

PROJECT TITLE

PUMP STATION GENERATOR DESIGN

NJ SPORTS & EXPOSITION AUTHORITY

50 STATE ROUTE 120

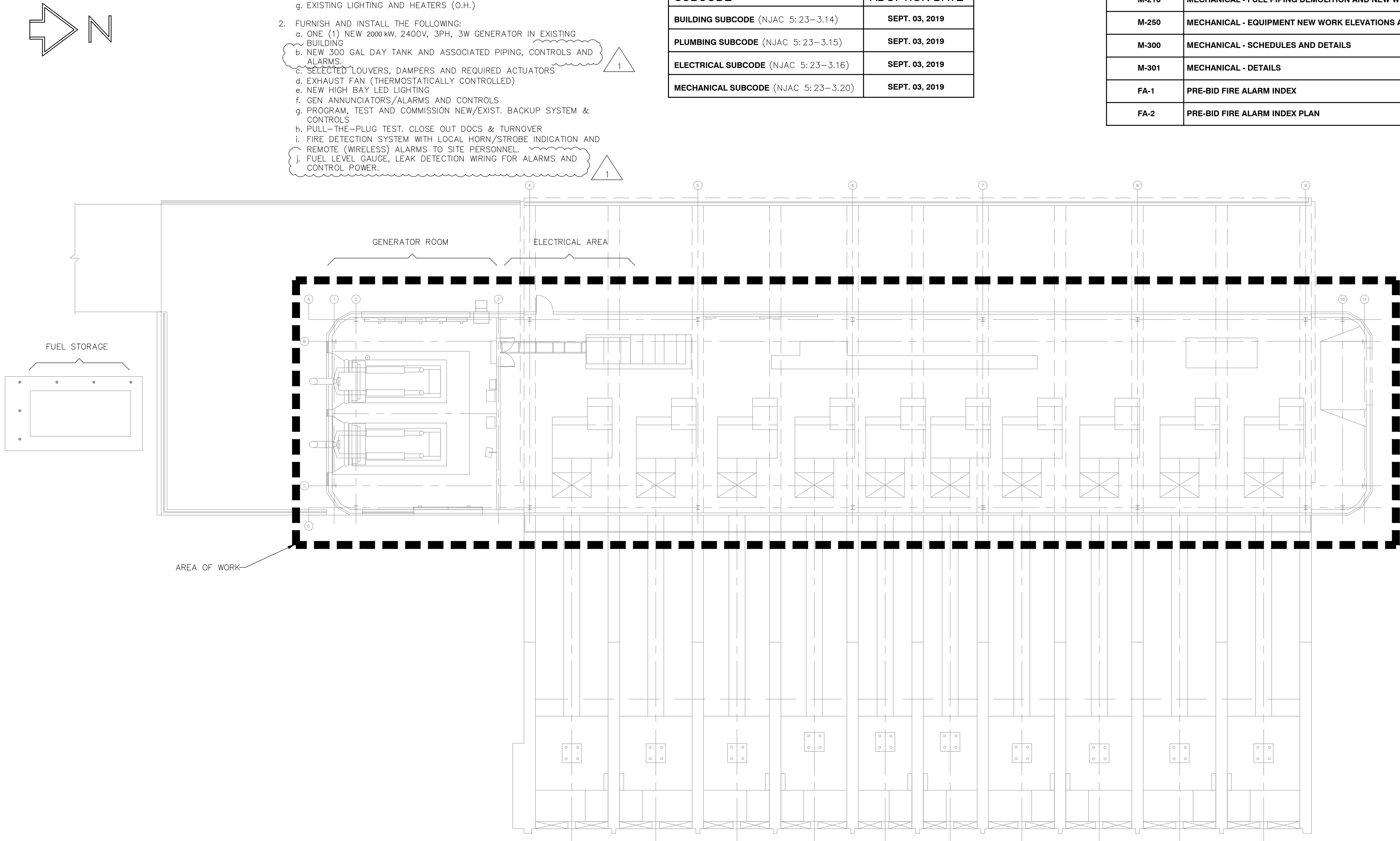
EAST RUTHERFORD, NEW JERSEY 07073

GENERAL SCOPE OF WORK:

1. DEMOLISH AND REMOVE THE FOLLOWING:
a. GEN#1 AND GEN#2
b. INERTIA PADS AND ISOLATORS
c. DAY TANKS AND SECTIONS OF FUEL PIPING (INCLUDING FUEL WITHIN)
d. SELECTED LOUVERS, DAMPERS AND DAMAGED ACTUATORS (WHERE APPLICABLE)
e. AIR SUPPLY FAN (TO BE REPLACED WITH AN EXHAUST FAN)
f. CONDUIT AND WIRE
g. EXISTING LIGHTING AND HEATERS (O.H.)
2. FURNISH AND INSTALL THE FOLLOWING:
a. ONE (1) NEW 2000 kW, 2400V, 3PH, 3W GENERATOR IN EXISTING BUILDING
b. NEW 300 GAL DAY TANK AND ASSOCIATED PIPING, CONTROLS AND ALARMS
c. SELECTED LOUVERS, DAMPERS AND REQUIRED ACTUATORS
d. EXHAUST FAN (THERMOSTATICALLY CONTROLLED)
e. NEW HIGH BAY LED LIGHTING
f. GEN ANNUNCIATORS/ALARMS AND CONTROLS
g. PROGRAM, TEST AND COMMISSION NEW/EXIST. BACKUP SYSTEM & CONTROLS
h. PULL-THE-PLUG TEST, CLOSE OUT DOCS & TURNOVER
i. FIRE DETECTION SYSTEM WITH LOCAL HORN/STROBE INDICATION AND REMOTE (WIRELESS) ALARMS TO SITE PERSONNEL
j. FUEL LEVEL GAUGE, LEAK DETECTION WIRING FOR ALARMS AND CONTROL POWER.

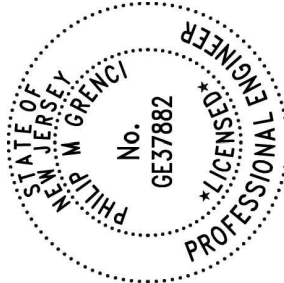
CODE REFERENCE TABLE	
BUILDING USE GROUP "U"	
ALL WORK IS TO CONFORM TO THE REQUIREMENTS OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE, (N.J.A.C. 5:23)	
SUBCODE	ADOPTION DATE
BUILDING SUBCODE (NJAC 5:23-3.14)	SEPT. 03, 2019
PLUMBING SUBCODE (NJAC 5:23-3.15)	SEPT. 03, 2019
ELECTRICAL SUBCODE (NJAC 5:23-3.16)	SEPT. 03, 2019
MECHANICAL SUBCODE (NJAC 5:23-3.20)	SEPT. 03, 2019

LIST OF PROJECT DRAWINGS	
DWG #	TITLE
T-100	TITLE SHEET - SCOPE OF WORK AND DRAWING LIST
E-001	ELECTRICAL - SPECIFICATIONS
E-002	ELECTRICAL - SPECIFICATIONS AND SYMBOLS
E-100	ELECTRICAL - SINGLE LINE DIAGRAM DEMOLITION WORK
E-101	ELECTRICAL - SINGLE LINE DIAGRAM NEW WORK
E-102	ELECTRICAL - ATC-900 SCHEMATIC & SEQUENCE OF OPERATION
E-200	ELECTRICAL - EQUIPMENT DEMOLITION AND NEW WORK PART PLANS
E-210	ELECTRICAL - LIGHTING PART PLAN
E-250	ELECTRICAL - EQUIPMENT DEMOLITION AND NEW WORK ELEVATIONS AND SECTIONS
E-300	ELECTRICAL - GROUNDING PLAN
E-301	ELECTRICAL - GROUNDING DETAILS
E-400	ELECTRICAL - DETAILS
M-001	MECHANICAL - ABBREVIATIONS AND SYMBOLS
M-002	MECHANICAL - SPECIFICATIONS
M-003	MECHANICAL - SPECIFICATIONS
M-100	MECHANICAL - EQUIPMENT WIRING DIAGRAM AND SCHEMATICS
M-200	MECHANICAL - EQUIPMENT DEMOLITION AND NEW WORK PART PLANS
M-210	MECHANICAL - FUEL PIPING DEMOLITION AND NEW WORK PART PLANS
M-250	MECHANICAL - EQUIPMENT NEW WORK ELEVATIONS AND SECTIONS
M-300	MECHANICAL - SCHEDULES AND DETAILS
M-301	MECHANICAL - DETAILS
FA-1	PRE-BID FIRE ALARM INDEX
FA-2	PRE-BID FIRE ALARM INDEX PLAN



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T-100

PARTIAL SITE PLAN
SCALE: N.T.S.



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NJ SPORTS & EXPOSITION
AUTHORITY
PUMP STATION GENERATOR
INSTALLATION

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

6-2-22 ISSUED FOR REVIEW

6-15-22 ISSUED FOR DCA APPROVAL

11-18-22 ISSUED FOR BID

Date Issued Revision No.

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Drawing Title:
TITLE SHEET
SCOPE OF WORK
AND DRAWING LIST

Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG

AMA Project No.:
CEI215080

T-100

SCOPE OF WORK

1. THE PURPOSE OF THE PROJECT IS TO REPLACE THE EXISTING GENERATORS AND ANOILLARY EQUIPMENT AT THE PROJECT FACILITY, MINIMIZING EFFECT ON THE EXISTING SYSTEM. THIS SCOPE IS TO BE COMPREHENSIVE, SUCH AS TO PROVIDE THE OWNER WITH A FULLY FUNCTIONAL, CODE COMPLIANT AND OPERATIONAL SYSTEM AT THE PROJECT COMPLETION. ALL WORK REQUIRED TO ACCOMPLISH THIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
2. CONSTRUCTION PERMITS TO BE PREPARED, FILLED AND PAID BY THE CONTRACTOR UNLESS OTHERWISE INSTRUCTED BY OWNER. ALL OTHER ENVIRONMENTAL PERMITS TO BE PREPARED, FILLED AND PAID BY THE OWNER.

(4) SETS OF SIGNED AND SEALED ELECTRICAL PLANS AND PROJECT SPECIFICATIONS SHALL BE SUBMITTED AS REQUIRED BY THE STATE AND LOCAL AUTHORITIES HAVING JURISDICTION, UNLESS OTHERWISE REQUESTED.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OBTAINING ALL APPROVALS & INSPECTIONS NECESSARY FROM ALL AUTHORITIES HAVING JURISDICTION.
4. CONTRACTOR SHALL PROVIDE ALL LABOR, RIGGING & MATERIALS NECESSARY TO INSTALL NEW AND REFEED EXISTING SYSTEMS AND EQUIPMENT. THIS SHALL INCLUDE EQUIPMENT THAT MAY BE PRE-PURCHASED BY THE OWNER.
5. COORDINATE ALL ACTIVITIES WITH OWNER FROM DRAWING SUBMITTALS TO FINAL INSPECTION AND CUT-IN. FREIGHT, HANDLING, AND RECEIVING OF COMPONENTS, DELIVERY TO JOB SITE, AND RIGGING OF EQUIPMENT ALL MATERIAL AND LABOR UNLESS OTHERWISE NOTED WILL BE SUPPLIED BY THE CONTRACTOR.
6. MISCELLANEOUS: THE ENGINEER HAS DESIGNED THE PROPOSED WORK IN ACCORDANCE WITH APPLICABLE CODES AND CURRENT STANDARDS. THE CONTRACTOR HOWEVER SHALL BE RESPONSIBLE TO INSURE THAT ALL INSTALLATIONS WHETHER DETAILED OR NOT MEET ALL APPLICABLE CODES. CONTRACTOR SHALL REMEDY AT HIS EXPENSE ANY ITEMS FAILING INSPECTION BY LOCAL AND/OR STATE (DCA) OFFICIALS.

7. THE CONTRACTOR WILL:
- A. INSTALL AND DELIVER TO THE OWNER A COMPLETE WORKING SYSTEM AS DESCRIBED HEREIN. THE SYSTEM MUST BE INSTALLED AND TESTED TO THE OWNER'S SATISFACTION. FINAL TESTING WILL BE SCHEDULED WITH THE OWNER.
- B. BE RESPONSIBLE FOR CORRECTING ALL CODE VIOLATIONS APPLICABLE BY ANY AUTHORITY HAVING JURISDICTION.
- C. CONDUCT POST-CONSTRUCTION INSPECTION AND TESTING OF FACILITY SERVICES. CONTRACTOR TO PROVIDE ALL REQUIRED TEST EQUIPMENT AS PART OF THEIR CONTRACT. TESTING OF ALL MAJOR EQUIPMENT AND FEEDERS SHALL BE PERFORMED BY A NETA CERTIFIED TESTING COMPANY.
- D. CONDUCT FINAL INSPECTION OF THE PROJECT. PROVIDE CLOSEOUT DOCUMENTATIONS.
- E. FREIGHT, HANDLING, AND RECEIVING OF COMPONENTS, DELIVERY TO JOB SITE, RIGGING AND ASSEMBLY OF OF EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- F. ALL MATERIAL AND LABOR WILL BE SUPPLIED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED. DUMPSTERS AND EQUIPMENT NECESSARY FOR DEMOLITION WORK IN THE CONSTRUCTION DOCUMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- G. PROVIDE DETAILED AND EXACT, COMPLETELY DIMENSIONED AS-BUILT DRAWINGS FOR USE BY OWNER WITHIN 2 WEEKS OF PROJECT COMPLETION (INVOICING FOR 100% COMPLETION).
- H. GUARANTEE ALL MATERIALS AND LABOR FOR ONE YEAR FROM THE FINAL ACCEPTANCE DATE OF THE OWNER.

SEQUENCE OF WORK – ELECTRICAL

1. THIS SCOPE OF WORK SHALL BE SEQUENCED BY THE CONTRACTOR SUCH THAT THE NEW GENERATOR IS FULLY OPERATIONAL AT TITA USA PUMP STATION FACILITY, EXCEPT DURING ELECTRICAL AND MECHANICAL CUTOVERS. THESE CUTOVERS SHALL BE COORDINATED SUCH THAT ELECTRICAL AND MECHANICAL WORK IS PERFORMED CONCURRENTLY TO MINIMIZE ANY DOWNTIME. CONTRACTOR SHALL FURNISH SCHEDULE FOR OWNER APPROVAL PRIOR TO PERFORMING ANY CUTOVER WORK.
- 1.1. EXISTING GEN-1 AND GEN-2 SHALL BE DEMOLISHED.
- 1.2. REMOVE EXISTING DAYTANKS, FUEL PIPING TO MAIN TANK, INTAKE AIR LOUVER/DAMPERS ON WEST SIDE, SUPPLY AIR FAN, LIGHTS, HEATERS, ETC. AS SHOWN ON PLANS.
- 1.3. CONTRACTOR SHALL FURNISH AND INSTALL NEW GEN-1 IN SAME LOCATION AS EXISTING GEN-1. THE NEW GENERATOR SHALL BE TESTED AND COMMISSIONED TO THE EXTENT POSSIBLE PRIOR TO CUTTING OVER. REFERENCE MECHANICAL CUTOVER SEQUENCE FOR ADDITIONAL DETAILS.
- 1.4. THE NEW GEN-1 SHALL BE PROVIDING BACK-UP POWER TO THE SITE.
- 1.5. FURNISH AND INSTALL NECESSARY GENERATOR CONTROLS AND START CIRCUIT FROM EXISTING ATS CONTROLLER.
- 1.6. CONTRACTOR SHALL PROVIDE FIRE DETECTION SYSTEM COMPLETE WITH LOCAL ALARM INDICATION AND REMOTE (WIRELESS) ALARMS TO SITE PERSONNEL.

SEQUENCE OF WORK – MECHANICAL

1. DISCONNECT AND REMOVE EXISTING EXHAUST PIPING SYSTEMS AND SILENCERS IN THEIR ENTIRETY, DISPOSE AS PER OWNER'S INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL REGULATIONS.
2. DISCONNECT AND REMOVE EXISTING VENTILATION DISCHARGE AIR LOUVER(S) AND DAMPERS.
3. DISCONNECT AND REMOVE EXISTING PLANKS BLOCKING VENTILATION INTAKE OPENING AND DAMPERS LOCATED ON THE WEST WALL IN THEIR ENTIRETY. PRESERVE CONTROLS AND WIRING FOR RE-USE, IF APPLICABLE.
4. DISCONNECT AND REMOVE ACTUATORS SERVING VENTILATION INTAKE LOUVERS AND DAMPERS LOCATED ON THE EAST WALL. BRING DAMPERS TO CLOSED POSITION AND INSTALL A SHEETMETAL CAP TO COVER THE ABANDONED INSTALLATION.
5. DISCONNECT AND REMOVE EXISTING INTAKE AIR FAN WITH ASSOCIATED DAMPER AND HOOD IN THEIR ENTIRETY. PRESERVE CONTROLS AND POWER WIRING FOR RE-USE, IF APPLICABLE.
6. DISCONNECT AND REMOVE EXISTING FUEL OIL PIPING AND DAY TANKS AS REQUIRED UP TO MAIN TANK. COORDINATE WITH OWNER IN FIELD AS REQUIRED.
7. CAP AND PROTECT EXISTING 4000 GAL FUEL STORAGE TANK TO BE RE-USED. COORDINATE WITH NEW WORK PIPING PLANS.
8. MECHANICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FUEL OIL PIPING AND DAY TANKS IN ORGANIZED SEQUENCE. COORDINATE DEMOLITION WORK SEQUENCE WITH NEW WORK INSTALLATION. REMOVE MAJOR EQUIPMENT FOLLOWING OWNER'S APPROVAL AT EACH STAGE. FOLLOW THE WORK STAGES LISTED BELOW:

- MODIFY EXISTING GENERATOR ROOM AREA TO ACCEPT NEW GENERATOR (GEN-1).
- INSTALL NEW PIPE IN PIPE FUEL OIL PIPING AND DAY TANK (DT-1) FOR NEW GENERATOR (GEN-1).
- INSTALL REQUIRED LOUVERS, DAMPERS, ACTUATORS AND EXHAUST FAN WITH A NEW COOLING THERMOSTAT CONTROLS. TEST THE NEW SYSTEM INSTALLATION AND CONTROLS OPERATION. ADJUST IN FIELD, AS REQUIRED.

DEMOLITION

1. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS AS REQUIRED TO COMPLETE DEMOLITION AND REMOVAL OF ALL ITEMS AS INDICATED OR AS OTHERWISE DIRECTED BY OWNER INCLUDING TEMPORARY PROTECTION AS INDICATED BELOW:
- A. PROVIDE TEMPORARY PROTECTIONS AS REQUIRED TO PRESERVE EXISTING ITEMS INDICATED TO REMAIN AND RESTORE DAMAGED WORK TO THE CONDITION EXISTING PRIOR TO THE START OF WORK, UNLESS OTHERWISE DIRECTED.
- B. CONTROL DUST AND DIRT CAUSED BY DEMOLITION OPERATIONS. AREA OUTSIDE THE AREA OF WORK SHALL BE KEPT CLEAN FROM DIRT AND DUST.
- C. ALL ACTIVE MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS TO REMAIN SHALL BE FULLY PROTECTED FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
2. TEMPORARY BRACING, SHORING, CENTERING, AND SIMILAR WORK SHALL BE PROVIDED AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING CONSTRUCTION AND FINISHES.
3. THE CONTRACTOR SHALL EXECUTE ALL WORK WITHIN THE REGULATIONS OF THE OWNER FOR DEMOLITION AND REMOVAL OF DEBRIS, INCLUDING OVERTIME WORK REQUIRED.
4. ALL WORK DEMOLISHED SHALL BE REMOVED FROM THE PREMISES EXCEPT ITEMS TO BE REUSED OR RETURNED TO OWNER OR AS OTHERWISE DIRECTED.
5. THE CONTRACTOR SHALL AT ALL TIMES PROTECT THE PROPERTY OF THE OWNER, INCLUDING BUT NOT LIMITED TO: WINDOWS, FLOOR AND CEILING TILE, TOILETS, DOORS, BUCKS, ELECTRICAL AND AIR CONDITIONING EQUIPMENT, ETC.
6. UPON COMPLETION OF THE DEMOLITION WORK, THE GENERAL CONTRACTOR SHALL PROVIDE THAT ALL AREAS BE LEFT MOPPED CLEAN. AREAS SHOULD BE LEFT DAILY BROOM CLEANED.
7. ALL EQUIPMENT SHOWN ON DRAWINGS TO BE DEMOLISHED SHALL BE COORDINATED WITH OWNER. OWNER TO INSTRUCT CONTRACTOR AS TO DISPOSAL OF ALL MATERIALS AND EQUIPMENT.
8. CONTRACTOR SHALL FURNISH RECORDS THAT DEMOLITION IS IN ACCORDANCE WITH EPA AND LOCAL ENVIRONMENTAL REQUIREMENTS.

CLEANING

1. GENERAL: EXECUTE CLEANING, DURING PROGRESS OF THE WORK, AND AT COMPLETION OF THE WORK, AS REQUIRED BY GENERAL CONDITIONS.
2. DISPOSAL REQUIREMENTS: CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH CODES, ORDINANCES, REGULATIONS, AND ANTI-POLLUTION LAWS AND IN FULL COMPLIANCE WITH ALL NJDEP REGULATIONS.
3. PRODUCTS: USE ONLY THOSE CLEANING MATERIALS WHICH WHICH WILL NOT CREATE HAZARDS TO HEALTH OR PROPERTY, AND WHICH WILL NOT DAMAGE SURFACES.
4. USE ONLY THOSE CLEANING MATERIALS AND METHODS RECOMMENDED BY THE MANUFACTURER OF THE SURFACE MATERIAL TO BE CLEANED.
5. USE CLEANING MATERIALS ONLY ON SURFACES RECOMMENDED BY CLEANING MATERIAL MANUFACTURER.
6. EXECUTION: EXECUTE PERIODIC CLEANING TO KEEP THE WORK, THE SITE AND ADJACENT PROPERTIES FREE FROM ACCUMULATIONS OF WASTE MATERIALS, RUBBISH, AND WINDBLOWN DEBRIS, RESULTING FROM CONSTRUCTION OPERATIONS.
7. PROVIDE ON-SITE CONTAINERS FOR THE COLLECTION OF WASTE MATERIALS, DEBRIS AND RUBBISH. REMOVE WASTE MATERIALS, DEBRIS, AND RUBBISH FROM THE SITE PERIODICALLY, AND DISPOSE OF AT LEGAL DISPOSAL AREAS AWAY FROM THE SITE.
8. DUST CONTROL: CLEAN INTERIOR SPACES PRIOR TO THE START OF FINISH PAINTING AND CONTINUE CLEANING ON AN AS-NEEDED BASIS UNTIL PAINTING IS FINISHED.
9. SCHEDULE OPERATIONS SO THAT DUST AND OTHER CONTAMINATES RESULTING FROM CLEANING PROCESS WILL NOT FALL ON WET, NEWLY-COATED SURFACES.

FINAL CLEANING

1. UPON COMPLETION OF WORK, CONTRACTOR WILL PROVIDE A BROOM CLEAN AND MOPPED DOWN SPACE. ALL NEW RUBBER BASE SHALL BE FREE OF CONSTRUCTION DUST, ALL ENCLOSURES CLEANED DOWN AND FREE OF ALL SHOE MARKS AND MATERIAL FRAGMENTS.
2. REMOVE GREASE, MASTIC, ADHESIVES, STAIN STAINS, FINGERPRINTS, LABELS, AND OTHER FOREIGN MATERIALS FROM SITE EXPOSED INTERIOR AND EXTERIOR SURFACES.
3. WASH AND SHINE GLAZING AND MIRRORS. POLISH GLOSSY SURFACES TO A CLEAR SHINE.
4. PRIOR TO FINAL COMPLETION OR OWNER OCCUPANCY, CONTRACTOR SHALL CONDUCT AN INSPECTION OF SIGHT EXPOSED INTERIOR AND EXTERIOR SURFACES, AND ALL WORK AREAS, TO VERIFY THAT THE ENTIRE WORK IS CLEAN.

ELECTRICAL (GENERAL NOTES)

1. THE FOLLOWING NOTES APPLY TO THE ELECTRICAL SYSTEM INSTALLATION AND ARE LIMITED ONLY BY THE REQUIREMENTS SET FORTH IN THE LATEST ADOPTED COPY OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.
2. THE ELECTRICAL SYSTEM SHOWN ON DRAWINGS INCLUDE PLANS, ELEVATIONS, DETAILS AND DIAGRAMS. ANY DEVIATION FROM THE DRAWINGS OR STANDARDS MUST HAVE THE APPROVAL OF THE OWNER'S ENGINEER.
3. CONDUIT AND CABLE RUNS ARE SHOWN DIAGRAMMATICALLY AND ARE TO BE LOCATED APPROXIMATELY AS SHOWN ON PLAN DRAWINGS WHERE APPLICABLE.
4. CONDUIT AND CABLE RUNS SHALL BE AT ELEVATIONS SHOWN IN PLANS, DETAILS, AND STANDARDS. ELEVATIONS MAY BE VARIED TO AVOID INTERFERENCES. POWER CONDUITS SHALL CROSS SIGNAL CONDUITS AT 90° AND SHALL MAINTAIN MAXIMUM CLEARANCE PRACTICAL.
5. BEFORE INSTALLING CONDUITS AND CABLES, A CAREFUL CHECK SHALL BE MADE TO AVOID INTERFERENCES WITH PIPING, EQUIPMENT, ETC. IF NOT OTHERWISE SPECIFIED, CONDUIT RUNS MUST BE KEPT AT LEAST 12" AWAY FROM HOT SURFACES. A MINIMUM CLEARANCE OF 8" SHALL BE KEPT WHERE A CONDUIT CROSSES A HOT PIPE.
6. CONDUIT AND WIRING NOT IDENTIFIED ON DRAWINGS SHALL BE DETERMINED AS FOLLOWS:
- A. MINIMUM CONDUIT SIZE SHALL BE 1" EXCEPT AS NOTED OTHERWISE.
- B. MINIMUM WIRE SIZE SHALL BE #12 AWG FOR POWER UNLESS OTHERWISE NOTED.
7. CONDUCTORS SHALL HAVE INSULATION OF THE PROPER COLOR TO MATCH STANDARD COLOR CODE SYSTEM. AS AN ALTERNATIVE, THE CONTRACTOR CAN USE VINYL PLASTIC ELECTRICAL TAPE OF THE APPROPRIATE COLOR AROUND EACH CABLE AT ALL TERMINATION POINTS, JUNCTION AND PULL BOXES. EXISTING CONDUCTORS INVOLVED WITH THIS SCOPE OF WORK SHALL BE CORRECTED TO MATCH NEW. COLOR DESIGNATIONS SHALL BE IN COMPLIANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS AND THE FOLLOWING:
- A: 480/277V (A ,B, C, N): BROWN, ORANGE, YELLOW, GRAY
- B: 208/120V (A, B, C, N): BLACK, RED, BLUE, WHITE
8. CONTRACTOR SHALL TAG EVERY CONDUIT AT ENTRANCE TO EQUIPMENT, ENTRANCE AND EXIT OF EACH ROOM THE CONDUIT PASSES THROUGH AND AT THE POINT OF FINAL TERMINATION. CONDUIT SHALL BE CLEANED PRIOR TO APPLYING. LABEL SHALL BE A MINIMUM OF 12MM BLACK/WHITE BRADY LABEL WITH FULL SIZE CAPITAL LETTER FONT. TAGS SHALL MATCH THE EQUIPMENT REFERENCES IN THE CONSTRUCTION DOCUMENTS HEREIN.

7. CONDUIT RUNS NOT COMPLETELY SHOWN ON DRAWINGS TO EQUIPMENT SHALL BE ROUTED IN THE FIELD TO SUIT.
8. WIRE SPLICES SHALL BE KEPT TO A MINIMUM, AND MADE IN PROPER FITTINGS. SPLICES SHALL BE MADE WITH SUITABLE INSULATED WIRE CONNECTORS. 3M OR BURNDY INLINE BUTT SPLICES SHALL BE USED AND DOUBLE CRIMPED ON BOTH ENDS WITH 3M COLD SHRINK WRAP COVERING.
9. ALL UNUSED OPENINGS IN FITTINGS, BOXES, ETC., SHALL BE PLUGGED. DURING CONSTRUCTION, ALL OPENINGS SHALL BE KEPT CLOSED TO PREVENT MOISTURE AND FOREIGN MATERIAL, SUCH AS DIRT AND DEBRIS, FROM ENTERING THE CONDUIT SYSTEM.
10. ALL LOW POINTS OF THE CONDUIT SYSTEM THAT MAY TRAP CONDENSATE, SHALL BE SUITABLY DRAINED.
11. ALL FIELD DRILLED HOLES, CUT EDGES, AND WELDED AREAS OF GALVANIZED STEEL SHALL BE DEBURRED AND TOUCHED UP WITH GALVO-WELD PAINT, STEEL NOT FURNISHED GALVANIZED SHALL BE PAINTED.
12. ALL ITEMS NOT FURNISHED BY OTHERS AND REQUIRED TO COMPLETE THE INSTALLATION IN A GOOD, WORKMAN-LIKE MANNER SHALL BE PROVIDED BY THE CONTRACTOR. THESE ITEMS MAY CONSIST OF MISC. STEEL SUPPORTS, CONDUIT STRAPS, CONDUIT CLAMPS, WIRE CONNECTORS, CONDUIT UNIONS, INSULATING TAPES, SEALING COMPOUNDS, MASONRY ANCHORS, NUTS AND BOLTS, ETC.
13. PVC SCHED. 80 CONDUIT SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED FOR OUTDOOR INSTALLATIONS. EMT WITH STEEL COMPRESSION TYPE CONNECTORS MAY BE USED FOR INDOOR INSTALLATIONS UNLESS OTHERWISE NOTED. EXISTING UNDERGROUND PVC CONDUITS SHALL BE CLEANED AND CHECKED FOR OBSTRUCTIONS.
14. WIRE SHALL BE TYPE THWN COPPER EXCEPT GREEN INSULATED GROUND CONDUCTORS RUN IN CONDUIT MAY BE TYPE TW COPPER.
15. ALL SWITCHBOARD, PANELS, SWITCHES AND ENCLOSED MOLDED CASE BREAKERS FURNISHED BY CONTRACTOR SHALL BE LISTED. ALL EQUIPMENT SHALL BE COPPER BUS INTERIOR.

GROUNDING NOTES

1. CONTRACTOR SHALL INSTALL NEW GROUNDING ELECTRODE FOR EACH GENERATOR IN ACCORDANCE WITH THE REQUIREMENTS HEREIN.
2. CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS, RODS, CLAMPS AND WIRE. TO ESTABLISH GROUND CONNECTIONS BETWEEN NEW EQUIPMENT AND THE EXISTING GROUND NETWORK.
3. A GROUND CONDUCTOR SHALL BE RUN IN ALL CONDUITS AND RACEWAYS TO BOND ELECTRICAL EQUIPMENT TO GROUND SYSTEM UNLESS OTHERWISE NOTED.
4. GROUNDING SHALL BE PROVIDED BY A GROUNDING CABLE CONNECTION FROM THE EQUIPMENT TO THE LOCAL GROUND NETWORK, AT POINTS INDICATED ON THIS DRAWING OR OTHER SUITABLE GROUND POINTS AS REQUIRED BY THE NEC.
5. GROUNDING AND BONDING FOR PROTECTION OF THE ELECTRICAL SYSTEM AND EQUIPMENT SHALL BE INSTALLED TO MINIMIZE DAMAGE IN CASE OF GROUND FAULTS BY PROVIDING LOW FAULT IMPEDANCE, THEREBY LIMITING THE VOLTAGE TO GROUND AND FACILITATING THE OPERATION OF OVERCURRENT DEVICES. ALL EQUIPMENT COVERED UNDER THIS STANDARD SHALL HAVE GROUND LUGS SIZED TO ACCEPT ONE SIZE SMALLER WIRE THAN ITS FEEDER.
6. FOR ABOVEGROUND WORK, GROUND CONDUCTORS SHALL BE SOLDERLESS, PRESSURE TYPE (BOLT ON) AS MANUFACTURED BY BURNDY OR ANDERSON.

GENERAL SERVICES TO BE PROVIDED BY OWNER

1. ELECTRICAL POWER – 480/277V & 208/120V, 60HZ POWER IS AVAILABLE AT SITE. CONTRACTOR WILL BE RESPONSIBLE FOR EXTENDING POWER SUPPLY TO SATISFY HIS NEEDS. NO CONNECTIONS CAN BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER OR HIS REPRESENTATIVE. ALL OTHER REQUIRED UTILITIES SHALL BE PROVIDED BY CONTRACTOR.

GENERAL CONDITIONS AND SERVICES PROVIDED BY CONTRACTOR

1. PROVIDE ALL UTILITIES REQUIRED FOR HIS WORK, NOT PROVIDED BY THE OWNER.
2. THE CONTRACTOR SHALL CONFINE THE STORAGE OF HIS MATERIAL AND EQUIPMENT TO HIS DESIGNATED AREA, AND PROVIDE FOR HIS OWN FIELD OFFICE, GANG BOXES AND STORAGE AREA. THE CONTRACTOR SHALL BE PREPARED AT ALL TIMES TO RECEIVE, UNLOAD, AND HANDLE ITEMS AND ANY OTHER MATERIALS, AS MAY BE REQUIRED BY THIS REQUISITION WITHOUT INTERFERENCE TO OTHER CONTRACTORS OR OWNER. CONTRACTOR WILL BE RESPONSIBLE FOR RECEIVING, UNLOADING, TRANSFERRING, UNPACKING AND INSTALLING MAJOR EQUIPMENT PROVIDED BY OWNER.
3. THE CONTRACTOR SHALL ADVISE THE OWNER'S PROJECT REPRESENTATIVE IMMEDIATELY OF ANY LABOR DISPUTE BEING EXPERIENCED OR ANTICIPATED. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE CONDUCT OF HIS EMPLOYEES AND THOSE OF CONTRACTOR'S SUBCONTRACTORS WHILE SUCH EMPLOYEES ARE ON OWNER'S PROPERTY.
4. CONTRACTOR'S PERSONNEL SHALL MAINTAIN THE SCHEDULE OF STARTING, QUITTING, BREAKS AND LUNCH AS DIRECTED BY THE OWNER AND IN AREAS AS DESIGNATED BY THE OWNER AND WORK IN HARMONY WITH OTHER CONTRACTORS, AND/OR OWNER'S OWN FORCES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT AND ALIGNMENT OF HIS WORK SUBJECT TO REVIEW BY THE OWNER OF ALL WORK INCLUDING ALL REQUIRED INTERFERENCES, CHECKS OF CONDUITS, BUS DUCT AND EQUIPMENT AND PROVIDING PULL BOXES, FITTINGS, ETC.
6. CONTRACTOR SHALL HAVE A FULL-TIME COMPETENT SUPERINTENDENT ON THE SITE WHO SHALL BE FULLY AUTHORIZED TO ACT FOR THE CONTRACTOR AND TO RECEIVE SUCH ORDERS AS MAY BE GIVEN BY THE OWNER FOR THE PROPER CONTINUANCE OF THE WORK. CONTRACTOR SHALL SUBMIT WITH HIS PROPOSAL THE NAME AND RESUME OF HIS SUPERINTENDENT.
7. OWNER'S ENGINEERS OR REPRESENTATIVES SHALL HAVE ACCESS AT ALL TIMES TO THE WORK AT THE SITE OR AT CONTRACTOR'S OFFICES OR OTHER'S SHOPS. IF WORK IS UNSATISFACTORY, IMMEDIATE STEPS SHALL BE TAKEN TO REVISE THE WORK TO CONFORM TO THE SPECIFICATIONS WHEN INFORMED BY OWNER'S ENGINEERS OR REPRESENTATIVE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN JOBSITE AS REQUIRED BY OWNER, OSHA AND ANY OTHER GOVERNING LEGISLATION. THE PROMPT COLLECTION AND DISPOSAL OF ALL WASTES AND/OR SCRAP (NOT INCLUDING OLD CABLE) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. OWNER MAY DESIRE TO DESIGNATE A SCRAP AREA FOR WASTE RESULTING FROM OWNER SUPPLIED MATERIALS. THE CONTRACTOR SHALL TURN EQUIPMENT SYSTEMS OVER TO THE OWNER FREE OF TRASH AND CONSTRUCTION DEBRIS.
9. ALL MODIFICATIONS SHALL BE CARRIED OUT WITH DUE REGARD TO OWNER'S OPERATIONS AND SHALL NOT CAUSE LOSS OF TIME TO OWNER'S PERSONNEL BY BLOCKAGE OF HALLWAYS, OR ACCESS WAYS. ALL TEMPORARY CONDITIONS MENTIONED ABOVE SHALL BE SUBMITTED TO OWNER'S REPRESENTATIVE BEFORE IMPLEMENTATION TO AVOID SUCH PROBLEMS.
10. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROTECTING FROM DAMAGE, ALL EXISTING FACILITIES. HE SHALL BE RESPONSIBLE FOR THE COST OF REPAIRING OR RESTORING ANY DAMAGE TO THE OWNER'S PROPERTY CAUSED AS A RESULT OF HIS WORK, TO THE SATISFACTION OF THE OWNER, OWNER'S ENGINEER OR REPRESENTATIVE.

11. CONTRACTOR SHALL SUPPLY TOOLS (CAPITAL AND SMALL) AND CONSUMABLE MATERIALS AND SHALL BE RESPONSIBLE FOR THE SECURITY OF SAME.
12. SMOKING SHALL NOT BE PERMITTED WITHIN THE PROJECT SITE AT ANY TIME.
13. MATERIALS FURNISHED BY CONTRACTOR SHALL BE NEW AND OF FIRST QUALITY. SUBSTITUTION SHALL NOT BE MADE IN EITHER MATERIALS OR MANUFACTURER FROM THOSE SPECIFIED UNLESS PRIOR WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE OWNER.
14. CONTRACTOR SHALL PROVIDE IDENTIFICATION BADGES FOR HIS EMPLOYEES TO BE WORN AT ALL TIMES IN PLAIN VIEW ON OUTER GARMENTS DURING THE WORK PERIOD.
15. CONTRACTOR SHALL PROVIDE ADEQUATE EMERGENCY MEDICAL FACILITIES AS REQUIRED BY LAW FOR THE EXECUTION OF HIS PORTION OF THE WORK.
16. UNDER NO CIRCUMSTANCES WILL DRUGS, ALCOHOLIC BEVERAGES, FIREARMS OR WEAPONS OF ANY TYPE BE PERMITTED ON THE JOBSITE. POSSESSION OF THE ABOVE ITEMS ON JOBSITE ARE CONSIDERED GROUNDS FOR IMMEDIATE EXPULSION AND DISCHARGE.
17. CONTRACTOR SHALL PROVIDE ALL MATERIAL REQUIRED FOR HIS WORK NOT SPECIFICALLY IDENTIFIED AS BEING FURNISHED BY OTHERS.
18. CONTRACTOR SHALL:

- A. INCLUDE THE ASSISTANCE OF THE MANUFACTURER OR VENDOR WHEN NECESSARY TO MAKE A SATISFACTORY INSTALLATION.
- B. REMOVE ALL RUST PREVENTATIVES AND OILS USED TO PROTECT THE EQUIPMENT DURING SHIPMENT AND/OR THE CONSTRUCTION PERIOD WHENEVER THESE PROTECTIVE MATERIALS WILL BE DETRIMENTAL TO OPERATION.
- C. REMOVE ALL TEMPORARY SUPPORTS, BRACING OR OTHER FOREIGN OBJECTS THAT WERE INSTALLED IN EQUIPMENT TO PREVENT DAMAGE DURING SHIPPING, STORAGE AND/OR ERECTION.
- D. PROVIDE ALL MATERIALS NOT FURNISHED BY OWNER REQUIRED FOR THE COMPLETE INSTALLATION SUCH AS BOLTS, NUTS, NAILS, LUMBER, ANCHOR BOLTS, MARKERS, TOUCH UP POINTS, WARNING SIGNS, AND MISCELLANEOUS HARDWARE.
- E. PROVIDE ON ALL WIRE AND CABLE ENDS PHASE CODING USING 1/2 IN. WIDE COLOR TAPE SPIRALED FOR 12 IN. OF WIRE LENGTH.
- F. PROVIDE MANUFACTURED PLUGS TO SEAL BOX AND CONDUIT OPENINGS THAT RESULTED FROM ALTERATIONS.
- G. PROVIDE STANDBY GENERATOR AS MAYBE REQUIRED TO TEMPORARILY POWER EQUIPMENT WHILE MODIFICATIONS ARE BEING MADE TO THE POWER SUPPLY TO THE EQUIPMENT.

INTERFERENCES AND COORDINATION WITH OTHERS

1. THE CONTRACTOR SHALL OBTAIN CLEARANCE FROM THE OWNER'S PROJECT REPRESENTATIVE PRIOR TO INSTALLING EQUIPMENT OR MATERIAL AT ANY LOCATION WHERE INTERFERENCES MIGHT DEVELOP. SHOULD THE CONTRACTOR PROCEED WITHOUT OBTAINING SUCH CLEARANCES AND INTERFERENCES DO DEVELOP, THE CONTRACTOR MUST RELOCATE HIS EQUIPMENT, ETC., AND SUCH RELOCATION SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.
2. THE PLANS ARE GENERALLY DIAGRAMMATIC AND THE CONTRACTOR SHALL COORDINATE HIS WORK SO THAT INTERFERENCES BETWEEN EXISTING OR NEW CONDUIT, HVAC, SPRINKLER EQUIPMENT AND STRUCTURAL WORK SHALL BE AVOIDED.
3. IN NO CASE SHALL THE CONTRACTOR WELD, CUT, BURN OR DRILL ANY STRUCTURAL MEMBER OR MOUNT ELECTRICAL EQUIPMENT OR FACILITATE CONDUIT INSTALLATION WITHOUT HAVING PREVIOUSLY RECEIVED APPROVAL IN WRITING FROM THE OWNER'S REPRESENTATIVE. CONTRACTOR TO PROVIDE PATCHING AND TOUCH UP PAINT AND PERFORM ALL REQUIRED TOUCH UP PAINTING OF EQUIPMENT AND/OR MATERIALS.
4. IN THE EVENT OF DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE PRICE QUOTED BY CONTRACTOR SHALL BE BASED ON THE MOST COMPLETE DRAWINGS AND/OR SPECIFICATION REQUIREMENTS.
5. FIELD CHANGES:
- A. ALL CHANGES ISSUED BY THE OWNER SHALL BE IN WRITING. THIS AUTHORIZATION MAY TAKE THREE FORMS:
- B. DRAWING REVISION WITH A TRANSMITTAL LETTER AUTHORIZING THE CONTRACTOR TO PROCEED PENDING SUBMISSION OF A REQUEST FOR CHANGE.
- a. DRAWING REVISION WITH A TRANSMITTAL LETTER AUTHORIZING THE CONTRACTOR TO PROCEED PENDING SUBMISSION OF A REQUEST FOR CHANGE.
- b. FIELD ORDER FOR MINOR WORK
- c. REQUEST FOR CHANGE BY OWNER TO CONTRACTOR WITH AUTHORIZATION TO PROCEED UPON APPROVAL OF COSTS.
- C. SHOULD THE CONTRACTOR BELIEVE THAT A SITUATION HAS DEVELOPED THAT MAY BE CONSTRUED AS A CHANGE, HE SHALL NOTIFY THE OWNER BY ISSUANCE OF A PROPERLY EXECUTED REQUEST FOR CHANGE FORM WITH APPROPRIATE BACK-UP OF ALL COSTS INVOLVED.
- D. THE CONTRACTOR SHALL MAINTAIN A LIST OF SCOPE CHANGES. THE ITEMS ON THE LIST WILL BE DISCUSSED AT THE WEEKLY PROGRESS MEETING OR AT THE END OF SHIFT MEETING WITH OWNER.
- E. CHANGES MAY BE APPROVED IN ONE OF THE FOLLOWING FORMS:
- NEGOTIATED LUMP SUM
 - UNIT PRICE
 - TIME AND MATERIAL W/ AGREED OVERHEAD AND AGREED PROFIT
 - COST PLUS FEE
- G. OWNER RESERVES THE RIGHT TO SELECT THE FORM.

6. PROCEDURE FOR CHANGE ORDER REQUEST
- A. THE REQUESTS FOR CHANGE SHALL BE SUBMITTED TO OWNER'S REPRESENTATIVE AND PROCESSED IN ACCORDANCE WITH ONE OF THE FOLLOWING CATEGORIES:
- B. LUMP SUM: THE CONTRACTOR SHALL SUBMIT LUMP SUM ESTIMATE OF THE COST AND TIME REQUIRED TO PERFORM THE WORK AS SPECIFIED ON THE ENCLOSED FORMS. MARKUPS SHALL BE AS STATED IN THE PURCHASE ORDER. THE CONTRACTOR SHALL NUMBER THE ESTIMATE LETTERS FOR REFERENCE.
- C. TIME AND MATERIAL: THE CONTRACTOR'S ORIGINAL COPY OF EACH TIME AND MATERIAL (T&M) SHEET SHALL ACCOMPANY THE CHANGE ORDER REQUEST AND SHALL LEGIBLY INCLUDE:

- THE CONTRACTOR'S COMPANY NAME PREPRINTED
- DATE OF WORK
- OWNER'S PURCHASE ORDER NUMBER
- SIGNATURE OF OWNER'S REPRESENTATIVE
- SIGNATURE OF CONTRACTOR'S REPRESENTATIVE
- OWNER'S COST CODE
- OWNER'S AUTHORIZED SIGNATURE (IF REQUIRED)
- NAME OF CONTRACTOR'S PERSONNEL INVOLVED, INCLUDING BADGE PAYROLL NUMBER



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NJ SPORTS & EXPOSITION
AUTHORITY
PUMP STATION GENERATOR
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EAST RUTHERFORD, NEW JERSEY
07073



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Drawing Title:
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SPECIFICATIONS**

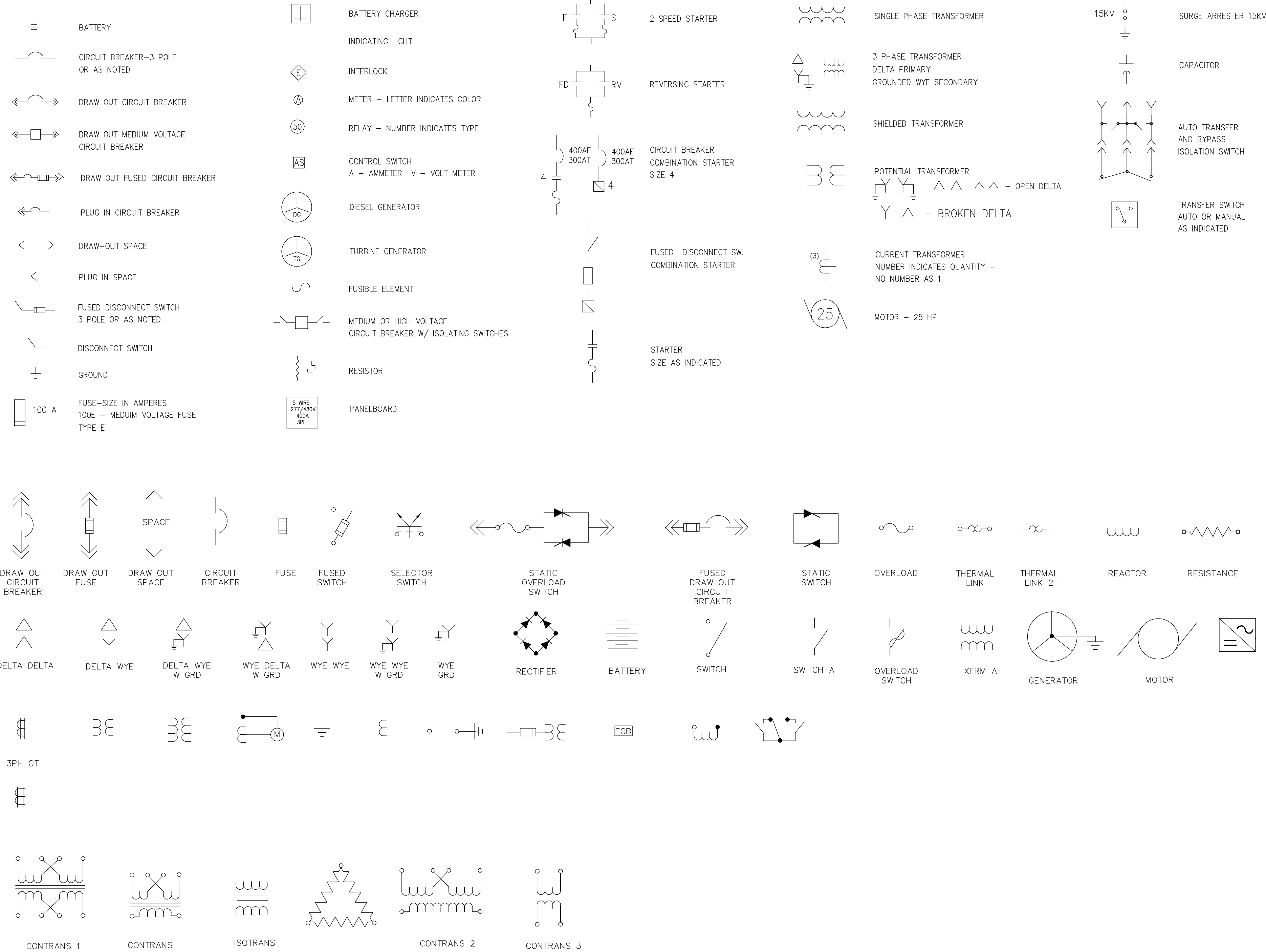
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Proj. Manager:	Proj. Engineer:
ANC	PMG
AMA Project No.: CEI215080	

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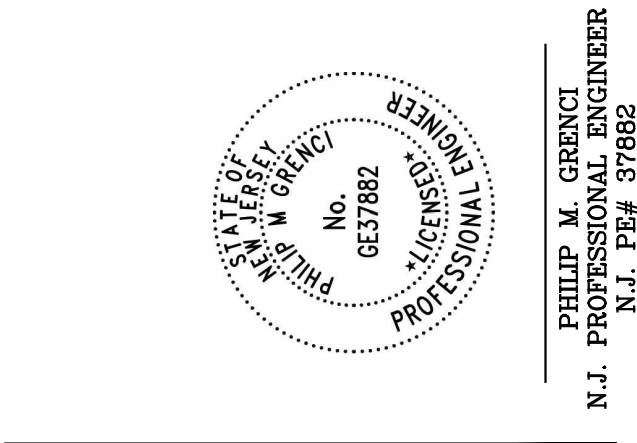
GENERAL NOTES AND CONDITIONS

- ALL WORK HEREIN SHALL BE CONSIDERED THE CONTRACTOR'S. IN ANY CASE OF DEVIATION OR DISCREPANCY WITHIN THE CONSTRUCTION DOCUMENTS THE MORE STRINGENT SHALL APPLY.
- CONTRACTOR SHALL ENSURE THAT ALL SUB-CONTRACTORS FULLY INVESTIGATE THE JOBSITE TO COMPARE THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS RELATING TO CONSTRUCTION OF NEW WORK AND LABOR. THE CONTRACTOR SHALL INCLUDE ALL COSTS FOR ALL WORK DESCRIBED IN THE CONTRACT DOCUMENTS AND REQUIRED OR IMPLIED BY EXISTING CONDITIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICTS BETWEEN THE CONSTRUCTION PLANS, AND EXISTING CONDITIONS. THE CONTRACTOR SHALL ALSO NOTIFY THE OWNER'S REPRESENTATIVE OF ANY OMISSION OR CONFLICT IN THE DRAWINGS AND ANY RESTRICTIONS RELATED TO THE EXECUTION OF THE WORK. ALL CONFLICTS SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF ANY WORK.
- THE CONTRACTOR SHALL THOROUGHLY REVIEW THE EXISTING CONDITIONS TO IDENTIFY THE IMPACT ON ANY EXISTING FUNCTION, AND SHALL COORDINATE HIS WORK SCHEDULES PRIOR TO COMMENCEMENT OF NEW WORK WITH OWNER.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR, AND HAVE CONTROL OVER, ALL CONSTRUCTION MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK REQUIRED BY THE CONTRACT DOCUMENTS.
- UNLESS SPECIFICALLY NOTED TO THE CONTRARY, ALL NEW WORK IS IN CONTRACT. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE PROJECT OUTLINED ON THIS SET OF PLANS OR REASONABLY INFERABLE FROM THEM.
- THE CONTRACTOR SHALL EXERCISE CARE AND CAUTION IN REMOVING ALL EXISTING ITEMS NOTED TO BE REMOVED.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES AND REQUIREMENTS.
- ALL WORK SHALL COMPLY WITH GOOD TRADE PRACTICE, REGULATIONS OF THE COUNTY, STATE AND FEDERAL GOVERNMENT AGENCIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS ON THE PROJECT SITE AT ALL TIMES, AND SHALL CLEARLY AND ACCURATELY RECORD IN COLOR ANY CHANGED OR DEVIATIONS IN THE ORIGINALLY SPECIFIED WORK UPON COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL FORWARD A COMPLETE SET OF MARKED-UP PRINTS TO THE OWNER FOR PREPARATION OF AS BUILT DRAWINGS.
- ALL CONTRACTORS SHALL PROVIDE AND MAINTAIN PROPER AND SAFE WORKING CONDITIONS AT ALL TIMES, INCLUDING BUT NOT LIMITED TO APPROPRIATE TOOLS, EQUIPMENTS, SCAFFOLDING, SHORING, ETC.
- NO SUBSTITUTION OF MATERIALS AND OR CONSTRUCTION ITEMS SPECIFIED WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER.
- SUBSTITUTIONS WILL BE ALLOWED WHEN THE SPECIFIED ITEMS CANNOT BE OBTAINED WITHIN THE CONTRACT TIME. SPECIFIED ITEMS ARE TO BE USED AS A GUIDELINE FOR DESIGN. SAMPLES ARE TO BE SUBMITTED TO THE OWNER FOR APPROVAL BEFORE SUBSTITUTION.
- EXTRA COSTS: THE OWNER'S WRITTEN AUTHORIZATION MUST BE OBTAINED PRIOR TO THE ORDERING OF ANY MATERIALS, CONTRACTS, OR THE EXECUTION OF ANY WORK IN EXCESS OF ORIGINAL CONTRACT.
- CHANGES IN THE DRAWINGS OR ACTUAL WORK SHALL BE ISSUED IN PURCHASE ORDER FORMAT BY OWNER'S REPRESENTATIVE.
- ALL ADJACENT WORK SHALL BE PROTECTED FROM DAMAGE CAUSED BY THIS WORK. ANY RECURRENT DAMAGE SHALL BE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL SCHEDULE AND PERFORM ALL WORK SO AS NOT TO REASONABLY DISTURB ANY TENANT IN THE BUILDING AND SHALL BE RESPONSIBLE FOR ANY OWNER-RELATED COSTS INCURRED THEREBY.
- THE CONTRACTOR SHALL KEEP THE PROJECT SITE REASONABLY CLEAN AND FREE FROM HAZARDS AT ALL TIMES. ALL EXISTING EGRESS REQUIREMENTS ARE TO BE MAINTAINED. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS, BROOM CLEAN THE ENTIRE PROJECT AREA, AND LEAVE THE SITE IN A REASONABLY CLEAN CONDITION DAILY.
- TWO (2) WEEKS PRIOR TO COMPLETION, THE CONTRACTOR SHALL NOTIFY THE OWNER TO COMPLETE A PUNCH LIST OF CORRECTIONS.
- THE CONTRACTOR SHALL COMPLY AND COORDINATE ALL WORK WITH BUILDING OWNER REGARDING HEAT, WATER, ELECTRICITY, DELIVERIES, ACCESS, ELEVATOR AVAILABILITY, NOISE CONTROL, TRASH AND DEBRIS REMOVAL, HOISTING AND ANY OTHER UTILITIES OR OWNER'S RULES AND REGULATIONS CONCERNING THE PROJECT SITE.
- CONTRACTOR SHALL INCLUDE IN BID THE REMOVAL OF DEBRIS AND CLEANING AFTER ALL FINISH TRADES.
- CONTRACTOR TO VERIFY ACCEPTABLE BUILDING HOURS FOR ALL DEMOLITION WORK AND REMOVALS PRIOR TO SUBMITTING BIDS.
- AFTER REMOVALS, ALL HOLES OR DEFECTIVE PLASTER AT COLUMNS, FLOOR AND PERIMETER, AND INTERIOR PARTITIONS SHALL BE PATCHED FREE OF ALL ROUGHNESS AND IRREGULARITIES.
- ALL ITEMS SPECIFIED FOR REUSE ARE ASSUMED TO BE IN GOOD CONDITION. CONTRACTOR TO VERIFY THIS AND ADVISE OWNER OF DISCREPANCIES PRIOR TO BIDDING. CONTRACTOR TO STORE ALL ABOVE ITEMS SO AS NOT TO DAMAGE THEM. SHOULD DAMAGES OCCUR IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE SAID ITEMS AT HIS SOLE COST AND EXPENSE.
- VERIFY ALL DIMENSIONS IN THE FIELD. DO NOT SCALE DRAWINGS, DIMENSIONS SHALL GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS.
- SUBMIT FOR OWNER'S REVIEW PRIOR TO FABRICATION OR PURCHASE, SHOP DRAWINGS OF MAJOR EQUIPMENT (E.G., SWITCHBOARDS, ATS'S, ETC.), AND ALL OTHER ITEMS AS REQUIRED IN THE CONTRACT DOCUMENTS.
- PATCH ALL HOLES IN EXISTING WALLS CAUSED BY REMOVAL AND/OR ALTERATION, TO MATCH THE ADJACENT SURFACE. ALL DAMAGED "EXISTING AREAS TO REMAIN" AND "EXISTING AREAS" AFFECTED BY DEMOLITION OR "NEW CONSTRUCTION WORK" SHOWN ON DRAWINGS SHALL BE PATCHED AS REQUIRED TO MATCH IMMEDIATE EXISTING ADJACENT AREAS, IN MATERIAL, FIRE RATING, FINISH AND COLOR.
- CONTRACTOR SHALL DO ALL CUTTING, FITTING AND PATCHING WORK THAT MAY BE REQUIRED TO MAKE ALL PARTS OF THE PROJECT COME TOGETHER PROPERLY.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL NON-COMBUSTIBLE BRACING AND BLOCKING AS REQUIRED TO SUPPORT ANY WALL-MOUNTED FIXTURES, SHELVING, COUNTERTOPS, CABINETS, ETC. ALL WOOD BLOCKING OR BRACING SHALL BE PRESSURE TREATED, FIRE-RETARDANT.
- ALL DIMENSIONS SHOWN ARE FINISH TO FINISH, UNLESS OTHERWISE NOTED.
- DIMENSIONS NOTED "+/-" ARE THE ONLY DIMENSIONS ADJUSTABLE WITHOUT APPROVAL OF OWNERS REPRESENTATIVE.
- DURING THE ENTIRE PERIOD OF DEMOLITION AND CONSTRUCTION, ALL EXISTING EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND ALARMS SHALL BE CONTINUOUSLY MAINTAINED.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL FIRE EXTINGUISHERS AS REQUIRED BY THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), BY FIRE DEPARTMENT REGULATIONS, AND AS SHOWN ON THE DRAWINGS.
- FIRE BARRIER PENETRATIONS - WHERE PIPES PASS THROUGH FIRE-RATED WALLS, PARTITIONS, CEILINGS AND FLOORS, CONTRACTOR SHALL MAINTAIN THE FIRE-RATED INTEGRITY.
- THIS PROJECT IS SUBJECT TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.

SYMBOLS AND ABBREVIATIONS



1



NJ SPORTS & EXPOSITION
AUTHORITY
PUMP STATION GENERATOR
INSTALLATION

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
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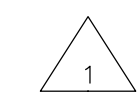
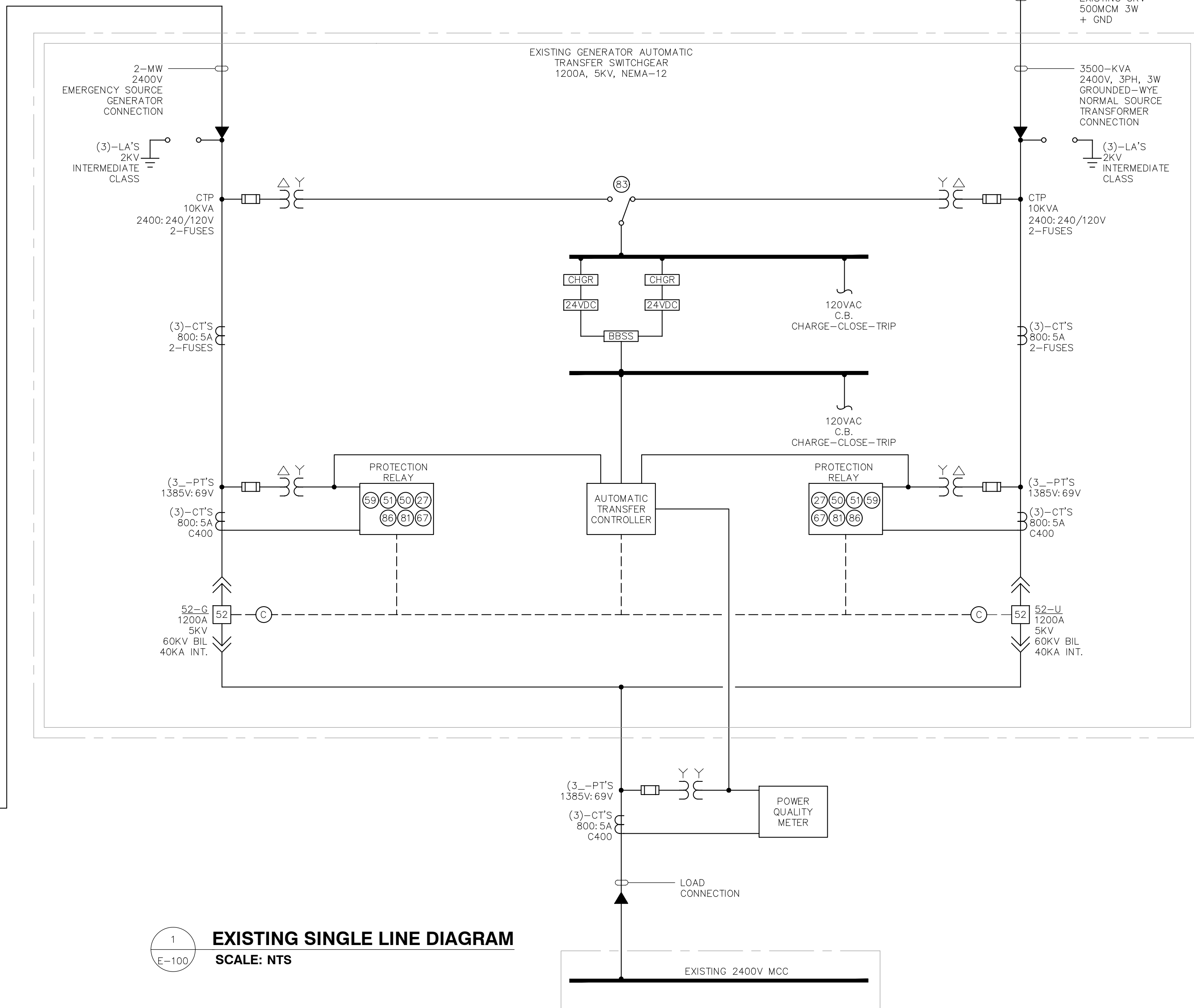
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Drawing Title:
**ELECTRICAL
SPECIFICATIONS AND SYMBOLS**

Scale N.T.S.	Issue Date: 4/18/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

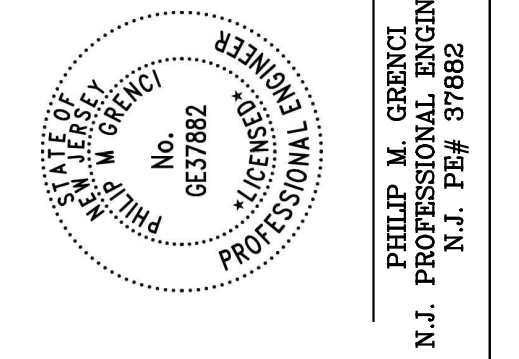
E-002

1. REMOVE BOTH ENGINE/GENERATORS, INERTIA/ISOLATION PADS, DAY TANKS, LOUVERS, DAMPERS AND ASSOCIATED AUXILIARIES.
2. IF FEASIBLE, PROVIDE DUCT TO PULL BACK EXISTING 5kv SHIELDED CABLES TO BE REUSED FOR NEW GENERATOR.
3. REPLACE EXISTING 125E RATED FUSE WITH 45DE RATED FUSE.
4. DOCUMENT AND TAG EXISTING CONTROL CKTS. AND AUX. POWER CIRCUITS TO BE REUSED FOR NEW GENERATOR.

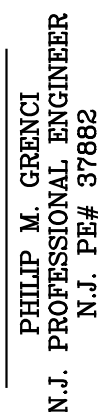
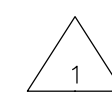
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Drawing Title:	
ELECTRICAL SINGLE LINE DIAGRAM DEMOLITION WORK	
Scale:	Issue Date:
N.T.S.	4/26/22
Proj. Manager:	Proj. Engineer:
ANC	PMG
AMA Project No.:	
CEI215080	

E-100



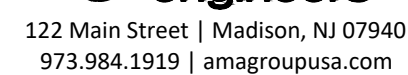
1. INSTALL NEW GENERATOR IN LOCATION OF EXISTING GENERATOR #1 (GEN-1).
INSTALL NEW DAY TANK (DT-10 IN LOCATION OF EXISTING GENERATOR #2 (GEN-2)).
INSTALL NEW BATTERIES, CHARGER(S), LOUVERS, DAMPERS, RADIATOR PLenums,
ENGINE EXHAUST AND EXHAUST FAN (EF-1). REFER TO MECHANICAL DRAWINGS FOR
DETAILS. UTILIZE/EXTEND EXISTING 120VAC CIRCUITS AS REQUIRED TO POWER NEW
AUXILIARIES.
2. PROVIDE DEDUCT TO REUSE EXISTING CABLES AND CONDUIT (IF FEASIBLE).
3. INSTALL ENGINE START WIRING TO NEW GENERATOR FROM ATS CONTROLLER.
CONTRACTOR SHALL COORDINATE WIRING AND TESTING SERVICES WITH GENERATOR
VENDOR AND/OR TESTING CO., AS WELL AS STARTUP AND COMMISSIONING OF SAME.
4. INSTALL (2) 4" CONDUIT TO EXTERIOR WALL AND INSTALL REMOVABLE CAP.
5. PROGRAM AND TEST EXISTING EATON ATC-900 CONTROLLER AS REQUIRED TO
PROVIDE PROPER SEQUENCE FOR LOSS AND RETURN OF UTILITY POWER, COOL
DOWN, PERIODIC TEST, ETC. SEE E-102 FOR ATC-900 SCHEMATIC AND GENERAL
SEQUENCE OF OPERATION.
6. SET PROGRAM AND TEST EXISTING REPLAYS. OVER CURRENT SET POINTS TO BE
PROVIDED BY OWNER'S ENGINEER. PROGRAMING OF RELAY CONTROL, OUTPUTS,
FUNCTIONS, ETC. SHALL BE BY TESTING CO.
7. MECHANICAL DAMPER CONTROLS (REFER TO MECHANICAL DWGS. FOR DETAILS).
8. REMOTE ANNUNCIATOR TO BE LOCATED OUTSIDE GENERATOR ROOM.
9. RECURRINT EXISTING 277V, 20A CKT. #5 (PANEL PP1A) TO GENERATOR JACKET
WATER HEATER(S) AS REQUIRED. CKT. #6 AVAILABLE IF REQUIRED.
10. PROPOSED TEMPORARY LOAD BANK CONNECTION POINT FOR TESTING.



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E-101

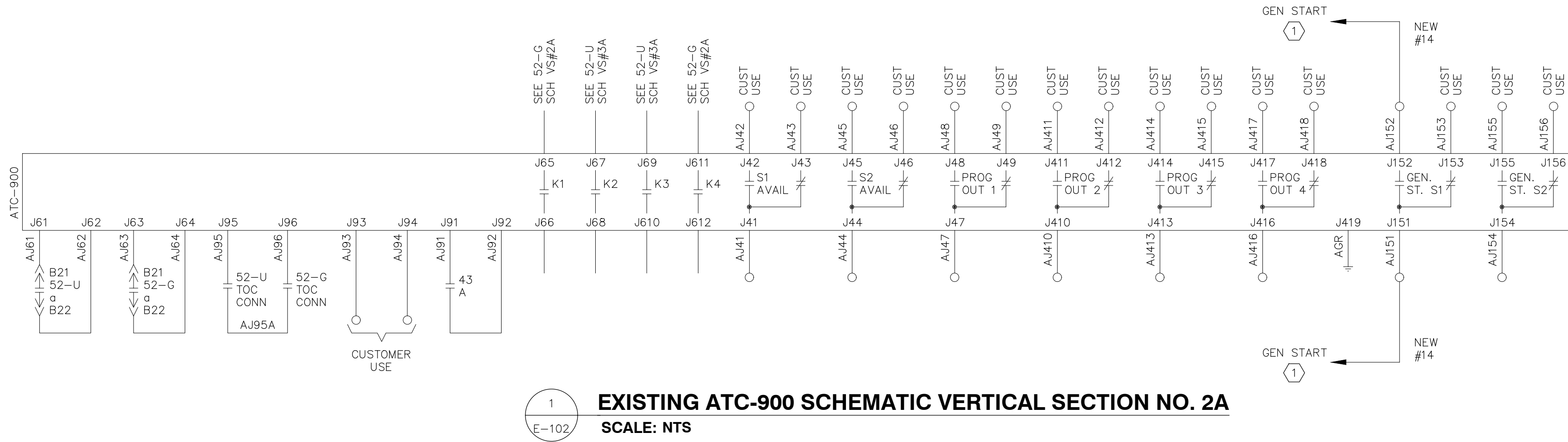
GENERAL SEQUENCE OF OPERATION:

THE FOLLOWING IS A GENERAL SEQUENCE FOR BASIC OPERATION OF THE ENGINE-GENERATOR (EG) SYSTEM FOLLOWED BY ADDITIONAL FEATURES TO BE PROGRAMMED BY EATON TESTING/TECHNICAL SERVICES OR NETA CERTIFIED TESTING COMPANY:

- A. LOSS OF UTILITY POWER:
- A.1. NORMAL UTILITY POWER (UP) IS LOST OR BELOW 80% NOMINAL VOLTAGE FOR A MINIMUM OF 10 SECONDS TO ALLOW UTILITY RECLOSERS ON THE GRID TO OPERATE.
- A.2. THE MAIN SCREW PUMPS (IF RUNNING) WILL SHUT DOWN FOR MANUAL RESTART.
- A.3. WEST SIDE DAMPERS IN THE GENERATOR ROOM WILL FAIL-OPEN.
- A.4. THE ATS ATC-900 (ATC) CONTROLLER WILL INITIATE START OF EG AT THE END OF THE 10 SECOND DELAY PERIOD.
- A.5. THE WEST SIDE DAMPERS WILL REMAIN OPEN UPON ENGINE START AND WHILE RUNNING.
- A.6. ONCE VOLTAGE AND FREQUENCY FROM THE GENERATOR IS ATTAINED, AND AFTER A 5 SECOND DELAY THE ATC INITIATES TRANSFER THE ATS SWITCHGEAR FROM NORMAL (UTILITY POWER) TO BACKUP (GENERATOR POWER).
- B. RETURN OF NORMAL UTILITY POWER:
- B.1. UPON RETURN OF STABLE UP FOR 15 MINUTES, THE ATC WILL INITIATE RE-TRANSFER BACK TO NORMAL AS FOLLOWS:
- B.1.a. ATC WILL OPEN THE EMERGENCY BREAKER IN THE ATS SWITCHGEAR.
- B.1.b. AFTER 10 SECOND DELAY THE UTILITY BREAKER WILL CLOSE TO RE-ENERGIZE THE PUMP STATION AUXILIARY LOADS.
- B.1.c. AFTER 15-MINUTE COOLDOWN PERIOD THE ATC WILL SHUT DOWN THE EG.

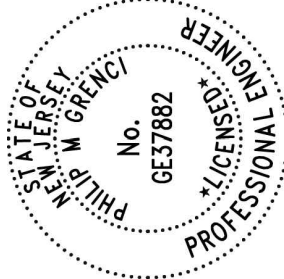
ADDITIONAL FEATURES:

- C. MANUAL EG START AND IN-SYNC TRANSFER OF BUILDING LOAD TO FROM UP TO EG WITH OR WITHOUT SCREW PUMPS RUNNING (INDEFINITE TIME) OR (TIMED FOR PERIODIC MANUAL TESTING).
- C.1. FROM THE ATC CONTROLLER INITIATE EG START.
- C.2. ATC TO MONITOR PHASE ANGLE BETWEEN UP AND EG.
- C.3. ATC TO TRANSFER FROM UP TO EG WITHIN A +/-5% PHASE ANGLE DIFFERENCE (ADJUST TO FIELD CONDITIONS UP TO +/-10% MAX). ADD TIME FOR AUTO RETRANSFER TO UP IF NEEDED.
- D. MANUAL IN-SYNC RE-TRANSFER OF BUILDING LOAD FROM EG TO UP WITH OR WITHOUT SCREW PUMPS RUNNING.
- D.1. FROM THE ATC CONTROLLER INITIATE TRANSFER TO UP.
- D.2. ATC TO MONITOR PHASE ANGLE BETWEEN UP AND EG.
- D.3. ATC TO TRANSFER TO UP WITHIN A +/-5% PHASE ANGLE DIFFERENCE (ADJUST TO FIELD CONDITIONS UP TO +/-10% MAX).
- D.4. AFTER 15-MINUTE COOLDOWN PERIOD THE ATC WILL SHUT DOWN THE EG.
- E. MANUAL EG START WITHOUT TRANSFER OF BUILDING LOAD (INDEFINITE).
- E.1. (EG ON) AT LOCAL GENERATOR CONTROL PANEL, SWITCH FROM AUTO TO MANUAL AND INITIATE EG START.
- E.2. (EG OFF) AT LOCAL GENERATOR CONTROL PANEL, SWITCH FROM MANUAL TO AUTO TO INITIATE EG COOLDOWN. AFTER 15 MINUTES EG TO SHUTDOWN (FIELD VERIFY CONTROLLER SEQUENCE FOR LOCAL EG SHUTDOWN).



KEY NOTES:

1. REFER TO GENERATOR VENDOR SCHEMATICS FOR TERMINATION OF GENERATOR START WIRING.



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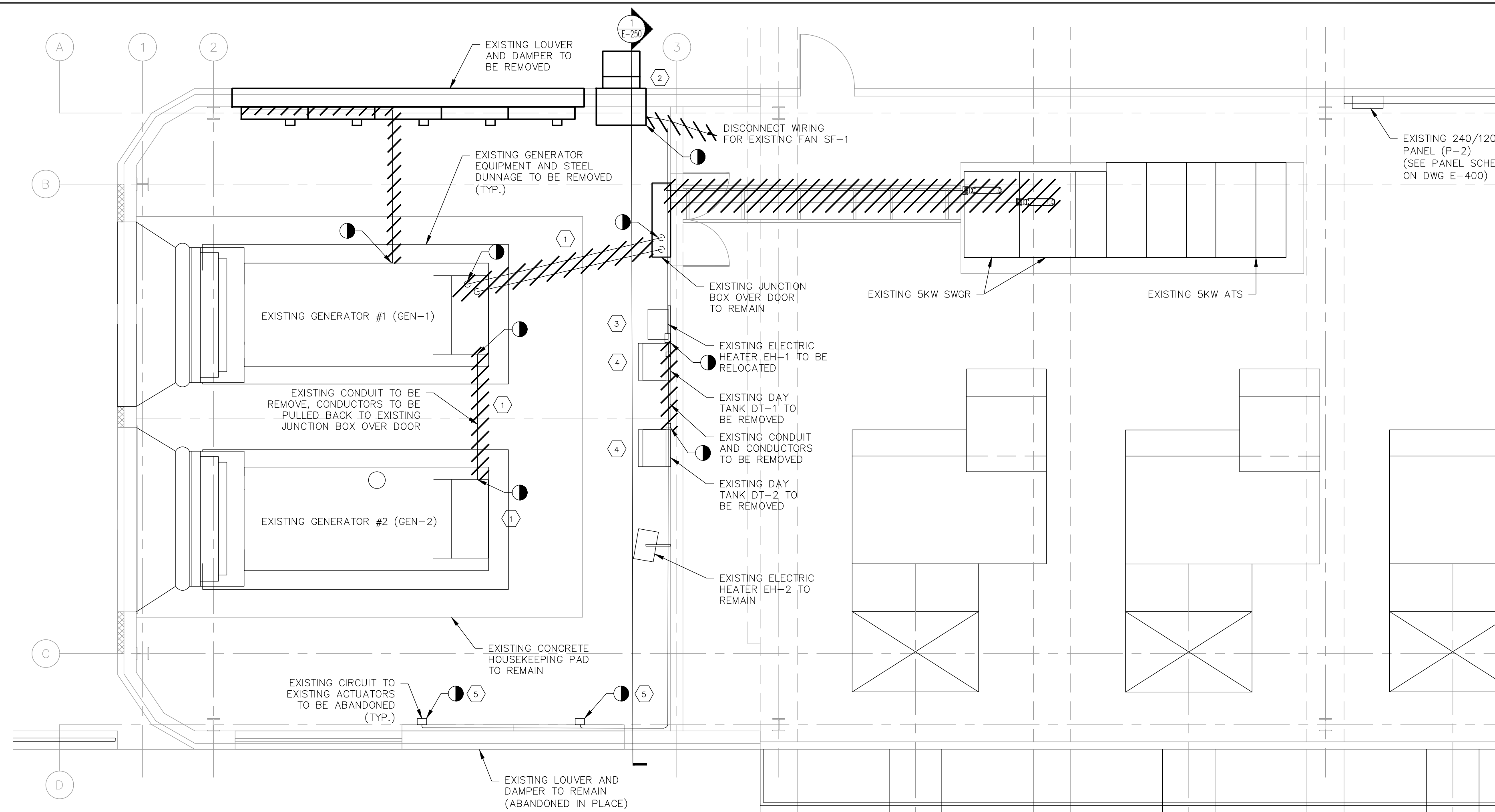


Drawing Title:
ELECTRICAL
ATC-900 SCHEMATIC &
SEQUENCE OF OPERATION

Scale N.T.S.	Issue Date: 4/26/22
Proj. Manager: ANC	Proj. Engineer: PMG

AMA Project No.:
CEI215080

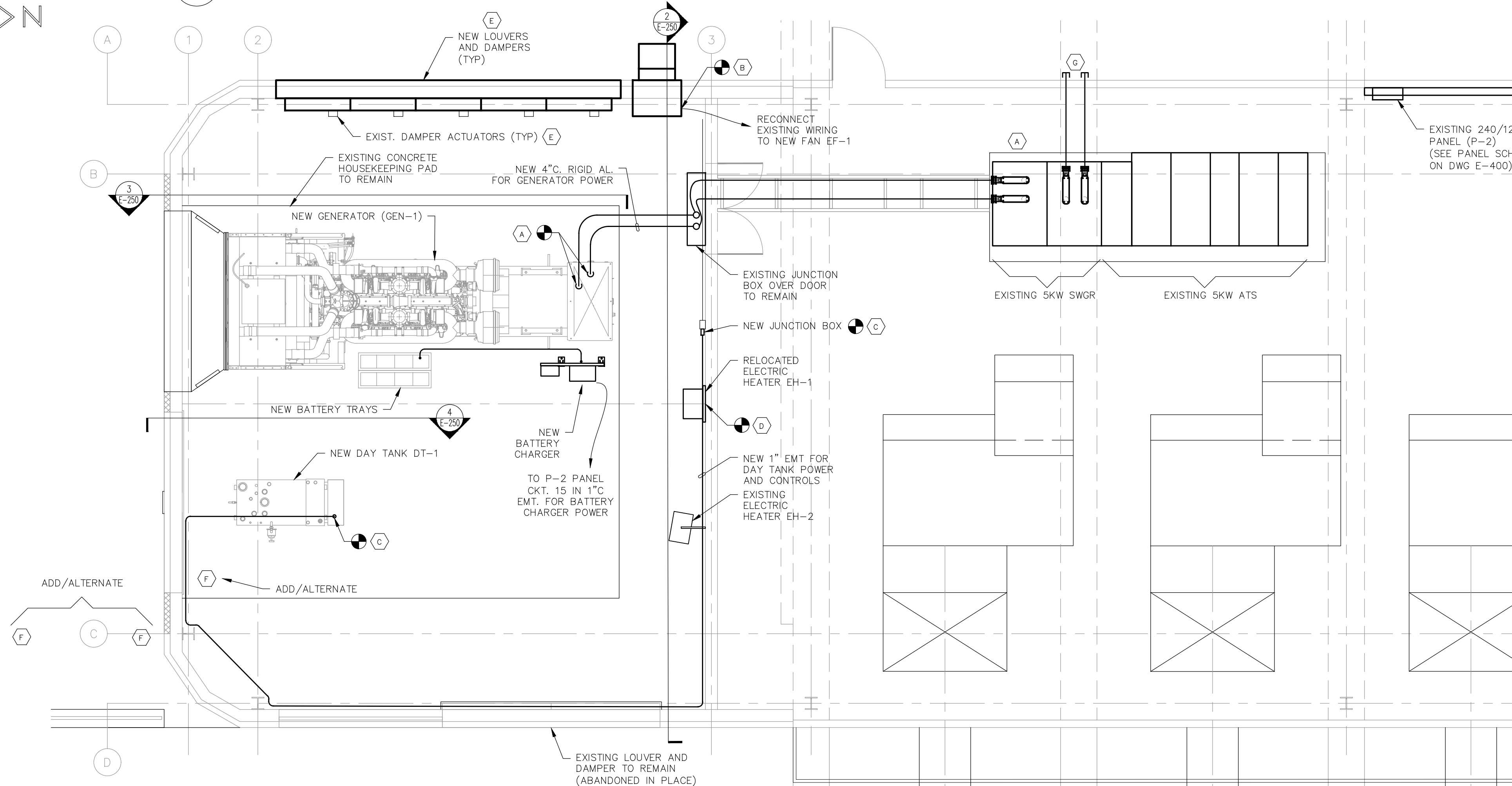
E-102



ELECTRICAL EQUIPMENT DEMOLITION PART PLAN

SCALE: 1/4"=1'-0"

1
E-200



ELECTRICAL EQUIPMENT NEW WORK PART PLAN

SCALE: 1/4"=1'-0"

2
E-200

DEMOLITION NOTES:

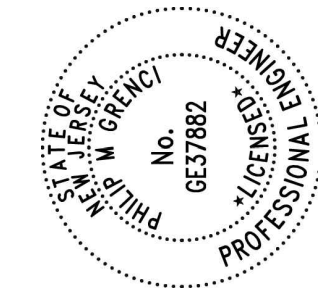
1. DISCONNECT POWER FEEDS FROM EXISTING GENERATOR #1 AND GENERATOR #2. COORDINATE GENERATORS' REMOVAL WITH OTHER TRADES IN FIELD. POWER FEED CONNECTIONS TO ATM ARE TO BE REUSED DURING NEW WORK PHASE.
2. DISCONNECT POWER FROM EXISTING FAN SF-1. COORDINATE WORK W/ MECHANICAL CONTRACTOR IN FIELD.
3. DISCONNECT POWER AND REMOVE POWER WIRING TO EXISTING DAY TANKS DT-1 AND DT-2. SAFE-OFF POWER FEEDS FOR RE-USE DURING NEW WORK PHASE.
4. DISCONNECT POWER FROM EXISTING ELECTRIC HEATER EH-1. SAFE-OFF POWER FEED FOR RE-USE DURING NEW WORK PHASE.
5. DISCONNECT POWER TO EXISTING DAMPER ACTUATORS SERVING DAMPERS ON EASTERN WALL. SAFE-OFF POWER FEEDS SECURELY AS REQUIRED.

NEW WORK NOTES:

- A. FURNISH AND INSTALL NEW POWER CONNECTIONS BETWEEN THE NEW GENERATOR AND THE EXISTING SWGR. FURNISH AND INSTALL ALL CONTROLS NECESSARY FOR NEW GENERATOR'S OPERATION AND MONITORING. PROVIDE FLEXIBLE CONDUIT CONNECTIONS TO GENERATOR.
- B. RE-CONNECT EXISTING POWER SUPPLY TO NEW EXHAUST FAN EF-1. COORDINATE WORK W/ MECHANICAL CONTRACTOR IN FIELD.
- C. CONNECT POWER TO THE NEW DAY TANK DT-1 USING EXISTING AVAILABLE CIRCUITS. EXTEND AS REQUIRED TO NEW DAY TANK. FURNISH AND INSTALL A 3RD 20A CKT (3/4\"/>

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO COORDINATE WITH OWNER AND MECHANICAL CONTRACTOR TO INSTALL CONTROL POWER AND ALARM WIRING FOR MAIN TANK LEVEL GAUGE, LEAK DETECTION SENSORS, HONEYWELL BMS SYSTEM AND VESDA SYSTEM.



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NJ SPORTS & EXPOSITION AUTHORITY PUMP STATION GENERATOR INSTALLATION

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EAST RUTHERFORD, NEW JERSEY
07073

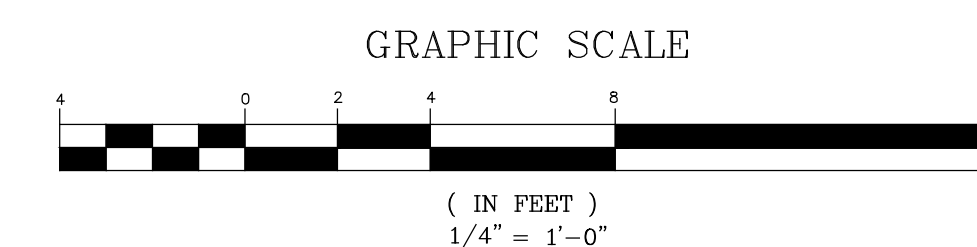
6-2-22	ISSUED FOR REVIEW
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11-18-22	ISSUED FOR BID

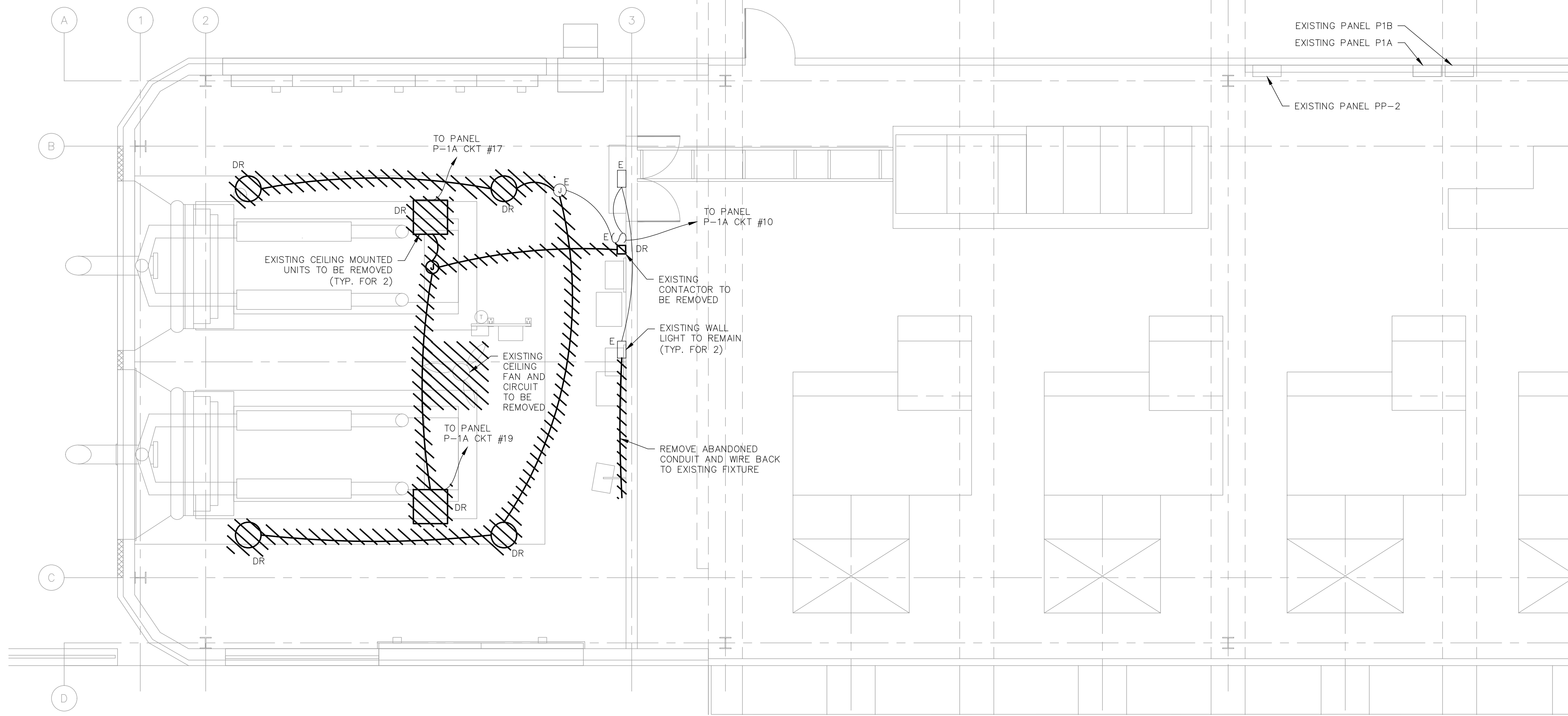
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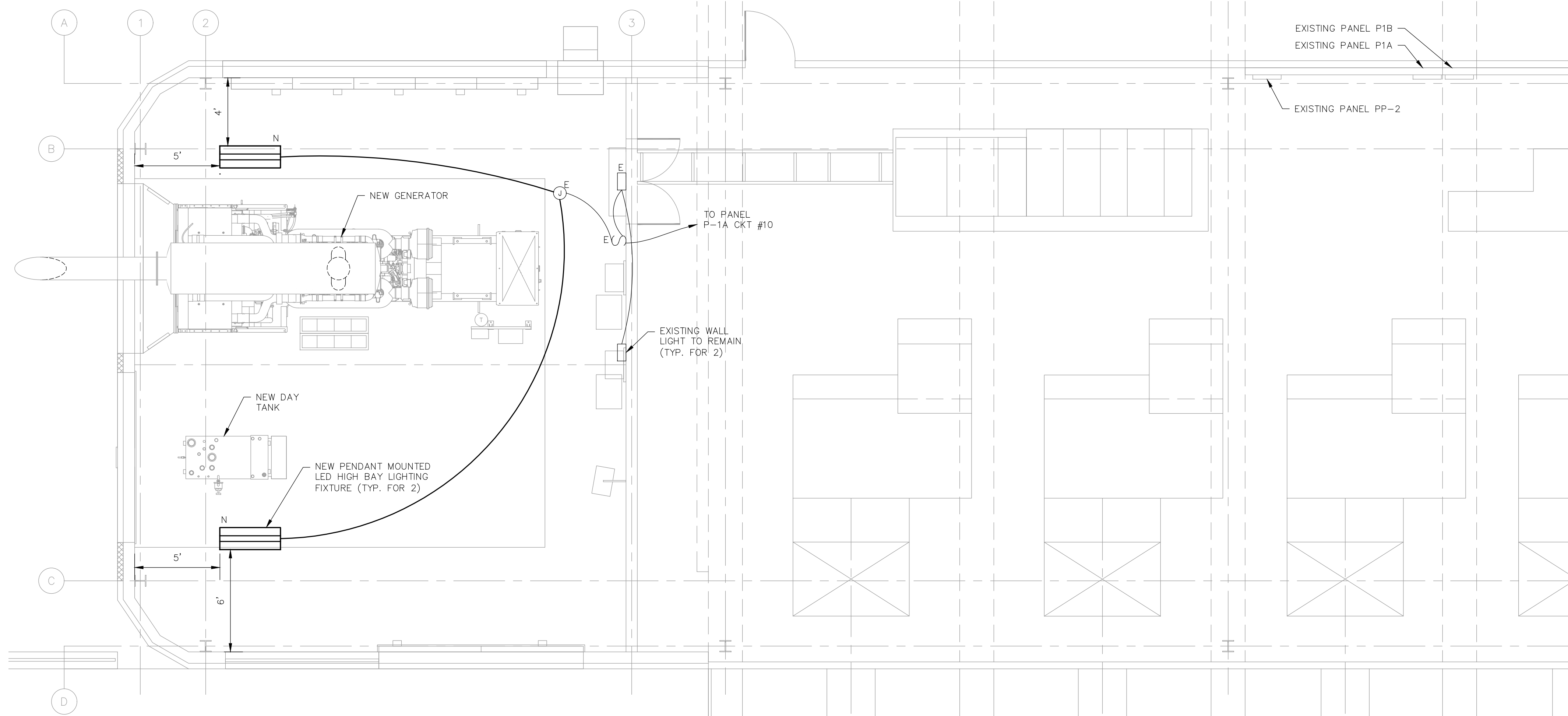
Drawing Title: ELECTRICAL EQUIPMENT DEMOLITION AND NEW WORK PART PLANS	
Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

E-200





1
E-210
LIGHTING DEMOLITION PART PLAN
SCALE: 1/4"=1'-0"



2
E-210
NEW LIGHTING PART PLAN
SCALE: 1/4"=1'-0"

LIGHTING POWER NOTES:

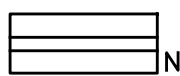
- UNLESS OTHERWISE NOTED, ALL DEVICES AND BRANCH CIRCUIT WIRING INDICATED ON THIS DRAWING IS NEW. EXISTING HOMERUNS TO PANELS SHALL BE REUSED.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LIGHTING IN GENERATOR ROOM, INCLUDES ALL FIXTURES, SUPPORTS, WIRING, HOME RUNS AND CONTROL DEVICES AND SAFE OFF. SEE DEMOLITION PLANS FOR DETAILS. ALL NEW LIGHTING SHALL BE FED FROM EXISTING PANEL "PP-1".

WHERE NOTED:
ER - EXISTING TO BE RELOCATED
DR - DISCONNECT & REMOVE
E - EXISTING TO REMAIN
N - NEW
R - RELOCATED

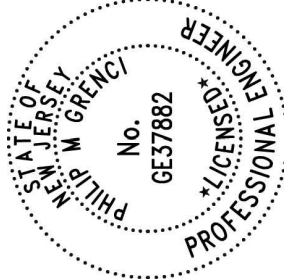
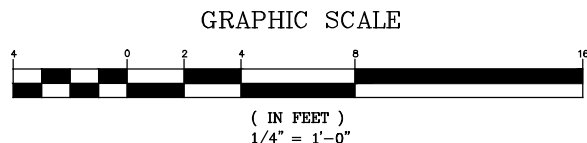
LIGHTING GENERAL NOTES:

- ALL ELECTRICAL FACILITIES SHALL COMPLY WITH OSHA (OCCUPATIONAL SAFETY HEALTH ACT), THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, APPLICABLE STATE AND LOCAL CODES AND REGULATIONS AND ELECTRICAL GENERAL SPECIFICATIONS FOR THIS CONTRACT.
- CONDUIT, LIGHTING PANELS, LIGHTING FIXTURES, RECEPTACLES AND OTHER ITEMS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS, IF ANY DEVIATION IS REQUIRED, APPROVAL SHALL BE OBTAINED FROM THE OWNER PRIOR TO CHANGE. LOCATION OF LIGHTING FIXTURES AND CONDUIT RUNS SHOWN ON THE DRAWINGS ARE IN APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED IN THE FIELD TO AVOID INTERFACE WITH PIPING AND STRUCTURES, ETC.
- CONDUIT SUPPORTS SHALL BE PROVIDED WHERE REQUIRED SUCH AS AT FIXTURE LOCATIONS, RECEPTACLES, ELEVATION CHANGES, FITTINGS AND BOXES. ALL CONDUIT SUPPORT HARDWARES SHOWN AS GALV. CLAMPS, STRAPS, CLIPS, CHANNEL SHALL BE HOT-DIPPED GALVANIZED STEEL FINISH.
- CONTRACTOR SHALL INSTALL UNIONS, BUSHINGS, COUPLINGS AND NIPPLES AS REQUIRED FOR PROPER CONDUIT MAKE UP. CONDUIT FITTINGS SHALL BE INSTALLED WITH COVER OPENING IN THE VERTICAL PLANE OR DOWNWARD IN THE HORIZONTAL PLANE.
- ALL UNUSED OPENINGS IN FIXTURES, BOXES AND FITTINGS SHALL BE PLUGGED.
- ANY FIELD CUTS, DRILLED HOLES AND WELDED AREAS OF GALVANIZED STEEL SHALL BE DEBURRED AND TOUCHED UP WITH GALVO-WELD PAINT. STEEL NOT FURNISHED GALVANIZED SHOULD BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS FOR THIS CONTRACT.
- BEFORE INSTALLING LIGHTING CONDUITS, FIXTURES, ETC., A CAREFUL CHECK SHALL BE MADE TO AVOID INTERFERENCES WITH PIPING, EQUIPMENT, ETC., IF NOT OTHERWISE SPECIFIED CONDUIT RUNS MUST BE KEPT AT LEAST 12" AWAY FROM HOT SURFACES. A MINIMUM CLEARANCE OF 6" SHALL BE KEPT WHERE A CONDUIT CROSSES A HOT PIPE. NO ELECTRICAL EQUIPMENT, CONDUITS, ETC. SHALL BE MOUNTED DIRECTLY ABOVE 26KV SWITCHGEAR.
- CONDUIT AND WIRING ARE IDENTIFIED ON DRAWINGS ONLY AT:
 - POINT OF ORIGIN (USUALLY PANELBOARDS)
 - WHERE A CHANGE OCCURS IN CONDUIT FILL BUT ONLY WHERE NECESSARY FOR CLARITY.
 - CONTINUATION TO OR FROM OTHER PLANS, ELEVATIONS, DETAILS OR RISER DIAGRAMS. IDENTIFICATION SHALL CONSIST OF CONDUIT SIZE, NUMBER AND SIZE OF WIRES, PANEL TAG NUMBER AND CIRCUIT NUMBER AS EXPLAINED UNDER LIGHTING LEGEND, C.O.D. REFERS TO CONTINUATION ON DRAWING STATED.
- CONDUIT AND WIRING NOT IDENTIFIED ON DRAWINGS SHALL BE DETERMINED IN FIELD AS FOLLOWS:
 - MINIMUM CONDUIT SIZE SHALL BE 3/4".
 - MINIMUM WIRE SIZE SHALL BE #12 AWG.
- ALL ABOVE GROUND CONDUIT SHALL BE EMT UNLESS OTHERWISE NOTED. ALL ABOVE GROUND LIGHTING CONDUIT SHALL BE 3/4" INCH MINIMUM OR 1" INCH MAXIMUM, WHERE PRACTICAL.
- LIGHTING FIXTURES SHALL BE MOUNTED TO EXISTING STRUCTURAL STEEL. MINOR VARIATIONS TO SUIT FIELD CONDITIONS ARE ALLOWABLE.
- HORIZONTAL OR VERTICAL CONDUIT RUNS SHALL BE SUPPORTED FROM CONCRETE WALLS WITH STEEL STUD TYPE EXPANSION BOLT AND GALV. ONE HOLE CONDUIT CLAMP WITH GALV. CLAMP BACK SPACER AS REQUIRED BY NEC. BEAM CLAMPS SHALL BE USED TO SUPPORT CONDUITS TO ROOF STRUCTURE.
- WORK ALL LIGHTING DRAWINGS TOGETHER WITH ELECTRICAL CONSTRUCTION AND ASSEMBLY DRAWINGS FOR APPLICABLE SYMBOLS LEGENDS, FIXTURE AND FIXTURE SCHEDULE CALL-OUTS.
- EMT CONDUIT SHALL BE SUPPORTED AT LEAST EVERY 10 FT., IN ADDITION TO WITHIN 3 FT. OF EACH TERMINATION PER NEC.

NEW LIGHT FIXTURE



NEW PENDANT MOUNTED LED HIGH BAY LIGHTING FIXTURE, SEMI-DIFFUSE ACRYLIC LENS, 120-277V, 18,000 LUMENS, WIDE DISTRIBUTION, 262W @ 120V, 4000 KELVINS, LITHONIA 1BL-18L-WD-SD125-LP740DLC/J9 OR APPROVED EQUAL. CONTRACTOR SHALL FURNISH AND SUPPLY MOUNTING HARDWARE, SUPPLIED SEPARATELY.



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6-15-22	ISSUED FOR DCA APPROVAL
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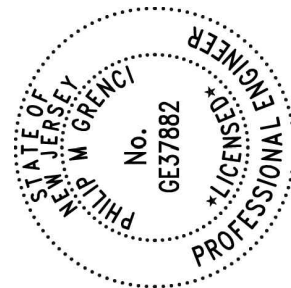
Drawing Title:

**ELECTRICAL
DEMOLITION AND NEW WORK
LIGHTING PART PLAN**

Scale	Issue Date:
N.T.S.	4/26/22
Proj. Manager:	Proj. Engineer:
ANC	PMG

AMA Project No.:
CEI215080

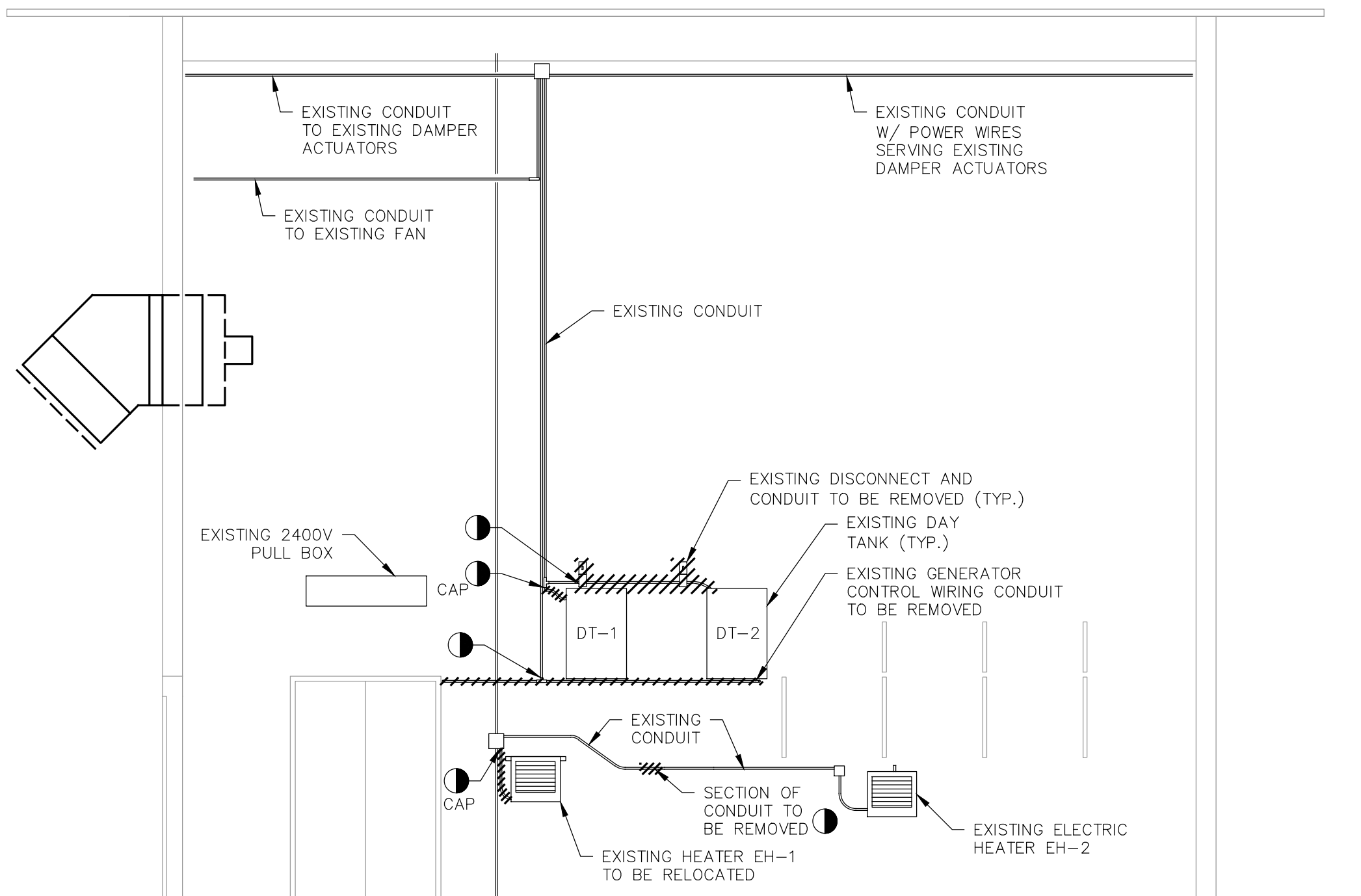
E-210



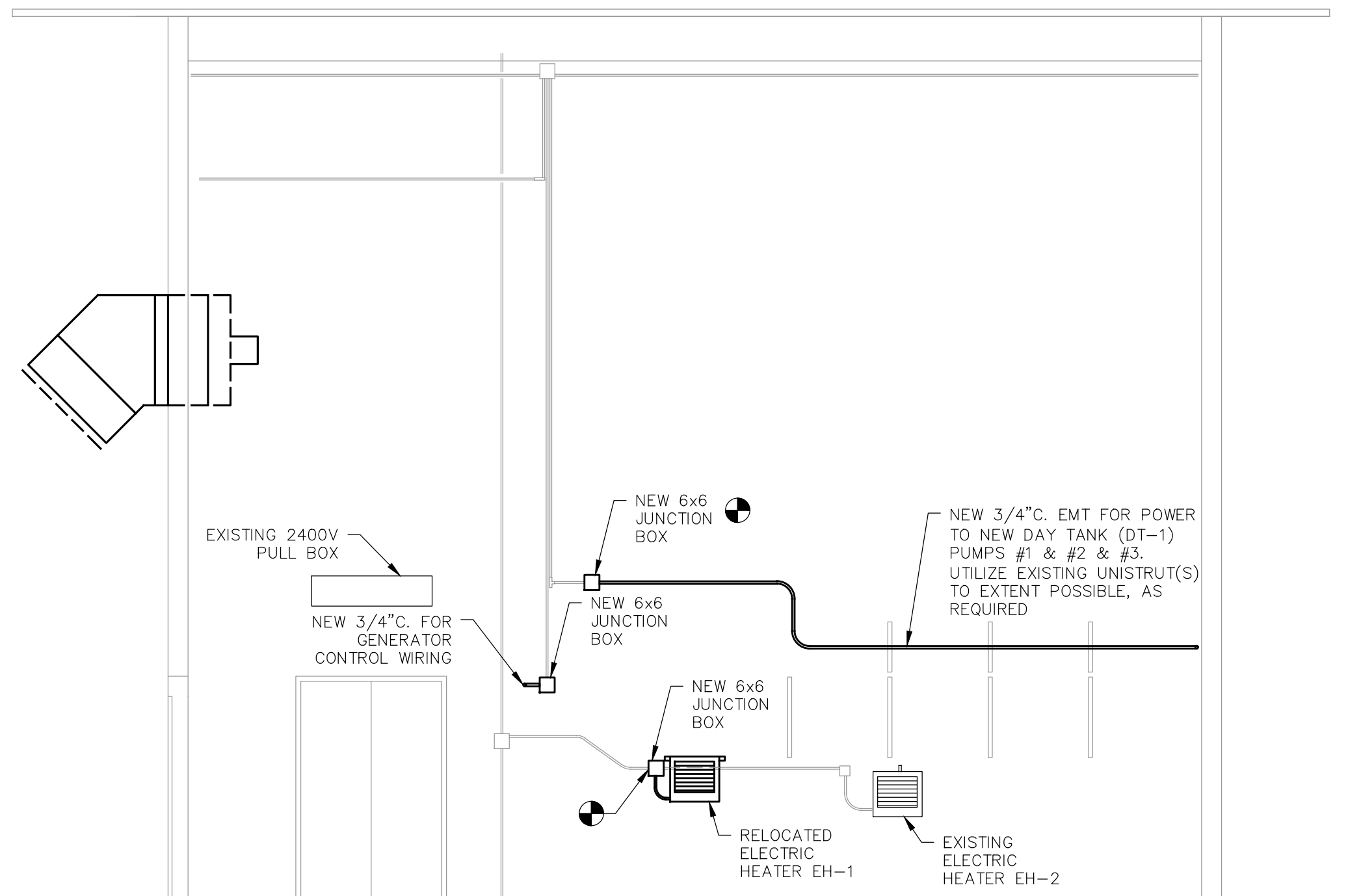
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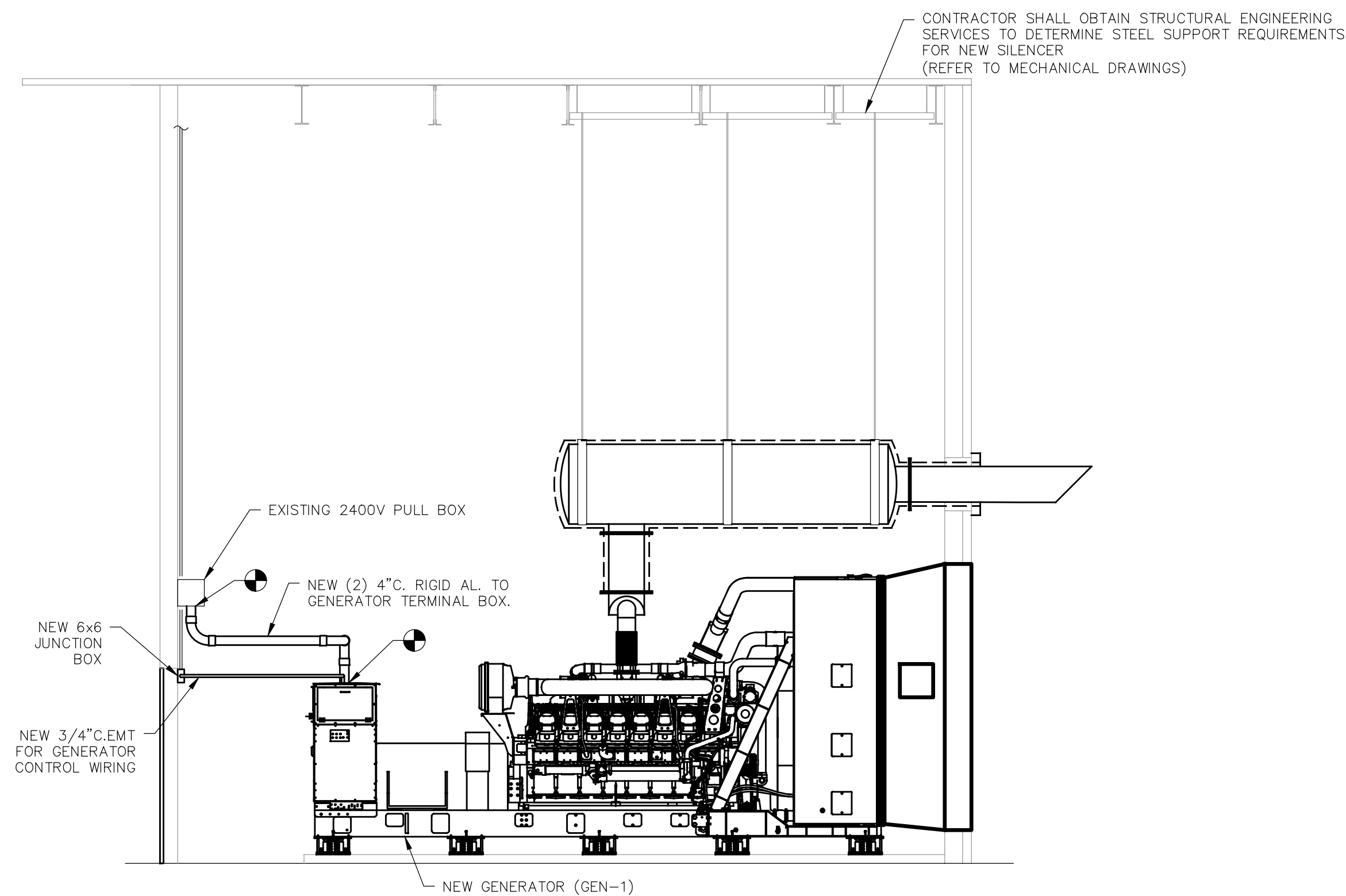
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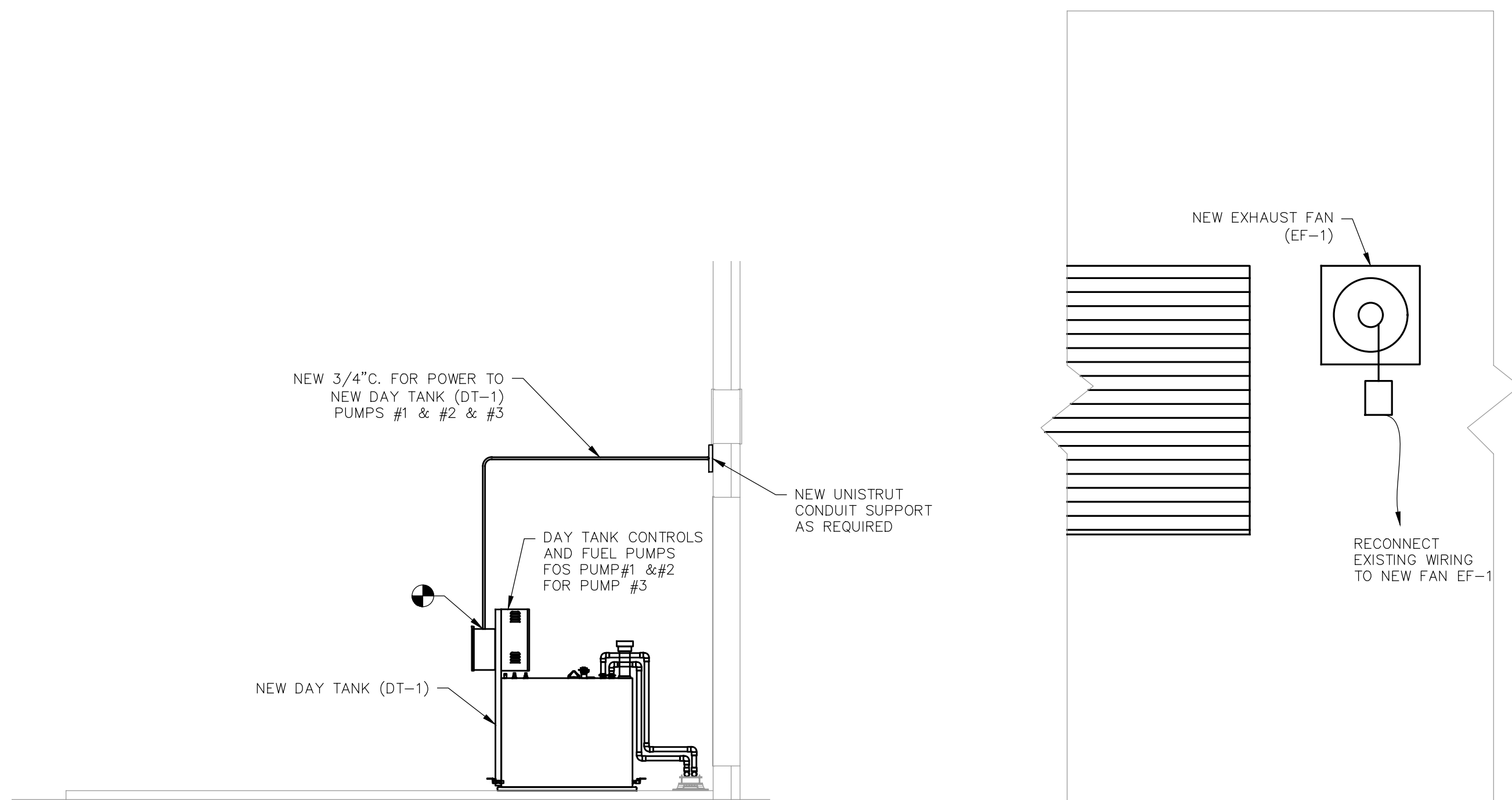
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E-250
ELECTRICAL DEMOLITION NORTH WALL ELEVATION
SCALE: 1/4"=1'-0"



2
E-250
ELECTRICAL NEW WORK NORTH WALL ELEVATION
SCALE: 1/4"=1'-0"

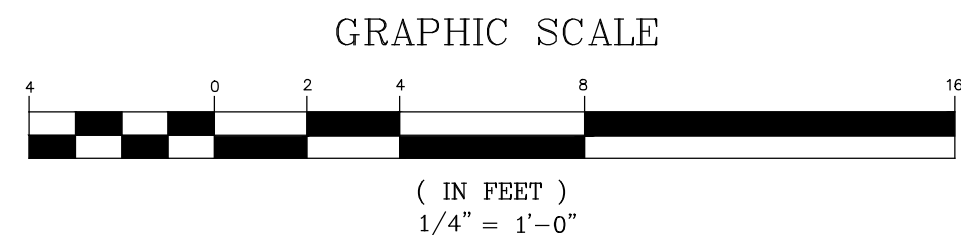


3
E-250
ELECTRICAL NEW WORK GENERATOR SECTION
SCALE: 1/4"=1'-0"



4
E-250
ELECTRICAL NEW WORK DAY TANK SECTION
SCALE: 1/4"=1'-0"

5
E-250
ELECTRICAL NEW EF-1 DETAIL
SCALE: 1/4"=1'-0"



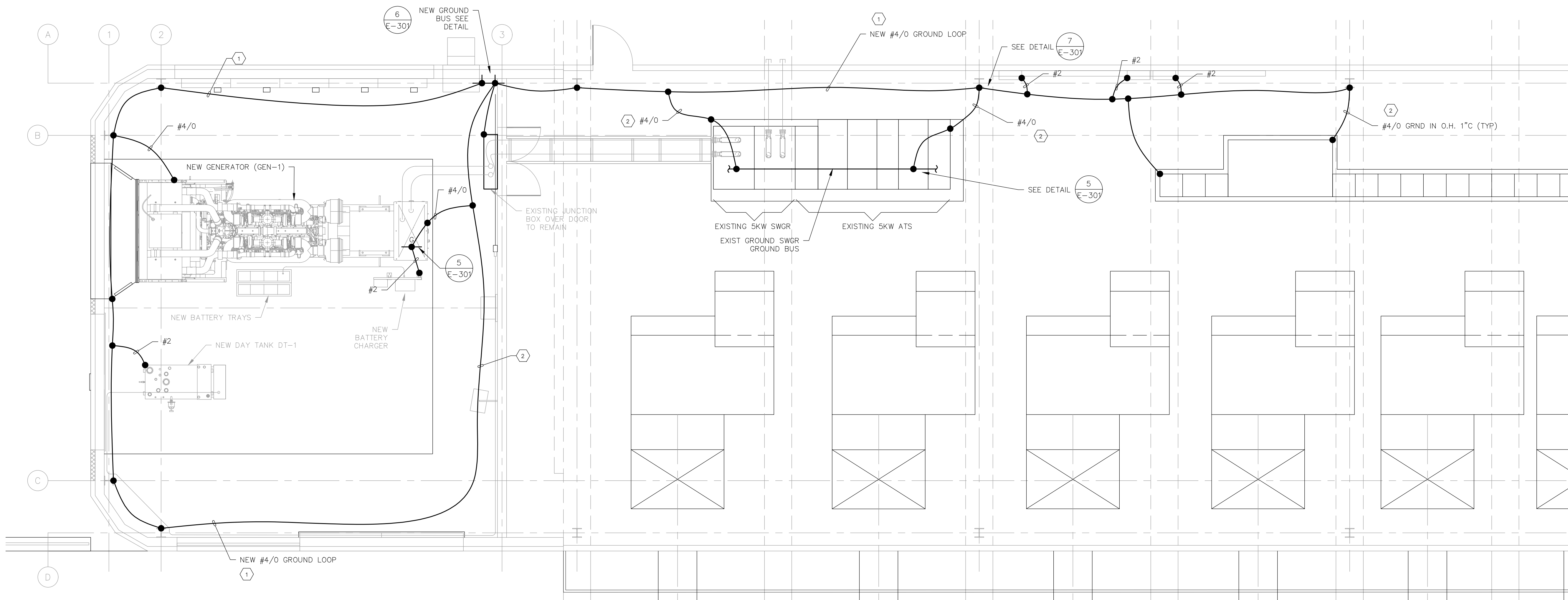
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Scale: AS NOTED	Issue Date: 4/15/22
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AMA Project No.: CEI215080	

E-250



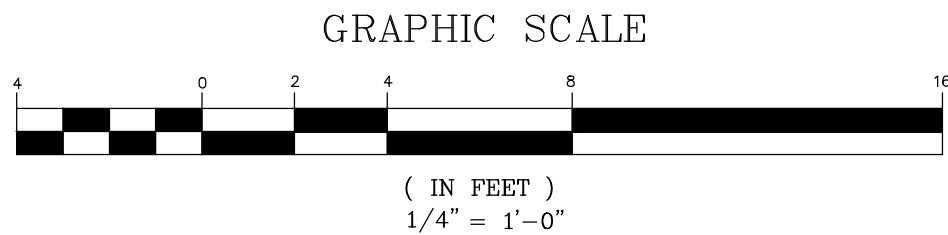
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ELECTRICAL EQUIPMENT NEW WORK PART PLAN
SCALE: 1/4"=1'-0"

GROUNDING NOTES:

- CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS, RODS, CLAMPS AND WIRE, TO ESTABLISH GROUND CONNECTIONS BETWEEN NEW EQUIPMENT AND THE GROUND NETWORK.
- A GROUND CONDUCTOR SHALL BE RUN IN ALL CONDUITS AND RACEWAYS TO BOND ELECTRICAL EQUIPMENT TO GROUND SYSTEM UNLESS OTHERWISE NOTED.
- GROUNDING SHALL BE PROVIDED BY A GROUNDING CABLE CONNECTION FROM THE EQUIPMENT TO THE LOCAL GROUND NETWORK, AT POINTS INDICATED ON THIS DRAWING OR OTHER SUITABLE GROUND POINTS AS REQUIRED BY THE NEC.
- GROUNDING AND BONDING FOR PROTECTION OF THE ELECTRICAL SYSTEM AND EQUIPMENT SHALL BE INSTALLED TO MINIMIZE DAMAGE IN CASE OF GROUND FAULTS BY PROVIDING LOW FAULT IMPEDANCE, THEREBY LIMITING THE VOLTAGE TO GROUND AND FACILITATING THE OPERATION OF OVER- CURRENT DEVICES.
- WHERE POSSIBLE, COPPER GROUND CONDUCTORS SHALL BE INSTALLED OVERHEAD IN CONDUIT OR SUPPORTED BY UNISTRUT WHERE APPLICABLE, WITHOUT BREAKS OR JOINTS, AND SHALL HAVE 30" MAXIMUM COVER.
- THE CONTRACTOR SHALL PERFORM THE FOLLOWING INSPECTIONS AND TESTS UPON ALL EQUIPMENT GROUND CONNECTIONS INSTALLED:
A. CHECK AND TIGHTEN ALL HARDWARE AND CONNECTIONS.
B. RESISTANCE TO EARTH NOT EXCEEDING 5 OHMS. GROUND RESISTANCE SHALL BE MEASURED WITH A PORTABLE HAND-CRANKED 40 OHM "MEGGER" GROUND TESTING INSTRUMENT. WHEN THE GROUND RESISTANCE EXCEEDS 5 OHMS, ADDITIONAL GROUND RODS SHALL BE INSTALLED TO MEET THIS REQUIREMENT. IN LIEU OF ADDITIONAL RODS, EXTENSIONS TO THE RODS MAY BE ADDED TO DRIVE THE GROUND RODS DEEPER INTO THE EARTH.

KEY NOTES

- NEW GROUNDING LOOP AND WHIPS SHALL SUPPLEMENT EXISTING #4/0 GROUND LOOP BELOW STRUCTURE AND STEEL SUPPORT COLUMNS AND PILES. SUPPORT NEW GROUND LOOP IN 1"C.
- ROUTE NEW EQUIPMENT GROUNDS TO LOOPS IN 1"C OR ON UNISTRUT SUPPORTS WHERE REQUIRED FOR OVERHEAD ROUTING AND TO PROTECT FROM PHYSICAL DAMAGE



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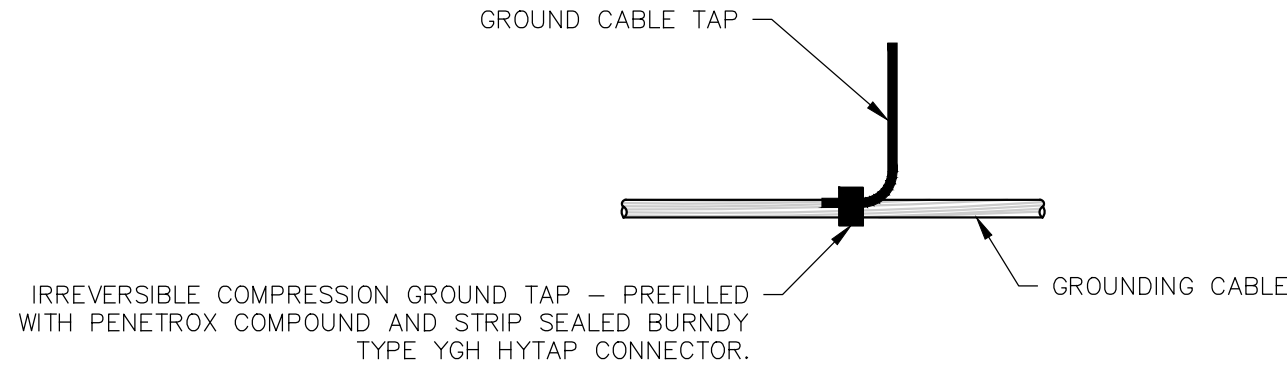
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**ELECTRICAL
GROUNDING PLAN**

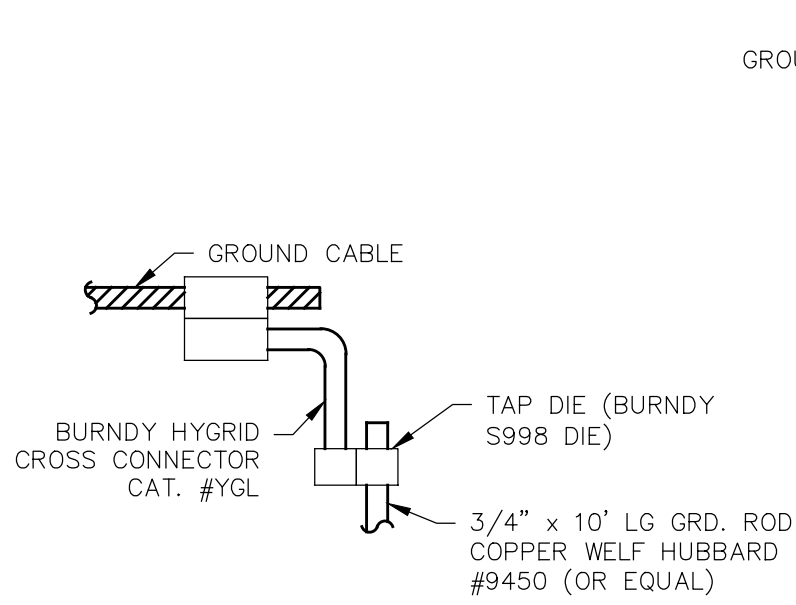
Scale AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG

AMA Project No.:
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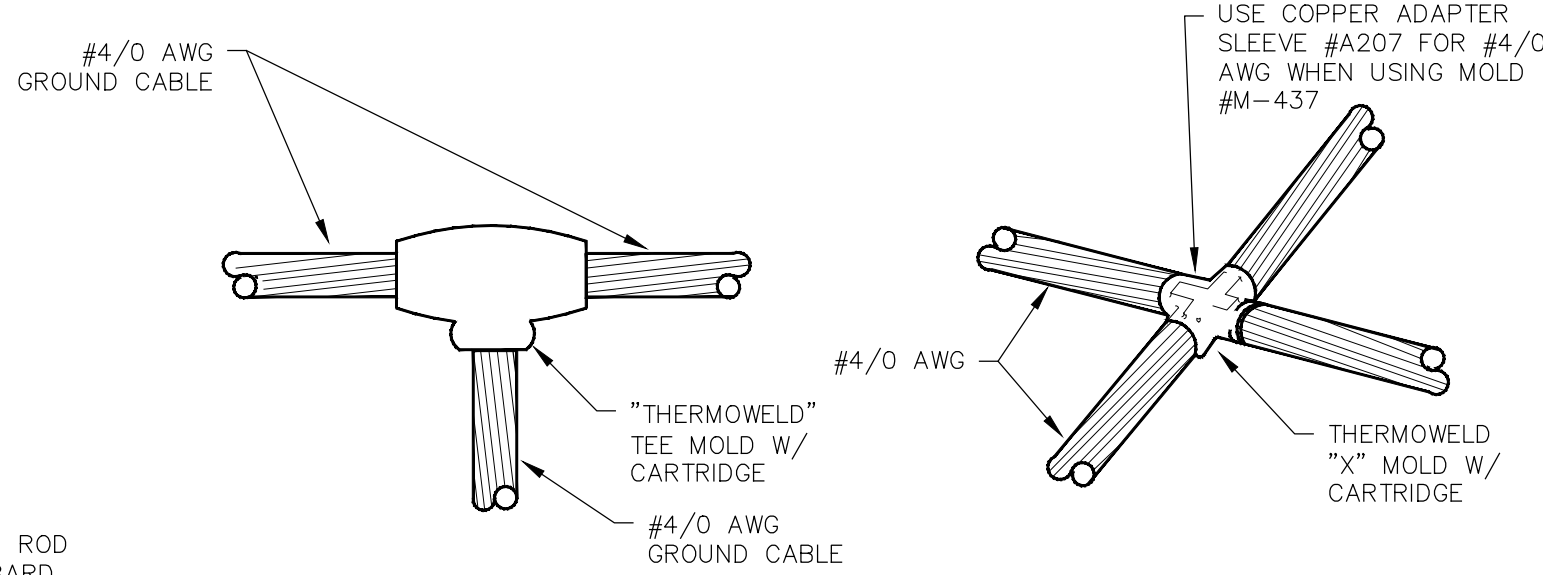
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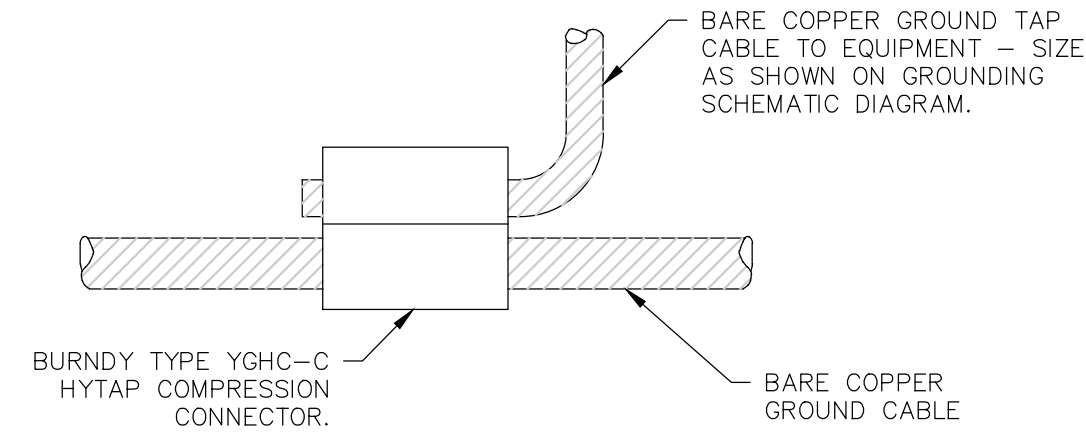
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E-301
TYPICAL GROUNDING CABLE TAP DETAIL
N.T.S.



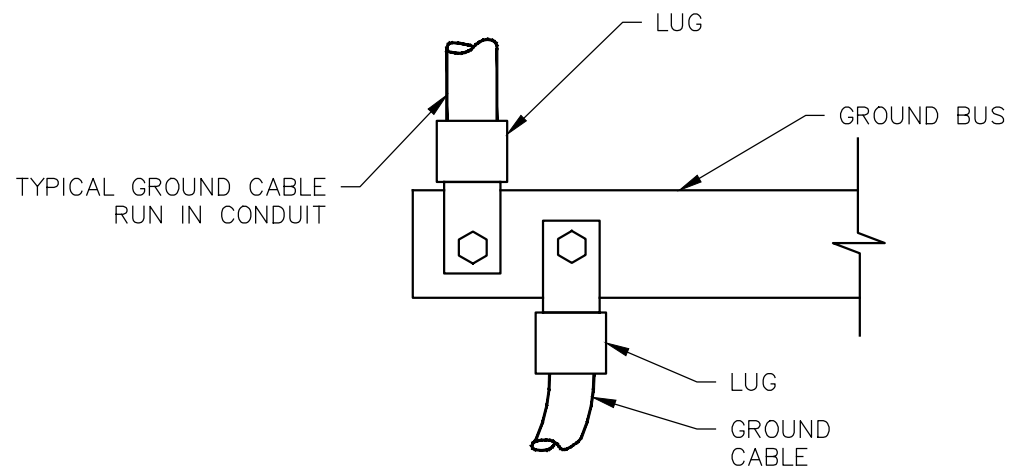
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E-301
GROUND CABLE TO GROUND ROD
N.T.S.



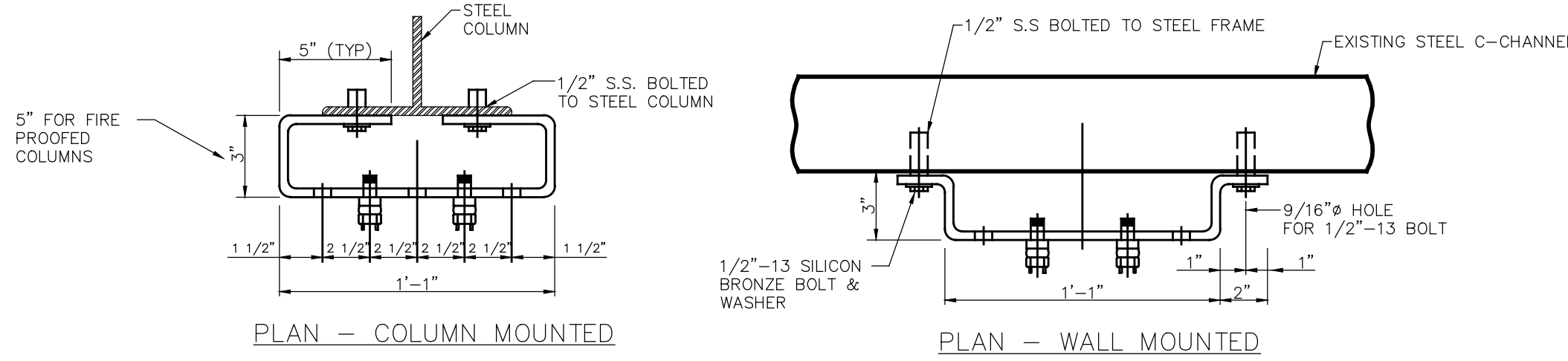
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E-301
TYPICAL GROUNDING DETAILS
SCALE: N.T.S.



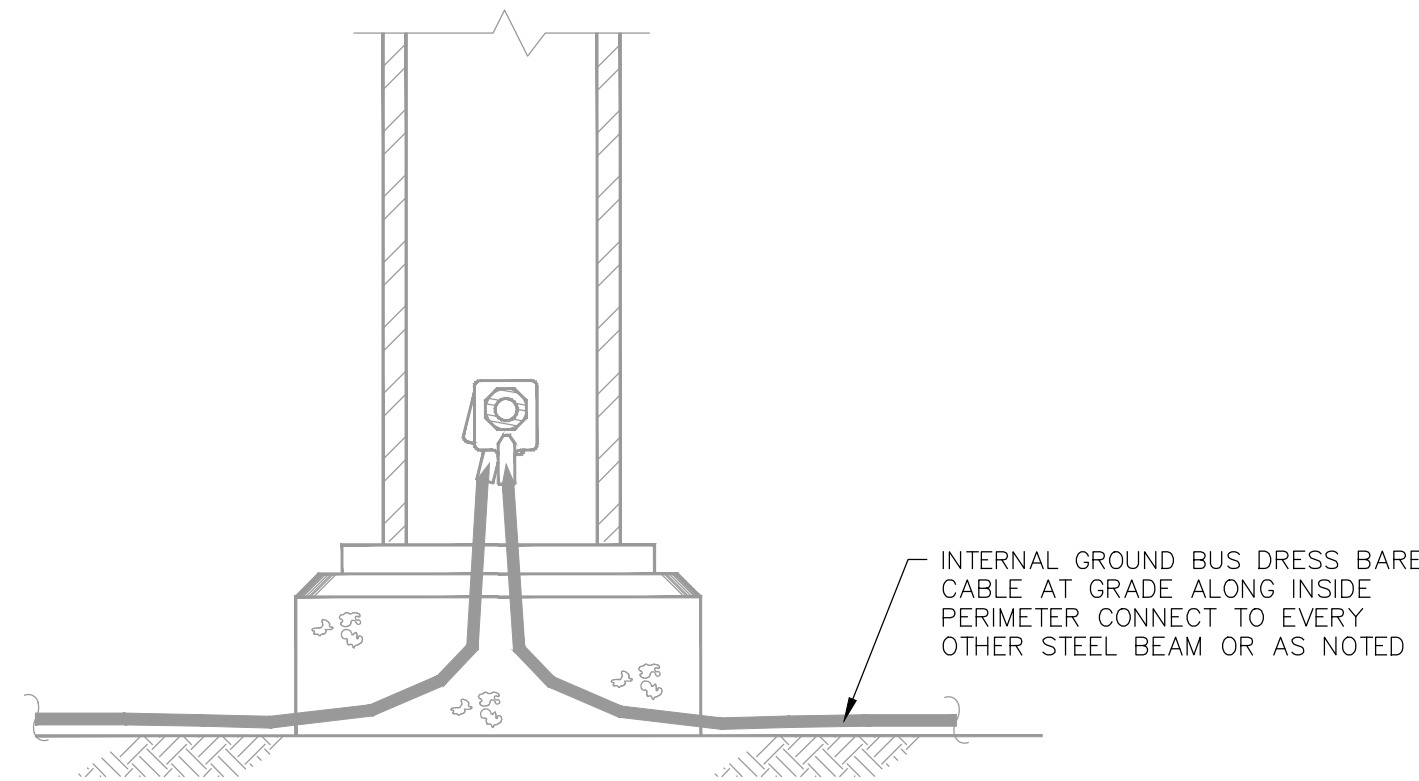
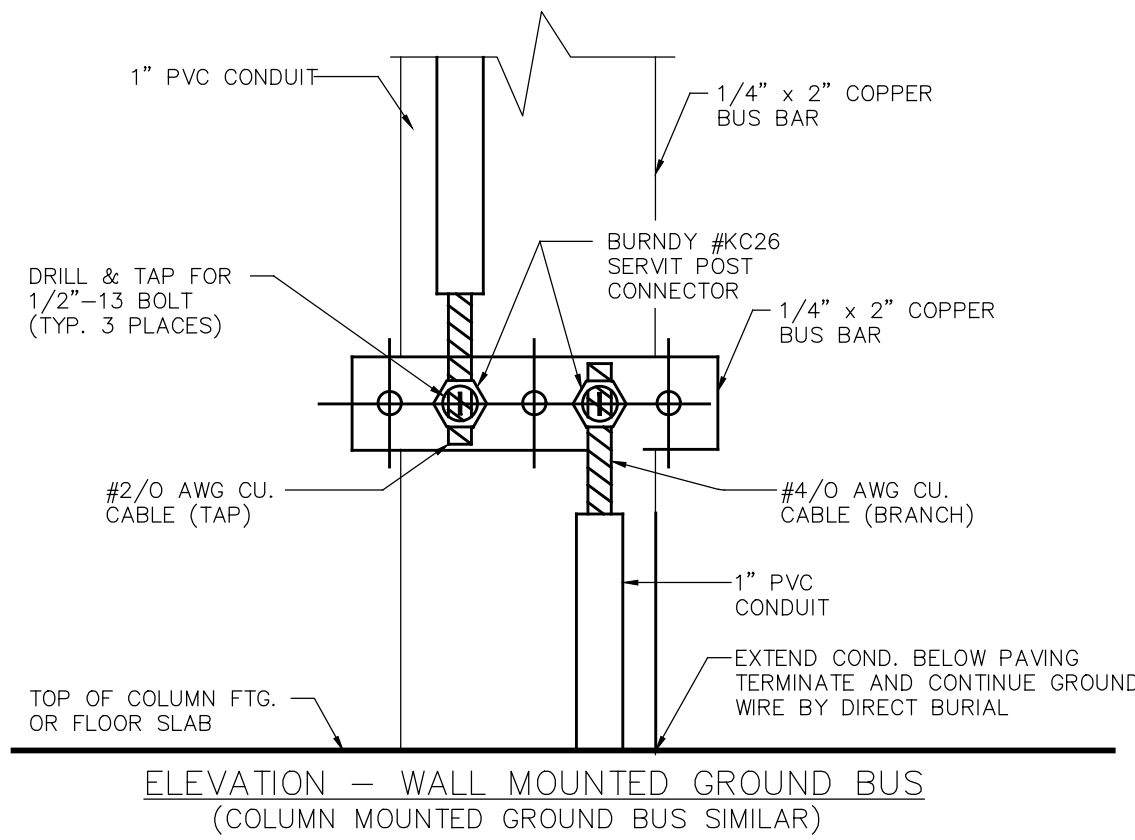
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E-301
TYPICAL GROUND LOOP TAP CONNECTION
SCALE: N.T.S.



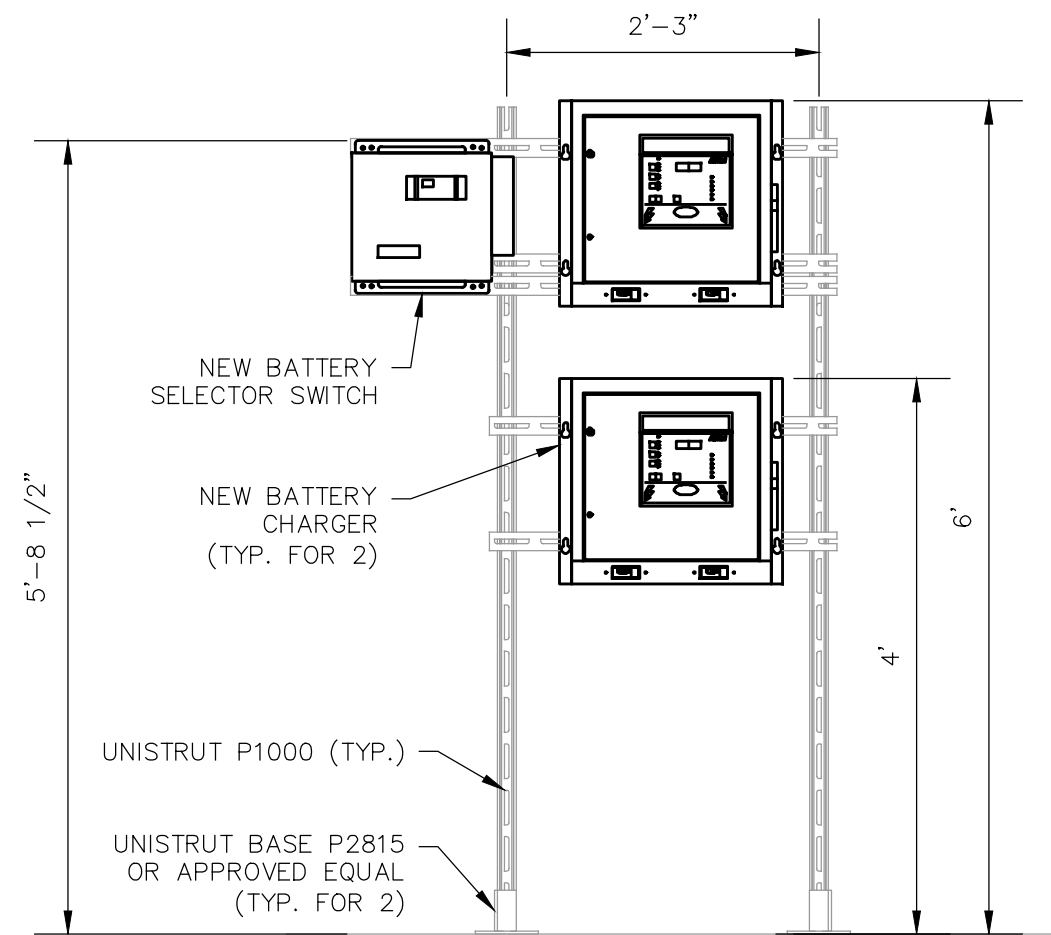
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E-301
EQUIPMENT GROUNDING BUS CONNECTOR
SCALE: N.T.S.



6
E-301
WALL OR COLUMN MOUNTED GROUND BUS
SCALE: N.T.S.

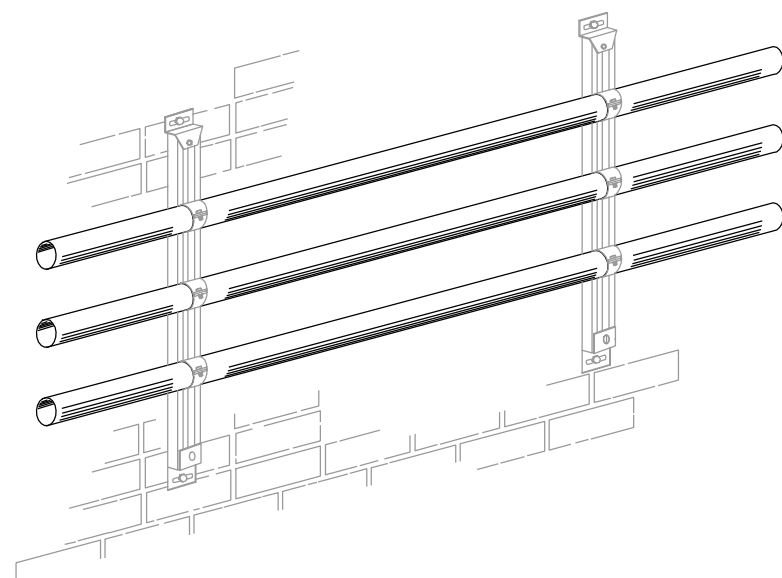


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E-301
INTERNAL GROUND BUS CONNECTIONS TO BUILDING STEEL
SCALE: N.T.S.



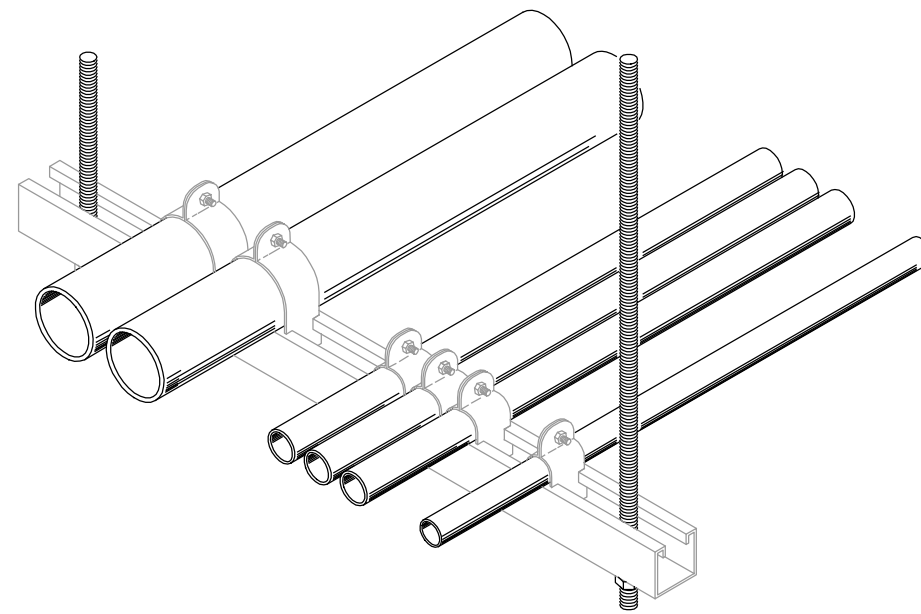
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E-400

TYPICAL BATTERY CHARGER MOUNTING DETAIL
SCALE: 3/4"=1'-0"



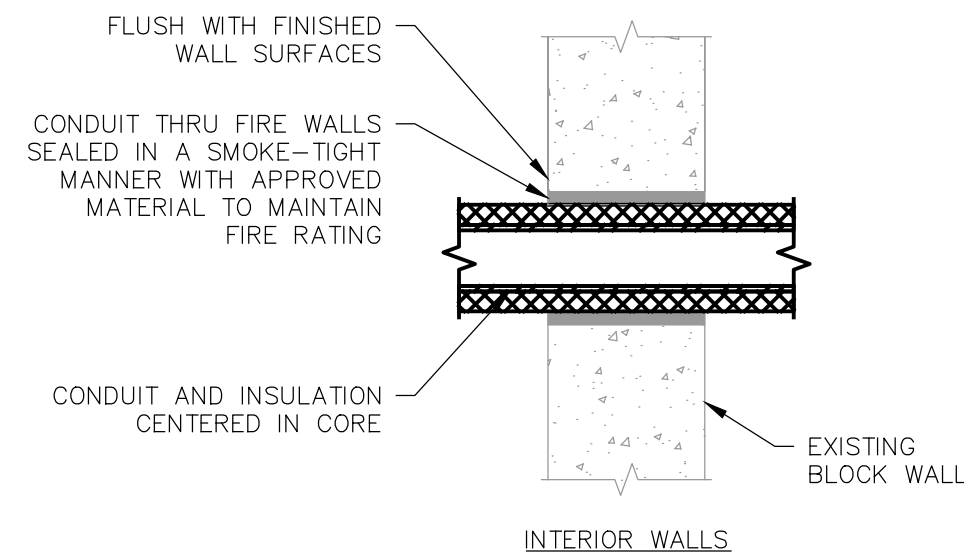
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E-400

CONDUIT WALL MOUNT DETAIL
SCALE: N.T.S.



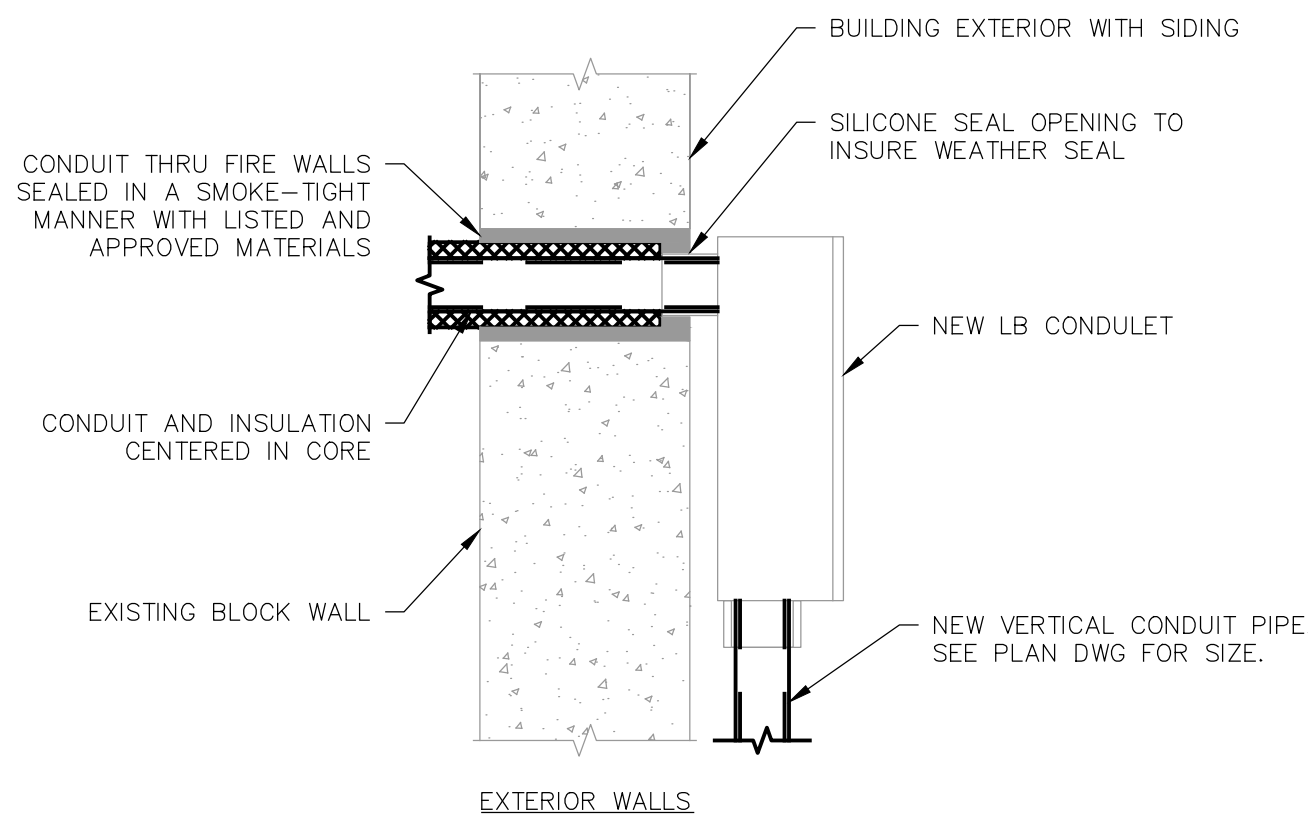
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E-400

TRAPEZE HANGER DETAIL
SCALE: N.T.S.



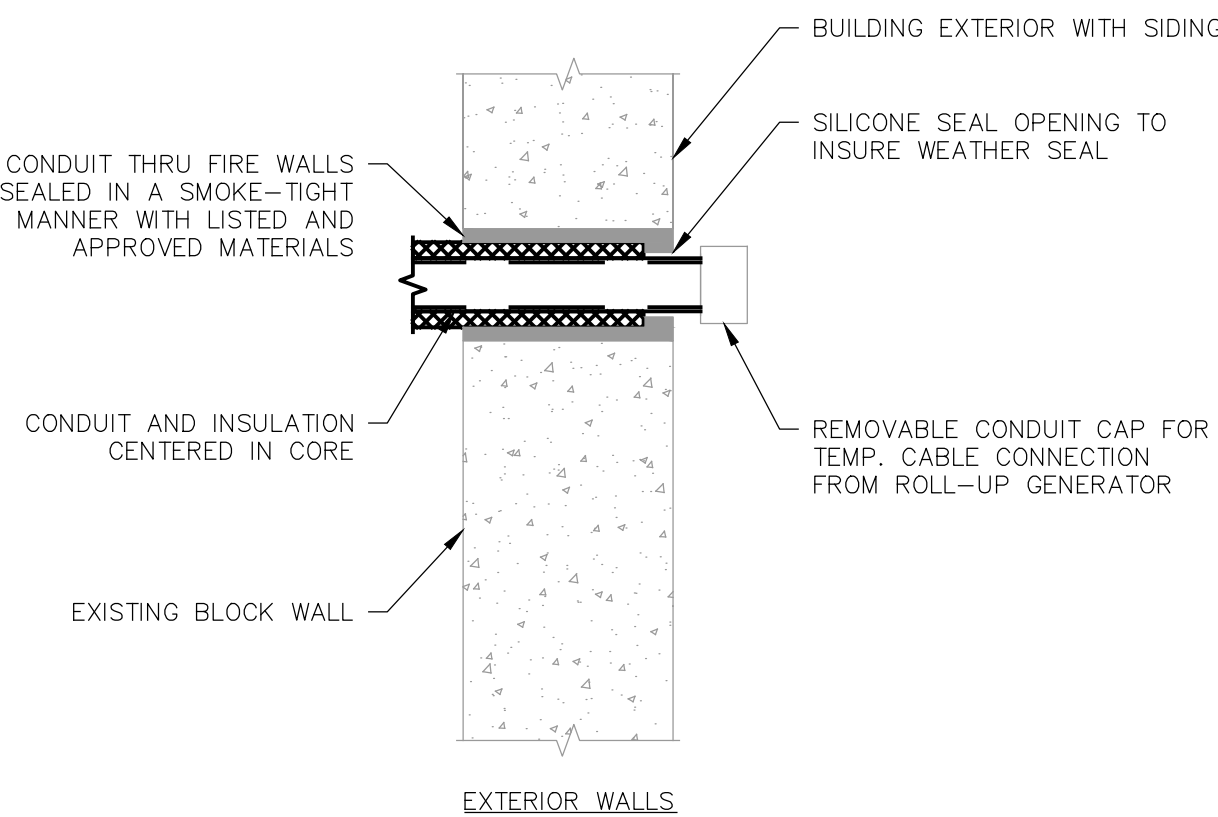
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E-400

TYPICAL WALL PENETRATION DETAIL (INTERIOR)
SCALE: N.T.S.



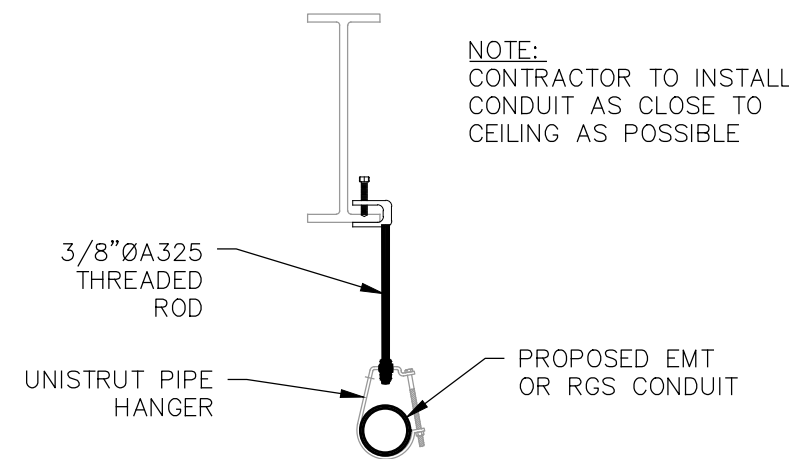
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E-400

TYPICAL WALL PENETRATION DETAIL (EXTERIOR)
SCALE: N.T.S.



6
E-400

TYPICAL CAPPED WALL PENETRATION DETAIL (EXTERIOR)
SCALE: N.T.S.



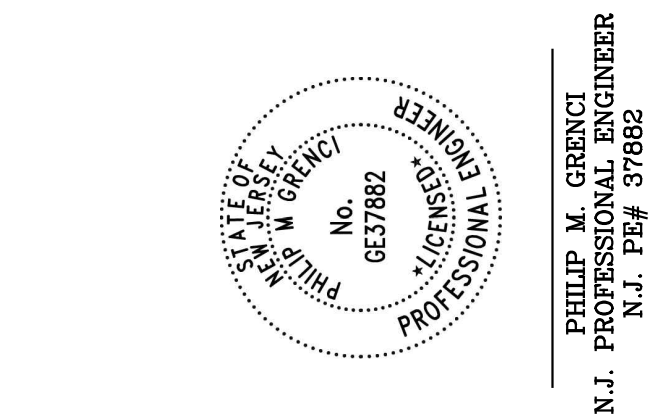
7
E-400

TYPICAL PIPING HANGER DETAIL
SCALE: N.T.S.

NEW											
MAINS: <input type="checkbox"/> LOADCENTER <input checked="" type="checkbox"/> PANELBOARD				PANEL DESIG: P-2				BUSSING: <input checked="" type="checkbox"/> CU <input type="checkbox"/> AL			
<input type="checkbox"/> MLO <input type="checkbox"/> TOP <input checked="" type="checkbox"/> BOTTOM PHASE: 1								<input type="checkbox"/> ISO GROUND <input checked="" type="checkbox"/> SURFACE			
MCB AIC: 10K TRIP: 400A WIRE: 3				LOCATION: MACHINE ROOM				<input checked="" type="checkbox"/> FULL NEUTRAL			
FED FROM: ---				SUPPLY FEEDER: ---				<input checked="" type="checkbox"/> STD. GROUND BUS AMPS: 400			
								VOLTS: 120/240V			
								NEMA TYPE: 3R			
CKT NO.	LOAD DESCRIPTION	FEEDER WIRE	EG	BKR TRIP				BKR TRIP	FEEDER WIRE	LOAD DESCRIPTION	CKT NO.
1	MACHINE ROOM LIGHTS	2-#12	#12	20A				20A	#12 2-#12	MACHINE ROOM HEATERS	2
3	MACHINE ROOM HEATERS	2-#12	#12	20A				20A	#12 2-#12	OUTSIDE LIGHTS/ HIRS GEN ROOM	4
5	MACHINE ROOM RECPT.	2-#12	#12	20A				20A	#12 2-#12	BATT. CHARGER/ RECPT. WATER LEVEL	6
7	GEN ROOM RECPT.	2-#12	#12	20A				20A	#12 2-#12	120V HELIPORT LIGHTS	8
9	LOUVERS GEN #1	2-#12	#12	20A				20A	#12 2-#12	120V HELIPORT LIGHTS	10
11	DAY TANK PUMP #1	2-#12	#12	20A				20A	#12 2-#12	120V HELIPORT LIGHTS	12
13	DAY TANK PUMP #1	2-#12	#12	20A				20A	#12 2-#12	120V SOURCE MASTER CONTROL PNL	14
15	BATT. CHARGER GEN #1	2-#12	#12	20A				20A	#12 2-#12	SPARE	16
17	DAY TANK PUMP #3 (RET.)	2-#12	#12	20A				20A	#12 2-#12	120V RECPT. COFFERDAM	18
19	FIRE DET. SYS.	2-#12	#12	20A				20A	#12 2-#12	OUTSIDE XFRM FANS	20
21	240V RECPT COFFERDAM	2-#12	#12	20A				20A	#12 2-#12	HEAT LAMPS ASCO CONTROLS	22
23	BATT. CHARGER GEN #2	2-#12	#12	20A						LOUVERS MACHINE ROOM	24
NOTES: 1. WIRE SIZE SHALL MATCH C.B. TRIP SIZE . PER N.E.C. UNLESS NOTED 2. CONDUIT SHALL BE EMT UNLESS NOTED AS FOLLOWS. P=PVC, I=IMC, MC=METAL-CLAD CABLE NM=NON-METALLIC SHEATHED CABLE 3. FULLY RATED PANEL								NOTES: * VIA DOCK RACEWAY SYSTEM			

* CIRCUIT TO BE REUSED FOR NEW EQUIPMENT, EXTENDED AS REQUIRED.

1



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Drawing Title:
**ELECTRICAL
DETAILS**
Scale: N.T.S. Issue Date: 4/26/22
Proj. Manager: ANC Proj. Engineer: PMG
AMA Project No.: CEI215080

E-400

ABBREVIATION

AC	AIR CONDITIONING	H	HEIGHT
ACU	AIR CONDITIONING UNIT	HD	HEAD
AD	ACCESS DOOR	HR	HOUR
ADJ	ADJUSTABLE	HZ	FREQUENCY
AFF	ABOVE FINISHED FLOOR	IN	INCH OR INCHES
AP	ACCESS PANEL	KW	KILOWATT
ATC	AUTOMATIC TEMPERATURE CONTROL	L	LENGTH
BHP	BRAKE HORSEPOWER	LAT	LEAVING AIR TEMPERATURE
BTU	BRITISH THERMAL UNIT	LBS	POUNDS
BTUH	BTU PER HOUR	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
COND	CONDENSATE	MBH	THOUSAND BTU PER HOUR
CU FT	CUBIC FEET	MD	MOTORIZED DAMPER
D	DROP	MER	MECHANICAL EQUIPMENT ROOM
DIA	DIAMETER	MHP	MOTOR HORSEPOWER
DWG	DRAWING	MIN	MINIMUM
EA.	EACH	MOT	MOTOR
EA	EXHAUST AIR	N.C.	NORMALLY CLOSED
EAT	ENTERING AIR TEMPERATURE	N.I.C	NOT IN CONTRACT
EF	EXHAUST FAN	N.O.	NORMALLY OPEN
EL	ELEVATION	NO.	NUMBER
ELEEC	ELECTRIC	NPSH	NET POSITIVE SUCTION HEAD
EQ	EQUAL	NTS	NOT TO SCALE
EXH	EXHAUST	OA	OUTSIDE AIR
F	FILTER	OAI	OUTSIDE AIR INTAKE
F	DEGREES FAHRENHEIT	OD	OUTSIDE DIAMETER
FA	FREE AREA (SQ.FT.)	PD	PRESSURE DROP
FC	FLEXIBLE CONNECTION	PSI	POUNDS PER SQUARE INCH
FLA	FULL LOAD AMPERES	R	RISE
FOR	FUEL OIL RETURN	RM	ROOM
FOS	FUEL OIL SUPPLY	RPM	REVOLUTIONS PER MINUTE
FOT	FUEL OIL TANK	SA	SUPPLY AIR
FOV	FUEL OIL VENT	SP	STATIC PRESSURE
FPI	FINS PER INCH	SPEC	SPECIFICATION
FPM	FEET PER MINUTE	SS	STAINLESS STEEL
FT	FEET	TEMP	TEMPERATURE
FV	FACE VELOCITY	TYP	TYPICAL
G	GAUGE	UON	UNLESS OTHERWISE NOTED
GAL	GALLON	V	VOLTS
GC	GENERAL CONTRACTOR	VENT	VENTILATION AIR
GPM	GALLONS PER HOUR	W	WIDTH
GPH	GALLONS PER MINUTE	W/	WITH
		W/O	WITHOUT
		WC	WATER COLUMN
		WG	WATER GAUGE
		WMS	WIRE MESH SCREEN

LINE REPRESENTATION

	NEW PIPING OR EQUIPMENT
	NEW PIPING WITH CONTAINMENT SHELL (DOUBLE WALL)
	EXISTING PIPING
	EXISTING PIPING OR EQUIPMENT TO BE REMOVED
	THERMOSTAT/SENSOR WIRING FROM SENSING DEVICE TO CONTROLLED DEVICE
	NEW EQUIPMENT
	EXISTING EQUIPMENT TO REMAIN
	EXISTING EQUIPMENT TO BE RELOCATED
	RELOCATED POSITION OF EXISTING EQUIPMENT
	EXISTING EQUIPMENT TO BE REMOVED

DRAWING NOTATIONS

	DRAWING NOTE TAG
	SECTION DESIGNATION ON DRAWING WHERE SECTION IS CUT A--SECTION DESIGNATION B--DRAWING NO.
	DETAIL/SECTION NO.
	DETAIL NUMBER SHEET NUMBER
	SECTIONS SYMBOL
	POINT OF NEW CONNECTION TO EXISTING WORK
	REMOVE AND PATCH EXISTING WORK
	SEE NOTE #...
	EXISTING EQUIPMENT & PIPING TO REMAIN
	NEW EQUIPMENT,
	CENTER LINE
	DIAMETER
	SQUARE FEET

CONTROLS SYMBOLS

	THERMOSTAT
	HEAT DETECTOR
	SMOKE DETECTOR
	PRESSURE SENSOR
	DIFFERENTIAL PRESSURE SWITCH
	DIFFERENTIAL PRESSURE VALVE
	PRESSURE CONTROL VALVE

PIPING SYMBOLS

	PIPE DROP
	PIPE RISE
	PITCH UP IN DIRECTION OF FLOW
	PITCH DOWN IN DIRECTION OF FLOW
	UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER -- FLAT BOTTOM
	ECCENTRIC REDUCER -- FLAT TOP
	FLANGED CONNECTION
	FLANGED END
	DEAD END -- SCREWED CAP
	GATE VALVE
	AUTOMATED BALL VALVE
	DRAIN VALVE
	BUTTERFLY VALVE
	ELECTRIC MOTORIZED VALVE OPERATOR
	THERMOMETER WELL
	THERMOMETER AND WELL
	PRESSURE GAUGE
	FUEL PUMP
	FLOW SWITCH
	TEMPERATURE TRANSMITTER
	FUEL OIL RETUR
	FUEL OIL SUPPLY
	FUEL OIL VENT
	SOLENOID VALVE
	"Y" TYPE STRAINER
	CONCENTRIC REDUCER
	FLANGED CONNECTION



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PUMP STATION GENERATOR
INSTALLATION

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Drawing Title:

MECHANICAL
ABBREVIATIONS AND
SYMBOLS

Scale	Issue Date:
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MECHANICAL SPECIFICATIONS CONTINUED

2.07 EQUIPMENT
A. GENERAL:

1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSPORTING EQUIPMENT TO JOB SITE, RIGGING, BREAKDOWN AND SET-UP OF EQUIPMENT AS REQUIRED FOR LOCATION OF EQUIPMENT, INSTALLATION AND ALL GUARANTEES AND WARRANTIES OF EQUIPMENT AND WORKMANSHIP. DELIVERY OF EQUIPMENT SHOULD BE COORDINATED WITH OWNER, MANUFACTURER AND SITE MANAGEMENT.
2. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS INDICATED ON THE DRAWINGS.
3. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, MANUFACTURER'S INSTRUCTIONS AND REGULATIONS WHICH APPLY.
4. ALL EQUIPMENT POWER SUPPLY SHALL BE WIRED BY ELECTRICAL TRADE, IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND REGULATIONS WHICH APPLY.
5. PROVIDE AND INSTALL ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL MOTOR STARTERS AS REQUIRED, MOTOR STARTERS WILL BE INSTALLED BY THIS CONTRACTOR AND WIRED BY ELECTRICAL TRADE.
6. MECHANICAL CONTRACTOR INSTALLING EQUIPMENT IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED CLEARANCES FOR SERVICING AND MAINTENANCE. COORDINATE REQUIREMENTS WITH ALL TRADES.

B. RECTANGULAR SIMPLEX STS DOUBLE WALL FUEL STORAGE TANK (DAY TANK SUPPLIED WITH GENERATOR).

1. PROVIDE AND INSTALL A SIMPLEX DAY TANK, MODEL STS, THERMALLY INSULATED, RECTANGULAR DOUBLE-WALL STEEL CONSTRUCTION.
2. THE TANK SHALL BE DESIGNED FOR OPEN SPACE STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS AT ATMOSPHERIC PRESSURE. TANK SHALL INCLUDE INTEGRAL STEEL SECONDARY CONTAINMENT AND THERMAL INSULATION THAT PROVIDES A MINIMUM TWO-HOUR FIRE RATING.
3. THE TANK SHALL BE DELIVERED AS A COMPLETE UL-LISTED ASSEMBLY WITH TWO FACTORY SUPPLIED, WELDED-ON SADDLES. SIZE AND LOCATION OF SADDLES SHALL BE AS REQUIRED BY EQUIPMENT MANUFACTURER. SADDLES TO BE SET LEVEL ON A SOLID FOUNDATION.
4. TANK SHALL BE DESIGNED FOR POSSIBLE RELOCATION AT A FUTURE DATE.

C. STS DAY TANK OPTIONS

1. DAY TANK SHALL BE CONSTRUCTED IN COMPLIANCE WITH UL142, SECONDARY CONTAINMENT TANK (DOUBLE WALL CONSTRUCTION) OF REQUIRED CAPACITY, WITH FACTORY STANDARD PIPE FITTINGS.
2. THE TANK SHALL BE FACTORY EQUIPPED WITH THE FOLLOWING:
 - TANK LEAK SENSOR
 - UL508A LEVEL CONTROLLER WITH POINT SENSING FLOAT SWITCH ARRAY
 - DUPLEX FILL PUMP, 2 GPM, 120VAC, SINGLE PHASE, 60 HERTZ
 - SIMPLEX RETURN PUMP, 7 GPM, 120VAC, SINGLE PHASE, 60 HERTZ
 - FILL CHECK VALVE
 - PACKAGED FOR INDOOR INSTALLATION
3. TANK FINISH: COATED SIMPLEX CAROLINA VERMILION
4. CONTROLLER FINISH: COATED SIMPLEX COASTAL HAZE

D. STS DAY TANK FUEL LEVEL CONTROLLER (INDOOR)

1. THE CONTROLLER SHALL BE PACKAGED IN TYPE 1 ENCLOSURE WITH HINGE-OPEN AND LOCKABLE FRONT DOOR CONSTRUCTION IN COMPLIANCE WITH UL508A
2. THE CONTROLLER SHALL BE EQUIPPED WITH THE FOLLOWING FUNCTIONS:
 - AUTO-OFF-MANUAL CONTROL SWITCH
 - PRESS-TO-TEST PUSHBUTTON
 - TANK FILL AUTOMATIC DIFFERENTIAL LEVEL
 - OVERFILL CONTROL BACKUP
 - LEAK DETECTION
3. STS CONTROLLER INDICATION FUNCTIONS (LED) SHALL INCLUDE:
 - FUEL LEVEL
 - POWER AVAILABLE
 - NOT IN AUTO (FLASHING)
 - TANK FILLING
 - LOW LEVEL ALARM
 - HIGH LEVEL ALARM
 - TANK LEAK
4. STS CONTROLLER OUTPUT FUNCTIONS SHALL INCLUDE:
 - FILL START-STOP
 - LOW LEVEL ALARM
 - HIGH LEVEL ALARM
 - TANK LEAK
 - NOT IN AUTO
5. TANK CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION NFPA 30 FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE. THE TANK'S SECONDARY CONTAINMENT MUST BE TESTED FOR TIGHTNESS IN THE FACTORY AND IN THE FIELD BEFORE COMMISSIONING. TANK SHALL BE SUPPLIED WITH EMERGENCY VENTS FOR THE PRIMARY AND THE SECONDARY CONTAINMENT TANKS. EMERGENCY VENTING BY "FORM OF CONSTRUCTION" IS NOT EQUAL AND WILL NOT BE PERMITTED.
6. INNER AND OUTER TANK SHALL BE MANUFACTURED IN ACCORDANCE WITH UL-142 STANDARD FOR STEEL ABOVEGROUND TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS. ENTIRE TANK SHALL BE LABELED FOR UNDERWRITERS LABORATORIES UL 2085 STANDARD FOR INSULATED SECONDARY CONTAINMENT ABOVEGROUND TANK FOR FLAMMABLE LIQUIDS. THE TANK SHALL BE TESTED FOR BALLISTICS, IMPACT, HOSE STREAM, AND POOL FIRE. UL-2085 PERFORMANCE STANDARDS.
7. TANK SHALL BE MANUFACTURED AND LABELED IN STRICT ACCORDANCE WITH STEEL TANK INSTITUTE (STI) THERMALLY INSULATED, DOUBLE WALL STEEL ABOVEGROUND STORAGE TANK STANDARDS AS APPLIED BY A LICENSEE OF THE STI. TANK SHALL BE SUBJECT TO THE STI'S QUALITY ASSURANCE PROGRAM AND SHALL BE BACKED BY THE STI 30 YEAR LIMITED WARRANTY.

E. FUEL DAY TANK CONSTRUCTION

1. TANK SHALL BE FABRICATED PER UL-142 OF MILD CARBON STEEL, WITH SHELL SEAMS OF CONTINUOUS LAP WELD CONSTRUCTION.
2. TANK SHALL BE OF DOUBLE WALL CONSTRUCTION AND PROVIDE COMPLETE SECONDARY CONTAINMENT OF THE PRIMARY STORAGE TANK'S CONTENTS BY AN IMPERVIOUS STEEL OUTER WALL.

F. DIESEL ENGINE EXHAUST SYSTEM

1. THE EXHAUST SYSTEM SHALL BE CONSTRUCTED AND INSTALLED IN FIELD BY THE CONTRACTOR. PIPE ASSEMBLY & COMPONENTS SHALL BE LISTED BY THE UNDERWRITERS' LABORATORIES, INC. FOR USE WITH STATIONARY ENGINES BURNING GAS OR LIQUID FUELS, AS DESCRIBED IN NFPA 37 CHAPTER 8.1, WHICH PRODUCE EXHAUSTED FLUE GASES AT A TEMPERATURE NOT EXCEEDING 1000° UNDER CONTINUOUS OPERATING CONDITIONS.
2. THE EXHAUST PIPING ROUTE BETWEEN THE SILENCER AND THE OUTDOORS SHALL BE AS SHORT AND AS STRAIGHT AS POSSIBLE. THE EXHAUST DISCHARGE SHALL BE LOCATED MIN. 36" FROM THE WALL, ANY TURNS AND OFFSETS SHALL BE CONSTRUCTED WITH LONG RADIUS ELBS. UNDER NO CIRCUMSTANCES THE EXHAUST GAS STATIC PRESSURE INSIDE THE EXHAUST PIPE SHALL EXCEED THE ENGINE BACK-PRESSURE.
3. THE DOUBLE WALL (INSULATED) EXHAUST PIPING SHALL BE INSTALLED INSIDE THE GENERATOR ROOM AND SHALL HAVE AN OUTER JACKET OF ALUMINUM COATED STEEL .025" THICK IN 6" THROUGH 24" DIAMETERS AND .034" THICK FOR LARGER DIAMETERS. THERE SHALL BE MINIMUM 2-1/2" INSULATION BETWEEN THE WALLS. THE INNER GAS CARRYING PIPE SHALL BE SCHEDULE 40 BLACK STEEL.
4. ALL FITTINGS AND APPURTENANCES OUTSIDE THE GENERATOR'S ENCLOSURE SHALL BE CONSTRUCTED WITH SCHEDULE 40 BLACK STEEL. THE OUTDOOR SECTIONS SHALL BE OF SINGLE WALL CONSTRUCTION.
5. CONNECTIONS TO SILENCERS AND EXPANSION JOINTS SHALL BE MADE WITH MATCHING FLANGES. MATCHING FLANGES SHALL BE OF THE SAME SIZE, THICKNESS, BOLT HOLE SPACING AND PRESSURE RATING AS THE FLANGES TO WHICH THE CONNECTIONS ARE MADE.
6. ALL FLANGED CONNECTIONS SHALL BE GASKETED. GASKETS SHALL BE SUITABLE FOR TEMPERATURES UP TO 1200°F, MINIMUM 1/16" THICK.
7. EACH EXPANSION JOINT SHALL BE WRAPPED WITH AN INSULATION BLANKET SIMILAR TO BLANKETS MANUFACTURED BY MIRATECH CORP (TULSA, OK), OR EQUAL. THE OUTER JACKET SHALL BE WOVEN FIBER GLASS WITH SILICONE RUBBER IMPREGNATION. THE INSULATION SHALL BE SIMILAR TO MIRATECH CORP (TULSA, OK) TYPE-2 FIBERGLASS INSULATION BLANKET ENCAPSULATED IN 30# SS MESH. SUITABLE FOR TEMPERATURES OF UP TO 1200°F, OR EQUAL.
6. INSTALLATION
 1. THE STACK SYSTEM SHALL BE INSTALLED ACCORDING TO AND SHALL COMPLY WITH THE FOLLOWING ADDITIONAL CODES OR STANDARDS:
 - NFPA-37 - CHAPTERS 8.2 AND 8.3
 2. INNER PIPE JOINTS SHALL BE WELDED ACCORDING TO ASME B31 CODE (HIGH TEMPERATURE GAS APPLICATION).
 3. THE PIPING AND ITS SUPPORTING SYSTEM SHALL RESIST SIDE LOADS (WHETHER SYSTEM IS HORIZONTAL OR VERTICAL) AT LEAST 1.5 TIMES THE WEIGHT PER FOOT OF THE PIPING. THE PIPING SHALL BE REINFORCED AND INSTALLED TO WITHSTAND THE SEISMIC AND WIND FORCES, AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
 4. PROVIDE ALL HANGERS, SUPPORTS, EXPANSION JOINTS, ANCHORS, ETC. AND APPURTENANCES THERETO FOR A COMPLETE SYSTEM.

PART 3- EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITIES

- A. PROVIDE AND INSTALL ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND MANUFACTURERS RECOMMENDATIONS. PROVIDE ALL MOTOR STARTERS AS REQUIRED; MOTOR STARTERS WILL BE INSTALLED BY THIS CONTRACTOR AND WIRED BY ELECTRICAL TRADE.
- B. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED CLEARANCES FOR SERVICING AND MAINTENANCE. COORDINATE REQUIREMENTS WITH ALL TRADES.
- C. IDENTIFICATION OF EQUIPMENT AND CONTROLS:
 1. ALL EQUIPMENT SHALL BE STENCILED OR LABELED WITH LAMACOID PLATES SCREWED THEREON WHICH SHALL INDICATE SYSTEMS SERVICE.
 2. MOTOR STARTERS SHALL BE PROVIDED WITH LAMACOID PLATES WHICH INDICATE SYSTEM SERVED.
 3. CONTRACTOR TO SUBMIT LIST OF EQUIPMENT TO RECEIVE LABELS AND THE COORDINATED DESIGNATIONS, SIZE OF LABEL LETTERING, PLATE SIZE AND COLOR FOR REVIEW PRIOR TO INSTALLATION.
 4. FOR ALL FLOOR MOUNTED EQUIPMENT PROVIDE A 4" HIGH CONCRETE HOUSE-KEEPING PAD; WHERE FLOOR STANDS ARE INDICATED PROVIDE FLOOR STAND OF STRUCTURAL STEEL OR STEEL PIPES AND FITTINGS AND BOLT TO PAD; FOR ROOF MOUNTED, OR SURFACE MOUNTED EQUIPMENT PROVIDE SUPPORTS WITH APPROVED ANCHORS DIRECTLY FROM BUILDING STEEL STRUCTURE. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.

3.02 FUEL DAY TANK INSTALLATION

- A. TANK SHALL BE INSTALLED ON A REINFORCED CONCRETE BASE CONSTRUCTED BY G.C. INSTALLATION AND TESTING SHALL BE IN STRICT ACCORDANCE WITH STEEL TANK INSTITUTE (STI) INSTALLATION AND TESTING INSTRUCTIONS FOR THERMALLY INSULATED, LIGHTWEIGHT, DOUBLE WALL ABOVEGROUND STORAGE TANKS.
- B. APPROVED MANUFACTURER: TANK SHALL BE MANUFACTURED BY SIMPLEX, INC., OR EQUAL.
- C. THE DAY TANK SHALL BE POSITIONED AND INSTALLED ACCORDING TO THE MAIN FUEL STORAGE TANK AND ENGINE LOCATION. IN GENERAL, LOCATE THE DAY TANK AS CLOSE TO THE ENGINE AS POSSIBLE CONSISTENT WITH APPLICABLE LOCAL AND NATIONAL PLUMBING AND ELECTRICAL CODES. POSITION THE DAY TANK SO THAT THE HIGHEST FUEL LEVEL IN THE TANK IS LOWER THAN THE ENGINE INJECTORS. THE DAY TANK SHALL BE LOCATED NOT FARTHER THAN 200' FROM THE MAIN FUEL TANK. THE DAY TANK SHALL NOT BE MORE THAN 18 FEET HIGHER THAN THE LOWEST FUEL LEVEL IN THE MAIN FUEL TANK. DAY TANK LOCATION IN A CONFINED SPACE SHALL CONSIDER ACCIDENTAL FUEL SPILLAGE AND USE A RUPTURE BASIN WHEN NECESSARY. DO NOT LOCATE THE DAY TANK NEAR A SURFACE OR OBJECT WHICH MAY BE ADVERSELY AFFECTED BY FUEL OIL.
- D. CLEAN AND FLUSH DAY TANKS PRIOR TO DELIVERY TO THE PROJECT SITE. SEAL UNTIL PIPE CONNECTIONS ARE MADE.
- E. PROVIDE PIPING CONNECTIONS TO TANKS WITH UNIONS AND

SWING JOINTS. PROVIDE VENTING AS PER CODE.

3.03 FUEL PIPING INSTALLATION

- A. INSTALLATION SHALL MEET OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS, REFERENCED STANDARDS AND CONFORM TO CODES AND ORDINANCES OF AUTHORITIES HAVING JURISDICTION.
- B. ALL INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
- C. PIPING CONNECTIONS: USE COMPATIBLE SEALANT WHEN ASSEMBLING ALL THREADED JOINTS AND FITTINGS.
- D. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT.
- E. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE.
- F. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
- G. PROVIDE CLEARANCE FOR ACCESS TO VALVES AND FITTINGS.
- H. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED.
- I. IDENTIFY PIPING SYSTEMS W/ METAL TAGS OR APPROVED EQUAL.
- J. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
- K. PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS DURING CONSTRUCTION BY INSTALLING TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK THAT CAN BE ISOLATED AND ISOLATING PARTS OF COMPLETED SYSTEM.
- L. INSTALLATION OF PIPING SHALL CONFORM TO NFPA 31 OR NFPA 37, AS APPLICABLE, AND THE FOLLOWING:
 1. INSTALL PIPING IN AS SHORT AND DIRECT ARRANGEMENT AS POSSIBLE TO MINIMIZE PRESSURE DROP.
 2. INSTALL PIPING FOR MINIMUM NUMBER OF JOINTS USING AS FEW ELBOWS AND OTHER FITTINGS AS POSSIBLE TO MINIMIZE PRESSURE DROP.
 3. USE FITTINGS FOR ALL CHANGES IN DIRECTION AND ALL BRANCH CONNECTIONS.
 4. INSTALL DIELECTRIC UNIONS TO JOIN DISSIMILAR METALS.
 5. INSTALL EXPOSED PIPING AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE NOT PERMITTED, UNLESS EXPRESSLY INDICATED.
 6. INSTALL PIPING FREE OF SAGS OR BENDS AND WITH ALL AMPLE SPACE TO ALLOW TIME FOR PERMIT PROPER INSULATION APPLICATIONS.
 7. LOCATE GROUPS OF PIPE PARALLEL, TO EACH OTHER, SPACED TO PERMIT APPLYING INSULATION AND SERVICING OF VALVES.
 8. INSTALL FUEL PIPING WITH ADEQUATE SLOPING TO ALLOW GRAVITY FUEL DRAINING TOWARDS THE NEAREST FUEL TANK.
 9. SECONDARY PIPING (DOUBLE WALL PIPING INSTALLATIONS) SECONDARY CONTAINMENT PIPE SHALL BE POSITIONED OVER PRIMARY PIPE PRIOR TO BONDING. THE SECONDARY PIPING SHALL BE ASSEMBLED FROM COMPONENTS THAT CAN BE DIS-ASSEMBLED AND RE-ASSEMBLED FOR SERVICING OF THE PRIMARY PIPE. THE SECONDARY PIPE DIAMETER SHALL ALLOW FOR INSTALLATION OF THE REQUIRED SPACERS (IN PLACE OF THE PRIMARY PIPING INSULATION). AFTER TESTING THE PRIMARY PIPE THE CONTAINMENT FITTINGS SHALL BE ASSEMBLED. THE CONTAINMENT SYSTEM SHALL THEN BE TESTED FOR LEAKS.

3.04 CLEANING AND PRETREATMENT

- M. CLEANING OF PIPING SHALL BE PERFORMED IN THE PRESENCE OF A BUILDING REPRESENTATIVE.
- N. CHECK EACH SYSTEM FOLLOWING FLUSHING TO ENSURE CLEANING MEDIUM HAS BEEN REMOVED FROM EACH SYSTEM AND TEST TO ENSURE THAT THERE ARE NO CONTAMINANTS REMAINING.

3.05 EQUIPMENT START-UP AND TESTING

- A. UPON COMPLETION OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT AND SYSTEMS ARE TESTED AND ADJUSTED UNDER FIELD OPERATING CONDITIONS TO DEMONSTRATE ITS COMPLIANCE WITH SPECIFICATION REQUIREMENTS.
- B. SHOULD ANY PART OF THE EQUIPMENT OR SYSTEM FAIL TO MEET THE CONTRACT REQUIREMENTS, THIS CONTRACTOR SHALL ADJUST, REPAIR OR REPLACE ALL DEFECTIVE OR INOPERATIVE PARTS AND AGAIN CONDUCT THE COMPLETE START-UP TEST.
- C. SUBMIT SYSTEM START UP SHEETS AND TEST RESULTS TO THE OWNER AND ENGINEER.

3.06 PERFORMANCE TESTS AND COMMISSIONING

- A. COMMISSIONING IS MORE DETAILED THAN EQUIPMENT START-UP TESTING AND SHALL BE PERFORMED ON THIS PROJECT TO DEMONSTRATE TO THE COMMISSIONING AUTHORITY (CXA) A COMPLETE AND SUCCESSFUL WORKING INSTALLATION IN ALL OPERATIONAL MODES AS OUTLINED IN THE SEQUENCE OF OPERATIONS. THIS CONTRACTOR SHALL:
 1. ATTEND ALL PRE-COMMISSIONING AND ANY SUBSEQUENT COMMISSIONING MEETINGS WITH ASSOCIATED SUB-COMMITTEES AND MANUFACTURERS REPRESENTATIVES THAT ARE REQUIRED TO COMPLETE THE COMMISSIONING OF THE EQUIPMENT AND SYSTEMS PROVIDED.
 2. REVIEW THE COMMISSIONING PLAN TYPICALLY PREPARED AND ISSUED BY THE CXA.
 3. COMPLETE PRE-STARTUP AND STARTUP ON ALL INSTALLED EQUIPMENT PRIOR TO ALL COMMISSIONING ACTIVITIES.
 4. COMPLETE AND SUBMIT A PRE-FUNCTIONAL CHECKLIST DISTRIBUTED BY THE CXA FOR EACH PIECE OF EQUIPMENT AND SYSTEM TO BE COMMISSIONED. ANY ISSUES ENCOUNTERED DURING START-UP SHOULD BE LISTED IN THE COMMENT SECTION.
 5. PERFORM FUNCTIONAL PERFORMANCE TESTING OUTLINED IN THE COMMISSIONING PLAN.
 6. WORK CLOSELY WITH THE CXA IN IDENTIFYING ALL OPERATING, MAINTENANCE, FAILURE MODES THAT MUST BE DEMONSTRATED AS PART OF THE COMMISSIONING PROCESS.
 7. COORDINATE, SCHEDULE, AND COMPLETE COMMISSIONING TASKS WITH THE CXA.
 8. BE RESPONSIBLE FOR ALL COSTS FOR TESTING, INCLUDING RE-TESTING DUE TO DEFICIENCIES/NON-COMPLIANCE WITH THE SPECIFICATIONS. RE-TESTING COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL NOT CONSTITUTE JUSTIFICATION FOR ADDITIONAL COSTS TO THE OWNER.
 9. INCLUDE OVERTIME LABOR AS NEEDED FOR TESTING.

10. RESPONSIBLE TO SUPPLY AND CONNECT ALL TESTING EQUIPMENT REQUIRED FOR ANY PART OF THE COMMISSIONING PROCESS (I.E. LOAD BANKS, CABLES, INFRARED SCANNING, TEMPORARY COOLING MEANS, TESTING MATERIALS AND CHEMICALS, ETC.)
11. SUBMIT MANUFACTURER ACCEPTANCE TESTING DOCUMENTATION (STARTUP AND MANUAL DOCUMENTS) TO THE COMMISSIONING AUTHORITY.
- B. FUNCTIONAL PERFORMANCE TESTING:
 1. START UP OF SYSTEMS AND COMPONENTS SHALL BE PERFORMED BY CONTRACTORS AND MANUFACTURER TECHNICIANS AS APPLICABLE PRIOR TO FUNCTIONAL PERFORMANCE TESTING (FPT) IN THE PRESENCE OF THE CXA. ALL POWER, SAFETIES AND CONTROL INTERLOCKS SHALL BE MADE OPERATIONAL. PRE-TEST VERIFICATION BY THE CONTRACTOR OF COMPONENTS AND SYSTEMS IS MANDATORY TO VERIFY OPERATION BEFOREHAND AND AVOID LAST MINUTE CORRECTIVE WORK OR REPEAT TESTING. SUBMISSION OF PRE-FUNCTION CHECKLISTS SHALL COMMUNICATE THAT SUCH PROCESS HAS OCCURRED.
 2. ONCE PRE-FUNCTION CHECKLISTS HAVE BEEN SUBMITTED TO AND REVIEWED BY THE CXA, FUNCTIONAL TESTING CAN BE SCHEDULED BY THE CXA.
 3. THE CXA MUST BE KEPT INFORMED OF THE CONSTRUCTION SCHEDULE AND GIVEN TWO (2) WEEKS NOTICE OF THE ANTICIPATED FUNCTIONAL TESTING TIMEFRAME WINDOW.
 4. FUNCTIONAL TESTING SHOULD FOLLOW THE SYSTEMS TESTING AND BALANCING PROCESS.
 5. PERFORMANCE TEST PROCEDURES ARE INTENDED TO DEMONSTRATE AND RECORD THE PERFORMANCE OF EQUIPMENT AND SYSTEMS UNDER SAFETY AND OPERATIONAL SCENARIOS AS APPLICABLE INCLUDING:
 - E) RESPONSE TO SAFETIES IN MANUAL AND AUTOMATIC MODE
 - F) SIGNALS TO FIRE ALARM, SECURITY AND USER ALARM PANELS
 - G) SEQUENCE OF OPERATION, STEP BY STEP
 - H) INTERLOCK WITH OTHER PIECES OF EQUIPMENT (E.G., VALVES, FUEL LEAK DETECTORS, ETC.)
 - I) CONTROL SYSTEM RESPONSE AND ANNUNCIATION OF SENSOR/MONITOR POINTS
 6. THE FUNCTIONAL TESTING PROCEDURES ARE EXECUTED BY THE CONTRACTORS, UNDER THE DIRECTION OF, AND RECORDED BY THE CXA. THE CONTRACTOR SHALL PROVIDE A FIELD TECHNICIAN AND A REPRESENTATIVE FROM THE AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR TO OPERATE EQUIPMENT AND CONFIRM RESPONSES IN THE PRESENCE OF THE CXA AND OWNER'S APPOINTED REPRESENTATIVE.
 7. ANY NON-COMPLIANCE ITEMS FOUND SHALL BE LISTED IN A COMMISSIONING ISSUES LOG PREPARED BY THE CXA. CONTRACTORS SHALL ENSURE THAT CORRECTIVE ACTION OF LISTED DEFICIENCIES IS IMPLEMENTED AND SHALL RESPOND UPON COMPLETION OF SUCH TO THE CXA VIA THE PROVIDED AREAS IN THE COMMISSIONING ISSUES LOG.
 8. ITEMS OF NON-COMPLIANCE IN MATERIAL, INSTALLATION OR SETUP ARE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 9. ONCE THE CONTRACTOR INDICATES THAT ALL DEFICIENCIES HAVE BEEN ADDRESSED, THE SYSTEMS SHALL BE RE-TESTED.
- C. SYSTEMS TO BE COMMISSIONED:
 1. FUEL DAY TANK (DT-1) WITH FUEL TRANSFER PUMP MODULE
 2. EXHAUST FAN (EF-1) WITH ASSOCIATED OA INTAKE DAMPERS (D-1 FOR SAL-1, SAL-2)
 3. GENERATOR

3.07 ELECTRICAL WORK

- A. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR POWER WIRING UNDER A SEPARATE DIVISION OF CONTRACT WORK. AUTOMATIC TEMPERATURE, SAFETY AND INTERLOCKING CONTROLS FOR MOTORS, MOTOR STARTERS AND OTHER ELECTRICAL APPARATUS AND DEVICES SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CONTROL WIRING SHALL INCLUDE BUT NOT LIMITED TO ALL 12-, 24-, and 120-VOLT WIRING.
- 3.08 CONTROLS WIRING
 - A. MECHANICAL CONTRACTOR SHALL COORDINATE ALL CONTROL AND INTERLOCK WIRING INCLUDING CONDUITS, WITH THE ELECTRICAL CONTRACTOR'S INSTALLATION. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES. SUBMIT POINT TO POINT WIRING DIAGRAM, AND ALL CONTROLS COMPONENTS FOR REVIEW AND APPROVAL. INCLUDING ALL SWITCHES, RELAYS, THERMOSTATS CONTROL PANELS, SAFETIES, TRANSFORMERS, CONTROLLERS INSTRUMENTATION AND PROGRAMMING AND ALL DEVICES FOR A FULL OPERATIONAL SYSTEM. THIS CONTRACTOR SHALL VERIFY PROPER SYSTEM OPERATION.
 - B. PROVIDE ALL CONTROL, POWER, AND INTERLOCK WIRING INCLUDING CONDUITS AND INSTALL PER NATIONAL ELECTRIC CODE. SUBMIT TERMINAL TO TERMINAL WIRING DIAGRAM, SEQUENCE OF OPERATION AND CUTS OF ALL COMPONENTS FOR APPROVAL. PROVIDE ALL RELAYS, SWITCHES, DAMPERS AND ACTUATORS, PILOT POSITIONERS, THERMOSTATS, PANELS, LIMIT SAFETIES, TRANSFORMERS, TIME CLOCKS, CONTROL VALVES AND OTHER DEVICES TO ACCOMPLISH THE DESIRED SEQUENCE OF OPERATION.
 - C. ALL TEMPERATURE CONTROL SYSTEMS AND COMPONENTS ARE TO BE FULLY MODULATING TYPE, EXCEPT WHERE NOTED OTHERWISE.
 - D. ALL CONTROLS SHALL BE THE PRODUCT OF ONE MANUFACTURER. ALL AUTOMATIC CONTROL VALVES AND DAMPER OPERATORS SHALL BE MANUFACTURED BY THE TEMPERATURE CONTROL MANUFACTURER.
 - E. THE MANUFACTURER OF THE AUTOMATIC CONTROL EQUIPMENT SHALL SUBMIT THE FOLLOWING FOR APPROVAL: A SCHEMATIC DIAGRAM OF OPERATION AND RANGE OF THE CONTROLS FOR ALL CYCLES, PROVIDE TERMINAL POINT TO TERMINAL POINT ELECTRICAL WIRING DIAGRAMS FOR APPROVAL, A COMPLETE DESCRIPTION OF THE AUTOMATIC OPERATION OF EACH SYSTEM WHERE THE DESCRIPTION INCLUDES THE DUTY OF EACH THERMOSTAT, VALVE, SWITCH, ETC., INCORPORATED IN THE CONTROL SYSTEM WITH A SCHEDULE AND ILLUSTRATION OF ALL CONTROL INSTRUMENTS AND EQUIPMENT INCLUDING CONTROL PANELS AND DEVICES FOR EACH SYSTEM.
 - F. SPECIFIC WIRING DIAGRAMS OF FACTORY INSTALLED EQUIPMENT WIRING SHALL ALSO BE SUBMITTED FOR APPROVAL AND FURNISHED TO THE ELECTRICAL CONTRACTOR FOR HIS INSTALLATION REQUIREMENTS AND OTHER USES.
 - G. MECHANICAL CONTRACTOR SHALL MAINTAIN ALL EXISTING CONTROL CONNECTIONS FOR STARTERS TO BE REUSED. CONTRACTOR SHALL COORDINATE EXISTING CONDITIONS AND PROVIDE ALL CONTACTS AND RELAYS REQUIRED FOR EXISTING STARTERS TO BE REPLACED WITH NEW.

PART 4 - SEQUENCE OF OPERATIONS

4.01 SEQUENCE OF OPERATIONS

THE INTENT IS TO CREATE AN AUTONOMOUS FUEL SUPPLY SYSTEM TO THE NEW BATTERY-UP POLY-TGENERATOR WHICH CAN OPERATE WITHOUT DIRECT HUMAN INVOLVEMENT. THE HUMAN OPERATORS SHALL HAVE CAPABILITY TO MONITOR SYSTEM'S OPERATION FROM A REMOTE LOCATION. SEQUENCE OF OPERATION SHALL BE IN ACCORDANCE WITH BUT NOT LIMITED TO THE FOLLOWING:

A. DAY TANK (DT-1)

1. THE DAY TANK FUEL LEVEL CONTROLS SHALL BE ENERGIZED AND MAINTAIN MINIMUM 50% (ADJ.) FUEL LEVEL AT ALL TIMES.
2. THE DAY TANK FUEL PUMPS SHALL BE ENERGIZED AND READY TO RUN AT ALL TIMES. THE POWER SUPPLY SYSTEM POWERING THE DAY TANK CONTROLS AND PUMPS SHALL AUTOMATICALLY TRANSFER TO THE GENERATOR POWER UPON GENERATOR'S START. THE PUMPS' POWER SHALL AUTOMATICALLY TRANSFER BACK TO THE NETWORK POWER WHEN GENERATOR STOP.
3. UPON DEPLETING FUEL LEVEL TO 50% (ADJ.) OF TANK CAPACITY, THE DAY-TANK CONTROLS, BASED ON LOW LEVEL FLOAT SWITCH SIGNAL, SHALL ACTIVATE ONE (1) SUPPLY FUEL OIL PUMP TO TRANSFER ADDITIONAL FUEL FROM THE MAIN FUEL STORAGE TANK (ST-1).
4. UPON RISING FUEL LEVEL OF 90% (ADJ.) OF TANK CAPACITY, THE DAY-TANK CONTROLS, BASED ON HIGH LEVEL FLOAT SWITCH SIGNAL, SHALL STOP THE FUEL OIL SUPPLY PUMP OPERATION.
5. THE TWO (2) FUEL SUPPLY PUMPS SHALL OPERATE IN LEAD-LAG SETTING. UPON SENSING FALL OF DAY TANK FUEL LEVEL BELOW 50% (ADJ.), THE DAY TANK CONTROLS SHALL DISPLAY A "LEAD PUMP FAILURE" ALARM AND THE "LAG" SUPPLY PUMP SHALL ACTIVATE AND MAINTAIN OPERATION UNTIL THE FUEL LEVEL RISE TO 70% (ADJ.) OF DAY TANK CAPACITY. THE CONTROLS SHALL RUN IN "PUMPS' LEAD-LAG FUNCTION PERIODICALLY TO ENSURE UNIFORM PUMPS USAGE.
6. UPON ACTIVATION OF "OVERFLOW" ALARM, THE FUEL RETURN PUMP SHALL ACTIVATE AND TRANSFER FUEL OUT OF THE DAY TANK TO MAIN STORAGE TANK UNTIL THE DAY TANK FUEL LEVEL FALLS TO 50% (ADJ.) LEVEL. UPON RE-STATE PUMP'S FUEL LEVEL SETPOINT, THE FUEL RETURN PUMP SHALL STOP.
7. WHEN FUEL TEMPERATURE INSIDE TANK REACHES 140°F (ADJ.), THE DAY TANK CONTROLS SHALL ACTIVATE ONE (1) SUPPLY AND ONE (1) RETURN FUEL PUMP TO CYCLE FUEL BETWEEN DAY TANK AND THE STORAGE TANK (ST-1) UNTIL THE FUEL TEMPERATURE FALLS TO ACCEPTABLE LEVEL (120°F, ADJ.). UPON FURTHER TEMPERATURE RISE TO 145°F (ADJ.), DESPITE FUEL CYCLING, THE FUEL COOLER FAN SHALL ACTIVATE. BOTH PUMPS AND THE FUEL COOLER FAN SHALL STOP UPON REACHING THE DESIRED FUEL TEMPERATURE SETPOINT.

B. GENERATOR OUTDOOR AIR INTAKE DAMPERS (D-1)

1. THE OA INTAKE DAMPERS (D-1, ASSOCIATED WITH SAL-1) SHALL ENERGIZE AND OPEN UPON GENERATOR(S) ACTIVATION. THE OA INTAKE DAMPERS SHALL CLOSE WHEN GENERATOR IS POWERED DOWN. EACH DAMPER ACTUATOR SHALL BE NORMALLY OPEN (N.O.) TYPE, HELD CLOSED WHEN GENERATOR IS IN AUTO. WHEN THE DAMPER IS FIRST APPLIED, THE DAMPER ACTUATORS SHALL CLOSE AND REMAIN IN CLOSED POSITION. WHENEVER POWER IS REMOVED, THE ACTUATORS SHALL OPEN UNDER RETURN SPRING POWER AND REMAIN IN OPEN POSITION UNTIL POWER SUPPLY IS RESTORED.

C. COOLING EXHAUST FAN (EF-1)

1. THE EXHAUST FAN EF-1 SHALL BE ENGAGED AND READY TO RUN AT ALL TIMES WHEN THE SPACE TEMPERATURE EXCEEDS THE SETPOINT OF 85°F (ADJ.) BASED ON SPACE THERMOSTAT READINGS, ONE OF THE OUTDOOR AIR DAMPERS (D-1), LOCATED FURTHEST AWAY FROM THE EXHAUST FAN, SHALL OPEN AND THE EXHAUST FAN (EF-1) SHALL RUN. THE FAN SHALL SHUT-OFF AND THE OA DAMPER SHALL CLOSE WHEN THE SPACE TEMPERATURE FALLS BELOW THE 85°F (ADJ.) SETPOINT.

D. ELECTRIC SPACE HEATERS (EH-1, EH-2)

1. THE ELECTRIC HEATERS (EH-1, EH-2) SYSTEM SHALL BE ENGAGED & READY TO OPERATE AT ALL TIMES. WHEN THE SPACE TEMPERATURE FALLS BELOW THE SETPOINT OF 55°F (ADJ.) THE SPACE HEATER SHALL ACTIVATE. THE HEATER SHALL SHUT-OFF WHEN THE SPACE TEMPERATURE REACHES 60°F (ADJ.) SETPOINT.

E. FUEL OIL WATER SEPARATOR FILTER SET

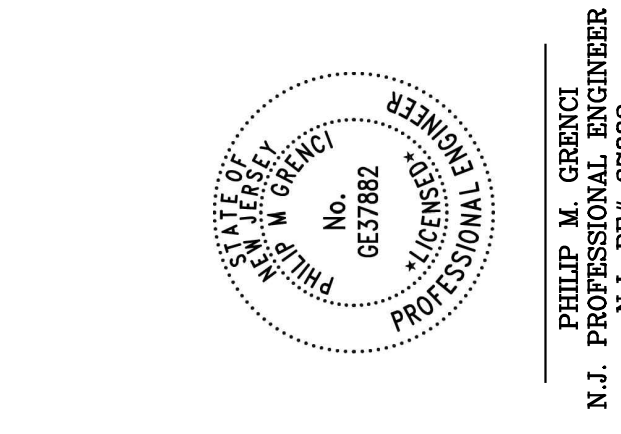
1. FUEL OIL WATER SEPARATOR FILTER SET SHALL BE INSTALLED FOLLOWING GENERATOR ENGINE MANUFACTURER'S RECOMMENDATIONS. THE FILTER SET SHALL BE DESIGNED TO ALLOW FILTER INSERTS REPLACEMENT WHILE THE ENGINE IS RUNNING.

F. MAIN TANK (ST-1) FUEL LEVEL MONITORING SYSTEM

1. FUEL LEVEL SENSOR SHALL MONITOR MAIN FUEL STORAGE TANK (ST-1) CAPACITY AT ALL TIMES AND DISPLAY CURRENT FUEL LEVEL VIA A DIGITAL TANK GAUGE SYSTEM. WHEN THE TANK REACHES 25% (ADJ.) CAPACITY, THE SYSTEM SHALL GENERATE A "FUEL LOW LEVEL" ALARM. WHEN THE TANK REACHES 95% (ADJ.) CAPACITY, THE SYSTEM SHALL GENERATE AN "OVERFILL" ALARM. WHEN THE SYSTEM DETECTS HIGH FUEL LEVEL LOSS IN TANK IDLE CONDITION (WHEN GENERATOR IS NOT RUNNING), THE SYSTEM SHALL GENERATE "FUEL LOSS" ALARM. THE SYSTEM SHALL ALSO HAVE ABILITY TO VERIFY FUEL DELIVERY CAPACITY AND LOG THE TRUE FUEL QUANTITY DELIVERED TO THE TANK.

1

1



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6-2-22 ISSUED FOR REVIEW

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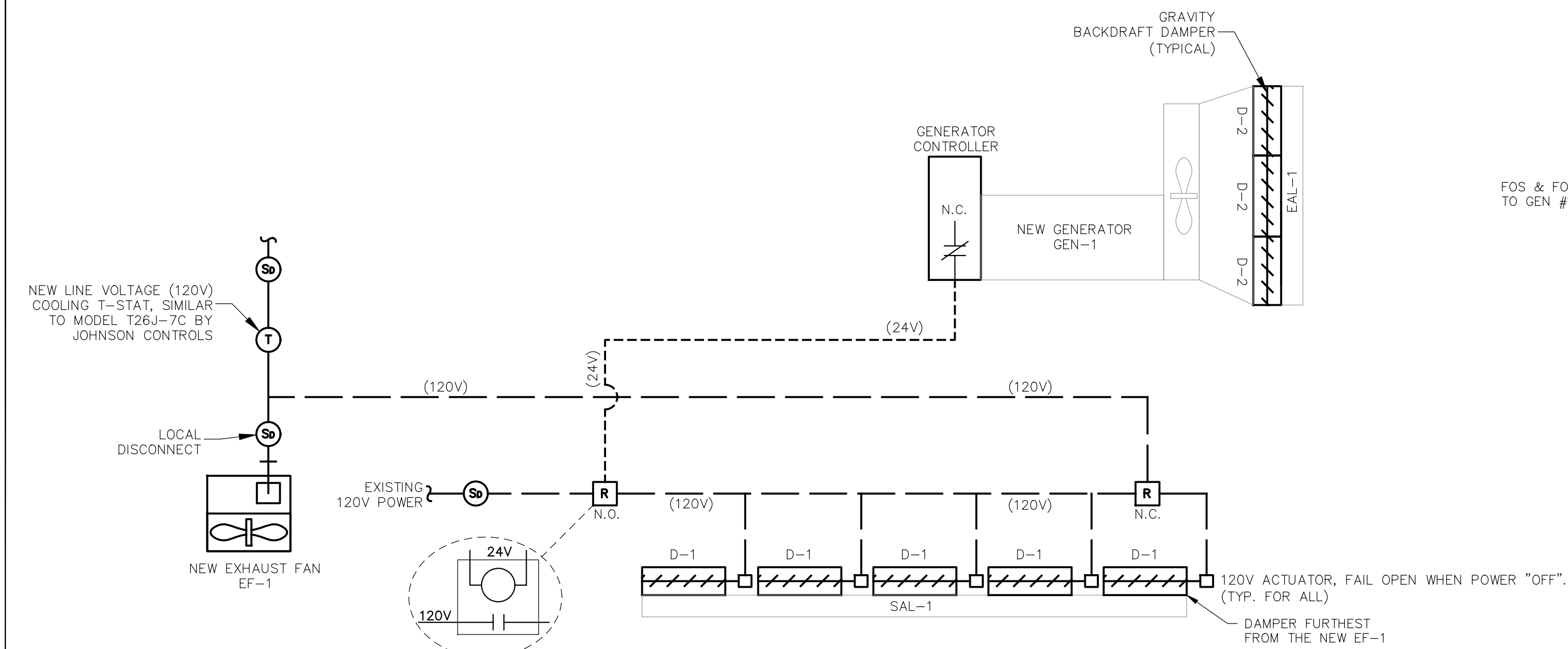
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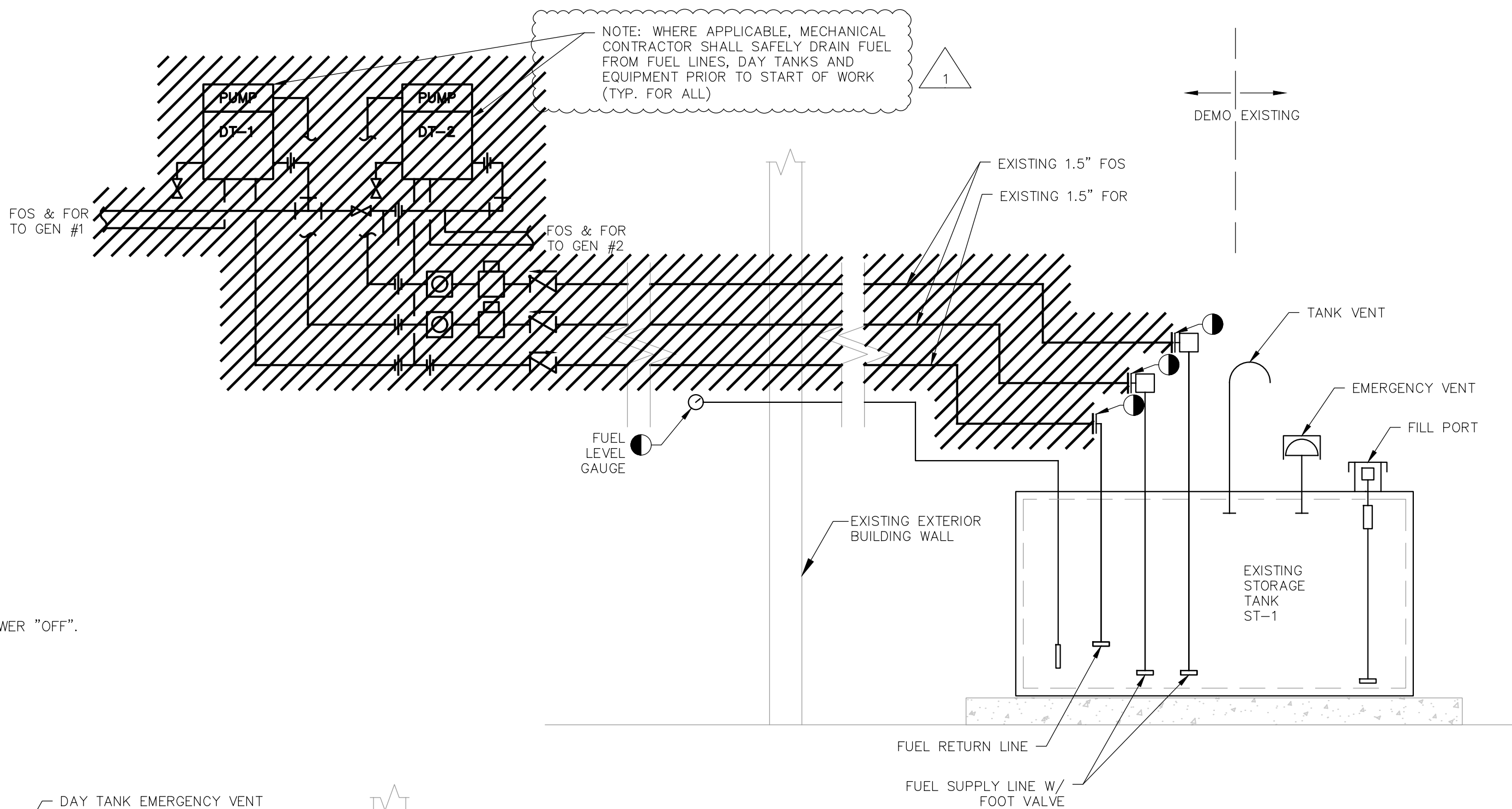
MECHANICAL
SPECIFICATIONS

Scale	Issue Date
N.T.S.	4/18/22
Proj. Manager:	Proj. Engineer:
ANC	PMG
AMA Project No.:	
CEI215080	

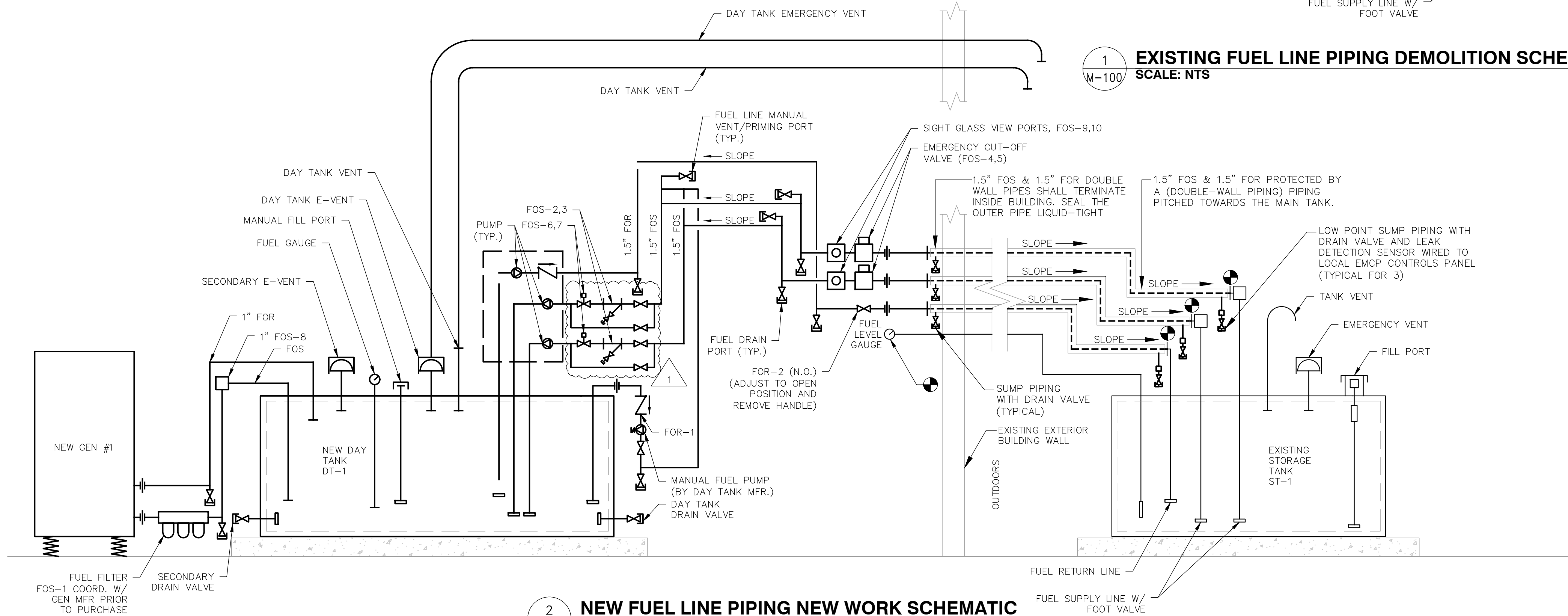
M-003



3
M-100
EXHAUST FAN AND LOUVERS WIRING DIAGRAM
SCALE: NTS



1
M-100
EXISTING FUEL LINE PIPING DEMOLITION SCHEMATIC
SCALE: NTS

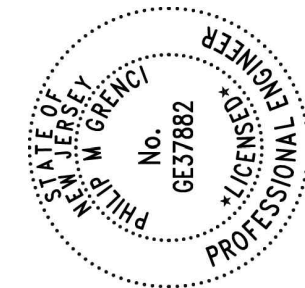


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M-100
NEW FUEL LINE PIPING NEW WORK SCHEMATIC
SCALE: NTS

FUEL OIL PIPING COMPONENTS SCHEDULE														
UNIT NO.	DESCRIPTION	SERVICE	LOCATION	SERVICE				ACTUATOR DATA				MANUFACTURER / MODEL (OR APPROVED EQUAL)	REMARKS	
				MEDIUM	FLOW (GPM)	HEAD (FT W.C.)	TEMP. (DEG F)	ACTUATOR TYPE	FAILURE POSITION	TYPE	POWER			RANGE
FOS-1	1" FUEL OIL WATER SEPARATOR FILTER	NEW GENERATOR	GENERATOR ROOM	FUEL OIL	5.5	2.5	N/A	N/A	N/A	N/A	N/A	N/A	RACOR-PARKER INC. / 791000 FHV32410	10 MICRON FILTER
FOS-2	1-1/2" LINE STRAINER (100 MESH)	NEW DAY TANK	GENERATOR ROOM	FUEL OIL	7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SIMPLEX (BY DAY TANK MFR.)	N/A
FOS-4	1-1/2" EMERGENCY SHUTOFF VALVE	SUPPLY FUEL LINE	GENERATOR ROOM	FUEL OIL	7.5	N/A	165	LEVER	N/A	FUSIBLE LINK	N/A	N/A	MORRISON BRO'S, INC. / 346SS-0100AV	N/A
FOS-6	1-1/2" SOLENOID VALVE	NEW DAY TANK	GENERATOR ROOM	FUEL OIL	7.5	4.5	N/A	SOLENOID	N.C.	POWERED	24 AC	ON/OFF	SIMPLEX (BY DAY TANK MFR.)	NOTE 2
FOS-8	1" PRIMING TEE	NEW GENERATOR	GENERATOR ROOM	FUEL OIL	5.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MORRISON BRO'S, INC. / 912-100510AT	N/A
FOS-9	SIGHT GLASS VIEW PORT	SUPPLY FUEL LINE	GENERATOR ROOM	FUEL OIL	7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MC MASTER CARR / 3277K	N/A
FOR-1	1-1/2" IN-LINE CHECK VALVE	NEW DAY TANK	GENERATOR ROOM	FUEL OIL	7.5	5.5	N/A	N/A	N/A	N/A	N/A	N/A	SIMPLEX (BY DAY TANK MFR.)	N/A
FOR-2	1-1/2" ISOLATION VALVE	RETURN FUEL LINE	GENERATOR ROOM	FUEL OIL	7.5	N/A	N/A	HANDWHEEL	LAST POSITION	MANUAL	N/A	ON/OFF	MORRISON BRO'S, INC. / 235BDI-0700AV	NOTE 1

NOTE:

- PROVIDE ISOLATION VALVE WITH HANDWHEEL FOR MANUAL OPERATION.
- PROVIDE SOLENOID VALVE WITH POWER CONFIRM FOR ACTUATOR. CONFIRM POWER AVAILABILITY AND COORDINATE POWER REQUIREMENTS W/ CONTROLS VENDOR PRIOR TO PURCHASE.



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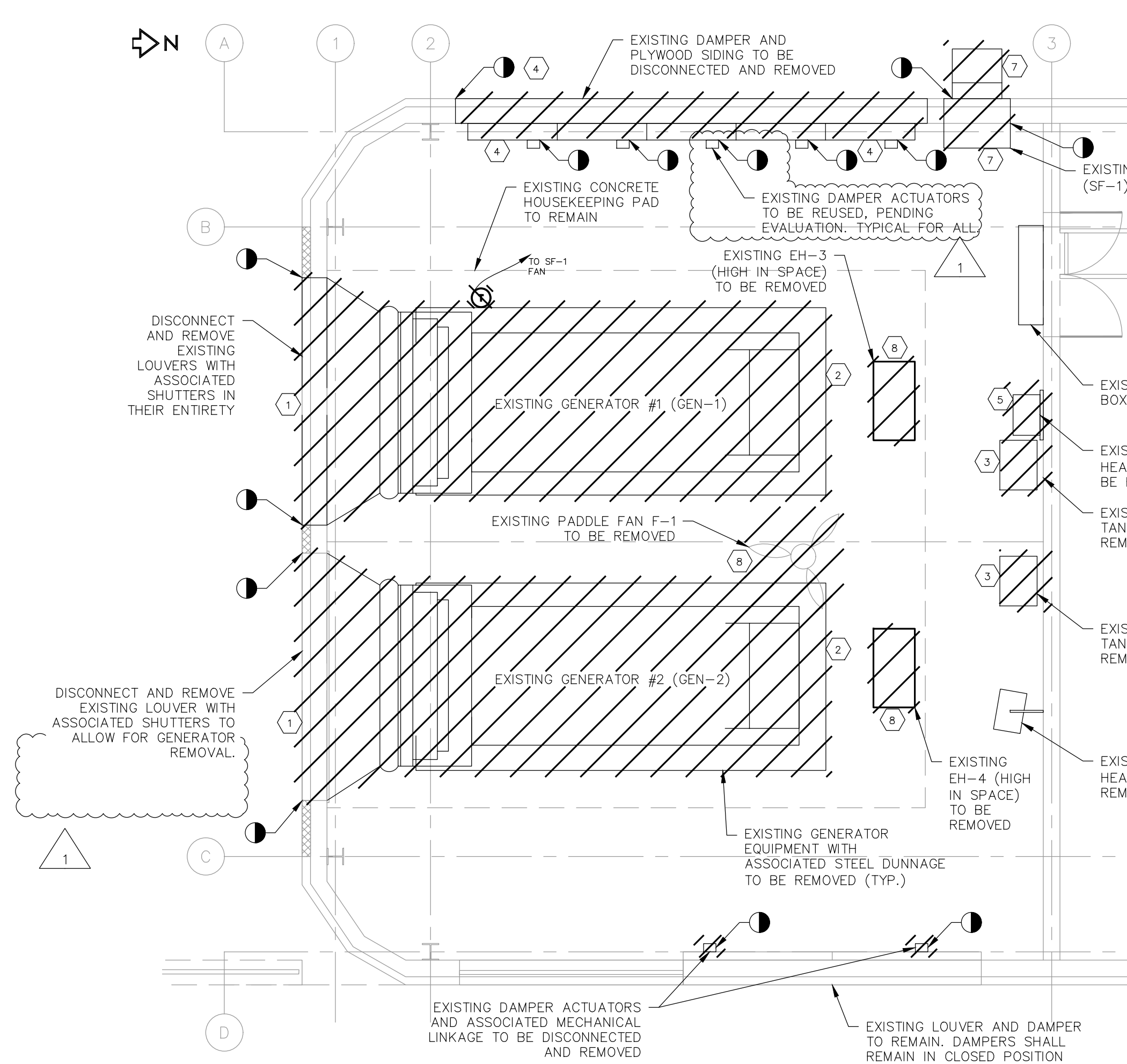
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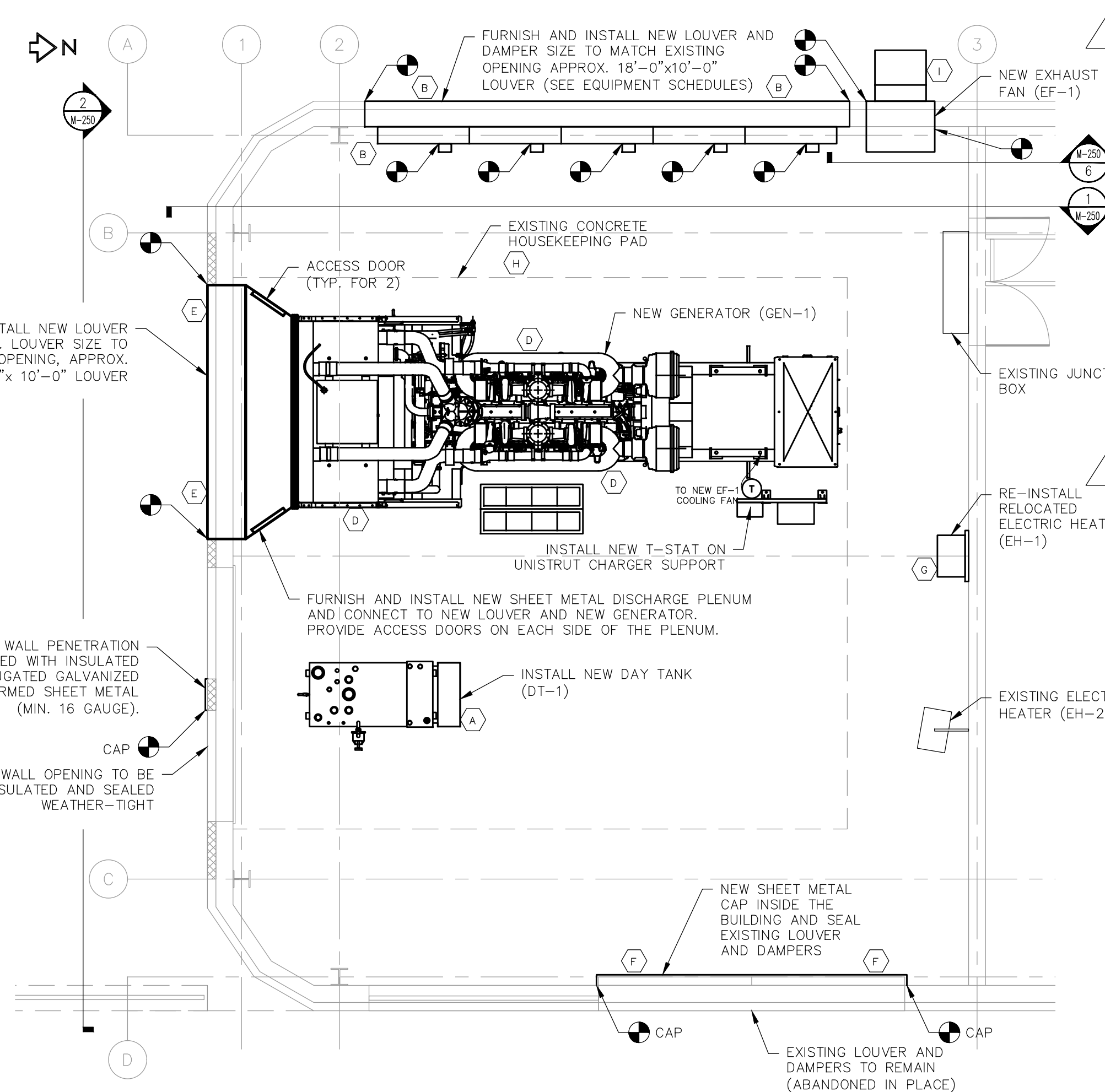
Drawing Title:
**MECHANICAL
EQUIPMENT WIRING DIAGRAM
AND SCHEMATICS**

Scale: **AS NOTED** Issue Date: **4/15/22**
Proj. Manager: **ANC** Proj. Engineer: **PMG**
AMA Project No.: **CEI215080**

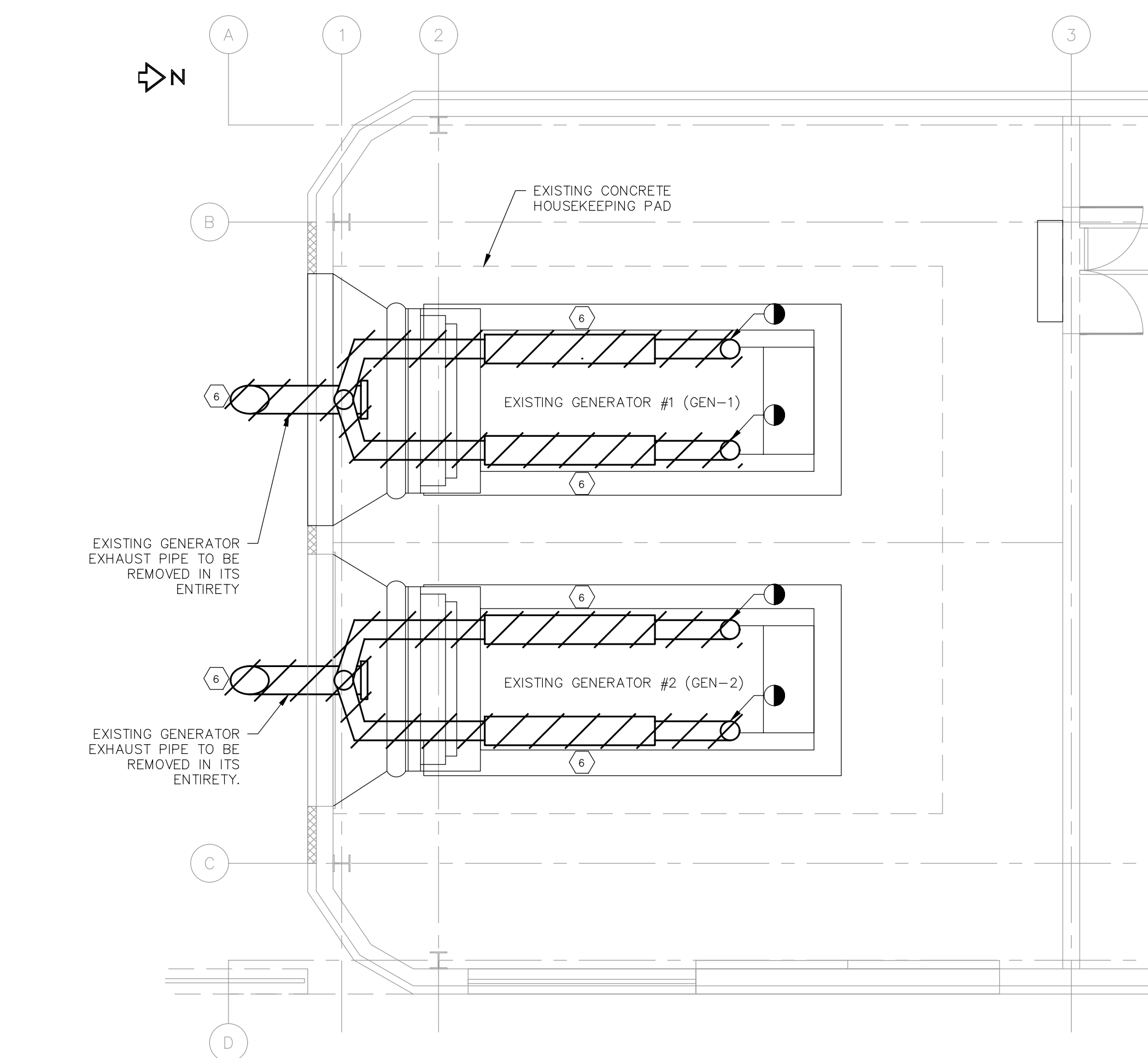
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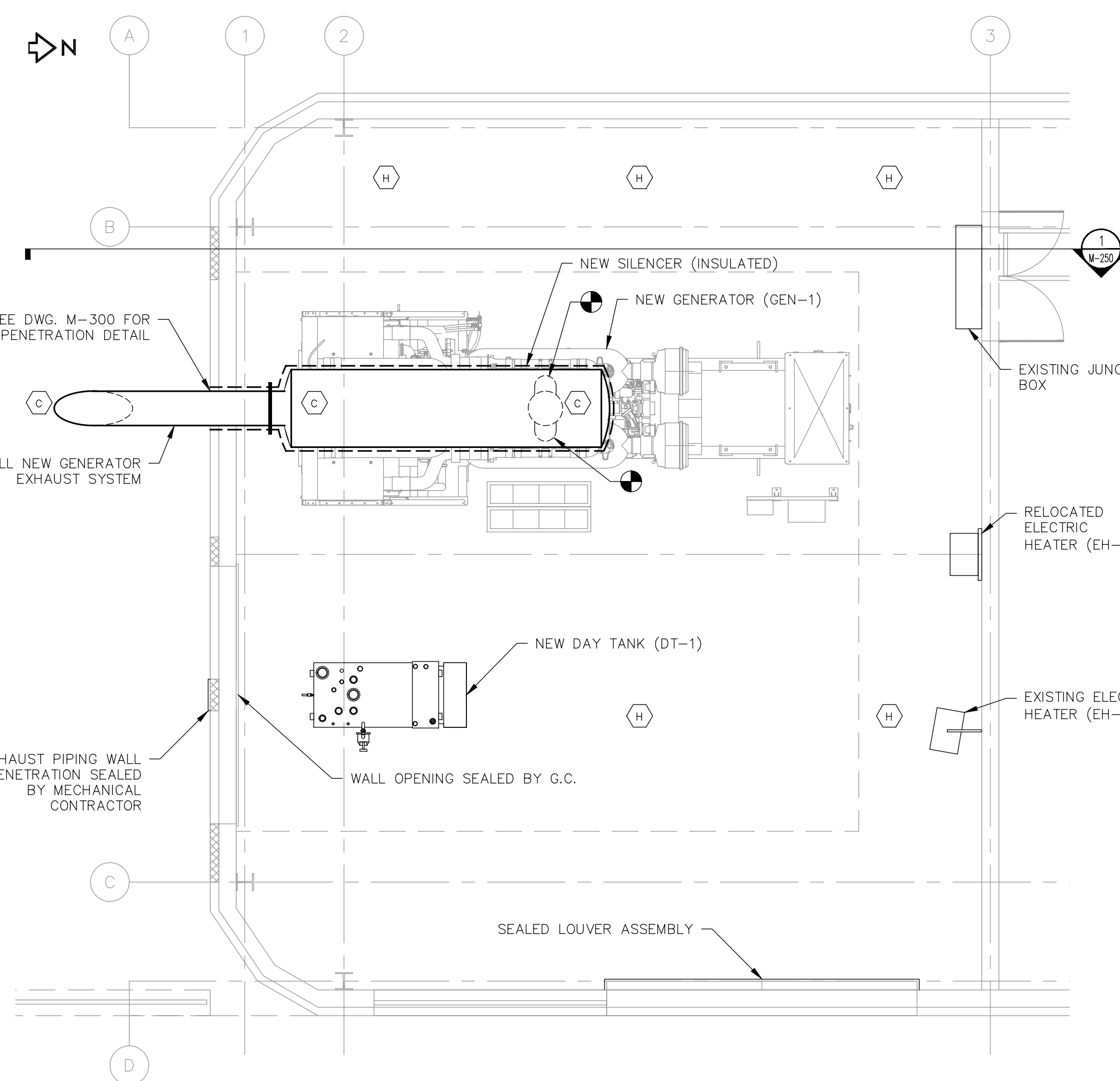
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M-200
MECHANICAL EQUIPMENT DEMOLITION PART PLAN
SCALE: 1/4"=1'-0"



2
M-200
MECHANICAL EQUIPMENT NEW WORK PART PLAN
SCALE: 1/4"=1'-0"



3
M-200
MECHANICAL EXHAUST DEMOLITION PART PLAN
SCALE: 1/4"=1'-0"



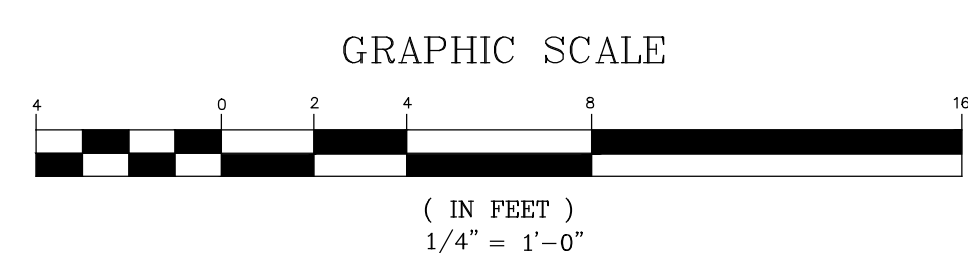
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M-200
MECHANICAL EXHAUST NEW WORK PART PLAN
SCALE: 1/4"=1'-0"

DEMOLITION NOTES (MECHANICAL CONTRACTOR):

1. DISCONNECT AND REMOVE TWO (2) EXISTING GENERATORS WITH ASSOCIATED EXISTING EXHAUST AIR LOUVERS AND SHUTTERS AND AIR DISCHARGE PLENUMS. INSTALL WEATHER-TIGHT SEAL FOR GENERATOR'S DISCHARGE AIR OPENING NOT USED DURING NEW CONSTRUCTION PHASE. RESTORE BUILDING FACADE WITH MATERIALS MATCHING EXISTING FINISH. COORDINATE WITH OWNER FOR APPROVED MATCHING SIDING AND CONSTRUCTION MATERIALS.
2. DRAIN REMAINING FUEL, DISCONNECT AND REMOVE EXISTING GENERATORS' FUEL LINES W/ ASSOCIATED AUXILIARY INSTALLATIONS IN THEIR ENTIRETY. POWER CONNECTIONS SHALL BE DISCONNECTED AND WIRING REMOVED BY THE ELECTRICAL CONTRACTOR. REMOVE ALL EQUIPMENT SCHEDULED FOR DEMOLITION IN AN ORDERLY SEQUENCE THROUGH OPENINGS CREATED DURING DEMOLITION PHASE. COORDINATE WORK IN FIELD AS REQUIRED.
3. DRAIN REMAINING FUEL, DISCONNECT AND REMOVE EXISTING DAY TANKS W/ ASSOCIATED AUXILIARY INSTALLATIONS IN THEIR ENTIRETY. POWER CONNECTIONS SHALL BE DISCONNECTED AND WIRING REMOVED BY THE ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD AS REQUIRED.
4. DISCONNECT AND REMOVE EXISTING OA LOUVER W/ ASSOCIATED DAMPERS. THE EXISTING DAMPER ACTUATORS SHALL REMAIN TO BE RE-USED DURING THE NEW WORK CONSTRUCTION PHASE. PROTECT EXISTING ACTUATORS FROM DAMAGE AND EXPOSURE TO DEBRIS. ADD/ALTERNATE: CONTRACTOR SHALL TEST EXISTING ACTUATORS FOR OPERATION AND PERFORMANCE. REPLACE ACTUATORS IN KIND, AS REQUIRED.
5. DISCONNECT AND RELOCATE EXISTING ELECTRIC HEATER EH-1 FROM THE CURRENT LOCATION. SAVE AND PROTECT THE HEATER FOR RE-INSTALLATION DURING THE NEW WORK CONSTRUCTION PHASE. POWER CONNECTIONS SHALL BE DISCONNECTED AND REMOVED BY ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD AS REQUIRED.
6. DISCONNECT AND REMOVE EXISTING EXHAUST PIPING W/ ASSOCIATED SILENCERS AND SUPPORTS IN THEIR ENTIRETY. COORDINATE WORK IN FIELD AS REQUIRED.
7. DISCONNECT AND REMOVE EXISTING WALL MOUNTED AIR SUPPLY FAN SF-1, W/ ASSOCIATED HOOD AND AUXILIARY INSTALLATIONS. POWER SHALL BE DISCONNECTED BY ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD, AS REQUIRED.
8. DISCONNECT AND REMOVE EXISTING SPACE HEATERS EH-3 AND EH-4 WITH PADDLE FAN F-1 IN THEIR ENTIRETY. POWER SHALL BE DISCONNECTED AND WIRING REMOVED AND SAVED BY ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD AS REQUIRED.

NEW WORK NOTES (MECHANICAL CONTRACTOR):

- A. INSTALL A NEW FUEL DAY TANK (DT-1) SUPPLIED BY GENERATOR'S VENDOR AT LOCATION SHOWN, FOLLOWING CURRENT REGULATIONS BY AUTHORITY HAVING JURISDICTION AND MANUFACTURER'S RECOMMENDATIONS. NEW POWER CONNECTIONS SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. COORDINATE WORK W/ NEW GENERATOR INSTALLATION IN FIELD AS REQUIRED. TANK SHALL BE FURNISHED BY GENERATOR VENDOR AND INSTALLED BY MECHANICAL CONTRACTOR.
- B. FURNISH AND INSTALL A NEW OA LOUVER W/ ASSOCIATED DAMPERS IN THE EXISTING WALL OPENING ON THE WEST SIDE OF THE BUILDING. VERIFY WALL OPENING DIMENSIONS IN FIELD PRIOR TO LOUVER PURCHASE. INVESTIGATE WALL OPENING CONDITION AND CONDUCT NECESSARY REPAIRS PRIOR TO LOUVER INSTALLATION. RE-CONNECT EXISTING ACTUATORS TO NEW OA DAMPERS. RE-POSITION ACTUATORS AND MODIFY LINKAGE AS REQUIRED TO ENSURE PROPER OPERATION AS DESCRIBED IN THE MECHANICAL SPECIFICATIONS, PART 4 - "SEQUENCE OF OPERATIONS". TEST ACTUATORS OPERATION AND REPLACE DAMAGED ACTUATORS WITH NEW UNITS AS REQUIRED. SIMILAR TO HONEYWELL, MODUTROL IV SERIES, LINE VOLTAGE, SPRING RETURN, NORMALLY OPEN, MATCHING EXISTING ACTUATORS' SIZES. MODIFY ACTUATOR CONTROLS OF THE DAMPER LOCATED FURTHEST AWAY FROM THE EXHAUST FAN. THE ACTUATOR POWER SUPPLY SHALL BE MODIFIED TO OPERATE OPEN WHEN THE GENERATOR OR THE EXHAUST FAN (EF-1) ARE OPERATING. ALL POWER CONNECTIONS MODIFICATIONS SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. COORDINATE WORK W/ NEW GENERATOR INSTALLATION IN FIELD AS REQUIRED.
- C. FURNISH AND INSTALL A NEW EXHAUST SILENCER (MODEL: JCGE0-16PF-2-0000008A BY MIRATECH, OR SIMILAR) W/ ASSOCIATED EXHAUST WYE (MODEL: 10X-D08CA2-16PF2-205-390-00-2 BY MIRATECH, OR SIMILAR), EXHAUST PIPING AND FIXTURES FOLLOWING CURRENT REGULATIONS BY THE AUTHORITY HAVING JURISDICTION AND MANUFACTURER'S RECOMMENDATIONS. CONSTRUCT AND INSTALL NEW SILENCER SUPPORTS. HIRE STRUCTURAL ENGINEER'S SERVICES FOR NEW SUSPENDED LOAD ANALYSIS ON ROOF SUPPORTS PRIOR TO SILENCER'S SUPPORTS CONSTRUCTION. COORDINATE WORK W/ NEW GENERATOR INSTALLATION IN FIELD AS REQUIRED.
- D. ASSIST GENERAL CONTRACTOR IN THE NEW GENERATOR UNIT INSTALLATION. THE INSTALLATION SHALL FOLLOW CURRENT REGULATIONS BY THE AUTHORITY HAVING JURISDICTION AND MANUFACTURER'S RECOMMENDATIONS. THE NEW GENERATOR SHALL BE ALIGNED WITH EXISTING DISCHARGE AIR AND EXHAUST WALL OPENINGS. THE NEW GENERATOR SHALL BE INSTALLED ON VIBRATION ISOLATORS PROVIDED BY VENDOR (MODEL: 510-9149-CHG-01 SHIPPED LOOSE). ALL NEW POWER CONNECTIONS SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR. PROTECT SURROUNDING INSTALLATIONS FROM CONSTRUCTION DAMAGE. UPON NEW GENERATOR INSTALLATION COMPLETION, REMOVE THE EQUIPMENT TEMPORARY PROTECTIVE COVERS. COORDINATE WORK W/ OTHER EQUIPMENT IN FIELD AS REQUIRED.
- E. FURNISH AND INSTALL A NEW AIR EXHAUST LOUVER W/ ASSOCIATED BACKDRAFT DAMPERS AND A DISCHARGE AIR PLENUM FOR THE NEW GENERATOR. CONSTRUCT A NEW AIR PLENUM TO CONNECT GENERATOR RADIATOR DISCHARGE TO THE NEW EXHAUST LOUVER. CONFIRM EXISTING WALL OPENING DIMENSIONS PRIOR TO THE NEW LOUVER PURCHASE. INVESTIGATE WALL OPENING CONDITION AND CONDUCT NECESSARY REPAIRS PRIOR TO LOUVER'S INSTALLATION. COORDINATE WORK W/ NEW GENERATOR INSTALLATION IN FIELD AS REQUIRED.
- F. SEAL WEATHER-TIGHT BACK OF THE EXISTING LOUVERS LOCATED ON THE EAST WALL WITH A GALVANIZED SHEET METAL CAP. COORDINATE WORK IN FIELD AS REQUIRED.
- G. RE-INSTALL EXISTING ELECTRIC HEATER (EH-1) AT NEW LOCATION. ALL POWER CONNECTION MODIFICATIONS AND RE-CONNECTION SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD AS REQUIRED.
- H. ASSIST GENERAL CONTRACTOR IN PERFORMING JOB SITE REVIEW FOR DAMAGES RESULTING FROM THE NEW GENERATOR INSTALLATION AT THE COMPLETION OF THE PROJECT. CONDUCT THE NECESSARY REPAIRS. MATCH EXISTING MATERIALS AND FINISHES. COORDINATE WORK IN FIELD AS REQUIRED.
- I. FURNISH AND INSTALL A NEW EXHAUST FAN (EF-1) IN THE EXISTING WALL OPENING. VERIFY OPENING SIZE IN FIELD PRIOR TO EQUIPMENT PURCHASE. POWER SUPPLY CONNECTIONS SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. PROVIDE NEW EXHAUST FAN W/ EXHAUST WEATHER HOOD, BIND SCREEN, SHUTTERS AND LINE VOLTAGE COOLING THERMOSTAT. COORDINATE WORK IN FIELD, AS REQUIRED.



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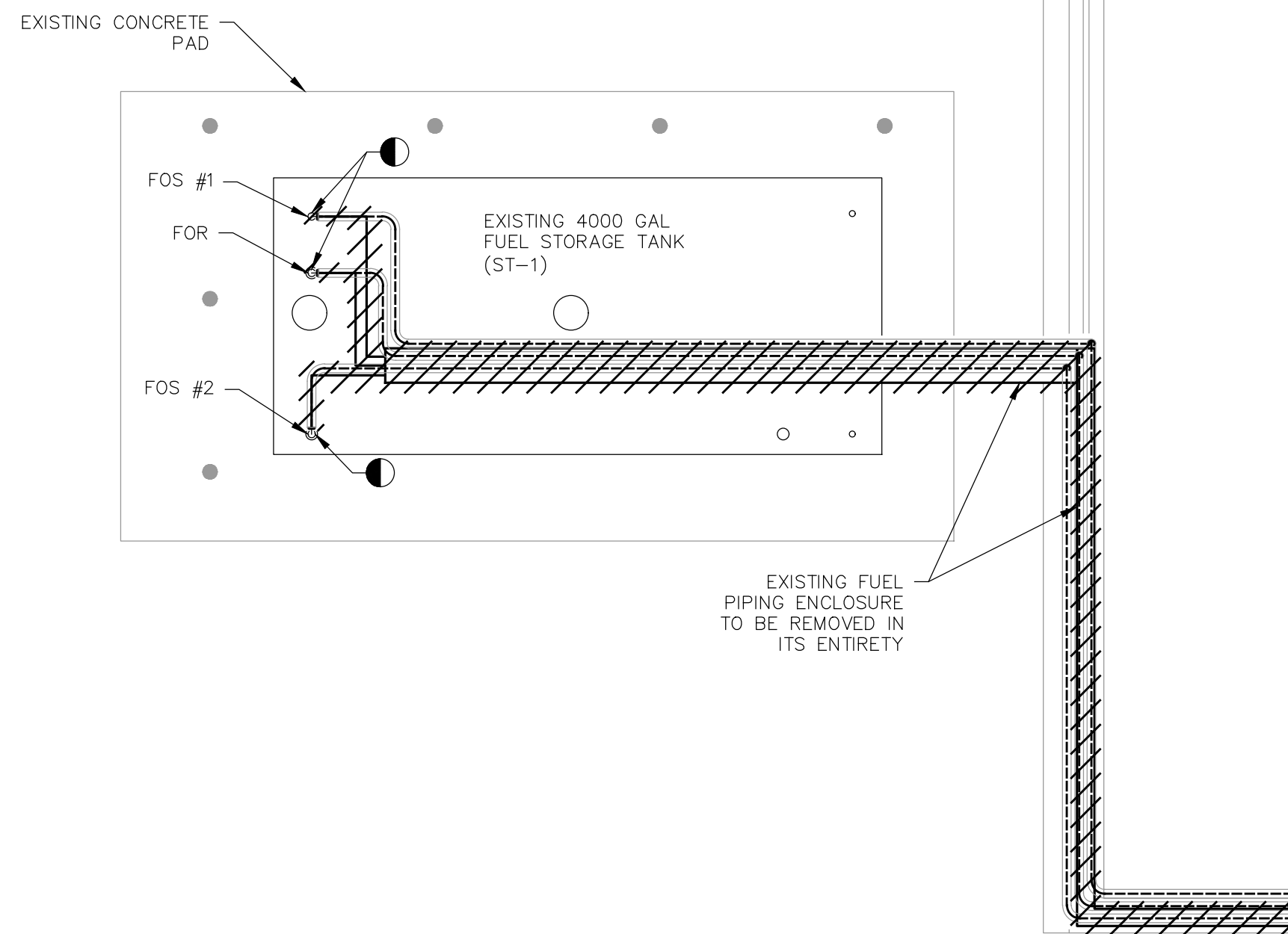
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Date	Issued	Revised No.
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Drawing Title: MECHANICAL EQUIPMENT DEMOLITION AND NEW WORK PART PLANS	
Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

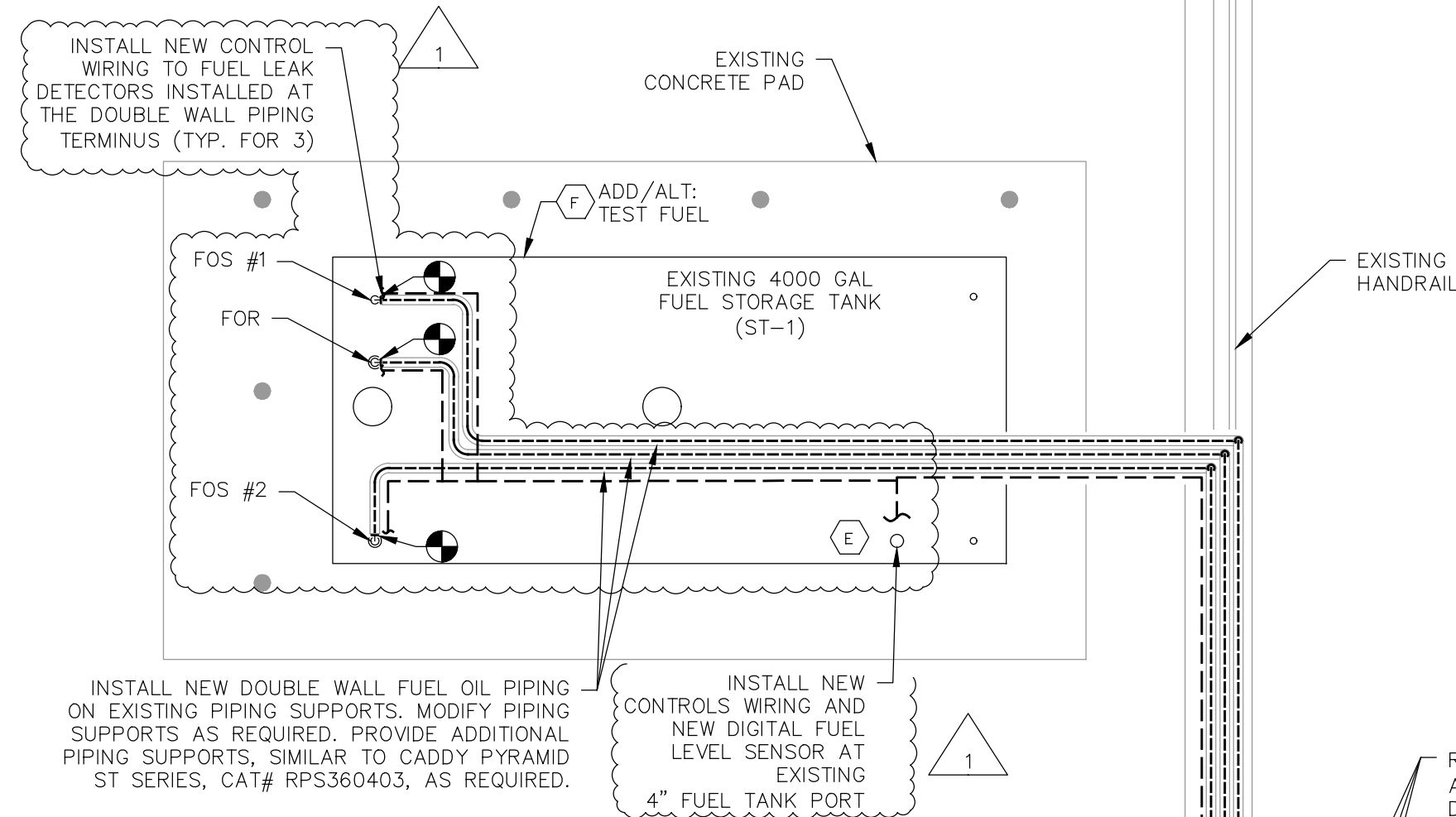
M-200



1
M-210

MECHANICAL FUEL PIPING DEMOLITION PART PLAN

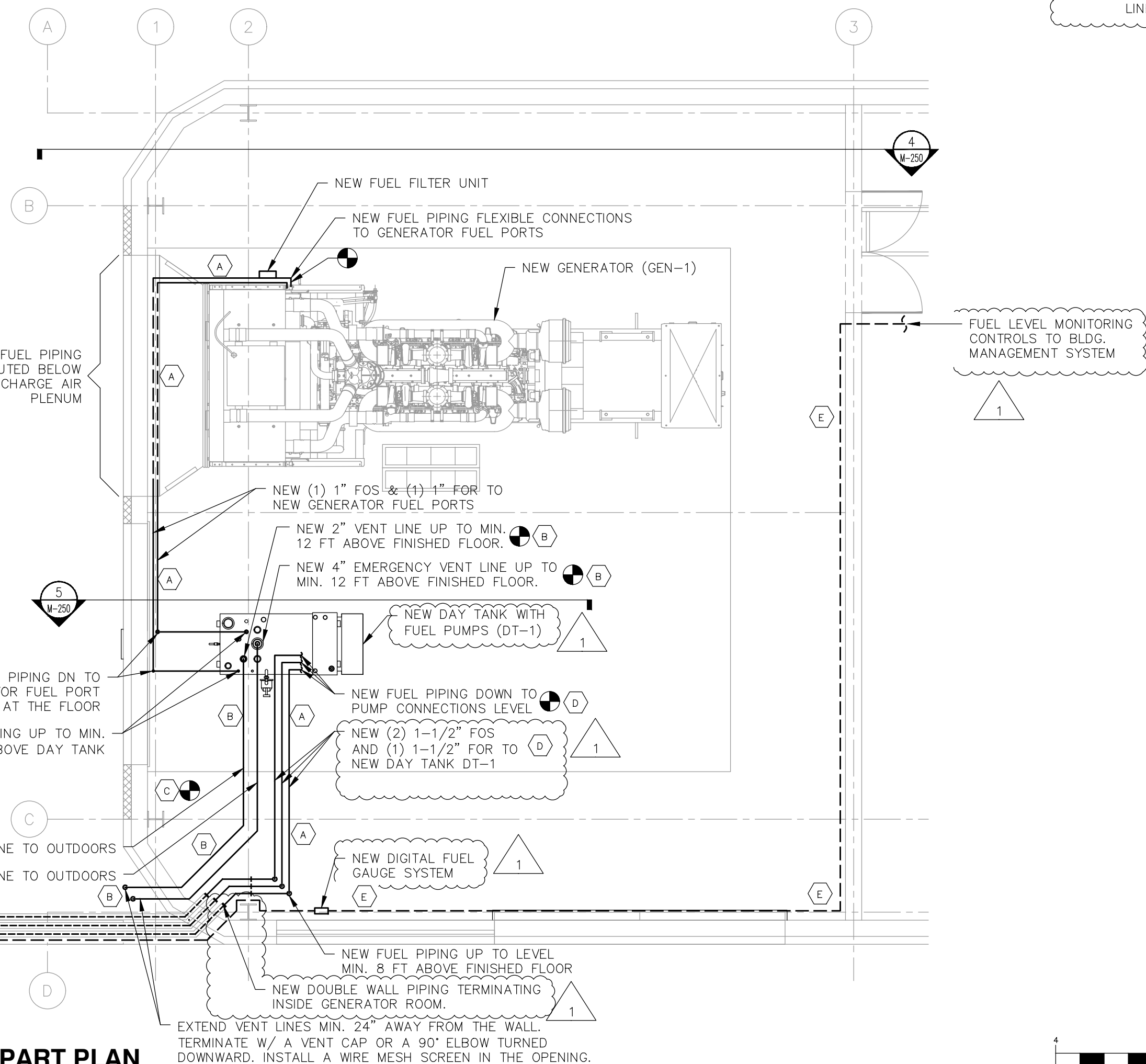
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2
M-210

MECHANICAL FUEL PIPING NEW WORK PART PLAN

SCALE: 1/4"=1'-0"



DEMOLITION NOTES:

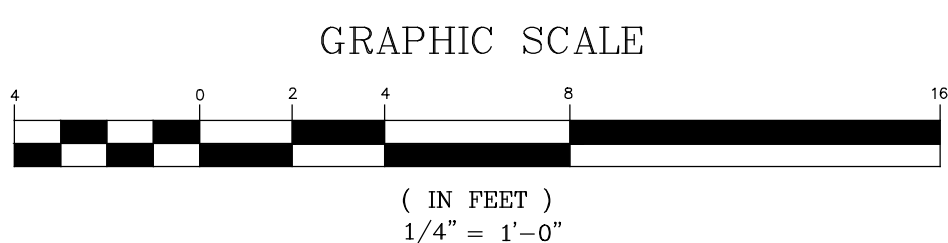
1. DRAIN REMAINING FUEL, DISCONNECT AND REMOVE EXISTING PIPING SECTIONS TO EXTENT SHOWN.
2. DRAIN REMAINING FUEL, DISCONNECT AND REMOVE EXISTING FUEL DAY TANKS. POWER SUPPLY CONNECTIONS SHALL BE DISCONNECTED AND REMOVED BY ELECTRICAL CONTRACTOR. COORDINATE WORK IN FIELD AS REQUIRED.
3. DISCONNECT AND REMOVE EXISTING FUEL GAUGE WITH ASSOCIATED TUBING FROM THE PRESENT LOCATION. SAVE FOR RE-INSTALLATION DURING NEW WORK PROJECT PHASE.

NEW WORK NOTES (MECHANICAL CONTRACTOR):

- INSTALL NEW FUEL PIPING SECTIONS CONNECTING FUEL STORAGE TANK WITH THE NEW GENERATOR. ENSURE THAT NEW FUEL PIPING DOES NOT IMPACT SERVICE ACCESS TO EQUIPMENT MAINTENANCE AREAS. ALL NEW PIPING INSTALLATIONS SHALL CONFORM TO REGULATIONS BY THE LOCAL AUTHORITY HAVING JURISDICTION AND THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- INSTALL NEW VENT AND EMERGENCY VENT PIPING TO ROUTE FUMES TO THE OUTDOORS. VENT PIPING SHALL BE INSTALLED TO AVOID BENDS THAT COULD TRAP FUMES. DO NOT INSTALL VALVES IN THE VENT PIPING. ALL NEW VENT PIPING INSTALLATIONS SHALL CONFORM TO REGULATIONS BY THE LOCAL AUTHORITY HAVING JURISDICTION AND THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- RE-INSTALL FUEL GAUGE AT THE NEW LOCATION. TEST AND REPAIR THE GAUGE AS REQUIRED TO RESTORE ITS OPERATION. THE CURRENT GAUGE IS SIMILAR TO MODEL P-14 (HAND PUMP TYPE) BY PNEUMATORIC LIQUID LEVEL CONTROL SYSTEMS. COORDINATE IN FIELD WITH THE SITE MANAGER PRIOR TO START OF WORK.
- PRIME NEW FUEL LINES PRIOR TO EQUIPMENT TESTING.
- FURNISH AND INSTALL A FUEL TANK GAUGE MONITORING SYSTEM (SIMILAR TO MODEL TG-#L-D4B BY PREFERRED UTILITIES MFG CORP.) W/ ASSOCIATED FUEL LEVEL SENSOR (SIMILAR TO MODEL TG-EL-WF-C BY PREFERRED UTILITIES MFG CORP.) THE NEW FUEL GAUGE MONITORING SYSTEM SHALL HAVE ABILITY TO LOG THE TRUE FUEL QUANTITY DELIVERED TO THE MAIN STORAGE TANK, INDEPENDENTLY FROM RE-FUELING TANKER FUEL GAUGES. POWER SUPPLY TO THE NEW SYSTEM SHALL BE PROVIDED BY ELECTRICAL TRADE. COMMUNICATIONS WIRING AND PROGRAMMING SHALL BE BY SITE CONTROLS VENDOR (HONEYWELL) IN COORDINATION WITH NJSEA PROJECT MANAGER. COORDINATE WORK WITH ELECTRICAL CONTRACTOR, COMMUNICATIONS VENDOR AND SITE OWNER PRIOR TO NEW EQUIPMENT PURCHASE.
- ADD/ALTERNATE:
 1. TEST FUEL STORED IN 4000 GALLON MAIN TANK FOR CONTAMINANTS, DEGRADATION AND MOISTURE CONTENT, ETC. TO ESTABLISH IF COMPATIBLE WITH NEW GENERATOR'S FUEL REQUIREMENTS. PROVIDE COST AS A SEPARATE LINE ITEM.
 2. TREAT EXISTING FUEL STORED IN 4000 GAL MAIN TANK. BASED ON THE TEST RESULTS. PROVIDE COST AS A SEPARATE LINE ITEM.
 3. REPLACE EXISTING FUEL (STORED IN THE 4000 GAL MAIN TANK) WITH NEW FUEL. PROVIDE COST AS A SEPARATE LINE ITEM.

1

1



PHILIP M. GRENCI
N.J. P.E.# 37882

NJ SPORTS & EXPOSITION AUTHORITY PUMP STATION GENERATOR INSTALLATION

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

6-2-22 ISSUED FOR REVIEW

6-15-22 ISSUED FOR DCA APPROVAL

11-18-22 ISSUED FOR BID

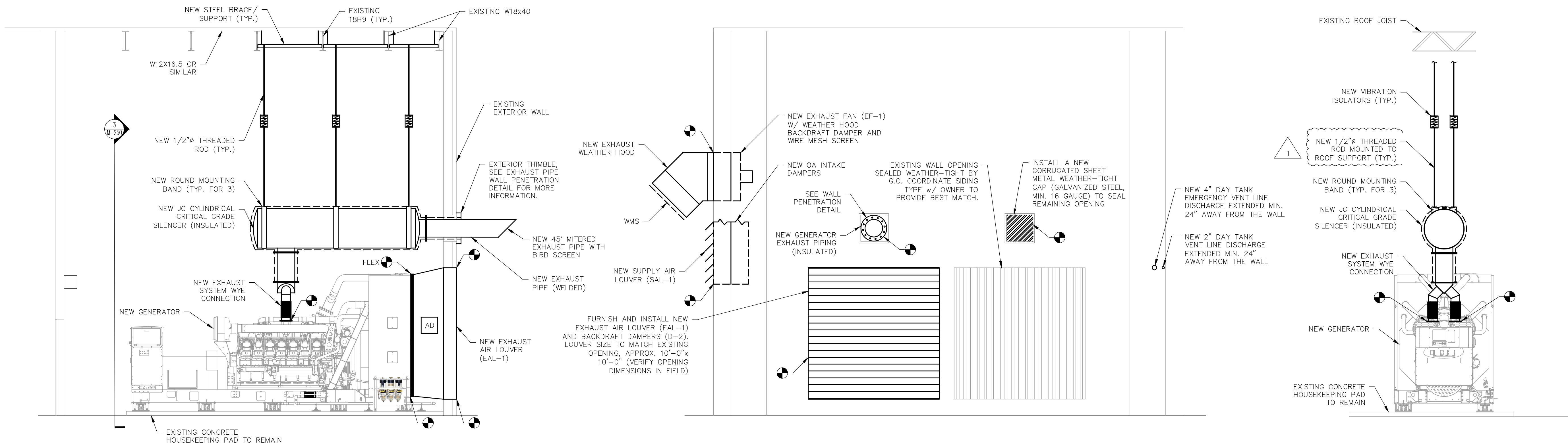
Date Issued Revision No.

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engineers
122 Main Street | Madison, NJ 07940
973.984.1919 | amagroupusa.com

Drawing Title:
**MECHANICAL
FUEL PIPING DEMOLITION AND
NEW WORK PART PLANS**

Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

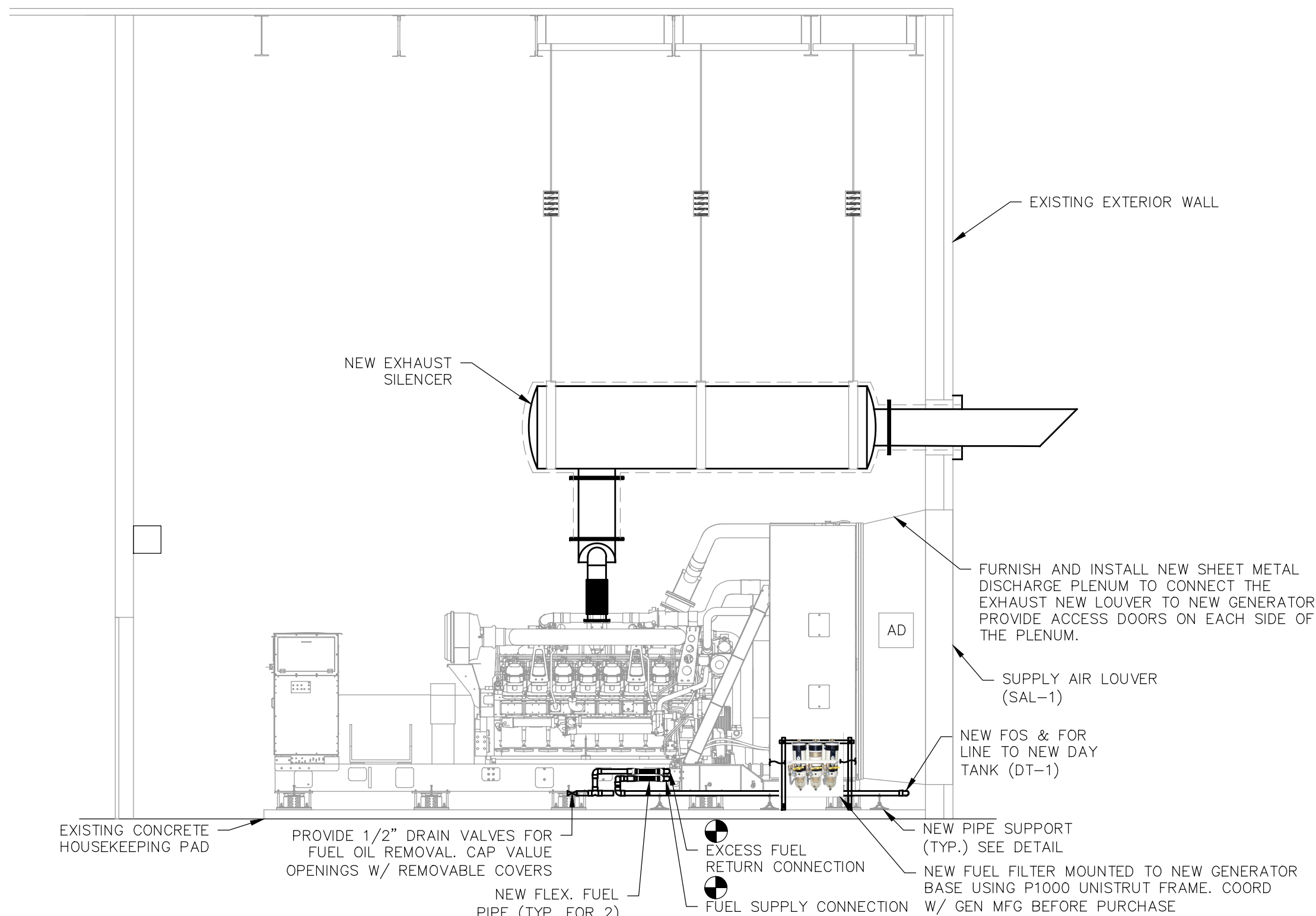
M-210



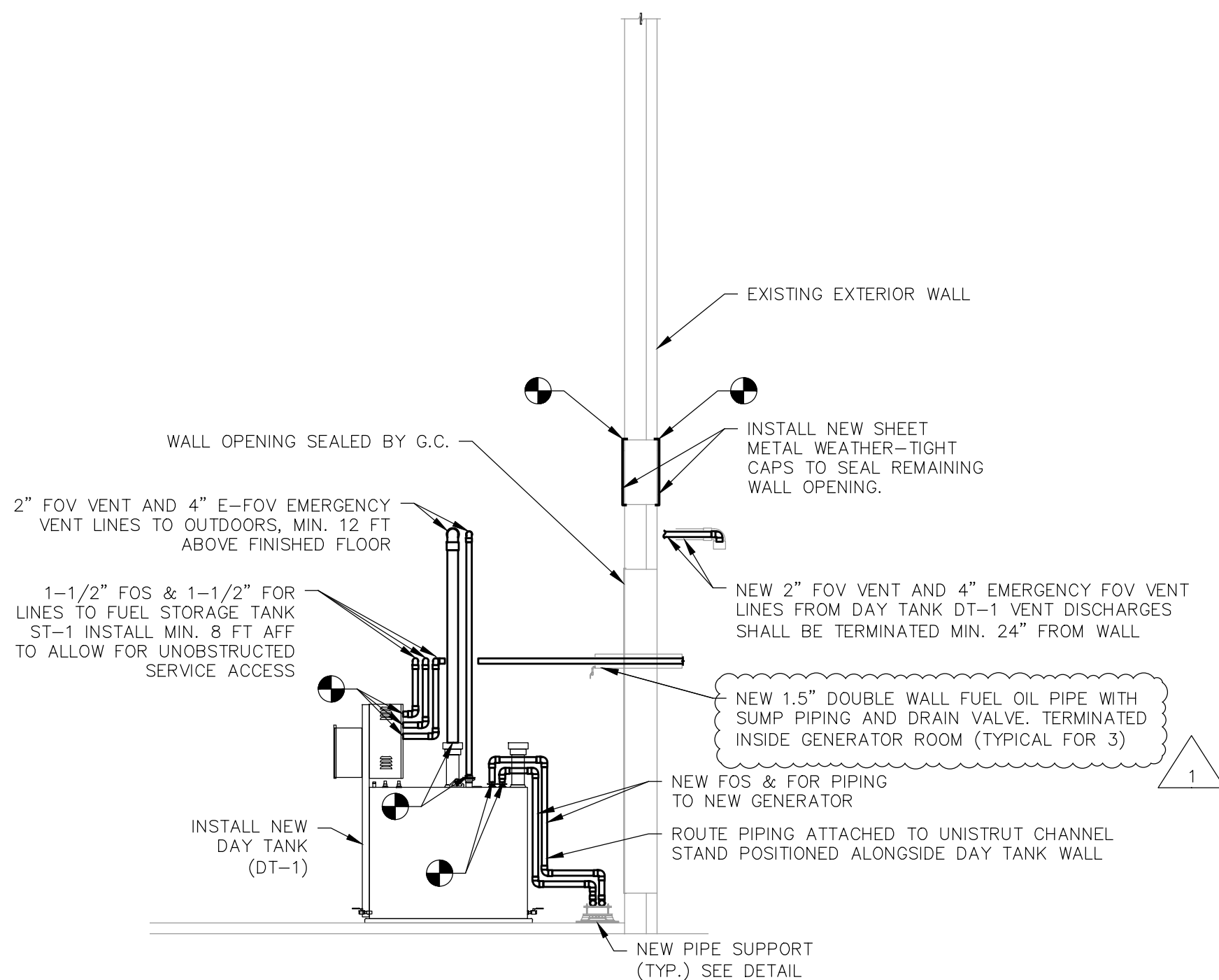
**MECHANICAL EXHAUST AND DISCHARGE AIR
PLENUM CONNECTION NEW WORK ELEVATION**
SCALE: 1/4"=1'-0"

MECHANICAL EQUIPMENT EXTERIOR NEW WORK ELEVATION
SCALE: 1/4"=1'-0"

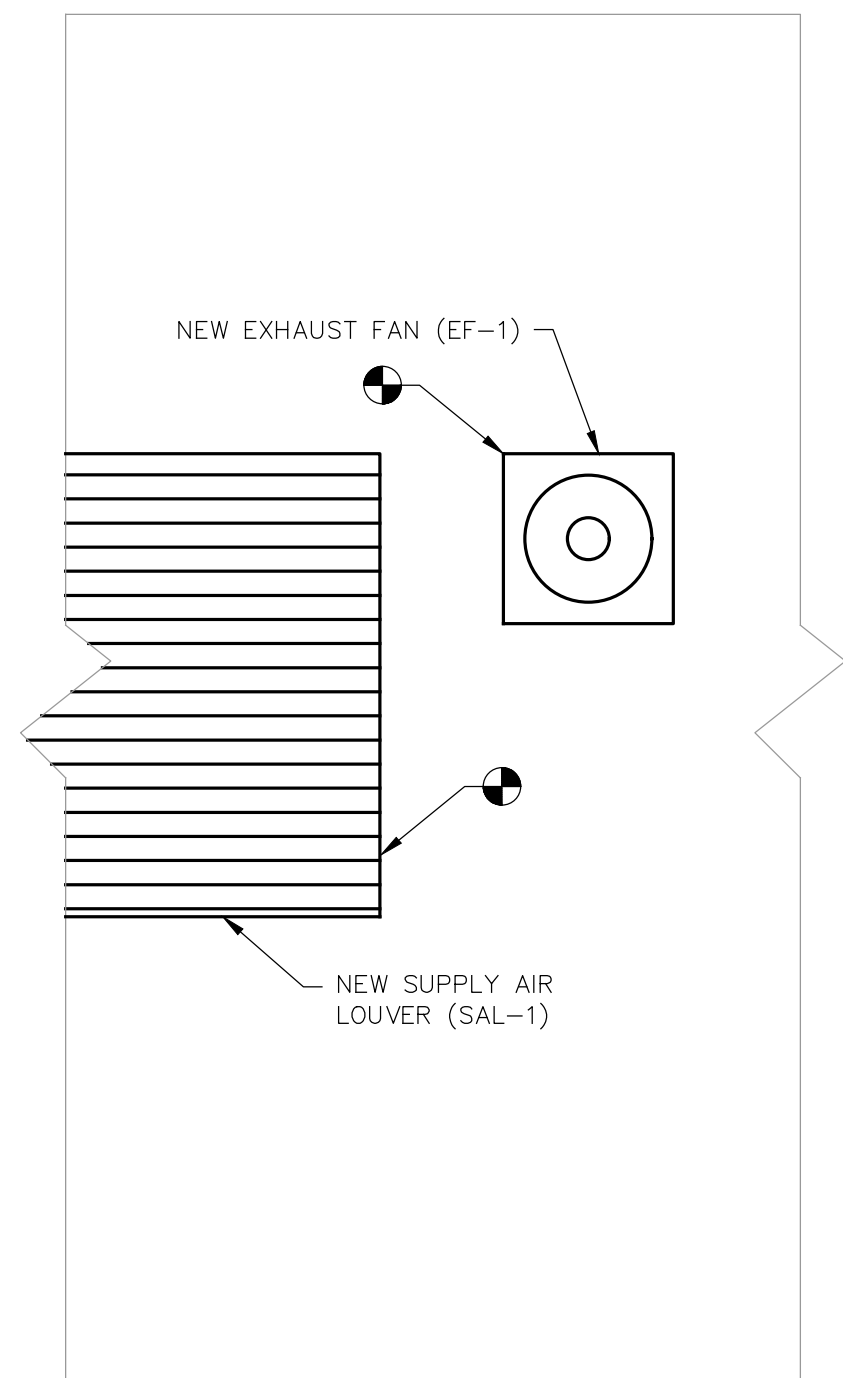
**MECHANICAL EXHAUST SYSTEM
NEW WORK SECTION**
SCALE: 1/4"=1'-0"



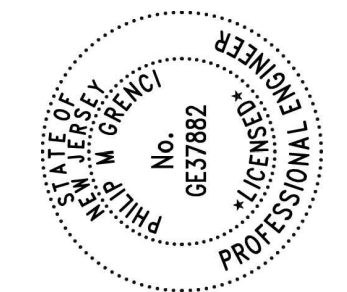
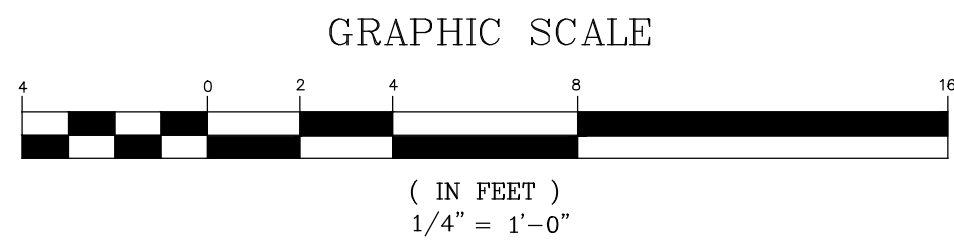
MECHANICAL FUEL PIPING CONNECTION NEW WORK SECTION
SCALE: 1/4"=1'-0"



**MECHANICAL DAY TANK PIPING
NEW WORK ELEVATION**
SCALE: 1/4"=1'-0"



MECHANICAL NEW EF-1 DETAIL
SCALE: 1/4"=1'-0"



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NJ SPORTS & EXPOSITION
AUTHORITY
PUMP STATION GENERATOR
INSTALLATION
50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

6-2-22	ISSUED FOR REVIEW
6-15-22	ISSUED FOR DCA APPROVAL
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Date	Issued	Revision No.
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Drawing Title: MECHANICAL EQUIPMENT NEW WORK ELEVATIONS AND SECTIONS	
Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

M-250

EXISTING ABOVE-GROUND FUEL OIL STORAGE TANK SCHEDULE (FOR RECORD ONLY)									
UNIT NO.	CAPACITY (GAL.)	LOCATION	SERVICE	CONSTRUCTION & MATERIALS	TANK SIZE		WEIGHT (LBS)	MANUFACTURER	REMARKS
					INNER LxWxH (IN.xIN.xIN.)	OUTER LxWxH (IN.xIN.xIN.)			
STK-1	4,000	ABOVE GROUND	LONG TERM FUEL STORAGE	DOUBLE WALL CONSTRUCTION, TANKS: MILD CARBON STEEL SHELL: BALLISTIC CONCRETE	136 x 82 x 86	211 x 96 x 84	45,000	CONVAULT INC.	EXISTING, TO BE REUSED

DAMPER SCHEDULE												
UNIT NO.	QTY.	SERVICE	AIRFLOW (CFM)	MIN. FREE AREA (SQ. FT.)	SECTION QTY.	SECTION FRAME WIDTH (IN)	SECTION FRAME HEIGHT (IN)	TYPE	SP (IN WG)	MANUFACTURER & MODEL NO. (OR APPROVED EQUAL)	REMARKS	
D-1	1	SA LOUVER	99,000	121.0	10	42	60	CONTROL DAMPER	0.05	DOWCO/SAFE-AIR MODEL 604	W/ MECHANICAL LINKAGE, FLANGE CONNECTIONS, FINISH: ANODIZED	
D-2	1	EA LOUVER	82,500	78.0	6	40	60	CONTROL DAMPER	0.05	DOWCO/SAFE-AIR MODEL BRL	W/ COUNTERBALANCE WEIGHTS (ASSIST) FLANGE CONNECTIONS, FINISH: ANODIZED	

NOTES:
1. PROVIDE SA DAMPERS (D-1) WITH MECHANICAL LINKAGE TO BE CONNECTED TO EXISTING ELECTRICAL ACTUATORS IN FIELD.
2. PROVIDE EA DAMPERS (D-2) WITH COUNTERBALANCE WEIGHT, ADJUSTED TO ASSIST DAMPER OPENING.

SUPPLY AIR LOUVER SCHEDULE												
UNIT NO.	AIRFLOW (CFM)	MINIMUM OPENING FREE AREA (SQ. FT.)	MIN. WALL OPENING W x H (IN X IN)	SECTIONS		TYPE	SP (IN WG)	MANUFACTURER & MODEL NO. (OR APPROVED EQUAL)	REMARKS			
				QTY.	WIDTH (IN)							
SAL-1	99,000	106.32	210 x 120	2	72	120	DRAINABLE	0.12	DOWCO/SAFE-AIR MODEL EA 403	W/ WIRE MESH SCREEN, DAMPER SECTION(S) (D-1) TO COVER LOUVER FACE		
				1	66	120				FINISH: BAKED ENAMEL, RATED FOR MARINE DUTY		

NOTE: VERIFY EXISTING WALL OPENING SIZE IN FIELD PRIOR TO EQUIPMENT PURCHASE.

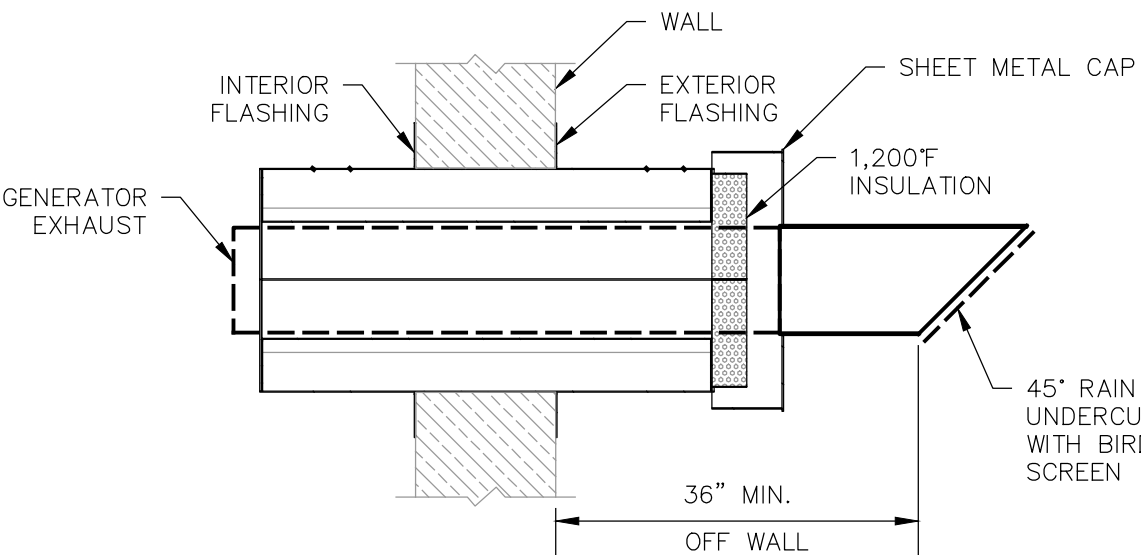
EXHAUST AIR LOUVER SCHEDULE												
UNIT NO.	AIRFLOW (CFM)	MINIMUM OPENING FREE AREA (SQ. FT.)	MIN. WALL OPENING W x H (IN X IN)	SECTIONS		TYPE	SP (IN WG)	MANUFACTURER & MODEL NO. (OR APPROVED EQUAL)	REMARKS			
				QTY.	WIDTH (IN)							
EAL-1	82,500	51.20	120 x 120	2	120	60	DRAINABLE	0.25	DOWCO/SAFE-AIR LEC-04	W/ WIRE MESH SCREEN, DUCT SLEEVE, INTEGRAL SHUTTER SECTION(S) TO COVER LOUVER FACE		
										FINISH: BAKED ENAMEL		

NOTE: VERIFY EXISTING WALL OPENING SIZE IN FIELD PRIOR TO EQUIPMENT PURCHASE.

EXHAUST FAN SCHEDULE													
UNIT NO.	LOCATION	CFM	SP (IN WG)	RPM	BHP	DRIVE	MOTOR DATA			WEIGHT (LBS)	BASIS OF SELECTION (OR APPROVED EQUAL)		REMARKS
							HP	V/PH/HZ	AMPS		MANUFACTURER	MODEL	
EF-1	WALL	10,449	0.25	860	1.11	DIRECT	1.0 VG	115/1/60	12.6	130	GREENHECK	SE2-36-611-C10	W/ BACKDRAFT DAMPER, 45° WEATHER HOOD, OSHA FAN GUARD, PREWIRED DISCONNECT SWITCH, VARI-GREEN MOTOR

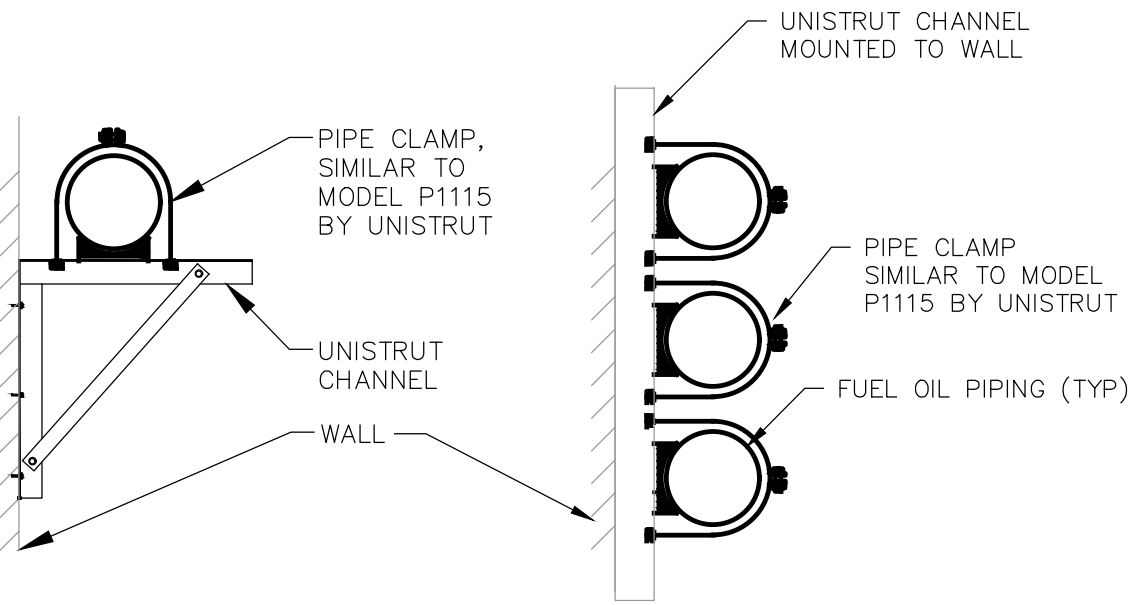
DAY TANK FUEL STORAGE SCHEDULE (SUPPLIED BY GENERATOR VENDOR)																				
UNIT NO.	SERVICE	LOCATION	CAPACITY (GAL.)	FUEL SUPPLY PUMP							FUEL RETURN PUMP						DRY WEIGHT (LBS)	BASIS OF SELECTION (OR APPROVED EQUAL)	NOTES	
				CONFIG	FLOW (GPM)	MOTOR DATA			INLET (IN)	OUTLET (IN)	CONFIG	FLOW (GPM)	MOTOR DATA			INLET (IN)				OUTLET (IN)
						HP	V/PH/HZ	RPM					HP	V/PH/HZ	RPM					
DT-1	DAY TANK	GENERATOR ROOM	300	DUPLX	7.5	1/3	115/1/60	1,750	0.75	0.75	SIMPLX	7.5	1/3	115/1/60	1,750	0.75	0.75	890	SIMPLEX TECHNOLOGY SERIES STS-300	SEE NOTES BELOW

NOTES:
1. PROVIDE DAY TANK SET w/ FOLLOWING FEATURES:
• (1x) AUXILIARY HAND PUMP
• (1x) DUPLX FUEL STRAINER
• (1x) VENT CAP
• (1x) EMERGENCY VENT w/ FLANGE + VENT CAP
• (1x) DRAIN HAND VALVE
• (3x) CHECK VALVE
• (2x) SOLENOID VALVE
• (1x) CONTAINMENT DRAIN HAND VALVE
• (1x) SIMPLEX RETURN PUMP w/ TEFC MOTOR
• (1x) DUPLX SUPPLY PUMP w/ TEFC MOTOR
• (1x) BASIC PLC BASED LEVEL AND DUPLX PUMP CONTROLLER
• (1x) MANUAL PRIMING PUMP
• (1x) FUEL OIL COOLER
• (2x) RUNNING TIME METER
• (3x) SINGLE PHASE MAGNETIC MOTOR STARTER
2. PROVIDE DAY TANK w/ FOLLOWING CONTROL OPTIONS:
• FLOAT SWITCH IN RUPTURE BASIN w/ ALARM
• DIGITAL CONTROLLER
• MECHANICAL DIAL LEVEL GAUGE
• DISCONNECT SWITCH
• CONTROLS POWER TRANSFORMER
• "POWER AVAILABLE" GREEN LIGHT
• OPERATION MODE SELECTOR
• LOSS OF FLOW ALARM
• AUXILIARY RELAY
• CRITICAL HIGH LEVEL CUT-OUT
• "LOW FUEL LEVEL" RED LIGHT
• "CRITICAL LOW FUEL" ALARM
• ALARM HORN
• "RUNNING PUMP" AMBER LIGHT
• MANUAL RESET NORMALLY OPEN SOLENOID VALVE
• ANTI-SIPHON VALVE
• FUEL OIL COOLER CONTROLS
• AUTOMATIC DUPLX PUMP CONTROLLER (OPTION 345)
• AUTOMATIC PUMP-OUT CONVERSION
• FUEL RISE PUMP-OUT CONTROLS (OPTION 390)

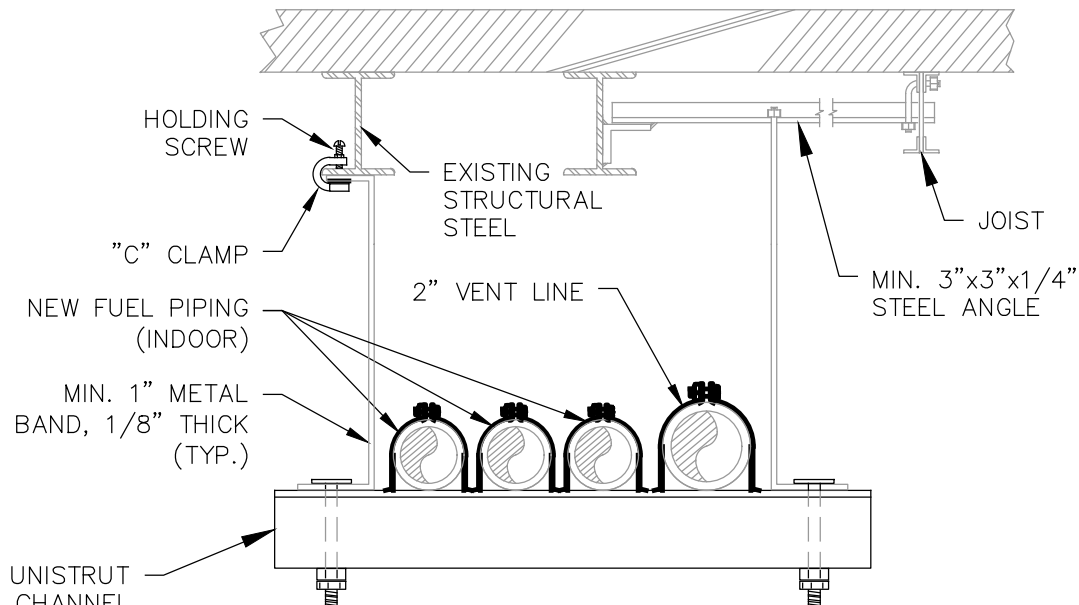


NOTE: REFER TO SPECIFICATIONS DRAWING M-575, SECTION " DIESEL ENGINE BREACHING AND STACK" FOR MORE INFORMATION

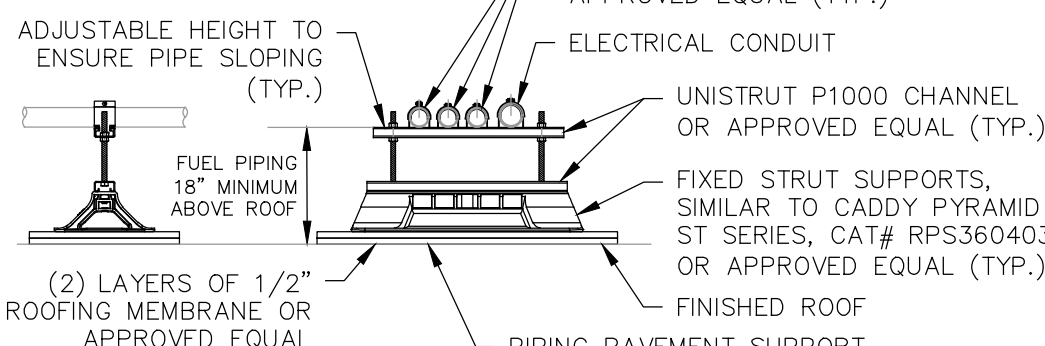
6 M-300 **GENERATOR EXHAUST DETAIL**
SCALE: N.T.S.



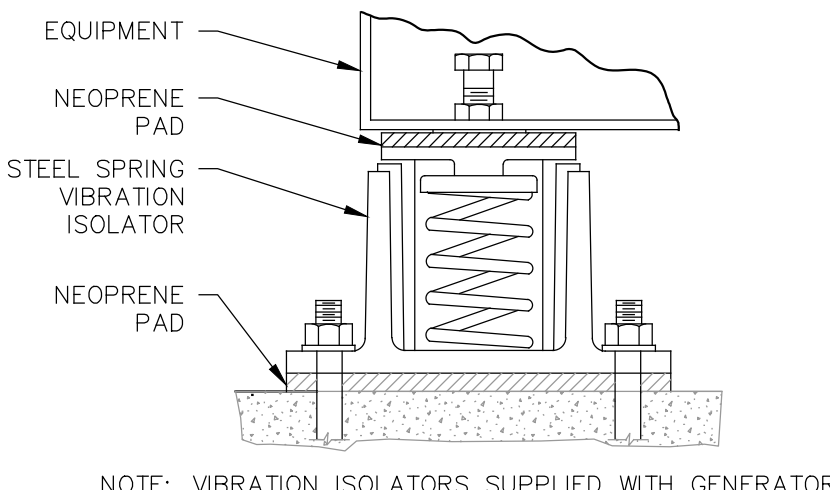
7 M-300 **TYPICAL WALL PIPING SUPPORT**
SCALE: NTS



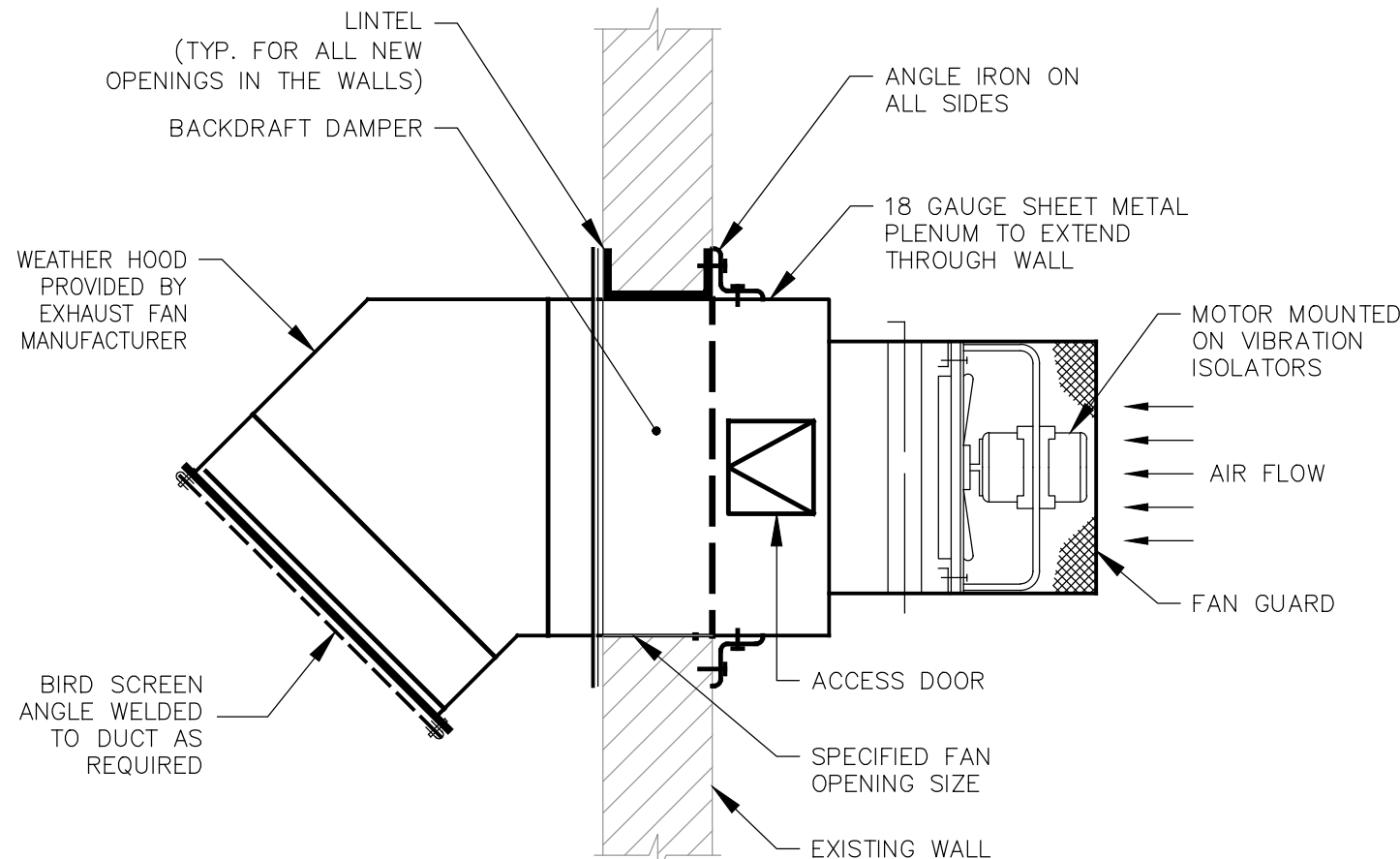
8 M-300 **FUEL PIPING HANGING SUPPORT DETAIL**
SCALE: NTS



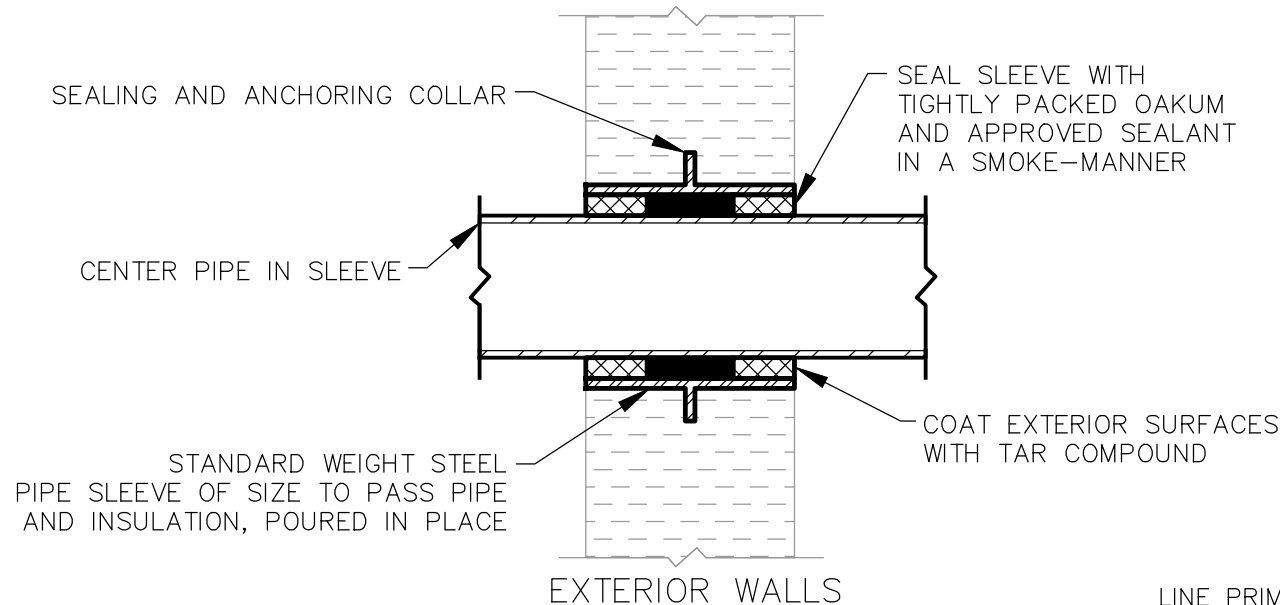
9 M-300 **FUEL PIPING FLOOR SUPPORT DETAIL**
SCALE: NTS



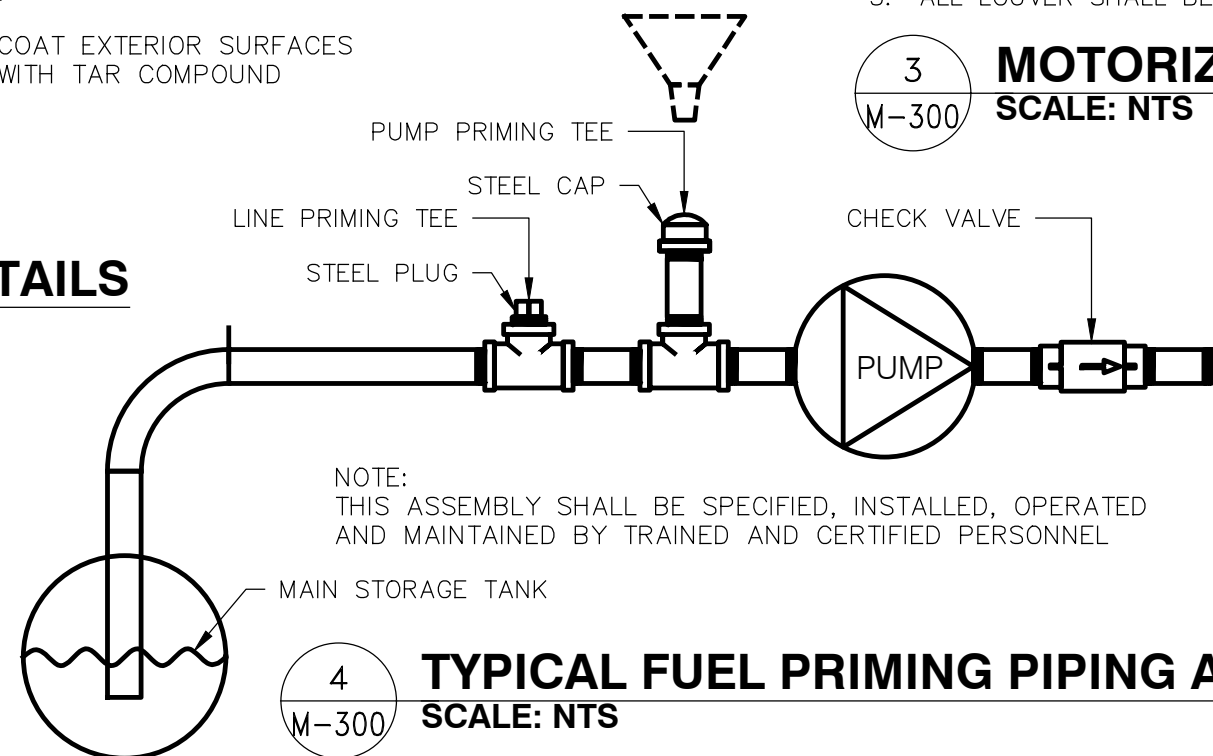
10 M-300 **VIBRATION ISOLATOR DETAIL**
SCALE: NTS



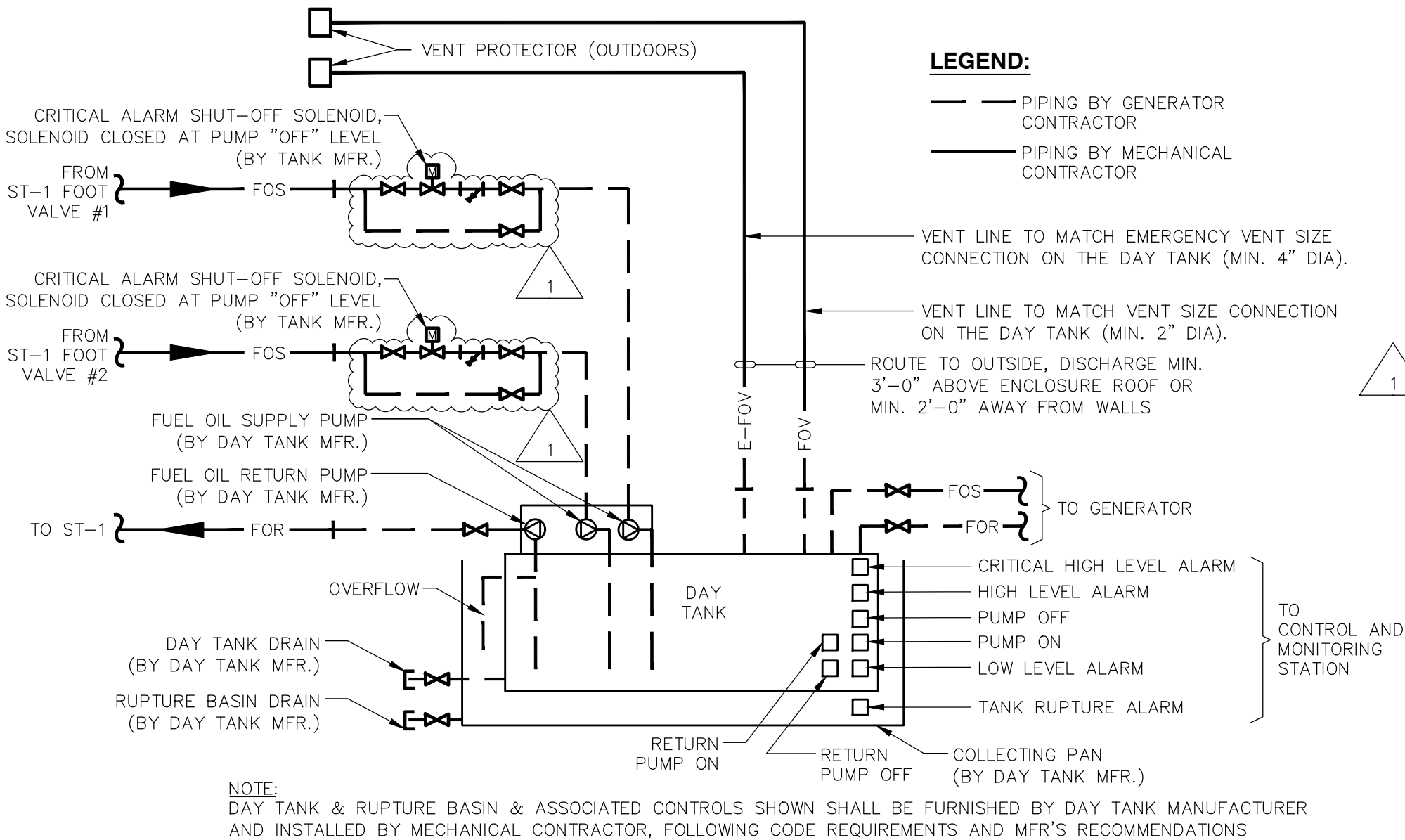
1 M-300 **EXHAUST FAN w/ WEATHER HOOD DETAIL**
SCALE: NTS



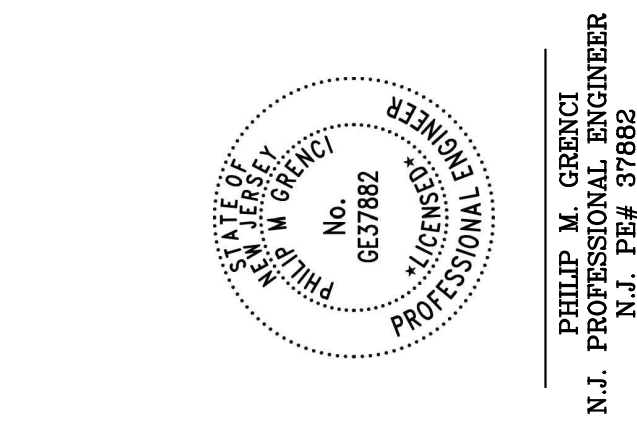
2 M-300 **WALL SLEEVE DETAILS**
SCALE: NTS



4 M-300 **TYPICAL FUEL PRIMING PIPING ASSEMBLY**
SCALE: NTS



5 M-300 **TYPICAL DAY TANK FLOW DIAGRAM**
SCALE: NTS



NJ SPORTS & EXPOSITION AUTHORITY PUMP STATION GENERATOR INSTALLATION

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

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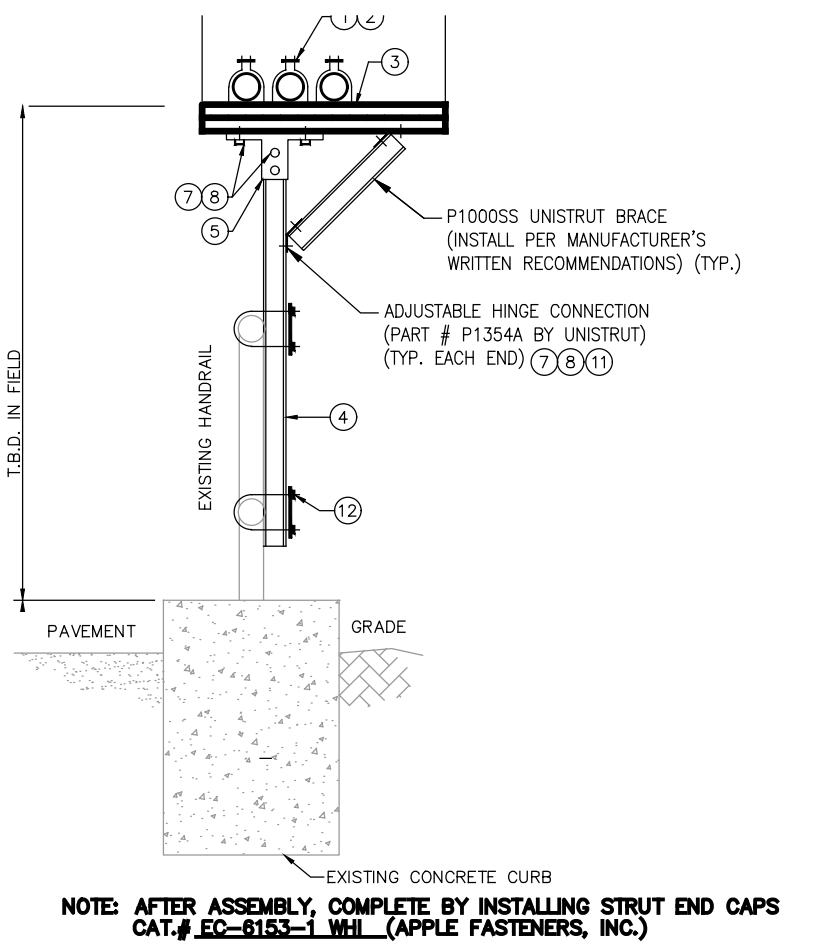
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Drawing Title:
**MECHANICAL
SCHEDULES AND DETAILS**

Scale: **AS NOTED** Issue Date: **4/15/22**
Proj. Manager: **ANC** Proj. Engineer: **PMG**

AMA Project No.:
CEI215080

M-300

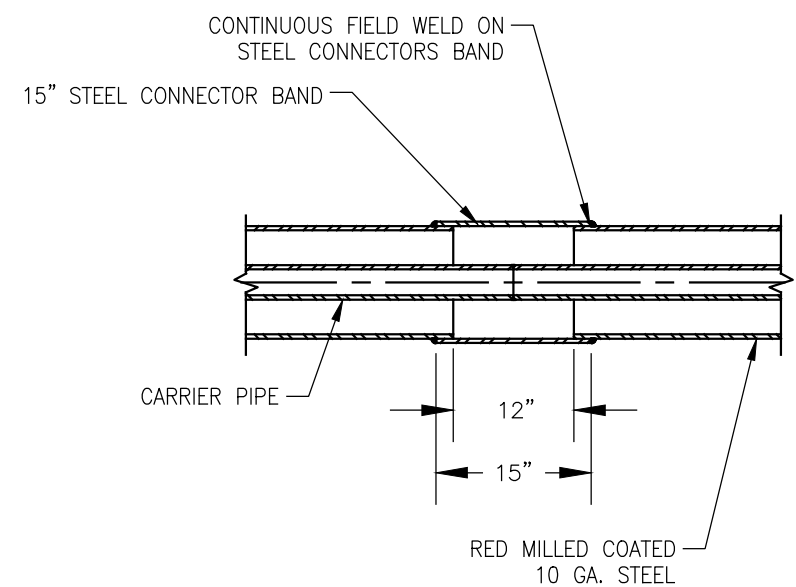


NOTE: AFTER ASSEMBLY, COMPLETE BY INSTALLING STRUT END CAPS CAT# ED-8153-1 WHL (APPLE FASTENERS, INC.)

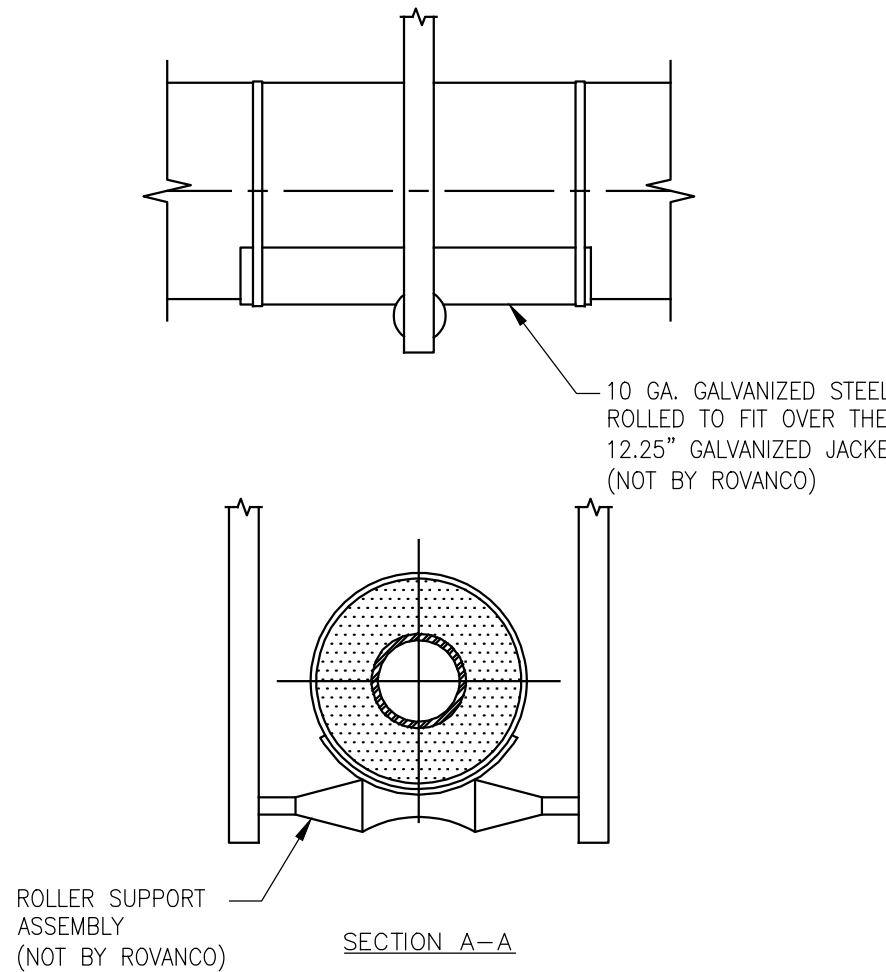
TYPICAL MATERIAL LIST			
IT	DESCRIPTION	UNISTRUT No.	QLOBE No.
1	CARRIER PIPE		
2	4" PIPE CLAMP ASSEMBLY	P1113SS	G7004SS
3	1 5/8"x 3 1/4" CHANNEL, COMBINATION	P1001SS	G5812ASS
4	1 5/8" X 1 5/8" CHANNEL	P1000SS	G5812SS
5	5 13/32" x 3 7/8" WING SHAPE FITT.	P2346SS	G3084SS
6	6" Ø POST BASE FITTING	P2072ASS	G5105SS
7	1 1/2" - 13 X 1 3/16" CAP SCREW	HHCS050119SS	G1815SS
8	{1 1/2}" - 13 NUT WITH SPRING	P1010SS	G1035SS
9	5/8" RD. FLAT WASHER	HLW062SS	G1678SS
10	5/8" - 11 HEX NUT	HHKN062SS	G1846SS
11	UNISTRUT ADJUSTABLE HINGE	P1354A	G3204SS
11	NATIONAL HARDWARE U-BOLT w/ PLATE	-	N222-463 2193

* STAINLESS STEEL.
** SIZE TO MATCH EXISTING RAILS. PROVIDE WITH ADEQUATE MOUNTING HARDWARE.

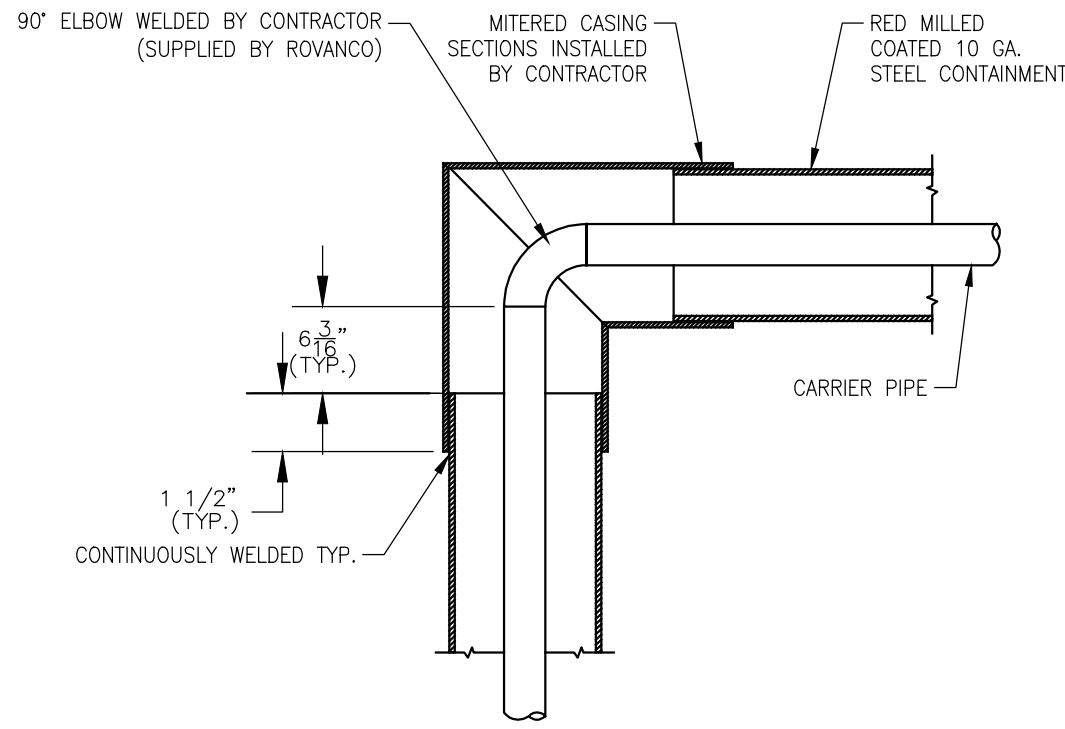
1
M-301
SUPPORTING COLUMN DETAIL
SCALE: N.T.S.



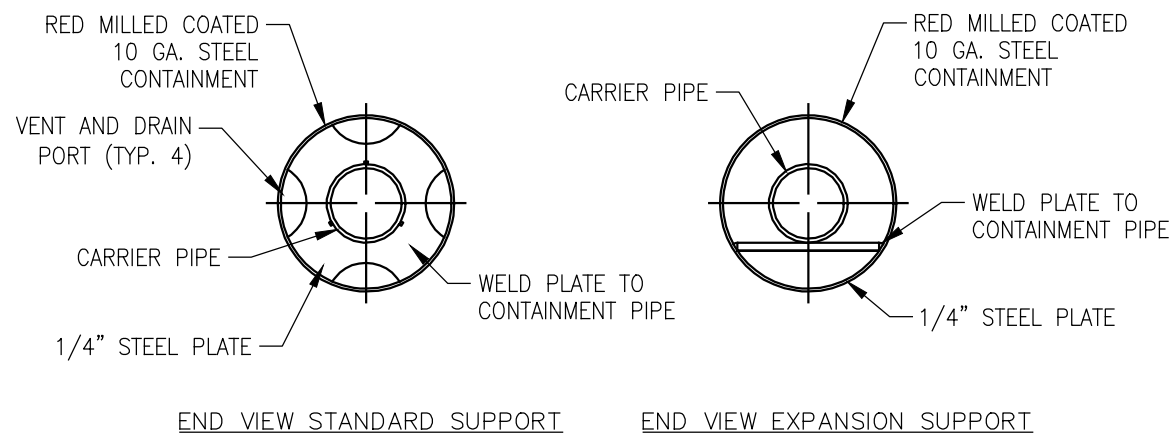
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M-301
STEEL CONTAINMENT FIELD JOINT DETAIL
SCALE: N.T.S.



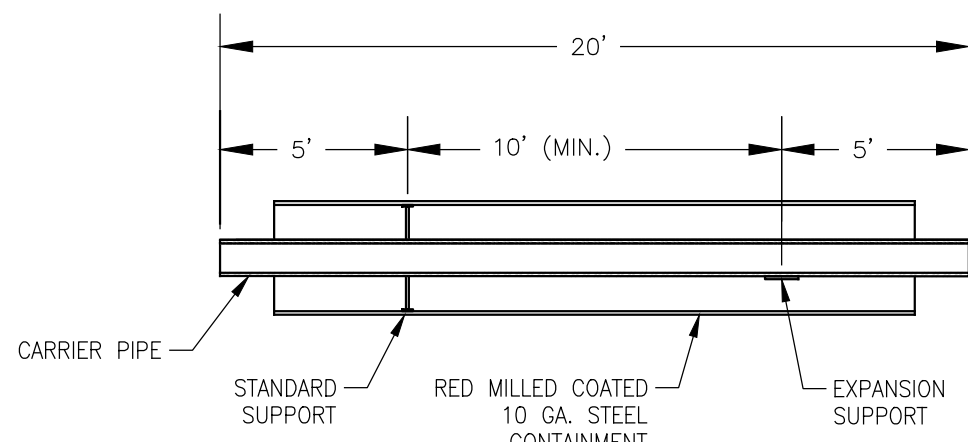
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M-301
TYPICAL ROLLER SUPPORT DETAIL
SCALE: N.T.S.



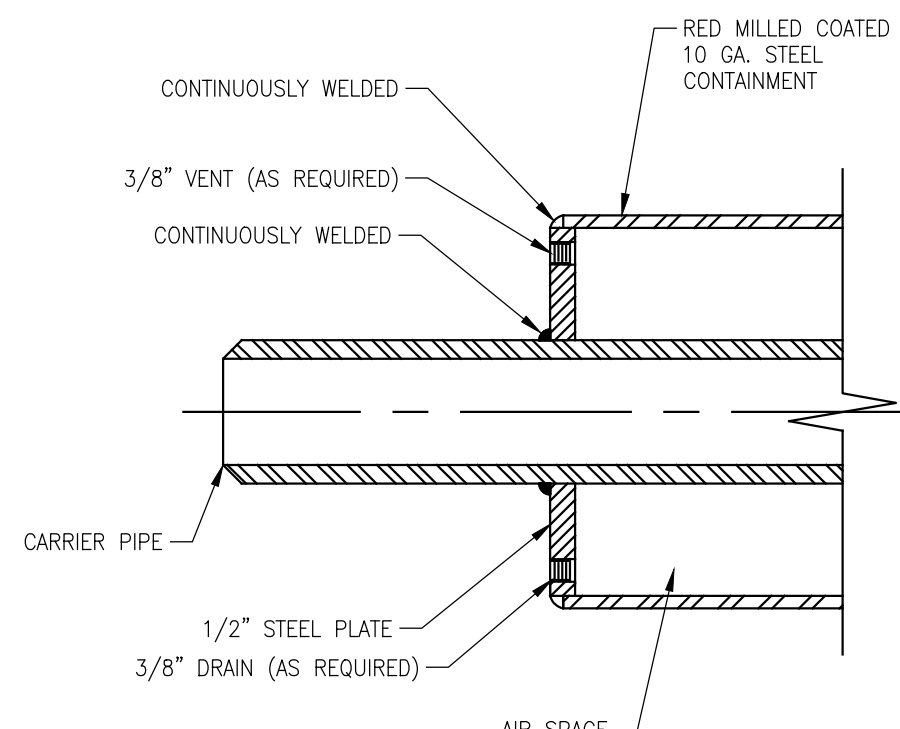
2
M-301
QUICK FIT CONTAINMENT ELBOW DETAIL
SCALE: N.T.S.



END VIEW STANDARD SUPPORT **END VIEW EXPANSION SUPPORT**

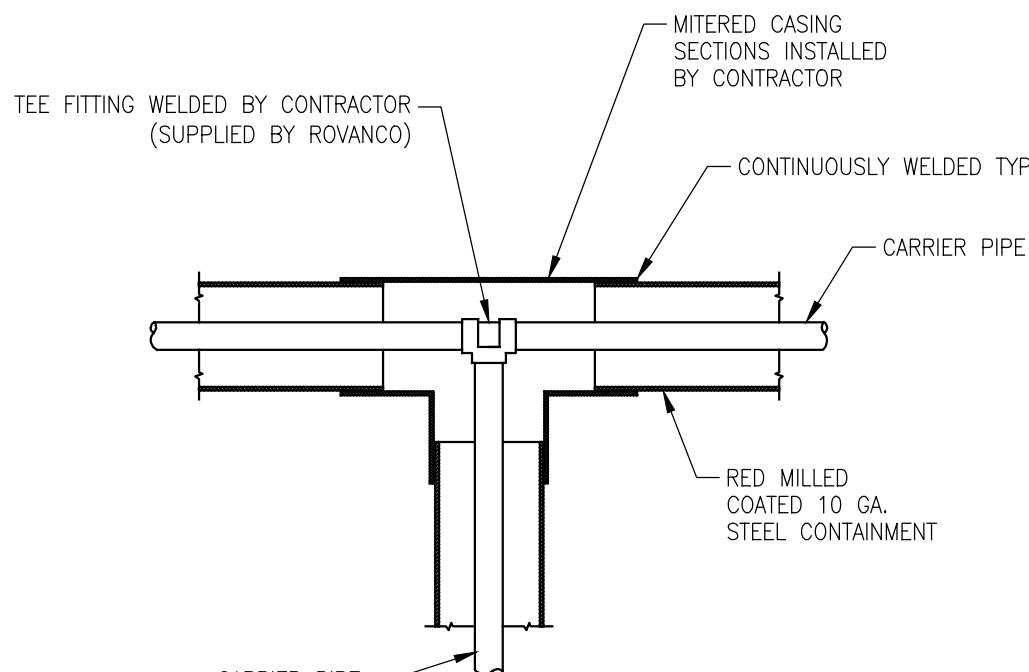


5
M-301
20' STRAIGHT LENGTH DETAIL
SCALE: N.T.S.

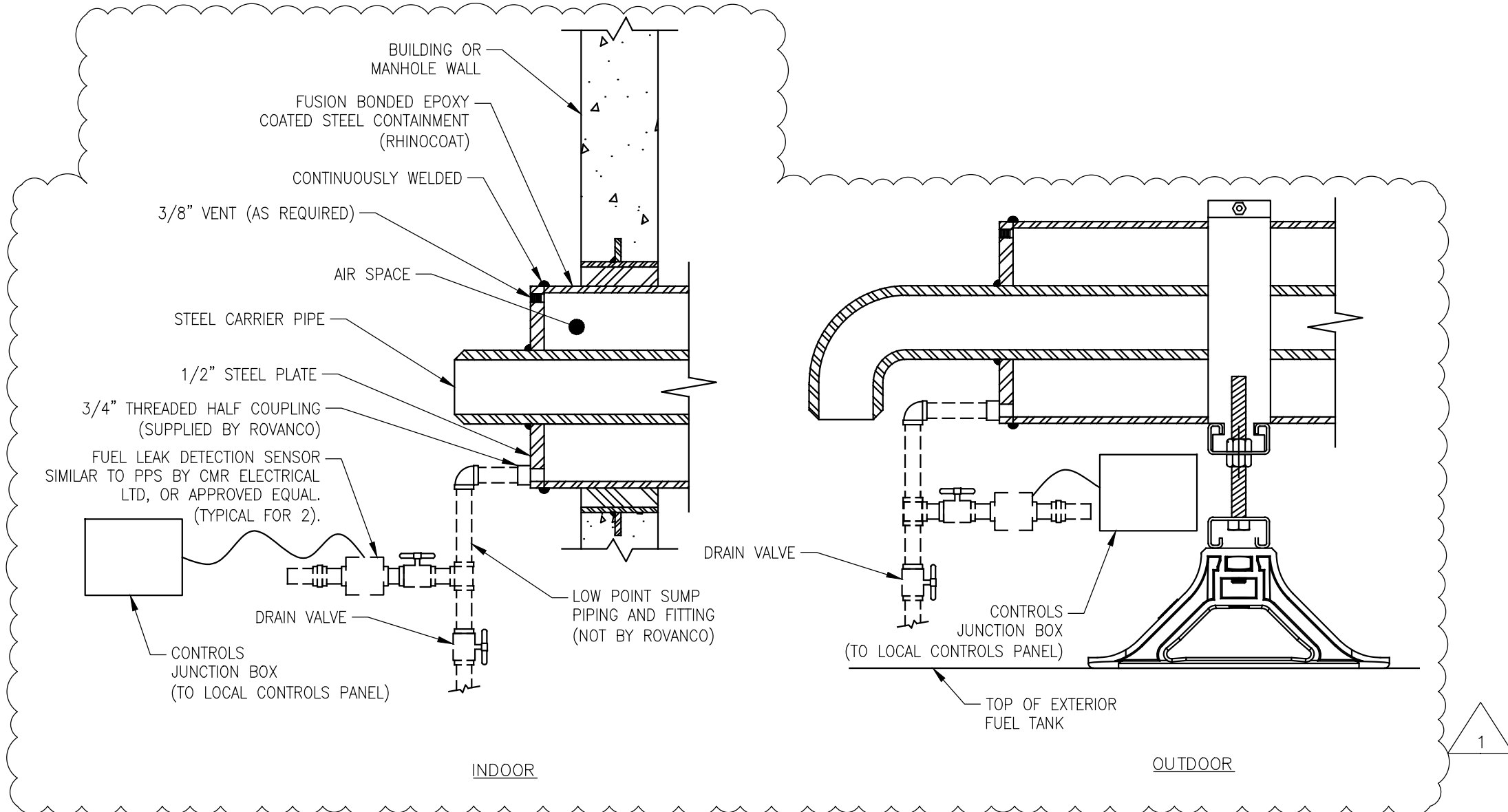


ALL OF OUR DIMENSIONS ARE TAKEN FROM
END OF CARRIER PIPE AT WALL PENETRATIONS.

3
M-301
STEEL CONTAINMENT END SEAL DETAIL
SCALE: N.T.S.



6
M-301
QUICK FIT CONTAINMENT TEE DETAIL
SCALE: N.T.S.



9
M-301
LOW POINT SUMP DETAIL
SCALE: N.T.S.

DOUBLE WALL PIPING GENERAL NOTES

CARRIER PIPE:
A53B BLACK STEEL PIPE, SEAMLESS OR ERW, IN PRE-CUT LENGTHS. PIPE 10-INCH AND SMALLER SHALL BE SCHEDULE 40. PIPE 12-INCH AND LARGER SHALL BE .375 WALL. (SCHEDULE 80) OTHER PIPING MATERIALS AND THICKNESS ALSO AVAILABLE.

INNER PIPE SUPPORTS:
ALL PIPE SHALL BE ALIGNED AND SUPPORTED WITHIN THE CASING WITH CENTERING SUPPORTS SPACED ON APPROXIMATELY 10'-FT. THE INNER PIPE SHALL BEAR DIRECTLY ON THE SUPPORT. THE SUPPORT SHALL BE DESIGNED AS TO PERMIT DRAINAGE AND FREE AIR PASSAGE. CONCRETE TYPE PIPE SUPPORTS WILL NOT BE ALLOWED.

OUTER CONTAINMENT CASING:
OUTER CASING SHALL BE BLACK STEEL. CASING UP THROUGH 24-INCH SHALL BE 10 GAUGE. THE INTERIOR SURFACE SHALL BE SMOOTH TO PERMIT FREE MOISTURE DRAINAGE AND REMOVABILITY OF THE INNER ASSEMBLY. THE OUTER CASING SHALL BE SIZED TO PROVIDE AN ADEQUATE ANNUAL SPACE BETWEEN THE OUTER SURFACE OF THE PIPE MATERIAL AND THE INTERIOR SURFACE OF THE CASING. THE EXTERIOR SURFACE WILL BE COATED WITH 4-6 MILS OF RED MIL PRIMER. RED MIL PRIMER MUST BE CORROSION RESISTANT AND MEET CLASS A FOR SLIP COEFFICIENT. IT MUST ALSO MEET PERFORMANCE COMPARABLE TO PRODUCTS FORMULATED TO FEDERAL SPECIFICATIONS: MIL-P-23377 AND MIL-P-53022. STEEL SURFACE MUST BE CLEAN, DRY PRIMED. NO ASPHALT, COAL TAR COATING, FRP CASING OR ANY OTHER TYPE WILL BE ALLOWED. OUTER CASING CLOSURES SHALL CONSIST OF TO GAUGE STEEL SUITABLY RUST-PROOFED AND IN CYLINDRICAL FORM WITH A SINGLE HORIZONTAL SPLIT AND SHALL BE FIELD WELDED OVER ADJACENT UNITS. AFTER TESTS ALL EXPOSED CLOSURES SHALL BE PAINTED WITH RED MIL PRIMER. FOR ABOVE GROUND APPLICATIONS, THE STEEL CASING, FITTING COVERS AND CLOSURE JOINTS CAN BE RED MIL PRIMED.

TEST NAME	TEST METHOD	RESULTS
ABRASION RESISTANCE	ASTM D4060, CS17 WHEEL, 1000 CYCLES, 1KG LOAD	200 MG LOSS
ACCELERATED WEATHERING - QUV1	ASTM D4587, QUV-A, 5,000 HRS	PASSES
ADHESION	ASTM D4541	1050 PSI
CORROSION WEATHERING D714	ASTM D5894, 13 CYCLES, 4,368 HOURS	RATING 10 PER ASTM FOR BLISTERING; PER ASTM D610 FOR RUSTING
RATING 7		160 IN. LBS
DIRECT IMPACT RESISTANCE	ASTM D2794	250F (DISCOLORATION)
DRY HEAT RESISTANCE	ASTM D2485	PASSES
FLEXIBILITY	ASTM D522, 180° BEND, 1-INCH MANDREL	PASSES
MOISTURE CONDENSATION RESISTANCE	ASTM D4585, 100F (38°C), 2000 HOURS	PASSES, NO CRACKING OR DELAMINATION
PENICIL HARDNESS	ASTM D3363	3H
SALT FOG RESISTANCE	ASTM B117, 5,600 HOURS	PASSES, NO CRACKING OR DELAMINATION
SLIP COEFFICIENT, RED OXIDE	AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS	CLASS A, 0.50

WELD FITTINGS:
ALL CHANGES IN DIRECTION SHALL BE MADE WITH BENT OR WELD FITTINGS. WHERE TEE BRANCHES ARE SMALLER THAN THE MAINS THEY JOINT, WELD-O-LETS MAY BE USED. ALL FITTINGS SHALL BE SAME WALL THICKNESS AS ADJACENT PIPING.

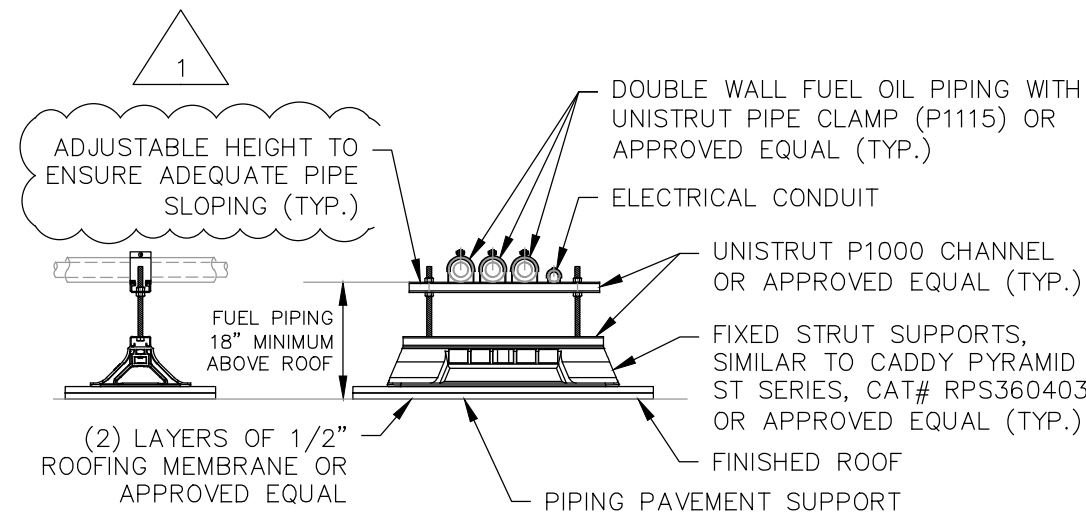
ANCHOR:
ANCHORS SHALL BE PRE-FABRICATED ONTO THE PIPING UNITS AND SHALL BE EQUIPPED WITH DRAINAGE AND VENT OPENINGS AT THE TOP AND BOTTOM OF THE ANCHOR PLATE. ANCHOR PLATES SHALL BE MADE OF 0.5-INCH STEEL PLATE. ANCHOR SHALL BE RED MIL PRIMED.

END SEAL:
TERMINAL ENDS INSIDE MANHOLES, PITS, OR BUILDING WALLS SHALL BE EQUIPPED WITH END SEALS CONSISTING OF A STEEL BULKHEAD PLATE WELDED TO THE PIPE CONDUIT. END SEALS SHALL BE MADE OF A 0.5-INCH STEEL PLATE WITH DRAIN OR VENT OPENINGS LOCATED DIAMETRICALLY OPPOSITE ON THE VERTICAL CENTER LINE OF THE MOUNTING PLATE AND SHALL BE SHIPPED TO THE JOBSITE WITH PLUGS IN PLACE. TERMINATE CONTAINMENT 2 INCHES BEYOND THE INSIDE FACE OF BUILDING WALLS TO PROTECT ANY EXPOSED PIPING FROM DAMP WALL CONDENSATION. END SEALS SHALL BE RED MIL PRIMED.

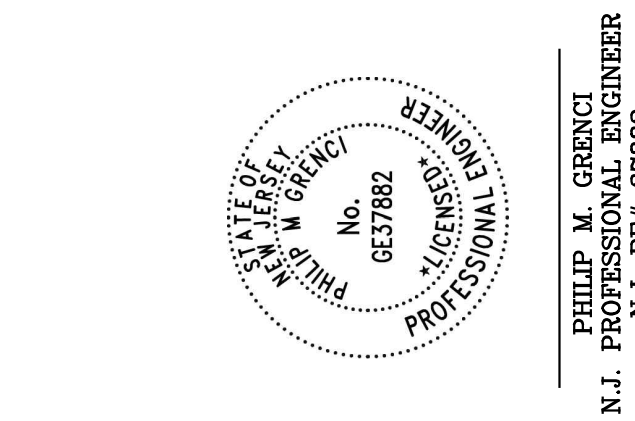
FIELD TESTS:
THE INNER PIPE OF THE SYSTEM SHALL BE TESTED HYDROSTATICALLY TO 1-1/2 TIMES THE WORKING PRESSURE OF THE LINE. IF A LEAK IS FOUND, IT SHALL BE REPAIRED AND THE TEST REPEATED. THE OUTER CASING SHALL BE TESTED WITH AIR AT 15 PSIG AND A SOAP SOLUTION SHALL BE APPLIED TO THE FIELD JOINTS TO LOCATE LEAKS. IF LEAKS OCCUR, THEY SHALL BE REPAIRED AND THE TEST REPEATED, AFTER APPROVED BY TEST ALL FIELD JOINTS SHALL BE COATED BY THE CONTRACTOR. THE CONTRACTOR SHALL TEST THE CONTAINMENT COATING WITH AN ELECTRIC HOLIDAY DETECTOR. ANY BREAKS IN THE COATING SYSTEM SHALL BE REPAIRED AND THE TEST REPEATED BY THE CONTRACTOR.

INSTALLATION:
THE INSTALLATION SHALL BE MADE IN ACCORDANCE WITH PLANS AND SPECIFICATIONS, AND MANUFACTURERS INSTALLATION INSTRUCTIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXTERNAL PIPING COATING WITH TOUCH-UP PAINT TO ENSURE INTEGRITY OF THE PROTECTIVE LAYER ON THE PIPING SURFACE EXPOSED TO ELEMENTS. THE TOUCH-UP PAINT PROPERTIES SHALL MATCH THE RED MIL PRIMER PROPERTIES. MANUFACTURER WILL PROVIDE A FIELD SERVICE INSTRUCTOR ON-SITE TO TRAIN THE CONTRACTOR IN ALL PHASES OF INSTALLATION AND MAINTENANCE.

APPROVED VENDORS:
RED MIL STEEL CONTAINMENT SYSTEM BY ROVANCO, JOLIET, ILLINOIS OR APPROVED EQUAL. ANY ALTERNATE SUPPLIER MUST SUBMIT THEIR TECHNICAL DATA TO THE SITE ENGINEER TEN DAYS PRIOR TO BID DATE TO BE APPROVED IN WRITING AS AN EQUAL.



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FUEL DOUBLE WALL PIPING SUPPORT DETAIL
SCALE: NTS



NJ SPORTS & EXPOSITION AUTHORITY PUMP STATION GENERATOR INSTALLATION

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

6-2-22	ISSUED FOR REVIEW
6-15-22	ISSUED FOR DCA APPROVAL
11-18-22	ISSUED FOR BID

Date	Issued	Revision No.
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Drawing Title: MECHANICAL DETAILS	
Scale: AS NOTED	Issue Date: 4/15/22
Proj. Manager: ANC	Proj. Engineer: PMG
AMA Project No.: CEI215080	

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