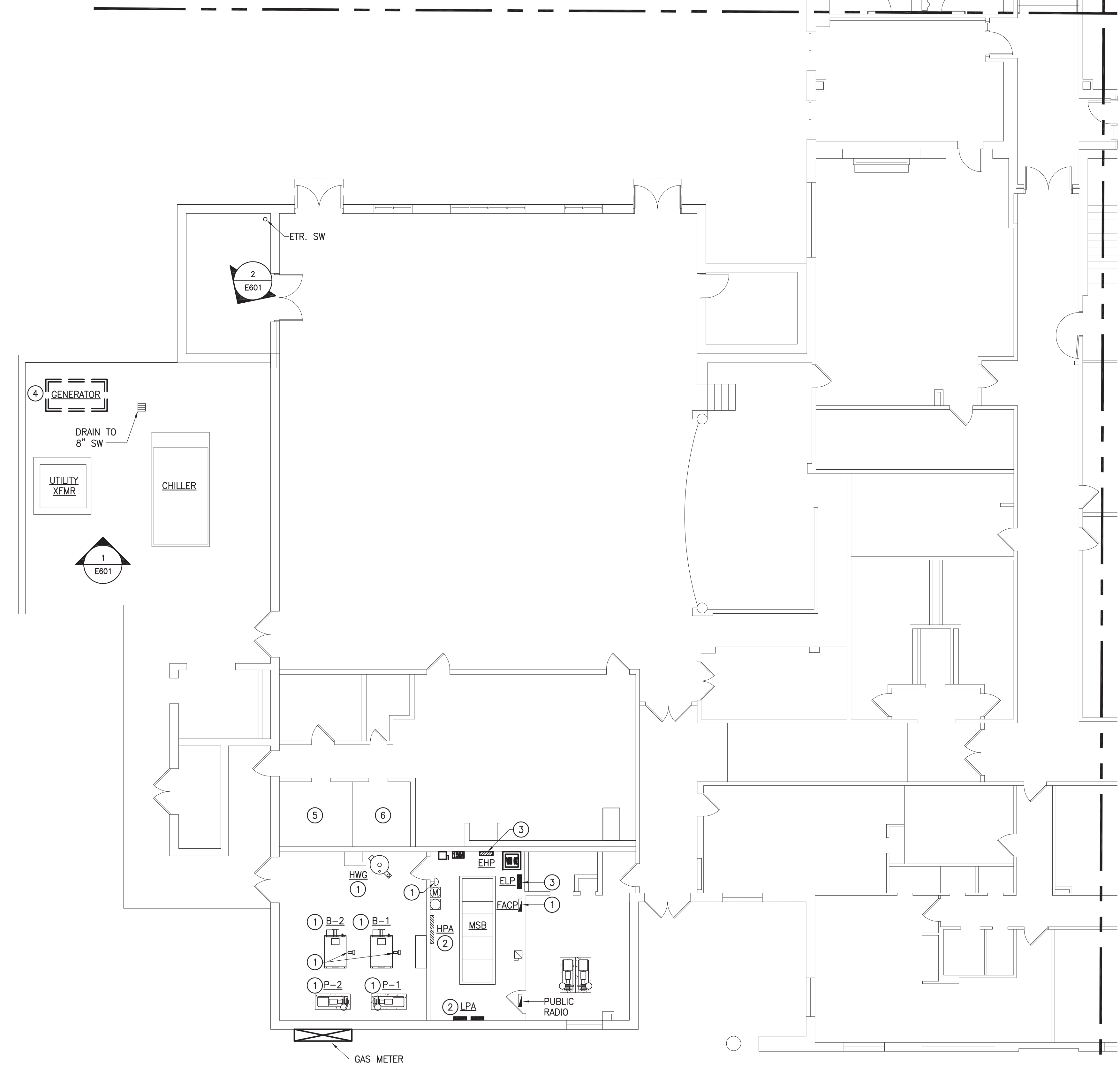
**PARTIAL FLOOR PLAN - AREA A**  
**- DEMOLITION**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN# 22077  
PROJECT MANAGER DRH  
DESIGNER BSF

**ED101**  
BID SET  
06-09-2023

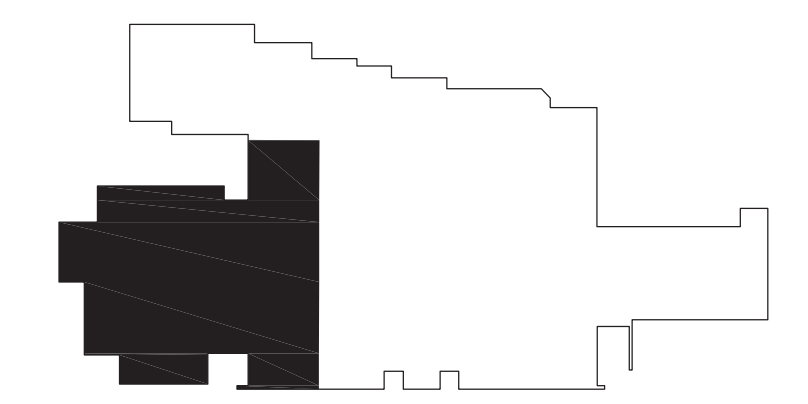
MATCHLINE - AREA C

MATCHLINE - AREA B



PARTIAL FLOOR PLAN - AREA A

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



KEY PLAN

SCALE: 1/8" = 1'-0"  
8 0 8 16

**GENERAL NOTES:**

- REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL REDUCE FEEDER SIZE (IF REQUIRED) WITHIN 5'-0" OF EQUIPMENT TO ACCOMMODATE LUG SIZES.
- ALL PANELBOARDS WITH 84-POLES OR LESS SHALL BE IN A SINGLE INTERIOR BACKBOX.
- VERIFY APPROPRIATE BREAKERS ASSOCIATED WITH MECHANICAL EQUIPMENT TO BE ON EMERGENCY POWER ARE BEING RELOCATED TO EMERGENCY PANELS.
- RE-CIRCUIT ALL RESTROOM LIGHTING FIXTURES AND CONTROLS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- ALL NEW EMERGENCY RECEPTACLES SHALL BE TAMPER-PROOF AND RED IN COLOR.
- RE-CIRCUIT ALL FIRE ALARM BRANCH CIRCUITS ON NORMAL PANELS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

**DRAWING NOTES:**

- GENERATOR TO REMAIN ACTIVE AND RUNNING CURRENT EMERGENCY LOADS UNTIL NEW GENERATOR IS INSTALLED. ONCE NEW GENERATOR IS INSTALLED, RELOCATE REMAINING CIRCUITS TO NEW EMERGENCY PANELS AND REMOVE EXISTING GENERATOR AND EXISTING EMERGENCY EQUIPMENT.
- RE-CIRCUIT ALL LIGHTING FIXTURES AND CONTROLS IN THIS ROOM TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- UNDER ADD ALTERNATE #1, NEW EXHAUST FAN ON ROOF. MAKE ALL CONNECTIONS TO DISCONNECT PROVIDED WITH UNIT.
- COORDINATE LOCATION WITH GENERATOR GAS LINE. MAINTAIN 3' CLEARANCE.
- WALK-IN COOLER.
- WALK-IN FREEZER.

NO.	DATE	REVISIONS	DESCRIPTION

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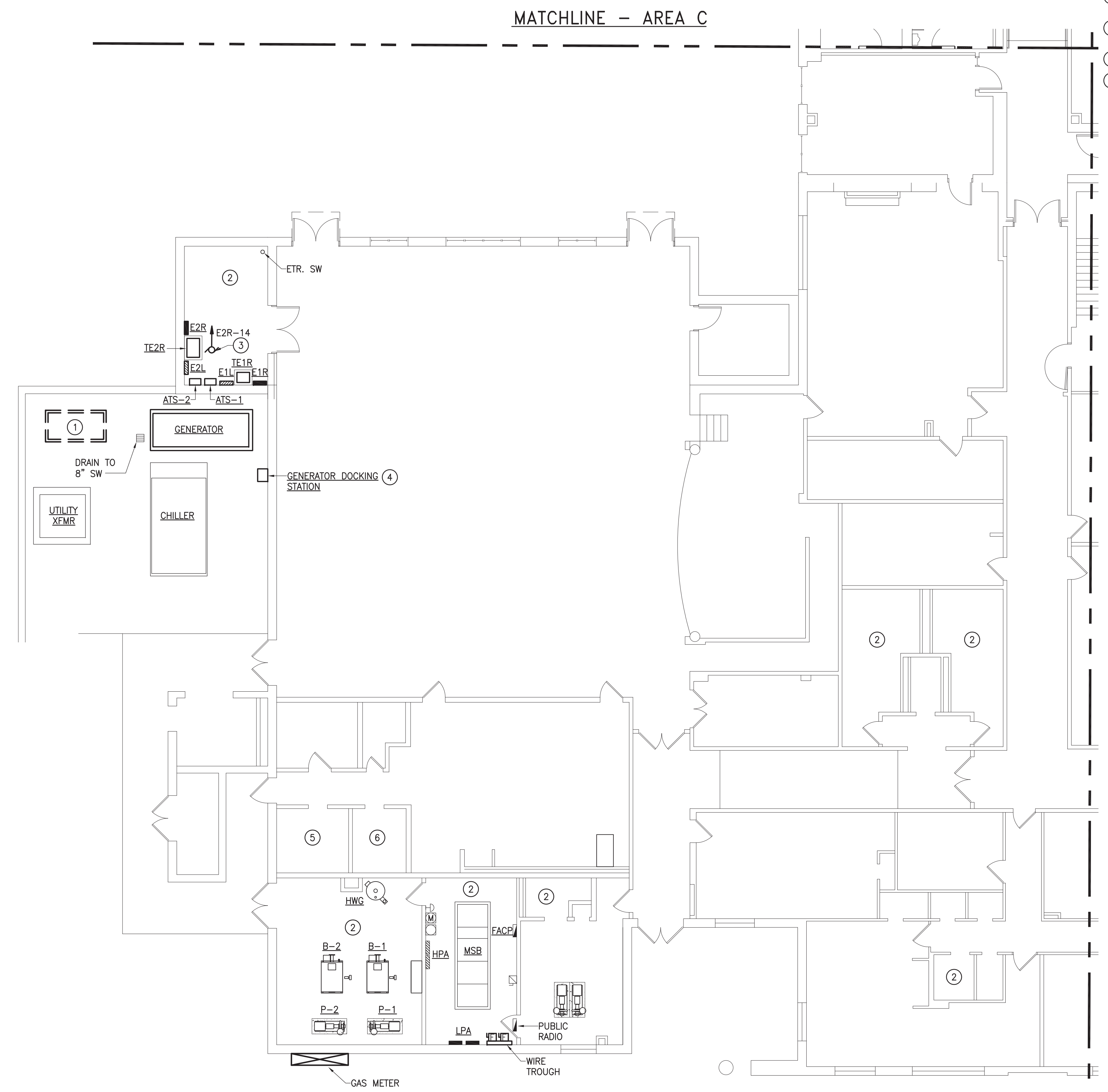
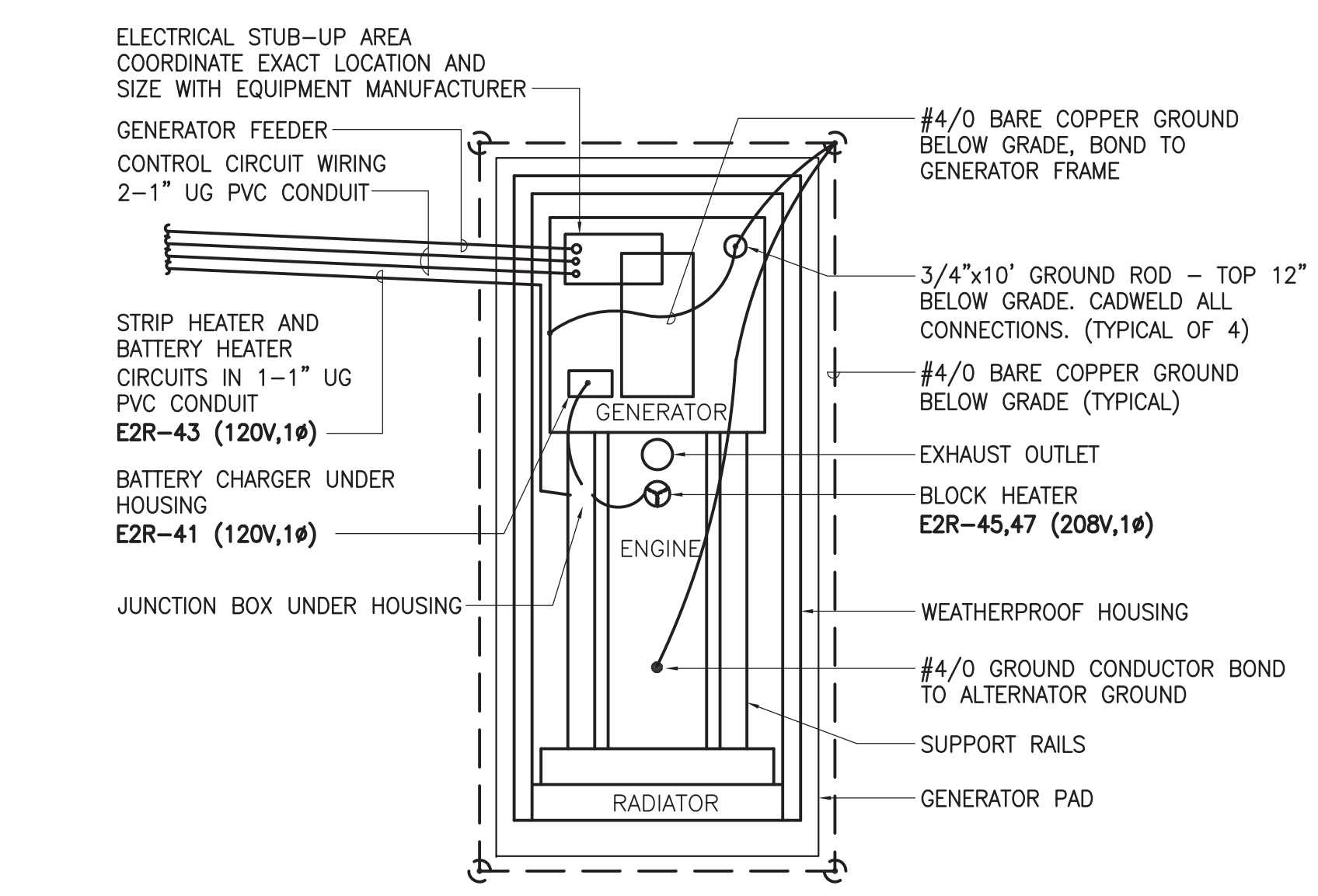
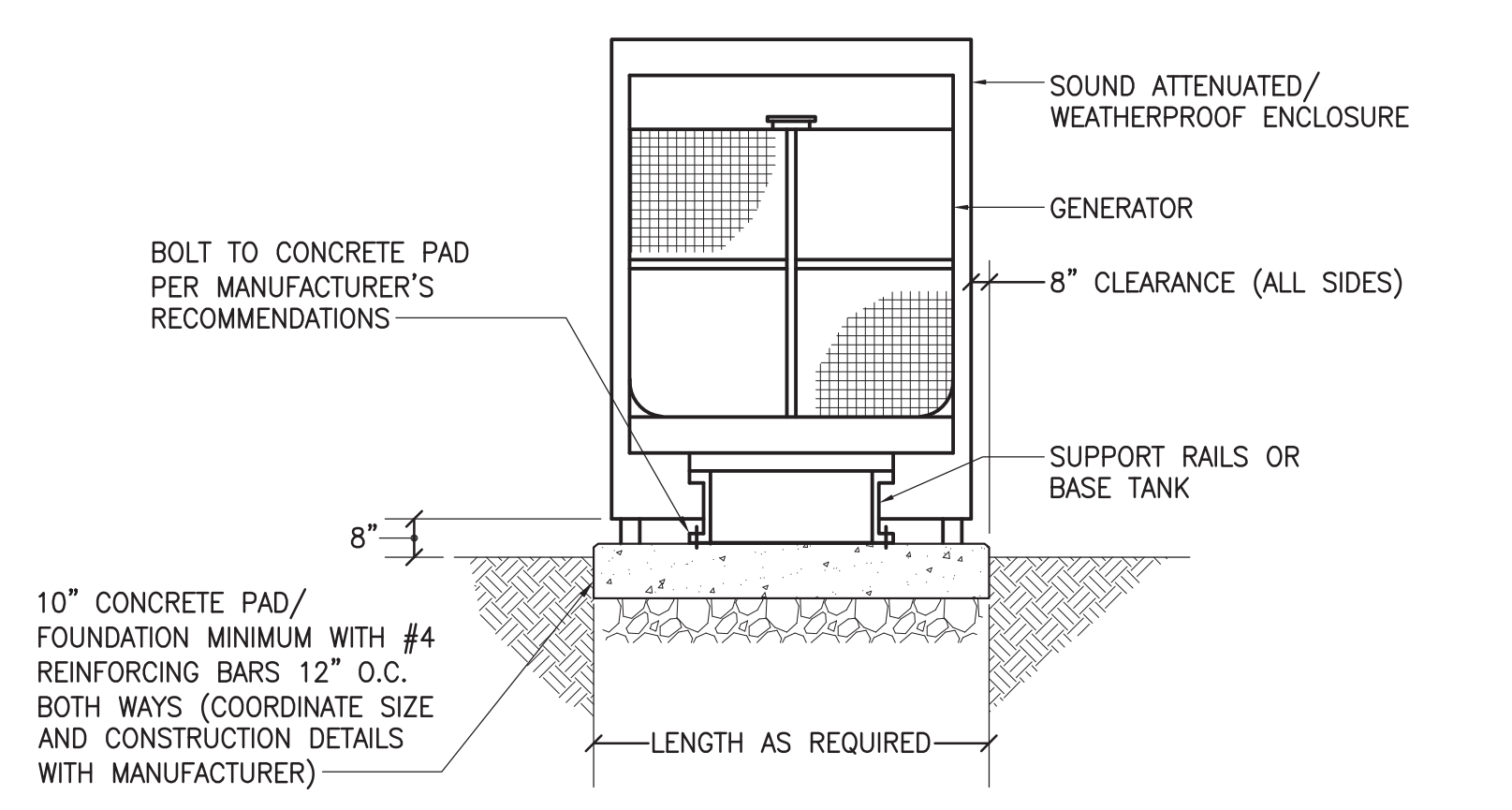
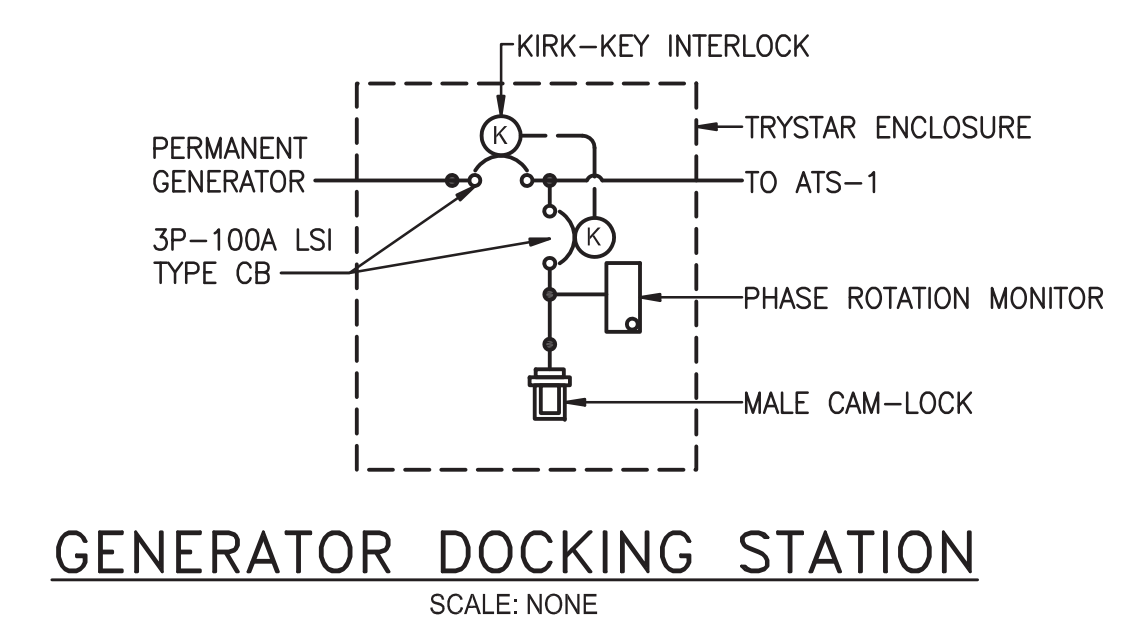
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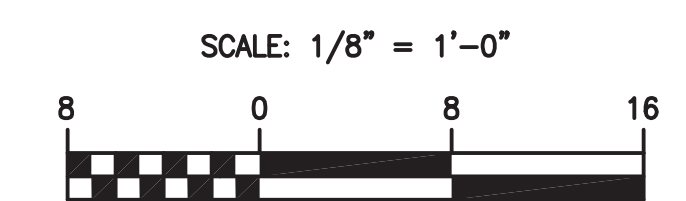
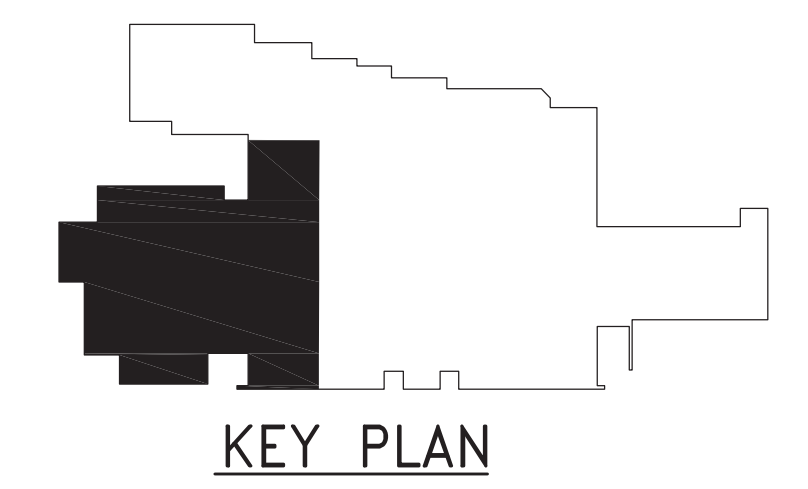
**PARTIAL FLOOR PLAN - AREA A**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN# 22077  
PROJECT MANAGER DRH  
DESIGNER BSF

**E101**  
BID SET  
06-09-2023



MATCHLINE - AREA B



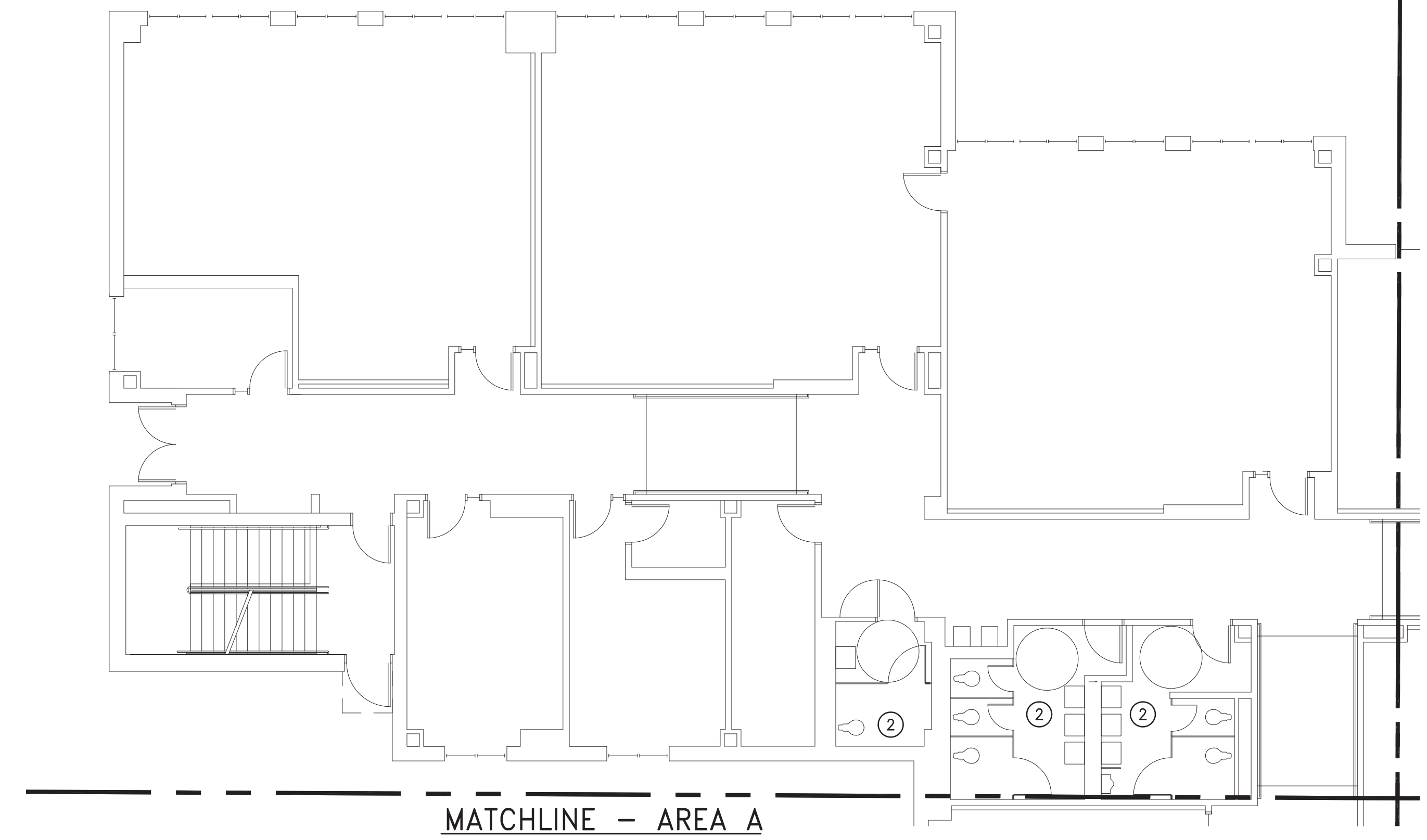


MATCHLINE - AREA B

MATCHLINE - AREA A



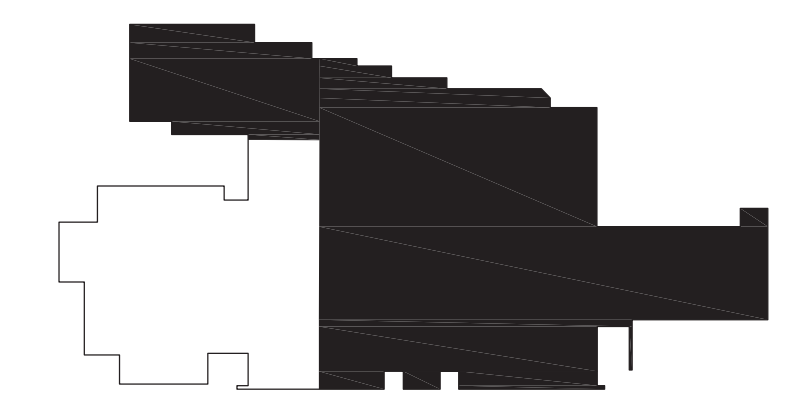
PARTIAL FLOOR PLAN - AREA B  
SCALE: 1/8" = 1'-0"



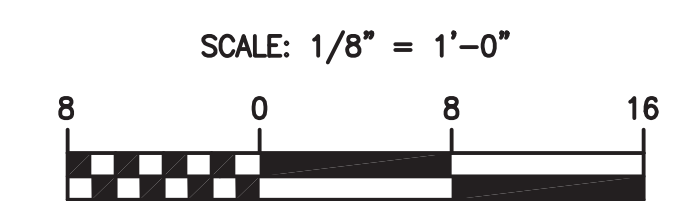
MATCHLINE - AREA A  
PARTIAL FLOOR PLAN - AREA C  
SCALE: 1/8" = 1'-0"

- GENERAL NOTES:**
- REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
  - CONTRACTOR SHALL REDUCE FEEDER SIZE (IF REQUIRED) WITHIN 5'-0" OF EQUIPMENT TO ACCOMMODATE LUG SIZES.
  - ALL PANELBOARDS WITH 84-POLES OR LESS SHALL BE IN A SINGLE INTERIOR BACKBOX.
  - VERIFY APPROPRIATE BREAKERS ASSOCIATED WITH MECHANICAL EQUIPMENT TO BE ON EMERGENCY POWER ARE BEING RELOCATED TO EMERGENCY PANELS.
  - ALL NEW EMERGENCY RECEPTACLES SHALL BE TAMPER-PROOF AND RED IN COLOR.
  - RE-CIRCUIT ALL RESTROOM LIGHTING FIXTURES AND CONTROLS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
  - RE-CIRCUIT ALL FIRE ALARM BRANCH CIRCUITS ON NORMAL PANELS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

- DRAWING NOTES:**
- MOUNT TO SUIT HEALTH REFRIGERATOR.
  - RE-CIRCUIT ALL LIGHTING FIXTURES AND CONTROLS IN THIS ROOM TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
  - IF NO EXISTING FIXTURE IS ON EMERGENCY POWER IN THE ADMIN RECEPTION, CIRCUIT (1) FIXTURE TO NEAREST EMERGENCY CIRCUIT WITH (2)#12 + #12GW - 3/4".
  - MOUNT TO SUIT PA RACK IN ADMIN SUITE. CONFIRM EXACT LOCATION WITH OWNER.



KEY PLAN



NO.	DATE	REVISIONS	DESCRIPTION

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**PARTIAL FLOOR PLAN - AREAS B&C**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN# 22077  
PROJECT MANAGER DRH  
DESIGNER BSF

**E102**  
BID SET  
06-09-2023



**GENERAL NOTES:**

- REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL REDUCE FEEDER SIZE (IF REQUIRED) WITHIN 5'-0" OF EQUIPMENT TO ACCOMMODATE LUG SIZES.
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- RE-CIRCUIT ALL FIRE ALARM BRANCH CIRCUITS ON NORMAL PANELS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

**DRAWING NOTES:**

- RE-CIRCUIT ALL LIGHTING FIXTURES AND CONTROLS IN THIS ROOM TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

NO.	DATE	REVISIONS	DESCRIPTION

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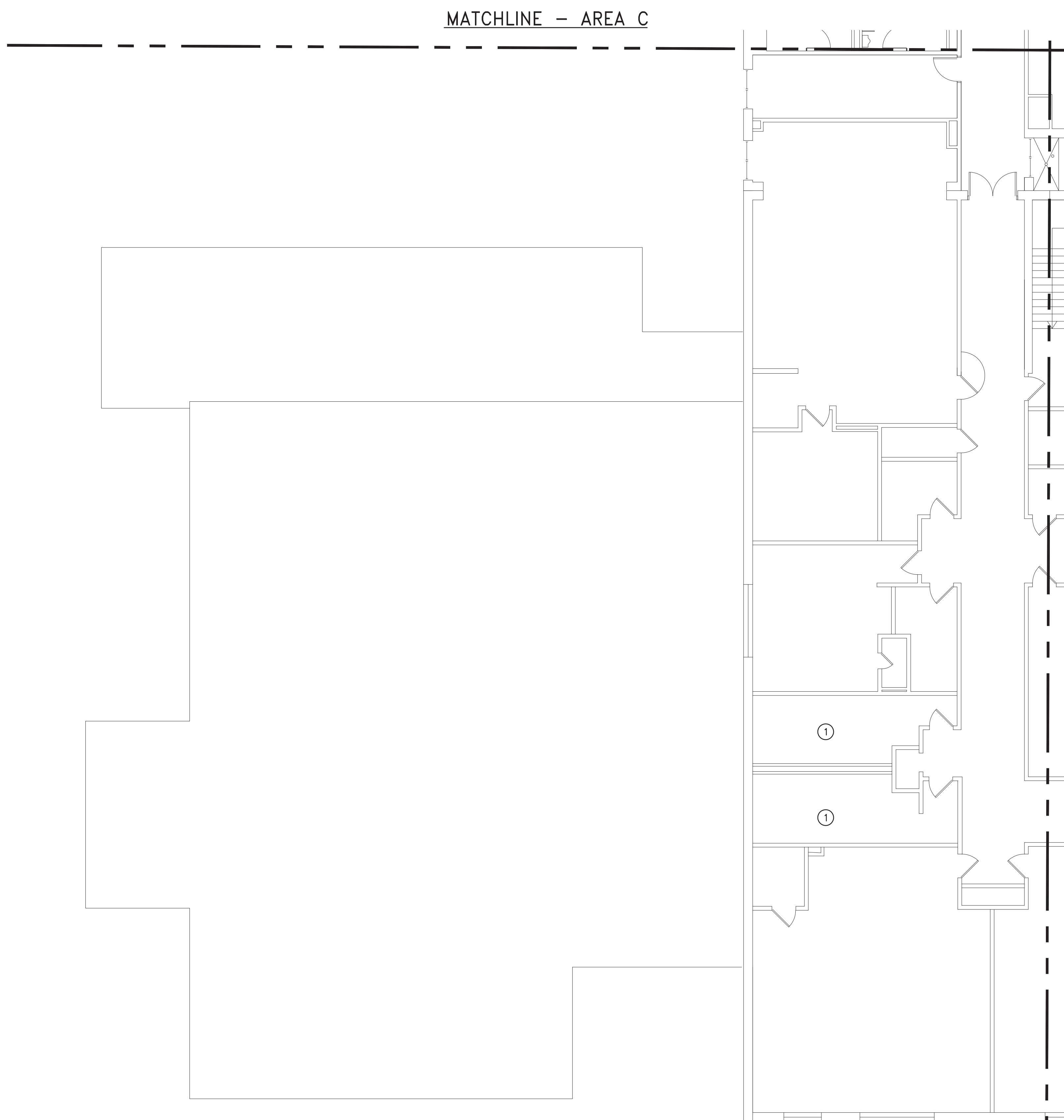
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LICENSE NO. 51896  
EXPIRATION DATE: 12-13-2023\*

**ALBAN**  
ENGINEERING, INC.  
303 INTERSTATE CIRCLE  
HUNTS VALLEY, MD 21080  
www.albanengineering.com 410.842.6411

**PARTIAL SECOND FLOOR PLAN**  
- AREA A  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN#	22077
PROJECT MANAGER	DRH
DESIGNER	BSF

**E103**  
BIO SET  
06-09-2023

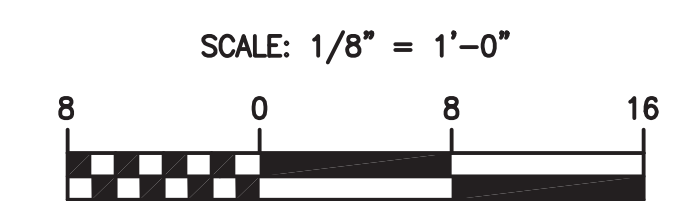


**PARTIAL SECOND FLOOR PLAN - AREA A**

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



**KEY PLAN**



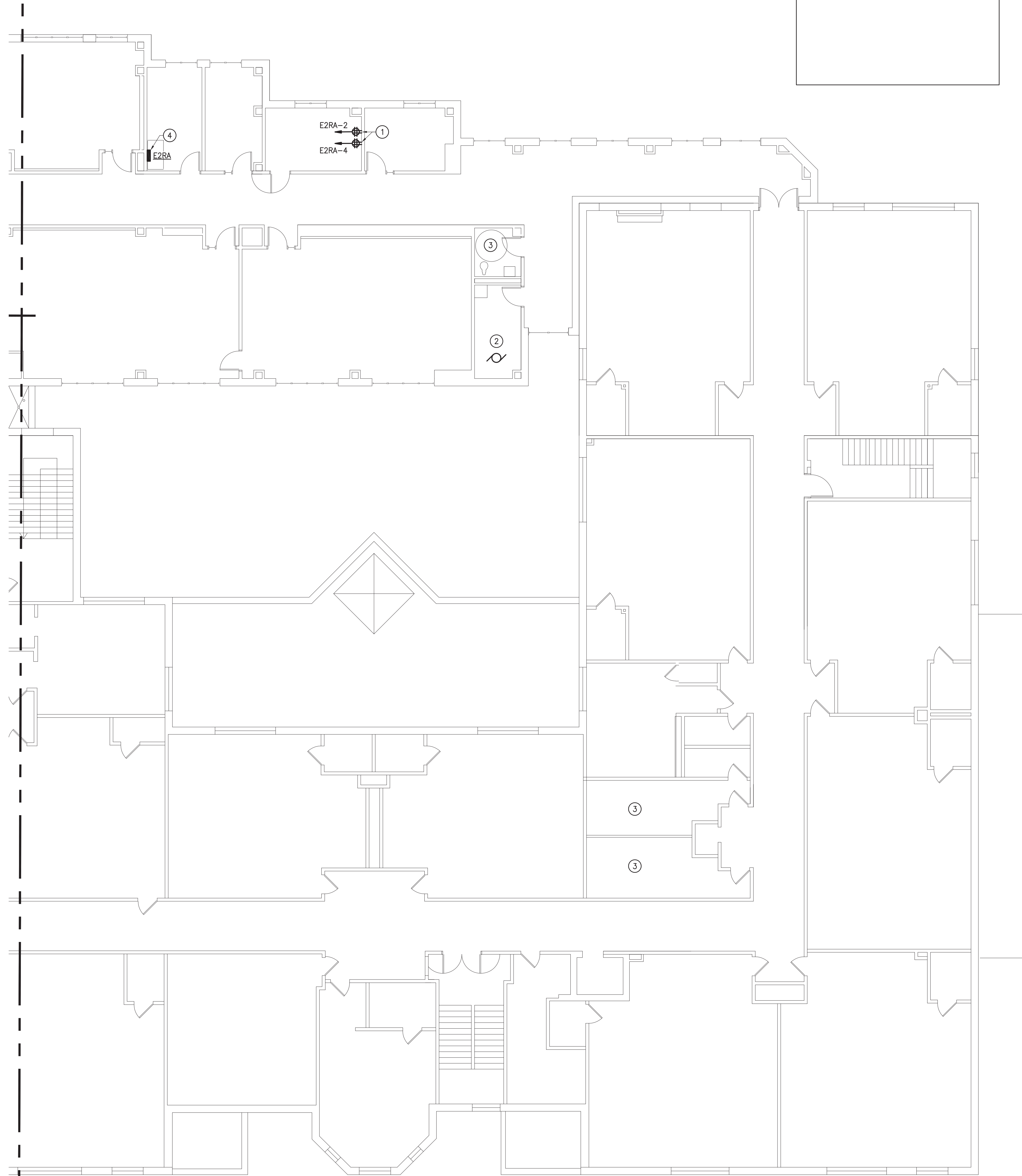
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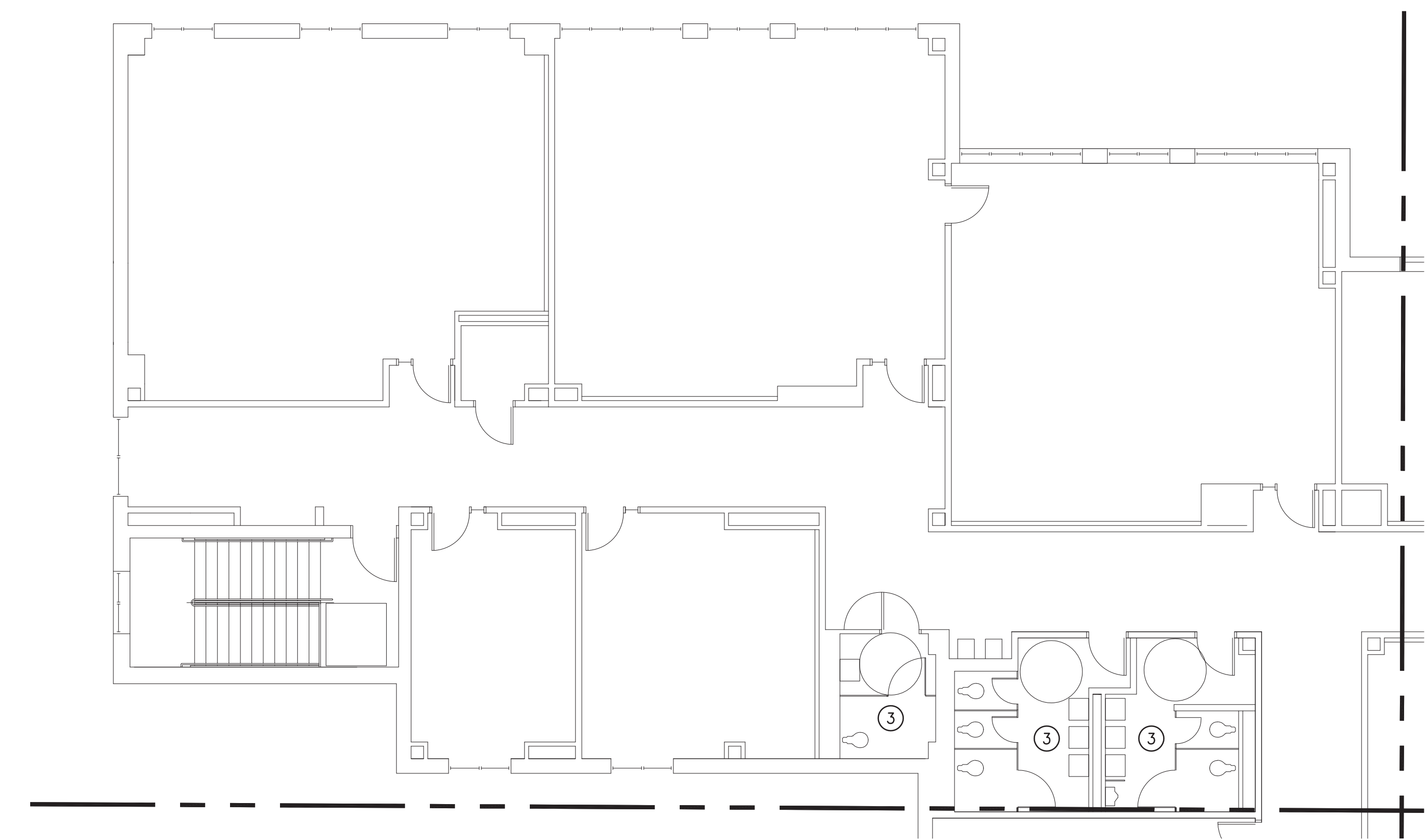


MATCHLINE - AREA B

MATCHLINE - AREA A



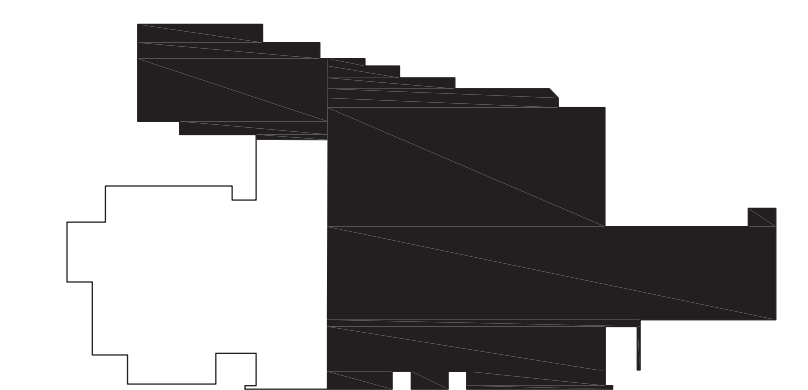
PARTIAL SECOND FLOOR PLAN - AREA B  
SCALE: 1/8" = 1'-0"



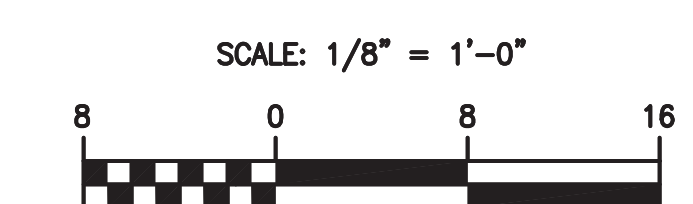
MATCHLINE - AREA A

MATCHLINE - AREA B

PARTIAL FLOOR PLAN - AREA C  
SCALE: 1/8" = 1'-0"



KEY PLAN



**GENERAL NOTES:**

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- ALL NEW EMERGENCY RECEPTACLES SHALL BE TAMPER-PROOF AND RED IN COLOR.
- RE-CIRCUIT ALL RESTROOM LIGHTING FIXTURES AND CONTROLS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- RE-CIRCUIT ALL FIRE ALARM BRANCH CIRCUITS ON NORMAL PANELS TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.

**DRAWING NOTES:**

- MOUNT TO SUIT DATA RACKS.
- RE-CIRCUIT HWG & RECIRC PUMP ON SECOND FLOOR FROM PANEL E2RA AS INDICATED ON PANEL SCHEDULE.
- RE-CIRCUIT ALL LIGHTING FIXTURES AND CONTROLS IN THIS ROOM TO BE SERVED FROM ASSOCIATED E1 PANEL. MODIFY/EXTEND CIRCUIT AS REQUIRED.
- MAINTAIN 3" CLEARANCE IN FRONT OF PANEL. PROVIDE NEMA 3R PANEL.

NO.	DATE	REVISIONS	DESCRIPTION

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**PARTIAL SECOND FLOOR PLAN - AREAS B&C**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN#	22077
PROJECT MANAGER	DRH
DESIGNER	BSF

**E104**

BID SET  
06-09-2023





1 GENERATOR/TRANSFORMER



2 NEW EMERGENCY PANEL LOCATION



3 MAIN BUILDING IT ROOM

DRY TYPE TRANSFORMER SCHEDULE											
XFMR	KVA	PRIMARY			PRIMARY WIRING	SECONDARY WIRING	SECONDARY		NEUTRAL/CASE GND	REMARKS	MOUNTING DISCRPTION
		VOLTAGE	#	CB			VOLTAGE	#			
TE1R	15	480	3	30	3#10+10GW-3/4"C	4#6+10GW-1 1/4"C	208/120	3	60	#8	FLOOR
TE2R	45	480	3	90	3#3+8GW-1 1/4"C	4#10+8GW-2"C	208/120	3	125	#6	FLOOR

MSB											
MOUNTING: FREE STANDING			A.I.C. RATING: 100,000			LOCATION: MAIN ELEC RM					
VOLTAGE: 480/277V, 3ø, 4 WIRE			1200 AMPERE MAIN BUS			1200 AMPERE MAIN CIRCUIT BREAKER					
DISTRIBUTION SECTION											
FDR NO	SERVES	CIRCUIT BREAKER	WIRING	REMARKS	CONN KVA						
		P   FRAME   TRIP	SETS   NO   SIZE   GND   C								
1	PANEL HPB	3	400								
2	PANEL HPC	3	400								
3	PANEL HPA	3	400								
4	CHILLER	3	400								
5	GYMNASIUM PANELS	3	400								
6	EMERGENCY WIRE TROUGH	3	400	225	1	4	4/0	4	2-1/2	VERIFY EXISTING FUSE	63.8
7	EXISTING CIRCUIT	3	200								
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
PROVIDE GROUND FAULT PROTECTION AT MAIN CIRCUIT BREAKER					TOTAL CONNECTED LOAD:					63.8	KVA

FUSED PANEL E1L										
MOUNTING: SURFACE			LOCATION: FORMER CHAIR STORAGE							
VOLTAGE: 480/277V, 3ø, 4W			100 AMPERE BUS			60 A MCB				
100 AMPERE BUS			100% RATED NEUTRAL BUS			42,000 A.I.C.				
CONN KVA	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA	
1.0	1	LTG - ADMIN AREA	1	20 2 12 12 3/4	2	PANEL E1R (VIA XFMR TE1R)	3	30	REFER TO XFMR SCHEDULE	2.1
1.2	3	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	4				1.8	
1.0	5	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	6				1.8	
1.2	7	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	8				1.8	
1.4	9	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	10				1.8	
1.0	11	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	12				1.8	
1.0	13	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	14				1.8	
1.4	15	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	16				1.8	
1.2	17	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	18				1.8	
1.2	19	EX LIGHTING CIRCUIT*	1	20 2 12 12 3/4	20				1.8	
	21				22					
	23				24					
	25				26					
	27				28					
	29				30					
	31				32					
	33				34					
	35				36					
	37				38					
	39				40	SPD	3	30 4 10 10 3/4	0.1	
	41				42				0.1	
TOTAL CONNECTED LOAD					17.6		KVA PER PHASE:		A 6.6 B 5.9 C 5.1	

FUSED PANEL E1R									
MOUNTING: SURFACE			LOCATION: FORMER CHAIR STORAGE						
VOLTAGE: 208/120V, 3ø, 4W			100 AMPERE BUS			60 A MCB			
100 AMPERE BUS			100% RATED NEUTRAL BUS			42,000 A.I.C.			
CONN KVA	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA
1.5	1	1 FACP*	1	20 2 12 12 3/4	2	DEDICATED FA CIRCUIT	1	20 2 12 12 3/4	0.3
1.5	3	GYM LIGHTING*	1	20 2 12 12 3/4	4	DEDICATED FA CIRCUIT	1	20 2 12 12 3/4	0.3
1.5	5	GYM LIGHTING*	1	20 2 12 12 3/4	6	DEDICATED FA CIRCUIT	1	20 2 12 12 3/4	0.3
	7				8	DEDICATED FA CIRCUIT	1	20 2 12 12 3/4	0.3
	9				10				
	11				12				
	13				14				
	15				16				
	17				18				
	19				20				
	21				22				
	23				24				
	25				26				
	27				28				
	29				30				
	31				32				
	33				34				
	35				36				
	37				38				
	39				40	SPD	3	30 4 10 10 3/4	0.1
	41				42				0.1
TOTAL CONNECTED LOAD					5.7		KVA PER PHASE:		A 2.1 B 1.8 C 1.8

PANEL E2L									
MOUNTING: SURFACE			LOCATION: FORMER CHAIR STORAGE						
VOLTAGE: 480/277V, 3ø, 4W			150 AMPERE BUS			150 A MCB			
150 AMPERE BUS			100% RATED NEUTRAL BUS			42,000 A.I.C.			
CONN KVA	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA
3.9	1				2				0.0
3.9	3	CIRCULATING PUMP (P-1)	3	30 3 10 10 3/4	4	CIRCULATING PUMP (P-2)	3	30 3 10 10 3/4	0.0
3.9	5				6				0.0
0.5	7	TIME CLOCKS*	1	20 2 10 10 3/4	8				
0.5	9	TIME CLOCKS*	1	20 2 10 10 3/4	10				
	11				12				
	13				14				
	15				16				
	17				18				
	19				20				
	21				22				
	23				24				
	25				26				
	27				28				
	29				30				
	31				32				
	33				34				
	35				36				
10.7	37	PANEL E2R (VIA XFMR TE2R)	3	90	38				
11.1	39				40	SPD	3	30 4 10 10 3/4	
	41				42				
TOTAL CONNECTED LOAD					46.2		KVA PER PHASE:		A 15.1 B 16.1 C 15.0

PANEL E2R									
MOUNTING: SURFACE			LOCATION: FORMER CHAIR STORAGE						
VOLTAGE: 208/120V, 3ø, 4W			225 AMPERE BUS			150 A MCB			
225 AMPERE BUS			100% RATED NEUTRAL BUS			42,000 A.I.C.			
CONN KVA	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA
0.6	1	HWG-1 BOILER ROOM	1	20 2 12 12 3/4	2	RADIO AMPLIFICATION**	1	20 2 12 12 3/4	0.8
1.2	3	BOILER-1	1	20 2 12 12 3/4	4	NABP**	1	20 2 12 12 3/4	0.8
1.2	5	BOILER-2	1	20 2 12 12 3/4	6	PA SYSTEM**	1	20 2 12 12 3/4	0.8
1.4	7	PUMPS ABOVE BOILERS	1	20 2 12 12 3/4	8	ELEV. CAB LIGHTS**	1	20 2 12 12 3/4	0.5
0.5	9	EPO	1	20 2 12 12 3/4	10	ELEV. PIT LIGHTS/REC**	1	20 2 12 12 3/4	0.5
0.5	11	OFFICE QUAD	1	20 2 12 12 3/4	12	ELEV. PIT LIGHTS/REC**	1	20 2 12 12 3/4	0.5
1.0	13	HEALTH FRIDGE	1	20 2 12 12 3/4	14	IT/DATA QUAD	1	20 2 12 12 3/4	0.6
2.6	15	FREEZER EVAPORATOR	2	40 2 8 10 3/4	16	IT/DATA QUAD	1	20 2 12 12 3/4	0.6
2.6	17	FAN			18				1.1
0.9	19	COOLER EVAPORATOR	2	15 2 12 12 3/4	20	COOLER CONDENSER	3	15 3 12 12 3/4	1.1
0.9	21	COIL			22				1.1
0.8	23	WALK-IN LIGHTS/HTRS	1	20 2 12 12 3/4	24				1.1
	25				26	FREEZER CONDENSER	3	15 3 12 12 3/4	1.1
	27				28				1.1
	29				30	REC - PA RACK	1	20 2 12 12 3/4	0.8
	31				32	ELEC ROOM FAN*	1	20 2 12 12 3/4	0.4
	33				34				
	35				36				
	37				38				
	39				40				
0.8	41	BATTERY CHARGER	1	20 2 12 12 3/4	42				
0.8	43	STRIP/BATTERY HEATER	1	20 2 12 12 3/4	44				
1.0	45	GEN BLOCK HEATER	2	20 2 12 12 3/4	46				
1.0	47				48				
1.4	49				50				0.1
1.3	51	PANEL E2RA	3	50 4 6 10 1	52	SPD	3	30 4 10 10 3/4	0.1
0.0	53				54				0.1
TOTAL CONNECTED LOAD					33.5		KVA PER PHASE:		A 10.7 B 11.7 C 11.1

PANEL E2RA									
MOUNTING: SURFACE			LOCATION: SECOND FLOOR STORAGE						
VOLTAGE: 208/120V, 3ø, 4W			100 AMPERE BUS			50 A MCB			
100 AMPERE BUS			100% RATED NEUTRAL BUS			42,000 A.I.C.			
CONN KVA	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CKT	DESCRIPTION	BREAKER P   AMPS	CIRCUIT WIRING NO   SIZE   GND   C	CONN KVA
0.6	1	HWG-2 - ADDITION	1	20 2 12 12 3/4	2	ADDITION IT/DATA QUAD	1	20 2 12 12 3/4	0.8
0.5	3	REC. PUMP - ADDITION	1	15 2 12 12 3/4	4	ADDITION IT/DATA QUAD	1	20 2 12 12 3/4	0.8
	5				6				
	7				8				
	9				10				
	11				12				
	13				14				
	15				16				
	17				18				
	19			</					



**PLUMBING GENERAL NOTES:**

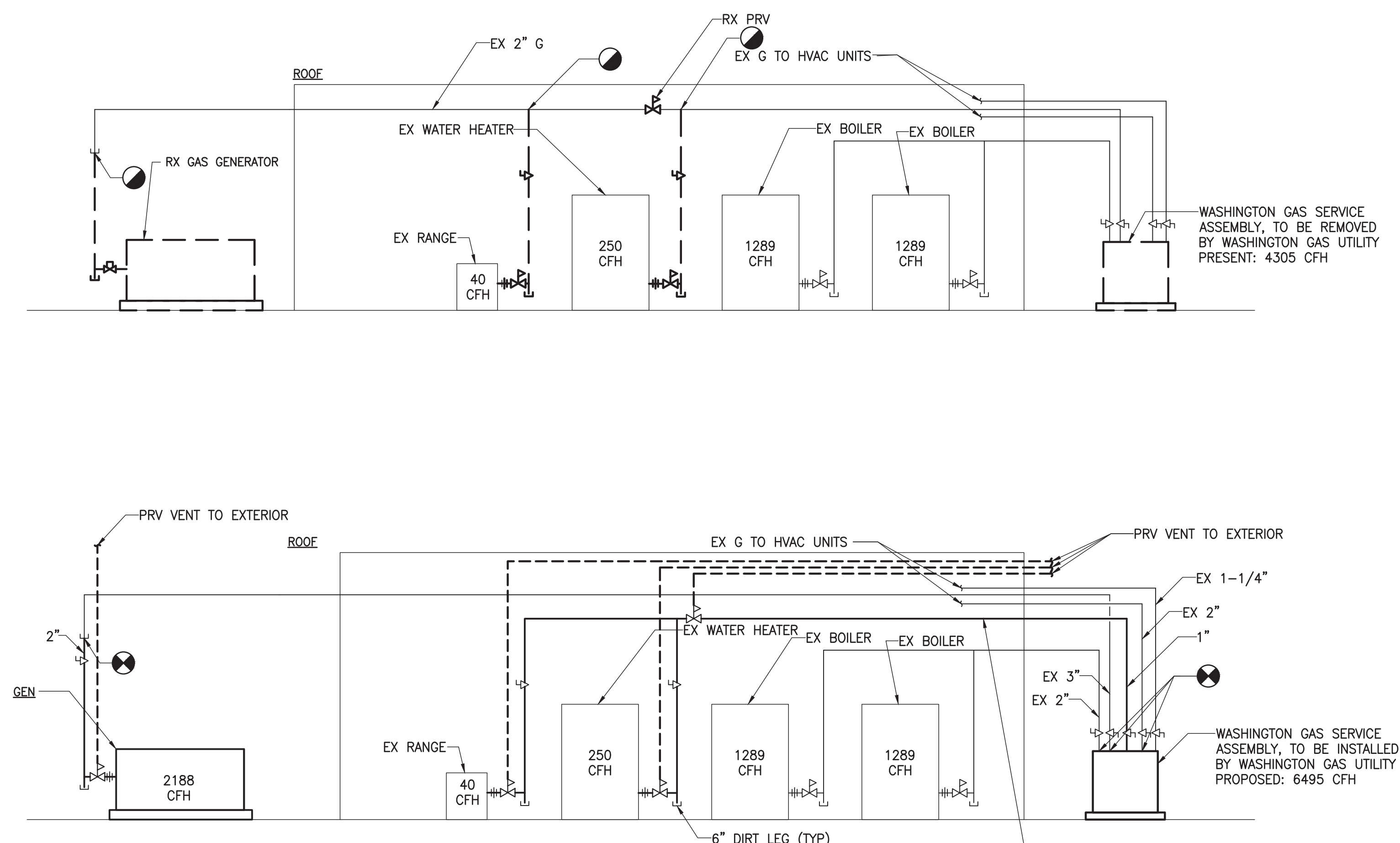
- A. COORDINATE NEW WORK BETWEEN ALL DISCIPLINES.
- B. REFER TO SECTIONS ON ARCHITECTURAL AND MECHANICAL DRAWINGS FOR PIPE ROUTING THROUGH THE FACILITY.
- C. COORDINATE PLUMBING PIPING ENCLOSURES WITH ARCHITECTURAL DRAWINGS PRIOR TO SETTING PIPING BELOW SLABS.
- D. FIELD VERIFY PIPING MATERIALS AND SIZES PRIOR TO CONNECTION THERETO.
- E. INSTALL PIPING TO ALLOW ACCESS TO VALVES.
- J. WHERE HOT AND COLD WATER PIPING DROPS INTO PIPE CHASE, THE SIZE SHOWN FOR THE PIPE DROPS SHALL BE USED TO THE LAST FIXTURE.
- K. ITEMS SUCH AS ACCESS DOORS, RISE AND DROPS IN PIPING, ETC., ARE INDICATED ON THE DRAWINGS FOR CLARITY OR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR THESE ITEMS AS REQUIRED ELSEWHERE IN THE CONTRACT DOCUMENTS.
- L. FIXTURES SUBJECT TO INTERMITTENT OR CONTINUOUS PRESSURE BACK-SIPHONAGE SHALL BE PROVIDED WITH A BACKFLOW PREVENTION DEVICE.
- M. COORDINATE SETTING OF KITCHEN FLOOR SINKS AND FLOOR DRAINS WITH LOCAL PLUMBING INSPECTOR.
- N. ALL PIPING NOT INDICATED IN CHASES SHALL BE LOCATED ABOVE CEILING AS HIGH AS POSSIBLE. COORDINATE ROUTING OF PIPING WITH OTHER DISCIPLINES.
- O. REFER TO ALL ARCHITECTURAL DRAWINGS FOR RATED WALL ASSEMBLY LOCATIONS.

**MISCELLANEOUS**

- ① REFERENCE TO DRAWING NOTE
- #/P/# DETAIL REFERENCE: DETAIL NUMBER/DRAWING NUMBER
- ITEMS SHOWN DASHED/HEAVY ARE TO BE REMOVED
- ITEMS SHOWN SOLID/LIGHT ARE EXISTING TO REMAIN
- ITEMS SHOWN DASHED-DOTTED/LIGHT ARE TO OCCUR IN FUTURE PHASES

**DEMOLITION NOTES:**

- 1. DEMOLITION DRAWINGS ARE DIAGRAMMATIC IN NATURE; NO ATTEMPT HAS BEEN MADE TO SHOW ALL EXISTING ELECTRICAL WORK IN AREAS INDICATED TO BE RENOVATED. ALL EXISTING ELECTRICAL WORK IS TO BE REMOVED UNLESS OTHERWISE NOTED. WHEN AN ITEM TO BE REMOVED, REMOVE ALL ASSOCIATED ELECTRICAL WORK BACK TO POINT-OF-SOURCE.
- 2. WHERE WORK PASSES THROUGH THE RENOVATION AREA TO SERVE OTHER PORTIONS OF THE BUILDING, OR WORK IN THE RENOVATION AREA INDICATED TO BE REMAIN, IT SHALL BE SUITABLY RELOCATED AND THE SYSTEMS RESTORED TO NORMAL. COORDINATE ANY OUTAGES WITH OWNER 7 DAYS IN ADVANCE.
- 3. WORK INDICATED TO REMAIN SHALL BE SUITABLY PROTECTED AGAINST DAMAGE.
- 4. TURN OVER ALL CIRCUIT BREAKERS, LIGHTING AND APPLIANCE PANELBOARD COVERS, CONTACTORS, MOTOR STARTERS, TIME CLOCKS, BATTERY PACKS, CLOCKS, SPEAKERS, ETC THAT ARE IN GOOD CONDITION TO OWNER. CONTACT OWNER FOR VERIFICATION IF ITEMS ARE IN QUESTIONABLE CONDITION.
- 5. COORDINATE ALL DEMOLITION AND CONSTRUCTION ACTIVITIES WITH THE OWNER TO MINIMIZE DISRUPTION OF THE NORMAL DAILY FUNCTIONING OF THE OWNERS OCCUPIED AREAS.
- 6. REMOVE AND REINSTALL ALL EXISTING CEILING MOUNTED DEVICES INDICATED TO REMAIN AS REQUIRED TO SUIT NEW CEILING INSTALLATION.
- 7. ALL REMOVED DEVICE WALL PENETRATIONS SHALL BE PATCHED AND PAINTED TO MATCH EXISTING WALL COLOR OR WALL COLOR PER ARCHITECT'S DIRECTION.



- 1. THE CONTRACTOR SHALL VERIFY ALL CAPACITIES AND PIPE SIZES.
- 2. PAINT ALL GAS PIPING YELLOW.
- 3. GAS PIPING SIZED PER 2018 IFGC TABLE 402.4(5).

**LONGEST RUN = 100'**

**LEGEND**

SYMBOLS		SYMBOLS		ABBREVIATIONS		ABBREVIATIONS	
SYMBOL	DEFINITION	SYMBOL	DEFINITION	ABBREV.	DEFINITION	ABBREV.	DEFINITION
---	COLD WATER	□	FLOOR SINK	140'	140° DOMESTIC HOT WATER	HYD	HYDRAULIC
---	TEMPERED WATER (110°)	⊙ ( # )	ROOF DRAIN (W/ SQ.FT INDICATED)	140°R	140° DOMESTIC HOT WATER RETURN	IN	INCHES
---	TEMPERED WATER RETURN (110°)	U	TRAP (ELEVATION)	AAV	AUTOMATIC AIR VENT	I.E.	INVERT ELEVATION
---	140° DOMESTIC HOT WATER	JL	VENT THROUGH ROOF (ELEVATION)	ABV	ABOVE	IW	INDIRECT WASTE
---	140° DOMESTIC HOT WATER RETURN	JL	VENT THROUGH ROOF (PLAN)	AD	AREA DRAIN	LOC	LIMIT OF CONTRACT
---	TEMPERED WATER	○	VENT THROUGH ROOF (PLAN)	AFF	ABOVE FINISHED FLOOR	MAV	MANUAL AIR VENT
---	FIRE LINE	○	MIXING VALVE	ANC	ANCHOR	NFGH	NON-FREEZE GROUND HYDRANT
---	SPRINKLER LINE	○	METER (FLUID OR GAS)	AP	ACCESS PANEL	NFWH	NON-FREEZE WALL HYDRANT
---	SANITARY	○	INCHES	APPROX	APPROXIMATE	NRS	NON-RISING STEM & YOKE
---	VENT	”	FEET	AQ	AQUASTAT	OHD	OPEN HUB DRAIN
---	STORM WATER	”	HOSE BIBB (PLAN)	AV	ACID VENT	O,S,&Y	OUTSIDE STEM & YOKE VALVE
---	PUMPED DISCHARGE	”	NON-FREEZE WALL HYDRANT	AW	ACID WASTE	P	PRESSURE
---	CONDENSATE DRAIN	”	HOSE BIBB (ELEV.)	BDV	BLOW DOWN VALVE	PCOND	PUMPED CONDENSATE
---	FOUNDATION DRAIN	”	HOSE END DRAIN	BF	BLIND FLANGE	PD	PUMPED DISCHARGE
---	ACID RESISTANT WASTE	”	OUTSIDE STEM & YOKE VALVE	BFP	BACKFLOW PREVENTER	PH	PIPE HANGER
---	ACID RESISTANT VENT	”	NON-RISING STEM & YOKE	BHP	BRAKE HORSEPOWER	PRV	PRESSURE REDUCING VALVE
---	COMPRESSED AIR	”	FLOW SWITCH	BOP	BOTTOM OF PIPE	PS	PRESSURE SWITCH
---	BALL VALVE	”	TAMPER SWITCH	BOTT	BOTTOM	PSAN	PUMPED SANITARY
---	PIPING BELOW GRADE OR SLAB	”	PRESSURE SWITCH	BTU	BRITISH THERMAL UNIT	PSC	PUMPED STEAM CONDENSATE
---	BUTTERFLY VALVE	”	FIRE DEPT HOSE CONNECTION	BTUH	BRITISH THERMAL UNIT PER HOUR	RD	ROOF DRAIN
---	UNION	”	FLOOR CONTROL VALVE ASSEMBLY	BWV	BACK WATER VALVE W/ ACCESS COVER	RL	RAIN LEADER
---	GATE VALVE	”	” Y” STRAINER	CAP	CAPACITY	SAN, S	SANITARY
---	GLOBE VALVE	”	WATER HAMMER ARRESTOR	CD, COND	CONDENSATE DRAIN	SC	STEAM CONDENSATE
---	BALANCING VALVE	”	ACCESS PANEL	CI	CAST IRON	SCH	SCHEDULE
---	PLUG VALVE	”	POINT OF CONN. TO SITE UTILITIES	CLG	CEILING	SP	SPRINKLER LINE
---	REDUCED PRESS. BACKFLOW PREVENTER	”	SQUARE FOOTAGE	CO	CLEANOUT	STD	STANDARD
---	PRESSURE REDUCING VALVE	”	DUPLEX GAS OUTLET	CONN	CONNECT	SW	STORM WATER
---	CHECK VALVE	”	ECCENTRIC REDUCER	CONC	CONCRETE	T	TEMPERATURE
---	DOUBLE DETECTOR CHECK VALVE	”	CONCENTRIC REDUCER	CU FT	CUBIC FEET	TD	TRENCH DRAIN
---	FLOOR CLEANOUT	”	FLEXIBLE CONNECTION	CW	COLD WATER	TS	TAMPER SWITCH
---	WALL CLEANOUT	”	CAPPED PIPE	CX	CONNECT TO EXISTING	TW	TEMPERED WATER
---	PIPE UP	”	BLIND FLANGE	DDC	DOUBLE DETECTOR CHECK VALVE	TWR	TEMPERED WATER RETURN
---	PIPE UP & DOWN	”	MANUAL AIR VENT	DFU	DRAINAGE FIXTURE UNITS	UP	PIPE UP
---	PIPE DOWN	”	AUTOMATIC AIR VENT	DIA	DIAMETER	UP&DN	PIPE UP & DN
---	SIGHT GLASS	”	BLOW DOWN VALVE (W/HOSE END)	DISH	DISCHARGE	V	VENT
---	FLOAT VALVE	”	PRESSURE/TEMP. RELIEF VALVE	DN	PIPE DOWN	VB	VACUUM BREAKER
---	FLOOR DRAIN	”	PRESSURE DIFFERENCE	DS	DOWN SPOUT W/BOOT	VTR	VENT THROUGH ROOF
---	FLOOR DRAIN WITH TRAP PRIMER	”	TEMPERATURE DIFFERENCE	DST	DEEP SEAL TRAP	WCO	WALL CLEANOUT
---	PRESSURE GAUGE W/ NEEDLE VALVE	”	CENTER LINE	DWG	DRAWING	WHA	WATER HAMMER ARRESTOR
---	DIAMETER (OR ELECTRICAL PHASE)	”	SANITARY/WATER RISER DESIGNATION	ELEC	ELECTRIC	WSFU	WATER SUPPLY FIXTURE UNITS
---	BACK WATER VALVE W/ ACCESS COVER	”		ELEV	ELEVATION	TD	TRENCH DRAIN
---	SOLENOID VALVE	”		EWT	ENTERING WATER TEMPERATURE		
---	SLOPE OF PIPE (WITH % OF SLOPE SHOWN)	”		EX	EXISTING		
---	DIRECTION OF FLOW	”		F	FIRE LINE		
---	FUNNEL CONNECTION @ FLOOR DRAIN	”		FC	FUNNEL CONNECTION @ FD		
---		”		FCO	FLOOR CLEANOUT		
---		”		FCVA	FLOOR CONTROL VALVE ASSEMBLY		
---		”		FD	FLOOR DRAIN		
---		”		FDV	FIRE DEPT. HOSE CONNECTION		
---		”		FS	FLOW SWITCH		
---		”		FT	FEET		
---		”		FT,HD	FEET OF HEAD		
---		”		G	GAS		
---		”		GA	GAUGE		
---		”		GALV	GALVANIZED		
---		”		GPM	GALLONS PER MINUTE		
---		”		HB	HOSE BIBB		
---		”		HED	HOSE END DRAIN		
---		”		HOR	HORIZONTAL		
---		”		HP	HORSEPOWER		
---		”		HT	HEAT TRAP		
---		”		HW	HOT WATER (140°F)		
---		”		HWR	HOT WATER RETURN (140°F)		

NOTE: NOT ALL SYMBOLS MAY BE USED.

NOTE: NOT ALL ABBREVIATIONS MAY BE USED.

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**MECH/PLUMB LEGEND, CONVENTIONS, RISER, AND ABBREVIATIONS**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN# 22077  
PROJECT MANAGER DRH  
DESIGNER GAD

**MP001**



**GENERAL NOTES:**

- PATCH ALL HOLES, PENETRATIONS, ETC. TO MATCH EXISTING MATERIALS (WALLS, FLOORS, ROOF, ETC), FINISHES ETC, AND PAINT TO MATCH EXISTING FINISHES. ALL ROOFING WORK SHALL BE PERFORMED BY AN MCPS APPROVED ROOFING VENDOR TO MAINTAIN THE EXISTING WARRANTY IN THE AREAS OF WORK.
- REMOVE EXISTING ACOUSTIC CEILING TILES AS REQUIRED FOR DEMOLITION. REPLACE ALL DEMOLISHED CEILING COMPONENTS IN KIND TO MATCH EXISTING CONDITIONS.

**DRAWING NOTES:**

- CUT AND REMOVE END OF CHILLER CONCRETE PAD TO ENSURE 6" CLEARANCE BETWEEN CHILLER PAD AND NEW GENERATOR PAD.

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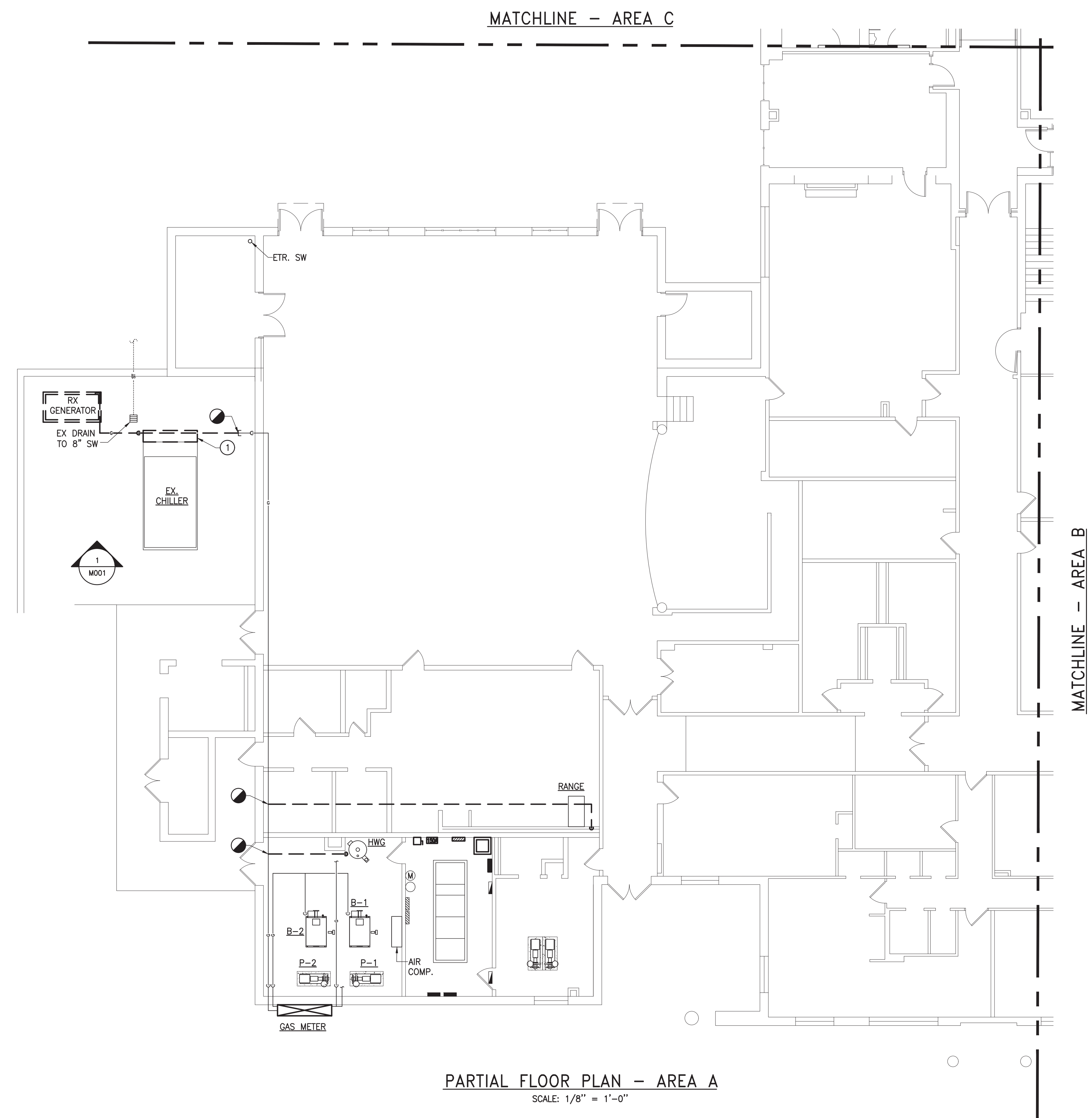
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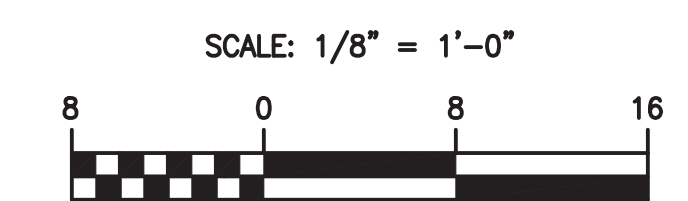
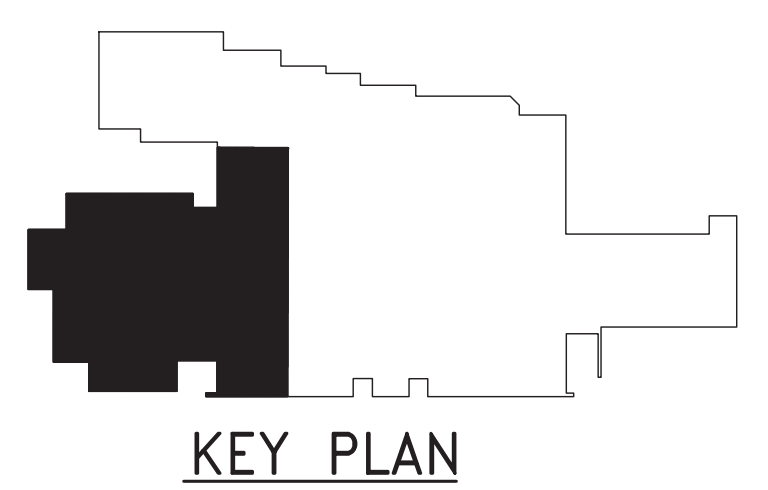
**PARTIAL FLOOR PLAN - AREA A**  
**- DEMOLITION**  
PINE CREST ES - EMERGENCY UPGRADE  
SILVER SPRING, MD 20901

PN#	22077
PROJECT MANAGER	DRH
DESIGNER	GAD

**MPD101**  
BID SET  
06-09-2023



**PARTIAL FLOOR PLAN - AREA A**  
SCALE: 1/8" = 1'-0"





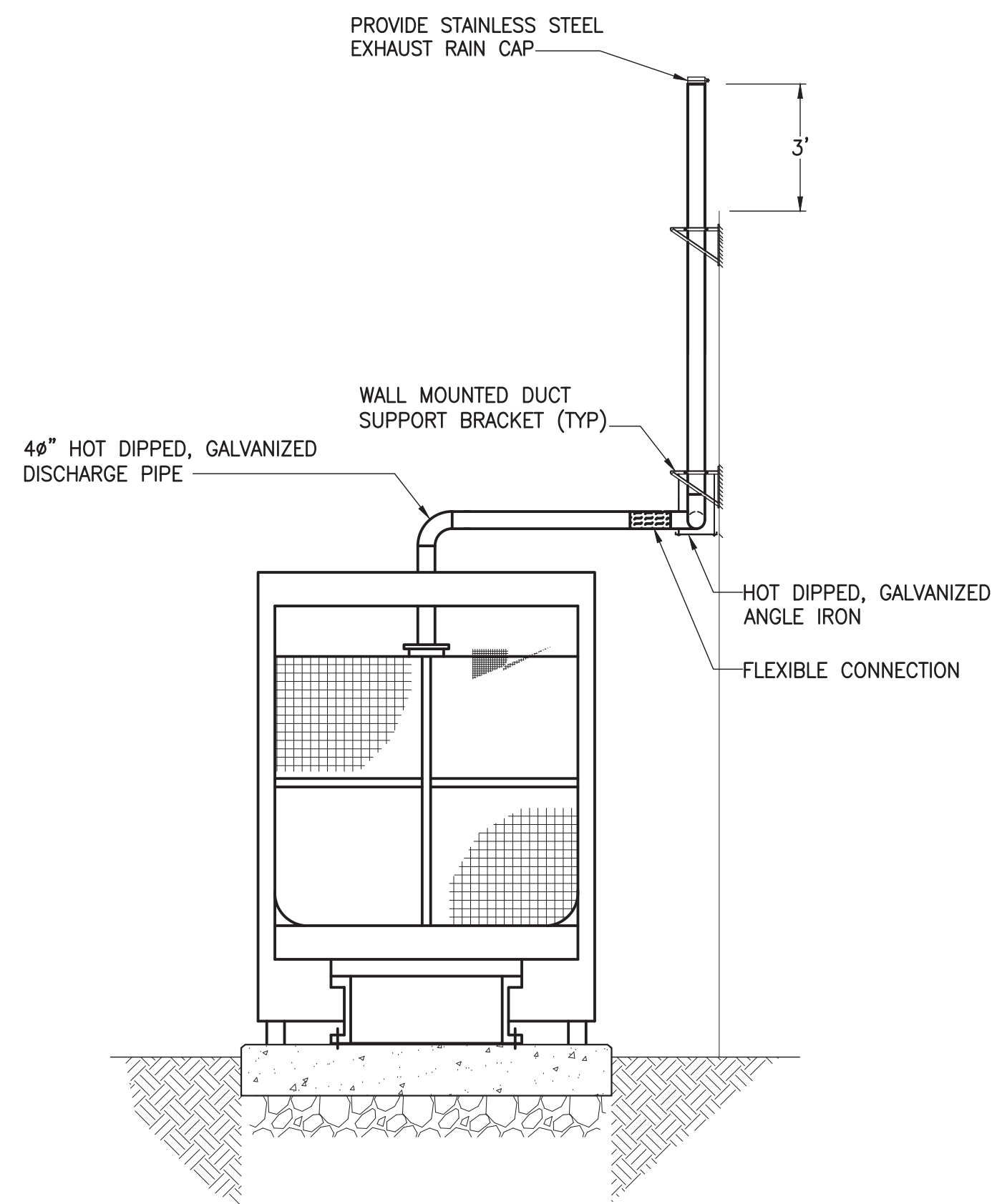
**GENERAL NOTES:**

- PATCH ALL HOLES, PENETRATIONS, ETC. TO MATCH EXISTING MATERIALS (WALLS, FLOORS, ROOF ETC), FINISHES ETC. AND PAINT TO MATCH EXISTING FINISHES.
- REMOVE EXISTING ACOUSTIC TILE CEILING AS REQUIRED FOR DEMOLITION. REPLACE ALL DEMOLISHED CEILING COMPONENTS IN KIND TO MATCH EXISTING CONDITIONS.

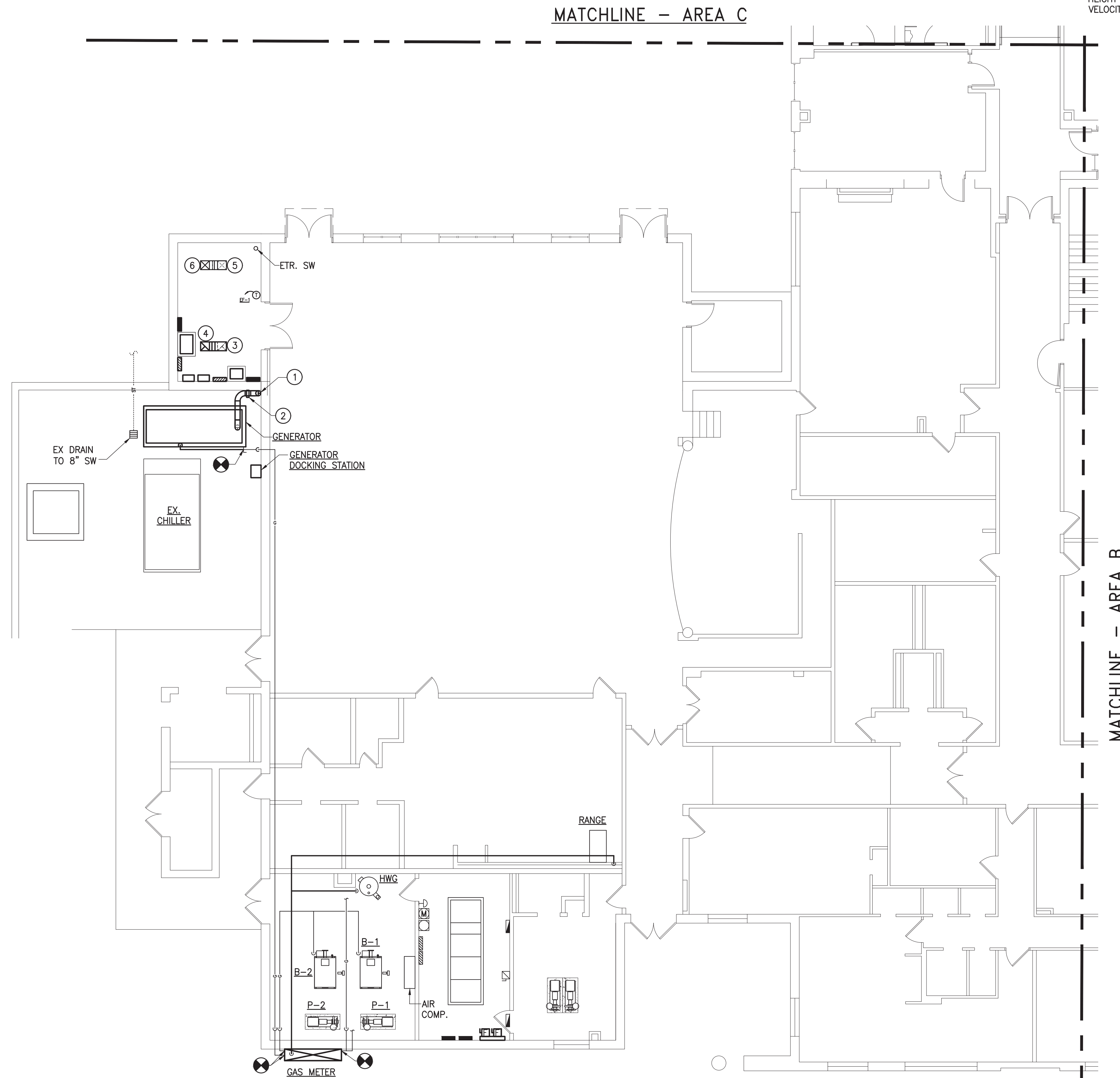
**DRAWING NOTES:**

- 4" HOT-DIPPED, GALVANIZED EXHAUST PIPE UP TO 3' ABOVE ROOF LINE.
- PROVIDE WALL MOUNTED EXHAUST PIPE SUPPORT WITH HOT DIPPED GALVANIZED BRACKET.
- 14"x14" EXHAUST GRILLE, 600 CFM, MAX NC 18, BOD: TITUS 350RL. PROVIDE UNDER ADD ALTERNATE #1.
- 14"x14" EA DUCT UP TO EF-1. PROVIDE UNDER ADD ALTERNATE #1.
- 14"x14" VENTILATION GRILLE, 600 CFM, MAX NC 18, BOD: TITUS 350RL. PROVIDE UNDER ADD ALTERNATE #1.
- 14"x14" OA DUCT UP TO 28"x28" INTAKE LOUVER PENTHOUSE. PROVIDE UNDER ADD ALTERNATE #1.

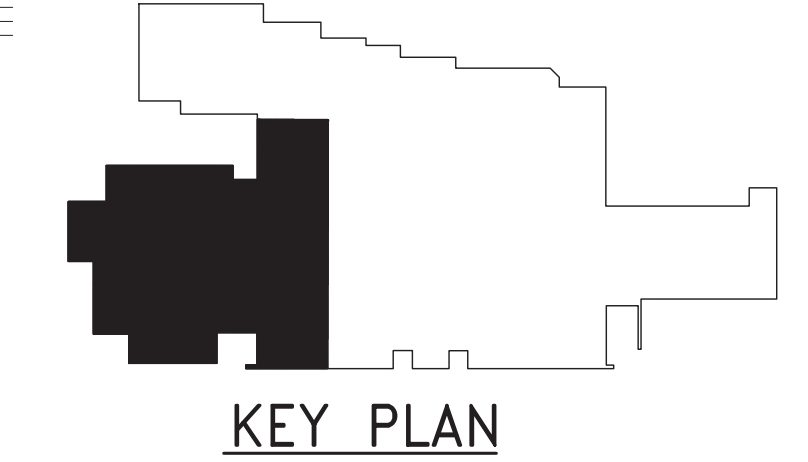
INTAKE LOUVER PENTHOUSE, PROVIDE UNDER ADD ALTERNATE #1:  
 VOLUME 600 CFM  
 SP 0.035 IN. WG  
 CURB 22"x22"  
 HEIGHT 12'-1/4", 3 LOUVERS HIGH  
 VELOCITY 450FPM



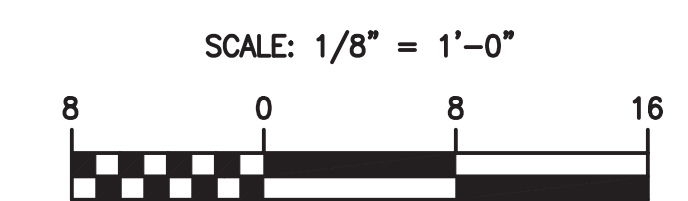
**GENERATOR DISCHARGE PIPE DETAIL**  
 SCALE: NONE



**PARTIAL FLOOR PLAN - AREA A**  
 SCALE: 1/8" = 1'-0"



**KEY PLAN**



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**PARTIAL FLOOR PLAN - AREA A**  
 PINE CREST ES - EMERGENCY UPGRADE  
 SILVER SPRING, MD 20901

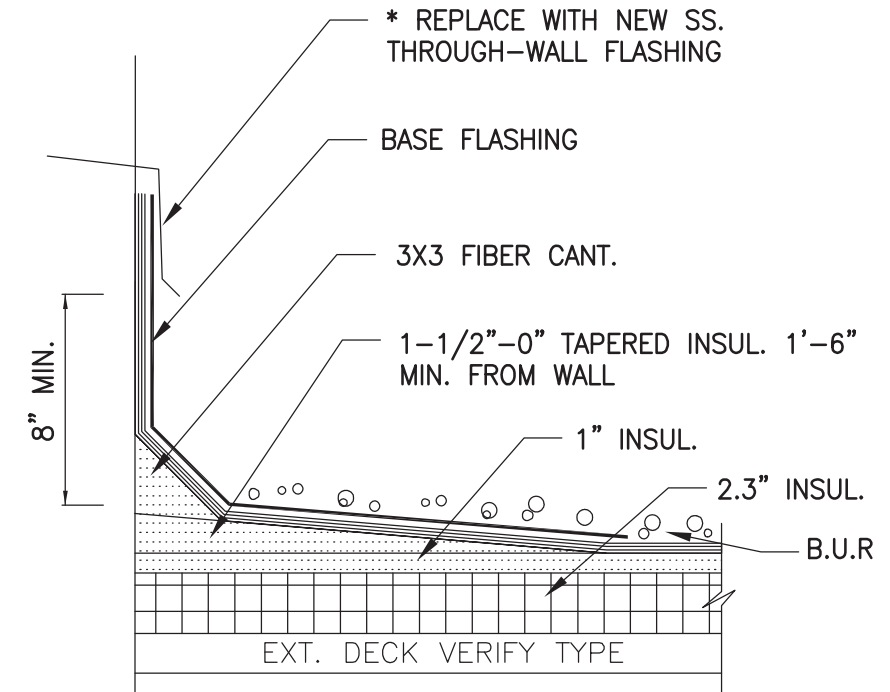
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 PROJECT MANAGER DRH  
 DESIGNER GAD

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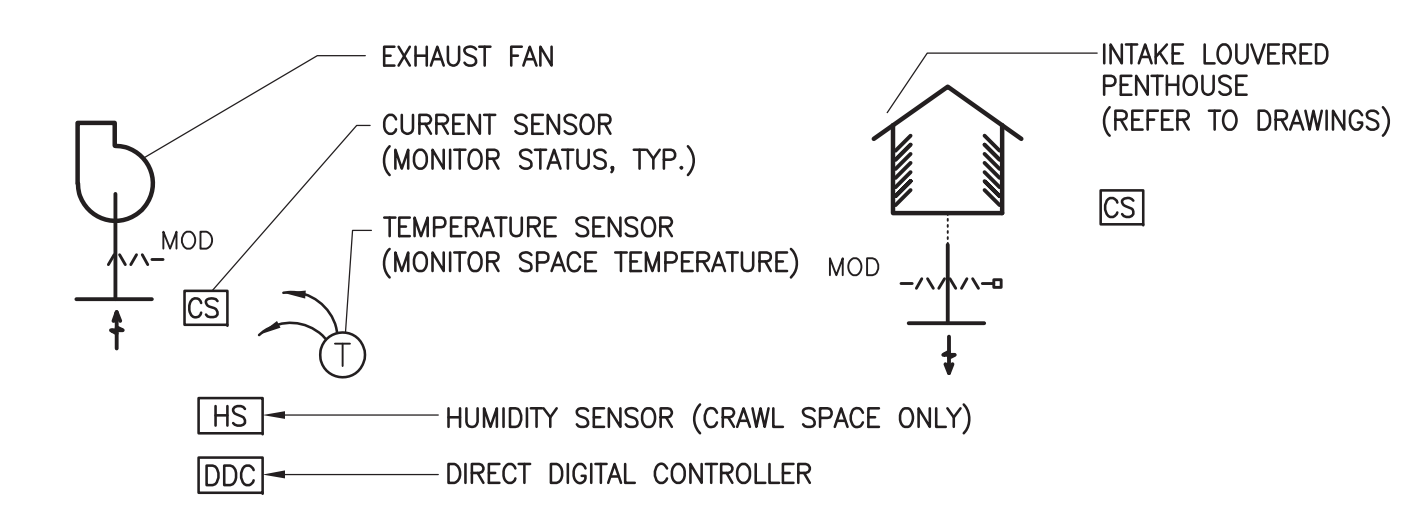


FAN SCHEDULE													
UNIT F-X	AREA SERVED	INTERLOCK	LOCATION	CHARACTERISTICS								TYPE	BASED ON (GREENHICK)
				MAX CFM	ESP (IN H2O)	FRPM	DRIVE TYPE	MOTOR HP	MOTOR TYPE	V/ø/Hz	ELECTRICAL EMERGENCY POWER		
1	NEW ELECTRICAL ROOM	TSTAT	ROOF	600	0.25	1500	DIRECT	1/10	ECM	115/1/60	YES	POWER ROOF VENTILATOR	G-090-VG

- NOTES: 1. TSTAT= THERMOSTAT; SW=SWITCH; SP=STATIC PRESSURE; TD=WITH 15 MINUTE TIME DELAY  
 2. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH FOR ALL EXHAUST FANS, COORDINATING REQUIREMENTS AND INTERLOCKS  
 3. REFER TO CONTROL DIAGRAMS FOR SPECIFIC SEQUENCES OF OPERATION AND INTERLOCK ARRANGEMENTS  
 4. INSTALL UNDER ADD ALTERNATE #1



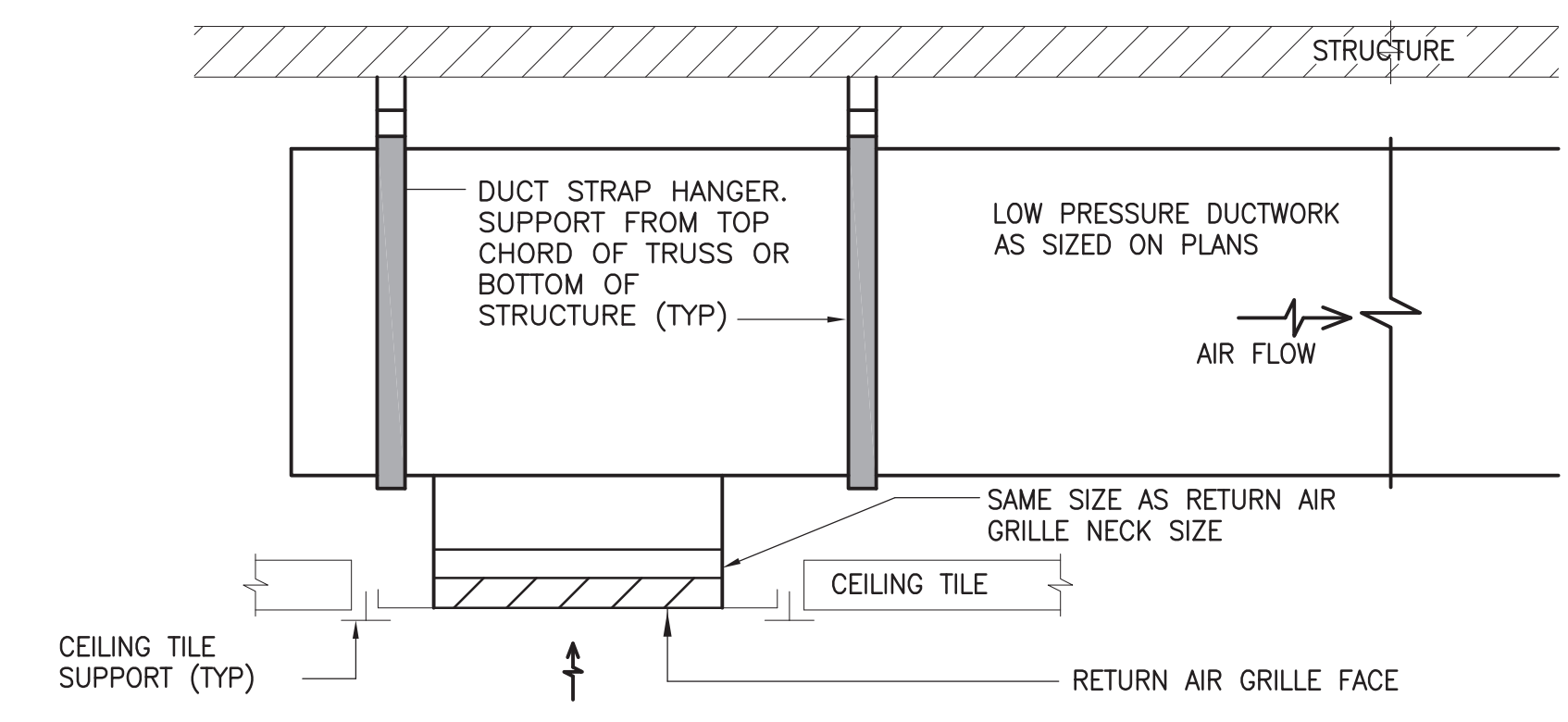
**TYPICAL COUNTER FLASHING**  
SCALE: NONE



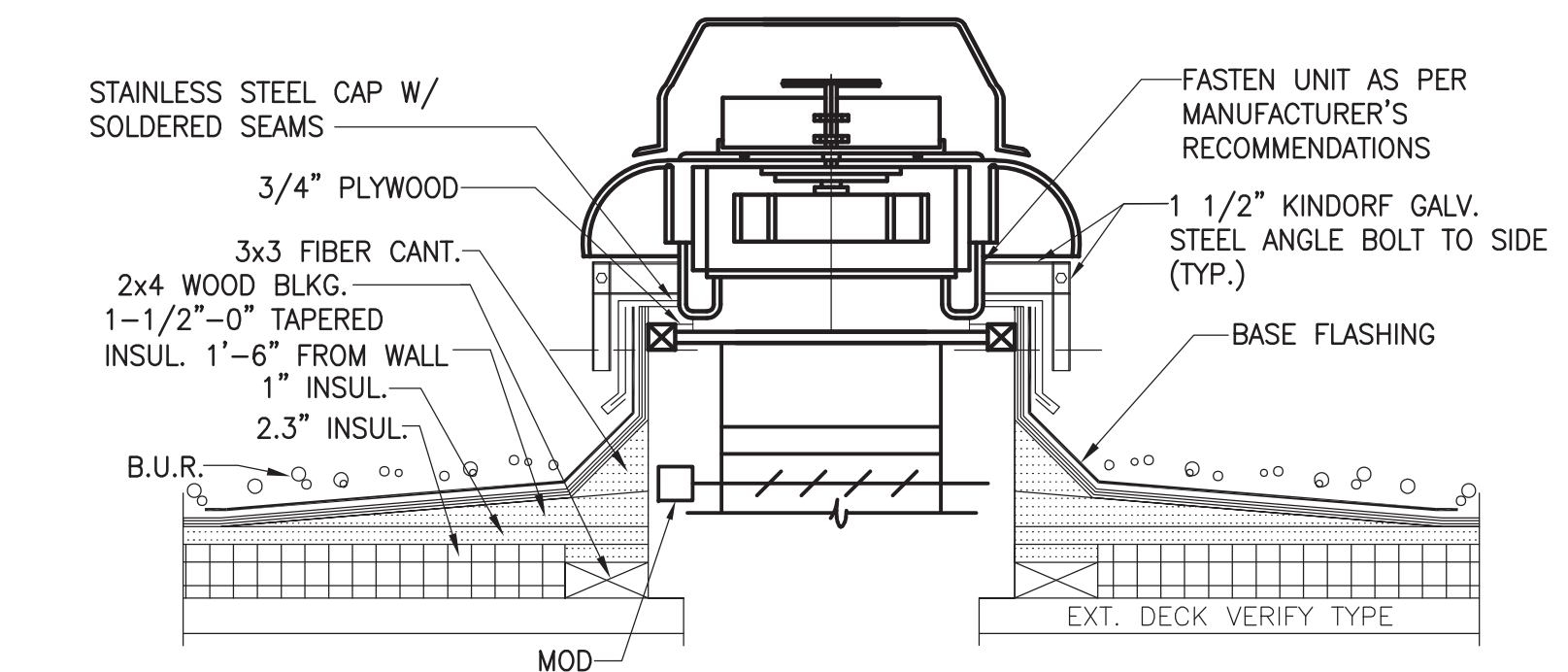
**SEQUENCE OF OPERATION**

- VENTILATION: SPACE TEMPERATURE SENSOR SHALL ON A RISE IN TEMPERATURE TO 90°F (ADJ.) ENERGIZE EXHAUST FAN. IN A FALL IN TEMPERATURE TO 85°F (ADJ.), THE EXHAUST FAN SHALL DE-ENERGIZE. PROVIDE A 5°F DEADBAND BETWEEN ENERGIZING/DE-ENERGIZING FAN TO PREVENT SHORT CYCLING.
- EMS HIGH (105°F) AND LOW (40°F) TEMPERATURE ALARMS SHALL BE ANNUNCIATED AT THE CENTRAL ENERGY MANAGEMENT SYSTEM COMPUTER. EMS SHALL MONITOR FAN STATUS.
- THE ENERGY MANAGEMENT SYSTEM (EMS) SHALL BE MANUFACTURED BY HI SOLUTIONS, RELIABLE CONTROL, OR SCHNEIDER ELECTRIC STRUXUREWARE/CONTINUUM; APPROVED MANUFACTURERS OF AUTOMATIC TEMPERATURE CONTROLS (ATC) COMPONENTS ARE INVENYS, SIEMENS, JOHNSON, HONEYWELL, KELE, KREUTER, BELIMO, FUNCTIONAL DEVICES (RIB), ACI, BAPI, SERTA AND SCHNEIDER ELECTRIC. CONTROLS SYSTEMS SHALL BE INSTALLED BY PERFORMANCE CONTROLS, BUILDING AUTOMATION SERVICES, ENGINEERED SERVICES, CONTROL SOURCES, OR PRITCHETT CONTROLS.

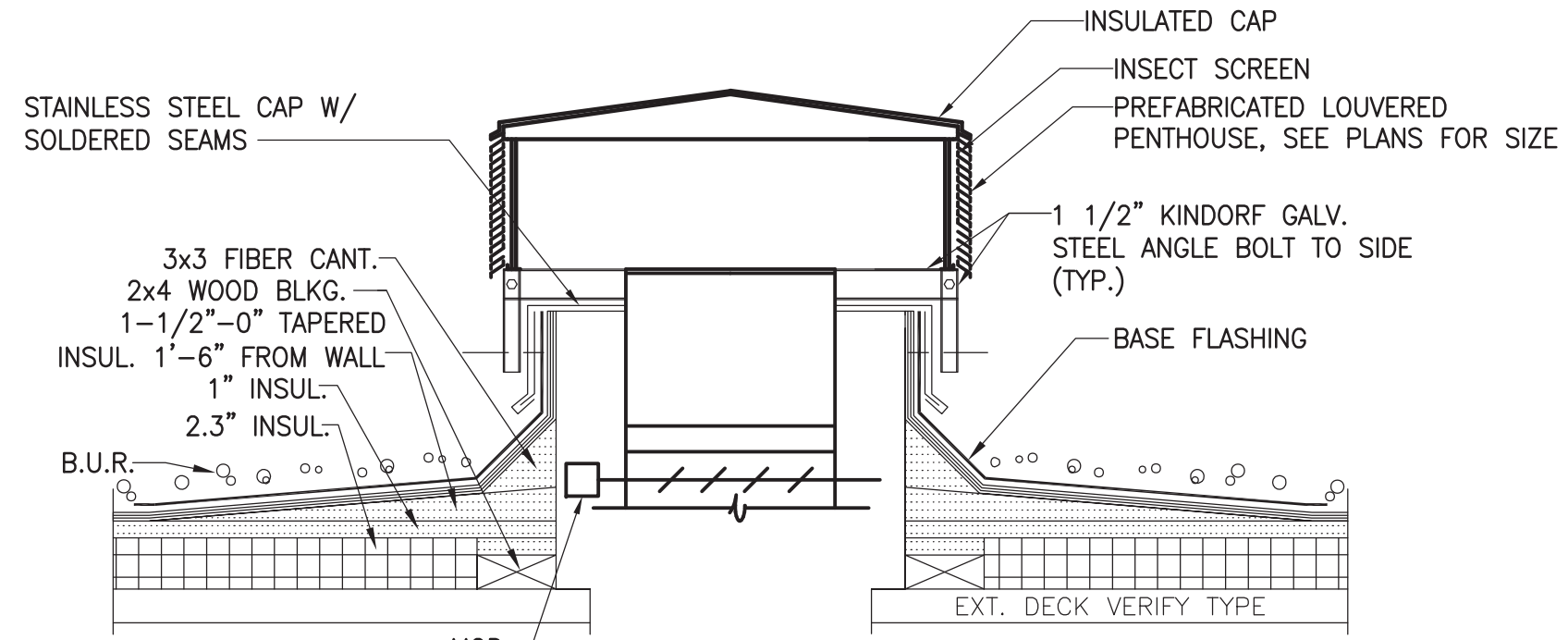
**TYPICAL ELECTRICAL EQUIPMENT ROOM CONTROL DIAGRAM**  
SCALE: NONE



**TYPICAL CEILING AIR DEVICE DETAIL**  
SCALE: NONE



**TYPICAL CENTRIFUGAL POWER ROOF VENTILATOR DETAIL**  
SCALE: NONE



**TYPICAL RELIEF/INTAKE DETAIL**  
SCALE: NONE

REVISIONS	
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**MECHANICAL/PLUMBING  
ADD ALTERNATE #1 DETAILS**  
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SILVER SPRING, MD 20901

PN#	22077
PROJECT MANAGER	DRH
DESIGNER	GAD

**MP701**