Alaska Court System

Boney Courthouse Generator Replacement

303 K Street Anchorage, Alaska 99501

CONSTRUCTION DOCUMENTS

03/06/2024

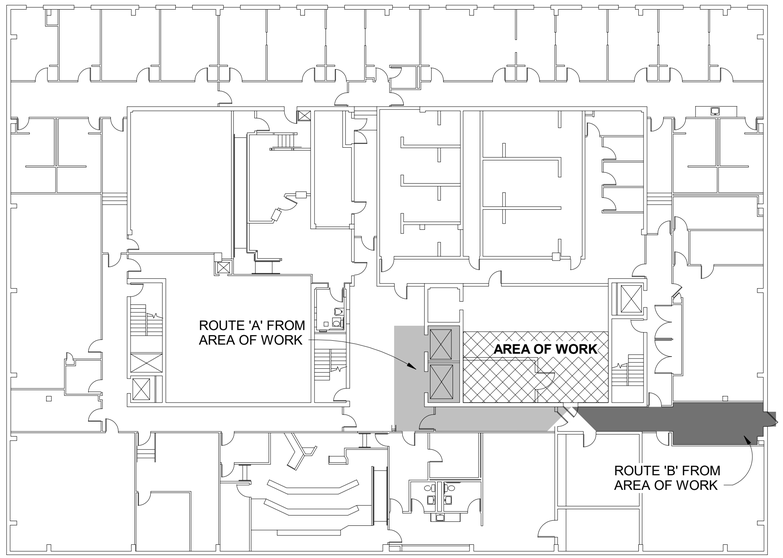
PROJECT LOCATION MAP

CODE ANALYSIS

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF THE REPLACEMENT OF AN EXISTING GENERATOR UNIT. ONLY THE EXISTING GENERATOR AND ITS ASSOCIATED MECHANICAL AND ELECTRICAL COMPONENTS WILL BE REMOVED AND REPLACED WITH A NEW GENERATOR UNIT AND ASSOCIATED MECHANICAL AND ELECTRICAL COMPONENTS. THIS PROJECT DOES NOT CHANGE ANY EXITING COMPONENTS, PATHS, FIRE RATINGS, OR OTHER LIFE-SAFETY SYSTEMS.

CODE ANALYSIS
ORIGINAL CONSTRUCTION: 1972
SPRINKLERED: YES
CONSTRUCTION TYPE: I-A
OCCUPANCY: B - BUSINESS
A-3 - COURTROOMS

EGRESS PATH: NO MODIFICATIONS
FIRE RATINGS: NO MODIFICATIONS



1 G001 REFERENCE FLOOR PLAN - BASEMENT
NTS

CONTRACTOR SEQUENCING / STAGING INFORMATION

REFER TO 01 1400 WORK RESTRICTIONS FOR POSSIBLE ON-SITE PARKING SPACES THAT MAY BE PROVIDED FOR CONTRACTOR'S USE AT OWNER'S DISCRETION. CONTRACTOR SHALL SECURE ALL NECESSARY STORAGE AND STAGING AREAS AS REQUIRED FOR THE PROJECT.

CONTRACTOR SHALL COORDINATE BUILDING ACCESS WITH OWNER AND AS STIPULATED UNDER DIVISION 00 AND 01. THE EAST ENTRANCE, WHICH IS THE EMPLOYEE ENTRANCE MAY BE USED WITH PROPER APPROVAL AND COORDINATION WITH OWNER, BUT CANNOT BE BLOCKED OR OTHERWISE IMPEDE FROM USE ON A REGULAR AND DAILY BASIS BY EMPLOYEES. CONTRACTOR SHALL NOTE THAT THIS FACILITY PROVIDES SERVICES ON A 24/7 BASIS.

CONTRACTOR MAY ELECT TO MOVE MATERIALS IN TO THE AREA OF WORK THROUGH TWO ROUTES:

ROUTE 'A' IS THROUGH THE MAIN OR EAST ENTRANCE DOORS OF THE BONEY COURTHOUSE AND VIA THE EXISTING ELEVATORS DOWN TO THE BASEMENT LEVEL. EXISTING ELEVATORS HAVE A POSTED WEIGHT CAPACITY OF 3,500 LBS.

ROUTE 'B' IS THROUGH THE ADJACENT FACILITY, NESBETT COURTHOUSE, THROUGH THE MAIN ENTRANCE DOORS, OR AS COORDINATED WITH OWNER, AND VIA EXISTING ELEVATORS DOWN TO THE BASEMENT LEVEL. THE EXISTING ELEVATORS HAVE A POSTED WEIGHT CAPACITY OF 4,000 LBS. THE CONTRACTOR WILL BE REQUIRED TO MOVE MATERIALS THROUGH THE CONNECTING CORRIDOR AT THE BASEMENT LEVEL, AND SHALL COORDINATE ACCESS THROUGH CONTROLLED DOORS AT THE CONNECTING COORIDOR.

INDEX OF DRAWINGS

PROJECT TEAM

MCG EXPLORE DESIGN
421 W. 1st Avenue, Suite 300
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FOR:
● SUBMITTAL
○ PRICING

COVER SHEET, PROJECT LOCATION MAP, CODE ANALYSIS, DRAWING INDEX

SHEET NO.
G001

PIPING LEGEND

- DENOTES DEMOLITION
- XXX — SEE ABBREVIATIONS FOR MEDIA
- PIPE UP
- PIPE DOWN
- CAP
- DIRECTION OF FLOW
- ISOLATION VALVE
- GATE VALVE
- 3-WAY CONTROL VALVE
- CHECK VALVE
- BALANCE VALVE
- FUSIBLE OIL SAFETY VALVE
- PRESSURE/TEMPERATURE RELIEF VALVE
- PUMP
- THERMOMETER
- PRESSURE GAUGE W/ ISOLATION COCK
- STRAINER W/ BLOWDOWN
- FLOOR DRAIN
- THERMOSTAT/SENSOR

LOGIC

- POINT OF CONNECTION
- 5 / M2 — DETAIL NUMBER / SHEET LOCATED ON
- TAG — SHEET NOTES

DUCTWORK LEGEND

- SUPPLY AIR UP & DOWN
- RETURN AIR UP & DOWN
- EXHAUST AIR UP & DOWN
- ROUND DUCT UP & DOWN
- VOLUME DAMPER
- MOTORIZED CONTROL DAMPER
- 12/24 — DUCT SIZE (FIRST FIGURE – SIDE SHOWN) (SECOND FIGURE – SIDE NOT SHOWN)
- TURNING VANES

ABBREVIATIONS

ACCR	AIR COOLER COOLANT RETURN
ACCS	AIR COOLER COOLANT SUPPLY
AFG	ABOVE FINISHED GRADE
BTUH	BRITISH THERMAL UNIT/HOUR
CAC–X	CHARGE AIR COOLER DESIGNATOR
CFM	CUBIC FEET PER MINUTE
CP–X	CIRCULATION PUMP DESIGNATOR
DEG	DEGREE
DIA	DIAMETER
DIM	DIMENSION
(E)	EXISTING
EAT	ENTERING AIR TEMPERATURE
ECR	ENGINE COOLANT RETURN
ECS	ENGINE COOLANT SUPPLY
EG	ETHYLENE GLYCOL
EGT	ENTERING GLYCOL TEMPERATURE
EGT–X	ETHYLENE GLYCOL TANK DESIGNATOR
ES–X	EXHAUST SILENCER DESIGNATOR
ESP	EXTERNAL STATIC PRESSURE
F	FAHRENHEIT
FD	FLOOR DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FT	FEET
GAL	GALLONS
GEN–X	GENERATOR DESIGNATOR
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER
HX–X	HEAT EXCHANGER DESIGNATOR
IN	INCHES
JWR	JACKET WATER RETURN
JWS	JACKET WATER SUPPLY
LAT	LEAVING AIR TEMPERATURE
LF	LINEAL FEET
LGT	LEAVING GLYCOL TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUH
MIN	MINUTE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NTS	NOT TO SCALE
N.O.	NORMALLY OPEN
O/A	OUTSIDE AIR
PD	PRESSURE DROP
PH	PHASE
PSI	POUNDS PER SQUARE INCH
RAD–X	RADIATOR DESIGNATOR
RPM	REVOLUTIONS PER MINUTE
S/A	SUPPLY AIR
SEDD–X	SUPPLEMENTAL EXPANSION DEAERATION & DRAWDOWN TANK DESIGNATOR
TYP	TYPICAL
W/	WITH
W/O	WITHOUT
WPD	WATER PRESSURE DROP

RADIATOR SCHEDULE

						CIRCUIT 1						CIRCUIT 2						FAN					
SYMBOL	MANUFACTURER	MODEL	SERVES	SERVICE	ORIENTATION	MEDIUM	BTU/MIN REMOVED	GPM	EGT DEG F	LGT DEG F	WPD FD HD	MEDIUM	BTU/MIN REMOVED	GPM	EGT DEG F	LGT DEG F	WPD FD HD	CFM	HP	POWER	DRIVE	RPM	REMARKS
RAD–1	YOUNGTOUCHSTONE	VM04F512331H233	GEN	JACKET WATER	HORIZONTAL	50% E.G.	3,435	45	210.0	199.7	5.8	50% E.G.	1,083	50	127.0	124.0	8.8	4,002	1.5	460/60/3	DIRECT	1,160	3" NPT CIRCUIT 1, 2" NPT CIRCUIT 2.

REMOTE CHARGE AIR COOLER SCHEDULE

						COLD SIDE					HOT SIDE					
SYMBOL	MANUFACTURER	MODEL	SERVES	SERVICE	BTU/MIN REMOVED	MEDIUM	GPM	EGT DEG F	LGT DEG F	WPD FT HD	MEDIUM	SCFM	EAT DEG F	LAT DEG F	WPD FT HD	REMARKS
CAC–1	YOUNGTOUCHSTONE	RCAC15ABT1784	GEN–1	AFTER COOLER	1,083	50% E.G.	50	124	127	4.2	AIR	311	328.0	134.6	2.3	4" FLANGED AIR CIRCUIT, 2–1/2" FLANGED 50% E.G. CIRCUIT.

SUPPLEMENTAL EXPANSION, DEAERATION & DRAWDOWN TANK SCHEDULE

					TANK VOLUME			
SYMBOL	MANUFACTURER	LOCATION	MEDIUM	MATERIAL	ECS/ECR TANK	ACCS/ACCR TANK	JW TANK	REMARKS
SEDD–1	YOUNGTOUCHSTONE	RAD–1	50% E.G.	STEEL	7.1 GAL	5.5 GAL	--	75/25 SPLIT TANK. ECS/ECR TO GO TO LARGER PORTION OF TANK, ACCS/ACCR TO GO TO SMALLER PORTION OF TANK, COORDINATE SIZE AND DIMENSIONS OF TANK W/ GENERATOR & RADIATOR SUPPLIER.
SEDD–2	YOUNGTOUCHSTONE	GEN–1	50% E.G.	STEEL	--	--	3.7 GAL	TANK TO BE MOUNTED ON OR NEAR GENERATOR. TO PROVIDE EXPANSION CAPABILITY FOR ENGINE JW LOOP, COORDINATE SIZE AND DIMENSIONS OF TANK W/ GENERATOR & RADIATOR SUPPLIER.

HEAT EXCHANGER SCHEDULE

					HOT SIDE					COLD SIDE					
						FLOW	WPD	E.G.T.	L.G.T.		FLOW	WPD	E.G.T.	L.G.T.	
SYMBOL	MANUFACTURER	MODEL	TYPE	FUNCTION	MEDIUM	(GPM)	(FT HD)	DEG F	DEG F	MEDIUM	(GPM)	(FT HD)	DEG F	DEG F	REMARKS
HX–1	ALFA LAVAL	CB110–90H	BRAZED PLATE	GENERATOR COOLING	50% E.G.	45	2.0	210.0	199.7	50% E.G.	45	2.3	195	205	2" NPT CONNECTIONS.

PUMP SCHEDULE

				PUMPED			MOTOR DATA		
SYMBOL	MFGR	MODEL	FUNCTION	MEDIUM	GPM	HEAD FT	WATTS	POWER	REMARKS
CP–RAD–1	GRUNDFOS	UPS 40–160 F	GENERATOR ENGINE COOLANT	50% E.G.	45	37	770	460/60/3	2 SPEED PUMP SET TO SPEED 2.
CP–RAD–2	GRUNDFOS	UPS 50–160 F	GENERATOR CHARGE AIR COOLANT	50% P.G.	50	42	1,300	460/60/3	2 SPEED PUMP SET TO SPEED 2.

LOUVER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	FUNCTION	MATERIAL	FINISH	CFM	FACE SIZE (H X W) (IN.)	NC	REMARKS
L–1	RUSKIN	ELF6375DX	RAD–1 O/A	ALUMINUM	PAINT TO MATCH EXISTING LOUVERS	4,002	72" X 60"	<25	PROVIDE WITH 3/4" BIRDSCREEN AND HARDWARE FOR MASONRY WALL INSTALLATION
L–2	RUSKIN	ELF6375DX	RAD–1 E/A	ALUMINUM	PAINT TO MATCH EXISTING LOUVERS	4,002	72" X 60"	<25	PROVIDE WITH 3/4" BIRDSCREEN AND HARDWARE FOR MASONRY WALL INSTALLATION

GLYCOL TANK SCHEDULE

						TANK CAPACITY		PUMP		ELECTRICAL		
SYMBOL	MANUFACTURER	MODEL	FUNCTION	MEDIUM	MATERIAL	GAL	DIMENSIONS	GPM	PSI	HP	POWER	REMARKS
EGT–1	WESSELS	GMPD–23050	GENERATOR COOLANT	50% E.G.	POLYETHYLENE	50	34" DIA X 56" H	1.8 @ 70 PSI		1/3 (2)	120/60/1	PACKAGED DUPLEX GLYCOL CHARGING SYSTEM, CORD AND PLUG CONNECTION. SERVES BOTH ENGINE COOLANT, ECS/ECR, AND CHARGE AIR COOLANT, ACCS/ACCR.

FOR:
- SUBMITTAL
- PRICING

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STATE OF ALASKA — 49TH — ELIAS R. BAUMGARTNER — ME-135263 — 3/6/24 — REGISTERED PROFESSIONAL ENGINEER

Alaska Court System

Boney Courthouse Generator Replacement

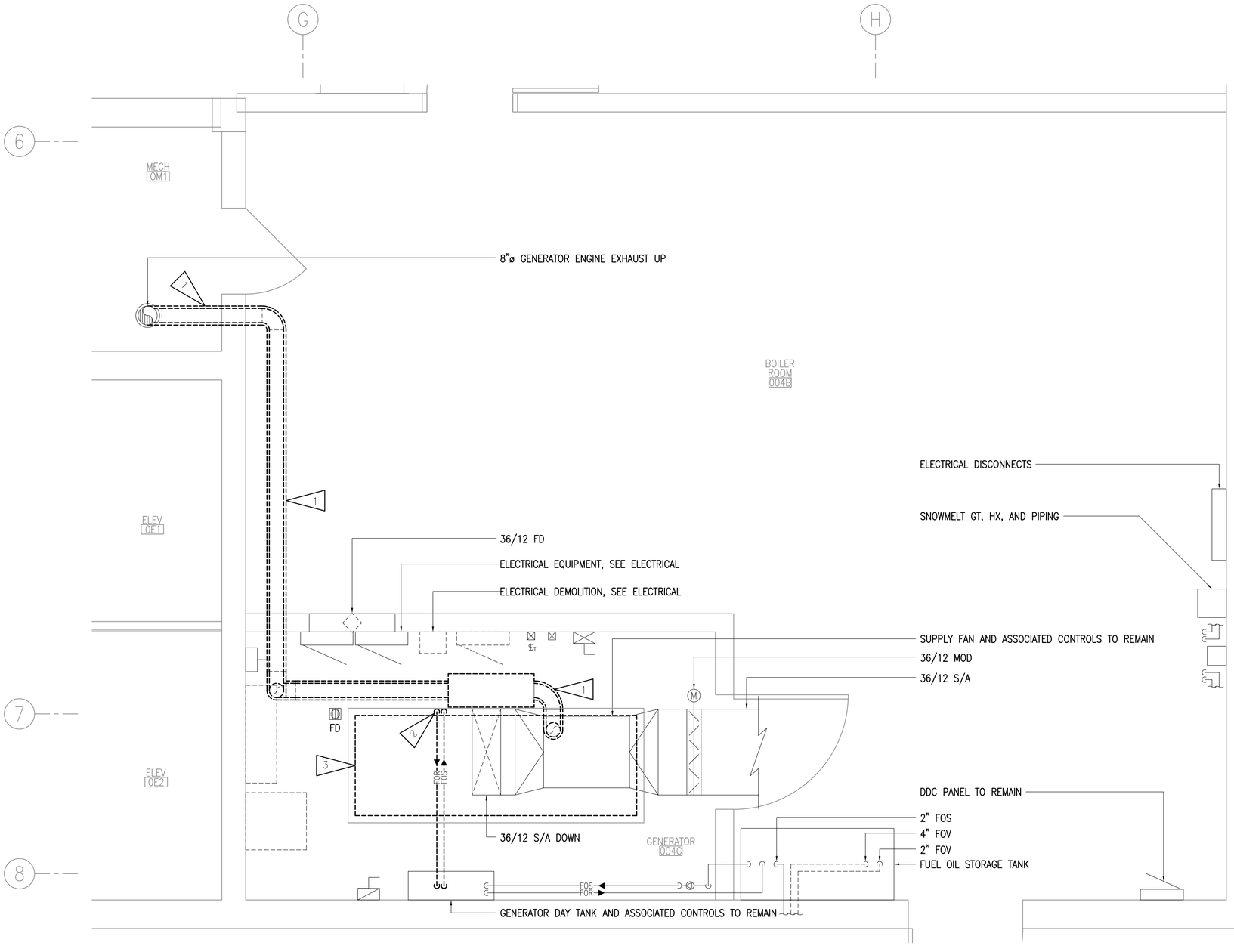
303 K Street
Anchorage, Alaska
99501

CONSTRUCTION DOCUMENTS

JOB NO.	M3152
DATE:	03/06/24
PROJ. MGR.:	MRB
DRAWN BY:	MRB
REVIEWED BY:	BPP
REVISIONS:	

MECHANICAL LEGENDS, ABBREVIATIONS AND SCHEDULES

SHEET NO.
M001



GENERAL NOTES

A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS BUILT DRAWINGS AND A NON–DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE–IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.

B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A LOCATION AS DIRECTED BY THE OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

C. DASHED OR DOTTED BOLD LINES INDICATE ITEMS TO BE REMOVED. UN–BOLDED LINES INDICATE EXISTING ITEMS TO REMAIN.

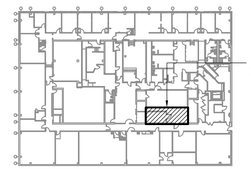
SHEET NOTES

1. DEMOLISH SILENCER AND ASSOCIATED INSULATED 6"ø GENERATOR ENGINE EXHAUST BACK TO TRANSITION TO 8"ø GENERATOR ENGINE EHXUAST IN MECHANICAL SHAFT.

2. DEMOLISH 1/2" FOR/FOS FROM GENERATOR DAY TANK TO GENERATOR IN ITS ENTIRETY.

3. DEMOLISH GENERATOR IN ITS ENTIRETY. SEE ELECTRICAL FOR ADDITIONAL INFORMATION. DEMOLISH EXISTING GENERATOR DDC CONTROLS TO EXTENT NECESSARY TO ACCOMMODATE NEW WORK.

1 GENERATOR ROOM - HVAC DEMOLITION PLAN
1/2" = 1'-0"



BASEMENT - KEY PLAN
NO SCALE

FOR:
- SUBMITTAL
- PRICING

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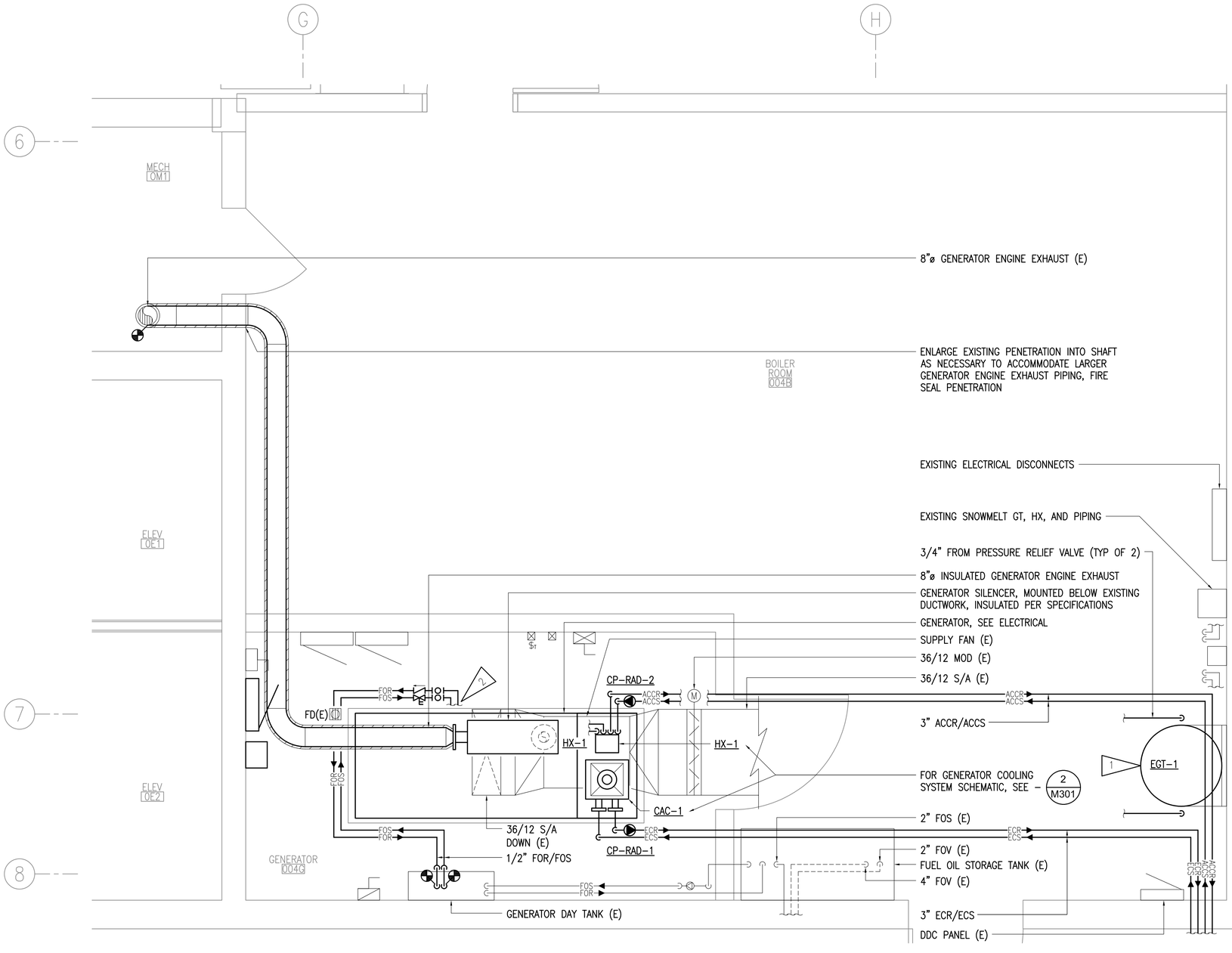
PROJ. MGR.:	MRB
DRAWN BY:	MRB
REVIEWED BY:	BPP
REVISIONS:	

GENERATOR ROOM HVAC DEMOLITION

SHEET NO.
M101



1 GENERATOR ROOM - HVAC REMODEL PLAN

1/2" = 1'-0"

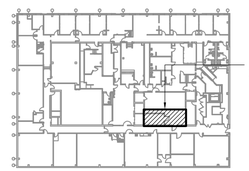
GENERAL NOTES

A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS BUILT DRAWINGS AND A NON–DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE–IN.

B. MECHANICAL CONTRACTOR TO PROVIDE FIELD INSTALLATION FOR ALL GENERATOR COMPONENTS SHIPPED LOOSE FOR FIELD INSTALLATION.

SHEET NOTES

1. PROVIDE SEISMIC RESTRAINT FOR EQT–1.
2. PROVIDE FLEXIBLE PIPING CONNECTION FOR FOS/FOS TO GENERATOR.



BASEMENT - KEY PLAN

NO SCALE

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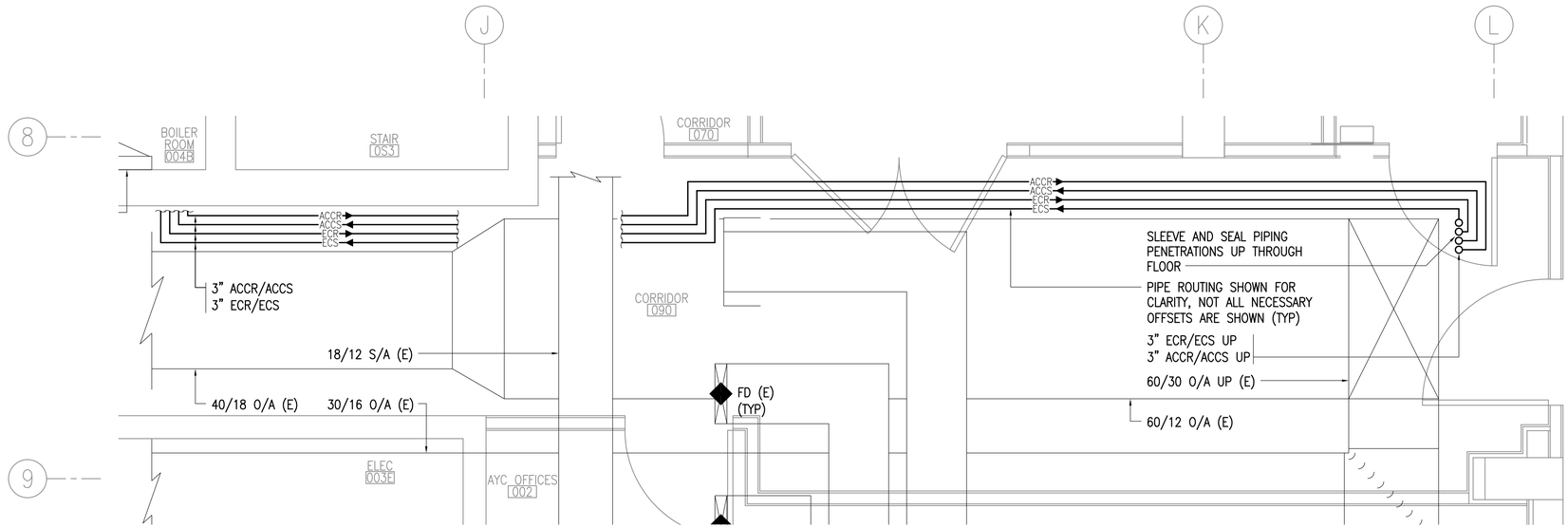
DRAWN BY:	MRB
REVIEWED BY:	BPP
REVISIONS:	

GENERATOR ROOM HVAC REMODEL

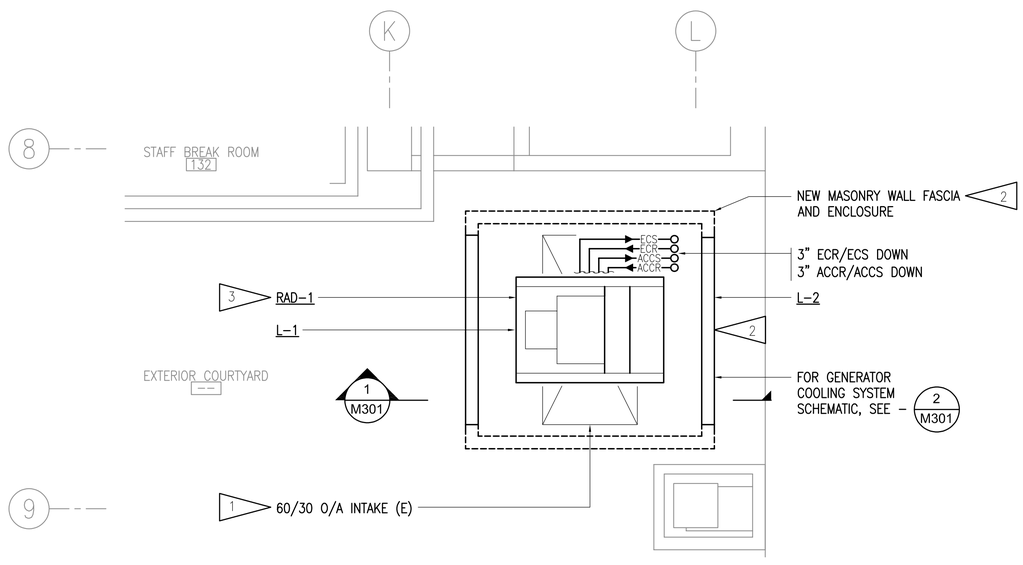
SHEET NO.
M201

FOR:
SUBMITTAL
PRICING



1 BASEMENT CORRIDOR - HVAC REMODEL PLAN

1/2" = 1'-0"



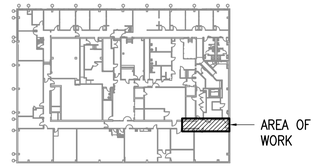
2 1ST FLOOR - HVAC REMODEL PLAN

1/2" = 1'-0"

GENERAL NOTES

A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN.

B. MECHANICAL CONTRACTOR TO PROVIDE FIELD INSTALLATION FOR ALL GENERATOR COMPONENTS SHIPPED LOOSE FOR FIELD INSTALLATION.



BASEMENT - KEY PLAN

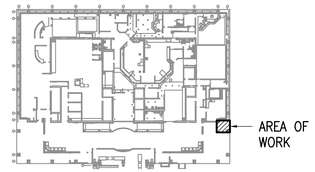
NO SCALE

SHEET NOTES

1. REMOVE AND SALVAGE BRICK FASCIA ASSOCIATED W/ O/A INTAKE. DEMOLISH EXISTING LOUVERS, TYP OF 3.

2. REINSTALL SALVAGED BRICK FASCIA. EXTEND FASCIA WITH NEW BRICK AND PROVIDE NEW LOUVERS, L-1 AND L-2 FOR RAD-1 AIRFLOW. MOUNT LOUVERS MINIMUM 6" AFG. TOP OF FASCIA TO BE MINIMUM 6" ABOVE TOP OF LOUVER. CONTRACTOR TO COORDINATE W/ OWNER FOR PROCUREMENT OF MASONRY WALL FASCIA FOR RADIATOR ENCLOSURE. NEW MASONRY FASCIA TO MATCH EXISTING MASONRY FASCIA FOR OUTSIDE AIR INTAKE. SEAL ALL JOINTS WEATHER TIGHT TO EXISTING MASONRY FASCIA AND GRADE.

3. INSTALL RAD-1 ON STEEL SUPPORTS SECURED TO GRADE. CONTRACTOR TO PROVIDE A DEFERRED SUBMITTAL WITH STRUCTURAL & SEISMIC CALCULATIONS STAMPED BY A REGISTERED STRUCTURAL ENGINEER.



1ST FLOOR - KEY PLAN

NO SCALE

FOR:
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- PRICING

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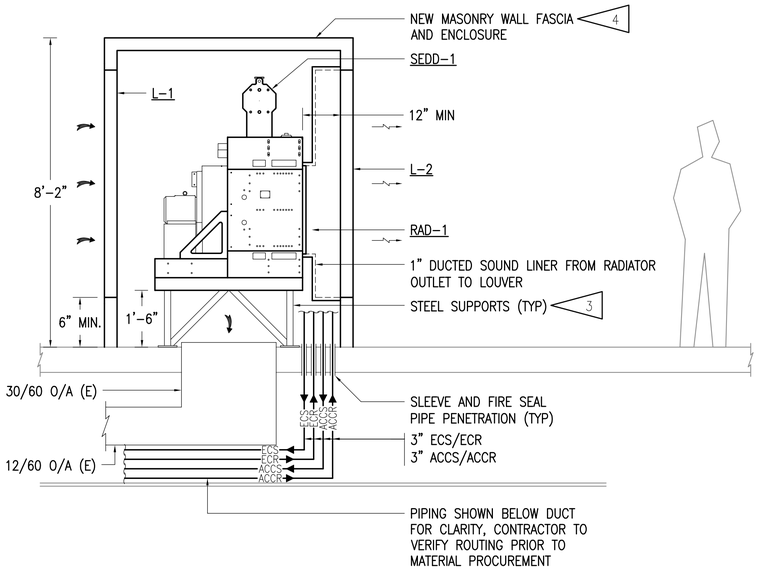
DRAWN BY:	MRB
REVIEWED BY:	BPP
REVISIONS:	

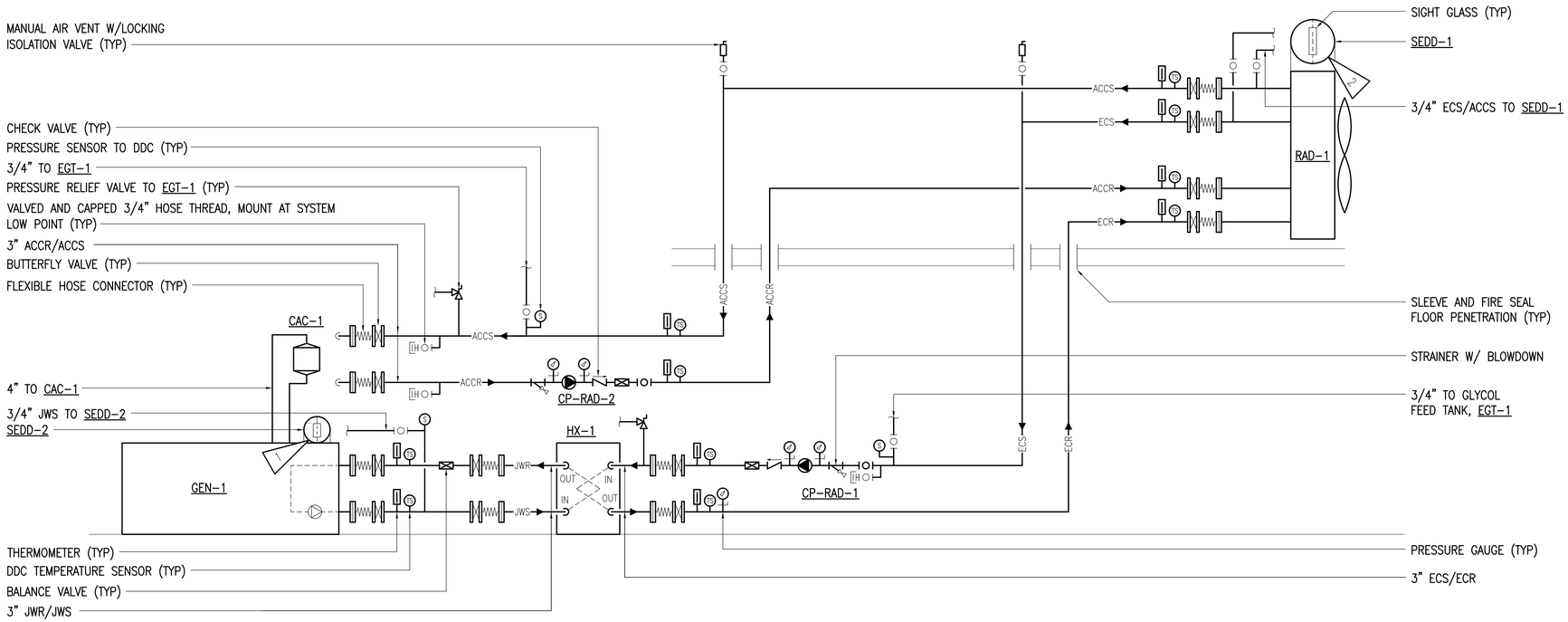
BASEMENT CORRIDOR 1ST FLOOR HVAC REMODEL

SHEET NO.
M202



1 REMOTE RADIATOR SECTION

1/2" = 1'-0"



2 GENERATOR FLOW DIAGRAM - COOLING SYSTEM

NO SCALE

GENERAL NOTES

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B. MECHANICAL CONTRACTOR TO PROVIDE FIELD INSTALLATION FOR ALL GENERATOR COMPONENTS SHIPPED LOOSE FOR FIELD INSTALLATION.

SCHEMATIC NOTES:

1. PROVIDE LOW LIQUID LEVEL SENSOR ON 1/2 NPT FITTING AT TANK, JW CIRCUIT. OUTPUT TO ENGINE CONTROLLER LOW COOLANT CONTACT.

2. PROVIDE TWO(2) LOW LIQUID LEVEL SENSORS ON 1/2 NPT FITING AT TANK, AFTER COOLER AND ENGINE COOLANT CIRCUITS. OUTPUT TO ENGINE CONTROLLER LOW COOLANT CONTACT.

3. CONTRACTOR TO PROVIDE A DEFERRED SUBMITTAL WITH STRUCTURAL & SEISMIC CALCULATIONS STAMPED BY A REGISTERED STRUCTURAL ENGINEER.

4. CONTRACTOR TO COORDINATE W/ OWNER FOR PROCUREMENT OF MASONRY WALL FASCIA FOR RADIATOR ENCLOSURE. NEW MASONRY FASCIA TO MATCH EXISTING MASONRY FASCIA FOR OUTSIDE AIR INTAKE. SEAL ALL JOINTS WEATHER TIGHT TO EXISTING MASONRY FASCIA AND GRADE.

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REVISIONS:	

MECHANICAL SCHEDULES AND SCHEMATICS

SHEET NO.
M301

LEGEND

	CONDUIT, CONCEALED	C	CONDUIT
#10	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)	CO	CONDUIT ONLY
A-2	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	E	DENOTES EXISTING ITEM
,	NEW PANEL, EXISTING PANEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	JUNCTION BOX	GRSC	GALVANIZED RIGID STEEL CONDUIT
	MOTOR (SIZED AS NOTED)	MCB	MAIN CIRCUIT BREAKER
$_{7}$	FRACTIONAL HORSEPOWER MOTOR STARTER	MLO	MAIN LUGS ONLY
	DISCONNECT SWITCH	N	DENOTES NEW ITEM
	DISCONNECT SWITCH (FUSED)	NEC	NATIONAL ELECTRICAL CODE
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER	R	DENOTES EXISTING ITEM THAT HAS BEEN RELOCATED
	DUPLEX RECEPTACLE TO BE REMOVED (DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED TYPICAL)	TYP	TYPICAL
1	NOTE TAG (No. INDICATES NOTE)	UON	UNLESS OTHERWISE NOTED
AFF	ABOVE FINISHED FLOOR	WP	WEATHERPROOF
AFG	ABOVE FINISHED GRADE		

ELECTRICAL LOAD CALCULATION

SERVICE SWITCHBOARD: 4,000A, 277/480V, 3Ø, 4-WIRE

EXISTING SERVICE DEMAND LOAD

EXISTING PEAK DEMAND LOAD (W) - PAST 12 MO	368,000 W
PER NEC 220.87(2) (125%)	460,000 W
0.85 POWER FACTOR	541,176 VA

PANEL 'X': 225A, 277/480VV, 3Ø, 4-WIRE

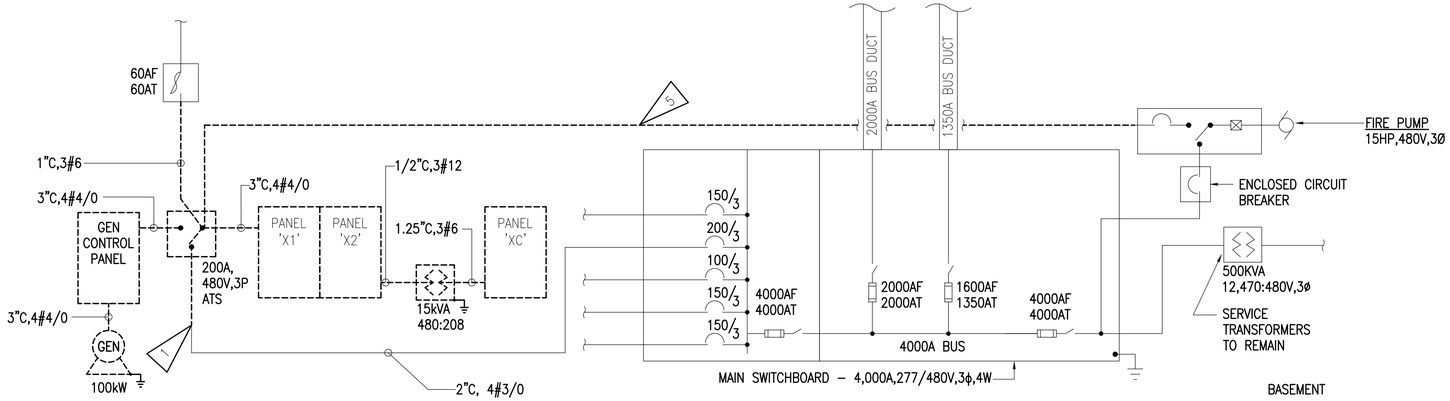
EXISTING DEMAND LOAD (NEC 220.87)

30-DAY DEMAND METERING (VA):	63,282 VA
ADDED EQUIPMENT LOADS	
RAD-1	2,494 VA
CP-RAD-1	770 VA
CP-RAD-2	1,300 VA
EGT-1 (2 @ 863 VA)	1,728 VA
TOTAL ADDED LOAD	**6,292 VA**

NEW CALCULATED DEMAND LOAD - SERVICE/MDP (VA): 547,468 VA
NEW CALCULATED DEMAND LOAD - SERVICE/MDP (AMPS): 659 A

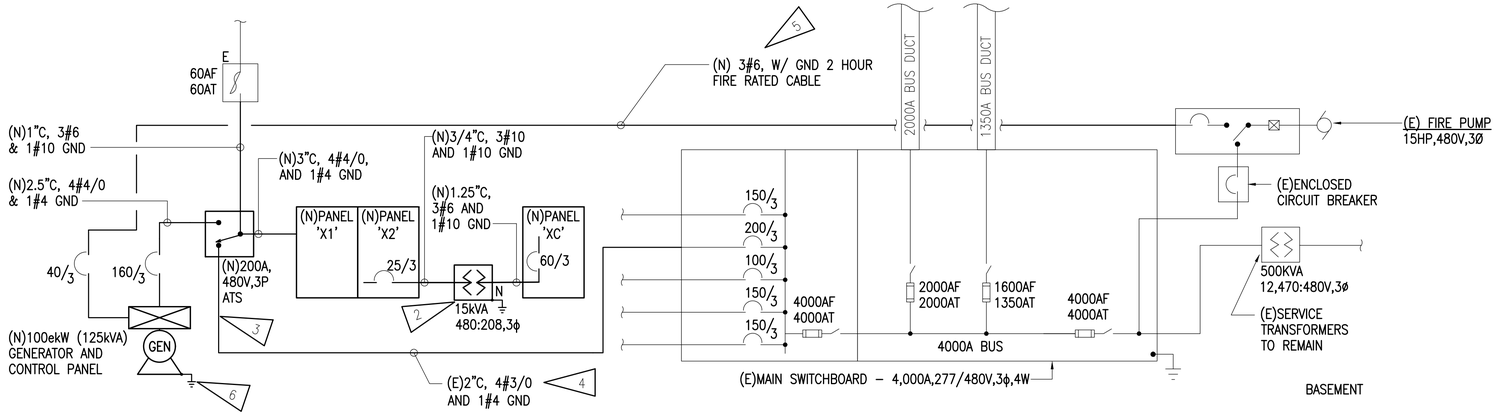
NEW CALCULATED DEMAND LOAD - PANEL 'X' (VA): 69,574 VA
NEW CALCULATED DEMAND LOAD - PANEL 'X' (AMPS): 84 A

RESULT: THE EXISTING SERVICE, MDP, AND PANEL 'X' HAVE ADEQUATE CAPACITY FOR THE ADDED LOAD.



1 DEMOLITION PARTIAL ONE-LINE DIAGRAM

NO SCALE



2 REMODEL PARTIAL ONE-LINE DIAGRAM

NO SCALE

GENERAL NOTES:

A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS–BUILT DRAWINGS AND A NON–DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE–IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.

B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.

C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

D. WORK INCLUDES THE DEMOLITION OF THE EXISTING GENERATOR AND ASSOCIATED EQUIPMENT FOR REPLACEMENT WITH A NEW GENERATOR AND ASSOCIATED EQUIPMENT TO INCLUDE A REMOTE RADIATOR.

SHEET NOTES:

1. DEMOLISH EXISTING FEEDER AS NEEDED TO INSTALL NEW ATS. EXTEND AND RECONNECT TO NEW TRANSFER SWITCH. PROVIDE JUNCTION BOXES, CONDUIT, AND WIRE AS REQUIRED.
2. PROVIDE NEW TRANSFORMER AND RECONNECT TO EXISTING GROUNDING ELECTRODE CONDUCTOR FOR SEPARATELY DERIVED SYSTEM.
3. EXTEND AND RECONNECT EXISTING FEEDERS AS REQUIRED.
4. PROVIDE #4 EQUIPMENT GROUNDING CONDUCTOR IF IT DOES NOT EXIST IN THE FEEDER, OTHERWISE EXTEND.
5. REMOVE EXISTING FEEDER TO FIRE PUMP AND REPLACE WITH 2 HOUR RATED FEEDER PER NEC 695.6(A)(2)(4). FIRE PUMP FEEDER IS APPROXIMATELY 140' IN LENGTH.
6. PROVIDE #2 BARE COPPER GROUND ELECTRODE CONDUCTOR AND CONNECT TO EXISTING GROUNDING ELECTRODE.

FOR:
- SUBMITTAL
- PRICING

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STATE OF ALASKA — TIMOTHY E. HALL — EE-9131 — REGISTERED PROFESSIONAL ENGINEER

Alaska Court System

Boney Courthouse Generator Replacement

303 K Street
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99501

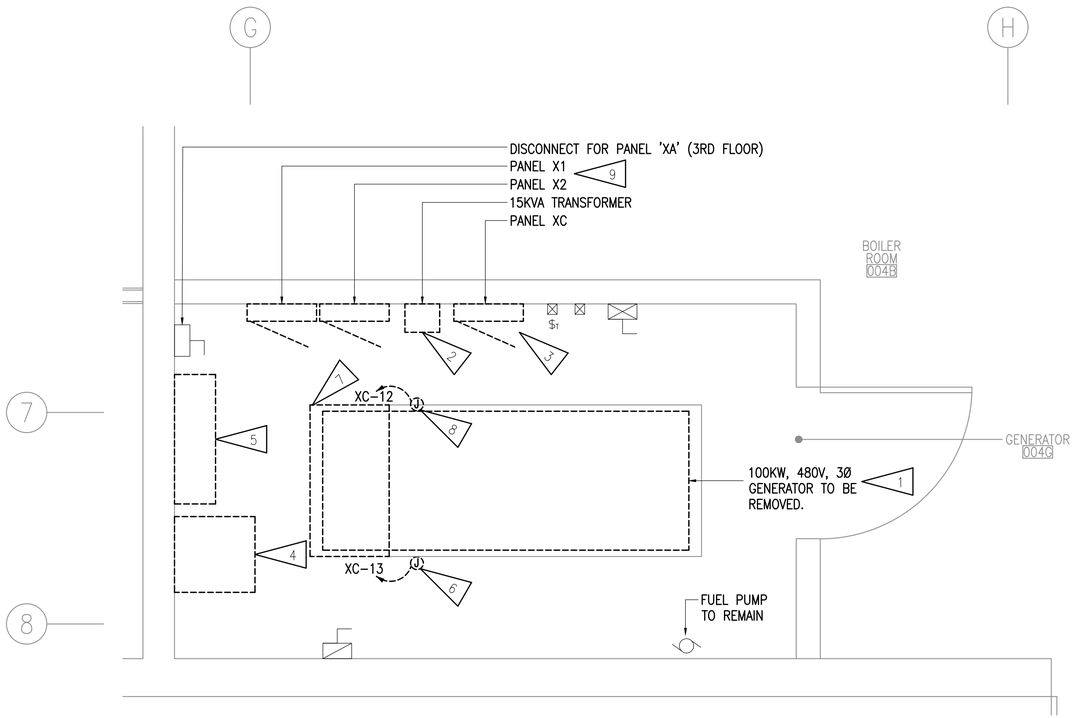
CONSTRUCTION DOCUMENTS

JOB NO.	M3152
DATE:	03/06/24
PROJ. MGR.:	TEH
DRAWN BY:	BC,NVF
REVIEWED BY:	TEH, JAM
REVISIONS:	

LEGEND, ONE-LINE DIAGRAMS, AND LOAD CALCULATION

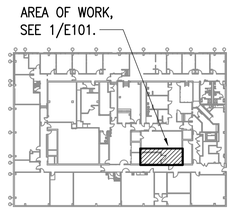
SHEET NO.

E001



1 GENERATOR ROOM - ELECTRICAL DEMOLITION PLAN

1/2" = 1'-0"



BASEMENT - KEY PLAN

NO SCALE

GENERAL NOTES:

A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS-BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.

B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.

C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

D. SALVAGE ALL GENERATOR MONITORING DEVICES AND CONNECTORS

SHEET NOTES:

1. REMOVE GENERATOR AND ASSOCIATED ELECTRICAL EQUIPMENT. SALVAGE WIRING FOR EXTENSION TO NEW GENERATOR. SEE ELECTRICAL REMODEL PLAN 1/E201.
2. DEMOLISH EXISTING TRANSFORMER.
3. DEMOLISH PANELBOARD. SALVAGE ALL BRANCH CIRCUIT WIRING FOR EXTENSION TO NEW PANELBOARD TO BE INSTALLED AT NEW LOCATION. SEE ELECTRICAL REMODEL PLAN 1/E201.
4. DEMOLISH GENERATOR CONTROL PANEL.
5. DEMOLISH TRANSFER SWITCH.
6. DEMOLISH CONNECTION TO BATTERIES AND CHARGING EQUIPMENT. SALVAGE CIRCUIT FOR RE-USE.
7. PORTION OF HOUSEKEEPING PAD IN FRONT OF PANELS TO BE REMOVED. COORDINATE WITH PROJECT MANAGER.
8. DEMOLISH ENGINE BLOCK HEATER. SALVAGE CIRCUIT FOR RE-USE.
9. DEMOLISH PANELBOARD. SALVAGE BRANCH CIRCUIT WIRING FOR CONNECTION TO NEW PANELBOARD TO BE INSTALLED AT THIS LOCATION. SEE ELECTRICAL REMODEL PLAN 1/E201.

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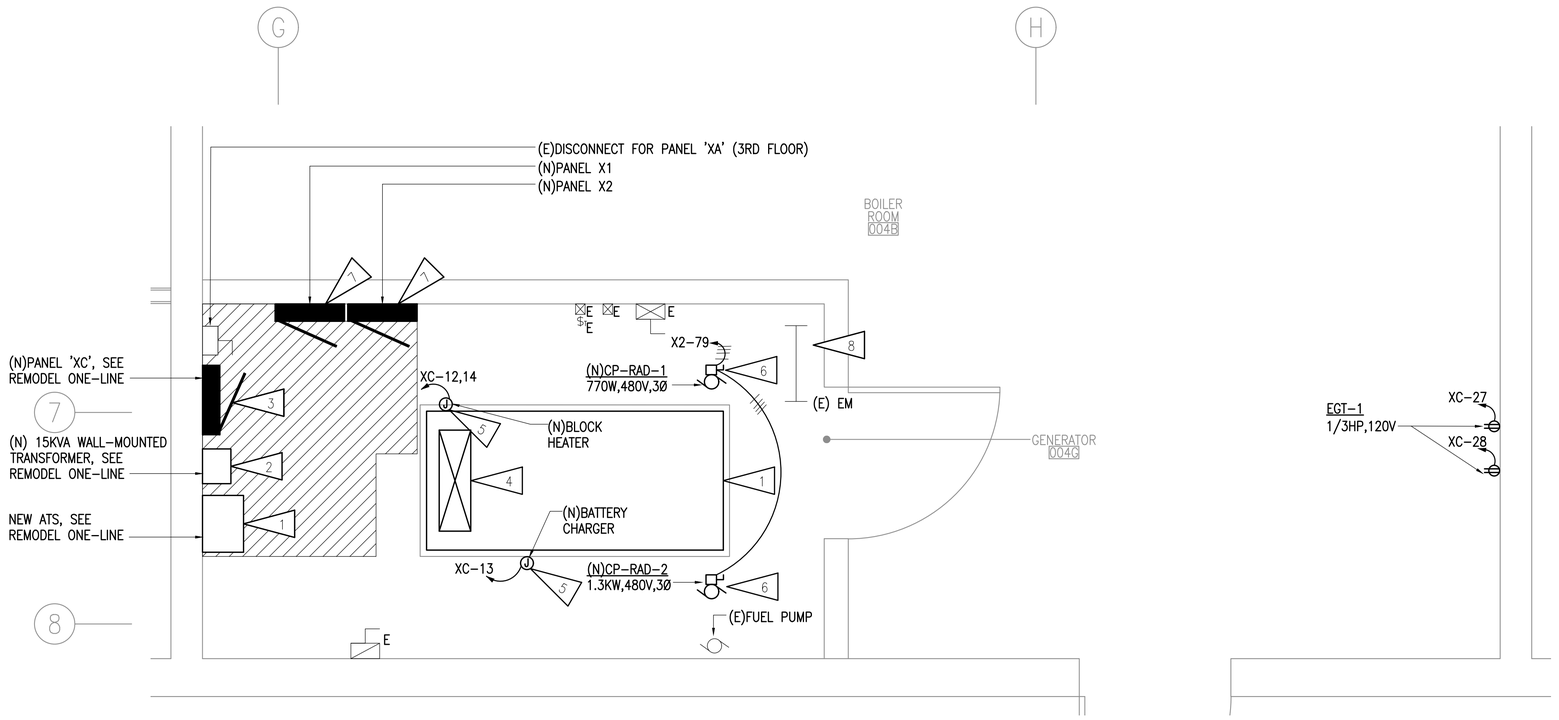
DRAWN BY:	**BC,NVF**
REVIEWED BY:	**TEH, JAM**
REVISIONS:	

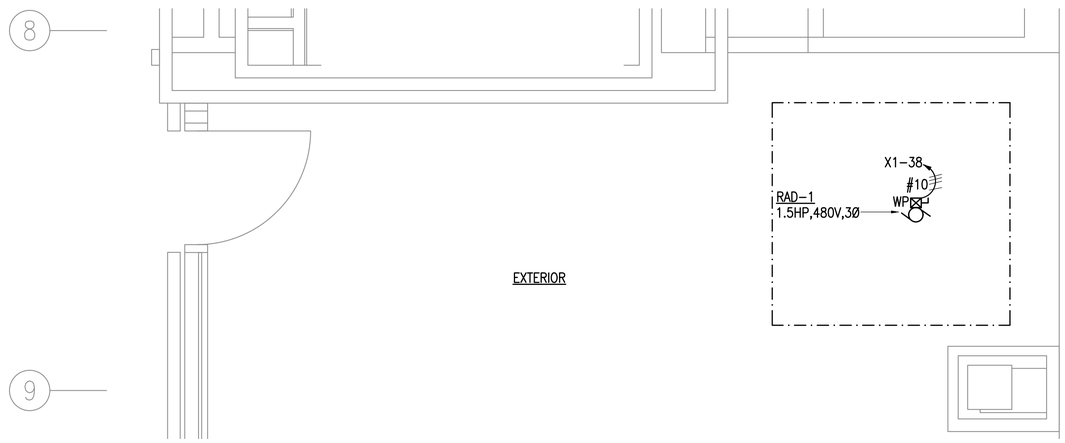
ELECTRICAL DEMOLITION PLAN

SHEET NO.
E101



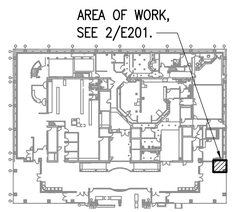
1 GENERATOR ROOM - ELECTRICAL REMODEL PLAN

1/2" = 1'-0"



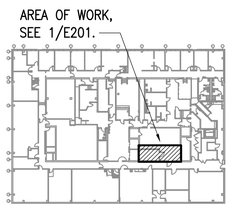
2 1ST FLOOR - ELECTRICAL REMODEL PLAN

1/2" = 1'-0"



1ST FLOOR - KEY PLAN

NO SCALE



BASEMENT - KEY PLAN

NO SCALE

GENERAL NOTES:

A. SEE REMODEL ONE-LINE DIAGRAM 2/E001 FOR EQUIPMENT RATINGS.

B. CONTRACTOR SHALL DISCONNECT AND RECONNECT EQUIPMENT IN AREAS OF WORK AS REQUIRED TO INSTALL NEW GENERATOR IN ROOM.

C. EXTEND AND RECONNECT ALL EXISTING GENERATOR MONITORING DEVICES AND CONNECTIONS (DDC, FIRE ALARM, ETC.). PROVIDE JUNCTION BOXES, CONDUIT AND WIRE AS REQUIRED.

SHEET NOTES:

1. NEW PAD MOUNTED STANDBY DIESEL GENERATOR AND WALL MOUNTED ATS. PROVIDE NEW FEEDER AND CONNECT TO NEW EQUIPMENT AT NEW LOCATIONS. SEE REMODEL ONE-LINE DIAGRAM 2/E001.
2. PROVIDE NEW 15KVA, 480:208V, 3ϕ WALL-MOUNTED TRANSFORMER IN LOCATION INDICATED. PROVIDE EXTENSION OF EXISTING LOCAL CIRCUIT AND CONNECT TO TRANSFORMER AT NEW LOCATION.
3. PROVIDE NEW PANELBOARD IN NEW LOCATION. PROVIDE EXTENSION OF SALVAGED CIRCUITS FOR CONNECTION TO NEW PANELBOARD. PROVIDE JUNCTION BOXES, CONDUIT, AND WIRE AS REQUIRED. SEE PANEL SCHEDULE ON SHEET E301 FOR PANELBOARD RATINGS, NEW CIRCUITS, AND EXISTING CIRCUITS THAT ARE TO REMAIN.
4. GENERATOR MOUNTED CONTROL PANEL. PROVIDE CONTROL CONNECTION FROM NEW ATS PER MANUFACTURER INSTRUCTIONS.
5. PROVIDE EXTENSION OF EXISTING CIRCUIT TO NEW LOAD. PROVIDE JUNCTION BOXES, CONDUIT, AND WIRE AS REQUIRED.
6. PROVIDE CONNECTION FOR MECHANICAL EQUIPMENT.
7. PROVIDE NEW PANELBOARD IN EXISTING LOCATION. PROVIDE EXTENSION OF SALVAGED CIRCUITS FOR CONNECTION TO NEW PANELBOARD. PROVIDE JUNCTION BOXES, CONDUIT, AND WIRE AS REQUIRED. SEE PANEL SCHEDULE ON SHEET E301 FOR PANELBOARD RATINGS, NEW CIRCUITS, AND EXISTING CIRCUITS THAT ARE TO REMAIN.
8. EXISTING EMERGENCY LIGHT TO REMAIN.

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REVIEWED BY:	TEH, JAM
REVISIONS:	

ELECTRICAL REMODEL PLANS

SHEET NO.
E201

NEW PANEL `X' (SECTION 1)

MFR/MODEL: SQUARE 'D' TYPE NF | VOLTS: 277/480V,3PH,4W | ENCLOSURE: NEMA 1 | 200 A | MTG: SURFACE

NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
b	1	3	70	PUMP P-7	MOTR				FEDR	TRANSFORMER PANEL 'XB'	*	3	2	b
b	3	3	70	^^^	MOTR				FEDR	^^^	*	3	4	b
b	5	3	70	^^^	MOTR				FEDR	^^^	*	3	6	b
b	7	3	20	FAN F-10	MOTR				MOTR	PUMP P-2	20	3	8	b
b	9	3	20	^^^	MOTR				MOTR	^^^	20	3	10	b
b	11	3	20	^^^	MOTR				MOTR	^^^	20	3	12	b
b	13	3	20	COMPRESSOR (3 HP)	MOTR				MOTR	PUMP P-3	20	3	14	b
b	15	3	20	^^^	MOTR				MOTR	^^^	20	3	16	b
b	17	3	20	^^^	MOTR				MOTR	^^^	20	3	18	b
b	19	3	15	BLR 1	MOTR				MOTR	UNIT HEATER #1	20	3	20	b
b	21	3	15	^^^	MOTR				MOTR	^^^	20	3	22	b
b	23	3	15	^^^	MOTR				MOTR	^^^	20	3	24	b
b	25	3	15	BLR 2	MOTR				MOTR	UNIT HEATER #2	20	3	26	b
b	27	3	15	^^^	MOTR				MOTR	^^^	20	3	28	b
b	29	3	15	^^^	MOTR				MOTR	^^^	20	3	30	b
b	31	3	15	BLR 3	MOTR				MOTR	SUMP PUMPS	20	3	32	b
b	33	3	15	^^^	MOTR				MOTR	^^^	20	3	34	b
b	35	3	15	^^^	MOTR				MOTR	^^^	20	3	36	b
b	37	3	15	JOCKEY PUMP	MOTR	**831**			**MOTR**	**REMOTE RADIATOR**	**15**	**3**	**38**	**a**
b	39	3	15	^^^	MOTR		**831**		**MOTR**	**^^^**	**15**	**3**	**40**	**a**
b	41	3	15	^^^	MOTR			**831**	**MOTR**	**^^^**	**15**	**3**	**42**	**a**
				SECTION 1 V-A ADDED		831	831	831		2,493	VA			
				SECTION 1 AMPS ADDED		3	3	3		3	A			
				A.I.C. RATING: 25,000										

NEW PANEL `X' (SECTION 2)

MFR/MODEL: SQUARE 'D' TYPE NF | VOLTS: 277/480V,3PH,4W | ENCLOSURE: NEMA 1 | 200 A | MTG: SURFACE

NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
b	43	3	20	PUMP 1-B	MOTR	**4,777**			**FEDR**	**TRANSFORMER PANEL 'XC'**	**25**	**3**	**44**	**b**
b	45	3	20	^^^	MOTR		**4,561**		**FEDR**	**^^^**	**25**	**3**	**46**	**b**
b	47	3	20	^^^	MOTR			**5,116**	**FEDR**	**^^^**	**25**	**3**	**48**	**b**
b	49	1	20	LTG-RM B26	LTG				LTG	LTG-STAIRWELLS	20	1	50	b
b	51	1	20	LTG-CORRIDOR B25	LTG				LTG	LTG-STAIRWELLS	20	1	52	b
b	53	1	20	LTG-MEZZANINE	LTG				LTG	LTG-4TH FLOOR	20	1	54	b
b	55	1	20	LTG-1ST FLOOR	LTG				LTG	LTG-5TH FLOOR	20	1	56	b
b	57	1	20	LTG-2ND FLOOR	LTG					SPARE	20	1	58	
b	59	1	20	LTG-3RD FLOOR	LTG					SPARE	20	1	60	
	61	1	20	SPARE						SPARE	20	1	62	
	63	1	20	SPARE					LTG	LTG-RMS B55,B67	20	1	64	b
	65	1	20	SPARE						SPACE	-	1	66	
	67	1	20	SPARE					FEDR	PANEL 'XD'	*	3	68	b
	69	1	20	SPARE					FEDR	^^^	*	3	70	b
	71	1	20	SPARE					FEDR	^^^	*	3	72	b
	73	1	20	SPARE					HEAT	WATER HEATER WH-21	15	3	74	b
	75	1	20	SPARE					HEAT	^^^	15	3	76	b
	77	1	20	SPARE					HEAT	^^^	15	3	78	b
a	**79**	**3**	**15**	**CP-RAD-1 & 2**	**MOTR**	**690**				SPACE		1	80	
a	**81**	**3**	**15**	**^^^**	**MOTR**		**690**			SPACE		1	82	
a	**83**	**3**	**15**	**^^^**	**MOTR**			**690**		SPACE		1	84	
				SECTION 2 V-A ADDED		5,467	5,251	5,806		16,524	VA			
				SECTION 2 AMPS ADDED		20	19	21		20	A			
				TOTAL V-A ADDED		6,298	6,082	6,637		19,017	VA			
				TOTAL AMPS ADDED		23	22	24		23	A			
				A.I.C. RATING: 25,000										

PANEL NOTES:
a NEW LOAD CONNECTED TO NEW CIRCUIT.
b EXISTING LOAD AND CIRCUIT THAT WAS DISCONNECTED AND SALVAGED FROM THE DEMOLISHED PANEL 'X'. RECONNECT WIRING TO NEW CIRCUIT BREAKER IN THIS PANEL AND PROVIDE EXTENSION OF EXISTING CIRCUITS AS REQUIRED TO SAFELY CONNECT TO NEW CIRCUIT BREAKERS. SALVAGED LOAD SHALL BE CONNECTED TO NEW BREAKERS MATCHING THE SIZE OF THE PREVIOUS.

PANEL OPTIONS:
MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)

NEW PANEL 'XC'

MFR/MODEL: SQUARE 'D' TYPE NQ | VOLTS: 120/208V,3PH,4W | ENCLOSURE: NEMA 1 | 100 A | MTG: SURFACE

NOTE	CIRC	POLE	AMPS	SERVICE	TYPE	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	TYPE	SERVICE	AMPS	POLE	CIRC	NOTE
c	1	1	15	PUMP P-2	MOTR	215 500			MISC	BOILER CONTROL	20	1	2	b
b	3	1	20	HANDICAP DOOR OPERATOR	MISC		500 **300**		**MISC**	**BATTERY CHARGING**	**20**	**1**	**4**	**b**
c	5	1	20	PUMP P-5	MOTR			696 500	MISC	BOILER MGMT SYSTEM	20	1	6	b
a	7	1	20	GENERATOR RM COOLING FAN	MOTR	1176 180			RECP	RECP-BOILER ROOM	20	1	8	c
b	9	1	20	LTG-ELEVATOR PIT GEN ROOM	LTG		300 180		RECP	RECP-BOILER ROOM	20	1	10	c
b	11	1	20	RECP-ELEVATOR PIT	RECP			180 **1500**	**MISC**	**GENERATOR BLOCK HEATER**	**20**	**2**	**12**	**b**
c	13	1	20	SEWER DRAIN HT	HEAT	500 1000			MISC	^^	20	2	14	b
c	15	1	15	WATER HEATER 21	MISC		197 180		RECP	RECP-BOILER ROOM	20	1	16	c
b	17	1	20	AIR DUCT SMOKE DETECTOR	MISC			200 360	MISC	TV CAMERA	20	1	18	b
b	19	1	20	PUMP P-1	MOTR	1176 30			LTG	EMERGENCY LIGHTING UNIT	20	1	20	c
b	21	1	20	PUMP P-11	MOTR		1176			SPACE		1	22	
c	23	1	20	RECP-GEN ROOM	RECP			180 1500	MISC	COMPUTER RM B53 UPS	20	1	24	b
	25	1	20	SPARE						SPARE	20	1	26	
	27	**1**	**20**	**EGT-1(1)**	**MOTR**		**864 864**		**MOTR**	**EGT-1(2)**	**20**	**1**	**28**	
	29	1	20	SPARE						SPARE	20	1	30	
	31	1	20	SPARE						SPARE	20	1	32	
	33			SPACE						SPACE			34	
	35			SPACE						SPACE			36	
	37			SPACE						SPACE			38	
	39			SPACE						SPACE			40	
	41			SPACE						SPACE			42	
				TOTAL V-A		4777	4561	5116		14,454	VA			
				TOTAL AMPS		40	38	43		40	A			
				A.I.C. RATING: 10,000										

	LTG	RECP	MOTR	LG.MT	MISC	KIT	HEAT	SPEC	TOTAL	AMPS
TOTAL CONNECTED LOAD IN KVA:	0.33	0.90	4.44	0.29	6.56	0.00	0.50	0.00	12.7 KVA	35 A
DEMAND LOAD IN KVA:	0.41	0.90	4.44	0.29	6.56	0.00	0.50	0.00	13.1 KVA	36 A

PANEL NOTES:
a LOAD INFORMATION FROM RECORD DRAWINGS.
b LOAD INFORMATION ESTIMATED BASED ON EQUIPMENT DATA FROM SIMILAR PROJECTS. SIZE BREAKER PER MANUFACTURER RECOMMENDATIONS OF EQUIVALENT SELECTED.
c LOAD INFORMATION BASED ON FIELD OBSERVATIONS.

PANEL OPTIONS:
MAIN CIRCUIT BREAKER (SEE ONE-LINE FOR SIZE)

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PANEL SCHEDULES

SHEET NO.
E301