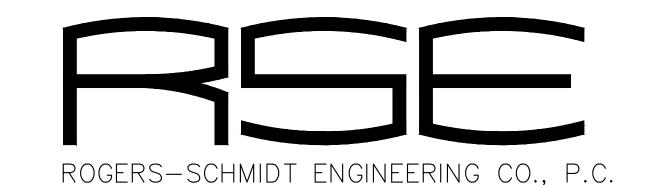
UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH POWER PLANT MOBERLY CORRECTIONAL CENTER MOBERLY, MISSOURI



CONSULTING ENGINEERS MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OWNER:

STATE OF MISSOURI

MIKE KEHOE, **GOVERNOR**

DEPARTMENT OF CORRECTIONS

PROJECT

OFFICE OF ADMINISTRATION

DIVISION OF FACILITIES MANAGEMENT, MANAGEMENT:

DESIGN AND CONSTRUCTION

DESIGNER:

ROGERS-SCHMIDT ENGINEERING CO., PC.

1736 WEST PARK CENTER DR.

SUITE 204

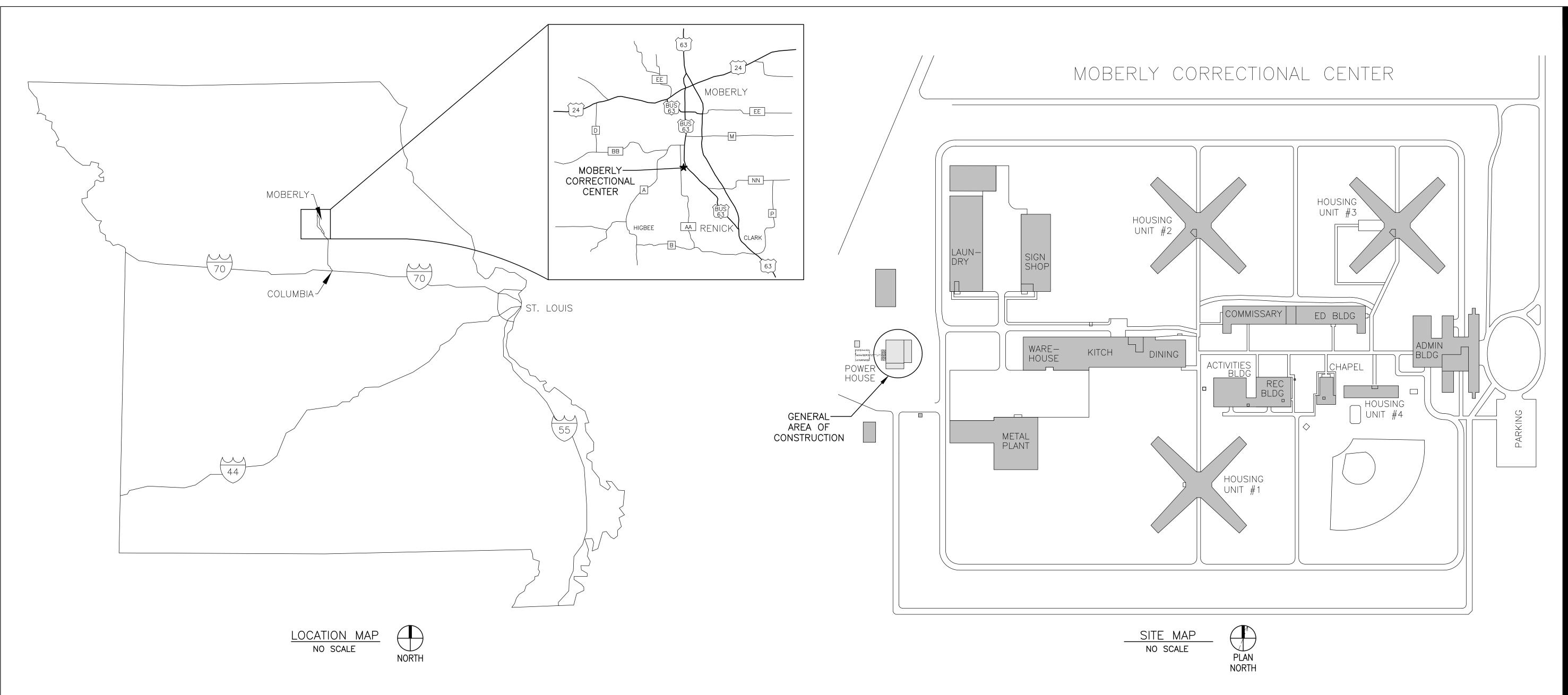
ST. LOUIS, MO 63026 PHONE: 636-600-1551

EMAIL: BFREINER@ROGERS-SCHMIDT.COM

PROJECT NUMBER: C1920-01

SITE NUMBER: **ASSET NUMBER:** 7005

9327005051



DRAWING	DRAWING TITLE	DRAWING	DRAWING TITLE
NUMBER	DIVINITO TITLE	NUMBER	
G-001	COVER SHEET	E-001	ELECTRICAL SYMBOLS, ABBREVIATIONS & GENERAL NOTES
G-002	SITE MAPS AND DRAWING INDEX		
G-003	CONSTRUCTION LIMITS, SCHEDULE & PHASING	ES-101	ELECTRICAL SITE PLAN
M-001	MECHANICAL SYMBOLS, ABBREVIATIONS & GENERAL NOTES	ED-401	ELECTRICAL DEMOLITION PLAN - POWER PLANT
MD-401	MECHANICAL PLAN - DEMOLITION - POWER PLANT	ED-601	ONE-LINE DIAGRAM - DEMOLITION - 4.16kV
MD-402	MECHANICAL PLAN - DEMOLITION - POWER PLANT	ED-602	ONE-LINE DIAGRAM - DEMOLITION - 4.16kV
		ED-603	ONE-LINE DIAGRAM - DEMOLITION - 480V
M - 401	MECHANICAL PLAN - POWER PLANT		
M - 402	MECHANICAL PLAN - POWER PLANT	E-401	ELECTRICAL PLAN - POWER PLANT
M-410	MECHANICAL SECTIONS & DETAILS - POWER PLANT	E-402	ELECTRICAL PLAN - CONTROL ROOM & OFFICE
M-501	MECHANICAL — DETAILS	E-501	ELECTRICAL & FENCE DETAILS
		E-502	DUCT BANK & MOTOR CONTROL CENTER DETAILS
M-601	MECHANICAL - SCHEDULES		
M-602	MECHANICAL - SCHEDULES	E-601	ONE-LINE DIAGRAM - NEW WORK - 4.16kV
M-610	MECHANICAL - FLOW DIAGRAM - FUEL OIL	E-602	ONE-LINE DIAGRAM - NEW WORK - 4.16kV
		E-603	ONE-LINE DIAGRAM - NEW WORK - 480V
MI-401	MECHANICAL — INSTRUMENTATION & CONTROLS — POWER PLANT	E-604	PANELBOARD SCHEDULES



BARRY D. FREINER
Registered Professional Engineer
MO # E-24220
Expires 12-31-2026

ROGERS-SCHMIDT
ENGINEERING CO., P.C.
CONSULTING ENGINEERS
1736 WEST PARK CENTER DR.
SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE # 7005

ASSET # 9327005051

REVISION:
DATE:
REVISION:

DATE:
REVISION:
DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-G-002.DWG

9327005051-G-002.DWG

DRAWN BY: KET

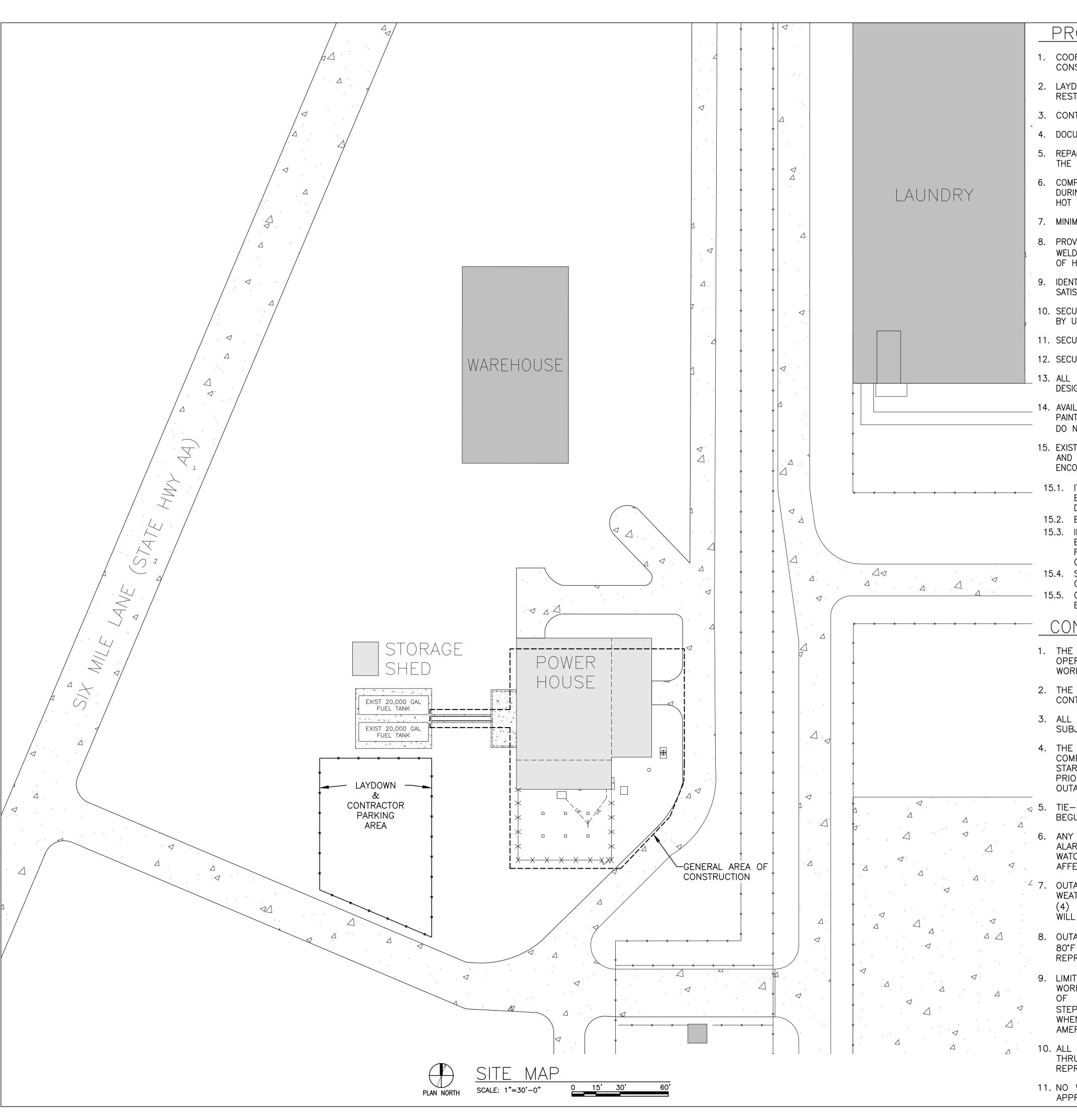
CHECKED BY: BDF

DESIGNED BY: BDF

SHEET TITLE:
SITE MAPS AND
DRAWING INDEX

SHEET NUMBER:

G-002



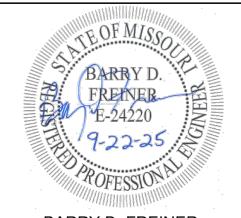
PROJECT GENERAL NOTES:

- 1. COORDINATE CONSTRUCTION FENCE, LAYDOWN AREA AND CONTRACTOR PARKING WITH CONSTRUCTION REPRESENTATIVE.
- 2. LAYDOWN AREA SHALL BE APPROVED BY THE CONSTRUCTION REPRESENTATIVE & RESTORED TO ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE.
- 3. CONTRACTOR SHALL NOT BLOCK ACCESS TO ANY MANHOLE OR VALVE BOX.
- 4. DOCUMENT EXISTING CONDITIONS WITH PHOTOGRAPHS PRIOR TO PROCEEDING.
- 5. REPAIR ALL DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION TO THE SATISFACTION OF THE CONSTRUCTION REPRESENTATIVE. MATCH EXISTING CONSTRUCTION AND FINISH.
- 6. COMPLY WITH THE INTERNATIONAL FIRE CODE INCLUDING THE REQUIREMENTS FOR FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND FOR WELDING AND OTHER HOT WORK. MAINTAIN A HOT WORK PROGRAM PERMIT SYSTEM.
- 7. MINIMIZE HOT WORK WITHIN BUILDINGS.
- 8. PROVIDE A FIRE WATCH FOR ALL DEMOLITION AND CONSTRUCTION HOT WORK (CUTTING, GRINDING, WELDING, SOLDERING, ETC.). MAINTAIN FIRE WATCH FOR AT LEAST 4 HOURS AFTER COMPLETION OF HOT WORK.
- 9. IDENTIFY & PROTECT ALL CONSTRUCTION AREAS WITH SIGNS AND SAFETY BARRIERS TO THE SATISFACTION OF THE CONSTRUCTION REPRESENTATIVE.
- 10. SECURE ALL CONSTRUCTION AREAS WITH BARRIERS & LOCKS AS REQUIRED TO PREVENT ACCESS BY UNAUTHORIZED PERSONS AT ALL TIMES.
- 11. SECURE ALL MECHANICAL & ELECTRICAL ROOMS WHEN UNOCCUPIED.
- 12. SECURE ALL HAND TOOLS IN LOCKED TOOL BOXES & LOCK ALL EQUIPMENT WHEN NOT IN USE.
- 13. ALL MATERIAL, TOOLS, ETC. MUST BE SECURED IN THE LAYDOWN AREA OR IN AN OWNER DESIGNATED AREA WITHIN THE POWER PLANT AT THE END OF EACH WORK DAY.
- 14. AVAILABLE INFORMATION INDICATES PROJECT WORK AREAS DO NOT CONTAIN ASBESTOS OR LEAD PAINT. SHOULD THE CONTRACTOR DISCOVER ITEMS SUSPECTED TO CONTAIN HAZARDOUS MATERIAL, DO NOT DISTURB. CONTACT OWNER'S REPRESENTATIVE FOR DIRECTION PRIOR TO PROCEEDING.
- 15. EXISTING UNDERGROUND UTILITIES HAVE BEEN INDICATED BASED UPON AVAILABLE INFORMATION AND THEIR LOCATIONS ARE APPROXIMATE ONLY. OTHER UTILITIES OR OBSTRUCTIONS MAY ALSO BE ENCOUNTERED.
- 15.1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND TO AVOID DAMAGE TO SAME DURING CONSTRUCTION.
- 15.2. EXCAVATE WITH CAUTION.
- 15.3. IF IT CAN BE DETERMINED BY THE OWNER'S REPRESENTATIVE THAT ANY EXISTING UTILITY HAS BEEN, OR CAN BE ABANDONED, CONTRACTOR SHALL REMOVE SAME, AT HIS EXPENSE, TO FACILITATE CONSTRUCTION. ENDS OF REMAINING CONDUITS OR PIPES SHALL BE PLUGGED OR CAPPED.
- 15.4. SUPPORT AND PROTECT UTILITIES CROSSING EXCAVATIONS. RESTORE DAMAGED UTILITIES TO ORIGINAL CONDITIONS PRIOR TO BACKFILLING EXCAVATIONS.
- 15.5. OBTAIN INSPECTION AND APPROVAL OF CONSTRUCTION REPRESENTATIVE PRIOR TO BACKFILLING EXCAVATIONS.

CONSTRUCTION PHASING & SCHEDULING:

- 1. THE PROJECT SHALL BE COMPLETED AS NECESSARY TO PROVIDE UNINTERRUPTED OPERATION OF THE FACILITY. THE SEQUENCING, PHASING AND SCHEDULING OF ALL WORK SHALL BE DEPENDENT ON AND SUBJECT TO FACILITY OPERATIONS.
- 2. THE NATURE OF THIS PROJECT REQUIRES A HIGH LEVEL OF COORDINATION BY CONTRACTOR WITH OWNER.
- 3. ALL WORK SHALL BE SCHEDULED WITH THE CONSTRUCTION REPRESENTATIVE AND BE SUBJECT TO THE FACILITY APPROVAL PRIOR TO PROCEEDING.
- 4. THE PROJECT REQUIRES OUTAGES TO BUILDING SYSTEMS. CONTRACTOR SHALL COMPLETE ALL RELATED WORK TO THE MAXIMUM EXTENT POSSIBLE PRIOR TO THE START OF OUTAGES. CONTRACTOR SHALL HAVE ALL REQUIRED MATERIALS ON SITE PRIOR TO START OF OUTAGES AND SHALL PERFORM PRELIMINARY CHECKS PRIOR TO OUTAGE DATE TO ENSURE ALL MATERIALS AND TOOLS REQUIRED ARE ONSITE.
- TIE-INS TO BUILDING SYSTEMS SHALL BE MADE DURING APPROVED OUTAGES AND ONCE BEGUN, WORK SHALL CONTINUE UNTIL THE TIE-IN IS COMPLETED.
- 6. ANY OUTAGES OVER 4 HOURS IN DURATION WHICH AFFECT FIRE PROTECTION, FIRE ALARM, DEDICATED TELEPHONE, OR EMERGENCY MANAGEMENT SYSTEMS REQUIRE FIRE WATCHES. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING FIRE WATCHES IN ALL AFFECTED AREAS.
- 7. OUTAGES SHALL BE COORDINATED WITH THE CONSTRUCTION REPRESENTATIVE AND ARE WEATHER DEPENDENT. CONTRACTOR SHALL NOTIFY CONSTRUCTION REPRESENTATIVE FOUR (4) WEEKS IN ADVANCE OF DESIRED OUTAGE TIME. CONSTRUCTION REPRESENTATIVE WILL GIVE CONTRACTOR 72 HOURS ADVANCE NOTICE OF ACTUAL TIME FOR OUTAGE.
- 8. OUTAGES SHALL BE COMPLETED DURING ACCEPTABLE WEATHER CONDITIONS (50°F TO 80°F OUTDOOR AIR TEMPERATURE), UNLESS APPROVED OTHERWISE BY CONSTRUCTION REPRESENTATIVE AND SHALL ONLY OCCUR BETWEEN 8AM & 4PM ON TUES THRU THUR.
- 9. LIMIT EMERGENCY GENERATOR (EG) SYSTEM RETROFIT OUTAGE TO NO MORE THAN 20 WORKING DAYS. EG SHALL BE FULLY OPERATIONAL WITHIN 20 WORKING DAYS OF START OF EG OUTAGE. PROVIDE TEMPORARY DIESEL—ENGINE—DRIVEN GENERATOR AND STEP—UP XFMR, IF/AS REQD, TO PROVIDE EMERGENCY BACKUP FOR THE FACILITY WHEN PERMANENT EG IS NOT AVAILABLE. POWER FACILITY USING EXIST EG WHEN AMEREN POWER IS TURNED OFF FOR WORK ON MAIN 4.16kV METERING SWGR.
- 10. ALL SITE CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO 7AM TO 3:30PM ON MONDAY THRU FRIDAY, UNLESS APPROVED OTHERWISE IN ADVANCE BY CONSTRUCTION REPRESENTATIVE.
- 11. NO WORK IS TO TAKE PLACE ON WEEKENDS OR STATE OBSERVED HOLIDAYS UNLESS APPROVED IN WRITING IN ADVANCE BY CONSTRUCTION REPRESENTATIVE.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



BARRY D. FREINER
Registered Professional Engineer
MO # E-24220
Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551

EMAIL: bfreiner@rogers-schmidt.com
MISSOURI STATE CERTIFICATE
OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 SITE # 7005

ASSET # 9327005051

REVISION:

DATE:
REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:

ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005 9327005051-G-003.DWG DRAWN BY: KET CHECKED BY: CLB DESIGNED BY: BDF

SHEET TITLE:

CONSTRUCTION
LIMITS, SCHEDULE
& PHASING

SHEET NUMBER:

G-003



CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT. **DESIGN AND CONSTRUCTION**

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

9327005051 ASSET# **REVISION:**

DATE: **REVISION:** DATE: **REVISION:** DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-M-001.DWG DRAWN BY: CHECKED BY: _ DESIGNED BY: ____ C L B

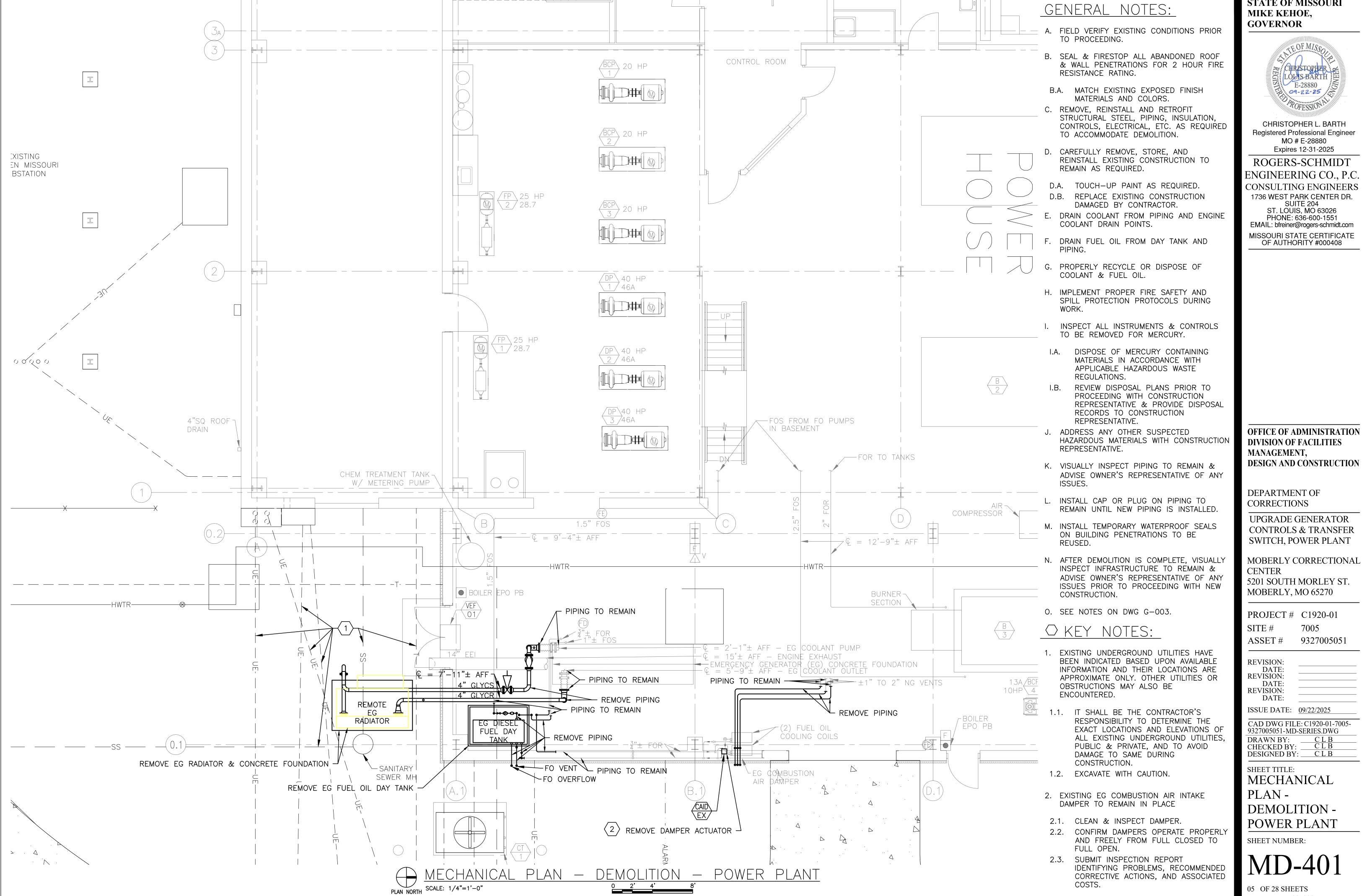
SHEET TITLE:

MECHANICAL SYMBOLS. ABBREVIATIONS & GENERAL NOTES

SHEET NUMBER:

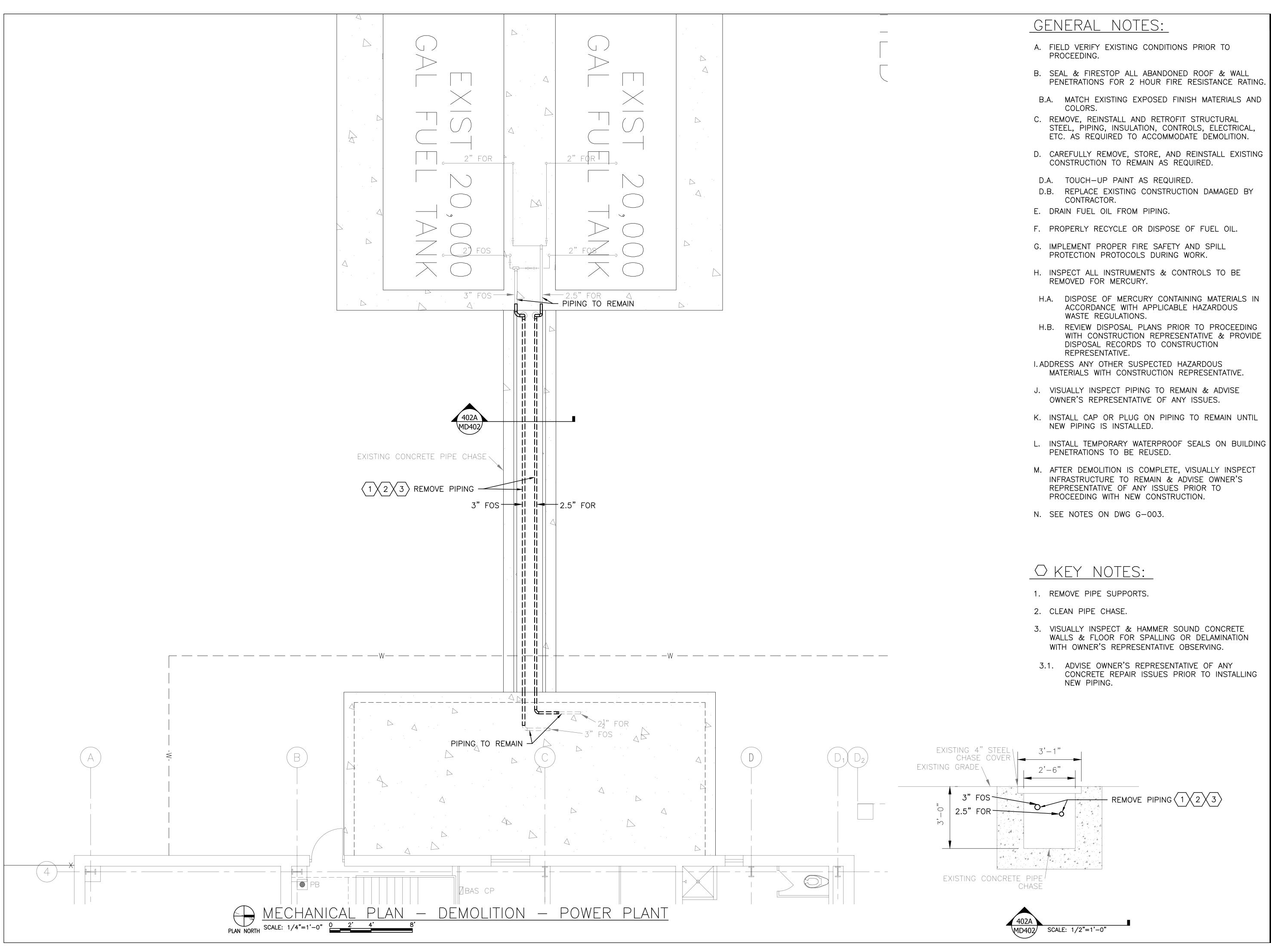
04 OF 28 SHEETS

SEPTEMBER 22, 2025



STATE OF MISSOURI

MOBERLY CORRECTIONAL



STATE OF MISSOURI MIKE KEHOE,

GOVERNOR

9-22-25

CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. **CONSULTING ENGINEERS** 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE

OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR **CONTROLS & TRANSFER** SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

7005 9327005051 ASSET#

REVISION: DATE: **REVISION:** DATE: **REVISION:**

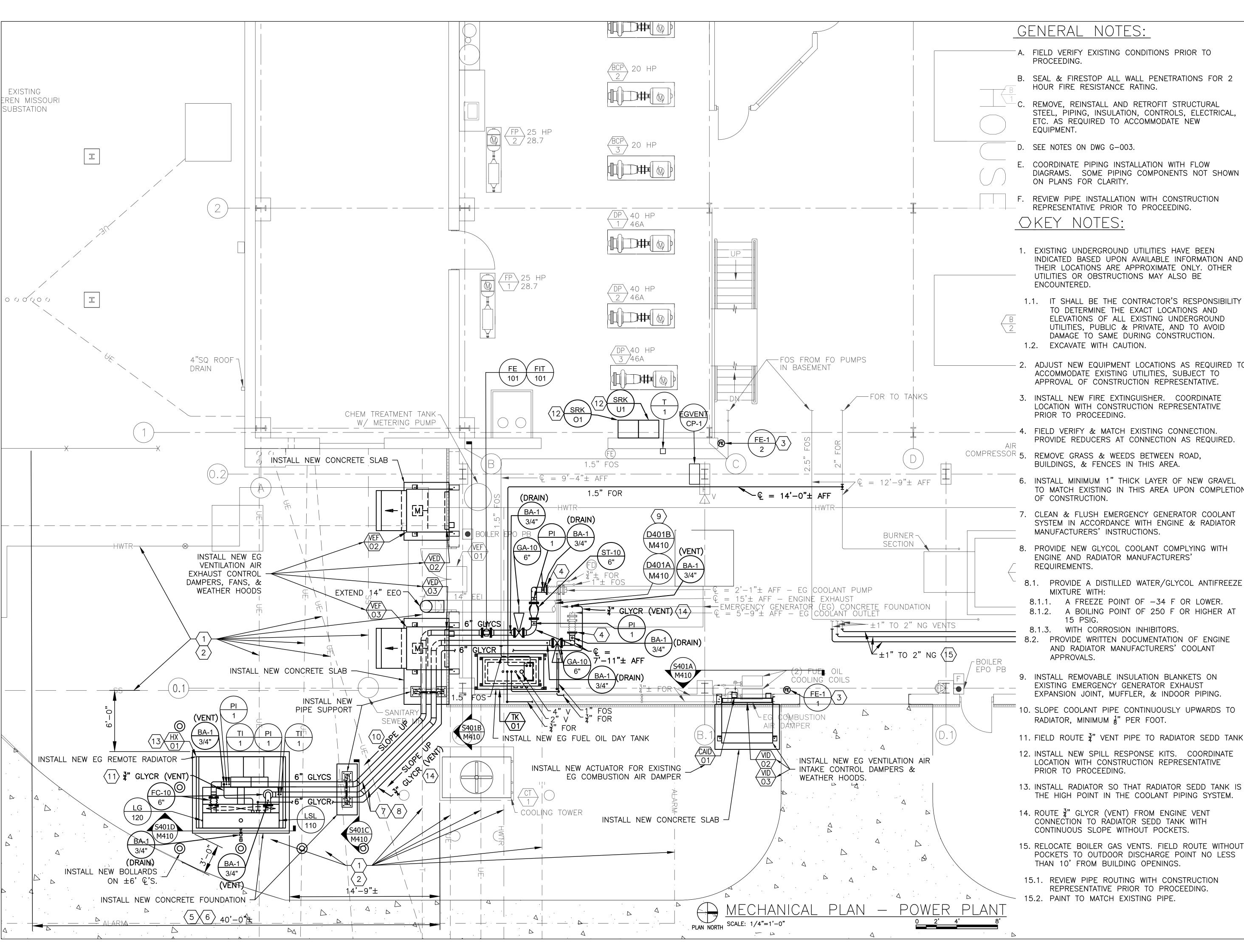
ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-MD-SERIES.DWG

DRAWN BY: ___ CHECKED BY: __ DESIGNED BY: ____CLB

SHEET TITLE: MECHANICAL PLAN -**DEMOLITION -**POWER PLANT

SHEET NUMBER:



GENERAL NOTES:

- A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.
- B. SEAL & FIRESTOP ALL WALL PENETRATIONS FOR 2 HOUR FIRE RESISTANCE RATING.
- REMOVE, REINSTALL AND RETROFIT STRUCTURAL STEEL, PIPING, INSULATION, CONTROLS, ELECTRICAL, ETC. AS REQUIRED TO ACCOMMODATE NEW EQUIPMENT.
- D. SEE NOTES ON DWG G-003.
- E. COORDINATE PIPING INSTALLATION WITH FLOW DIAGRAMS. SOME PIPING COMPONENTS NOT SHOWN ON PLANS FOR CLARITY.
- REVIEW PIPE INSTALLATION WITH CONSTRUCTION REPRESENTATIVE PRIOR TO PROCEEDING.

OKEY NOTES:

- 1. EXISTING UNDERGROUND UTILITIES HAVE BEEN INDICATED BASED UPON AVAILABLE INFORMATION AND THEIR LOCATIONS ARE APPROXIMATE ONLY. OTHER UTILITIES OR OBSTRUCTIONS MAY ALSO BE ENCOUNTERED.
- 1.1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF ALL EXISTING UNDERGROUND UTILITIES, PUBLIC & PRIVATE, AND TO AVOID DAMAGE TO SAME DURING CONSTRUCTION.
- 1.2. EXCAVATE WITH CAUTION.
- 2. ADJUST NEW EQUIPMENT LOCATIONS AS REQUIRED TO ACCOMMODATE EXISTING UTILITIES, SUBJECT TO APPROVAL OF CONSTRUCTION REPRESENTATIVE.
- 3. INSTALL NEW FIRE EXTINGUISHER. COORDINATE LOCATION WITH CONSTRUCTION REPRESENTATIVE PRIOR TO PROCEEDING.
- FIELD VERIFY & MATCH EXISTING CONNECTION. PROVIDE REDUCERS AT CONNECTION AS REQUIRED.
- COMPRESSOR 5. REMOVE GRASS & WEEDS BETWEEN ROAD, BUILDINGS, & FENCES IN THIS AREA.
 - 6. INSTALL MINIMUM 1" THICK LAYER OF NEW GRAVEL TO MATCH EXISTING IN THIS AREA UPON COMPLETION
 - 7. CLEAN & FLUSH EMERGENCY GENERATOR COOLANT SYSTEM IN ACCORDANCE WITH ENGINE & RADIATOR MANUFACTURERS' INSTRUCTIONS.
 - PROVIDE NEW GLYCOL COOLANT COMPLYING WITH ENGINE AND RADIATOR MANUFACTURERS' REQUIREMENTS.
 - PROVIDE A DISTILLED WATER/GLYCOL ANTIFREEZE MIXTURE WITH:
 - 8.1.1. A FREEZE POINT OF -34 F OR LOWER. A BOILING POINT OF 250 F OR HIGHER AT 15 PSIG.
 - 8.1.3. WITH CORROSION INHIBITORS.
 - PROVIDE WRITTEN DOCUMENTATION OF ENGINE AND RADIATOR MANUFACTURERS' COOLANT APPROVALS.
 - INSTALL REMOVABLE INSULATION BLANKETS ON EXISTING EMERGENCY GENERATOR EXHAUST EXPANSION JOINT, MUFFLER, & INDOOR PIPING.
 - 10. SLOPE COOLANT PIPE CONTINUOUSLY UPWARDS TO RADIATOR, MINIMUM & PER FOOT.

 - 12. INSTALL NEW SPILL RESPONSE KITS. COORDINATE LOCATION WITH CONSTRUCTION REPRESENTATIVE PRIOR TO PROCEEDING.
 - 13. INSTALL RADIATOR SO THAT RADIATOR SEDD TANK IS THE HIGH POINT IN THE COOLANT PIPING SYSTEM.
 - 14. ROUTE $\frac{3}{4}$ " GLYCR (VENT) FROM ENGINE VENT CONNECTION TO RADIATOR SEDD TANK WITH CONTINUOUS SLOPE WITHOUT POCKETS.
 - 15. RELOCATE BOILER GAS VENTS. FIELD ROUTE WITHOUT POCKETS TO OUTDOOR DISCHARGE POINT NO LESS THAN 10' FROM BUILDING OPENINGS.
 - 15.1. REVIEW PIPE ROUTING WITH CONSTRUCTION REPRESENTATIVE PRIOR TO PROCEEDING.
 - 15.2. PAINT TO MATCH EXISTING PIPE.

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204

ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION**

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE# 7005 9327005051 ASSET#

REVISION:

REVISION: DATE: **REVISION:**

DATE: ISSUE DATE: 09/22/2025

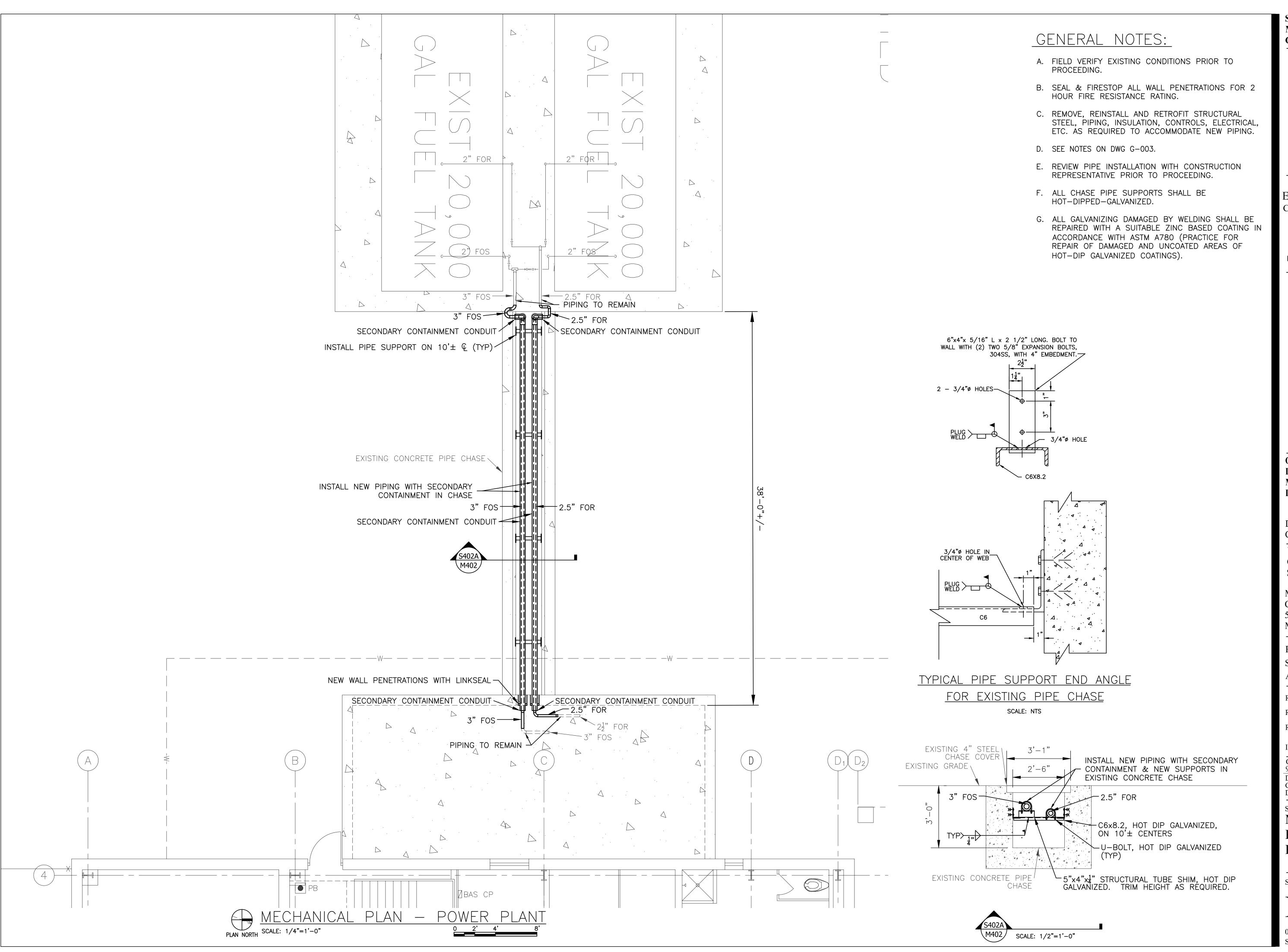
CAD DWG FILE: C1920-01-7005-

9327005051-M-SERIES.DWG DRAWN BY: CHECKED BY: DESIGNED BY: ____ C L B

SHEET TITLE:

MECHANICAL PLAN - POWER **PLANT**

SHEET NUMBER:





CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551

PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE # 7005 ASSET # 9327005051

REVISION:
DATE:
REVISION:
DATE:
REVISION:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-M-SERIES.DWG

DRAWN BY: CLB

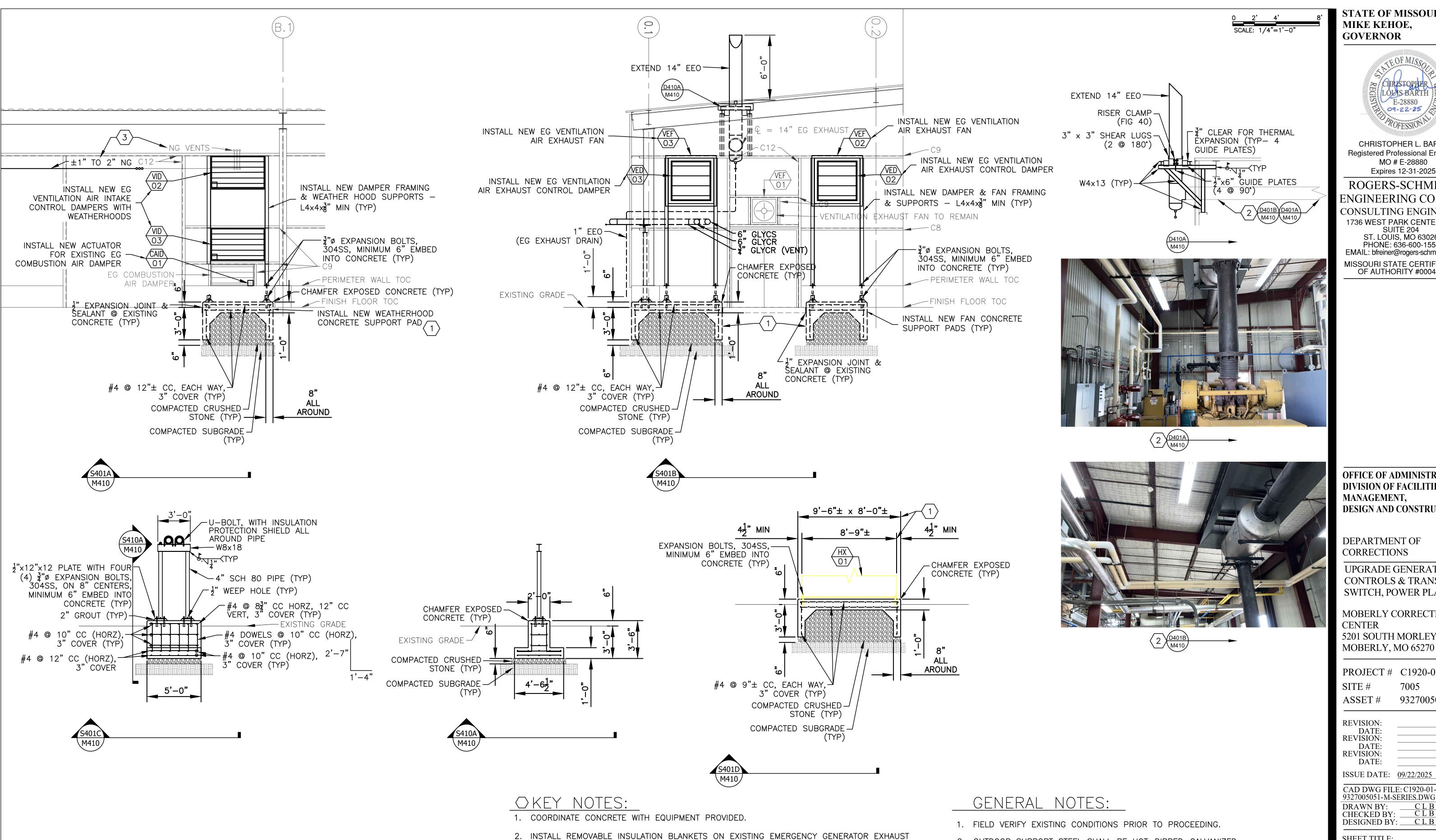
CHECKED BY: CLB

DESIGNED BY: CLB

SHEET TITLE:
MECHANICAL
PLAN - POWER
PLANT

SHEET NUMBER:

M-402



EXPANSION JOINT, MUFFLER, & INDOOR PIPING.

THAN 10' FROM BUILDING OPENINGS.

3.2. PAINT TO MATCH EXISTING PIPE.

3. RELOCATE BOILER GAS VENTS. FIELD ROUTE TO OUTDOOR DISCHARGE POINT NO LESS

3.1. REVIEW PIPE ROUTING WITH CONSTRUCTION REPRESENTATIVE PRIOR TO PROCEEDING.

- 2. OUTDOOR SUPPORT STEEL SHALL BE HOT-DIPPED-GALVANIZED.
- 3. ALL GALVANIZING DAMAGED BY WELDING SHALL BE REPAIRED WITH A SUITABLE ZINC BASED COATING IN ACCORDANCE WITH ASTM A780 (PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS).
- 4. INDOOR SUPPORT STEEL SHALL BE PAINTED.

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204

ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, **DESIGN AND CONSTRUCTION**

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST.

PROJECT # C1920-01

7005 9327005051 ASSET#

REVISION: DATE: **REVISION:** DATE: **REVISION:**

DATE:

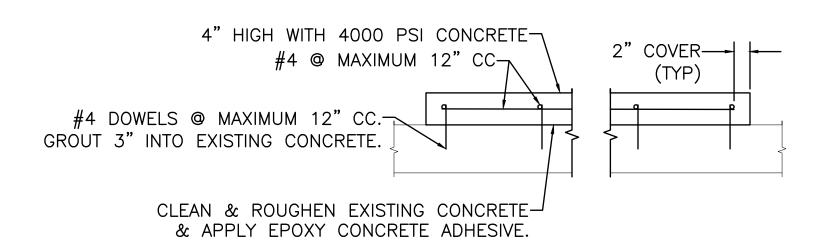
ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-M-SERIES.DWG DRAWN BY: CHECKED BY: DESIGNED BY: ____CLB

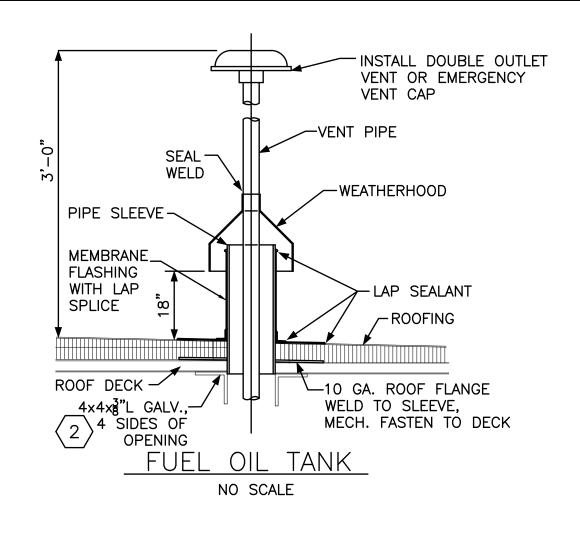
SHEET TITLE:

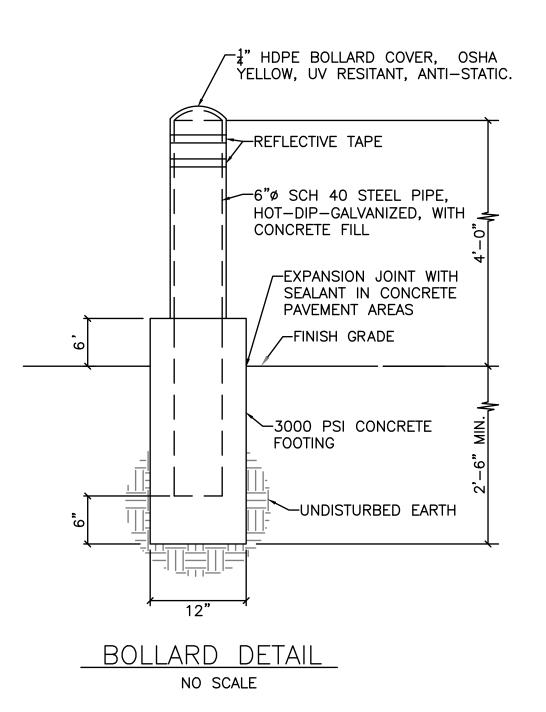
MECHANICAL SECTIONS & **DETAILS - POWER PLANT**

SHEET NUMBER:



EQUIPMENT HOUSEKEEPING PAD NO SCALE





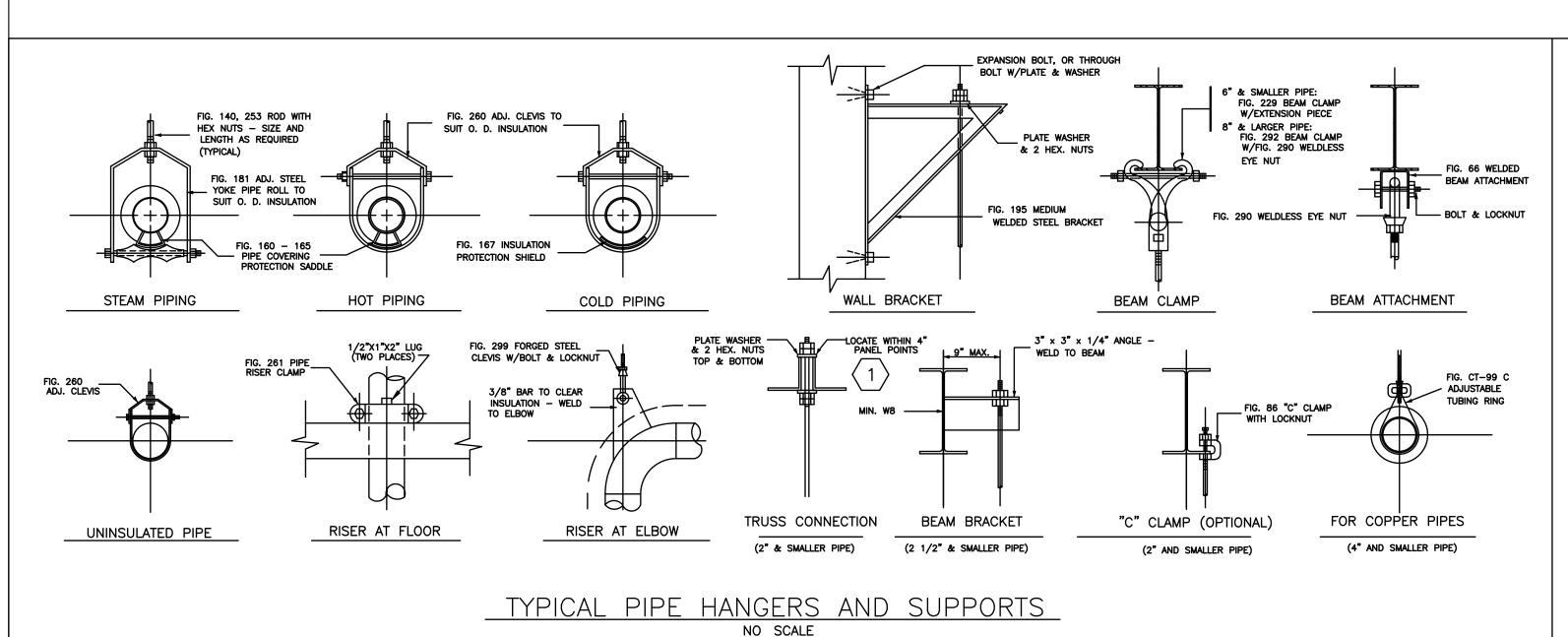
GENERAL NOTES:

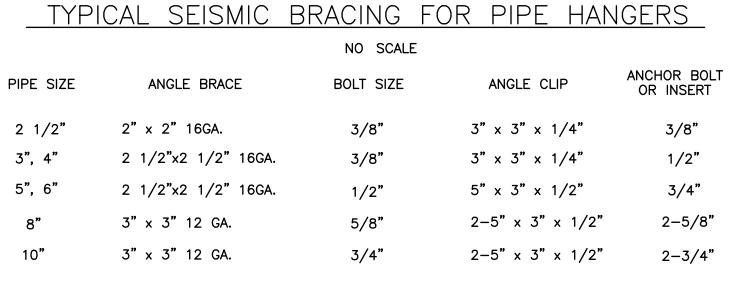
A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

O KEY NOTES:

- 1. IF DISTANCE EXCEEDS 4", INSTALL 2"x2"x4"L BRACE BETWEEN LOAD POINT & PANEL POINT, BOTH SIDES OF CHORD.
- 2. SET TOP FLANGE OF ANGLES ON TOP CHORD OF

JOISTS & ATTACH WITH $\frac{1}{4}$ " FILLET WELD.





____DOUBLE ANGLE CLIP

- BOLT WITH CUT WASHER

BRACE HANGER RODS OVER 3'-0"
LONG WITH 2" x 2" x 3/16"
VERTICAL ANGLE BRACE WITH 1"
WELDS SPACED @ 24' cc

- PIPE SLEEVE OVER BOLT

ANCHOR BOLTS (FOR CONCRETE AREAS)
OR WELD TO STRUCTURAL STEEL —

LONGITUDINAL ANGLE BRACE (SLOPE 1/1)

BOLT WITH CUT WASHER

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. **CONSULTING ENGINEERS** 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE

OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

9327005051

PROJECT # C1920-01 7005

REVISION: DATE: **REVISION:** DATE: **REVISION:**

DATE:

ASSET#

ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-M-501.DWG DRAWN BY: CHECKED BY: DESIGNED BY: ____CLB

SHEET TITLE: **MECHANICAL** -**DETAILS**

SHEET NUMBER:

				VE	NTILATION	FAN SCI	HEDULE	-			
						ELEVATION					
				EXTERNAL	AIR	ABOVE			INLET		
				STATIC	TEMPERATURE	SEA	WHEEL		SOUND		
			FLOW	PRESSURE	MIN / MAX	LEVEL	DIAMETER	FAN	PRESSURE	MOTOR	
TAG	TYPE - DRIVE	SERVICE	CFM	IN. W.G.	DEG F	FEET	INCHES	RPM	dBA	HP / RPM / VOLT / CYCLES / PH	NOTES
VEF-02	PROPELLER - DIRECT	EXHAUST	20,000	1.0	40 / 120	860	42.25	1160	94	7.5 / 1160 / 460 / 60 / 3	1, 2, 3
VEF-03	PROPELLER - DIRECT	EXHAUST	20,000	1.0	40 / 120	860	42.25	1160	94	7.5 / 1160 / 460 / 60 / 3	1, 2, 3

NOTES:

- 1. WITH DAMPER, DAMPER GUARD, WALL HOUSING, BIRD SCREEN, WEATHER HOOD, AND OTHER ACCESSORIES IN ACCORDANCE WITH SPECIFICATIONS.
- 2. DESIGN BASIS: GREENHECK AER-42-VG
- 3. MOUNTING: FLUSH INTERIOR WITH FAN AND HOUSING OUTSIDE BUILDING, DAMPER INSIDE, MOTOR ACCESS FROM BUILDING EXTERIOR.

						OONTDO			LIEDI						
						CONTRO	<u> JL DAIV</u>	IPER SC	HEDL	JLE					
			NOMINAL SIZE	<u> </u>		BLADE CHARACTERISTICS				FACE					
					NUMBER				AIR	AREA	PRESSURE				
		WIDTH	HEIGHT	DEPTH	OF				FLOW	VELOCITY	LOSS	MOTORIZED	FAIL SAFE		
TAG	DUTY	(INCHES)	(INCHES)	(INCHES)	SECTIONS	ORIENTATION	DESIGN	TYPE	(CFM)	(FPM)	(IN. H2O)	ACTUATOR	POSITION	NOTES	
VID-02	INTAKE	60	36	5	1	HORIZONTAL	AIRFOIL	OPPOSED	20,000	1,333	0.17	MODULATING	SPRING CLOSED	2, 3, 4, 5. 9	
VID-03	INTAKE	60	36	5	1	HORIZONTAL	AIRFOIL	OPPOSED	20,000	1,333	0.17	MODULATING	SPRING CLOSED	2, 3, 4, 5. 9	
VED-02	EXHAUST	44	44	5	1	HORIZONTAL	AIRFOIL	OPPOSED	20,000	1,488	0.21	MODULATING	SPRING CLOSED	1, 2, 3, 5, 9	
VED-03	EXHAUST	44	44	5	1	HORIZONTAL	AIRFOIL	OPPOSED	20,000	1,488	0.21	MODULATING	SPRING CLOSED	1, 2, 3, 5, 9	
CAID-01	INTAKE	48	24	5	1	HORIZONTAL	AIRFOIL	PARALLEL	6,534	817	0.07	OPEN / CLOSED	SPRING OPEN	6, 7, 8, 9	
															_

NOTES:

- 1. FURNISHED WITH VENT FAN.
- 2. DESIGN BASIS: GREENHECK CONTROL DAMPER WITH INSULATED AIRFOIL BLADES, VCD-34.
- 3. PRESSURE DROP SHALL BE SHALL BE RATED BASED ON A PLENUM-MOUNTED DAMPER (AMCA STD. 500-D, FIG. 5.5)
- 4. WITH DAMPER GUARD, BIRD SCREEN, INTAKE WEATHER HOOD, AND OTHER ACCESSORIES IN ACCORDANCE WITH SPECIFICATIONS.
- 5. SIZE VENTILATION ACTUATOR TO SPRING RETURN DAMPER TO FAIL SAFE POSITION IN LESS THAN 20 SECONDS.
- 6. EXISTING EMERGENCY GENERATOR COMBUSION AIR DAMPER TO REMAIN IN PLACE.
- 7. INSTALL NEW TWO-POSITION, SPRING-RETURN TO OPEN POSITION, ELECTRIC ACTUATOR AND ASSOCIATED JACKSHAFTS, LINKAGES, ETC.
- 8. SIZE ACTUATOR TO SPRING RETURN DAMPER TO FAIL SAFE POSITION IN LESS THAN 10 SECONDS.
- 9. WITH OPEN AND CLOSED DAMPER BLADE POSITION SWITCHES.

				EN	MERGEN	1CY	GEN	↓ERAT	OR '	REMOT	IE RA	ADIA	ror s	3CH ¹	<i>E</i> DULE	$\langle 2 \rangle$						
					COC	OLANT SID	ĴΕ						AMBIENT	T AIR SIC)E		SOUND		APPF	ROXIMATE	£ SIZE	
							T	TEMPERATUR	RE			TF	EMPERATUR	/RE	ELEVATION		PRESSURE					
					HEAT					PRESSURE					ABOVE		AT					
			FACE		LOAD	FLOW	INLET	OUTLET	LOSS	LOSS	FLOW	INLET	OUTLET	GAIN	SEA LEVEL	FAN	25 FEET	MOTOR	LENGTH	WIDTH	HEIGHT	
TAG	TYPE - DRIVE	SERVICE	ORIENTATION	COOLANT TYPE	BTU/MINUTE	GPM	F	F	F	PSI	ACFM	F	F	F	FEET	RPM	dBA	HP/RPM/VOLT/CYCLES/PH	(FEET)	(FEET)) (FEET)	NOTES
HX-01	PROPELLER - BELT	ENGINE COOLING	VERTICAL	50% ETHYLENE GLYCOL	79,121	400	207	180	27	4	78,000	122	185	63	900	750	94	50 / 1775 / 460 / 60 / 3	7	8	10	1, 2
														<u> </u>								
NOTES:	<u>'</u>			1	'							1										

- 1. WITH ACCESSORIES IN ACCORDANCE WITH SPECIFICATIONS.
- 2. DESIGN BASIS: YOUNG TOUCHSTONE DS MODEL VB

GENERAL NOTES:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

O KEY NOTES:

- 1. FOR EXISTING DAMPERS TO REMAIN, CONTROLS CONTRACTOR SHALL FIELD INSPECT DAMPERS TO IDENTIFY ANY CONTROL ISSUES, DETERMINE REQUIRED OPERATING TORQUE, PROPERLY SIZE ACTUATORS & DESIGN LINKAGES, ATTACHMENTS, ETC.
- 1.1. DOCUMENT & ADDRESS ISSUES, IF ANY, WITH ENGINEER PRIOR TO PROCEEDING.
- 2. PRIOR TO PROCEEDING WITH REMOTE RADIATOR PROCUREMENT:
- 2.1. CONFIRM RADIATOR PERFORMANCE REQUIREMENTS ARE ADEQUATE FOR CATERPILLAR 3516, 1500 KW, STANDBY, DIESEL ENGINE EMERGENCY GENERATOR WITH CATERPILLAR.
- 2.2. REMOTE RADIATOR COOLANT LOOP PRESSURE LOSS WILL BE ABOUT 4 PSI (RADIATOR) + 3 PSI PIPING = 7 PSI TOTAL.
- 2.3. CONFIRM EXISTING EG ENGINE-MOUNTED COOLANT PUMP IS ADEQUATE FOR COOLANT SYSTEM EXTERNAL STATIC PRESSURE LOSS OF 7 PSI.
- 2.4. ADVISE ENGINEER IF OTHERWISE, PRIOR TO PROCEEDING.

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



CHRISTOPHER L. BARTH Registered Professional Engineer MO # E-28880 Expires 12-31-2025

ROGERS-SCHMIDT ENGINEERING CO., P.C. **CONSULTING ENGINEERS** 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE

OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

SITE# ASSET # 9327005051

REVISION: REVISION: DATE: **REVISION:**

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-M-600 SERIES.DWG DRAWN BY: JDF/KET
CHECKED BY: CLB
DESIGNED BY: CLB

SHEET TITLE: MECHANICAL -SCHEDULES

SHEET NUMBER:

				FLO	W ELEMEN	ITS / TF	RANSMIT	TERS					
		INLET	INLET	DESIGN			DESGIN	MAXIMUM	MINIMUM				
		PRESSURE	TEMPERATURE	INLET	DESIGN	DESIGN	PRESSURE	METER	METER		FLANGES		
DESCRTIPTION	SERVICE	RANGE	RANGE	PRESSURE	TEMPERATURE	FLOW	LOSS	FLOW	FLOW	SIZE	ANSI		COMMENTS
		(PSIG)	(F)	(PSIG)	(F)	(GPM)	(PSI)	(GPM)	(GPM)	(INCHES)	CLASS	NOTES	
ELECTROMAGNETIC	GLYCS	10 TO 20	0 TO 220	10	180	400	0.5	2500	8	6	150	1, 2, 3	EG REMOTE RADIATOR COOLING WATER
			PRESSURE DESCRTIPTION SERVICE RANGE (PSIG)	PRESSURE TEMPERATURE DESCRTIPTION SERVICE RANGE RANGE (PSIG) (F)	INLET INLET DESIGN PRESSURE TEMPERATURE INLET DESCRIPTION SERVICE RANGE RANGE PRESSURE (PSIG) (F) (PSIG)	INLET INLET DESIGN PRESSURE TEMPERATURE INLET DESIGN DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE (PSIG) (F) (PSIG) (F)	INLET INLET DESIGN PRESSURE TEMPERATURE INLET DESIGN DESIGN DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW (PSIG) (F) (PSIG) (F) (GPM)	INLET INLET DESIGN DESIGN PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS (PSIG) (F) (PSIG) (F) (GPM) (PSI)	PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE METER DESCRIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS FLOW (PSIG) (F) (PSIG) (F) (GPM) (PSI) (GPM)	INLET INLET DESIGN DESIGN MAXIMUM MINIMUM PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE METER METER DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS FLOW FLOW (PSIG) (F) (PSIG) (F) (GPM) (PSI) (GPM) (GPM)	INLET INLET DESIGN DESIGN DESIGN MAXIMUM MINIMUM PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE METER METER DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS FLOW FLOW SIZE (PSIG) (F) (PSIG) (F) (GPM) (PSI) (GPM) (GPM) (INCHES)	INLET INLET DESIGN DESIGN DESIGN MAXIMUM MINIMUM PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE METER METER FLANGES DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS FLOW FLOW SIZE ANSI (PSIG) (F) (PSIG) (F) (GPM) (GPM) (GPM) (GPM) (INCHES) CLASS	INLET INLET DESIGN DESIGN MAXIMUM MINIMUM PRESSURE TEMPERATURE INLET DESIGN DESIGN PRESSURE METER METER FLANGES DESCRTIPTION SERVICE RANGE RANGE PRESSURE TEMPERATURE FLOW LOSS FLOW FLOW SIZE ANSI (PSIG) (F) (PSIG) (F) (GPM) (PSI) (GPM) (GPM) (INCHES) CLASS NOTES

NOTES:

- 1. SERVICE FLUID IS ABOUT A 50% ETHYLENE GLYCOL AND 50% WATER SOLUTION.
- 2. METER IS OVERSIZED TO MINIMIZE COOLING LOOP PRESSURE DROP.
- 3. MINIMUM FLOW = MAXIMUM RATED FLOW / 300:1 TURNDOWN WITH +/-0.25% ACCURACY.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



CHRISTOPHER L. BARTH
Registered Professional Engineer
MO # E-28880
Expires 12-31-2025

ROGERS-SCHMIDT
ENGINEERING CO., P.C.
CONSULTING ENGINEERS
1736 WEST PARK CENTER DR.
SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE
OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

SITE # 7005 ASSET # 9327005051

PROJECT # C1920-01

DATE:
REVISION:
DATE:
REVISION:
DATE:

REVISION:

ISSUE DATE: <u>09/22/2025</u>

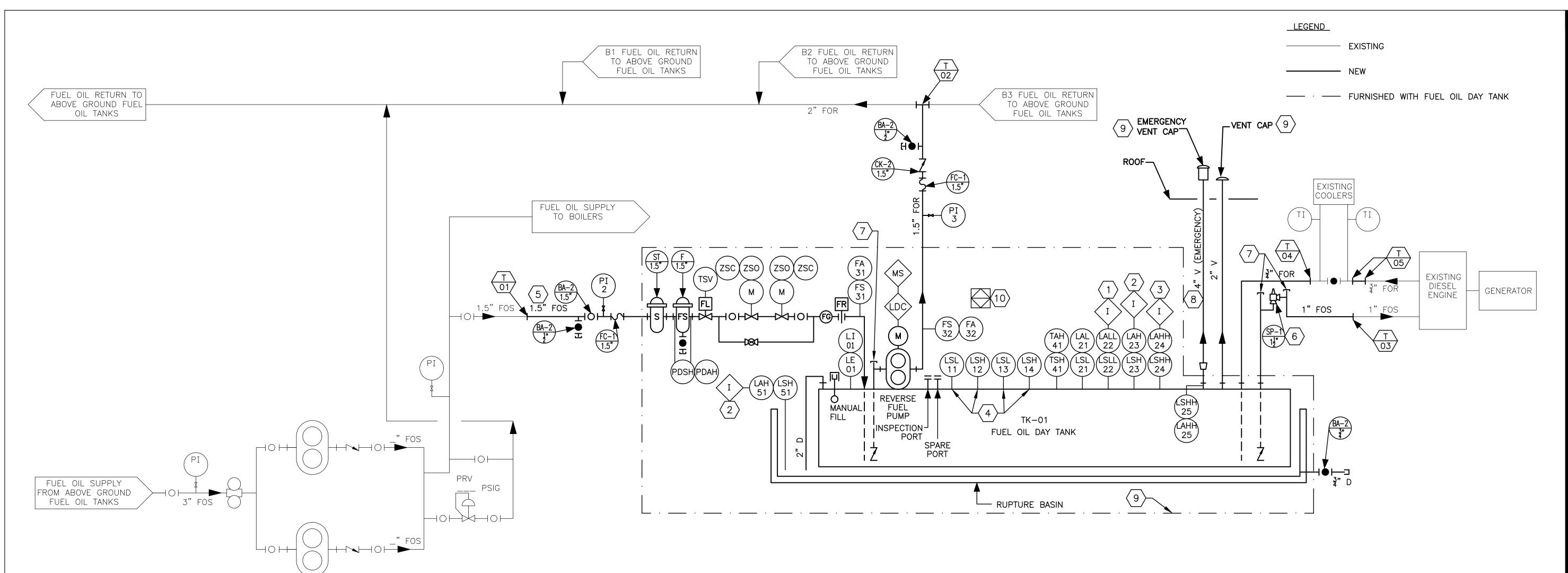
CAD DWG FILE: C1920-01-7005-9327005051-M-600 SERIES.DWG

DRAWN BY: JDF/KET
CHECKED BY: CLB
DESIGNED BY: CLB

SHEET TITLE:
MECHANICAL SCHEDULES

SHEET NUMBER:

M-60



EXISTING EG FUEL

OIL SUPPLY PUMPS

GENERAL NOTES:

- A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.
- B. OWNER WILL FURNISH FUEL OIL FOR EMERGENCY GENERATOR START-UP AND TESTING FROM EXISTING FUEL OIL STORAGE TANKS.
- C. CONTRACTOR SHALL TEST AND CONFIRM THAT THE QUALITY OF THE EXISTING FUEL OIL IS ACCEPTABLE FOR THE EMERGENCY GENERATOR PRIOR TO PROCEEDING WITH STARTUP.
- C.A. ADVISE OWNER'S REPRESENTATIVE IN WRITING OF ANY FUEL OIL QUALITY CONCERNS PRIOR TO PROCEEDING.

O KEY NOTES:

- 1. CRITICAL LOW FUEL FOR ENGINE SHUTOFF.
- 2. CRITICAL HIGH FUEL LEVEL FOR SUPPLY PUMP AND MOV SHUTDOWN.
- 3. CRITICAL HIGH FUEL LEVEL FOR SUPPLY PUMP AND MOV SHUTDOWN AND REVERSE PUMP START.
- 4. LEVEL SWITCHES FOR CONTROL OF FUEL SUPPLY MOV VALVES & FUTURE DUPLEX FUEL SUPPLY PUMP LEAD/LAG SYSTEM.
- 5. INSTALL PIPE WITH CONTINUOUS SLOPE DOWNWARDS TO TANK WITHOUT TRAPS.
- 6. ANTISIPHON VALVE.
- 7. PRIME PIPE WITH FUEL OIL PRIOR TO START-UP.
- 8. MINIMUM. EMERGENCY VENT LINE SIZE SHALL BE NO LESS THAN FUEL OIL TANK EMERGENCY VENT CONNECTION SIZE.
- 9. FURNISHED WITH FUEL OIL DAY TANK.
- 10. FACTORY-PACKAGED FUEL OIL DAY TANK CONTROL PANEL.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



CHRISTOPHER L. BARTH
Registered Professional Engineer
MO # E-28880
Expires 12-31-2025

ROGERS-SCHMIDT

ENGINEERING CO., P.C.
CONSULTING ENGINEERS
1736 WEST PARK CENTER DR.
SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 SITE # 7005

ASSET # 9327005051

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
DATE:

ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-M-610.DWG DRAWN BY: CLB

9327005051-M-610.DWG

DRAWN BY: CLB

CHECKED BY: CLB

DESIGNED BY: CLB

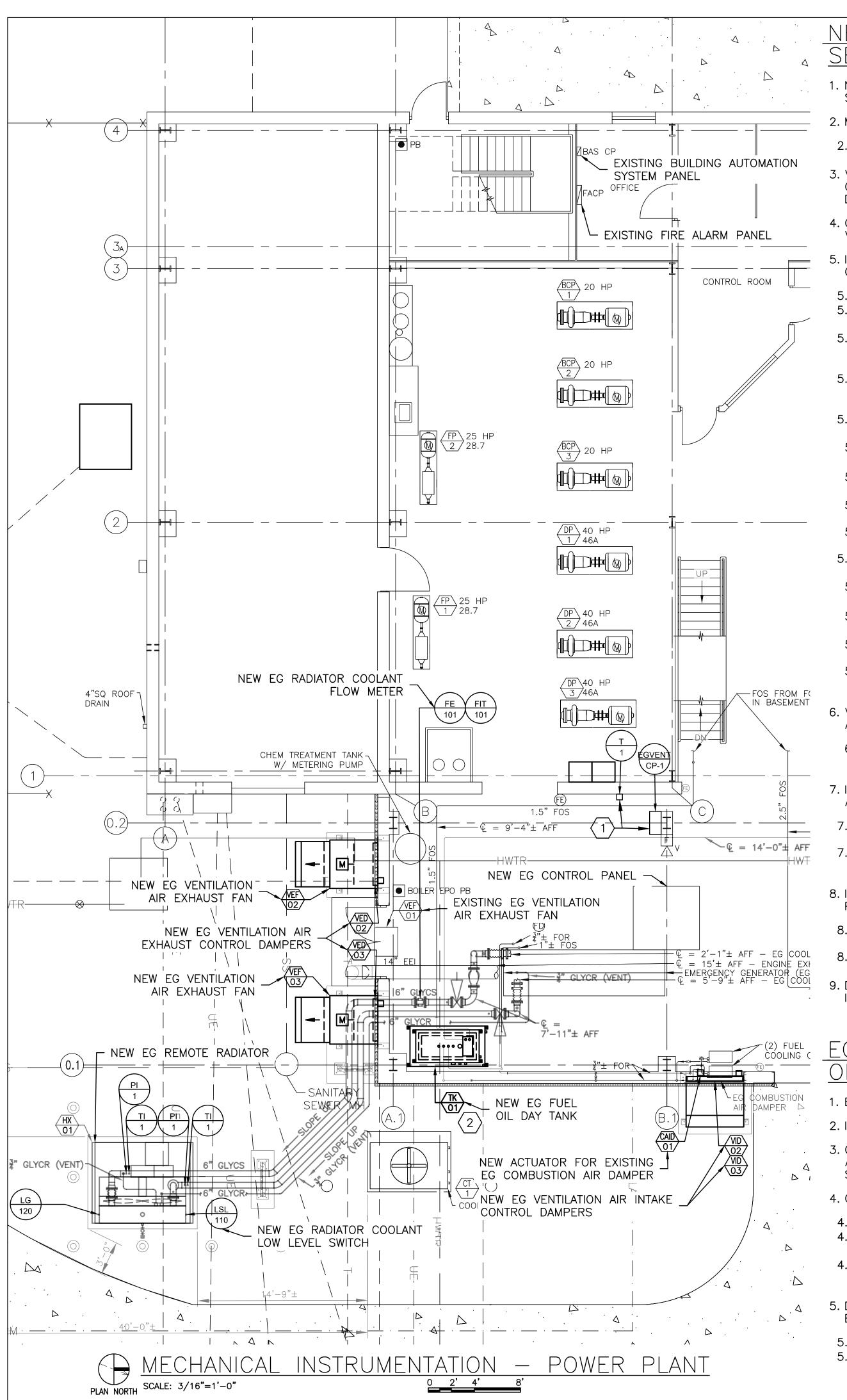
SHEET TITLE:

MECHANICAL -

FLOW DIAGRAM FUEL OIL

SHEET NUMBER:

M-610



NEW EG ROOM VENTILATION SYSTEM SEQUENCE OF OPERATION:

- 1. NEW CONTROL PANEL, EGVENT-CP-1, SHALL CONTROL NEW EG ROOM VENTILATION SYSTEMS.
- 2. MONITOR AND DISPLAY EG ROOM TEMPERATURE, T-1.
- 2.1. ALARM WHEN ROOM TEMPERATURE IS BELOW 45 F AND ABOVE 120 F.
- 3. VENTILATION INTAKE AND EXHAUST DAMPERS SHALL HAVE FAIL—CLOSED, POWER TO OPEN, MODULATING ACTUATORS WITH AN ANALOG POSITION FEEDBACK SIGNAL AND DIGITAL FULLY OPEN AND FULLY CLOSED POSITION FEEDBACK SIGNALS.
- 4. CONTROL PANEL SHALL INCLUDE A HAND-OFF-AUTO SELECTOR SWITCH FOR NEW VENTILATION SYSTEM.
- 5. IN AUTO MODE, VENTILATION SYSTEM SHALL BE INTERLOCKED WITH THE NEW EG CONTROL PANEL.
- 5.1. VENTILATION SYSTEM SHALL START WHEN EG IS ENERGIZED.
- 5.2. VENTILATION SYSTEM SHALL STOP WHEN EG IS DE-ENERGIZED WITH OPERATOR ADJUSTABLE TIME DELAY (O TO 180 MINUTES).
- 5.3. MODULATE VENTILATION INTAKE DAMPER, VID-02, & VENTILATION EXHAUST DAMPER, VED-02, TO CONTROL ROOM TEMPERATURE TO SET POINT, 60 F (ADJUSTABLE).
- 5.4. MODULATE VÉNTILATION INTAKE DAMPER, VID-03, & VENTILATION EXHAUST DAMPER, VED-03, TO CONTROL ROOM TEMPERATURE TO SET POINT, 70 F (ADJUSTABLE).
- 5.5. IF DAMPERS ARE 100% OPEN AND ROOM TEMPERATURE IS ABOVE SET POINT, 80 F (ADJUSTABLE), START VENTILATION EXHAUST FAN VEF-02.
- 5.5.1. MODULATE FAN SPEED TO CONTROL ROOM TEMPERATURE TO SET POINT, 80 F (ADJUSTABLE)
- 5.5.2. SHUTDOWN FAN WHEN ROOM TEMPERATURE IS 5 F (ADJUSTABLE) BELOW SET POINT.
- 5.5.3. FAN SHALL RUN A MINIMUM OF 10 MINUTES (ADJUSTABLE) TO AVOID SHORT CYCLING.
- 5.5.4. INTERLOCK VEF-02 START WITH VID-02 & VED-02 100% OPEN POSITION SWITCHES.
- 5.6. IF VEF-02 IS AT FULL SPEED AND ROOM TEMPERATURE IS ABOVE SET POINT, 90 F (ADJUSTABLE), START VENTILATION EXHAUST FAN, VEF-03.
- 5.6.1. MODULATE FAN SPEED TO CONTROL ROOM TEMPERATURE TO SET POINT, 90 F (ADJUSTABLE).
- 5.6.2. SHUTDOWN FAN WHEN ROOM TEMPERATURE IS 5 F (ADJUSTABLE) BELOW SET POINT.
- 5.5.3. FAN SHALL RUN A MINIMUM OF 10 MINUTES (ADJUSTABLE) TO AVOID SHORT CYCLING.
- 5.5.4. INTERLOCK VEF-03 START WITH VID-03 & VED-03 100% OPEN POSITION SWITCHES.
- 6. VENTILATION FANS ARE SIZED TO MAINTAIN A 20 F TEMPERATURE RISE ABOVE AMBIENT TEMPERATURES WHEN THE GENERATOR IS OPERATING AT FULL LOAD.
- 6.0.1. ROOM TEMPERATURE WILL EXCEED SET POINTS WHEN AMBIENT TEMPERATURES ARE HIGH.
- 7. IN HAND MODE, OPERATOR SHALL BE ABLE TO ADUST DAMPER POSITIONS, START AND STOP FANS, AND ADJUST FAN SPEEDS AT CONTROL PANEL INTERFACE.
- 7.6. INTERLOCK VEF-02 START WITH VID-02 & VED-02 100% OPEN POSITION SWITCHES.
- 7.7. INTERLOCK VEF-03 START WITH VID-03 & VED-03 100% OPEN POSITION SWITCHES.
- 8. INTERLOCK EG VENTILATION SYSTEM WITH POWER PLANT FIRE ALARM CONTROL PANEL.
- 8.1. WHEN EG IS <u>NOT</u> ENERGIZED, UPON ACTIVATION OF FIRE ALARM PANEL, SHUTDOWN VENTILATION FANS & CLOSE VENTILATION DAMPERS.
- 8.2. VENTILATION SYSTEM SHALL REMAIN IN OPERATION WHEN EG IS ENERGIZED.
- 9. DISPLAY ALL CONTROL SYSTEM INPUT AND OUTPUT SIGNALS AT PANEL OPERATOR INTERFACE.

EG COMBUSTION AIR SYSTEM SEQUENCE OF OPERATION:

- 1. EXISTING EG COMBUSTION AIR INTAKE DAMPER, CAID-01, SHALL REMAIN IN PLACE.
- 2. INSTALL NEW ACTUATOR ON EXISTING DAMPER.
- 3. CAID-01 DAMPER SHALL BE FAIL OPEN & POWER TO CLOSE WITH TWO-POSITION ACTUATOR, WITH DIGITAL FULLY OPEN AND FULLY CLOSED POSITION FEEDBACK SIGNALS.
- 4. CAID-01 SHALL BE INTERLOCKED WITH THE NEW EG CONTROL PANEL
- 4.1. DAMPER SHALL OPEN 100% WHEN EG IS ENERGIZED.
- 4.2. DAMPER SHALL CLOSE 100% WHEN EG IS DE-ENERGIZED WITH OPERATOR ADJUSTABLE TIME DELAY (O TO 60 MINUTES).
- 4.3. THIS INTERLOCK SHALL BE HARD-WIRED FROM THE EG CONTROL SYSTEM WITH RELAYS & SHALL BE INDEPENDENT OF ANY DDC FUNCTIONS.
- 5. DAMPER OPEN & CLOSED POSITION SWITCH SIGNALS SHALL BE INDICATED ON NEW EG CONTROL PANEL FACE.
- 5.1. ALARM WHEN EG IS RUNNING AND DAMPER IS CLOSED.
- 5.2. ALARM WHEN EG IS NOT RUNNING AND DAMPER IS OPEN AFTER PROGRAMMED TIME DELAY.

EXISTING EG VENTILATION AIR SYSTEM SEQUENCE OF OPERATION:

- 1. EXISTING EG VENTILATION EXHAUST FAN, VEF-01, SHALL REMAIN IN PLACE.
- 2. EXISTING FAN BACK-DRAFT EXHAUST DAMPER SHALL REMAIN IN PLACE.
- 3. EXISTING FAN HAND-OFF-AUTO SWITCH SHALL REMAIN IN PLACE.
- 4. IN HAND MODE, FAN SHALL RUN.
- 5. IN AUTO MODE, VEF-01 SHALL BE INTERLOCKED WITH THE NEW EG CONTROL PANEL.
- 5.1. FAN SHALL START WHEN EG IS ENERGIZED.
- 5.2. FAN SHALL STOP WHEN EG IS DE-ENERGIZED WITH OPERATOR ADJUSTABLE TIME DELAY (0 TO 180 MINUTES).
- 5.3. THIS INTERLOCK SHALL BE HARD—WIRED FROM THE EG CONTROL SYSTEM WITH RELAYS & SHALL BE INDEPENDENT OF ANY DDC FUNCTIONS.
- 6. INTERLOCK EXISTING EG VENTILATION SYSTEM WITH EXISTING POWER PLANT FIRE ALARM CONTROL PANEL.
- 6.1. WHEN EG IS <u>NOT</u> ENERGIZED, UPON ACTIVATION OF FIRE ALARM PANEL, SHUTDOWN VENTILATION FAN.
- 6.2. VENTILATION FAN SHALL REMAIN IN OPERATION WHEN EG IS ENERGIZED.

<u>new eg coolant system sequence of</u> operation:

- 1. NEW EG COOLANT SYSTEM SHALL INCLUDE A REMOTE RADIATOR, HX-1, HAND-AUTO SWITCH, LOW LEVEL SWITCH, AND FLOW METER.
- 2. IN HAND MODE, REMOTE RADIATOR FAN SHALL RUN.
- 3. IN AUTO MODE, REMOTE RADIATOR FAN SHALL BE INTERLOCKED WITH THE NEW EG CONTROL PANEL.
- 3.1. RADIATOR FAN SHALL START WHEN EG IS ENERGIZED.
- 3.2. FAN SHALL STOP WHEN EG IS DE-ENERGIZED WITH OPERATOR ADJUSTABLE TIME DELAY (0 TO 60 MINUTES).
- 3.3. THIS INTERLOCK SHALL BE HARD—WIRED FROM THE EG CONTROL SYSTEM WITH RELAYS & SHALL BE INDEPENDENT OF ANY DDC FUNCTIONS.
- 4. NEW EG CONTROL PANEL SHALL MONITOR AND DISPLAY EG RADIATOR COOLANT LEVEL SWITCH STATUS, LSL-110.
- 5. NEW EG CONTROL PANEL SHALL MONITOR AND DISPLAY EG RADIATOR COOLANT FLOW METER SIGNAL, FE-101 / FIT-101.

NEW EG FUEL OIL DAY TANK SYSTEM SEQUENCE OF OPERATION:

- 1. NEW EG FUEL OIL DAY TANK SYSTEM SHALL INCLUDE THE MANUFACTURER'S FACTORY—PACKAGED INSTRUMENTATION & CONTROL SYSTEM.
- 2. THE POWER PLANT'S EXISTING BUILDING AUTOMATION SYSTEM (BAS) SHALL MONITORING AND DISPLAY DAY TANK CONTROL SYSTEM STATUS.

GENERAL NOTES:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

OKEY NOTES:

- 1. REVIEW LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
- 2. SEE M-610 FOR NEW FUEL OIL DAY TANK CONTROL SYSTEM.

SOLE SOURCE HVAC 1&C SUBCONTRACTOR:

1. THE HVAC INSTRUMENTATION AND CONTROLS SUBCONTRACTOR FOR THIS PROJECT SHALL BE C&C GROUP. CONTACT: COREY SCHEPERS, C&C GROUP, CSCHEPERS@C-CGROUP.COM, (913) 530-7369.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



CHRISTOPHER L. BARTH
Registered Professional Engineer
MO # E-28880
Expires 12-31-2025

ROGERS-SCHMIDT
ENGINEERING CO., P.C.
CONSULTING ENGINEERS
1736 WEST PARK CENTER DR.
SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com
MISSOURI STATE CERTIFICATE

OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE # 7005 ASSET # 9327005051

REVISION:
DATE:
REVISION:

REVISION: DATE: REVISION: DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-

CAD DWG FILE: C1920-01-700.
9327005051-MI-SERIES.DWG

DRAWN BY: CLB

CHECKED BY: CLB

DESIGNED BY: CLB

SHEET TITLE:

MECHANICAL -

MECHANICAL INSTRUMENTATION
& CONTROLS POWER PLANT

SHEET NUMBER:

MI-40

STATE OF MISSOURI **ELECTRICAL ABBREVIATIONS ELECTRICAL SYMBOLS** MIKE KEHOE, **GOVERNOR** POWER FACTOR GAUGE AMPERE(S) KEYNOTE; SPECIFICALLY REFERENCED TO TE OF MISSO ELECTRIC METER / CHASSIS GROUNDING CONNECTION AN ITEM ON THE FIELD OF THE ABAND ABANDONED GALLON PILOT LIGHT DRAWING. DIGITS IDENTIFY NOTE NUMBER. WIRING CROSSING, CONNECTION PANEL BARRY D. TRANSFORMER ALTERNATING CURRENT GALV GALVANIZED FRENER CONDUIT EXPOSED AMP FUSE OR AMP FRAME GENERATOR CONTROL PANEL PNLBD PANELBOARD E-24220 WIRING CROSSING, NO CONNECTION END-OF-LINE RESISTOR GROUND DETECTION SYSTEM PROTECTIVE RELAYS OR PAIR 9-22-25 EOLR ABOVE FINISHED FLOOR CONDUIT OR CABLE TURNED DOWN ABOVE FINISHED GRADE GROUND FAULT POTENTIAL TRANSFORMER EQUIPMENT CONNECTION 4' INDUSTRIAL OR STRIP LIGHT AMPERE INTERRUPTING CAPACITY CONDUIT OR CABLE TURNED UP GROUND FAULT CIRCUIT PUSH-TO-TEST INTERRUPTER (RMS SYMMETRICAL) SELECTOR OR TOGGLE SWITCH EXIT SIGN — SINGLE FACE WALL MTD **—**0 BARRY D. FREINER SCHEDULE 40 CONDUIT BELOW GRADE OR IN FLOOR GROUND FAULT RELAY POLYVINYLCHLORIDE CONDUIT Registered Professional Engineer AM AMMETER MO # E-24220 BATTERY OPERATED EMERGENCY LIGHT GENERATOR REMOTE ANNUCIATOR PWR POWER NON-FUSIBLE DISCONNECT SWITCH ANNUN ANNUNCIATOR Expires 12-31-2026 0 0 PANEL FLEXIBLE CONDUIT OR CABLE RAC RIGID ALUMINUM CONDUIT APPROX APPROXIMATELY GALVANIZED RIGID STEEL **ROGERS-SCHMIDT** MANUAL PULL STATION RECPT RECEPTACLE MEDIUM VOLTAGE FUSIBLE HOME RUN TO PANEL - SHORT CONDUIT AS AMMETER SWITCH ENGINEERING CO., P.C. LOAD-INTERUPTER SWITCH GROUND STROKES INDICATE PHASE OR SWITCHED REQD REQUIRED HORN/STROBE ANNUNCIATOR, WALL-MTD ASSOC ASSOCIATED CONSULTING ENGINEERS WIRES, LONG STROKE DENOTES NEUTRAL, GENERATOR VENTILATION $\neg \Box \Box \neg$ FUSED SWITCH REQMTS REQUIREMENTS LONG STROKE WITH DOT DENOTES ASSY ASSEMBLY 1736 WEST PARK CENTER DR CONTROL PANEL HEAT DETECTOR, CEILING-MTD SUITE 204 GROUND. #12 AWG WIRES IN ¾"GRC REV REVERSE AMP TRIP _____ ST. LOUIS, MO 63026 UNLESS NÖTED OTHERWISE. FUSIBLE DISCONNECT SWITCH PHONE: 636-600-1551 ATS AUTOMATIC TRANSFER SWITCH ADDRESSABLE RELAY CONTROL MODULE H-O-A HAND-OFF-AUTOMATIC EMAIL: bfreiner@rogers-schmidt.com L_____J DISCONNECT SWITCH RMC RIGID METAL CONDUIT AUTO AUTOMATIC HORSEPOWER MISSOURI STATE CERTIFICATE F = FUSIBLEMULTI-CRITERIA SMOKE DETECTOR, $\neg\Box\Box$ **FUSE** REMOTE MONITORING PANEL OF AUTHORITY #000408 N = NON-FUSIBLEAVAIL AVAILABLE CEILING-MTD FREQUENCY IN CYCLES PER ROOT MEAN SQUARE AWG AMERICAN WIRE GAUGE MEDIUM VOLTAGE (MV) FUSE FIRE EXTINGUISHER JUNCTION BOX -QI/O INPUT/OUTPUT SURGE ARRESTOR BFG BELOW FINISHED GRADE INCLUDING SURGE CAPACITOR CIRCUIT BREAKER EXISTING CONTROL PANEL BREAKER INFORMATION SHORT CIRCUIT CURRENT RATING $\langle\!\langle\!\!\langle \cdots \rangle\!\!\rangle$ BLDG BUILDING DRAW-OUT CIRCUIT BREAKER NEW CONTROL PANEL INSULATED INS SCHEDULE BSMT BASEMENT INSTRUMENT OR SERVICE ENTRANCE EXISTING PANELBOARD TRANSFORMER CONDUIT OR CONDUCTOR INSTRUMENTATION SHLD SHIELD OR SHIELDED CIRCUIT BREAKER JUNCTION BOX CURRENT TRANSFORMER (SHOWN WITH **NEW PANELBOARD** J-BOX SPEED OR SURGE PROTECTIVE POLARITY MARKS, RATIO & QUANTITY) CKT CIRCUIT KILOAMPERE(S) POTENTIAL TRANSFORMER (SHOWN WITH CNTRL CONTROL SELECTOR SWITCH OR STAINLESS SINGLE POLE SWITCH KILOAMPERE INTERRUPTING QUANTITY AND RATIO) COMB COMBINATION CAPACITY (RMS SYMMETRICAL) ST SHUNT TRIP CONTROL POWER TRANSFORMER 120V DUPLEX RECEPTACLE CONC CONCRETE THOUSAND CIRCULAR MIL(S) STA STATION CONTROL PANEL 120V GROUND FAULT CIRCUIT KILOVOLT(S) STL STEEL AUTO INTERRUPTER DUPLEX RECEPTACLE CONTROL POWER TRANSFORMER kVA KILOVOLT-AMPERE(S) HAND-OFF-AUTOMATIC STRD STRANDED 120V DUPLEX RECEPTACLE W/ SELECTOR SWITCH CONTROL RELAY kW KILOWATT(S) WEATHERPROOF COVER SW SWITCH OFFICE OF ADMINISTRATION CONDUIT SUPPORT OR CONTROL kWh KILOWATT-HOUR(S) **DIVISION OF FACILITIES** SWBD SWITCHBOARD 120V DOUBLE DUPLEX RECEPTACLE LIGHTING ARRESTER MANAGEMENT. CURRENT TRANSFORMER PILOT LIGHT, PUSH-TO-TEST SWGR SWITCHGEAR LIQUIDTIGHT FLEXIBLE METAL SPECIAL RECEPTACLE (AS NOTED) $-\varphi(X)$ X = LENS COLOR**DESIGN AND CONSTRUCTION** CENTER SYM SYMMETRICAL CONDUIT COPPER LSH LEVEL SWITCH (HIGH) THERMOSTAT REMOTE CONTROL STATION STOP PUSHBUTTON D OR DEPARTMENT OF LONG TIME, SHORT TIME, TB TERMINAL BLOCK INSTANTANEOUS, GROUND FAULT CONTACTOR START PUSHBUTTON CORRECTIONS TC TOP OF CONCRETE \multimap \multimap DIRECT CURRENT LSL LEVEL SWITCH (LOW) TDR TIME DELAY RELAY UPGRADE GENERATOR DIAMETER CONTROL RELAY NORMALLY CLOSED CONTACT LTG LIGHTING CONTROLS & TRANSFER TEFC TOTALLY ENCLOSED FAN COOLED DISC DISCONNECT LOW-VOLTAGE SWITCH, POWER PLANT TEMP TEMPERATURE OR TEMPORARY EQUIPMENT GROUND FAULT NORMALLY OPEN CONTACT MOTOR STARTING CONTACTOR OR TERM TERMINATE OR TERMINATION DISTRIBUTION PANEL MOBERLY CORRECTIONAL THERMAL OVERLOAD MECHANICAL (KEY) INTERLOCK THERMAL MAGNETIC CIRCUIT mA MILLIAMPERE(S) CENTER DISCONNECT SWITCH BREAKER MAX MAXIMUM 5201 SOUTH MORLEY ST. MOTOR OVERLOAD CONTACTS MOTOR STARTING CONTACTOR DWG DRAWING TYP TYPICAL MOBERLY, MO 65270 MCB MAIN CIRCUIT BREAKER EMERGENCY GENERATOR UNDERGROUND ELECTRIC MOTOR, X = HORSEPOWERTHERMOSTAT MCC MOTOR CONTROL CENTER ELEV ELEVATION UNINTERRUPTIBLE POWER PROJECT # C1920-01 MCCB MOLDED CASE CIRCUIT BREAKER EXISTING COMBINATION MAGNETIC ELEC ELECTRIC OR ELECTRICAL TIME DELAY RELAY 7005 MOTOR STARTER VOLT(S) MECH MECHANICAL EM EMERGENCY 9327005051 NEW COMBINATION MAGNETIC ASSET# MIN MINIMUM VOLT-AMPERE(S) TIMING RELAY EPM ELECTRONIC POWER METER MOTOR STARTER VAR VARMETER MLO MAIN LUG ONLY EMERGENCY POWER OFF --------**REVISION:** SPD SURGE PROTECTIVE DEVICE VOLTMETER MS MOTOR STARTING COMBINATION MOTOR STARTER DATE: EQUIP EQUIPMENT **REVISION:** --------VS VOLTMETER SWITCH MTD MOUNTED EXH EXHAUST DATE: SURGE ARRESTER **→** 어I' **REVISION:** WATT(S), WIRE(S) OR WIDE MV MEDIUM-VOLTAGE EXIST EXISTING DATE: **GENERATOR** FAULTED CIRCUIT INDICATOR MVA MEGAVOLT-AMPERES FUSE OR FUSIBLE ISSUE DATE: 09/22/2025 WITH GROUND FCI FAULTED CIRCUIT INDICATOR CAD DWG FILE: C1920-01-7005-GROUNDING ROD LEVEL SWITCH $-\infty$ W/O WITHOUT 9327005051-E-001.DWG FDR FEEDER NORMALLY CLOSED CHECKED BY: DESIGNED BY: RET BDF WHM WATTHOUR METER EARTH GROUNDING CONNECTION FL FLOOR N.O. NORMALLY OPENED DESIGNED BY: BDF WHMD WATTHOUR METER DEMAND FM FREQUENCY METER N/A NOT APPLICABLE WM WATTMETER SHEET TITLE: FOR FORWARD GENERAL ELECTRICAL NOTES: NATIONAL ELECTRICAL CODE ELECTRICAL WEATHERPROOF FS FUSIBLE SWITCH NON-FUSED A. THE CONTRACTOR SHALL PROVIDE ALL HOLES IN FLOORS AND WALLS AS REQUIRED FOR SYMBOLS, WW WIREWAY FVNR FULL VOLTAGE NON REVERSING NGR NEUTRAL GROUNDING RESISTOR CONDUIT ROUTING. SEAL PENETRATIONS IN ACCORDANCE WITH THE SPECIFICATIONS. XFMR TRANSFORMER **ABBREVIATIONS &** NOT IN CONTRACT B. COORDINATE EXACT LOCATIONS OF CONDUIT RUNS WITH EXISTING CONDITIONS AND WITH **IMPEDANCE** SECTION NUMBER SECTION NUMBER **GENERAL NOTES** NAMEPLATE THE OWNER'S REPRESENTATIVE. INDICATE FINAL ROUTING OF ALL CONDUITS ON "AS AND 101 NTS NOT TO SCALE BUILT" DRAWINGS. SHEET NUMBER: E501 E501 $\int SCALE$: 1/4" = 1'-0"DELTA

DRAWING NUMBER

WHERE SECTION

DETAILED

SECTION IDENTIFICATION SYMBOL

DRAWING NUMBER

WHERE SECTION

DETAILED

SECTION MARK

C. ALL INFORMATION CONTAINED ON THIS DRAWING APPLIES TO ED. ES. AND E SERIES

D. THERE MAY BE SYMBOLS AND/OR ABBREVIATIONS SHOWN ON THIS SHEET THAT ARE

NOT APPLICABLE TO THIS PROJECT.

OVERHEAD ELECTRIC

OVERLOAD ELEMENT

PB PUSHBUTTON SWITCH

POLE(S)

P/O PART OF

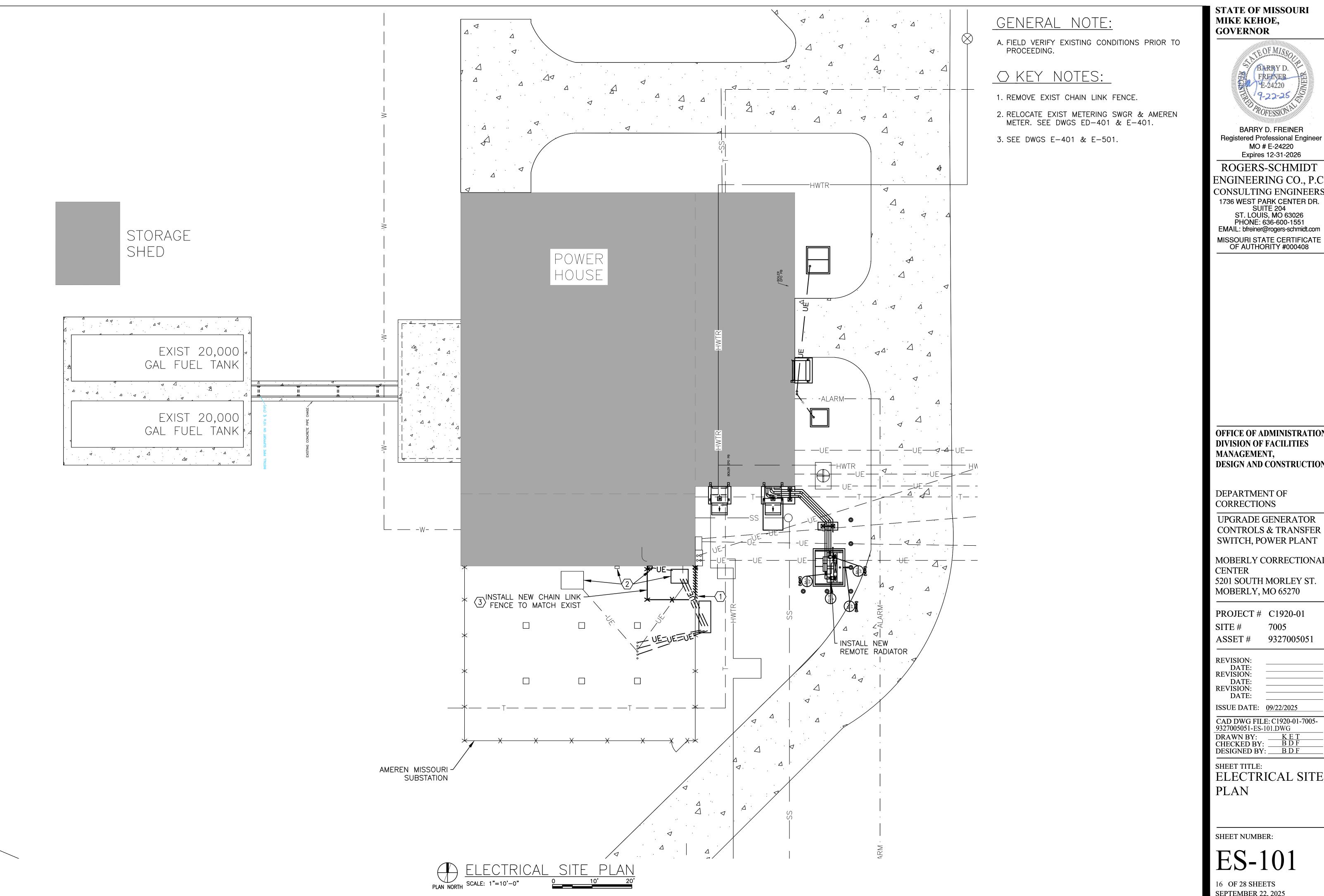
NUMBER

PERCENT

Ø PHASE OR DIAMETER

15 OF 28 SHEETS

SEPTEMBER 22, 2025





BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

ASSET # 9327005051

REVISION: DATE: **REVISION:**

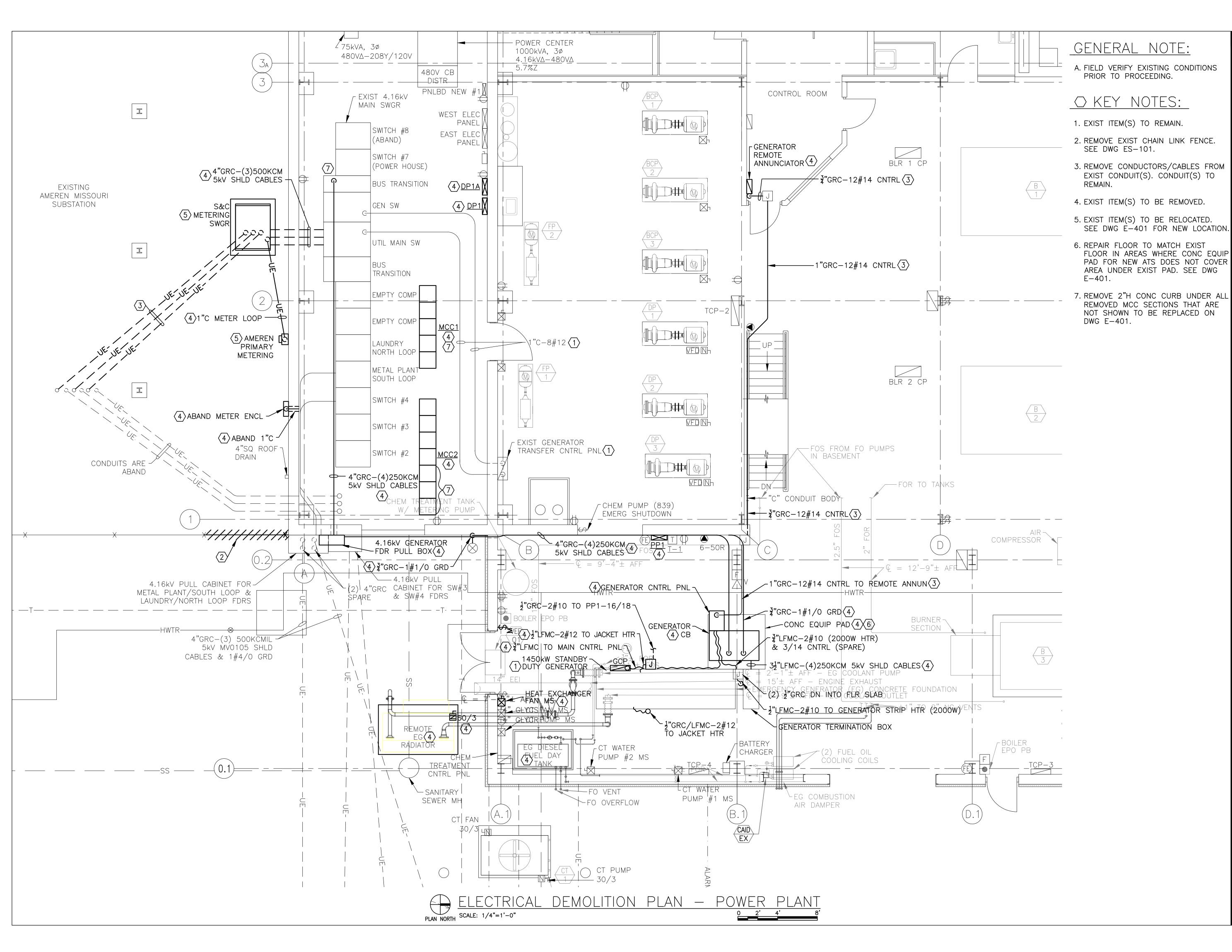
ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-ES-101.DWG DRAWN BY: KET
CHECKED BY: BDF
DESIGNED BY: BDF

SHEET TITLE:

ELECTRICAL SITE PLAN

SHEET NUMBER:



BARRY D.
FREINER
FE-24220
9-22-25

BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT
ENGINEERING CO., P.C.
CONSULTING ENGINEERS
1736 WEST PARK CENTER DR.
SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551

PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com
MISSOURI STATE CERTIFICATE
OF AUTHORITY #000408

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE # 7005 ASSET # 9327005051

REVISION: DATE: REVISION: DATE: REVISION:

DATE:

ISSUE DATE: <u>09/22/2025</u> CAD DWG FILE: C1920-01-70

CAD DWG FILE: C1920-01-7005-9327005051-ED-401.DWG

DRAWN BY: J D F/K E T

CHECKED BY: B D F

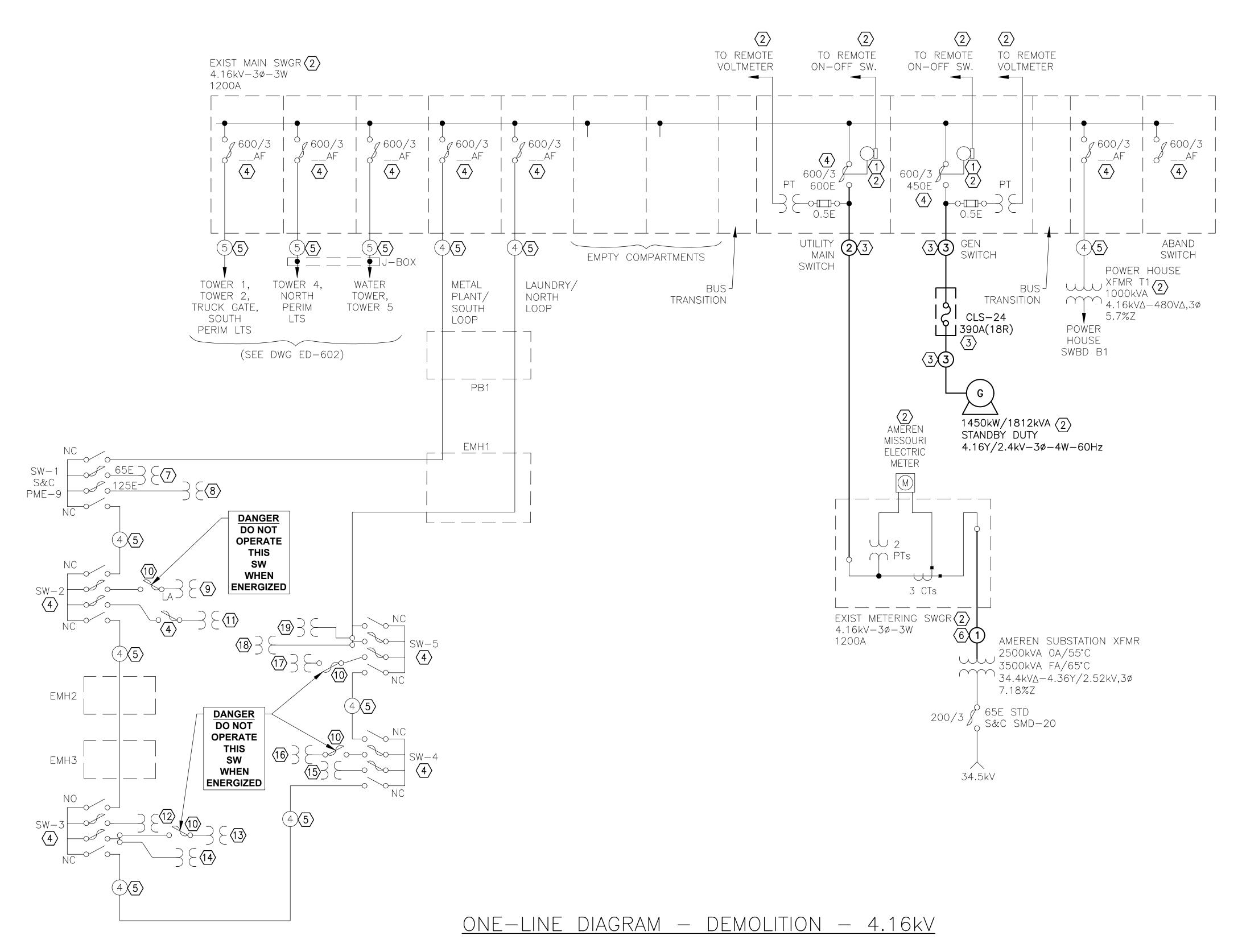
DESIGNED BY: B D F

SHEET TITLE:

ELECTRICAL
DEMOLITION PLAN
- POWER PLANT

SHEET NUMBER:

ED-401



	ME	DIUM-	·VOL	TAGE	FEED	ER SC	CHEDU	JLE -	EXIS	TING
			PHA	SE CONDUC	CTORS	NEU ⁻ CONDU	TRAL CTORS		JNDING UCTORS	
	FEEDER NUMBER	CIRCUIT VOLTAGE	PHASE	QTY PER PHASE	SIZE	QTY	SIZE	QTY	SIZE	RACEWAY
$\langle 5 \rangle$	1	4.16kV	3	3	500KCM	-	-	-	-	(3) 5"
$\overline{5}$	2	4.16kV	3	3	500KCM	-	-	-	-	(3) 4"
	3	4.16kV	3	1	250KCM	1	250KCM	-	-	4"
$\langle 5 \rangle$	4	4.16kV	3	1	500KCM	-	-	1	4/0	4"
(5)	5	4.16kV	3	1	1/0	-	-	1	2	3"

GENERAL NOTE:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

○ KEY NOTES:

- 1. MOTOR OPERATOR.
- 2. EXIST ITEM(S) TO REMAIN.
- 3. EXIST ITEM(S) TO BE REMOVED.
- 4. UNVERIFIABLE WHILE SWGR IS ENERGIZED. FIELD VERIFY AND DOCUMENT EXIST FUSE SIZE & TYPE DURING SCHEDULED POWER OUTAGE.
- 5. UNVERIFIABLE WHILE SWGR IS ENERGIZED. FIELD VERIFY AND DOCUMENT EXIST CONDUIT SIZE & TYPE AND CABLE TYPE, QTY & SIZES, INCL GRD DURING SCHEDULED POWER OUTAGE.
- 6. REMOVE CABLES FROM EXIST CONDUITS. CONDUITS TO REMAIN.
- 7. EXIST 300kVA, $4.16kV\Delta-208Y/120V$, 3-PHASE DRY TYPE XFMR, 6.6%Z AT METAL PLANT.
- 8. EXIST 500kVA, $4.16kV\Delta-480Y/277V$, 3-PHASE DRY TYPE XFMR, 5.6%Z AT METAL PLANT.
- 9. EXIST 225kVA, $4.16kV\Delta-208Y/120V$, 3-PHASE DRY TYPE XFMR, 4.7%Z AT HU 1.
- 10. EXIST G&W 4.16kV, 3-PHASE OIL INS SWITCH.
- 11. EXIST 500kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 5.94%Z AT FOOD SERVICE.
- 12. EXIST 300kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 5.6%Z AT HU 3.
- 13. EXIST 500kVA, $4.16kV\Delta-208Y/120V$, 3-PHASE DRY TYPE XFMR, 5.8%Z AT ADMIN BLDG.
- 14. EXIST 300kVA, 4.16kVΔ-480Y/277V, 3-PHASE DRY TYPE XFMR, 4.2%Z AT ADMIN BLDG FOR CHILLERS.
- 15. EXIST 300kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.99%Z AT SCHOOL.
- 16. EXIST 225kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.7%Z AT HU 2.
- 17. EXIST 225kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.7%Z AT SIGN SHOP.
- 18. EXIST 225kVA, 4.16kV Δ -208Y/120V, 3-PHASE DRY TYPE XFMR AT PRINT SHOP/LAUNDRY (NO NAMEPLATE ON XFMR).
- 19. EXIST 300kVA, 4.16kVΔ-480Y/277V, 3-PHASE DRY TYPE XFMR, 3.87%Z AT MVE WAREHOUSE.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



BARRY D. FREINER
Registered Professional Engineer
MO # E-24220
Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204

SUITE 204
ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com
MISSOURI STATE CERTIFICATE
OF AUTHORITY #000408

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

SITE # 7005 ASSET # 9327005051

REVISION:
DATE:
REVISION:
DATE:
REVISION:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-ED-601.DWG DRAWN BY: <u>KET/MNS</u>

9327005051-ED-601.DWG

DRAWN BY: KET/MNS

CHECKED BY: BDF

DESIGNED BY: BDF

SHEET TITLE:
ONE-LINE
DIAGRAM DEMOLITION 4.16kV

SHEET NUMBER:

ED-60

GENERAL NOTE:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.





BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

ASSET # 9327005051

REVISION: REVISION: DATE: **REVISION:** DATE:

ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-ED-602.DWG

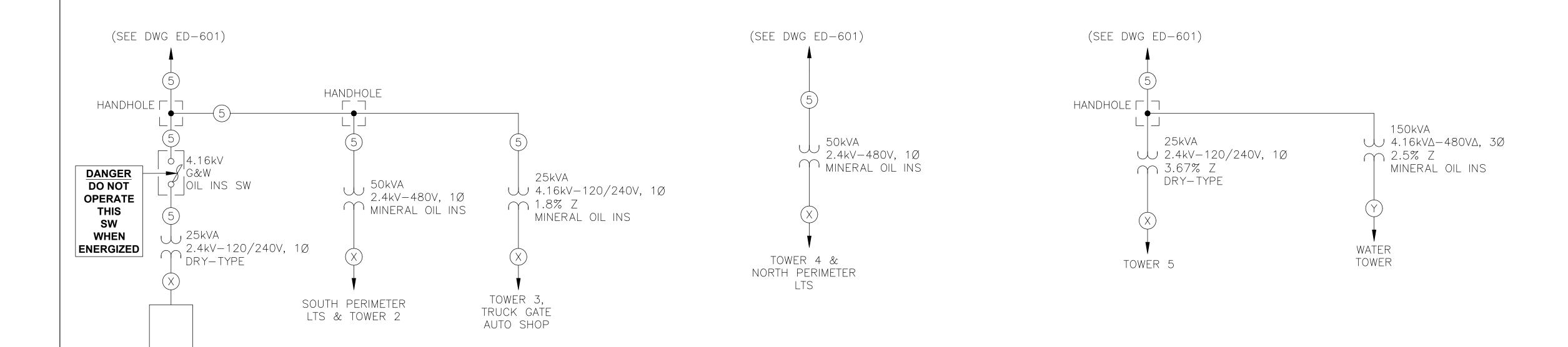
DRAWN BY: KET
CHECKED BY: BDF
DESIGNED BY: BDF

SHEET TITLE: ONE-LINE DIAGRAM -DEMOLITION -

4.16kV

SHEET NUMBER:

19 OF 28 SHEETS SEPTEMBER 22, 2025



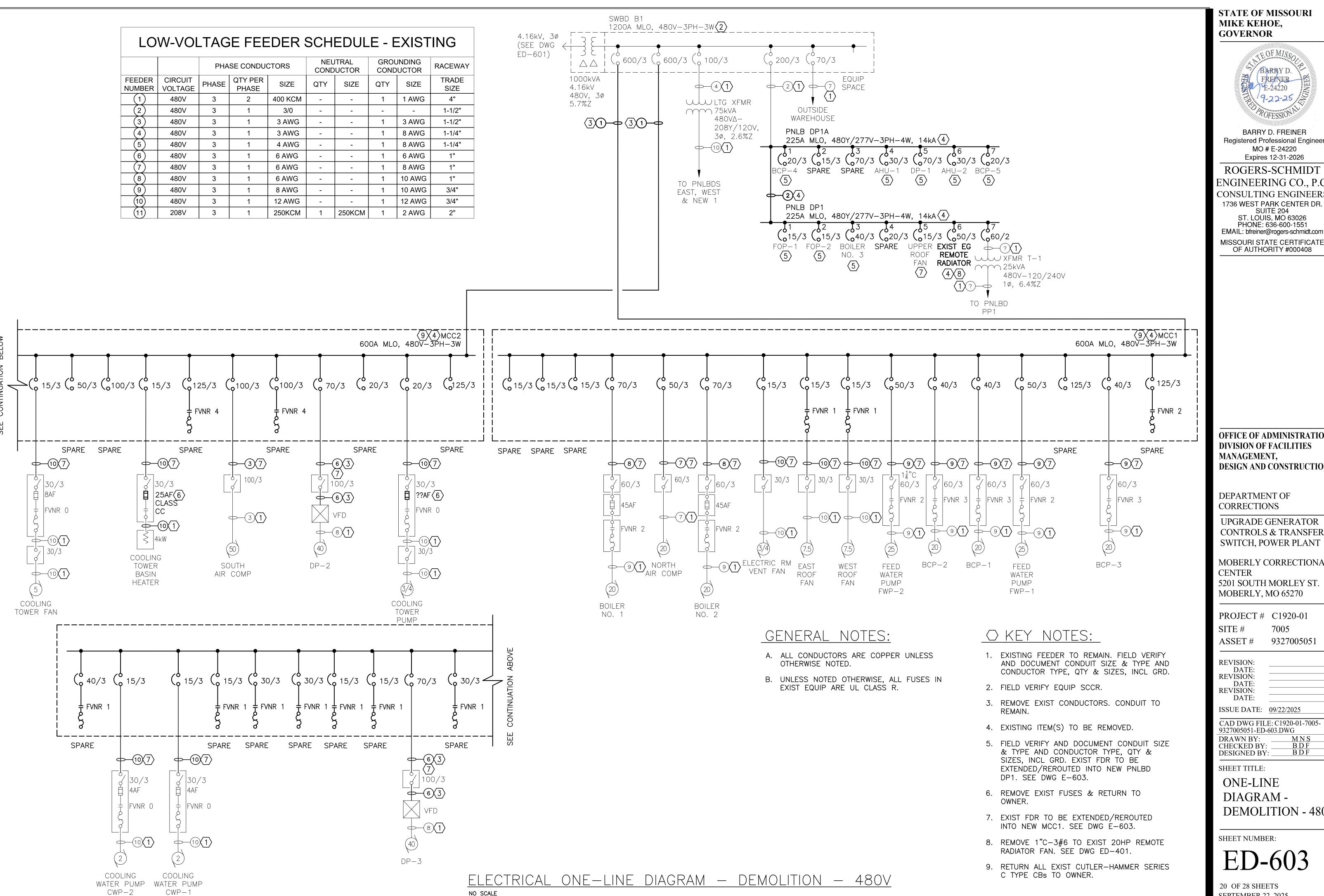
100A MAIN FS

22 CKT CB

 $120/240V - 1\emptyset - 3W$

PNLBD TOWER 1

<u>ONE-LINE DIAGRAM - DEMOLITION - 4.16kV</u>





BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, **DESIGN AND CONSTRUCTION**

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

9327005051 ASSET#

DATE: **REVISION:** DATE: **REVISION:**

DATE: ISSUE DATE: 09/22/2025

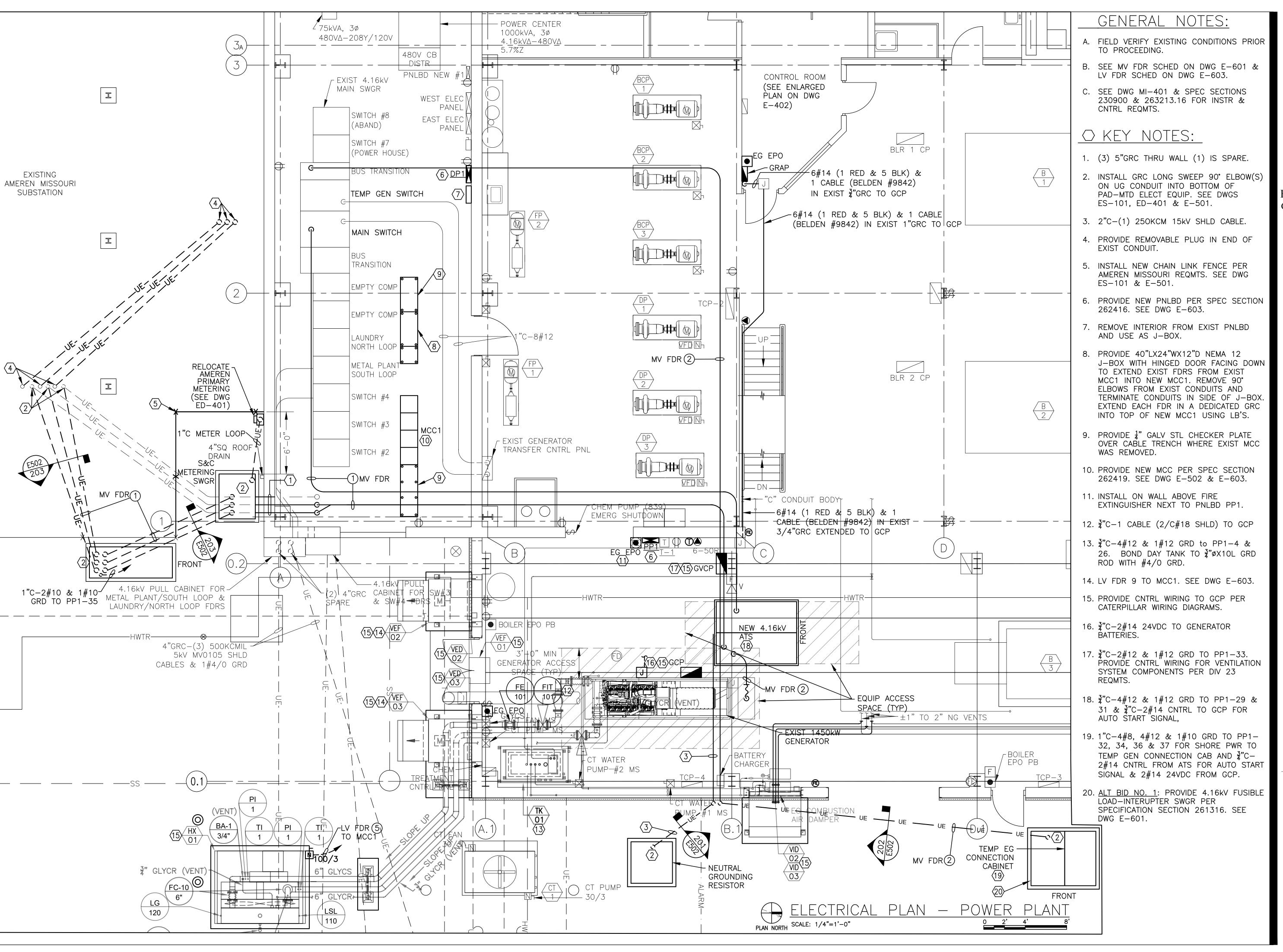
CAD DWG FILE: C1920-01-7005-

9327005051-ED-603.DWG DRAWN BY: CHECKED BY: **DESIGNED BY:**

SHEET TITLE:

ONE-LINE DIAGRAM -**DEMOLITION - 480V**

SHEET NUMBER:





BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. **CONSULTING ENGINEERS** 1736 WEST PARK CENTER DR.

ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

7005 SITE# 9327005051 ASSET#

REVISION: REVISION: DATE: **REVISION:**

ISSUE DATE: 09/22/2025

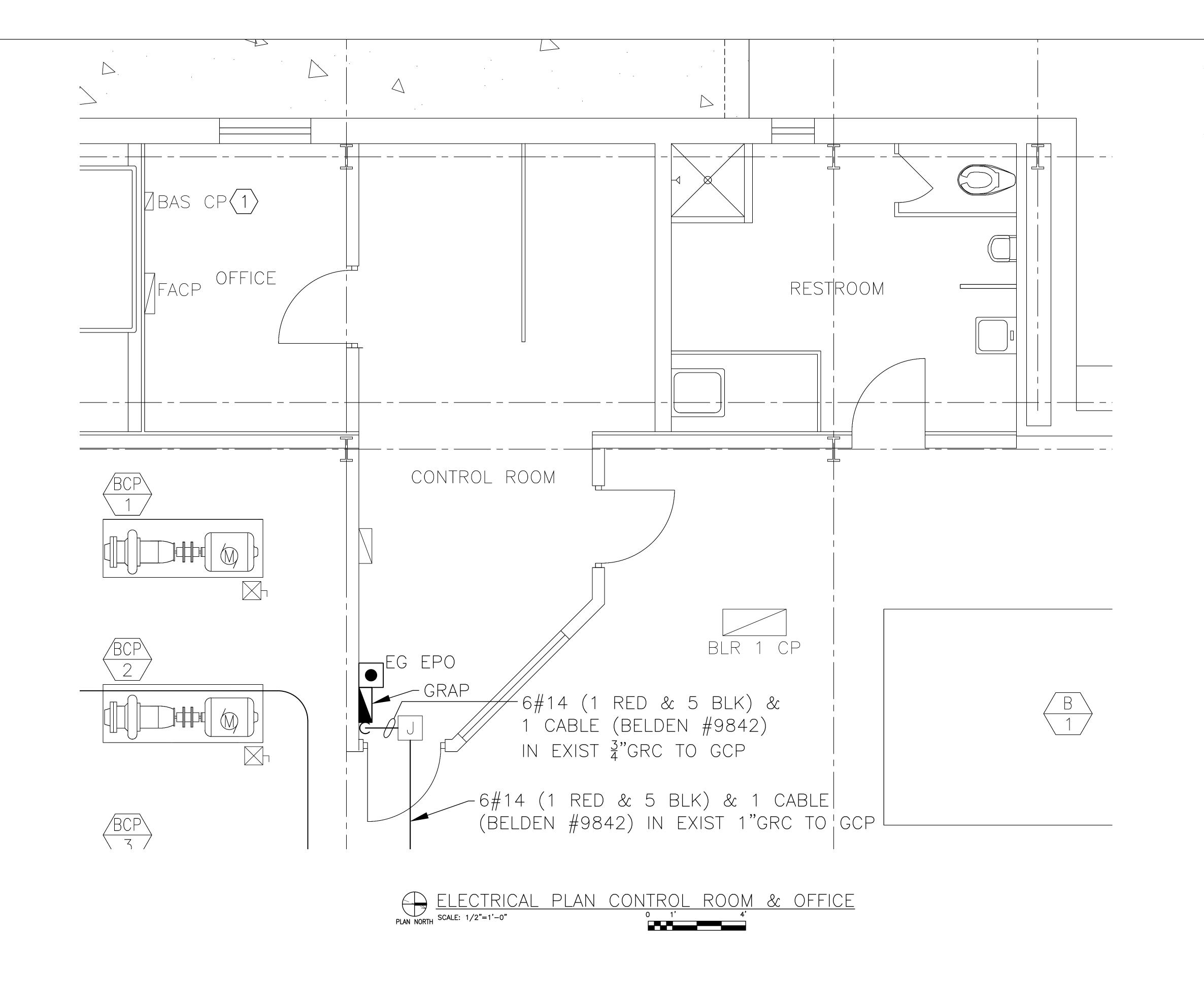
CAD DWG FILE: C1920-01-7005-9327005051-E-401.DWG

DRAWN BY: JDF/KET
CHECKED BY: BDF
DESIGNED BY: BDF

SHEET TITLE:

ELECTRICAL PLAN - POWER PLANT

SHEET NUMBER:



GENERAL NOTE:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

1. WIRE ALL BAS CNTRL SIGNALS INDICATED ON THE PLANS & IN THE SPECIFICATIONS TO THE EXIST BAS CNTRL PANEL. SEE SPECIFICATION SECTION 230900.

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005 SITE#

ASSET # 9327005051

REVISION: REVISION: DATE: **REVISION:**

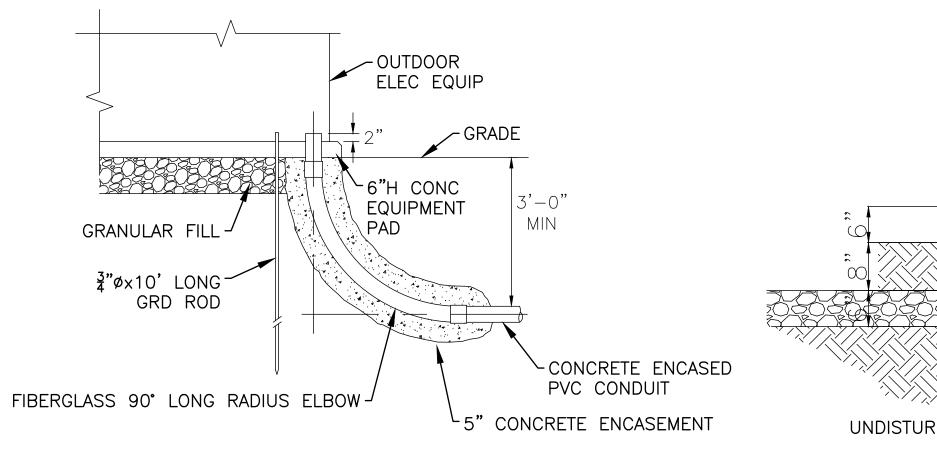
ISSUE DATE: <u>09/22/2025</u>

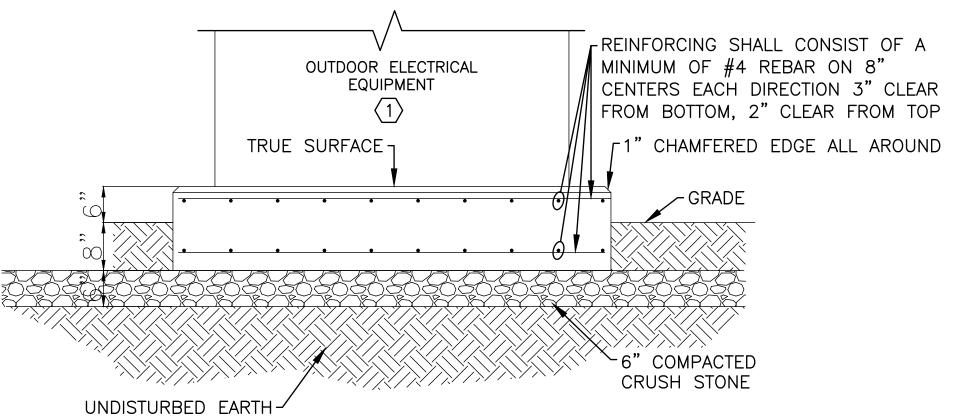
CAD DWG FILE: C1920-01-7005-9327005051-E-402.DWG

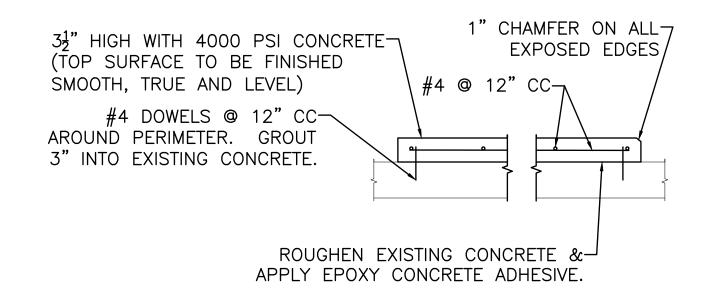
DRAWN BY: MNS
CHECKED BY: BDF
DESIGNED BY: BDF

SHEET TITLE: ELECTRICAL PLAN - CONTROL ROOM & OFFICE

SHEET NUMBER:







INDOOR EQUIPMENT PAD DETAIL

SCALE IN FEET 3/4" = 1'-0"

○ KEY NOTES:

- 1. SET EQUIPMENT ON CONCRETE PAD IN PROPER LOCATION. DO NOT SLIDE ON CONCRETE TO AVOID DAMAGING PROTECTIVE FINISH ON
- 2. EARTH FORMING OF DUCT BANKS SHALL BE PERMITTED ONLY IN AREAS WHERE SIDES AND BOTTOM OF DUCT BANK TRENCH CONSIST OF FIRM UNDISTURBED SOIL.
- 3. ALL SPARE DUCT BANK CONDUITS SHALL CONTAIN A PULL STRING IN ACCORDANCE WITH THE SPECIFICATIONS.



BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

STATE OF MISSOURI

MIKE KEHOE,

GOVERNOR

ROGERS-SCHMIDT ENGINEERING CO., P.C. **CONSULTING ENGINEERS** 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551

EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

9327005051 ASSET#

REVISION: DATE: **REVISION:** DATE: **REVISION:**

DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-E-501.DWG

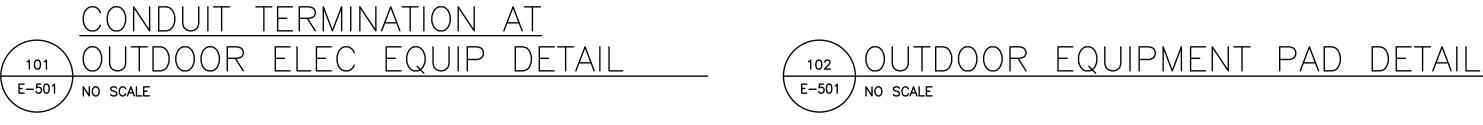
DRAWN BY: KET
CHECKED BY: BDF
DESIGNED BY: BDF

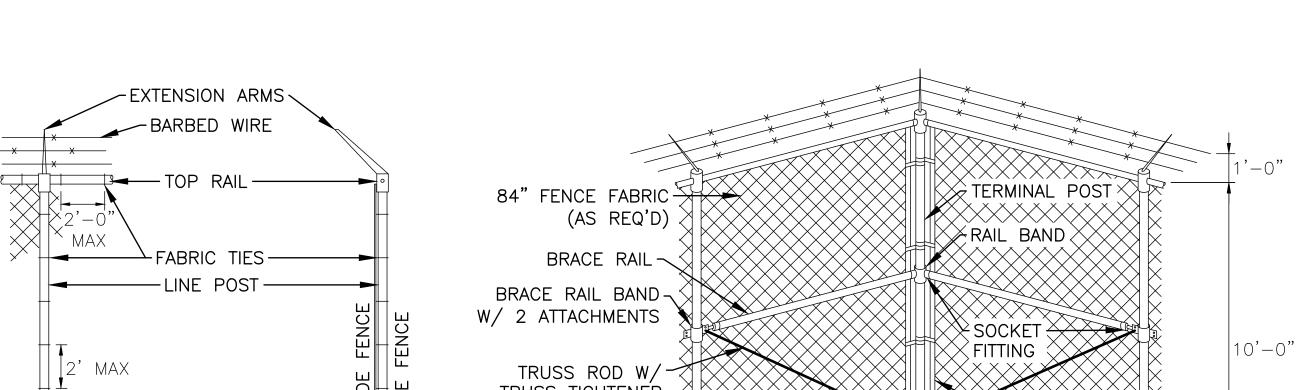
SHEET TITLE: ELECTRICAL & FENCE DETAILS

SHEET NUMBER:

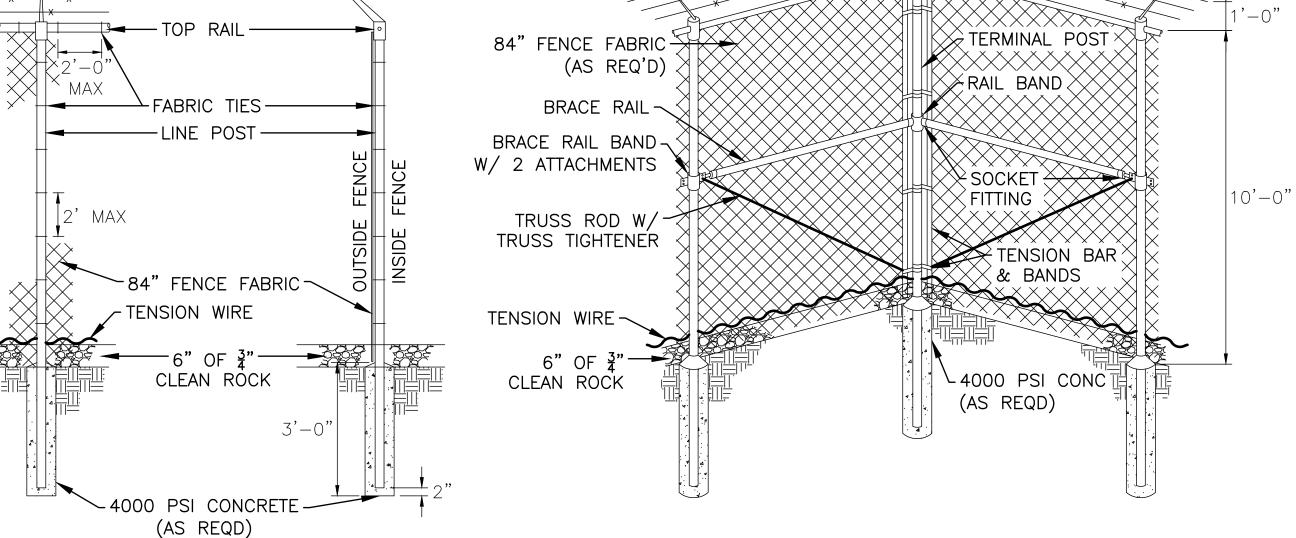
23 OF 28 SHEETS

SEPTEMBER 22, 2025





E-501 NO SCALE

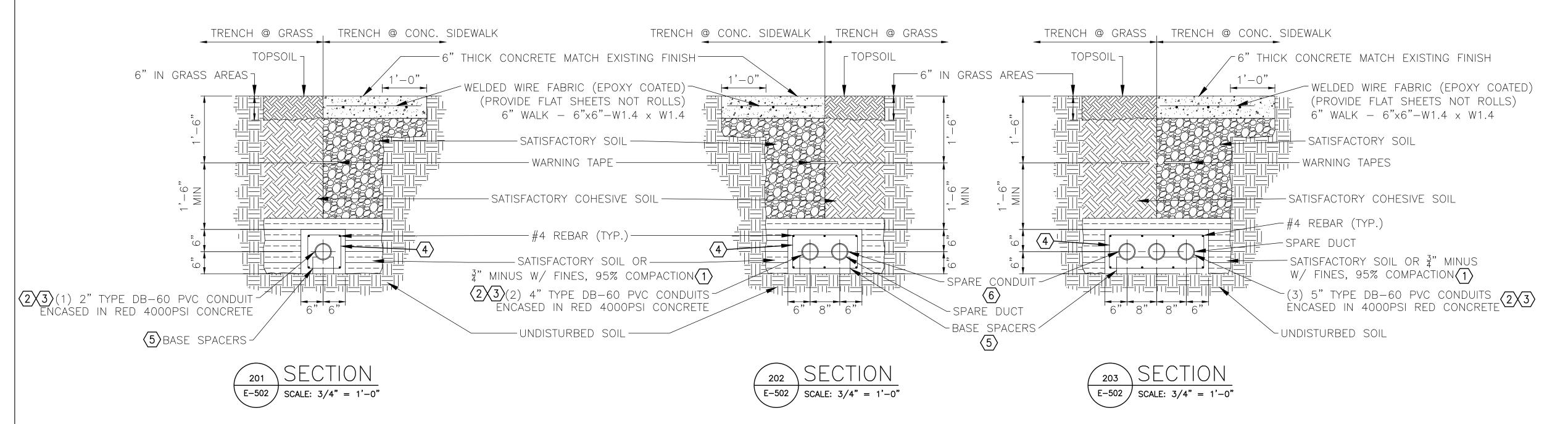


SECTION 104 E-501 NO SCALE

SECTION E-501 / NO SCALE

106 CORNER SECTION E-501 NO SCALE

AMEREN MISSOURI SUBSTATION FENCE DETAILS



МО	TOR CONTROL CENTER
	MCC1 SCHEDULE
BUCKET NO.	DESCRIPTION
1A	MONITORING UNIT FOR EPM
1E	EPM
1G	GDS
11	SPD
1K	FVNR 1 - ELECTRIC RM VENT FAN
10	40A/3P CB - BCP 1
1Q	40A/3P CB - BCP 2
1S	40A/3P CB - BCP 3
1U	600A MAIN LUGS
2A	60A/3P CB - BOILER 1
2C	60A/3P CB - BOILER 2
2E	50A/3P CB - FWP 1
2G	50A/3P CB - FWP 2
21	FVNR1 - UPPER ROOF FAN
2M	FVNR1 - EAST ROOF FAN
2Q	FVNR1 - WEST ROOF FAN
2U	FVNR1 - SPARE
3A	50A/3P CB - NORTH AIR COMPRESSOR
3C	100A/3P CB - SOUTH AIR COMPRESSOR
3E	70A/3P CB - DP 2
3G	70A/3P CB - DP 3
31	20A/3P CB - CT PUMP
3K	15A/3P CB - CT BASIN HEATER
3M	15A/3P CB - CT FAN
30	15A/3P CB - CWP-2
3Q	15A/3P CB - CWP-1
3S	20A/3P CB - SPARE
3U	15A/3P CB - SPARE
3W	30A/3P CB - SPARE
4A	125A/3P CB - SPARE
4C	25A/3P CB - SPARE
4E	20A/3P CB - VEF-03 EAST
4G	20A/3P CB - VEF-02 WEST
41	FVNR1 - SPARE
4M	FVNR2 - SPARE
4Q	FVNR3 - EMER GEN REMOTE RADIATOR FAN

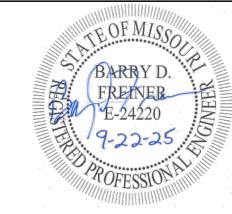
	SECTION 4	SECTION 3	SECTION 2	SECTION 1		
	WIREWAY	WIREWAY	WIREWAY	WIREWAY		
A B C C C C C C C C C C C C C C C C C C	125A FDR 4A	50A FDR 3A	60A FDR 2A	MONITORING UNIT FOR		
)	25A FDR 4C	100A FDR 3C	60A FDR 2C	EPM 1A		
- - -	20A FDR 4E	70A FDR 3E	50A FDR 2E	EPM 1E		
; 	20A FDR 4G	70A FDR 3G	50A FDR 2G	GDS 1G		
	FVNR1	20A FDR 3I	FVNR1	SPD 11		
	41	15A FDR 3K	21	FVNR1		
	FVNR2	15A FDR 3M	FVNR1	1K		
	4M	15A FDR 30	2M	40A FDR 10		
		15A FDR 3Q	□ /NID 1	40A FDR		
	EVND 7	20A FDR 3S	FVNR1 2Q	40A FDR		
	FVNR3	15A FDR 3U	EV/NID1	0001		
	4Q	30A FDR 3W	FVNR1 2U	600A MAIN LUGS		
	WIREWAY	WIREWAY	WIREWAY			
'	600A	600A	600A	600A		

204 MCC1 ELEVATION
E-502 NO SCALE

OKEY NOTES:

- 1. EARTH FORMING OF DUCT BANK IS ACCEPTABLE WHERE SIDES OF TRENCH CONSIST OF FIRM, UNDISTURBED SOIL. FORMING SHALL BE REQUIRED TO LIMIT DUCT BANK CONC THICKNESS TO 12" MAX FROM SIDE OF DUCT.
- 2. IN PLACING CONCRETE, USE A
 DELIVERY CHUTE TO MINIMIZE FALL
 OF THE CONCRETE INTO THE TRENCH.
 USE A SPLASH BOARD TO DIVERT
 THE FLOW OF CONCRETE AWAY FROM
 THE TRENCH SIDES AND AVOID
 DISLODGING SOIL AND STONES.
 CONCRETE SLUMP SHALL HAVE
 CONSISTENCY TO INSURE FLOWING OF
 CONC BETWEEN, UNDER, AND ALL
 AROUND DUCTS. PRECAUTIONS SHALL
 BE USED TO PREVENT VOIDS AND
 AIR POCKETS, AND TO PREVENT THE
 DUCTS FROM FLOATING.
- 3. EACH UNDERGROUND CONDUIT MUST HAVE A MINIMUM 3" CONCRETE ENVELOPE IN EACH DIRECTION AND MAXIMUM OF 6" VERTICAL AND A MAXIMUM OF 12" HORIZONTAL. THE NUMBER AND CONFIGURATION OF CONDUITS IN DUCT BANKS SHALL BE AS INDICATED.
- 4. #4 REBAR TIE LOOP EVERY 48"
 MAXIMUM O.C.. SPACE BETWEEN
 LONGITUDINAL REINFORCING REBAR
 SHALL BE 12" MAXIMUM.
- INSTALL SPACERS AT A MAXIMUM OF EVERY 8 FEET.
- 6. ALL SPARE DUCT BANK CONDUITS
 SHALL CONTAIN A PULL STRING IN
 ACCORDANCE WITH THE SPECIFICATION
 337119.13.
- 7. MCC1 LAYOUT SHOWN IS BASED ON SQUARE D MODEL 6. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS AT NO ADDITIONAL COST TO ACCOMODATE ALTERNATE ARRANGEMENT FROM ONE OF THE OTHER MCC MANUFACTURERS LISTED IN SPECIFICATION SECTION 262419.

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



BARRY D. FREINER
Registered Professional Engineer
MO # E-24220
Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204

ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 SITE # 7005

ASSET # 9327005051

REVISION:
DATE:

DATE:
REVISION:
DATE:

REVISION:

ISSUE DATE: <u>09/22/2025</u>

CAD DWG FILE: C1920-01-7005-9327005051-E-502.DWG

DRAWN BY: KET

CHECKED BY: BDF

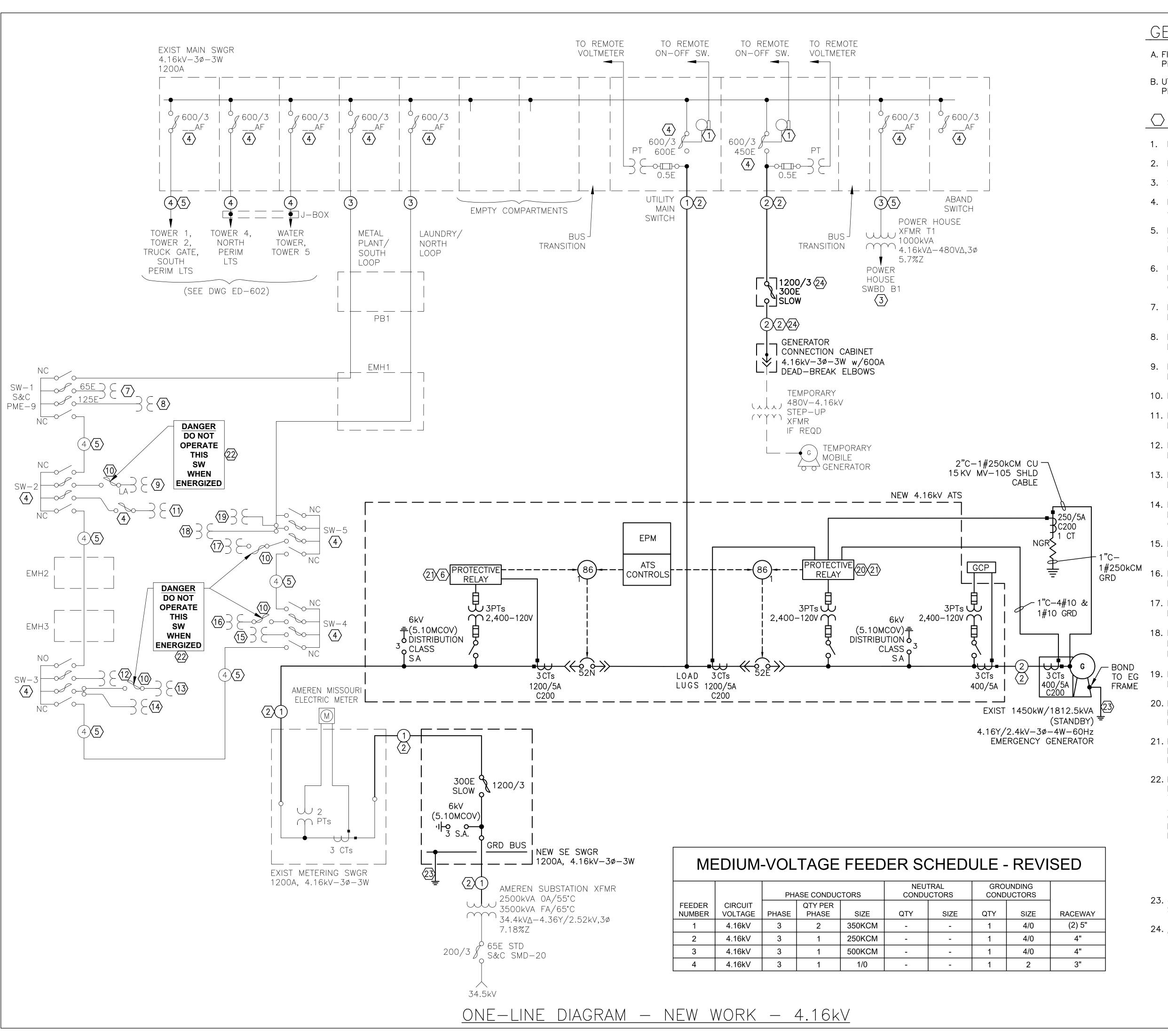
DESIGNED BY: BDF

SHEET TITLE:

DUCT BANK &
MOTOR CONTROL
CENTER DETAILS

SHEET NUMBER:

E-502



GENERAL NOTES:

- A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.
- B. UTILIZE 15kV SHLD CABLE FOR ALL 4.16kV CKTS PER SPECIFICATION SECTION 260513.

O KEY NOTES:

- MOTOR OPERATOR.
- 2. PROVIDE NEW 4.16kV FEEDER.
- 3. SEE DWG E-603.
- 4. FIELD VERIFY AND DOCUMENT EXIST FUSE TYPE & SIZE.
- 5. FIELD VERIFY AND DOCUMENT EXIST CONDUIT SIZE & TYPE AND CABLE TYPE, QTY & SIZES, INCL GRD.
- 6. UTILITY SOURCE PROTECTIVE RELAY SHALL BE GE MULTILIN 850 OR APPROVED EQUAL BY BASLER OR SCHWEITZER.
- 7. EXIST 300kVA, $4.16kV\Delta 208Y/120V$, 3-PHASE DRY TYPE XFMR, 6.6%Z AT METAL PLANT.
- 8. EXIST 500kVA, 4.16kVΔ-480Y/277V, 3-PHASE DRY TYPE XFMR, 5.6%Z AT METAL PLANT.
- 9. EXIST 225kVA, $4.16kV\Delta-208Y/120V$, 3-PHASE DRY TYPE XFMR, 4.7%Z AT HU 1.
- 10. EXIST G&W 4.16kV, 3-PHASE OIL INS SWITCH.
- 11. EXIST 500kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 5.94%Z AT FOOD SERVICE.
- 12. EXIST 300kVA, $4.16kV\Delta-208Y/120V$, 3-PHASE DRY TYPE XFMR, 5.6%Z AT HU 3.
- 13. EXIST 500kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 5.8%Z AT ADMIN BLDG.
- 14. EXIST 300kVA, 4.16kVΔ-480Y/277V, 3-PHASE DRY TYPE XFMR, 4.2%Z AT ADMIN BLDG FOR CHILLERS.
- 15. EXIST 300kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.99%Z AT SCHOOL.
- 16. EXIST 225kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.7%Z AT HU 2.
- 17. EXIST 225kVA, 4.16kVΔ-208Y/120V, 3-PHASE DRY TYPE XFMR, 4.7%Z AT SIGN SHOP.
- 18. EXIST 225kVA, 4.16kV∆-208Y/120V, 3-PHASE DRY TYPE XFMR AT PRINT SHOP/LAUNDRY (NO NAMEPLATE ON XFMR).
- 19. EXIST 300kVA, $4.16kV\Delta-480Y/277V$, 3-PHASE DRY TYPE XFMR, 3.87%Z AT MVE WAREHOUSE.
- 20. EMERGENCY SOURCE PROTECTIVE RELAY SHALL BE GE MULTILIN 889 OR APPROVED EQUAL BY BASLER OR SCHWEITZER.
- 21. PROTECTIVE RELAY FUNCTIONS TO BE DETERMINED BY SPECIFICATION SECTION 260573 ENGINEER PER AMEREN RQMTS.
- 22. PROVIDE AN ENGRAVED LAMINATED PLASTIC NAMEPLATE, PER SPECIFICATION 260553, ON THE OUTSIDE OF THE DOOR THAT PROVIDES ACCESS TO ALL G&W OIL INSULATED SWITCHES, OR ON THE WALL NEXT TO THE SWITCH IF IT IS NOT ENCLOSED, WITH THE FOLLOWING WHITE LETTERING ON A RED BACKGROUND:

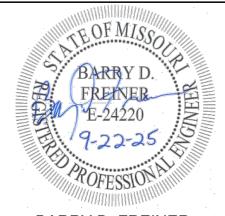
DANGER!

DO NOT OPERATE THIS

SWITCH WHEN ENERGIZED

- 23. 4/0 STRD CU GRD TO $\frac{3}{4}$ "øX10'L COPPERCLAD STL GRD ROD.
- 24. <u>ALTERNATE BID NO. 1</u>

STATE OF MISSOURI MIKE KEHOE, GOVERNOR



BARRY D. FREINER
Registered Professional Engineer
MO # E-24220
Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204

ST. LOUIS, MO 63026
PHONE: 636-600-1551
EMAIL: bfreiner@rogers-schmidt.com
MISSOURI STATE CERTIFICATE
OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST.

PROJECT # C1920-01

MOBERLY, MO 65270

SITE # 7005 ASSET # 9327005051

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
DATE:

DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-E-601.DWG

CAD DWG FILE: C1920-01-7005-9327005051-E-601.DWG

DRAWN BY: KET/MNS

CHECKED BY: BDF

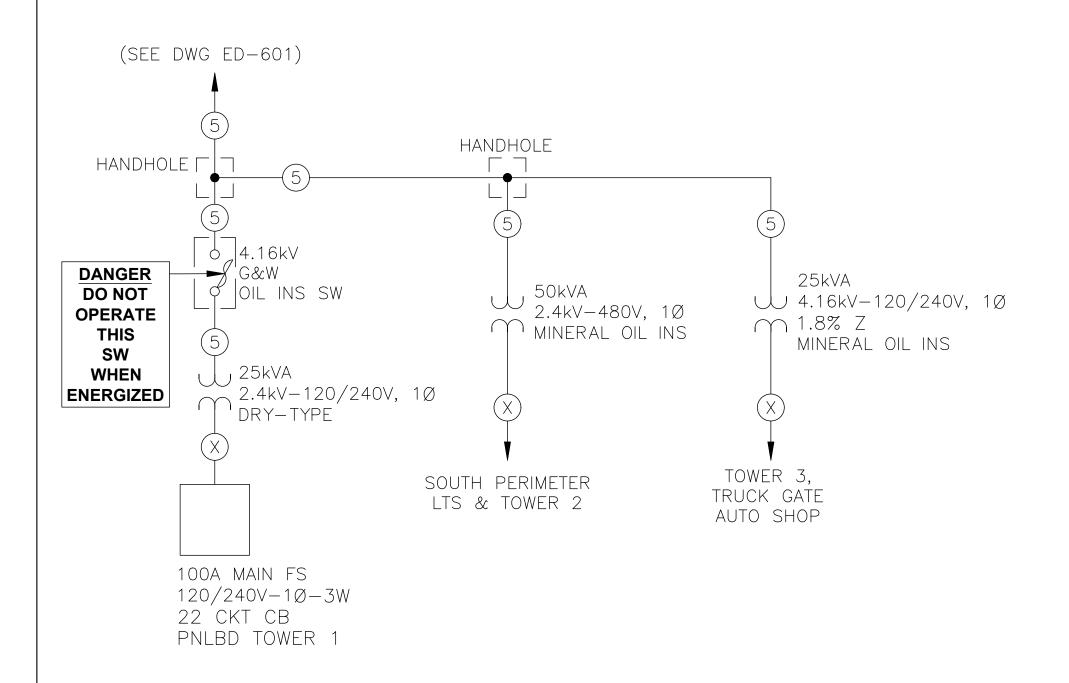
DESIGNED BY: BDF

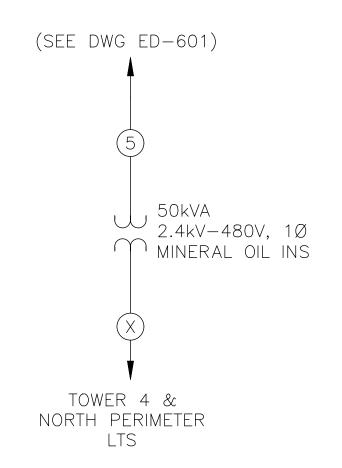
SHEET TITLE:
ONE-LINE
DIAGRAM - NEW
WORK - 4.16kV

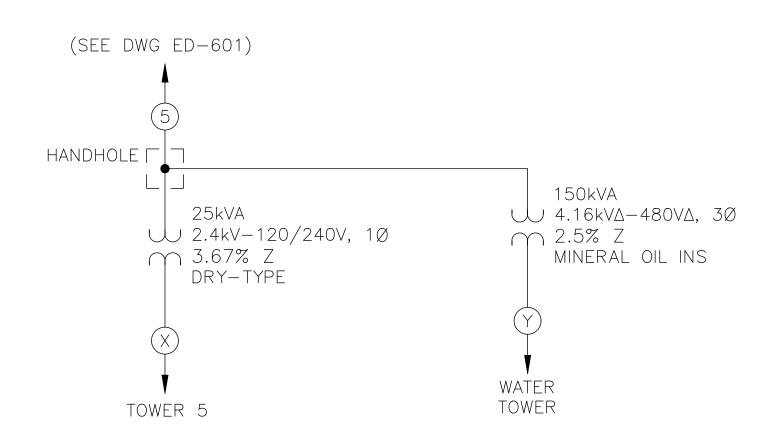
SHEET NUMBER:

E-601

25 OF 28 SHEETS
SEPTEMBER 22, 2025







ONE-LINE DIAGRAM - 4.16kV

GENERAL NOTE:

A. FIELD VERIFY EXISTING CONDITIONS PRIOR TO PROCEEDING.

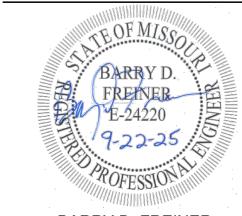
○ KEY NOTE:

1. PROVIDE AN ENGRAVED LAMINATED PLASTIC NAMEPLATE, PER SPECIFICATION 260553, ON THE OUTSIDE OF THE DOOR THAT PROVIDES ACCESS TO ALL G&W OIL INSULATED SWITCHES, OR ON THE WALL NEXT TO THE SWITCH IF IT IS NOT ENCLOSED, WITH THE FOLLOWING WHITE LETTERING ON A RED BACKGROUND:

DANGER!

DO NOT OPERATE THIS SWITCH WHEN ENERGIZED

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551 EMAIL: bfreiner@rogers-schmidt.com

MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

ASSET # 9327005051

REVISION: REVISION: DATE: **REVISION:** DATE:

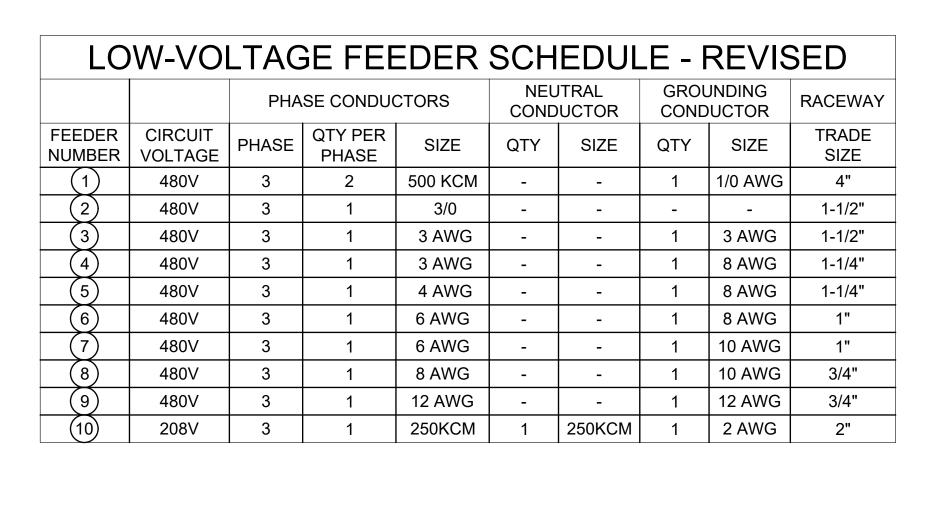
ISSUE DATE: 09/22/2025

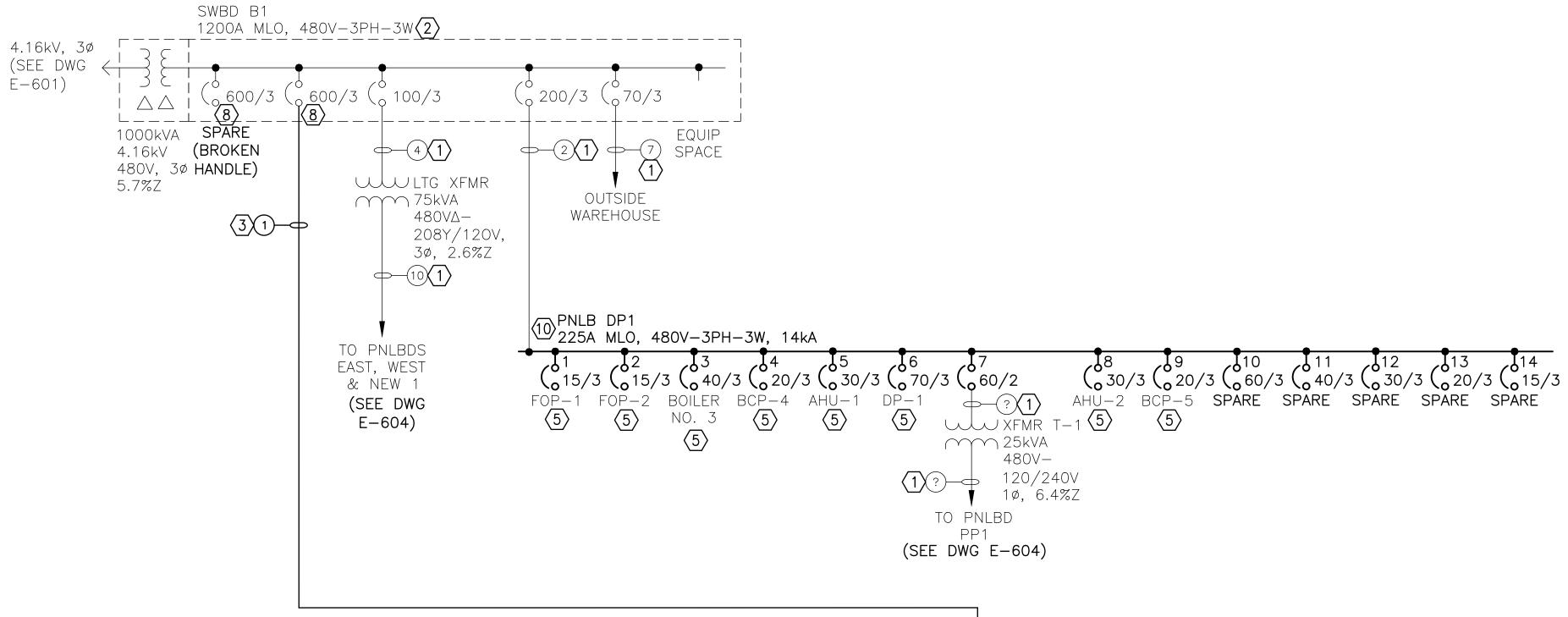
CAD DWG FILE: C1920-01-7005-9327005051-E-602.DWG DRAWN BY: KET
CHECKED BY: BDF
DESIGNED BY: BDF

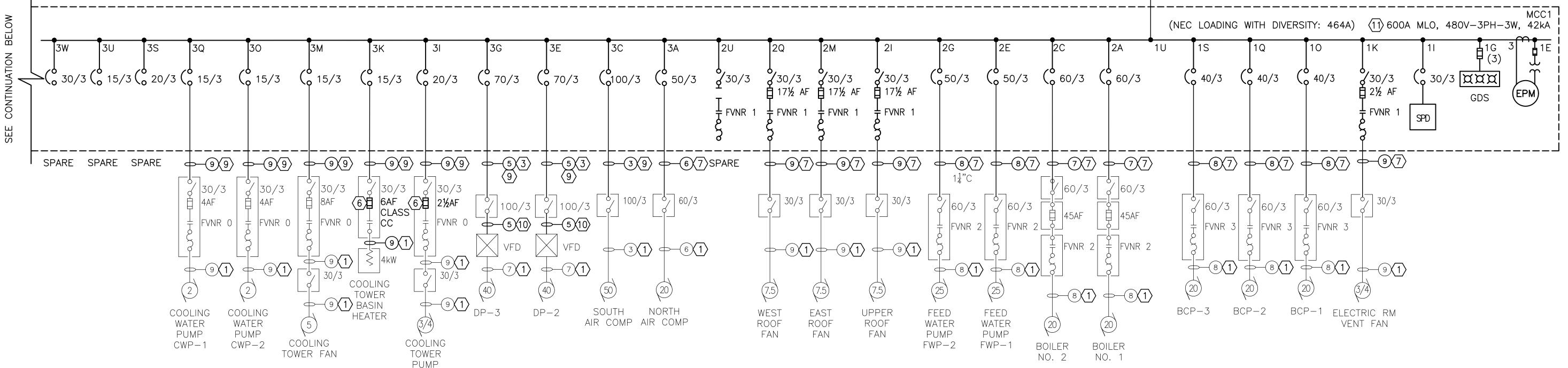
SHEET TITLE: ONE-LINE DIAGRAM - NEW

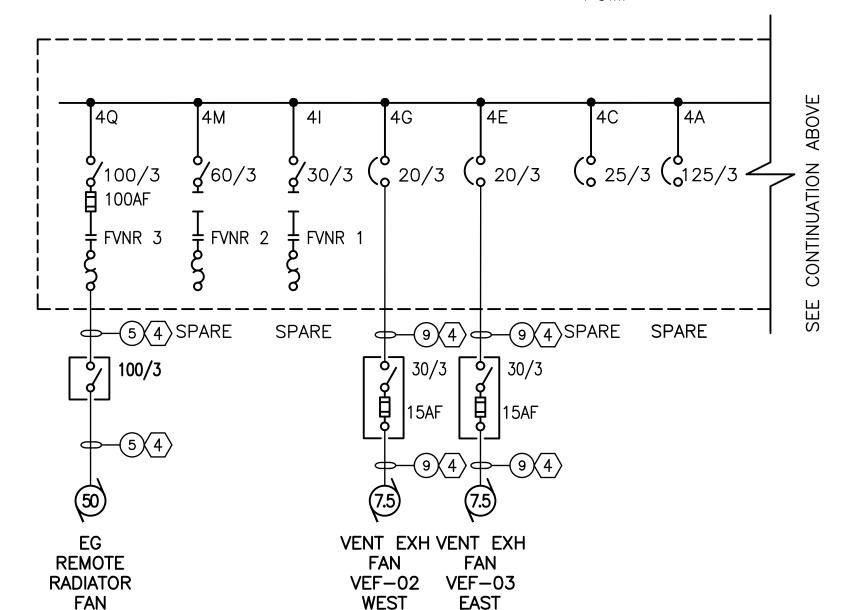
WORK - 4.16kV

SHEET NUMBER:









GENERAL NOTES:

NO SCALE

- A. ALL CONDUCTORS ARE COPPER UNLESS OTHERWISE NOTED.
- B. ALL NEW 480VAC CONDUCTORS SHALL HAVE TYPE 1000V INSULATION PER SPECIFICATION SECTION 260519.
- C. UNLESS NOTED OTHERWISE, ALL FUSES IN NEW EQUIP SHALL BE UL CLASS J & ALL NEW FUSES IN EXIST EQUIP SHALL BE UL CLASS RK1.
- D. ARRANGE UNITS IN MCC AS REQD TO LIMIT THE NUMBER OF EXIST FEEDERS THAT MUST BE SPLICED.
- E. ALL VFDs, MOTOR STARTERS & ALL DISC SWITCHES SIZE 30A & LARGER BETWEEN SOURCE EQUIP & LOAD SHALL HAVE AN ARC FLASH WARNING LABEL APPLIED PER SPECIFICAITON SECTIONS 260573 & 260553.

O KEY NOTES:

- 1. EXISTING FEEDER TO REMAIN. FIELD VERIFY AND DOCUMENT CONDUIT SIZE & TYPE AND CONDUCTOR TYPE, QTY & SIZES, INCL GRD.
- 2. FIELD VERIFY EQUIP SCCR.
- 3. PROVIDE NEW FEEDER CONDUCTORS IN EXIST CONDUIT.
- 4. PROVIDE NEW FEEDER.
- 5. FIELD VERIFY AND DOCUMENT CONDUIT SIZE & TYPE AND CONDUCTOR TYPE, QTY & SIZES, INCL GRD. EXTEND/REROUTE EXIST FDR INTO NEW PNLBD DP1. SEE DWG ED-603.
- 6. PROVIDE NEW FUSES AS INDICATED.
- 7. EXTEND/REROUTE EXIST FDR INTO NEW MCC1. SEE DWG ED-603.

- 8. TERMINATE NEW MCC1 FDR ON THE "MC2" CB. PROVIDE NEW ENGRAVED NP "MCC1" FOR THIS CB AND "SPARE" NP FOR THE CB WITH THE BROKEN HANDLE.
- 9. CONNECT EXIST MCC2 FDR TO NEW MCC1. EXTEND EXIST CONDUIT & WIRING IF/AS REQD. SEE DWG ED-603.
- 10. PROVIDE NEW PANELBOARD PER SPECIFICATION SECTION 262416.
- 11. PROVIDE NEW MCC PER SPECIFICATION SECTION 262419.

STATE OF MISSOURI MIKE KEHOE, **GOVERNOR**



BARRY D. FREINER Registered Professional Engineer MO # E-24220 Expires 12-31-2026

ROGERS-SCHMIDT ENGINEERING CO., P.C. CONSULTING ENGINEERS 1736 WEST PARK CENTER DR. SUITE 204 ST. LOUIS, MO 63026 PHONE: 636-600-1551

EMAIL: bfreiner@rogers-schmidt.com MISSOURI STATE CERTIFICATE OF AUTHORITY #000408

OFFICE OF ADMINISTRATION **DIVISION OF FACILITIES** MANAGEMENT, **DESIGN AND CONSTRUCTION**

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01

7005 9327005051 ASSET#

REVISION: DATE: **REVISION:** DATE: **REVISION:** DATE:

ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-E-603.DWG DRAWN BY:

KET/MNS CHECKED BY: **DESIGNED BY:**

SHEET TITLE:

ONE-LINE **DIAGRAM - NEW WORK - 480V**

SHEET NUMBER:

<u>ELECTRICAL ONE-LINE DIAGRAM - NEW WORK - 480V</u> 27 OF 28 SHEETS **SEPTEMBER 22, 2025**

GENERAL NOTES:

- A. PANELBOARD SCHEDULES ARE BASED ON AVAILABLE EXIST DOCUMENTATION. ALL INFORMATION SHALL BE FIELD VERIFIED FOR THE ARC FLASH RISK ASSESSMENT STUDY PER SPECIFICATION SECTION 260573 WITH ALL CHANGES NOTED ON "AS-BUILT" DWGS.
- B. PROVIDE UPDATED PRINTER GENTERATED PNLBD CKT DIRECTORY FOR EACH PNLBD (NEW & EXIST) PER SPECIFICATION SECTION 260553 WITH THE LOAD(S) SERVED BY EACH CKT IDENTIFIED PER NEC 408.4(A).
- C. NEW OCPDs PROVIDED IN EXIST PNLBDs SHALL BE SAME TYPE, SIZE, AMPERE RATING, AIC RATING AND MANUFACTURER AS EXIST.

O KEY NOTES:

- 1. TRACE EXIST CKT AND INDICATE LOAD(S) SERVED ON NEW CKT DIRECTORY.
- 2. VERIFY BRANCH CIRCUIT CONDUCTOR SIZE IS 10AWG. CHANGE FUSE/CB TO 20A FOR 12AWG AND TO 15A FOR 14AWG CONDUCTORS.
- 3. PROVIDE DEVICE THAT PREVENTS CB FROM BEING TURNED OFF BUT ALLOWS THE CB TO
- 4. PROVIDE RED LABEL WITH WHITE "FIRE ALARM" LETTERING PER NEC 760.41.
- 5. PROVIDE NEW PNLBD WITH INTEGRALLY MTD SPD PER SPECIFICATION SECTION 262416.
- 6. PROVIDE $\frac{3}{4}$ "C-1 CABLE (2/C#18) TO BAS CNTRL PANEL IN OFFICE FOR SPD STATUS.
- 7. FIELD VERFY FUSE AND CONDUCTOR SIZES.

· · · · · · · · · · · · · · · · · · ·		FIELD	VERIFY	EQUIP	SCCR.
---------------------------------------	--	-------	---------------	-------	-------

	SUITE 204
	ST. LOUIS, MO 63026
ı	PHONE: 636-600-1551
	EMAIL: bfreiner@rogers-schmidt.co
	MISSOURI STATE CERTIFICAT
	OF AUTHORITY #000408

STATE OF MISSOURI

BARRY D.

BARRY D. FREINER

Registered Professional Engineer

MO # E-24220

Expires 12-31-2026

ROGERS-SCHMIDT

ENGINEERING CO., P.C.

CONSULTING ENGINEERS 1736 WEST PARK CENTER DR.

MIKE KEHOE,

GOVERNOR

				NEW PANELBOA	ARD P	P1 SC	HEDL	JLE (G	ENERATOR RM) (5X6)				
Ī	CKT		POLES		VOLT-A	MPERES	VOLT-A	MPERES	LOAD	POLES		CKT	
	NO	AMPS	PC	LOAD	ØA	ØB	ØA	ØB			AMPS	NO	
$\langle 2 \rangle$	1	30	1	CONV OUTLETS & FENCE SENSOR	-		-		DOOR OPENER	1	30	2	2
	3	20	1	VENT FAN & DAMPER MOTOR #3		-		-	DAY TANK CONTROL PANEL	1	20	4]
	5	20	1	LTG - GENERATOR & BOILER 3 AREA	-		-		EXTERIOR LTS & RESTRICTED TOOL CAGE	1	20	6]
	7	20	1	WATER SOFTENER RECPT		-		-	COOLING TOWER HEAT TRACE	1	20	8]
	9	20	1	SPARE	-		-		BOILER #1 & #2 CONTROLS	1	20	10]
	11	20	1	GENERATOR BATTERY CHARGER		-		-	WEST OUT BUILDING	1	20	12]
	13	20	1	ROOF EXH FAN ABOVE SW STAIRWELL	-		-		WEST OUT BUILDING	1	20	14]
	15	20	1	PLUG STRIP BLR CNTRL CAB - OFFICE		-		-	CENEDATOR WEST INCKET WATER LITE	2	20	16]
	17	15	1	OFFICE	-		-		GENERATOR WEST JACKET WATER HTR	2	30	18]
	19	60	_	CDADE		-		-	BLR CNTRL CIR - LOW WATER - OFFICE	1	15	20]
Ī	21	60	2	SPARE	-		-		WELDED	2	70	22]
	23	- 30	2	INGERSOL RAND AIR COMPRESSOR		-		-	WELDER	2	70	24]
	25	30		INGERSOL RAND AIR COMPRESSOR	-		-		DAY TANK REVERSE FUEL OIL PUMP	1	20	26	
(1)	27	20	1	UNKNOWN LOAD		-		-	GENERATOR EAST JACKET WATER HTR	2	30	28	
	29	20	1	ATS CONTROL POWER	•		-		GENERATOR EAST JACKET WATER HTR		30	30	
	31	20	1	ATS EMERGENCY SOURCE CB SHUNT TRIP		-		-	TEMP GEN CONNECTION CABINET SHORE POWER	1	30	32])
	33	20	1	GENERATOR VENTILATION CONTROL PANEL	-		-		TEMP GEN CONNECTION CABINET SHORE POWER	1	30	34	$]\times 3$
Ī	35	20	1	4.16kV SE SWGR ENCL HEATERS		-		-	TEMP GEN CONNECTION CABINET SHORE POWER	1	20	36]) _
Ī	37	20	1	4.16kV GEN CONNECTION CABINET ENCL HEATERS	-		-		SPARE	1	20	38]
Ī	39	15	1	SPARE		-		-	SPARE	1	15	40]
Ī	41	15	1	SPARE	-		-		SPARE	1	15	42]
	125 AI	MP MCB	, 120/2	40V-1Ø-3W, 42 CKT, 10kA						•	•	-	-

BOTTOM FEED

				EXISTING	PANE	ELBOA	ARD E	AST S	CHED	ULE (ELEC RM)				
•	CKT		POLES		VC	OLT-AMPERI	ES	V	OLT-AMPER	ES		POLES		СКТ	
	NO	AMPS	8	LOAD	ØA	ØB	ØС	ØA	ØВ	ØС	LOAD	G	AMPS	NO	
(2)	1	30	1	LTS-BATHRM/PATIO & RECPTS-KITCHEN/S. OFFICE	-			-			E&N OFFICE, ENTRANCE, KITCHEN & W PUMP RM RECPTS	1	30	2	2
	3	20	1	SANDBLASTER/BOILER RM RECPTS		-			-		WATER FOUNTAIN	1	30	4	(2)
$\langle 2 \rangle$	5	30	1	TOWER SECURITY LIGHT			-			-	LIGHTS - 3RD FLOOR	1	30	6	(2)
$\langle 2 \rangle$	7	30	1	LIGHT - E. SIDE 2ND FLOOR	-			-			LIGHTS - S. SIDE 3RD FLOOR	1	30	8	(2) (2) (2)
2	9	30	1	HIGH H2O ALARM-STORAGE TANK/3RD FLR RECPTS		-			-		OFFICE A/C - HEAT PUMP	1	30	10	2
2	11	30	1	LIGHTS - MIDDLE 2ND FLR & TELEPHONE BELL			-			-	OFFICE A/C - HEAT PUMP	1	30	12	2
2	13	30	1	LIGHTS - 2ND FLR ID FANS	-			-			BATHROOM HEATER	1	30	14	$\langle 2 \rangle$
$\overline{2}$	15	30	1	LIGHTS - BLUEROOM/PAINT LOCKER/STAIRWAY/SW 2ND FLOOR		-			-		BATHROOM HEATER	1	30	16	2
$\langle 2 \rangle$	17	25	1	LIGHTS - PREHEATER			-			-	SUMP PUMP BY GARAGE DOOR	1	30	18	$\langle 2 \rangle$
2	19	30	1	LTS-W. SIDE 2ND FLR ABOVE ID FANS/BLUEROOM HTR	-			-			WALL HEATERS - ELEC ROOM NORTH & WEST	1	-	20	
2	21	25	1	OFFICE HEATER		-			-		WALL HEATERS - ELEC ROOM NORTH & WEST	1	-	22	
$\langle 2 \rangle$	23	25	1	OFFICE HEATER			-			-	ELEC ROOM HEATER	1	-	24	
(2) (7)	25	30	1	RECPT AT MAKEUP PUMPS	-			-			BATHROOM DOMESTIC WATER HEATER	1	25	26	$\langle 2 \rangle$
$\overline{7}$	27	?	1	NORTH SECURITY LIGHT		-			-		BATHROOM DOMESTIC WATER HEATER	1	25	28	$\begin{pmatrix} 2 \\ 2 \end{pmatrix}$
$\overline{7}$	29	?	1	LIGHTS ABOVE PUMPS IN PUMP ROOM			-			-	-	1	-	30	
	31	?	1	-	-			-			-	1	-	32	

200 AMP MLO, 208Y/120V-3Ø-4W, 32 CKT, ??kA(8) FRANK ADAM ELECTRIC PLUG FUSED PNLD

				EXISTING	PANE	ELBOA	RD W	EST S	CHED	ULE ((ELEC RM)					
	СКТ		POLES		V(OLT-AMPER	ES	V	OLT-AMPER	ES		POLES		CKT	1	
	NO	AMPS	PO	LOAD	ØA	ØB	ØC	ØA	ØB	ØC	LOAD	<u> </u>	AMPS	NO		'
(2)\(1)	1	30	1	UNKNOWN LOAD	-			-			PUMPR00M RECPTS, MU METER, BSMT SP ALARM, DDC PUMP CNTRL CKT FOR BLR & DIST PUMPS	1	30	2	2	
	3	15	1	LIGHT - WATER CEMISTRY CABINET		-			-		BOILER CONTROL PANEL LIGHTS & ANNUNCIATOR	1	30	4	2	
(2)	5	30	1	LIGHTS - N. OF ID FANS & BLUEROOM RECPTS			-			-	2ND FLR RECPT - E, W, MIDDLE & PAINT STORAGE & AHU DDC COMMUNICATIONS	1	30	6	2 4 \(\frac{3}{2} \)	3
$\langle 2 \rangle$	7	30	1	LIGHTS - N & E BASEMENT & N. RECPTS	-			-			OUTLETS COMP. RM BSMT (AIR DRYER)	1	30	8	$\langle 2 \rangle$	-
	9	-	1	PORTABLE GENERATOR RECEPT		-			-		RECPTS - BASEMENT UNDER BOILERS	1	30	10	2 2	-
	11	-	1	PORTABLE GENERATOR RECPT - BATT CHARGER			-			-	SPARE	1	30		2	
(2)	13	30	1	LITES - N, MIDDLE, W OF BLRS & S BSMT, DRILL PRESS	-			-			LIGHTS - ABOVE FRONT OF BOILERS 1 & 2	1	20	14		-
	15	-	1	SPARE		-			-		LIGHTS - STAIRWAY IN FRONT OF BLR 1, CENTER STAIRWAY	1	30	16	2	
$\langle 2 \rangle \langle 1 \rangle$	17	30	1	UNKNOWN LOAD			-			-	LIGHTS - MIDDLE ELECTRIC ROOM	1	30	18	$\langle 2 \rangle$	_
	19	20	1	LIGHTS - SOUTH PUMP ROOM	-			-			LIGHTS - N & S ELECTRIC ROOM	1	30	20	(2)	
$\langle 2 \rangle$	21	30	1	LIGHTS - NORTH PUMP ROOM		-			-		UNKNOWN LOAD	1	20	22	$\langle 1 \times 2 \rangle$	
	23	20	1	LIGHTS - OFFICE/KITCHEN/ENTRANCE			-			-	MAKEUP PUMP METER	1	30	24	$\overline{2}$	_
	200 A	MP MLO.	208Y/	120V-3Ø-4W, 24 CKT, ??kA(8)											•	

)	_ •			• · · · • = /	•	
200 AN	MP MLO,	208Y/	120V-3Ø-	4W, 24 CK	T, ??kA(8>
				G FUSED I		_

01/7		ES		V	OLT-AMPER	ES	V	OLT-AMPERI	ES		ES		01/7
CKT NO	AMPS	POLES	LOAD	ØA	ØB	ØC	ØA	ØB	ØC	LOAD	POLES	AMPS	CKT NO
1	20	1	ANTENNA #3 RECP	-			-			ANTENNA ROOM SPARE	1	20	2
3	20	1	ANTENNA #2 RECP		-			-		ANTENNA ROOM SPARE	1	20	4
5	20	1	ANTENNA #1 RECP			-			-	ANTENNA #4 RECP	1	20	6
7	20	1	AMEREN GAS METER	-			-			UNKNOWN LOAD	1	20	8
9	20	1	FIRE ALARM		-			-		UNKNOWN LOAD	1	20	10
11	- 30	2	A/C DADIO DOOM			-			-	OFFICE A/C LIFAT DUMP		30	12
13	7 30	2	A/C RADIO ROOM	-			-			OFFICE A/C-HEAT PUMP	2	30	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
41	_	-	_			_			_	_	<u> </u>	<u> </u>	42

200 AMP MCB, 208Y/120V-3Ø-4W, 42 CKT, 10kA SQUARE D QO LOAD CENTER

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

UPGRADE GENERATOR CONTROLS & TRANSFER SWITCH, POWER PLANT

MOBERLY CORRECTIONAL CENTER 5201 SOUTH MORLEY ST. MOBERLY, MO 65270

PROJECT # C1920-01 7005

REVISION: DATE: **REVISION:** DATE: **REVISION:**

ASSET # 9327005051

DATE: ISSUE DATE: 09/22/2025

CAD DWG FILE: C1920-01-7005-9327005051-E-604.DWG DRAWN BY: KET/MNS CHECKED BY: ____ DESIGNED BY: _

SHEET TITLE:

PANELBOARD SCHEDULES

SHEET NUMBER: