**PSEG Power Connecticut LLC**
Bridgeport Harbor Station, 1 Atlantic Street, Bridgeport, CT 06604-5513

**Submitted by Email and Hardcopy**

**April 11, 2017**

Melanie A. Bachman
Executive Director
State of Connecticut
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

**Development and Management Plan Update No. 2**
**Updated Plant Design Drawings**
**PSEG Power Connecticut LLC**
**Bridgeport Harbor Station Unit 5 Combined Cycle Project**
**Petition No. 1218**

Dear Ms. Bachman:

This Development and Management Plan (D&MP) Update No. 2 (D&MP Update No. 2) provides revised and updated plant design drawings prepared to reflect final detailed design plans for review and approval by Connecticut Siting Council (CSC) staff.

As background, this project is the combined cycle generating facility designated by PSEG Power Connecticut LLC (PSEG) as Bridgeport Harbor Station Unit 5 ("BHS 5", the "Project" or the "Facility") as addressed in Petition No. 1218. An initial D&MP submittal (D&MP Phase 1), for construction support facilities was filed with the CSC on September 21, 2016. A second D&MP submittal (D&MP Phase 2) was filed on October 31, 2016. Collectively, these two D&MP documents included the complete design and construction details of the Project as known at that time. The D&MPs were approved by the CSC on October 27, 2016 and December 22, 2016, respectively.

Subsequently, a D&MP Update No. 1 was filed on June 29, 2017 addressing improvements in the site water balance and underground utility routings and alignments. This D&MP update was approved by the CSC on July 6, 2017. Since then, in parallel with site construction activities, PSEG and the project Design Engineering firm ("SNC-Lavalin" or "SNCL") have continued to finalize the detailed design of the Facility. The focus has been on identifying construction efficiencies, incorporating contract supplier inputs, and including functional improvements to the original design. This D&MP Update No. 2 reflects, in part, the result of that process.

The proposed revisions are considered to be minor in nature and involve minimal refinements in structure locations, include minor mechanical and electrical changes to assure code compliance and incorporate information provided by the various contracted suppliers. This includes the

water and ultra-low sulfur distillate (ULSD) tank fabricators, Air Cooled Condenser supplier, and the various Pre-Engineered Metal Building suppliers. In addition, final plant elevations and general arrangements, site finishing and grading plans and the final utility routings on Henry and Russell Streets related to the underground utilities (345 KV to Singer Substation, gas supply and water supply) are included as part of this submittal.

The revisions included in this D&MP Update No. 2 do not result in any significant changes in previously identified impacts, appearance, or function of the new plant. Specifically, the drawings and documents provided with this D&MP Update No. 2 will not result in any re-arrangement of facilities or structures excepting for minor adjustments in plan location and/or elevation to address clearances and fabrication requirements; any change to the height or location of the plant Heat Recovery Steam Generator stack or the auxiliary boiler stack; a change in the Project's Limit of Disturbance; additional or different environmental impact; a change in EMF conclusions; changes to previously defined offsite impacts; an increase in the drainage area associated with the stormwater system; or a change in the stormwater outfall or flows.

Based on our assessment of the project at this time, the enclosed plant design drawings reflect the final design plans for the Facility and are provided to CSC staff for review and approval as D&MP Update No. 2.

If you have any questions or require clarification, please contact me at 973-856-0066 or the Project Senior Technical Director / Regulatory Lead, Jeff Pantazes at 856-359-7645.

Very truly yours



David Hinchey, Jr.

Manager Environmental - Major Permits & Technical Services
PSEG Power LLC
Fossil Environment, Health and Safety

**Enclosure – D&MP Update No. 2**

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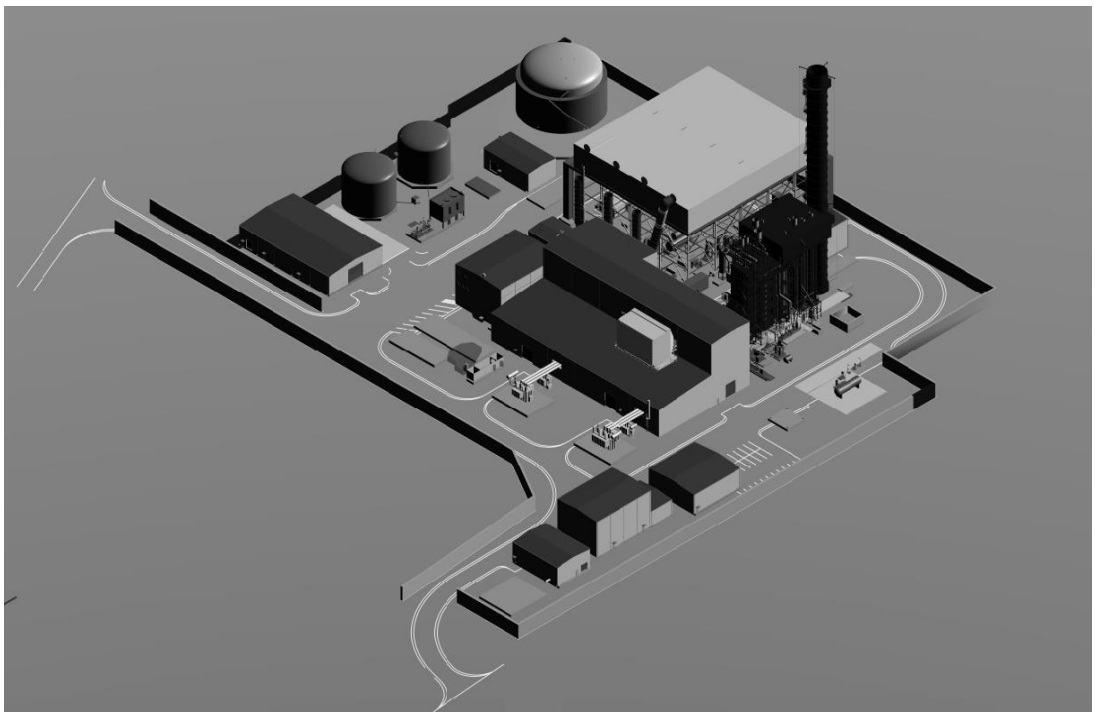
# Connecticut Siting Council
# Development and Management Plan Update No. 2
# Combined Cycle Generating Facility
# PE 1218

## Bridgeport Harbor Station Unit 5
## Bridgeport, Connecticut



## Design Revisions

**PREPARED FOR:**
**PSEG POWER CONNECTICUT, LLC**

**April 11, 2018**

## Development and Management Plan Update No. 2 Summary:

This project is the combined cycle generating facility as addressed in Petition No. 1218.

This Development and Management Plan Update (D&MP Update No. 2) submittal to the Connecticut Siting Council (CSC) includes drawing revisions that reflect final detailed design plans for PSEG Power Connecticut LLC (PSEG) Bridgeport Harbor Station Unit 5 ("BHS 5", the "Project" or the "Facility"), including:

- General Arrangements (overall and detail) for various portions of the plants and structures;
- Plant renderings showing approximate plant profiles from various perspectives. These are direct outputs of the engineering model, and therefore have some "cut-away" views of various buildings. The original D&MP Phase 2 submittal included elevation drawings.
- Containment design drawings;
- Oil/Water Separator design drawings;
- Underground utility design for the offsite utility connections on Henry and Russell Streets. Note that underground utility plans for the site were submitted with D&MP Update No. 1.
- Water balances; and
- Site Finishing and Grading Plans

An initial D&MP submittal (D&MP Phase 1) for construction support facilities was filed with the CSC on September 21, 2016. A second D&MP submittal (D&MP Phase 2) was filed on October 31, 2016. Collectively, these two D&MP documents included the complete design and construction details of the Project as known at that time. The D&MPs were approved by the CSC on October 27, 2016 and December 22, 2016, respectively.

Subsequently, a D&MP Update No. 1 was filed on June 29, 2017 addressing improvements in the site water balance and underground utility routings and alignments. This D&MP update was approved by the CSC on July 6, 2017. Since then, PSEG and its project Design Engineering firm ("SNC-Lavalin" or "SNCL") have continued to finalize the detailed design of the Facility.

The proposed design revisions are considered to be minor in nature and involve minimal refinements in structure locations, include minor mechanical and electrical changes to assure code compliance and incorporate information provided by the various contracted suppliers. This includes the water and ultra-low sulfur distillate (ULSD) tank fabricators, Air Cooled Condenser supplier, and the various Pre-Engineered Metal Building suppliers. In addition, final plant elevations and general arrangements, site finishing and grading plans and the final utility routings on Henry and Russell Streets related to the underground utilities (345 KV to Singer Substation, gas supply and water supply) are included as part of this submittal.

**Connecticut Siting Council – Development and Management Plan Update No. 2**
**New Combined Cycle Generating Facility - Bridgeport Harbor Station Unit 5**
**Docket Petition No. 1218 (Approved July 21, 2016)**
**April 11, 2018**

The drawings and documents provided with this D&MP Update No. 2 do not result in:

- Any re-arrangement of facilities or structures excepting for minor adjustments in plan location and / or elevation to address clearances and fabrication requirements;
- Any change to the height or location of the plant Heat Recovery Steam Generator stack or the auxiliary boiler stack;
- A change in the Project's Limit of Disturbance;
- Additional or different environmental impacts;
- A change in EMF conclusions;
- Changes to previously defined offsite impacts;
- An increase in the drainage area associated with the stormwater system; or
- A change in the stormwater outfall or flows.

To summarize, based on the current design status, the enclosed plant design drawings reflect final design of the facility and are consistent with prior submittals to the CSC.

**Exhibits:**

1. **General Arrangements (overall and detail)**
2. **Plant Renderings / Profiles**
3. **Containment Design**
4. **Oil/Water Separator Design**
5. **Offsite Utility Underground Design (routing on Henry and Russell Streets)**
6. **Water Balances**
7. **Site Finishing and Grading Plans**

## Exhibit 1 General Arrangements (overall and detail)

| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911 GA002-S001 | 1 | Plant Layout Power Block – General Arrangement |
| 644911 GA001-S001 | 0 | Plant Layout Site Plan |
| 644911 GA003-S001 | 0 | Plant Layout Power Building – CTG Area General Arrangement |
| 644911 GA004-S001 | 0 | Plant Layout HRSG Area General Arrangement |
| 644911 GA005-S001 | 0 | Plant Layout General Arrangement STG Upper – Mezzanine Areas Elevation 35’ 0” and Up |
| 644911 GA005-S002 | 0 | Plant Layout STG Ground Area General Arrangement Elevation 18’-0” to 35’-0” |
| 644911 GA006-S001 | 0 | Plant Layout Condensate Polishing Area Under ACC General Arrangement |
| 644911 GA007-S001 | 0 | Plant Layout Fuel Gas Compressor Area General Arrangement |
| 644911 GA008-S001 | 0 | Plant Layout Tank Area General Arrangement |
| 644911 GA009-S001 | 0 | Plant Layout Services Area General Arrangement |
| 644911 GA010-S001 | 0 | Plant Layout Auxiliary Boiler & Rack Areas General Arrangement |
| 644911 GA011-S001 | 0 | Plant Layout Misc. West Area General Arrangement |
| 644911 GA011-S002 | 0 | Plant Layout Misc. East Area General Arrangement |
| 644911 GA012-S001 | 1 | Plant Layout Equipment Location Schedule SHT 1 of 2 |
| 644911 GA012-S002 | 1 | Plant Layout Equipment Location Schedule SHT 2 of 2 |
| 644911 GA013-S001 | 0 | Plant Layout Ammonia Storage Area General Arrangement |

1. STEAM TURBINE
2. STEAM TURBINE GENERATOR
3. STG LUBE/HYDRAULIC OIL SKID
4. STEAM TURBINE DRAINS TANK
5. GLAND STEAM CONDENSER
6. STG LUBE OIL COOLER EMERGENCY COOLING WATER PUMP
7. STG EXCITATION COMPARTMENT
8. AIR COMPRESSOR EQUIPMENT AREA
9. ADMIN/CONTROL/AUX ELECTRICAL BUILDING (PEMB)
10. HEAT RECOVERY STEAM GENERATOR (HRSG)
11. CTG TURBINE
12. CTG LCI/EXCITATION COMPARTMENT
13. PEECC
14. CTG GENERATOR
15. CTG BATTERY COMPARTMENT
16. CTG EXCITATION TRANSFORMER
17. CTG LCI TRANSFORMER
18. CTG SURGE & VT CMPT
19. CTG GSU AND STG GSU
20. GENERATOR CIRCUIT BREAKER
21. UNIT AUX TRANSFORMER 2000
22. UNIT AUX TRANSFORMER 1000
23. MV ELECTRICAL PDC ENCLOSURE
24. STANDBY DIESEL GENERATOR
25. CTG WATER WASH SKID
26. CTG GAS DRYER
27. GE–H2 CONTROL PANEL (GT GEN)
28. DC LINK REACTOR
29. AC REACTOR
30. CTG NEUTRAL GROUND TRANSFORMER
31. STG GAS DRYER
32. CTG 7A WATER MIST FIRE PROTECTION SKID
33. WATER WASH/FALSE START DRAIN TANK (UG)
34. FUEL GAS PERFORMANCE HEATER
35. AUX STEAM TO WATER START UP FUEL HEATER
36. FUEL GAS FLOW METER
37. FUEL GAS CONDITIONING SKID DRAINS TANK
38. FUEL GAS ABSOLUTE SEPARATOR
39. HRSG GE BURNER FUEL SKID
40. CEMS SHELTER INLET
41. HRSG AMMONIA FLOW CONTROL SKID
42. HRSG BLOWDOWN TANK
43. HRSG GE COOLING AIR BLOWER SKID
44. FUEL GAS SCRUBBER
45. CTG LUBE OIL RESERVOIR
46. CTG LIQUID FUEL FILTER SKID
47. FEEDWATER PUMP A
48. FEEDWATER PUMP B
49. RECIRCULATION PUMP SKID A
50. RECIRCULATION PUMP SKID B
51. HRSG STACK
52. CEMS SHELTER
53. HRSG ELECTRICAL PDC ENCLOSURE
54. HRSG BLOWDOWN SUMP PUMPS 1A & 1B
55. AUXILIARY BOILER
56. ECONOMIZER
57. BOILER FEEDWATER REGULATING SKID
58. AUX BOILER BLOWDOWN TANK
59. DEAERATOR PEGGING REGULATOR SKID
60. AUX BOILER SAFETY SHOWER
61. MAKE–UP WATER REGULATING SKID
62. AUX BOILER DEAERATOR AND FEED PUMP SKID
63. AIR COOLED CONDENSER (ACC)
64. CT INLET FILTER GLYCOL WATER HEAT EXCHANGER
65. HRSG SAMPLE PANEL ENCLOSURE
66. ACC CONDENSATE COLLECTION TANK AND DEAERATOR
67. RESIN RECOVERY TANK
68. PRECOAT POLISHING SKID A & B
69. SPENT SLURRY SUMP PUMPS A & B
70. WASTE WATER COLLECTION SUMP PUMPS A & B
71. CONDENSATE PUMPS A & B
72. LIQUID RING VACUUM PUMPS A & B
73. SOUTH OIL/WATER SEPARATOR (UG)
74. CYCLE CHEMICAL FEED ENCLOSURE
75. ACC ELECTRICAL PDC ENCLOSURE
76. CT AIR INLET HEATING CLOSED COOLING WATER SKID
77. ULSD (ULTRA LOW SULFUR DIESEL) TANK
78. EAST OIL/WATER SEPARATOR (UG)
79. FUEL OIL UNLOADING PUMP SKID
80. FUEL OIL FORWARDING PUMPS A & B
81. AUX BOILER STACK
82. FIRE PUMP ENCLOSURE
83. SERVICE/FIRE WATER STORAGE TANK
84. AUX COOLING TOWER
85. AUX COOLING WATER PUMP SKID
86. DEMINERALIZED WATER TANK
87. GENERAL SERVICES ENCLOSURE SUMP PUMPS A & B
88. DEMINERALIZED WATER TRAILERS
89. SCALE/CORROSION INHIBITOR FEED PUMP SKIDS
90. CT WATER INJECTION SKIDS A & B
91. DEMIN WATER PUMP SKID
92. SERVICE WATER PUMP SKID
93. ELECTRICAL DCS ROOM
94. SODIUM HYPOCHLORITE/ACID FEED PUMP SKIDS
95. CLOSED CYCLE COOLING WATER PUMPS A & B
96. CLOSED CYCLE COOLING WATER HEAT EXCHANGERS A & B
97. AMMONIA UNLOADING AND STORAGE AREA
98. WAREHOUSE/MAINTENANCE BUILDING (CONT ABOVE)
99. GIS BUILDING
100. FG COMPRESSOR & ENCLOSURE
101. FG SOUTHERN CONNECTICUT GAS METERING AREA
102. SAMPLE PANEL
103. FUEL OIL FOAM ENCLOSURE
104. ELECTRIC SUPER HEATER
105. DIESEL GENERATOR LOAD BANK
106. NORTH OIL/WATER SEPARATOR (UG)
107. SANITARY LIFT STATION
108. SANITARY LIFT STATION
109. CO2 MANIFOLD CT GEN
110. GAS CONTROL VALVES CT GEN
111. ADVANCED PRECOAT SKID
112. FUEL OIL TRUCK UNLOADING AREA
113. AMMONIA TRUCK UNLOADING AREA
114. BULK HYDROGEN SYSTEM
115. POLISHER AIR RECEIVER
116. STEAM JET AIR EJECTOR
117. FIN TUBE CLEANING SYSTEM
118. ELECTRIC SUPER HEATER
119. FUEL GAS LUBE OIL SKID
120. SUCTION SCRUBBER
121. FG COMPRESSOR DRAINS TANK
122. GAS CHROMATIGRAPH
123. WASTE WATER FILTER SKID
124. CO2 MANIFOLD ST GENERATOR
125. CCW EXPANSION TANK
126. STEAM DUCT DRAIN POT PUMPS A&B
127. STG VACUUM DRAINS TANK
128. RECYCLE WATER SUMP PUMPS A & B
129. SERVICE WATER CORROSION INHIBITOR PUMP SKID
130. FUEL GAS METERING SKID
131. FUEL GAS PRESSURE REDUCING SKID
132. TURBINE GENERATOR ENCLOSURE
133. GENERAL SERVICES ENCLOSURE
134. AUX BOILER ENCLOSURE
135. FUEL OIL FORWARDING PUMP ENCLOSURE
136. BOILER FEEDWATER PUMP ENCLOSURE

E 4700'–0" E 4800'–0" E 4900'–0" E 5000'–0" E 5100'–0" E 5200'–0" E 5300'–0" E 5400'–0" E 5500'–0"

N 1800'–0" N 1700'–0" N 1600'–0" N 1500'–0" N 1400'–0" N 1300'–0" N 1200'–0" N 1100'–0" N 1000'–0" N 900'–0"

PLANT NORTH

50 0 50 100
SCALE IN FEET

ACCESS ROAD

PARKING

CRANE RAIL

LAYDOWN AREA

HRSG STACK
PLANT COORD
E 5000'–0"
N 1000'–0"

MANUFACTURED TREATMENT DEVICE

US#1 US#2 US#3 US#4 US#5 US#6 US#7 US#8 US#9 US#10 US#11 US#12 US#13 US#14 US#15 US#16 US#17 US#18 US#19 US#20 US#21 US#22 US#23

S/S

## GENERAL NOTES:

1. PROJECT PLANT COORDINATES ARE SHOWN IN IMPERIAL (FEET) DECIMAL.
2. PROJECT ELEVATIONS ARE BASED ON THE PLANT ELEVATION DATUM. PLANT ELEVATION 18'–0"= 208.50' & PLANT COORDINATES BASED ON NAD 83/2011.
3. FOR SITE GENERAL ARRANGEMENT SEE DRAWING 644911 GA001.
4. FOR CIVIL SITE PLAN AND VICINITY MAP SEE DRAWING 644911 C001.
5. FOR PLANT FINAL GRADING SEE DRAWING 644911 C005.
6. FOR PLANT PARTIAL PAVING SEE DRAWING 644911 C006.
7. FOR ADMIN / CONTROL / WAREHOUSE AREA SEE INNOVA DRAWING 10809–951.
8. FOR GENERAL ARRANGEMENT POWER BUILDING–CTG AREA, SEE DRAWING 644911 GA003.
9. FOR GENERAL ARRANGEMENT HRSG AREA, SEE DRAWING 644911 GA004.
10. FOR GENERAL ARRANGEMENT STG UPPER AND MEZZANINE, STG GROUND FLOOR AREA, SEE DRAWING 644911 GA005–S001 AND S002.
11. FOR GENERAL ARRANGEMENT AIR COOLED CONDENSER AREA, SEE DRAWING 644911 GA006.
12. FOR GENERAL ARRANGEMENT FUEL GAS COMPRESSOR AREA SEE DRAWING 644911 GA007.
13. FOR GENERAL ARRANGEMENT TANK SOUTH AREA, SEE DRAWING 644911 GA008.
14. FOR GENERAL ARRANGEMENT SERVICES AREA, SEE DRAWING 644911 GA009.
15. FOR GENERAL ARRANGEMENT AUX BOILER AND UTILITY RACK, SEE DRAWING 644911 GA010.
16. FOR GENERAL ARRANGEMENT WAREHOUSE AND CTG GSU, STG GSU AND AUX XMFR'S, SEE DRAWING 644911 GA011–S001 AND S002.
17. FOR EQUIPMENT LOCATION SCHEDULE SEE DRAWING 644911 GA012–S001 & S002.
18. FOR GENERAL ARRANGEMENT AMMONIA AREA, SEE DRAWING 644911 GA013.

## LEGEND:

▲ UTILITY STATIONS

S/S SAFETY SHOWERS

ORIGINAL

| UPDATED EQUIPMENT LIST | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 11/6/17 | [illegible] | [illegible] | LP | SF | SF |
| ISSUED FOR CONTRUCTION | | | | | | |
| 0 | 5/25/17 | KDE | REP | LP | LA | SF | SO |
| ISSUED FOR INFORMATION | | | | | | |
| A | 4/28/17 | KDE | REP | LON | LA | SF | SO |
| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER
06 Nov 2017

SCALE: 1"=50'-0"

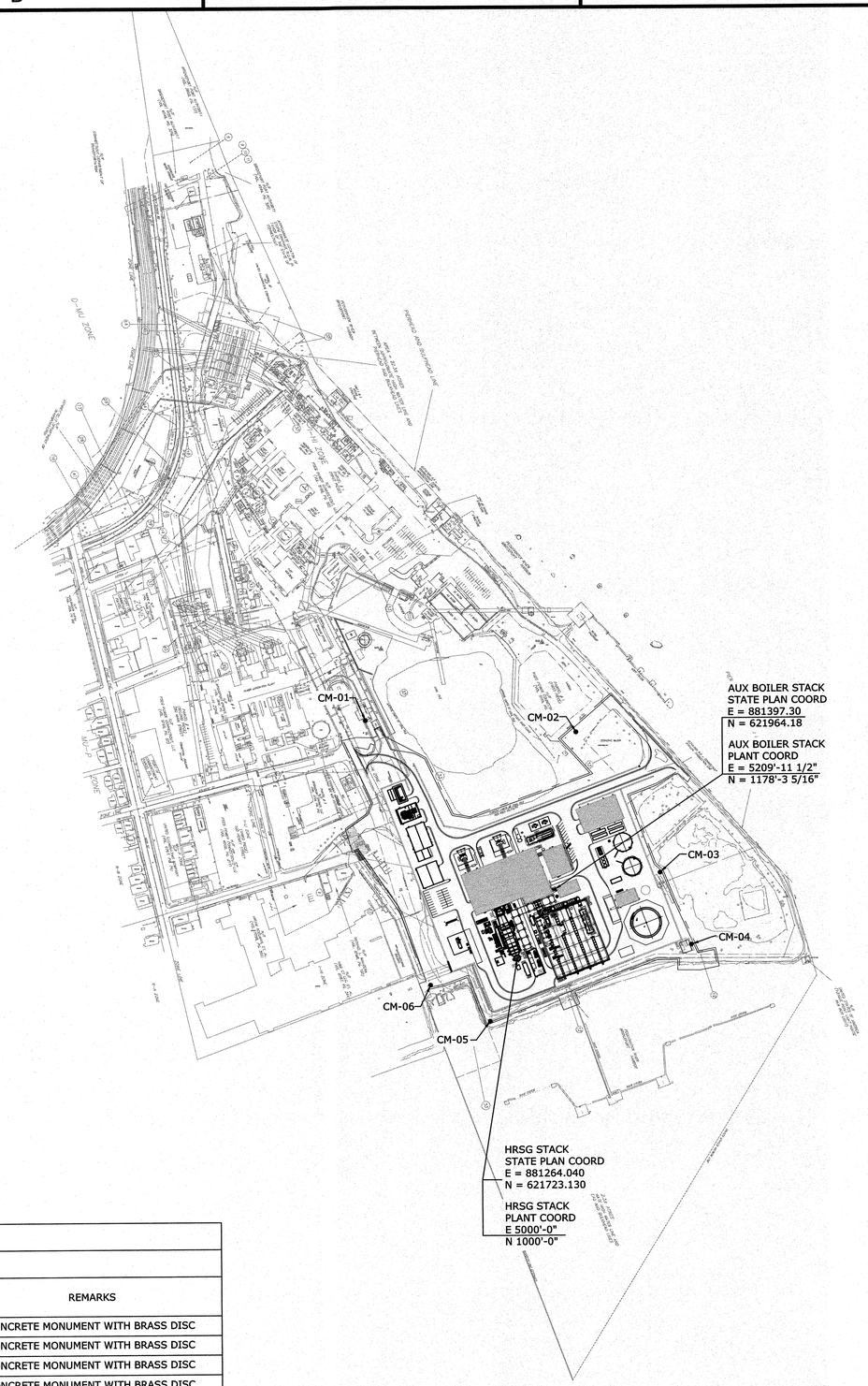
BRIDGEPORT 05

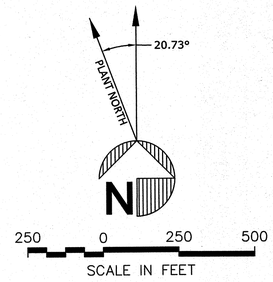
PLANT LAYOUT
POWER BLOCK
GENERAL ARRANGEMENT

ARRANGEMENT DESIGN-CIVIL GENERAL

VENDOR NO. 644911 GA002-S001 REV 1

INSTR ELECT MECH STRUCT PIPING PROCESS REVIEW/SEEN BY




## GENERAL NOTES:

1. HORIZONTAL DATUM IS BASED THE NORTH AMERICAN DATUM OF NAD83 / 2011 (NAD83 / 2011).
2. VERTICAL DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

## REFERENCE DRAWINGS:

1. COORDINATES ON THIS DRAWING WERE OBTAILED FROM "BONGIOVANI GROUP INC" DRAWING "HORIZONTAL AND VERTICAL CONTROL SURVEY FOR PSEG CONNECTICUT" DATED 2-07-2017

## SURVEY NOTES:

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

TYPE OF SURVEY: HORIZONTAL AND VERTICAL CONTROL SURVEY
CLASS OF HORIZONTAL SURVEY: A-A
CLASS OF VERTICAL SURVEY: V-1
INTENDED USE: PROJECT CONTROL

## PROJECT SURVEY CONTROL

### CONTROL MONUMENT LOCATIONS

| MONUMENT NO. | PLANT COORDINATES | | MONUMENT NO. | STATE PLANE COORDINATES | | ELEVATION | REMARKS |
|---|---|---|---|---|---|---|---|
| | NORTHING | EASTING | | NORTHING | EASTING | | |
| CM-01 | 1975.13 | 4801.89 | CM-01 | 622,565.01 | 880,733.59 | LTR | CONCRETE MONUMENT WITH BRASS DISC |
| CM-02 | 1671.05 | 5481.87 | CM-02 | 622,521.31 | 881,477.19 | LTR | CONCRETE MONUMENT WITH BRASS DISC |
| CM-03 | 1102.08 | 5581.07 | CM-03 | 622,024.29 | 881,771.36 | LTR | CONCRETE MONUMENT WITH BRASS DISC |
| CM-04 | 824.94 | 5592.23 | CM-04 | 621,769.04 | 881,879.89 | LTR | CONCRETE MONUMENT WITH BRASS DISC |
| CM-05 | 824.74 | 4830.30 | CM-05 | 621,499.16 | 881,167.36 | LTR | CONCRETE MONUMENT WITH BRASS DISC |
| CM-06 | 1019.70 | 4679.47 | CM-06 | 621,628.11 | 880,957.29 | LTR | CONCRETE MONUMENT WITH BRASS DISC |

NOTE: NEW BENCHMARKS ARE 5'-0" x 12"Ø CONCRETE MONUMENTS WITH BRASS DISC IN TOP. HORIZONTAL CONTROL IS BASED ON THE CONNECTICUT PLANE COORDINATE SYSTEM NAD83 (2011) FEET. THE ELEVATIONS ARE BASED ON THE NAVD88 DATUM.

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16669
LICENSED
PROFESSIONAL ENGINEER

5-10-17

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 5/10/17 | | | | | | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: 1"=250'-0"

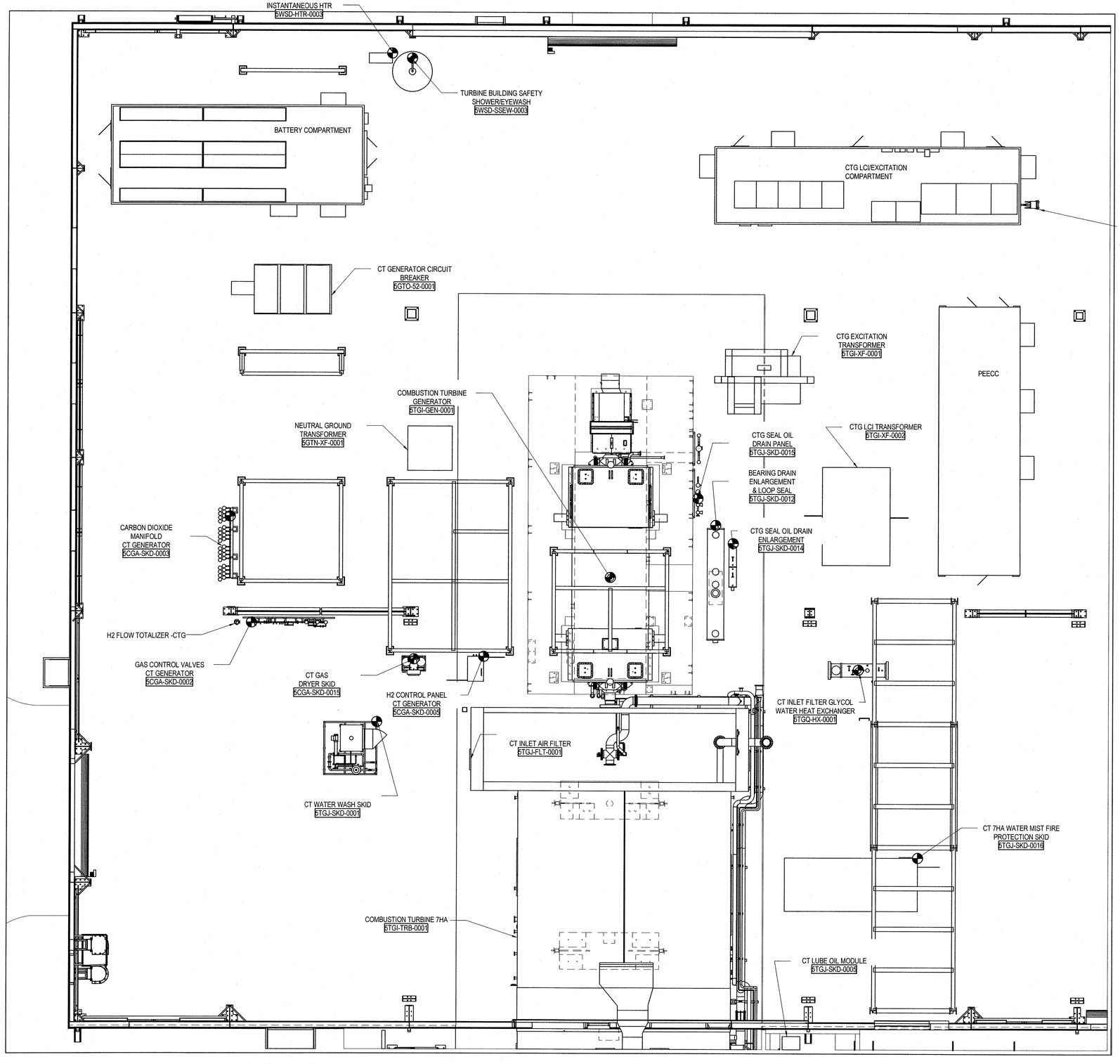
BRIDGEPORT 05

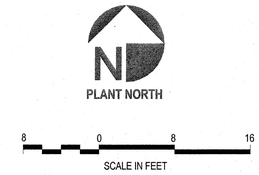
PLANT LAYOUT
SITE PLAN

SITE PLAN — DESIGN-CIVIL GENERAL

VENDOR NO. 644911 GA001-S001 — REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY




## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/6/17 | DEC | DEP | 4 | 2 | 5P | 5 |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
POWER BUILDING - CTG AREA
GENERAL ARRANGEMENT

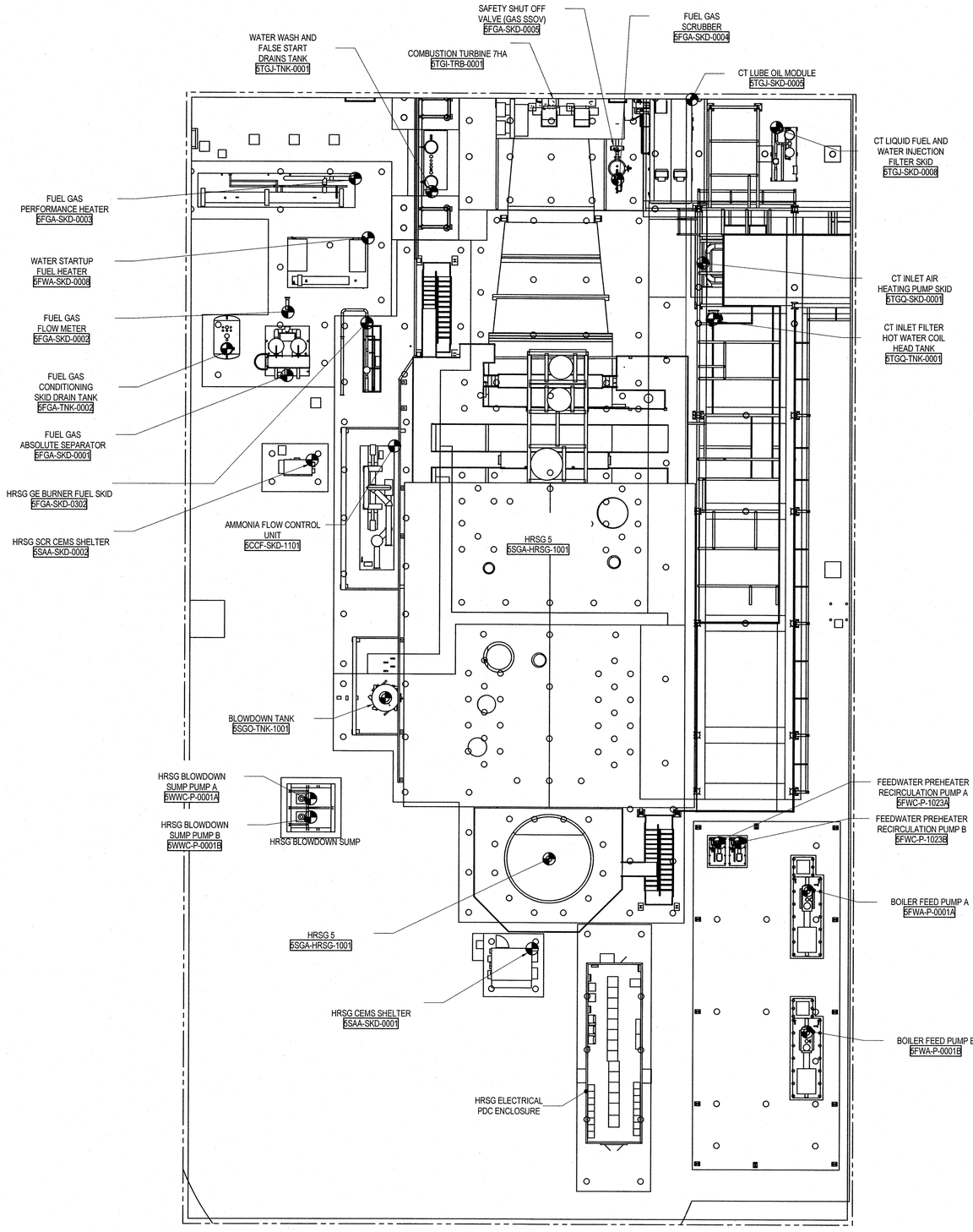
ARRANGEMENT DESIGN-CIVIL GENERAL

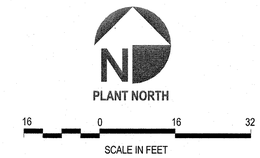
VENDOR NO. 644911 GA003-S001 REV 0

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

William D. Husted
06 Nov 2017

PRINTED DATE: 10/31/2017 7:14:35 AM




## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/6/17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
HRSG AREA
GENERAL ARRANGEMENT

ARRANGEMENT — DESIGN-CIVIL GENERAL

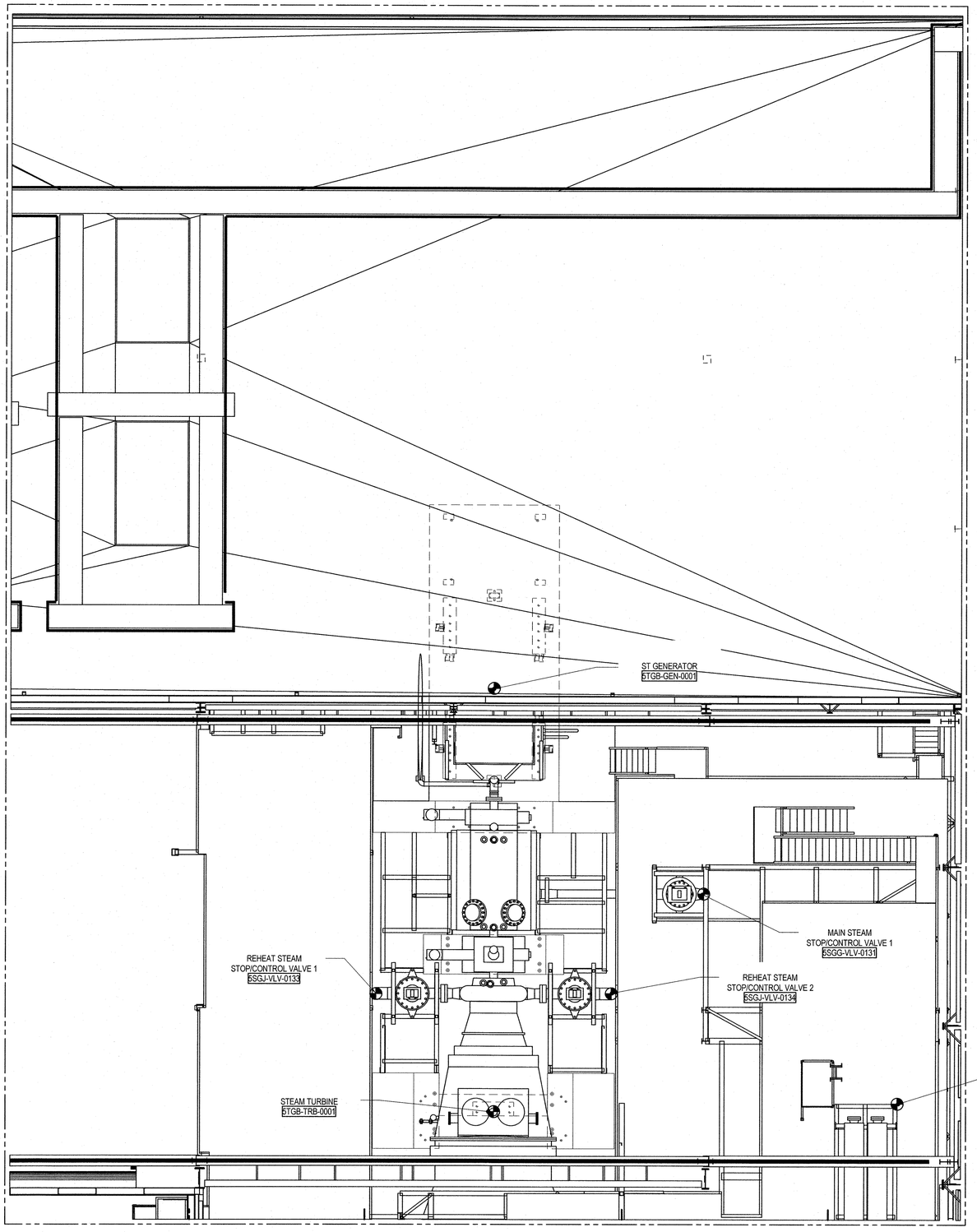
VENDOR NO. 644911 GA004-S001 — REV 0

STATE OF CONNECTICUT — WILLIAM D. HUSTED — 32272 — LICENSED PROFESSIONAL ENGINEER

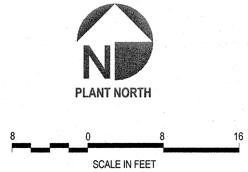
William D. Husted
06 Nov 2017

REVIEW/SEEN BY: PROCESS | PIPING | STRUCT | MECH | ELECT | INSTR

PRINTED DATE: 10/31/2017 7:17:08 AM




OPERATING DECK AND UP




## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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| 0 | 11/6/17 | DC | NEB | 4 | [illegible] | SF | [illegible] |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
GENERAL ARRANGEMENT
STG UPPER - MEZZANINE AREAS
ELEVATION 35'-0" AND UP

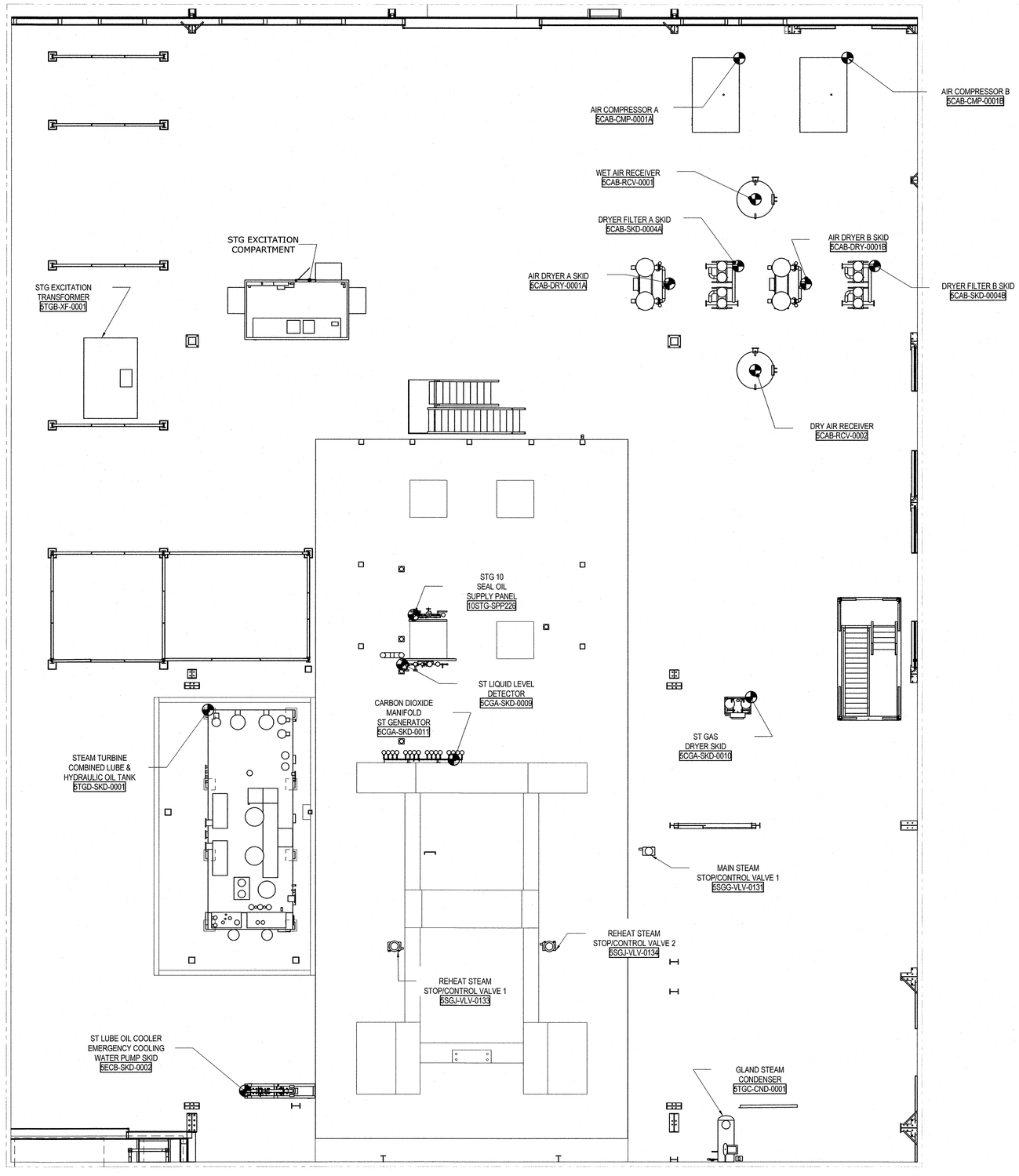
ARRANGEMENT DESIGN-CIVIL GENERAL

VENDOR NO. 644911 GA005-S001 REV 0

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

William D. Husted
06 Nov 2017

PRINTED DATE: 10/31/2017 8:01:24 AM




PLANT NORTH

8 0 8 16

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX. BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/6/17 | DLC | JDB | LP | JS | JF | JS |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC• LAVALIN
CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
STG GROUND FLOOR AREA
GENERAL ARRANGEMENT
ELEVATION 18'-0" TO 35'-0"

ARRANGEMENT DESIGN-CIVIL GENERAL

VENDOR NO.

644911 GA005-S002

REV 0

INSTR. ELECT MECH STRUCT PIPING PROCESS REVIEW/ SEEN BY

STATE OF CONNECTICUT
WILLIAM D. HUSTED
32275
LICENSED PROFESSIONAL ENGINEER

DLC NOV 2017

PRINTED DATE: 10/31/2017 8:01:51 AM

STM CYCLE SAMPLING & ANALYSIS SYS 5SAC-ENCL-0001

STEAM DUCT DRAIN POT PUMP 2 5HRA-P-0023

STEAM DUCT DRAIN POT PUMP 1 5HRA-P-0022

DEAERATOR EJECTOR 5HRB-SKD-0003

INSTANTANEOUS HTR 5WSD-HTR-0014

CYCLE CHEMICAL FEED ENCLOSURE 5FWE-ENCL-0001

SEMI-AUTOMATIC FIN TUBE CLEANING SYSTEM 5HRA-SKD-0002

ACC CONDENSATE TANK 5HRA-TNK-0001

ACC DEAERATOR 5HRA-DEA-0001

STEAM JET AIR EJECTOR SKID 5HRB-SKD-0002

RESIN RECOVERY TANK 5FWD-TNK-0003

ADVANCE PRECOAT SKID 5FWD-SKD-0002

CONDENSATE PUMP A 5FWC-P-0001A

ACC ELECTRICAL PDC ENCLOSURE

SPENT SLURRY SUMP PUMP A 5FWD-P-0004A

PRECOAT POLISHING SKID A 5FWD-SKD-0001A

SPENT SLURRY SUMP PUMP B 5FWD-P-0004B

PRECOAT POLISHING SKID 'B' 5FWD-SKD-0001B

CONDENSATE PUMP B 5FWC-P-0001B

WASTE WATER COLLECTION SUMP PUMP A 5WWC-P-0002A

POLISHER AIR RECEIVER 5FWD-RCV-0001

WASTE WATER COLLECTION SUMP PUMP B 5WWC-P-0002B

LIQUID RING VACUUM PUMP 1A 5HRB-SKD-0001A

LIQUID RING VACUUM PUMP 2A 5HRB-SKD-0002A

SOUTH OIL/WATER SEPARATOR 5WWD-OWS-0002

LIQUID RING VACUUM PUMP 1B 5HRB-SKD-0001B

LIQUID RING VACUUM PUMP 2B 5HRB-SKD-0002B

PLANT NORTH

12 0 12 24

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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| 0 | 11/2/17 | | | | | | |

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
CONDENSATE POLISHING AREA UNDER ACC
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO.

644911 GA006-S001

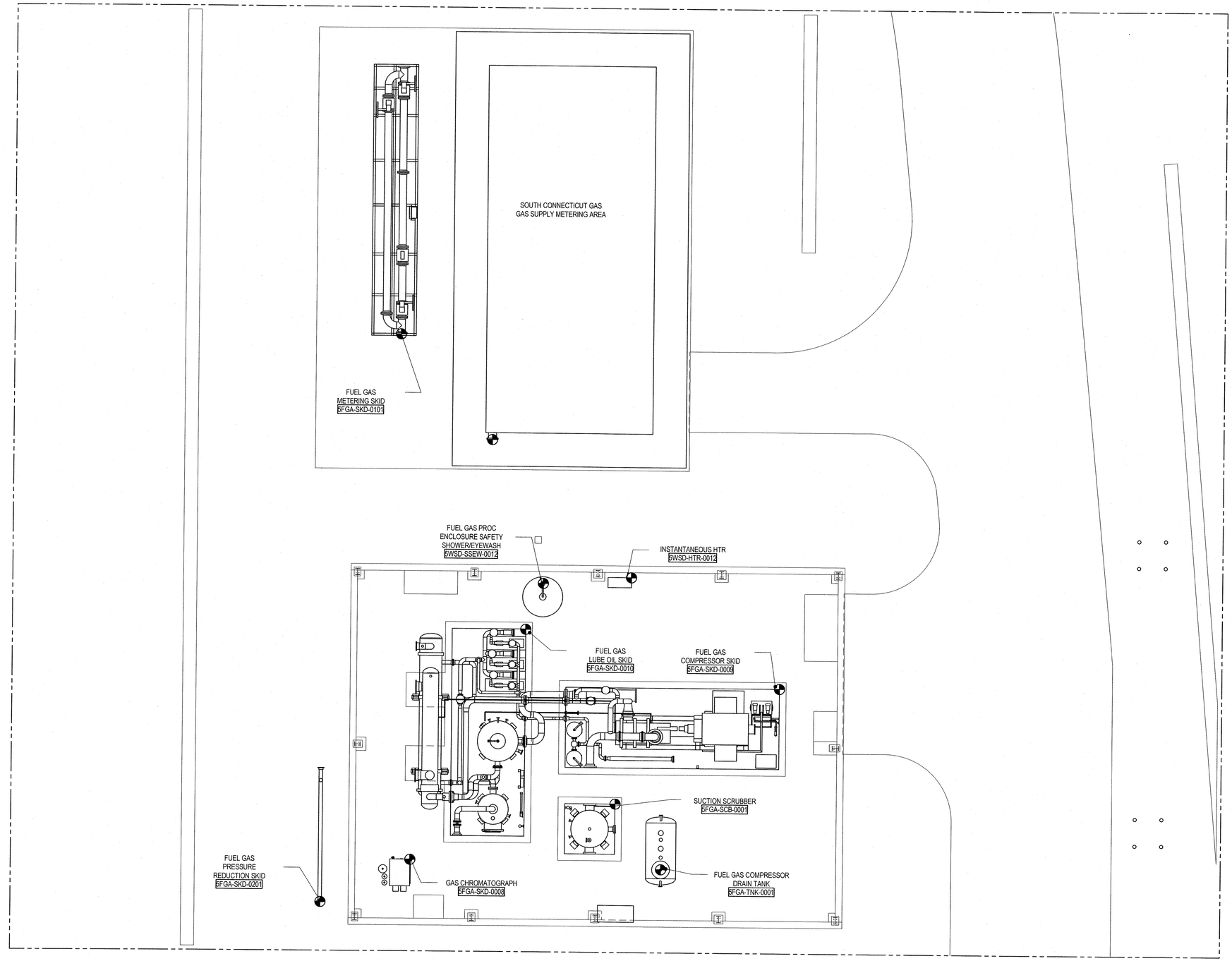
REV 0

INSTR. ELECT MECH CIVIL/STRUCT PIPING PROCESS REVIEW/SEEN BY

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

06 Nov 2017

PRINTED DATE: 10/31/2017 7:20:47 AM




PLANT NORTH

8 0 8 16

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX. BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

STATE OF CONNECTICUT
WILLIAM D. HOISTED
32272
LICENSED
PROFESSIONAL ENGINEER

06 Nov 2017

ORIGINAL

ISSUED FOR CONSTRUCTION

| REV/ISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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| 0 | 11/6/17 | | | | | | |

**PROJECT ENGINEERING DIVISION**

**PSEG** *Power Connecticut LLC*

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

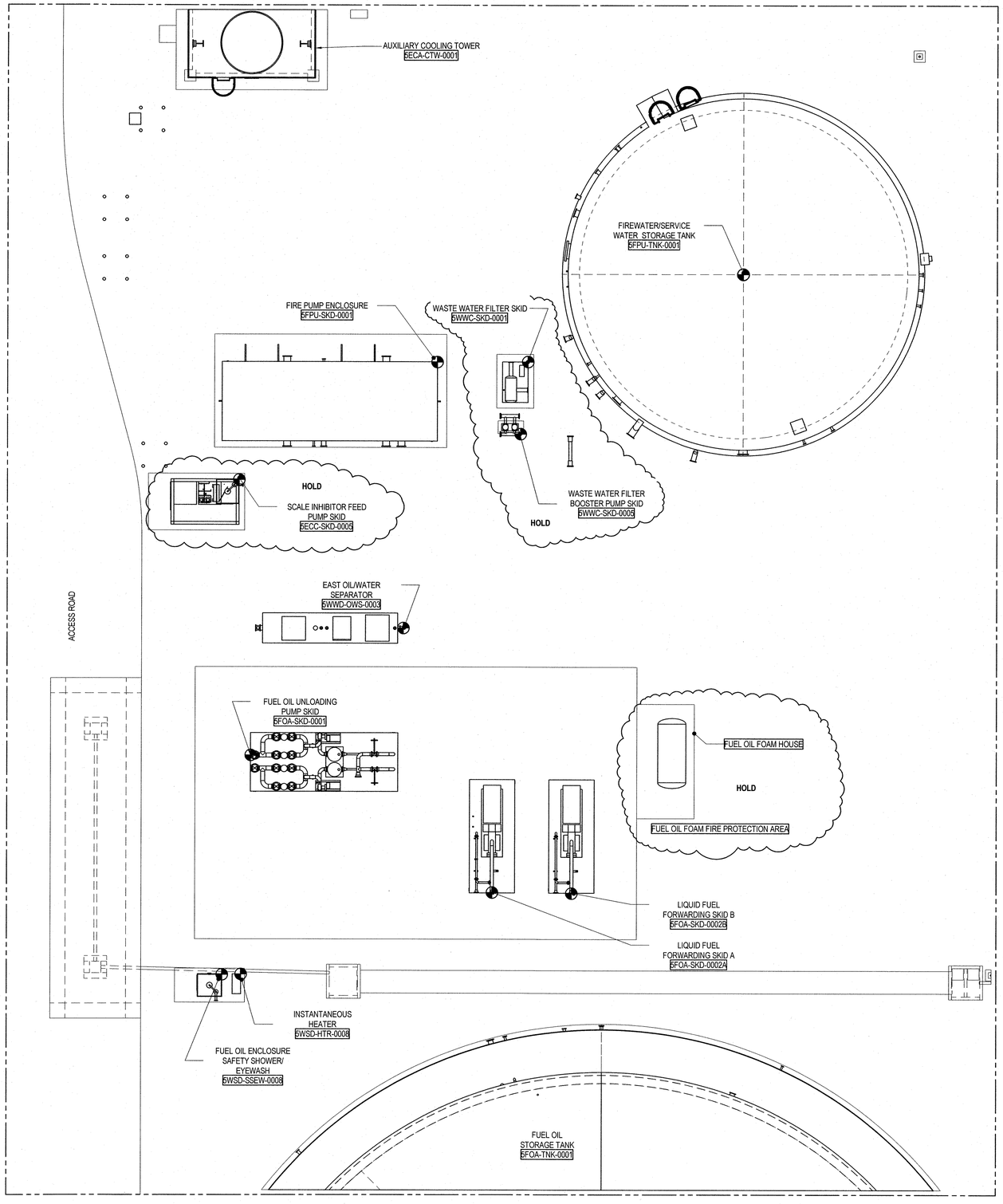
PLANT LAYOUT
FUEL GAS COMPRESSOR AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO. **644911 GA007-S001** REV. 0

INSTR. | ELECT. | MECH. | STRUCT. | PIPING | PROCESS | REVIEW/SEEN BY

PRINTED DATE: 10/31/2017 8:02:40 AM




PLANT NORTH

12 0 12 24

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

STATE OF CONNECTICUT
WILLIAM D. HUSTED
32272
LICENSED
PROFESSIONAL ENGINEER

Will D. Husted
06 Nov 2017

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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**PROJECT ENGINEERING DIVISION**

PSEG
*Power Connecticut LLC*

SNC• LAVALIN
CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
TANK AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO.

**644911 GA008-S001**

REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

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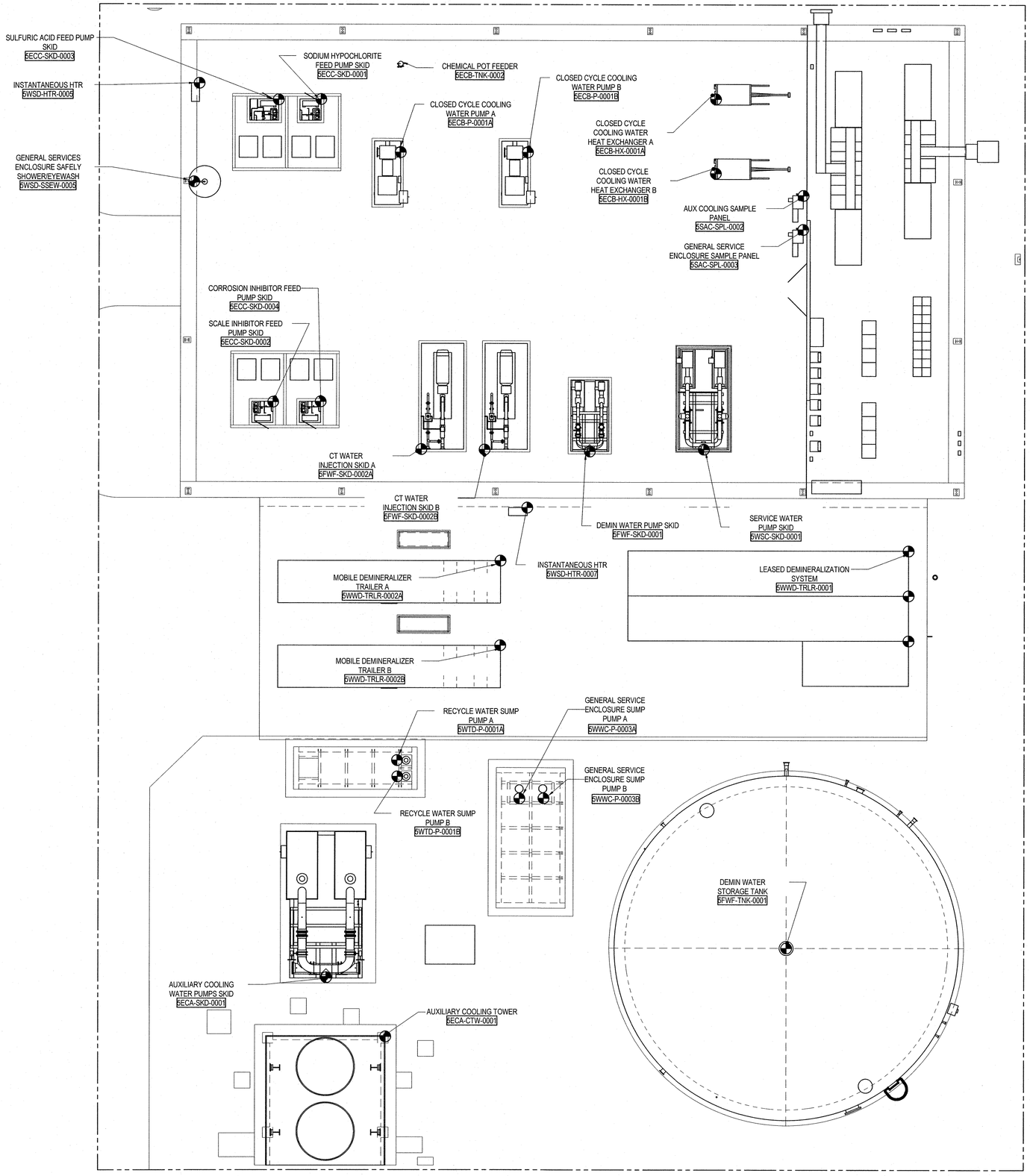


PLANT NORTH

12 0 12 24

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REV | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
SERVICES AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL — ARRANGEMENT

VENDOR NO:

644911 GA009-S001

REV: 0

STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER

06 Nov 2017

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

PRINTED DATE: 10/31/2017 8:07:02 AM

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
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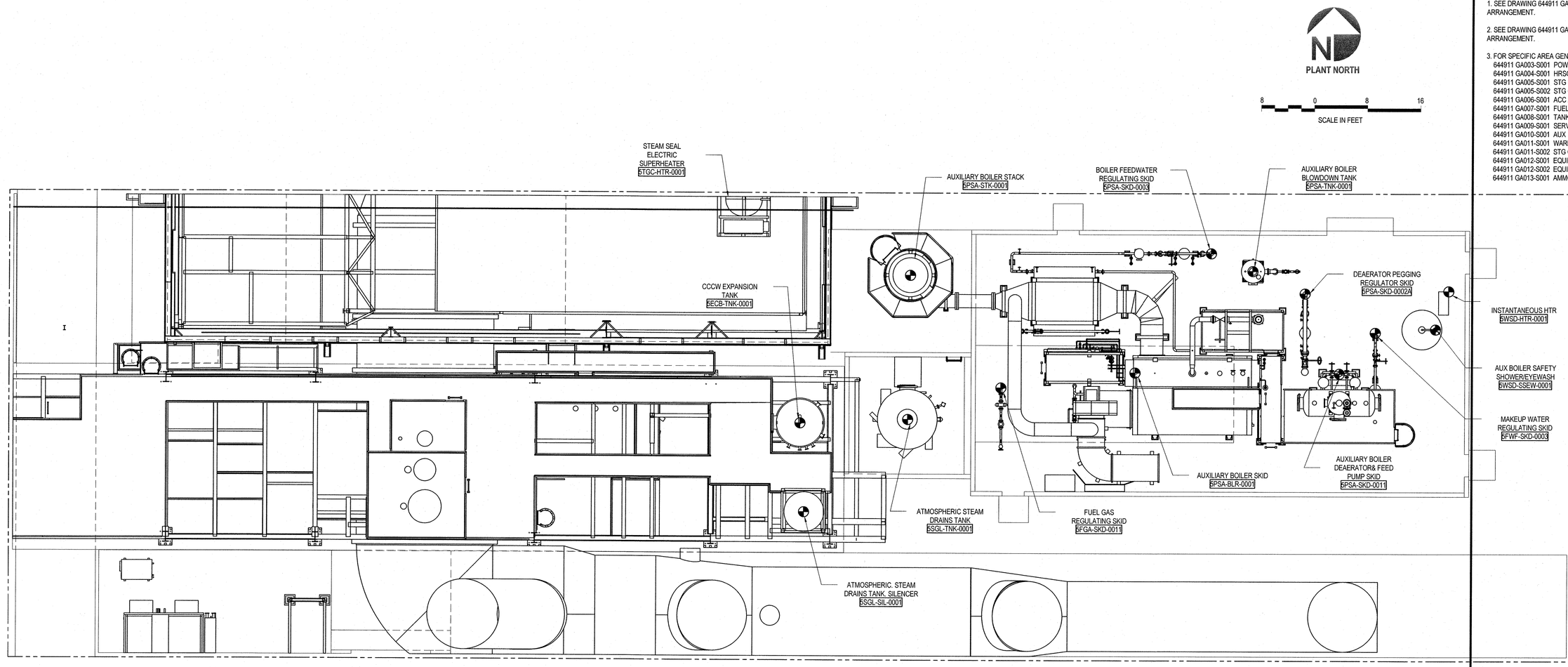
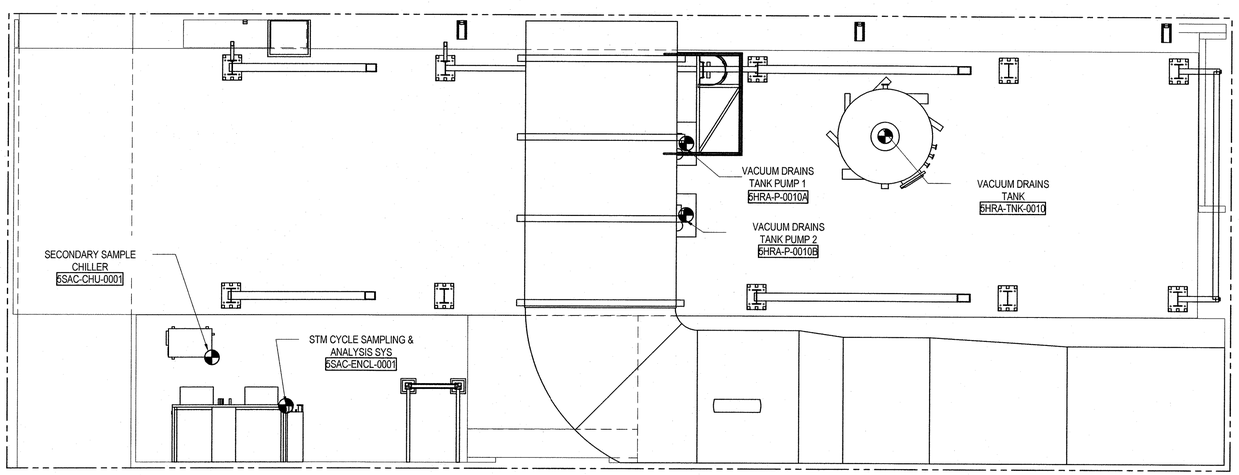
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA




PLAN AT ELEVATION 18'-0"

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

Will D. Husted
06 Nov 2017

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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**PROJECT ENGINEERING DIVISION**

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
AUXILLIARY BOILER AND RACK AREAS
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO. 644911 GA010-S001 REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

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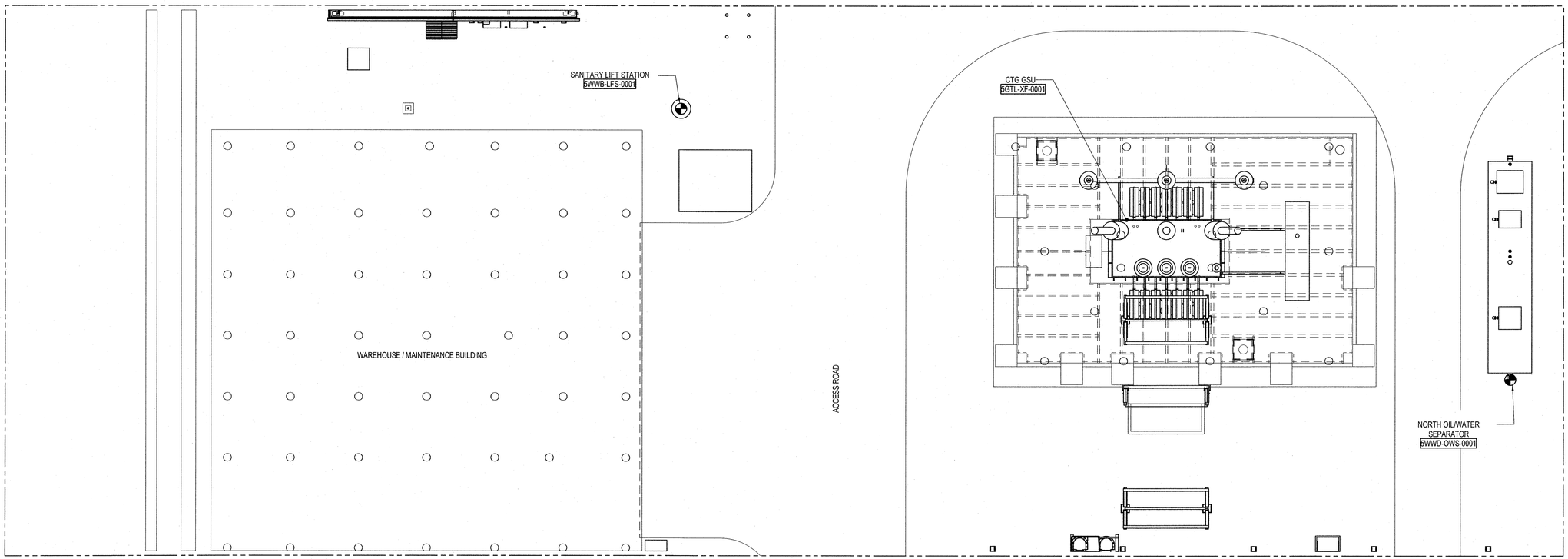


PLANT NORTH

12 0 12 24

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
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   - 644911 GA005-S002 STG GROUND FLOOR AREA
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   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/6/17 | | | | | | |

PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

SNC• LAVALIN
CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
MISC WEST AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO.

644911 GA011-S001

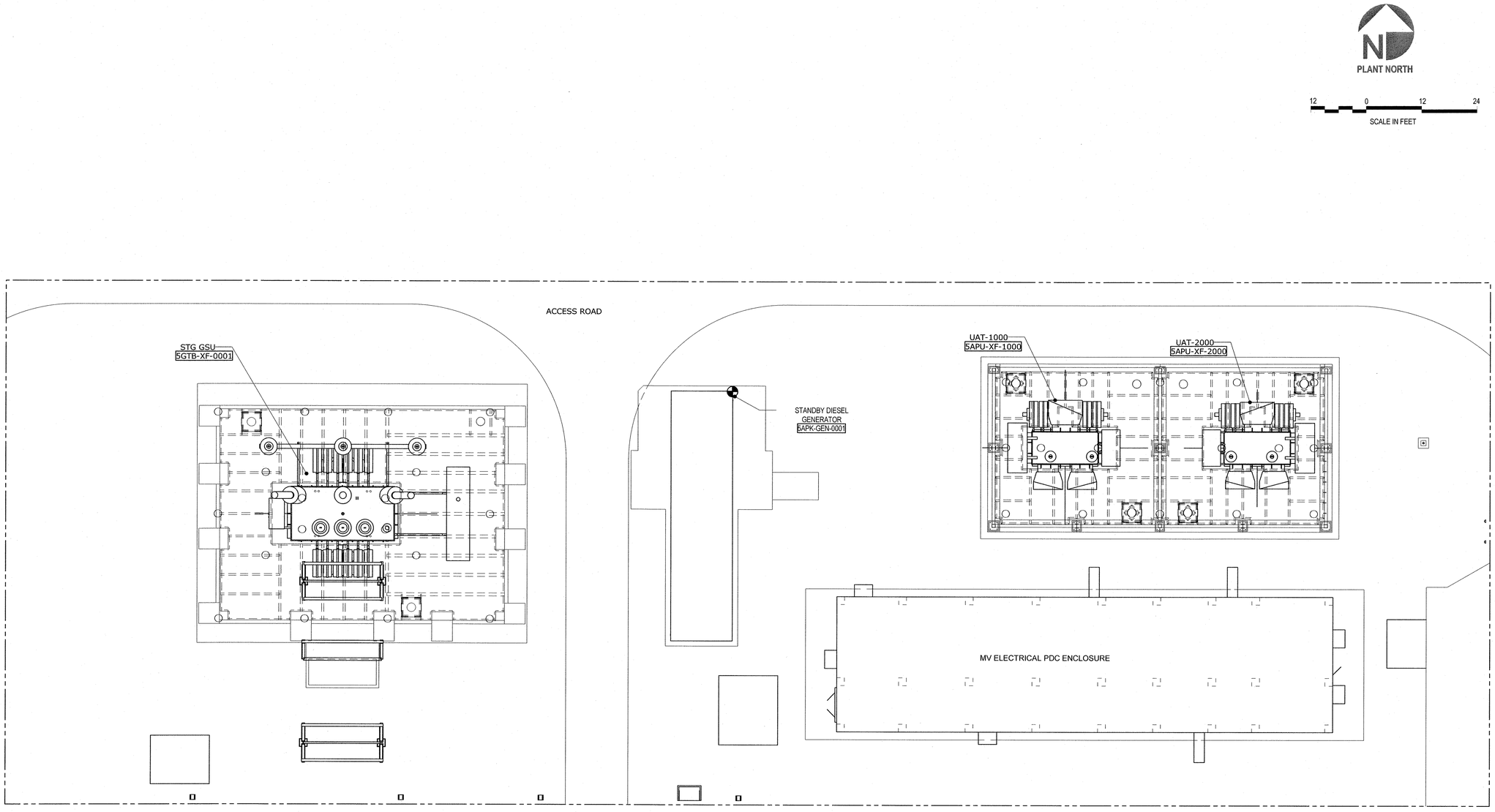
REV. 0

REVIEW/ SEEN BY | INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

STATE OF CONNECTICUT
WILLIAM D. HUSTED
33272
LICENSED
PROFESSIONAL ENGINEER

06 Nov 2017

PRINTED DATE: 10/31/2017 8:07:47 AM




## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
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   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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| 0 | 11/6/17 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

**PROJECT ENGINEERING DIVISION**

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
MISC EAST AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO. 644911 GA011-S002 REV 0

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

William D. Husted
06 Nov 2017

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

PRINTED DATE: 10/31/2017 8:08:17 AM

| GA # | REV | EQPT NO | EQUIPMENT DESCRIPTION | GA DWG | NORTHING COORDINATE | NORTHING DESCRIPTION | EASTING COORDINATE | EASTING DESCRIPTION | ELEVATION COORDINATE | ELEVATION DESCRIPTION | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 1 | 5APK-GEN-0001 | STANDBY DIESEL GENERATOR | GA011-2 | 1423' 9 1/2" | NE CORNER | 5162' 11 5/8" | NE CORNER | 18' 6 " | BASE OF STEEL | TERMINATION PANEL ON WEST SIDE |
| 8 | 1 | 5CAB-CMP-0001A | AIR COMPRESSOR A SKID | GA005-2 | 1338'-6" | NE CORNER | 5173'-0" | NE CORNER | 19'-0" | BOTTOM OF UNIT | CONN R ON WEST SIDE |
| 8 | 1 | 5CAB-CMP-0001B | AIR COMPRESSOR B SKID | GA005-2 | 1338'-6" | NE CORNER | 5187'-6" | NE CORNER | 19'-0" | BOTTOM OF UNIT | CONN R ON WEST SIDE |
| 8 | 1 | 5CAB-DRY-0001A | DRYER FILTER A SKID | GA005-2 | 1308'-2 1/8" | FOF WET INLET A | 5163'-7 1/16" | FOF WET INLET A | 21'-2 1/8" | C/L WET INLET A | WET INLET FACES EAST |
| 8 | 1 | 5CAB-DRY-0001B | DRYER FILTER B SKID | GA005-2 | 1308'-2 1/8" | FOF WET INLET A | 5181'-11 1/16" | FOFWET INLET A | 21'-2 1/8" | C/L WET INLET A | WET INLET FACES EAST |
| 8 | 1 | 5CAB-RCV-0001 | WET AIR RECEIVER | GA005-2 | 1319'-6" | C/L TANK | 5175'-2" | C/L TANK | 19'-0" | BOTTOM OF BASE RING | WET INLET FACES NORTH |
| 8 | 1 | 5CAB-RCV-0002 | DRY AIR RECEIVER | GA005-2 | 1296'-6" | C/L TANK | 5175'-2" | C/L TANK | 19'-0" | BOTTOM OF BASE RING | DRY INLET FACES NORTH |
| 8 | 1 | 5CAB-SKD-0004A | AIR DRYER A SKID | GA005-2 | 1310'-6" | C/L INLET C | 5172'-10 1/8" | FOF INLET C | 23'-0" | C/L INLET C | INLET C FACES EAST |
| 8 | 1 | 5CAB-SKD-0004B | AIR DRYER B SKID | GA005-2 | 1310'-6" | C/L INLET C | 5191'-2 1/8" | FOF INLET C | 23'-0" | C/L INLET C | INLET C FACES EAST |
| 41 | 1 | 5CCF-SKD-1101 | HRSG AMMONIA CONTROL SKID | GA004 | 1103'-0" | NE CORNER | 4961'-0" | NE CORNER | 18'-6" | BOTTOM OF SKID | OUTLETS FACE SOUTH |
| 110 | 1 | 5CGA-SKD-0002 | GAS CONTROL VALVES CT GENERATOR | GA003 | 1253' 11 5/16" | C/L NOZZLE LE003 | 4946'-0" | C/L NOZZLE LE003 | 23'-8" | FOF NOZZLE LE003 | NOZZLE LE3 FACES WEST |
| 109 | 1 | 5CGA-SKD-0003 | CARBON DIOXIDE MANIFOLD CT GENERATOR | GA003 | 1269'-11" | C/L NOZZLE LE021 | 4942'-10" | C/L NOZZLE LE021 | 23'-9" | C/L NOZZLE LE021 | NOZZLE LE21 FACES NORTH |
| 27 | 1 | 5CGA-SKD-0005 | HYDROGEN CONTROL PANEL CT GENERATOR | GA003 | 1247' 6 15/16" | BOTTOM OF NE CORNER | 4980' 10 7/16" | BOTTOM OF NE CORNER | 18'-7 1/2" | BOTTOM OF SKID | TUBING CONNS ON WEST SIDE |
| – | 1 | 5CGA-SKD-0009 | ST LIQUID LEVEL DETECTOR | GA005-2 | 1258'-1 1/4" | CONN LE035 | 5143'-0 1/2" | CONN LE035 | 35'-5 1/2" | C/L CONN LE035 | CONN LE035 FACES WEST |
| 31 | 1 | 5CGA-SKD-0010 | ST GAS DRYER SKID | GA005-2 | 1252'-6" | NE CORNER | 5174'-7" | NE CORNER | 18'-7 1/2" | BOTTOM OF SKID | INLET CONNS ON NORTH SIDE |
| 124 | 1 | 5CGA-SKD-0011 | CARBON DIOXIDE MANIFOLD ST GENERATOR | GA005-2 | 1244'-0 11/16" | C/L NOZZLE LE021 | 5134' 5 3/4" | C/L NOZZLE LE021 | 24' 9 " | C/L NOZZLE LE021 | NOZZLE LE021 FACES EAST |
| – | 0 | 5CGA-SKD-0012 | ST COLLECTOR CABINET | GA005-2 | – | – | – | – | – | – | PART OF STEAM TURBINE GENERATOR |
| 26 | 1 | 5CGA-SKD-0015 | CT GAS DRYER SKID | GA003 | 1247'-11 1/2" | NE CORNER | 4972'-3 1/4" | NE CORNER | 18'-7 1/2" | BOTTOM OF SKID | GROUNDING CONN FACES NORTH |
| 114 | 1 | 5CGA-TRLR-0001 | HYDROGEN TRAILER | GA013 | 1204'-2 3/4" | C/L TRAILER | 4847'-6" | EAST END OF TRAILER | 18'-6" | TOP OF CONCRETE | – |
| 113 | 1 | 5CGE-SKD-0001 | AQUEOUS AMMONIA UNLOADING SKID | GA013 | 1105'-7 7/8" | C/L NOZZLE A2 | 4852'-8 1/8" | C/L NOZZLE A2 | 20'-6" | C/L NOZ A2, TANK FILL | NOZZLE A2 FACES WEST |
| 97 | 1 | 5CGE-SKD-0002 | AQUEOUS AMMONIA FORWARDING PUMP SKID | GA013 | 1091'-10 3/4" | FOF NOZZLE P | 4829'-2" | FOF NOZZLE P | 20'-3 7/8" | FOF NOZZLE P | NOZZLE P FACES EAST |
| 97 | 1 | 5CGE-TNK-0001 | AQUEOUS AMMONIA STORAGE TANK | GA013 | 1138'-9" | FOF NOZZLE A, FILL | 4826'-8 1/2" | FOF NOZZLE A, FILL | 33'-0" | FOF NOZZLE A, FILL | LADDER TO THE EAST SIDE |
| 84 | 1 | 5ECA-CTW-0001 | AUXILIARY COOLING TOWER | GA009 | 1224'-4" | NE CORNER | 5420'-3 1/2" | NE CORNER | 30'-6" | BOTTOM OF SKID | LADDER TO THE SOUTH SIDE |
| 85 | 1 | 5ECA-SKD-0001 | AUXILIARY COOLING WATER PUMP SKID | GA009 | 1235' 5 1/4" | FOF SUCTION FLANGE | 5409'-2 3/8" | FOF SUCTION FLANGE | 22'-4 11/16" | C/L SUCTION FLANGE | SUCTION FLG FACES SOUTH |
| 96 | 1 | 5ECB-HX-0001A | CLOSED CYCLE COOLING WATER HEAT EXCHANGER A | GA009 | 1401'-0" | FOF NOZZLE S2 | 5482'-6" | FOF NOZZLE S2 | 19'-11 3/8" | C/L NOZZLE S2 | NOZZLE S2 FACES WEST |
| 96 | 1 | 5ECB-HX-0001B | CLOSED CYCLE COOLING WATER HEAT EXCHANGER B | GA009 | 1387'-0" | FOF NOZZLE S2 | 5482'-6" | FOF NOZZLE S2 | 19'-11 3/8" | C/L NOZZLE S2 | NOZZLE S2 FACES WEST |
| 95 | 1 | 5ECB-P-0001A | CLOSED CYCLE COOLING WATER PUMP A | GA009 | 1391'-0" | FOF SUCTION INLET | 5423'-0" | FOF SUCTION INLET | 21' 2 1/4" | FOF SUCTION INLET | SUCTION INLET FACES EAST |
| 95 | 1 | 5ECB-P-0001B | CLOSED CYCLE COOLING WATER PUMP B | GA009 | 1391'-0" | FOF SUCTION INLET | 5447'-0" | FOF SUCTION INLET | 21' 2 1/4" | FOF SUCTION INLET | SUCTION INLET FACES EAST |
| 6 | 1 | 5ECB-SKD-0002 | ST LUBE OIL COOLER EMERGENCY COOLING WATER PUMP SKID | GA005-2 | 1199'-6" | FOF SUCTION | 5106'-6" | FOF SUCTION | 20'-7 3/4" | C/L SUCTION | SUCTION FLANGE FACES WEST |
| 125 | 1 | 5ECB-TNK-0001 | CCCW EXPANSION TANK | GA010 | 1156'-0" | C/L TANK | 5193'-5" | C/L TANK | 70'-10 3/4" | BASE OF TANK | MANWAY FACES WEST |
| – | 1 | 5ECB-TNK-0002 | CHEMICAL POT FEEDER | GA009 | 1407'-8" | C/L TANK | 5423'-0" | C/L TANK | 21'-4" | C/L INLET | MOUNT BRACKET FACES EAST |
| 94 | 1 | 5ECC-SKD-0001 | SODIUM HYPOCHLORITE FEED PUMP SKID | GA009 | 1401'-0" | NE CORNER | 5408'-0" | NE CORNER | 19'-5 3/16" | BOTTOM OF SKID | NOZZLE 1A FACES SOUTH |
| 89 | 1 | 5ECC-SKD-0002 | SCALE INHIBITOR FEED PUMP SKID | GA009 | 1344'-0" | NE CORNER | 5399'-0" | NE CORNER | 19'-1" | BOTTOM OF SKID | NOZZLE 2A FACES NORTH |
| 94 | 1 | 5ECC-SKD-0003 | SULFURIC ACID FEED PUMP SKID | GA009 | 1401'-0" | NE CORNER | 5400'-0" | NE CORNER | 19'-5 3/16" | BOTTOM OF SKID | NOZZLE 3A FACES SOUTH |
| 89 | 1 | 5ECC-SKD-0004 | CORROSION INHIBITOR FEED PUMP SKID | GA009 | 1344'-0" | NE CORNER | 5408'-0" | NE CORNER | 19'-1" | BOTTOM OF SKID | NOZZLE 4A FACES NORTH |
| 129 | 1 | 5ECC-SKD-0005 | SERVICE WATER CORROSION INHIBITOR PUMP SKID | GA008 | 1116'-0" | NE CORNER | 5404'-0" | NE CORNER | 18'-6" | BOTTOM OF BASE | NOZZLE E FACES EAST |
| 120 | 1 | 5FGA-SCB-0001 | SUCTION SCRUBBER | GA007 | 1605'-7" | NE CORNER | 4829'-10" | NE CORNER | 19'-0" | BASE OF TANK SKID | NOZZLE C FACES NORTH |
| 38 | 1 | 5FGA-SKD-0001 | FUEL GAS ABSOLUTE SEPARATOR | GA007 | 1120'-6" | FOF FUEL GAS INLET | 4934'-2" | FOF FUEL GAS INLET | 29'-2 1/2" | C/L FUEL GAS INLET | LADDER ON WEST SIDE |
| 36 | 0 | 5FGA-SKD-0002 | FUEL GAS FLOW METER | GA007 | 1136'-4 3/4" | FOF FUEL GAS INLET | 4934'-2" | FOF FUEL GAS INLET | 21'-11 1/2" | C/L FUEL GAS INLET | ORIENTS NORTH/SOUTH |
| 34 | 1 | 5FGA-SKD-0003 | FUEL GAS PERFORMANCE HEATER | GA004 | 1169'-10" | FOF FUEL GAS INLET | 4951'-0" | FOF FUEL GAS INLET | 21' 11 1/8" | FOF FUEL GAS INLET | NOZZLE FG185 FACES EAST |
| 44 | 1 | 5FGA-SKD-0004 | FUEL GAS SCRUBBER | GA004 | 1172' 7 13/16" | C/L TANK | 5016'-5 3/4" | C/L TANK | 18' 7 1/2" | BOTTOM OF SKID | MANWAY FACES EAST |
| 44 | 0 | 5FGA-SKD-0005 | SAFETY SHUT OFF VALVE (GAS SSOV) | GA007 | 1177'-1 13/16" | FOF FUEL GAS INLET | 5016'-5 3/4" | FOF FUEL GAS INLET | 27'-11 1/2" | FOF FUEL GAS INLET | – |
| – | 0 | 5FGA-SKD-0006 | BAND START UP HEATER | GA004 | 1179'-10 3/4" | C/L BW END OF PIPE | 5016'-5 3/4" | C/L BW END OF PIPE | 27'-11 1/2" | C/L BW END OF PIPE | – |
| – | 0 | 5FGA-SKD-0007 | CT FUEL CONTROL MODULE | GA004 | – | – | – | – | – | – | PART OF COMBUSTION TURBINE |
| 122 | 1 | 5FGA-SKD-0008 | GAS CHROMATOGRAPH | GA007 | 1597' 1" | NE CORNER | 4799' 2 1/2" | NE CORNER | 18' 7 1/2" | BOTTOM OF SKID | NOZZLE A FACES NORTH |
| 100 | 1 | 5FGA-SKD-0009 | FUEL GAS COMPRESSOR SKID | GA007 | 1623'-0" | NE CORNER | 4854'-4" | NE CORNER | 21'-2" | BASE OF SKID | CONN 1B FACES SOUTH |
| 119 | 1 | 5FGA-SKD-0010 | FUEL GAS LUBE OIL SKID | GA007 | 1631'-8" | NE CORNER | 4816'-3" | NE CORNER | 19'-0" | BASE OF SKID | MANWAY FACES SOUTH |
| – | 1 | 5FGA-SKD-0011 | FUEL GAS REGULATING SKID | GA006 | 1161'-4" | FOF INLET | 5222'-2" | FOF INLET | 21'-6" | FOF INLET C83 | CONN C83 FACES NORTH |
| 130 | 1 | 5FGA-SKD-0101 | FUEL GAS METERING SKID | GA007 | 1670'-8" | FOF CONN B | 4796'-3 1/4" | FOF CONN B | 21'-1 1/2" | C/L FLANGE CONN B | CONN B FACES SOUTH |
| 131 | 1 | 5FGA-SKD-0201 | FUEL GAS PRESSURE REDUCTION SKID | GA007 | 1586'-8 1/4" | FOF INLET FLANGE | 4785'-9" | FOF INLET FLANGE | 20'-8" | C/L INLET FLANGE | CONN A FACES SOUTH |
| 39 | 0 | 5FGA-SKD-0301 | HRSG FLOW METER | GA004 | 1115' 8 5/16" | FOF NOZZLE TP037 | 4947' 11 " | C/L NOZZLE TP037 | 21' 3 7/8" | C/L NOZZLE TP037 | – |
| 39 | 1 | 5FGA-SKD-0302 | HRSG 5 DUCT BURNER FUEL SKID | GA004 | 1133'-9 7/16" | FOF INLET | 4954'-0 1/2" | FOF INLET | 20'-8 3/8" | C/L INLET | CONTROL PANEL ON EAST SIDE |
| 43 | 1 | 5FGA-SKD-0321 | HRSG 5 DUCT BURNER SCANNER COOLING AIR BLOWER SKID | GA004 | 1126'-0" | OUTLET NOZZLE | 4993'-9" | OUTLET NOZZLE | 18'-7 1/2" | BASE OF SKID | OUTLET FACES WEST |
| 121 | 1 | 5FGA-TNK-0001 | FUEL GAS COMPRESSOR DRAINS TANK | GA007 | 1595'-10" | C/L MANWAY FLG | 4836'-9" | C/L MANWAY FLG | 18'-7 1/2" | BASE OF LEGS | MANWAY ON SOUTH END |
| 37 | 1 | 5FGA-TNK-0002 | FUEL GAS CONDITIONING SKID DRAINS TANK | GA004 | 1127'-3" | C/L MANWAY FLG | 4919'-0" | C/L MANWAY FLG | 19' 6" | BASE OF LEGS | MANWAY ON SOUTH END |
| 79 | 1 | 5FOA-SKD-0001 | FUEL OIL UNLOADING PUMP SKID | GA008 | 1068'-6 1/4" | FOF NOZZLE A | 5409'-2" | FOF NOZZLE A | 22' 6 9/16" | C/L NOZZLE A | CONN A1 FACES WEST |
| 80 | 1 | 5FOA-SKD-0004A | LIQUID FUEL FORWARDING SKID A | GA008 | 1044'-4" | FOF NOZZLE LF1 | 5451'-10" | FOF NOZZLE LF1 | 19'-0" | BOTTOM OF SKID | NOZZLE LF1 FACES SOUTH |
| 80 | 1 | 5FOA-SKD-0004B | LIQUID FUEL FORWARDING SKID B | GA008 | 1044'-4" | FOF NOZZLE LF14 | 5465'-10" | FOF NOZZLE LF14 | 19'-0" | BOTTOM OF SKID | NOZZLE LF14 FACES SOUTH |
| 77 | 0 | 5FOA-TNK-0001 | FUEL OIL STORAGE TANK | GA008 | 945'-3 1/8" | C/L TANK | 5471'-2 3/8" | C/L TANK | 19'-0" 18'-6" | TOC INSTALLED SETTLED BASE EL | TANK SETTLEMENT 6" |
| 82 | 1 | 5FPU-SKD-0001 | FIRE PUMP ENCLOSURE | GA008 | 1138'-0" | NE CORNER | 5442'-0" | NE CORNER | 18'-6" | BOTTOM OF SKID | CONN TP1A FACES SOUTH |

| GA # | REV | EQPT NO | EQUIPMENT DESCRIPTION | GA DWG | NORTHING COORDINATE | NORTHING DESCRIPTION | EASTING COORDINATE | EASTING DESCRIPTION | ELEVATION COORDINATE | ELEVATION DESCRIPTION | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83 | 0 | 5FPU-TNK-0001 | FIREWATER/SERVICE WATER STORAGE TANK | GA008 | 1153'-6" | C/L TANK | 5496'-0" | C/L TANK | 19'-0" 18'-6" | TOC INSTALLED SETTLED BASE EL | TANK SETTLEMENT 6" |
| 47 | 1 | 5FWA-P-0001A | BOILER FEED PUMP A | GA004 | 992'-3" | FOF DISCHARGE FLANGE G2 | 5064'-8" | FOF DISCHARGE FLANGE G2 | 19'-0" | BOTTOM OF SKID | LUBE OIL UNIT ON NORTH END |
| 48 | 1 | 5FWA-P-0001B | BOILER FEED PUMP B | GA004 | 957'-0" | FOF DISCHARGE FLANGE G2 | 5064'-8" | FOF DISCHARGE FLANGE G2 | 19'-0" | BOTTOM OF SKID | LUBE OIL UNIT ON NORTH END |
| 35 | 1 | 5FWA-SKD-0008 | WATER STARTUP FUEL HEATER | GA004 | 1155'-0" | FOF INLET FG205 | 4954'-2 9/16" | FOF INLET FG205 | 18'-7 1/2" | BOTTOM OF SKID | CONN FG205 ON NORTH END |
| 71 | 1 | 5FWC-P-0001A | CONDENSATE PUMP A | GA006 | 1062' 8" | FOF SUCTION TP1 | 5192'-8" | FOF SUCTION TP1 | 22'-6" | C/L SUCTION TP1 | CONN TP1 ON NORTH SIDE |
| 71 | 1 | 5FWC-P-0001B | CONDENSATE PUMP B | GA006 | 1031'-8" | FOF SUCTION TP1 | 5192'-8" | FOF SUCTION TP1 | 22'-6" | C/L SUCTION TP1 | CONN TP1 ON NORTH SIDE |
| 49 | 1 | 5FWC-P-1023A | FEEDWATER PREHEATER RECIRCULATION PUMP A | GA004 | 1004'-2" | C/L DISCHARGE | 5042'-8" | C/L DISCHARGE | 19'-0" | BOTTOM OF BASE | PUMP ON SOUTH END |
| 50 | 1 | 5FWC-P-1023B | FEEDWATER PREHEATER RECIRCULATION PUMP B | GA004 | 1004'-2" | C/L DISCHARGE | 5047'-8" | C/L DISCHARGE | 19'-0" | BOTTOM OF BASE | PUMP ON SOUTH END |
| 69 | 1 | 5FWD-P-0004A | SPENT SLURRY SUMP PUMP A | GA006 | 1047'-0 5/16" | C/L DISCHARGE | 5094'-9 3/4" | C/L DISCHARGE | 19'-7 3/4" | FOF DISCHARGE | LADDER ON WEST SIDE |
| 69 | 1 | 5FWD-P-0004B | SPENT SLURRY SUMP PUMP B | GA006 | 1045'-0 1/16" | C/L DISCHARGE | 5094'-9 3/4" | C/L DISCHARGE | 19'-7 3/4" | FOF DISCHARGE | LADDER ON WEST SIDE |
| 115 | 1 | 5FWD-RCV-0001 | POLISHER AIR RECEIVER | GA006 | 1022'-11 1/4" | C/L TANK | 5135'-0" | C/L TANK | 19' 6 " | BOTTOM OF TANK | CONN TP030 FACES NORTH |
| 68 | 1 | 5FWD-SKD-0001A | PRECOAT FILTER POLISHER A | GA006 | 1060'-9" | C/L OUTLET TP2 | 5130'-9 7/8" | C/L OUTLET TP2 | 20'-4 1/16" | C/L OUTLET TP2 | LADDER ON WEST SIDE |
| 68 | 1 | 5FWD-SKD-0001B | PRECOAT FILTER POLISHER B | GA006 | 1042'-3" | C/L OUTLET TP12 | 5130'-9 7/8" | C/L OUTLET TP12 | 20'-4 1/16" | C/L OUTLET TP12 | LADDER ON WEST SIDE |
| 111 | 1 | 5FWD-SKD-0002 | ADVANCE PRECOAT SKID | GA006 | 1069'-4" | C/L OUTLET TP025 | 5131'-6" | C/L OUTLET TP025 | 18'-7 1/2" | BOTTOM OF SKID | LADDER ON NORTH SIDE |
| 67 | 1 | 5FWD-TNK-0003 | RESIN RECOVERY TANK | GA006 | 1071'-0" | C/L TANK | 5094'-0" | C/L TANK | 18'-7" | BOTTOM OF TANK | RESIN INLET FACES EAST |
| 74 | 1 | 5FWE-ENCL-0001 | CYCLE CHEMICAL FEED ENCLOSURE | GA006 | 1112'-6" | NE CORNER | 5232' 10 " | NE CORNER | 18'-6" | BOTTOM OF SKID | CONN PW ON NORTH SIDE |
| 91 | 1 | 5FWF-SKD-0001 | DEMINERALIZED WATER PUMP SKID | GA009 | 1334'-8" | FOF NOZZLE A | 5458'-9" | FOF NOZZLE A | 19'-0" | BASE OF SKID | NOZZLE A ON SOUTH SIDE |
| 90 | 1 | 5FWF-SKD-0002A | CT WATER INJECTION SKID A | GA009 | 1335'-0" | SW CORNER | 5427'-0" | SW CORNER | 19'-0" | BASE OF SKID | PUMP ON NORTH END |
| 90 | 1 | 5FWF-SKD-0002B | CT WATER INJECTION SKID B | GA009 | 1335'-0" | SW CORNER | 5439'-0" | SW CORNER | 19'-0" | BASE OF SKID | PUMP ON NORTH END |
| 61 | 1 | 5FWF-SKD-0003 | MAKEUP WATER REGULATING SKID | GA010 | 1170'-0 1/8" | FOF NOZZLE C52 | 5280'-0 1/8" | FOF NOZZLE C52 | 20'-7 1/2" | C/L NOZZLE C52 | NOZZLE C52 ON NORTH END |
| 86 | 1 | 5FWF-TNK-0001 | DEMINERALIZED WATER STORAGE TANK | GA009 | 1241'-0" | C/L TANK | 5496'-0" | C/L TANK | 19'-0" 18'-6" | TOC INSTALLED SETTLED BASE EL | CONN B ON NORTH SIDE TANK SETTLES 6" |
| 19 | 0 | 5GTB-XF-0001 | STG GSU | GA011-2 | 1400'-0" | C/L UNIT | 5088'-0" | C/L UNIT | 20'-6" | BOTTOM OF BASE | – |
| 19 | 0 | 5GTL-XF-0001 | CTG GSU | GA011-1 | 1400'-5 29/32" | C/L UNIT | 4952'-0" | C/L UNIT | 20'-6" | BOTTOM OF BASE | – |
| 63 | 0 | 5HRA-CND-001 | AIR COOLED CONDENSER (ACC) | GA006 | 1112'-0 3/8"" | C/L COLUMN A1 | 5109'-0" | C/L COLUMN A1 | 18'-9" | BOTTOM OF BASEPLATE | – |
| 66 | 0 | 5HRA-DEA-0001 | ACC DEAERATOR | GA006 | – | – | – | – | – | – | PART OF CONDENSATE TANK ASSEMBLY |
| – | 1 | 5HRA-P-0010A | VACUUM DRAINS TANK PUMP 1 | GA010 | 1155'-0" | FOF SUCTION | 5149'-9" | FOF SUCTION | 19'-10 1/8" | C/L SUCTION FLG | SUCTION FLG FACES EAST |
| – | 1 | 5HRA-P-0010B | VACUUM DRAINS TANK PUMP 2 | GA010 | 1147'-6" | FOF SUCTION | 5149'-9" | FOF SUCTION | 19'-10 1/8" | C/L SUCTION FLG | SUCTION FLG FACES EAST |
| 126 | 1 | 5HRA-P-0022 | STEAM DUCT DRAIN POT PUMP 1 | GA006 | 1113'-11" | C/L PUMP DISCHARGE | 5133'-6" | C/L PUMP DISCHARGE | 12' 9 7/8" | BOTTOM OF PUMP BASE | SUCTION FLG FACES NORTH |
| 126 | 1 | 5HRA-P-0023 | STEAM DUCT DRAIN POT PUMP 2 | GA006 | 1113'-11" | C/L PUMP DISCHARGE | 5130'-6" | C/L PUMP DISCHARGE | 12' 9 7/8" | BOTTOM OF PUMP BASE | SUCTION FLG FACES NORTH |
| 117 | 1 | 5HRA-SKD-0002 | SEMI-AUTOMATIC FIN TUBE CLEANING SYSTEM | GA006 | 1105'-6" | NE CORNER | 5245'-0" | NE CORNER | 18'-6" | BOTTOM OF STEEL | CONN 12A FACES NORTH |
| 66 | 1 | 5HRA-TNK-0001 | ACC CONDENSATE TANK | GA006 | 1099'-9 1/8" | C/L NORTH EAST COLUMN | 5152'-6" | C/L NORTH EAST COLUMN | 18'-8" | BOTTOM OF TANK STAND BASEPLATE | LADDERS ON WEST SIDE |
| 127 | 1 | 5HRA-TNK-0010 | VACUUM DRAINS TANK | GA010 | 1155'-6" | C/L TANK | 5167'-0" | C/L TANK | 18'-7 1/2" | BOTTOM OF TANK BASEPLATE | NOZZLE N8 FACES SOUTH |
| 116 | 1 | 5HRB SKD-0002 | STEAM JET AIR EJECTOR SKID | GA006 | 1102'-7 7/8" | C/L NOZZLE 11C | 5185'-2 7/16" | C/L NOZZLE 11C | 37'-10 1/16" | FOF NOZZLE 11C | NOZZLE 11C ON EAST SIDE |
| 72 | 1 | 5HRB-SKD-0001A | LIQUID RING VACUUM PUMP 1A | GA006 | 999'-10 7/8" | NE CORNER | 5153'-0" | NE CORNER | 19'-0" | BOTTOM OF STEEL | NOZZLE A ON NORTH SIDE |
| 72 | 1 | 5HRB-SKD-0001B | LIQUID RING VACUUM PUMP 1B | GA006 | 966'-4 7/8 | NE CORNER | 5153'-0" | NE CORNER | 19'-0" | BOTTOM OF STEEL | NOZZLE A ON NORTH SIDE |
| 72 | 0 | 5HRB-SKD-0002A | LIQUID RING VACUUM PUMP 2A | GA006 | 988'- 8 7/8" | SW CORNER | 5118'-0" | SW CORNER | 19'-0" | BOTTOM OF STEEL | CONNECTS TO LRVP 1A |
| 72 | 0 | 5HRB-SKD-0002B | LIQUID RING VACUUM PUMP 2B | GA006 | 955'-2 7/8" | SW CORNER | 5118'-0" | SW CORNER | 19'-0" | BOTTOM OF STEEL | CONNECTS TO LRVP 2A |
| – | 1 | 5HRB-SKD-0003 | DEAERATOR EJECTOR | GA006 | 1110'-0 3/4" | FOF NOZZLE B | 5151'-10 5/16" | FOF NOZZLE B | 49'-10" | C/L OF UNIT | NOZZLE B FACES WEST |
| 55 | 0 | 5PSA-BLR-0001 | AUXILIARY BOILER SKID | GA010 | 1163'-7 11/16" | C/L OF ORIGIN, WATER DRUM | 5243'-11 3/16" | C/L OF ORIGIN, WEST SUPPORT STEEL | 18'-7 1/2" | BOTTOM OF BASEPLATE | STACK OUTLET FACES WEST |
| 56 | 0 | 5PSA-SKD-0001 | DEAERATOR PREHEATER | GA010 | 1169'-10 11/16" | FOF INLET | 5226'- 9 7/8" | FOF INLET | 32'-7 3/8" | FOF INLET | CONN C12 ON WEST SIDE |
| 59 | 1 | 5PSA-SKD-0002A | DEAERATOR PEGGING REGULATOR SKID | GA010 | 1175'-1 1/8" | FOF NOZZLE C49 | 5269'-2 1/8" | FOF NOZZLE C49 | 18'-7 1/2" | BOTTOM OF BASEPLATE | NOZZLE C49 ON NORTH END |
| 57 | 0 | 5PSA-SKD-0003 | BOILER FEEDWATER REGULATING SKID | GA010 | 1181'-7 11/16" | FOF NOZZLE C01 | 5255'-2 15/16" | FOF NOZZLE C01 | 18'-7 1/2" | BOTTOM OF BASEPLATE | CONN C1 ON EAST SIDE |
| 55 | 1 | 5PSA-SKD-0004 | ECONOMIZER | GA010 | 1178'-0 1/16" | NE CORNER BASEPLATE | 5238' 2 3/4 " | NE CORNER BASEPLATE | 18'-7 1/2" | BOTTOM OF BASEPLATE | CONN C07 ON NORTH SIDE |
| 62 | 1 | 5PSA-SKD-0011 | AUXILIARY BOILER DEAERATOR & FEED PUMP SKID | GA010 | 1163'-7 1/16" | FOF NOZZLE C67 | 5274' 7 3/16" | FOF NOZZLE C67 | 18'-7 1/2" | BOTTOM OF BASEPLATE | LADDER ON EAST SIDE |
| 81 | 0 | 5PSA-STK-0001 | AUXILIARY BOILER STACK | GA010 | 1178'-3 3/8" | C/L STACK | 5209'-11 1/2" | C/L STACK | 18'-7 1/2" | BASE OF STACK | ON AUX BOILER OUTLET |
| 58 | 1 | 5PSA-TNK 0001 | AUXILIARY BOILER BLOWDOWN TANK | GA010 | 1178'-11 15/16" | C/L TANK | 5261'-6 5/8" | C/L TANK | 18'-7 1/2" | BOTTOM OF BASEPLATE | OVERFLOW CONN ON EAST SIDE |
| 62 | 0 | 5PSA-TNK-XXXX | AUX BOILER DEAERATOR | GA010 | – | – | – | – | – | – | PART OF 5PSA-SKD-0011 |
| 62 | 0 | 5PSA-TNK-XXXX | AUX BOILER STORAGE TANK | GA010 | – | – | – | – | – | – | PART OF 5PSA-SKD-0011 |
| 52 | 1 | 5SAA-SKD-0001 | HRSG CEMS SHELTER | GA004 | 977'-7" | NE CORNER BASE SUPPORT | 4995'-10" | NE CORNER BASE SUPPORT | 18'-7 1/2" | BOTTOM OF BASE SUPPORTS | DOOR ON NORTH SIDE |
| 40 | 1 | 5SAA-SKD-0002 | HRSG SCR CEMS SHELTER | GA004 | 1099'-6" | NE CORNER | 4940'-5 1/2" | NE CORNER | 18'-7 1/2" | BOTTOM OF BASE | DOOR ON SOUTH SIDE |
| – | 1 | 5SAC-CHU-0001 | SECONDARY SAMPLE CHILLER | GA006 | 1132'-0" | SE CORNER | 5096'-0" | SE CORNER | 18'-7 1/2" | BOTTOM OF BASE | PIPING CONNS ON EAST SIDE |
| – | 1 | 5SAC-CXX-0001 | PRIMARY COOLING RACK | GA006 | 1127'-0" | NOZZLE C | 5104'-4" | NOZZLE C | 22'-2" | NOZZLE C | NOZZLE C ON NORTH SIDE |
| 65 | 1 | 5SAC-ENCL-0001 | HRSG SAMPLE PANEL ENCLOSURE | GA006 | 1127'-0" | NE CORNER | 5103'-10" | NE CORNER | 19'-0" | BOTTOM OF BASE | A/C UNITS ON NORTH SIDE |
| 102 | 1 | 5SAC-SPL-0002 | AUXILIARY COOLING WATER SAMPLE PANEL | GA009 | 1383'-0" | NE CORNER | 5499'-0" | NE CORNER | 19'-0" | BOTTOM OF BASE | SINK FACES WEST |
| 102 | 1 | 5SAC-SPL-0003 | GENERAL SERVICE ENCLOSURE SAMPLE PANEL | GA009 | 1376'-6" | NE CORNER | 5499'-0" | NE CORNER | 19'-0" | BOTTOM OF BASE | SINK FACES WEST |

## GENERAL NOTES:

1. FOR OVERALL SITE PLAN SEE DWG 644911 GA001-S001.

2. FOR GENERAL NOTES SEE DWG 644911 GA002-S001.

3. SOME EQUIPMENT LOCATIONS LISTED ARE BASED ON PRELIMINARY INFORMATION. VENDOR EQUIPMENT DRAWINGS ARE IN VARYING STAGES OF CONSTRUCTION CERTIFICATION. CONTRACTOR SHALL CONFIRM THE LOCATION COORDINATES AND ELEVATIONS AGAINST THE LATEST CERTIFIED VENDOR DRAWINGS AND RESOLVE ANY DISCREPANCIES WITH CONSTRUCTION ENGINEERING PRIOR TO INSTALLATION.

ORIGINAL

REVISED AS NOTED

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 1 | 4/3/18 | | | | | | |
| ISSUED FOR CONSTRUCTION | | | | | | | |
| 0 | 11/6/17 | DEC | REP | LP | LA | SF | SO |

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER

04 APRIL 2018

SCALE: NONE

BRIDGEPORT 05

PLANT LAYOUT
EQUIPMENT LOCATION
SCHEDULE
SHT 1 OF 2

GENERAL ARRANGEMENT — DESIGN-PIPING

VENDOR NO.

644911 GA012-S001

REV 1

REVIEW/SEEN BY: INSTR, ELECT, MECH, STRUCT, PIPING, PROCESS

PATH: H:\SLC-Projects\0835_Genesis Keys Energy\Piping\Cad\GA\160091 GA012-S001.dwg
TODAYS DATE: JUL 15 2016 TIME: 08:46 — Printed By: EMMEK
DATE OF LAST UPDATE: July 15 2016 8:19am

| GA # | REV | EQPT NO | EQUIPMENT DESCRIPTION | GA DWG | NORTHING COORDINATE | NORTHING DESCRIPTION | EASTING COORDINATE | EASTING DESCRIPTION | ELEVATION COORDINATE | ELEVATION DESCRIPTION | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 0 | 5SGA-HRSG-1001 | HEAT RECOVERY STEAM GENERATOR (HRSG) | GA004 | 1163'-0" | C/L INLET DUCT | 5000'-0" | C/L UNIT | 34'-7.50" | C/L INLET DUCT | STACK OUTLET ON SOUTH END |
| 51 | 0 | 5SGA-STK-1001 | HEAT RECOVERY STEAM GENERATOR STACK | GA004 | 1000'-0" | C/L STACK | 5000'-0" | C/L STACK | 18'-7 1/2" | BOTTOM OF BASEPLATE | CONNECT TO HRSG |
| -- | 1 | 5SGG-VLV-0131 | MAIN STEAM STOP/CONTROL VALVE 1 | GA005-1 | 1231'-9 1/4" | C/L VALVE | 5157'-6" | C/L OUTLET NOZZLE | 35'-0 13/16" | C/L OUTLET NOZZLE | -- |
| -- | 0 | 5SGJ-VLV-0133 | REHEAT STEAM STOP/CONTROL VALVE 1 | GA005-1 | 1218'-11 1/2" | C/L VALVE | 5121'-10 7/8" | C/L INLET NOZZLE | 39'-6 1/8" | C/L INLET NOZZLE | -- |
| -- | 0 | 5SGJ-VLV-134 | REHEAT STEAM STOP/CONTROL VALVE 2 | GA005-1 | 1218'-11 1/2" | C/L VALVE | 5152'-1 1/8" | C/L INLET NOZZLE | 39'-6 1/8" | C/L INLET NOZZLE | -- |
| -- | 1 | 5SGL-SIL-0001 | ATMOSPHERIC STEAM DRAINS TANK SILENCER | GA010 | 1142'-7 7/16" | C/L TANK | 5194'-0 15/16" | C/L TANK | 74'-10 13/16" | INLET FLANGE | SILENCER DRAIN AT 45 DEG NE |
| 4 | 1 | 5SGL-TNK-0001 | ATMOSPHERIC STEAM DRAINS TANK | GA010 | 1156'-7" | C/L TANK | 5209' 7 " | C/L TANK | 14'-3 1/2" | BOTTOM OF BASEPLATE | MANWAY FACES NORTH |
| 42 | 1 | 5SGO-TNK-1001 | BLOWDOWN TANK | GA004 | 1040'-0" | C/L TANK | 4959'-0" | C/L TANK | 18' 7 1/2" | BASE OF LEGS | MANWAY FACES EAST |
| 2 | 0 | 5TGB-GEN-0001 | STEAM TURBINE GENERATOR | GA005-1 | 1258'-1 1/4" | C/L GENERATOR | 5137'-0" | C/L GENERATOR | 42'-6" | C/L GENERATOR | ON STEAM TURBINE NORTH END |
| 1 | 0 | 5TGB-TRB-0001 | STEAM TURBINE | GA005-1 | 1203'-9 1/4" | C/L BEARING #1 | 5137'-0" | C/L BEARING #1 | 42'-6" | C/L BEARING #1 | ON ST GENERATOR SOUTH END |
| 5 | 1 | 5TGC-CND-0001 | GLAND STEAM CONDENSER | GA005-2 | 1183'-3" | C/L CONN GC105 | 5171'-3" | C/L CONN GC105 | 26'-8" | BOTTOM OF BASEPLATE | CONN GC105 ON SOUTH END |
| 118 | 1 | 5TGC-HTR-0001 | STEAM SEAL ELECTRIC SUPERHEATER | GA005-1 | 1204' 10 " | NE CORNER | 5188'-10" | NE CORNER | 56'-6" | BASE OF SKID | CONN A FACES WEST |
| -- | 0 | 5TGD-GEN-001 | ST GENERATOR HYDROGEN COOLERS | GA005-1 | -- | -- | -- | -- | -- | -- | PART OF STEAM TURBINE GENERATOR |
| 3 | 1 | 5TGD-SKD-0001 | STEAM TURBINE COMBINED LUBE & HYDRAULIC OIL TANK | GA005-2 | 1250'-9" | NW CORNER | 5101'-6" | NW CORNER | 19'-1 1/2" | BOTTOM OF BASEPLATE | COOLERS ON WEST SIDE |
| 14 | 0 | 5TGI-GEN-0001 | COMBUSTION TURBINE GENERATOR | GA003 | 1260'-9 5/16" | C/L GENERATOR | 5000'-0" | C/L GENERATOR | 34'-7 1/2" | C/L GENERATOR | ON COMBUSTION TURBINE NORTH END |
| -- | 1 | 5TGI-HX-0001 | CT LCI COOLER | GA003 | 1315'-6" | FACE OF NOZZLE CW100 | 5063'-0" | FACE OF NOZZLE CW100 | 23'- 11 1/4" | C/L NOZZLE CW100 | PIPING CONNS ON SOUTH SIDE |
| 11 | 1 | 5TGI-TRB-0001 | COMBUSTION TURBINE | GA003 | 1226'-11 1/8" | C/L BASE ANCHOR SUPPORT | 5000'-0" | C/L BASE ANCHOR SUPPORT | 26'-10 7/8" | C/L BASE ANCHOR SUPPORT | ON CT GENERATOR SOUTH END |
| -- | 0 | 5TGJ-CLR-0001 | CT EVAP COOLER | GA003 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE INLET FILTER |
| -- | 0 | 5TGJ-FLT-0001 | CT INLET AIR FILTER | GA003 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE |
| 25 | 1 | 5TGJ-SKD-0001 | CT WATER WASH SKID | GA003 | 1238'-9" | NE CORNER | 4965'-0" | NE CORNER | 18'-7 1/2" | BOT OF SKID PADS | PANEL FACES EAST |
| -- | 0 | 5TGJ-SKD-0003 | CT FUEL CONTROL MODULE | GA003 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE |
| -- | 0 | 5TGJ-SKD-0004 | TURBINE COMPARTMENT | GA004 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE |
| 45 | 1 | 5TGJ-SKD-0005 | CT LUBE OIL MODULE | GA004 | 1189'-11 15/16" | NE CORNER | 5035'-2 1/4" | NE CORNER | 18'-7 1/2" | BOTTOM OF SKID | DUCTWORK ON NORTH END |
| -- | 0 | 5TGJ-SKD-0006 | CT DRAIN MODULE | GA003 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE |
| 46 | 1 | 5TGJ-SKD-0008 | CT LIQUID FUEL AND WATER INJECTION FILTER SKID | GA009 | 1183'-0" | FOF NOZZLE WJ14 | 5056'-2 5/8" | FOF NOZZLE WJ14 | 18'-7 1/2" | BOTTOM OF BASEPLATE | NOZZLE WJ14 ON NORTH END |
| -- | 1 | 5TGJ-SKD-0012 | CTG BEARING DRAIN ENLARGEMENT | GA003 | 1268'-8" | END OF NOZZLE LO252 | 5015' 10" | C/L OF SHELL | 28' 3 1/2" | C/L OF NOZ LO252 | NOZZLE LO252 ON NORTH END |
| -- | 1 | 5TGJ-SKD-0014 | CT SEAL OIL DRAIN ENLARGEMENT | GA003 | 1266'-0" | END OF NOZZLE HS024 | 5018' 5" | END OF NOZZLE HS024 | 28' 6 5/8" | C/L OF NOZZLE HS024 | NOZZLE HS024 POINTS NORTH |
| -- | 1 | 5TGJ-SKD-0015 | CTG SEAL OIL DRAIN PANEL | GA003 | 1270'-8 1/16" | C/L NOZZLE HS062 | 5013'1 3/4" | C/L NOZZLE HS062 | 25'-2 1/2" | FOF NOZZLE HS062 | NOZZLE HS062 ON SOUTH END |
| 32 | 1 | 5TGJ-SKD-0016 | CT WATER MIST FIRE PROTECTION SKID | GA003 | 1218'-10" | NE CORNER | 5046'-4" | NE CORNER | 18'-7 1/2" | BOT OF SKID PADS | DOOR ON EAST SIDE |
| -- | 1 | 5TGJ-SKD-0017 | CT PURGE COOLER | GA003 | -- | -- | -- | -- | -- | -- | PART OF COMBUSTION TURBINE GENERATOR |
| 33 | 1 | 5TGJ-TNK-0001 | WATER WASH AND FALSE START DRAINS TANK | GA004 | 1166'-7" | FOF NOZZLE C | 4970'-0" | FOF NOZZLE C | 10'-8 5/16" | C/L NOZZLE C | UNDERGROUND EQPT |
| 64 | 1 | 5TGQ-HX-0001 | CT INLET FILTER GLYCOL WATER HEAT EXCHANGER | GA003 | 1247'-0" | FOF INLET NOZZLE C | 5037'-4" | FOF INLET NOZZLE C | 24'-9" | FOF INLET, NOZ C | NOZZLE A ON EAST END |
| 76 | 1 | 5TGQ-SKD-0001 | CT INLET AIR HEATING PUMP SKID | GA004 | 1149'-0" | FOF SUCTION A | 5037'-10" | FOF SUCTION A | 21'-7" | C/L OF SUCTION A | CONN A FACES WEST |
| 76 | 1 | 5TGQ-TNK-0002 | CT INLET FILTER GLYCOL WATER EXPANSION TANK | GA004 | 1135'-0" | C/L TANK | 5040'-9" | C/L TANK | 19'-0" | BASE OF SUPPORT SKIRT | PIPING CONNS ON EAST SIDE |
| 92 | 1 | 5WSC-SKD-0001 | SERVICE WATER PUMP SKID | GA009 | 1335'-0 5/8" | FOF SUCTION | 5480'-3" | FOF SUCTION | 19'-6" | BOTTOM OF SKID | SUCTION FACES SOUTH |
| -- | 1 | 5WSD-BFP-0001 | BACK FLOW PREVENTER 1 | GA011 | 1374'-5 3/8" | FOF CONN N1 | 4786'-0" | FOF CONN N1 | 22'-7 1/16" | C/L CONN N1 | CONN N1 FACES SOUTH |
| -- | 1 | 5WSD-BFP-0002 | BACK FLOW PREVENTER 2 | GA011 | 1374'-5 3/8" | FOF CONN N1 | 4790'-0" | FOF CONN N1 | 22'-7 1/16" | C/L CONN N1 | CONN N1 FACES SOUTH |
| -- | 1 | 5WSD-BFP-0003 | BACK FLOW PREVENTER 3 | GA008 | 1120'-7 1/16" | FOF INLET FLANGE | 5468'-0" | FOF INLET FLANGE | 21'-6" | C/L INLET FLANGE | CONN N1 FACES SOUTHWEST |
| -- | 1 | 5WSD-BFP-0004 | BACK FLOW PREVENTER 4 | GA008 | 1117'-1" | FOF INLET FLANGE | 5436'-9" | FOF INLET FLANGE | 21'-2 3/8" | C/L INLET FLANGE | CONN N1 FACES EAST |
| 117 | 1 | 5WSD-FLT-0001 | TEMPORARY CARBON FILTER | GA006 | 1114'-0" | C/L OF WEST TANK | 5240'-6" | C/L OF WEST TANK | 18'-6" | BOTTOM OF TANK | INLET A FACES WEST |
| -- | 1 | 5WSD-HTR-0003 | INSTANTANEOUS HEATER | GA003 | 1340'-0" | NE CORNER | 4967'-0" | NE CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES SOUTH |
| -- | 1 | 5WSD-HTR-0005 | INSTANTANEOUS HEATER | GA009 | 1392'-3" | NE CORNER | 5384'-9" | NE CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES EAST |
| -- | 1 | 5WSD-HTR-0007 | INSTANTANEOUS HEATER | GA009 | 1317'-6" | SW CORNER | 5506'-9" | SW CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES NORTH |
| -- | 1 | 5WSD-HTR-0013 | INSTANTANEOUS HEATER | GA006 | 1103'-3" | NE CORNER | 5090'-11" | NE CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES WEST |
| -- | 1 | 5WSD-HTR-0014 | INSTANTANEOUS HEATER | GA006 | 1114'-7 11/16" | SW CORNER | 5227'-2" | SW CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES NORTH |
| -- | 1 | 5WSD-HTR-0015 | INSTANTANEOUS HEATER | GA008 | 1113'-6" | NW CORNER | 5406'-7 1/2" | NW CORNER | 18'-7 1/2" | BOTTOM OF BASE SUPPORT | DOOR FACES EAST |
| -- | 1 | 5WSD-SSEW-0003 | TURBINE BUILDING SAFETY SHOWER/ EYEWASH | GA003 | 1338'-9" | C/L STAND | 4970'-0" | C/L STAND | 18'-6" | BASE OF STAND MOUNT | SHOWER HEAD POINTS SOUTH |
| -- | 1 | 5WSD-SSEW-0005 | GENERAL SERVICES ENCLOSURE SAFETY SHOWER/ EYEWASH | GA009 | 1385'-6" | C/L STAND | 5384'-6" | C/L STAND | 18'-6" | BASE OF STAND MOUNT | SHOWER HEAD POINTS EAST |
| -- | 1 | 5WSD-SSEW-0007 | DEMINERALIZED WATER TRAILERS/RO SAFETY SHOWER/ EYEWASH | GA009 | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | PART OF DEMIN TRAILER |
| -- | 1 | 5WSD-SSEW-0008 | FUEL OIL ENCLOSURE SAFETY SHOWER/ EYEWASH | GA008 | 1030'-0 1/4" | C/L STAND | 5398'-10 1/2" | C/L STAND | 18' 6 " | BOTTOM OF BASE | SHOWER HEAD POINTS SOUTH |
| -- | 1 | 5WSD-SSEW-0011 | AMMONIA TRUCK UNLOADING SAFETY SHOWER/ EYEWASH | GA013 | 1094'-11 3/4" | C/L STAND | 4856'-6" | C/L STAND | 18'-6 " | BOTTOM OF BASE | SHOWER HEAD POINTS NORTH |
| -- | 1 | 5WSD-SSEW-0015 | SERVICE WATER CORROSION INHIBITOR ENCLOSURE | GA008 | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR | BY VENDOR |

| GA # | REV | EQPT NO | EQUIPMENT DESCRIPTION | GA DWG | NORTHING COORDINATE | NORTHING DESCRIPTION | EASTING COORDINATE | EASTING DESCRIPTION | ELEVATION COORDINATE | ELEVATION DESCRIPTION | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 128 | 1 | 5WTD-P-0001A | RECYCLE WATER SUMP PUMP A | GA009 | 1276'-4" | C/L DISCHARGE FLANGE N1 | 5422'-6" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | PUMP OUTLET FACES WEST |
| 128 | 1 | 5WTD-P-0001B | RECYCLE WATER SUMP PUMP B | GA009 | 1273'-3 1/2" | C/L DISCHARGE FLANGE N1 | 5422'-6" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | PUMP OUTLET FACES WEST |
| 88 | 1 | 5WTD-TRLR-0001 | PERMANENT WATER TREATMENT TRAILER | GA009 | 1315'-11" | NE CORNER | 5519'-0" | NE CORNER | 18'-6" | BOTTOM OF BASE | PIPING CONNS ON EAST SIDE |
| 107 | 0 | 5WWB-LFS-0001 | SANITARY LIFT STATION 1 | GA002 | 1428'-0" | C/L TANK | 4863'-0" | C/L TANK | 18'-6" | TOP OF TANK | GRADE AT 18'-0" |
| 108 | 0 | 5WWB-LFS-0002 | SANITARY LIFT STATION 2 | GA002 | 1327'-0" | C/L TANK | 5277'-0" | C/L TANK | 18'-7" | TOP OF TANK | GRADE AT 18'-0" |
| 54 | 1 | 5WWC-P-0001A | HRSG BLOWDOWN SUMP PUMP A | GA004 | 1014'-10" | C/L DISCHARGE FLANGE | 4939'-10 3/8" | C/L DISCHARGE FLANGE | 9'-9 3/4" | FOF DISCHARGE FLANGE | DISCH FLANGE ON EAST SIDE |
| 54 | 1 | 5WWC-P-0001B | HRSG BLOWDOWN SUMP PUMP B | GA004 | 1010'-3" | C/L DISCHARGE FLANGE | 4939'-10 3/8" | C/L DISCHARGE FLANGE | 9'-9 3/4" | FOF DISCHARGE FLANGE | DISCH FLANGE ON EAST SIDE |
| 70 | 1 | 5WWC-P-0002A | WASTEWATER COLLECTION SUMP PUMP A | GA006 | 1019'-5 1/8" | C/L DISCHARGE FLANGE N1 | 5093'- 10 3/8" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | DISCH FLANGE ON EAST SIDE |
| 70 | 1 | 5WWC-P-0002B | WASTEWATER COLLECTION SUMP PUMP B | GA006 | 1016'-0" | C/L DISCHARGE FLANGE N1 | 5093'- 10 3/8" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | DISCH FLANGE ON EAST SIDE |
| 87 | 1 | 5WWC-P-0003A | GENERAL SERVICE ENCLOSURE SUMP PUMP A | GA009 | 1268'-6" | C/L DISCHARGE FLANGE N1 | 5445'-6" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | DISCH FLANGE ON SOUTH SIDE |
| 87 | 1 | 5WWC-P-0003B | GENERAL SERVICE ENCLOSURE SUMP PUMP B | GA009 | 1268'-6" | C/L DISCHARGE FLANGE N1 | 5450'- 0" | C/L DISCHARGE FLANGE N1 | 9'-9 3/4" | C/L DISCHARGE FLANGE N1 | DISCH FLANGE ON SOUTH SIDE |
| 123 | 1 | 5WWC-SKD-0001 | WASTEWATER FILTER SKID | GA008 | 1138'-0" | NE CORNER | 5458'-0" | NE CORNER | 18'-6" | BOTTOM OF BASEPLATE | INLET FACES EAST |
| 123 | 1 | 5WWC-SKD-0005 | WASTEWATER FILTER BOOSTER PUMP SKID | GA008 | 1124'-8 7/16" | FOF NOZZLE TP-A | 5459'-0" | FOF NOZZLE TP-A | 19'-4 3/4" | C/L NOZZLE TP-A | NOZZLE TP-A FACES SOUTH |
| 106 | 0 | 5WWD-OWS-0001 | NORTH OIL/WATER SEPARATOR | GA002 | 1376'-4 5/8" | FOF INLET | 5015'-0 3/8" | C/L INLET | 11'-3 1/2" | C/L INLET | 12,000 GAL |
| 73 | 0 | 5WWD-OWS-0002 | SOUTH OIL/WATER SEPARATOR | GA006 | 976'-6" | FOF INLET | 5096'-0" | C/L INLET | 13' 11 1/2" | C/L INLET | 3,000 GAL |
| 78 | 0 | 5WWD-OWS-0003 | EAST OIL/WATER SEPARATOR | GA008 | 1091'-0" | C/L INLET | 5410'-0" | FOF INLET | 10'-10 1/2" | C/L INLET | 5,500 GAL |
| -- | 1 | 5WWD-P-0009 | CTG STEP-UP TRANSFORMER SUMP PUMP | GA011-1 | 1418'-6 1/2" | C/L SUMP | 4983'-10" | C/L SUMP | 16'-0" | BOTTOM OF SUMP | NE CORNER |
| -- | 1 | 5WWD-P-0010 | STG STEP-UP TRANSFORMER SUMP PUMP | GA011-2 | 1417'-9 1/2" | C/L SUMP | 5114'-6" | C/L SUMP | 16'-0" | BOTTOM OF SUMP | NE CORNER |
| -- | 1 | 5WWD-P-0011 | UNIT AUXILIARY TRANSFORMER SUMP PUMP 1 | GA011-2 | 1425'-4" | C/L SUMP | 5240'-9" | C/L SUMP | 17'-6" | BOTTOM OF SUMP | NE CORNER |
| -- | 1 | 5WWD-P-0012 | UNIT AUXILIARY TRANSFORMER SUMP PUMP 2 | GA011-2 | 1425'-4" | C/L SUMP | 5249'-9" | C/L SUMP | 17'-6" | BOTTOM OF SUMP | NW CORNER |
| -- | 1 | 5WWD-P-0014 | ACC DRAIN POT SUMP PUMP | GA008 | 1107'-2" | C/L OF PUMP | 5137'-0" | C/L OF PUMP | 9'-8 1/2" | BASE OF PUMP | OUTLET FACES WEST |
| -- | 1 | 5WWD-P-0015 | ATMOSPHERIC DRAINS TANK SUMP PUMP | GA010 | 1149'-3" | C/L OF PUMP | 5217'-11" | C/L OF PUMP | 13'-5" | BASE OF PUMP | OUTLET FACES SOUTHWEST |
| -- | 1 | 5WWD-P-0016 | CT INLET FILTER EXPANSION TANK SUMP PUMP | GA003 | 1135'-9" | C/L OF PUMP | 5064'-0" | C/L OF PUMP | 16'-6" | BASE OF PUMP | OUTLET FACES SOUTH |
| 88 | 1 | 5WWD-TRLR-0002A | MOBILE WATER TREATMENT TRAILER A | GA009 | 1314'-0" | NE CORNER | 5442'-0" | NE CORNER | 18'-6" | BOTTOM OF TRAILER WHEELS | NOZZLES POINT NORTH |
| 88 | 1 | 5WWD-TRLR-0002B | MOBILE WATER TREATMENT TRAILER B | GA009 | 1296'-0" | NE CORNER | 5442'-0" | NE CORNER | 18'-6" | BOTTOM OF TRAILER WHEELS | NOZZLES POINT NORTH |

GENERAL NOTES:

ORIGINAL

| REV | REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|---|
| 1 | REVISED AS NOTED | 3/18 | | | | | | |
| 0 | ISSUED FOR CONSTRUCTION | 11/6/17 | DEC | REP | LP | LA | SF | SO |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: NONE

BRIDGEPORT 05

PLANT LAYOUT
EQUIPMENT LOCATION
SCHEDULE
SHT 2 OF 2

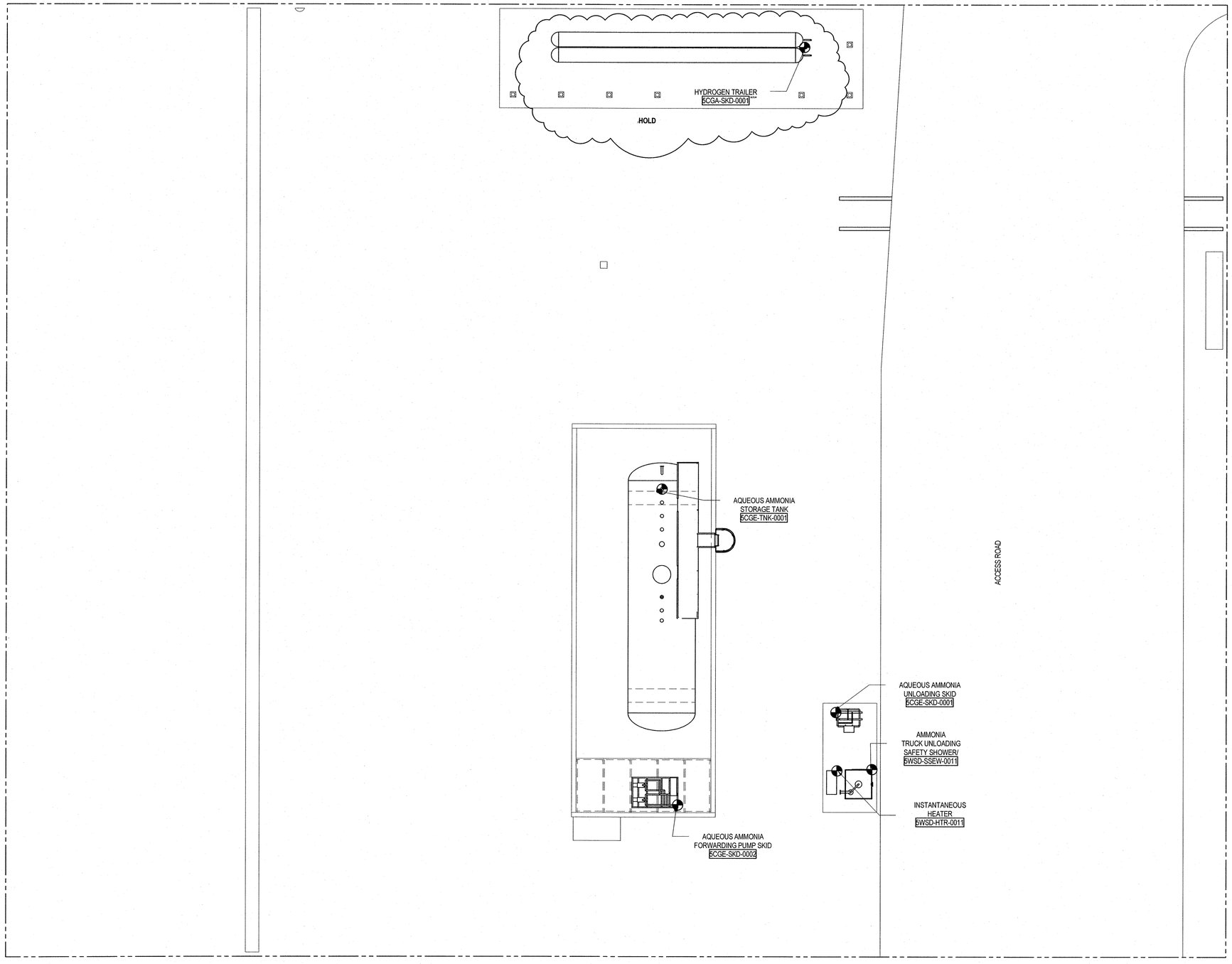
GENERAL ARRANGEMENT DESIGN-PIPING

VENDOR NO. 644911 GA012-S002 REV 1

INSTR | ELECT BJS | MECH | STRUCT CJL | PIPING | PROCESS DS-MK | REVIEW / SEEN BY

STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER
04 APR 2018

PATH: H:\SLCI-Projects\0835_Genesis Keys Energy\Piping\Cad\GA\160091 GA012-S001.dwg
TODAYS DATE: JUL 15 2016 TIME: 08:46 - Printed By: EMMEK
DATE OF LAST UPDATE: July 15 2016 8:19am







8 0 8 16

SCALE IN FEET

## GENERAL NOTES:

1. SEE DRAWING 644911 GA001 FOR THE SITE GENERAL ARRANGEMENT.

2. SEE DRAWING 644911 GA002 FOR THE PLANT GENERAL ARRANGEMENT.

3. FOR SPECIFIC AREA GENERAL ARRANGEMENT PLANS SEE:
   - 644911 GA003-S001 POWER BUILDING - CTG AREA
   - 644911 GA004-S001 HRSG AREA
   - 644911 GA005-S001 STG UPPER & MEZZANINE AREAS
   - 644911 GA005-S002 STG GROUND FLOOR AREA
   - 644911 GA006-S001 ACC AREA
   - 644911 GA007-S001 FUEL GAS COMPRESSOR AREA
   - 644911 GA008-S001 TANK SOUTH AREA
   - 644911 GA009-S001 SERVICES AREA
   - 644911 GA010-S001 AUX. BOILER AND UTILITY RACK
   - 644911 GA011-S001 WAREHOUSE AND CTG GSU
   - 644911 GA011-S002 STG GSU AND AUX XFMR'S
   - 644911 GA012-S001 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA012-S002 EQUIPMENT LOCATION SCHEDULE
   - 644911 GA013-S001 AMMONIA AREA

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 4/6/17 | | PEP | | | | |

PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

SNC• LAVALIN
CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PLANT LAYOUT
AMMONIA STORAGE AREA
GENERAL ARRANGEMENT

DESIGN-CIVIL GENERAL ARRANGEMENT

VENDOR NO.

644911 GA013-S001

REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

STATE OF CONNECTICUT
WILLIAM D. HUESTED
32272
LICENSED
PROFESSIONAL ENGINEER

Dlo Nov 2017

PRINTED DATE: 11/3/2017 9:45:24 AM

## Exhibit 2 Plant Renderings / Profiles

Four low level oblique images and one high level oblique image created from the BHS 5 engineering model are included.

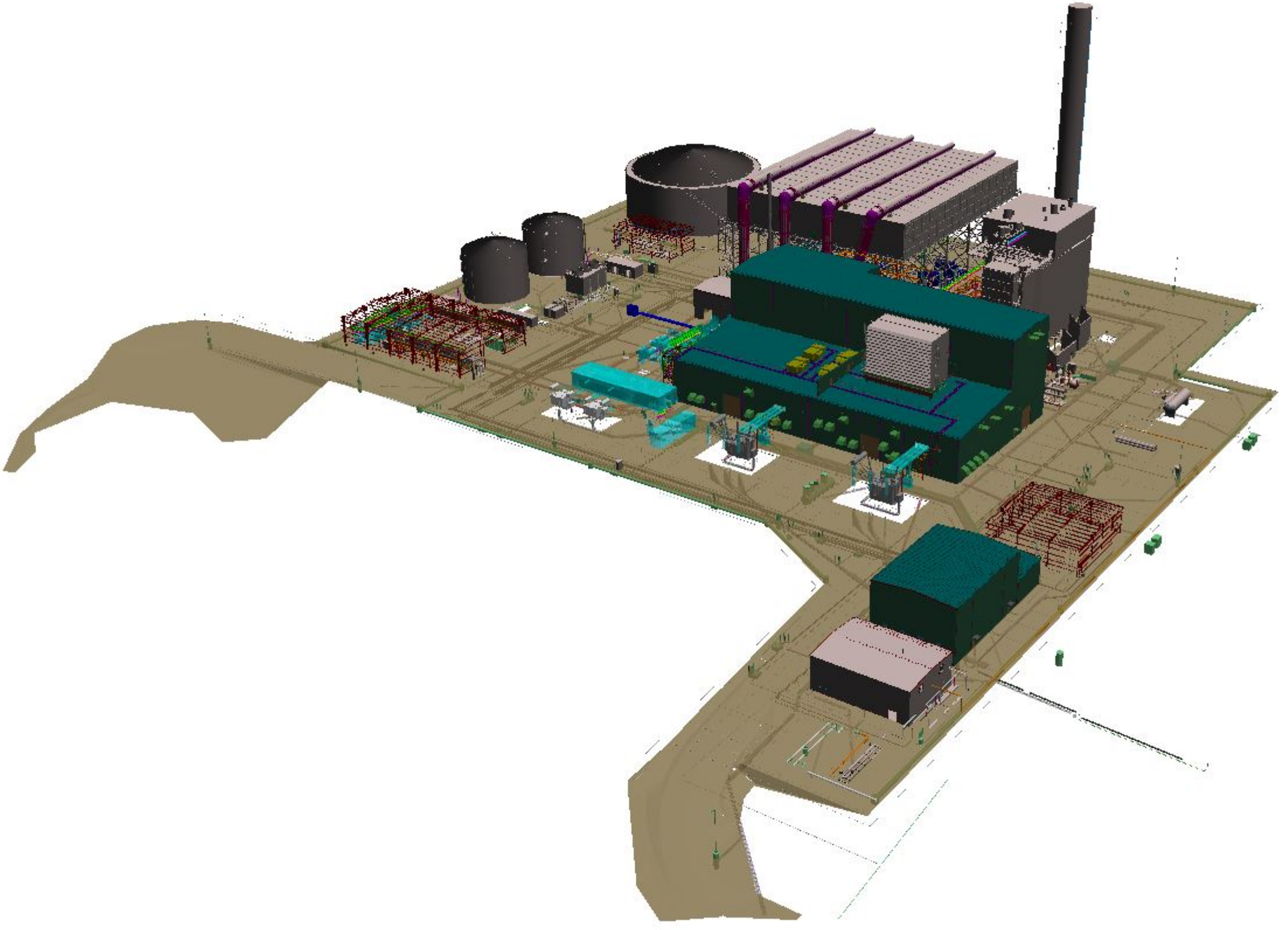
**Bridgeport Harbor Station Unit 5 - From Northwest**

**Bridgeport Harbor Station Unit 5 – From Southwest**

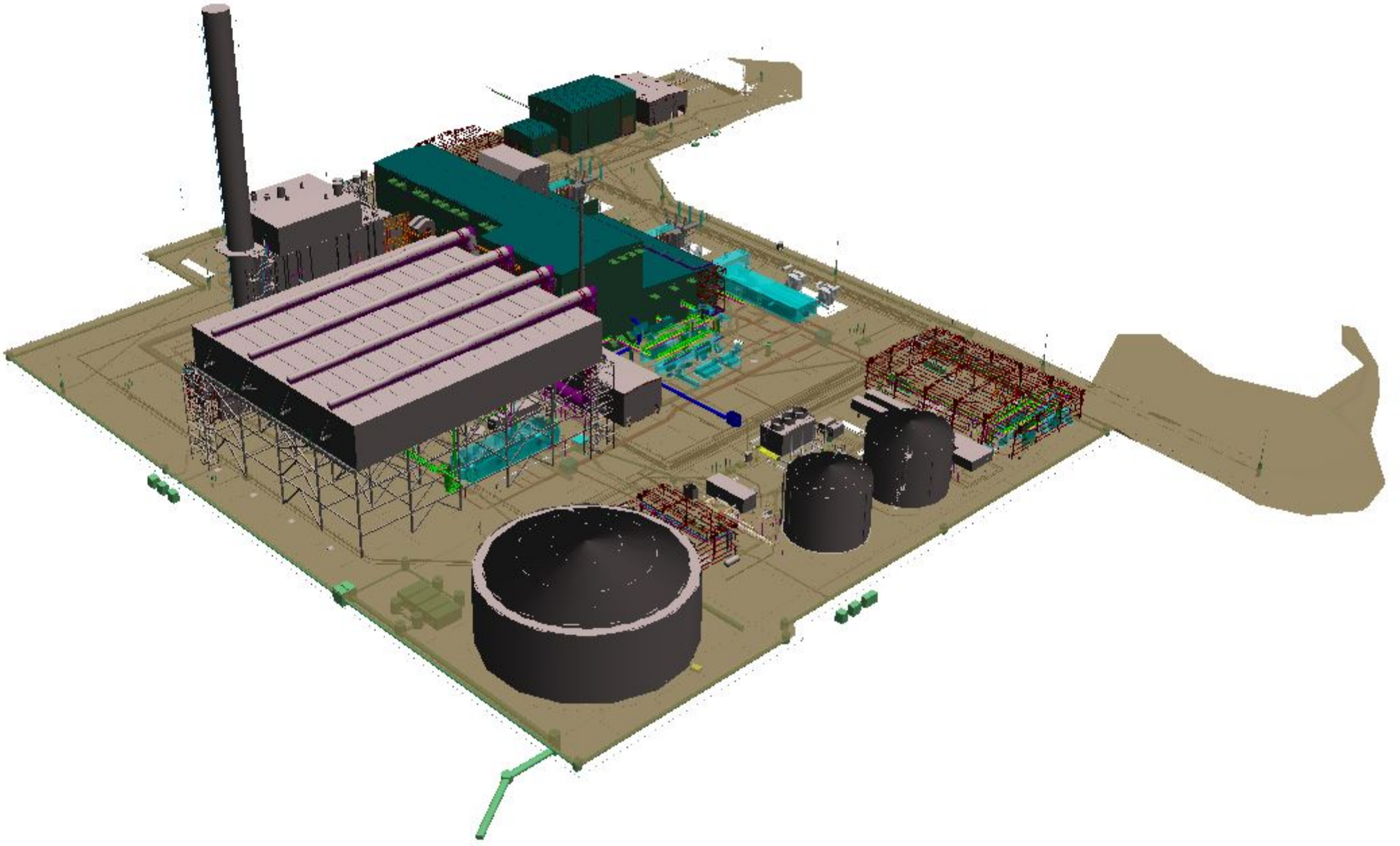
**Bridgeport Harbor Station Unit 5 - From Southeast**

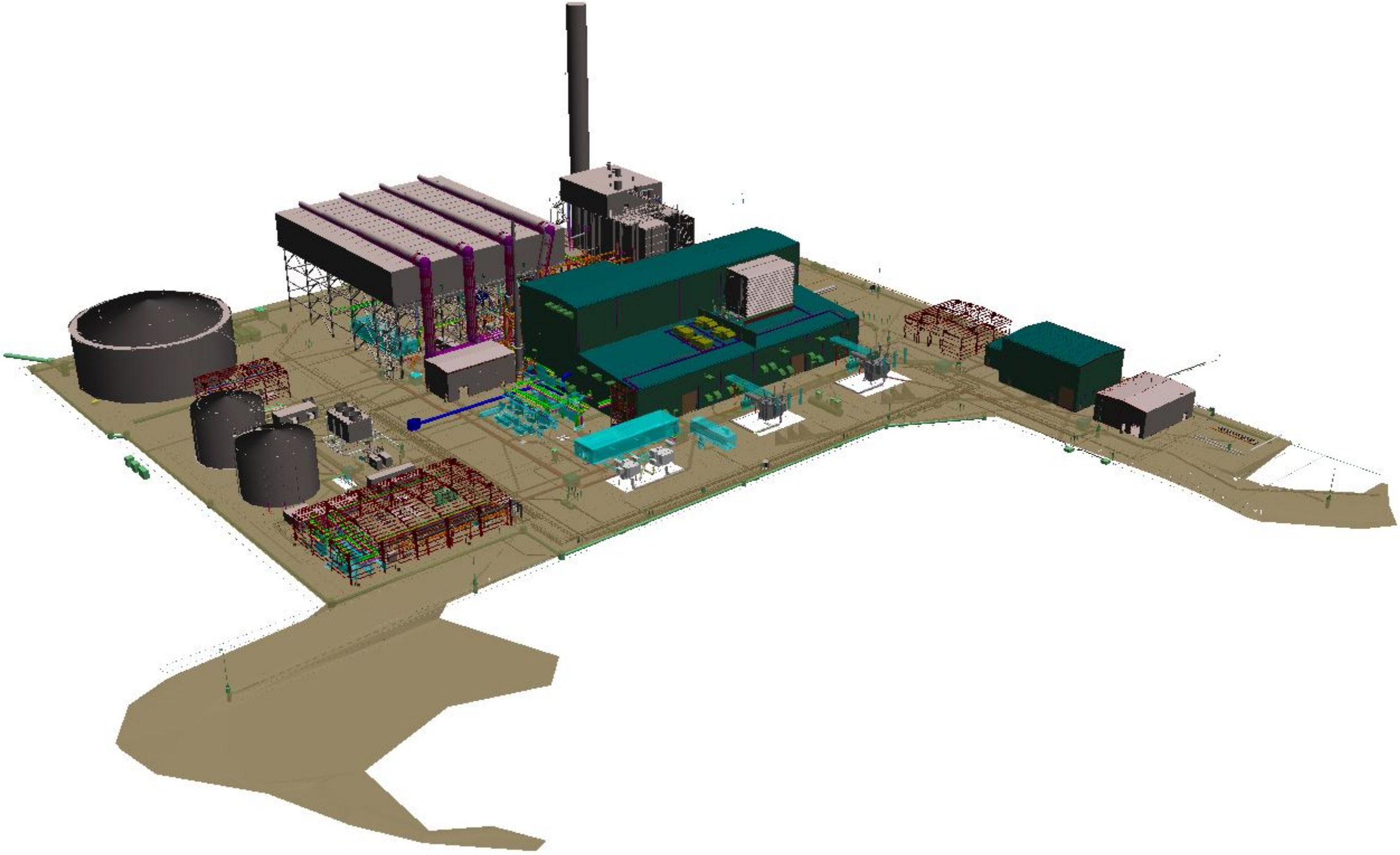
**Bridgeport Harbor Station Unit 5 - From Northeast**

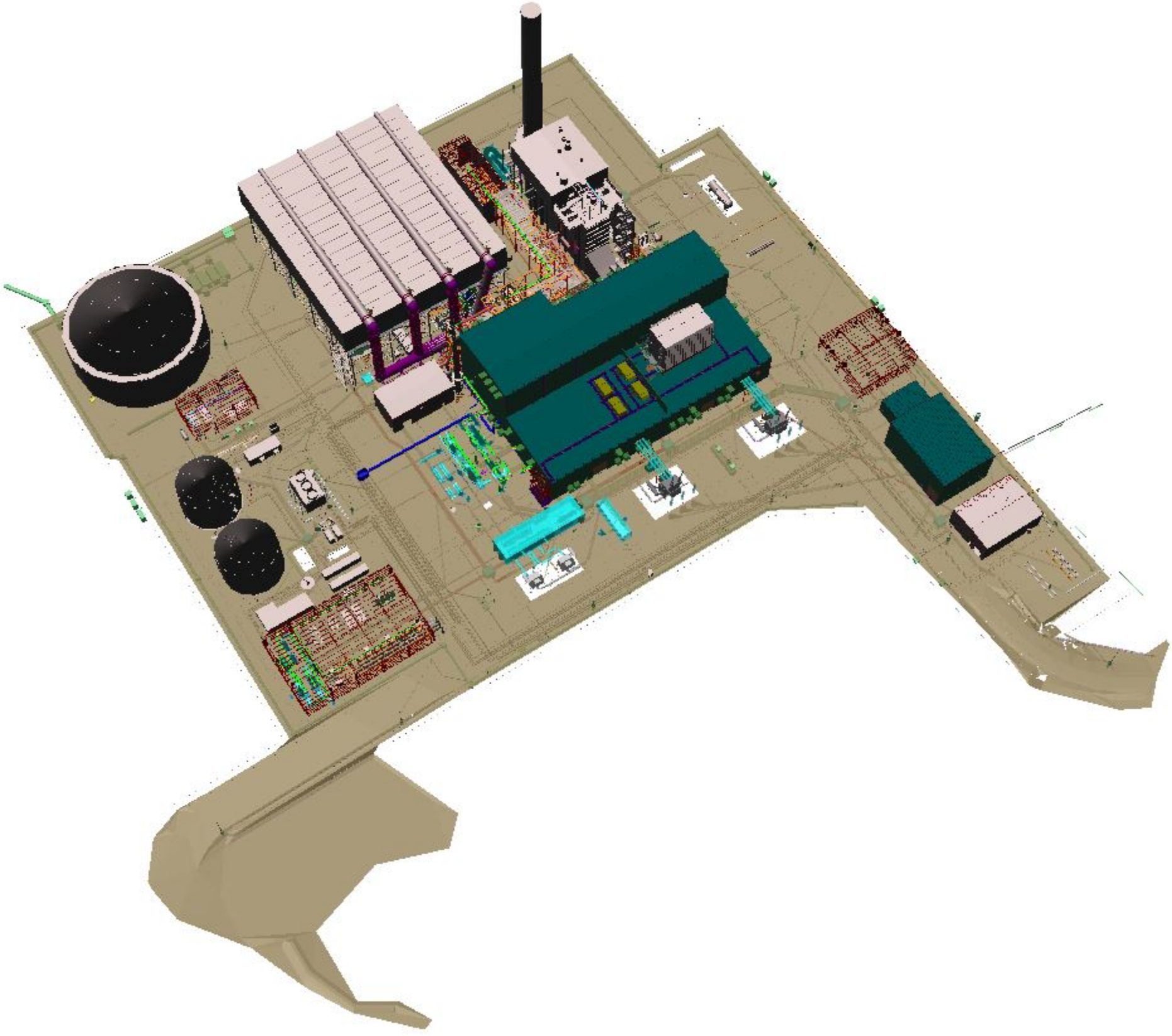
**Bridgeport Harbor Station Unit 5 - High Level from North**





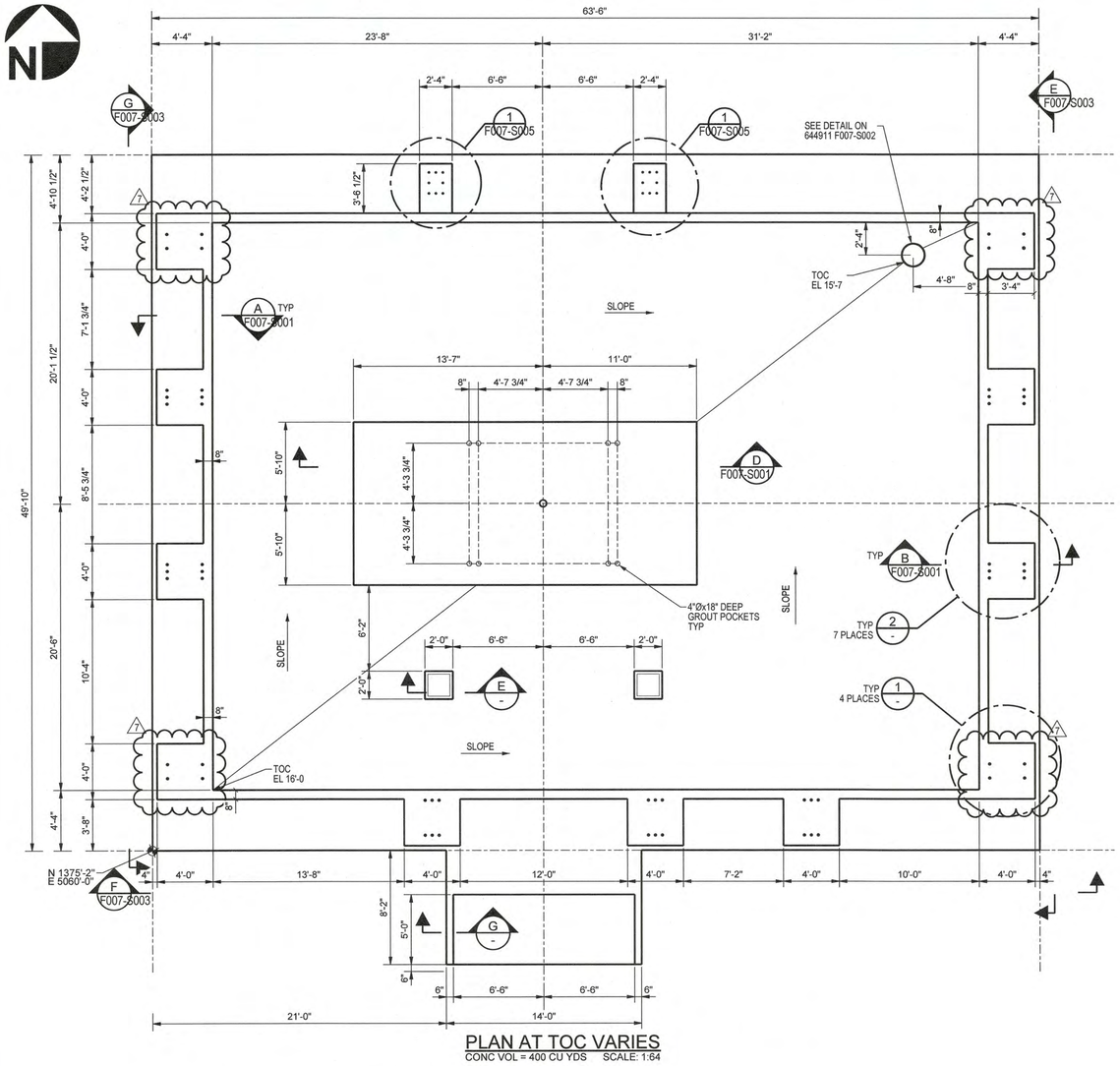


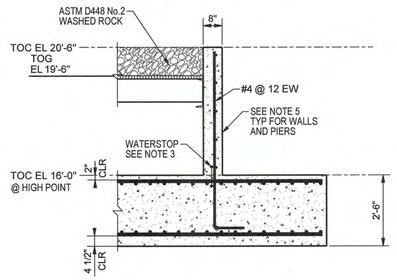




## Exhibit 3 Containment Design

| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911 F007-S001 | 7 | STG Transformer Foundation Plan SHT 1 of 5 |
| 644911 F008-S001 | 8 | Combustion Turbine Generator GSU Transformer Foundation SHT 1 of 4 |
| 644911 F010-S001 | 5 | Aux Transformer Foundation Plan SHT 1 of 2 |
| 644911 F011-S001 | 0 | STG Lube Oil Containment Foundation SHT 1 of 1 |
| 644911 F026-S001 | 0 | CTG Lube Oil Foundation Isometric Layout SHT 1 of 6 |
| 644911 F026-S002 | 1 | CTG Lube Oil Foundation Plan SHT 2 of 6 |
| 644911 F026-S003 | 1 | CTG Lube Oil Foundation Sections SHT 3 of 6 |
| 644911 F026-S004 | 0 | CTG Lube Oil Foundation Sections SHT 4 of 6 |
| 644911 F028-S001 | 3 | Auxiliary Boiler Foundation Plan SHT 1 of 2 |
| 644911 F028-S002 | 3 | Auxiliary Boiler Sections and Details SHT 2 of 2 |
| 644911 F031-S001 | 0 | Ammonia Area Pipe Elevation & Foundation Plan SHT 1 of 4 |
| 644911 F032-S001 | 1 | Air Cooled Condenser Foundation Plan SHT 1 of 8 |
| 644911 F032-S007 | 1 | Air Cooled Condenser Sections SHT 7 of 8 |
| 644911 F039-S003 | 1 | Fuel Oil Truck Unloading Area Fuel Oil Storage Foundation SHT 3 of 4 |
| 644911 F051-S001 | 2 | General Services Enclosure Foundation Plan SHT 1 of 2 |
| D-L-J4466-M12A | A | Cycle Chemical Feed Systems Sheets 1, 2, and 3 |
| 644911-5WWD-M2644C | 3 | Waste Water Containment & Unloading Areas P&ID SHT 3 of 3 |
| 644911-REF-W070-0001 Sheet 001 | 1 | Service Water Corrosion Inhibitor Feed System (Vendor Drawing Nos. D-NA1366-M21 and D-NA1366-M22 Revs. 0) |




A SECTION
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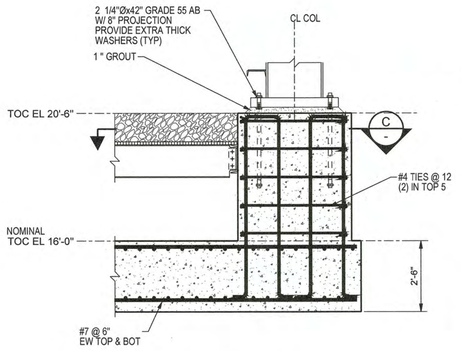


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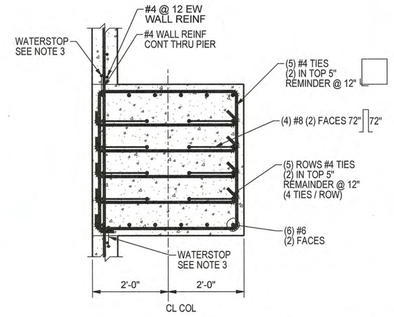


C SECTION
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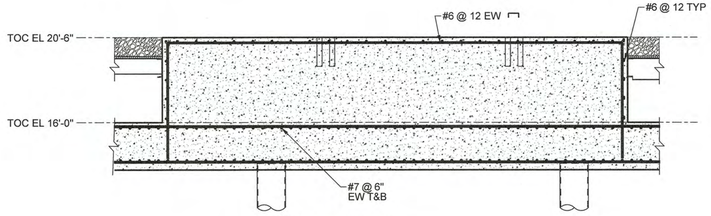
NOTE: ANCHOR BOLTS ARE NOT SHOWN

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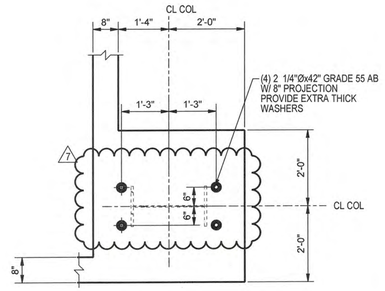


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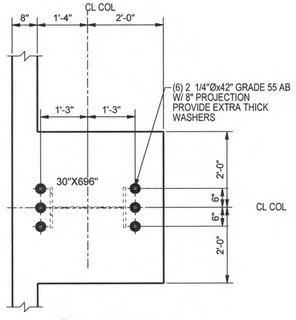


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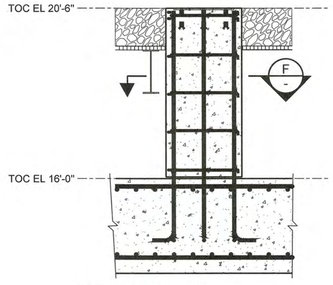
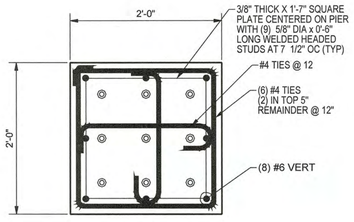
Scale: 1:24




E SECTION
Scale: 1:24




F SECTION
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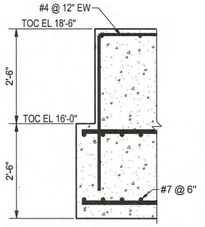



G SECTION
Scale: 1:24

## GENERAL NOTES:

1. FOR STRUCTURAL NOTES SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 633911 F001-S001.
3. ALL WATERSTOPS SHALL BE TYPE 2.
4. FOR STEEL AND GRATING SEE DWG S006-S001
5. CONCRETE SHALL HAVE A MIN 28 DAYS COMPRESSIVE STRENGTH OF 5000 psi AND A MAX WATER/CEMENT RATIO OF 0.40. PROVIDE TYPE II FIBER REINFORCEMENT AT THE RATE OF 5 lbs/yd3 USING EUCLID TUF-STRAND OR EQ.

## LEGEND:

## REFERENCE DWGS:

HYOSUNG-DWG
ET1A105010
ET1A105011

ORIGINAL

## REFERENCE SPECS:

CONCRETE SPEC 644911-C190

| REV | DET | 1 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4 | 2/16/18 | MB | CL | GG | MK 2/16 | SF | | |
| ADDED PIERS | | | | | | | | |
| 6 | 01/17/2018 | MB | MK | GG | LA | SF | SF | |
| ADDED NOTES | | | | | | | | |
| 5 | 11/21/2017 | AS | MK | GG | LA | SF | SF | |
| REVISED PIER SIZES | | | | | | | | |
| 4 | 09/22/2017 | MB | MK | GG | LA | SF | | |
| REVISED PIER LOCATION & REINFORCEMENT | | | | | | | | |
| 3 | 09/14/2017 | AS | GG | GG | GG | SF | | |
| REMOVED NOTCHES IN CONCRETE | | | | | | | | |
| 2 | 08/07/2017 | MB | MK | GG | LA | SF | | |
| ADDED ANCHOR BOLTS & MODIFIED DETAILS | | | | | | | | |
| 1 | 05/31/2017 | AS | GG | GG | LA | SF | SF | |
| ISSUED FOR CONSTRUCTION | | | | | | | | |
| 0 | 05/23/2017 | MB | MK | GG | LA | SF | | |
| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

STG TRANSFORMER FOUNDATION PLAN

SHT 1 OF 5

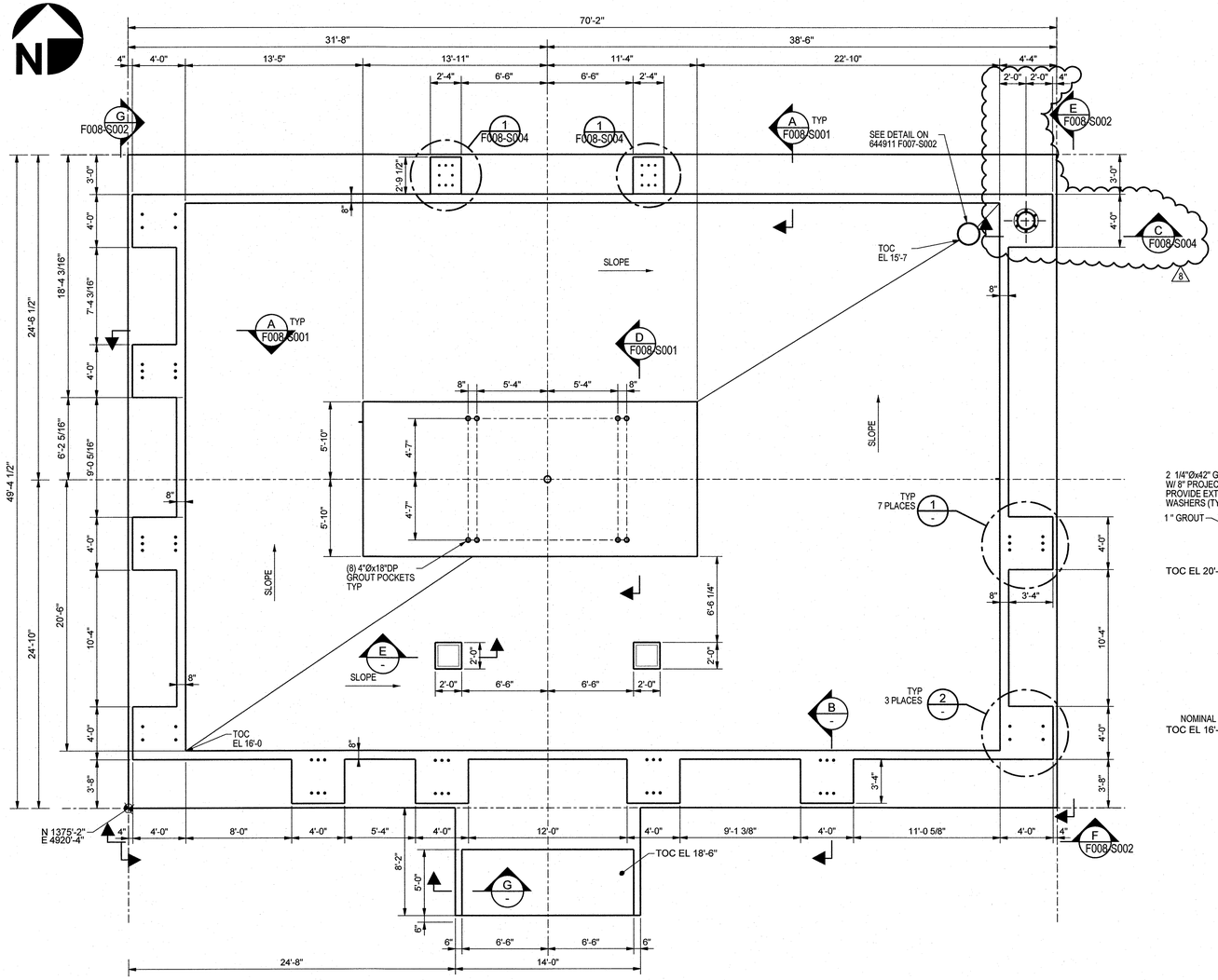
PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F007-S001 REV 4

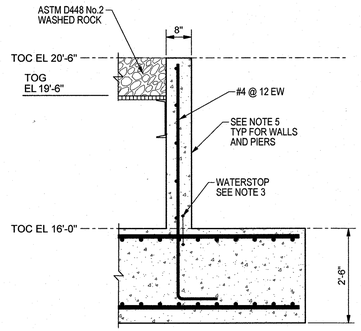
STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER
2-16-18

INSTR. ELECT MECH STRUCT PIPING PROCESS REVIEW/ SEEN BY

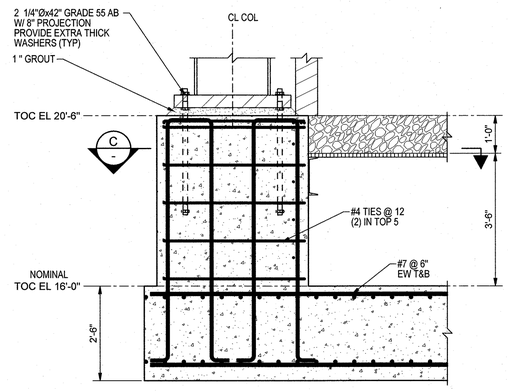
MODEL NAME: F_GSU




## PLAN AT TOC VARIES
CONC VOL = 450 CU YDS SCALE: 1:64




## A SECTION
Scale: 1:24

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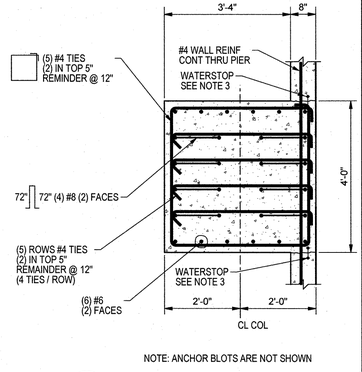
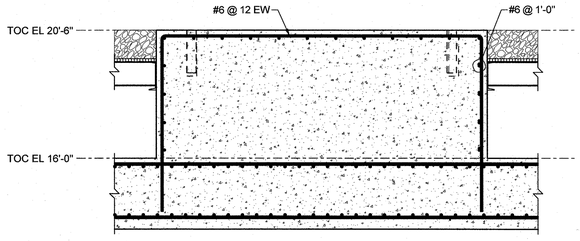
Scale: 1:24

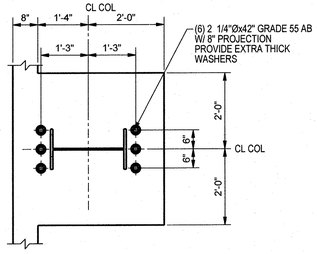



NOTE: ANCHOR BLOTS ARE NOT SHOWN

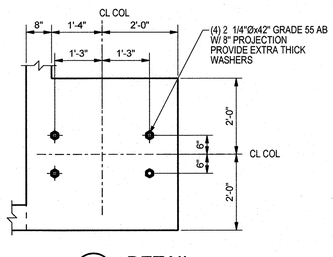
## C SECTION
Scale: 1:24




## D SECTION
Scale: 1:32




## 1 DETAIL
Scale: 1:24

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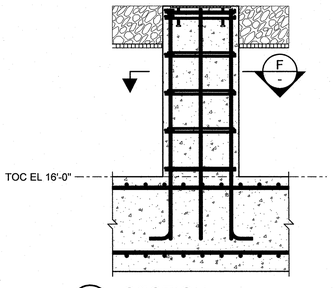
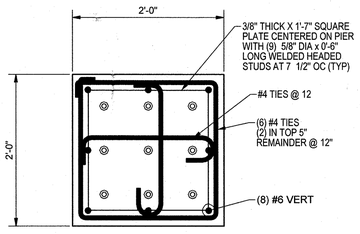



## E SECTION
Scale: 1:24

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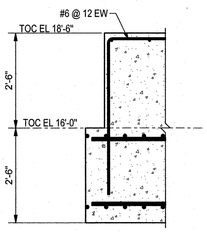



## G SECTION
Scale: 1:24

MODEL NAME: F_GSU

## GENERAL NOTES:

1. FOR STRUCTURAL NOTES SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 633911 F001-S001.
3. ALL WATERSTOPS SHALL BE TYPE 2.
4. FOR STEEL AND GRATING SEE DWG S005-S001
5. CONCRETE SHALL HAVE A MIN 28 DAYS COMPRESSIVE STRENGTH OF 5000 psi AND A MAX WATER/CEMENT RATIO OF 0.40, PROVIDE TYPE II FIBER REINFORCEMENT AT THE RATE OF 5 lbs/yd3 USING EUCLID TUF-STRAND OR EQ.

## LEGEND:

## REFERENCE DWGS:

HYOSUNG-DWG
ET1A105020
ET1A105021

## REFERENCE SPECS:

CONCRETE SPEC 644911-C190

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| ADDED LIGHTNING PROTECTION POLE | | | | | | | |
| 8 | 3/15/18 | BS | GG | GG | JH | SF | |
| REV DET 2 | | | | | | | |
| 7 | 02/16/2018 | MB | CL | GG | LA | SF | |
| ADDED PIERS | | | | | | | |
| 6 | 01/17/2018 | MB | MK | GG | LA | SF | SO |
| ADDED NOTES | | | | | | | |
| 5 | 11/02/2017 | AS | MK | GG | LA | SF | SO |
| REVISED PIER SIZES | | | | | | | |
| 4 | 09/22/2017 | MB | MK | GG | LA | SF | |
| REVISED PIER LOCATION & REINFORCEMENT | | | | | | | |
| 3 | 09/14/2017 | AS | GG | GG | GG | SF | |
| REMOVED NOTCHES IN CONCRETE | | | | | | | |
| 2 | 08/07/2017 | MB | MK | GG | LA | SF | |
| ADDED ANCHOR BOLTS & MODIFIED DETAILS | | | | | | | |
| 1 | 05/31/2017 | AS | GG | GG | LA | SF | SO |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

COMBUSTION TURBINE GENERATOR
GSU TRANSFORMER FOUNDATION

SHT 1 OF 4

PLAN DESIGN-CIVIL CONCRETE

VENDOR NO.

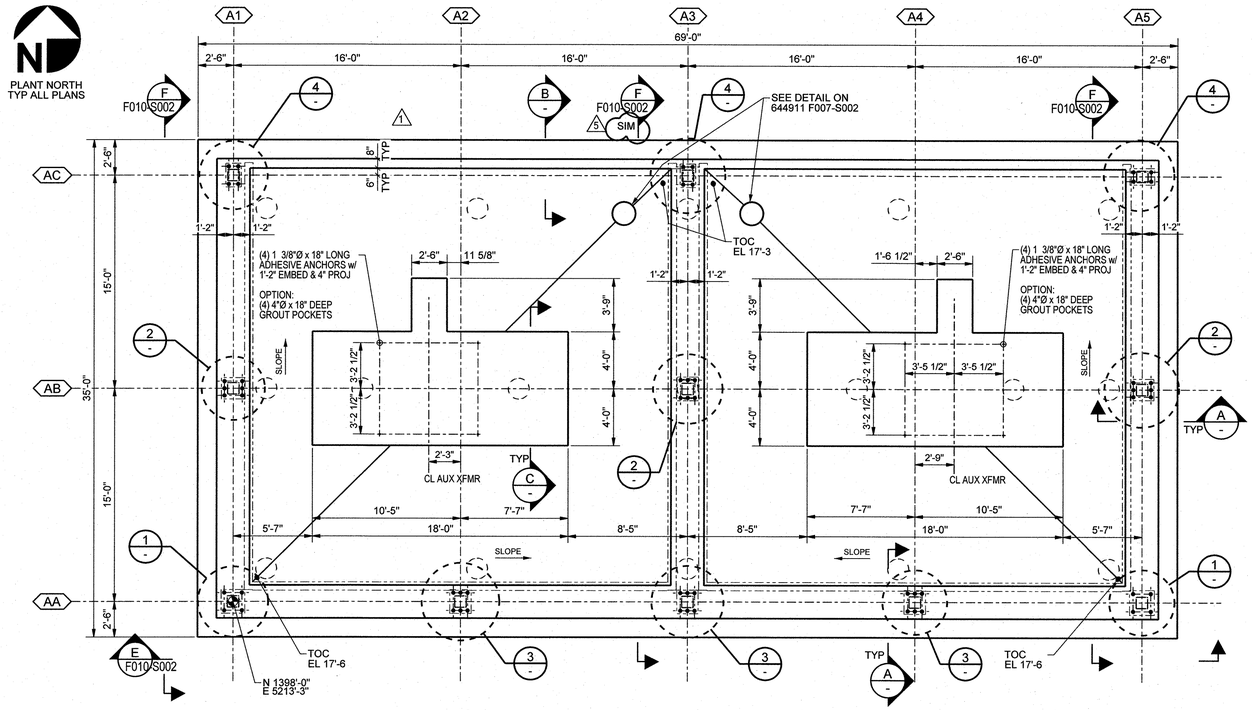
644911 F008-S001

REV 8

INSTR. | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/ SEEN BY

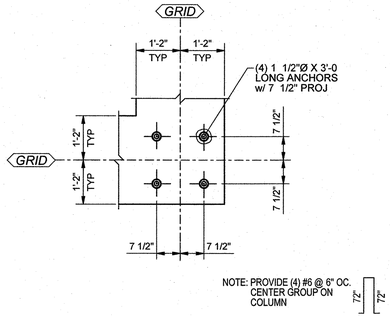
STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER

3-13-18




## AUX TRANSFORMER FOUNDATION PLAN

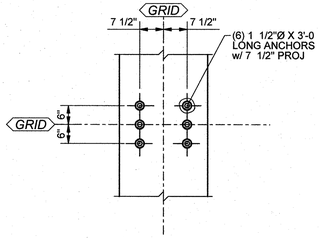
CONC VOL = 266 CU YDS SCALE: 1:64




NOTE: PROVIDE (4) #6 @ 6" OC. CENTER GROUP ON COLUMN

ORIENTATION PER PLAN

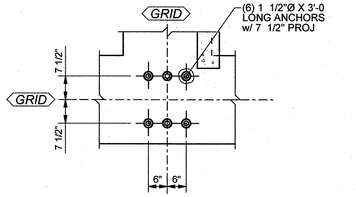
1 DETAIL
Scale: 1:24




NOTE: PROVIDE (4) #6 @ 6" OC. CENTER GROUP ON COLUMN

ORIENTATION PER PLAN

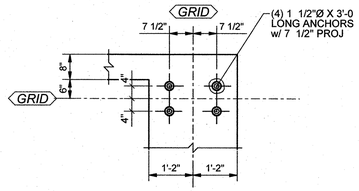
2 DETAIL
Scale: 1:24




NOTE: PROVIDE (4) #6 @ 6" OC. CENTER GROUP ON COLUMN

ORIENTATION PER PLAN

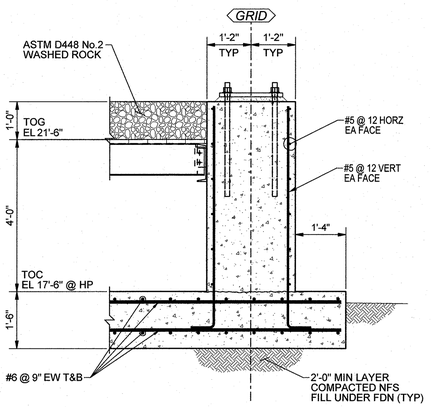
3 DETAIL
Scale: 1:24




NOTE: PROVIDE (4) #6 @ 6" OC. CENTER GROUP ON COLUMN

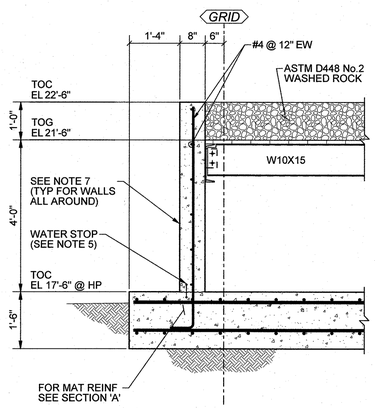
ORIENTATION PER PLAN

4 DETAIL
Scale: 1:24



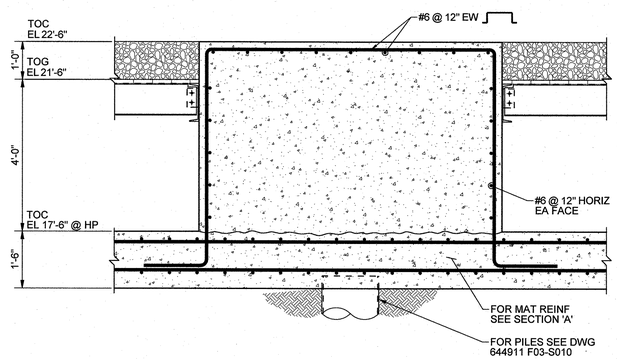

SECTION THRU PILASTER

A SECTION
Scale: 1:24




SECTION THRU CURB

B SECTION
Scale: 1:24




C SECTION
Scale: 1:24

## GENERAL NOTES:

1. FOR STRUCTURAL DESIGN NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS, SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND PIPING, SEE DRAWING 644911 P200-S001.
4. FOR UNDERGROUND ELECTRICAL, SEE DRAWING 644911 E300-S001.
5. ALL WATERSTOPS SHALL BE TYPE 2.
6. FOR STEEL & GRATING SEE DRAWING 644911 S007-S001.
7. CONCRETE SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 5000 psi & A MAXIMUM WATERCEMENT RATIO OF 0.40. PROVIDE TYPE II FIBER REINFORCEMENT @ THE RATE OF 5 lbs/yd3 USING EUCLID TUF-STRAND OR APPROVED EQUAL.

## LEGEND:

## REFERENCE DWGS:

WEG
OUTLINE DRAWING 10004583122
OVERALL DIMENSIONS 10004583123

## REFERENCE SPECS:

CONCRETE SPEC: 644911-C190

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 5 ADDED NOTE | 3/9/18 | BS | MK | GG | | GG/SF | |
| 4 REVISED GROUT POCKETS; ADDED COORD | 02/09/2018 | BS | CL | GG | LA | SF | |
| 3 ADDED NOTE | 11/07/2017 | BS | MK | GG | LA | SF | SF |
| 2 ADD GROUT POCKETS | 09/22/2017 | MB | MK | GG | LA | SF | |
| 1 THICKENED WALLS | 09/10/2017 | BS | GG | GG | LA | SF | |
| 0 ISSUED FOR CONSTRUCTION | 04/24/2017 | BS | MK | GG | LA | GG/SF | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER
3-9-18

SCALE: AS NOTED

BRIDGEPORT 05

AUX TRANSFORMER FOUNDATION PLAN

SHT 1 OF 2

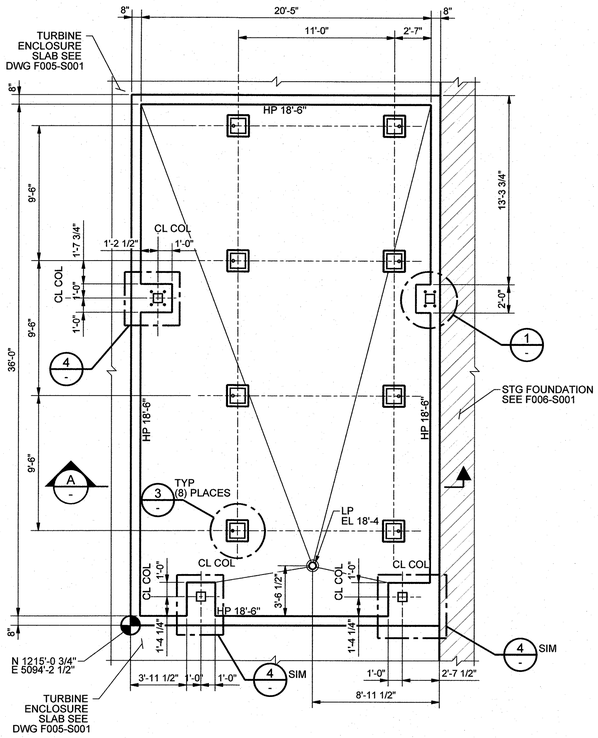
PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F010-S001 REV 5

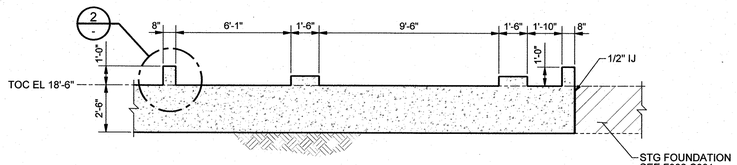
REVIEW/ SEEN BY: INSTR, ELECT BJS, MECH, STRUCT, PIPING, PROCESS

MODEL NAME: F_GSU

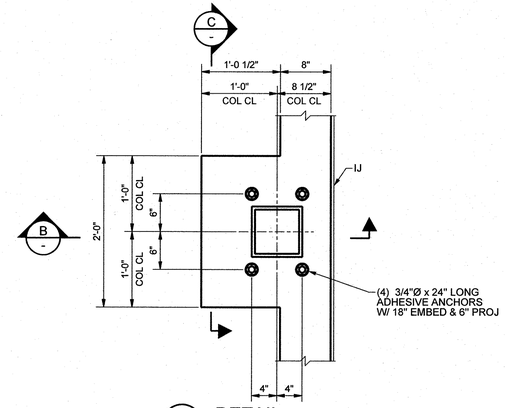
PLANT NORTH
TYP ALL PLANS



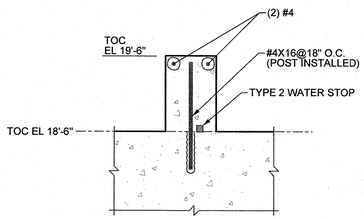

## PLAN AT TOC EL VARIES
SCALE: 1:64



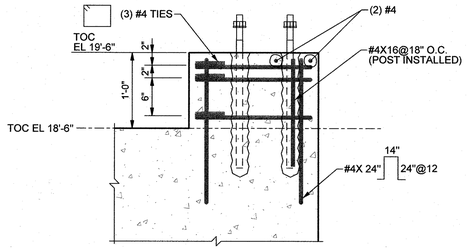

A SECTION
Scale: 1:48



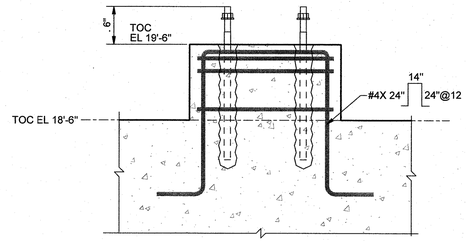

1 DETAIL
Scale: 1:12



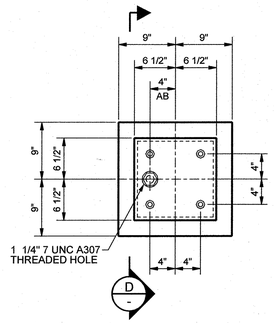

2 DETAIL
Scale: 1:12



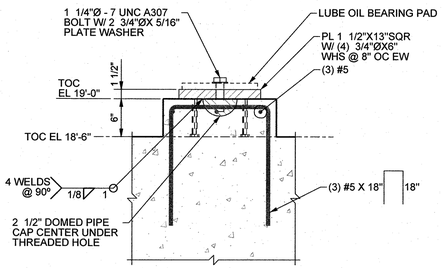

B SECTION
Scale: 1:12



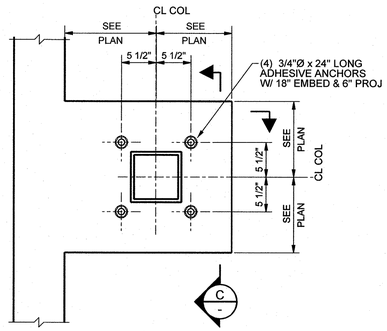

C SECTION
Scale: 1:12




3 DETAIL
Scale: 1:12




D SECTION
Scale: 1:12




4 DETAIL
Scale: 1:12

## GENERAL NOTES:

1. FOR STRUCTURAL DESIGN NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS, SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND PIPING, SEE DRAWING 644911 P200-S001.
4. FOR UNDERGROUND ELECTRICAL, SEE DRAWING 644911 E300-S001.

## LEGEND:

## REFERENCE DWGS:

GE DWG 122T8028

## REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/9/17 | KS | MK | GG | | | |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

STG LUBE OIL
STG LUBE OIL CONTAINMENT FOUNDATION

SHT 1 OF 1

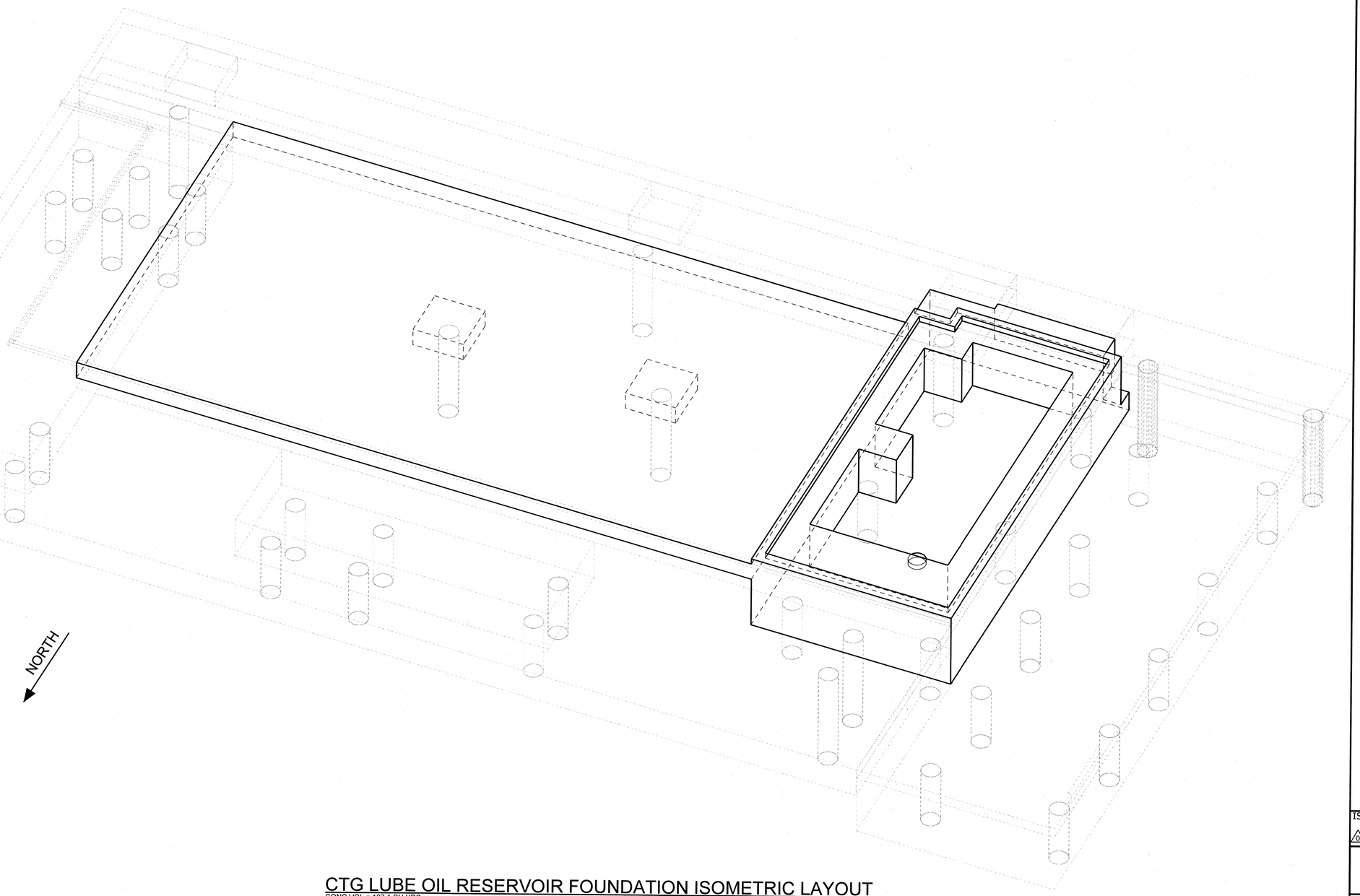
SECTIONS DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F011-S001 REV 0

INSTR. | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY

STATE OF CONNECTICUT
GLENN GRISWOLD
No. 16069
LICENSED PROFESSIONAL ENGINEER
11-8-17

MODEL NAME: F_TE




CTG LUBE OIL RESERVOIR FOUNDATION ISOMETRIC LAYOUT

CONC VOL = 167.1 CU YDS

SCALE: 1:48

## GENERAL NOTES:

1. FOR STRUCTURAL DESIGN NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS, SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND PIPING, SEE DRAWING 644911 P200-S001.
4. FOR UNDERGROUND ELECTRICAL, SEE DRAWING 644911 E300-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/1/17 | DE | GG | GG | | | |

PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER

11-1-17

SCALE: AS NOTED

BRIDGEPORT 05

CTG LUBE OIL FOUNDATION
ISOMETRIC LAYOUT

SHT 1 OF 6

ISOMETRIC DESIGN-CIVIL CONCRETE

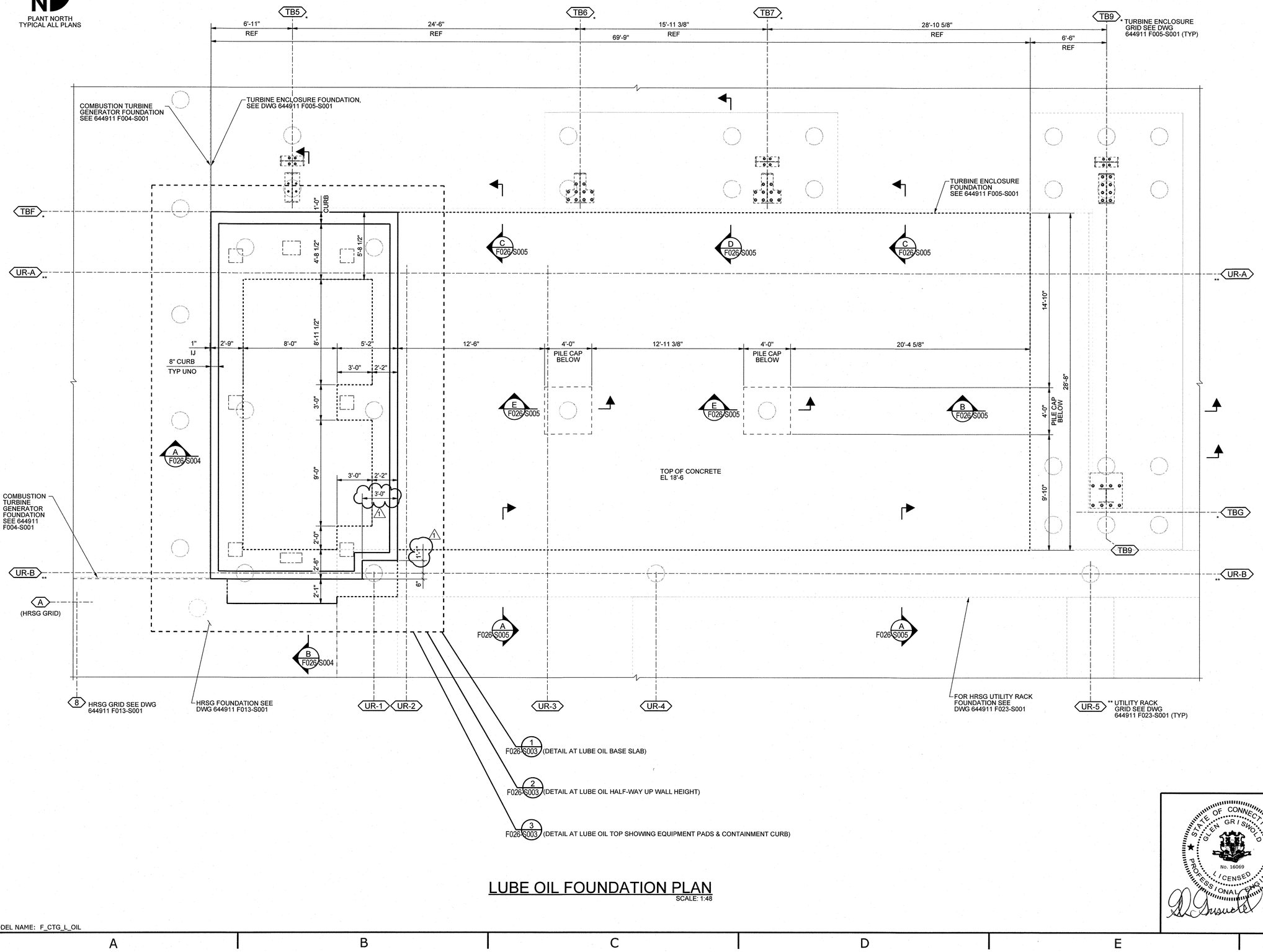
VENDOR NO. 644911 F026-S001

REV 0

REVIEW/SEEN BY: INSTR, ELECT, MECH, STRUCT, PIPING, PROCESS

MODEL NAME: F_CTG_L_OIL

PLANT NORTH
TYPICAL ALL PLANS




# LUBE OIL FOUNDATION PLAN

SCALE: 1:48

MODEL NAME: F_CTG_L_OIL

## GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 F026-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISED DIMS

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 11/28/17 | DC | MK | GG | LA | SF | SO |

ISSUED FOR CONSTRUCTION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 11/01/2017 | DC | GG | GG | LA | SF | SO | |
| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |

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Power Connecticut LLC

SNC ◆ LAVALIN
CONSTRUCTORS INC.

STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER
11-20-17

SCALE: AS NOTED

BRIDGEPORT 05

CTG LUBE OIL FOUNDATION PLAN

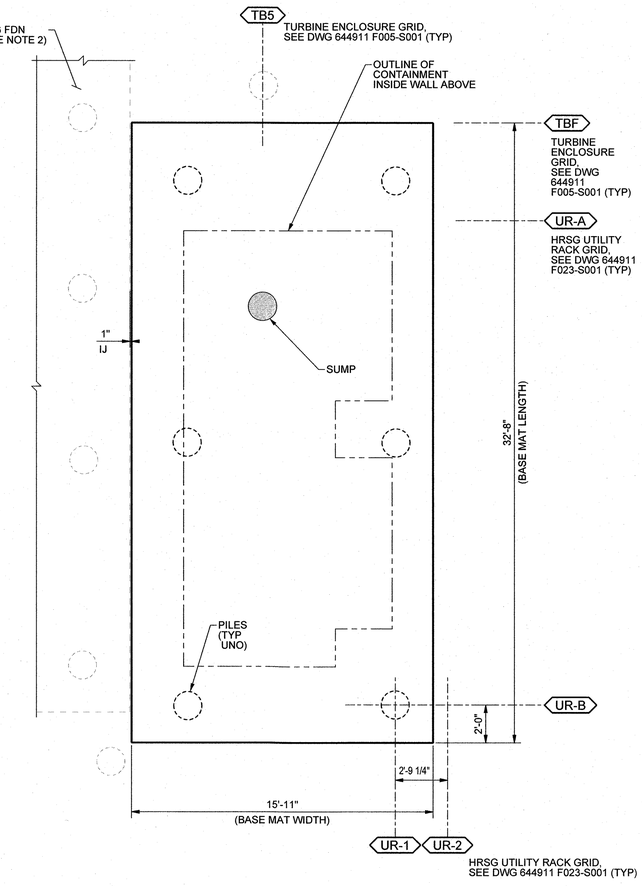
SHT 2 OF 6

PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F026-S002 REV 1

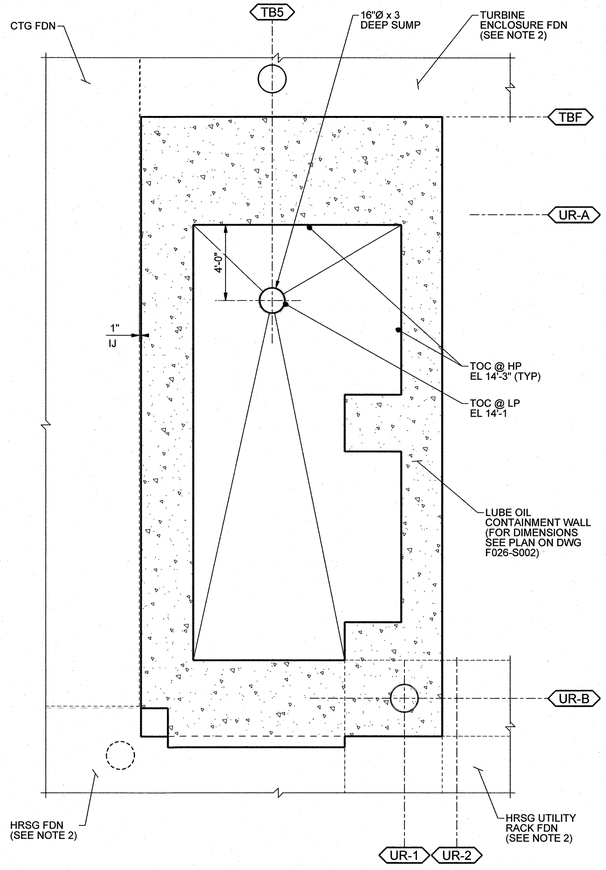
INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

PLANT NORTH
TYPICAL ALL PLANS



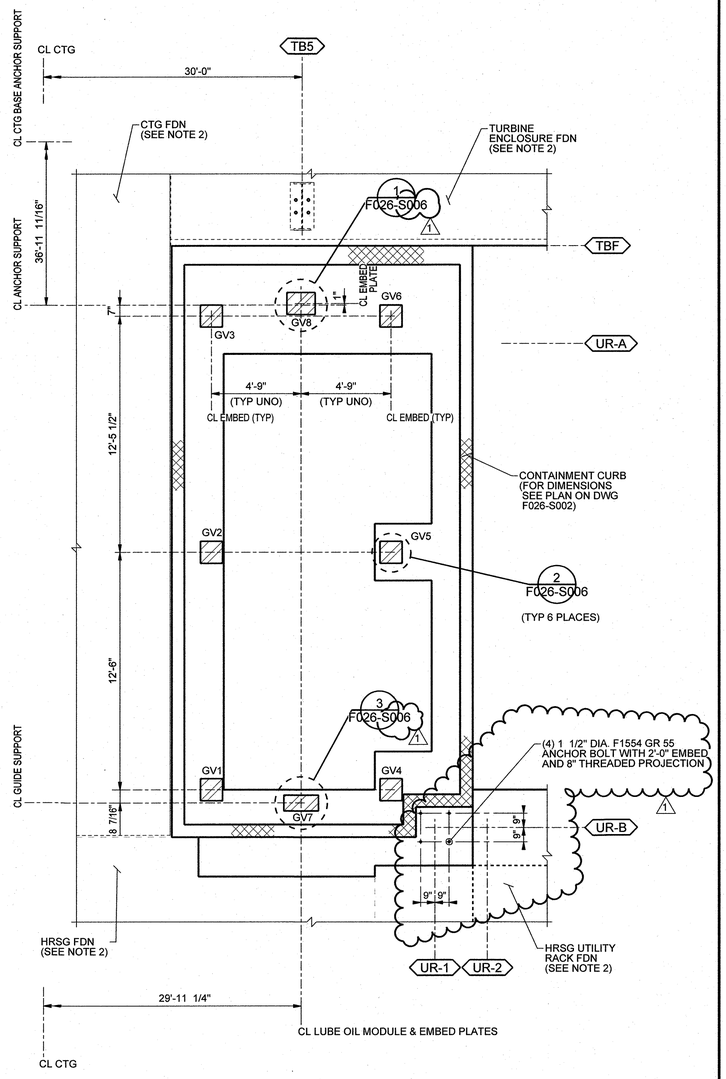

DETAIL @ LUBE OIL BASE MAT

1 DETAIL
Scale: 1:48




DETAIL OF LUBE OIL SUMP
@ ELEVATION 16'-6"

2 DETAIL
Scale: 1:48




DETAIL @ LUBE OIL TOP SHOWING
EQUIPMENT PADS & CONTAINMENT CURB

3 DETAIL
Scale: 1:48

## GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 F026-S001.
2. FOR CTG FOUNDATION, SEE DWG 644911 F004-S001. FOR HRSG FOUNDATION, SEE DWG 644911 F013-S001. FOR TURBINE ENCLOSURE FOUNDATION, SEE DWG 644911 F005-S001. FOR HRSG UTILITY RACK FOUNDATION SEE DWG 644911 F023-S001.

## LEGEND:

## REFERENCE DWGS:

## REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 1 ADDED ANCHOR BOLTS, REVISED CALLOUTS | 11/20/17 | DC | GG | GG | LA | SF | SO |
| 0 ISSUED FOR CONSTRUCTION | 11/01/2017 | DC | GG | GG | LA | SF | SO |

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STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
11-20-17

SCALE: AS NOTED

BRIDGEPORT 05

CTG LUBE OIL FOUNDATION
SECTIONS

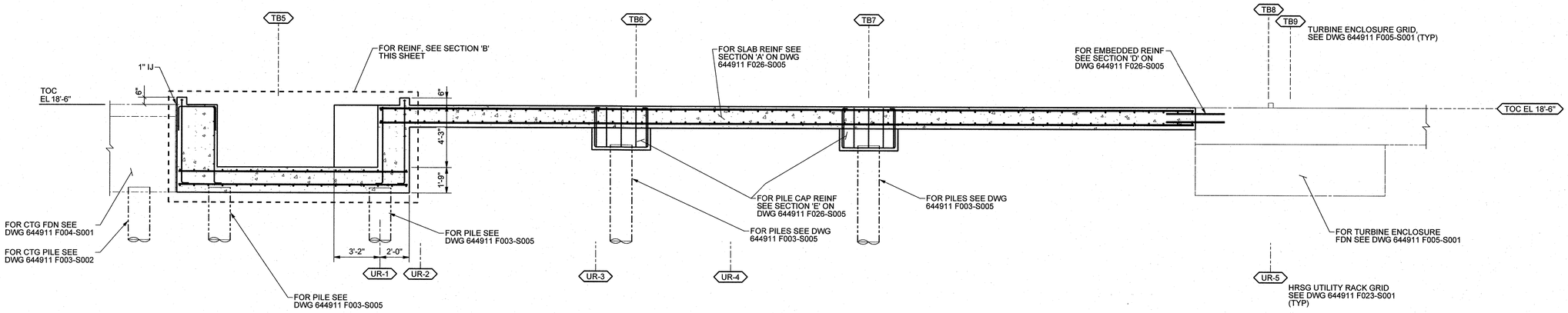
SHT 3 OF 6

SECTION DESIGN-CIVIL CONCRETE

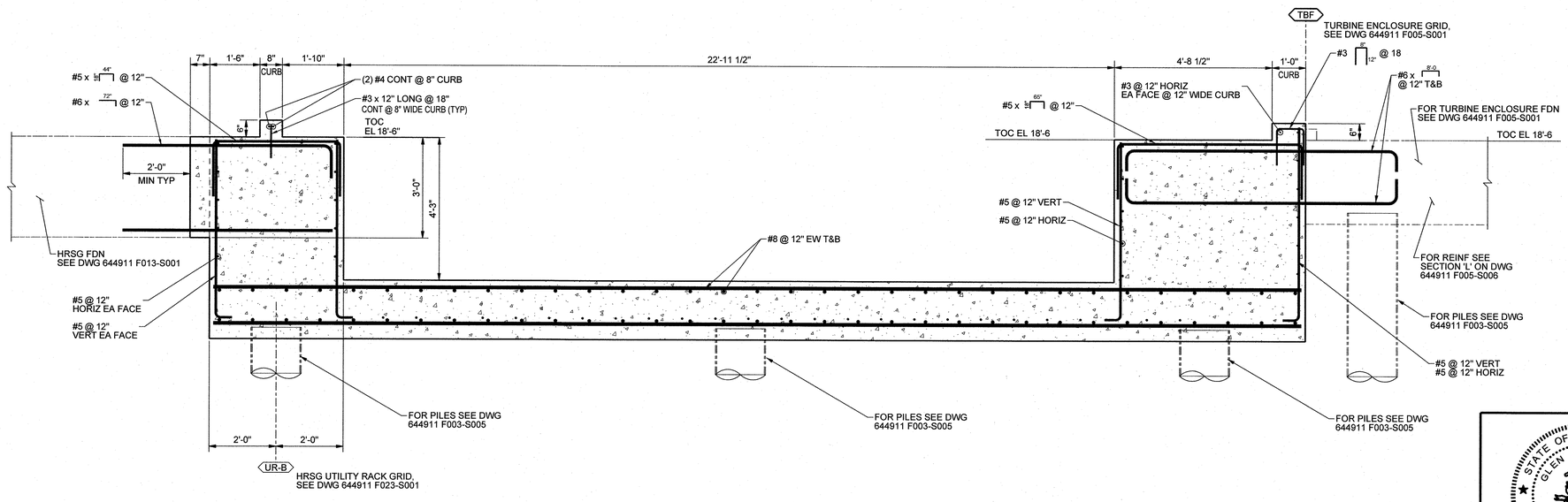
VENDOR NO. 644911 F026-S003 REV 1

REVIEW SEEN BY: INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

MODEL NAME: F_CTG_L_OIL




A SECTION
Scale: 1:48




B SECTION
Scale: 1:24

MODEL NAME: F_CTG_L_OIL

## GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 F026-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/1/17 | DR | GG | GG | [illegible] | [illegible] | [illegible] |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

CTG LUBE OIL FOUNDATION SECTIONS

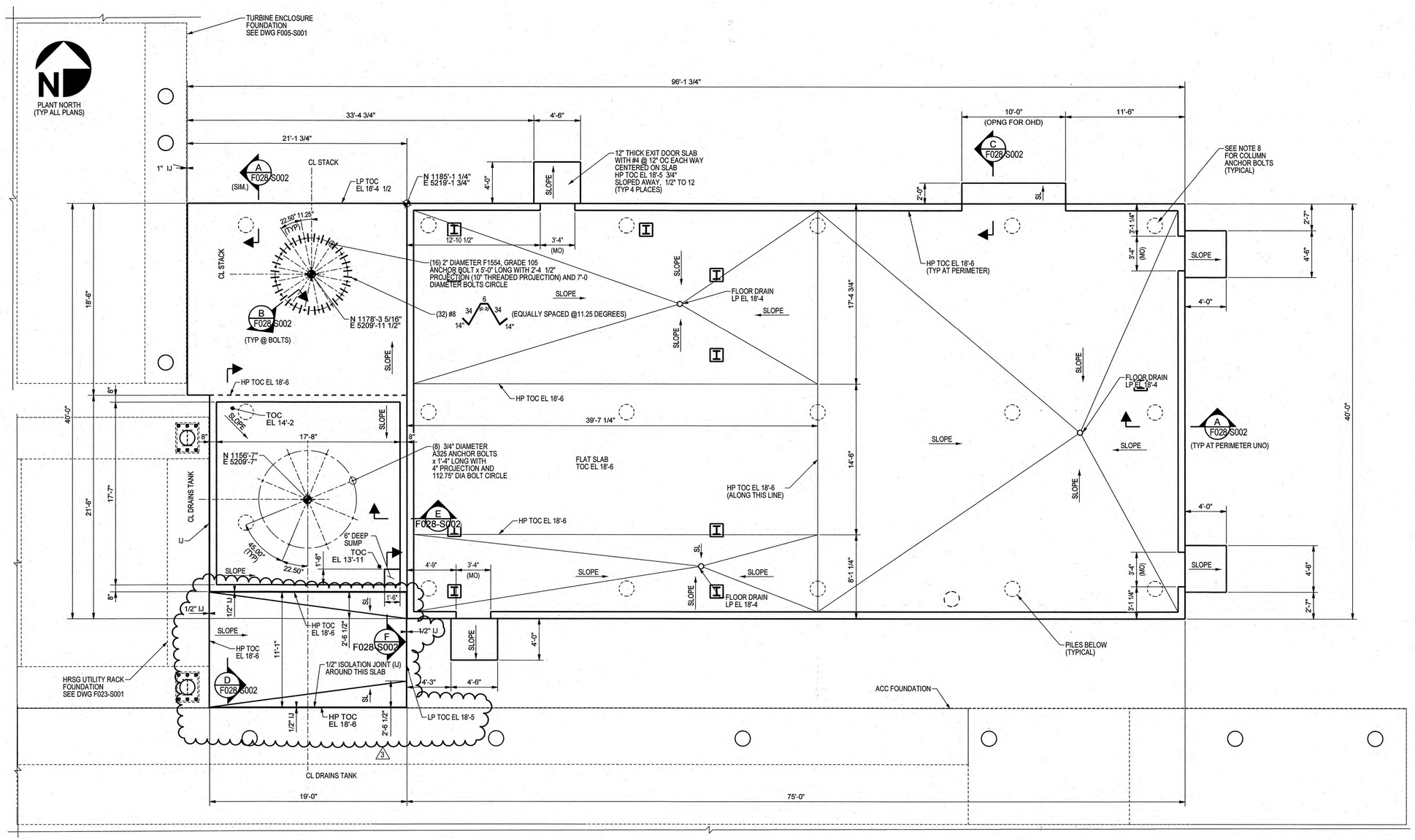
SHT 4 OF 6

SECTION DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F026-S004 REV 0

STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER
11-1-17

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY




## PLAN AT TOC EL 18'-6"

CONC VOL = 407 CU YDS SCALE: 1:64

## GENERAL NOTES:

1. SEE DRAWING 644911 S001-S001 FOR STRUCTURAL DESIGN NOTES.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001.
3. FOR ANCHOR BOLT LOCATIONS AND SIZES, SEE "VICTORY ENERGY" DRAWINGS 90-13822-02 AND 90-13822-03. ANCHOR BOLTS TO BE OF SIZES STATED ON "VICTORY ENERGY" DRAWINGS. EMBED ANCHORS A MINIMUM OF 6" FOR 3/4" DIAMETER BOLTS AND 3" FOR 1/2" DIAMETER BOLTS NOTED. ZINC PLATED MECHANICAL ANCHORS MAY BE USED IN LIEU OF CAST-IN-PLACE ANCHORS. PROVIDE 5/16" HARDENED STEEL WASHERS TO COVER OVERSIZE HOLES.
4. MINIMUM CONCRETE STRENGTH IS 4500 PSI AT 28 DAYS.
5. FLOOR LIVE LOAD 250 PSF.
6. FOR UNDERGROUND ELECTRICAL SEE DRAWING 644911 E303-S001
7. FOR UNDERGROUND PIPING SEE DRAWING 644911 P200-S001.
8. ALL COLUMN ANCHOR BOLTS SHALL BE 3/4" DIAMETER ADHESIVE ANCHORS WITH 6 3/4" EMBED AND 5 1/2" PROJECTION. USE 1 1/2" GROUT UNDER BASE PLATES.

## LEGEND:

## REFERENCE DWGS:

INDUSTRIAL ENVIRONMENTAL SYSTEMS, INC
AUX BOILER STACK DRAWING R-62-01

TSP / DIXIE-SOUTHERN
STEAM TURBINE DRAINS TANK DRAWING DM-5300E

## REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| ADDED SLAB | | | | | | | |
| 3 | 3/6/18 | | MK | GG | | SF | |
| ADDED ANCHOR BOLT NOTE | | | | | | | |
| 2 | 01/22/2018 | DC | MK | GG | LA | SF | SO |
| REVISED FOUNDATION | | | | | | | |
| 1 | 08/25/2017 | AS | MK | GG | LA | SF | SO |
| ISSUED FOR CONSTRUCTION | | | | | | | |
| 0 | 06/28/2017 | DC | GG | GG | LA | SF | |

PROJECT ENGINEERING DIVISION

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CONSTRUCTORS INC.

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED PROFESSIONAL ENGINEER

3-7-18

SCALE: AS NOTED

BRIDGEPORT 05

AUXILIARY BOILER FOUNDATION PLAN

SHT 1 OF 2

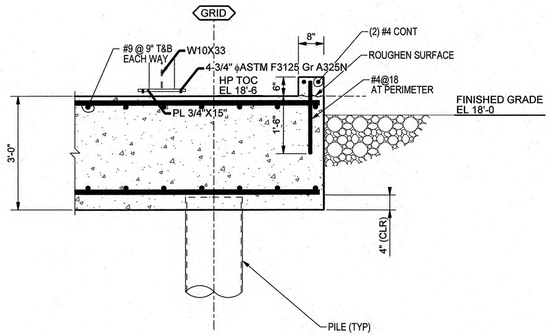
PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F028-S001 REV. 3

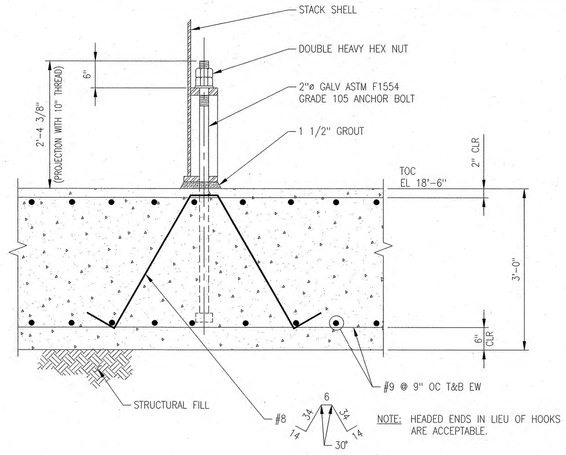
REVIEW/ SEEN BY

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

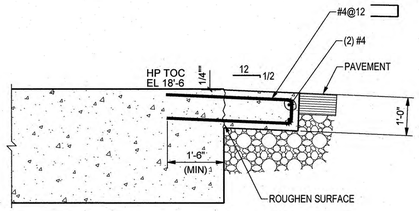
MODEL NAME: F_AUX_BOILER



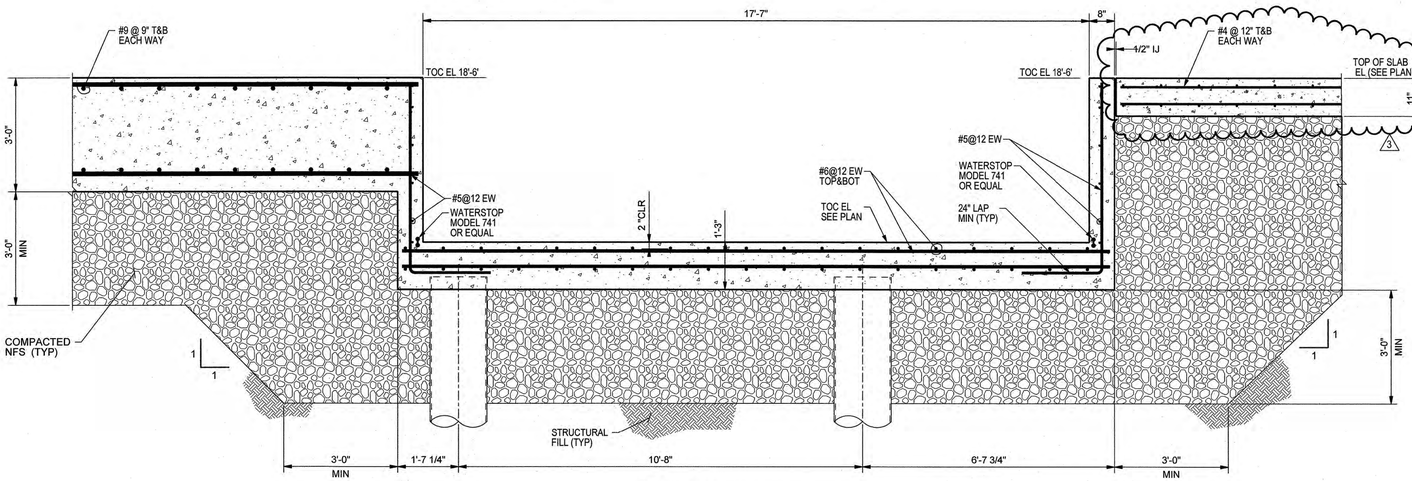

A SECTION
Scale: 1:24



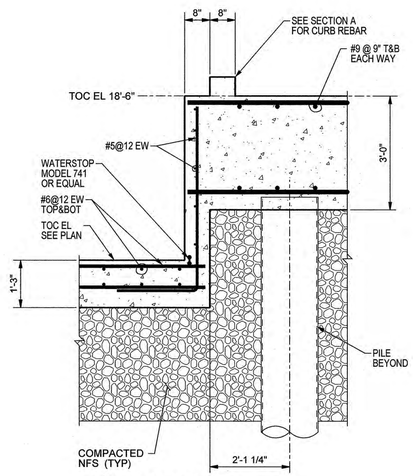

B SECTION
SCALE 1:16



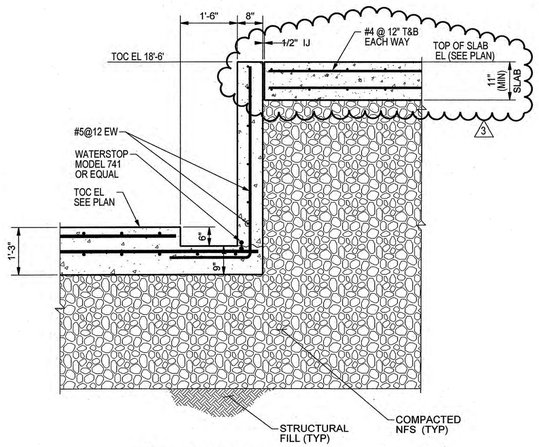

C SECTION
Scale: 1:24




D SECTION
Scale: 1:24




E SECTION
Scale: 1:24




F SECTION
Scale: 1:24

MODEL NAME: F_AUX_BOILER

## GENERAL NOTES:

1. SEE DRAWING 644911 S001-S001 FOR STRUCTURAL DESIGN NOTES.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| ADDED SLAB | | | | | | | |
| 3 | 3/6/18 | DV | MK | GG | LA | SF | |
| ADDED NFS | | | | | | | |
| 2 | 08/31/2017 | BS | MK | GG | LA | SF | |
| ADDED SECTIONS | | | | | | | |
| 1 | 08/25/2017 | AS | MK | GG | LA | SF | SO |
| ISSUED FOR CONSTRUCTION | | | | | | | |
| 0 | 06/28/2017 | DC | GG | GG | LA | | |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

AUXILIARY BOILER
SECTIONS AND DETAILS

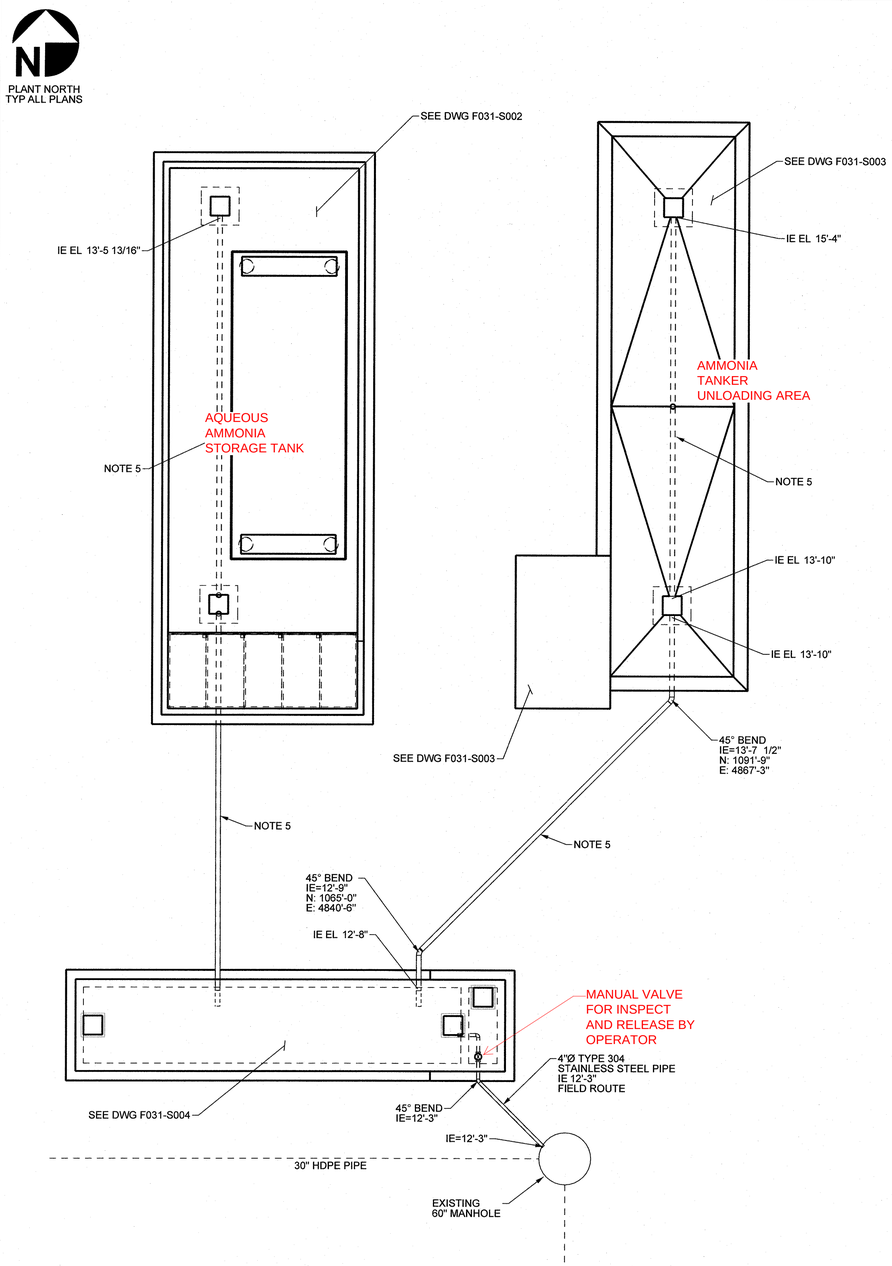
SHT 2 OF 2

SECTIONS DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F028-S002 REV. 3

REVIEW/SEEN BY: INSTR, ELECT, MECH, STRUCT, PIPING, PROCESS

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED PROFESSIONAL ENGINEER
3-7-18




AMMONIA AREA PIPING & FOUNDATION PLAN
SCALE: 1:96

## GENERAL NOTES:

1. SEE DRAWING 644911 S001-S001 FOR STRUCTURAL DESIGN NOTES.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND ELECTRICAL SEE DRAWING 644911 E303-S001
4. FOR UNDERGROUND PIPING SEE DRAWING 644911 P200-S001
5. PIPE TO CONSIST OF 6"Ø ASTM F714 POLYTHYLENE PIPE HAVING A MINIMUM WALL THICKNESS OF 0.406" UNLESS NOTED

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 11/10/17 | | | | | | |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

AMMONIA AREA
PIPE ELEVATION & FOUNDATION PLAN

SHT 1 OF 4

PLAN DESIGN-CIVIL CONCRETE

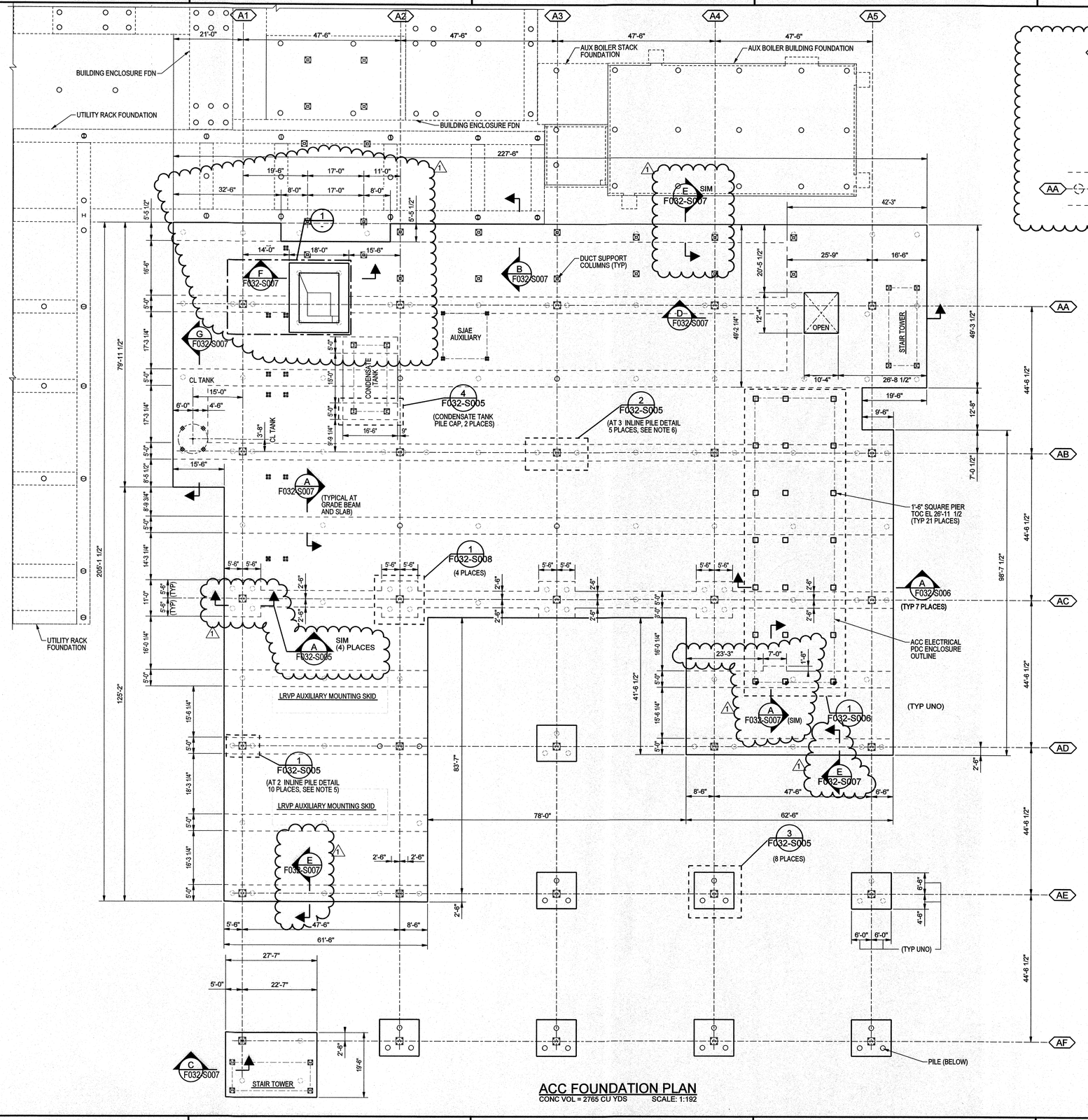
VENDOR NO. 644911 F031-S001 REV 0

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
11-10-17

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

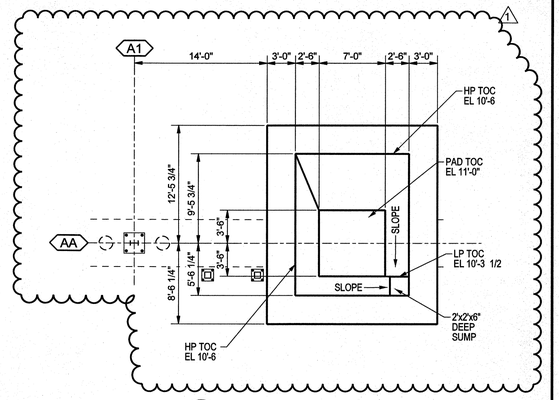
MODEL NAME: F_AM_STOR_TNK_CONT

PLANT NORTH
(TYP ALL PLANS)




## ACC FOUNDATION PLAN

CONC VOL = 2765 CU YDS SCALE: 1:192




1 DETAIL
Scale: 1:96

## GENERAL NOTES:

1. FOR STRUCTURAL NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001.
3. FOR FOUNDATION LOCATION PLAN, SEE DRAWING 644911 F002-S001.
4. FLOOR LIVE LOAD IS 250 PSF UNIFORMLY DISTRIBUTED.
5. 2 INLINE PILE CAPS ARE LOCATED AT COLUMNS:
   AA/A1
   AA/A2
   AA/A3
   AA/A4
   AB/A1
   AB/A5 (SIM)
   AC/A5 (SIM)
   AD/A1
   AD/A5
   AE/A1
6. 3 INLINE PILE CAPS ARE LOCATED AT COLUMNS:
   A2/AB
   A3/AB
   A4/AB
   A2/AD
   A4/AD
   A2/AE

## LEGEND:

## REFERENCE DWGS:

VENDOR DRAWINGS:

HOLTEC INTERNATIONAL LAYOUT DRAWINGS
DRAWING NO. 10784 (6 SHEETS)

SIEMENS DRAWINGS P01156 SHEET 1 "SIEMENS BRIDGEPORT ACC PDC 86'x24' BUILDING, BUILDING REACTIONS

## REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 1 REV & ADD FDN OUTLINE, ADD SUMP PIT | 9/7/17 | AS | GLG | GLG | | | |
| 0 ISSUED FOR CONSTRUCTION | 08/11/2017 | DC | GG | GG | LA | SF | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

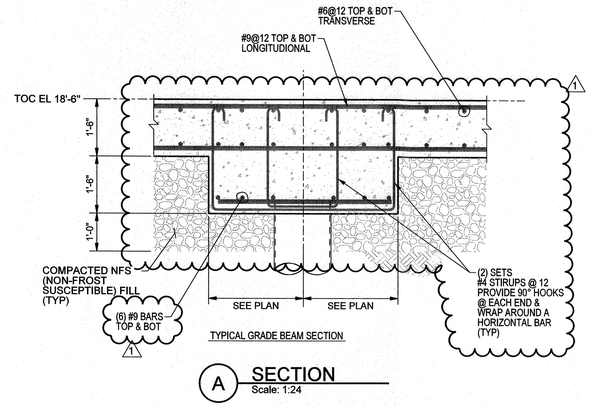
AIR COOLED CONDENSOR
FOUNDATION PLAN
SHT 1 OF 8

PLAN DESIGN-CIVIL
VENDOR NO. 644911 F032-S001 REV 1

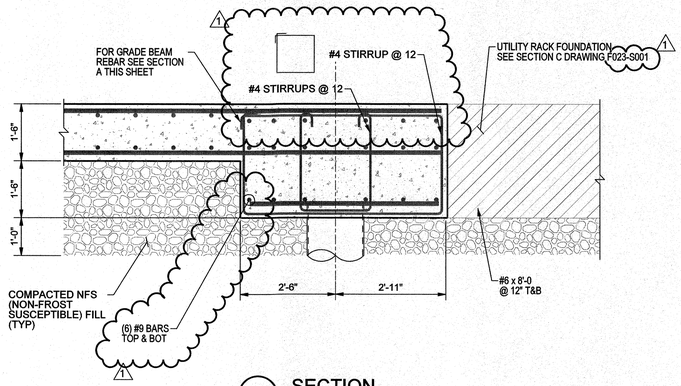
REVIEW SEEN BY: INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED PROFESSIONAL ENGINEER
9-7-17

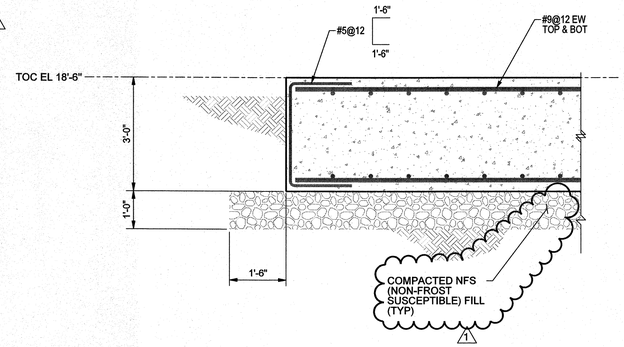
MODEL NAME: F_ACC



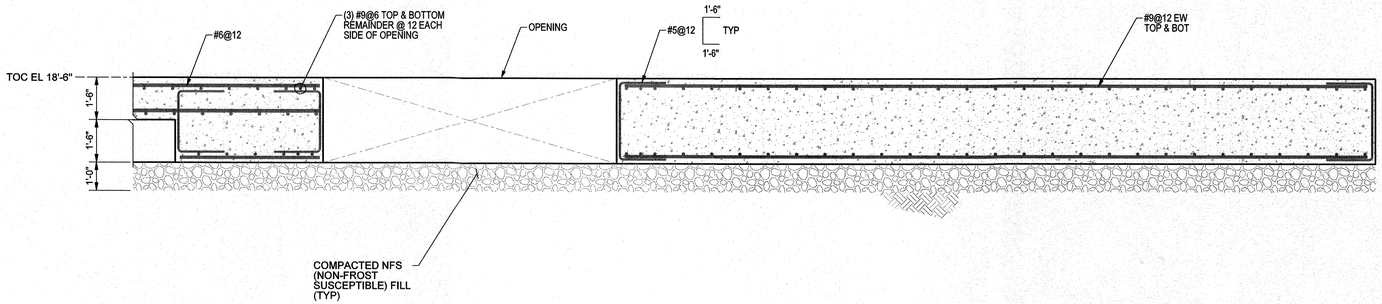

A SECTION
Scale: 1:24



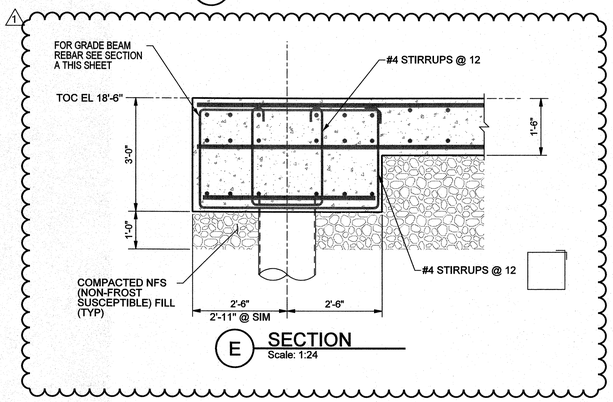

B SECTION
Scale: 1:24



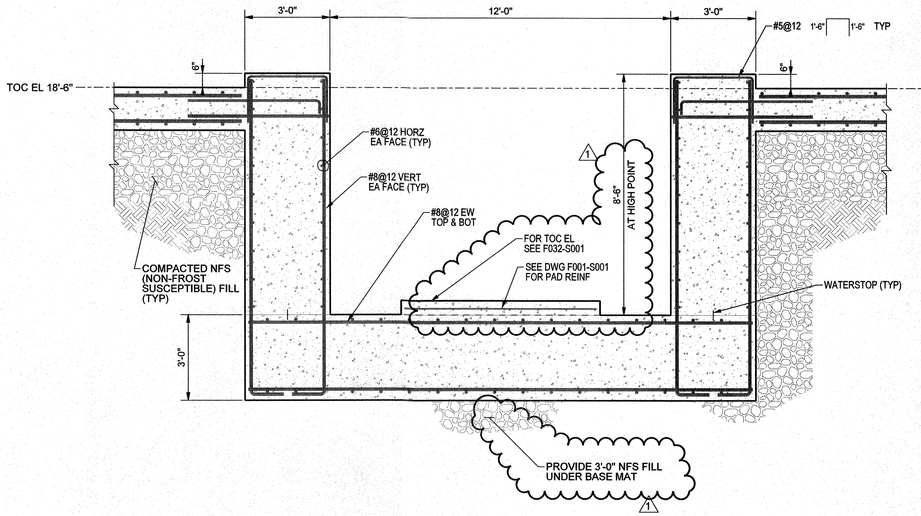

C SECTION
Scale: 1:24



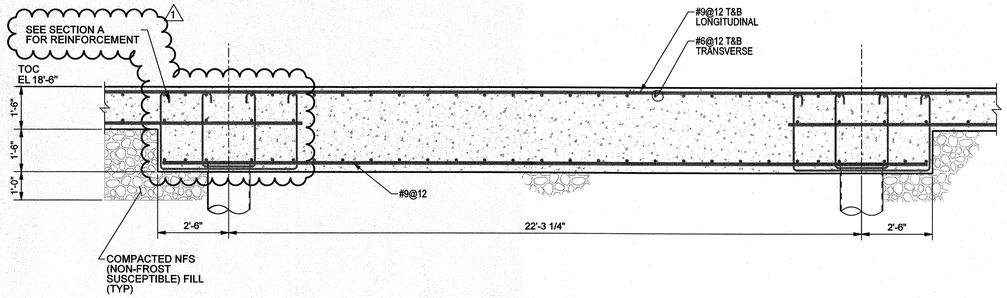

D SECTION
Scale: 1:32




E SECTION
Scale: 1:24




F SECTION
Scale: 1:32




G SECTION
Scale: 1:32

MODEL NAME: F_ACC

## GENERAL NOTES:

1. FOR STRUCTURAL NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001.
3. FOR FOUNDATION LOCATION PLAN, SEE DRAWING 644911 F002-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 1 REVISED SECTIONS, ADD NOTES | 9/7/17 | AS | GG | GG | JL | SF | |
| 0 ISSUED FOR CONSTRUCTION | 08/11/2017 | DC | GG | GG | LA | SF | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT · GLEN GRISWOLD · No. 16069 · LICENSED PROFESSIONAL ENGINEER
9-7-17

SCALE: AS NOTED

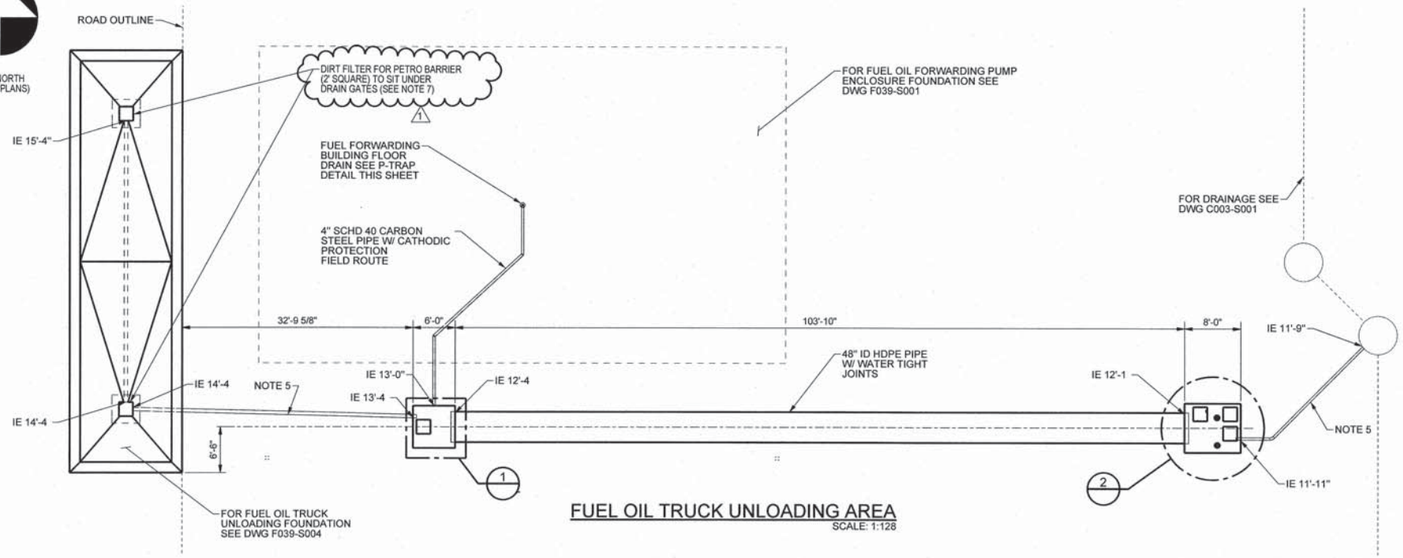
BRIDGEPORT 05

AIR COOLED CONDENSOR
SECTIONS
SHT 7 OF 8

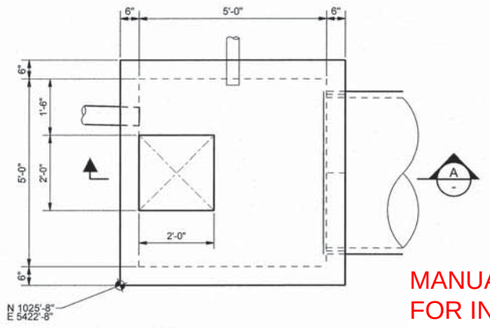
SECTIONS — DESIGN-CIVIL

VENDOR NO. 644911 F032-S007 — REV 1

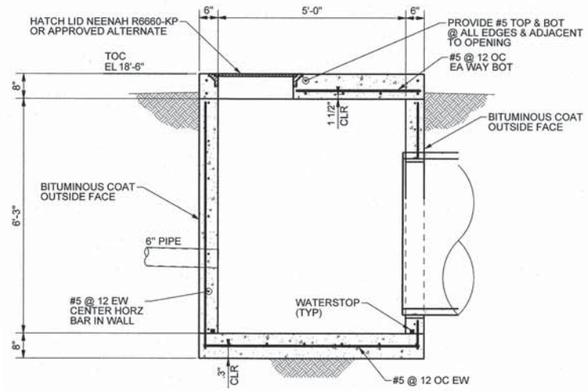
REVIEW/SEEN BY: INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS




## FUEL OIL TRUCK UNLOADING AREA
SCALE: 1:128

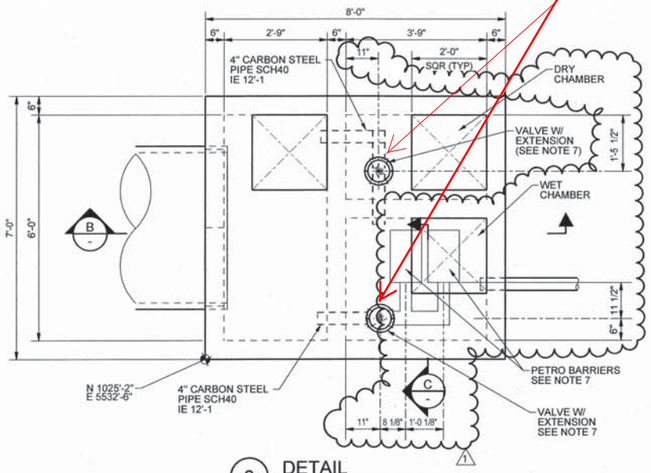



1 DETAIL
Scale: 1:24

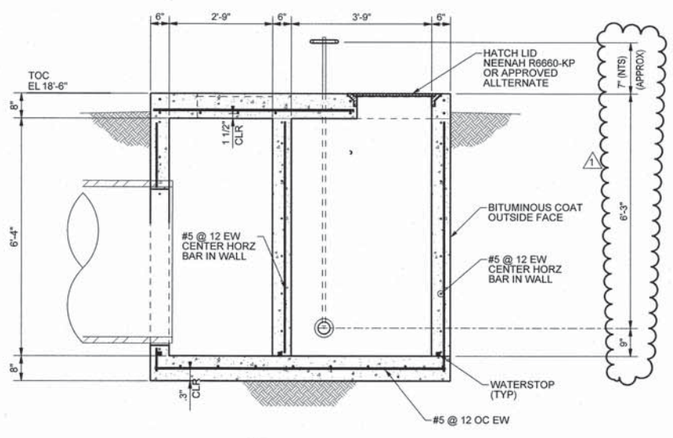



A SECTION
Scale: 1:24

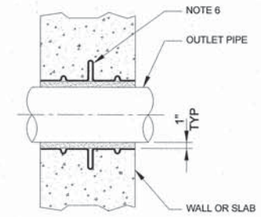
MANUAL VALVES FOR INSPECT AND RELEASE BY OPERATOR




2 DETAIL
Scale: 1:24

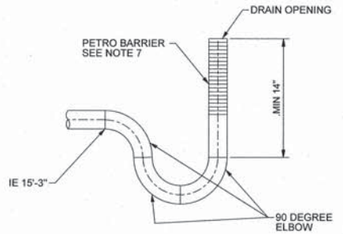



B SECTION
Scale: 1:24

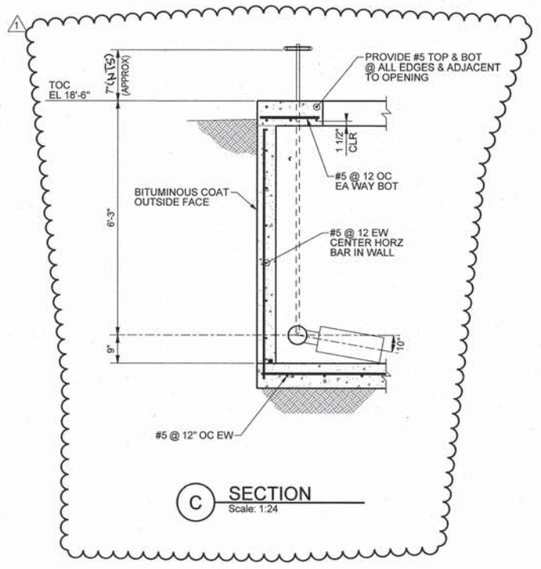



TYPICAL PIPE-THRU-WALL OR SLAB
PENETRATION DETAIL USING
"CENTURY-LINE" SLEEVE OPTION

## TYPICAL PIPE PENETRATION DETAIL
NTS




## P-TRAP DETAIL
NTS




C SECTION
Scale: 1:24

## GENERAL NOTES:

1. FOR STRUCTURAL DESIGN NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS, SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND PIPING, SEE DRAWING 644911 P200-S001.
4. FOR UNDERGROUND ELECTRICAL, SEE DRAWING 644911 E300-S001.
5. PIPE TO CONSIST OF 6"Ø ASTM F714 POLYTHYLENE PIPE HAVING A MINIMUM WALL THICKNESS OF 0.406" UNLES NOTED OTHERWISE
6. COVER LIVE LOAD 200 PSF
7. SEE P&ID DRAWING 644911-5WWD-M2644C FOR VALVE & PETRO BARRIER INFORMATION

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| ADDED DIMS, ADDED NOTES, ADDED SECT | | | | | | | |
| 1 | 5/18 | DC | MK | GG | JL | SF | SO |
| ISSUED FOR CONSTRUCTION | | | | | | | |
| 0 | 11/29/2017 | AS | GG | GG | LA | SF | SO |

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

FUEL OIL TRUCK UNLOADING AREA
FUEL OIL STORAGE FOUNDATION

SHT 3 OF 4

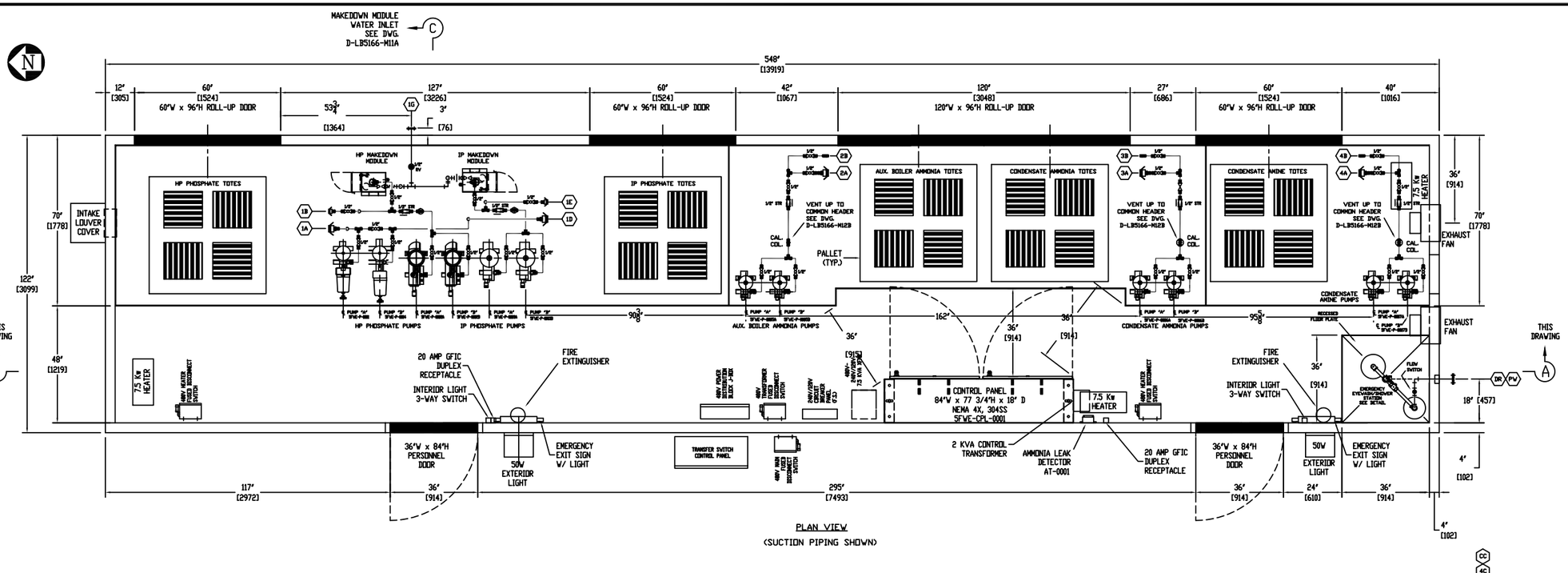
PLAN — DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F039-S003 — REV 1

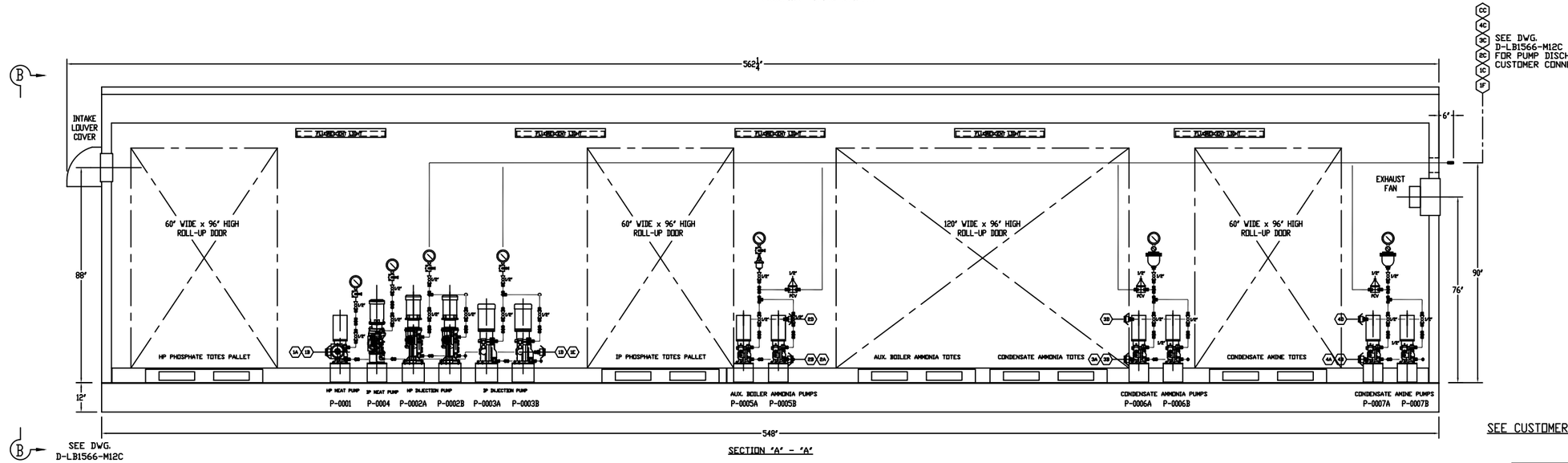
STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
1-5-18

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY

MODEL NAME: F_FO_BLDG

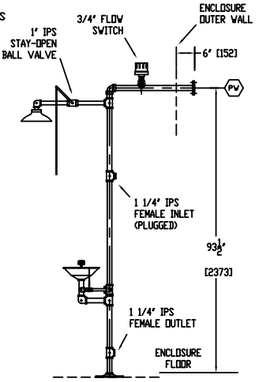



PLAN VIEW
(SUCTION PIPING SHOWN)




SECTION 'A' - 'A'

SEE DWG. D-LB1566-M12C FOR PUMP DISCHARGE CUSTOMER CONNECTIONS




DETAIL - SAFETY SHOWER/EYEWASH
(SEE PLAN VIEW FOR TRUE ORIENTATIONS)

SEE CUSTOMER CONNECTIONS LEGEND SEE DWG. D-LB5166-M12C

CERTIFIED
NAME:_____ DATE:_____

SKID "A/B/C"
DWG. 1 OF 3

SNC·LAVALIN

| | |
|---|---|
| 1 | No exceptions taken, resubmit document as certified. Proceed with fabrication. |
| 2 | No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication. |
| 3 | Exceptions as noted, revise and resubmit. Proceed with fabrication inclusive of mark-ups. |
| 4 | Exceptions as noted, revise and resubmit. Do not proceed with fabrication. |
| 5 | Approval not required, for information / reference only. |
| 6 | Rejected, Document does not meet minimum documentation requirements. |

Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in detail not detailing as detailed in his contract.

Vendor: JOHNSON MARCH - P00058 No.: DLJ-4466-M12A Rev: A
Doc. Title: CYCLE CHEMICAL FEED SYSTEMS ENCLOSURE TAG: 5FWE-ENCL-0001 & SKID TAG: 5FWE-SKD-0001 GENERAL ARRANGEMENT

Keyword:

Statussed As Per Engineering 3/8/2017

Date Rec'd 2/14/2014

Project: Bridgeport Harbor Unit 5

Document No 64911-W070-0061-001

Submittal 01

BRIDGEPORT HARBOR 05 COMBINED CYCLE PROJECT
BRIDGEPORT, CONNECTICUT
BLACK & VEATCH CORPORATION
CYCLE CHEMICAL FEED SYSTEMS
ENCLOSURE TAG: 5FWE-ENCL-0001 & SKID TAG: 5FWE-SKD-0001
GENERAL ARRANGEMENT

S.O. NO. LJ4466 | CONTRACT NO. 191547.65.1110

JOHNSON MARCH SYSTEMS, INC.
220 RAILROAD DR.
IVYLAND PA 18974

| | | |

Chemical containment for phosphate

Chemical containment for ammonia & amine

MID-POINT CENTER HOLD DOWN CLAMP W/ 1" DIA. MOUNTING HOLE (TYP. 2)

548" [13919]

12" [305] | 60" [1524] 60"W x 96"H ROLL-UP DOOR | 127" [3226] | 60" [1524] 60"W x 96"H ROLL-UP DOOR | 42" [1067] | 120" [3048] 120"W x 96"H ROLL-UP DOOR | 27" [686] | 60" [1524] 60"W x 96"H ROLL-UP DOOR | 40" [1016]

HP MAKEDOWN MODULE

IP MAKEDOWN MODULE

HP & IP PRV DISCHARGE DOWN TO CONTAINMENT AREA TYP. (4)

HP PHOSPHATE TOTES

IP PHOSPHATE TOTES

VENT DOWN TO CAL. COLUMN SEE DWG. D-LJ4466-M12A

AUX. BOILER AMMONIA TOTES

CONDENSATE AMMONIA TOTES

CONDENSATE AMINE TOTES

7.5 Kw HEATER

36" [914]

122" [3099]

113" [2870]

INTAKE LOUVER COVER

HP PHOSPHATE PUMPS

IP PHOSPHATE PUMPS

AUX. BOILER AMMONIA PUMPS

CONDENSATE AMMONIA PUMPS

CONDENSATE AMINE PUMPS

CAL. COL. COMMON HEADER

289 9/16" [7354]

70 3/16" [1784]

CONTROL PANEL B 84"W x 77 3/4"H x 18" D NEMA 4X, 304SS 5FWE-CPL-0001

7.5 Kw HEATER

AMMONIA LEAK DETECTOR AT-0001

ACCESSED FLOOR PLATE

FLOW SWITCH

EMERGENCY EYEWASH/SHOWER STATION SEE DETAIL ON DWG. D-LJ4466-M12A

EMERGENCY EXIT SIGN W/ LIGHT

EXHAUST FAN

2" [50] (TYP.)

6" [152]

52" [1321]

22" [559]

SEE DWG. D-LJ4466-M12A

36"W x 84"H PERSONNEL DOOR

50W EXTERIOR LIGHT W/ PHOTOCELL

TRANSFER SWITCH CONTROL PANEL

552 1/2" [14034]

END HOLD DOWN CLAMP W/ 1" DIA. MOUNTING HOLE (TYP. 4)

PLAN VIEW

(DISCHARGE PIPING SHOWN)

SEE DWG. D-LJ4466-M12C

REFERENCE NORTH

**DESIGN CRITERIA:** IBC 2012 CONNECTICUT EDITION; ASCE 7-10

WIND LOADS: 140 MPH Exp. C

SEISMIC LOADS:
Site Class E Ss=0.243
I=1.25 SI=0.064

SNOW LOADS: 35 PSF

ICE LOADS: Uniform Thickness=0.75"

ANCHOR BOLT LOAD TABULATION (POUNDS PER ANCHOR BOLT MAX+1STD)

| | | | |
|---|---|---|---|
| DEAD LOAD | | | 8817 I |
| LIVE LOAD | | | 4629 |
| SNOW LOAD | | | 1851 |
| ICE LOAD | | | 719 |
| WIND LOAD (±) | N-S (+) | AXIAL | 12770 II |
| | | SHEAR | 7434 — |
| | E-W (+) | AXIAL | 5350 II |
| | | SHEAR | 2207 — |
| SEISMIC LOAD (±) | N-S (+) | AXIAL | 1884 II |
| | | SHEAR | 1275 — |
| | E-W (+) | AXIAL | 1005 II |
| | | SHEAR | 1275 — |

I - COMPRESSION II - TENSION/COMPRESSION
— - LOADS IN THE DIRECTION OF THE FORCE
NOTE: ALL LOADS ARE UNFACTORED, DESIGNER MUST ADD OVERSTRENGTH & NON-DUCTILE CODE REQUIREMENTS FOR ANCHORBOLTS

548"

126" FRONT WALL

106 1/2"

12" x 12" INTAKE Llouver

INTAKE LOUVER COVER

7.5 Kw HEATER

480V HEATER FUSED DISCONNECT SWITCH (F.S.)

TO HEATER

36"W x 84"H PERSONNEL DOOR

PANIC HARDWARE

INTERIOR LIGHT 3-WAY SWITCH

20 AMP GFIC

SHELTER FLOOR

12"

480V POWER DISTRIBUTION BLOCK 2-POS (FAR SIDE)

480V TRANSFORMER FUSED DISCONNECT SWITCH (F.S.)

480V MAIN FUSED DISCONNECT SWITCH (M.S.)

MANUAL SWITCH CONTROL PANEL (M.S.)

240V/120V CIRCUIT BREAKER PANEL (F.S.)

480V-240V/120V 75 KVA XFMR (F.S.)

CONTROL PANEL (REAR VIEW) 84"W x 77 3/4"H x 18" D NEMA 4X, 304SS 5FWE-CPL-0001

7.5 Kw HEATER

AMMONIA LEAK DETECTOR AT-0001

20 AMP GFIC

TO HEATER

25 KVA XFMR (F.S.)

62 5/8" [1590]

50W EXTERIOR LIGHT W/ PHOTOCELL

EXHAUST FAN (TYP. 02)

INTERIOR LIGHT 3-WAY SWITCH

129" REAR WALL

MID-POINT CENTER HOLD DOWN CLAMP W/ 1" DIA. MOUNTING HOLE (TYP. 2)

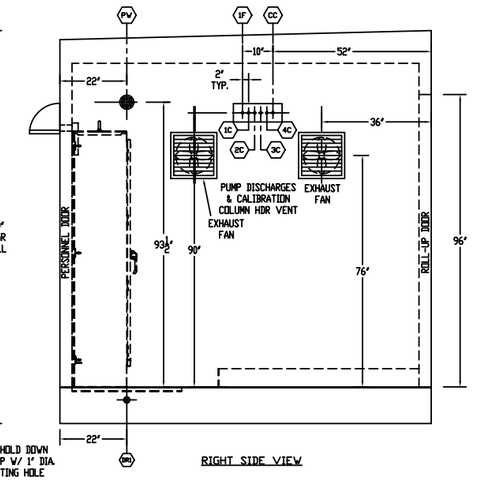
END HOLD DOWN CLAMP W/ 1" DIA. MOUNTING HOLE (TYP. 4)

276 1/4" | 276 1/4"

552 1/2"

FRONT VIEW

SEE CUSTOMER CONNECTIONS LEGEND SEE DWG. D-LJ4466-M12C




RIGHT SIDE VIEW

CERTIFIED
NAME:_____ DATE:_____

SKID "A/B/C"
DWG. 2 OF 3

BRIDGEPORT HARBOR 05 COMBINED CYCLE PROJECT
BRIDGEPORT, CONNECTICUT
BLACK & VEATCH CORPORATION
CYCLE CHEMICAL FEED SYSTEMS
ENCLOSURE TAG: 5FWE-ENCL-0001 & SKID TAG: 5FWE-SKD-0001
GENERAL ARRANGEMENT

S.O. NO. LJ4466 | CONTRACT NO. 191547.65.1110

| REV: | DATE | | REVISED PER CUSTOMER MARK-UP |
|---|---|---|---|
| DR: | | | |
| CHK: | | | |
| APP: | | | |

| REV: | DATE | | REVISED ENCLOSURE TAG No. IN TITLE BLOCK |
|---|---|---|---|
| DR: BWG | 12/27/16 | | |
| CHK: BJS | 12/27/16 | | ADDED CENTER HOLD DOWN CLAMP AS REQUIRED |
| APP: BJS | 12/27/16 | | |

| REV: 0 | DATE | INITIAL DRAWING SUBMITTAL |
|---|---|---|
| DR: GPS | 11/15/16 | NOT FOR CONSTRUCTION. |
| CHK: BJS | 11/15/16 | |
| APP: BJS | 11/15/16 | |

JOHNSON MARCH SYSTEMS, INC.
220 RAILROAD DR.
IVYLAND PA 18974

| | | | | |
|---|---|---|---|---|
| DR: GPS | 11/14/16 | APP: BJS | 11/15/16 | DWG. NO. D-LJ4466-M12B REV. A |
| CHK: BJS | 11/15/16 | APP: | | |
| SCALE: | | SKID "A" | | |

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## CUSTOMER PHOSPHATE CONNECTIONS

- 1A — HP PHOSPHATE NEAT PUMPS SUCTION: 1", FEMALE CAMLOCK, 316SS
- 1B — HP PHOSPHATE SOLUTION FEED PUMPS SUCTION BYPASS SUPPLY: 1/2", FEMALE CAMLOCK, 316SS
- 1C — HP PHOSPHATE SOLUTION FEED PUMP DISCHARGE: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 1D — IP PHOSPHATE NEAT PUMPS SUCTION: 1", FEMALE CAMLOCK, 316SS
- 1E — IP PHOSPHATE SOLUTION FEED PUMPS SUCTION BYPASS SUPPLY: 1/2", FEMALE CAMLOCK, 316SS
- 1F — IP PHOSPHATE SOLUTION FEED PUMP DISCHARGE: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 1G — MAKEDOWN MODULE WATER INLET: 1/2", FLANGE, 150#, RF, 316SS

## CUSTOMER AUX. BOILER DEAERATOR AMMONIA CONNECTIONS

- 2A — AUXILIARY BOILER DEAERATOR AMMONIA FEED PUMPS SUCTION: 1", FEMALE CAMLOCK, 316SS
- 2B — AUXILIARY BOILER DEAERATOR AMMONIA SUCTION PIPING NC DRAIN: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 2C — AUXILIARY BOILER DEAERATOR AMMONIA FEED PUMPS DISCHARGE: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 2D — AUXILIARY BOILER DEAERATOR AMMONIA PUMPS RELIEF VALVE DISCHARGE: 1/2", FEMALE CAMLOCK, 316SS

## CUSTOMER CONDENSATE AMMONIA CONNECTIONS

- 3A — CONDENSATE AMMONIA FEED PUMPS SUCTION: 1", FEMALE CAMLOCK, 316SS
- 3B — CONDENSATE AMMONIA SUCTION PIPING NC DRAIN: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 3C — CONDENSATE AMMONIA FEED PUMP DISCHARGE: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 3D — CONDENSATE AMMONIA FEED PUMPS RELIEF VALVE DISCHARGE: 1/2", FEMALE CAMLOCK, 316SS

## CUSTOMER CONDENSATE AMINE CONNECTIONS

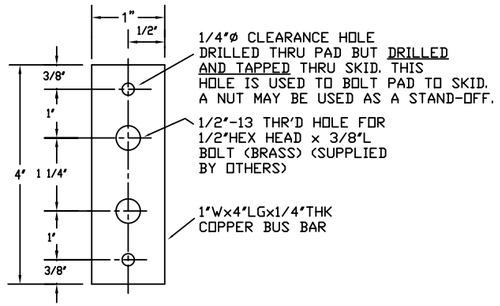
- 4A — CONDENSATE AMINE FEED PUMPS SUCTION: 1", FEMALE CAMLOCK, 316SS
- 4B — CONDENSATE AMINE SUCTION PIPING NC DRAIN: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 4C — CONDENSATE AMINE FEED PUMP DISCHARGE: 1/2", O.D. TUBE COMPRESSION FITTING, 316SS
- 4D — CONDENSATE AMINE FEED PUMPS RELIEF VALVE DISCHARGE: 1/2", FEMALE CAMLOCK, 316SS

## CUSTOMER CALIBRATION COLUMN VENTS:

- CC — CAL. COL. COMMON HEADER - (AUX., BOILER DEAERATOR AMMONIA, CONDENSATE AMMONIA & CONDENSATE AMINE): 1/2", O.D. TUBE COMPRESSION FITTING, 316SS

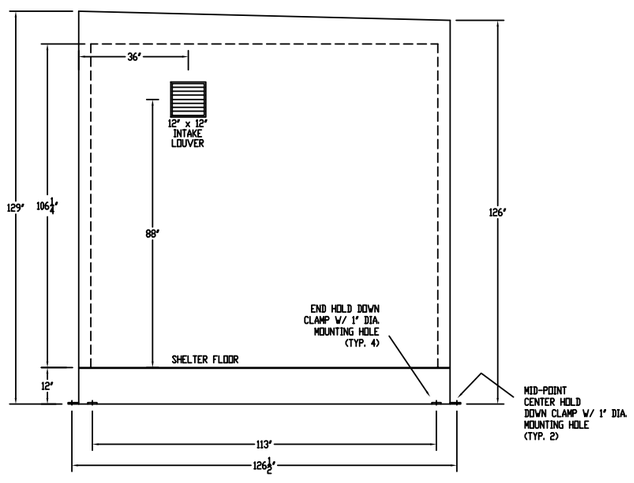
## CUSTOMER ENCLOSURE CONNECTIONS

- DR — SHOWER STSTION BASIN DRAIN: 1 1/2", COUPLING, 3000#, C.S., SW CONNECTION:
- PW — SHOWER STATION POTABLE WATER SUPPLY: 1 1/4" FLANGE, 150#, RF, 316SS




JMSI STD. BUS BAR
(SKID GROUNDING)

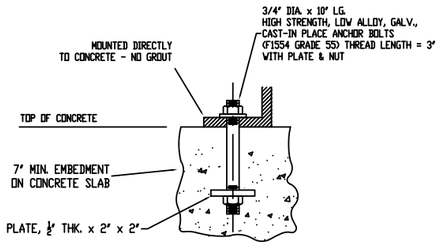
NOTE:
A NEMA 2-HOLE GROUND LUG DRILLING TEMPLATE IS SHOWN WHICH MAY BE REVISED AS NECESSARY




VIEW "B" - "B" - LEFT SIDE

NOTES:

1. ENCLOSURE:
   DIMENSIONS: 10'-2" W x 10'-6H x 45'-8" L
   FRAME: TUBULAR STEEL
   FLOOR: 1/4" THK. DIAMOND PLATE W/ 6" HIGH CONTAINMENT BASINS.
   DOORS (2): INDUSTRIAL, 36" x 84" W/ 1/2" GLASS, KEY LOCK, WEATHER STRIPPING, THRESHOLD, PANIC HARDWARE, CLOSURE, SLIDE BOLT, CRASH CHAIN, WEATHER STRIPPING, PANIC HARDWARE & CLOSURE.
   DOORS (3): MANUAL ROLL UP DOORS 60" W x 96" H.
   (1): MANUAL ROLL UP DOORS 120" W x 96" H.
   FLOOR DRAIN (1) PIPED TO BUILDING EXTERIOR
   HOLD DOWN CLIPS (6) W/ 1" DIA. HOLES.
   GROUNDING LUGS (2).
   SAFETY SHOWER (1), CEILING FLORESCENT LIGHTING FIXTURES (12), EMERGENCY LIGHTING FIXTURES (2), VENTILATION FAN w/ EXHAUST LOUVER, EXTERIOR SODIUM LIGHTING (2), SPACE HEATERS (2).
2. ENCLOSURE CODE REQUIREMENTS:
   P.E. STAMP, STATE OF CONNECTICUT
3. ENCLOSURE PIPING:
   SAFETY SHOWER STATION:
   PIPE: 1 1/4" SCH. 40S, 316SS, ASTM A312, SEAMLESS
   FITTINGS: 3000#, SW CONNECTION, MAT'L: 316SS, ASTM A182
   FLANGES: 150#, RF, MAT'L: 316SS, ASTM A182
   DRAIN BASINS:
   PIPE: SCH. 40, C.S., ASTM A106, SEAMLESS
   FITTINGS: 3000#, SW CONNECTION, MAT'L: C.S., ASTM A105, SEAMLESS
4. PAINT SPECIFICATION:
   EXTERIOR WALL PANELS: KYNAR COATING
   INTERIOR FLOOR: EPOXY COATED
   COLOR: TBD
5. WEIGHT:
   SHIPPING: 22000 LBS.
   OPERATING: 46000 LBS.
6. REFERENCE DRAWINGS:
   BOM - DWG. B-LJ4466-B01
   CYCLE CHEMICAL FEED PIPING SYSTEMS:
   HP PHOSPHATE PUMP SYSTEM - DWG. D-LJ4466-M11A
   IP PHOSPHATE PUMP SYSTEM - DWG. D-LJ4466-M11A
   CONDENSATE AMMONIA PUMP SYSTEM - DWG. D-LJ4466-M11B
   AUX. BOILER AMMONIA PUMP SYSTEM - DWG. D-LJ4466-M11B
   CONDENSATE AMINE PUMP SYSTEM - DWG. D-LJ4466-M11C
   ENCLOSURE & CYCLE CHEMICAL FEED ELECTRICAL:
   ENCLOSURE - DWG. D-LJ4466-E01 THRU- E05
   CYCLE FEED PUMPS CONTROL PANEL - DWG. D-LJ4466-E06 THRU -E18




SUGGESTED ANCHOR BOLT DETAIL
(PROVIDED BY OTHERS)

SKID "A/B/C"
DWG. 3 OF 3

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design criteria.

This review does not relieve the vendor of responsibility for errors in design and detailing as detailed in his contract.

1 No exceptions taken, resubmit document as certified. Proceed with fabrication.
2 No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication.
3 Exceptions as noted, revise and resubmit. Proceed with fabrication inclusive of mark ups.
4 Exceptions as noted, revise and resubmit. Do not proceed with fabrication.
5 Approval not required, for information / reference only.
6 Rejected. Document does not meet minimum documentation requirements.

Vendor: JOHNSON MARCH - P00058
Doc. Title: CYCLE CHEMICAL FEED SYSTEMS ENCLOSURE TAG: 5FWE-ENCL-0001 & SKID TAG: 5FWE-SKID-0001 GENERAL ARRANGEMENT
No.: D-LJ4466-M12C Rev: A
Date Rec'd 2/14/2014

Keyword:
Statused As Per Engineering 3/8/2017
Project: Bridgeport Harbor Unit 5
Document No. 644911-W070-0063-001
Submittal 01

BRIDGEPORT HARBOR 05 COMBINED CYCLE PROJECT
BRIDGEPORT, CONNECTICUT
BLACK & VEATCH CORPORATION
CYCLE CHEMICAL FEED SYSTEMS
ENCLOSURE TAG: 5FWE-ENCL-0001 & SKID TAG: 5FWE-SKID-0001
GENERAL ARRANGEMENT

S.O. NO. LJ4466 | CONTRACT NO. 191547.65.1110

| REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: A | DATE | REVISED PER CUSTOMER MARK-UP | REV: 0 | DATE | INITIAL DRAWING SUBMITTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DR: | | | DR: | | | DR: | | | DR: | | | DR: BWG | 12/27/16 | REVISED ENCLOSURE TAG No. IN TITLE BLOCK | DR: GPS | 11/15/16 | NOT FOR CONSTRUCTION. |
| CHK: | | | CHK: | | | CHK: | | | CHK: | | | CHK: BJ | 12/27/16 | REVISED ENCLOSURE CODE REQUIREMENTS STATE IN NOTES | CHK: BJ | 11/15/16 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: BJ | 12/27/16 | | APP: BJ | 11/15/16 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: | | | APP: | | |

JOHNSON MARCH SYSTEMS, INC.
220 RAILROAD DR.
IVYLAND PA 18974

| DR: GPS | 11/14/16 | APP: BJ | 11/15/16 |
|---|---|---|---|
| CHK: BJ | 11/15/16 | APP: | |

SCALE: SKID "A"

DWG. NO. D-LJ4466-M12C REV. A

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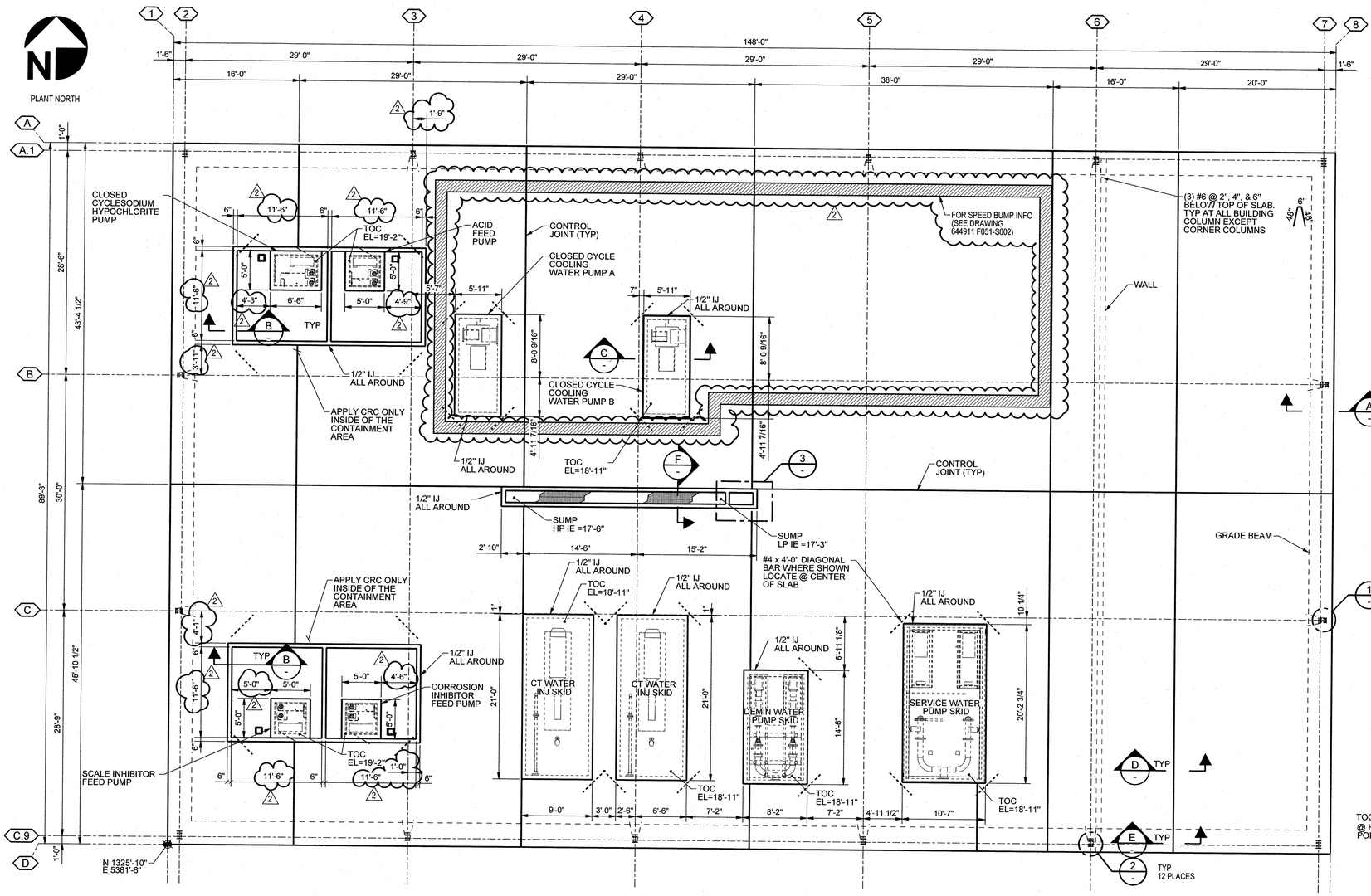



GENERAL SERVICES ENCLOSURE FOUNDATION AT TOC EL VARIES

CONC VOL = 516 CU YDS

SCALE: 1:96




1 DETAIL
Scale: 1:12




2 DETAIL
Scale: 1:12




CONSTRUCTION JOINT IN GRADE BEAM

E SECTION
Scale: 1:32



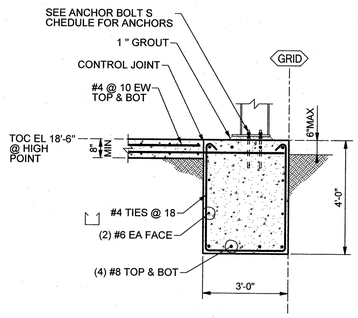

3 DETAIL
Scale: 1:32



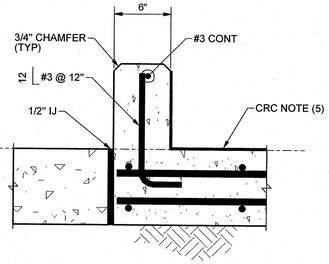

F SECTION
Scale: 1:24



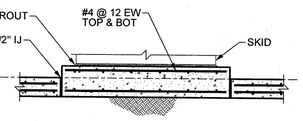

G SECTION
Scale: 1:32



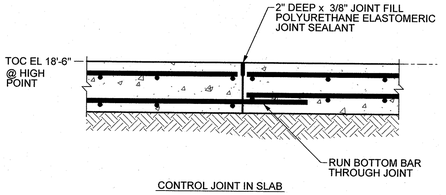

A SECTION
Scale: 1:32




B SECTION
Scale: 1:8




C SECTION
Scale: 1:32




CONTROL JOINT IN SLAB

D SECTION
Scale: 1:12

| ANCHOR BOLT SCHEDULE | | | | |
|---|---|---|---|---|
| GRID LOCATION | DIA Ø | COUNT | LENGTH | PROJ |
| A.1-2, A.1-7, C.9-2, C.9-7, B-2, B-7, C-2, C-7 | 3/4" | 32 | 24" | 5" |
| A.1-3, A.1-4, A.1-5, C.9-3, C.9-4, C.9-5 | 1 1/4" | 24 | 24" | 5" |
| A.1-6, C.9-6 | 2" | 8 | 24" | 5" |

## GENERAL NOTES:

1. FOR STRUCTURAL DESIGN NOTES, SEE DRAWING 644911 S001-S001.
2. FOR STANDARD CONCRETE DETAILS, SEE DRAWING 644911 F001-S001.
3. FOR UNDERGROUND PIPING, SEE DRAWING 644911 P200-S001.
4. FOR UNDERGROUND ELECTRICAL, SEE DRAWING 644911 E300-S001.
5. CHEMICAL RESISTANT COATING "SEMSTONE 140" FROM SENTRY POLYMERS OR EQUAL.
6. ANCHOR EQUIPMENT TO FOUNDATION USING POST INSTALLED ANCHORS IN LOCATIONS AND SIZES RECOMMENDED BY EQUIPMENT SUPPLIER. SEE S001-S001 FOR EMBEDMENTS

## LEGEND:

SPEED BUMP (SEE PLAN)

## REFERENCE DWGS:

VP BUILDINGS
JOB NO: 17-014249-02
PROJECT: Bpt PSEG GENERAL SERVICES

FUREY FILTER & PUMP, INC
DWG: JJ05506-06-GA

JOHNSON MARCH SYSTEMS, INC
DWG: D-LJ4466-M13

FUREY FILTER & PUMP, INC
DWG: JJ05506-03-GA

GE POWER
DWG: 12579000

FUREY FILTER & PUMP, INC
DWG: JJ05506-04-GA

## REFERENCE SPECS:

ORIGINAL

| REV | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 2 | 1/3/18 | DR | MK | GG | JL | SF | CF |
| 1 | 11/22/2017 | AS | MK | GG | LA | SF | |
| 0 | 10/25/2017 | AS | MK | GG | LA | SF | |

REV CONTAINMENT,ADDED SPEED BUMP

ADDED TRENCH

ISSUED FOR CONSTRUCTION

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

GENERAL SERVICES ENCLOSURE FOUNDATION PLAN

SHT 1 OF 2

PLAN DESIGN-CIVIL CONCRETE

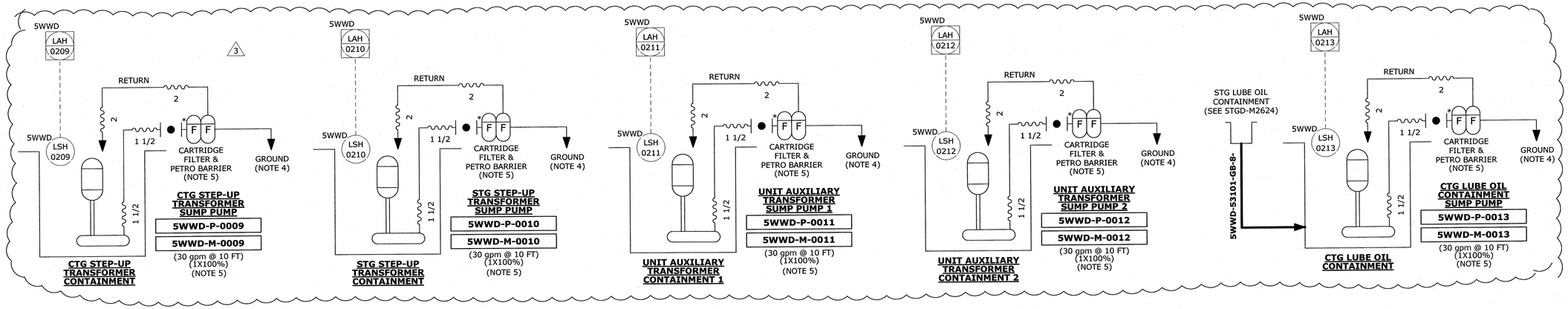
VENDOR NO. 644911 F051-S001 REV 2

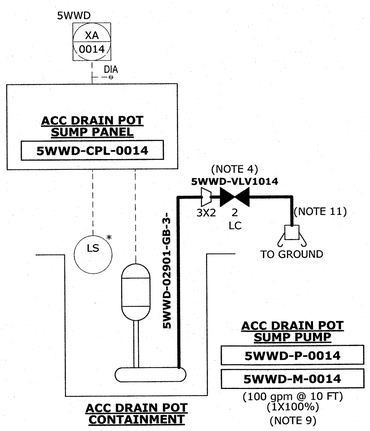
REVIEW/ SEEN BY: INSTR. ELECT. MECH. STRUCT. PIPING PROCESS

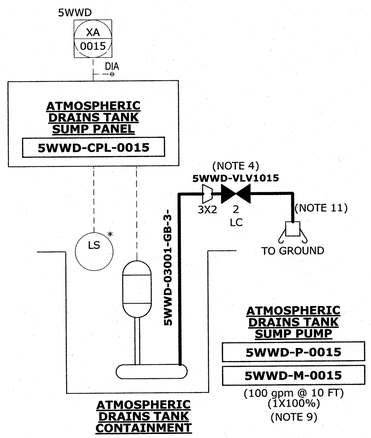
STATE OF CONNECTICUT · GLEN GRISWOLD · No. 16069 · LICENSED PROFESSIONAL ENGINEER

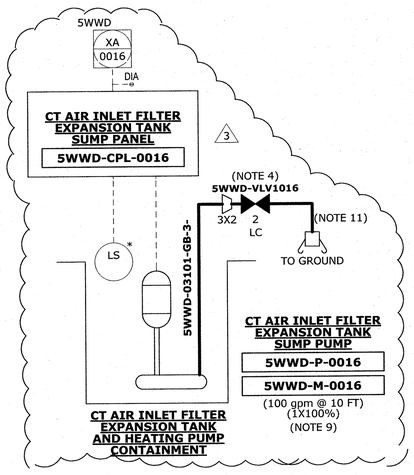
1-3-18

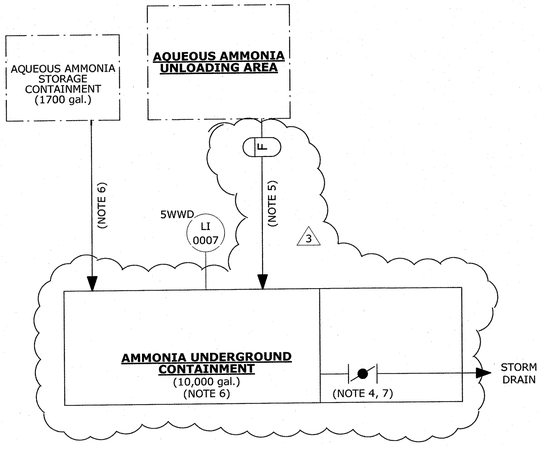
MODEL NAME: F_GS_BLDG

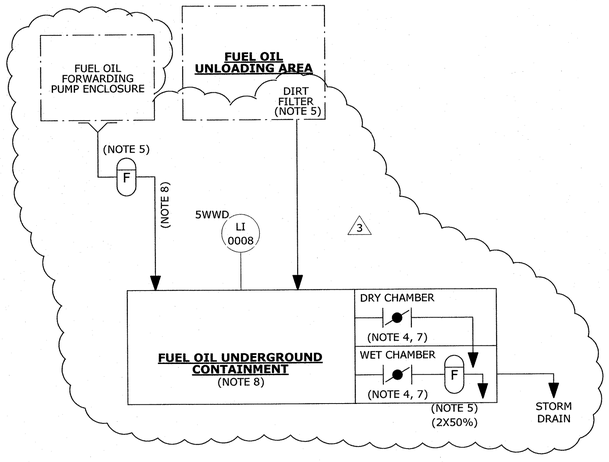



## GENERAL NOTES:

1. THIS DRAWING INCLUDES START UP SYSTEMS:

   5WWD

2. REFER TO DRAWING 5AAA-M2001 FOR OTHER NOTES AND SYMBOL DEFINITIONS.

3. AN ASTERISK (*) INDICATES ITEM SUPPLIED BY VENDOR.

4. INSPECT AND RELEASE RAIN WATER IN CONTAINMENT MANUALLY.

5. PETRO PIPE/BARRIER OR EQUAL DESIGNED TO ALLOW RAIN WATER TO FLOW THROUGH, WHILE TRAPPING OILS.

   AMMONIA UNLOADING: 2 QTY. SPI PETRO BARRIER CONSISTS OF 4" PREFILTER , BYPASS VALVE,16" PETRO BARRIER CANISTER TO BE MOUNTED UNDER 2 SQ FT DRAIN GRATES.

   CTG LUBE OIL CONTAINMENT/ TRANSFORMER CONTAINMENT: 5 QTY. SPI PUMP-THRU BARRIERS. 24" PTB-24. INCLUDE DIRT FILTER, CARTRIDGE FILTER, 1/3 HP SUMP PUMP, HEATING BLANKETS & HOSES.

   FUEL OIL FWD PUMP ENC: 1 QTY. SPI PETRO-PLUG FOR 4" FLOOR DRAIN. 4"X8" PP-408.

   FUEL OIL UNLOADING: 2 QTY. SPI DIRT/ PREFILTERS, 2 QTY. SPI PETRO PIPE-BARRIERS PI-620-M4. DIRT FILTERS TO BE MOUNTED UNDER 2 SQ FT DRAIN GRATES. PETRO PIPE BARRIERS TO BE MOUNTED AT 10-15 DEGREE DOWNWARD ANGLE.

6. SEE CIVIL DRAWING 644911-F031 FOR UNDERGROUND LINE AND CONTAINMENT DETAILS.

7. 4" BUTTERFLY VALVE. BRAY SERIES 31, MANUAL HAND LEVER, SERIES 12 STEM EXTENSION (6' LONG), LUG FITTING, DI BODY SS316 DISC & STEM, BUNA N SEAT (FUEL OIL) OR EPDM SEAT (AMMONIA).

8. SEE CIVIL DRAWING 644911-F039 FOR UNDERGROUND LINE AND CONTAINMENT DETAILS.

9. REFERENCE DRAWINGS:

   SUMP PUMP DIMENSIONAL DRAWING
   GENERAL ARRANGEMENT
   FLYGT
   DRAWING NUMBER: 7998500

10. SLCI FUNCTIONAL DESCRIPTION: 644911-5WWC-I135-M2643

11. 2" HOSE COUPLING.

ORIGINAL

ISSUED FOR CONSTRUCTION
A1-E1: REVISED SUMP PUMP DISCHARGE
A4: REVISED AMMONIA CONTAINMENT
C4: REVISED FUEL OIL CONTRAINMENT; ADDED FUEL OIL PUMP ENCLOSURE & FLOOR DRAIN
E2-E3: ADDED 5WWD-P/M/CPL0016, CONTAINMENT, LINE WWD-03101 & WWD-VLV1016

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | 1/10/18 | WW | AR HMK | WDH | RMK LA | SF | SF SEO |

ISSUED FOR CONSTRUCTION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 10/23/17 | WW | AR HMK | WDH | LA | SF | SEO |

ISSUED FOR CONSTRUCTION (UGR)
APPROVAL (AGR)
A4, C4: DELETED LINES 5WWD-52203, 52303 & SUMP PUMPS
E1-E2: ADDED LINE 5WWD-53101

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 09/18/17 | WW | AR HMK | WDH | LA | SF | SEO |

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|

**PROJECT ENGINEERING DIVISION**

PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: N/A

BRIDGEPORT 05

WASTE WATER
CONTAINMENT & UNLOADING AREAS
P&ID
SHT. 3 OF 3

P&ID — DESIGN-PIPING

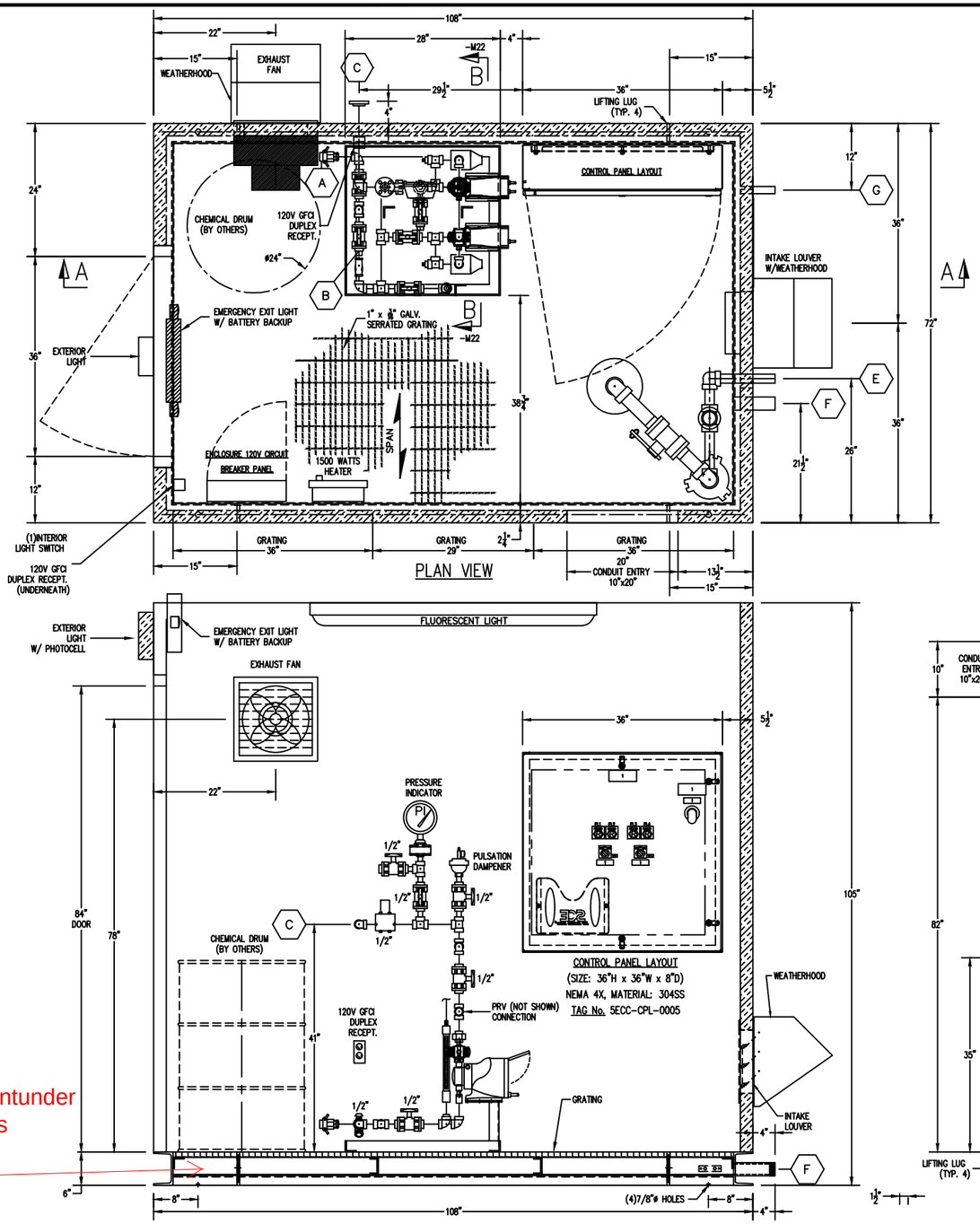
VENDOR NO. **644911 - 5WWD-M2644C** REV 3

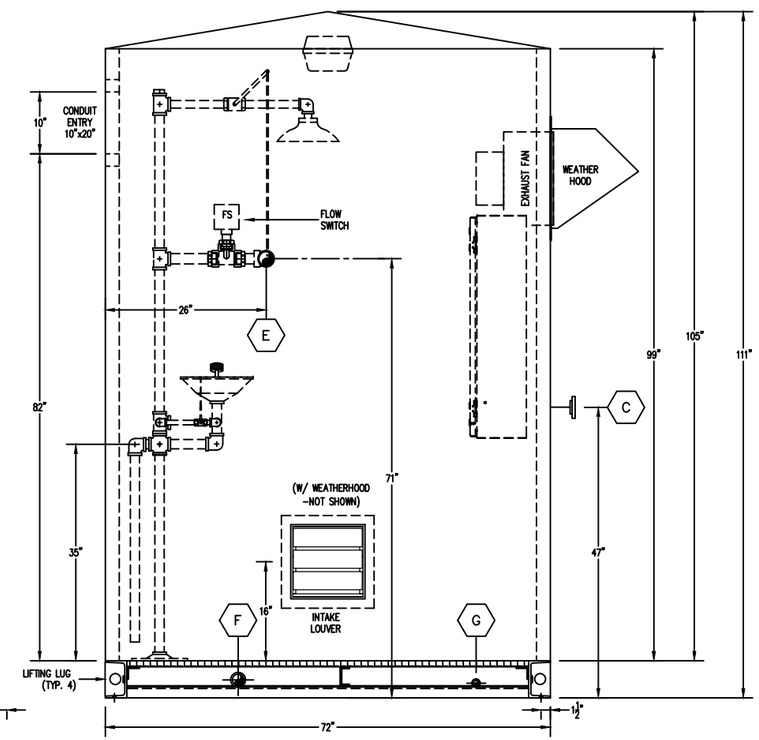
ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY | INSTR

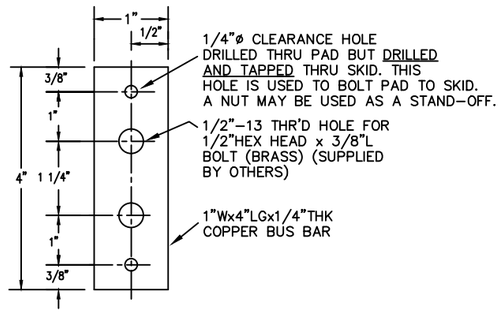
STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER

11 JAN 2018

PRINTED DATE: 1/10/2018 11:47:07 AM
PRINTED BY: CLUBR




JMSI STD. BUS BAR
(SKID GROUNDING)

NOTE:
A NEMA 2-HOLE GROUND LUG DRILLING TEMPLATE IS SHOWN WHICH MAY BE REVISED AS NECESSARY

NOTES:

1. ENCLOSURE:
   DIMENSIONS: 6'-0" W x 9'-3" H x 9'-0" L
   FRAME: BASE STEEL
   FLOOR: 1"x3/16" SERRATED TOP GALVANIZED GRATING
   DOORS (1) 36" x 84" W/ KEY LOCK,
   WEATHER STRIPPING AND PANIC HARDWARE CLOSURE
   EYEWASH/SHOWER DRAIN (1) PIPED TO SHELTER EXTERIOR
   CONTAINMENT DRAIN (1) PIPED TO SHELTER EXTERIOR
   GROUNDING LUGS (2).
   SAFETY SHOWER (1), CEILING FLUORESCENT LIGHTING FIXTURE (1), EMERGENCY LIGHTING FIXTURE (1), VENTILATION FAN w/ EXHAUST LOUVER(1), EXTERIOR LIGHTING (1), SPACE HEATER (1).

3. ENCLOSURE PIPING:
   SAFETY SHOWER STATION:
   PIPE: 1 1/4" SCH. 40S, 316SS, ASTM A312, SEAMLESS
   FITTINGS: 3000#, SW CONNECTION, MAT'L: 316SS, ASTM A182
   FLANGES: 150#, RF, MAT'L: 316SS, ASTM A182
   DRAIN BASINS:
   PIPE: SCH. 40, C.S., ASTM A106, SEAMLESS
   FITTINGS: 3000#, SW CONNECTION, MAT'L: C.S., ASTM A105, SEAMLESS

4. SHELTER STEEL BASE PAINT SPECIFICATION:
   SURFACE PREPARATION: SSPC-SP6, COMMERCIAL BLAST
   PRIMER COAT:
   SHERWIN WILLIAMS MACROPOXY 646 (4-6) MILS DFT
   FINISH COAT:
   SHERWIN WILLIAMS MACROPOXY 646 (4-6) MILS DFT
   COLOR: ANSI #61 GRAY
   PUMPS, MOTORS AND ACCESSORIES ARE MFG'S. STANDARD PAINT & COLOR.

5. WEIGHT:
   SHIPPING: 9050 LBS.
   OPERATING: 9650 LBS.

6. REFERENCE DRAWINGS:
   BOM - DWG. B-NA1366-B01
   P&ID - DWG. D-NA1366-M01
   ELECTRICAL - DWG. D-NA1366-E01 THRU -E06

## CUSTOMER CONNECTIONS:

- A — CORROSION INHIBITOR PUMPS SUCTION: 1", FEMALE CAMLOCK, POLYPRO
- B — CORROSION SCALE INHIBITOR SUCTION PIPING (CHEM BYPASS): 1/2", PIPE CAP, SCH. 80, CPVC, FNPT
- C — CORROSION SCALE INHIBITOR PUMPS DISCHARGE: 1/2", 150# FF FLANGE, SCH. 80, CPVC
- D — CORROSION INHIBITOR INJECTION QUILL INLET: 1/2", 316SS, FNPT
- E — EYEWASH/SHOWER WATER SUPPLY: 1 1/4", 304SS, MNPT
- F — EYEWASH/SHOWER CONTAINMENT DRAIN: 2", CS, MNPT
- G — SHELTER CONTAINMENT DRAIN: 1", CS, MNPT —PLUGGED

Chemical containmentunder floor grates

BRIDGEPORT HARBOR 05 COMBINED CYCLE PROJECT
BRIDGEPORT, CONNECTICUT
BLACK & VEATCH CORPORATION
SERVICE WATER CORROSION INHIBITOR FEED SYSTEM
SKID TAG: 5ECC-SKD-0005
MECHANICAL LAYOUT

S.O. NO. NA1366 | CONTRACT NO. MA00004549-02

JOHNSON MARCH SYSTEMS, INC.
220 RAILROAD DR.
IVYLAND PA 18974

| REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: 0 | DATE | INITIAL DRAWING SUBMITTAL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DR: | | | DR: | | | DR: | | | DR: | | | DR: | | | DR: JLG | 02/9/18 | NOT FOR CONSTRUCTION |
| CHK: | | | CHK: | | | CHK: | | | CHK: | | | CHK: | | | CHK: MG | 02/16/18 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: | | | APP: MG | 02/16/18 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: | | | APP: | | |

| DR: JLG | 02/9/18 | APP: MG | 02/16/18 | DWG. NO. | REV. |
|---|---|---|---|---|---|
| CHK: MG | 02/16/18 | APP: | | D-NA1366-M21 | 0 |
| SCALE: 1" = 1'-0" | | | | | |

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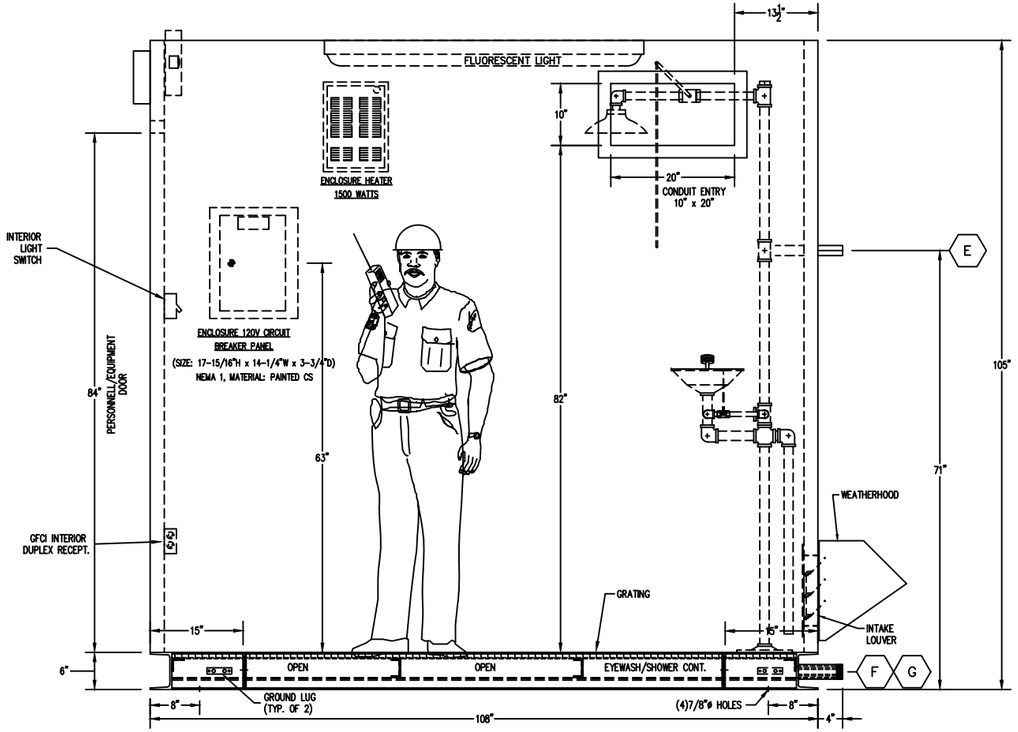
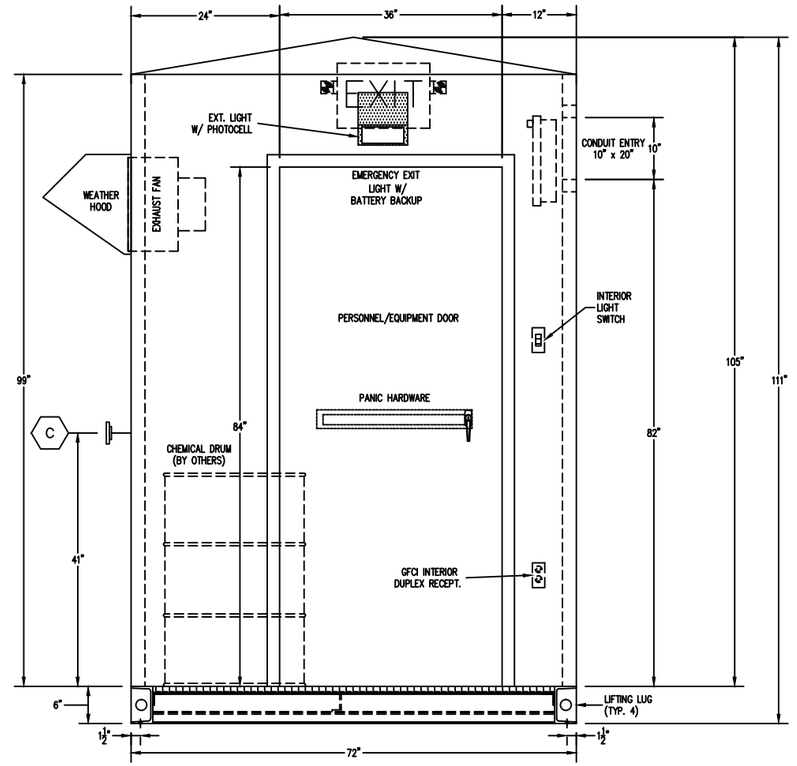
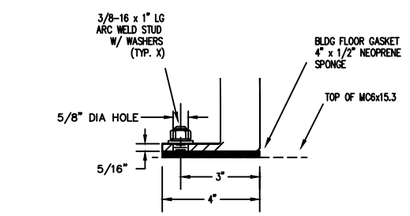


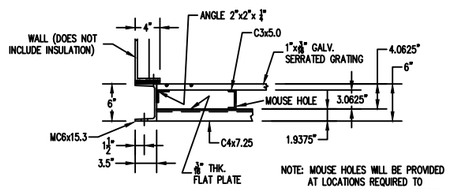

FRONT VIEW




LEFT SIDE VIEW

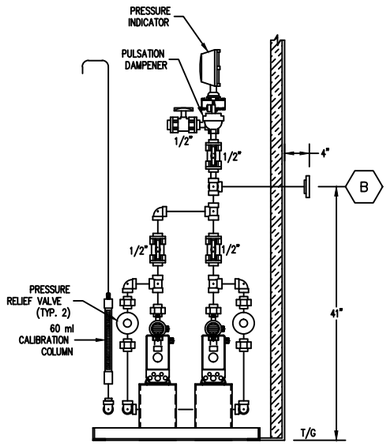



BUILDING FLANGE TO FLOOR BOLTING
SCALE: NONE

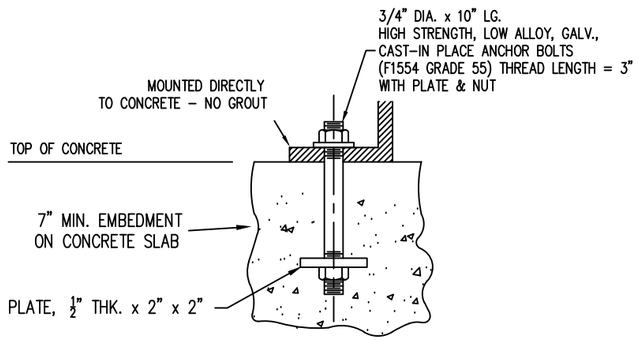



NOTE: MOUSE HOLES WILL BE PROVIDED AT LOCATIONS REQUIRED TO ALLOW SPILLED LIQUID TO DRAIN.

DETAIL 1

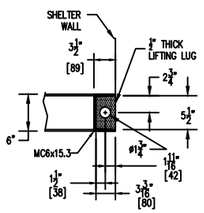



SECTION B-B




SUGGESTED ANCHOR BOLT DETAIL

(PROVIDED BY OTHERS)




LIFTING LUG DETAIL
(TYP. 4)

DESIGN CRITERIA: IBC 2012 CONNECTICUT EDITION; ASCE 7-10
WIND LOADS: 140 MPH Exp. C
SEISMIC LOADS: Site Class E Ss=0.243 I=1.25 S1=0.064
SNOW LOADS: 35 PSF
ICE LOADS: Uniform Thickness=0.75"

REFERENCE NORTH

| ANCHOR BOLT LOAD TABULATION (POUNDS PER ANCHOR BOLT MAX+15%) | | | |
|---|---|---|---|
| DEAD LOAD | | | 2774 ‖ |
| LIVE LOAD | | | 1941 ‖ |
| SNOW LOAD | | | 299 ‖ |
| ICE LOAD | | | 193 ‖ |
| WIND LOAD (±) | N-S (+) | AXIAL | 2511 ‖ |
| | | SHEAR | 1082 — |
| | E-W (+) | AXIAL | 1607 ‖ |
| | | SHEAR | 738 — |
| SEISMIC LOAD (±) | N-S (+) | AXIAL | 482 ‖ |
| | | SHEAR | 469 — |
| | E-W (+) | AXIAL | 393 ‖ |
| | | SHEAR | 469 — |

| - COMPRESSION ‖ - TENSION/COMPRESSION
— - LOADS IN THE DIRECTION OF THE FORCE
NOTE: ALL LOADS ARE UNFACTORED, DESIGNER MUST ADD OVERSTRENGTH & NON-DUCTILE CODE REQUIREMENTS FOR ANCHORBOLTS |
|---|

BRIDGEPORT HARBOR 05 COMBINED CYCLE PROJECT
BRIDGEPORT, CONNECTICUT
BLACK & VEATCH CORPORATION
SERVICE WATER CORROSION INHIBITOR FEED SYSTEM
SKID TAG: 5ECC-SKD-0005
MECHANICAL LAYOUT

S.O. NO. NA1366 | CONTRACT NO. MA00004549-02

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| REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: | DATE | | REV: 0 | DATE | INITIAL DRAWING SUBMITTAL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DR: | | | DR: | | | DR: | | | DR: | | | DR: JLG | 02/9/18 | NOT FOR CONSTRUCTION |
| CHK: | | | CHK: | | | CHK: | | | CHK: | | | CHK: TTG | 02/16/18 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: TTG | 02/16/18 | |
| APP: | | | APP: | | | APP: | | | APP: | | | APP: | | |

JOHNSON MARCH SYSTEMS, INC.
220 RAILROAD DR.
IVYLAND PA 18974

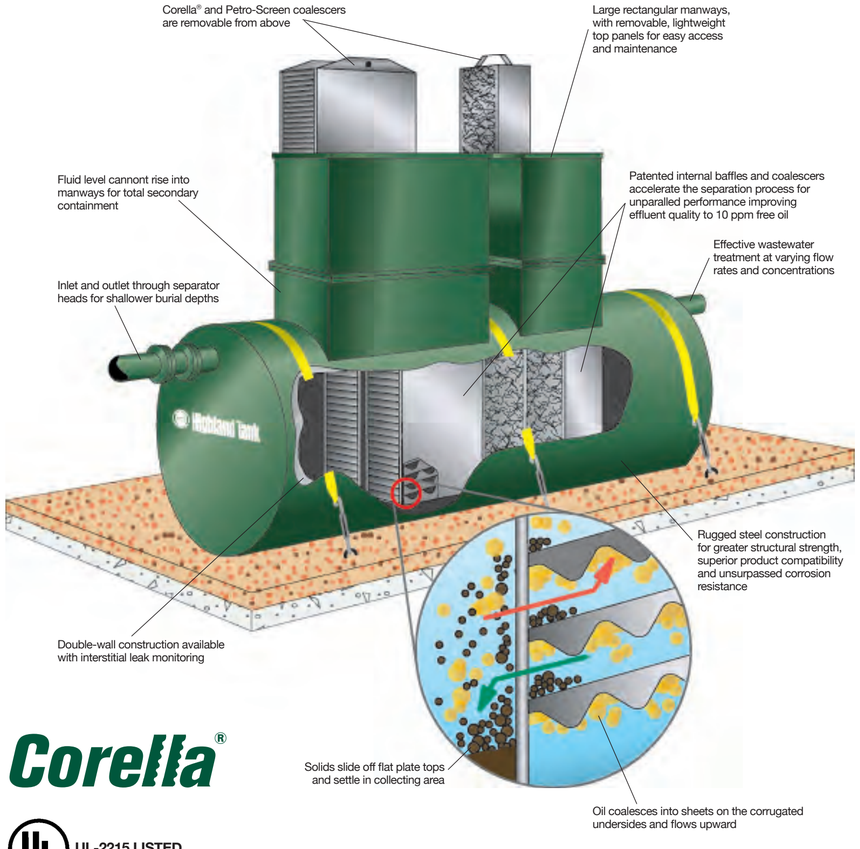
| DR: JLG | 02/9/18 | APP: TTG | 02/16/18 | DWG. NO. | REV. |
|---|---|---|---|---|---|
| CHK: TTG | 02/16/18 | APP: | | D-NA1366-M22 | 0 |
| SCALE: 1" = 1'-0" | | | | | |

## Exhibit 4 Oil/Water Separator Design

| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911-W200-0001 | 2 | Highland Tank Oil-Water Separator Vendor Data (2 sheets) |
| 100716 | 1 | 12000 Gallon Oil Water Separator UL-HTC-J, ACT-100-U, Double Wall (North OWS) |
| 100717 | 1 | North OWS Notes / Details |
| 100723 | 1 | 550 Gallon Oil Water Separator UL-HTC-J, Highguard, Double Wall (South OWS) |
| 100724 | 1 | South OWS Notes / Details |
| 100748 | 1 | 3000 Gallon Oil Water Separator UL-HTC-J, Highguard, Double Wall (East OWS) |
| 100749 | 1 | East OWS Notes / Details |

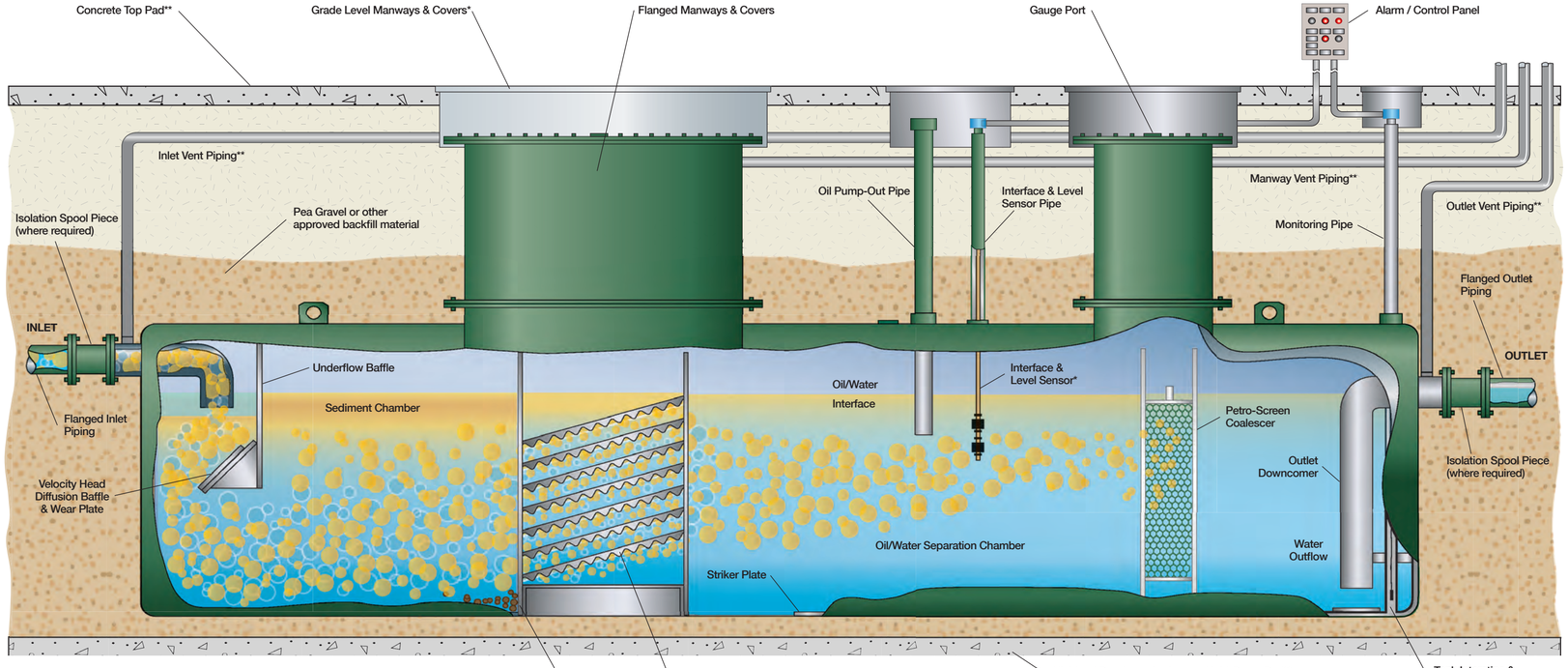
## Corella® The Newest Advancement in Oil/Water Seperation Technology

**The Corella® Coalescer is a removable, inclined parallel, flat/corrugated plate coalescer that enhances separation of both oil and solids from all strata of the wastewater stream. It is individually engineered to specific application and job-site requirements to maximize utility.**




Corella®

UL-2215 LISTED




Model HTC Oil/Water Separator with EZ Access option shown.

*Optional equipment available from Highland Tank.
**Installer supplied equipment

**How It Works**

Highland Tank's patented oil/water separators are stationary wastewater treatment tanks filled with water. They contain specially designed internal baffles and coalescers to accelerate the separation process.

The tank is designed to allow convenient access for inspection and maintenance from above. Inlet flow is directed against the velocity head diffusion baffle to reduce flow turbulence and to distribute the flow evenly over the separator's cross-sectional area.

In the sediment chamber, heavy solids settle out and concentrated oil rises to the surface. The oily water then passes through the Corella® Coalescer, an inclined arrangement of stacked, parallel, flat and corrugated plates. The corrugated underside of the Corella® plates causes the oil to coalesce into sheets.

The oil globules then rise to the surface of the separation chamber, where the separated oil accumulates.

Any remaining solids sink to the top of the plates and slide off the plates to the solids collection area. The effluent flows down and toward the outlet and is discharged by gravity displacement.

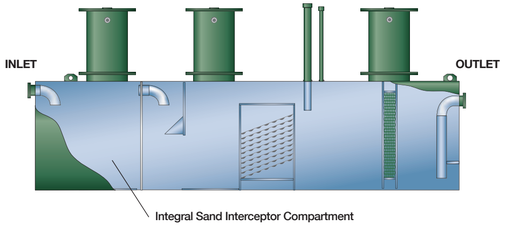
A Petro-Screen polypropylene impingement coalescer (an encased bundle of layered oil-attracting fibers) is used to intercept droplets of oil that are too minute to be removed by the Corella® Coalescer.

Electronic oil level controls sound an alarm at high oil levels so that waste oil can be removed from the separator. Double-wall separators are monitored with electronic leak detection systems for the interstitial space.

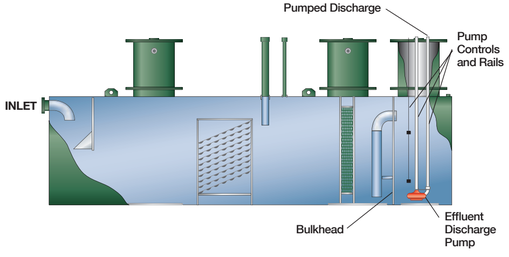
## Pre-Engineered Design Options

**Solution Oriented Designs**

**Series - G Oil/Water Separators** feature an integral sand interceptor compartment to permit sand and gravel to settle out before the wastewater enters the separation chamber.




**Series - J Oil/Water Separators** have an integral effluent pump-out compartment with level controls. The pumped effluent can be routed through Highland's Advanced Filtration System to further reduce the oil content.




**Highland Tank Oil/Water Separators are listed and approved under one or more of the following patents and approvals:**

Underwriters' Laboratories, Inc. UL-SU2215

U.S. Patents - 4,722,800; 5,520,825 & 6,605,224

Canadian Patents - 1,325,179; 1,296,263 & 2,389,065

City of New York, Board of Standards and Appeals
under Calendar Number 1215-88-SA

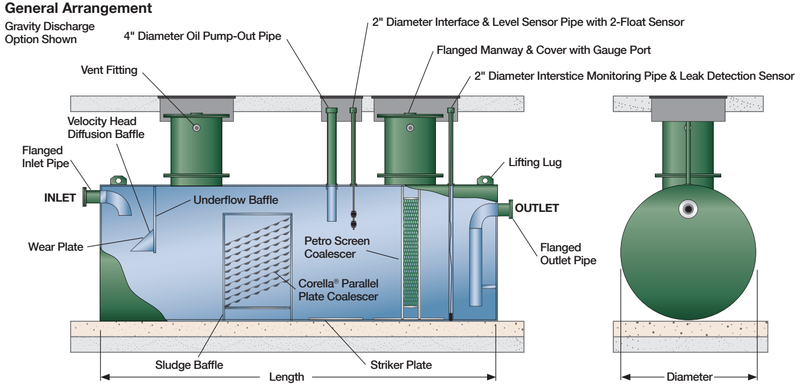
Massachusetts Board of State Examiners of Plumber and Gas Fitters
Approval Code P1-0594-25

Evaluated to DIN Parts 4 & 5, DIN 38-409 Part 18

Proudly Made In AMERICA

## Cylindrical Separator Sizing Guide

**General Arrangement**




| Model HT or HTC | Flow Rate Gal/Min | Total Volume Gallons | Recommended Oil Pump-out Gallons | Dimensions | | Inlet & Outlet Diameter |
|---|---|---|---|---|---|---|
| | | | | Diameter | Length | |
| 350 | 35 | 350 | 70 | 3'-6" | 6'-0" | 4" |
| 550 | 55 | 550 | 110 | 3'-6" | 7'-9" | 4" |
| 1,000 | 100 | 1,000 | 200 | 4'-0" | 10'-9" | 6" |
| 2,000 | 200 | 2,000 | 400 | 5'-4" | 12'-0" | 6" |
| 3,000 | 300 | 3,000 | 600 | 5'-4" | 18'-0" | 8" |
| 4,000 | 400 | 4,000 | 800 | 5'-4" | 24'-0" | 8" |
| 5,000 | 500 | 5,000 | 1,000 | 6'-0" | 23'-10" | 8" |
| 6,000 | 600 | 6,000 | 1,200 | 6'-0" | 28'-8" | 10" |
| 7,000 | 700 | 7,000 | 1,400 | 7'-0" | 24'-4" | 10" |
| 8,000 | 800 | 8,000 | 1,600 | 7'-0" | 28'-0" | 10" |
| 9,000 | 900 | 9,000 | 1,800 | 8'-0" | 24'-0" | 12" |
| 10,000 | 1,000 | 10,000 | 2,000 | 8'-0" | 26'-8" | 12" |
| 12,000 | 1,200 | 12,000 | 2,400 | 8'-0" | 32'-0" | 12" |
| 15,000 | 1,500 | 15,000 | 3,000 | 10'-0" | 25'-6" | 14" |
| 20,000 | 2,000 | 20,000 | 4,000 | 10'-6" | 31'-0" | 16" |
| 25,000 | 2,500 | 25,000 | 5,000 | 10'-6" | 38'-9" | 18" |
| 30,000 | 3,000 | 30,000 | 6,000 | 10'-6" | 46'-6" | 20" |
| 40,000 | 4,000 | 40,000 | 8,000 | 12'-0" | 47'-3" | 24" |
| 50,000 | 5,000 | 50,000 | 10,000 | 12'-0" | 59'-6" | 24" |
| 60,000 | 6,000 | 60,000 | 12,000 | 13'-0" | 60'-6" | 24" |

Plate spacing and orientation may vary depending on site conditions. Custom sizing is available.
Consult Highland Tank for Series G & J sizing information.


***Please visit us at www.highlandtank.com***

One Highland Road
Stoystown, PA 15563
P: 814-893-5701
F: 814-893-6126

4535 Elizabethtown Road
Manheim, PA 17545
P: 717-664-0600
F: 717-664-0617

958 19th Street
Watervliet, NY 12189
P: 518-273-0801
F: 518-273-1365

2700 Patterson Street
Greensboro, NC 27407
P: 336-218-0801
F: 336-218-1292

2225 Chestnut Street
Lebanon, PA 17042
P: 717-664-0602
F: 717-664-0631

1510 Stoystown Road
Friedens, PA 15541
P: 814-443-6800
F: 814-444-8662


© Highland Tank – HT– 2040 – 1/2018

# Cylindrical Oil/Water Separators



*Unparalleled in Performance*

Highland Tank



Highland Tank provides you with the strongest and most reliable oil/water separators in the industry.

Our separators are designed to remove oil, grease, light petroleum products, and oily coated solids from a variety of wastewater discharges.

They are typically installed in industrial areas and receive oily wastewater generated during processes such as bulk petroleum storage and handling, aircraft and vehicle fueling, maintenance, washing and environmental remediation of petroleum contaminated sites.

The effluent from oil/water separators is typically discharged to either a storm or sanitary sewer system.

Our high-efficiency oil/water separators are recommended for a wide range of industrial applications, such as:

- Airports & Aircraft Services
- Electric Utilities & Power Plants
- Environmental Remediation
- Industrial Facilities
- Military & Government Facilities
- Municipalities
- Petroleum Production & Marketing Facilities
- Railroad Yards
- Transportation Companies

They are also located in vehicle service areas associated with each of these facilities:

- Fueling Facilities
- Repair & Maintenance Shops
- Wash Areas

Highland oil/water separators set the standard for reliability. Our separators are highly efficient - treating wastewater under a wide range of conditions.

Unlike other oil/water separators, they are easy to install, operate and maintain.

**Unmatched Quality & Service**

PSEG_BH05_100_OWS 1 General Arrangement Dwg_Rev 1

**DRAWING 1 OF 3**

REFERENCE DRAWING NO. 100717 FOR NOTES/DETAILS
REFERENCE DRAWING NO. 100718 FOR HOLD DOWN STRAP DETAILS

| TAG NUMBERS |
|---|
| OWS TAG NO– 5WWD–OWS–0001 |
| PUMP#1 TAG NO– 5WWD–P–0001A |
| PUMP#2 TAG NO– 5WWD–P–0001B |
| PANEL TAG NO– 5WWD–CPL–0001 |

NORTH OIL/WATER SEPARATOR

NOTE:
TOP 18" OF MANWAY EXTENSIONS, MANWAY COVERS AND TOP 18" OF RISER PIPES TOP COATED WITH CHEMTHANE 3300 UV RESISTANT WHITE COATING.

SNC·LAVALIN

1 No exceptions taken, resubmit document as certified. Proceed with fabrication.
2 No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication.
3 Exceptions as noted, revise and resubmit. Proceed with fabrication inclusive of markups.
4 Exceptions as noted, revise and resubmit. Do not proceed with fabrication.
5 Approval not required, for information / reference only.
6 Rejected. Document does not meet minimum documentation requirements.

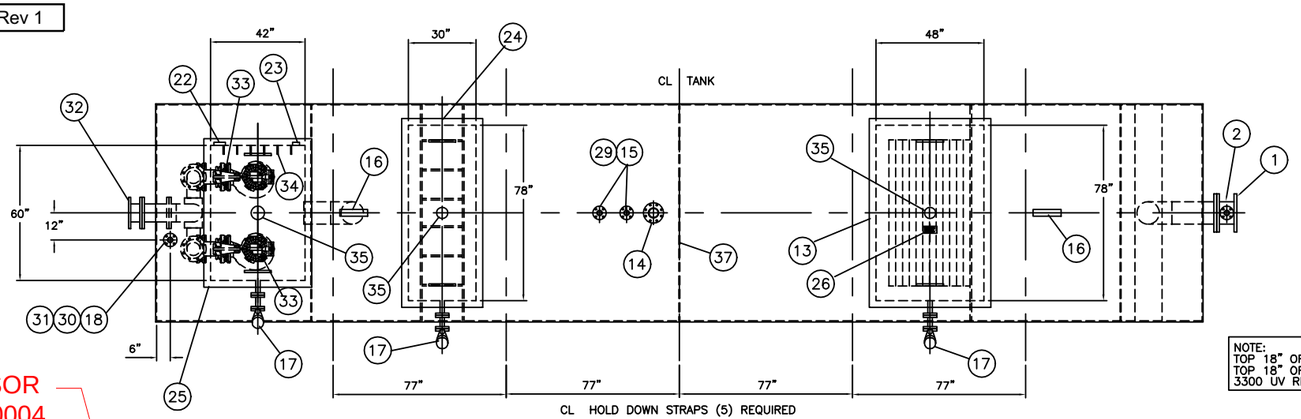
Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.

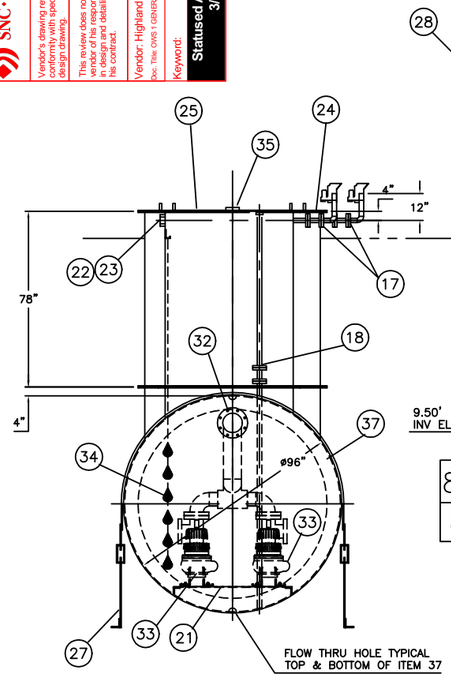
Vendor: Highland Tank & Mfg - S001400 No.: 100716 Rev. 1
Doc. Title: OWS 1 GENERAL ARRANGEMENT - 12000 GALLON OIL WATER SEPARATOR UL-HTC-J, ACT-100-U, DOUBLE WALL
Date Rec'd 2/14/2017
Submittal 02
Project: Bridgeport Harbor Unit 5
Keyword:
Document No: 6449111-W200-0032-001

**Statused As Per Engineering 3/9/2017**

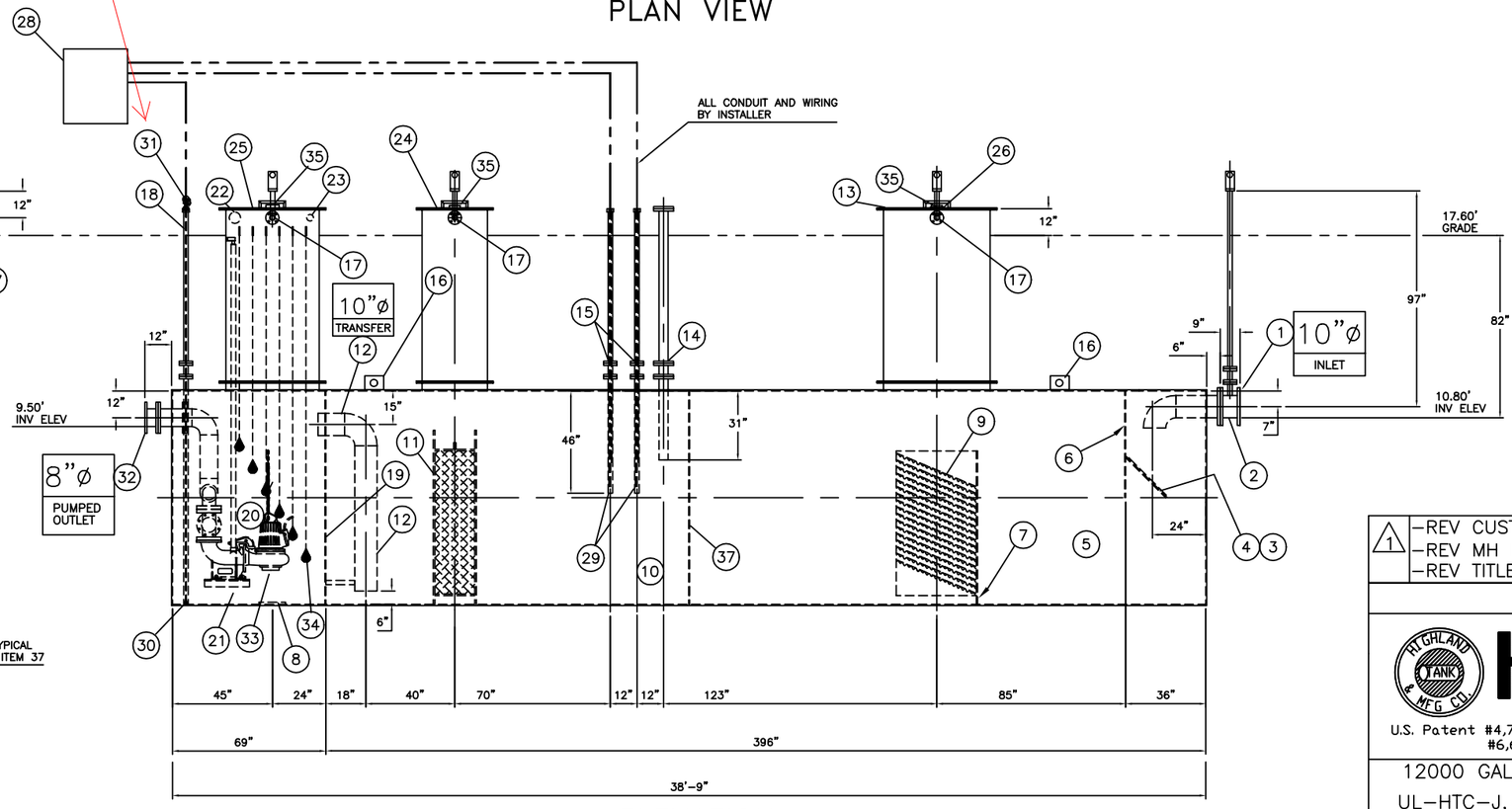
LEAK SENSOR
5WWD-LS-0004




PLAN VIEW




END VIEW




ELEVATION

| | | | |
|---|---|---|---|
| 1 | –REV CUST PROV ELEV'S<br>–REV MH EXT'S/RISER HTS<br>–REV TITLE BLOCK | 2–14–17 | REM |

REVISIONS

Highland Tank

U.S. Patent #4,722,800 #6,606,224 Canadian Patent # 1,296,263 # 2,389,065

12000 GALLON OIL WATER SEPARATOR
UL–HTC–J, ACT–100–U, DOUBLE WALL

**CUSTOMER:** PSEG POWER CONNECTICUT, LLC
BRIDGEPORT COMBINED CYCLE
**PROJECT:** PROJECT–OWS #1
BRIDGEPORT, CT

**QUOTE NO:** 390270

CHK'D BY:

| SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|
| 3/16"=1'-0" | 11–29–16 | REM | 100716 |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE + OR – 1"

NOTE: ALL RIGHTS RESERVED. THIS DRAWING MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK®. HIGHLAND TANK® SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE AND LOCATION OF FITTINGS, ACCESSORIES, AND COATINGS SHOWN ON THIS DRAWING.

PSEG_BH05_105_OWS 1 Notes Dwg_Rev 1

CUSTOMER– PSEG FOSSIL LLC

MANUFACTURER– HIGHLAND TANK & MFG. CO.

MODEL– HTC–J 12,000 ACT–100–U CUSTOM

FLOW RATE– 500 GPM

HIGHLAND TANK WORK ORDER NO– 86685

HIGHLAND TANK DRAWINGS– 100716 / 100717
100718

OWS TAG NO– 5WWD–OWS–0001

NORTH OIL/WATER SEPARATOR

## PROVIDED EQUIPMENT

1. 150# F.F.S.O. FLANGE
2. ISOLATION SPOOL W/ 2" 150# RFSO FLANGE, RISER PIPE AND FLAME ARRESTOR AS SHOWN. VENT PIPE RISER COATED SAME AS OTHER OWS RISERS
3. VELOCITY HEAD DIFFUSION BAFFLE
4. WEAR PLATE
5. SEDIMENT CHAMBER
6. UNDERFLOW BAFFLE
7. SLUDGE BAFFLE
8. STRIKER PLATES
9. PARALLEL CORRUGATED PLATE COALESCER. CORELLA PVC PLATES (65" X 65" X 36") (3" PLATE SPACING)
10. OIL/WATER SEPARATOR CHAMBER
11. PETROSCREEN COALESCER MATERIAL INSTALLED W/ PULL ROD SHIPPED LOOSE (65" X 65" X 18"). 304 SS METAL SUPPORTS PROVIDED
12. STEEL TRANSFER WITH DOWNCOMER
13. 78"x48" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT–ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
14. 4"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR OIL PUMP–OUT WITH INTERNAL PVC PIPE INSTALLED & FLANGED RISER PIPE W/ FFSO FLANGE & BLIND FLANGE AT TOP. SHIPPED LOOSE
15. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEVEL SENSOR W/ RISER PIPE SHIPPED LOOSE. (2) REQUIRED
16. LIFTING LUG
17. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR VENT W/ VENT PIPING AND FLAME ARRESTOR AS SHOWN. VENT PIPES COATED W/ CHEMTHANE 3001 PRIMER/3300 FINISH
18. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEAK SENSOR W/ RISER PIPE SHIPPED LOOSE
19. 3/8" BULKHEAD
20. EFFLUENT WATER CHAMBER
21. PUMP MOUNT
22. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR EFFLUENT PUMP CONDUIT AND WIRING
23. 3"ø FNPT W/ 3"x2" NYLON BUSHING FOR EFFLUENT LEVEL SENSOR CONDUIT AND WIRING
24. 78"x30" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT–ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
25. 60"x42" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT–ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
26. OWS ID PLATE (LASER MARKED 304 STAINLESS STEEL). ATTACHED BY ADHESIVE STRIPS. SEE DETAIL–A
27. STEEL HOLD DOWN STRAPS W/ GALVANIZED TURNBUCKLES & NEOPRENE LINERS PER DRAWING 100718
28. NEMA 4X (304 SS) PUMP CONTROL & ALARM PANEL 3PH/60HZ/460V TAG NO. 5WWD–CPL–0001
29. THREE PROBE CONDUCTIVITY SENSOR WITH SUSPENDED PROBES. SEE DETAIL–B. (2) REQUIRED. TAG NO'S 5WWD–LS–0002, 5WWD–LS–0003
30. HTLP 1.5 LIQUID ONLY LEAK SENSOR W/ 60' OF CABLE **SPDTx2 SWITCHES** TAG NO. 5WWD–LS–0004
31. HTSC–2B NEMA 4X CAP FOR LEAK SENSOR
32. 150# F.F.S.O. FLANGE W/ ISOLATION SPOOL
33. (2) FLYGT CP–3127/433 SUBMERSIBLE EFFLUENT PUMP. 3PH/60HZ/460V, 500 GPM @ 30' TDH PER PUMP, 1740 RPM, 7.5 HP, X–PROOF GUIDE RAILS, BASE ELBOWS, CHECK VALVE AND INTERNAL PIPING PROVIDED. (1) 6" LINE FROM EACH PUMP TO MANIFOLD INTO (1) 8" EFFLUENT FLANGE. TAG NO'S 5WWD–P–0001A, 5WWD–P–0001B
34. (1) SET OF (6) ENM–10 FLOATS W/60' OF CABLE. SEE DETAIL–E TAG NO. 5WWD–LS–0001
35. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR GAUGE WITH STEEL PLUG
36. PUMP ID TAGS WITH SS WIRE FOR ATTACHMENT TO PUMPS. SEE DETAIL–D
37. 6" x 1/2" STIFFENER RING (1) REQUIRED

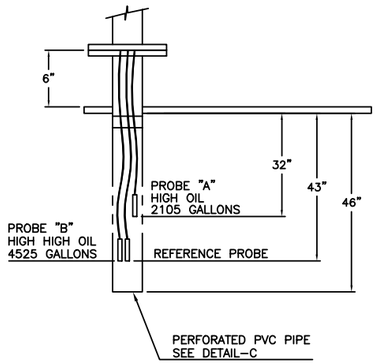
5WWD-LS-0004

## NOTES

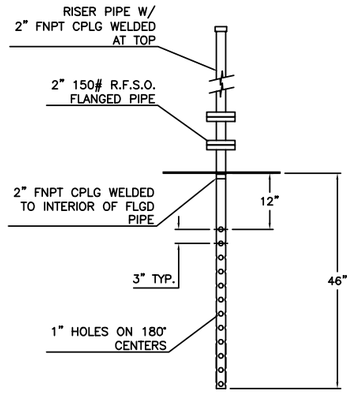
1. POLYURETHANE ACT–100–U TANK IS NOT APPROVED FOR THE STORAGE OF HEATED PRODUCTS.
2. VENT PIPING CONFIGURATION TO BE VERIFIED TO BE IN COMPLIANCE W/ AHJ BY ENGINEER OF RECORD FOR THE PROJECT.
3. 15000 VOLT SPARK TEST PROVIDED AT FACTORY.
4. CMTR'S ON MAJOR SHELL MATERIAL.
5. WELDING BY AWS D1.1 QUALIFIED WELDERS WITH UL 58 DESIGN BASIS.
6. DESIGN IS PER UL 58 TYPE I OWS WITH SHELL THICKNESS TO MEET 70" MAXIMUM BURIAL DEPTH AND MAXIMUM TOP OF TANK PRESSURE OF 350 PSF DUE TO SURFACE LOADING
7. PICTURE TO BE TAKEN OF THE VACUUM GAUGE PRIOR TO SHIPMENT
8. ONE SET OF SPARE GASKET MATERIAL FOR ALL FLANGES/MANWAY COVERS PROVIDED

NOTE: ALL RIGHTS RESERVED. THIS DRAWING MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK®. HIGHLAND TANK® SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE AND LOCATION OF FITTINGS, ACCESSORIES, AND COATINGS SHOWN ON THIS DRAWING.

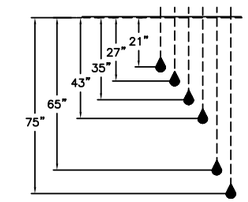
## DETAIL–A
ID PLATE DETAILS




## DETAIL–B
CONDUCTIVITY PROBES
(2) REQ.
5WWD–LS–0002
5WWD–LS–0003




## DETAIL–C
PERFORATED PIPE
(2) REQ.




## DETAIL–E
SUGGESTED ENM–10 SETTINGS
5WWD–LS–0001

OWS TAG NO– 5WWD–OWS–0001
PUMP TAG NO– 5WWD–P–0001A

PUMP A

OWS TAG NO– 5WWD–OWS–0001
PUMP TAG NO– 5WWD–P–0001B

PUMP B

## DETAIL–D
PUMP TAG DETAILS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE + OR – 1"

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.

| | |
|---|---|
| 1 | No exceptions taken, resubmit document as certified. Proceed with fabrication. |
| 2 | No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication. |
| 3 | Exceptions as noted. revise and resubmit. Proceed with fabrication inclusive of markups. |
| 4 | Exceptions as noted. revise and resubmit. Do not proceed with fabrication. |
| X 5 | Approval not required. for information / reference only. |
| 6 | Rejected. Document does not meet minimum documentation requirements. |

Vendor: Highland Tank & Mfg - S001400 No.: 100717 Rev: 1 Date Rec'd 2/14/2017

Doc. Title: NOTES / DETAILS OWS #1

Keyword: Project: Bridgeport Harbor Unit 5

Statused As Per Engineering 3/9/2017 Document No 644911-W200-0018-001 Submittal 02

## DRAWING 2 OF 3

REFERENCE DRAWING NO. 100716 FOR OWS GENERAL ARRANGEMENT DWG
REFERENCE DRAWING NO. 100718 FOR HOLD DOWN STRAPS DETAILS

## GENERAL SPECIFICATIONS

NO. REQ'D: (1)
CAPACITY: 12000 GALLONS
TYPE: UL–HTC–J, ACT–100–U, DOUBLE WALL
MATERIAL: MILD CARBON STEEL
FLOW RATE: 500 GPM
GAUGE: BASED ON 70" MAX BURIAL AND 350 PSF DUE TO SURFACE LOADING

| | INNER | OUTER |
|---|---|---|
| SHELL– | 5/16" | 1/4" |
| HEADS– | 5/16" | 1/4" |

SURFACE PREP:
SSPC NO.6 BLAST ALL EXTERIOR SURFACES
SSPC NO.10 BLAST ALL INTERIOR SURFACES

| COATING: | MATERIAL | THICKNESS |
|---|---|---|
| EXTERIOR– | BURIED–CHEMTHANE 2240 | 70 MILS |
| | ABOVE GRADE–CHEMTHANE 3300 UV | 5 MILS |
| INTERIOR– | CHEMTHANE 4200PW | 15 MILS |

CONSTRUCTION :
LAP FIT & WELD ALL INTERIOR AND EXTERIOR SEAMS
OPERATING PRESSURE : ATMOSPHERIC
ESTIMATED TOTAL DRY WEIGHT : 47,500 LBS.

HI OIL LEVEL @ 20% TANK CAPACITY : 2105 GALLONS
HI–HI OIL LEVEL @ 43% TANK CAPACITY : 4525 GALLONS
MAX. EMERGENCY SPILL @ 80% TANK CAPACITY : 8400 GALLONS
APPROVED LABELS : U.L. 2215

| | | | |
|---|---|---|---|
| 1 | –REV MAX BURIAL DEPTH<br>–REV TITLE BLOCK | 2–14–17 | REM |

REVISIONS

HIGHLAND TANK & MFG. CO. **Highland Tank**

U.S. Patent #4,722,800 #6,606,224 Canadian Patent # 1,296,263 # 2,389,065

NOTES/DETAILS

CUSTOMER: PSEG POWER CONNECTICUT, LLC
BRIDGEPORT COMBINED CYCLE
PROJECT: PROJECT–OWS #1
BRIDGEPORT, CT

QUOTE NO: 390270 CHK'D BY:

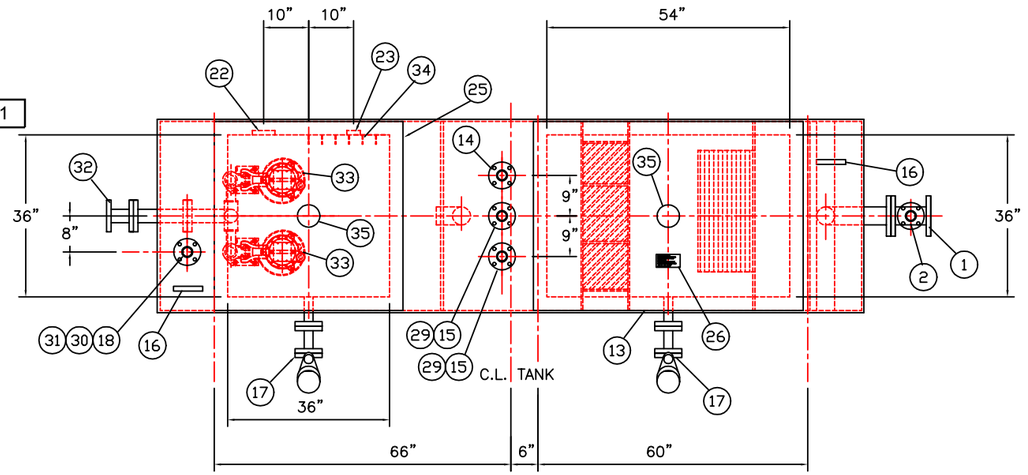
| SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|
| NTS | 11–29–16 | REM | 100717 |

NOTE :
ALL RIGHTS RESERVED. THIS DRAWING OR ANY PART THEREOF MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK.
HIGHLAND TANK SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE / LOCATION OF FITTINGS , ACCESSORIES & COATINGS SHOWN ON THIS DRAWING

PSEG_BH05_200_OWS 2 General Arrangement Dwg_Rev 1

**DRAWING 1 OF 3**

REFERENCE DRAWING NO. 100724 FOR NOTES/DETAILS
REFERENCE DRAWING NO. 100725 FOR HOLD DOWN STRAP DETAILS




C.L. HOLD DOWN STRAPS (3) REQUIRED

PLAN

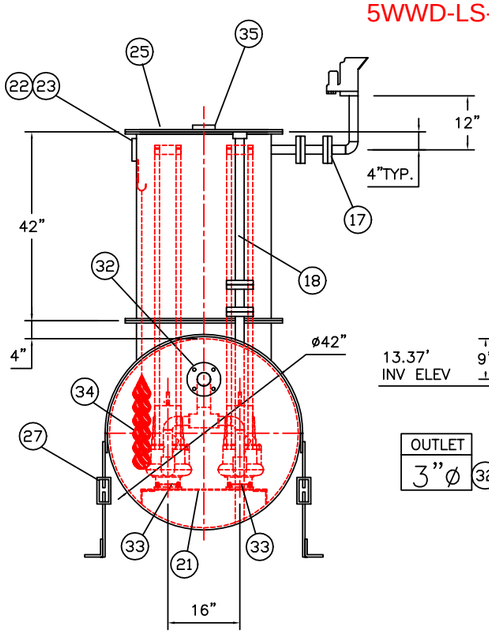
| TAG NUMBERS |
|---|
| OWS TAG NO- 5WWD-OWS-0002 |
| PUMP#1 TAG NO- 5WWD-P-0002A |
| PUMP#2 TAG NO- 5WWD-P-0002B |
| PANEL TAG NO- 5WWD-CPL-0002 |

SOUTH OIL/WATER SEPARATOR

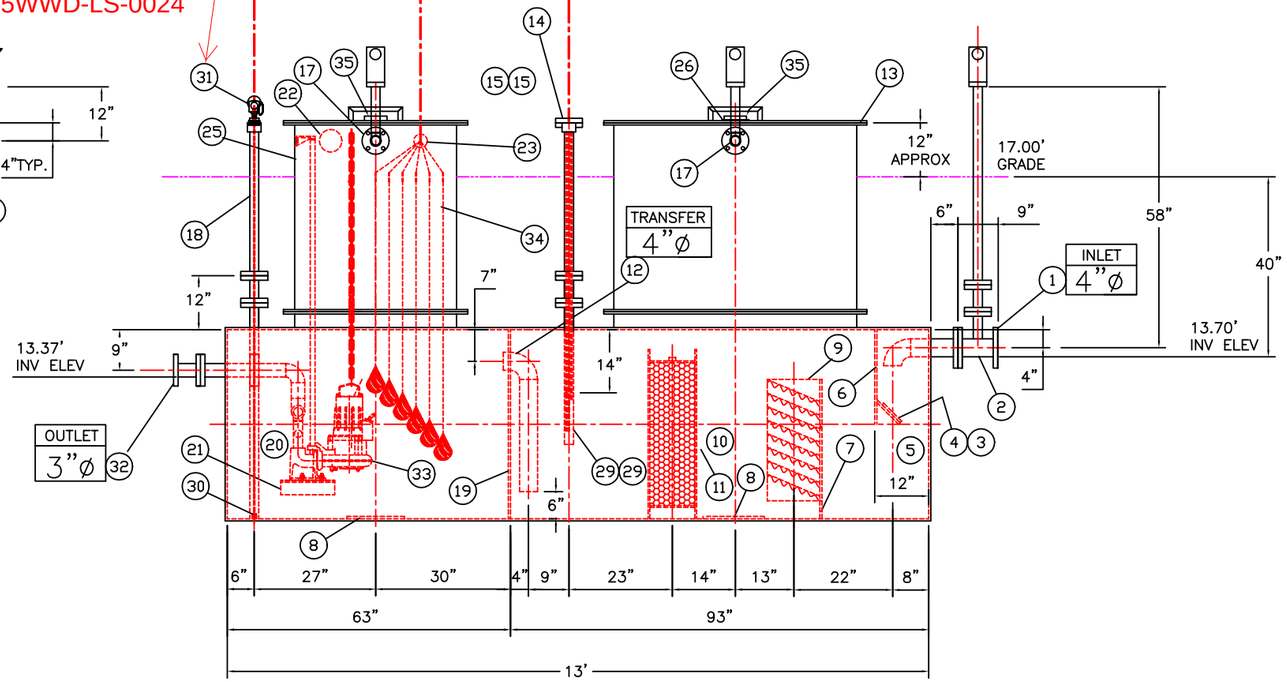
NOTE:
TOP 18" OF MANWAY EXTENSIONS, MANWAY COVERS AND TOP 18" OF RISER PIPES TOP COATED WITH CHEMTHANE 3300 UV RESISTANT WHITE COATING.

LEAK SENSOR
5WWD-LS-0024

ALL CONDUIT AND WIRING BY INSTALLER




END VIEW




ELEVATION

| | | |
|---|---|---|
| 1 | No exceptions taken, resubmit document as certified. Proceed with fabrication. | |
| 2 | No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication. | |
| 3 | Exceptions as noted. revise and resubmit. Proceed with fabrication inclusive of markups. | |
| 4 | Exceptions as noted. revise and resubmit. Do not proceed with fabrication. | |
| 5 | Approval not required. for information / reference only. | X |
| 6 | Rejected. Document does not meet minimum documentation requirements. | |

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.

Vendor: Highland Tank & Mfg - S001400 No.: 1007 23 Rev: 1 Date Rec'd 2/14/2017

Doc. Title: OWS 2 GENERAL ARRANGEMENT - 550 GALLON OIL WATER SEPARATOR UL-HTC-J, HIGHGUARD, DOUBLE WALL

Keyword: Project: Bridgeport Harbor Unit 5

Statused As Per Engineering 3/9/2017 Document No 644911-W200-0033-001 Submittal 02

| | | |
|---|---|---|
| 1 | -REV CUST PROV ELEV'S<br>-REV MH EXT'S/RISER HTS<br>-REV TITLE BLOCK | 2-15-17 REM |

Highland Tank

U.S. Patent #4,722,800 Canadian Patent # 1,296,263

550 GALLON OIL WATER SEPARATOR
UL-HTC-J,HIGHGUARD,DOUBLE WALL

**CUSTOMER:** PSEG POWER CONNECTICUT, LLC BRIDGEPORT COMBINED CYCLE
**PROJECT:** PROJECT-OWS #2 BRIDGEPORT, CT

**QUOTE NO:** 390271 **CHK'D BY:**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE + OR - 1"

| SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|
| 3/8"=1'-0" | 11-30-16 | REM | 100723 |

## PROVIDED EQUIPMENT

1. 150# F.F.S.O. FLANGE
2. ISOLATION SPOOL W/ 2" 150# RFSO FLANGE, RISER PIPE AND FLAME ARRESTOR AS SHOWN. VENT PIPE RISER COATED SAME AS OTHER OWS RISERS
3. VELOCITY HEAD DIFFUSION BAFFLE
4. WEAR PLATE
5. SEDIMENT CHAMBER
6. UNDERFLOW BAFFLE (REMOVABLE)
7. SLUDGE BAFFLE
8. STRIKER PLATES
9. PARALLEL CORRUGATED PLATE COALESCER. CORELLA PVC PLATES (27" X 27" X 12") (3" PLATE SPACING)
10. OIL/WATER SEPARATOR CHAMBER
11. PETROSCREEN COALESCER MATERIAL INSTALLED W/ PULL ROD SHIPPED LOOSE (27" X 27" X 10"). 304 SS METAL SUPPORTS PROVIDED
12. STEEL TRANSFER WITH DOWNCOMER
13. 54"x36" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT-ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
14. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR OIL PUMP-OUT WITH INTERNAL PVC PIPE INSTALLED & FLANGED RISER PIPE W/ FFSO FLANGE & BLIND FLANGE AT TOP. SHIPPED LOOSE
15. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEVEL SENSOR W/ RISER PIPE SHIPPED LOOSE. (2) REQUIRED
16. LIFTING LUG
17. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR VENT W/ VENT PIPING AND FLAME ARRESTOR AS SHOWN. VENT PIPES COATED W/ CHEMTHANE 3001 PRIMER/3300 FINISH
18. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEAK SENSOR W/ RISER PIPE SHIPPED LOOSE
19. 1/4" BULKHEAD
20. EFFLUENT WATER CHAMBER
21. PUMP MOUNT
22. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR EFFLUENT PUMP CONDUIT AND WIRING
23. 3"ø FNPT W/ 3"x2" NYLON BUSHING FOR EFFLUENT LEVEL SENSOR CONDUIT AND WIRING
24. PUMP ID TAGS WITH SS WIRE FOR ATTACHMENT TO PUMPS. SEE DETAIL-D
25. 36"x36" SQUARE MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT-ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
26. OWS ID PLATE (LASER MARKED 304 STAINLESS STEEL). ATTACHED BY ADHESIVE STRIPS. SEE DETAIL-A
27. STEEL HOLD DOWN STRAPS W/ GALVANIZED TURNBUCKLES & NEOPRENE LINERS PER DRAWING 100725
28. NEMA 4X (304 SS) PUMP CONTROL & ALARM PANEL 3PH/60HZ/460V TAG NO. 5WWD-CPL-0002
29. THREE PROBE CONDUCTIVITY SENSOR WITH SUSPENDED PROBES. SEE DETAIL-B. (2) REQUIRED. TAG NO'S 5WWD-LS-0002, 5WWD-LS-0003
30. HTLP 1.5 LIQUID ONLY LEAK SENSOR W/ 60' OF CABLE **SPDTx2 SWITCHES** TAG NO. 5WWD-LS-0004
31. HTSC-2B NEMA 4X CAP FOR LEAK SENSOR 5WWD-LS-0024
32. 150# F.F.S.O. FLANGE W/ ISOLATION SPOOL
33. (2) FLYGT CP-3045/254 SUBMERSIBLE EFFLUENT PUMP. 3PH/60HZ/460V, 57 GPM @ 16' TDH PER PUMP, 3390 RPM, 1.8 HP, X-PROOF GUIDE RAILS, BASE ELBOWS, CHECK VALVE AND INTERNAL PIPING PROVIDED. (1) 2" LINE FROM EACH PUMP TO MANIFOLD INTO (1) 3" EFFLUENT FLANGE. TAG NO'S 5WWD-P-0002A, 5WWD-P-0002B
34. (1) SET OF (6) ENM-10 FLOATS W/60' OF CABLE. SEE DETAIL-E TAG NO. 5WWD-LS-0001
35. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR GAUGE WITH STEEL PLUG

## NOTES

1. POLYURETHANE ACT-100-U TANK IS NOT APPROVED FOR THE STORAGE OF HEATED PRODUCTS.
2. VENT PIPING CONFIGURATION TO BE VERIFIED TO BE IN COMPLIANCE W/ AHJ BY ENGINEER OF RECORD FOR THE PROJECT.
3. 15000 VOLT SPARK TEST PROVIDED AT FACTORY.
4. CMTR'S ON MAJOR SHELL MATERIAL.
5. WELDING BY AWS D1.1 QUALIFIED WELDERS WITH UL 58 DESIGN BASIS.
6. DESIGN IS PER UL 58 TYPE I OWS WITH SHELL THICKNESS TO MEET 34" MAXIMUM BURIAL DEPTH AND MAXIMUM TOP OF TANK PRESSURE OF 350 PSF DUE TO SURFACE LOADING
7. PICTURE TO BE TAKEN OF THE VACUUM GAUGE PRIOR TO SHIPMENT
8. ONE SET OF SPARE GASKET MATERIAL FOR ALL FLANGES/MANWAY COVERS PROVIDED

NOTE: ALL RIGHTS RESERVED. THIS DRAWING MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK®. HIGHLAND TANK® SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE AND LOCATION OF FITTINGS, ACCESSORIES, AND COATINGS SHOWN ON THIS DRAWING.

PSEG_BH05_205_OWS 2 Notes Dwg_Rev 1

CUSTOMER- PSEG FOSSIL LLC

MANUFACTURER- HIGHLAND TANK & MFG. CO.

MODEL- HTC-J 550 ACT-100-U CUSTOM

FLOW RATE- 50 GPM

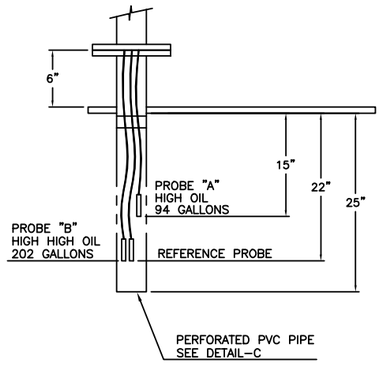
HIGHLAND TANK WORK ORDER NO- 86686

HIGHLAND TANK DRAWINGS- 100723 / 100724 100725

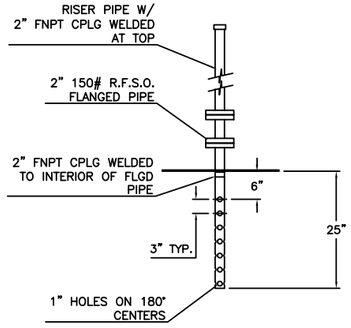
OWS TAG NO- 5WWD-OWS-0002

SOUTH OIL/WATER SEPARATOR

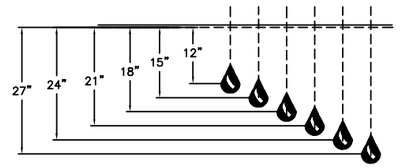
## DETAIL-A
ID PLATE DETAILS




## DETAIL-B
CONDUCTIVITY PROBES (2) REQ.
5WWD-LS-0002
5WWD-LS-0003




## DETAIL-C
PERFORATED PIPE (2) REQ.




## DETAIL-E
SUGGESTED ENM-10 SETTINGS
5WWD-LS-0001

## DRAWING 2 OF 3

REFERENCE DRAWING NO. 100723 FOR OWS GENERAL ARRANGEMENT DWG
REFERENCE DRAWING NO. 100725 FOR HOLD DOWN STRAPS DETAILS

## GENERAL SPECIFICATIONS

NO. REQ'D: (1)
CAPACITY: 550 GALLONS
TYPE: UL-HTC-J, ACT-100-U, DOUBLE WALL
MATERIAL: MILD CARBON STEEL
FLOW RATE: 50 GPM
GAUGE: BASED ON 34" MAX BURIAL AND 350 PSF DUE TO SURFACE LOADING

| | INNER | OUTER |
|---|---|---|
| SHELL- | 1/4" | 1/4" |
| HEADS- | 1/4" | 1/4" |

SURFACE PREP:
SSPC NO.6 BLAST ALL EXTERIOR SURFACES
SSPC NO.10 BLAST ALL INTERIOR SURFACES

| COATING: | MATERIAL | THICKNESS |
|---|---|---|
| EXTERIOR- | BURIED-CHEMTHANE 2240 | 70 MILS |
| | ABOVE GRADE-CHEMTHANE 3300 UV | 5 MILS |
| INTERIOR- | CHEMTHANE 4200PW | 15 MILS |

CONSTRUCTION :
LAP FIT & WELD ALL INTERIOR AND EXTERIOR SEAMS
OPERATING PRESSURE : ATMOSPHERIC
ESTIMATED TOTAL DRY WEIGHT : 10,000 LBS.

HI OIL LEVEL @ 20% TANK CAPACITY : 94 GALLONS
HI-HI OIL LEVEL @ 43% TANK CAPACITY : 202 GALLONS
MAX. EMERGENCY SPILL @ 80% TANK CAPACITY : 376 GALLONS
APPROVED LABELS : U.L. 2215

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design dr awing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contr act.

| | | |
|---|---|---|
| 1 | | No exceptions taken, resubmit document as certified. Proceed with fabr ication. |
| 2 | | No exceptions taken, accepted as final, resubmittal not required. Pr oceed with fabr ication. |
| 3 | | Exceptions as noted. revise and resubmit. Proceed with fabrication inclusive of mar kups. |
| 4 | | Exceptions as noted. revise and resubmit. Do not proceed with fabr ication. |
| 5 | X | Approval not required. for information / reference only. |
| 6 | | Rejected. Document does not meet minimum documentation r equir ements. |

Vendor: Highland Tank & Mfg - S001400 No.: 100724 Rev: 1 Date Rec'd 2/14/2017
Doc. Title: NOTES / DETAILS OWS#2
Keywor d: Project: Bridgeport Harbor Unit 5
Statused As Per Engineering 3/9/2017 Document No 644911-W200-0020-001 Submittal 02

OWS TAG NO- 5WWD-OWS-0002
PUMP TAG NO- 5WWD-P-0002A

PUMP A

OWS TAG NO- 5WWD-OWS-0002
PUMP TAG NO- 5WWD-P-0002B

PUMP B

## DETAIL-D
PUMP TAG DETAILS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE + OR - 1"

| | | | |
|---|---|---|---|
| 1 | -REV MAX BURIAL DEPTH<br>-REV TITLE BLOCK | 2-15-17 | REM |

## REVISIONS

HIGHLAND TANK & MFG CO. **Highland Tank**

U.S. Patent #4,722,800 #6,606,224 Canadian Patent # 1,296,263 # 2,389,065

# NOTES / DETAILS

CUSTOMER: PSEG POWER CONNECTICUT, LLC
PROJECT: BRIDGEPORT COMBINED CYCLE PROJECT-OWS #2 BRIDGEPORT, CT

QUOTE NO: 390271 CHK'D BY:

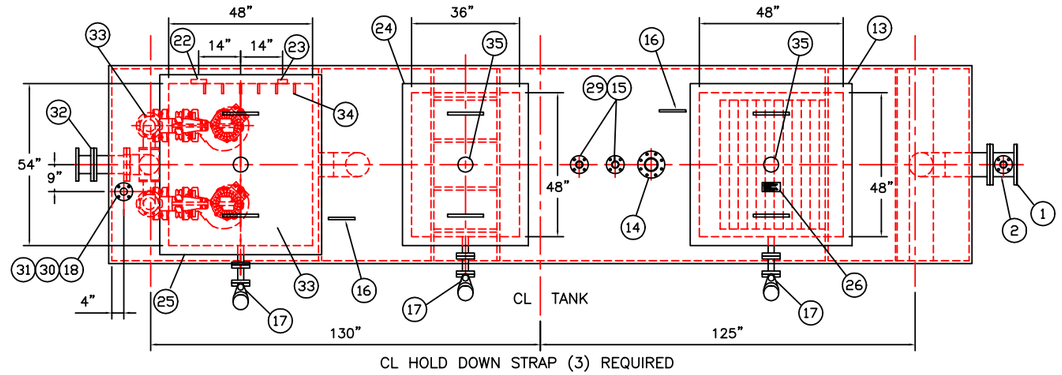
| SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|
| NTS | 11-29-16 | REM | 100724 |

NOTE :
ALL RIGHTS RESERVED. THIS DRAWING OR ANY PART THEREOF MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK.
HIGHLAND TANK SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE / LOCATION OF FITTINGS , ACCESSORIES & COATINGS SHOWN ON THIS DRAWING

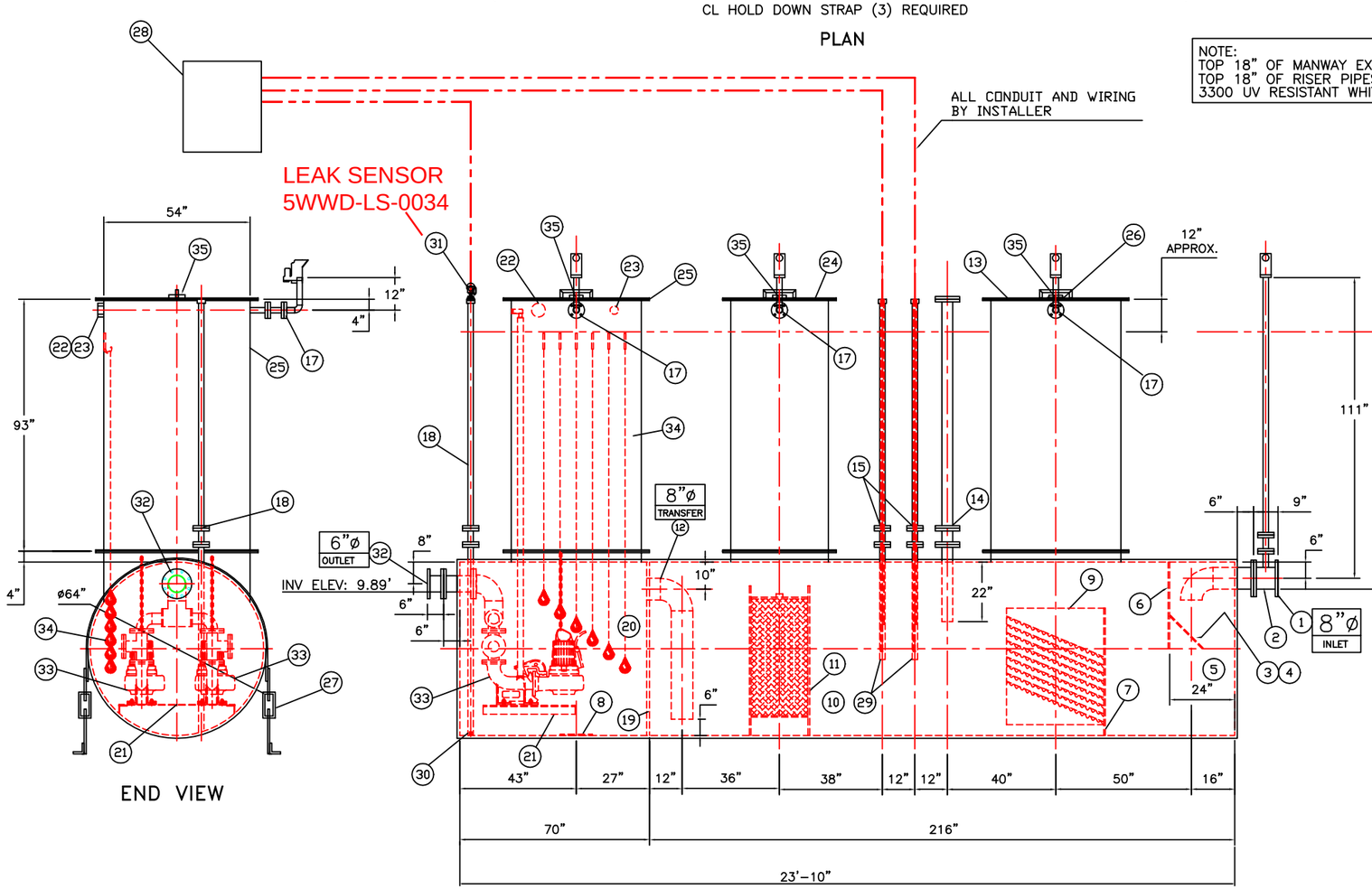
PSEG_BH05_300_OWS 3 General Arrangement Dwg_Rev 1

DRAWING 1 OF 3

REFERENCE DRAWING NO. 100749 FOR NOTES/DETAILS
REFERENCE DRAWING NO. 100750 FOR HOLD DOWN STRAP DETAILS




PLAN




END VIEW

ELEVATION

NOTE:
TOP 18" OF MANWAY EXTENSIONS, MANWAY COVERS AND TOP 18" OF RISER PIPES TOP COATED WITH CHEMTHANE 3300 UV RESISTANT WHITE COATING.

## TAG NUMBERS

OWS TAG NO- 5WWD-OWS-0003

PUMP#1 TAG NO- 5WWD-P-0003A

PUMP#2 TAG NO- 5WWD-P-0003B

PANEL TAG NO- 5WWD-CPL-0003

EAST OIL/WATER SEPARATOR

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.

| | | |
|---|---|---|
| 1 | | No exceptions taken, resubmit document as certified. Proceed with fabrication. |
| 2 | | No exceptions taken, accepted as final, resubmittal not required. Proceed with fabrication. |
| 3 | | Exceptions as noted. revise and resubmit. Proceed with fabrication inclusive of markups. |
| 4 | | Exceptions as noted. revise and resubmit. Do not proceed with fabrication. |
| 5 | X | Approval not required. for information / reference only. |
| 6 | | Rejected. Document does not meet minimum documentation requirements. |

Vendor: Highland Tank & Mfg - S001400 No.: 1007 48 Rev: 1 Date Rec'd 2/14/2017

Doc. Title: OWS 3 GENERAL ARRANGEMENT - 3000 GALLON OIL WATER SEPARATOR UL-HTC-J, HIGHGUARD, DOUBLE WALL

Keyword: Project: Bridgeport Harbor Unit 5

Statused As Per Engineering 3/9/2017 | Document No 644911-W200-0034-001 | Submittal 02

| | | | |
|---|---|---|---|
| 1 | -REV CUST PROV ELEV'S<br>-REV MH EXT'S/RISER HTS<br>-REV TITLE BLOCK | 2-15-17 | REM |

REVISIONS

Highland Tank

U.S. Patent #4,722,800 #6,606,224 Canadian Patent # 1,296,263 # 2,389,065

3000 GALLON OIL WATER SEPARATOR
UL-HTC-J, HIGHGUARD, DOUBLE WALL

CUSTOMER: PSEG POWER CONNECTICUT, LLC
PROJECT: BRIDGEPORT COMBINED CYCLE PROJECT-OWS #3 BRIDGEPORT, CT

QUOTE NO: 390272

CHK'D BY:

| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE + OR - 1' | SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|---|
| | 3/8"=1'-0" | 12-1-16 | REM | 100748 |

PSEG_BH05_305_OWS 3 Notes Dwg_Rev 1

## PROVIDED EQUIPMENT

1. 150# F.F.S.O. FLANGE
2. ISOLATION SPOOL W/ 2" 150# RFSO FLANGE, RISER PIPE AND FLAME ARRESTOR AS SHOWN. VENT PIPE RISER COATED SAME AS OTHER OWS RISERS
3. VELOCITY HEAD DIFFUSION BAFFLE
4. WEAR PLATE
5. SEDIMENT CHAMBER
6. UNDERFLOW BAFFLE
7. SLUDGE BAFFLE
8. STRIKER PLATES
9. PARALLEL CORRUGATED PLATE COALESCER. CORELLA PVC PLATES (43" X 43" X 36") (3" PLATE SPACING)
10. OIL/WATER SEPARATOR CHAMBER
11. PETROSCREEN COALESCER MATERIAL INSTALLED W/ PULL ROD SHIPPED LOOSE (43 X 43" X 21"). 304 SS METAL SUPPORTS PROVIDED
12. STEEL TRANSFER W/ DOWNCOMER
13. 48"x48" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT-ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
14. 4"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR OIL PUMP-OUT WITH INTERNAL PVC PIPE INSTALLED & FLANGED RISER PIPE W/ FFSO FLANGE & BLIND FLANGE AT TOP. SHIPPED LOOSE
15. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEVEL SENSOR W/ RISER PIPE SHIPPED LOOSE. (2) REQUIRED
16. LIFTING LUG
17. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR VENT W/ VENT PIPING AND FLAME ARRESTOR AS SHOWN. VENT PIPES COATED W/ CHEMTHANE 3001 PRIMER/3300 FINISH
18. 2"ø 150# RFSO FLANGE W/ ISOLATION SPOOL FOR LEAK SENSOR W/ RISER PIPE SHIPPED LOOSE
19. 1/4" BULKHEAD
20. EFFLUENT WATER CHAMBER
21. PUMP MOUNT
22. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR EFFLUENT PUMP CONDUIT AND WIRING
23. 3"ø FNPT W/ 3"x2" NYLON BUSHING FOR EFFLUENT LEVEL SENSOR CONDUIT AND WIRING
24. 36"x48" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT-ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
25. 54"x48" RECTANGULAR MANWAY WITH CLOSED CELL SPONGE GASKET. BOLT-ON EXTENSION SHIPPED LOOSE. LIFTING HANDLES ON COVER
26. OWS ID PLATE (LASER MARKED 304 STAINLESS STEEL). ATTACHED BY ADHESIVE STRIPS. SEE DETAIL-A
27. STEEL HOLD DOWN STRAPS W/ GALVANIZED TURNBUCKLES & NEOPRENE LINERS PER DRAWING 100750.
28. NEMA 4X (304 SS) PUMP CONTROL & ALARM PANEL 3PH/60HZ/460V TAG NO. 5WWD-CPL-0003
29. THREE PROBE CONDUCTIVITY SENSOR WITH SUSPENDED PROBES. SEE DETAIL-B. (2) REQUIRED. TAG NO'S 5WWD-LS-0002, 5WWD-LS-0003
30. HTLP 1.5 LIQUID ONLY LEAK SENSOR W/ 60' OF CABLE **SPDTX2 SWITCHES** TAG NO. 5WWD-LS-0004
31. HTSC-2B NEMA 4X CAP FOR LEAK SENSOR
32. 150# F.F.S.O. FLANGE W/ ISOLATION SPOOL
33. (2) FLYGT NP-3102/463 SUBMERSIBLE EFFLUENT PUMP. 3PH/60HZ/460V, 325 GPM @ 33' TDH PER PUMP, 1745 RPM, 5 HP, X-PROOF GUIDE RAILS, BASE ELBOWS, CHECK VALVE AND INTERNAL PIPING PROVIDED. (1) 4" LINE FROM EACH PUMP TO MANIFOLD INTO (1) 6" EFFLUENT FLANGE. TAG NO'S 5WWD-P-0003A, 5WWD-P-0003B
34. (1) SET OF (6) ENM-10 FLOATS W/60' OF CABLE. SEE DETAIL-E TAG NO. 5WWD-LS-0001
35. 5"ø FNPT W/ 5"x4" NYLON BUSHING FOR GAUGE WITH STEEL PLUG
36. PUMP ID TAGS WITH SS WIRE FOR ATTACHMENT TO PUMPS. SEE DETAIL-D

5WWD-LS-0034

## NOTES

1. POLYURETHANE ACT-100-U TANK IS NOT APPROVED FOR THE STORAGE OF HEATED PRODUCTS.
2. VENT PIPING CONFIGURATION TO BE VERIFIED TO BE IN COMPLIANCE W/ AHJ BY ENGINEER OF RECORD FOR THE PROJECT.
3. 15000 VOLT SPARK TEST PROVIDED AT FACTORY.
4. CMTR'S ON MAJOR SHELL MATERIAL.
5. WELDING BY AWS D1.1 QUALIFIED WELDERS WITH UL 58 DESIGN BASIS.
6. DESIGN IS PER UL 58 TYPE I OWS WITH SHELL THICKNESS TO MEET 85" MAXIMUM BURIAL DEPTH AND MAXIMUM TOP OF TANK PRESSURE OF 350 PSF DUE TO SURFACE LOADING
7. PICTURE TO BE TAKEN OF THE VACUUM GAUGE PRIOR TO SHIPMENT
8. ONE SET OF SPARE GASKET MATERIAL FOR ALL FLANGES/MANWAY COVERS PROVIDED

NOTE: ALL RIGHTS RESERVED. THIS DRAWING MUST NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF HIGHLAND TANK®. HIGHLAND TANK® SHALL BE RESPONSIBLE ONLY FOR ITEMS INDICATED ON THIS FABRICATION DRAWING UNLESS OTHERWISE NOTED. CUSTOMER IS RESPONSIBLE FOR VERIFYING CORRECTNESS OF SIZE AND LOCATION OF FITTINGS, ACCESSORIES, AND COATINGS SHOWN ON THIS DRAWING.

CUSTOMER- PSEG FOSSIL LLC

MANUFACTURER- HIGHLAND TANK & MFG. CO.

MODEL- HTC-J 3,000 ACT-100-U CUSTOM

FLOW RATE- 275 GPM

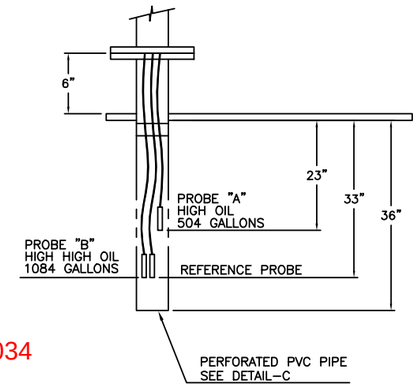
HIGHLAND TANK WORK ORDER NO- 86687

HIGHLAND TANK DRAWINGS- 100748 / 100749 100750

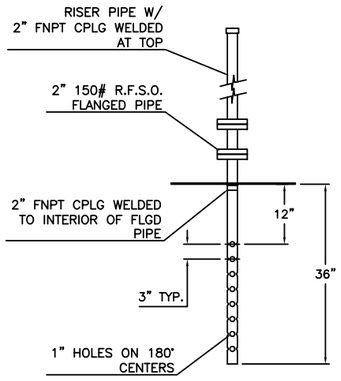
OWS TAG NO- 5WWD-OWS-0003

EAST OIL/WATER SEPARATOR

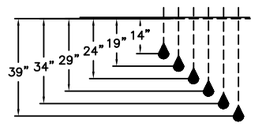
## DETAIL-A
ID PLATE DETAILS




## DETAIL-B
CONDUCTIVITY PROBES
(2) REQ.
5WWD-LS-0002
5WWD-LS-0003




## DETAIL-C
PERFORATED PIPE
(2) REQ.




## DETAIL-E
SUGGESTED ENM-10 SETTINGS
5WWD-LS-0001

OWS TAG NO- 5WWD-OWS-0003
PUMP TAG NO- 5WWD-P-0003A

PUMP A

OWS TAG NO- 5WWD-OWS-0003
PUMP TAG NO- 5WWD-P-0003B

PUMP B

## DETAIL-D
PUMP TAG DETAILS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE + OR - 1"

## DRAWING 2 OF 3

REFERENCE DRAWING NO. 100748 FOR OWS GENERAL ARRANGEMENT DWG
REFERENCE DRAWING NO. 100750 FOR HOLD DOWN STRAPS DETAILS

## GENERAL SPECIFICATIONS

NO. REQ'D: (1)
CAPACITY: 3000 GALLONS
TYPE: UL-HTC-J, ACT-100-U, DOUBLE WALL
MATERIAL: MILD CARBON STEEL
FLOW RATE: 275 GPM
GAUGE: BASED ON 85" MAX BURIAL AND 350 PSF DUE TO SURFACE LOADING

| | INNER | OUTER |
|---|---|---|
| SHELL- | 1/4" | 1/4" |
| HEADS- | 1/4" | 1/4" |

SURFACE PREP:
SSPC NO.6 BLAST ALL EXTERIOR SURFACES
SSPC NO.10 BLAST ALL INTERIOR SURFACES

| COATING: | MATERIAL | THICKNESS |
|---|---|---|
| EXTERIOR- | BURIED-CHEMTHANE 2240 | 70 MILS |
| | ABOVE GRADE-CHEMTHANE 3300 UV | 5 MILS |
| INTERIOR- | CHEMTHANE 4200PW | 15 MILS |

CONSTRUCTION :
LAP FIT & WELD ALL INTERIOR AND EXTERIOR SEAMS
OPERATING PRESSURE : ATMOSPHERIC
ESTIMATED TOTAL DRY WEIGHT : 21,500 LBS.

HI OIL LEVEL @ 20% TANK CAPACITY : 504 GALLONS
HI-HI OIL LEVEL @ 43% TANK CAPACITY : 1084 GALLONS
MAX. EMERGENCY SPILL @ 80% TANK CAPACITY : 2016 GALLONS
APPROVED LABELS : U.L. 2215

| | | | |
|---|---|---|---|
| 1 | -REV MAX BURIAL DEPTH<br>-REV TITLE BLOCK | 2-15-17 | REM |

REVISIONS

HIGHLAND TANK & MFG CO. **Highland Tank**

U.S. Patent #4,722,800 #6,606,224 Canadian Patent # 1,296,263 # 2,389,065

NOTES / DETAILS

CUSTOMER: PSEG POWER CONNECTICUT, LLC
BRIDGEPORT COMBINED CYCLE
PROJECT: PROJECT-OWS #3
BRIDGEPORT, CT

QUOTE NO: 390272

CHK'D BY:

| SCALE: | DATE: | DWG. BY: | DWG. NO.: |
|---|---|---|---|
| NTS | 11-30-16 | REM | 100749 |

SNC·LAVALIN

Vendor's drawing review for conformity with specifications and design dr awing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contr act.

| | | |
|---|---|---|
| 1 | | No exceptions taken, resubmit document as certified. Proceed with fabr ication. |
| 2 | | No exceptions taken, accepted as final, resubmittal not required. Pr oceed with fabr ication. |
| 3 | | Exceptions as noted, revise and resubmit. Proceed with fabrication inclusive of mar kups. |
| 4 | | Exceptions as noted. revise and resubmit. Do not proceed with fabr ication. |
| 5 | X | Approval not required. for information / reference only. |
| 6 | | Rejected. Document does not meet minimum documentation r equir ements. |

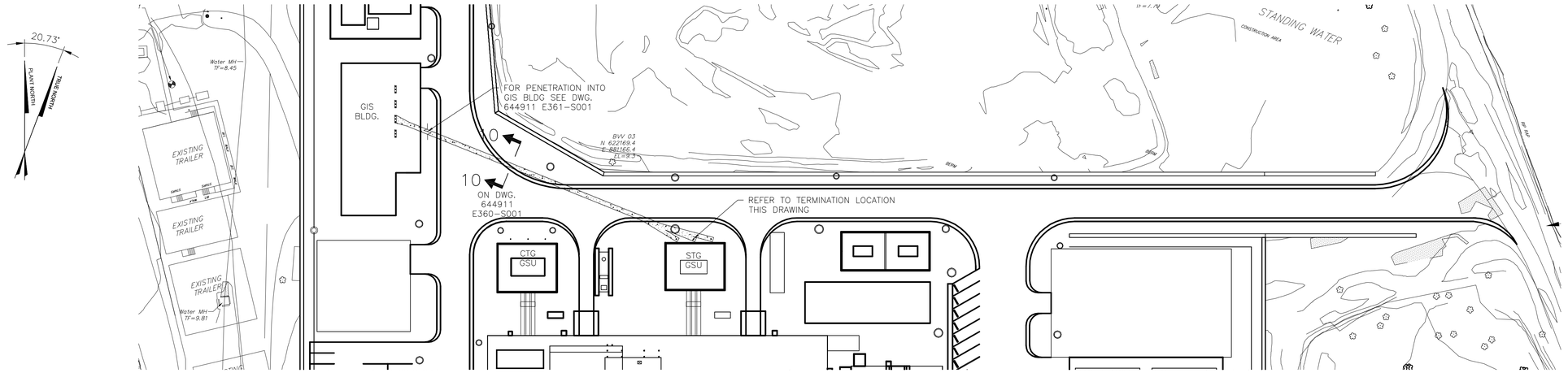
Vendor: Highland Tank & Mfg - S001400 No.: 100749 Rev: 1 Date Rec'd 2/14/2017
Doc. Title: NOTES / DETAILS OWS #3
Keywor d: Project: Bridgeport Harbor Unit 5
Statused As Per Engineering 3/9/2017 Document No 644911-W200-0022-001 Submittal 02

## Exhibit 5 Offsite Utility Underground Design (routing on Henry and Russell Streets)

| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911 E356-S001 | 4 | 345KV Underground Transmission Duct Bank Plan & Profile GIS Bldg. To STG GSU |

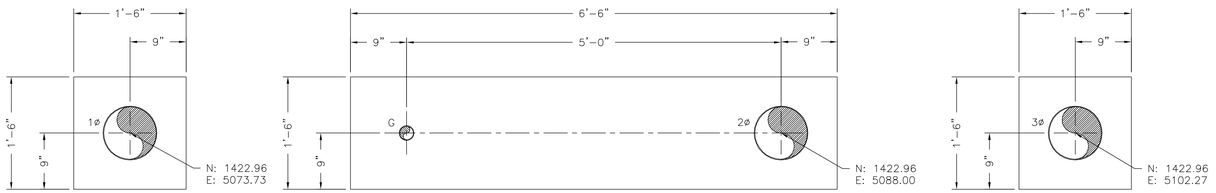
**Henry Street Water Main Relocation Construction Drawing Set – Cover Sheet plus Sheets 1 thru 6; prepared by Snyder Civil Engineering LLC Revision D all sheets**

| | | |
|---|---|---|
| 644911 C350-S001 | 1 | 345KV Underground Transmission Fence Plan SHT 1 of 2 |
| 644911 C351-S001 | 1 | 345KV Underground Transmission Sawcut / Surfacing Plan SHT 1 |
| 644911 C352-S001 | 1 | 345KV Underground Transmission Storm Drain Relocation Plan SHT 1 |
| 644911 C353-S001 | 0 | 345KV Underground Transmission Electrical Duct Bank Location SHT 1 of 2 |
| 644911 C353-S002 | 0 | 345KV Underground Transmission Electrical Duct Bank Location SHT 2 of 2 |
| 644911 E351-S001 | 4 | 345KV Underground Transmission Overall Plan |
| 644911 E353-S001 | 5 | 345KV Underground Transmission Plan & Profile Singer Sub to GIS Bldg. SHT 1 of 2 |
| 644911 E353-S002 | 4 | 345KV Underground Transmission Plan & Profile Singer Sub to GIS Bldg. SHT 2 of 2 |
| 644911 E354-S001 | 4 | 345KV Underground Transmission Conduit Profile Singer Sub to GIS Bldg. |
| 644911 E355-S001 | 4 | 345KV Underground Transmission Duct Bank Plan & Profile GIS Bldg. to CTG GSU |



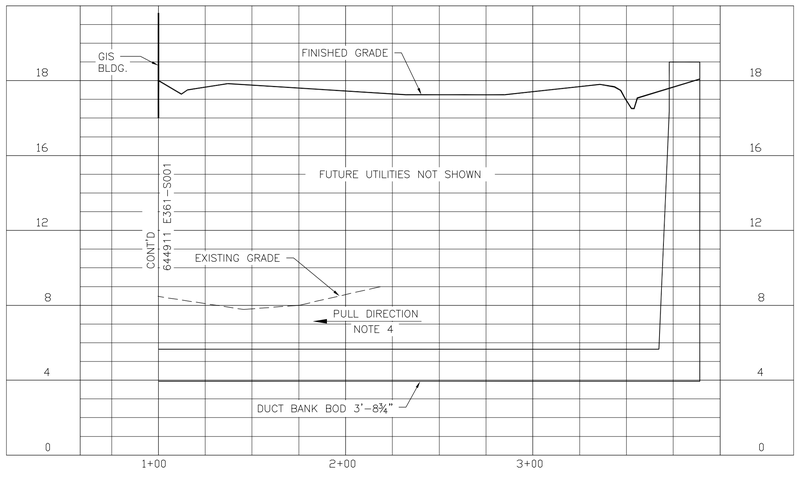

PLAN

SCALE: 1"=50'-0"

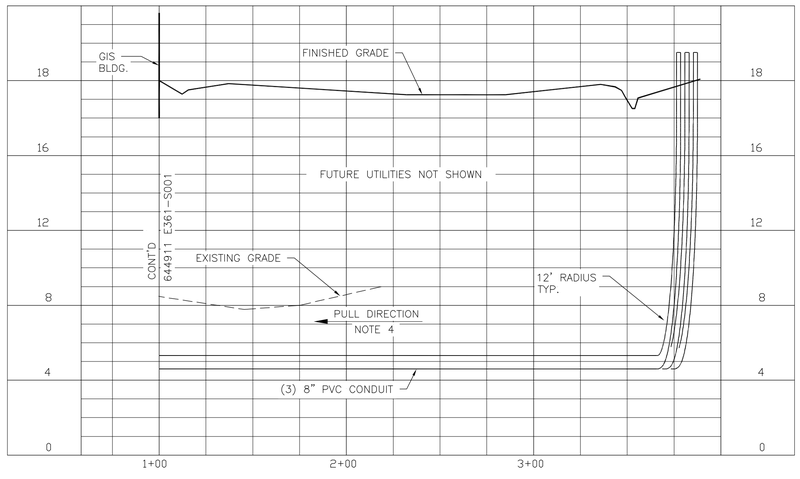



## STG GSU 345kV DUCT TERMINATION LOCATIONS

SCALE: 1"=1'-0"




PROFILE OF DUCT BANK FOR GIS BUILDING TO STG GSU




PROFILE OF CONDUIT FOR GIS BUILDING TO STG GSU

LEGENDS/SYMBOL KEYS:

DESIGN NOTES:

1. CABLE ENTRY INTO SINGER SUBSTATION SHALL USE EXISTING 8" CONDUITS ROUTED UNDER THE OPERATING FLOOR.
2. ELEVATIONS ARE BASED ON NAVD 88.
3. MINIMUM BENDING RADIUS FOR 2-INCH DUCT IS 24 INCHES. MINIMUM BENDING RADIUS FOR 4-INCH DUCT IS 48 INCHES. MINIMUM BENDING RADIUS FOR 8-INCH DUCT IS 10.5 FEET U.O.N.
4. DIRECTION OF BELL AN SPIGOTS ARE CRITICAL TO CABLE INSTALL. ALIGN AS SHOWN ON DWG. 644911 E360-S002.
5. ALL 8" CONDUIT BENDS SHALL BE FACTORY BENDS.

REFERENCES:

644911 E350-S001 GENERAL NOTES AND REFERENCES
644911 E360-S002 DUCT BANK DETAILS 2
644911 E361-S001 GIS BUILDING INSTALLATION PLAN

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 3 | 10/16/17 | | REVISED PER UI COMMENTS | TW | CD | RM | JG | BM | PS |
| 2 | 07/28/17 | | REVISED DUCTBANK | CD | JG | BM | DL | LA | SO |
| 1 | 06/29/17 | | REVISED DUCTBANK PLAN | CD | JG | BM | DL | LA | SO |
| 0 | 04/18/17 | | ISSUED FOR PERMITS | TW | RM | JG | BM | JS | |

REVISION

RCM Technologies
Energy Services

SNC•LAVALIN
CONSTRUCTORS INC.

PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

BRIDGEPORT 05
345KV UNDERGROUND TRANSMISSION
DUCT BANK PLAN AND PROFILE
GIS BLDG TO STG GSU

STANDARDS DESIGN-CIVIL GENERAL

DWG SCALE: N.T.S.

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| REVIEWED (ENGR RCMT) | REVIEWED (PROJ ENGR RCMT) | APPROVED (PRINCIPAL RCMT) |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.

644911 E356-S001 | 4

# HENRY STREET WATER MAIN RELOCATION

## BRIDGEPORT, CT

## *CONSTRUCTION DRAWING*

### GENERAL NOTES:

1. BASE MAPPING WAS PREPARED USING THE DRAWING TITLED:
   A. "MAP SHOWING LOCATION AND DATE FROM TEST PITS PREPARED FOR PSEG HENRY STREET BRIDGEPORT, CONNECTICUT" PREPARED BY THE BONGIOVANNI GROUP, INC., DATED 5-01-17, PROVIDED BY BGI IN AUTOCAD FORMAT

2. REFERENCE FOR THE LOCATION OF SUBSURFACE OR UNDERGROUND UTILITIES AND STRUCTURES SHOWN ON THE DRAWINGS IS BASED ON INFORMATION PROVIDED BY THE FOLLOWING:

   ELECTRIC - BASE MAPPING AND DRAWING PROVIDED BY PSEG
   STORM DRAINAGE - BASE MAPPING
   WATER - BASE MAPPING AND MAPS PROVIDED BY AWC
   GAS - BASE MAPPING AND MAPS PROVIDED BY SOUTHERN CONNECTICUT GAS CO
   COMMUNICATIONS - BASE MAPPING
   SANITARY SEWER - BASE MAPPING AND MAPS PROVIDED BY THE WPCA

3. THE LOCATION OF ALL SUBSURFACE OR UNDERGROUND UTILITIES AND STRUCTURES INCLUDING BUT NOT LIMITED TO PIPES, CABLES AND CONDUITS ARE NOT GUARANTEED TO BE EXACT, NOR IS IT GUARANTEED THAT ALL UNDERGROUND OR SUBSURFACE ITEMS ARE SHOWN.

4. MINIMUM WATER MAIN SANITARY INSTALLATION CLEARANCES ARE LISTED AS FOLLOWS:

   FOR WATER MAINS INSTALLED BELOW SANITARY SEWERS OR STORM DRAINS - 18" VERTICAL CLEARANCE

   FOR WATER MAINS INSTALLED ABOVE SANITARY SEWERS OR STORM DRAINS - 12" VERTICAL CLEARANCE

   IF MINIMUM INSTALLATION CLEARANCES CANNOT BE MET, THE CONTRACTOR SHALL:
   - NOTIFY THE ENGINEER
   - PROVIDE A WATER TIGHT SEAL AT JOINTS WITHIN 10' OF THE CROSSING USING A PIPE JOINT REPAIR CLAMP OR MECHANICAL JOINT
   - INSTALL A 2" RIGID INSULATION PROTECTIVE BARRIER BETWEEN THE WATER MAIN AND SEWER OR STORM DRAIN

5. ALL SURFACE RESTORATION INCLUDING PAVEMENT, CURBING, LANDSCAPING, PLANTING AND TREE REPLACEMENT SHALL BE COORDINATED WITH THE PROPERTY OWNERS AND THE TOWN OF BRIDGEPORT.

6. ALL VALVES SHALL BE OPEN RIGHT (OTR). ALL HYDRANTS SHALL BE OPEN LEFT (OTL).

7. THE CONTRACTOR SHALL USE MJ SOLID SLEEVES WHERE THE DIAMETER RANGE PERMITS AS THE PRIMARY MEANS OF CONNECTION. RESTRAINED HYMAX COUPLINGS MAY BE USED IF CONNECTION DIAMETERS ARE BEYOND THE RANGE OF MJ SOLID SLEEVES (PER APPROVAL OF AWC).

8. ALL WORK SHALL BE COORDINATED WITH AQUARION WATER COMPANY AND PUBLIC SERVICE ENTERPRISE GROUP.

9. ALL WATER MAIN MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISION OF THE AQUARION WATER COMPANY STANDARD SPECIFICATIONS FOR PIPELINE PROJECTS.

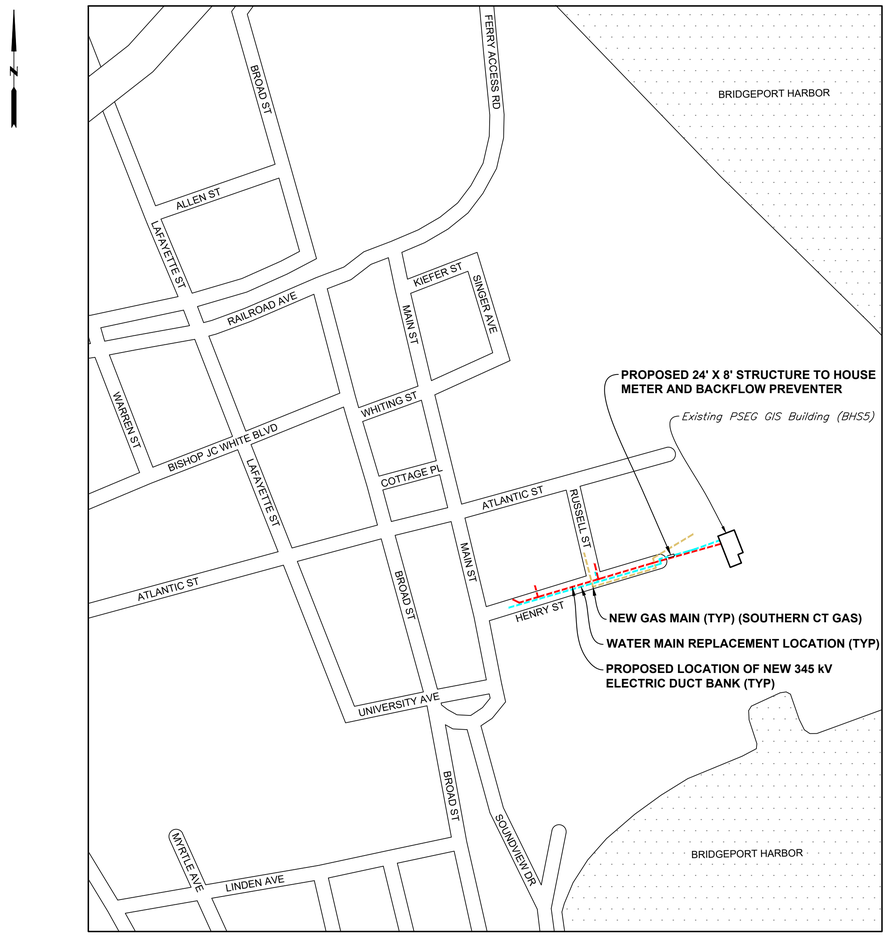
10. ALL GASKETS SHALL BE NITRILE RUBBER.

### DISCLAIMER:

THESE DRAWINGS SHALL SERVE AS WATER MAIN DESIGN PLANS ONLY. PROPOSED GAS AND ELECTRICAL DESIGN IS BY OTHERS AND SHOWN IN SCHEMATIC LOCATIONS FOR BIDDING USE ONLY.

### GAS MAIN INSTALLATION NOTES:

1. PIPE SHALL BE INSTALLED WITH A MINIMUM OF 3 FEET OF COVER WITH 1 FOOT OF SAND PADDING. WARNING TAPE SHALL BE PLACED ABOVE THE PIPE AT A DEPTH OF 1 FOOT.
2. ESTIMATED LENGTH OF 16" PIPE IS 708 LF OF 16" API5L.469 W.T. PSL2. ALL WELDS 100% X-RAY. ALL PIPING TO BE PRESSURE TESTED TO MINIMUM 900 PSIG FOR 8 HOURS (USING $N_2$).
3. REGARDING THE 16" CROSSING OF RE-CIRCULATION COOLING PIPES - THIS DESIGN TO BE AGREED ON BETWEEN SCG AND PSEG.




### SHEET LAYOUT

SCALE: 1" = 250'

0' 250' 500'

| SHEET DIRECTORY | |
|---|---|
| SHEET NO. | SHEET CONTENTS |
| 1 | HENRY STREET PLAN STA. -0+02.8 TO STA. 5+91 |
| 2 | HENRY STREET PLAN - ENLARGED VIEW,<br>CROSS SECTION AT STA. 2+49.2 AND<br>HENRY STREET PROFILE STA. 2+23 TO STA. 2+80 |
| 3 | SCHEMATIC VIEW OF WATER MAIN TO PSEG STATION,<br>COORDINATE TABLE, CROSS SECTION AT STA. 4+93.6 AND<br>CROSS SECTION AT STA. 0+03.5 |
| 4 | WATER METER AND BACKFLOW STRUCTURE - ENLARGED VIEW,<br>LIGHTING AND HVAC SCHEMATIC,<br>WEST/EAST ELEVATION AND<br>NORTH/SOUTH ELEVATION |
| 5 | WATER METER AND BACKFLOW STRUCTURE - ELEVATION VIEW AND<br>12" DUCTILE IRON PIPE LAYOUT |
| 6 | WATER METER AND BACKFLOW STRUCTURE - 8" PIPE LAYOUT PLAN VIEW AND<br>4" PIPE LAYOUT PLAN VIEW |
| 7 | GEOTECHNICAL INVESTIGATION FOR DEWATERING INFORMATION |

### SUGGESTED CONSTRUCTION SEQUENCE:

**PHASE I**

1. INSTALL NEW 16" WATER MAIN IN HENRY STREET FROM STA. -0+2.8 TO THE AIR VENT AT STA. 2+61.6
2. INSTALL NEW 16" WATER MAIN FROM TEE AT STA. 0+03.5 TOWARD THE EXISTING BHS3 METER BUILDING
3. CUT IN NEW 12" X 12" TEE AND VALVES NEAR THE EXISTING BHS3 METER BUILDING AND CONNECT TO THE NEW 12" WATER MAIN
4. INSTALL NEW 16" WATER MAIN ACROSS HENRY STREET FROM TEE AT STA. 2+49.2 TO NEW HYDRANT AND 16" BUTTERFLY VALVE. INSTALL PLUG AND TEMPORARY BLOW-OFF
5. INSTALL TEMPORARY WATER MAIN FROM BLOW-OFF NEAR THE INTERSECTION WITH MAIN STREET TO THE 2" AIR VENT AT STA. 2+30.6. DISINFECT, TEST, PLACE INTO SERVICE AND TRANSFER SERVICES TO TEMPORARY WATER MAIN
6. FILL, DISINFECT, FLUSH AND PRESSURE TEST NEW MAIN IN RUSSELL STREET AND HENRY STREET USING WATER FROM THE TEMPORARY WATER MAIN
7. CLOSE THE VALVE ON THE EXISTING 10" CAST IRON WATER MAIN APPROXIMATELY 30 FEET WEST OF THE INTERSECTION WITH RUSSELL STREET. CLOSE THE EXISTING VALVE ON THE EXISTING 12" WATER MAIN IN RUSSELL STREET APPROXIMATELY 40 FEET NORTH OF THE INTERSECTION WITH HENRY STREET. REMOVE PLUG AND TEMPORARY BLOW-OFF FROM THE 16" BUTTERFLY VALVE IN RUSSELL STREET AND MAKE CONNECTION TO EXISTING 12" WATER MAIN IN RUSSELL STREET. OPEN 12" LINE VALVE ON NEW SECTION OF WATER MAIN NEAR THE METER BUILDING. CLOSE NEW 12" BUTTERFLY VALVE ON BRANCH SIDE OF TEE NEAR METER BUILDING (PSEG SIDE)

**PHASE II**

8. INSTALL NEW 12" WATER MAIN FROM NEW 16" X 12" TEE EAST TO THE 12" X 12" TEE AND 12" BUTTERFLY VALVE WITH TEMPORARY BLOW-OFF. INSTALL 12" BUTTERFLY VALVE WITH 12" PLUG
9. MAKE FINAL CONNECTION TO 12" FIRE LINE (PSEG SIDE)
10. CONSTRUCT WATER METER AND BACKFLOW STRUCTURE
11. PER PSEG, CONNECTION TO BHS 5 BUTERFLY VALVE (POINT E) AND REMAINING WATER MAIN PIPING SHALL BE DESIGNED AND INSTALLED BY OTHERS

**PHASE III**

12. INSTALL NEW 16" BUTTERFLY VALVE, AIR VENT AND WATER MAIN FROM STA. 5+75.8 TO BUTTERFLY VALVE AT STA. 4+87 AND AIR VENT AT STA. 4+84 ON HENRY STREET
13. FILL, FLUSH, DISINFECT AND PRESSURE TEST NEW MAIN IN HENRY STREET FROM STA. 5+75.8 TO BUTTERFLY VALVE AND AIR VENT AT STA. 4+87
14. IN ONE WORKDAY, MAKE CONNECTION TO THE EXISTING 10" CAST IRON WATER MAIN AT STA. 5+91 AND TRANSFER 10" FIRE SERVICE FOR U.I. BUILDING TO NEW 16" WATER MAIN

**PHASE IV**

15. INSTALL 345 KV LINE, REMOVING EXISTING 10" WATER MAIN AS REQUIRED TO RUSSELL STREET. PROVIDE SLEEVE BELOW DUCT BANK FOR NEW GAS MAIN. (CONFIRM SLEEVE SIZE WITH SOUTHERN CONNECTICUT GAS)
16. INSTALL NEW WATER MAIN IN HENRY STREET FROM THE INTERSECTION WITH RUSSELL STREET (STA. 2+49.2) TO THE NEW 16" X 2" TAPPED TEE AT STA. 4+84
17. FILL, DISINFECT, FLUSH, AND PRESSURE TEST THE NEW WATER MAIN FROM STA. 2+49.2 TO STA. 4+87
18. AFTER WATER MAIN HAS BEEN ACCEPTED BY AWC, PLACE NEW WATER MAIN INTO SERVICE
19. TRANSFER WATER SERVICES TO NEW WATER MAIN.

### EXISTING FEATURES LEGEND

| | | | | | |
|---|---|---|---|---|---|
| CATCH BASIN | | ROCK/BOULDER | | STONE WALL | |
| STREET SIGN | | SURVEY CONTROL POINT | | COMM. LINE | T |
| MAILBOX | | SPOT ELEVATION | x | ELEC. LINE | E |
| SHRUB/BUSH | | IRON PIN/PIPE | | SANITARY SEWER MAIN | SS |
| WATER VALVE | | CONIFEROUS TREE | | WATER MAIN | W |
| HYDRANT | | DECIDUOUS TREE | | GAS MAIN | G |
| WATER CURB VALVE | | TREE STUMP | | TRAFFIC CTRL LINE | TR |
| WATER METER | | UTILITY POLE | | TREELINE/ BRUSHLINE | |
| LIGHT POST | | GARDEN | | PROPERTY LINE | |
| FENCE | | TRAFFIC LOOP | | STORM DRAIN PIPE | |
| SHRUB ROW | | CROSS WALK | | RETAINING WALL | |

NOTE: ALL DRAIN PIPE ELEVATIONS SHOWN ON CATCH BASIN NOTES ARE INVERT ELEVATIONS

### PREPARED FOR:

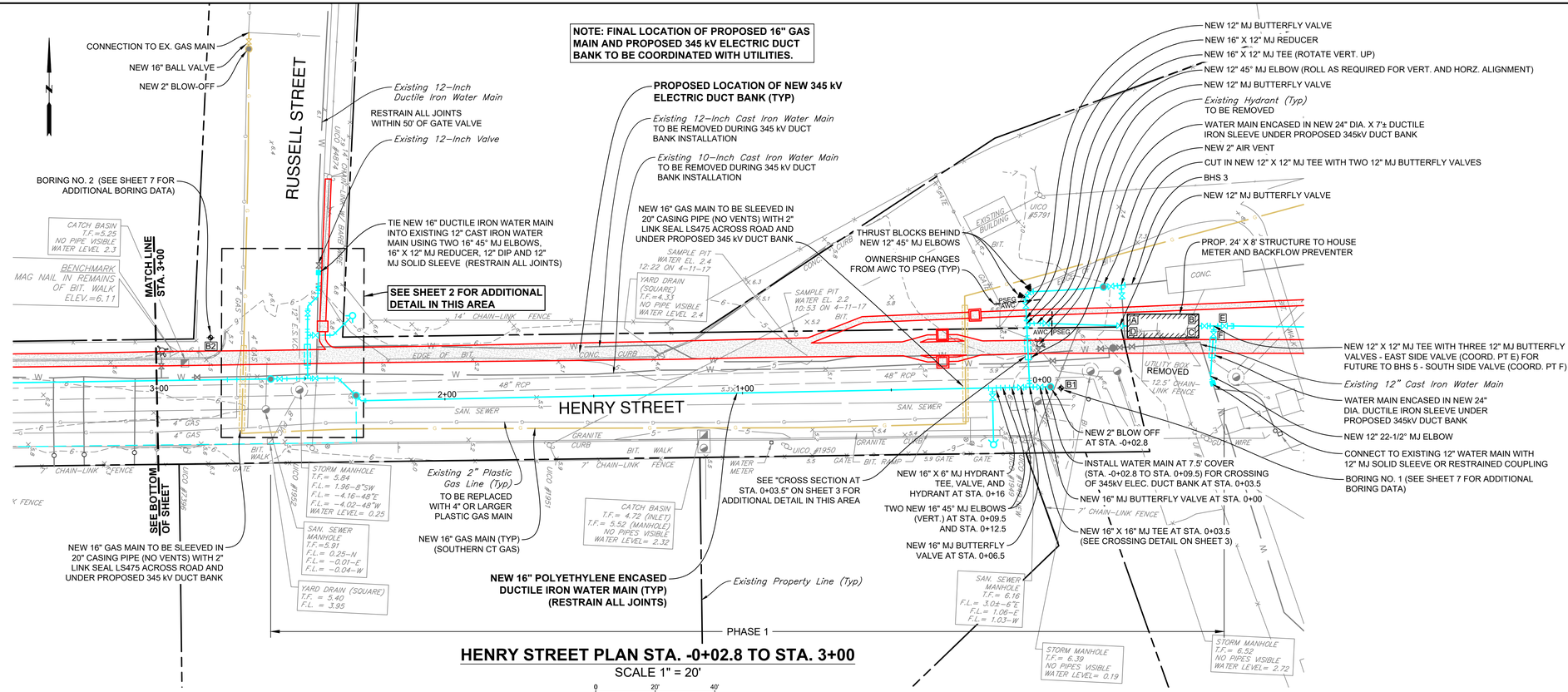
AQUARION Water Company
*Stewards of the Environment™*

AQUARION WATER COMPANY OF CT
600 LINDLEY STREET
BRIDGEPORT, CT 06606

### PREPARED BY:

SNYDER CIVIL Engineering, LLC

SNYDER CIVIL ENGINEERING, LLC
150 MARLBOROUGH STREET
PORTLAND, CT 06480




SHEET NO. 1

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

HENRY STREET PLAN
STA. -0+02.8 TO STA. 5+91

SCALES: 1" = 20' PLAN

REVISED
REV. A - 12/1/17
REV. B - 12/8/17
REV. C - 1/10/17
REV. D - 2/6/17

CHECKED DRS JFD

DRAWN RMS RWF

DESIGNED DRS

PREPARED FOR:
PSEG POWER, LLC
Bridgeport, CT

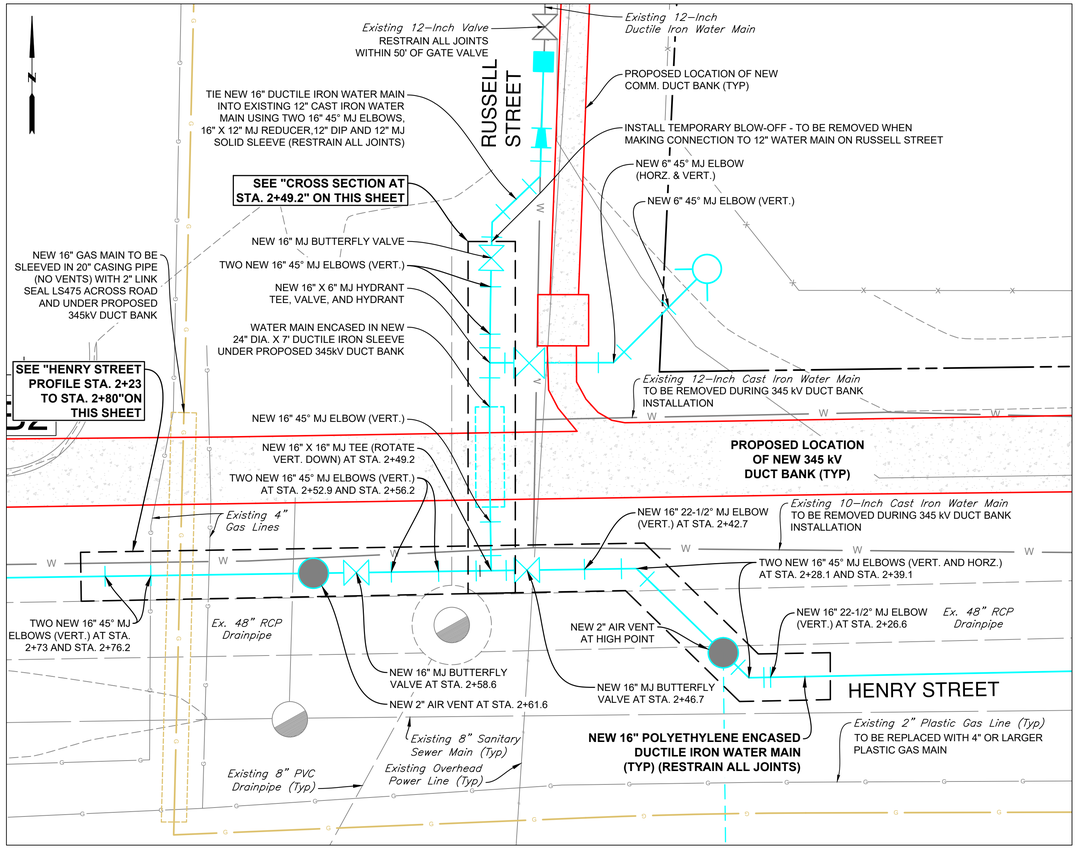
HENRY STREET WATER MAIN RELOCATION
Bridgeport, Connecticut

FEBRUARY 6, 2017

SHEET NO. 1 OF 7

JOB NO. PSEG-001

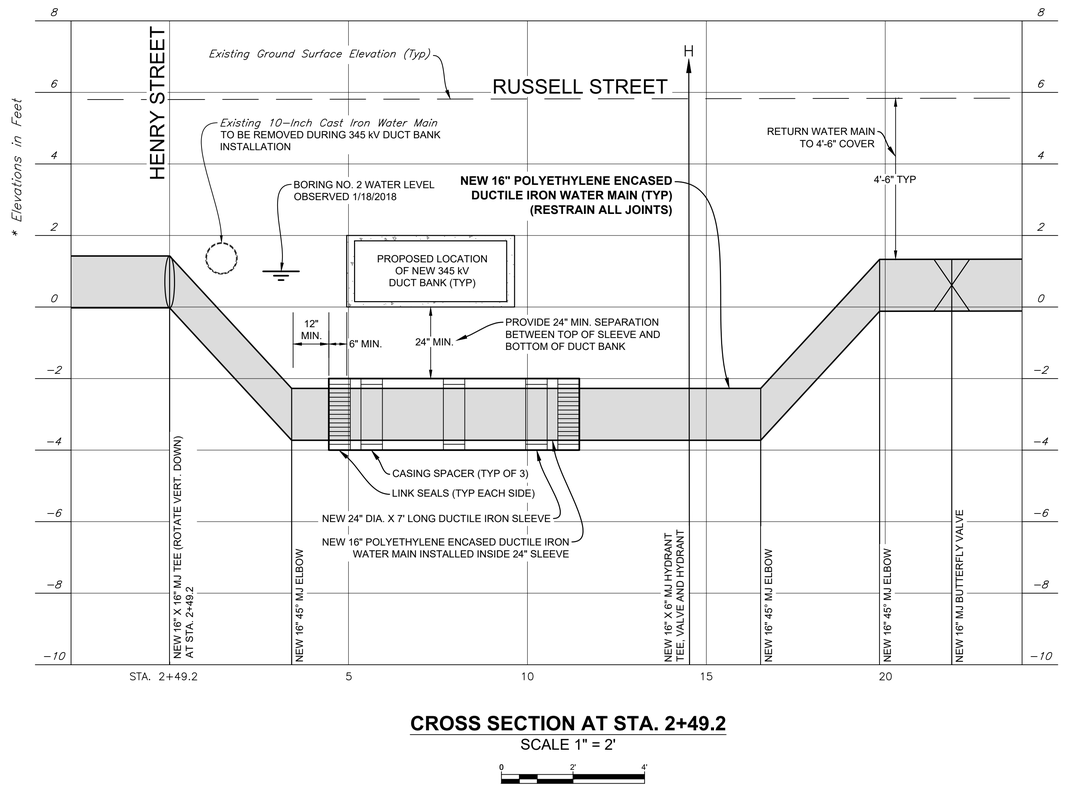
CONSTRUCTION DRAWING




## HENRY STREET PLAN - ENGLARGED VIEW

SCALE 1" = 5'

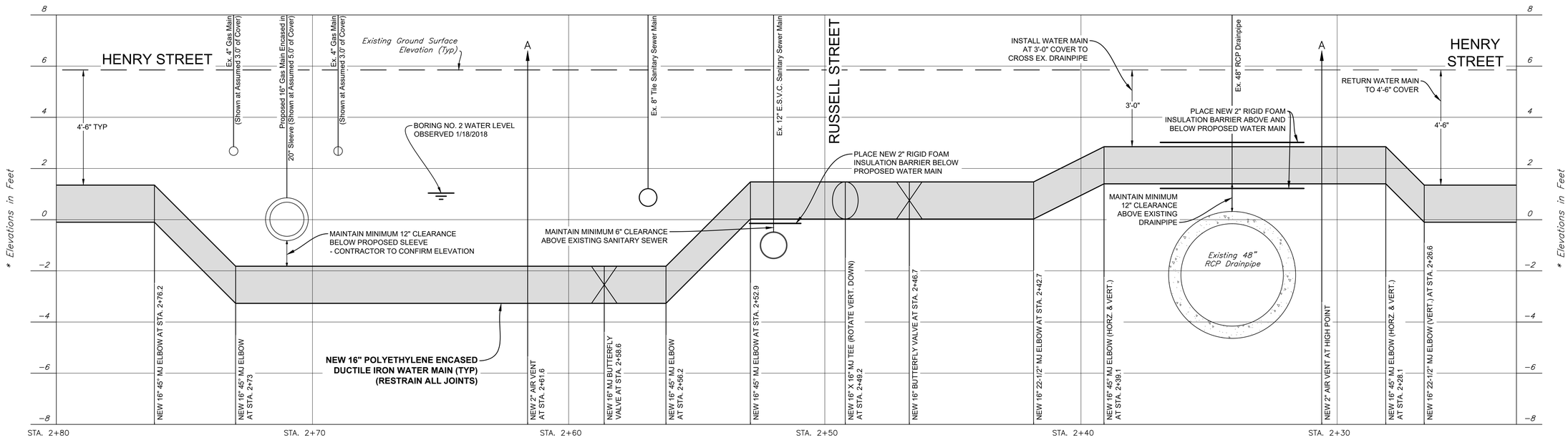
0 5' 10'




## CROSS SECTION AT STA. 2+49.2

SCALE 1" = 2'

0 2' 4'




## HENRY STREET PROFILE STA. 2+23 TO STA. 2+80

SCALE 1" = 2'

0 2' 4'

CONSTRUCTION DRAWING

SHEET NO. 2

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

HENRY STREET PLAN - ENLARGED VIEW,
CROSS SECTION AT STA. 2+49.2 AND
HENRY STREET PROFILE
STA. 2+23 TO STA. 2+80

SCALES AS NOTED

REVISED
REV. A – 12/1/17
REV. B – 12/8/17
REV. C – 1/10/17
REV. D – 2/6/17

DESIGNED DRS

DRAWN RMS RWF

CHECKED DRS JFD

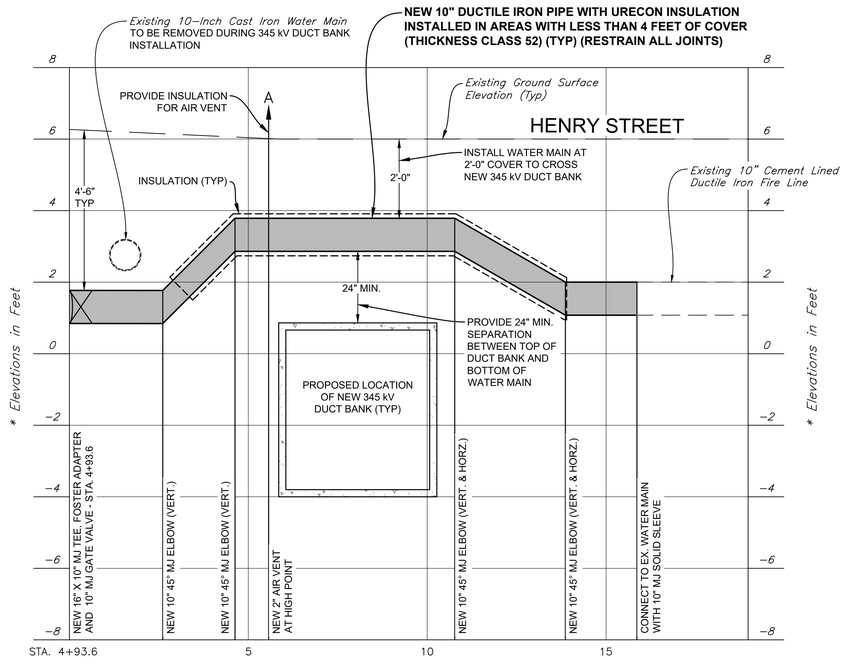
PREPARED FOR:
PSEG POWER, LLC
Bridgeport, CT

HENRY STREET WATER MAIN
RELOCATION
Bridgeport, Connecticut

FEBRUARY 6, 2017

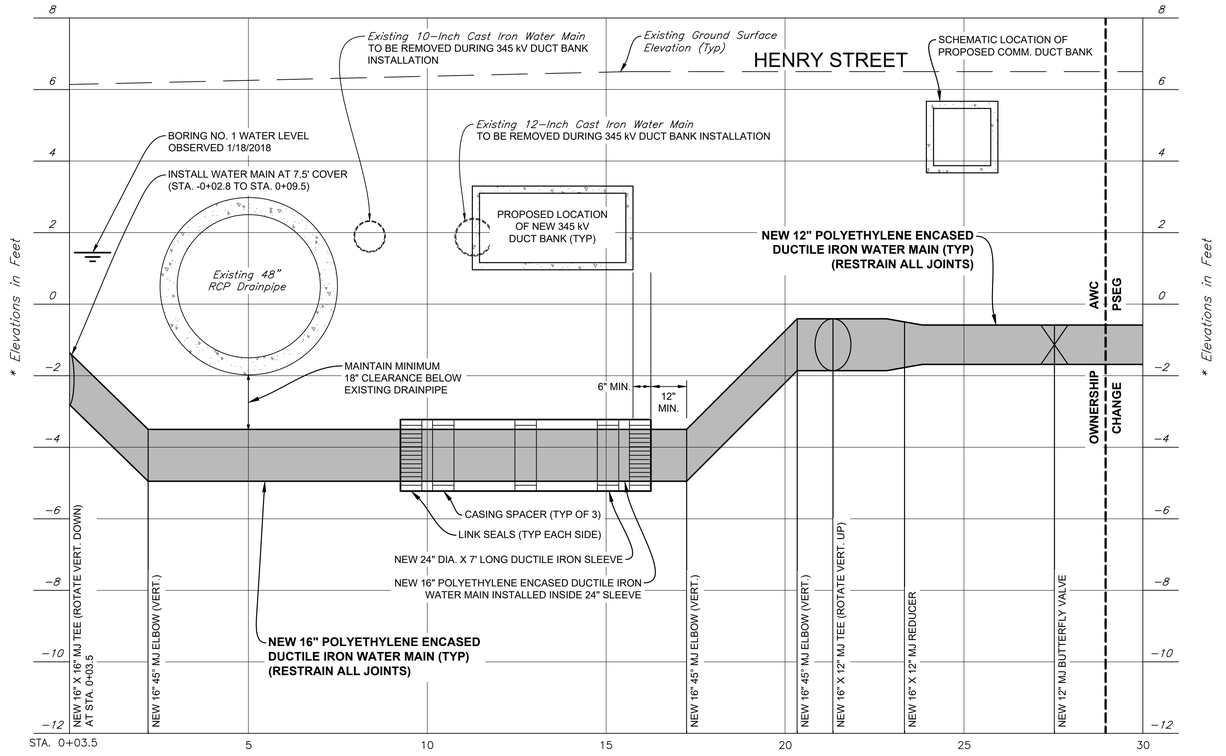
SHEET NO. 2 OF 7

JOB NO. PSEG-001



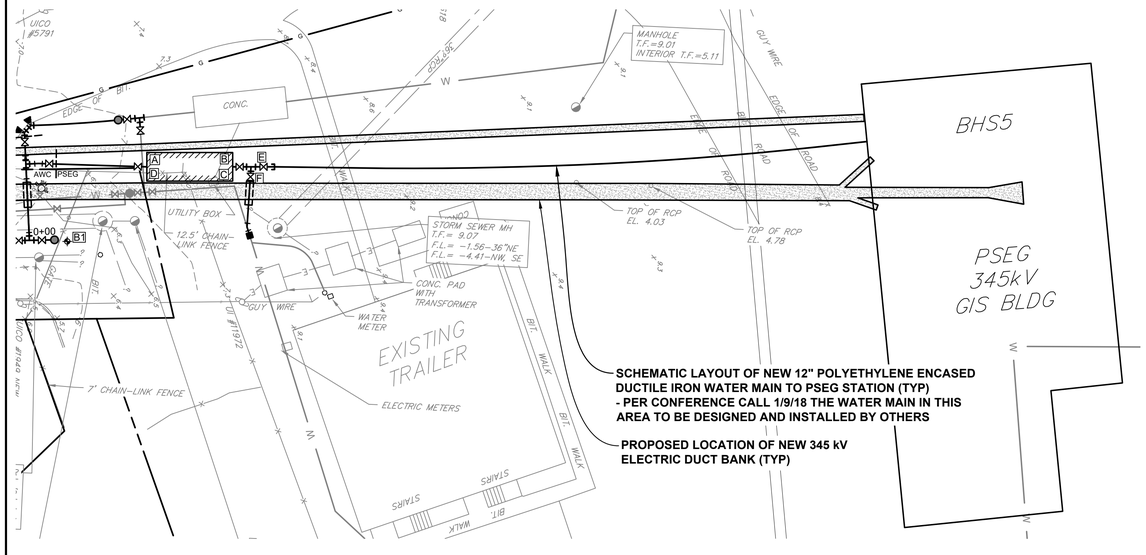

## CROSS SECTION FOR 10" FIRE LINE CONNECTION AT STA. 4+93.6

SCALE 1" = 2'




## CROSS SECTION AT STA. 0+03.5

SCALE 1" = 2'




## SCHEMATIC VIEW OF WATER MAIN TO PSEG STATION

SCALE 1" = 20'

### COORDINATE TABLE

| COORDINATE SYMBOL | COORDINATE DESCRIPTION | NORTHING | EASTING |
|---|---|---|---|
| A | NW BLDG CORNER | 622110.6867 | 880688.8134 |
| B | NE BLDG CORNER | 622117.1712 | 880711.9208 |
| C | SW BLDG CORNER | 622102.9842 | 880690.9750 |
| D | SE BLDG CORNER | 622109.4688 | 880714.0823 |
| E | 12" MJ BUTTERFLY VALVE 1 | 622115.4800 | 880721.3434 |
| F | 12" MJ BUTTERFLY VALVE 2 | 622111.2271 | 880718.6485 |
| B1 | BORING NO. 1 | 622080.7378 | 880674.1015 |
| B2 | BORING NO. 2 | 622019.8217 | 880394.3824 |
| B3 | BORING NO. 3 | 621933.4458 | 880130.4970 |

CONSTRUCTION DRAWING

SHEET NO. 3

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

SCHEMATIC VIEW OF WATER MAIN TO PSEG STATION, COORDINATE TABLE, CROSS SECTION AT STA. 4+93.6 AND CROSS SECTION AT STA. 0+03.5

SCALES AS NOTED

| DESIGNED | DRAWN | CHECKED | REVISED |
|---|---|---|---|
| DRS | RMS<br>RWF | DRS<br>JFD | REV. A – 12/1/17<br>REV. B – 12/8/17<br>REV. C – 1/16/17<br>REV. D – 2/6/17 |

PREPARED FOR:

PSEG POWER, LLC

Bridgeport, CT

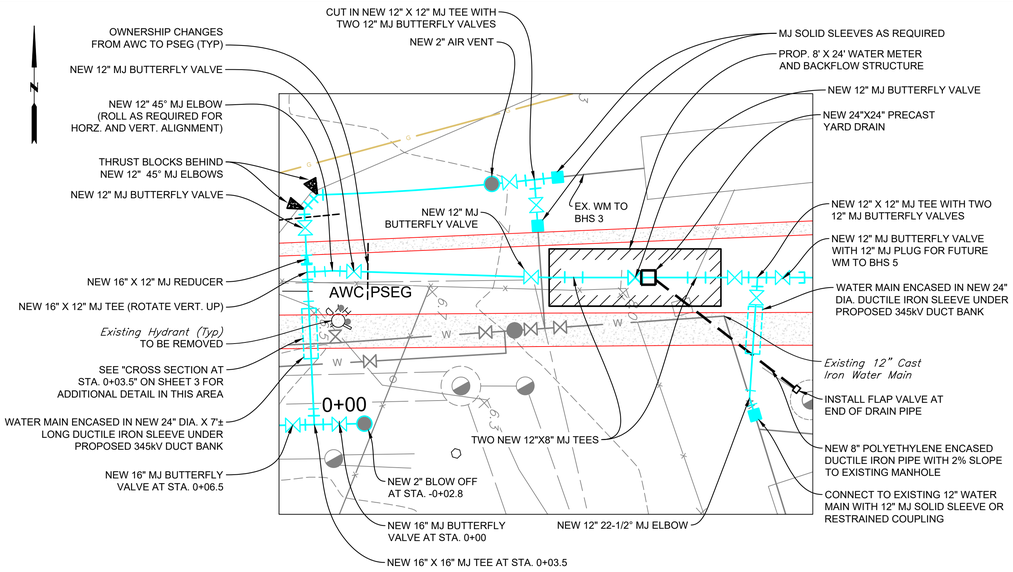
HENRY STREET WATER MAIN RELOCATION

Bridgeport, Connecticut

FEBRUARY 6, 2017

SHEET NO. 3 OF 7

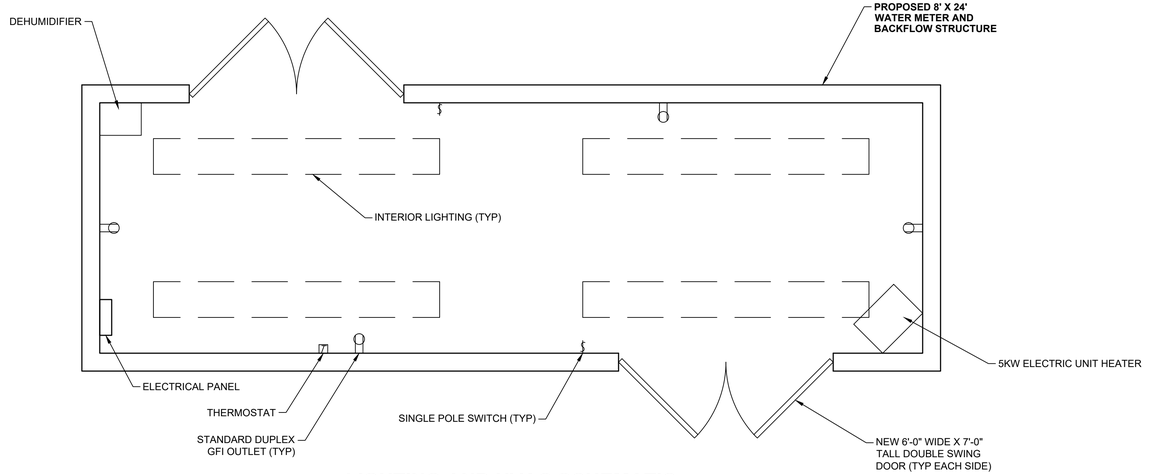
JOB NO. PSEG-001




## WATER METER AND BACKFLOW STRUCTURE - ENGLARGED VIEW

SCALE 1" = 10'

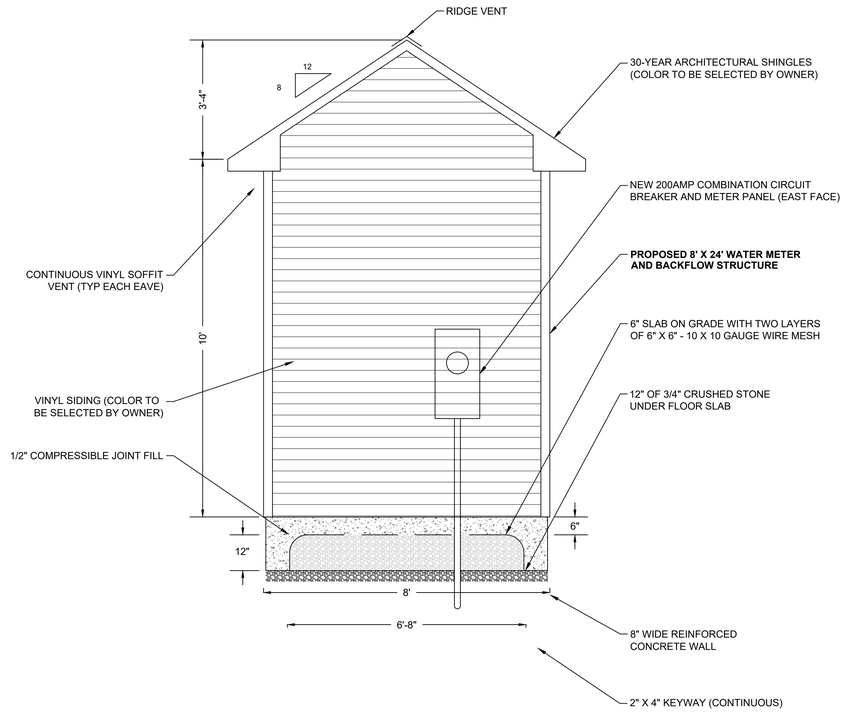
0 10' 20'




## LIGHTING AND HVAC SCHEMATIC

SCALE: 1/2" = 1'-0"

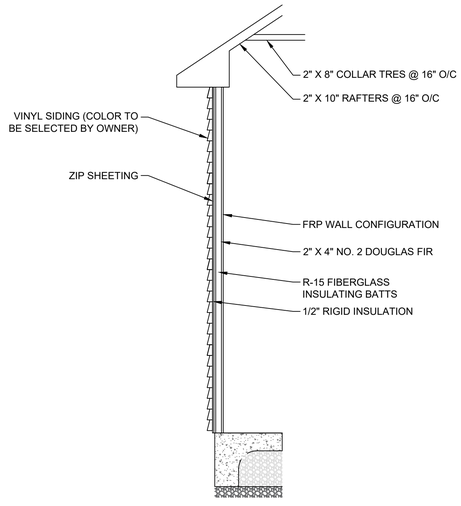
0 4' 8'




## WEST ELEVATION

SCALE: 1/2" = 1'-0"

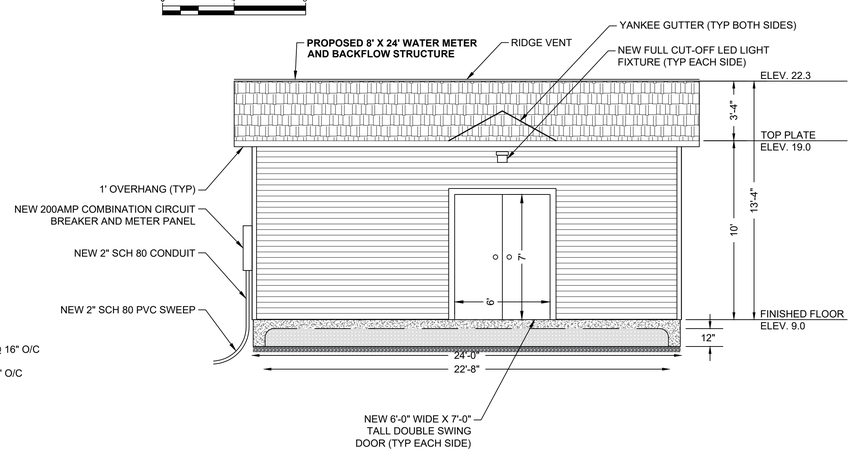
0 2' 4'




## FRAMING AND WALL SECTION DETAIL

SCALE: 1/2" = 1'-0"

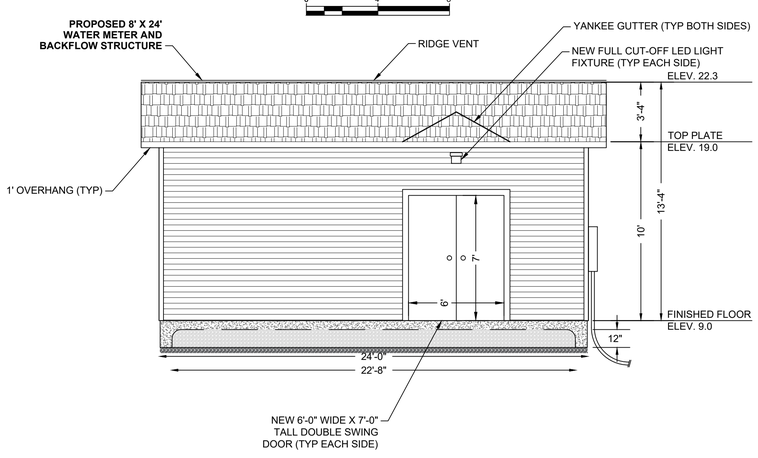
0 2' 4'




## SOUTH ELEVATION

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

0 4' 8'




## NORTH ELEVATION

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

0 4' 8'

CONSTRUCTION DRAWING

SHEET NO. 4

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

# WATER METER AND BACKFLOWSTRUCTURE - ENLARGED VIEW, LIGHTING AND HVAC SCHEMATIC, WEST/EAST ELEVATION AND NORTH/SOUTH ELEVATION

SCALES AS NOTED

REVISED
REV. A – 12/1/17
REV. B – 12/8/17
REV. C – 1/16/17
REV. D – 2/6/17

CHECKED DRS JFD

DRAWN YER

DESIGNED DRS

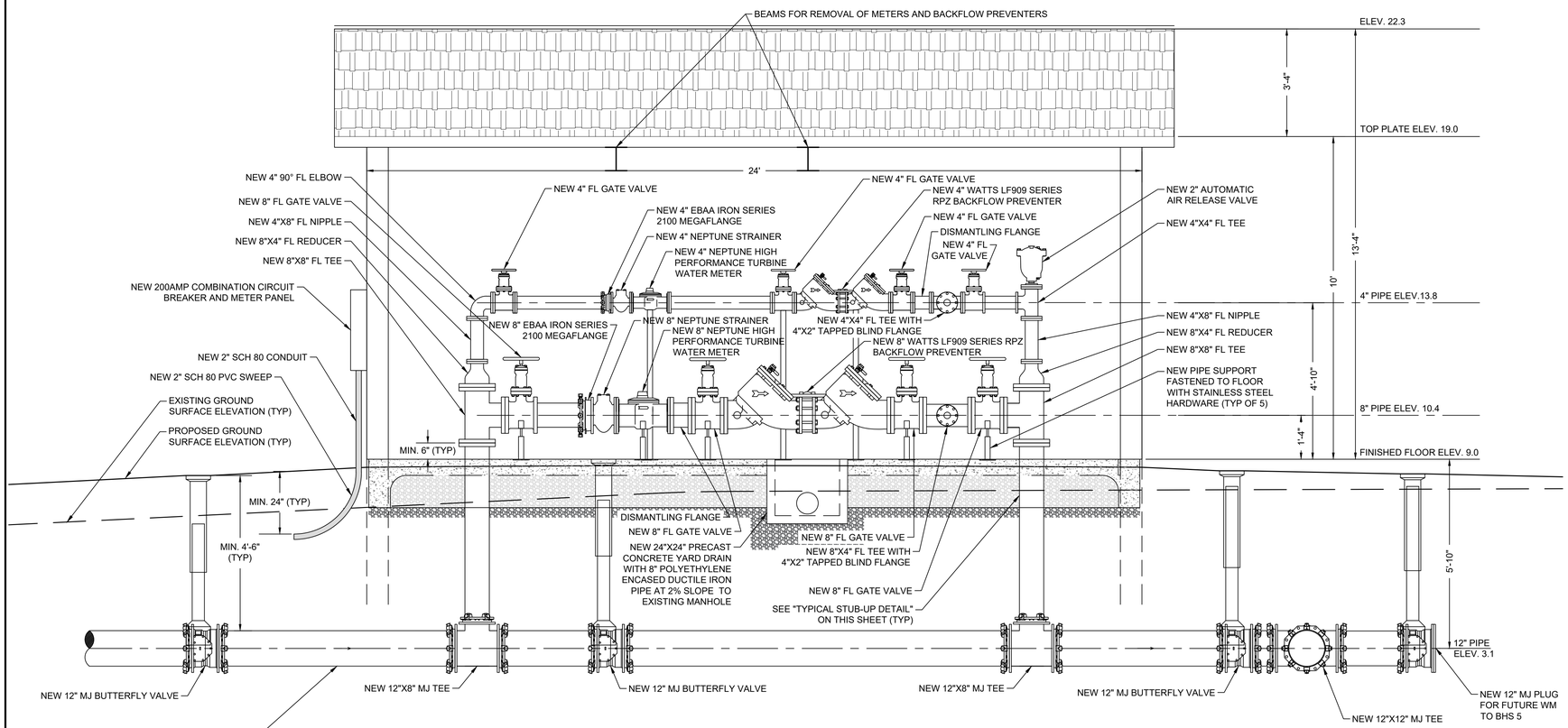
PREPARED FOR:
PSEG POWER, LLC
Bridgeport, CT

HENRY STREET WATER MAIN RELOCATION
Bridgeport, Connecticut

FEBRUARY 6, 2017

SHEET NO. 4 OF 7

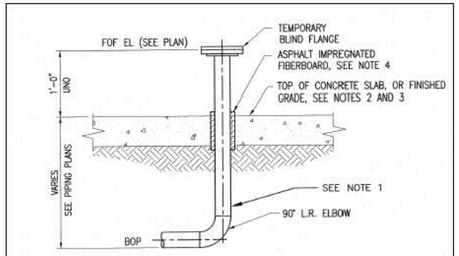
JOB NO. PSEG-001




## WATER METER AND BACKFLOW STRUCTURE - ELEVATION VIEW

SCALE: 1/2" = 1'-0"

0 2' 4'



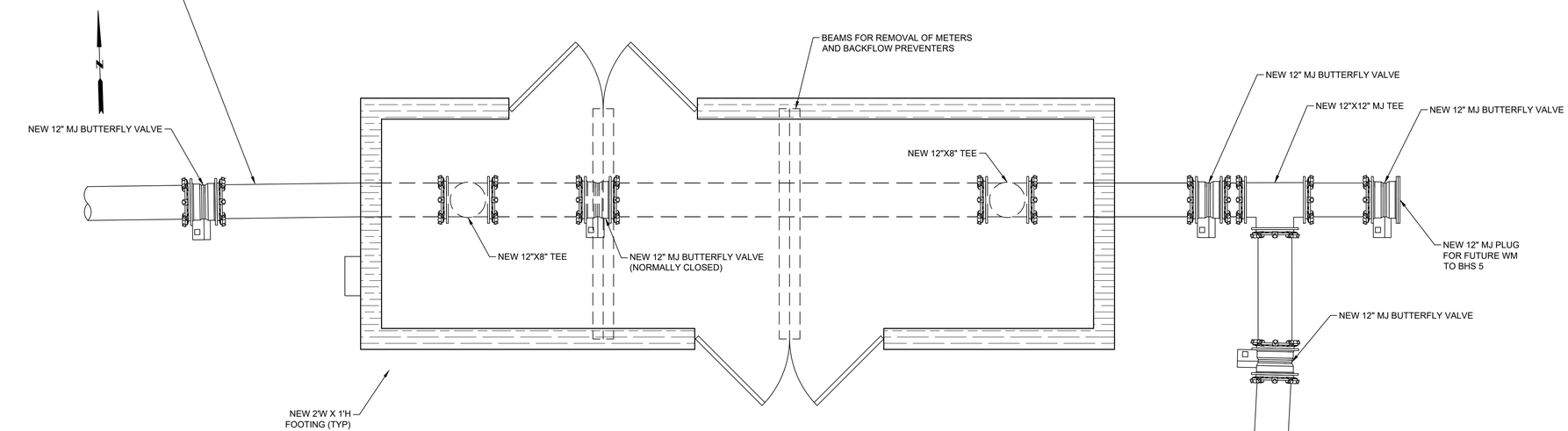

ELEVATION

## TYPICAL STUB-UP DETAIL

NOT TO SCALE

NOTES:

1. METALLIC PIPING SHALL BE COATED AND WRAPPED UP TO THE ABOVEGROUND FLANGE IN ACCORDANCE WITH THE PIPING MATERIAL SPECIFICATION.
2. METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ANY SLAB OR FOUNDATION REINFORCING STEEL OR OTHER CONDUCTIVE MATERIALS.
3. IF STUB-UPS 4" NPS AND SMALLER OF HDPE MATERIAL ARE LOCATED OUTSIDE SLABS OR FOUNDATIONS, CONCRETE COLLARS 2'-6" IN DIAMETER (OR SQUARE) BY 12" THICK SHALL BE INSTALLED AROUND THE PIPING AT GRADE.
4. IF STUB-UPS ARE LOCATED OUTSIDE SLABS, FOUNDATIONS, OR CONCRETE COLLARS, INSTALLATION OF FIBERBOARD IS NOT REQUIRED.
5. GUARD POSTS SHALL BE INSTALLED AROUND STUB-UPS IN HEAVY TRAFFIC AREAS. SEE DETAIL 644911-P232-S001.




## 12" DUCTILE IRON PIPE LAYOUT - PLAN VIEW

SCALE: 1/2" = 1'-0"

0 2' 4'

CONSTRUCTION DRAWING

SHEET NO. 5

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

# WATER METER AND BACKFLOW STRUCTURE - ELEVATION VIEW AND 12" DUCTILE IRON PIPE LAYOUT

SCALES AS NOTED

DESIGNED DRS | DRAWN YER | CHECKED DRS JFD

REVISED
REV. A - 12/5/17
REV. B - 12/8/17
REV. C - 1/10/17
REV. D - 2/6/17

PREPARED FOR:

PSEG POWER, LLC

Bridgeport, CT

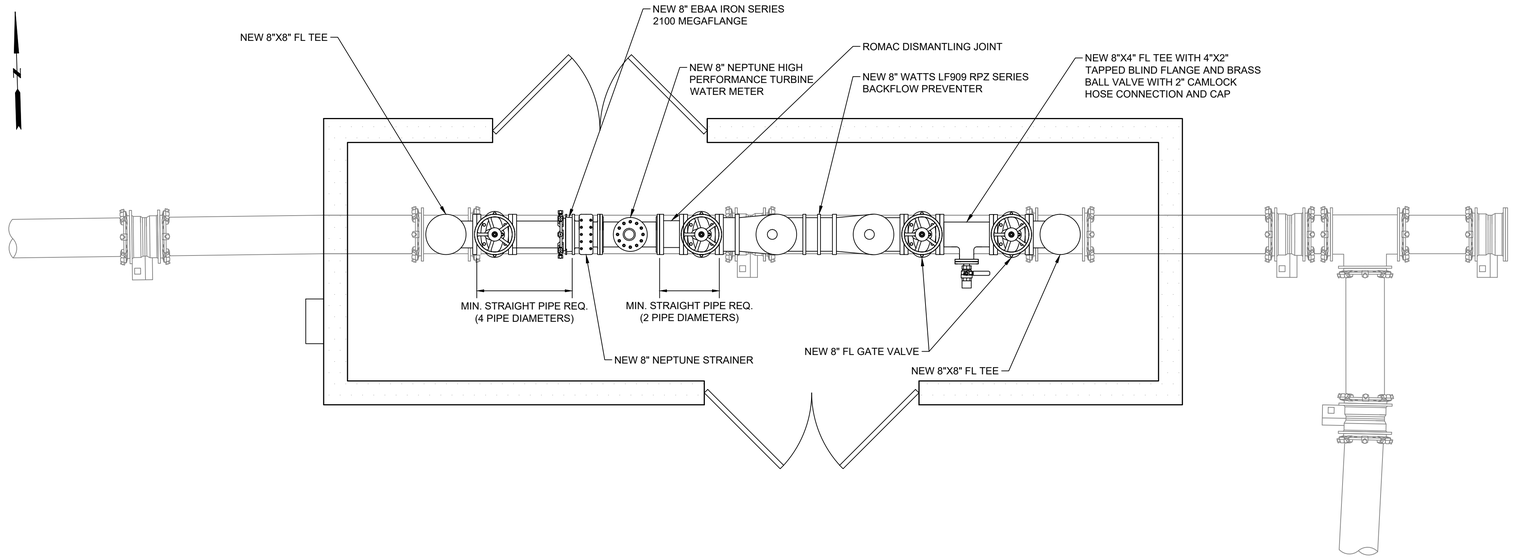
# HENRY STREET WATER MAIN RELOCATION

Bridgeport, Connecticut

FEBRUARY 6, 2017

SHEET NO. 5 OF 7

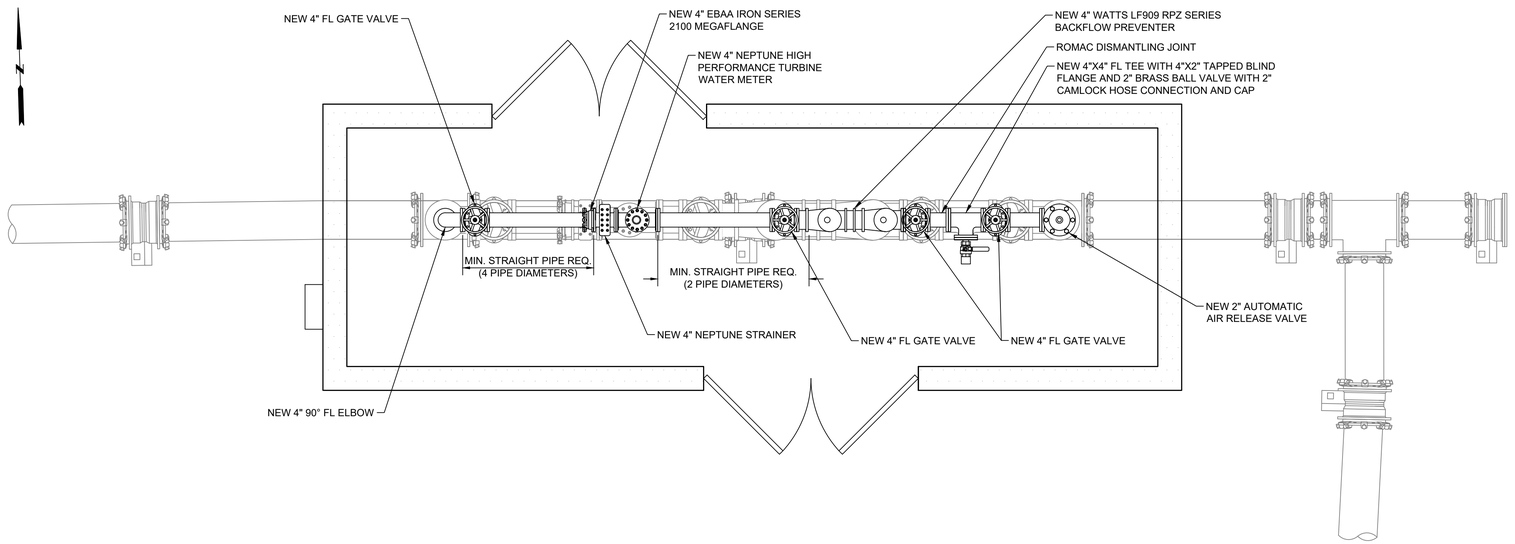
JOB NO. PSEG-001




## 8" PIPE LAYOUT - PLAN VIEW

SCALE: 1" = 2'-0"

0 2' 4'




## 4" PIPE LAYOUT - PLAN VIEW

SCALE: 1" = 2'-0"

0 2' 4'

CONSTRUCTION DRAWING

SHEET NO. 6

SNYDER CIVIL Engineering, LLC

PORTLAND, CONNECTICUT

WATER METER AND BACKFLOW STRUCTURE: 8" PIPE LAYOUT PLAN VIEW AND 4" PIPE LAYOUT PLAN VIEW

SCALES AS NOTED

REVISED
REV. A – 12/21/17
REV. B – 12/8/17
REV. C – 1/10/17
REV. D – 2/6/17

CHECKED DRS JFD

DRAWN YER

DESIGNED DRS

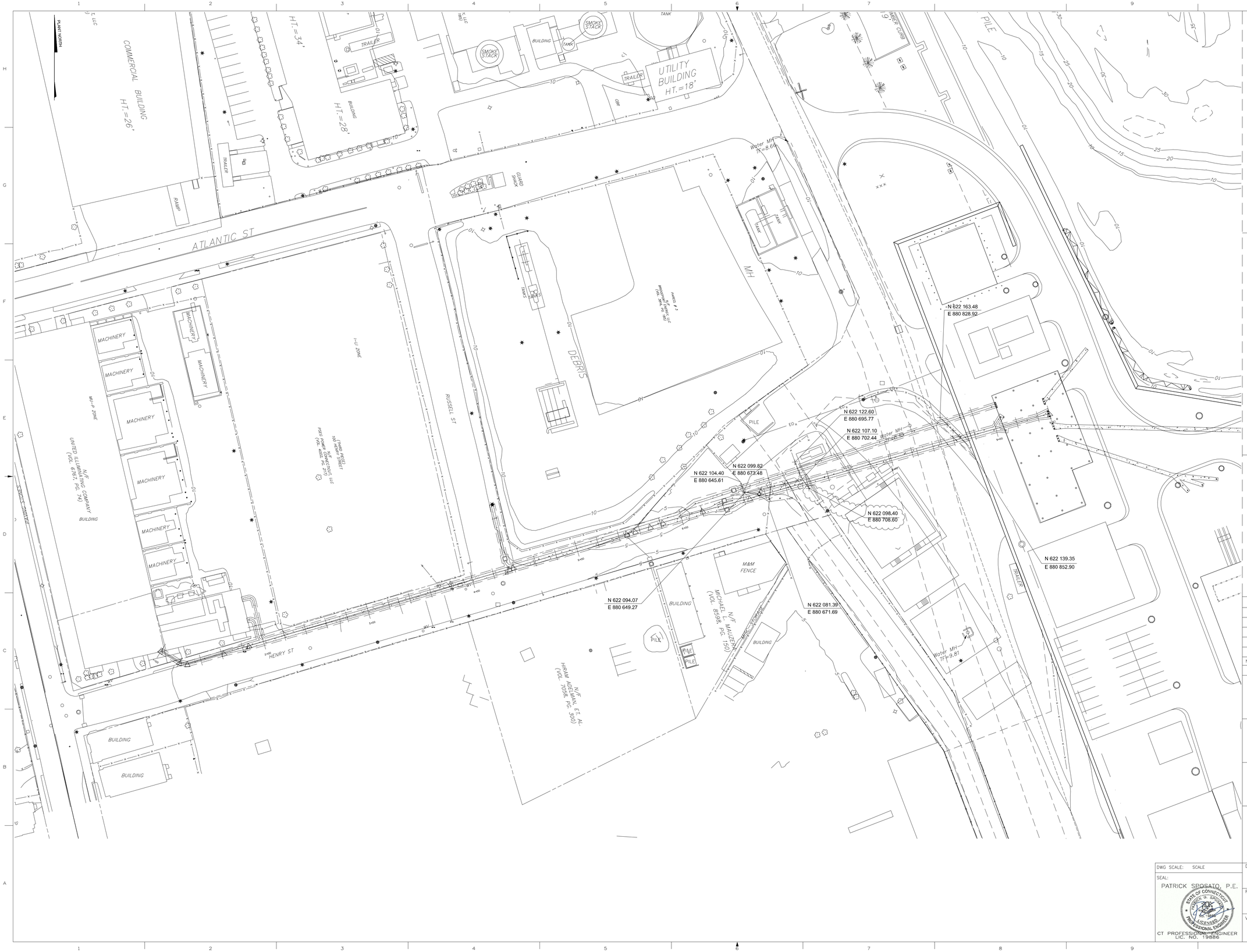
PREPARED FOR:
PSEG POWER, LLC
Bridgeport, CT

HENRY STREET WATER MAIN RELOCATION
Bridgeport, Connecticut

FEBRUARY 6, 2017

SHEET NO. 6 OF 7

JOB NO. PSEG-001




LEGENDS/SYMBOL KEYS:

- PROPOSED/RELOCATED FENCE
- EXISTING FENCE
- APPROXIMATE SAW CUT LINE
- PROPERTY LINES

DESIGN NOTES:

1. ALL COORDINATES FOR THIS SHEET ARE SUPPLIED IN THE NAD83 CONNECTICUT STATE PLANE.
2. FOR DETAILS OF FENCE, SEE FENCE DETAIL SHEET CXXX-S002.

REFERENCES:

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/7/17 | | REVISED PER DB LOCATION | KW | STB | BM | JG | BM | PS |
| 0 | 8/2/17 | | ISSUED FOR CONSTRUCTION | KW | STB | BM | DL | LA | SO |

REVISION

RCM Technologies
Energy Services

SNC • LAVALIN CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG** *Power Connecticut LLC*

# BRIDGEPORT 05
## 345kv UNDERGROUND TRANSMISSION
## FENCE PLAN
## SHEET 1 OF 2

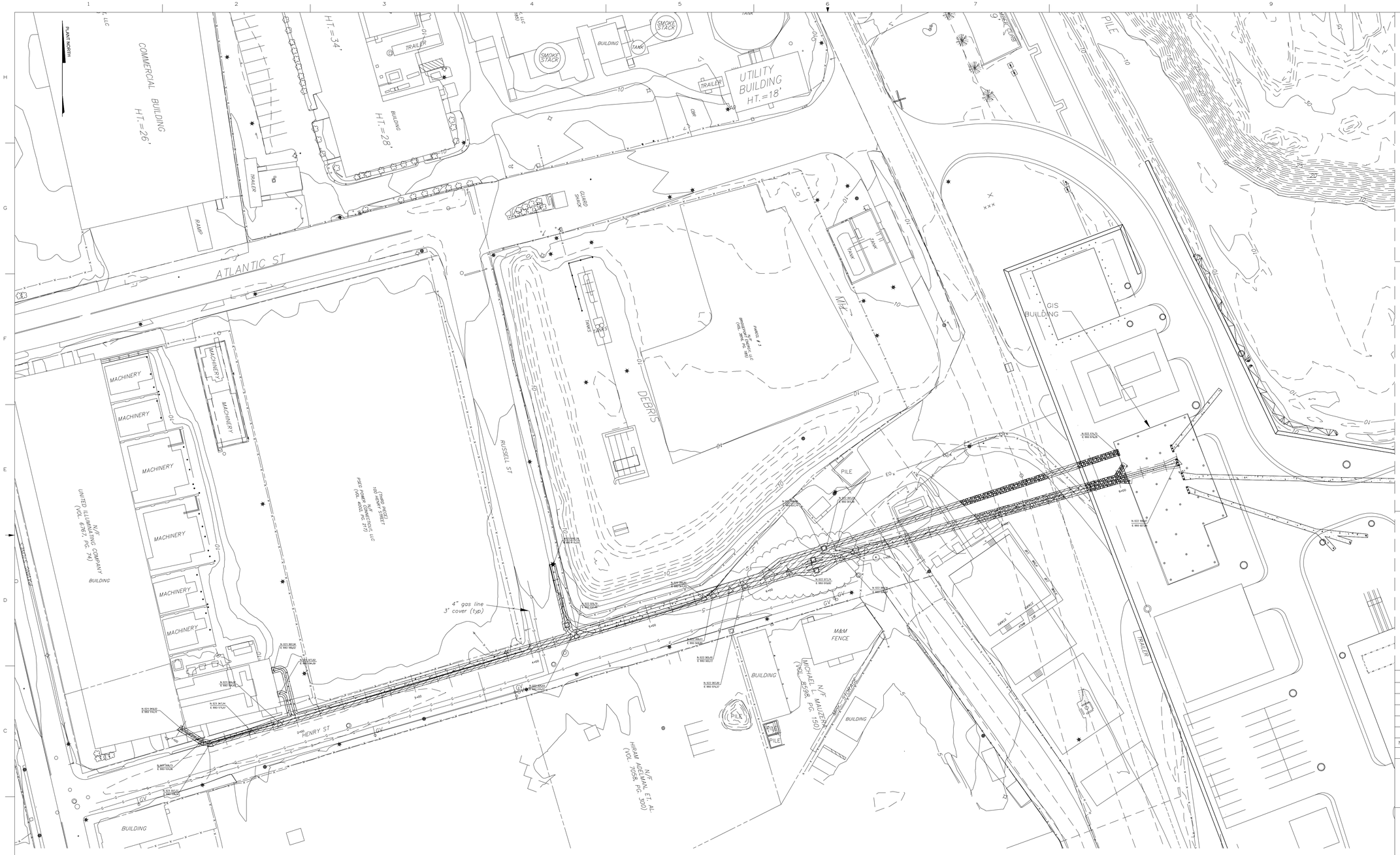
STANDARDS | CIVIL

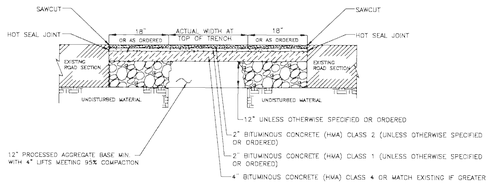
DWG SCALE: SCALE

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK S. SPOSATO
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| K WALLACE | S. BLANTON | BOBBY MCFARLAND |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 C350-S001 | 1




BITUMINOUS CONCRETE (HMA) PAVEMENT RECONSTRUCTION

LEGENDS/SYMBOL KEYS:

- E — EXISTING UNDERGROUND ELECTRIC
- FP — EXISTING UNDERGROUND FIRE PROTECTION
- G — EXISTING UNDERGROUND GAS
- S — EXISTING UNDERGROUND SANITARY
- EXISTING UNDERGROUND STORM
- W — EXISTING UNDERGROUND WATER
- UNK — EXISTING UNDERGROUND UNKNOWN UTILITY
- APPROXIMATE EXCAVATION LIMITS
- APPROXIMATE SAW CUT
- AREA OF ASPHALT REPLACEMENT
- AREA OF CONCRETE REPLACEMENT
- AREA OF GRASS REPLACEMENT
- AREA OF GRAVEL REPLACEMENT

DESIGN NOTES:

1. ANY COORDINATES FOR THIS SHEET ARE SUPPLIED IN THE NAD83 CONNECTICUT STATE PLANE.
2. SAW CUT LINE SHALL BE A MINIMUM OF 18 INCHES FROM OUTER EDGE OF ELECTRICAL DB. FOR DETAILS OF ASPHALT REPAIR, AND WIDTH OF SAW CUT SEE DETAIL THIS SHEET.
3. FOR HORIZONTAL AND VERTICAL CONTROLS OF ELECTRICAL DB SEE DRAWINGS E353-S001 AND E353-S002
4. DEWATERING BY OTHERS.
5. SEEDING TO BE DONE IN ACCORDANCE WITH APPROVED SOIL EROSION AND SEDIMENTATION CONTROL PLAN.
6. GRAVEL TO BE COMPACTED DENSE GRADED AGGREGATE.
7. SAW CUT MAY BE ADJUSTED IN THE FIELD (WITH ENGINEERS APROVAL) TO ENSURE PROPER PLACEMENT OF TRENCH BOXES.

REFERENCES:

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/7/17 | | REVISED PER DB LOCATION | KW | STB | BM | JG | BM | PS |
| 0 | 8/2/17 | | ISSUED FOR CONSTRUCTION | KW | STB | BM | DL | LA | SO |

REVISION

RCM Technologies
Energy Services

SNC • LAVALIN
CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG**
*Power Connecticut LLC*

BRIDGEPORT 05
345kv UNDERGROUND TRANSMISSION
SAWCUT/SURFACING PLAN
SHEET 1

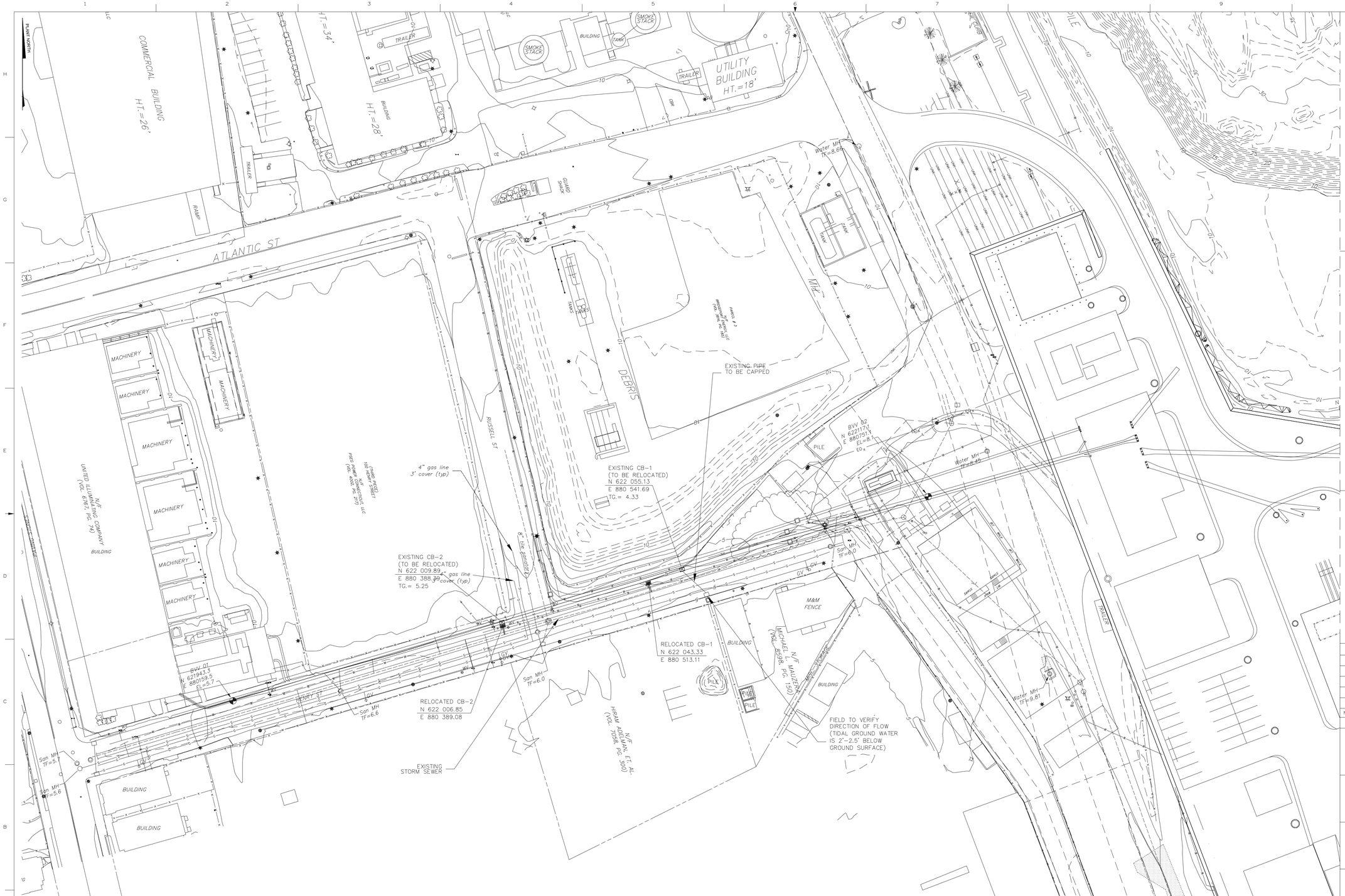
STANDARDS CIVIL

DWG SCALE: 1"=40'

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK V. SPOSATO
NO. 19886
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| K WALLACE | S. BLANTON | BOBBY MCFARLAND |
| REVIEWED (ENGR RCMT) | REVIEWED (PROJ ENGR RCMT) | APPROVED (PRINCIPAL RCMT) |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 C351-S001 1




LEGENDS/SYMBOL KEYS:

- PROPOSED RELOCATED CATCH BASIN
- EXISTING CATCH BASIN
- PROPOSED STORM PIPE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND FIRE PROTECTION
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND SANITARY
- EXISTING UNDERGROUND STORM
- EXISTING UNDERGROUND WATER
- EXISTING UNDERGROUND UNKNOWN UTILITY
- EXISTING UNDERGROUND TELECOMMUNICATIONS
- PROPOSED DUCT BANK
- RELOCATED/REMOVED CATCH BASIN

DESIGN NOTES:

1. ALL COORDINATES ARE SUPPLIED IN THE NAD83 CONNECTICUT STATE PLANE.
3. ALL EXISTING UTILITY COORDINATES SHOWN ARE APPROXIMATE BASED ON A GPR SURVEY BY OTHERS. LOCATIONS OF UTILITIES NEED TO BE VERIFIED IN THE FIELD PRIOR TO DIGGING.
4. PIPE SIZES AND INVERTS NOT SHOWN; TO BE VERIFIED IN THE FIELD.
5. GRATE ELEVATIONS OF PROPOSED CATCH BASINS SHALL MATCH THE GRATE ELEVATIONS OF THE EXISTING CATCH BASINS BEING RELOCATED.
6. NEW PAVING SHALL BE GRADED TO DRAIN TO THE LOCATION OF THE NEW INLETS WHILE MAINTAINING AS MUCH OF THE EXISTING GRADE AS POSSIBLE.
7. ALL PIPES BEING RELOCATED/REPLACED SHALL UTILIZE THEIR EXISTING SLOPE IN ORDER TO MAINTAIN THE INTEGRITY OF THE EXISTING STORM DESIGN.
8. MAINTAIN A MINIMUM OF 6 INCHES HORIZONTAL SEPARATION BETWEEN THE PROPOSED DUCT BANK AND THE NEW LOCATION OF EACH CATCH BASIN.
9. DEWATERING BY OTHERS.

REFERENCES:

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 1 | 12/7/17 | | REVISED PER DB LOCATION | KW | STB | BM | JG | BM | PS |
| 0 | 8/2/17 | | ISSUED FOR CONSTRUCTION | KW | STB | BM | DL | LA | SO |

REVISION

RCM Technologies
Energy Services

SNC • LAVALIN CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG**
*Power Connecticut LLC*

# BRIDGEPORT 05
## 345kv UNDERGROUND TRANSMISSION
## STORM DRAIN RELOCATION PLAN
## SHEET 1

STANDARDS — CIVIL

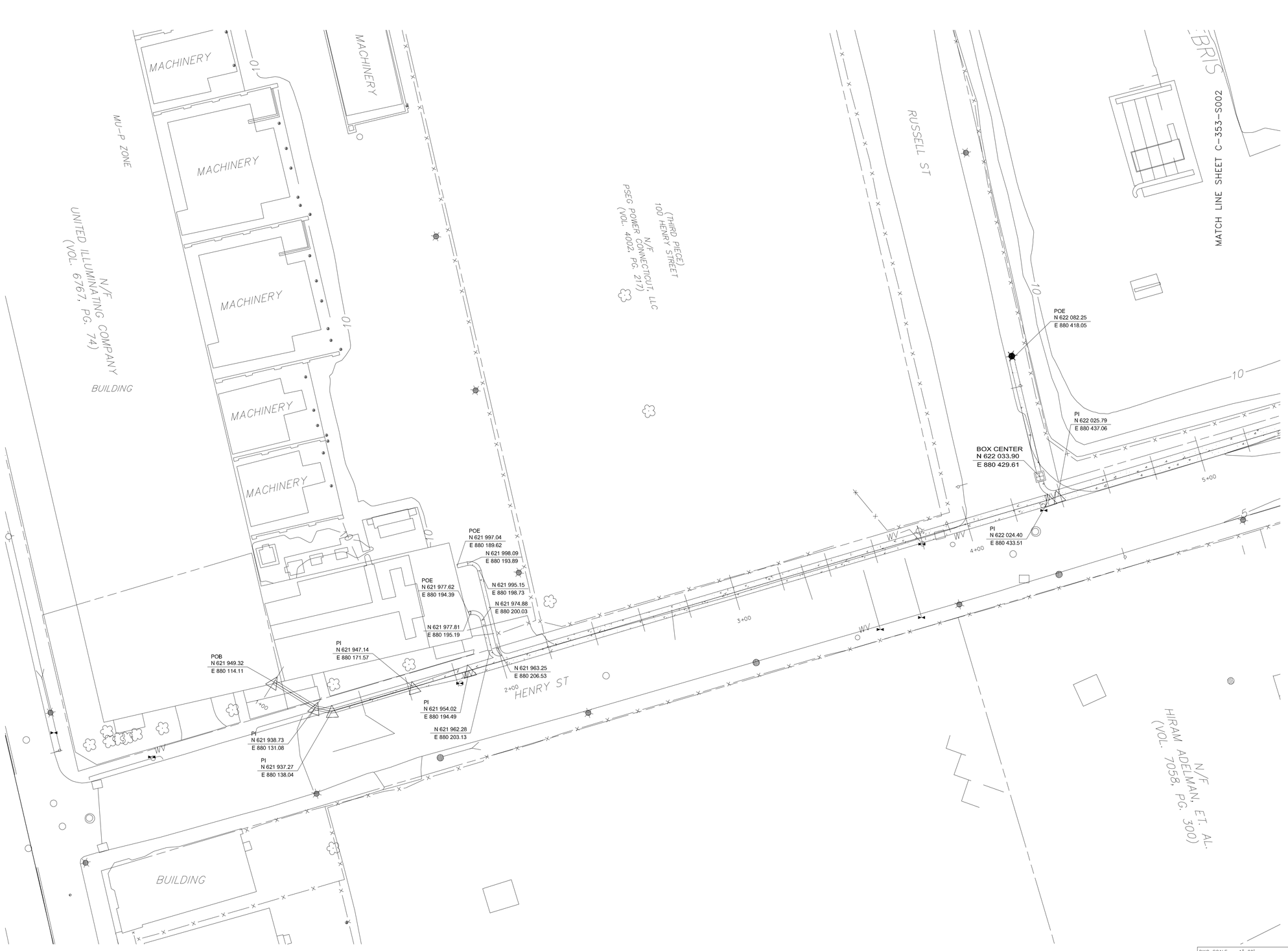
DWG SCALE: 1"=40'

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK A. SPOSATO
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| K WALLACE | S. BLANTON | BOBBY MCFARLAND |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.

644911 C352-S001 | 1




LEGENDS/SYMBOL KEYS:

DESIGN NOTES:

1. ALL COORDINATES FOR THIS SHEET ARE SUPPLIED IN THE NAD83 CONNECTICUT STATE PLANE.
2. FOR DB SECTIONS AND DETAILS REFER TO ELECTRICAL DRAWINGS E360-S001,S002,S003.
3. THIS DRAWING IS SOLELY FOR THE PURPOSE OF SHOWING COORDINATES FOR THE ELECTRICAL DUCT BANK HORIZONTAL LAYOUT WORK THIS DRAWING WITH THE ELECTRICAL PLAN AND PROFILE DRAWINGS E353-S001,S002.

REFERENCES:

| | |
|---|---|
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353-S001 | PLAN & PROFILE SINGER SUB TO GIS BLDG SHT. 1-2 |
| 644911 E353-S002 | PLAN & PROFILE SINGER SUB TO GIS BLDG SHT. 2-2 |
| 644911 E360-S001 | DUCT BANK SECTIONS AND DETAILS |
| 644911 E360-S002 | DUCT BANK DETAILS 2 |
| 644911 E360-S003 | DUCT BANK REBAR DETAILS |
| 644911 E357-S001 | CABLE VAULT PLAN AND SECTIONS |
| 644911 C353-S002 | ELECTRICAL DUCT BANK LOCATION |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 12/19/17 | | ISSUED FOR CONSTRUCTION | KW | STB | BM | JG | BM | PS |

REVISION

RCM Technologies
Energy Services

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CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG**
*Power Connecticut LLC*

# BRIDGEPORT 05
## 345kv UNDERGROUND TRANSMISSION
## ELECTRICAL DUCT BANK LOCATION
## SHEET 1 OF 2

STANDARDS CIVIL

| | | | |
|---|---|---|---|
| DWG SCALE: 1"=20' | DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
| | K WALLACE | S. BLANTON | BOBBY MCFARLAND |
| SEAL: PATRICK SPOSATO, P.E. STATE OF CONNECTICUT PATRICK G. SPOSATO LIC. NO. 19886 LICENSED PROFESSIONAL ENGINEER | REVIEWED (ENGR RCMT) | REVIEWED (PROJ ENGR RCMT) | APPROVED (PRINCIPAL RCMT) |
| CT PROFESSIONAL ENGINEER LIC. NO. 19886 | JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO. 644911 C353-S001 | 0

PLANT NORTH

MATCH LINE SHEET C-353-S001

PARCEL # 3
N/F BRIDGEPORT ENERGY, LLC
(VOL. 3816, PG. 185)

MH

DEBRIS

PILE

Water MH
TF=8.45

WALL PENETRATION
N 622 164.72
E 880 848.60

WALL PENETRATION
N 622 146.26
E 880 855.67

FOR DB LOCATIONS
IN THIA AREAUSE
DRAWING E361-S001

N 622 084.87
E 880 603.72

BOX CENTER
N 622 087.96
E 880 635.94

BOX CENTER
N 622 096.60
E 880 639.69

N 622 087.26
E 880 630.93

N 622 085.13
E 880 626.35

N 622 073.34
E 880 588.53

N 622 067.00
E 880 574.37

N 622 063.16
E 880 562.72

N 622 056.81
E 880 541.10

N 622 089.34
E 880 654.07

N 622 080.68
E 880 638.08

N 622 077.86
E 880 628.49

N 622 077.74
E 880 610.82

BOX CENTER
N 622 078.55
E 880 633.50

N 622 059.11
E 880 548.85

M&M
FENCE

BUILDING

MICHAEL L. MAUZERALL
N/F
(VOL. 8598, PG. 150)

MISC. STORAGE

BUILDING

PILE

PILE

PILE

TRAILER

Water MH
TF=9.81

H/F

LEGENDS/SYMBOL KEYS:

DESIGN NOTES:

1. ALL COORDINATES FOR THIS SHEET ARE SUPPLIED IN THE NAD83 CONNECTICUT STATE PLANE.
2. FOR DB SECTIONS AND DETAILS REFER TO ELECTRICAL DRAWINGS E360-S001,S002,S003.
3. THIS DRAWING IS SOLELY FOR THE PURPOSE OF SHOWING COORDINATES FOR THE ELECTRICAL DUCT BANK HORIZONTAL LAYOUT WORK THIS DRAWING WITH THE ELECTRICAL PLAN AND PROFILE DRAWINGS E353-S001,S002.

REFERENCES:

| | |
|---|---|
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353-S001 | PLAN & PROFILE SINGER SUB TO GIS BLDG SHT. 1-2 |
| 644911 E353-S002 | PLAN & PROFILE SINGER SUB TO GIS BLDG SHT. 2-2 |
| 644911 E360-S001 | DUCT BANK SECTIONS AND DETAILS |
| 644911 E360-S002 | DUCT BANK DETAILS 2 |
| 644911 E360-S003 | DUCT BANK REBAR DETAILS |
| 644911 E357-S001 | CABLE VAULT PLAN AND SECTIONS |
| 644911 C353-S001 | ELECTRICAL DUCT BANK LOCATION |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 12/19/17 | | ISSUED FOR CONSTRUCTION | KW | STB | BM | JG | BM | PS |

REVISION

RCM Technologies
Energy Services

SNC • LAVALIN
CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG**
*Power Connecticut LLC*

# BRIDGEPORT 05
## 345kv UNDERGROUND TRANSMISSION
## ELECTRICAL DUCT BANK LOCATION
## SHEET 2 OF 2

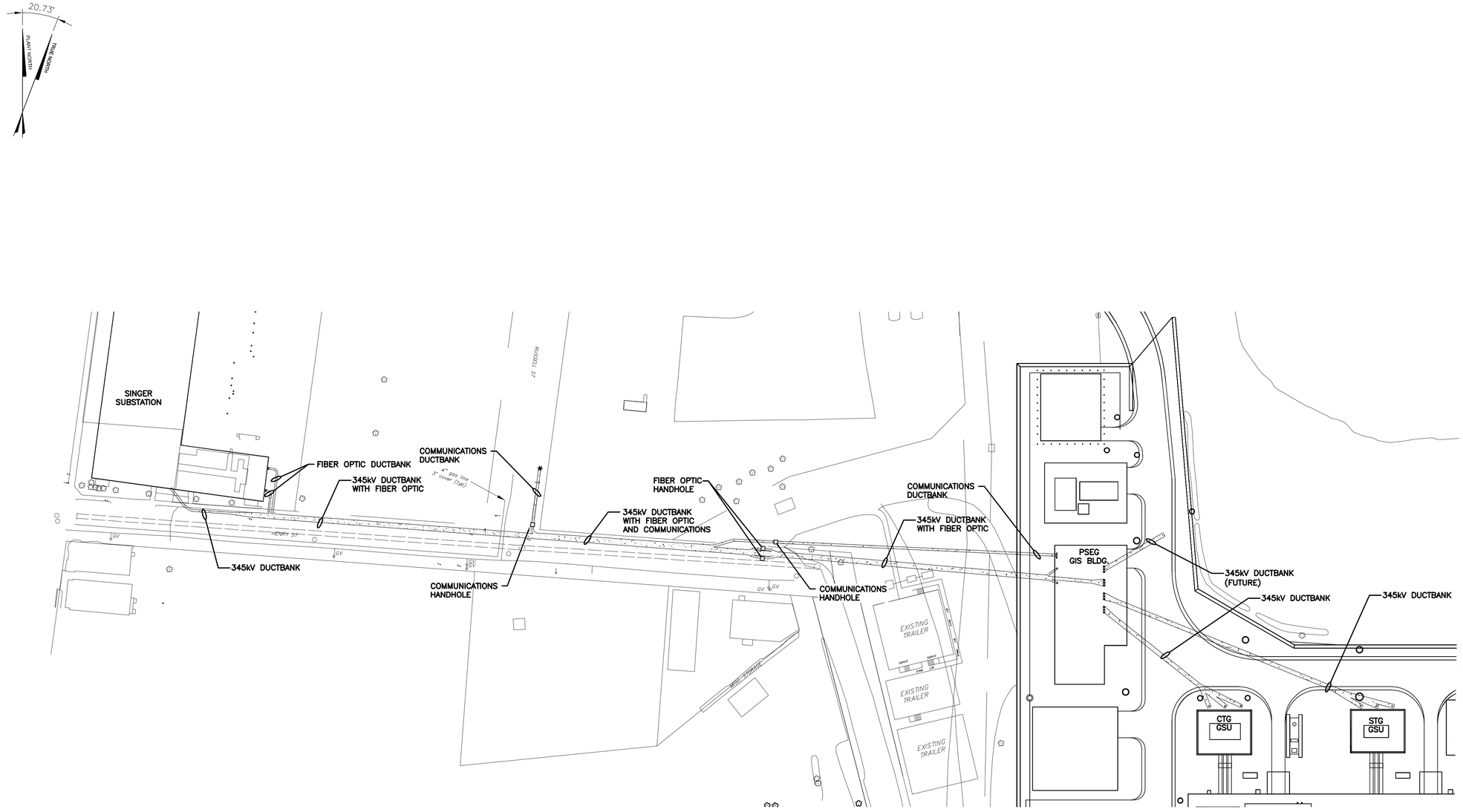
STANDARDS CIVIL

DWG SCALE: 1"=20'

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK V. SPOSATO
No. 19886
REGISTERED
PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| K WALLACE | S. BLANTON | BOBBY MCFARLAND |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 C353-S002 | 0




## OVERALL PLAN

345kV UNDERGROUND
TRANSMISSION INSTALLATION
SCALE: 1"= 50'-0"

LEGENDS/SYMBOL KEYS:

DESIGN NOTES:

REFERENCES:

| | |
|---|---|
| 25251-412 | UI – SINGER SUBSTATION |
| 25251-518 | UI – SINGER SUBSTATION |
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353-S001 | PLAN AND PROFILE SINGER SUB TO GIS SHT. 1 OF 2 |
| 644911 E353-S002 | PLAN AND PROFILE SINGER SUB TO GIS SHT. 2 OF 2 |
| 644911 E355-S001 | PLAN & PROFILE GIS BLDG TO CTG GIS |
| 644911 E356-S001 | PLAN & PROFILE GIS BLDG TO STG GIS |
| 644911 E402-S005 | OVERALL GROUNDING PLAN |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 3 | 10/20/17 | | REVISED PER PSEG CHANGE REQUEST | TW | CD | RM | JG | BM | PS |
| 2 | 07/28/17 | | REVISED COMM. DUCTBANK | CD | JG | BM | DL | LA | SO |
| 1 | 06/29/17 | | ADDED COMM. DUCTBANK | CD | JG | BM | DL | LA | SO |
| 0 | 04/18/17 | | ISSUED FOR PERMITS | CD | RM | JG | BM | JS | |

REVISION

RCM Technologies
Energy Services

SNC•LAVALIN CONSTRUCTORS INC.

PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

BRIDGEPORT 05
345KV UNDERGROUND TRANSMISSION
OVERALL PLAN

STANDARDS

DESIGN-CIVIL GENERAL

SCALE: 1"= 50'-0"
0 25' 50' 100'

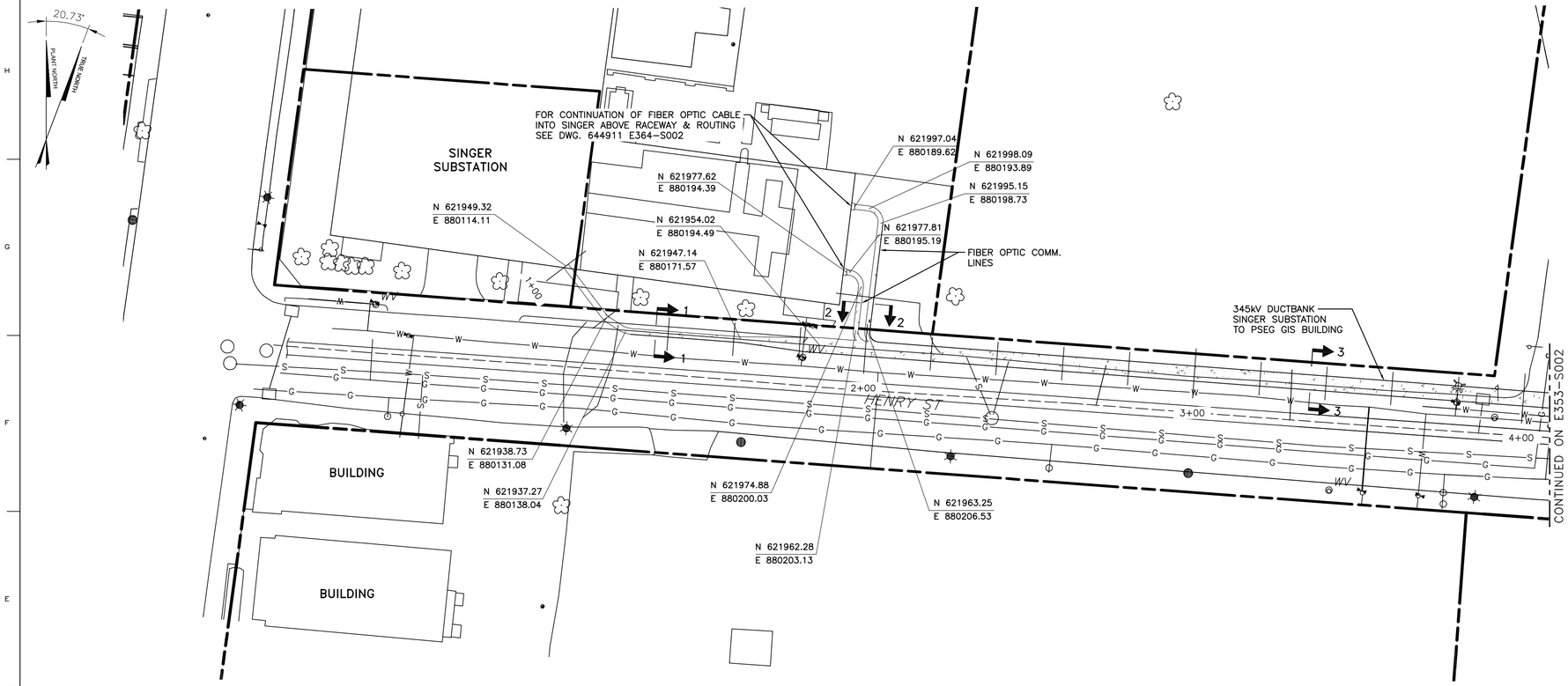
DWG SCALE: 1" = 50'-0"

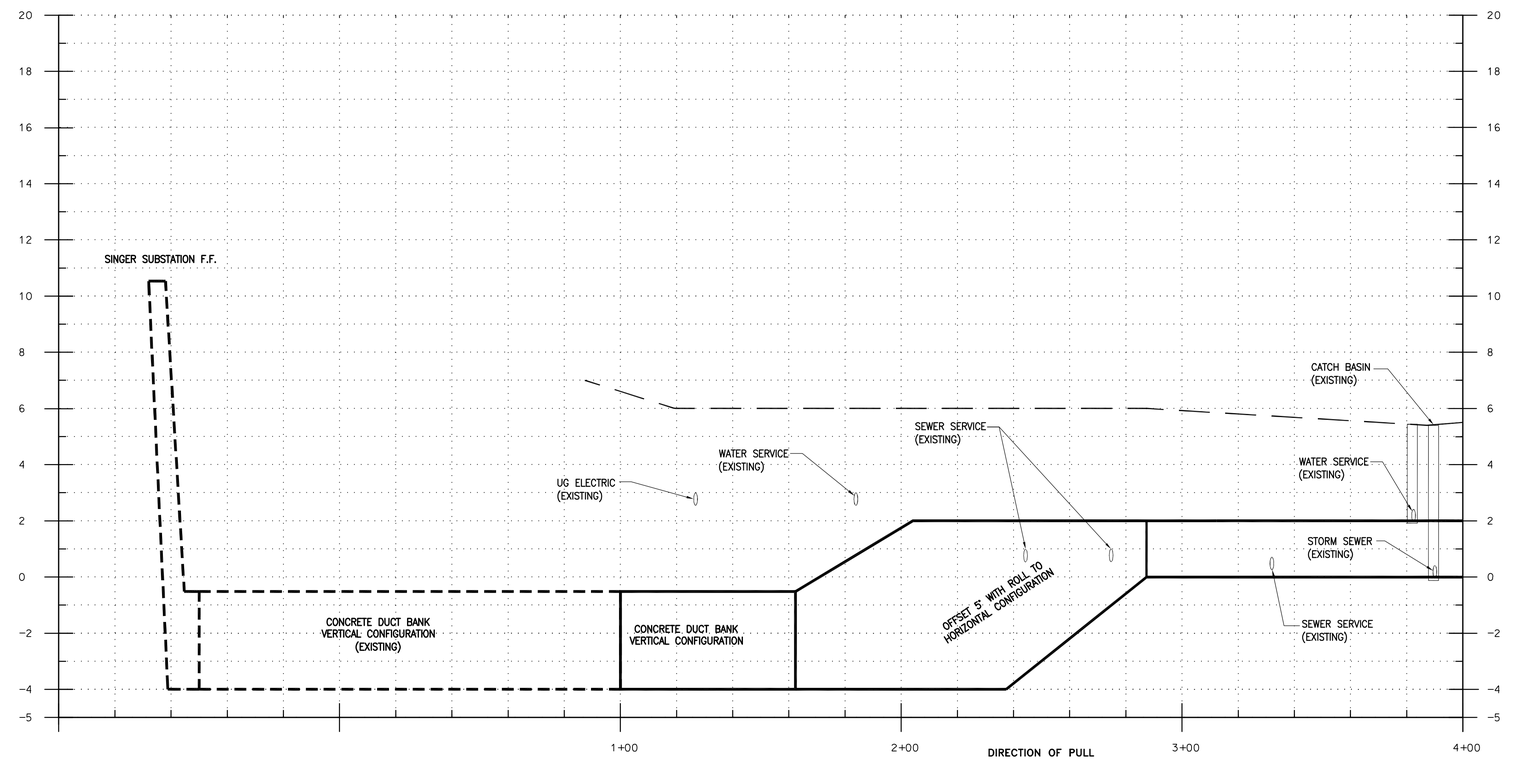
SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

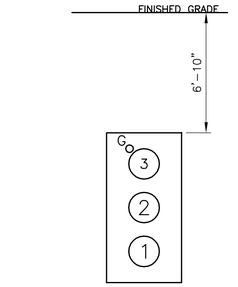
| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| REVIEWED (ENGR RCMT) | REVIEWED (PROJ ENGR RCMT) | APPROVED (PRINCIPAL RCMT) |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.

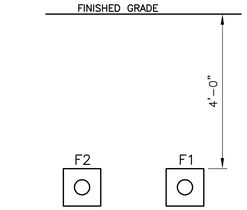
644911 E351-S001 | 4



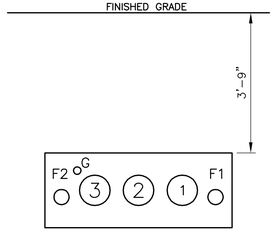




## SECTION 1
DUCT BANK DETAIL AT SINGER SUBSTATION
SECTION DETAIL ON DWG. 644991 E360-S001




## SECTION 2
DUCT BANK DETAIL AT SINGER SUBSTATION
SECTION DETAIL ON DWG. 644991 E360-S001




## SECTION 3
TYPICAL DUCT BANK DETAIL
SECTION DETAIL ON DWG. 644991 E360-S001

### LEGENDS/SYMBOL KEYS:

1 – 8 INCH DUCT FOR ø1
2 – 8 INCH DUCT FOR ø2
3 – 8 INCH DUCT FOR ø3
F1 – 4 INCH DUCT FOR PRIMARY COMMUNICATIONS
F2 – 4 INCH DUCT FOR SECONDARY COMMUNICATIONS
G – 2 INCH DUCT FOR GROUND CONDUCTOR

PROPOSED DUCT BANK

### DESIGN NOTES:

1. CABLE ENTRY INTO SINGER SUBSTATION SHALL USE EXISTING 8" CONDUITS ROUTED UNDER THE OPERATING FLOOR.
2. ELEVATIONS ARE BASED ON NAVD 88.
3. MINIMUM BENDING RADIUS FOR 2-INCH DUCT IS 24 INCHES. MINIMUM BENDING RADIUS FOR 4-INCH DUCT IS 48 INCHES". MINIMUM BENDING RADIUS FOR 8-INCH DUCT IS 10.5 FEET" U.O.N.
4. CONTRACTOR SHALL CONFIRM PHASE SEQUENCE AND DUCTBANK ORIENTATION AT ENTRY TO SINGER SUBSTATION UPON EXPOSING THE OUTDOOR END OF THE EXISTING DUCTBANK.
5. CITY WATER SERVICE SHALL BE RELOCATED TO CLEAR ROOM FOR 345kV DUCTBANK.

### REFERENCES:

| | |
|---|---|
| 25251-518 | UI – SINGER SUBSTATION |
| 25251-412 | UI – SINGER SUBSTATION |
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353-S002 | PLAN & PROFILE SINGER SUB TO GIS BLDG SHT. 2-2 |
| 644911 E360-S001 | DUCT BANK SECTIONS AND DETAILS |
| 644911 E360-S002 | DUCT BANK DETAILS 2 |
| 644911 E360-S003 | DUCT BANK REBAR DETAILS |
| 644911 E357-S001 | CABLE VAULT PLAN AND SECTIONS |
| 644911 E361-S001 | GIS INSTALLATION PLAN |
| 644911 E364-S002 | FIBER OPTIC UNDERGROUND SINGER SUBSTATION |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 4 | 10/20/17 | | REVISED PER PSEG CHANGE REQUEST | TW | CD | RM | JG | BM | PS |
| 3 | 10/16/17 | | REVISED PER UI COMMENTS | TW | CD | RM | JG | BM | PS |
| 2 | 07/28/17 | | REVISED STATION NUMBERS | CD | JG | BM | DL | LA | SO |
| 1 | 06/29/17 | | REVISED DUCT BANK ELEVATION | CD | JG | BM | DL | LA | SO |
| 0 | 04/18/17 | | ISSUED FOR PERMITS | CD | RM | JG | BM | JS | |

REVISION

RCM Technologies
Energy Services

SNC • LAVALIN
CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

PSEG
*Power Connecticut LLC*

BRIDGEPORT 05
345kV UNDERGROUND TRANSMISSION

PLAN AND PROILE SINGER SUB TO GIS BLDG
SHEET 1 OF 2

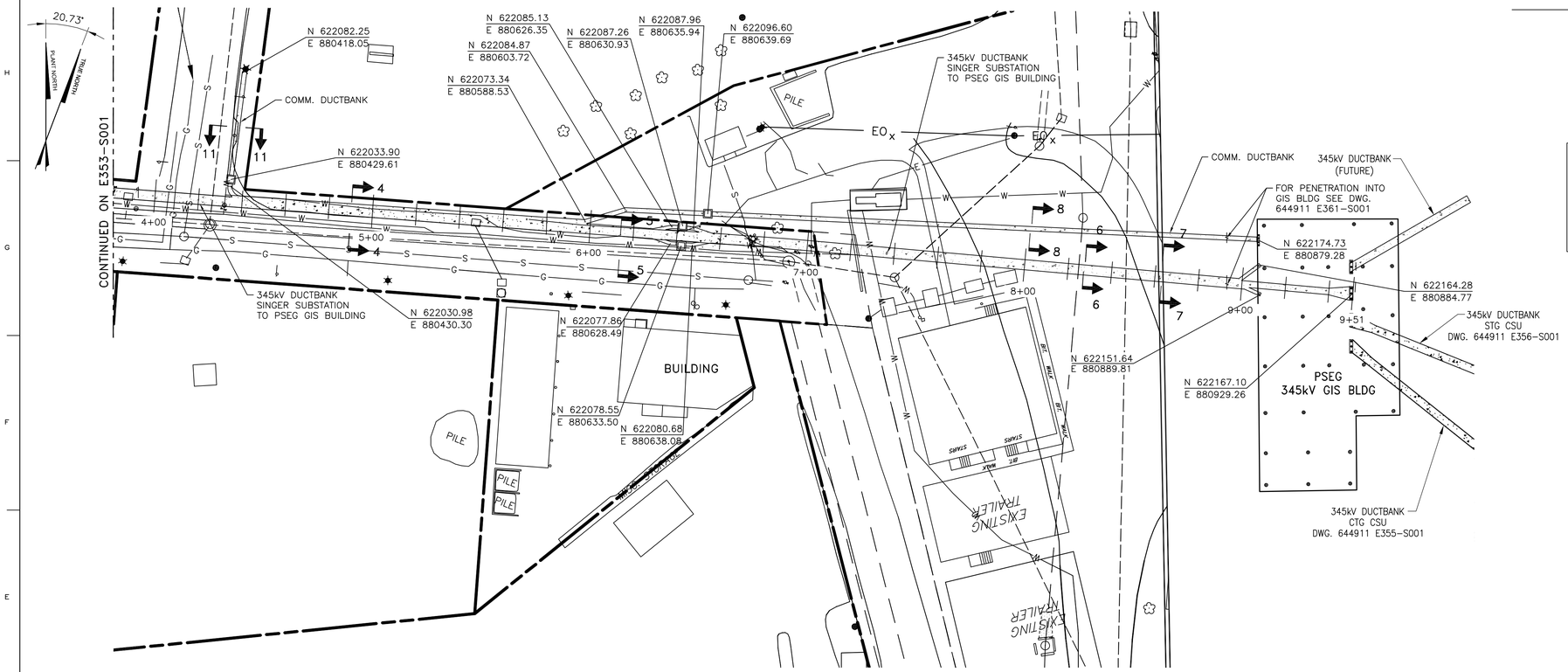
STANDARDS DESIGN-ELECTRICAL GENERAL

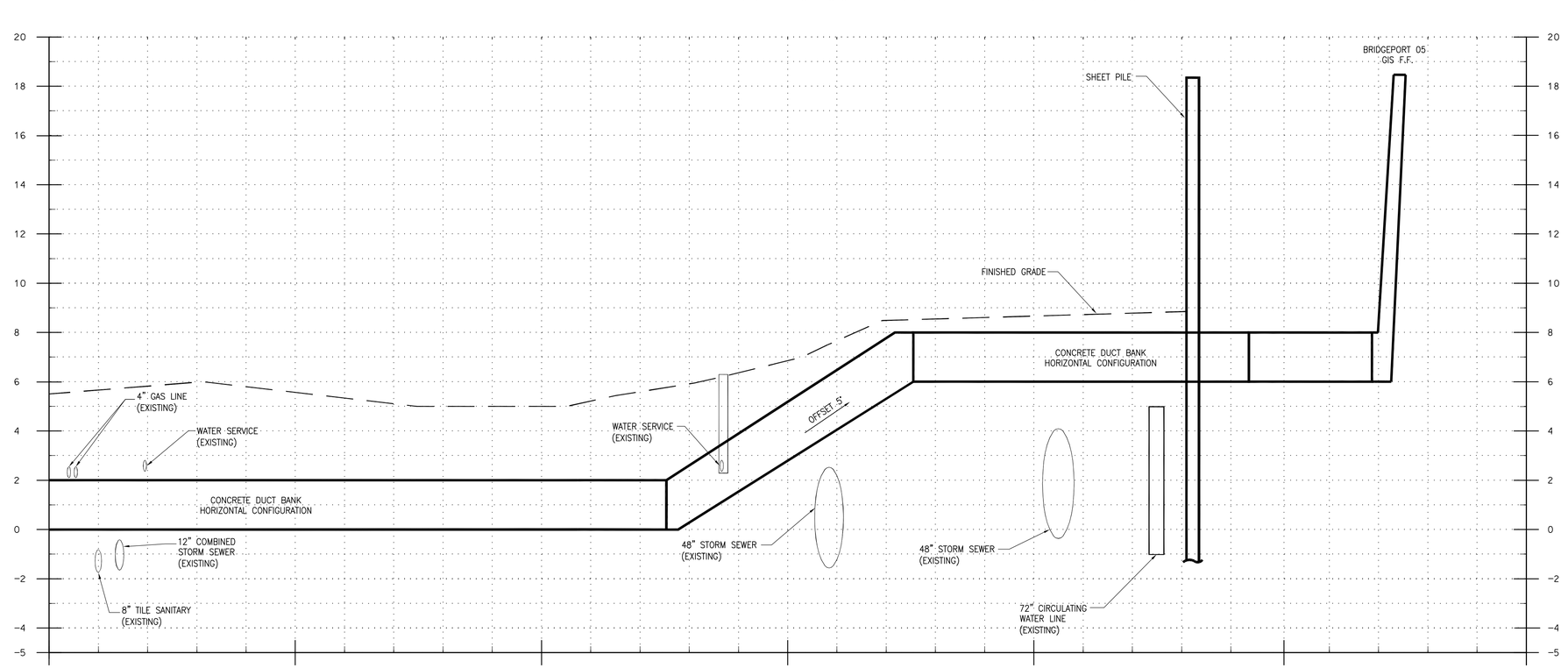
DWG SCALE: 1"=20'-0"

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK G. SPOSATO
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 E353-S001 | 5




FINISHED GRADE

3'-10"

F2 G 3 2 1 F1

## SECTION 4
TYPICAL DUCT BANK DETAIL
SECTION DETAIL ON DWG. 644991 E360-S001

FINISHED GRADE

3'-3"

F2 G 3 2 1 F1

## SECTION 5
TYPICAL DUCT BANK DETAIL
SECTION DETAIL ON DWG. 644991 E360-S001

FINISHED GRADE

0'-10"

F2 G 3 2 1 F1

## SECTION 6
TYPICAL DUCT BANK DETAIL
SECTION DETAIL ON DWG. 644991 E360-S001

FINISHED GRADE

0'-11"

F2 G 3 2 1 F1

## SECTION 7
TYPICAL DUCT BANK DETAIL
SECTION DETAIL ON DWG. 644991 E360-S001

### LEGENDS/SYMBOL KEYS:

1 – 8 INCH DUCT FOR ø1
2 – 8 INCH DUCT FOR ø2
3 – 8 INCH DUCT FOR ø3
F1 – 4 INCH DUCT FOR PRIMARY COMMUNICATIONS
F2 – 4 INCH DUCT FOR SECONDARY COMMUNICATIONS
G – 2 INCH DUCT FOR GROUND CONDUCTOR

PROPOSED DUCT BANK

### DESIGN NOTES:

1. CABLE ENTRY INTO SINGER SUBSTATION SHALL USE EXISTING 8" CONDUITS ROUTED UNDER THE OPERATING FLOOR.
2. ELEVATIONS ARE BASED ON NAVD 88.
3. DUCT BANK MAY BE CONSTRUCTED IN TWO PHASES TO ALLOW ACCESS DURING LATER CONSTRUCTION.
4. MINIMUM BENDING RADIUS FOR 2-INCH DUCT IS 24 INCHES. MINIMUM BENDING RADIUS FOR 4-INCH DUCT IS 48 INCHES". MINIMUM BENDING RADIUS FOR 8-INCH DUCT IS 10.5 FEET' U.O.N.
5. CONTRACTOR SHALL CONFIRM PHASE SEQUENCE AND DUCTBANK ORIENTATION AT ENTRY TO SINGER SUBSTATION UPON EXPOSING THE OUTDOOR END OF THE EXISTING DUCTBANK.
6. CITY WATER SHALL BE RELOCATED TO CLEAR ROOM FOR 345kV DUCTBANK.

### REFERENCES:

| | |
|---|---|
| 25251-518 | UI – SINGER SUBSTATION |
| 25251-412 | UI – SINGER SUBSTATION |
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353-S001 | PLANT PROFILE SINGER SUB TO GIS BLDG SHT. 1 OF 2 |
| 644911 E357-S001 | CABLE VAULT PLAN AND SECTIONS |
| 644911 E360-S001 | DUCT BANK SECTIONS AND DETAILS |
| 644911 E360-S002 | DUCT BANK DETAILS 2 |
| 644911 E360-S003 | DUCT BANK REBAR DETAILS |
| 644911 E361-S001 | GIS INSTALLATION PLAN |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 3 | 10/20/17 | | REVISED PER PSEG CHANGE REQUEST | TW | CD | RM | JG | BM | PS |
| 2 | 10/16/17 | | REVISED PER UI COMMENTS | TW | CD | RM | JG | BM | PS |
| 1 | 07/28/17 | | REVISED COMM. DUCTBANK | CD | JG | BM | DL | LA | SO |
| 0 | 06/29/17 | | ISSUED FOR CONSTRUCTION | CD | JG | BM | DL | LA | SO |

REVISION

RCM Technologies
Energy Services

SNC•LAVALIN
CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

PSEG
*Power Connecticut LLC*

# BRIDGEPORT 05
## 345kV UNDERGROUND TRANSMISSION

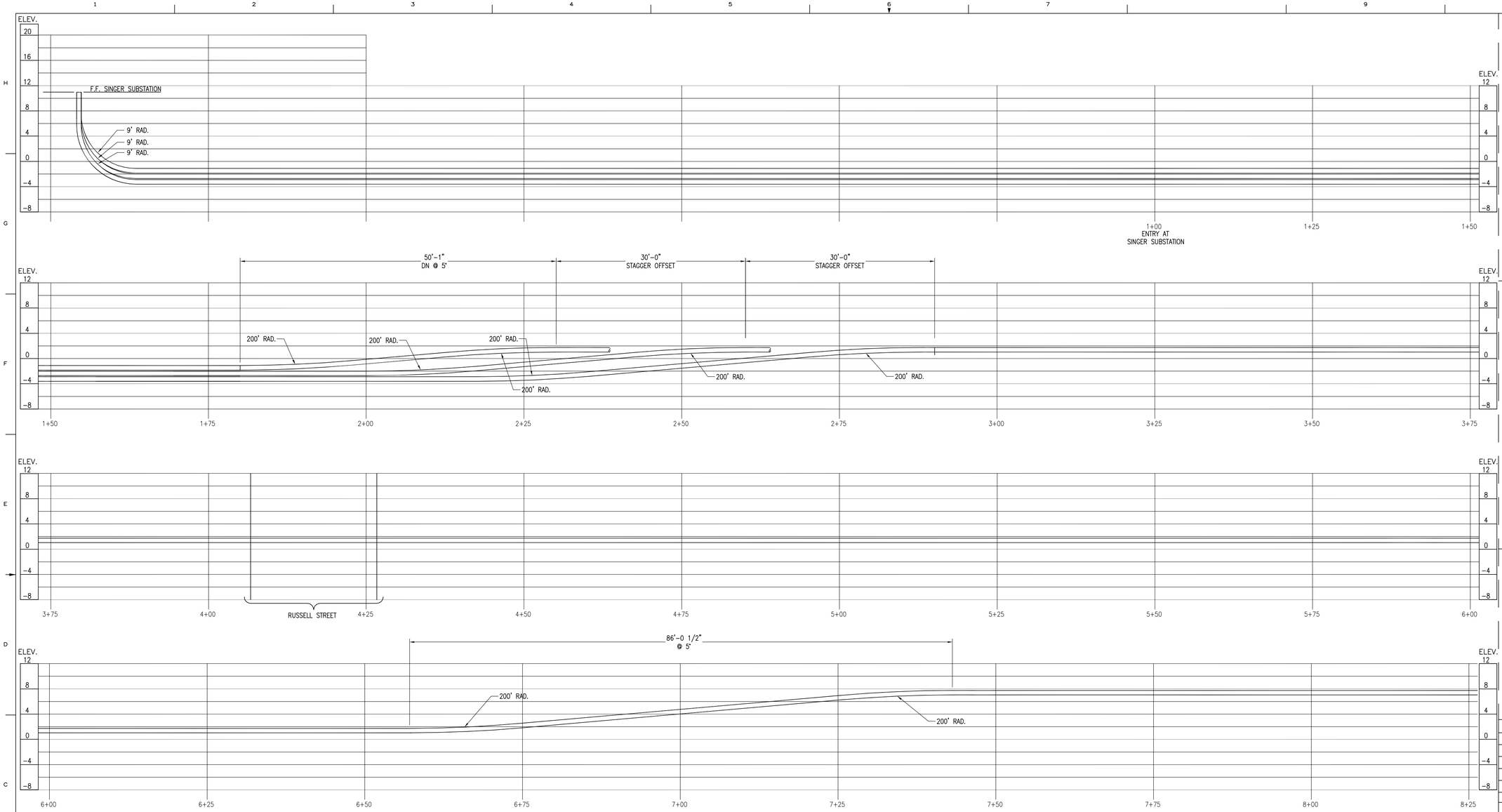
PLAN AND PROILE SINGER SUB TO GIS BLDG
SHEET 2 OF 2
STANDARDS DESIGN-ELECTRICAL GENERAL

DWG SCALE: 1"=30'-0"

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
LIC. NO. 19886
REGISTERED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 E353-S002 | 4




LEGENDS/SYMBOL KEYS:

DESIGN NOTES:

1. CABLE ENTRY INTO SINGER SUBSTATION SHALL USE EXISTING 8" CONDUITS ROUTED UNDER THE OPERATING FLOOR.
2. ELEVATIONS ARE BASED ON NAVD 88.
3. MINIMUM BENDING RADIUS FOR 2−INCH DUCT IS 24 INCHES. MINIMUM BENDING RADIUS FOR 4−INCH DUCT IS 48 INCHES. MINIMUM BENDING RADIUS FOR 8−INCH DUCT IS 10 FEET. U.O.N.
4. ALL 8" CONDUIT SHALL USE FACTORY BENDS.

REFERENCES:

| | |
|---|---|
| 25251−518 | UI − SINGER SUBSTATION |
| 25251−412 | UI − SINGER SUBSTATION |
| 644911 E350−S001 | GENERAL NOTES AND REFERENCES |
| 644911 E353−S001 | PLAN AND PROFILE SINGER SUB TO GIS SHT. 1 OF 2 |
| 644911 E353−S001 | PLAN AND PROFILE SINGER SUB TO GIS SHT. 2 OF 2 |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 3 | 10/20/17 | | REVISED PER PSEG CHANGE REQUEST | TW | CD | RM | JG | BM | PS |
| 2 | 07/28/17 | | REVISED BEND RADIUS | CD | JG | BM | DL | LA | SO |
| 1 | 06/29/17 | | REVISED ELEVATIONS | CD | JG | BM | DL | LA | SO |
| 0 | 04/18/17 | | ISSUED FOR PERMITS | CD | RM | JG | BM | JS | |

REVISION

RCM Technologies
Energy Services

SNC•LAVALIN
CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

**PSEG**
*Power Connecticut LLC*

# BRIDGEPORT 05
## 345KV UNDERGROUND TRANSMISSION
## CONDUIT PROFILE SINGER SUB TO GIS BLDG

STANDARDS — DESIGN−CIVIL GENERAL

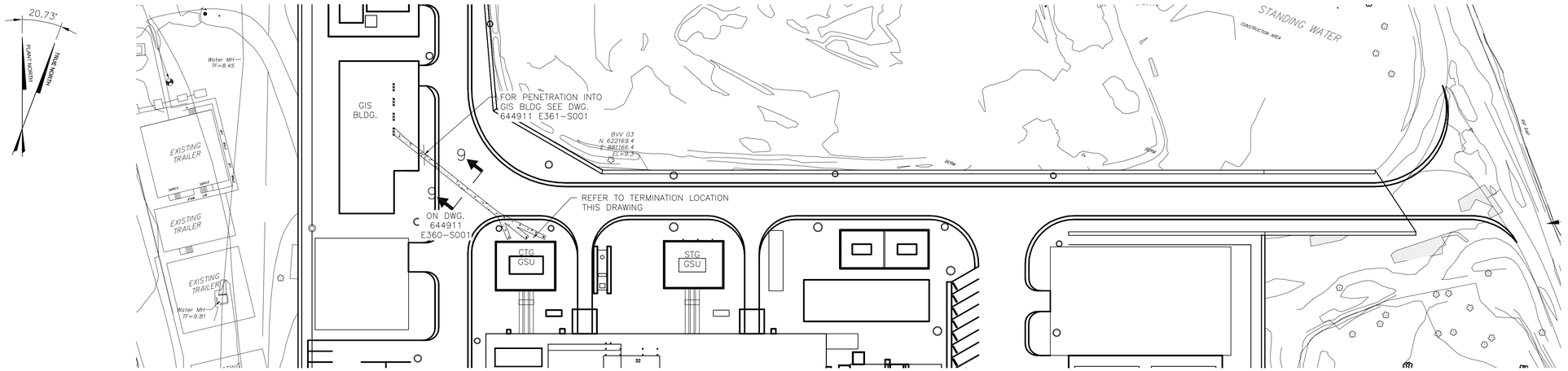
DWG SCALE: N.T.S.

SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
PATRICK G. SPOSATO
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER LIC. NO. 19886

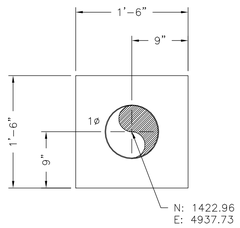
| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PARTICK SPOSATO |

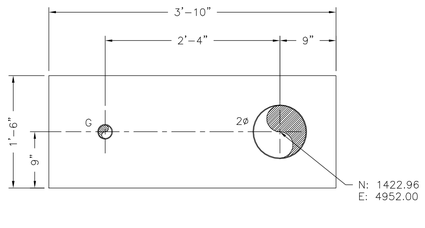
VENDOR NO.

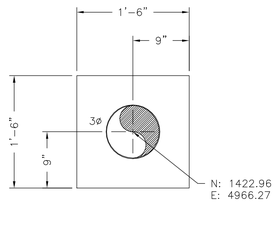
644911 E354−S001 | 4



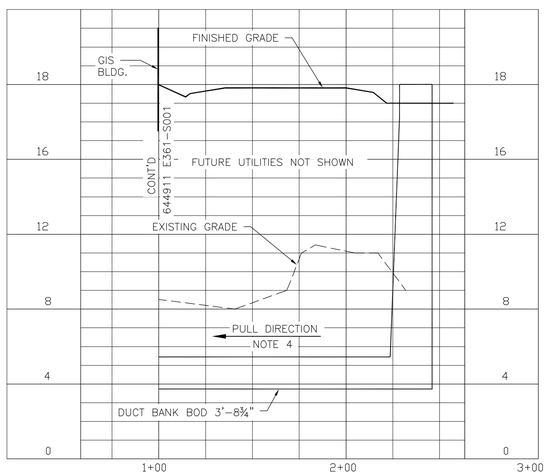

## PLAN
SCALE: 1"=50'-0"



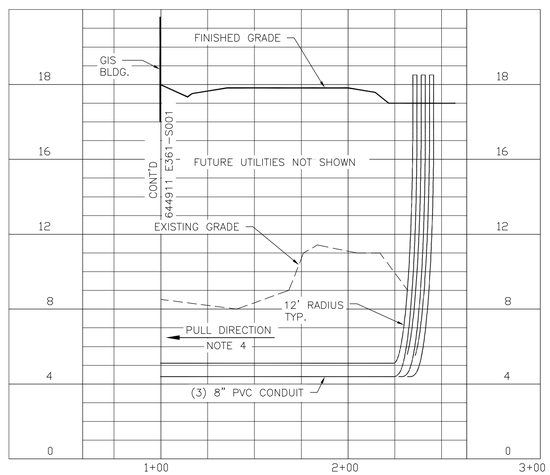




## CTG GSU 345kv DUCT TERMINATION LOCATIONS
SCALE: 1"=1'-0"




## PROFILE OF DUCT BANK FOR GIS BUILDING TO CTG GSU




## PROFILE OF CONDUIT FOR GIS BUILDING TO CTG GSU

LEGENDS/SYMBOL KEYS:

### DESIGN NOTES:

1. CABLE ENTRY INTO SINGER SUBSTATION SHALL USE EXISTING 8" CONDUITS ROUTED UNDER THE OPERATING FLOOR.
2. ELEVATIONS ARE BASED ON NAVD 88.
3. MINIMUM BENDING RADIUS FOR 2-INCH DUCT IS 24 INCHES. MINIMUM BENDING RADIUS FOR 4-INCH DUCT IS 48 INCHES. MINIMUM BENDING RADIUS FOR 8-INCH DUCT IS 10.5 FEET U.O.N.
4. DIRECTION OF BELL AN SPIGOTS ARE CRITICAL TO CABLE INSTALL. ALIGN AS SHOWN ON DWG. 644911 E360-S002.
5. ALL 8" CONDUIT SHALL USE FACTORY BENDS.

### REFERENCES:

| | |
|---|---|
| 644911 E350-S001 | GENERAL NOTES AND REFERENCES |
| 644911 E360-S002 | DUCT BANK DETAILS 2 |
| 644911 E361-S001 | GIS BUILDING INSTALLATION PLAN |

| NO | DATE | ACCT | DESCRIPTION | DWN | CKD | EXD | REV | REV | APD |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 11/17/17 | | ISSUED FOR CONSTRUCTION | TW | CD | RM | JG | BM | PS |
| 3 | 10/16/17 | | REVISED PER UI COMMENTS | TW | CD | RM | JG | BM | PS |
| 2 | 07/28/17 | | REVISED DUCTBANK | CD | JG | BM | DL | LA | SO |
| 1 | 06/29/17 | | REVISED DUCTBANK PLAN | CD | JG | BM | DL | LA | SO |
| 0 | 04/18/17 | | ISSUED FOR PERMITS | TW | RM | JG | BM | JS | |

REVISION

RCM Technologies
Energy Services

SNC•LAVALIN CONSTRUCTORS INC.

**PROJECT ENGINEERING DIVISION**

PSEG
Power Connecticut LLC

BRIDGEPORT 05
345KV UNDERGROUND TRANSMISSION
DUCT BANK PLAN AND PROFILE
GIS BLDG TO CTG GSU

STANDARDS DESIGN-CIVIL GENERAL

DWG SCALE: N.T.S.

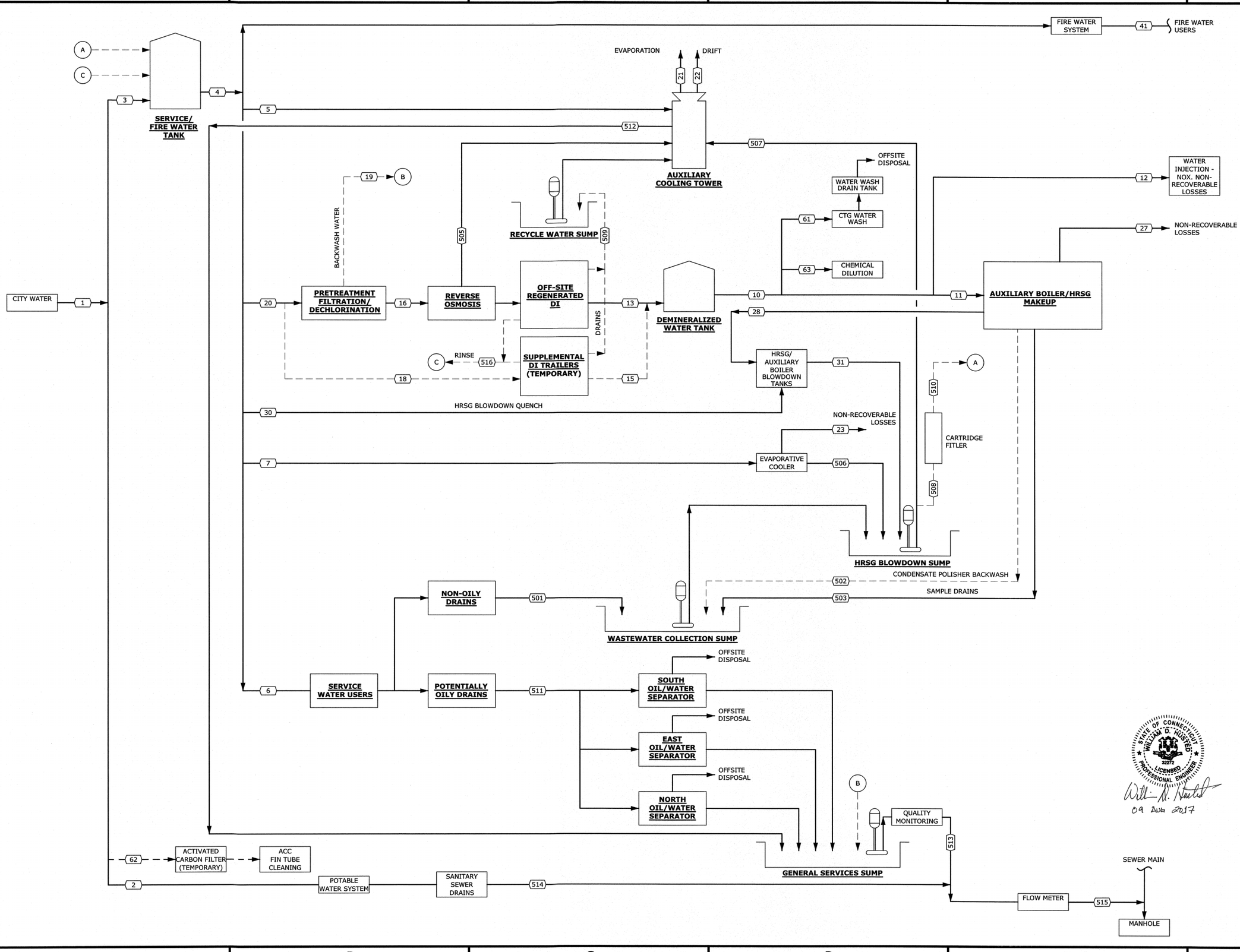
SEAL:
PATRICK SPOSATO, P.E.
STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
CT PROFESSIONAL ENGINEER
LIC. NO. 19886

| DRAWN (RCMT) | CHECKED (RCMT) | EXAMINED (SR DESIGNER RCMT) |
|---|---|---|
| TOM WALKER | CINDY DECKMAN | REYNOLD MCPHERSON |
| **REVIEWED (ENGR RCMT)** | **REVIEWED (PROJ ENGR RCMT)** | **APPROVED (PRINCIPAL RCMT)** |
| JOE GRANT | BOBBY MCFARLAND | PATRICK SPOSATO |

VENDOR NO.
644911 E355-S001 | 4

## Exhibit 6 Water Balances

| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911-FD002-S001 | 0 | Water Mass Balance Water System Flow Diagram SHT 1 |
| 644911-FD002-S002 | 1 | Water Mass Balance Water System Flow Diagram SHT 2 |
| 644911-FD002-S003 | 0 | Water Mass Balance Water System Flow Diagram SHT 3 |
| 644911-FD002-S004 | 0 | Water Mass Balance Water System Flow Diagram SHT 4 |
| 644911-FD002-S005 | 1 | Water Mass Balance Water System Flow Diagram SHT 5 |




## GENERAL NOTES:

1. THE INTENT OF THIS DIAGRAM IS TO SHOW THE MAJOR WATER AND WASTEWATER FLOWS.
2. REFER TO 644911-FD002-S002 FOR STREAM FLOW DATA.
3. DASHED LINES REPRESENT INTERMITTENT FLOWS.

Figure 4

ISSUED FOR CONSTRUCTION

| | | | | | | |
|---|---|---|---|---|---|---|
| 0 | 8/10/17 | | WDH | WDH | LA | SF |

ISSUED FOR APPROVAL

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | 05/17/17 | WW | WDH | WDH | LA | SF | SEO |

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|

STATE OF CONNECTICUT · WILLIAM D. KASTED · 32272 · LICENSED PROFESSIONAL ENGINEER

09 AUG 2017

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

PROCESS FLOW DIAGRAM
WATER SYSTEM
FLOW DIAGRAM
SHT. 1 OF 5

WATER BALANCE — MECHANICAL-PIPING

VENDOR NO.

644911-FD002-S001

0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/ SEEN BY

**FOR WASTEWATER PERMIT APPLICATION**

| Stream no. | Description | Unit | Low Ambient Case | CASE 1 | CASE 2 | CASE 3 | CASE 4 | CASE 5 | CASE 6 | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | USLD, EC off, DF ON, 100% GT load | NG, EC off, DF Off, 100% GT load | NG, EC ON, DF ON, 100% GT load | USLD, EC off, DF Off, 100% GT load | NG, EC ON, DF ON, 100% GT load | NG, EC ON, DF ON, 100% GT load | USLD, EC OFF DF ON, 100% GT load | |
| | Ambient temperature | | 0 F | 59 F / 60% RH | 90 F / 70% RH | 35 F / 50% RH | 90 F / 70% RH | 59 F / 60% RH | 35 F / 50% RH | |
| | HRSG & Heat balance Case no. | | 56 & CCA20146 | Case 1 (HRSG) & Heat balance CCA20095 | Case 2 (HRSG performance) & Heat balance CCA20081 | Case 3 (HRSG) & Heat balance CCA20139 | Case 4 (HRSG) & Heat balance CCA20081 | Case 5 (HRSG) & Heat balance CCA20004 | Case 6 (HRSG) & Heat balance CCA20138 | |
| 1 | City water supply | gpm | 586 | 120 | 169 | 618 | 169 | 143 | 623 | |
| 2 | Potable water network | gpm | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| 3 | Supply to Service/Fire water tank | gpm | 584 | 118 | 167 | 616 | 167 | 141 | 621 | |
| 4 | service water demand | gpm | 619 | 118 | 167 | 647 | 167 | 141 | 656 | |
| 5 | Service water makeup to CT makeup | gpm | 8 | 64 | 79 | 30 | 79 | 59 | 31 | |
| 6 | Service water for misc uses | gpm | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 7 | Supply to CTG evap cooler | gpm | 0 | 0 | 23 | 0 | 23 | 20 | 0 | |
| | Total steam rate | lb/h | 1,072,600 | 821,700 | 1,032,100 | 812,500 | 1,028,000 | 993,100 | 1,002,500 | |
| 11 | Boiler makeup | gpm | 38 | 29 | 36 | 28 | 36 | 35 | 35 | |
| 12 | Nox Water | gpm | 493 | 0 | 0 | 509 | 0 | 0 | 509 | |
| 10 | Total demin water | gpm | 531 | 29 | 36 | 537 | 36 | 35 | 544 | |
| 13 | Leased RO/DI trailers, permeate | gpm | 300 | 29 | 36 | 300 | 36 | 35 | 300 | |
| 15 | Supplement DI trailer, min flow | gpm | 231 | 0 | 0 | 237 | 0 | 0 | 244 | |
| 16 | Leased RO/DI trailers, feed | gpm | 353 | 34 | 42 | 353 | 42 | 41 | 353 | |
| 18 | Supplement DI trailer, feed | gpm | 237 | 0 | 0 | 244 | 0 | 0 | 251 | |
| 19 | Water pretreatment backwash | gpm | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 20 | Total supply to water treatment | gpm | 591 | 35 | 43 | 598 | 43 | 42 | 605 | |
| 21 | CT evaporation | gpm | 46 | 86 | 105 | 68 | 105 | 86 | 68 | |
| | CT makeup from all sources | gpm | 64 | 97 | 123 | 87 | 123 | 100 | 87 | |
| | CT Cycles of concentration | - | 3.5 | 8.5 | 7.0 | 4.6 | 7.0 | 7.0 | 4.5 | |
| 22 | CT Drift | gpm | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| 23 | CTG evap cooler evaporation | gpm | 0 | 0 | 19 | 0 | 19 | 17 | 0 | |
| 27 | Misc loses from w/s cycle | gpm | 11.8 | 8.0 | 11.2 | 7.9 | 11.1 | 10.6 | 10.7 | |
| 28 | HRSG blowdown | gpm | 21 | 16 | 21 | 16 | 21 | 20 | 20 | 1% Blowdown |
| | Blowdown, after flashing | gpm | 13 | 10 | 12 | 10 | 12 | 12 | 12 | |
| 30 | Quench water, gpm | gpm | 10 | 9 | 11 | 9 | 11 | 11 | 11 | |
| 31 | To blowdown sump | gpm | 23 | 19 | 24 | 19 | 24 | 23 | 23 | NOTE 2 |
| 41 | Fire water system | gpm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 61 | Demin water to CTG water wash | gpm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 62 | To ACC fin tube cleaning | gpm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 63 | Demin water to chemical dilution | gpm | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 501 | Non oily wastewater | gpm | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| 502 | Condensate polisher backwash | gpm | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | |
| 503 | sample panel drains | gpm | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |
| 505 | RO reject | gpm | 53 | 5 | 6 | 53 | 6 | 6 | 53 | NOTE 3 |
| 506 | Evaporative cooler blowdown | gpm | 0 | 0 | 4 | 0 | 4 | 3 | 0 | NOTE 4 |
| | Total from blowdown sump | gpm | | 28 | 37 | 28 | 37 | 35 | 32 | |
| 507 | Recycle to CT basin from BD sump | gpm | 0 | 28 | 37 | 0 | 37 | 35 | 0 | |
| 508 | To cartridge filters | gpm | 32 | 0 | 0 | 28 | 0 | 0 | 32 | |
| 509 | Recycle water sump | gpm | 4 | 0 | 0 | 4 | 0 | 0 | 4 | |
| 510 | Recycle to S/F water tank | gpm | 32 | 0 | 0 | 28 | 0 | 0 | 32 | |
| 511 | Oily wastewater | gpm | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| 512 | CT blowdown | gpm | 18 | 11 | 18 | 19 | 18 | 14 | 19 | |
| 512 | Temperature | degree F | 41 | 67 | 91 | 54 | 91 | 67 | 54 | |
| 512 | Total dissolved solids | mg/l | 2415 | 1260 | 1146 | 2439 | 1145 | 1205 | 2469 | |
| 512 | Total suspended solids | mg/l | 3 | 9 | 8 | 5 | 8 | 8 | 2 | |
| 512 | Zinc | mg/l | 1.91 | 0.98 | 0.92 | 1.94 | 0.92 | 0.95 | 1.94 | |
| 513 | CT blowdown, oily ww and filter backwash | gpm | 24 | 17 | 24 | 25 | 24 | 20 | 25 | |
| 514 | Sanitary wastewater | gpm | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| 515 | Total wastewater | gpm | 26.4 | 19.5 | 25.5 | 26.9 | 25.5 | 22.3 | 27.4 | |
| 515 | Temperature | degree F | 41 | 64 | 84 | 50 | 84 | 65 | 50 | |
| 515 | Total dissolved solids | mg/l | 1766 | 855 | 872 | 1795 | 872 | 871 | 1828 | |
| 515 | Total suspended solids | mg/l | 36 | 51 | 40 | 36 | 40 | 45 | 34 | |
| 515 | Zinc | mg/l | 1.4 | 0.6 | 0.7 | 1.4 | 0.7 | 0.7 | 1.4 | |
| 516 | Rinse water recyle to service/fire water tank | gpm | 2.9 | 0 | 0 | 2.9 | 0 | 0 | 2.9 | |

## GENERAL NOTES:

1. INDICATED FLOWS RATES MAY NOT BALANCE DUE TO ROUNDING.
2. QUENCHED BLOWDOWN TEMPERATURE EQUAL OR LESS THAN 140 DEGREES F.
3. ASSUMED 85% RO RECOVERY.
4. 6 CYCLES OF CONCENTRATION.

STATE OF CONNECTICUT
WILLIAM D. HUSTED
LICENSED
PROFESSIONAL ENGINEER
32272

William D. Husted
15 Aug 2017

ORIGINAL

ISSUED FOR CONSTRUCTION
C1-C5, E1-E5: REVISED COOLING TOWER CYCLE OF CONCENTRATION FOR LOW AMBIENT AND CASE 6.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 8/15/17 | WW | WDH | WDH | HMK FOR LA | SF | | |

ISSUED FOR CONSTRUCTION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 08/10/17 | WW | WDH | WDH | HMK FOR LA | SF | |

ISSUED FOR APPROVAL

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A | 05/17/17 | WW | WDH | WDH | LA | SF | SEO | |

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

WATER MASS BALANCE
WATER SYSTEM
FLOW DIAGRAM
SHT. 2 OF 5

WATER BALANCE MECHANICAL-PIPING

VENDOR NO.
644911-FD002-S002

REV 1

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

**ESTIMATED PERFORMANCE -CASE 1**

| | Unit | City water supply, stream 1 | Demineralized water | Evaporative cooler feed, stream 7 | Evaporative cooler blowdown, stream 506 | Boiler blowdown, exclude quenching | RO reject from permanent RO/DI system, stream 505 | Combined cooling tower makeup | Cooling tower blowdown, stream 512 | Sanitary Wastewater, stream 514 | Plant discharge to sewer main, stream 515 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow rate | gpm | 120 | | 0 | 0 | 10 | 5 | 97 | 11 | 2 | 19.5 |
| Biochemical oxygen demand (5 day) | mg/l | <1 | | <1 | | | | <1 | 4.25 | 220 | 25 |
| Chemical oxygen demand | mg/l | 4.9 | | 4.9 | | | | 4.9 | 20.825 | 500 | 64 |
| Oil and grease, total* | mg/l | <1 | | <1 | <6 | | | <1 | 8.5 | 100 | 18 |
| Oil and grease, hydrocarbon fraction | mg/l | | | | | | | | | | |
| Total suspended solids | mg/l | <1 | | <1 | <6 | | | 1 | 9 | 220 | 51 |
| Ammonia, as nitrogen* | mg/l | <0.10 | | <0.10 | <0.6 | | | <0.10 | 0.04 | 30 | 3 |
| Phosphorus, total | mg/l | 0.39 | | 0.39 | 2.34 | | | 0.39 | 3.315 | 3.26 | 2.51 |
| Ortho phosphate | mg/l | 2.75 | | 2.75 | 16.5 | 6 | 18.3 | 3.90 | 33.16 | 10 | 22.11 |
| Nitrate | mg/l | 0.039 | | 0.039 | 0.234 | | | 0.03 | 0.27 | 0.078 | 0.19 |
| Nitrite* | mg/l | <0.002 | | <0.002 | <0.012 | | | <0.002 | 0.017 | | <0.02 |
| Total kjeldahl nitrogen | mg/l | 0.97 | | 0.97 | | | | 0.8 | 6.6 | 40 | 9 |
| Total residual chlorine | mg/l | 1 | | 0.2 | | | | 0.08 | 0.1 | | 0.1 |
| Temperature | degree F | 60 | | 60 | | 212 | 60 | 65.45 | 67.4 | 60 | 64.4 |
| pH | | 7-8 | | 7-8 | 7-8 | 8.8-10 | 7-9 | 7-8 | 7 - 8.5 | | 7 - 8.5 |
| Copper, total* | mg/l | <0.01 | | <0.01 | <0.06 | | | <0.01 | 0.085 | | 0.050 |
| Lead, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.0085 | | 0.005 |
| Zinc, total | mg/l | 0.1 | | 0.1 | 0.6 | | 0.7 | 0.11 | 0.98 | | 0.63 |
| Antimony, total* | mg/l | <0.0008 | | <0.0008 | <0.0048 | | | <0.0008 | 0.0068 | | 0.004 |
| Arsenic, total* | mg/l | <0.0005 | | <0.0005 | <0.003 | | | <0.0005 | 0.00425 | | 0.0025 |
| Beryllium, total* | mg/l | <0.0003 | | <0.0003 | <0.0018 | | | <0.0003 | 0.00255 | | 0.0015 |
| Cadmiun, total* | mg/l | <0.0003 | | <0.0003 | <0.0018 | | | <0.0003 | 0.00255 | | 0.0015 |
| Chronium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.0085 | | 0.005 |
| Chronium | mg/l | | | | | | | | | | |
| Mercury, total* | mg/l | <0.0002 | | <0.0002 | <0.0012 | | | <0.0002 | 0.0017 | | 0.001 |
| Nickel, total* | mg/l | <0.005 | | <0.005 | <0.003 | | | <0.005 | 0.043 | | 0.025 |
| Selenium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.009 | | 0.005 |
| Silver, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.009 | | 0.005 |
| Thallium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.009 | | 0.005 |
| Cyanide, total* | mg/l | <0.0066 | | <0.0066 | <0.04 | | | <0.0066 | 0.0561 | | 0.033 |
| Cyanide | mg/l | | | | | | | | | | |
| Phenols, total | mg/l | | | | | | | | | | |
| Bromide* | mg/l | <0.05 | | <0.05 | <0.3 | | | <0.05 | 0.425 | | 0.25 |
| Color | C.U. | 2 | | 2 | | | | 2 | 20 | | |
| Fecal coliform | CFU/100 ml | <1 | | <1 | | | | <1 | 8.5 | | |
| Fluoride | mg/l | 0.74 | | 0.74 | 4.44 | | 4.93 | 0.85 | 7.23 | | 4.8 |
| Nitrogen, total organic | mg/l | | | | | | | | | | |
| Radioactivity | mg/l | | | | | | | | | | |
| Sulfate | mg/l | 17 | 0.003 | 17 | 102 | 1 | 113 | 20 | 218 | 51 | 143 |
| sulfide | mg/l | | | | | | | | | | |
| sulfite* | mg/l | <0.05 | | <0.05 | <0.3 | | | <0.05 | 0.425 | | 0.25 |
| Surfactants | mg/l | | | | | | | | | | |
| Aluminum, total | mg/l | 0.02 | | 0.02 | 0.12 | | | 0.02 | 0.20 | | 0.12 |
| Barium, total | mg/l | 0.014 | | 0.014 | 0.084 | | | 0.016 | 0.137 | | 0.086 |
| Boron, total | mg/l | 0.012 | | 0.012 | 0.072 | | | 0.014 | 0.117 | | 0.074 |
| Cobalt, total | mg/l | | | | | | | | | | |
| Iron, total * | mg/l | <0.01 | | <0.01 | <0.06 | | 0.07 | 0.01 | 0.10 | 0.02 | 0.06 |
| Magnesium, total | mg/l | 4.5 | | 4.5 | 27 | | 30 | 5.2 | 44.0 | 9 | 29 |
| Manganese | mg/l | <0.01 | | <0.01 | <0.06 | | 0.07 | 0.01 | 0.10 | 0.02 | 0.07 |
| Calcium | mg/l | 14 | | 14 | 84 | | 93 | 16 | 137 | | 91 |
| Sodium | mg/l | 19 | 0.003 | 19 | 114 | 3 | 127 | 22 | 191 | | 127 |
| Potassium | mg/l | 2 | | 2 | 12 | | 13 | 2 | 20 | | 13 |
| Silica | mg/l | 4.4 | 0.01 | 4.4 | 26 | 2 | 29 | 5.3 | 45.1 | | 30 |
| Chloride | mg/l | 31 | 0.003 | 32 | 192 | | 207 | 36 | 303 | | 202 |
| Total dissolved solids | mg/l | 125 | | 125 | 706 | 12 | 844 | 148 | 1260 | 386 | 854 |
| Alkalinity, as CaCO3 | mg/l | 31 | | 31 | 125 | | 207 | 36 | 250 | 100 | 175 |

## GENERAL NOTES:

1. ASTERISK (*) INDICATES TESTING PARAMETER IS UNDETECTABLE IN WATER. VALUE SHOWN REPRESENTS THE DETECTION LIMIT OF THE ANALYTICAL INSTRUMENT.

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 8/10/17 | MW | WDH | WDH | HWK | JF | |

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

WATER MASS BALANCE
WATER SYSTEM
FLOW DIAGRAM
SHT. 3 OF 5

WATER BALANCE MECHANICAL-PIPING

VENDOR NO. 644911-FD002-S003

REV 0

STATE OF CONNECTICUT WILLIAM D. HUSTED 32272 LICENSED PROFESSIONAL ENGINEER

10 Aug 2017

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

**ESTIMATED PERFORMANCE- CASE 5**

| | Unit | City water supply, stream 1 | Demineralized water | Evaporative cooler feed, stream 7 | Evaporative cooler blowdown, stream 506 | Boiler blowdown, exclude quenching | RO reject from permanent RO/DI system, stream 505 | Combined cooling tower makeup | Cooling tower blowdown, stream 512 | Sanitary Wastewater, stream 514 | Plant discharge to sewer main, stream 515 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow rate | gpm | 143 | | 20 | 3 | 12 | 6 | 100 | 14 | 2 | 22 |
| Biochemical oxygen demand (5 day) | mg/l | <1 | | <1 | | | | <1 | 4 | 220 | 22 |
| Chemical oxygen demand | mg/l | 5 | | 5 | | | | 4.9 | 17 | 500 | 56 |
| Oil and grease, total* | mg/l | <1 | | <1 | <6 | | | <1 | 7 | 100 | 16 |
| Oil and grease, hydrocarbon fraction | mg/l | | | | | | | | | | |
| Total suspended solids | mg/l | <1 | | <1 | <6 | 2 | | 1 | 8 | 220 | 45 |
| Ammonia, as nitrogen* | mg/l | <0.1 | | <0.1 | <0.6 | | | <0.1 | 0.05 | 30 | 2.72 |
| Phosphorus, total | mg/l | | | 0.39 | 2 | | | 0.39 | 2.73 | 3.26 | 2.24 |
| Ortho phosphate | mg/l | 3 | | 2.75 | 17 | 6 | 18.3 | 4.6 | 31.9 | 10.0 | 22.7 |
| Nitrate | mg/l | | | 0.039 | 0.23 | | | 0.04 | 0.26 | 0.08 | 0.19 |
| Nitrite* | mg/l | <0.002 | | <0.002 | <0.012 | | | <0.002 | 0.014 | | <0.009 |
| Total kjeldahl nitrogen | mg/l | 1 | | 1 | | | | 1 | 5 | 40 | 7 |
| Total residual chlorine | mg/l | 1 | | 1.0 | | | 0 | 0.7 | 0.1 | | 0.1 |
| Temperature | degree F | 60 | | 60 | | 212 | 60 | 64.9 | 67.4 | 60 | 64.7 |
| pH | | 7-8 | | 7-8 | 0 | 8.8-10 | 7-9 | 7-8 | 7 - 8.5 | | 7 - 8.5 |
| Copper, total* | mg/l | <0.01 | | <0.01 | <0.06 | | | <0.01 | 0.07 | | 0.045 |
| Lead, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.007 | | 0.004 |
| Zinc, total | mg/l | 0.1 | | 0.1 | 0.6 | | 0.7 | 0.1 | 0.9 | | 0.7 |
| Antimony, total* | mg/l | <0.0008 | | <0.0008 | <0.0048 | | | <0.0008 | 0.0056 | | 0.0036 |
| Arsenic, total* | mg/l | <0.0005 | | <0.0005 | <0.003 | | | <0.0005 | 0.0035 | | 0.0022 |
| Beryllium, total* | mg/l | <0.0003 | | <0.0003 | <0.0018 | | | <0.0003 | 0.0021 | | 0.0013 |
| Cadmiun, total* | mg/l | <0.0003 | | <0.0003 | <0.0018 | | | <0.0003 | 0.0021 | | 0.0013 |
| Chronium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.007 | | 0.004 |
| Chronium | mg/l | | | | | | | | | | |
| Mercury, total* | mg/l | <0.0002 | | <0.0002 | <0.0012 | | | <0.0002 | 0.0014 | | 0.0009 |
| Nickel, total* | mg/l | <0.005 | | <0.005 | <0.003 | | | <0.005 | 0.035 | | 0.022 |
| Selenium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.007 | | 0.004 |
| Silver, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.007 | | 0.004 |
| Thallium, total* | mg/l | <0.001 | | <0.001 | <0.006 | | | <0.001 | 0.007 | | 0.004 |
| Cyanide, total* | mg/l | <0.0066 | | <0.0066 | <0.04 | | | <0.0066 | 0.0462 | | 0.0297 |
| Cyanide | mg/l | | | | | | | | | | |
| Phenols, total | mg/l | | | | | | | | | | |
| Bromide* | mg/l | <0.05 | | <0.05 | <0.3 | | | <0.05 | 0.35 | | 0.22 |
| Color | C.U. | 2 | | 2 | | | | 2 | 20 | | |
| Fecal coliform | CFU/100 ml | <1 | | <1 | | | | <1 | 7 | | |
| Fluoride | mg/l | 0.74 | | 0.74 | 4.44 | | 4.93 | 1.00 | 6.99 | 1.48 | 4.99 |
| Nitrogen, total organic | mg/l | | | | | | | | | | |
| Radioactivity | mg/l | | | | | | | | | | |
| Sulfate | mg/l | 17 | 0.003 | 17 | 102 | 1 | 113 | 23 | 204 | 51 | 144 |
| sulfide | mg/l | | | | | | | | | | |
| sulfite* | mg/l | <0.05 | | <0.05 | <0.3 | | | <0.05 | 0.35 | | 0.23 |
| Surfactants | mg/l | | | | | | | | | | |
| Aluminum, total | mg/l | 0.02 | | 0.02 | 0.12 | | | 0.03 | 0.19 | 0.04 | 0.13 |
| Barium, total | mg/l | 0.014 | | 0.014 | 0.084 | | | 0.019 | 0.132 | 0.028 | 0.092 |
| Boron, total | mg/l | 0.012 | | 0.012 | 0.072 | | | 0.016 | 0.113 | 0.024 | 0.079 |
| Cobalt, total | mg/l | | | | | | | | | | |
| Iron, total * | mg/l | <0.01 | | <0.01 | <0.06 | | 0.07 | 0.01 | 0.09 | 0.02 | 0.07 |
| Magnesium, total | mg/l | 5 | | 5 | 27 | | 30 | 6 | 43 | 9 | 30 |
| Manganese | mg/l | <0.01 | | <0.01 | <0.06 | | 0.07 | 0.01 | 0.09 | 0.02 | 0.07 |
| Calcium | mg/l | 14 | | 14 | 84 | | 93 | 19 | 132 | 28 | 94 |
| Sodium | mg/l | 19 | 0.003 | 19 | 114 | 1 | 127 | 26 | 183 | 38 | 130 |
| Potassium | mg/l | 2 | | 2 | 12 | | 13 | 3 | 19 | 4 | 13 |
| Silica | mg/l | 4 | 0.01 | 4 | 26 | 2 | 29 | 6.2 | 43.6 | 9 | 30.9 |
| Chloride | mg/l | 31 | 0.003 | 31 | 186 | | 207 | 42 | 293 | 62 | 209 |
| Total dissolved solids | mg/l | 125 | | 125 | 700 | 10 | 844 | 172 | 1205 | 386 | 871 |
| Alkalinity, as CaCO3 | mg/l | 31 | | 31 | 125 | | 207 | 40 | 235 | 100 | 175 |

## GENERAL NOTES:

1. ASTERISK (*) INDICATES TESTING PARAMETER IS UNDETECTABLE IN WATER. VALUE SHOWN REPRESENTS THE DETECTION LIMIT OF THE ANALYTICAL INSTRUMENT.

ORIGINAL

ISSUED FOR CONSTRUCTION

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 8/10/17 | CW | WDH | WDH | HPK LR | JF | |

STATE OF CONNECTICUT · WILLIAM D. HUSTED · 32272 · LICENSED PROFESSIONAL ENGINEER

William D. Husted
10 Aug 2017

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

WATER MASS BALANCE
WATER SYSTEM
FLOW DIAGRAM
SHT. 4 OF 5

WATER BALANCE — MECHANICAL-PIPING

VENDOR NO.: 644911-FD002-S004

REV: 0

REVIEW SEEN BY: PROCESS | PIPING | STRUCT | MECH | ELECT | INSTR

**ESTIMATED PERFORMANCE -CASE 6**

| | Unit | City water to service/fire water tank, stream 3 | Recycled from HRSG blowdown sump + demin system rinse. Stream 510+stream 516 | Service/fire water tank outlet, stream 4 | Demineralized water | Evaporative cooler feed, stream 7 | Evaporative cooler blowdown, stream 506 | Boiler blowdown, exclude quenching | RO reject from permanent RO/DI system, stream 505 | Combined cooling tower makeup | Cooling tower blowdown, stream 512 | Sanitary Wastewater, stream 514 | Plant discharge to sewer main, stream 515 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow rate | gpm | 621 | 35 | 656 | | 0 | 0 | 12 | 53 | 87.4 | 19.4 | 2 | 27.4 |
| Biochemical oxygen demand (5 day) | mg/l | <1 | 1 | 1 | | 1 | | | | 0.98 | 2.25 | 220 | 18 |
| Chemical oxygen demand | mg/l | 4.9 | 3.2 | 4.8 | | 4.8 | | | | 4.8 | 10.8 | 500 | 44 |
| Oil and grease, total* | mg/l | <1 | 0.7 | 1.0 | | 1.0 | <6 | | | 0.98 | 4.5 | 100 | 12 |
| Oil and grease, hydrocarbon fraction | mg/l | | | | | | | | | | | | |
| Total suspended solids | mg/l | <1 | 1 | 1 | | 1 | <6 | 2 | | 0.4 | 2 | 220 | 34 |
| Ammonia, as nitrogen* | mg/l | <0.1 | 0.07 | 0.10 | | 0.10 | <0.6 | | | 0.10 | 0.06 | 30 | 2.23 |
| Phosphorus, total | mg/l | 0.39 | 0.26 | 0.38 | | 0.38 | 2.30 | | | 0.4 | 1.7 | 3.26 | 1.61 |
| Ortho phosphate | mg/l | 2.75 | 3.86 | 2.81 | | 2.81 | 16.86 | 6 | 18.7 | 12.6 | 56.6 | 10 | 42.0 |
| Nitrate | mg/l | 0.039 | 0.026 | 0.038 | | 0.038 | 0.230 | | | 0.013 | 0.060 | 0.078 | 0.06 |
| Nitrite* | mg/l | <0.002 | 0.001 | 0.002 | | 0.002 | <0.012 | | | 0.002 | 0.009 | | 0.01 |
| Total kjeldahl nitrogen | mg/l | 0.97 | 0.64 | 0.95 | | 0.95 | | | | 0.3 | 1.5 | 40 | 4 |
| Total residual chlorine | mg/l | 1 | 0.3 | 1.0 | | 1.0 | | | | 0.34 | 0.1 | | 0.1 |
| Temperature | degree F | 60 | 112 | 63 | | 63 | | 212 | 63 | 66.1 | 54.1 | 60 | 55.8 |
| pH | | 7-8 | 8.1 | 7.5 | | 7.5 | 7-8 | 8.8-10 | 7-9 | 7-8 | 7- 8.5 | | 7- 8.5 |
| Copper, total* | mg/l | <0.01 | 0.01 | 0.01 | | 0.01 | 0.06 | | | 0.010 | 0.05 | | 0.03 |
| Lead, total* | mg/l | <0.001 | 0.001 | 0.001 | | 0.001 | <0.006 | | | 0.001 | 0.005 | | 0.003 |
| Zinc, total | mg/l | 0.1 | 0.1 | 0.1 | | 0.1 | 0.6 | | 0.7 | 0.43 | 1.94 | | 1.43 |
| Antimony, total* | mg/l | <0.0008 | 0.0005 | 0.008 | | 0.008 | <0.0048 | | | 0.008 | 0.004 | | 0.003 |
| Arsenic, total* | mg/l | <0.0005 | 0.0003 | 0.0005 | | 0.0005 | <0.003 | | | 0.0005 | 0.002 | | 0.002 |
| Beryllium, total* | mg/l | <0.0003 | 0.0002 | 0.0003 | | 0.0003 | <0.0018 | | | 0.0003 | 0.001 | | 0.001 |
| Cadmiun, total* | mg/l | <0.0003 | 0.0002 | 0.0003 | | 0.0003 | <0.0018 | | | 0.0003 | 0.001 | | 0.001 |
| Chronium, total* | mg/l | <0.001 | 0.001 | 0.001 | | 0.001 | <0.006 | | | 0.001 | 0.005 | | 0.003 |
| Chronium | mg/l | | | | | | | | | | | | |
| Mercury, total* | mg/l | <0.0002 | 0.0013 | 0.0003 | | 0.0003 | <0.0012 | | | 0.0003 | 0.0009 | | 0.0006 |
| Nickel, total* | mg/l | <0.005 | 0.003 | 0.005 | | 0.005 | <0.003 | | | 0.0049 | 0.023 | | 0.016 |
| Selenium, total* | mg/l | <0.001 | 0.0007 | 0.001 | | 0.001 | <0.006 | | | 0.0010 | 0.005 | | 0.003 |
| Silver, total* | mg/l | <0.001 | 0.0007 | 0.001 | | 0.001 | <0.006 | | | 0.0010 | 0.005 | | 0.003 |
| Thallium, total* | mg/l | <0.001 | 0.0007 | 0.001 | | 0.001 | <0.006 | | | 0.0010 | 0.005 | | 0.003 |
| Cyanide, total* | mg/l | <0.0066 | 0.0044 | 0.0065 | | 0.0065 | <0.04 | | | 0.0065 | 0.030 | | 0.021 |
| Cyanide | mg/l | | | | | | | | | | | | |
| Phenols, total | mg/l | | | | | | | | | | | | |
| Bromide* | mg/l | <0.05 | 0.03 | 0.05 | | 0.05 | <0.3 | | | 0.0491 | 0.225 | | 0.161 |
| Color | C.U. | 2 | 1 | 2 | | 2 | | | | 2 | 20 | | |
| Fecal coliform | CFU/100 ml | <1 | 0.7 | 1 | | 1 | | | | 1 | 5 | | |
| Fluoride | mg/l | 0.74 | 0.49 | 0.73 | | 0.73 | 4.36 | | 4.84 | 3.19 | 14.34 | 1.48 | 10.6 |
| Nitrogen, total organic | mg/l | | | | | | | | | | | | |
| Radioactivity | mg/l | | | | | | | | | | | | |
| Sulfate | mg/l | 17 | 11 | 17 | 0.003 | 17 | 100 | 1 | 111 | 73 | 627 | 51 | 454 |
| sulfide | mg/l | | | | | | | | | | | | |
| sulfite* | mg/l | <0.05 | 0.03 | 0.05 | | 0.05 | <0.3 | | | 0.049 | 0.225 | | 0.185 |
| Surfactants | mg/l | | | | | | | | | | | | |
| Aluminum, total | mg/l | 0.02 | 0.01 | 0.02 | | 0.02 | 0.12 | | | 0.09 | 0.39 | | 0.28 |
| Barium, total | mg/l | 0.014 | 0.009 | 0.014 | | 0.014 | 0.082 | | | 0.060 | 0.271 | | 0.198 |
| Boron, total | mg/l | 0.012 | 0.008 | 0.012 | | 0.012 | 0.071 | | | 0.052 | 0.233 | | 0.170 |
| Cobalt, total | mg/l | | | | | | | | | | | | |
| Iron, total * | mg/l | <0.01 | 0.01 | 0.01 | | 0.01 | <0.06 | | 0.07 | 0.04 | 0.19 | 0.02 | 0.143 |
| Magnesium, total | mg/l | 4.5 | 3.0 | 4.4 | | 4.4 | 26.5 | | 29 | 19 | 87 | 9 | 64 |
| Manganese | mg/l | <0.01 | 0.01 | 0.01 | | 0.01 | <0.06 | | 0.07 | 0.04 | 0.19 | 0.02 | 0.14 |
| Calcium | mg/l | 14 | 9 | 14 | | 14 | 82 | | 92 | 60 | 271 | 28 | 200 |
| Sodium | mg/l | 19 | 13 | 19 | 0.003 | 19 | 112 | 1 | 124 | 82 | 370 | 38 | 272 |
| Potassium | mg/l | 2 | 1 | 2 | | 2 | 12 | | 13 | 9 | 39 | 4 | 29 |
| Silica | mg/l | 4.4 | 2.9 | 4.3 | 0.01 | 4.3 | 25.9 | 2 | 29 | 19.0 | 85.7 | 9 | 63 |
| Chloride | mg/l | 31 | 22 | 30 | 0.003 | 30 | 183 | | 203 | 134 | 602 | 62 | 443 |
| Total dissolved solids | mg/l | 125 | 88 | 123 | | 123 | 689 | 10 | 829 | 549 | 2469 | 386 | 1827 |
| Alkalinity, as CaCO3 | mg/l | 31 | 20 | 30 | | 30 | 122 | | 203 | 134 | 290 | 100 | 225 |

## GENERAL NOTES:

1. ASTERISK (*) INDICATES TESTING PARAMETER IS UNDETECTABLE IN WATER. VALUE SHOWN REPRESENTS THE DETECTION LIMIT OF THE ANALYTICAL INSTRUMENT.

STATE OF CONNECTICUT
WILLIAM D. HUSTED
32272
LICENSED PROFESSIONAL ENGINEER
15 Aug 2017

ORIGINAL

ISSUED FOR CONSTRUCTION

E1-E5: REVISED CYCLE OF CONCENTRATION FOR CT BLOWDOWN.

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 1 | 8/15/17 | WW | WDH | WDH | HMK FOR LA | SF | |
| ISSUED FOR CONSTRUCTION | | | | | | | |
| 0 | 08/10/17 | WW | WDH | WDH | HMK FOR LA | SF | |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

WATER MASS BALANCE
WATER SYSTEM
FLOW DIAGRAM
SHT. 5 OF 5

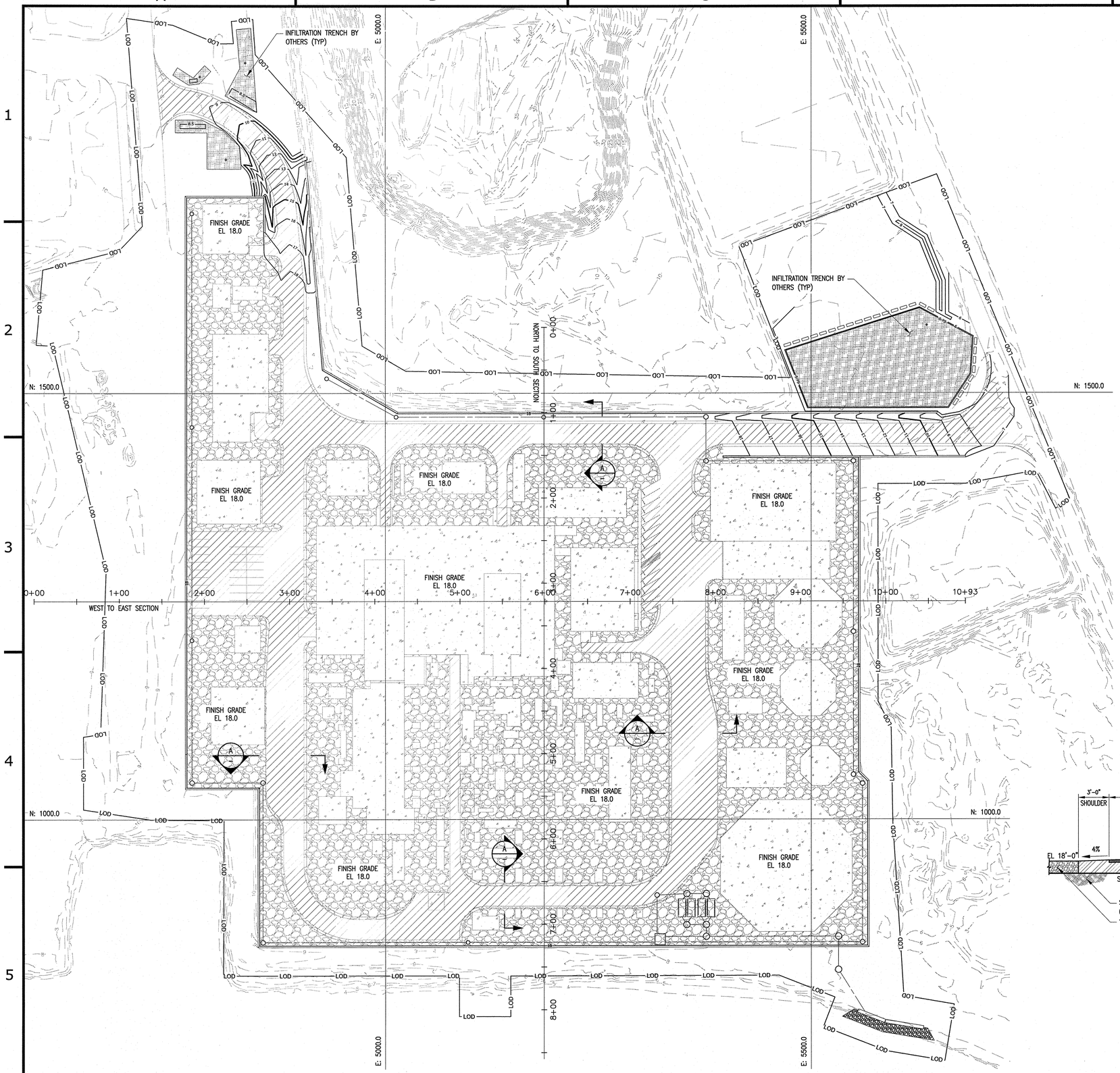
WATER BALANCE MECHANICAL-PIPING

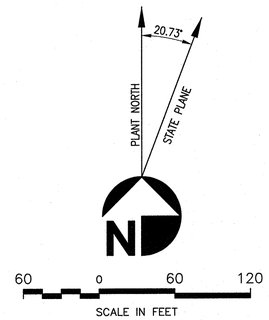
VENDOR NO. 644911-FD002-S005 REV 1

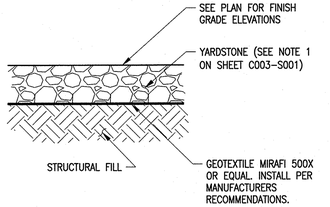
INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

## Exhibit 7 Site Finishing and Grading Plans

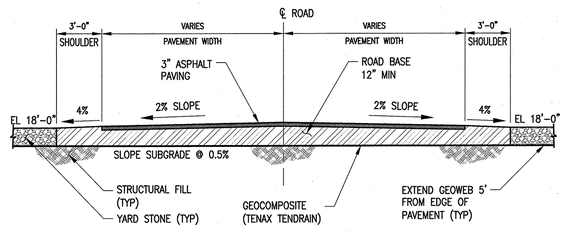
| DRAWING NO. | REV. | DRAWING TITLE |
|---|---|---|
| 644911 C005-S001 | 0 | Yard Grading – Surfacing / Final Grading Plan Sheet 1 of 2 |
| 644911 C005-S002 | 0 | Yard Grading – Surfacing / Final Grading Plan Profiles and Details Sheet 2 of 2 |
| 644911 C006-S001 | 0 | Yard Roads and Parking – Paving Plan Sheet 1 of 5 |
| 644911 C006-S002 | 0 | Yard Roads and Parking – Paving Plan Sheet 2 of 5 |
| 644911 C006-S003 | 0 | Yard Roads and Parking – Paving Plan Sheet 3 of 5 |
| 644911 C006-S004 | 0 | Yard Roads and Parking – Paving Plan Sheet 4 of 5 |
| 644911 C006-S005 | 0 | Yard Roads and Parking – Paving Plan Sheet 5 of 5 |




TYPICAL GRAVEL SECTION
NTS




SECTION A
1"=5'-0"

## GENERAL NOTES:

1. FOR TOP OF CONCRETE ELEVATION SEE FOUNDATION DRAWINGS

## LEGEND:

- ASPHALT AREA (119,877 SF)
- IMPERVIOUS AREA (187,694 SF)
- GRAVEL AREA (218,169SF)
- INFILTRATION TRENCH (BY OTHERS)

## REFERENCE DWGS:

## REFERENCE SPECS:

ORIGINAL

ISSUED FOR PERMIT

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 5/8/17 | AG | GG | GG | LA | JF | GJ |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

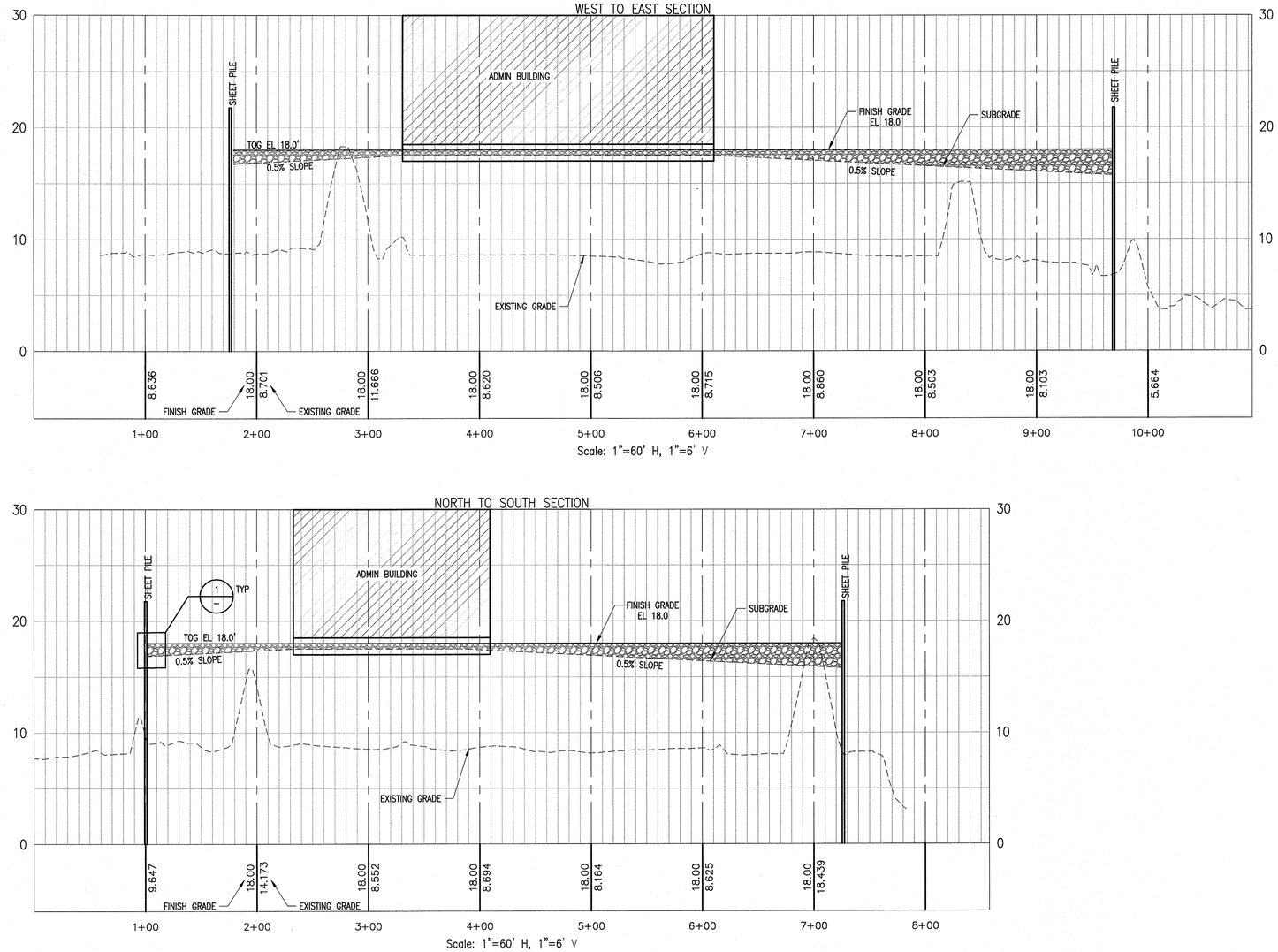
YARD
GRADING
SURFACING / FINAL GRADING PLAN
SHT 1 OF 2

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO. 644911 C005-S001 REV 0

STATE OF CONNECTICUT · GLEN GRISWOLD · No. 16069 · LICENSED PROFESSIONAL ENGINEER
5/8/17

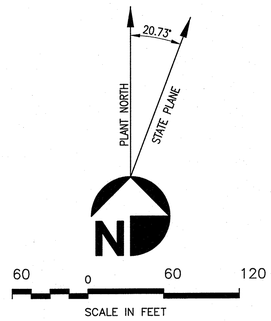
INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/ SEEN BY

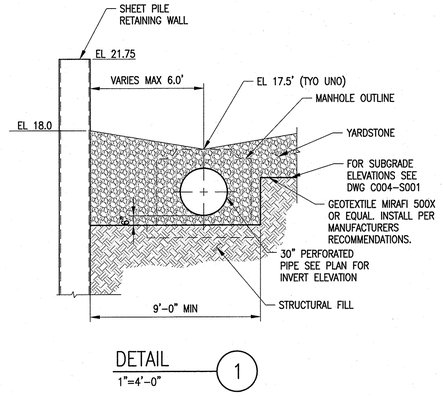



Scale: 1"=60' H, 1"=6' V




Scale: 1"=60' H, 1"=6' V




DETAIL 1
1"=4'-0"

GENERAL NOTES:

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

STATE OF CONNECTICUT GLEN GRISWOLD No. 16069 LICENSED PROFESSIONAL ENGINEER
5-8-17

ISSUED FOR PERMIT

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
|---|---|---|---|---|---|---|---|
| 0 | 5/8/17 | AS | GG | GG | LA | SF | G |

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

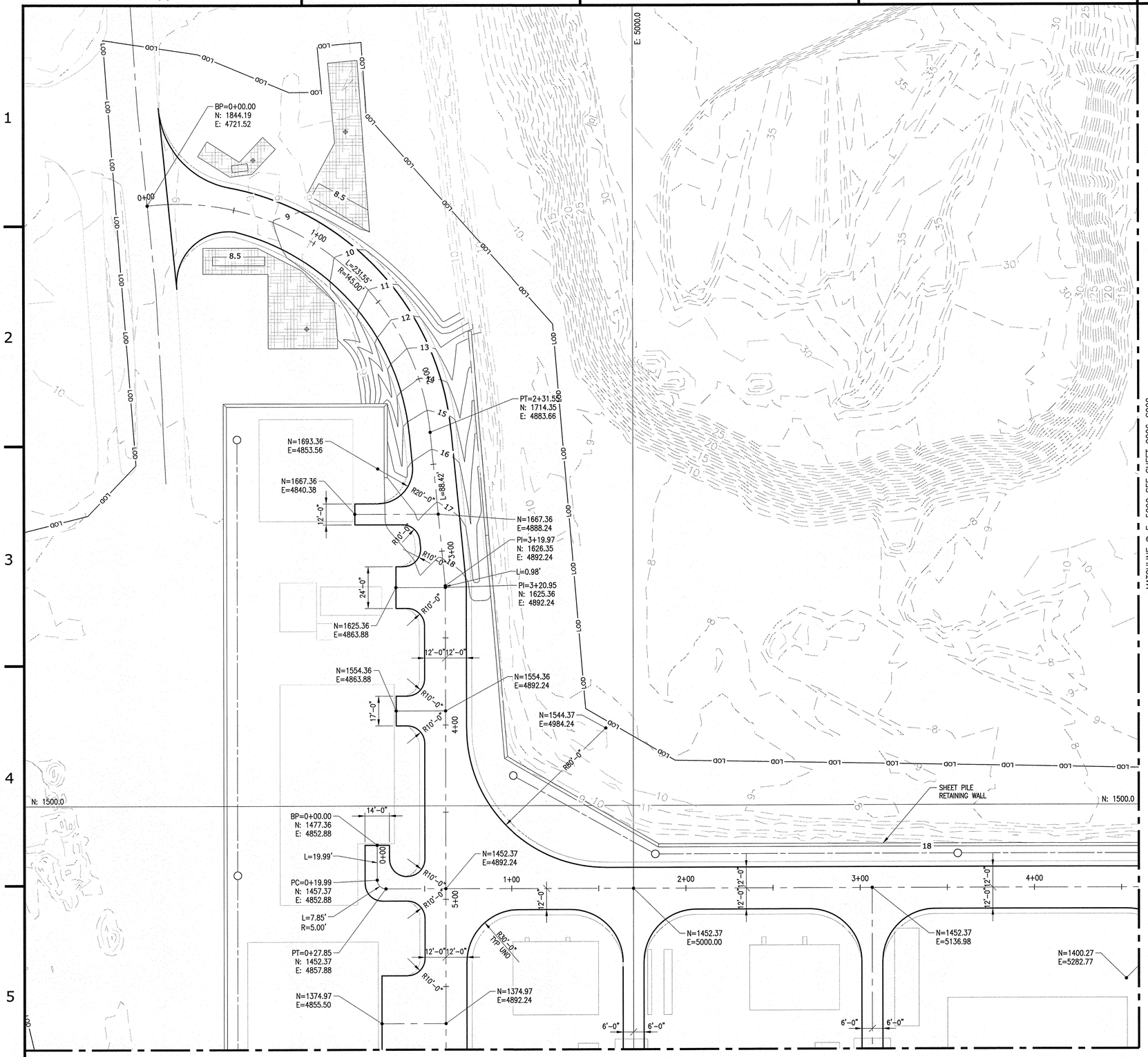
BRIDGEPORT 05

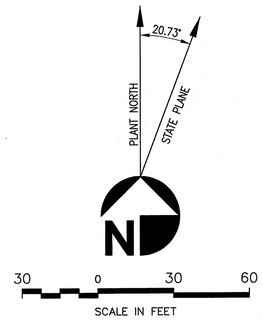
YARD
GRADING
FINAL GRADING PLAN PROFILES AND DETAILS
SHT 2 OF 2

PARTIAL SITE PLAN | DESIGN CIVIL GENERAL

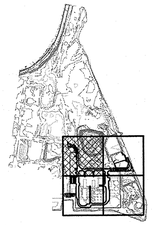
VENDOR NO.
644911 C005-S002
REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY




KEY MAP:



GENERAL NOTES:

LEGEND:

ALIGNMENT GEOMETRY POINT TEXT

| | |
|---|---|
| SC | SPIRAL–CURVE INTERSECT |
| SS | SPIRAL–SPIRAL INTERSECT |
| PC | TANGENT–CURVE INTERSECT |
| TS | TANGENT–SPIRAL INTERSECT |
| BP | ALIGNMENT BEGINNING |
| ST | SPIRAL–TANGENT INTERSECT |
| EP | ALIGNMENT END |
| PRC | REVERSE CURVE–CURVE INTERSECT |
| PT | CURVE–TANGENT INTERSECT |
| PCC | COMPOUND CURVE–CURVE INTERSECT |
| PI | TANGENT–TANGENT INTERSECT |
| CS | CURVE–SPIRAL INTERSECT |
| SPI | REVERSE SPIRAL INTERSECT |

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |
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| ISSUED FOR PERMIT | | | | | | | |
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PROJECT ENGINEERING DIVISION

PSEG
Power Connecticut LLC

SNC•LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

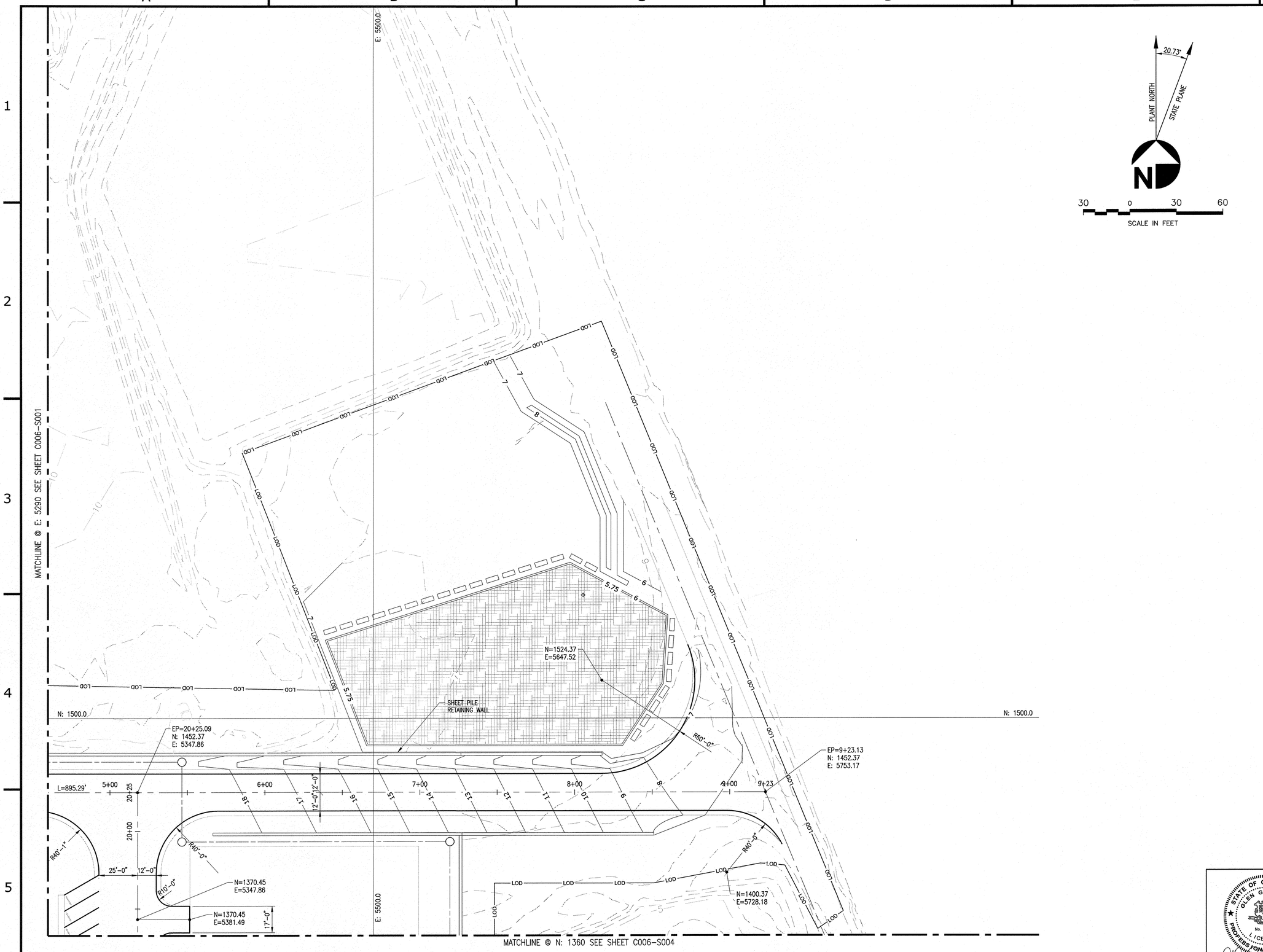
YARD
ROADS AND PARKING
PAVING PLAN
SHT 1 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO. 644911 C006-S001 — REV 0

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
5-8-17







KEY MAP:



## GENERAL NOTES:

1. FOR NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

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PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 2 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO. **644911 C006-S002** REV 1

REVIEW/SEEN BY: INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

STATE OF CONNECTICUT · GLEN GRISWOLD · No. 16069 · LICENSED PROFESSIONAL ENGINEER
5-8-17

MATCHLINE @ N:1360 SEE SHEET C006-S001

N=1338.38
E=4772.95

N=1342.88
E=4878.59

R10'-0"

R10'-0"

6+00

N=1343.79
E=5000.00

N=1343.79
E=5136.98

L=679.83'

18

N=1239.38
E=4772.95

R10'-0"

7+00

R10'-0"

N=1225.65
E=4918.83

31'-6"

N=1229.38
E=4853.65

N=1225.65
E=4892.24

R10'-0"

N=1193.29
E=5081.49

N=1247.52
E=5282.86

N=1201.52
E=5230.23

9"-0"

9"-0"

N=1156.73
E=4859.25

N=1155.53
E=5295.86

8+00

33'-0"

12'-0"

9+00

6'-0"

6'-0"

SHEET PILE
RETAINING WALL

LOD

N: 1000.0

MATCHLINE @ E: 5290 SEE SHEET C006-S004

N=978.56
E=5288.95

12'-0"12'-0"

PC=10+00.78
N: 945.54
E: 4892.24

10+00

N=933.04
E=4989.55

N=914.68
E=5036.06

N=914.68
E=5075.49

PI=12+55.99
N: 910.33
E: 5094.18

PC=14+47.67
N: 910.33
E: 5285.86

R60'-0"

13+00

L=191.68'

14+00

12'-0"

L=171.02'
R=71.50'

11+00

12'-0"

L=60.93'

12+00

L=77.25'

N=902.84
E=5081.49

18

PT=11+17.80
N: 871.04
E: 4966.74

PI=11+78.73
N: 871.04
E: 5027.67

N=859.04
E=5086.82

E: 5000.0

20.73°

PLANT NORTH

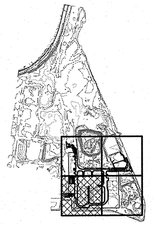
STATE PLANE

N

30 0 30 60

SCALE IN FEET

KEY MAP:



GENERAL NOTES:

1. FOR NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR PERMIT

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SNC•LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 3 OF 5

PARTIAL SITE PLAN | DESIGN CIVIL GENERAL

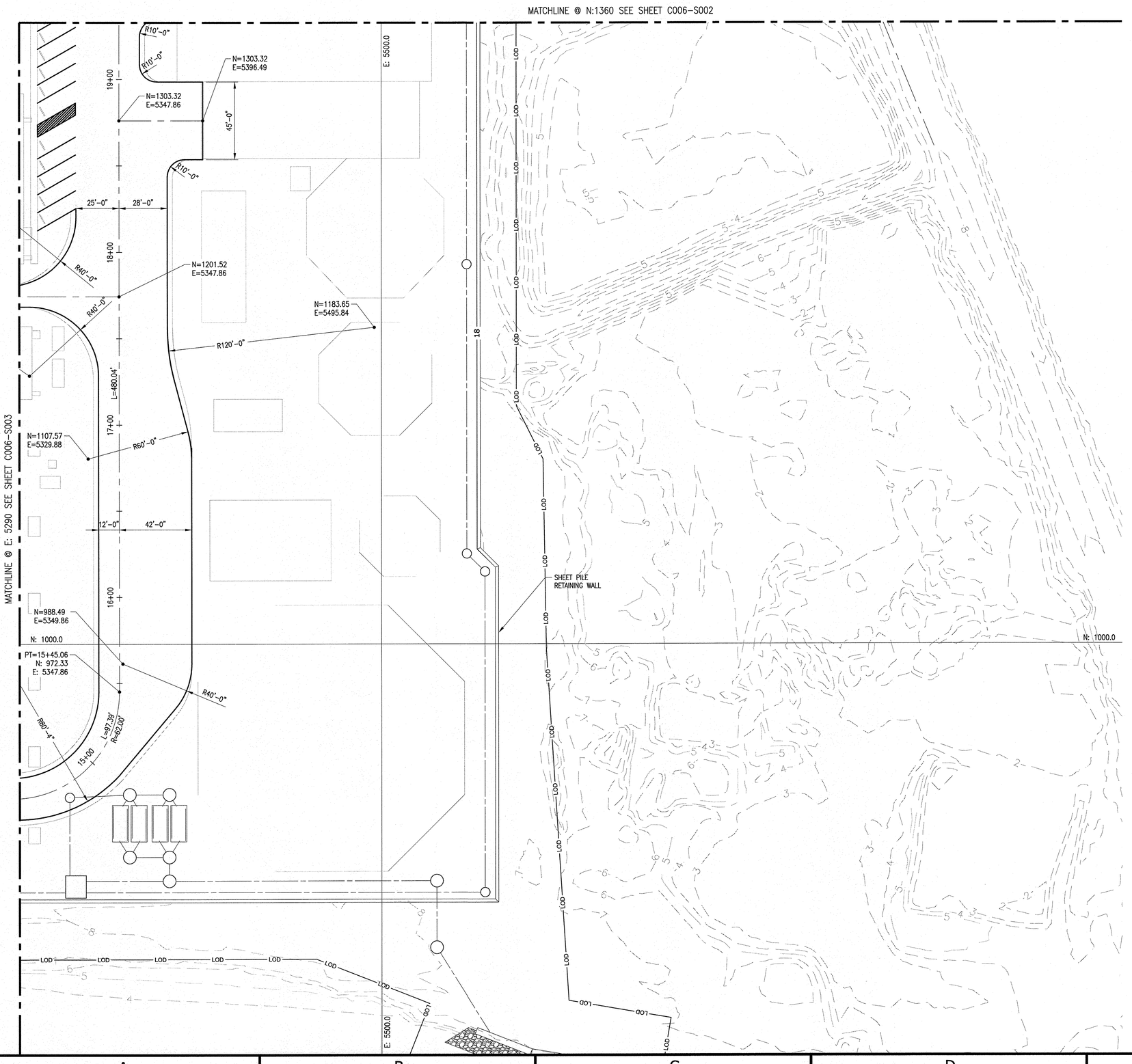
VENDOR NO.

644911 C006-S003

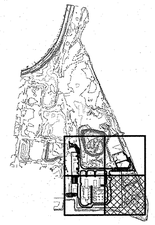
REV 0

STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
5-8-17

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/ SEEN BY




KEY MAP:



GENERAL NOTES:

1. FOR NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

| ISSUED FOR PERMIT | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 5/8/17 | AS | GG | GG | LA | JF | |
| REVISION | DATE | BY | CHECKED | APPROVED | PROJ. TECH. | DIR. TECH. | PROJ. MGR. |

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PSEG
Power Connecticut LLC

SNC•LAVALIN
CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 4 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

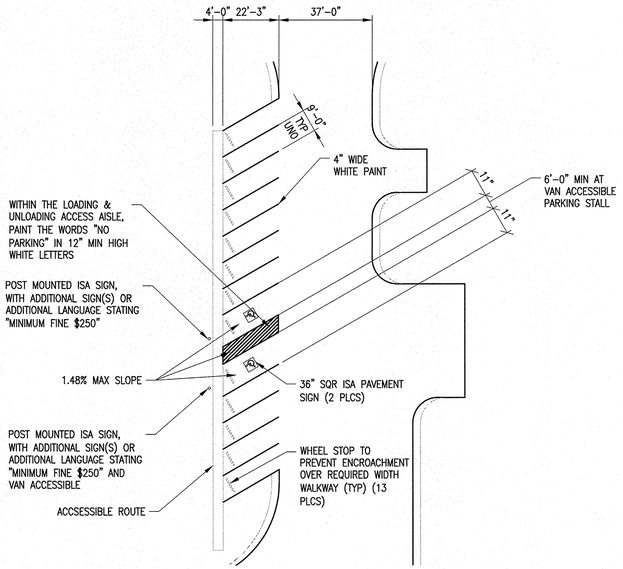
VENDOR NO.

644911 C006-S004

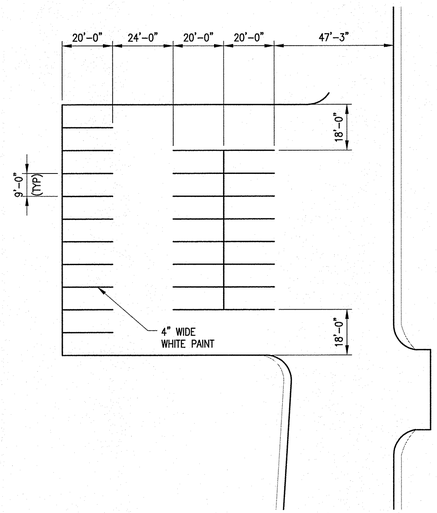
REV 0

REVIEW/SEEN BY: INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

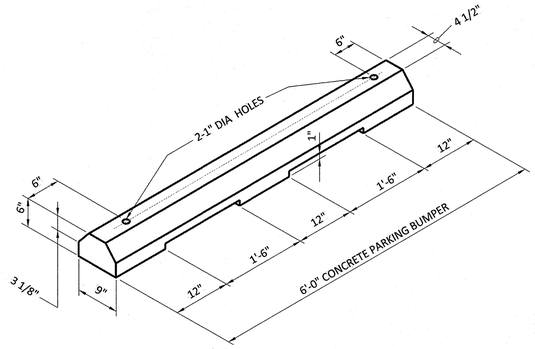
STATE OF CONNECTICUT
GLEN GRISWOLD
No. 16069
LICENSED
PROFESSIONAL ENGINEER
5-8-17



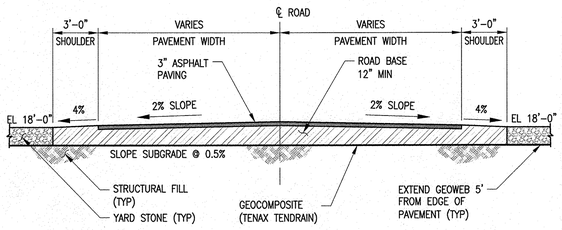

ADA PARKING & PARKING LAYOUT
1"=30'-0"



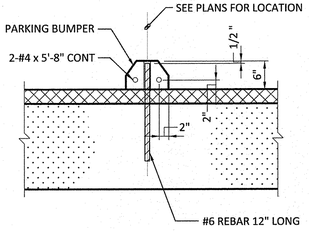

PARKING LAYOUT
1"=30'-0"




CONCRETE WHEEL STOP DETAIL
NTS




TYPICAL ROAD SECTION
1"=5'-0"




CONCRETE WHEEL STOP SECTION
NTS

## GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG C006-S001

## LEGEND:

## REFERENCE DWGS:

## REFERENCE SPECS:

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PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 5 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO.

644911 C006-S005

REV 0

REVIEW/SEEN BY | PROCESS | PIPING | STRUCT | MECH | ELECT | INSTR

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5-8-17