03 - ELECTRICAL
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THE DESIGN APPEARS TO CONFORM TO APPLICABLE CRITERIA. APPROVAL IS NOT TO BE CONSTRUED TO MEAN THAT ALL ASPECTS OF THE DESIGN HAVE BEEN PERSONALLY CHECKED BY THE UNDERSIGNED.

Christopher J. Bonsignore, P.E.
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TRANSPORTATION PRINCIPAL ENGINEER

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\FD_MSH_ELE_0170_3369_E001.dgn

SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: VARIOUS

DRAWING TITLE:
ELECTRICAL INDEX SHEET

PROJECT NO. 0170-3476
DRAWING NO. E-001
SHEET NO. 03.01

GENERAL NOTES:

1. MINIMUM SIZE WIRE FOR POWER AND LIGHTING PANELS CIRCUITS SHALL BE #12 AWG. BRANCH CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE #10 AWG. WIRING SIZE SHALL BE ADJUSTED AS NECESSARY TO REFLECT AMPACITY DERATING DUE TO NUMBER OF LOADED CONDUCTORS SHARING A PARTICULAR RACEWAY. MINIMUM CONDUIT SIZE SHALL BE ¾" AS OUTLINED IN SPECIFICATION SECTION 260533.
2. INTERRUPTING CAPACITY OF ELECTRICAL EQUIPMENT SHALL BE EQUAL TO OR GREATER THAN THE AVAILABLE SHORT-CIRCUIT CURRENT AT ITS SUPPLY TERMINAL.
3. INSTALLERS SHALL, IN A WORKMANLIKE MANNER, PROVIDE COMPLETE OPERABLE SYSTEMS.
4. INSTALLER SHALL COORDINATE ALL WORK WITH OTHER DIVISION TRADES, LOCATE FIXTURES, DEVICES, ETC, IN ORDER TO AVOID INTERFERENCE.
5. ALL FEEDER AND BRANCH CIRCUITS SHALL HAVE AN EQUIPMENT GROUND CONDUCTOR INCLUDED WITH PHASE WIRING.
6. CONDUIT ROUTING SHOWN ON THE PLANS ARE ONLY DIAGRAMMATIC IN NATURE.
7. ALL CIRCUITS SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR FROM ELECTRICAL PANELS.
8. ALL PANELBOARDS SHALL BE MOUNTED ON ¾" FIRE RETARDANT PLYWOOD, TREATED ON ALL SIDES, AND PAINTED WITH TWO COATS OF BLACK ENAMEL ON ALL SIDES.
9. PATCH AROUND ALL ELECTRICAL CONDUIT PENETRATIONS THROUGH WALLS. INSTALL FIRE STOP AROUND ALL ELECTRICAL CONDUIT PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS IN ACCORDANCE WITH SPECIFICATION NO. 260544. FIRE STOP MATERIAL SHALL BE APPLIED TO BOTH SIDES OF FIRE RATED WALL PENETRATION.
10. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF SERVICE EQUIPMENT, SWITCHBOARDS, PANEL BOARDS, AND MOTOR CONTROL CENTERS EXTENDING UP FROM THE FLOOR TO A HEIGHT OF 6' ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER IS LOWER, SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. FOREIGN SYSTEMS (SUCH AS WATER PIPING) INSTALLED DIRECTLY ABOVE THE DEDICATED SPACE MUST INCLUDE PROTECTIVE EQUIPMENT THAT ENSURES THAT OCCURRENCES SUCH AS LEAKS, CONDENSATION, AND BREAKS DO NOT DAMAGE ELECTRICAL EQUIPMENT BELOW. SEE NEC ARTICLE 110.26 FOR FURTHER DETAILS.
11. CONDUCTORS FOR ALL THE ELECTRICAL SYSTEMS SHALL BE RUN IN CONDUIT. NO EXPOSED CONDUCTORS SHALL BE ALLOWED UNLESS WHERE SPECIFICALLY NOTED OTHERWISE.
12. ALL WIRING IN BAYS AND SHOPS SHALL BE FED OVERHEAD IN CONDUIT (NO EXPOSED WIRING ALLOWED) - NO CONDUIT ALLOWED IN FLOOR SLAB, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL HANG ALL OVERHEAD CONDUITS IN BAYS WITH BEAM CLAMPS. ALL CONDUIT AND BOXES IN CMU WALLS SHALL BE CONCEALED.
13. MEANS OF MOUNTING SHALL BE PER MANUFACTURER'S SPECIFICATIONS UNLESS OTHERWISE NOTED.
14. ALL EXPOSED CONDUIT INSTALLED IN THE BAY AREAS, ELECTRICAL AND MECHANICAL ROOMS AT FLOOR LEVEL UP TO AND INCLUDING THE UNIFORM HEIGHT OF 10 FEET ABOVE FINISHED FLOOR SHALL BE RGSC. CONDUIT RACEWAYS SPECIFIED TO BE INSTALLED AND EXTENDED BEYOND THE 10 FOOT HEIGHT SHALL BE CONVERTED TO EMT.
15. THE CONTRACTOR SHALL CONTACT EVERSOURCE AND UI REPRESENTATIVES TO COORDINATE THE POWER UTILITY'S PORTION OF PROJECT WORK AND DISCONNECTION OF SERVICE. THE CONTRACTOR SHALL GIVE EVERSOURCE AND UI A MINIMUM NOTICE OF FOUR WEEKS PRIOR TO REQUIRING THE INITIATION OF ANY WORK TO BE COMPLETED BY THE UTILITY'S FORCES.
16. PARALLEL SETS OF CONDUCTORS SHALL BE RUN IN SEPARATE CONDUITS. SPARE CONDUIT SHALL BE CAPPED WITH PULL STRING AND TERMINATE IN THE ROOMS INDICATED 18" AFF.
17. SERVICE CONDUITS ENTERING THE BUILDING FROM OUTSIDE THE BUILDING SHALL BE ROUTED SURFACE MOUNTED NO MORE THAN 18" AFG BEFORE PENETRATING THE EXTERIOR WALL. SEE DETAIL NO.1 ON DRAWING NO.E-019.
18. CONDUIT SWEEPS/STUB-UPS IN CONCRETE AND PAVED AREAS SHALL BE PVC COATED RGSC. CONDUIT SWEEPS/STUB-UPS FOR ALL OTHER AREAS SHALL BE RGSC.
19. SEE DETAIL NO. 4 ON DRAWING NO. E-019 FOR CONDUIT IN TRENCH DETAILS. THE CONTRACTOR SHALL PROVIDE A 12" MINIMUM SEPARATION BETWEEN CROSSINGS OF OTHER UTILITY LINE; GAS LINES, FUEL LINES, ETC. AND ELECTRICAL LINES.
20. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF BOLLARDS WITH THE INSTALLATION OF CONDUIT. THE CONTRACTOR SHALL INSTALL THE BOLLARD FIRST TO ENSURE THAT THE CONDUIT INSTALLATION DOES NOT DISTURB THE BOLLARD FOUNDATION.
21. ALL CONDUIT SLEEVE PENETRATIONS THROUGH FOUNDATION WALLS SHALL BE INSTALLED USING A BORED CYLINDER.
22. ALL RACEWAY AND BOXES INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1 1/2" MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE RACEWAY OR BOX IN ACCORDANCE TO THE NEC.
23. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING, PLACING, MAINTAINING, AND REMOVING ALL SEDIMENTATION CONTROL SYSTEMS AS SHOWN IN THE DETAILS OR AS DIRECTED BY THE ENGINEER. ALL SEDIMENTATION CONTROL SYSTEMS SHALL BE INCLUDED IN ITEM NO. 0219001. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL MEET OR EXCEED THE REQUIREMENTS OF THE DEEP 2002 E&S GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL. FILTER FABRIC FENCE SHALL BE PLACED AT THE TOE OF SLOPE IN CONTRUCTION AREAS.
24. CONDUITS THROUGH OFFICE CORE SHALL BE INSTALLED ABOVE DROP DOWN CEILINGS AND SHALL BE SUPPORTED APPROPRIATELY PER NEC. CONDUIT LAYING ON TOP OF DROP DOWN CEILINGS IS NOT ACCEPTABLE.
25. CIRCUIT BREAKERS INSTALLED IN EXISTING PANELS SHALL BE SPECIFIED SO THAT THE KIC RATINGS MATCH THE EXISTING KIC RATING OF PANEL/CIRCUIT BREAKERS. NEW CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH EXISTING PANELS.
26. THE MAIN DISCONNECT INSTALLED ON THE LOAD SIDE OF THE METER SHALL SERVE AS THE MAIN BONDING JUMPER GROUND POINT. THE NEUTRAL AND SERVICE GROUND (GROUND ROD, WATER MAIN CONNECTIONS, METAL FRAME OF THE BUILDING, ETC) SHALL BE BONDED AT THIS POINT PER NEC ARTICLE 250.50. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING/INSTALLING GROUND LUGS, CONDUIT AND GROUNDING CONDUCTORS TO EQUIPMENT AS NECESSARY.
27. CONTRACTOR SHALL PROVIDE COORDINATION DRAWINGS SHOWING NEW ROOM LAYOUTS INDICATING NEW EQUIPMENT INSTALLATIONS/MODIFICATIONS TO SCALE. COORDINATION DRAWINGS SHALL INDICATE PROPER CLEARANCES ARE MET PER NEC. COORDINATION DRAWINGS SHALL BE PROVIDED AFTER EQUIPMENT SUBMITTALS HAVE BEEN APPROVED.
28. CONTRACTOR SHALL NOT ATTACH TO OR UTILIZE ANY EXISTING SUPPORTS WHEN MOUNTING NEW PANELS, ATS, SWITCHES, ETC.
29. NO FACILITY WITH AN EXISTING GENERATOR SHALL BE WITHOUT GENERATOR POWER FOR GREATER THAN 30 CALENDAR DAYS WITHOUT WRITTEN AUTHORIZATION FROM THE DEPARTMENT.
30. OPEN TRENCH TO BE PROTECTED BY TRAFFIC CONES AT ALL TIMES AND SHALL BE BACKFILLED AT THE END OF EACH WORK DAY.
31. CONTRACTOR SHALL PROVIDE A TYPED PANEL SCHEDULE LISTING ALL OCCUPIED CIRCUITS FOR ALL NEW PANELBOARDS INSTALLED AND EXISTING PANELBOARDS THAT ARE MODIFIED.

POWER SYMBOLS

200 AF / 200 AT	MOLDED CASE CIRCUIT BREAKER 200A FRAME RATING, 200A TRIP RATING (OR CIRCUIT BREAKER SIZE WHERE SHOWN ON CONTRACT DOCUMENTS)
	GROUND CONNECTION
M	METER PER LOCAL UTILITY REQUIREMENTS
	POWER/LIGHTING PANEL
SPD	SURGE PROTECTION DEVICE
	UNDERGROUND CONDUIT
	SURFACE MOUNTED CONDUIT OR CONDUIT ABOVE CEILING
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
	EXPLOSION PROOF EY FITTING

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AUTO	AUTOMATIC
AIC	AMPS INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRING GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BLDG	BUILDING
BRK.	BREAKER
C	CONDUIT
CKT.	CIRCUIT
COL.	COLUMN
CT	CURRENT TRANSFORMER
CU	COPPER
DISC.	DISCONNECT
DF	DRINKING FOUNTAIN
DP1	FUEL POWER PANEL
DWG	DRAWING
EDH	ELECTRICAL DUCT HEATER
EF	EXHAUST FAN
ELEC.	ELECTRICAL
ERV	ROOF VENTILATOR, EXHAUST
EUH	ELECTRICAL UNIT HEATER
FACP	FIRE ALARM CONTROL PANEL
FL	FLOOR
G.C.	GENERAL CONTRACTOR
GEN	GENERATOR
GFI	GROUND-FAULT INTERRUPTER
G, GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HT.	HEIGHT
HTR	HEATER
HZ	HERTZ
IN.	INCH
JB	JUNCTION BOX
kVA	KILOVOLT AMPERE
kW	KILOWATTS
LP	LIGHTING PANEL
MDP	MAIN DISTRIBUTION PANEL
MDS	MAIN DISCONNECT SWITCH
MECH.	MECHANICAL
MH	METAL HALIDE
MTG. HT.	MOUNTING HEIGHT
NEC	NATIONAL ELECTRICAL CODE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
O.C.	ON CENTER
PB	PUSH BUTTON
PF	PADDLE FAN
PIR	PASSIVE INFRARED
PVC	POLYVINYL CHLORIDE
PF	POWER FACTOR
PP	POWER PANEL
PNL	PANEL
RM	ROOM
REC	RECEPTACLE
RGSC	RIGID GALVANIZED STEEL CONDUIT
RP	RECEPTACLE PANEL
RTAC	ROOF TOP AIR CONDITIONER
SB	SWITCHBOARD
SPD	SURGE PROTECTION DEVICE
SPECS	SPECIFICATIONS
S"X"	SWITCH, SINGLE POLE "X" INDICATES SWITCHING CIRCUIT
SW	SWITCH
3PH	THREE PHASE
3P	THREE POLE
TYP.	TYPICAL
UH	UNIT HEATER
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
W	WATT OR WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\FD_MSH_ELE_0170_3369_E002.dgn

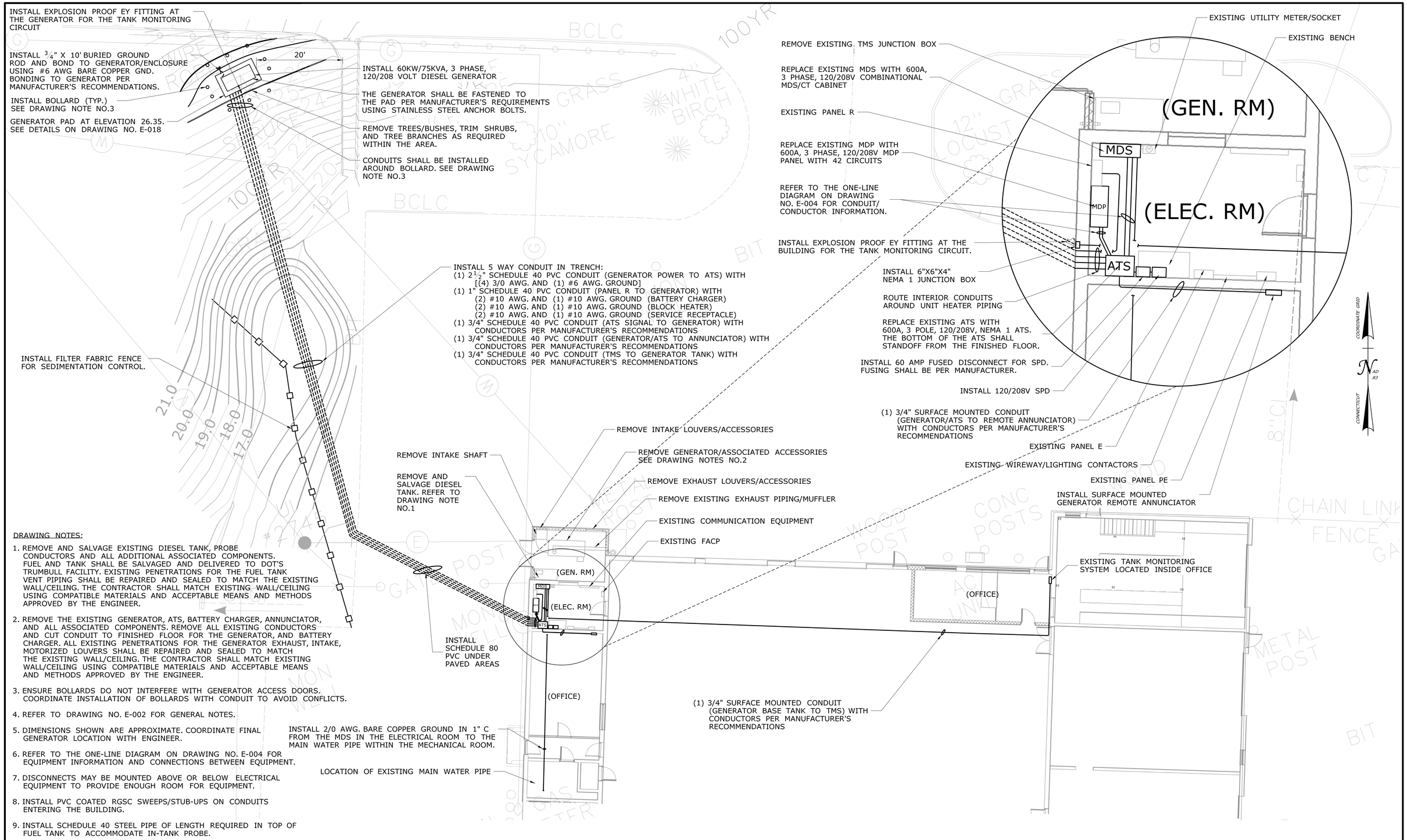
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: VARIOUS

DRAWING TITLE:
SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

PROJECT NO. 0170-3476
DRAWING NO. E-002
SHEET NO. 03.02



DRAWING NOTES:

1. REMOVE AND SALVAGE EXISTING DIESEL TANK, PROBE CONDUCTORS AND ALL ADDITIONAL ASSOCIATED COMPONENTS. FUEL AND TANK SHALL BE SALVAGED AND DELIVERED TO DOT'S TRUMBULL FACILITY. EXISTING PENETRATIONS FOR THE FUEL TANK VENT PIPING SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.
2. REMOVE THE EXISTING GENERATOR, ATS, BATTERY CHARGER, ANNUNCIATOR, AND ALL ASSOCIATED COMPONENTS. REMOVE ALL EXISTING CONDUCTORS AND CUT CONDUIT TO FINISHED FLOOR FOR THE GENERATOR, AND BATTERY CHARGER. ALL EXISTING PENETRATIONS FOR THE GENERATOR EXHAUST, INTAKE, MOTORIZED LOUVERS SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.
3. ENSURE BOLLARDS DO NOT INTERFERE WITH GENERATOR ACCESS DOORS. COORDINATE INSTALLATION OF BOLLARDS WITH CONDUIT TO AVOID CONFLICTS.
4. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.
5. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
6. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-004 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
7. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.
8. INSTALL PVC COATED RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.
9. INSTALL SCHEDULE 40 STEEL PIPE OF LENGTH REQUIRED IN TOP OF FUEL TANK TO ACCOMMODATE IN-TANK PROBE.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE: 1" = 10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Generator Site Plan.dgn

SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

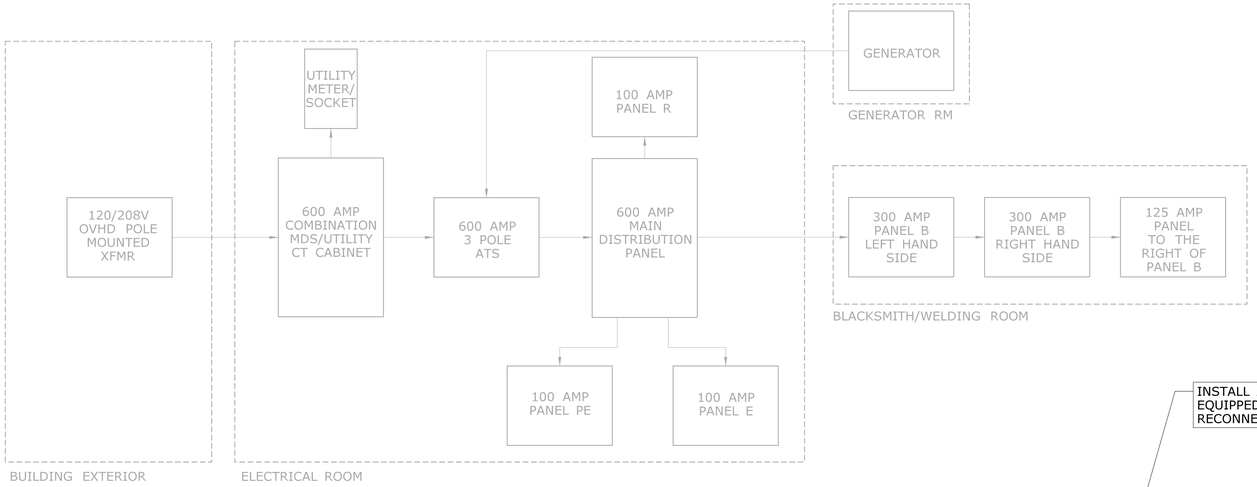
TOWN: EAST HAVEN

DRAWING TITLE: EAST HAVEN SITE PLAN/FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-003
SHEET NO. 03.03

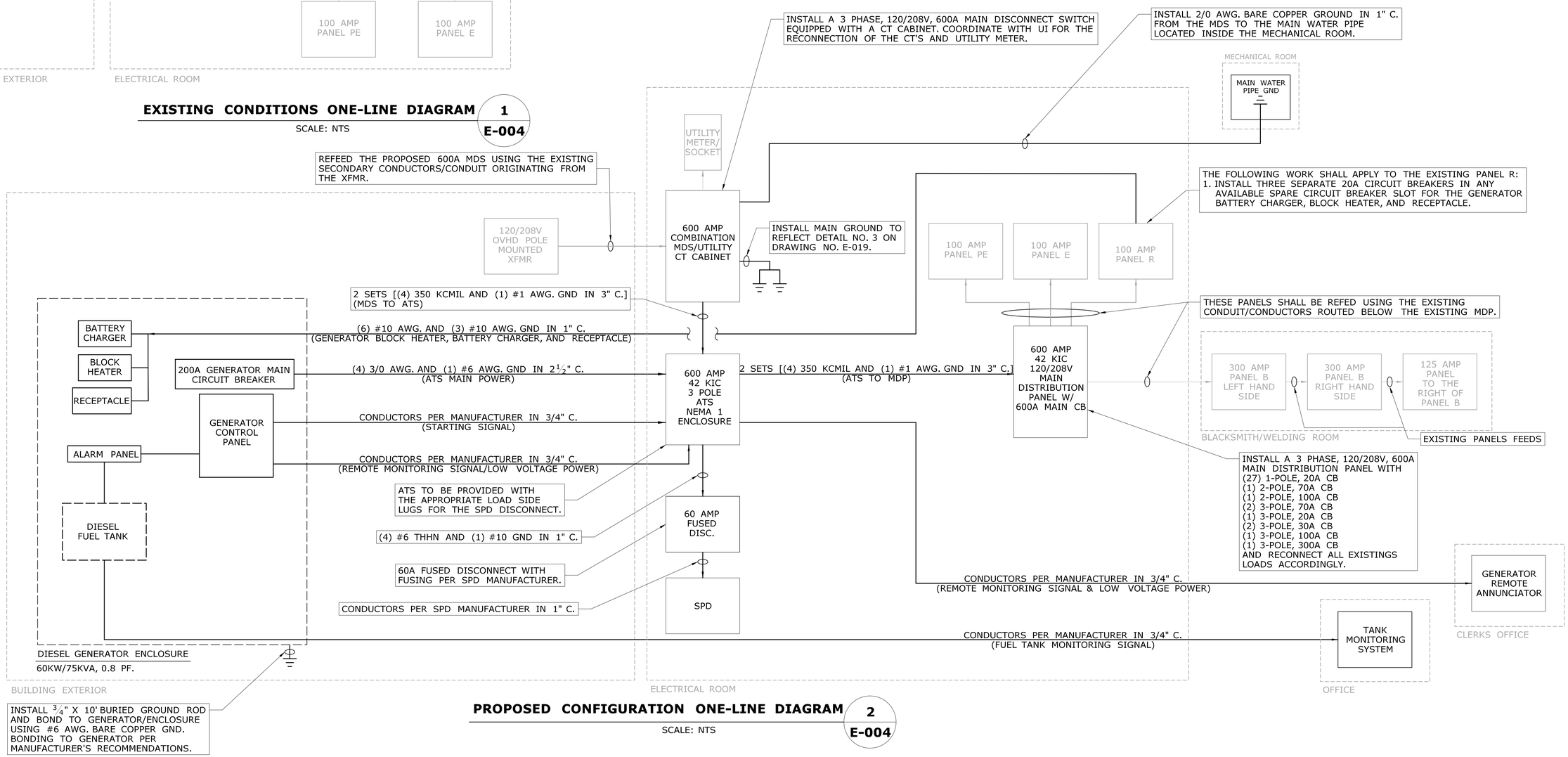
DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM $^{3}/_{4}$".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE EAST HAVEN SITE PLAN ON DRAWING NO. E-003 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. PROGRAMMING AND FINAL CONNECTIONS TO THE TANK MONITORING SYSTEM (TMS) SHALL BE DONE BY A TMS CERTIFIED INSTALLER. A TMS CERTIFIED INSTALLER SHALL ENSURE THAT ALL INTRINSICALLY SAFE WIRING IS MAINTAINED AND CONDUIT/CONDUCTORS SERVING THE BASE TANK ARE INNSTALLED CORRECTLY.



EXISTING CONDITIONS ONE-LINE DIAGRAM 1 E-004

SCALE: NTS



PROPOSED CONFIGURATION ONE-LINE DIAGRAM 2 E-004

SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

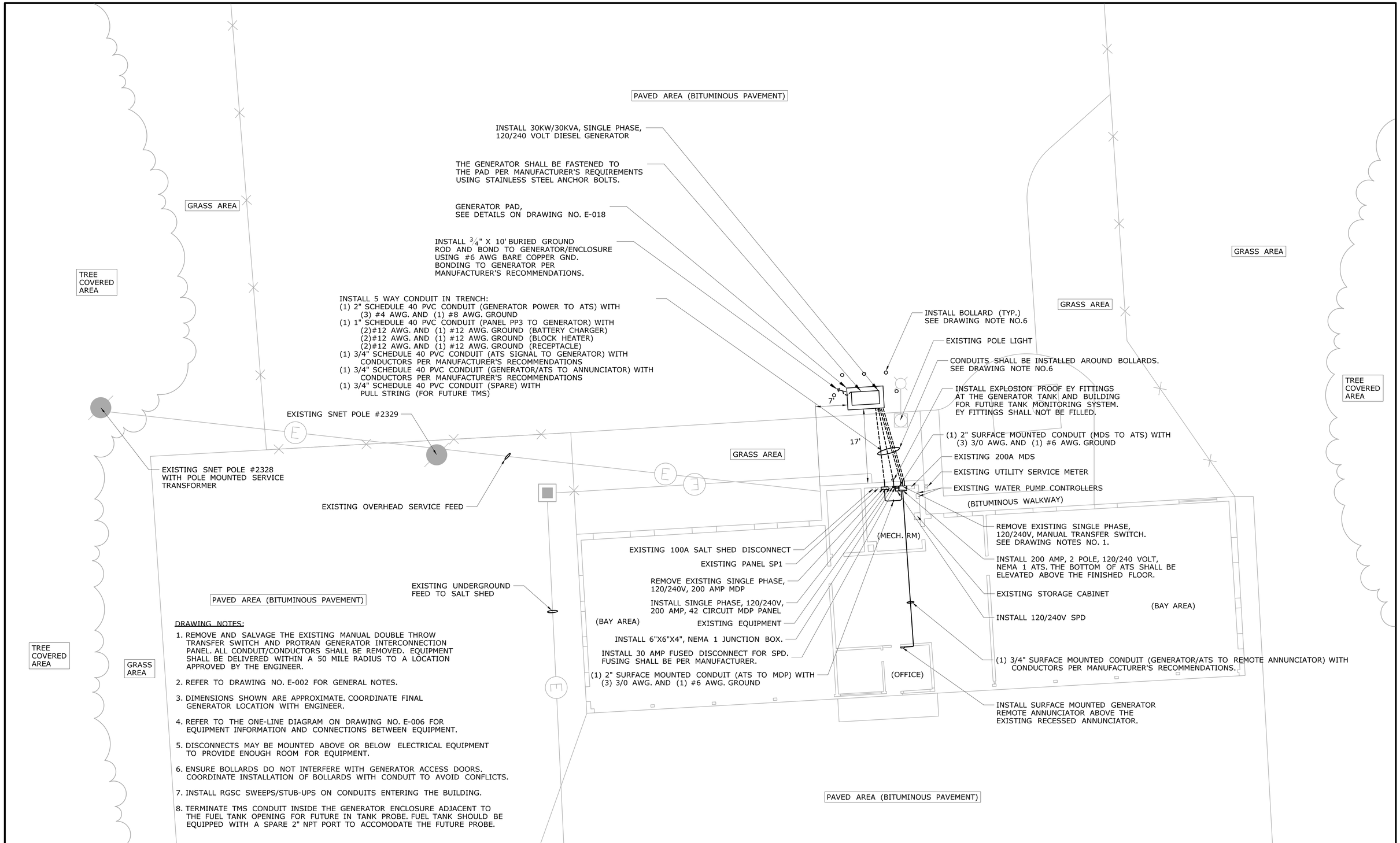
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: EAST HAVEN

DRAWING TITLE: EAST HAVEN ONE-LINE DIAGRAM

PROJECT NO. 0170-3476
DRAWING NO. E-004
SHEET NO. 03.04



DRAWING NOTES:

1. REMOVE AND SALVAGE THE EXISTING MANUAL DOUBLE THROW TRANSFER SWITCH AND PROTRAN GENERATOR INTERCONNECTION PANEL. ALL CONDUIT/CONDUCTORS SHALL BE REMOVED. EQUIPMENT SHALL BE DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPROVED BY THE ENGINEER.
2. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.
3. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
4. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-006 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
5. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.
6. ENSURE BOLLARDS DO NOT INTERFERE WITH GENERATOR ACCESS DOORS. COORDINATE INSTALLATION OF BOLLARDS WITH CONDUIT TO AVOID CONFLICTS.
7. INSTALL RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.
8. TERMINATE TMS CONDUIT INSIDE THE GENERATOR ENCLOSURE ADJACENT TO THE FUEL TANK OPENING FOR FUTURE IN TANK PROBE. FUEL TANK SHOULD BE EQUIPPED WITH A SPARE 2" NPT PORT TO ACCOMODATE THE FUTURE PROBE.

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CHECKED BY: MPW
SCALE: 1" = 10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Design Files\Site Plan.dgn

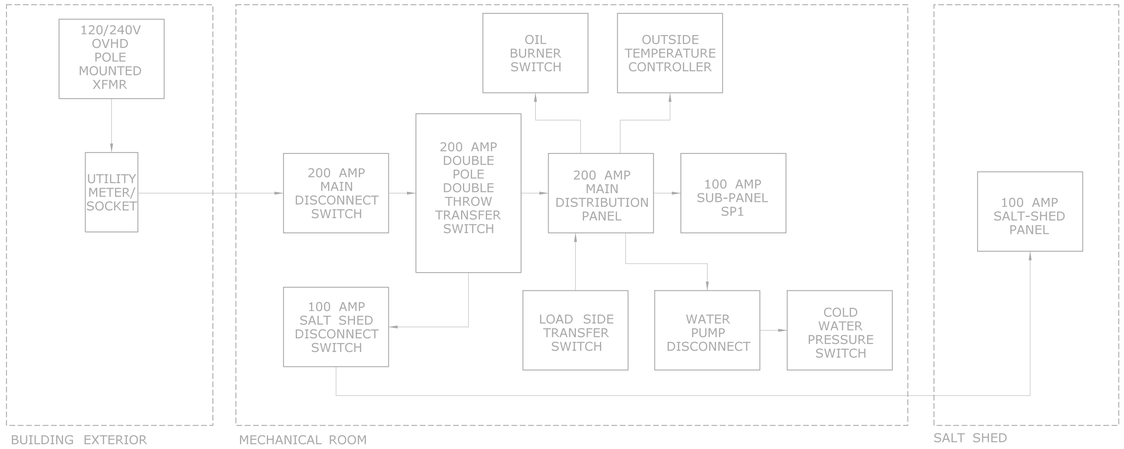
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: EAST LYME

DRAWING TITLE:
EAST LYME
SITE PLAN/FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-005
SHEET NO. 03.05



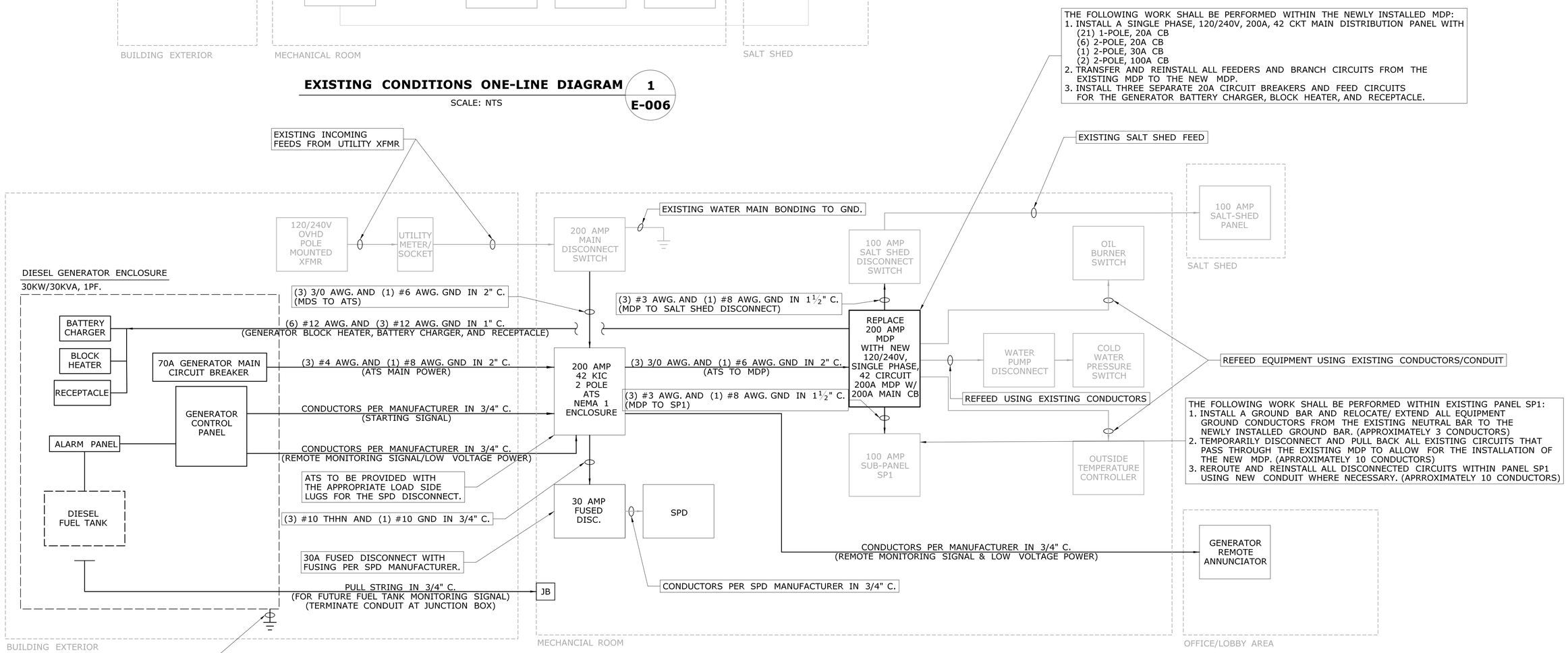
EXISTING CONDITIONS ONE-LINE DIAGRAM

SCALE: NTS

1
E-006

DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM $^{3}/_{4}$".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE EAST LYME SITE PLAN ON DRAWING NO. E-005 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.



PROPOSED CONFIGURATION ONE-LINE DIAGRAM

SCALE: NTS

2
E-006

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

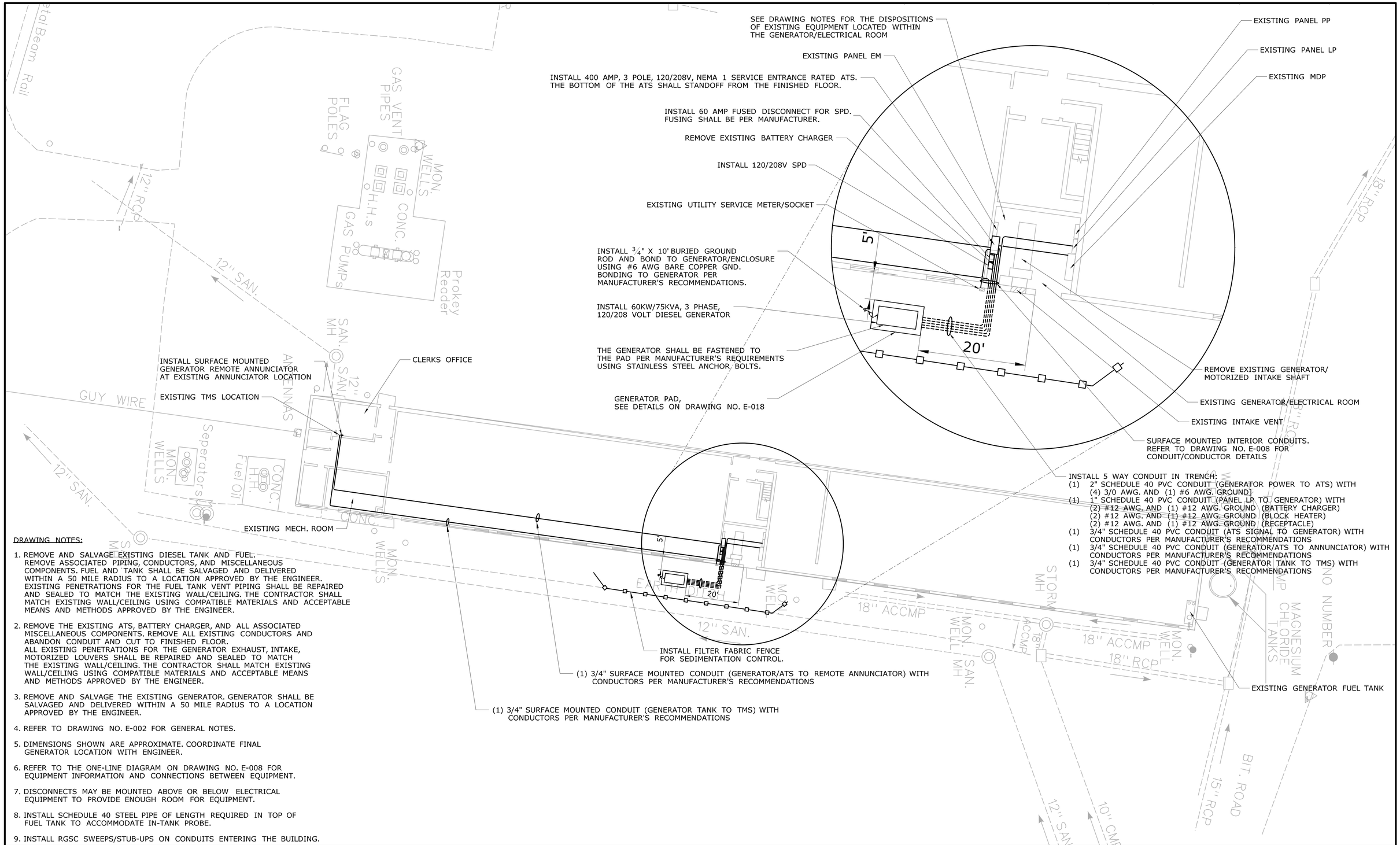
SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: EAST LYME

DRAWING TITLE: EAST LYME ONE-LINE DIAGRAM

PROJECT NO. 0170-3476
DRAWING NO. E-006
SHEET NO. 03.06



DRAWING NOTES:

1. REMOVE AND SALVAGE EXISTING DIESEL TANK AND FUEL. REMOVE ASSOCIATED PIPING, CONDUCTORS, AND MISCELLANEOUS COMPONENTS. FUEL AND TANK SHALL BE SALVAGED AND DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPROVED BY THE ENGINEER. EXISTING PENETRATIONS FOR THE FUEL TANK VENT PIPING SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.

2. REMOVE THE EXISTING ATS, BATTERY CHARGER, AND ALL ASSOCIATED MISCELLANEOUS COMPONENTS. REMOVE ALL EXISTING CONDUCTORS AND ABANDON CONDUIT AND CUT TO FINISHED FLOOR. ALL EXISTING PENETRATIONS FOR THE GENERATOR EXHAUST, INTAKE, MOTORIZED LOUVERS SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.

3. REMOVE AND SALVAGE THE EXISTING GENERATOR. GENERATOR SHALL BE SALVAGED AND DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPROVED BY THE ENGINEER.

4. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.

5. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.

6. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-008 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.

7. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.

8. INSTALL SCHEDULE 40 STEEL PIPE OF LENGTH REQUIRED IN TOP OF FUEL TANK TO ACCOMMODATE IN-TANK PROBE.

9. INSTALL RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE: 1/16" = 1'-0"

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Design Files\Site Plan.dgn

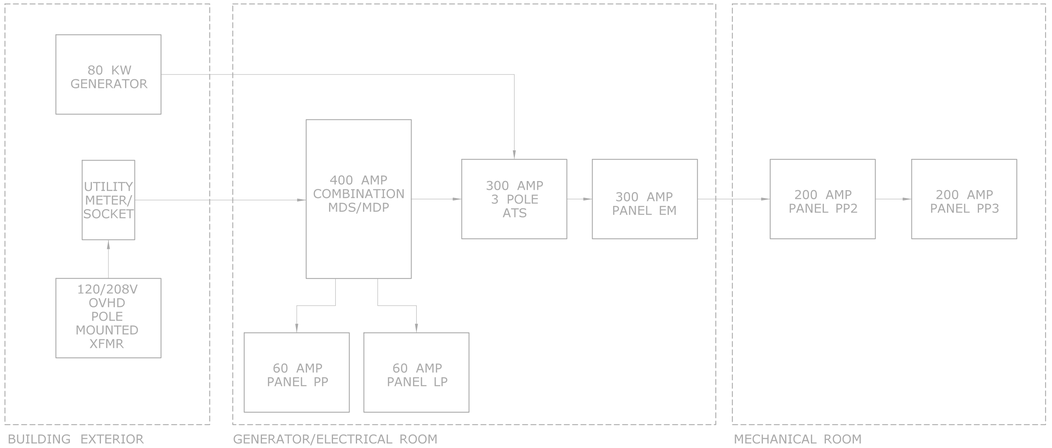
SIGNATURE/BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: EAST WINDSOR

DRAWING TITLE:
EAST WINDSOR SITE PLAN/FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-007
SHEET NO. 03.07



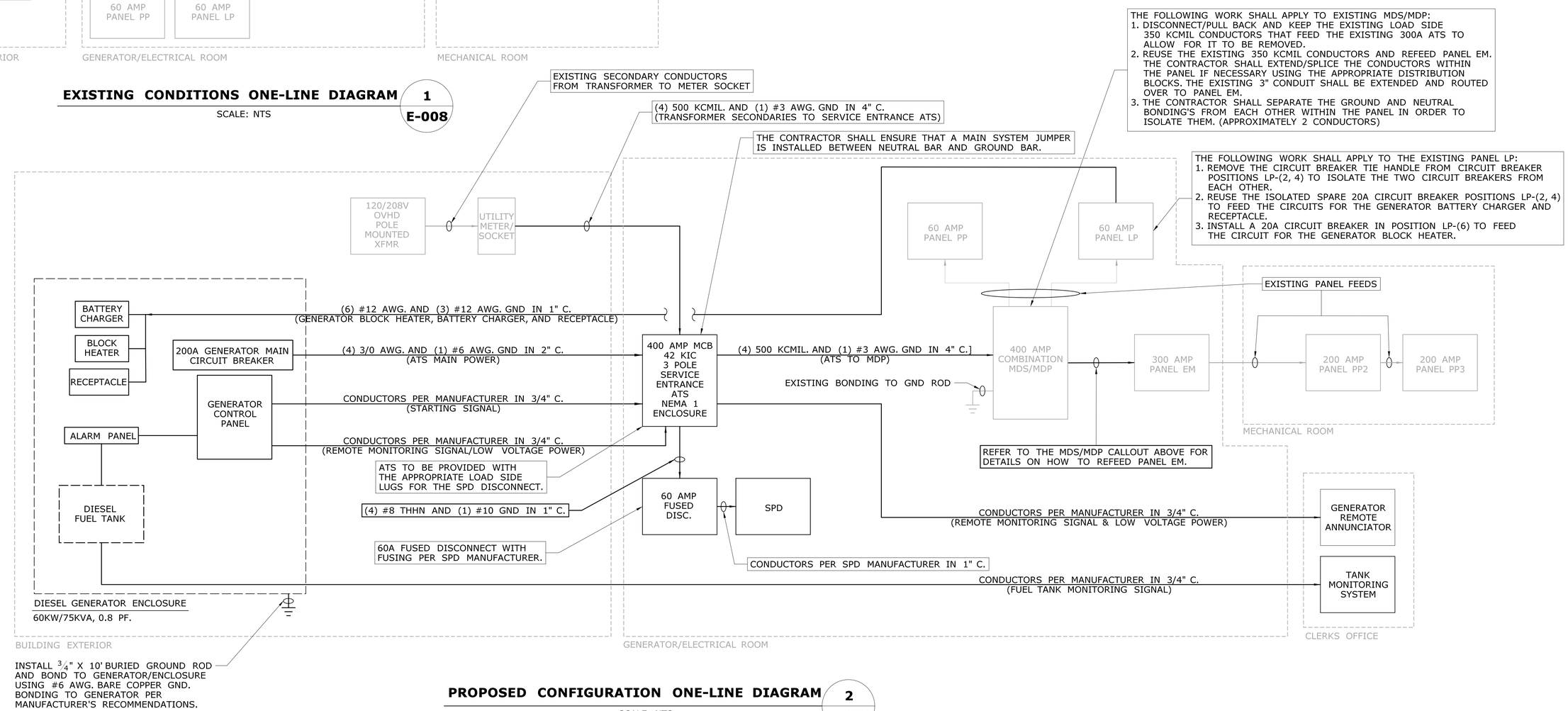
EXISTING CONDITIONS ONE-LINE DIAGRAM

SCALE: NTS

1
E-008

DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM $^{3}/_{4}$".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE EAST WINDSOR SITE PLAN ON DRAWING NO. E-007 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. PROGRAMMING AND FINAL CONNECTIONS TO THE TANK MONITORING SYSTEM (TMS) SHALL BE DONE BY A TMS CERTIFIED INSTALLER. A TMS CERTIFIED INSTALLER SHALL ENSURE THAT ALL INTRINSICALLY SAFE WIRING IS MAINTAINED AND CONDUIT/CONDUCTORS SERVING THE BASE TANK ARE INNSTALLED CORRECTLY.



PROPOSED CONFIGURATION ONE-LINE DIAGRAM

SCALE: NTS

2
E-008

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: EAST WINDSOR

DRAWING TITLE:
EAST WINDSOR ONE-LINE DIAGRAM

PROJECT NO. 0170-3476
DRAWING NO. E-008
SHEET NO. 03.08

DRAWING NOTES:

1. REMOVE EXISTING DIESEL TANK AND ASSOCIATED PIPING, CONDUCTORS, AND MISCELLANEOUS COMPONENTS. FUEL SHALL BE SALVAGED AND DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPROVED BY THE ENGINEER. EXISTING PENETRATIONS FOR THE FUEL TANK VENT PIPING SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.

2. REMOVE THE EXISTING GENERATOR, BATTERY CHARGER, AND ALL ASSOCIATED MISCELLANEOUS COMPONENTS. REMOVE ALL EXISTING CONDUCTORS AND ABANDON CONDUIT AND CUT TO FINISHED FLOOR. ALL EXISTING PENETRATIONS FOR THE GENERATOR EXHAUST, INTAKE, MOTORIZED LOUVERS SHALL BE REPAIRED AND SEALED TO MATCH THE EXISTING WALL/CEILING. THE CONTRACTOR SHALL MATCH EXISTING WALL/CEILING USING COMPATIBLE MATERIALS AND ACCEPTABLE MEANS AND METHODS APPROVED BY THE ENGINEER.

3. REMOVE AND SALVAGE THE EXISTING ATS. ATS TO BE DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPRVED BY THE ENGINEER.

4. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.

5. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.

6. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-010 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.

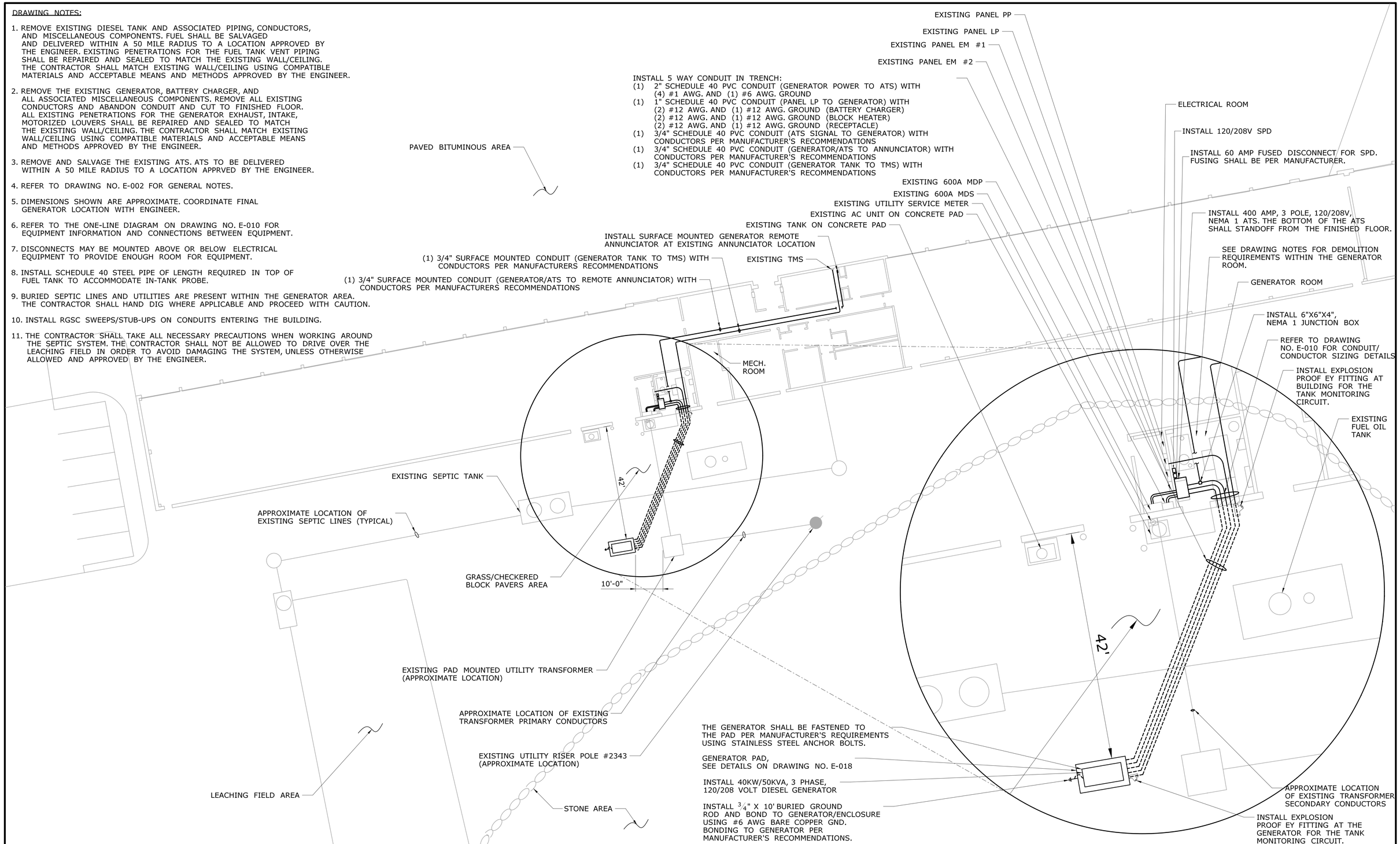
7. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.

8. INSTALL SCHEDULE 40 STEEL PIPE OF LENGTH REQUIRED IN TOP OF FUEL TANK TO ACCOMMODATE IN-TANK PROBE.

9. BURIED SEPTIC LINES AND UTILITIES ARE PRESENT WITHIN THE GENERATOR AREA. THE CONTRACTOR SHALL HAND DIG WHERE APPLICABLE AND PROCEED WITH CAUTION.

10. INSTALL RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.

11. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS WHEN WORKING AROUND THE SEPTIC SYSTEM. THE CONTRACTOR SHALL NOT BE ALLOWED TO DRIVE OVER THE LEACHING FIELD IN ORDER TO AVOID DAMAGING THE SYSTEM, UNLESS OTHERWISE ALLOWED AND APPROVED BY THE ENGINEER.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE: 1/16" = 1'-0"

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ..\Design Files\Site Plan.dgn

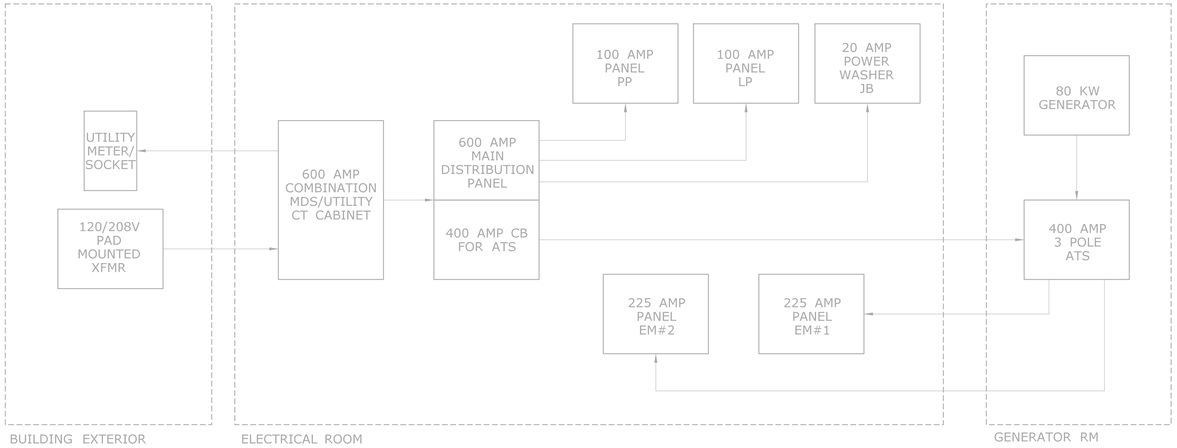
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: HADDAM

DRAWING TITLE:
HADDAM
SITE PLAN/FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-009
SHEET NO. 03.09



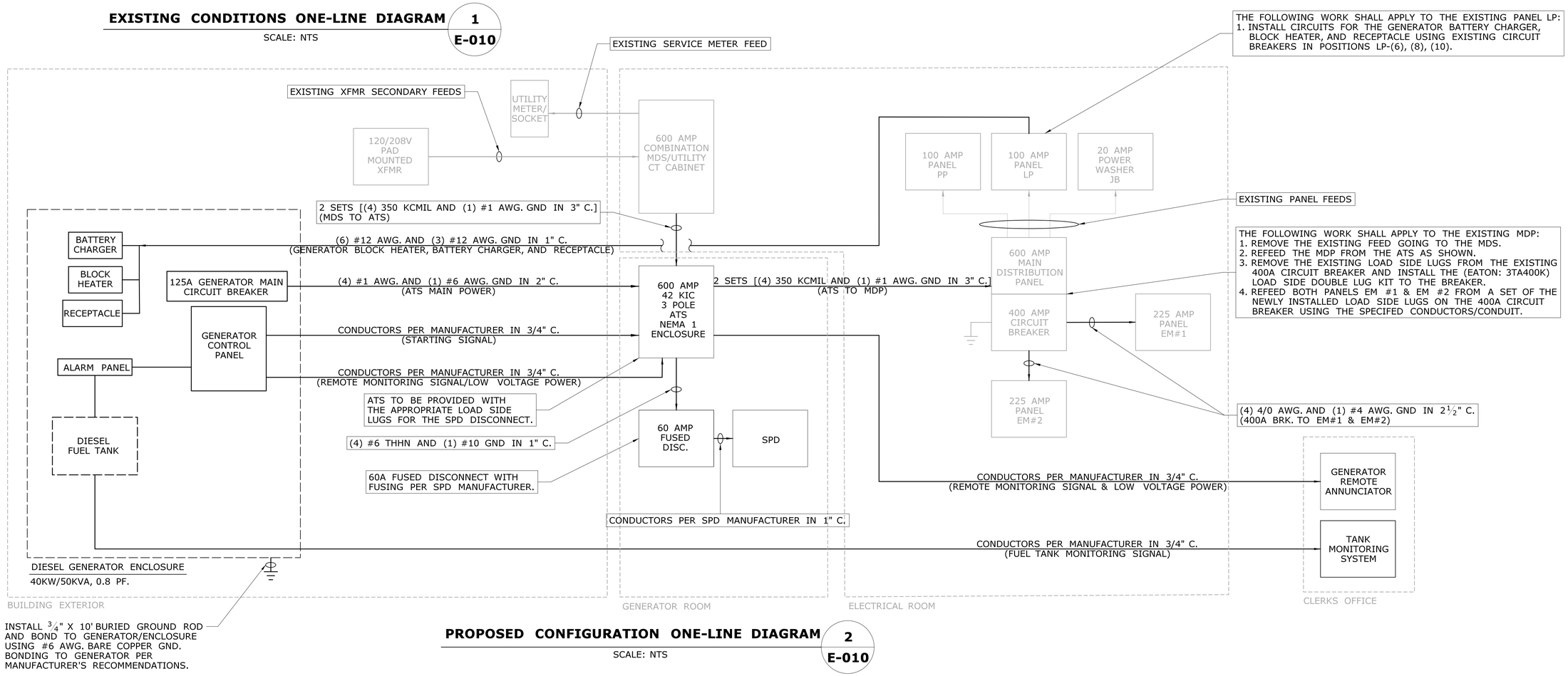
EXISTING CONDITIONS ONE-LINE DIAGRAM

1
E-010

SCALE: NTS

DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM $^{3}/_{4}$".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE HADDAM SITE PLAN ON DRAWING NO. E-009 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. PROGRAMMING AND FINAL CONNECTIONS TO THE TANK MONITORING SYSTEM (TMS) SHALL BE DONE BY A TMS CERTIFIED INSTALLER. A TMS CERTIFIED INSTALLER SHALL ENSURE THAT ALL INTRINSICALLY SAFE WIRING IS MAINTAINED AND CONDUIT/CONDUCTORS SERVING THE BASE TANK ARE INNSTALLED CORRECTLY.



PROPOSED CONFIGURATION ONE-LINE DIAGRAM

2
E-010

SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

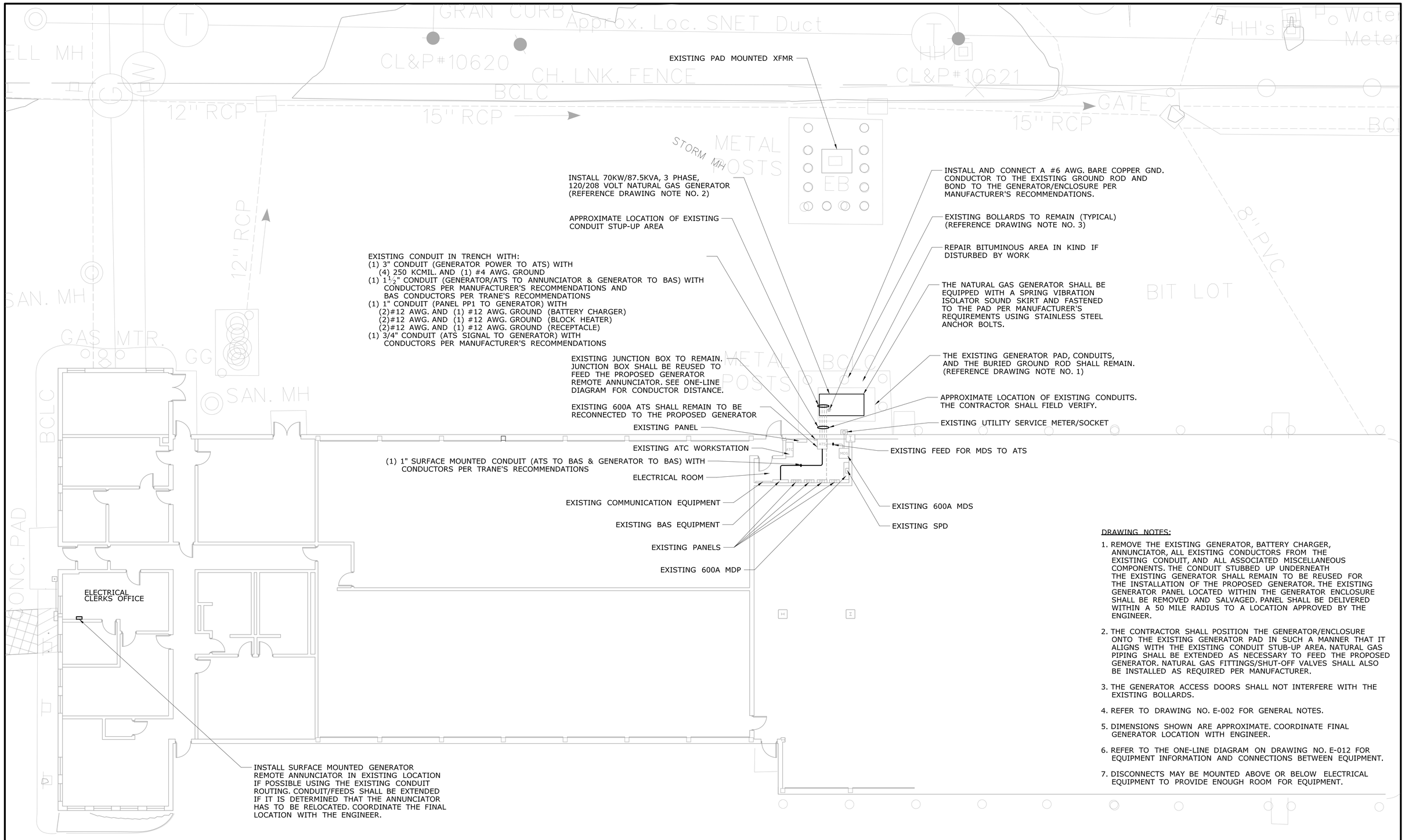
SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: HADDAM

DRAWING TITLE:
HADDAM ONE-LINE DIAGRAM

PROJECT NO. 0170-3476
DRAWING NO. E-010
SHEET NO. 03.10



DRAWING NOTES:

1. REMOVE THE EXISTING GENERATOR, BATTERY CHARGER, ANNUNCIATOR, ALL EXISTING CONDUCTORS FROM THE EXISTING CONDUIT, AND ALL ASSOCIATED MISCELLANEOUS COMPONENTS. THE CONDUIT STUBBED UP UNDERNEATH THE EXISTING GENERATOR SHALL REMAIN TO BE REUSED FOR THE INSTALLATION OF THE PROPOSED GENERATOR. THE EXISTING GENERATOR PANEL LOCATED WITHIN THE GENERATOR ENCLOSURE SHALL BE REMOVED AND SALVAGED. PANEL SHALL BE DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL POSITION THE GENERATOR/ENCLOSURE ONTO THE EXISTING GENERATOR PAD IN SUCH A MANNER THAT IT ALIGNS WITH THE EXISTING CONDUIT STUB-UP AREA. NATURAL GAS PIPING SHALL BE EXTENDED AS NECESSARY TO FEED THE PROPOSED GENERATOR. NATURAL GAS FITTINGS/SHUT-OFF VALVES SHALL ALSO BE INSTALLED AS REQUIRED PER MANUFACTURER.
3. THE GENERATOR ACCESS DOORS SHALL NOT INTERFERE WITH THE EXISTING BOLLARDS.
4. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.
5. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
6. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-012 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
7. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR

CHECKED BY: MPW

SCALE: 1" = 10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Design Files\Site Plan.dgn

SIGNATURE/BLOCK:
OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: HARTFORD

DRAWING TITLE:
HARTFORD SITE PLAN/FLOOR PLAN

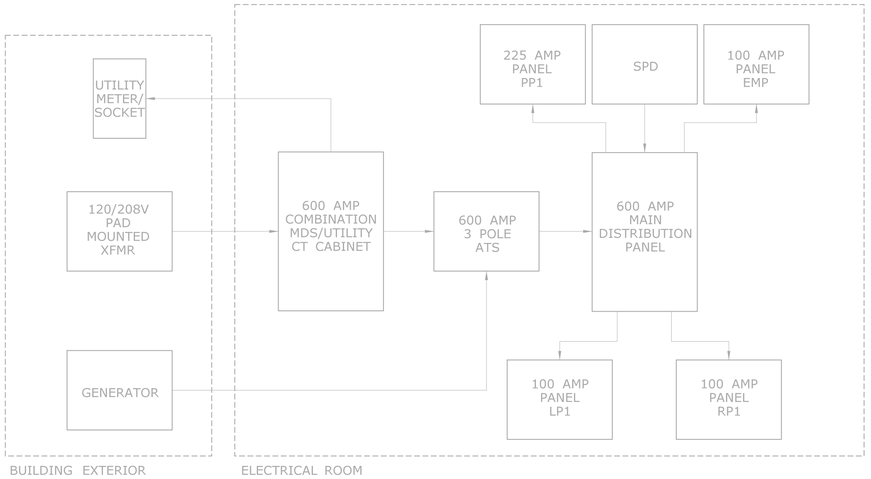
PROJECT NO. 0170-3476

DRAWING NO. E-011

SHEET NO. 03.11

DRAWING NOTES:

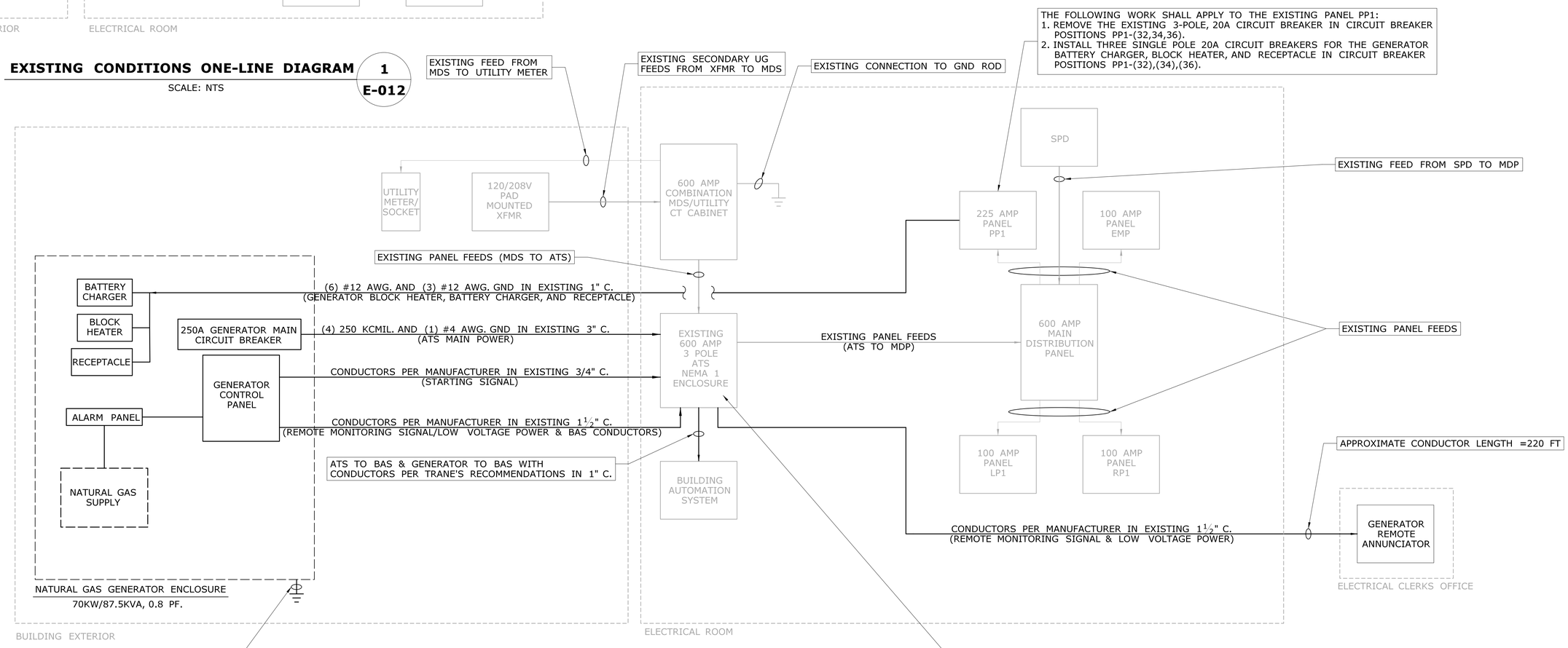
1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM ¾".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE HARTFORD SITE PLAN ON DRAWING NO. E-011 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. ADD BONDING JUMPER BEFORE AND AFTER WATER METER.
8. THE CONTRACTOR SHALL ROUTE CONDUIT AND CONDUCTORS FROM THE GEN SET TO THE TRANE EQUIPMENT PER TRANE'S RECOMMENDATIONS. THE CONTRACTOR SHALL HIRE TRANE TO MAKE FINAL CONNECTIONS TO THE BAS SYSTEM, PROGRAM, AND INTEGRATE THE GEN SET TO THE BAS. THE CONTRACTOR SHALL MAKE FINAL CONNECTONS AT THE ATS AND GENERATOR PER GENERATOR MANUFACTURERS RECOMMENDATIONS.



EXISTING CONDITIONS ONE-LINE DIAGRAM

1 / E-012

SCALE: NTS



PROPOSED CONFIGURATION ONE-LINE DIAGRAM

2 / E-012

SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR

CHECKED BY: MPW

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

SIGNATURE/ BLOCK: OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: HARTFORD

DRAWING TITLE: HARTFORD ONE-LINE DIAGRAM

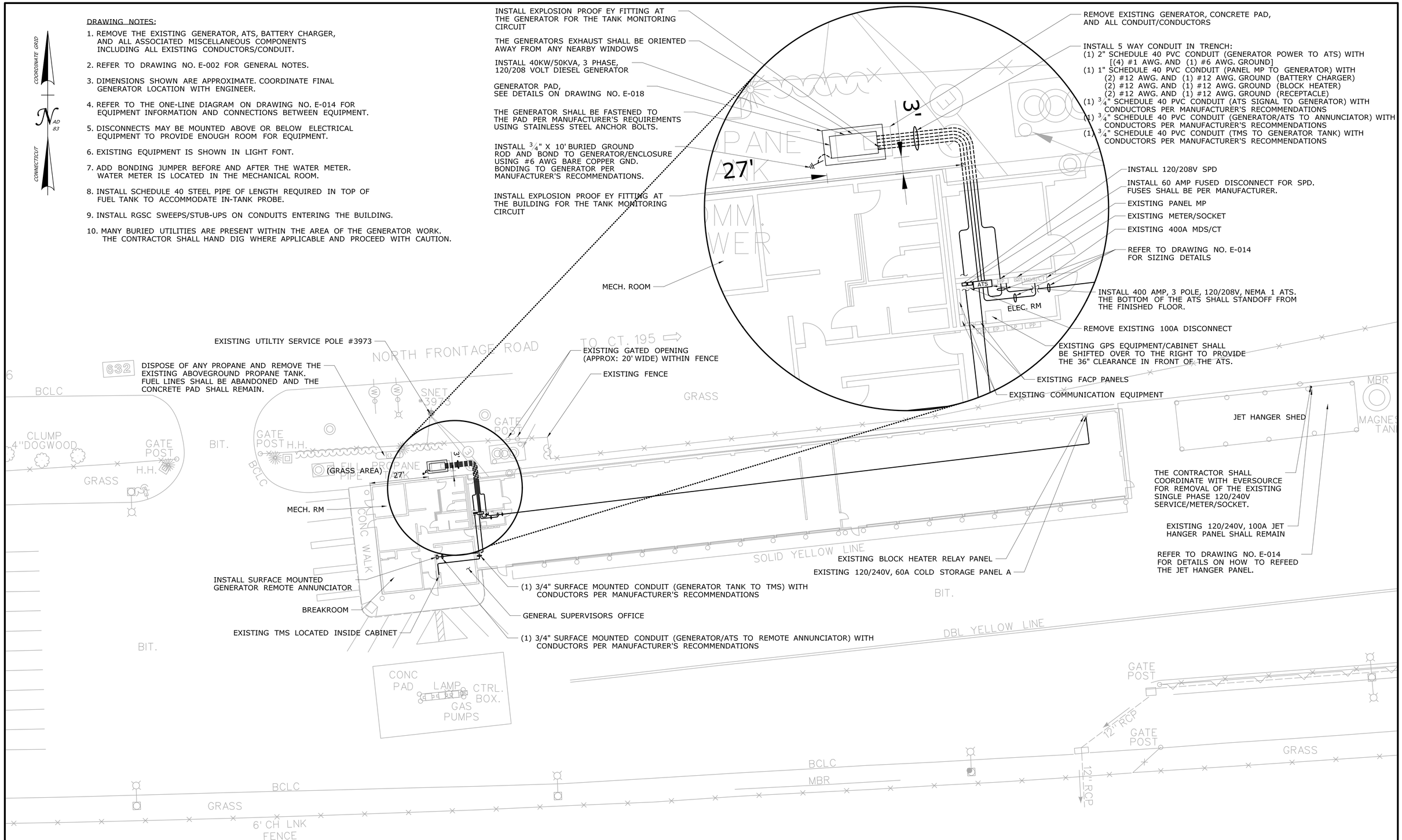
PROJECT NO. 0170-3476

DRAWING NO. E-012

SHEET NO. 03.12

DRAWING NOTES:

1. REMOVE THE EXISTING GENERATOR, ATS, BATTERY CHARGER, AND ALL ASSOCIATED MISCELLANEOUS COMPONENTS INCLUDING ALL EXISTING CONDUCTORS/CONDUIT.
2. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.
3. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
4. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-014 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
5. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.
6. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
7. ADD BONDING JUMPER BEFORE AND AFTER THE WATER METER. WATER METER IS LOCATED IN THE MECHANICAL ROOM.
8. INSTALL SCHEDULE 40 STEEL PIPE OF LENGTH REQUIRED IN TOP OF FUEL TANK TO ACCOMMODATE IN-TANK PROBE.
9. INSTALL RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.
10. MANY BURIED UTILITIES ARE PRESENT WITHIN THE AREA OF THE GENERATOR WORK. THE CONTRACTOR SHALL HAND DIG WHERE APPLICABLE AND PROCEED WITH CAUTION.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE IN FEET 0 20 40
SCALE 1"=20'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Design Plans\Site Plan.dgn

SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

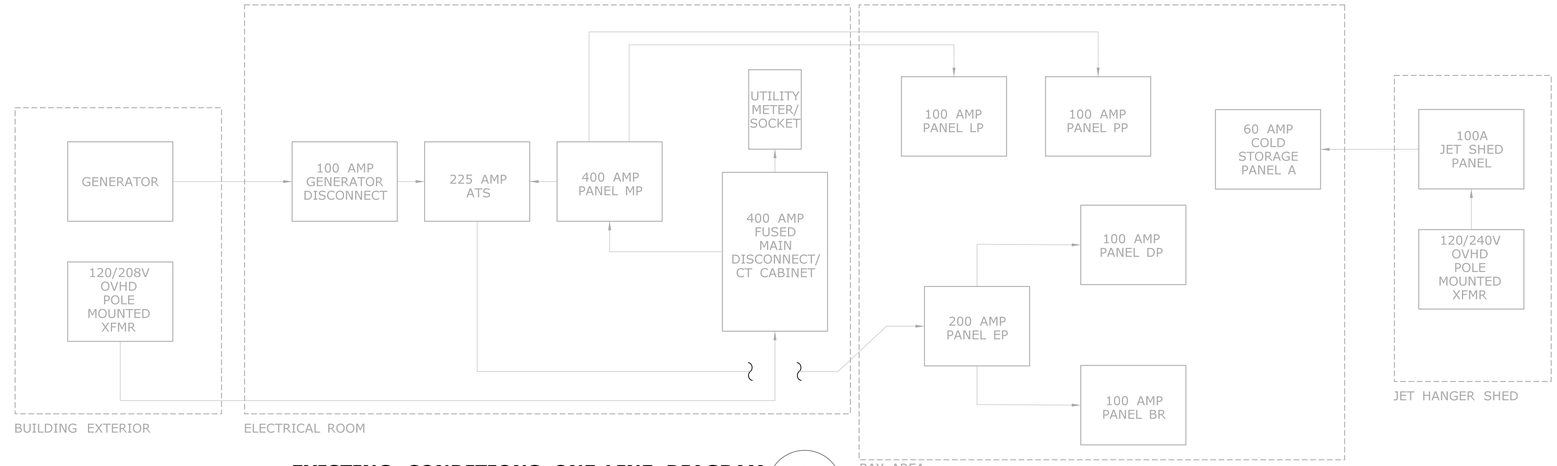
TOWN: MANSFIELD

DRAWING TITLE: MANSFIELD SITE PLAN/FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-013
SHEET NO. 03.13

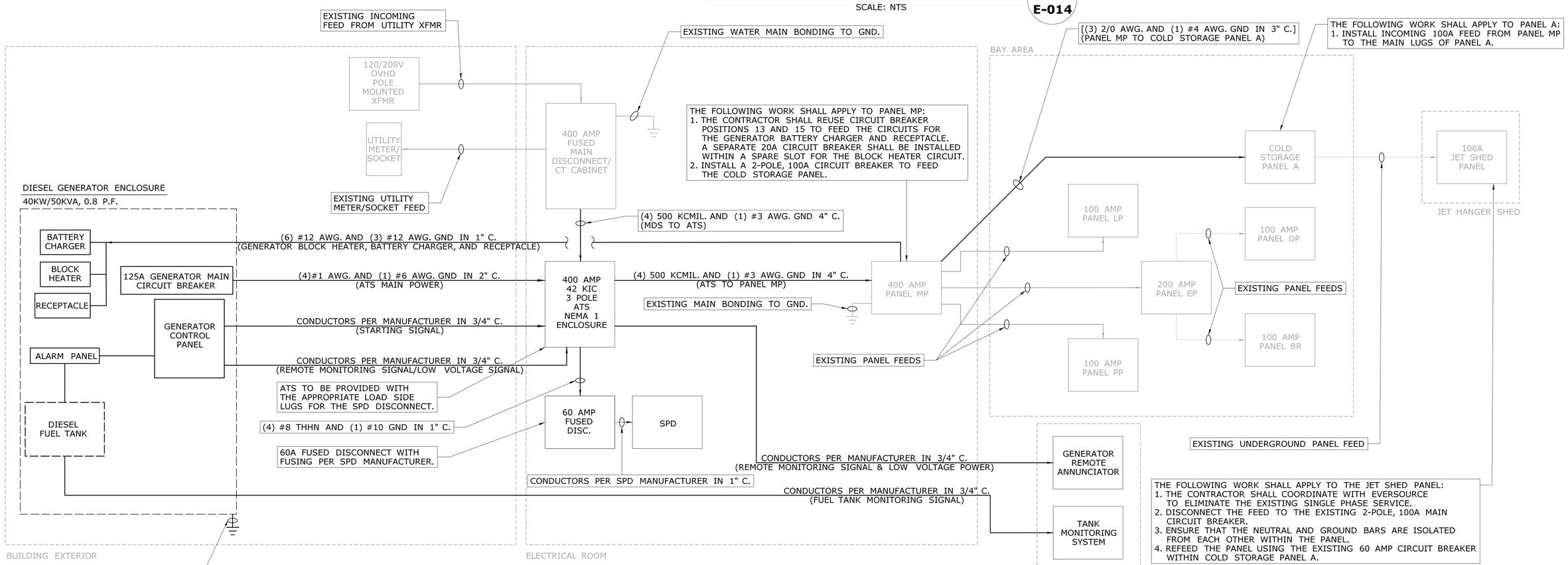
DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM ¾".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE MANSFIELD SITE PLAN ON DRAWING NO. E-013 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. ADD BONDING JUMPER BEFORE AND AFTER WATER METER.
8. PROGRAMMING AND FINAL CONNECTIONS TO THE TANK MONITORING SYSTEM (TMS) SHALL BE DONE BY A TMS CERTIFIED INSTALLER. A TMS CERTIFIED INSTALLER SHALL ENSURE THAT ALL INTRINSICALLY SAFE WIRING IS MAINTAINED AND CONDUIT/CONDUCTORS SERVING THE BASE TANK ARE INNSTALLED CORRECTLY.



EXISTING CONDITIONS ONE-LINE DIAGRAM 1 / E-014

SCALE: NTS



PROPOSED CONFIGURATION ONE-LINE DIAGRAM 2 / E-014

SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR

CHECKED BY: MPW

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

SIGNATURE/ BLOCK: OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: MANSFIELD

DRAWING TITLE: MANSFIELD ONE-LINE DIAGRAM

PROJECT NO. 0170-3476

DRAWING NO. E-014

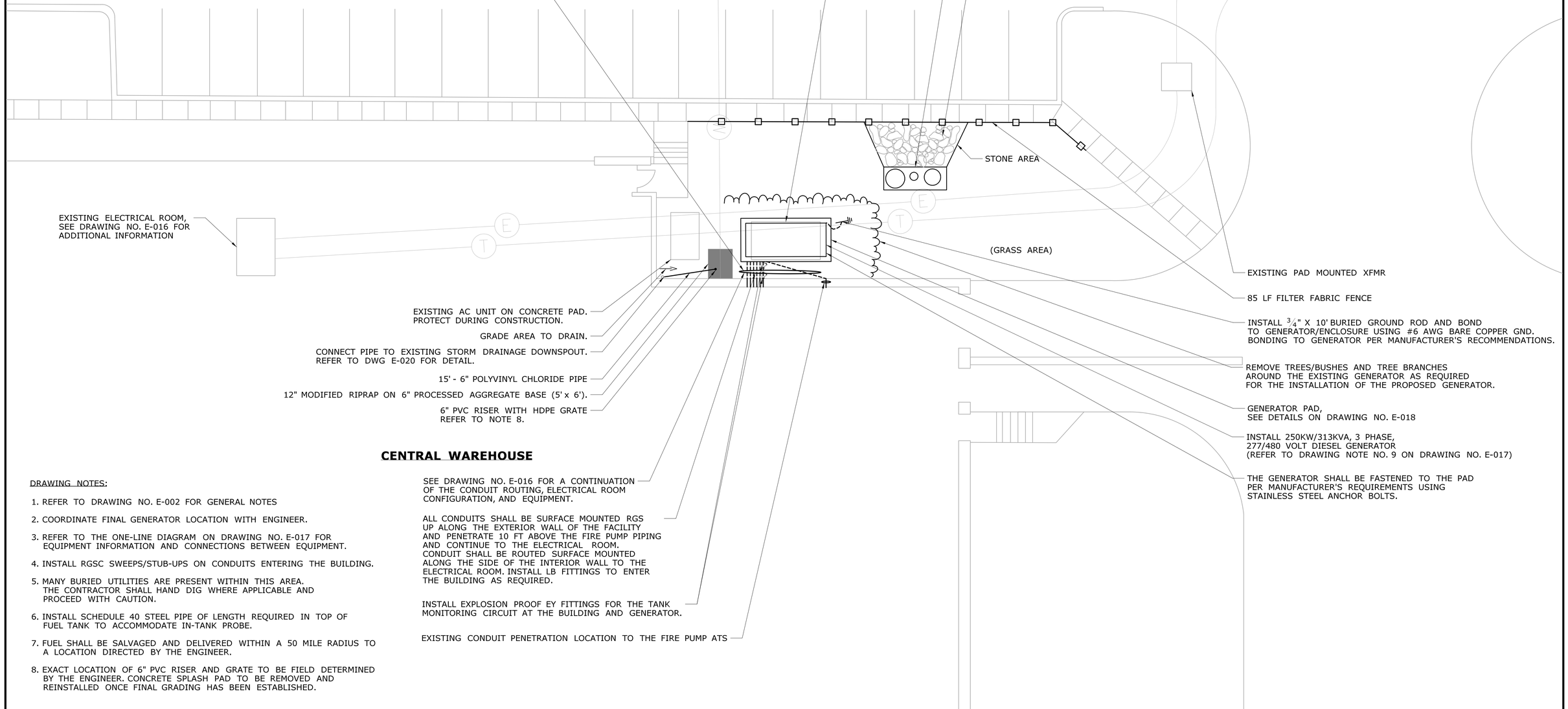
SHEET NO. 03.14

INSTALL 7 WAY CONDUIT IN TRENCH:
(2) 2" SCHEDULE 40 PVC CONDUIT (GENERATOR POWER TO ATS) WITH TWO SETS IN PARALLEL OF [(4) 3/0 AWG. AND (1) #3 AWG. GROUND]
(1) 3" SCHEDULE 40 PVC CONDUIT (GENERATOR POWER TO FIRE PUMP ATS) WITH (4) 250 KCMIL AND (1) #3 AWG. GROUND
(1) 1" SCHEDULE 40 PVC CONDUIT (PANEL ELP-1A TO GENERATOR) WITH
(2) #12 AWG. AND (1) #12 AWG. GROUND (BATTERY CHARGER)
(2) #12 AWG. AND (1) #12 AWG. GROUND (BLOCK HEATER)
(2) #12 AWG. AND (1) #12 AWG. GROUND (RECEPTACLE)
(1) 1" SCHEDULE 40 PVC CONDUIT (GENERATOR/ATS TO ANNUNCIATOR & GENERATOR TO BAS) WITH CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS AND BAS CONDUCTORS PER TRANE'S RECOMMENDATIONS
(1) 3/4" SCHEDULE 40 PVC CONDUIT (ATS SIGNAL TO GENERATOR) WITH CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS
(1) 3/4" SCHEDULE 40 PVC CONDUIT (TMS TO GENERATOR TANK) WITH CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS

REMOVE EXISTING GENERATOR, CONCRETE PAD, DAY TANK, ALL MISCELLANEOUS ACCESSORIES AND ALL CONDUIT/CONDUCTORS. LEVEL AREA IN PREPARATION FOR THE PROPOSED CONCRETE PAD.

REMOVE THE EXISTING UNDERGROUND GENERATOR FUEL TANK. INFILL AND REPAIR AREA. ESTABLISH TURF ON SLOPE. SLOPE SHALL NOT EXCEED 3 TO 1. FURNISHING AND PLACING TOPSOIL AND TURF ESTABLISHMENT SHALL BE PAID FOR UNDER ITEM #'S 0944000, AND 0950005. (REFER TO DRAWING NOTE. NO 7)

THE CONTRACTOR SHALL REMOVE ALL STONE WITHIN THIS AREA FOR REMOVAL OF THE TANK.



CENTRAL WAREHOUSE

DRAWING NOTES:

1. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES
2. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
3. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-017 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
4. INSTALL RGSC SWEEPS/STUB-UPS ON CONDUITS ENTERING THE BUILDING.
5. MANY BURIED UTILITIES ARE PRESENT WITHIN THIS AREA. THE CONTRACTOR SHALL HAND DIG WHERE APPLICABLE AND PROCEED WITH CAUTION.
6. INSTALL SCHEDULE 40 STEEL PIPE OF LENGTH REQUIRED IN TOP OF FUEL TANK TO ACCOMMODATE IN-TANK PROBE.
7. FUEL SHALL BE SALVAGED AND DELIVERED WITHIN A 50 MILE RADIUS TO A LOCATION DIRECTED BY THE ENGINEER.
8. EXACT LOCATION OF 6" PVC RISER AND GRATE TO BE FIELD DETERMINED BY THE ENGINEER. CONCRETE SPLASH PAD TO BE REMOVED AND REINSTALLED ONCE FINAL GRADING HAS BEEN ESTABLISHED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE IN FEET 0 10 20
SCALE 1"=10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Site Plan - Copy.dgn

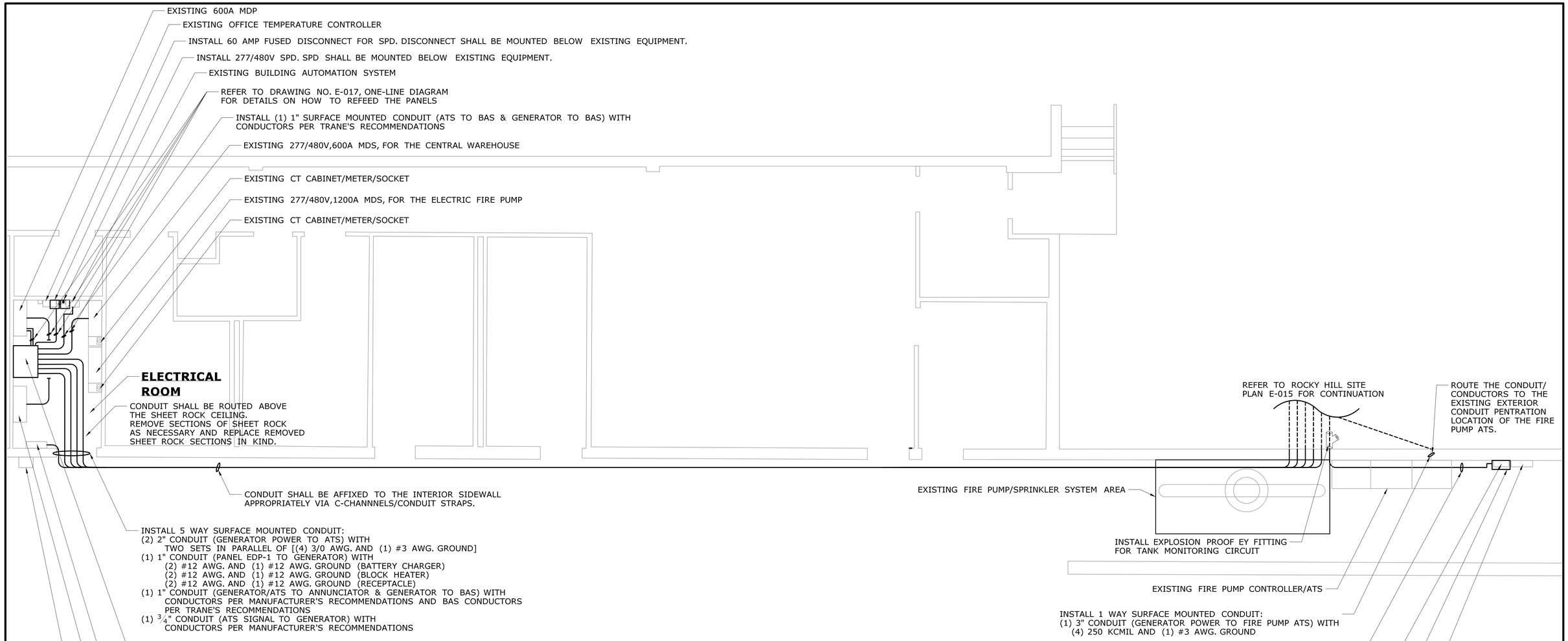
SIGNATURE/BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: ROCKY HILL

DRAWING TITLE: ROCKY HILL SITE PLAN

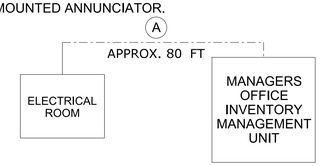
PROJECT NO. 0170-3476
DRAWING NO. E-015
SHEET NO. 03.15



OPEN WAREHOUSE AREA

ROUTING OF ANNUNCIATOR CABLE FROM GENERATOR/ATS TO ANNUNCIATOR

(A) THE CONTRACTOR SHALL INSTALL THE REMOTE ANNUNCIATOR IN THE INVENTORY MANAGEMENT UNIT MANAGER'S OFFICE AT SPECIFIC LOCATION DIRECTED BY THE ENGINEER. ROUTE ANNUNCIATOR CABLE IN 3/4" CONDUIT FROM THE ATS TO THE SURFACE MOUNTED ANNUNCIATOR.



REMOTE ANNUNCIATOR ONE-LINE DIAGRAM

SCALE: NTS

1
E-016

DRAWING NOTES:

1. REMOVE THE EXISTING ATS LOCATED WITHIN THE ELECTRICAL ROOM AND THE ANNUNCIATOR LOCATED OUTSIDE THE ELECTRICAL ROOM TO THE LEFT OF THE DOOR. ALL EXISTING CONDUIT/CONDUCTORS SHALL ALSO BE REMOVED.
2. REFER TO DRAWING NO. E-002 FOR GENERAL NOTES.
3. DIMENSIONS SHOWN ARE APPROXIMATE. COORDINATE FINAL GENERATOR LOCATION WITH ENGINEER.
4. REFER TO THE ONE-LINE DIAGRAM ON DRAWING NO. E-017 FOR EQUIPMENT INFORMATION AND CONNECTIONS BETWEEN EQUIPMENT.
5. DISCONNECTS MAY BE MOUNTED ABOVE OR BELOW ELECTRICAL EQUIPMENT TO PROVIDE ENOUGH ROOM FOR EQUIPMENT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE: 1/4" = 1'-0"

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\Design Files\Floor Plan.dgn

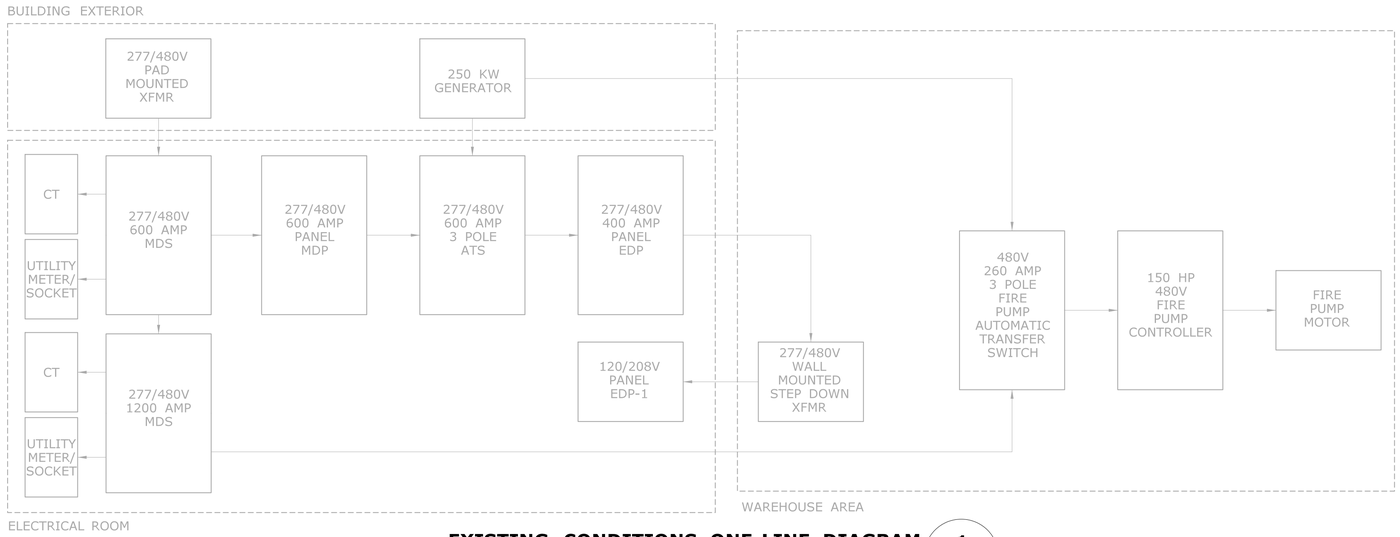
SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: ROCKY HILL

DRAWING TITLE: ROCKY HILL FLOOR PLAN

PROJECT NO. 0170-3476
DRAWING NO. E-016
SHEET NO. 03.16



EXISTING CONDITIONS ONE-LINE DIAGRAM

1
E-017

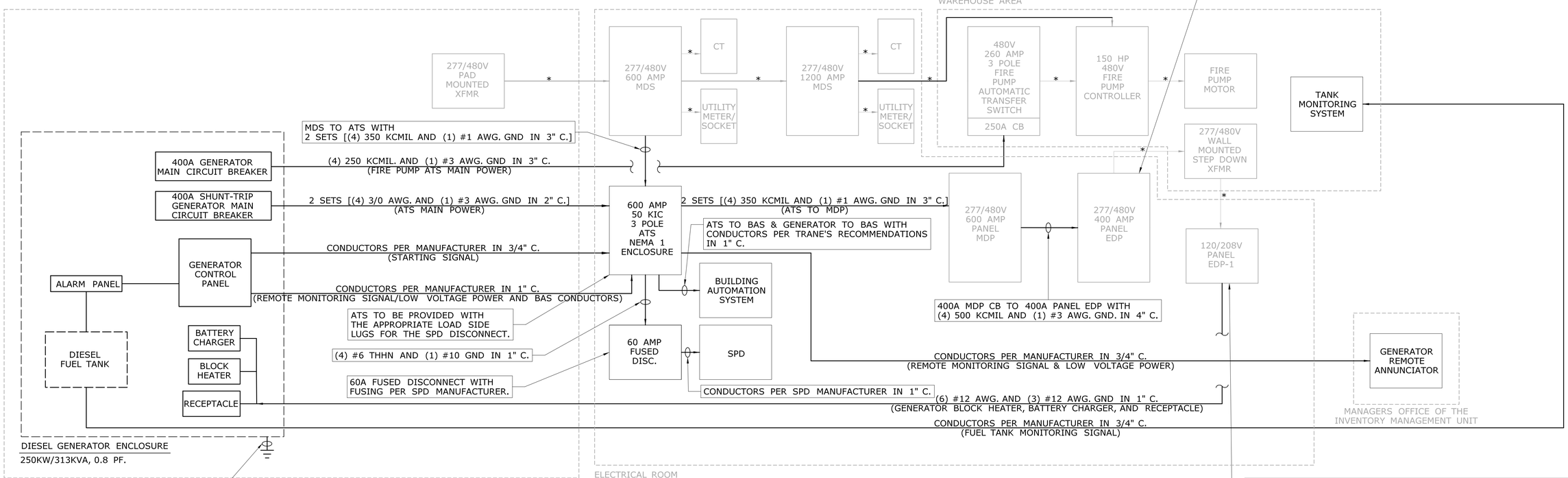
SCALE: NTS

DRAWING NOTES:

1. ALL CONDUIT WITHIN GENERATOR ENCLOSURE SHALL BE MINIMUM $^{3}/_{4}$".
2. THE CONTRACTOR SHALL PROVIDE MANUAL SHUTDOWN LOCATED EXTERNAL TO THE GENERATOR WEATHER PROOF ENCLOSURE AND SHALL BE APPROPRIATELY IDENTIFIED.
3. EXISTING EQUIPMENT IS SHOWN IN LIGHT FONT.
4. CONDUCTORS WITHIN THE GENERATOR ENCLOSURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
5. REFER TO THE ROCKY HILL SITE PLAN ON DRAWING NO. E-015 FOR CONDUIT TYPE AND LOCATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING APPROPRIATE LUGS IN EXISTING EQUIPMENT TO PROPERLY TERMINATE CONDUCTORS.
7. THE TMS 3000 CONSOLE INSTALLATION, PROGRAMMING AND FINAL CONNECTIONS TO THE TANK MONITORING SYSTEM (TMS) SHALL BE DONE BY A TMS CERTIFIED INSTALLER. A TMS CERTIFIED INSTALLER SHALL ENSURE THAT ALL INTRINSICALLY SAFE WIRING IS MAINTAINED AND CONDUIT/CONDUCTORS SERVING THE BASE TANK ARE INSTALLED CORRECTLY.
8. THE CONTRACTOR SHALL ROUTE CONDUIT AND CONDUCTORS FROM THE GEN SET TO THE TRANE EQUIPMENT PER TRANE'S RECOMMENDATIONS. THE CONTRACTOR SHALL HIRE TRANE TO MAKE FINAL CONNECTIONS TO THE BAS SYSTEM, PROGRAM, AND INTEGRATE THE GEN SET TO THE BAS. THE CONTRACTOR SHALL MAKE FINAL CONNECTONS AT THE ATS AND GENERATOR PER GENERATOR MANUFACTURERS RECOMMENDATIONS.
9. THE GENERATOR SHALL HAVE THE CAPABILITY TO SHUNT THE NORMAL BUILDING LOADS WHEN THE FIRE PUMP IS IN OPERATION. WHEN THE FIRE PUMP IS NOT IN OPERATION IT SHALL ALSO BE ABLE TO RUN THE NORMAL BUILDING LOADS. A SHUNT-TRIP CONDUCTOR SHALL BE INSTALLED AND ROUTED FROM THE NORMAL GENERATOR MAIN LINE 400A CIRCUIT BREAKER TO THE FIRE PUMP CONTROLLER.

*INDICATES EXISTING FEEDS

THE FOLLOWING WORK SHALL APPLY TO THE EXISTING PANEL EDP:
1. PANEL SHALL BE REFED USING THE EXISTING 400A CIRCUIT BREAKER IN THE MDP, WHICH PREVIOUSLY FED THE EXISTING 600A ATS.



INSTALL $^{3}/_{4}$" X 10' BURIED GROUND ROD AND BOND TO GENERATOR/ENCLOSURE USING #6 AWG. BARE COPPER GND. BONDING TO GENERATOR PER MANUFACTURER'S RECOMMENDATIONS.

THE FOLLOWING WORK SHALL APPLY TO THE EXISTING PANEL EDP-1:
1. REUSE CIRCUIT BREAKER POSITIONS EDP-1 (15) AND (17) TO FEED THE CIRCUITS FOR THE GENERATOR BATTERY CHARGER AND BLOCK HEATER.
2. A 20A CIRCUIT BREAKER SHALL BE INSTALLED IN SPARE CIRCUIT BREAKER POSITION #18 FOR THE GENERATOR RECEPTACLE.

PROPOSED CONFIGURATION ONE-LINE DIAGRAM

2
E-017

SCALE: NTS

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR
CHECKED BY: MPW
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\One-Line Diagram.dgn

SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: ROCKY HILL

DRAWING TITLE: ROCKY HILL ONE-LINE DIAGRAM

PROJECT NO. 0170-3476
DRAWING NO. E-017
SHEET NO. 03.17

	EAST HAVEN	EAST LYME	EAST WINDSOR	HADDAM	HARTFORD	MANSFIELD	ROCKY HILL
GENERATOR SIZE	60KW/75KVA	30KW/30KVA	60KW/75KVA	40KW/50KVA	70KW/87.5KVA	40KW/50KVA	250KW/313KVA
SERVICE SIZE/VOLTAGE	600A 120/208V	200A 120/240V	400A 120/208V	600A 120/208V	600A 120/208V	400A 120/208V	600A 277/480V
PHASE	3	1	3	3	3	3	3
ENCLOSURE	SOUND+	SOUND	SOUND	SOUND	SOUND	SOUND	SOUND
ATS ENCLOSURE	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1
ATS RATING*	600A 3 POLE	200A 2 POLE*	400A 3 POLE	600A 3 POLE	600A 3 POLE	400A 3 POLE	600A 3 POLE
FUEL TYPE	DIESEL	DIESEL	DIESEL	DIESEL	NATURAL GAS	DIESEL	DIESEL
TANK SIZE	250 GALLONS	140 GALLONS	250 GALLONS	250 GALLONS	N/A	250 GALLONS	1060 GALLONS
SPD CATALOG#	GE TRANQUELL: TPME120Y08WMN12S	GE TRANQUELL: TPME120S08WMN12S	GE TRANQUELL: TPME120Y08WMN12S	GE TRANQUELL: TPME120Y08WMN12S	EXISTING TO REMAIN	GE TRANQUELL: TPME120Y08WMN12S	GE TRANQUELL: TPME277Y08WMN12S
SPD DISCONNECT SIZE/CATALOG #	60A GE (TH4322)	30A GE (TH3221)	60A GE (TH4322)	60A GE (TH4322)	N/A	60A GE (TH4322)	60A GE (TH4322)
ANNUNCIATOR	YES	YES	YES	YES	YES	YES	YES
BLOCK HEATER	YES	YES	YES	YES	YES	YES	YES

+ INDICATES MORE STRINGENT SOUND ATTENUATION. SEE SPECIFICATION NO. 263213, SECTION 1.5 M - NOISE EMISSION FOR ENCLOSURE DECIBEL LEVEL REQUIREMENTS.

* THE CONTRACTOR MAY USE 3 POLE ATS FOR THE 200 AMP 2 POLE ATS SHOWN ABOVE.

EQUIPMENT SCHEDULE

1 / E-018

	STANDARD ENCLOSURE						
TOWN	* EAST HAVEN	* EAST LYME	* EAST WINDSOR	* HADDAM	HARTFORD	* MANSFIELD	* ROCKY HILL
GENERATOR SIZE	60KW/75KVA	30KW/30KVA	60KW/75KVA	40KW/50KVA	70KW/87.5KVA	40KW/50KVA	250KW/562KVA
GENERATOR ENCLOSURE	86"L x 40"W x 66"H	76"L x 36"W x 63"H	86"L x 40"W x 66"H	86"L x 40"W x 66"H	87"L x 46"W x 62"H	86"L x 40"W x 66"H	144"L x 56"W x 97"H
GENERATOR PAD	110"L x 64"W x 18"H	100"L x 60"W x 18"H	110"L x 64"W x 18"H	110"L x 64"W x 18"H	EXISTING PAD	110"L x 64"W x 18"H	179"L x 95"W x 18"H

* GENERATOR PAD SIZE REFLECTS THE SIZE OF THE GENERATOR BASE TANK IN ADDITION TO THE 1 FOOT SPACING REQUIRED ON EACH SIDE.

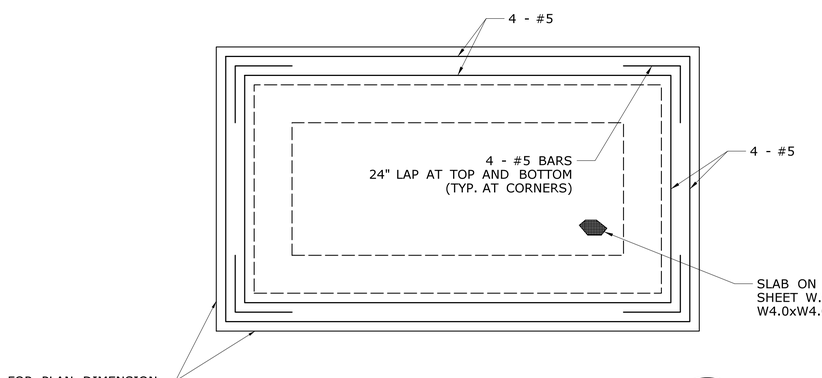
CONCRETE PAD NOTES:

1. DIMENSIONS FOR GENERATOR PAD/ENCLOSURE SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS. REFER TO THE GENERATOR PAD/ENCLOSURE SCHEDULE TABLE BELOW FOR GENERATOR PAD DIMENSIONS BASED ON THE BASIS OF DESIGN. CONSULT WITH THE MANUFACTURER FOR FINAL DIMENSIONS. THERE SHALL BE NO ADDITIONAL COST IF THE DIMENSION SHOWN FOR BOTH THE PAD/ ENCLOSURE IS DETERMINED TO BE LARGER.

2. CONCRETE SHALL BE CLASS F. REBAR REINFORCING SHALL BE EPOXY-COATED ASTM A615 GRADE 60. CONCRETE PAD AND TESTING SHALL BE PAID FOR UNDER ITEM NO. 0601365A. REFER TO SPECIAL PROVISION NO. 0601365A FOR MATERIAL AND TESTING FOR THE CONCRETE PAD.

GENERATOR PAD/ENCLOSURE SCHEDULE

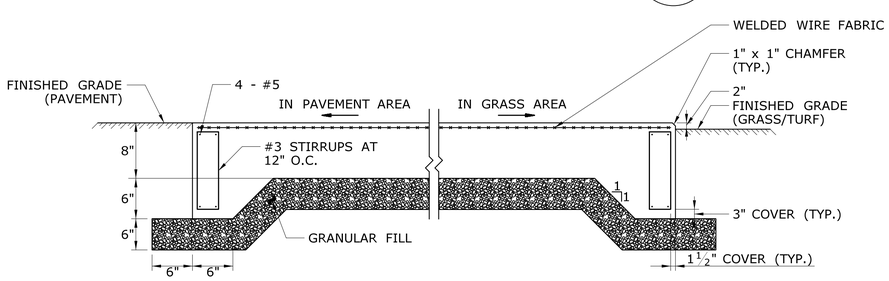
4 / E-018



NON-RAISED GENERATOR PAD PLAN

N.T.S.

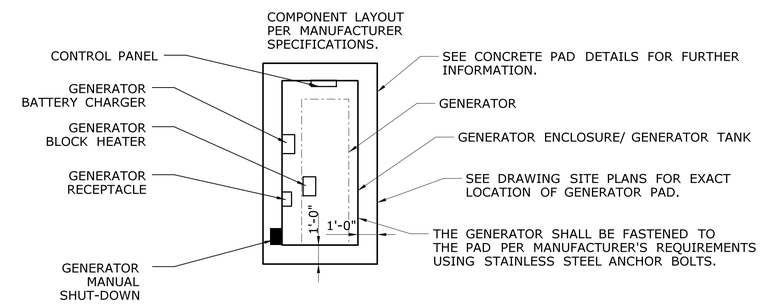
2 / E-018



NON-RAISED GENERATOR PAD SECTION

N.T.S.

3 / E-018



STANDARD ENCLOSURE GENERATOR LAYOUT

N.T.S.

5 / E-018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR

CHECKED BY: MPW

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\FD_MSH_ELE_0170_3369_E018.dgn

SIGNATURE/ BLOCK:

OFFICE OF ENGINEERING

APPROVED BY:

PROJECT TITLE:

FACILITIES GENERATOR INSTALLATION & REPLACEMENT

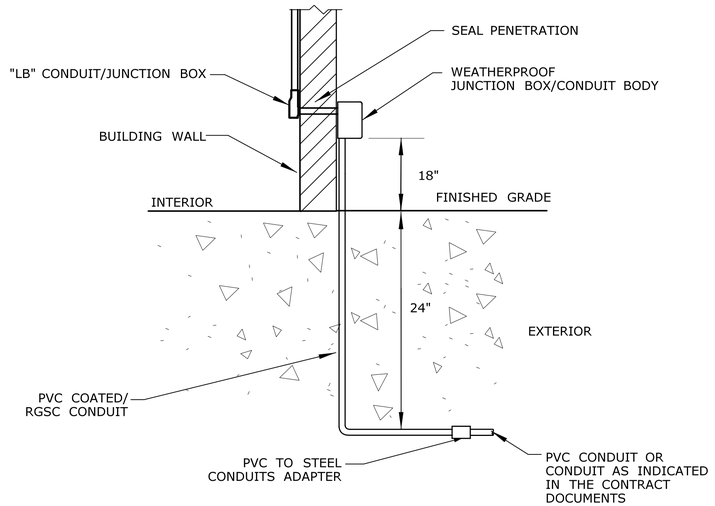
TOWN: VARIOUS

DRAWING TITLE: ELECTRICAL DETAILS #1

PROJECT NO. 0170-3476

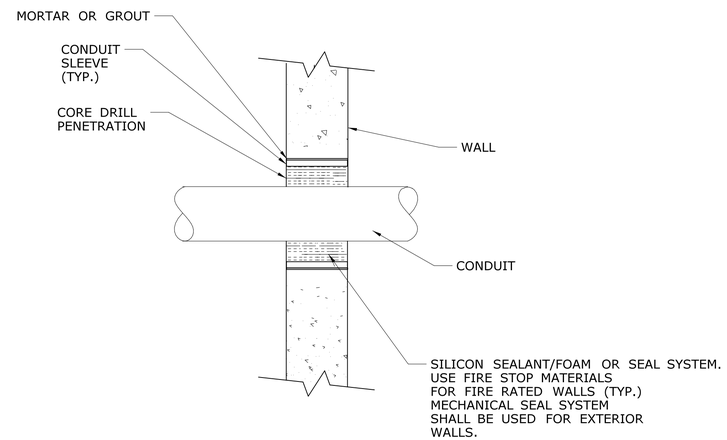
DRAWING NO. E-018

SHEET NO. 03.18



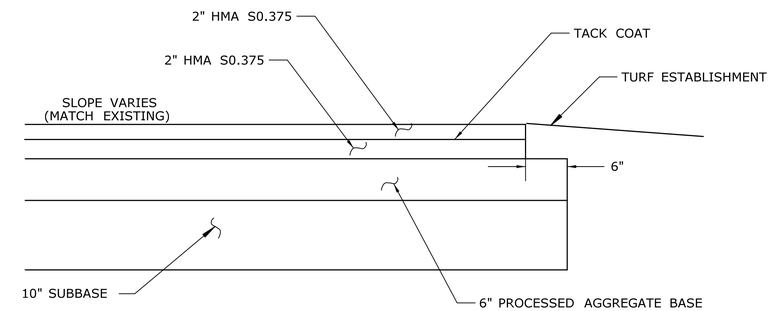
TYPICAL CONDUIT STUB-UP DETAIL 1 / E-019

NOT TO SCALE



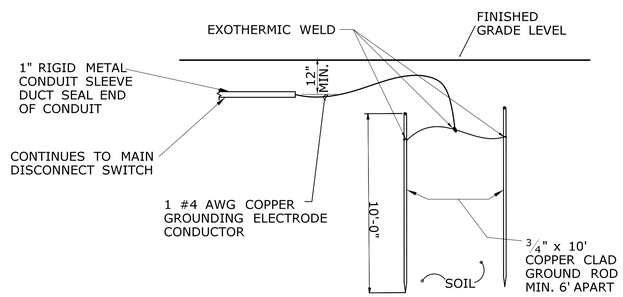
PENETRATION DETAIL 2 / E-019

NOT TO SCALE



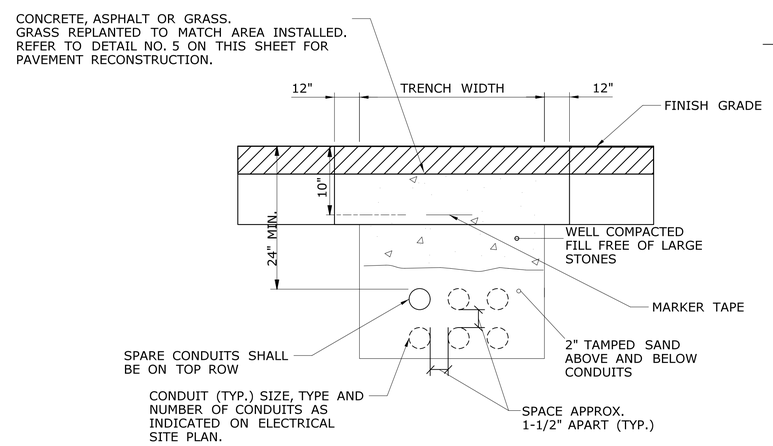
BITUMINOUS CONCRETE PAVEMENT - FACILITY - FULL DEPTH 5 / E-019

NOT TO SCALE



GROUNDING ELECTRODE DETAIL 3 / E-019

NOT TO SCALE



CONDUIT IN TRENCH 4 / E-019

NOT TO SCALE

NOTES:

1. THE CONTRACTOR SHALL PROVIDE A 12" MINIMUM SEPARATION BETWEEN ELECTRICAL LINES AND CROSSINGS OF OTHER UTILITY LINE (GAS LINES, FUEL LINES, ETC.)
2. ALL CONDUIT SLEEVES PENETRATIONS THROUGH FOUNDATION WALLS SHALL BE INSTALLED USING A BORED CYLINDER.
3. PATCH AROUND ALL ELECTRICAL CONDUIT PENETRATIONS THROUGH WALLS. INSTALL FIRE STOP AROUND ALL ELECTRICAL CONDUIT PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS IN ACCORDANCE WITH SPECIFICATION NO. 260544. FIRE STOP MATERIAL SHALL BE APPLIED TO BOTH SIDES OF FIRE RATED WALL PENETRATION.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 1/15/2019

DESIGNER/DRAFTER: RR

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

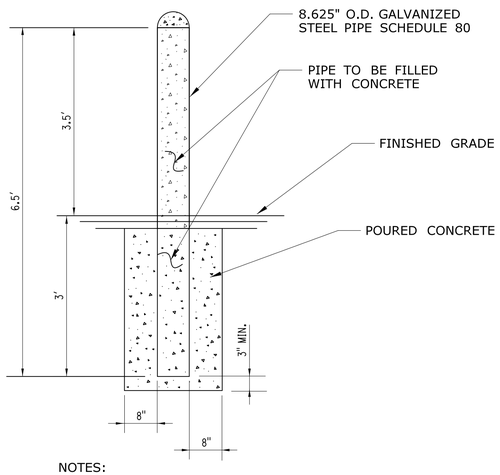
TOWN: VARIOUS

DRAWING TITLE: ELECTRICAL DETAILS #2

PROJECT NO. 0170-3476

DRAWING NO. E-019

SHEET NO. 03.19

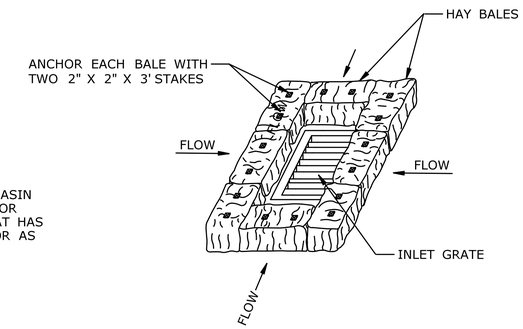


NOTES:

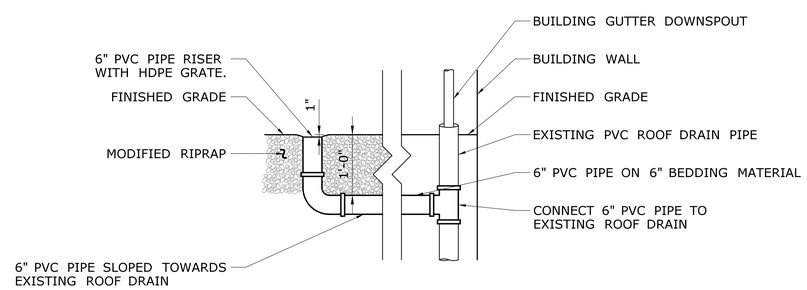
1. BOLLARDS SHALL BE COVERED WITH 1/4" YELLOW POLYETHYLENE COVER.
2. TRIM BOLLARD COVER TO FIT.

BOLLARD 1 / E-020
NOT TO SCALE

GENERAL NOTE:
1. PROVIDE HAY BALES AT ALL CATCH BASIN LOCATED WITHIN THE PROJECT LIMITS OR THAT ARE IMPACTED BY ANY WORK THAT HAS TO BE PERFORMED FOR THE PROJECT OR AS DIRECTED BY THE ENGINEER.



HAY BALE INSTALLATION AT CATCH BASIN 2 / E-020
NOT TO SCALE



STORM DRAINAGE PIPING 3 / E-020
NOT TO SCALE

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SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\FD_MSH_ELE_0170_3369_E020.dgn

SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
FACILITIES GENERATOR INSTALLATION & REPLACEMENT

TOWN: VARIOUS
DRAWING TITLE: CIVIL DETAILS

PROJECT NO. 0170-3476
DRAWING NO. E-020
SHEET NO. 03.20