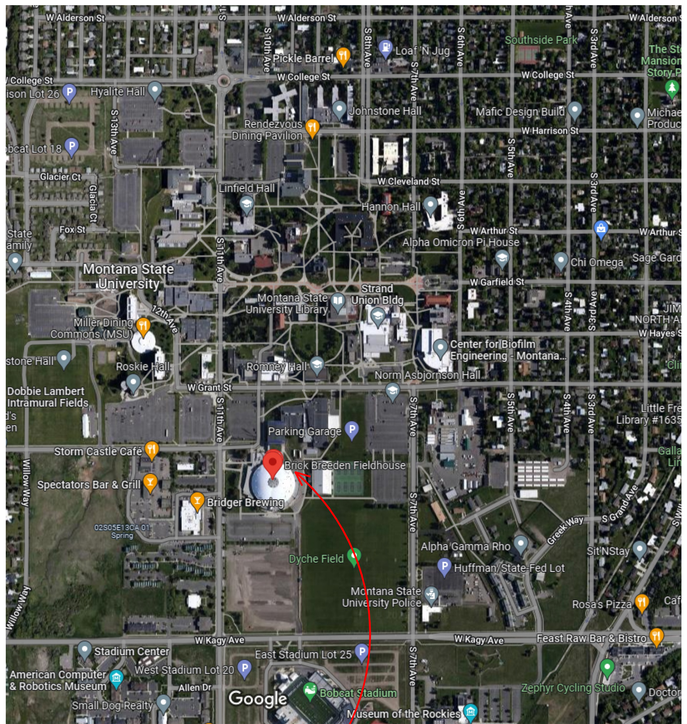
MONTANA STATE UNIVERSITY

BRICK BREEDEN FIELDHOUSE
159TR UIT RACKS TO GENERATOR

BOZEMAN, MONTANA

PROJECT LOCATION

BOZEMAN AREA MAP



MONTANA MAP

OWNER
Montana State University - Bozeman
University Facilities Management
PO Box 172760
Bozeman, MT 59717-2760
phone 406-994-2001

ENGINEER
TD&H Engineering
1800 River Drive North
Great Falls, MT 59401
phone 406-761-3010
Brad Kauffman, PE

PROJECT ADDRESS
MONTANA STATE UNIVERSITY
BRICK BREEDEN FIELDHOUSE
BOZEMAN, MONTANA 59717

DRAWING INDEX

GENERAL
G1.0 COVER SHEET

ELECTRICAL
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E2.0 ELECTRICAL REMODEL PLAN
E3.0 DEMO ELECTRICAL ONE-LINE DIAGRAM
E4.0 NEW ELECTRICAL ONE-LINE DIAGRAM

MECHANICAL
M1.0 MECHANICAL PLAN

STRUCTURAL
S1.0 GENERATOR CANOPY FRAMING DETAILS

PROJECT SCOPE OF WORK

THIS PROJECT INCLUDES THE REPLACEMENT OF AN EXISTING INDOOR, NATURAL GAS FUELED GENERATOR WITH A NEW OUTDOOR, NATURAL GAS FUELED GENERATOR. ELECTRICALLY, NEW AUTOMATIC TRANSFER SWITCHES WILL BE INSTALLED AS WELL AS A NEW PANELBOARD IN IT ROOM 159. ADDITIONAL WORK WILL INCLUDE A SNOW CANOPY BUILT OVER THE GENERATOR AND A NEW NATURAL GAS SERVICE WILL BE INSTALLED BY THE UTILITY COMPANY.

APPLICABLE BUILDING CODES

2021 INTERNATIONAL BUILDING CODE (IBC)
2021 UNIFORM PLUMBING CODE (UPC)
2020 NATIONAL ELECTRICAL CODE (NEC)

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BRICK BREEDEN FIELDHOUSE
159TR UIT RACKS TO GENERATOR

TD&H Engineering
tdhengineering.com

DRAWN BY:
REVIEWED BY:

REV.	DESCRIPTION	DATE

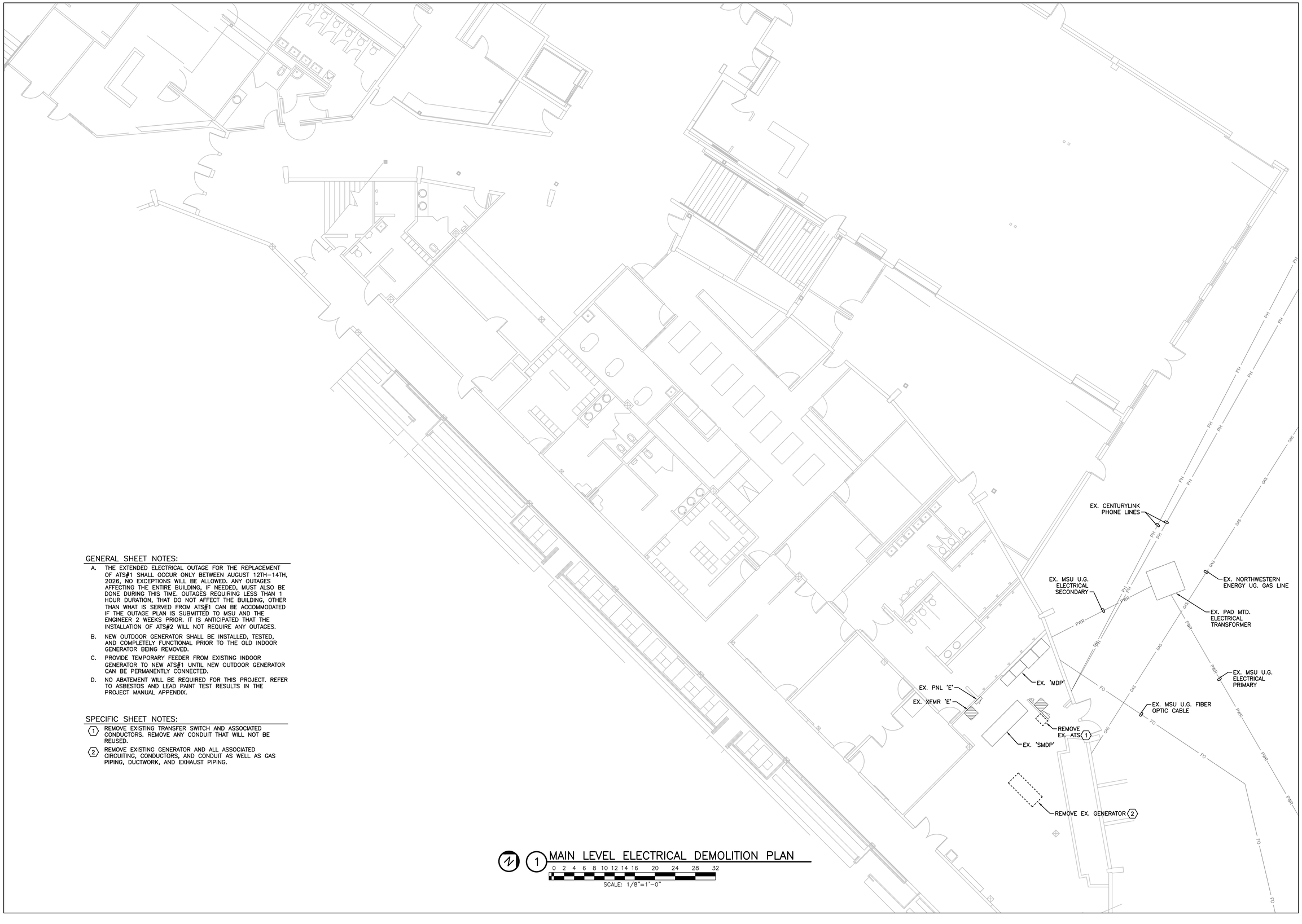
BRAD M. KAUFFMAN
No. 14587 PE
LICENSED PROFESSIONAL ENGINEER
MONTANA

PPA#23-0839
A/E#00-00-00
TDH#G24-2501

SHEET TITLE
COVER SHEET

SHEET
G1.0

DATE
09-15-25



GENERAL SHEET NOTES:

A. THE EXTENDED ELECTRICAL OUTAGE FOR THE REPLACEMENT OF ATS#1 SHALL OCCUR ONLY BETWEEN AUGUST 12TH–14TH, 2026, NO EXCEPTIONS WILL BE ALLOWED. ANY OUTAGES AFFECTING THE ENTIRE BUILDING, IF NEEDED, MUST ALSO BE DONE DURING THIS TIME. OUTAGES REQUIRING LESS THAN 1 HOUR DURATION, THAT DO NOT AFFECT THE BUILDING, OTHER THAN WHAT IS SERVED FROM ATS#1 CAN BE ACCOMMODATED IF THE OUTAGE PLAN IS SUBMITTED TO MSU AND THE ENGINEER 2 WEEKS PRIOR. IT IS ANTICIPATED THAT THE INSTALLATION OF ATS#2 WILL NOT REQUIRE ANY OUTAGES.

B. NEW OUTDOOR GENERATOR SHALL BE INSTALLED, TESTED, AND COMPLETELY FUNCTIONAL PRIOR TO THE OLD INDOOR GENERATOR BEING REMOVED.

C. PROVIDE TEMPORARY FEEDER FROM EXISTING INDOOR GENERATOR TO NEW ATS#1 UNTIL NEW OUTDOOR GENERATOR CAN BE PERMANENTLY CONNECTED.

D. NO ABATEMENT WILL BE REQUIRED FOR THIS PROJECT. REFER TO ASBESTOS AND LEAD PAINT TEST RESULTS IN THE PROJECT MANUAL APPENDIX.

SPECIFIC SHEET NOTES:

(1) REMOVE EXISTING TRANSFER SWITCH AND ASSOCIATED CONDUCTORS. REMOVE ANY CONDUIT THAT WILL NOT BE REUSED.

(2) REMOVE EXISTING GENERATOR AND ALL ASSOCIATED CIRCUITING, CONDUCTORS, AND CONDUIT AS WELL AS GAS PIPING, DUCTWORK, AND EXHAUST PIPING.

1 MAIN LEVEL ELECTRICAL DEMOLITION PLAN

0 2 4 6 8 10 12 14 16 20 24 28 32

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

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FIELDHOUSE

159TR UIT RACKS TO GENERATOR

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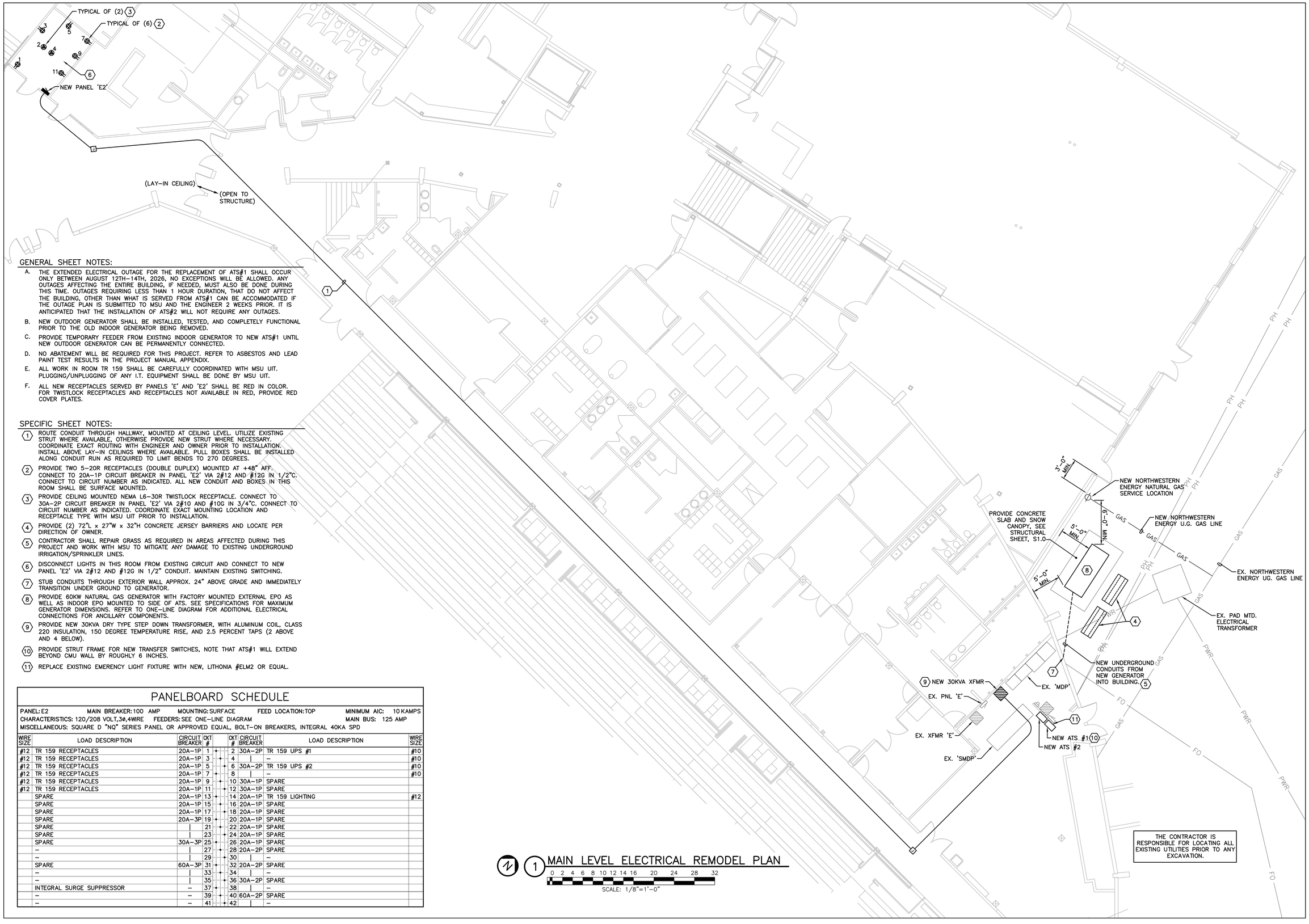
A/E#00-00-00

TDH#G24-2501

SHEET TITLE
ELECTRICAL DEMOLITION PLAN

SHEET
E1.0

DATE
09-15-25



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A. THE EXTENDED ELECTRICAL OUTAGE FOR THE REPLACEMENT OF ATS#1 SHALL OCCUR ONLY BETWEEN AUGUST 12TH–14TH, 2026, NO EXCEPTIONS WILL BE ALLOWED. ANY OUTAGES AFFECTING THE ENTIRE BUILDING, IF NEEDED, MUST ALSO BE DONE DURING THIS TIME. OUTAGES REQUIRING LESS THAN 1 HOUR DURATION, THAT DO NOT AFFECT THE BUILDING, OTHER THAN WHAT IS SERVED FROM ATS#1 CAN BE ACCOMMODATED IF THE OUTAGE PLAN IS SUBMITTED TO MSU AND THE ENGINEER 2 WEEKS PRIOR. IT IS ANTICIPATED THAT THE INSTALLATION OF ATS#2 WILL NOT REQUIRE ANY OUTAGES.

B. NEW OUTDOOR GENERATOR SHALL BE INSTALLED, TESTED, AND COMPLETELY FUNCTIONAL PRIOR TO THE OLD INDOOR GENERATOR BEING REMOVED.

C. PROVIDE TEMPORARY FEEDER FROM EXISTING INDOOR GENERATOR TO NEW ATS#1 UNTIL NEW OUTDOOR GENERATOR CAN BE PERMANENTLY CONNECTED.

D. NO ABATEMENT WILL BE REQUIRED FOR THIS PROJECT. REFER TO ASBESTOS AND LEAD PAINT TEST RESULTS IN THE PROJECT MANUAL APPENDIX.

E. ALL WORK IN ROOM TR 159 SHALL BE CAREFULLY COORDINATED WITH MSU UIT. PLUGGING/UNPLUGGING OF ANY I.T. EQUIPMENT SHALL BE DONE BY MSU UIT.

F. ALL NEW RECEPTACLES SERVED BY PANELS 'E' AND 'E2' SHALL BE RED IN COLOR. FOR TWISTLOCK RECEPTACLES AND RECEPTACLES NOT AVAILABLE IN RED, PROVIDE RED COVER PLATES.

SPECIFIC SHEET NOTES:

1. ROUTE CONDUIT THROUGH HALLWAY, MOUNTED AT CEILING LEVEL. UTILIZE EXISTING STRUT WHERE AVAILABLE, OTHERWISE PROVIDE NEW STRUT WHERE NECESSARY. COORDINATE EXACT ROUTING WITH ENGINEER AND OWNER PRIOR TO INSTALLATION. INSTALL ABOVE LAY–IN CEILINGS WHERE AVAILABLE. PULL BOXES SHALL BE INSTALLED ALONG CONDUIT RUN AS REQUIRED TO LIMIT BENDS TO 270 DEGREES.
2. PROVIDE TWO 5–20R RECEPTACLES (DOUBLE DUPLEX) MOUNTED AT +48" AFF. CONNECT TO 20A–1P CIRCUIT BREAKER IN PANEL 'E2' VIA 2#12 AND #12G IN 1/2"C. CONNECT TO CIRCUIT NUMBER AS INDICATED. ALL NEW CONDUIT AND BOXES IN THIS ROOM SHALL BE SURFACE MOUNTED.
3. PROVIDE CEILING MOUNTED NEMA L6–30R TWISTLOCK RECEPTACLE. CONNECT TO 30A–2P CIRCUIT BREAKER IN PANEL 'E2' VIA 2#10 AND #10G IN 3/4"C. CONNECT TO CIRCUIT NUMBER AS INDICATED. COORDINATE EXACT MOUNTING LOCATION AND RECEPTACLE TYPE WITH MSU UIT PRIOR TO INSTALLATION.
4. PROVIDE (2) 72"L x 27"W x 32"H CONCRETE JERSEY BARRIERS AND LOCATE PER DIRECTION OF OWNER.
5. CONTRACTOR SHALL REPAIR GRASS AS REQUIRED IN AREAS AFFECTED DURING THIS PROJECT AND WORK WITH MSU TO MITIGATE ANY DAMAGE TO EXISTING UNDERGROUND IRRIGATION/SPRINKLER LINES.
6. DISCONNECT LIGHTS IN THIS ROOM FROM EXISTING CIRCUIT AND CONNECT TO NEW PANEL 'E2' VIA 2#12 AND #12G IN 1/2" CONDUIT. MAINTAIN EXISTING SWITCHING.
7. STUB CONDUITS THROUGH EXTERIOR WALL APPROX. 24" ABOVE GRADE AND IMMEDIATELY TRANSITION UNDER GROUND TO GENERATOR.
8. PROVIDE 60KW NATURAL GAS GENERATOR WITH FACTORY MOUNTED EXTERNAL EPO AS WELL AS INDOOR EPO MOUNTED TO SIDE OF ATS. SEE SPECIFICATIONS FOR MAXIMUM GENERATOR DIMENSIONS. REFER TO ONE–LINE DIAGRAM FOR ADDITIONAL ELECTRICAL CONNECTIONS FOR ANCILLARY COMPONENTS.
9. PROVIDE NEW 30KVA DRY TYPE STEP DOWN TRANSFORMER, WITH ALUMINUM COIL, CLASS 220 INSULATION, 150 DEGREE TEMPERATURE RISE, AND 2.5 PERCENT TAPS (2 ABOVE AND 4 BELOW).
10. PROVIDE STRUT FRAME FOR NEW TRANSFER SWITCHES, NOTE THAT ATS#1 WILL EXTEND BEYOND CMU WALL BY ROUGHLY 6 INCHES.
11. REPLACE EXISTING EMERENCY LIGHT FIXTURE WITH NEW, LITHONIA #ELM2 OR EQUAL.

PANELBOARD SCHEDULE

PANEL: E2 MAIN BREAKER: 100 AMP MOUNTING: SURFACE FEED LOCATION: TOP MINIMUM AIC: 10 KAMPS
CHARACTERISTICS: 120/208 VOLT,3Ø,4WIRE FEEDERS: SEE ONE–LINE DIAGRAM MAIN BUS: 125 AMP
MISCELLANEOUS: SQUARE D "NQ" SERIES PANEL OR APPROVED EQUAL, BOLT–ON BREAKERS, INTEGRAL 40KA SPD

WIRE SIZE	LOAD DESCRIPTION	CIRCUIT BREAKER	CKT #		CKT #	CIRCUIT BREAKER	LOAD DESCRIPTION	WIRE SIZE
#12	TR 159 RECEPTACLES	20A–1P	1		2	30A–2P	TR 159 UPS #1	#10
#12	TR 159 RECEPTACLES	20A–1P	3		4	|	–	#10
#12	TR 159 RECEPTACLES	20A–1P	5		6	30A–2P	TR 159 UPS #2	#10
#12	TR 159 RECEPTACLES	20A–1P	7		8	|	–	#10
#12	TR 159 RECEPTACLES	20A–1P	9		10	30A–1P	SPARE	
#12	TR 159 RECEPTACLES	20A–1P	11		12	30A–1P	SPARE	
	SPARE	20A–1P	13		14	20A–1P	TR 159 LIGHTING	#12
	SPARE	20A–1P	15		16	20A–1P	SPARE	
	SPARE	20A–1P	17		18	20A–1P	SPARE	
	SPARE	20A–3P	19		20	20A–1P	SPARE	
	SPARE	|	21		22	20A–1P	SPARE	
	SPARE	|	23		24	20A–1P	SPARE	
	SPARE	30A–3P	25		26	20A–1P	SPARE	
	–	|	27		28	20A–2P	SPARE	
	–	|	29		30	|	–	
	SPARE	60A–3P	31		32	20A–2P	SPARE	
	–	|	33		34	|	–	
	–	|	35		36	30A–2P	SPARE	
	INTEGRAL SURGE SUPPRESSOR	–	37		38	|	–	
	–	–	39		40	60A–2P	SPARE	
	–	–	41		42	|	–	

1 MAIN LEVEL ELECTRICAL REMODEL PLAN

0 2 4 6 8 10 12 14 16 20 24 28 32

SCALE: 1/8"=1'–0"

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159TR UIT RACKS TO GENERATOR

TD&H Engineering tdhengineering.com

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REVIEWED BY:		
REV.	DESCRIPTION	DATE

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PPA#23-0839

A/E#00-00-00

TDH#G24-2501

SHEET TITLE

ELECTRICAL REMODEL PLAN

SHEET

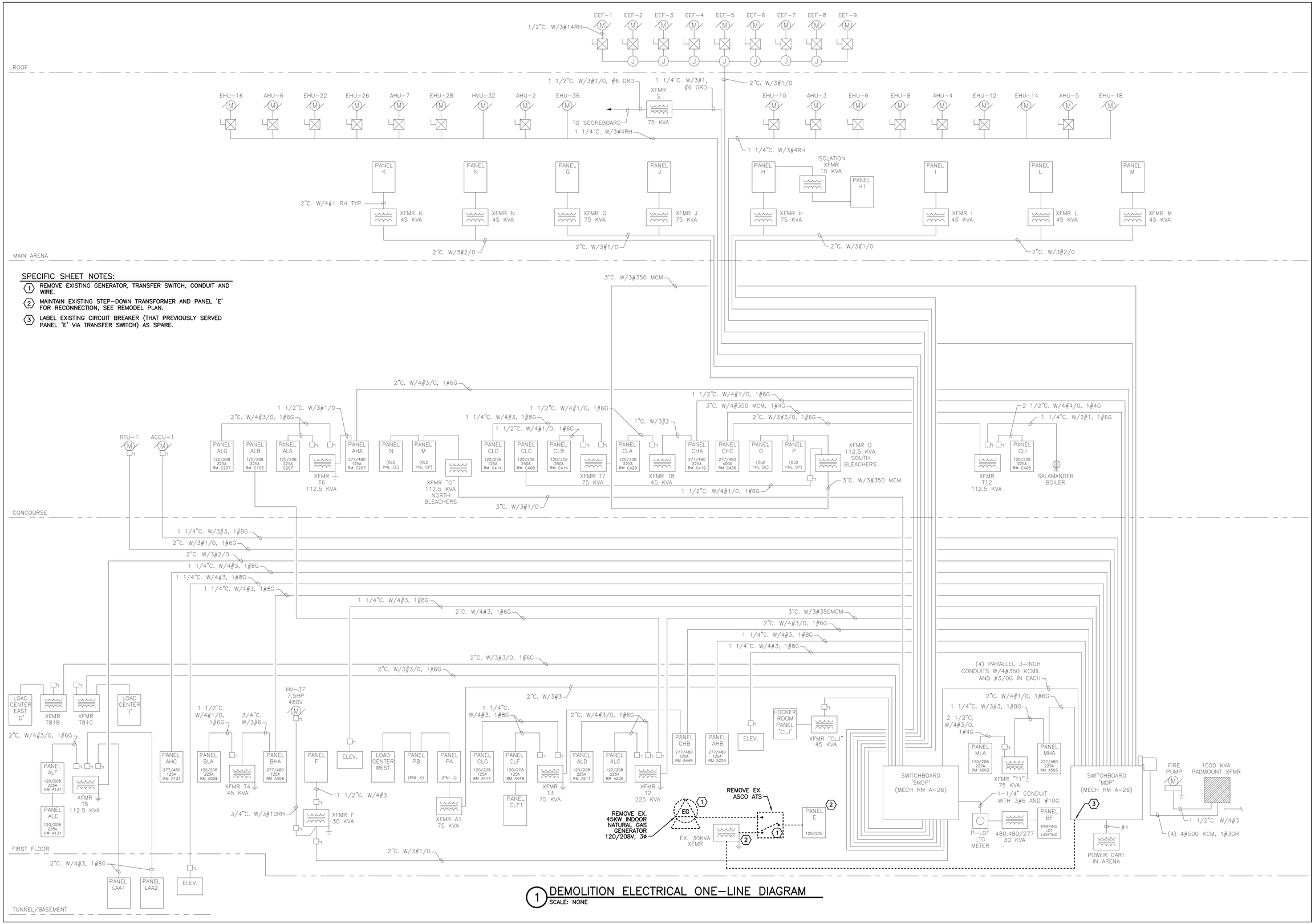
E2.0

DATE

09-15-25

SPECIFIC SHEET NOTES:

1. REMOVE EXISTING GENERATOR, TRANSFER SWITCH, CONDUIT AND WIRE.
2. MAINTAIN EXISTING STEP-DOWN TRANSFORMER AND PANEL 'E' FOR RECONNECTION, SEE REMODEL PLAN.
3. LABEL EXISTING CIRCUIT BREAKER (THAT PREVIOUSLY SERVED PANEL 'E' VIA TRANSFER SWITCH) AS SPARE.



1 DEMOLITION ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE

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No. 14587 PE
LICENSED PROFESSIONAL ENGINEER

PPA#23-0839

A/E#00-00-00

TDH#G24-2501

SHEET TITLE

DEMO ELECTRICAL ONE-LINE DIAGRAM

SHEET

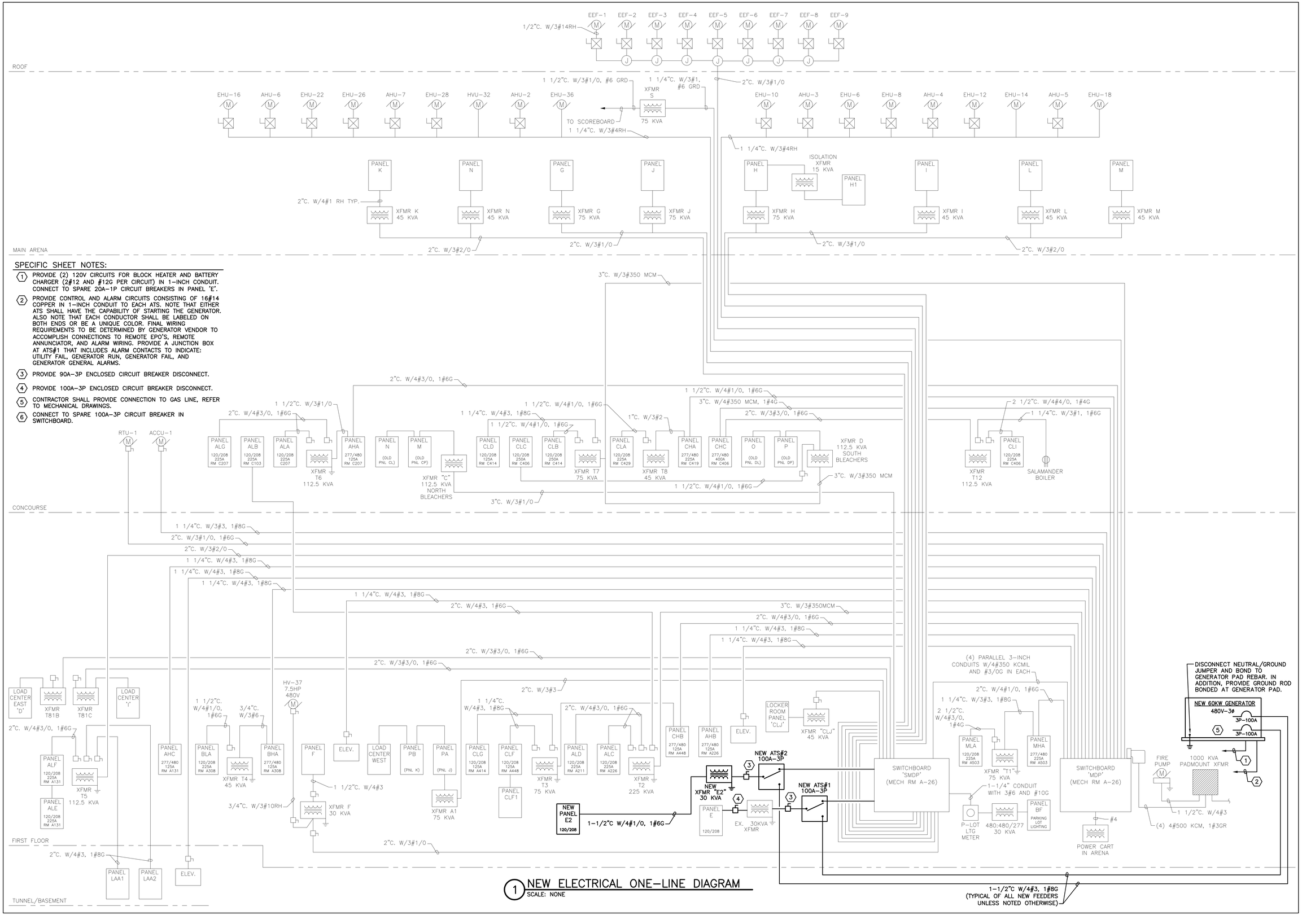
E3.0

DATE

09-15-25

SPECIFIC SHEET NOTES:

1. PROVIDE (2) 120V CIRCUITS FOR BLOCK HEATER AND BATTERY CHARGER (2#12 AND #12G PER CIRCUIT) IN 1–INCH CONDUIT. CONNECT TO SPARE 20A–1P CIRCUIT BREAKERS IN PANEL 'E'.
2. PROVIDE CONTROL AND ALARM CIRCUITS CONSISTING OF 16#14 COPPER IN 1–INCH CONDUIT TO EACH ATS. NOTE THAT EITHER ATS SHALL HAVE THE CAPABILITY OF STARTING THE GENERATOR. ALSO NOTE THAT EACH CONDUCTOR SHALL BE LABELED ON BOTH ENDS OR BE A UNIQUE COLOR. FINAL WIRING REQUIREMENTS TO BE DETERMINED BY GENERATOR VENDOR TO ACCOMPLISH CONNECTIONS TO REMOTE EPO'S, REMOTE ANNUNCIATOR, AND ALARM WIRING. PROVIDE A JUNCTION BOX AT ATS#1 THAT INCLUDES ALARM CONTACTS TO INDICATE: UTILITY FAIL, GENERATOR RUN, GENERATOR FAIL, AND GENERATOR GENERAL ALARMS.
3. PROVIDE 90A–3P ENCLOSED CIRCUIT BREAKER DISCONNECT.
4. PROVIDE 100A–3P ENCLOSED CIRCUIT BREAKER DISCONNECT.
5. CONTRACTOR SHALL PROVIDE CONNECTION TO GAS LINE, REFER TO MECHANICAL DRAWINGS.
6. CONNECT TO SPARE 100A–3P CIRCUIT BREAKER IN SWITCHBOARD.



1 NEW ELECTRICAL ONE–LINE DIAGRAM
SCALE: NONE

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FIELDHOUSE
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PPA#23-0839
A/E#00-00-00
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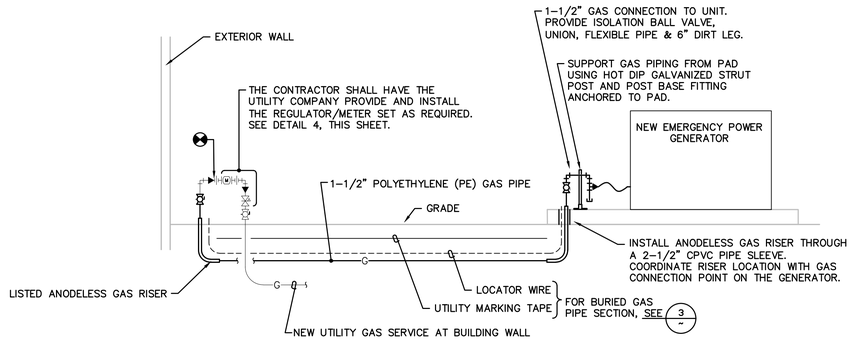
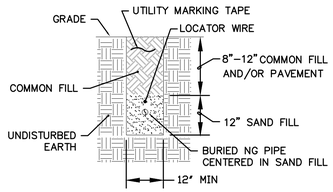
SHEET TITLE
NEW ELECTRICAL ONE-LINE DIAGRAM

SHEET
E4.0

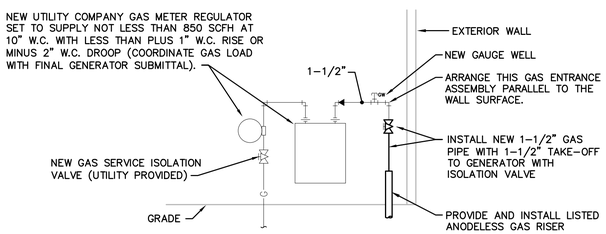
DATE
09-15-25



2 NATURAL GAS PIPING
NO SCALE



3 NATURAL GAS BURIED PIPING SECTION
NO SCALE



4 GAS METER PIPING INSTALLATION
NO SCALE

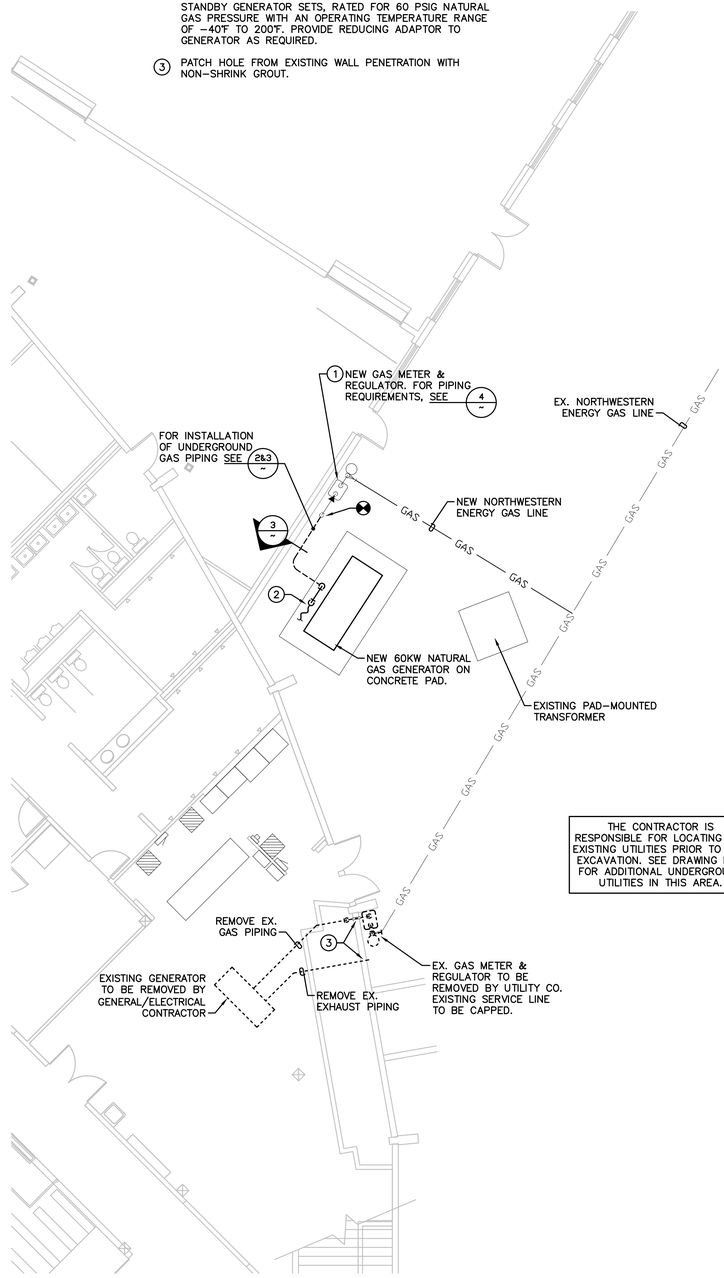
GENERAL SHEET NOTES:

A. ALL DEMOLITION WORK FOR EXISTING GENERATOR SHALL NOT OCCUR UNTIL NEW GENERATOR IS FULLY FUNCTIONAL AND CONNECTED INTO BUILDING ELECTRICAL SYSTEM.

B. NEW GAS SERVICE SHALL BE INSTALLED AND ACTIVE PRIOR TO THE OLD GAS SERVICE BEING DEMOLISHED.

SPECIFIC SHEET NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO ENSURE THE PROVIDED REGULATOR/METER MEETS THE DEMAND REQUIREMENTS. SEE SPECIFICATIONS AND NOTES THIS SHEET FOR FLOW AND PRESSURE REQUIREMENTS.
2. PROVIDE A 1-1/2" I.D. X 24" LONG FULLY INTERLOCKING HELICAL STRIP-WOUND HOSE CONNECTOR WITH STAINLESS STEEL OVERBRAID AND 1-1/2" MPT SWIVEL CONNECTIONS, M.B. STRURGIS MODEL SKU#100624 OR APPROVED EQUAL. THE ASSEMBLY SHALL BE INTENDED FOR CONNECTION TO STANDBY GENERATOR SETS, RATED FOR 60 PSIG NATURAL GAS PRESSURE WITH AN OPERATING TEMPERATURE RANGE OF -40°F TO 200°F. PROVIDE REDUCING ADAPTOR TO GENERATOR AS REQUIRED.
3. PATCH HOLE FROM EXISTING WALL PENETRATION WITH NON-SHRINK GROUT.



1 MECHANICAL PLAN
0 2 4 6 8 10 12 14 16 20 24 28 32
SCALE: 1/8"=1'-0"

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No. 39050 PE
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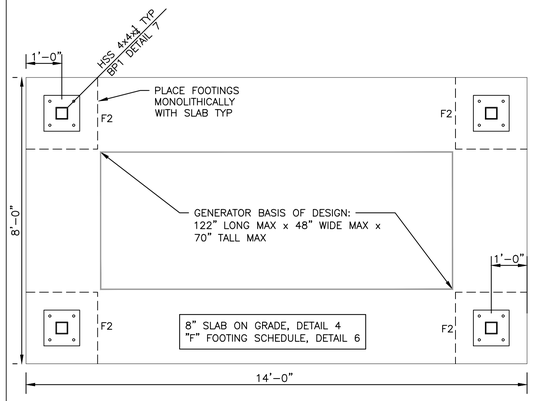
A/E#00-00-00

TDH#G24-2501

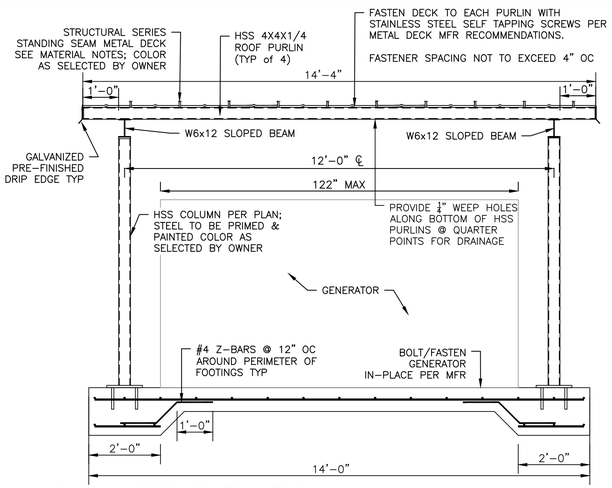
SHEET TITLE
MECHANICAL PLAN

SHEET
M1.0

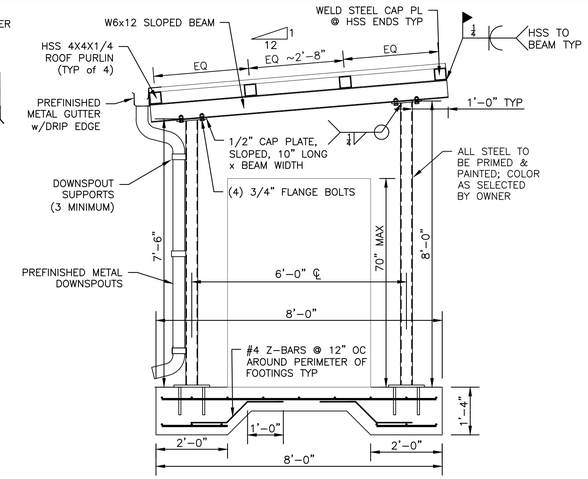
DATE
09-15-25



1 FOUNDATION PLAN
NTS



2 CANOPY ELEVATION
NTS



3 CANOPY ELEVATION
NTS

4 TYPICAL SLAB-ON-GRADE SECTION
NTS

BAR SIZE			CONCRETE	
IN-LB	SOFT METRIC	AREA (IN*2)	HORIZ & VERT	TOP
#3	#10	0.11	1'-7"	2'-1"
#4	#13	0.20	2'-1"	2'-9"
#5	#16	0.31	2'-7"	3'-5"
#6	#19	0.44	3'-1"	4'-1"
#7	#22	0.60	4'-6"	5'-11"
#8	#25	0.79	5'-2"	6'-9"
#9	#29	1.00	5'-10"	7'-7"
#10	#32	1.27	6'-7"	8'-6"
#11	#36	1.56	7'-3"	9'-6"

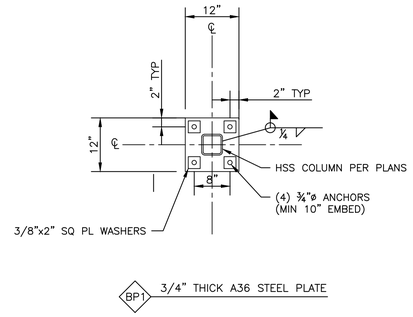
NOTES:
1. FOR REINFORCING WITH EPOXY COATING, MULTIPLY LAP LENGTH SHOWN BY 1.5.
2. CONCRETE LAP LENGTHS ARE CLASS "B" BASED ON F'C=4,000 PSI WITH COVER REQUIREMENTS INDICATED AND BAR SPACING AT LEAST TWO BAR DIAMETERS.
3. TOP BAR LAPS ARE HORIZONTAL LAPS WHERE MORE THAN 12" OF FRESH CONCRETE IS PLACED BELOW THE BARS.
4. TOP BAR LENGTHS MAY BE USED AT ALL LOCATIONS IN CONCRETE AT THE CONTRACTOR'S DISCRETION.

5 TYP. REINFORCING SPLICE LENGTHS
NTS

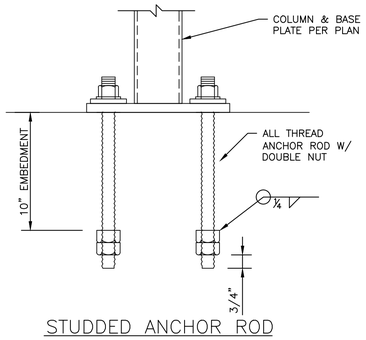
FOOTING (F) SCHEDULE

MARK	DIMENSION			REINFORCEMENT
	WIDTH (w)	LENGTH (L)	DEPTH (D)	
F2	2'-0"	2'-0"	1'-4"	(3) #4 BAR EA. WAY, TOP & BOT

6 FOOTING SCHEDULE
NTS



7 BASE PLATE SCHEDULE
NTS



8 TYPICAL ANCHOR ROD DETAILS
NTS

GENERAL NOTES

CODES & STANDARDS

1. INTERNATIONAL BUILDING CODE – 2021 IBC
2. AMERICAN SOCIETY OF CIVIL ENGINEERS – ASCE 7-16
3. AMERICAN CONCRETE INSTITUTE – ACI 318-19
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION – AISC 360-16
5. AMERICAN WELDING SOCIETY – AWS D1.4/D1.4M-2018
6. ASTM STANDARDS FOR THE MATERIALS SPECIFIED

MATERIALS

STRUCTURAL STEEL	W & WT PLATES HSS SQ OR RECT	ASTM A992, Fy = 50 KSI ASTM A36, Fy = 36 KSI ASTM A500, GR C, Fy = 50 KSI
METAL DECK	ROOF	STRUCTURAL SERIES STANDING SEAM RIB PROFILE = 2" MINIMUM GAGE = 22 GAGE MINIMUM PANEL WIDTH = 16" INWARD LOAD = 150 PSF MINIMUM
CONCRETE	ALL (U.N.O.)	PORTLAND CEMENT ASTM C150 TYPE II W/C RATIO = 0.45 MAXIMUM 28 DAY f'c = 4000 PSI SLUMP RANGE 3-5 INCHES AIR CONTENT = 4.5 - 7.5% ¾" MAXIMUM NORMAL WEIGHT AGGREGATE
REINFORCING BARS		ASTM A615, GRADE 60 (NON-WELDABLE) ASTM A706, GRADE 60 (WELDABLE)
ANCHOR RODS		ASTM F1554, GRADE 36
HIGH STRENGTH BOLTS		ASTM A325N
WELD METAL		E70XX ELECTRODE

FOUNDATION AND SOIL PREPARATION

SITE GRADING AND EXCAVATIONS

1. A GEOTECHNICAL ENGINEERING EVALUATION REPORT HAS NOT BEEN CONDUCTED FOR THIS PROJECT. THE CONTRACTOR IS THEREFORE RESPONSIBLE THAT ALL BUILDING CODE REQUIREMENTS ARE MET AND IN COMPLIANCE WITH THE LOCAL JURISDICTION. THE FOLLOWING NOTES ARE TYPICAL AND SHALL NOT GOVERN SITE SPECIFIC REQUIREMENTS.
2. CONFORM TO IBC CHAPTER 18 "SOILS AND FOUNDATIONS".
3. ALL TOPSOIL AND ORGANIC MATERIAL, ASPHALT, CONCRETE AND RELATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROPOSED BUILDING AND PAVEMENT AREAS AND ANY AREAS TO RECEIVE SITE GRADING FILL. FOR PLANNING PURPOSES, A MINIMUM STRIPPING THICKNESS OF 6 INCHES IS RECOMMENDED. THICKER STRIPPING DEPTHS MAY BE WARRANTED TO REMOVE ALL DETRIMENTAL ORGANICS AS DETERMINED ONCE ACTUAL STRIPPING OPERATIONS ARE PERFORMED.

FLOOR SLABS AND EXTERIOR FLATWORK

1. FOR NORMALLY LOADED, SLAB-ON-GRADE CONSTRUCTION, A MINIMUM 6-INCH CUSHION COURSE CONSISTING OF FREE-DRAINING, CRUSHED GRAVEL SHOULD BE PLACED BENEATH THE SLABS AND COMPACTED TO A MINIMUM OF 95 PERCENT DENSITY PER ASTM D698 (OR EQUIVALENT PER ASTM D4253-D4254). THIS MATERIAL SHOULD CONFORM TO SECTION 02235 OF MPWSS AND INCORPORATE A MAXIMUM PARTICLE SIZE OF ¾-INCH. PRIOR TO PLACING THE CUSHION COURSE, THE UPPER SIX INCHES OF SUBGRADE SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D698.

CONCRETE

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE." ALL REINFORCING SHALL CONFORM TO THE CRSI SPECIFICATIONS & HANDBOOK. CONCRETE PLACEMENT SHALL MEET ALL COLD WEATHER AND HOT WEATHER REQUIREMENTS OUTLINED IN ACI 306 & 305 RESPECTIVELY.
2. CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE A SLUMP OF 4" +/- 1", TO BE FIELD VERIFIED, PRIOR TO ADDING ADMIXTURE, AND NOT EXCEEDING 8" AT PLACEMENT.
3. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, INCLUDING SLABS ON GRADE AT 2'-0" OC AROUND AND UNDER-FLOOR DUCTS AND SLAB EDGES, REINFORCING, KEYS, ETC.
4. REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS AND THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
5. ALL CONDUITS, GROUND WIRES, DRAINS, ANCHOR BOLTS, OTHER EMBEDDED ITEMS, ETC. SHALL BE IN PLACE BEFORE CONCRETE PLACEMENT.
6. WHEN TOTAL NUMBER OF REINFORCING BARS IS SHOWN ON DESIGN DRAWINGS AND SPACING IS NOT SPECIFIED, BARS SHALL BE EQUALLY SPACED.
7. DETAILS OF REINFORCING NOT SHOWN IN THESE PLANS SHALL BE DONE IN ACCORDANCE WITH ACI 315 AND ACI 318.
8. ALL SLABS-ON-GRADE SHALL HAVE CONTROL JOINTS CUT IN CONCRETE WITHIN 8 HOURS OF PLACEMENT AT A SPACING NO GREATER THAN 10' OCEW (UNO ON PLANS).

STRUCTURAL STEEL

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360).
2. ALL WELDS AND WELDING PROCEDURES SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF AISC AND AWS WELDING PROCEDURES AND CODES AS OUTLINED IN THE SPECIFICATIONS. SPECIAL ATTENTION SHALL BE GIVEN TO PROPER HEAT TEMPERATURE REQUIREMENTS.
3. ALL STEEL BASE PLATES SHALL UTILIZE MAXIMUM RECOMMENDED HOLE SIZE AND STEEL PLATE WASHERS PER AISC CONSTRUCTION MANUAL TABLE 14-2 UNO. CONTRACTOR TO FIELD WELD PLATE WASHERS TO BASE PLATE WITH MINIMUM SIZE FILLET FULL WASHER PERIMETER AFTER INSTALLATION OF COLUMN.
4. UNLESS NOTED OTHERWISE ON THE PLANS, ALL STEEL SHALL BE SHOP PRIMED. ADDITIONAL PAINT MAY BE REQUIRED ON ALL STEEL PER SPECIFICATIONS.

CONNECTIONS

1. ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE.
2. BOLTS SHALL BE BEARING TYPE UNLESS NOTED OTHERWISE.
3. HIGH STRENGTH BOLTS SHALL BE TIGHTENED ACCORDING TO AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".

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FIELDHOUSE
159TR UIT RACKS TO GENERATOR

TD&H Engineering
tdhengineering.com

DRAWN BY: SEJ		
REVIEWED BY: SWM		
REV.	DESCRIPTION	DATE

MONTANA
SCOTT W. MAHURIN
No. 38400 PE
LICENSED PROFESSIONAL ENGINEER

PPA#23-0839
A/E#00-00-00
TDH#G24-2501

SHEET TITLE
GENERATOR CANOPY FRAMING DETAILS

SHEET
S1.0

DATE
09-15-25