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

Submitted by Email and Hardcopy

February 28, 2019

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

Development and Management Plan Update No. 3
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 Update No. 3 (D&MP Update No. 3) provides revised and updated plant design drawings prepared to reflect minor changes and updates to the final design plans. The revisions are submitted 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 for permanent plant facilities and features (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.

D&MP Update No. 1 was filed on June 29, 2017 addressing improvements in the site water balance and underground utility routings and alignments. The D&MP Update No. 1 was approved by the CSC on July 6, 2017.

D&MP Update No. 2 was filed on April 11, 2018 to address revisions to the design for several areas, including final grading, water balances, onsite and offsite utilities, etc. This D&MP Update No. 2 was approved by the CSC on April 16, 2018.

Since then, there have been no substantive revisions made excepting for minor refinements for constructability, vendor clarifications, and / or to address site construction interferences. This

D&MP Update No. 3 includes the design drawings and descriptions that have changed from prior submitted documentation. These changes are considered to be minor in nature, more accurately reflect certain systems and design features and involve minimal refinements in utility or structure location:

1. Revisions to the ammonia tank and unloading area containment to address construction interferences;

2. Water Balance Diagrams, including a zinc removal system necessary to assure compliance with anticipated discharge limits;

3. Grading / paving and on-site underground utility drawings to reflect minor changes made during construction; and

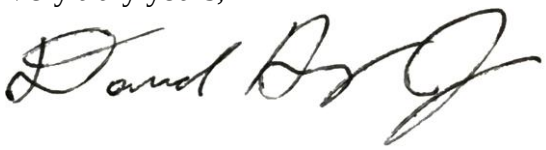
4. General Arrangement Drawing (for reference) and drawings showing the recycle sump foundation plans in the General Services area, and consolidated foundations under the Air Cooled Condenser.

The revisions included in this D&MP Update No. 3 do not result in any significant changes to the appearance or function of the new plant, and are consistent with the applicable City of Bridgeport Building Permits. They do not result in any re-arrangement of facilities or structures (excepting for the noted minor adjustments in plan location); 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 or values; 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 current and final design plans for the Facility and are provided to CSC staff for review and approval as D&MP Update No. 3.

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 609-440-0236.

Very truly yours,



David Hinchey, Jr.

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

Enclosure – D&MP Update No. 3

C Harold Blinderman, Esq
Leilani M. Holgado, Esq.
Arthur Mantell
Scott Matheson
Jeffrey Pantazes
Leonard Rodriguez, Esq. (United Illuminating Company)
Thomas Gill (City of Bridgeport)

Connecticut Siting Council
Development and Management Plan Update No. 3
Combined Cycle Generating Facility
PE 1218

Bridgeport Harbor Station Unit 5
Bridgeport, Connecticut

Final Design Refinements - Minor Drawing Revisions

PSEG POWER CONNECTICUT, LLC

February 28, 2019

Development and Management Plan Update No. 3 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. 3) submittal to the Connecticut Siting Council (CSC) includes minor drawing revisions to the detailed design plans for PSEG Power Connecticut LLC (PSEG) Bridgeport Harbor Station Unit 5 ("BHS 5", the "Project" or the "Facility"). The revisions are submitted for review and approval by Connecticut Siting Council (CSC) staff.

Background

The initial D&MP submittal (D&MP Phase 1) for construction support facilities was filed with the CSC on September 21, 2016 and approved on October 27, 2016. A second D&MP submittal for permanent plant facilities (D&MP Phase 2) was filed on October 31, 2016 and approved by the CSC on December 22, 2016.

D&MP Update No. 1 was filed on June 29, 2017 addressing improvements in the site water balance and underground utility routings and alignments (approved on July 6, 2017). D&MP Update No. 2 was filed on April 11, 2018 to address revisions to the design plans for several areas, including final grading, water balances, onsite utilities, and offsite utilities (approved on April 16, 2018).

This D&MP Update No. 3 includes design changes that are considered to be minor in nature, more accurately reflect certain system design details, or involve minimal refinements in utility or structure locations. This includes:

1. Revisions to the ammonia tank and unloading area containment to resolve construction interferences;

2. Water Balance Diagrams, including a zinc removal system necessary to assure compliance with anticipated discharge limits;

3. Paving / grading and on-site underground utility drawings to reflect minor changes made during construction (note that some of the underground utility drawings are the same as previously submitted, but the complete set is included for more convenient reference); and

4. General Arrangement (for reference - essentially no changes from prior submittal), drawings showing the recycle sump in the General Services area, and an updated foundation drawing (showing foundation consolidation under the Air Cooled Condenser).

Connecticut Siting Council – Development and Management Plan Update No. 3
PSEG Bridgeport Harbor Station Unit 5
Petition No. 1218 (Approved July 21, 2016)
February 28, 2019

The revisions included in this D&MP Update No. 3 do not result in any significant changes to the appearance or function of the new plant and are consistent with the applicable City of Bridgeport Building Permits. They do not result in:

- Any re-arrangement of facilities or structures excepting for minor adjustments in plan location to address construction 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 or values;
- 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 our assessment of the project at this time, the enclosed plant design drawings substantially reflect the final design plans for the Facility and are provided to CSC staff for review and approval as D&MP Update No. 3.

Exhibits

1. **Ammonia Tank / Unloading Area Containment Design**
2. **Water Balance Diagram**
3. **Onsite Underground Utility Design and Site Finishing / Grading Plans**
4. **General Arrangement and Foundation Plan Update**

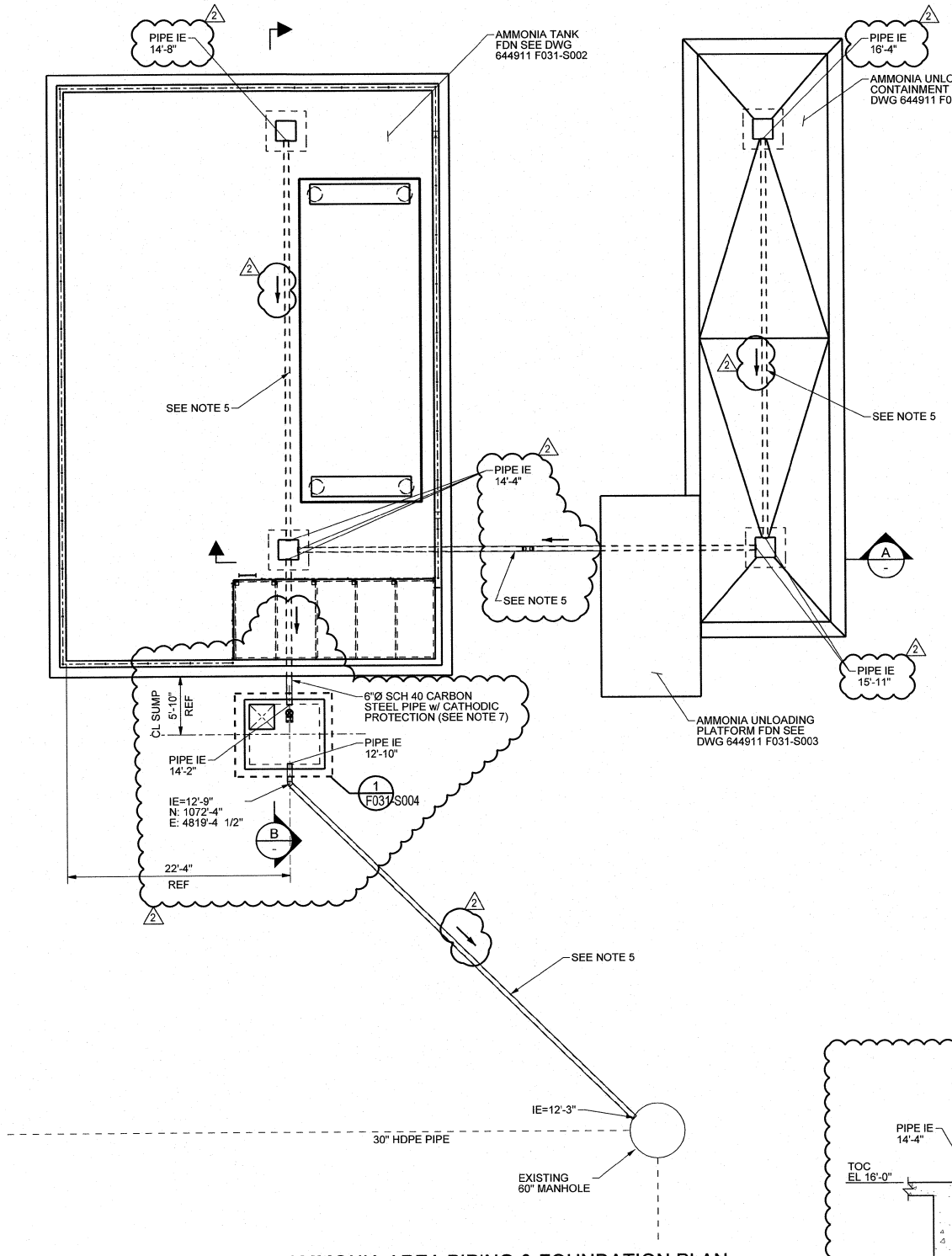
Connecticut Siting Council – Development and Management Plan Update No. 3
PSEG Bridgeport Harbor Station Unit 5
Petition No. 1218 (Approved July 21, 2016)
February 28, 2019

Exhibit 1 Ammonia Tank / Unloading Area Containment Design

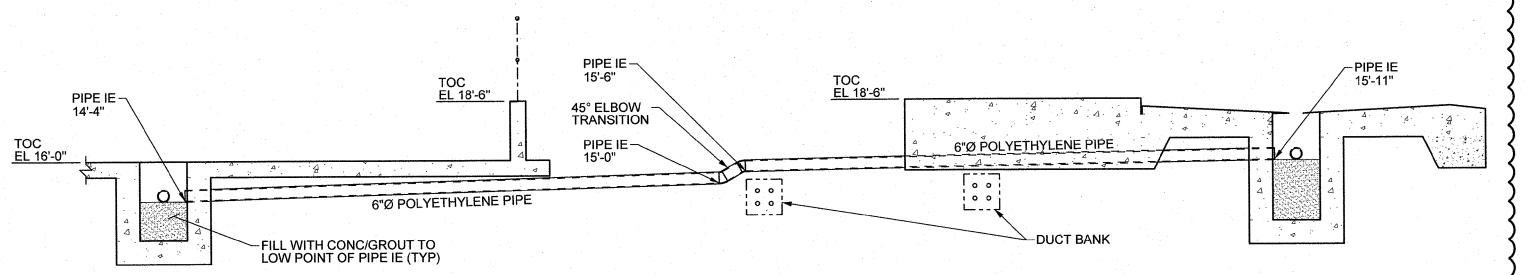
The ammonia tank and unloading area containment design and drawing have been revised to avoid construction interferences with the temporary access ramp in the southwest corner of the site. As originally designed, the containment would have precluded safe use of the ramp. The changes reduce the footprint of portions of the containment to avoid the interferences, but retain the required containment capacity.

Drawing No.	Rev.	Drawing Title
644911 F031-S001	**2**	**Ammonia Area – Pipe Elevation and Foundation Plan Sheet 1 of 4**
644911 F031-S002	**4**	**Ammonia Area – Ammonia Tank Foundation Sheet 2 of 4**
644911 F031-S003	**3**	**Ammonia Area – Ammonia Unloading Platform Fdn Sheet 3 of 4**
644911 F031-S004	**2**	**Ammonia Area – Ammonia Vault Foundation Sheet 4 of 4**
644911 GA013-S001	**0**	**Plant Layout Ammonia Storage Area General Arrangement**

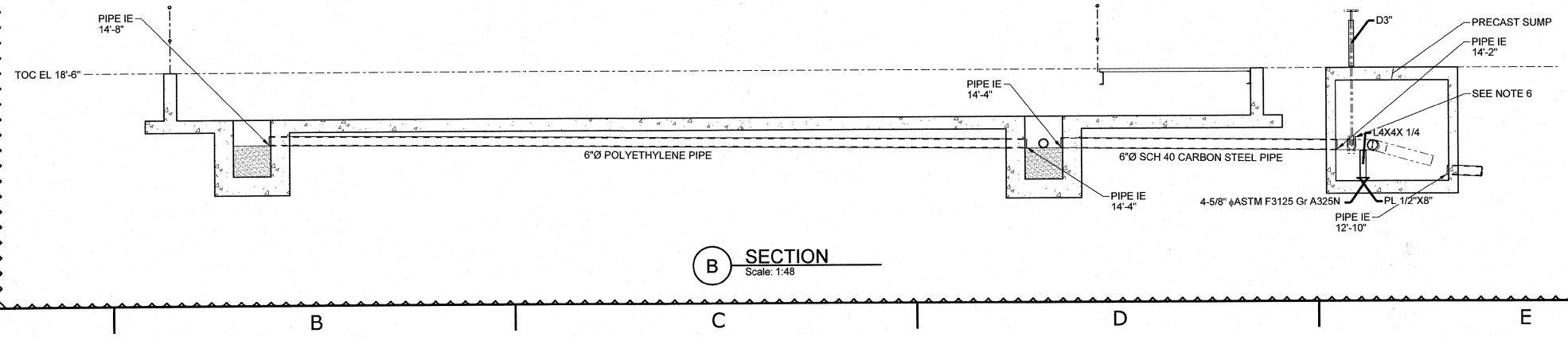
PLANT NORTH
TYP ALL PLANS



AMMONIA AREA PIPING & FOUNDATION PLAN
SCALE: 1:96



A SECTION
Scale: 1:48



B SECTION
Scale: 1:48

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 POLYETHYLENE PIPE HAVING A MINIMUM WALL THICKNESS OF 0.406" UNLESS NOTED.
6. FOR VALVE INFORMATION SEE P&ID DWG 644911-5WWD-M2644C.
7. FOR UNDERGROUND PIPING CATHODIC PROTECTION DETAILS SEE DRAWING 644911 P232-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
ADDED/REVISED INVERT ELEVATIONS							
2	5/15/18	BS	CL	CL	[illegible]	[illegible]	[illegible]
REVISED FOUNDATION, ADDED EMBED PL'S							
1	04/09/2018	BS	GG	GG	LA	SF	SO
ISSUED FOR CONSTRUCTION							
0	11/10/2017	AS	GG	GG	LA	SF	SO

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

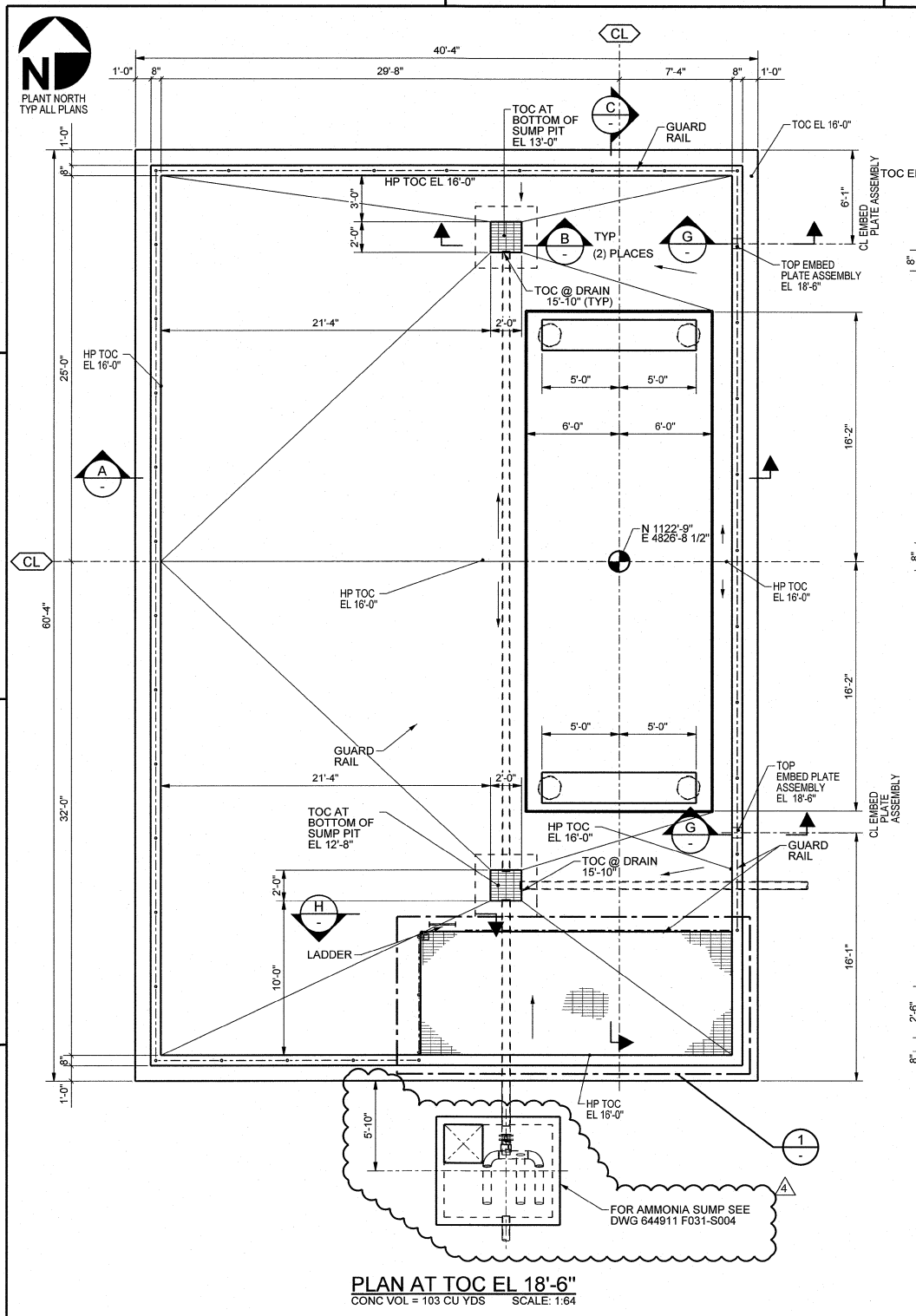
PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F031-S001 REV 2

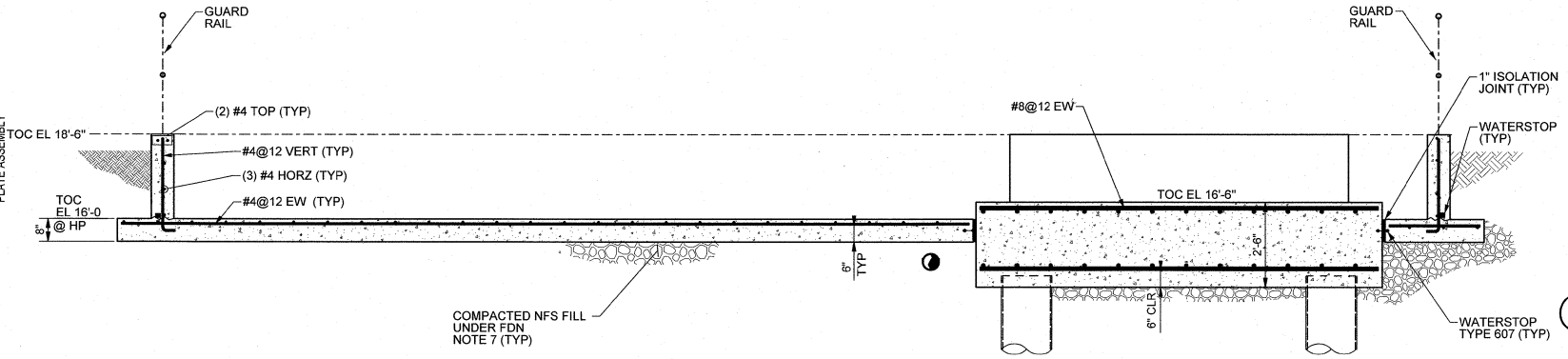
INSTR. | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY

STATE OF CONNECTICUT
MOHAMMED R KOURETCHIAN
32688
LICENSED PROFESSIONAL ENGINEER
5/15/18

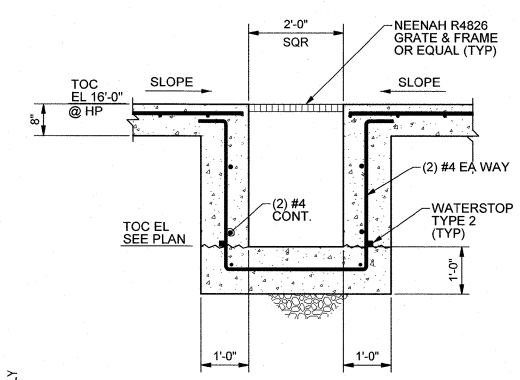
MODEL NAME: F_AM_STOR_TNK_CONT



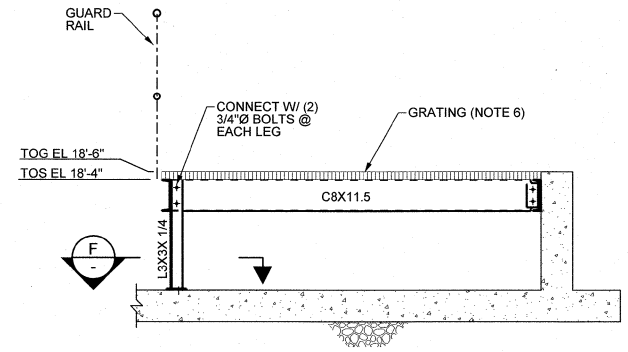
PLAN AT TOC EL 18'-6"
CONC VOL = 103 CU YDS SCALE: 1:64



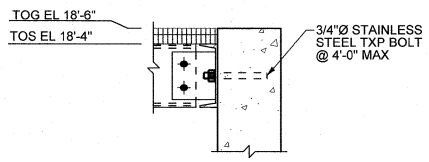
A SECTION
Scale: 1:32



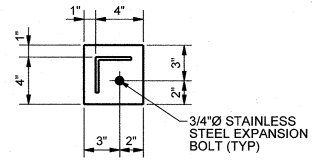
B SECTION
Scale: 1:24



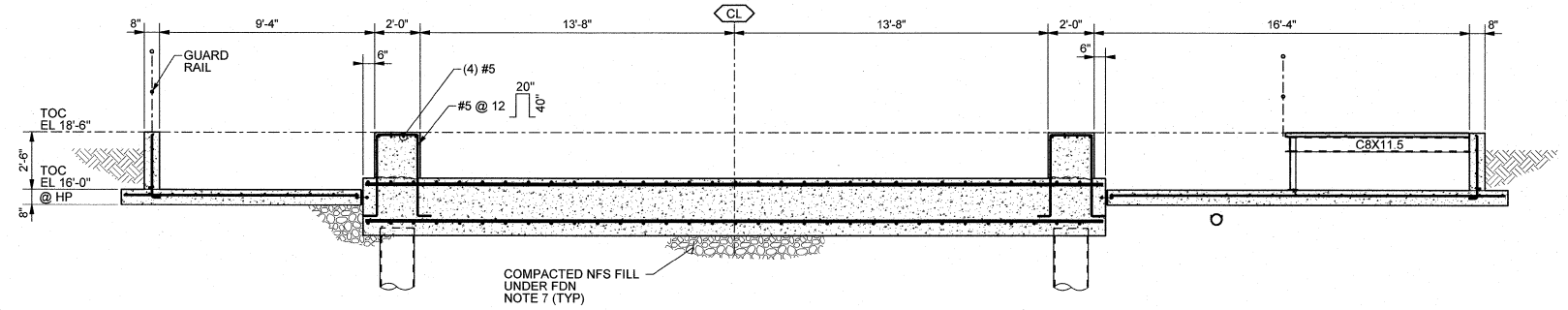
D SECTION
Scale: 1:24



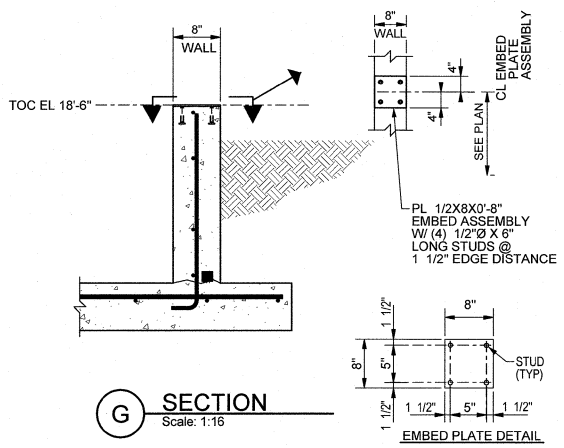
E SECTION
Scale: 1:12



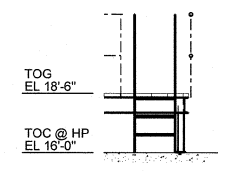
F SECTION
Scale: 1:8



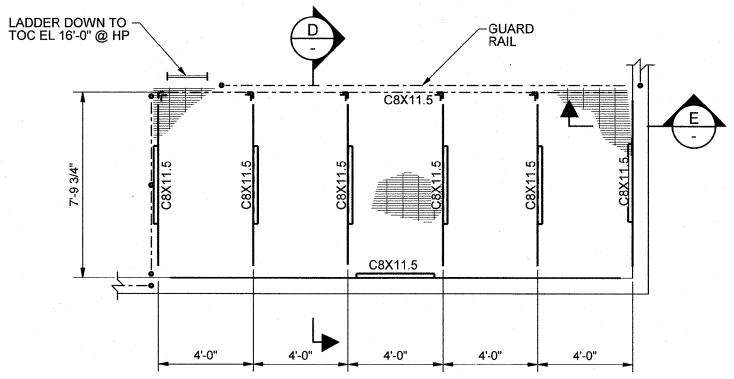
C SECTION
Scale: 1:48



G SECTION
Scale: 1:16



H SECTION
Scale: 1:48



STEEL PLATFORM PLAN AT TOS EL 18'-4 3/4"

1 DETAIL
Scale: 1:48

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. ALL STEEL TO BE PAINTED AS FOLLOWS:
   SURFACE PREP: SSPC: SP2
   PAINT: SHERWIN WILLIAMS TILE CLAD EPOXY
   PRIMER: 2-4 MILL OFT
6. GRATING: STRONGWELC 2" T-5800 DURADEK GRATING OR EQUAL ATTACH W/ STAINLESS STEEL INSERT CLIPS.
   COLOR: YELLOW
7. PROVIDE TYPE 2 NFS FILL TO ELEVATION 11'-6" BELOW CONTAINMENT SUMP.

4

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
4 REVISED VALVE BOX; DELETED NOTE	5/15/18	BS	CL	CL	[illegible]	[illegible]	SF
3 ADDED HANDRAIL; ENLARGED BASIN	04/09/2018	BS	GG	GG	LA	SF	SO
2 ADDED NOTES, PIER AND SECTION	01/22/2018	DC	MK	GG	GG	SF	SF
1 REVISED SLAB THICKNESS	01/03/2018	DC	MK	GG	LA	SF	SO
0 ISSUED FOR CONSTRUCTION	11/10/2017	AS	GG	GG	LA	SF	SO

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

AMMONIA AREA
AMMONIA TANK FOUNDATION

SHT 2 OF 4

PLAN — DESIGN-CIVIL CONCRETE

VENDOR NO.

644911 F031-S002

REV 4

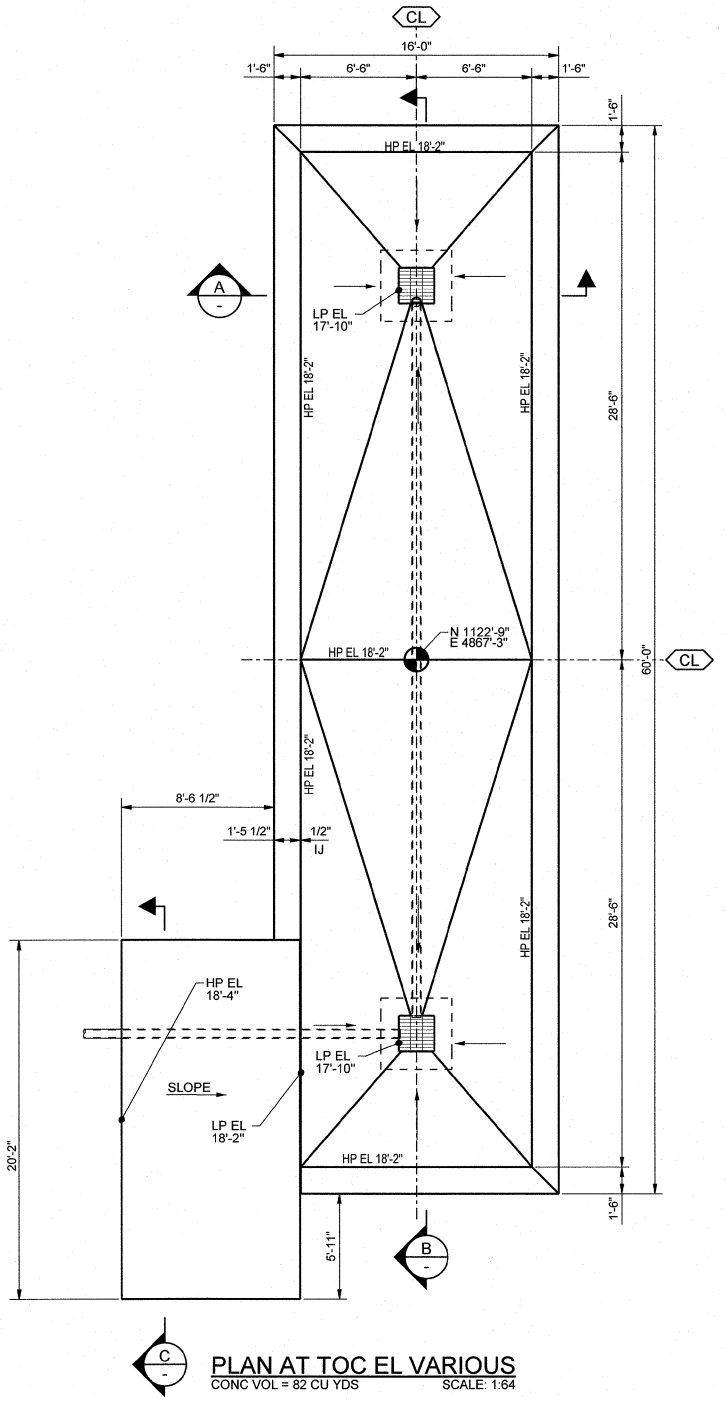
REVIEW/ SEEN BY

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

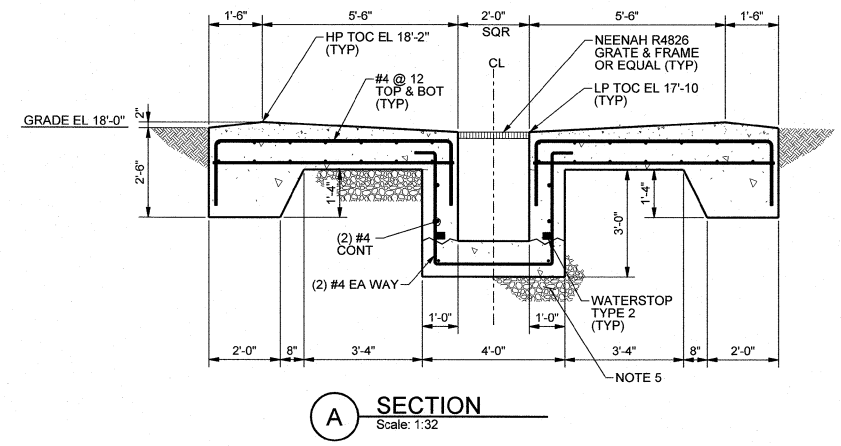
STATE OF CONNECTICUT · MOHAMMED R. KOUSHCHIAN · 32688 · LICENSED PROFESSIONAL ENGINEER
5/15/18

MODEL NAME: F_AM_STOR_TNK_CONT

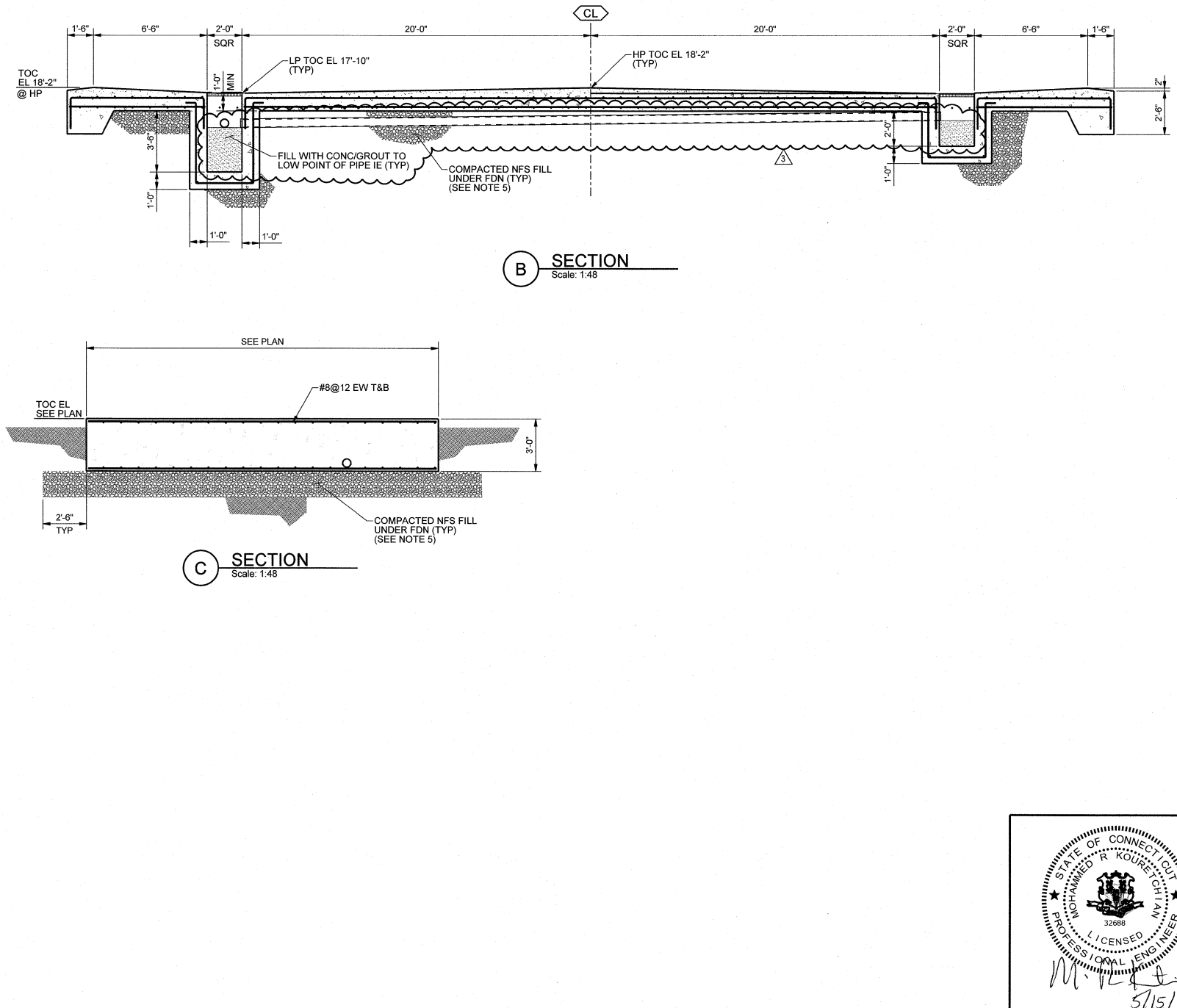
PLANT NORTH
TYP ALL PLANS



C
PLAN AT TOC EL VARIOUS
CONC VOL = 82 CU YDS SCALE: 1:64



A
SECTION
Scale: 1:32



B
SECTION
Scale: 1:48

C
SECTION
Scale: 1:48

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. PROVIDE NFS FILL UNDER FOUNDATIONS & SLABS TO A MINIMUM DEPTH OF 42" BELOW FINISH GRADE.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
ADDED OIL BARRIER FILTER & NOTE							
3	5/15/18	BS	CL	CL			
REROUTE DRAIN							
2	04/09/2018	BS	GG	GG	LA	SF	SO
ADDED NOTES							
1	01/03/2018	DC	MK	GG	LA	SF	SO
ISSUED FOR CONSTRUCTION							
0	11/10/2017	AS	GG	GG	LA	SF	SO

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT
MOHAMMED R. KOURETCHIAN
32688
LICENSED PROFESSIONAL ENGINEER
5/15/18

SCALE: AS NOTED

BRIDGEPORT 05

AMMONIA AREA
AMMONIA UNLOADING PLATFORM FDN

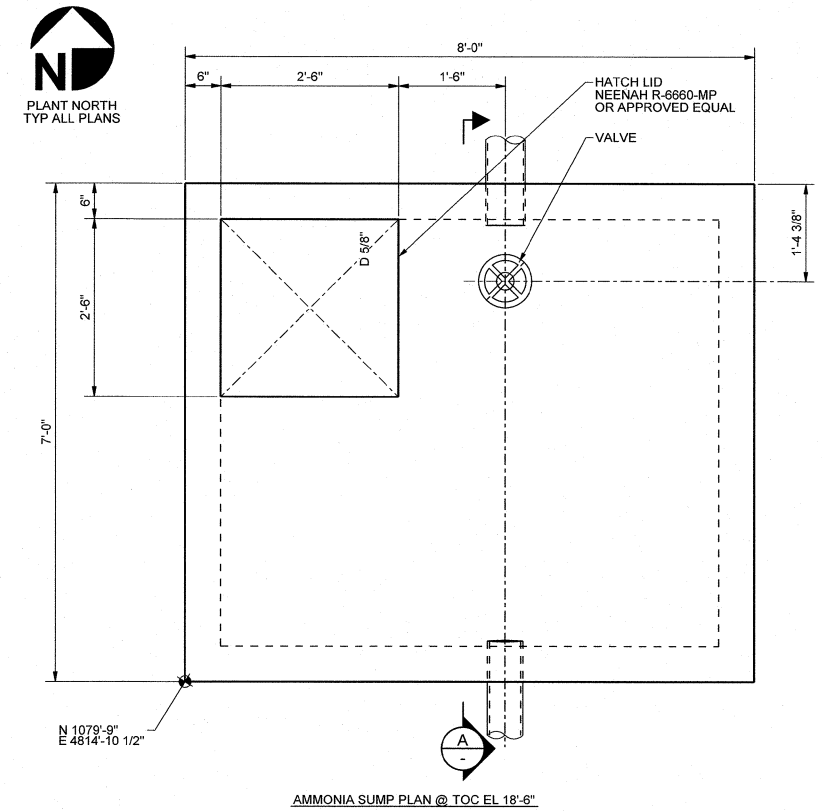
SHT 3 OF 4

PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F031-S003 REV 3

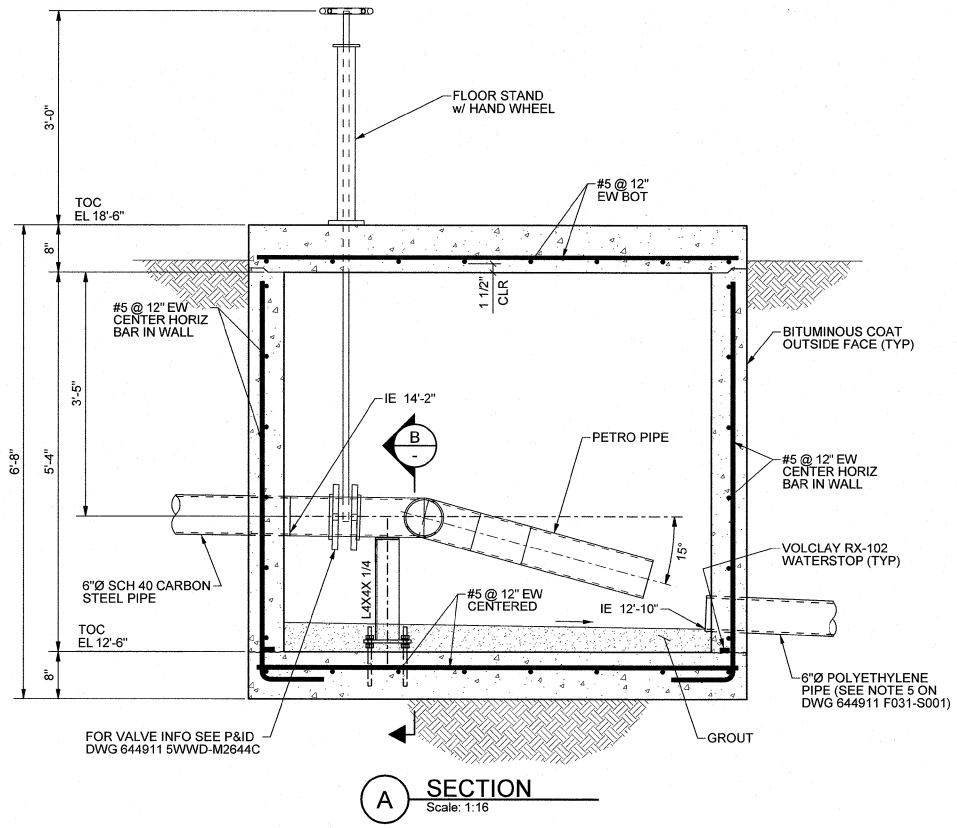
REVIEW/ SEEN BY: JINSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

MODEL NAME: F_AM_STOR_TNK_CONT

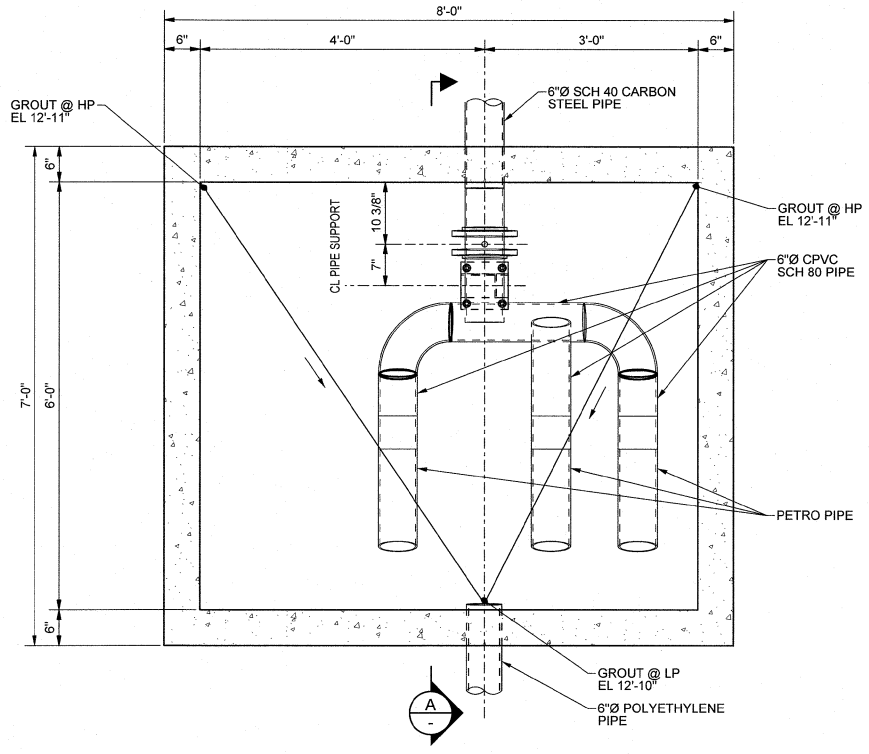


AMMONIA SUMP PLAN @ TOC EL 18'-6"

1 DETAIL
Scale: 1:16

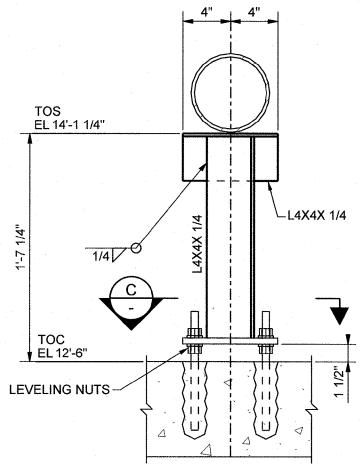


A SECTION
Scale: 1:16

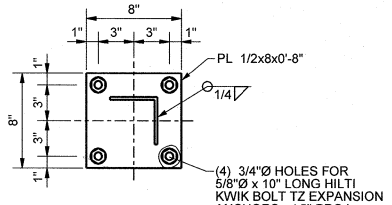


AMMONIA SUMP PLAN @ TOC EL 12'-6"

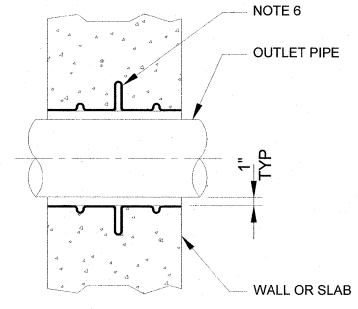
1 DETAIL
Scale: 1:16



B SECTION
Scale: 1:8



C SECTION
Scale: 1:8



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

TYPICAL PIPE PENETRATION DETAIL
NTS

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. COVER LIVE LOAD = 200 PSF

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
2 ADDED SUMP	5/15/18	BS	CL	CL			
1 VAULT DELETED	04/09/2018	BS	GG	GG	LA	SF	SO
0 ISSUED FOR CONSTRUCTION	11/10/2017	AS	GG	GG	LA	SF	SO

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

SCALE: AS NOTED

BRIDGEPORT 05

AMMONIA AREA
AMMONIA VAULT FOUNDATION

SHT 4 OF 4

PLAN DESIG-CIVIL CONCRETE

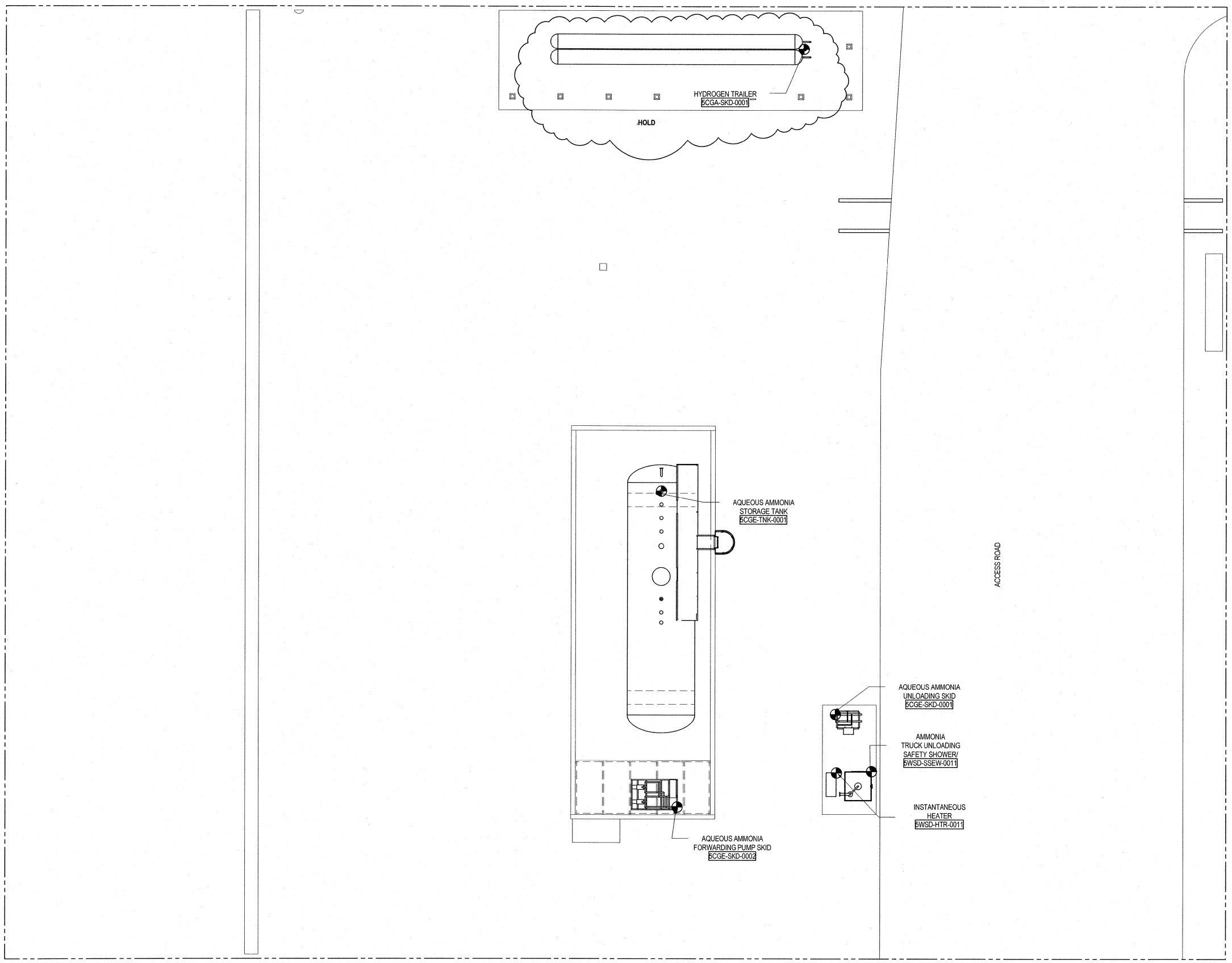
VENDOR NO. 644911 F031-S004 REV 2

REVIEW/ SEEN BY

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

STATE OF CONNECTICUT
MOHAMMED 'R' KOURECHIAN
32688
LICENSED PROFESSIONAL ENGINEER
5/15/18

MODEL NAME: F_AM_STOR_TNK_CONT



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. HUSTED
22272
LICENSED
PROFESSIONAL ENGINEER

Will D. Husted
DLO Nov 2017

ORIGINAL

ISSUED FOR CONSTRUCTION

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

INSTR. ELECT MECH STRUCT PIPING PROCESS REVIEW/ SEEN BY

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

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

Connecticut Siting Council – Development and Management Plan Update No. 3
PSEG Bridgeport Harbor Station Unit 5
Petition No. 1218 (Approved July 21, 2016)
February 28, 2019

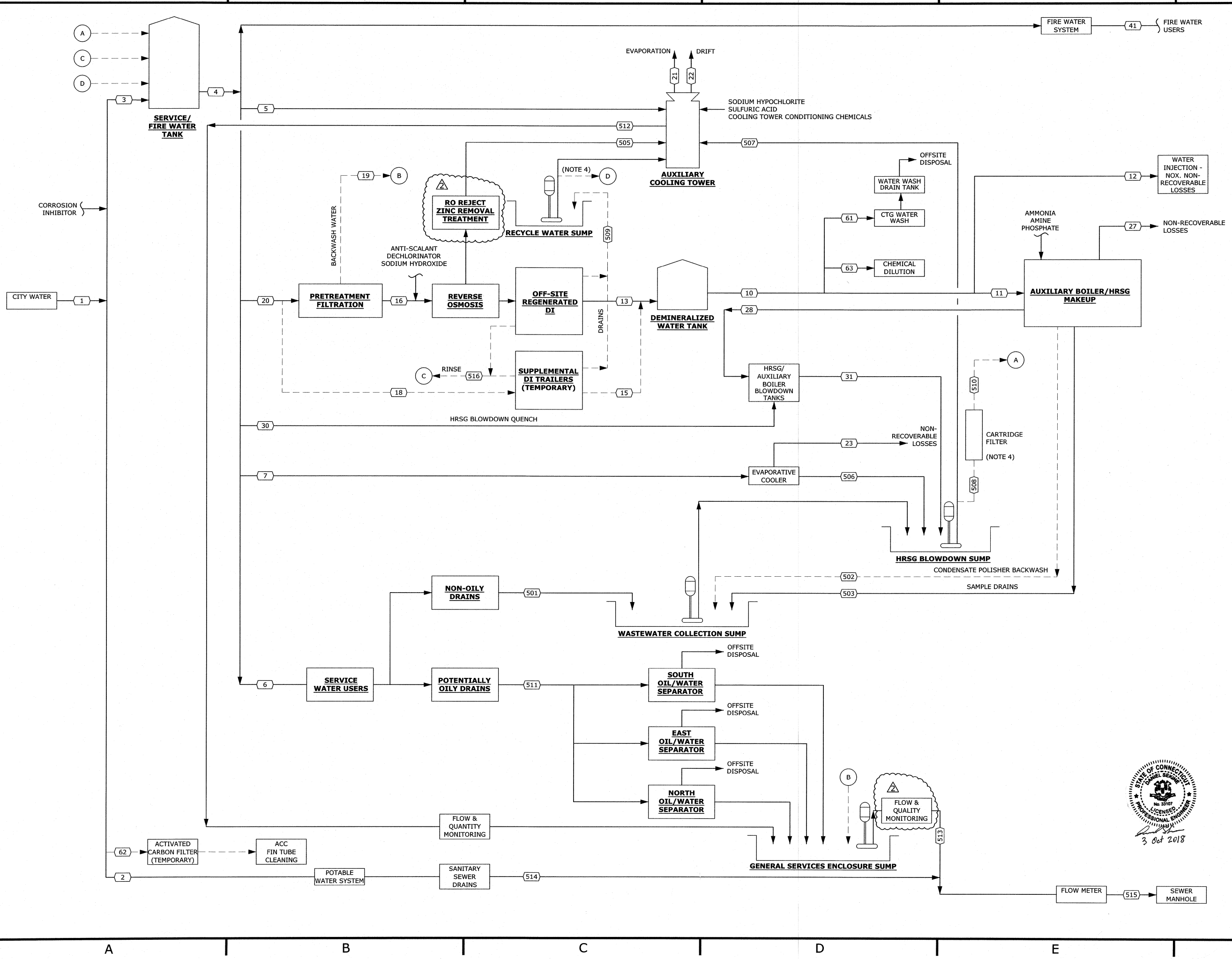
Exhibit 2 Water Balance Diagram

The BHS 5 Water Balance Diagram has been revised to:

1. Reflect sampling points anticipated to be required by the Connecticut Department of Energy and Environmental Protection's (CT DEEP) Individual Pre-Treatment Permit (i.e. Industrial Wastewater Discharge Permit No. SP0002474 authorizing discharges to the City of Bridgeport's Water Pollution Control Authority) when issued; and

2. Add zinc removal capability on the Reverse Osmosis reject water line to assure long-term compliance with the above referenced Individual Pre-Treatment Permit No. SP0002474.

Drawing No.	Rev.	Drawing Title
644911-FD002-S001	**2**	**Water Mass Balance Water System Flow Diagram Sheet 1**
644911-FD002-S002	**2**	**Water Mass Balance Water System Flow Diagram Sheet 2**
644911-FD002-S003	**1**	**Water Mass Balance Water System Flow Diagram Sheet 3**
644911-FD002-S004	**1**	**Water Mass Balance Water System Flow Diagram Sheet 4**
644911-FD002-S005	**2**	**Water Mass Balance Water System Flow Diagram Sheet 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.
4. COOLING TOWER BYPASS. NORMALLY NOT USED.

ORIGINAL

ISSUED FOR CONSTRUCTION
B2-C2: ADDED EQUIPMENT
D5: REVISED DESCRIPTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
2	10/3/18	MW	PMC	DS			

ISSUED FOR CONSTRUCTION
A1,B1, D1: ADDED CHEMICAL INJECTIONS
A1,C1: ADDED STREAM D
C5: ADDED MONITORING
F1: ADDED NOTE 4

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
1	02/22/18	WW	WDH	WDH	LA	SF	

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
0	08/10/17	WW	WDH	WDH	HMK FOR LA	SF	

ISSUED FOR APPROVAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
A	05/17/17	WW	WDH	WDH	LA	SF	SEO

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
REV 2

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

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. RO REJECT WILL BE TREATED WITH ZINC REMOVAL ION EXCHANGER WHEN THE PLANT RUNS ON FUEL OIL OPERATION. (LOW AMBIENT, CASE 3 & 6). △2
4. 6 CYCLES OF CONCENTRATION.

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	583	120	168	616	170	143	621	
2	Potable water network	gpm	2	2	2	2	2	2	2	
3	Supply to Service/Fire water tank	gpm	581	118	166	614	168	141	619	
4	service water demand	gpm	616	118	166	645	168	141	655	
5	Service water makeup to CT makeup	gpm	8	67	81	31	83	62	32	
6	Service water for misc uses	gpm	7	7	7	7	7	7	7	
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	100	124	87	126	103	89	
	CT Cycles of concentration	-	3.5	7.0	6.5	4.5	6.0	6.0	4.3	
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	Demin water 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	2	2	2	2	2	2	2	
512	CT blowdown	gpm	18	14	19	19	21	17	21	
512	Temperature	degree F	41	67	91	54	91	67	54	
512	Total dissolved solids	mg/l	2494	1034	1061	2480	975	1026	2437	
512	Total suspended solids	mg/l	4	7	7	5	7	7	2	
512	Zinc	mg/l	0.23	0.80	0.85	0.34	0.78	0.80	0.32	
513	Plant process wastewater, Final	gpm	21	17	22	22	24	20	24	
513	Temperature	degree F	44	66	87	55	87	66	55	
513	Total dissolved solids	mg/l	2179	897	950	2180	883	909	2159	
513	Total suspended solids	mg/l	15	21	18	15	17	19	12	
513	Zinc	mg/l	0.22	0.68	0.75	0.31	0.70	0.70	0.29	
514	Sanitary wastewater	gpm	2	2	2	2	2	2	2	
515	Total wastewater	gpm	23.4	19.3	24.1	24.4	26.0	22.2	25.6	
515	Temperature	degree F	41	65	87	51	87	66	51	
515	Total dissolved solids	mg/l	2022	840	899	2030	842	858	2017	
515	Total suspended solids	mg/l	34	44	36	34	34	39	30	
515	Zinc	mg/l	0.21	0.63	0.70	0.29	0.66	0.65	0.28	
516	Rinse water recyle to service/fire water tank	gpm	2.9	0	0	2.9	0	0	2.9	

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
△2 ISSUED FOR CONSTRUCTION — B1-E5: REVISED TABLE; F1: REVISED NOTE 3	10/3/18			DS			
△1 ISSUED FOR CONSTRUCTION — C1-C5, E1-E5: REVISED COOLING TOWER CYCLE OF CONCENTRATION FOR LOW AMBIENT AND CASE 6.	08/15/17	WW	WDH	WDH	HMK FOR LA	SF	
△0 ISSUED FOR CONSTRUCTION	08/10/17	WW	WDH	WDH	HMK FOR LA	SF	
△A ISSUED FOR APPROVAL	05/17/17	WW	WDH	WDH	LA	SF	SEO

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

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 △2

STATE OF CONNECTICUT — LICENSED PROFESSIONAL ENGINEER

03 Oct 2018

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	100	14	2	19.3
Biochemical oxygen demand (5 day)	mg/l		<1		<1				<1	3.5	220	25
Chemical oxygen demand	mg/l		4.9		4.9				4.9	17.15	500	64
Oil and grease, total*	mg/l		<1		<1	<6			<1	7	100	17
Oil and grease, hydrocarbon fraction	mg/l											
Total suspended solids	mg/l		<1		<1	<6			1	7	220	43
Ammonia, as nitrogen*	mg/l		<0.10		<0.10	<0.6			<0.10	0.05	30	3
Phosphorus, total	mg/l		0.39		0.39	2.34			0.39	2.73	3.26	2.46
Ortho phosphate	mg/l		2.75		2.75	16.5	6	18.3	3.87	27.08	10	21.82
Nitrate	mg/l		0.039		0.039	0.234			0.03	0.22	0.078	0.18
Nitrite*	mg/l		<0.002		<0.002	<0.012			<0.002	0.014		<0.02
Total kjeldahl nitrogen	mg/l		0.97		0.97				0.8	5.5	40	8
Total residual chlorine	mg/l		1		0.2				0.08	0.1		0.1
Temperature	degree F		60		60		212	60	65.29	67.4	60	65.5
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	0.07		0.052
Lead, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.007		0.005
Zinc, total	mg/l		0.1		0.1	0.6		0.7	0.11	0.80		0.62
Antimony, total*	mg/l		<0.0008		<0.0008	<0.0048			<0.0008	0.0056		0.004
Arsenic, total*	mg/l		<0.0005		<0.0005	<0.003			<0.0005	0.0035		0.0026
Beryllium, total*	mg/l		<0.0003		<0.0003	<0.0018			<0.0003	0.0021		0.0016
Cadmiun, total*	mg/l		<0.0003		<0.0003	<0.0018			<0.0003	0.0021		0.0016
Chronium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.007		0.005
Chronium	mg/l											
Mercury, total*	mg/l		<0.0002		<0.0002	<0.0012			<0.0002	0.0014		0.001
Nickel, total*	mg/l		<0.005		<0.005	<0.003			<0.005	0.035		0.026
Selenium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.007		0.005
Silver, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.007		0.005
Thallium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.007		0.005
Cyanide, total*	mg/l		<0.0066		<0.0066	<0.04			<0.0066	0.0462		0.034
Cyanide	mg/l											
Phenols, total	mg/l											
Bromide*	mg/l		<0.05		<0.05	<0.3			<0.05	0.35		0.26
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	0.85	5.93		4.7
Nitrogen, total organic	mg/l											
Radioactivity	mg/l											
Sulfate	mg/l		17	0.003	17	102	1	113	20	179	51	142
sulfide	mg/l											
sulfite*	mg/l		<0.05		<0.05	<0.3			<0.05	0.35		0.26
Surfactants	mg/l											
Aluminum, total	mg/l		0.02		0.02	0.12			0.02	0.16		0.12
Barium, total	mg/l		0.014		0.014	0.084			0.016	0.112		0.086
Boron, total	mg/l		0.012		0.012	0.072			0.014	0.096		0.074
Cobalt, total	mg/l											
Iron, total *	mg/l		<0.01		<0.01	<0.06		0.07	0.01	0.08	0.02	0.06
Magnesium, total	mg/l		4.5		4.5	27		30	5.2	36.1	9	29
Manganese	mg/l		<0.01		<0.01	<0.06		0.07	0.01	0.08	0.02	0.06
Calcium	mg/l		14		14	84		93	16	112		90
Sodium	mg/l		19	0.003	19	114	3	127	22	157		125
Potassium	mg/l		2		2	12		13	2	16		13
Silica	mg/l		4.4	0.01	4.4	26	2	29	5.3	37.0		29
Chloride	mg/l		31	0.003	32	192		207	36	249		199
Total dissolved solids	mg/l		125		125	706	12	844	148	1034	386	839
Alkalinity, as CaCO3	mg/l		31		31	125		207	36	205	100	170

GENERAL NOTES:

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

STATE OF CONNECTICUT DANIEL SERRA No. 33107 LICENSED PROFESSIONAL ENGINEER
03 Oct 2018

ORIGINAL

ISSUED FOR CONSTRUCTION
B1-E5: REVISED TABLE

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
1	10/3/18	MW	MRL	DS	RA		
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. 3 OF 5

WATER BALANCE MECHANICAL-PIPING

VENDOR NO. 644911-FD002-S003 REV 1

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

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	103	17	2	22
Biochemical oxygen demand (5 day)	mg/l		<1		<1				<1	3	220	22
Chemical oxygen demand	mg/l		5		5				4.9	15	500	56
Oil and grease, total*	mg/l		<1		<1	<6			<1	6	100	15
Oil and grease, hydrocarbon fraction	mg/l											
Total suspended solids	mg/l		<1		<1	<6	2		1	7	220	39
Ammonia, as nitrogen*	mg/l		<0.1		<0.1	<0.6			<0.1	0.05	30	2.74
Phosphorus, total	mg/l				0.39	2			0.39	2.34	3.26	2.19
Ortho phosphate	mg/l		3		2.75	17	6	18.3	4.5	27.0	10.0	22.5
Nitrate	mg/l				0.039	0.23			0.04	0.22	0.08	0.19
Nitrite*	mg/l		<0.002		<0.002	<0.012			<0.002	0.012		<0.009
Total kjeldahl nitrogen	mg/l		1		1				1	4	40	7
Total residual chlorine	mg/l		1		1.0			0	0.8	0.1		0.1
Temperature	degree F		60		60		212	60	64.8	67.4	60	65.7
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	0.06		0.046
Lead, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.006		0.005
Zinc, total	mg/l		0.1		0.1	0.6		0.7	0.1	0.8		0.7
Antimony, total*	mg/l		<0.0008		<0.0008	<0.0048			<0.0008	0.0048		0.0037
Arsenic, total*	mg/l		<0.0005		<0.0005	<0.003			<0.0005	0.003		0.0023
Beryllium, total*	mg/l		<0.0003		<0.0003	<0.0018			<0.0003	0.0018		0.0014
Cadmiun, total*	mg/l		<0.0003		<0.0003	<0.0018			<0.0003	0.0018		0.0014
Chronium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.006		0.005
Chronium	mg/l											
Mercury, total*	mg/l		<0.0002		<0.0002	<0.0012			<0.0002	0.0012		0.0009
Nickel, total*	mg/l		<0.005		<0.005	<0.003			<0.005	0.03		0.023
Selenium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.006		0.005
Silver, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.006		0.005
Thallium, total*	mg/l		<0.001		<0.001	<0.006			<0.001	0.006		0.005
Cyanide, total*	mg/l		<0.0066		<0.0066	<0.04			<0.0066	0.0396		0.0307
Cyanide	mg/l											
Phenols, total	mg/l											
Bromide*	mg/l		<0.05		<0.05	<0.3			<0.05	0.3		0.23
Color	C.U.		2		2				2	20		
Fecal coliform	CFU/100 ml		<1		<1				<1	6		
Fluoride	mg/l		0.74		0.74	4.44		4.93	0.99	5.95	1.48	4.91
Nitrogen, total organic	mg/l											
Radioactivity	mg/l											
Sulfate	mg/l		17	0.003	17	102	1	113	23	174	51	143
sulfide	mg/l											
sulfite*	mg/l		<0.05		<0.05	<0.3			<0.05	0.3		0.24
Surfactants	mg/l											
Aluminum, total	mg/l		0.02		0.02	0.12			0.03	0.16	0.04	0.13
Barium, total	mg/l		0.014		0.014	0.084			0.019	0.113	0.028	0.092
Boron, total	mg/l		0.012		0.012	0.072			0.016	0.097	0.024	0.079
Cobalt, total	mg/l											
Iron, total *	mg/l		<0.01		<0.01	<0.06		0.07	0.01	0.08	0.02	0.07
Magnesium, total	mg/l		5		5	27		30	6	36	9	30
Manganese	mg/l		<0.01		<0.01	<0.06		0.07	0.01	0.08	0.02	0.07
Calcium	mg/l		14		14	84		93	19	113	28	93
Sodium	mg/l		19	0.003	19	114	1	127	26	155	38	128
Potassium	mg/l		2		2	12		13	3	16	4	13
Silica	mg/l		4	0.01	4	26	2	29	6.2	37.0	9	30.5
Chloride	mg/l		31	0.003	31	186		207	42	249	62	206
Total dissolved solids	mg/l		125		125	700	10	844	171	1026	386	858
Alkalinity, as CaCO3	mg/l		31		31	125		207	40	200	100	171

GENERAL NOTES:

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

STATE OF CONNECTICUT DANIEL SEKINE No. 33107 LICENSED PROFESSIONAL ENGINEER 03 Oct 2018

ORIGINAL

ISSUED FOR CONSTRUCTION
B1-E5: REVISED TABLE
1 10/3/18 MRL DS
ISSUED FOR CONSTRUCTION
0 08/10/17 WW WDH WDH HMK FOR 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:

BRIDGEPORT 05

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

WATER BALANCE MECHANICAL-PIPING

VENDOR NO. 644911-FD002-S004 REV 1

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

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	619	35	655		0	0	12	53	84.8	20.6	2	25.6
Biochemical oxygen demand (5 day)	mg/l	<1	1	1		1				0.98	2.15	220	19
Chemical oxygen demand	mg/l	4.9	3.2	4.8		4.8				4.8	10.3	500	47
Oil and grease, total*	mg/l	<1	0.7	1.0		1.0	<6			0.98	4.3	100	12
Oil and grease, hydrocarbon fraction	mg/l												
Total suspended solids	mg/l	<1	1	1		1	<6	2		0.4	2	220	30
Ammonia, as nitrogen*	mg/l	<0.1	0.07	0.10		0.10	<0.6			0.10	0.06	30	2.39
Phosphorus, total	mg/l	0.39	0.26	0.38		0.38	2.30			0.4	1.6	3.26	1.66
Ortho phosphate	mg/l	2.75	3.86	2.81		2.81	16.86	6	18.7	12.7	54.8	10	45.4
Nitrate	mg/l	0.039	0.026	0.038		0.038	0.230			0.014	0.062	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				0.4	1.5	40	5
Total residual chlorine	mg/l	1	0.3	1.0		1.0				0.36	0.1		0.1
Temperature	degree F	60	117	63		63		212	63	63.1	54.1	60	55.3
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	0.04		0.03
Lead, total*	mg/l	<0.001	0.001	0.001		0.001	<0.006			0.001	0.004		0.003
Zinc, total (NOTE 2)	mg/l	0.1	0.1	0.1		0.1	0.6		0.1	0.08	0.33		0.30
Antimony, total*	mg/l	<0.0008	0.0005	0.008		0.008	<0.0048			0.008	0.003		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	0.004		0.003
Chronium	mg/l												
Mercury, total*	mg/l	<0.0002	0.0013	0.0003		0.0003	<0.0012			0.0003	0.0009		0.0007
Nickel, total*	mg/l	<0.005	0.003	0.005		0.005	<0.003			0.0049	0.022		0.017
Selenium, total*	mg/l	<0.001	0.0007	0.001		0.001	<0.006			0.0010	0.004		0.003
Silver, total*	mg/l	<0.001	0.0007	0.001		0.001	<0.006			0.0010	0.004		0.003
Thallium, total*	mg/l	<0.001	0.0007	0.001		0.001	<0.006			0.0010	0.004		0.003
Cyanide, total*	mg/l	<0.0066	0.0044	0.0065		0.0065	<0.04			0.0065	0.028		0.023
Cyanide	mg/l												
Phenols, total	mg/l												
Bromide*	mg/l	<0.05	0.03	0.05		0.05	<0.3			0.0491	0.215		0.175
Color	C.U.	2	1	2		2				2	20		
Fecal coliform	CFU/100 ml	<1	0.7	1		1				1	4		
Fluoride	mg/l	0.74	0.49	0.73		0.73	4.36		4.84	3.30	14.18	1.48	11.7
Nitrogen, total organic	mg/l												
Radioactivity	mg/l												
Sulfate	mg/l	17	12	17	0.003	17	100	1	111	76	610	51	498
sulfide	mg/l												
sulfite*	mg/l	<0.05	0.03	0.05		0.05	<0.3			0.049	0.215		0.188
Surfactants	mg/l												
Aluminum, total	mg/l	0.02	0.01	0.02		0.02	0.12			0.09	0.38		0.31
Barium, total	mg/l	0.014	0.009	0.014		0.014	0.082			0.062	0.268		0.220
Boron, total	mg/l	0.012	0.008	0.012		0.012	0.071			0.053	0.230		0.189
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	0.158
Magnesium, total	mg/l	4.5	3.0	4.4		4.4	26.5		29	20	86	9	71
Manganese	mg/l	<0.01	0.01	0.01		0.01	<0.06		0.07	0.04	0.19	0.02	0.16
Calcium	mg/l	14	9	14		14	82		92	62	268	28	220
Sodium	mg/l	19	13	19	0.003	19	112	1	124	85	366	38	301
Potassium	mg/l	2	1	2		2	12		13	9	38	4	32
Silica	mg/l	4.4	3.0	4.3	0.01	4.3	26.0	2	29	19.6	84.4	9	69
Chloride	mg/l	31	22	31	0.003	31	183		204	139	596	62	490
Total dissolved solids	mg/l	125	89	123		123	689	10	829	567	2437	386	2016
Alkalinity, as CaCO3	mg/l	31	20	30		30	122		203	138	297	100	253

GENERAL NOTES:

1. ASTERISK (*) INDICATES TESTING PARAMETER IS UNDETECTABLE IN WATER. VALUE SHOWN REPRESENTS THE DETECTION LIMIT OF THE ANALYTICAL INSTRUMENT.
2. RO REJECT WILL BE TREATED WITH ZINC REMOVAL ION EXCHANGER WHEN THE PLANT RUNS ON FUEL OIL OPERATION. (2)

STATE OF CONNECTICUT DANIEL SEKNE No. 33107 LICENSED PROFESSIONAL ENGINEER
03 Oct 2018

ORIGINAL

ISSUED FOR CONSTRUCTION
B1-E5: REVISED TABLE
F1: REVISED NOTE 2
2 10/3/18 WW MRL DS

ISSUED FOR CONSTRUCTION
E1-E5: REVISED CYCLE OF CONCENTRATION FOR CT BLOWDOWN
1 08/13/17 WW WDH WDH HMK FOR LA SF SEO

ISSUED FOR CONSTRUCTION
0 08/10/17 WW WDH WDH HMK FOR 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:

BRIDGEPORT 05

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

WATER BALANCE MECHANICAL-PIPING

VENDOR NO. 644911-FD002-S005 REV 2

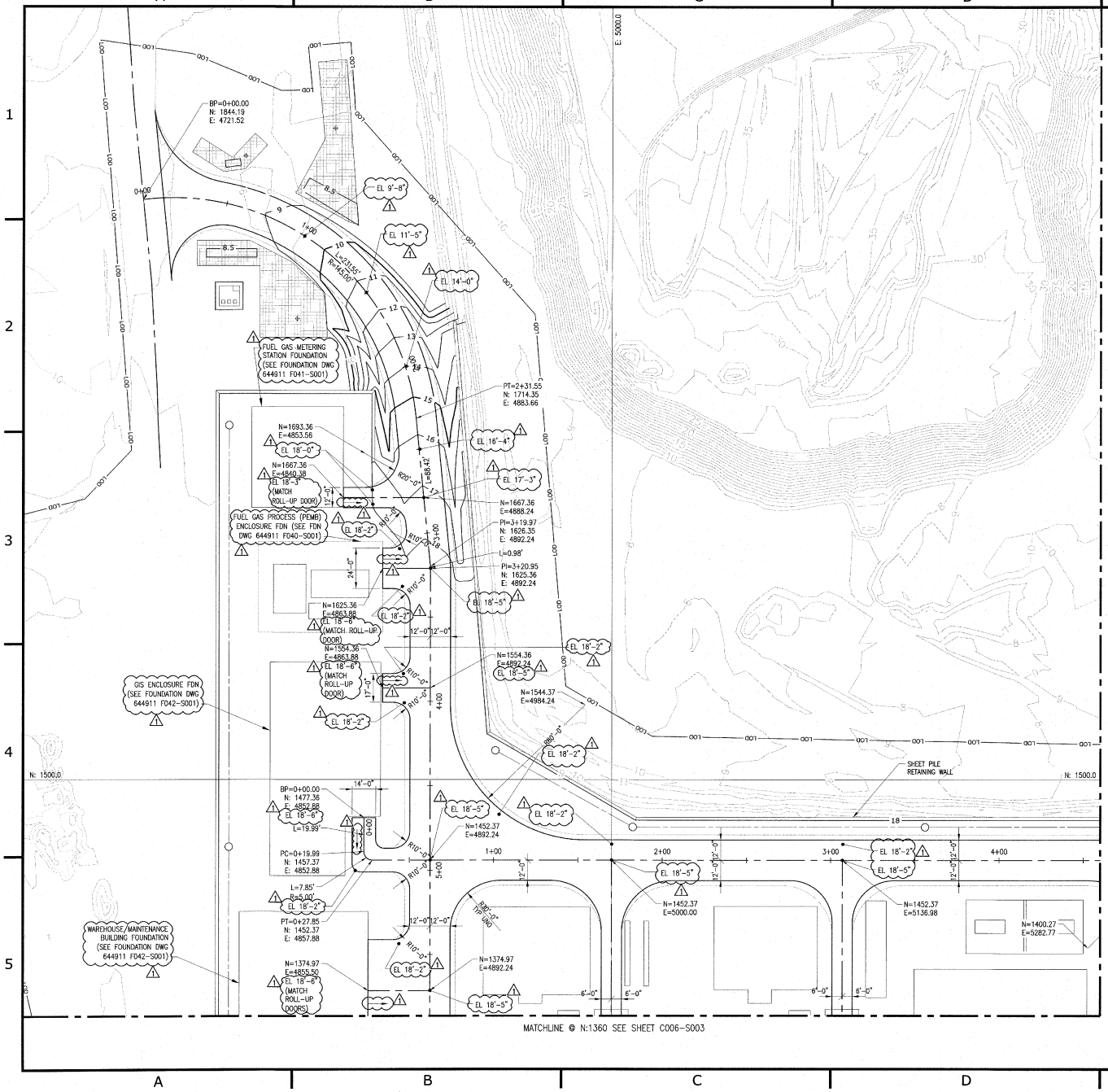
INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY

Exhibit 3 Onsite Underground Utility Design, Site Finishing, and Grading Plans

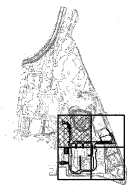
Revisions to paving / grading, site finishes and on-site underground utility drawings to reflect minor changes made during construction:

Drawing No.	Rev.	Drawing Title
644911 C006-S001	1	Yard Roads and Paving – Paving Plan Sheet 1 of 5
644911 C006-S002	1	Yard Roads and Paving – Paving Plan Sheet 2 of 5
644911 C006-S003	1	Yard Roads and Paving – Paving Plan Sheet 3 of 5
644911 C006-S004	1	Yard Roads and Paving – Paving Plan Sheet 4 of 5
644911 C006-S005	1	Yard Roads and Paving – Paving Plan Sheet 5 of 5
644911-P200-S001	1	Yard Underground Piping Plan
644911-P201-S001	2	Yard Underground Piping Plan Area 1
644911-P202-S001	1	Yard Underground Piping Plan Area 2
644911-P203-S001	3	Yard Underground Piping Plan Area 3
644911-P204-S001	2	Yard Underground Piping Plan Area 4
644911-P205-S001	5	Yard Underground Piping Plan Area 6
644911-P206-S001	1	Yard Underground Piping Plan Area 6
644911-P207-S001	1	Yard Underground Piping Plan Area 7
644911-P208-S001	3	Yard Underground Piping Plan Area 8
644911-P209-S001	3	Yard Underground Piping Plan Area 9
644911-P210-S001	3	Yard Underground Piping Plan Area 10
644911-P211-S001	3	Yard Underground Piping Plan Area 11
644911-P212-S001	6	Yard Underground Piping Plan Area 12
644911-P213-S001	4	Yard Underground Piping Plan Area 13

644911-P214-S001	**5**	**Yard Underground Piping Plan Area 14**
644911-P215-S001	**0**	**Yard Underground Piping Plan Area 15**
644911-P216-S001	**4**	**Yard Underground Piping Plan Area 16**
644911-P217-S001	**5**	**Yard Underground Piping Plan Area 17**
644911-P218-S001	**5**	**Yard Underground Piping Plan Area 10**
644911-P219-S001	**5**	**Yard Underground Piping Plan Area 19**
644911-P220-S001	**2**	**Yard Underground Piping Plan Area 20**
644911-P221-S001	**5**	**Yard Underground Piping Plan Area 21**
644911-P222-S001	**7**	**Yard Underground Piping Plan Area 22**
644911-P223-S001	**2**	**Yard Underground Piping Plan Area 23**
644911-P224-S001	**4**	**Yard Underground Piping Plan Area 24**
644q11-P225-S001	**1**	**Yard Underground Piping Plan Area 25**
644911-P226-S001	**3**	**Yard Underground Piping Plan Area 26**
644911-P227-S001	**1**	**Yard Underground Piping Plan Area 27**
644911-P230-S001	**1**	**Underground Piping Bedding Details**
644911-P231-S001	**2**	**Underground Piping Details**
644911-P232-S001	**1**	**Underground Piping Cathodic Protection Details**
644911-P233-S001	**3**	**Underground Fire Protection Piping Firewater Loop**
644911-P233-S002	**0**	**Underground Fire Protection Piping Sections and Details**



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

ISSUED FOR CONSTRUCTION

1	9/28/16	JR	MK	CL	RL	SG	

ISSUED FOR PERMIT

0	05/08/17	AS	GG	GG	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.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 1 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

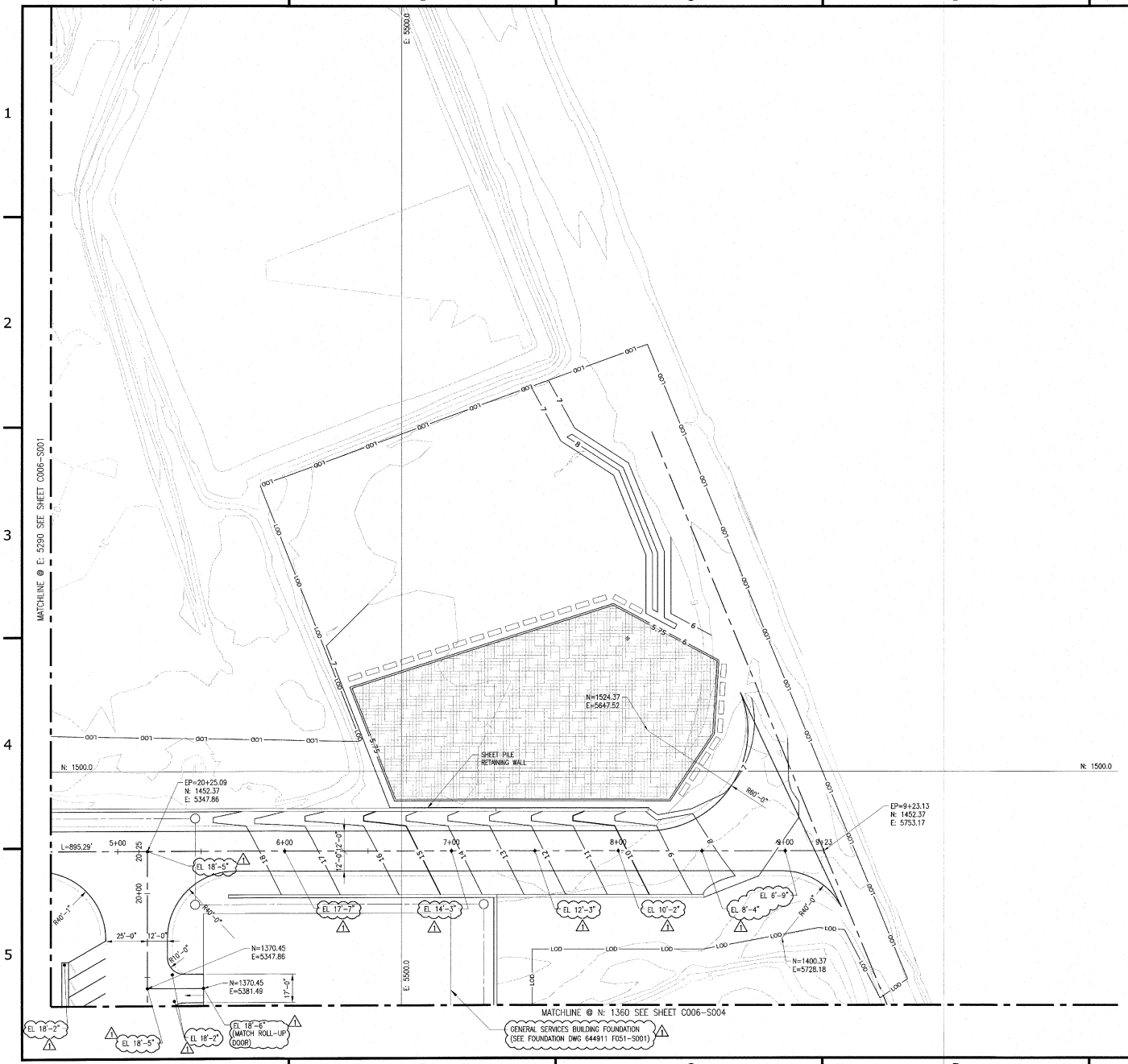
VENDOR NO.

644911 C006-S001

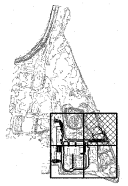
0

STATE OF CONNECTICUT
COLLIN LOCK
33125
LICENSED
PROFESSIONAL ENGINEER
8/29/16

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



KEY MAP:



GENERAL NOTES:

1. FOR NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION							
1 9/28/18	DP	FM	CL				
ISSUED FOR PERMIT							
0 05/08/17	AS	GG	GG	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.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 2 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO.

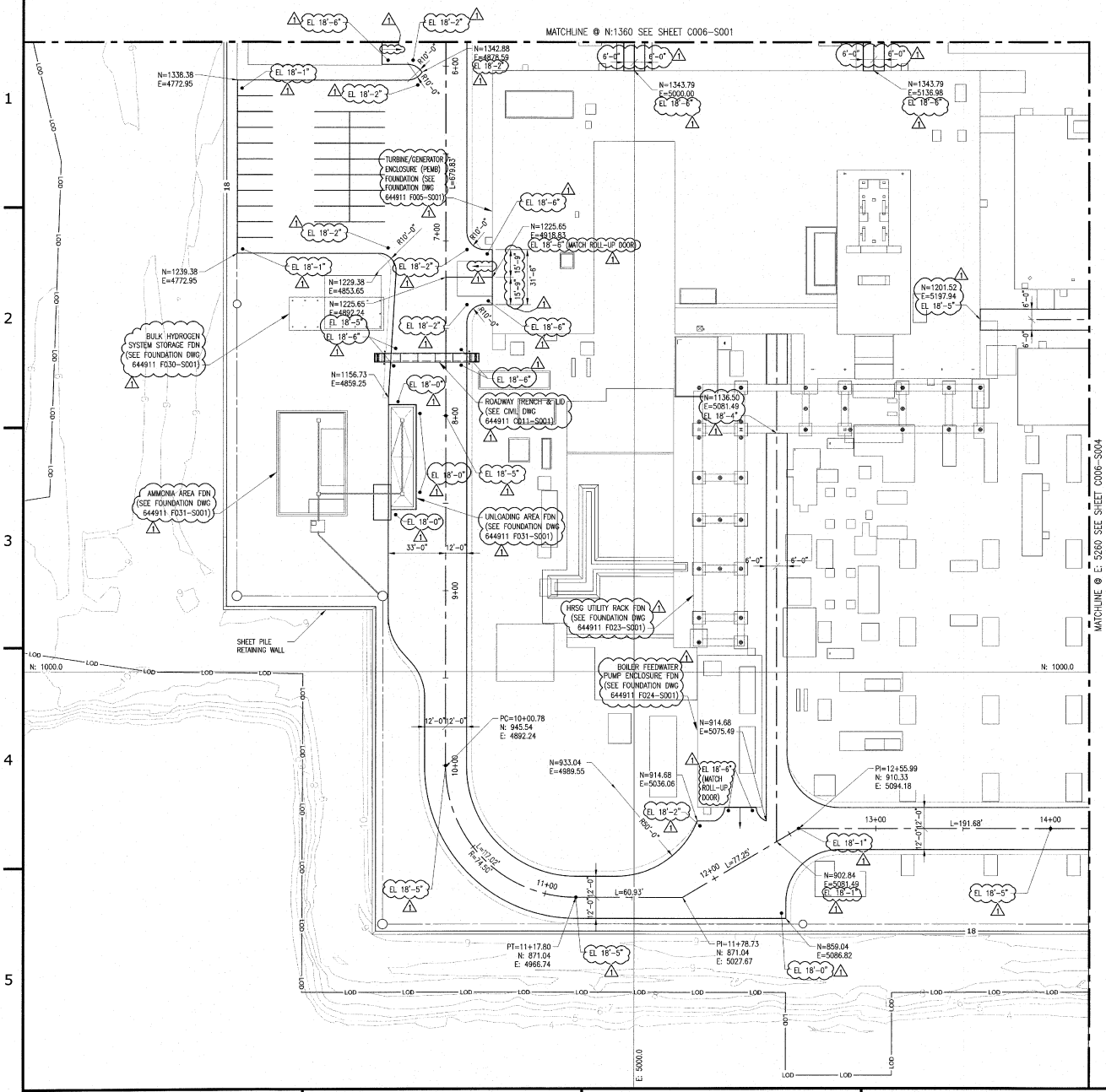
644911 C006-S002

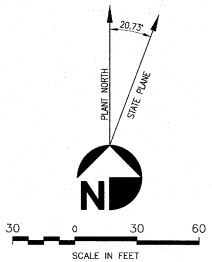
1

REVIEW/SEEN BY

JIB/TR | ELECT | MECH | STRUCT | PIPING | PROCESS

STATE OF CONNECTICUT
COLLIN L. LOCK
33125
LICENSED
PROFESSIONAL ENGINEER
9/28/18





KEY MAP:

GENERAL NOTES:

1. FOR NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION							
1 9/28/18							
ISSUED FOR PERMIT							
0 05/08/17	AS	GG	GG	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.

SCALE: AS NOTED

BRIDGEPORT 05

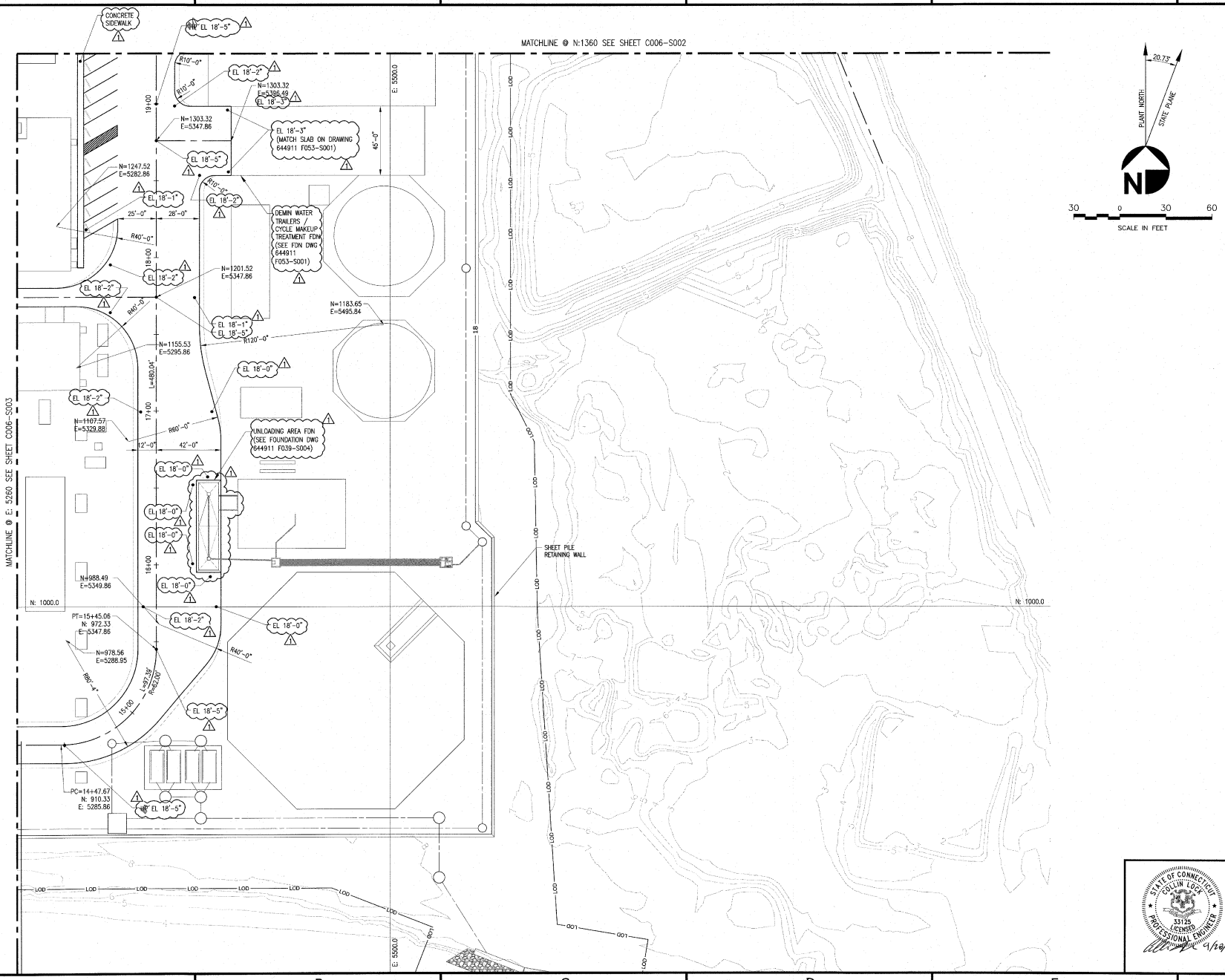
YARD
ROADS AND PARKING
PAVING PLAN
SHT 3 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

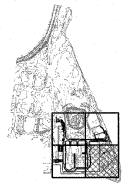
644911 C006-S003

STATE OF CONNECTICUT — COLLIN LOCK — 33125 LICENSED PROFESSIONAL ENGINEER — 9/28/18

UNITR | 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 CONSTRUCTION							
3 9/28/18							
ISSUED FOR PERMIT							
2 05/08/17	AS	GG	GG	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.

SCALE: AS NOTED

BRIDGEPORT 05

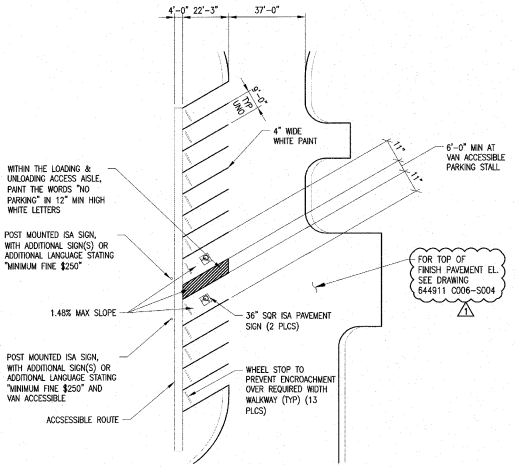
YARD
ROADS AND PARKING
PAVING PLAN
SHT 4 OF 5

PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

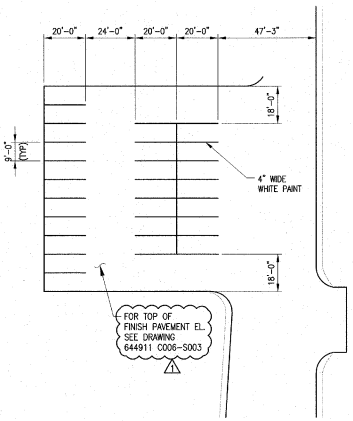
VERSION NO. 644911 C006-S004

STATE OF CONNECTICUT · COLLIN T. LOCK · 33125 · LICENSED PROFESSIONAL ENGINEER — 9/28/18

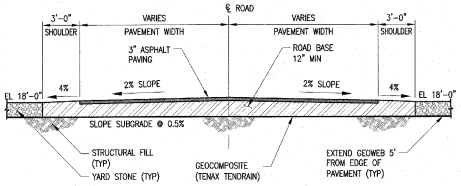
INSTR. | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY



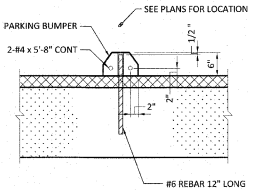
ADA PARKING & PARKING LAYOUT
1"=30'-0"



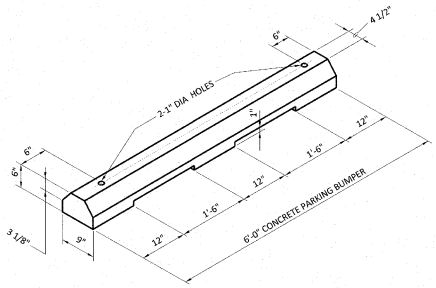
PARKING LAYOUT
1"=30'-0"



TYPICAL ROAD SECTION
1"=5'-0"



CONCRETE WHEEL STOP SECTION
NTS



CONCRETE WHEEL STOP DETAIL
NTS

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG C006-S001

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

ISSUED FOR CONSTRUCTION
9/28/18 RR PMK CL 2 2 4

ISSUED FOR PERMIT
05/08/17 AS GG GG 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.

SCALE: AS NOTED

BRIDGEPORT 05

YARD
ROADS AND PARKING
PAVING PLAN
SHT 5 OF 5

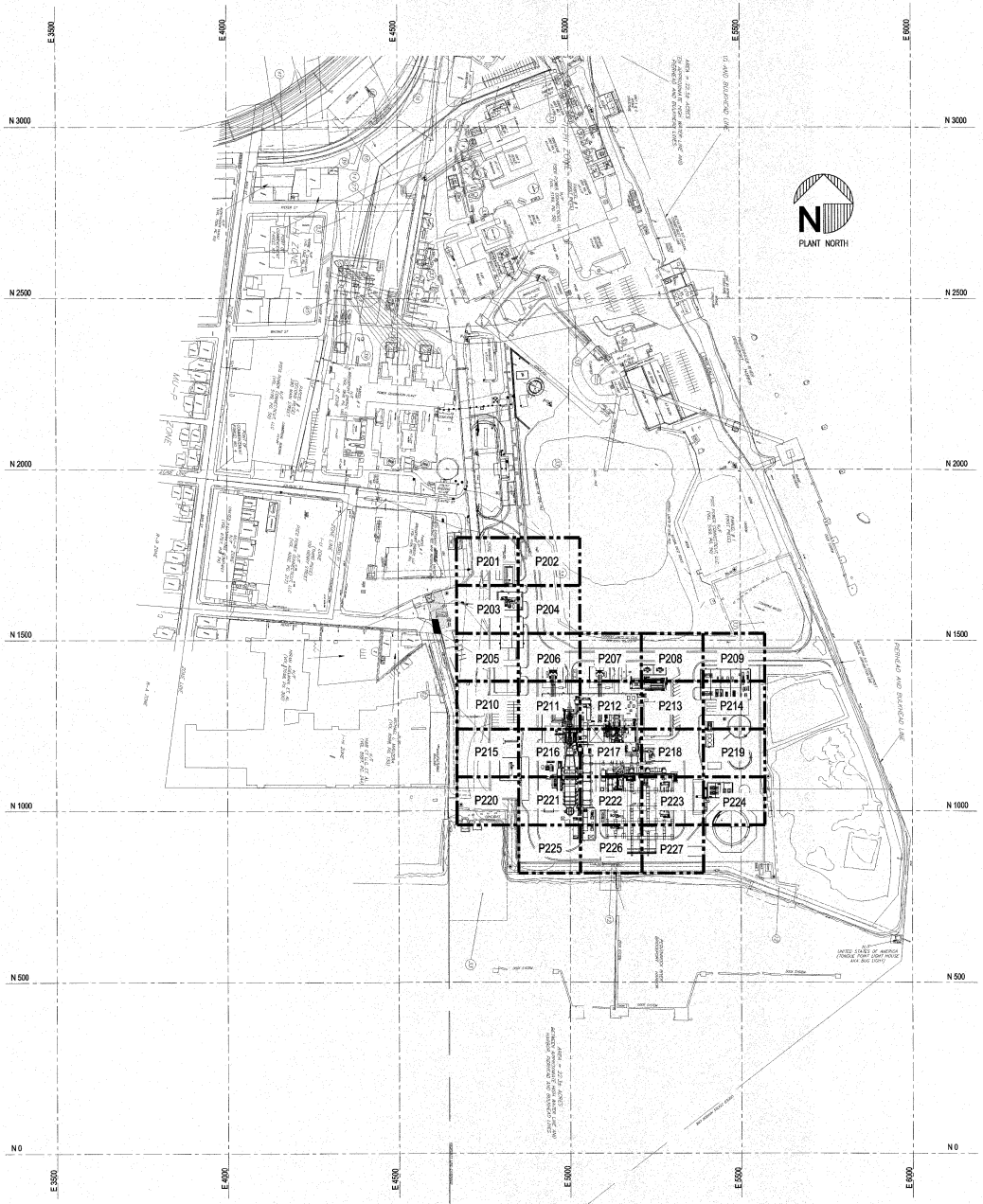
PARTIAL SITE PLAN — DESIGN CIVIL GENERAL

VENDOR NO.

644911 C006-S005

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

STATE OF CONNECTICUT
COLLIN LOCK
33125
LICENSED
PROFESSIONAL ENGINEER
5/29/18



ORIGINAL

STATE OF CONNECTICUT
WILLIAM D. PASSERO
22272
LICENSED PROFESSIONAL ENGINEER

18 MAY 2017

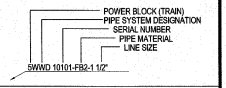
GENERAL NOTES:

1. FOR OVERALL SITE GENERAL ARRANGEMENT PLAN SEE DRAWING 644911-GA001-S001. FOR PLANT GENERAL ARRANGEMENT PLAN SEE DRAWING 644911-GA002-S001.
2. UNDERGROUND PIPING AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS 644911-SP-P171.1 AND 644911-SP-P200.
3. FOR CLEANOUT AND FLOOR DRAIN DETAILS SEE DWG 644911 P231-S001.
4. FOR STUB-UP DETAILS SEE DWG 644911 P231-0001.
5. FOR BELL UP (HUB DRAIN) DETAILS SEE DWG 644911 P231-S001.
6. FOR CATHODIC PROTECTION AND TEST STATION INSTALLATION DETAILS SEE DRAWING 644911-P232PS001.
7. FOR UNDERGROUND FIREWATER PLAN AND DETAILS SEE DWGS 644911 P233-S001 AND S002.
8. FOR FOUNDATION LOCATION PLAN SEE DWG 644911 F002-S001.
9. FOR INFORMATION ON CITY WATER MAIN (WSD) AND SANITARY WASTE SYSTEM (WWS) TIE-IN LOCATIONS SEE BRIDGEPORT HARBOR UTILITY DRAWINGS. FOR INFORMATION ON NATURAL GAS SYSTEM (FGA) TIE-IN LOCATION SEE SOUTHERN CONNECTICUT GAS COMPANY (SCGCo) DRAWINGS.
10. HIGH POINT OF FINISHED GRADE ELEVATION IS EL. 18'-0". SEE FINAL GRADING PLAN DWG 644911 C004-S001.
11. TOC FOR POWER TRAIN AND STG AREAS IS HIGH POINT EL. 18'-6 1/2".
12. HIGH POINT OF CONC FLOOR ELEVATION IN ALL EXTERNAL BUILDINGS AND ENCLOSURES IS EL. 18'-6". UNLESS NOTED OTHERWISE.
13. ALL PIPING AND ELECTRICAL SHOWN IS UNDERGROUND AND IN A SOLID LINE SYMBOL. PIPE ROUTED UNDER EQUIPMENT FOUNDATION, ELECTRICAL TRENCHES AND ACCESS ROADS ARE SHOWN AS HIDDEN LINES FOR CLARITY.
14. THE PROJECT PLANT GRID SYSTEM IS BASE ON THE CONNECTICUT STATE PLANE COORDINATE SYSTEM NAD83/2011 FEET.
15. ALL ELEVATIONS SHOWN ARE ACTUAL BASED ON NAV88 DATUM.
16. ALL UG D.I. PIPE SYSTEMS SHALL BE MECHANICAL JOINTS WITH RETAINER GLANDS.
17. FOR STUB-UP WITH INSULATION FOR FREEZE PROTECTION OR INSULATION/HEAT TRACE DETAILS SEE DWG 644911 P231-S001.
18. FOR UNDERGROUND ELECTRICAL INFORMATION SEE DWG 644911 E300 SERIES FOR DUCKBANK AND 644911 E400 SERIES FOR GROUNDING.

UNDERGROUND SYSTEM IDENTIFIER LIST

SYSTEM CODE	SYSTEM DESCRIPTION	SYSTEM DISCIPLINE
CAB	COMPRESSED AIR	MECH
CGA	COMPRESSED GAS	MECH
CGE	AMMONIA SUPPLY AND STORAGE	MECH
ECA	AUXILIARY COOLING WATER	MECH
ECB	CLOSED CYCLE COOLING WATER	MECH
FGA	FUEL GAS SUPPLY	MECH
FOA	FUEL OIL RECEIVING AND STORAGE	MECH
FOB	FUEL OIL SUPPLY	MECH
FPU	FIRE PROTECTION	MECH
FWC	CONDENSATE	MECH
FWD	CONDENSATE POLISHING	MECH
FWF	CYCLE MAKE UP AND STORAGE	CHEM
STF	STORM WATER	CIVIL
WSC	SERVICE WATER SUPPLY	MECH
WSD	POTABLE WATER	MECH
WTD	DEMINERALIZED WATER	CHEM
WWB	SANITARY DRAINAGE & TREATMENT	CIVIL/CHEM
WWC	WASTEWATER COLLECTION	MECH
WWD	OIL SPILL PREVENTION	MECH

PIPELINE SYSTEM DESIGNATION



ISSUED FOR CONSTRUCTION

1	5/18/17	DKE	WW	LP	JH	SF	SEO

ISSUED FOR PERMIT

0	4/27/17	KDE	KC	LON	LA	LP/SF	SEO

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIS. TECH.	PROJ. MGR.

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC • LAVALIN
CONSTRUCTORS INC.

SCALE: NONE

BRIDGEPORT 05

YARD
UNDERGROUND
PIPING PLAN

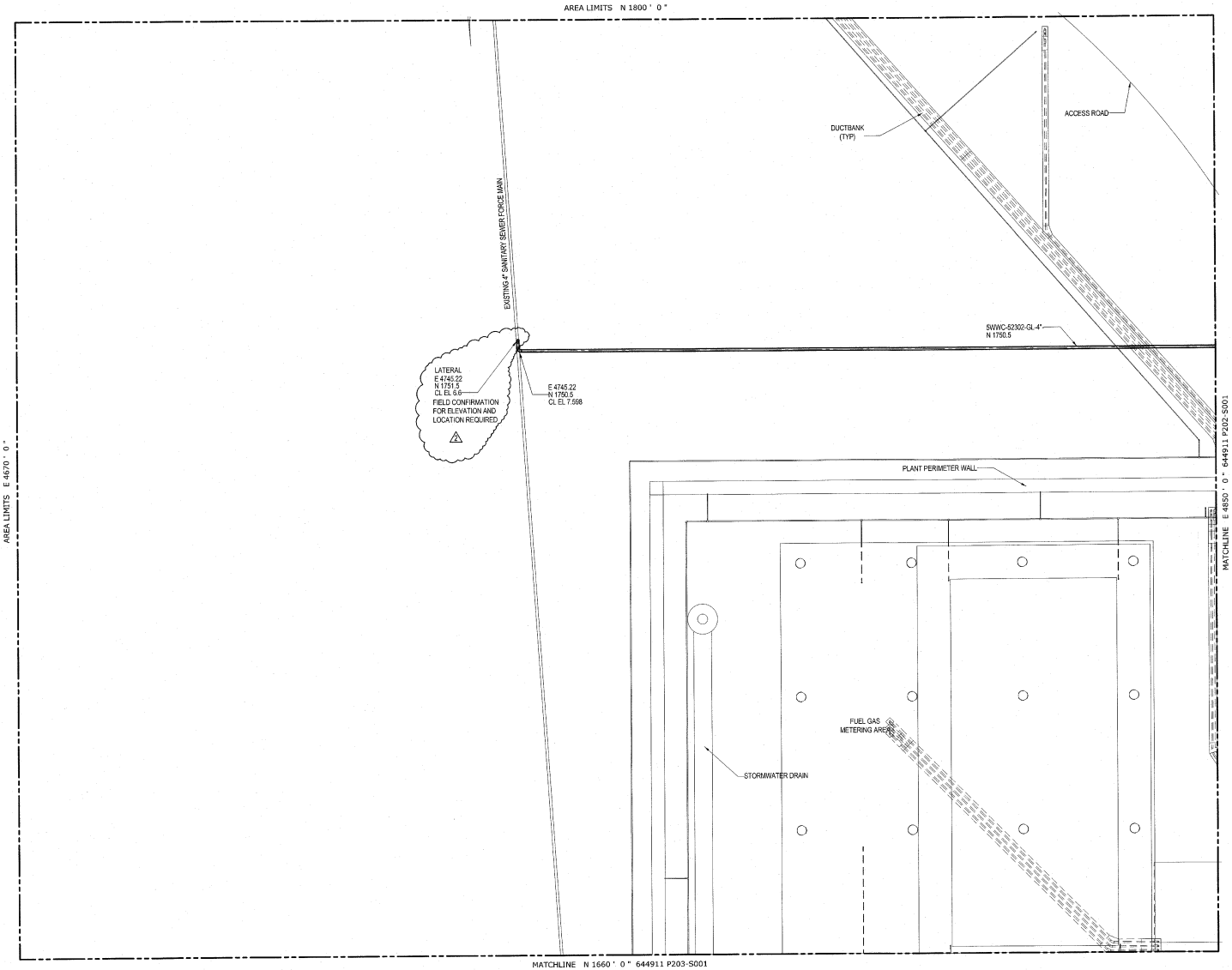
SITE PLAN — DESIGN-CIVIL GENERAL

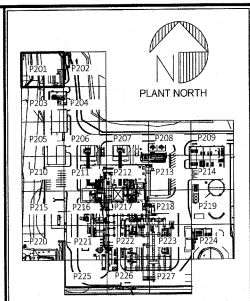
VENDOR NO.

644911 P200-S001

REV 1

REVIEW/ SEEN BY	PROCESS	PIPING	ELECT	MECH	STRUCT	INSTR.





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REMOVED HOLD ON SANITARY SEWER FORCE MAIN CONNECTION. FIELD TO VARIFY ELEVATION AND LOCATION.

2	10/6/17						

ADDED 5WWC-523; REMOVED 5WWB-502 AND 5WWC-816 AND SANITARY/PROCESS WASTEWATER SUMP; ADDED HOLD FOR FORCE MAIN TIE-IN CONFIRMATION.

1	8/3/17	DEC	KC	LP	LA	SF	SEO

ISSUED FOR CONSTRUCTION

0	5/24/17	VT	RET	LP	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: 1/8"=1'-0"

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 1

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

644911 P201-S001

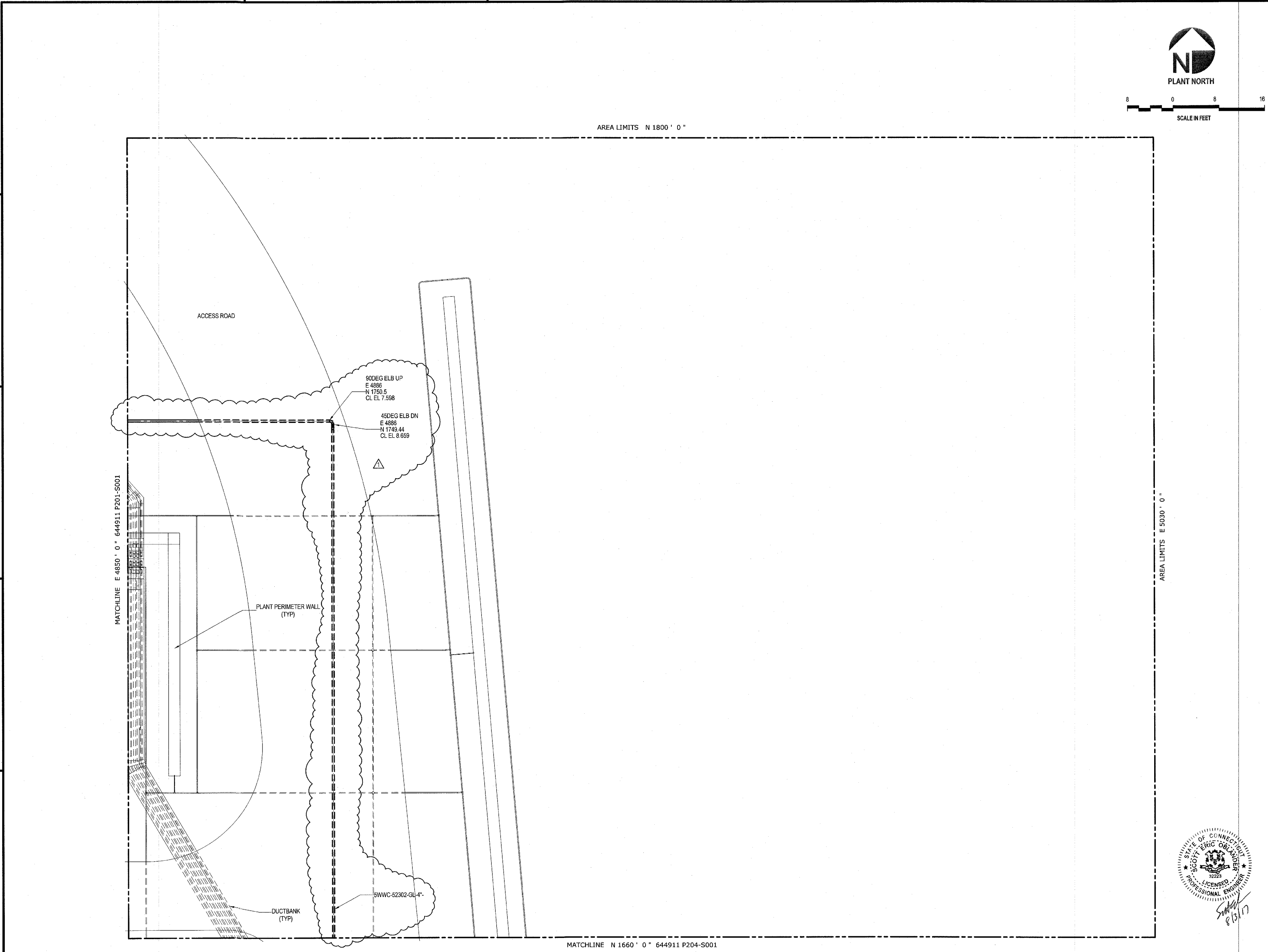
2

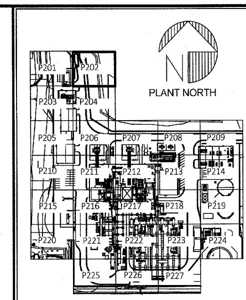
PROJ. MGR.	
INSTR.	
ELECT	
MECH	
CIVIL/STRUCT	
PIPING	
PROCESS	
REVIEW/DESIGN BY	

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

06 Oct 2017

PRINTED DATE: 10/4/2017 1:33:43 PM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) A - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) T - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
1	8/3/17	DEC	VT	LP	LA	SF	SEO
ADDED LINE 5WWC-523, REMOVED 5WWB-502 AND 5WWC-516							
0	5/29/17	VT	RET	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION							

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

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC+LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 2

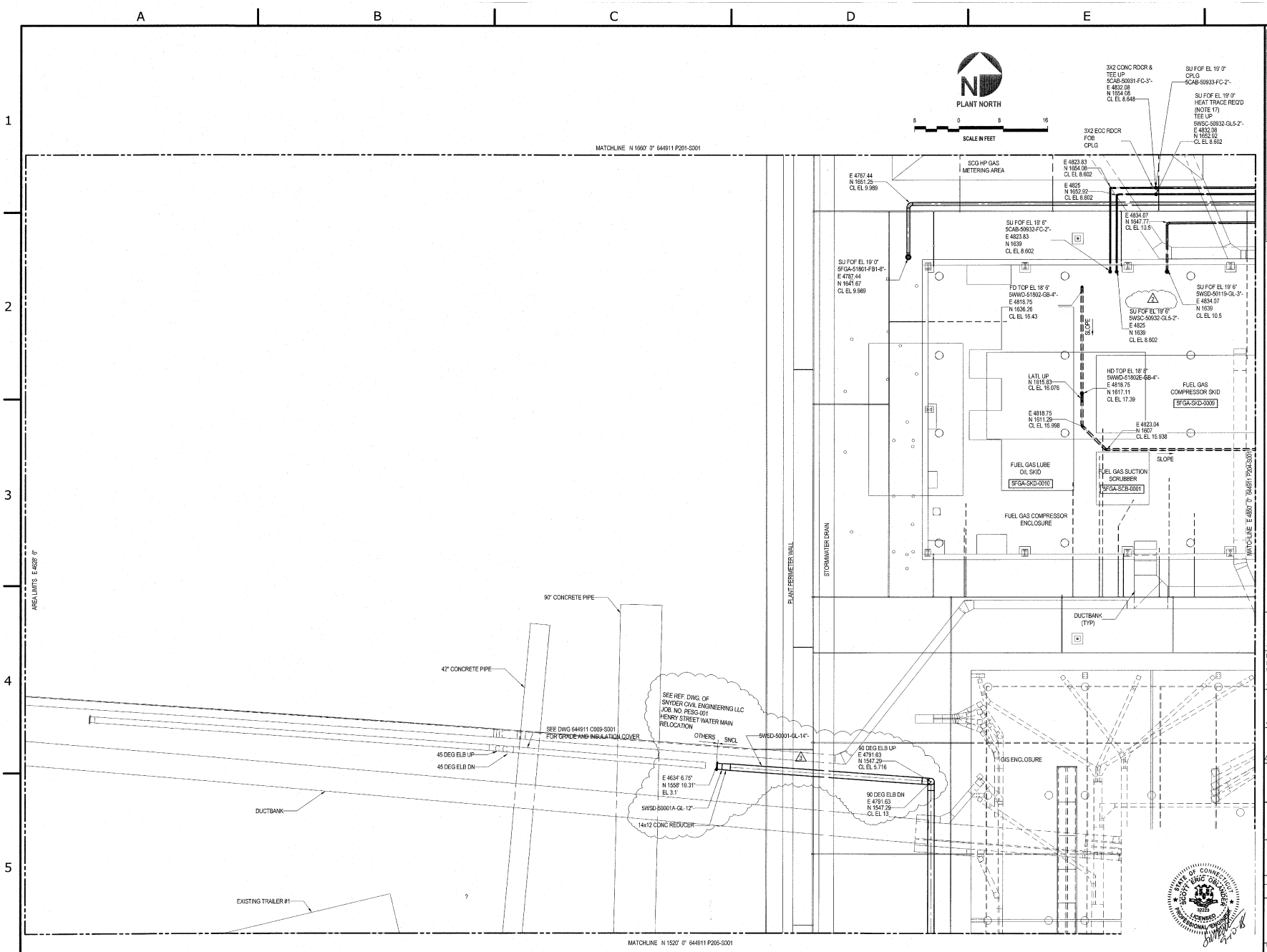
PARTIAL SITE PLAN | DESIGN - CIVIL GENERAL

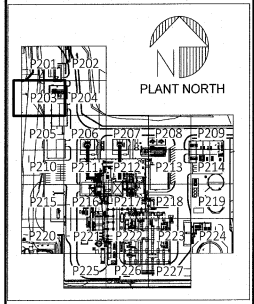
VENDOR NO. | 644911 P202-S001 | REV 1

STATE OF CONNECTICUT SCOTT ERIC OBLANDER LICENSED PROFESSIONAL ENGINEER 32223

8/3/17

PRINTED DATE: 8/1/2017 7:59:26 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

INCORPORATED FCCR 0343: REVISED LINE 5WSD-500 TIE POINT LOCATION TO POTABLE WATER SUPPLY

REVISED LINE 5WSD-500, REMOVED HEAT TRACE TO STUB-UP OF 5WSC-932 AND CHANGED ROUTING TO TIE IN FOR POTABLE WATER SUPPLY

2	1/31/18	DEC	REP	LP	LA	LP/SF	

REVISED LINE 5FGA-51801, REVISED ELEVATION OF LINES 5CAB-50931, 5CAB-50932, 5CAB-50933 AND 5WSC-50932

1	8/3/17	DEC	KC	LP	LA	SF	SEO

ISSUED FOR CONSTRUCTION

0	5/24/17	VT	RET	LP	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: 1/8"=1'-0"

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 3

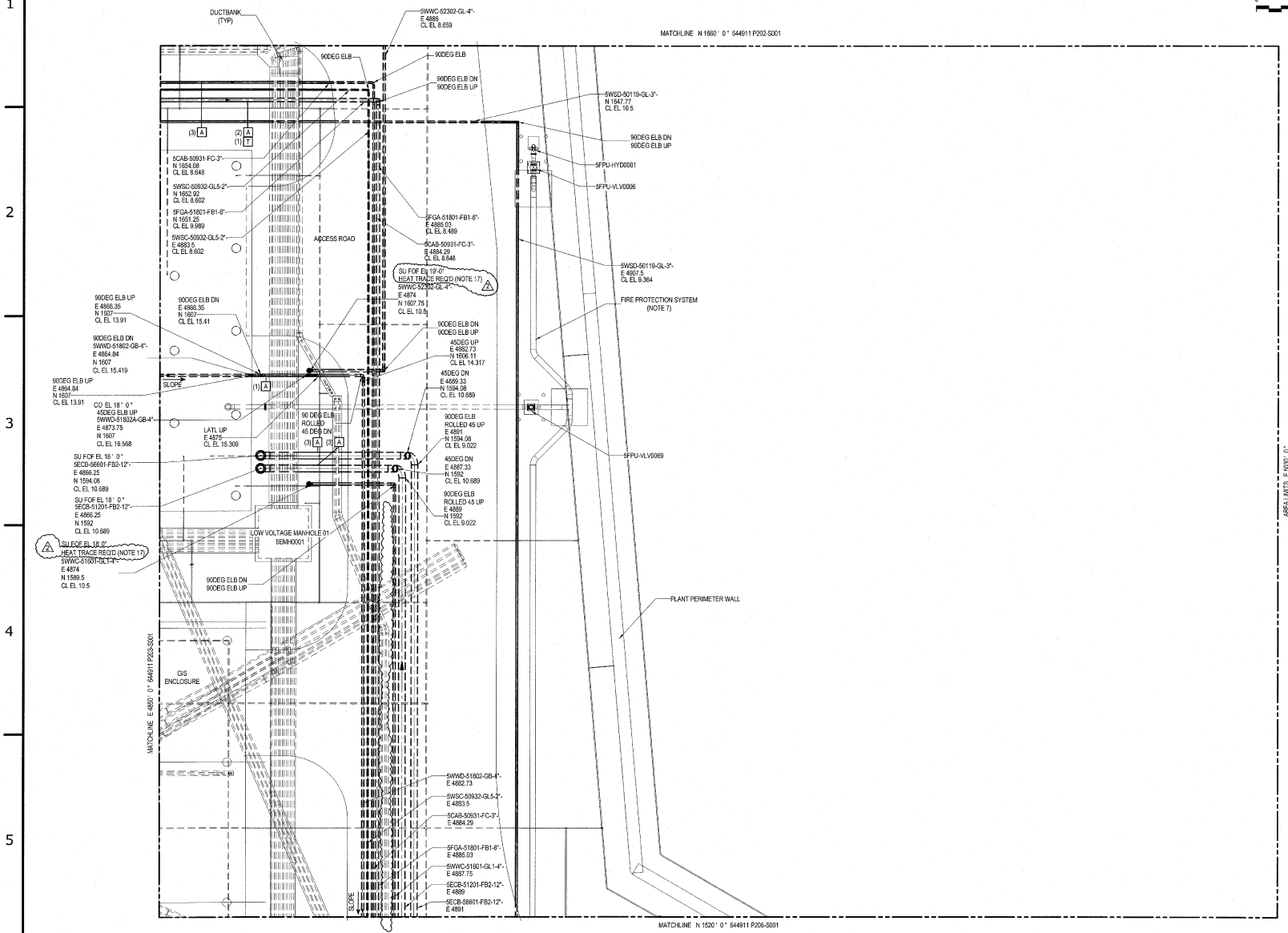
PARTIAL SITE PLAN

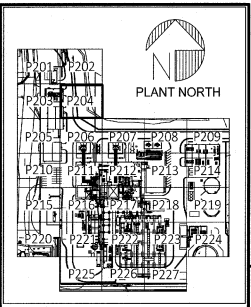
VENDOR NO.

644911 P203-S001

INSTR.	ELECT	MECH	STRUCT	PIPING	PROCESS	REVIEW/ SEEN BY

PRINTED DATE: 9/7/2018 10:26:33 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

INCORPORATED FCCR 0218: ADDED HT NOTE TO LINES 5WWC-51601 & 5WWC-52302.

2 | 9/10/18 | DEC | KC | LP | LA | SF | SEO

REVISED LINE 5WWC-51601; DELETED 5WWB-50201; ADDED 5WWC-52302; REVISED ELEVATION OF LINE 5CAB-50931 AND 5WSC-50932.

1 | 5/24/17 | DEC | KC | LP | LA | SF | SEO

ISSUED FOR CONSTRUCTION

0 | 5/24/17 | VT | RET | LP | 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: 1/8"=1'-0"

BRIDGEPORT 05

YARD UNDERGROUND PIPING PLAN AREA 4

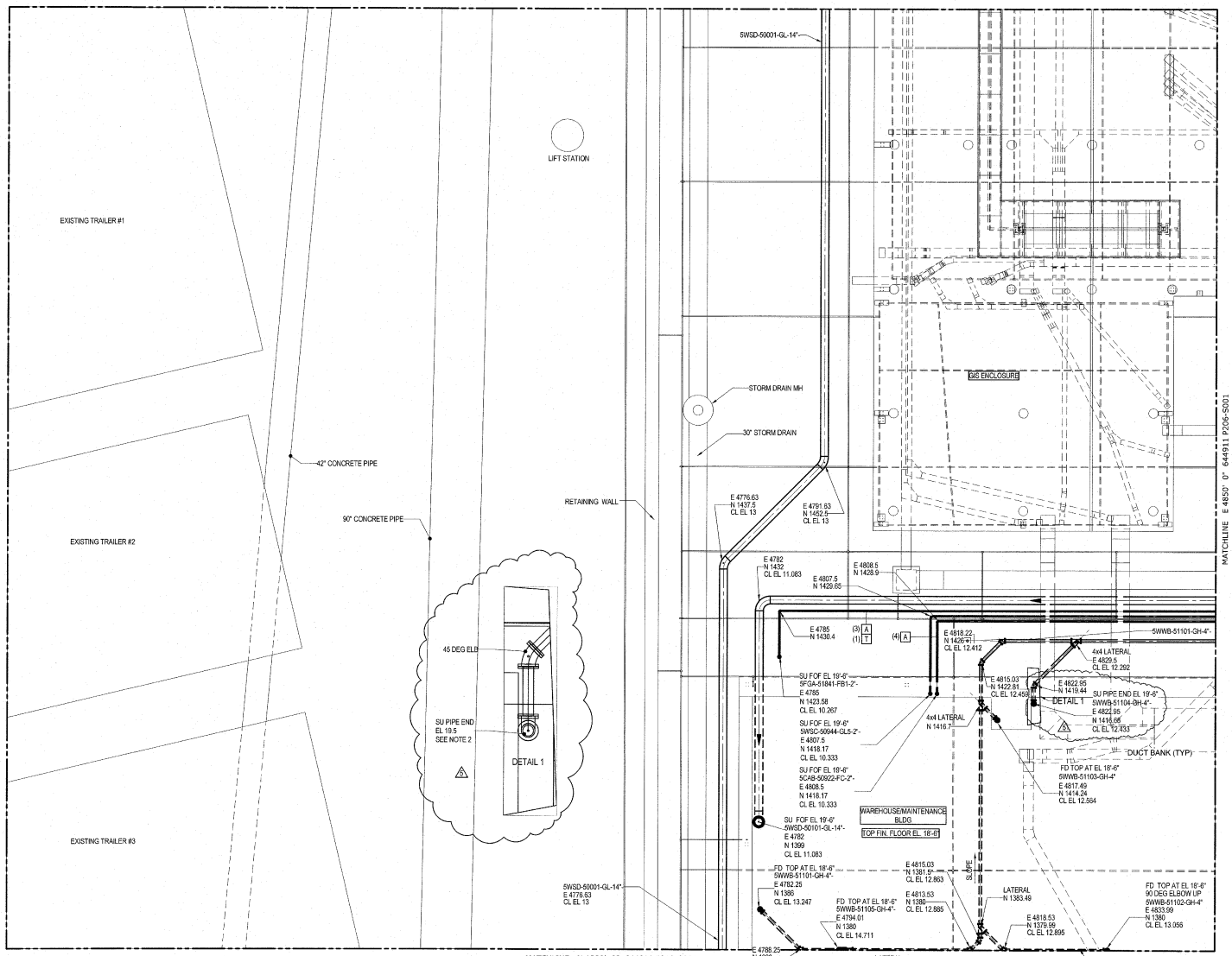
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

DRAWING NO. 644911 P204-S001 — 2

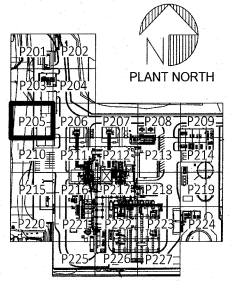
MSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW SEEN BY

STATE OF CONNECTICUT SCOTT ERIC OBERLANDER 32223 LICENSED PROFESSIONAL ENGINEER 9/10/18

PRINTED DATE: 9/10/2018 9:47:25 AM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001
2. PIPING THROUGH CONCRETE REQUIRES DUCTILE IRON PIPE, LEAVE PLAIN END AND CUT TO SUIT FOR ABOVE GROUND PIPE ROUTING. A

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) A - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) T - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WWB-51104 TO BUILDING PLUMBING DESIGN. ADDED NOTE 2.							
A 3/23/18	DEC	REP	LP	LA	LP/SF		
REVISED LINE 5WSD-50001 TO NEW POTABLE WATER TIE-IN.							
A 1/31/18	DEC	REP	LP	LA	LP/SF		
ADDED FLOOR DRAIN ON LINE 5WWB-51101							
3 10/6/17	DEC	REP	LP	LA	LP/SF	SEO	
REVISED 5FGA-518 STUB-UP LOCATION							
2 8/29/17	DEC	REP	LP	LA	SF	SEO	
REVISED PIPE SPEC FOR 5WWB-511, REMOVED LOOP SEAL. REVISED NORTHING FOR 5FGA-518, 5WSC-509, 5CAB-509, 5WWB-511 FOR BUILDING MOVE							
A 8/3/17	DEC	KC	LP	LA	SF	SEO	
ISSUED FOR CONSTRUCTION							
0 5/24/17	AL	DEC	LP	LA	SF	SEO	

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 5

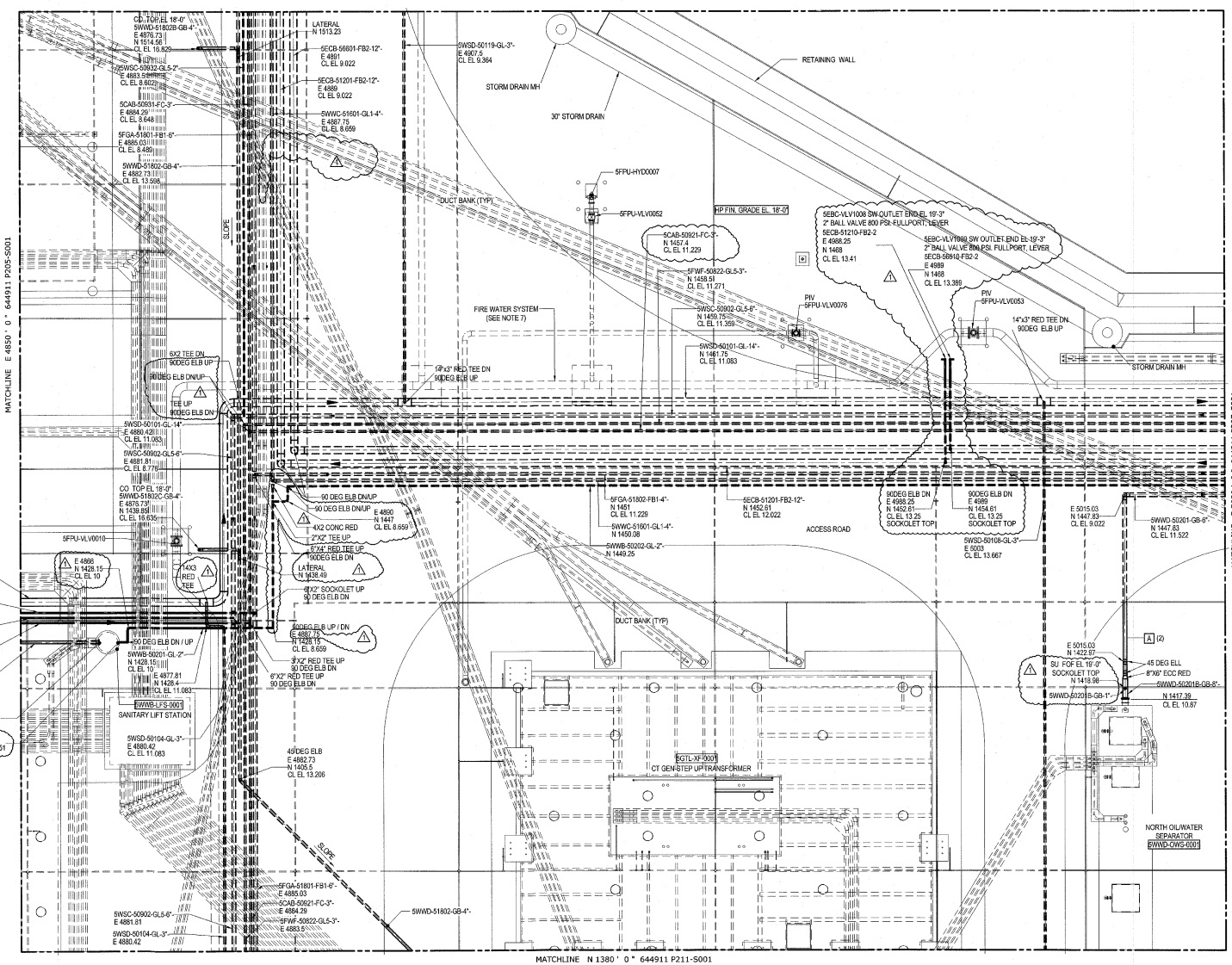
PARTIAL SITE PLAN

VENDOR NO. **644911 P205-S001** REV 5

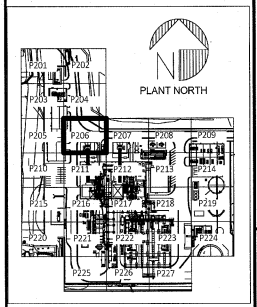
STATE OF CONNECTICUT SCOTT ERIC BERGER 25255 LICENSED PROFESSIONAL ENGINEER 3/26/18

INSTR. ELECT. P&IS MECH. STRUCT. PIPING PROCESS H+H REVIEW/ SEER BY

PRINTED DATE: 3/22/2018 2:29:02 PM
PRINTED DATE: 3/22/2018 2:29:04 PM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

ADDED LINES 5ECB-51210, 5ECB-56810 AND 5WWD-50201B AND REVISED ANNOTATION AND LINES 5WWB-502 AND 5WWC-516

8/3/17

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
0	5/24/17	AL	DEC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

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

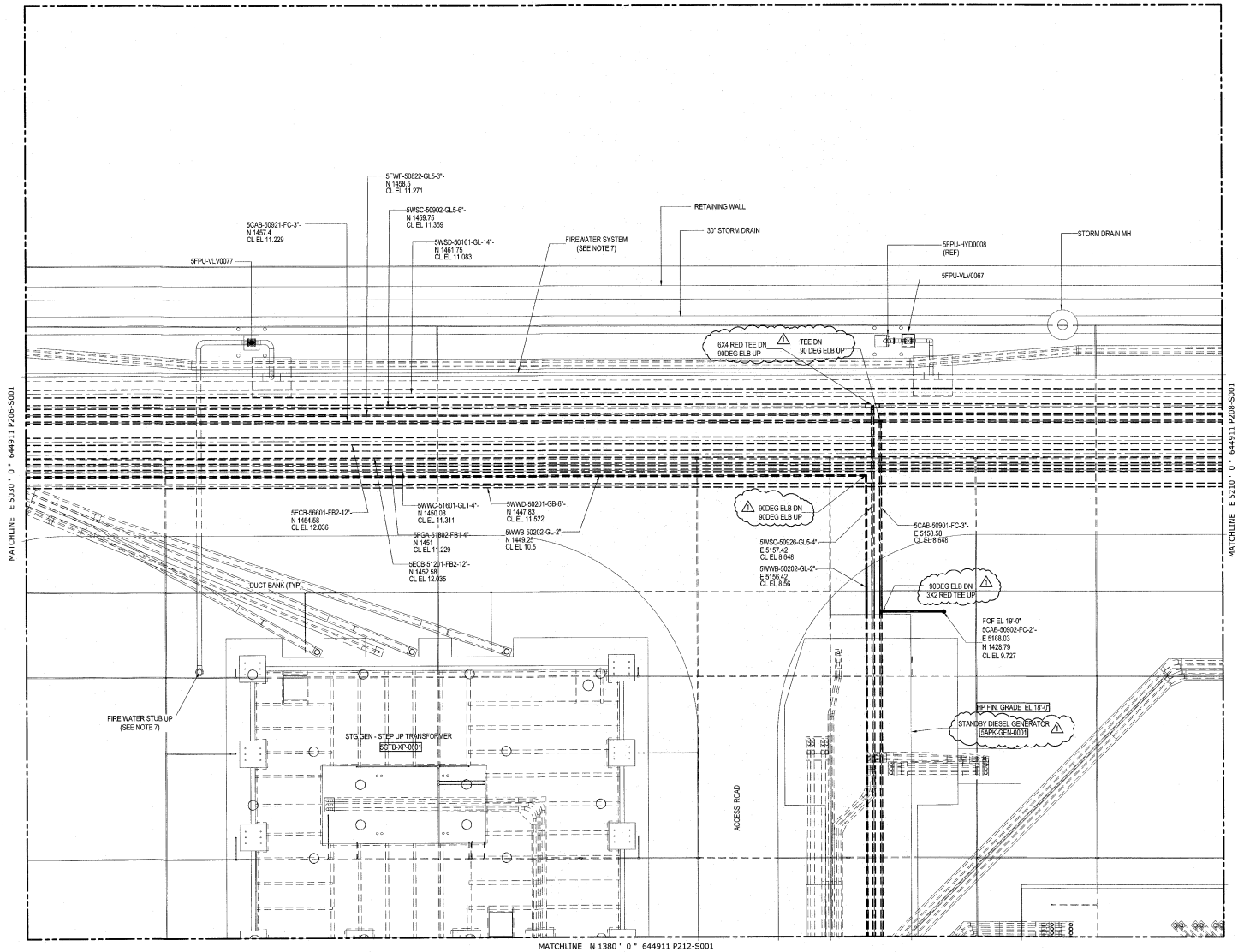
BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 6

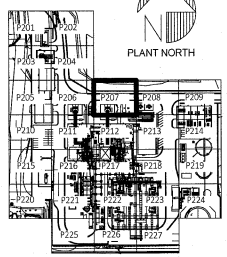
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

644911 P206-S001

PRINTED DATE: 8/1/2017 7:57:23 AM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED AND ADDED ANNOTATION	7/6/17						
ISSUED FOR CONSTRUCTION	5/24/17	AL	DEC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 7

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

644911 P207-S001

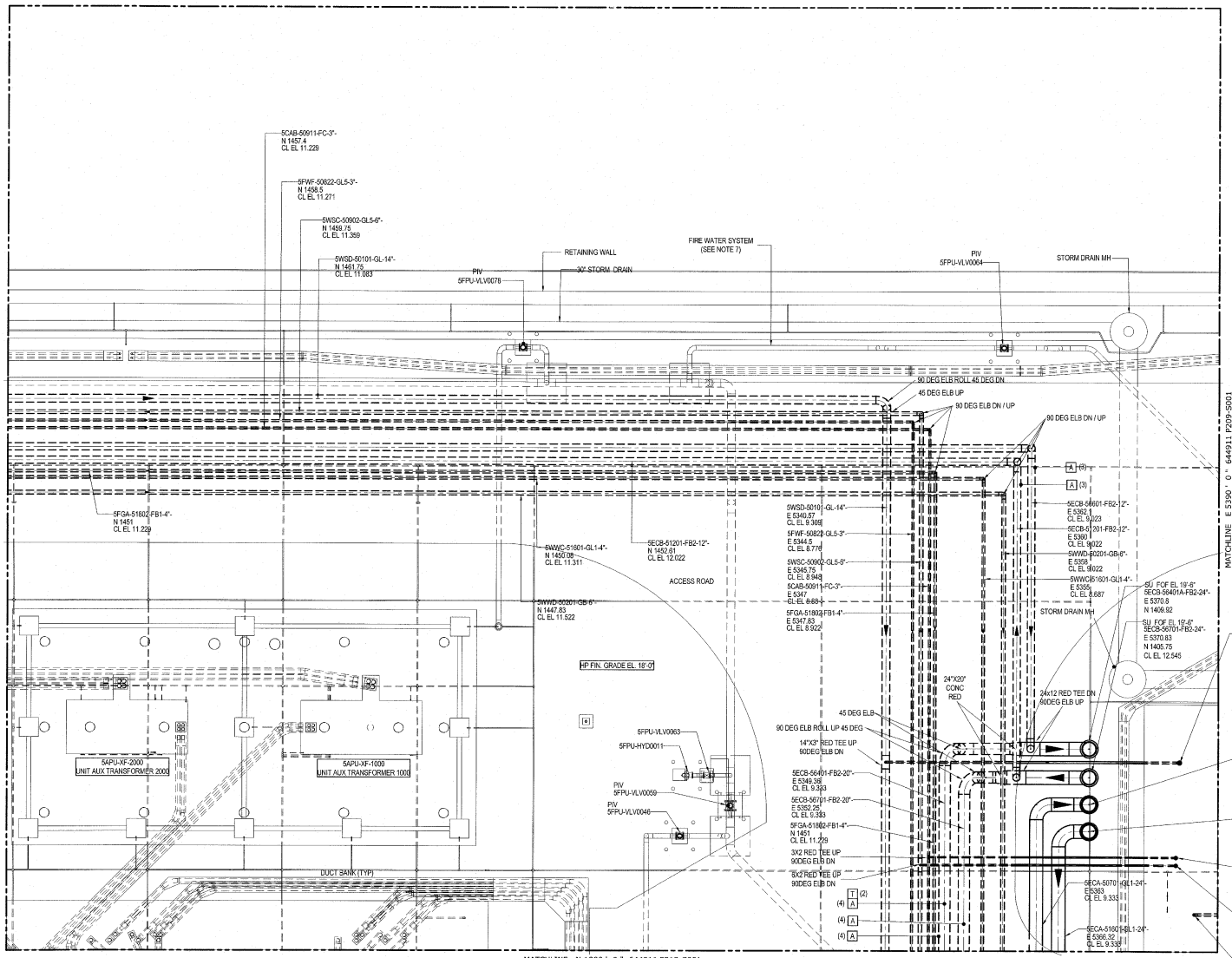
REV. 1

STATE OF CONNECTICUT — WILLIAM D. HASTED — 30078 — LICENSED PROFESSIONAL ENGINEER

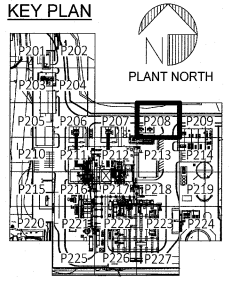
11 JULY 2017

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

PRINTED DATE: 7/7/2017 9:07:41 AM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
INCORPORATED FCCR 0218: ADDED HT NOTE TO LINES 5ECA-50701 & 5ECA51601.	3 Q/6/18						
DELETED LINE 5FGA-51831-FB1-2"	2	KDE	REP	LP	LA	SF	
REVISED AND ADDED ANNOTATION	1 8/3/17	DEC	KC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION	0 5/24/17	AL	KC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA B

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

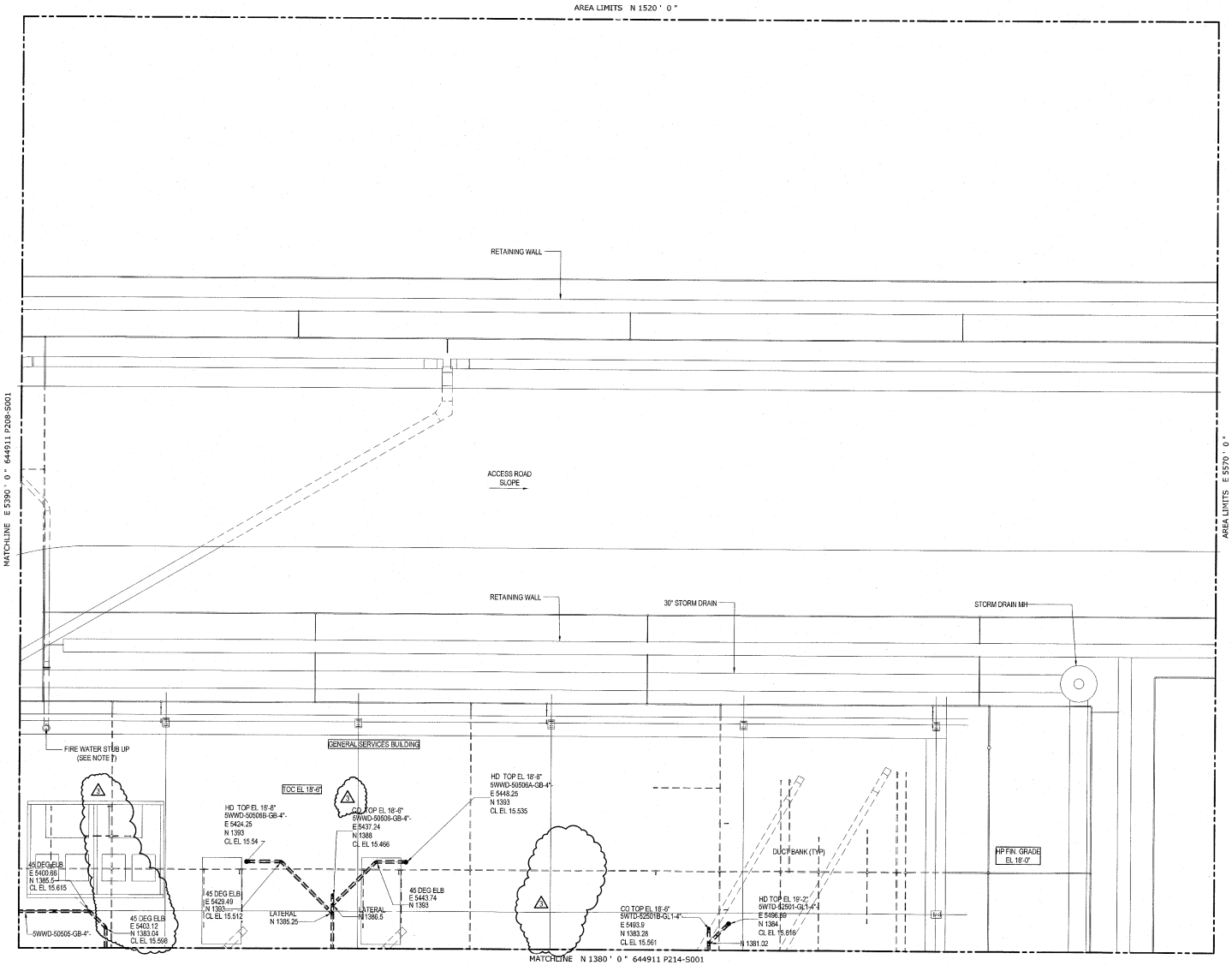
VENDOR NO.

644911 P208-S001

REV 3

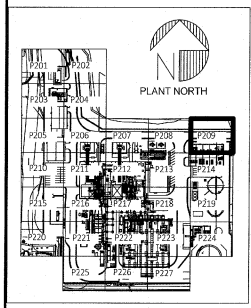
ARCH | ELECT | MECH | STRUCT | PIPING | PROCESS | REVIEW/SEEN BY

PRINTED DATE: 9/10/2018 9:50:38 AM



09 Nov 2017

KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WWD-506 PER CUSTOMER COMMENTS. ADDED FLOOR DRAIN TRENCH, CHANGED FLOOR DRAIN LOCATIONS TO CLEAN OUTS, REMOVED MISC HUB DRAINS.	11/8/17	DEC	KC	LP	LA	SF	SEO
RELOCATED HD FOR 5WWD-50506B AND 5WWD-50506A	8/3/17	DEC	KC	LP	LA	SF	SEO
RELOCATED 5WWC-520 AND 5WWD-505	7/11/17	DEC	KC	LP	AR/LA	LP/SF	
ISSUED FOR CONSTRUCTION	5/24/17	AL	KC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

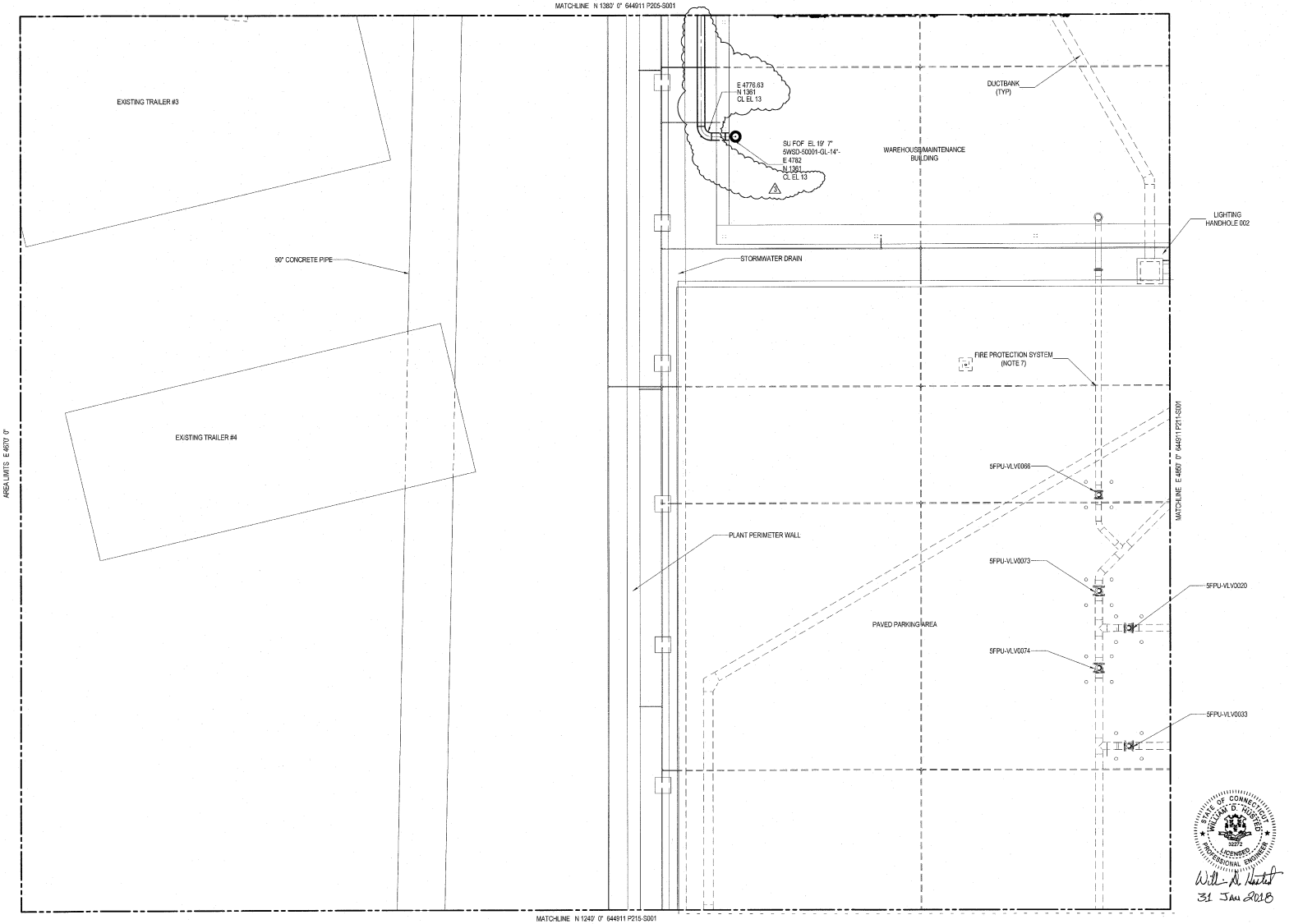
YARD UNDERGROUND PIPING PLAN AREA 9

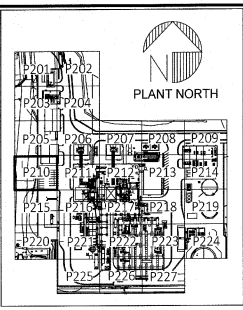
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

DRAWING NO. **644911 P209-S001** REV. 3

REVIEW/ISSUE: PROCESS | PIPING | PROJECT | MECH | ELECT | INSTR

PRINTED DATE: 11/7/2017 9:09:32 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WSD-50001 TO NEW POTABLE WATER TIE-IN.							
3	1/31/18	DEC	REP	LP	LA	LP/SF	SEO
REVISED HOLD ON 5WSD-50001, FIELD TO VERIFY ELEVATION AND LOCATION OF TIE-IN.							
2	10/6/17	DEC	REP	LP	LA	LP/SF	SEO
REVISED LINE 5WSD-50001 FOR ELEVATION, ADDED HOLD FOR TIE-IN CONFIRMATION							
1	8/3/17	DEC	KC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION							
0	5/24/17	VT	RET	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

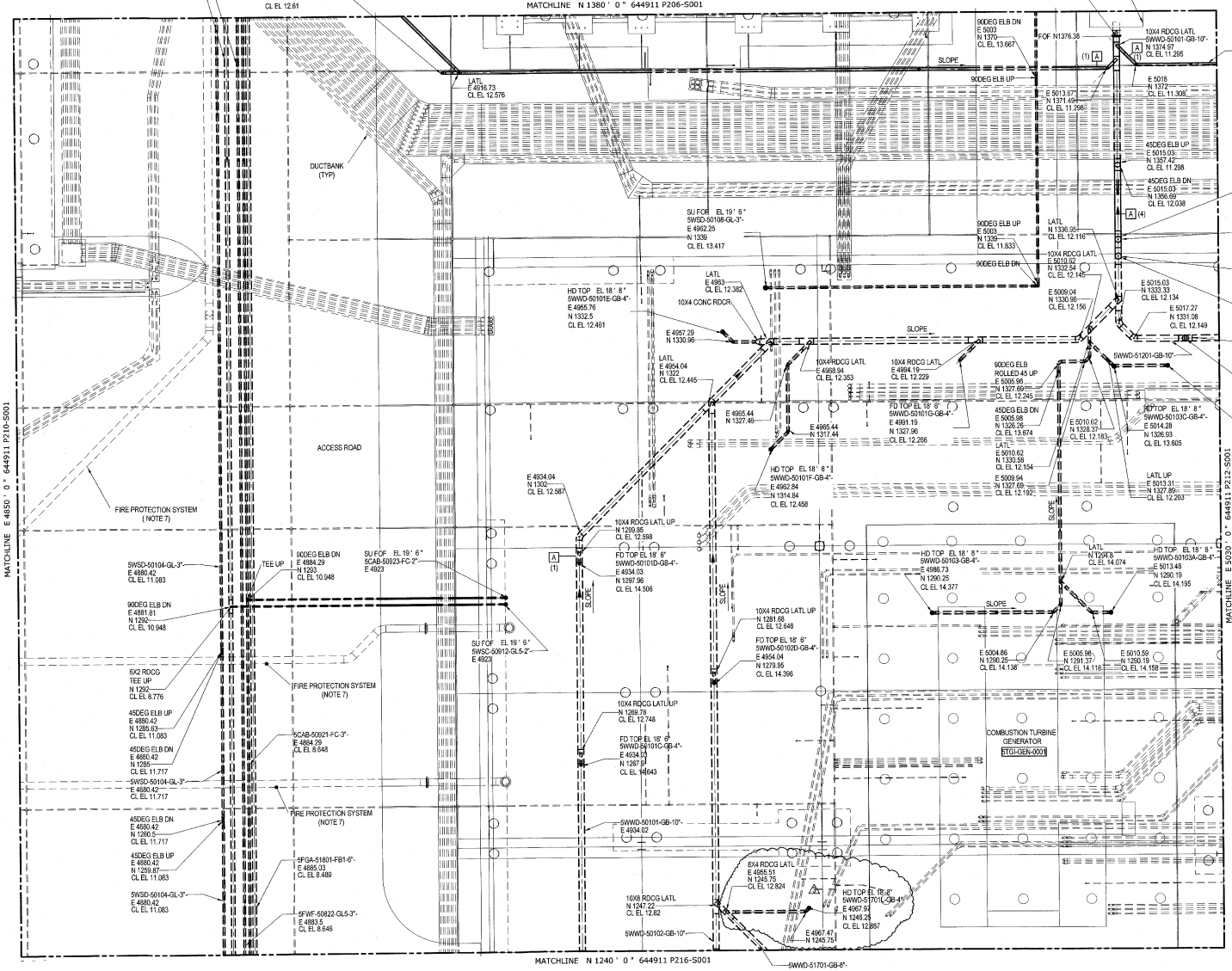
YARD
UNDERGROUND PIPING PLAN
AREA 10

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

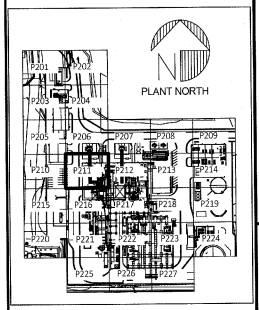
DRAWING NO. 644911 P210-S001

REVISION SEEN BY: ELECT. INSTR. MECH. STRUCT. PIPING PROCESS

PRINTED DATE: 1/25/2018 1:44:40 PM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ADDED BRANCH LINE 5WWD-51701L-GB-4"

8/8/17	DEC	KC	LP	AR/LA	LP/SF	

REVISED NORTHING ANNOTATION

7/11/17	DEC	KC	LP	AR/LA	LP/SF	

ISSUED FOR CONSTRUCTION

5/18/17	MZ	KC	LON	LA	SF	SO

ISSUED FOR PERMIT

0	4/27/17	MZ	RET	LON	LA	LP/SF	SO
REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC • LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 11

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

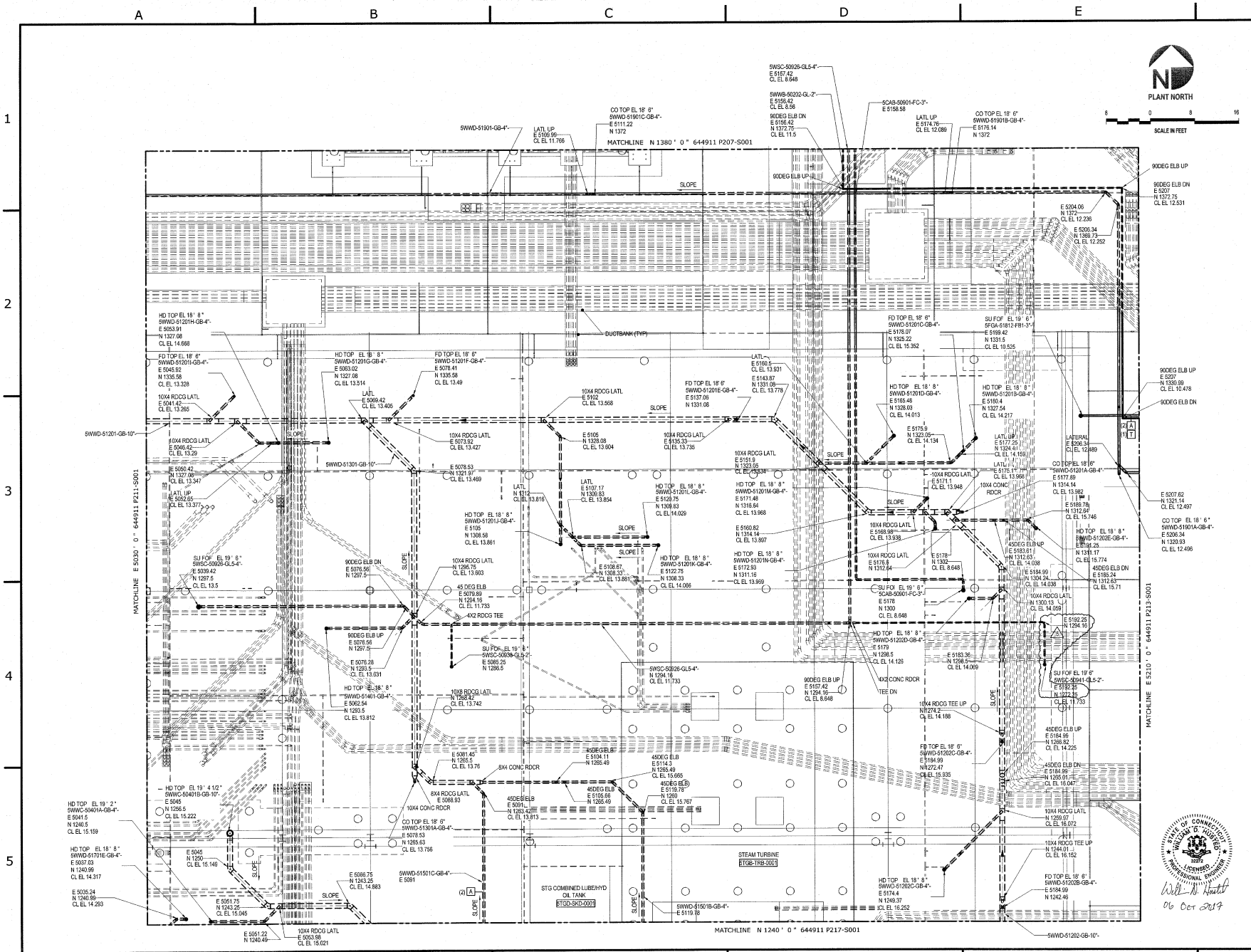
VENDOR NO.

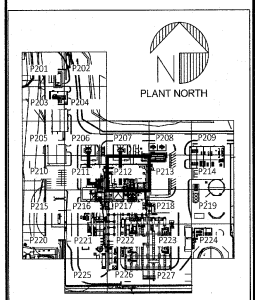
644911 P211-S001

REV 1

REVIEW | PROCESS | PIPING | MECH | ELEC | INSTR

PRINTED DATE: 8/2/2017 12:01:20 PM





KEY PLAN

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 6)

SU - STUB-UP (SEE NOTE 4)

(X) A - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) T - CATHODIC PROTECTION TEST STATION (SEE NOTE 8)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED 5WSC-50941 SU LOCATION	10/6/17						
REVISED 5FGA-51812 SU EASTING	8/29/17	DEC	REP	LP	LA	SF	SEO
RE-ROUTED 5WSC-50926-GL5-4" FROM UNDER STG PEDASTAL FOUNDATION	8/10/17	KDE	REP	LP	REP/ LA	SF	
REMOVED 5WD-51501B AND CONTAINMENT VALVE	8/3/17	DEC	KC	LP	LA	SF	SEO
REVISED ROUTING OF 5WD-515, 5WD-512, SCAB-509, 5WWC-504; ADDED ANNOTATIONS,	7/11/17	DEC	KC	LP	AR/LA	LP/SF	
ISSUED FOR CONSTRUCTION	5/16/17	MZ	KC	LON	LA	SF	SO
ISSUED FOR PERMIT	4/27/17	MZ	RK	LON	LA	LP/SF	SO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

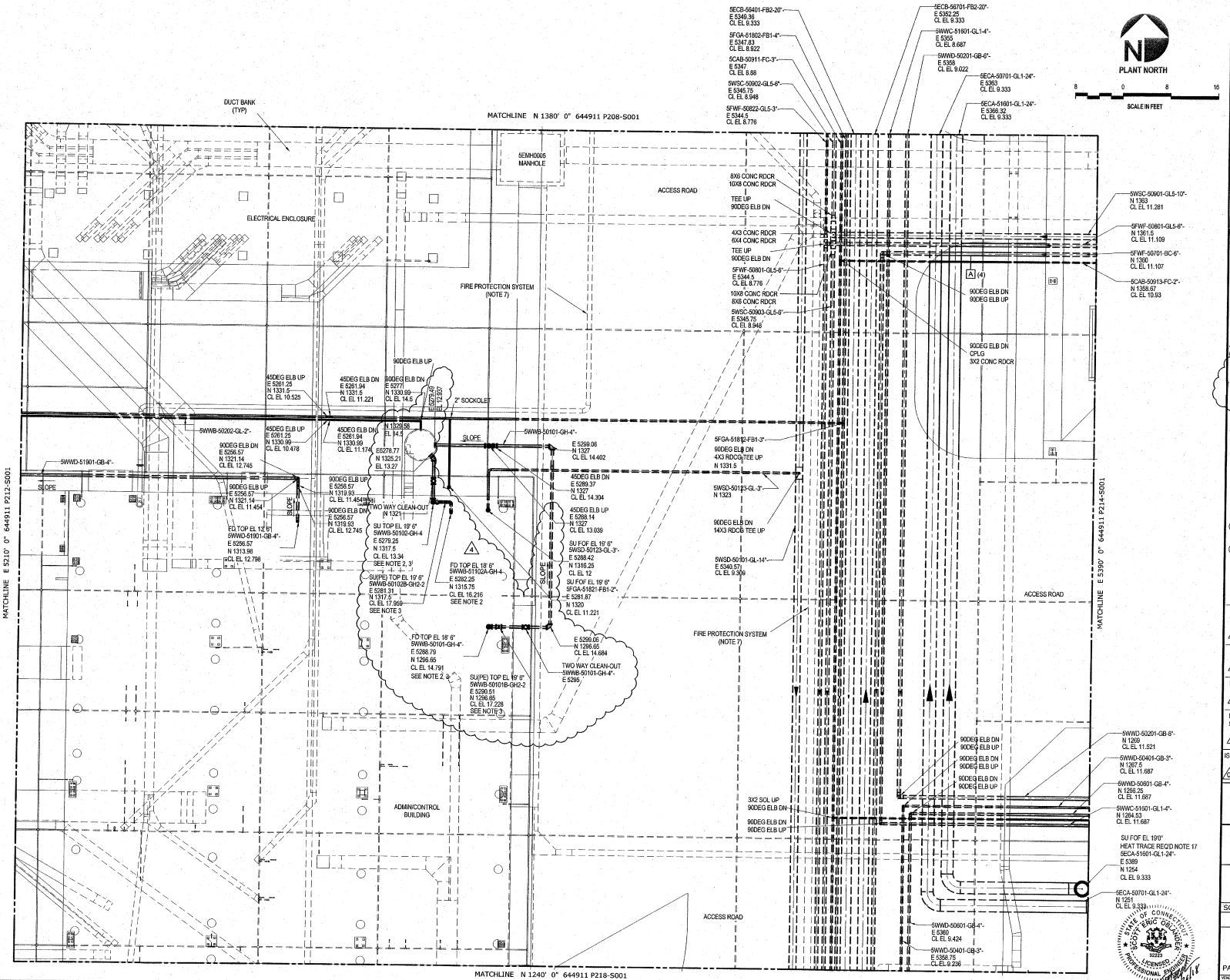
YARD
UNDERGROUND PIPING PLAN
AREA 12

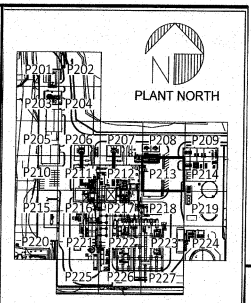
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VERSION NO: 644911 P212-S001 REV 5

REVIEW / SIGN BY: ELECT. MECH. PIPING PROCESS INSTR.

PRINTED DATE: 9/28/2017 10:40:49 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001
2. SEE INNOVA GLOBAL DRAWING-10809-951-P101
3. PIPING THROUGH CONCRETE REQUIRES DUCTLE IRON PIPE, LEAVE PLAIN END AND CUT TO SUIT FOR ABOVE GROUND PIPE ROUTING.
4.

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WWB-51104 AND 2 TO LIFT STATION, ADDED NOTE 2 AND 3.	3/23/18	DEC	MZ	LP	LA	SF	SEQ
ADDED LINE 5CAB-50934, ADDED HEAT TRACE NOTE	2/14/18	DEC	MZ	LP	REPILA	SF	
REVISED 5FGA-51821 SU NORTHING	8/29/17	DEC	REP	LP	LA	SF	SEQ
REVISED LINES 5FGS-51821, 5WSD-50123, 5WWD-50101 AND 5WWD-51901 ; ADDED HOLD TO SANITARY LIFT STATION	8/3/17	DEC	KC	LP	LA	SF	SEQ
ISSUED FOR CONSTRUCTION	5/29/17	VT	RET	LP	LA	SF	SEQ

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE:

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 13

PARTIAL SITE PLAN

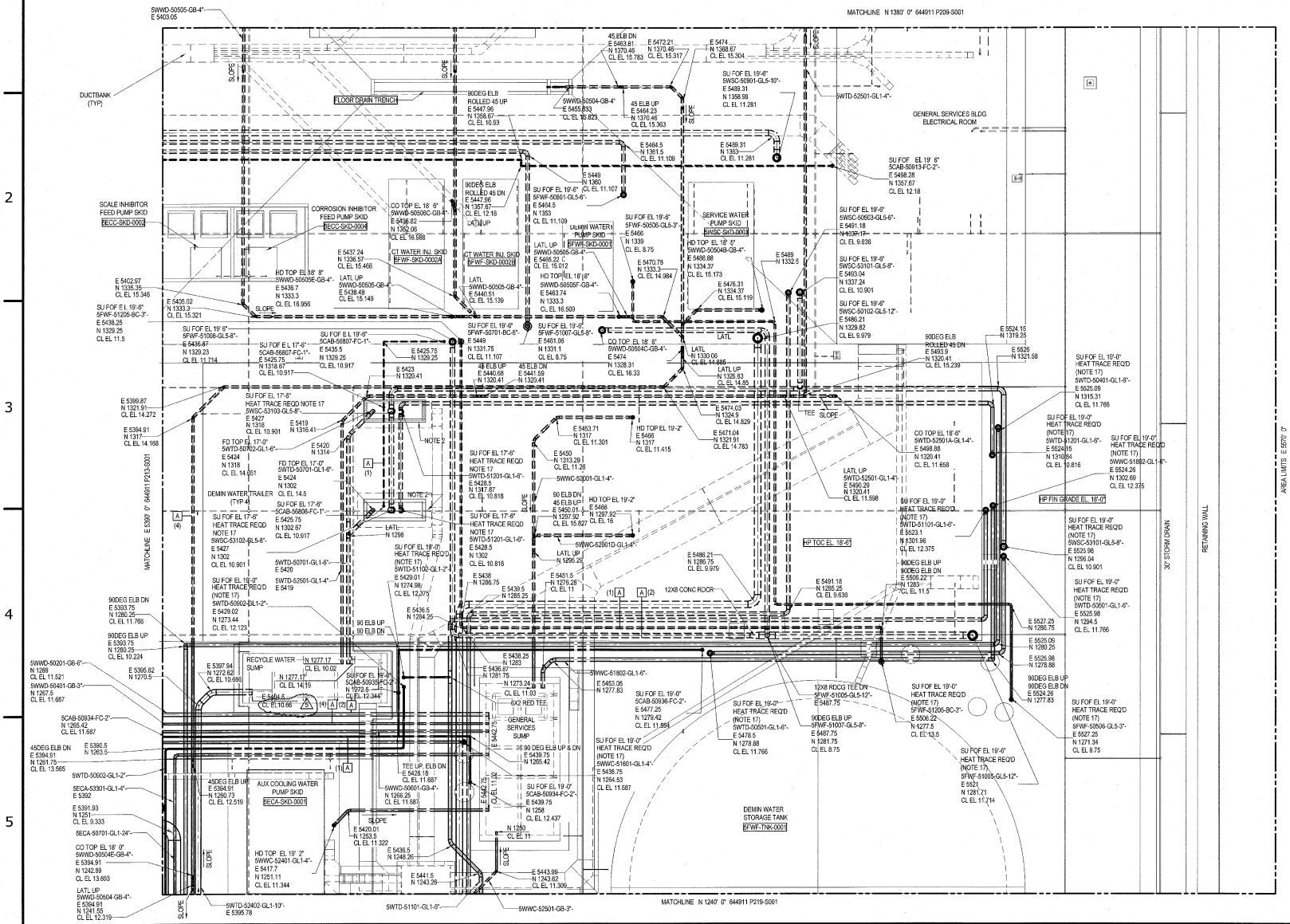
DESIGN - CIVIL GENERAL

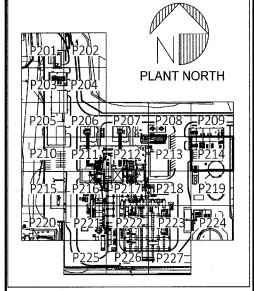
VERSION NO.

644911 P213-S001

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

PRINTED DATE: 3/23/2018 10:00:46 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001
2. FOR DEMIN TRAILER HOOK-UP PIT A AND B DETAIL SEE DWG 644911 F058-S001.

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

5	9/10/18	DEC	RBP	LP	CS	SF	SEO

INCORPORATED FCCR 0361: REVISED ELEV ON LINE 5WTD-52502

4	9/10/18	DEC	RBP	LP	CS	SF	SEO

ADDED LINES 5CAB-50935, 5CAB-50938 AND 5CAB-50937, ADD ONE ANODE

3	12/14/17	DEC	MZ	LP	REP /LA	SF	SEO

REVISED LINE 5WWD-505 PER CUSTOMER COMMENTS. ADDED FLOOR DRAIN TRENCH, CHANGED FLOOR DRAIN LOCATIONS TO CLEAN OUTS, REMOVED MISC HUB DRAINS.

2	11/8/17	DEC	REP	LP	LA	SF	SEO

ADDED LINES 5WTD-507, 5WTD-509, 5WTD-511, 5WTD-512; REVISED NORTHINGS, EASTINGS AND ELEVATIONS; REVISED LINES 5WTD-504, 5WTD-505, 5WTD-524, 5WWC-518, 5WSC-531, 5WWC-520 AND 5WWC-524. ADDED RECYCLE WATER SUMP AND DEMIN TRAILER HOOK UP PIT A AND B. REVISED LINE 5WTD-520 TO 5WTD-525 AND REROUTED TO RECYCLE WATER SUMP. REVISED 5WWD-524 PORTION CHANGED TO 5WTD-524.

1	10/20/17	DEC	REP	LP	REP /LA	SF	SEO

ADDED LINES 5WWC518, 5WWC525; REVISED NORTHINGS, EASTINGS AND ELEVATIONS; LINES 5WTD-50401, 5WTD-50501, 5FWF-512, 5FWF-505, 5WSC-531, 5WSC-505, 5ECA-533, 5WWD-506, 5WWD-502, 5WTD-505, 5WWD-505; REVISED ANNOTATION.

0	8/3/17	DEC	KC	LP	LA	SF	SEO

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.	INSTR.	
0	5/24/17	VT	KC	LP	LA	SF	SEO		

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 14

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

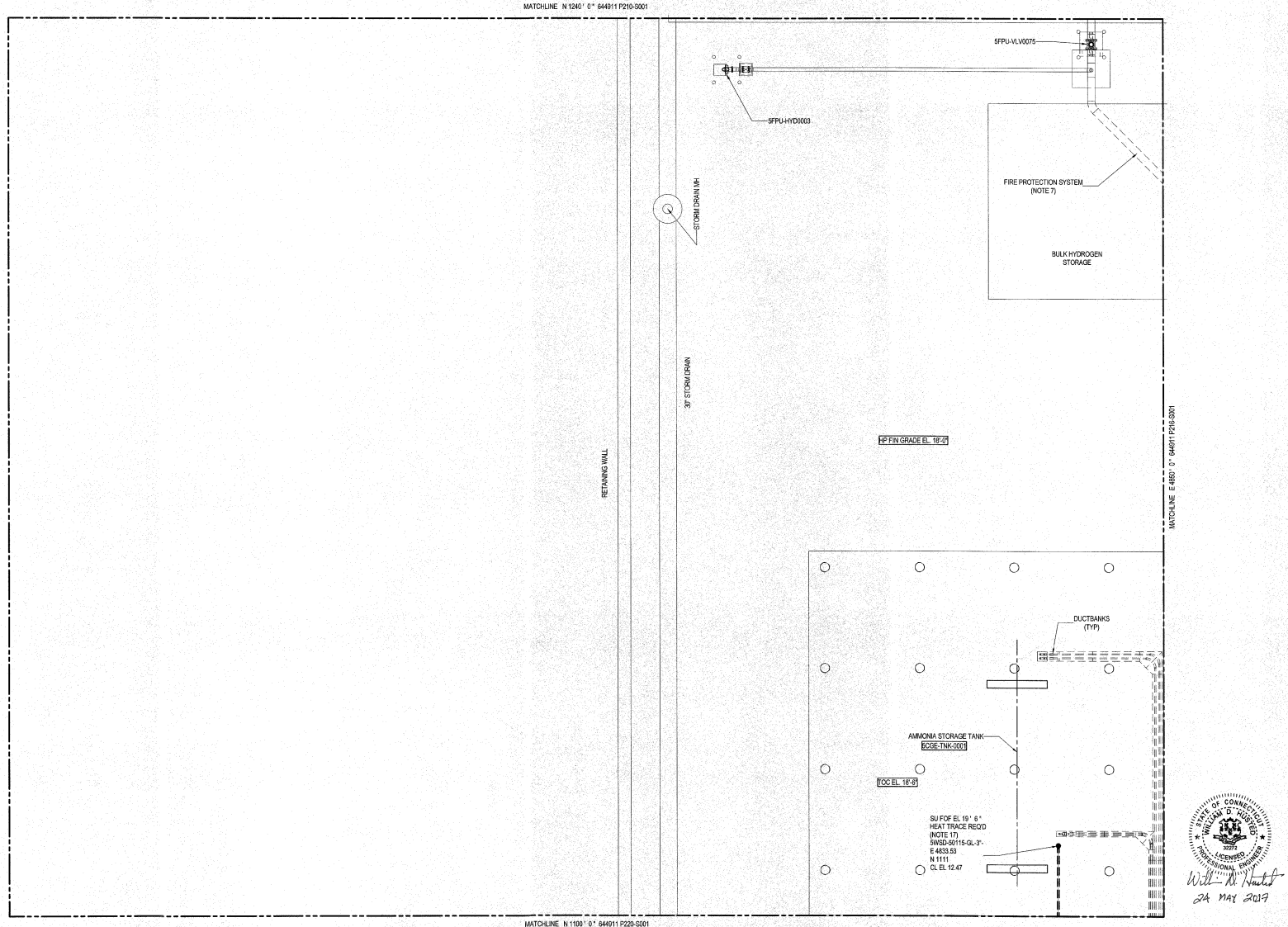
VENDOR NO.

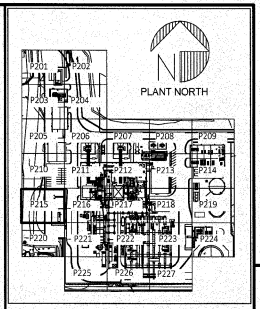
644911 P214-S001

5

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

PRINTED DATE: 9/10/2018 9:57:45 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
0	5/24/17	VT					

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 15

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

644911 P215-S001

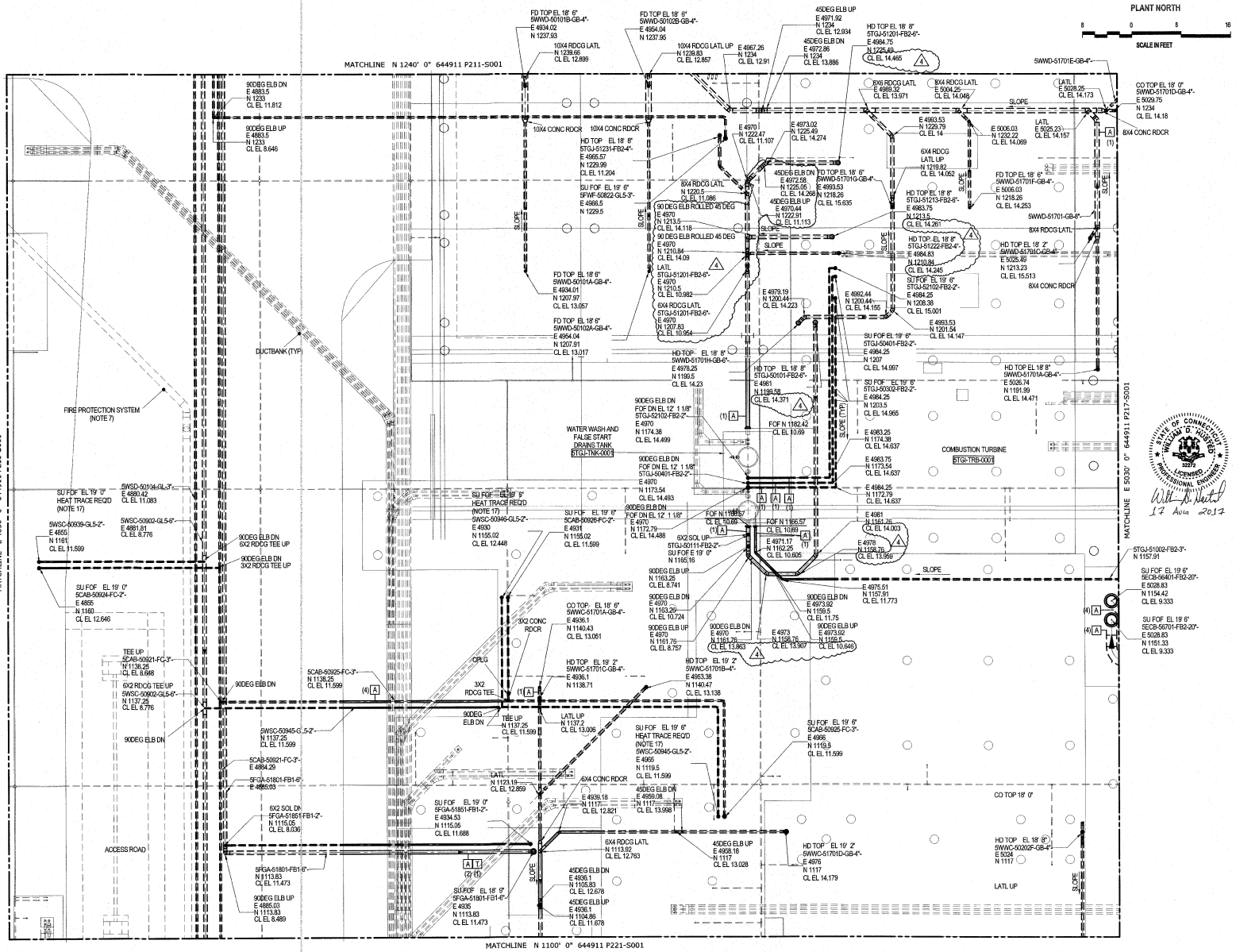
0

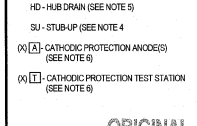
INSTR. / ELEC / MECH / CIVIL / PIPING / PROCESS / REVIEW SEEN BY

STATE OF CONNECTICUT WILLIAM R. HASTED 20274 LICENSED PROFESSIONAL ENGINEER

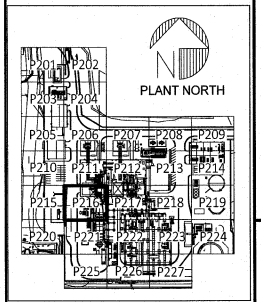
24 MAY 2017

PRINTED DATE: 5/23/2017 7:59:23 AM





KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
MOVED LINES 5TGJ-50101-FB2-6", 5TGJ-51222-FB2-4", 5TGJ5123-FB2-6", 5TGJ-51201-FB2-6" UP INTO CTG FOUNDATION.	9/17/17	KDE	REP	LP		SF	
DELETED LINE 5FGA-54901-DB3-2"	8/10/17	KDE	REP	LP	REP FOR LA	SF	
REMOVED BRANCH LINE 5WWD-51701J, ADDED BRANCH LINE SRT1-51231; REVISED LINE 5WWD-51701A AND SU ELEVATION FOR LINES 5ECB-56401, 5ECB-56701, 5FGA-51801 AND 5FGA-51851; ADDED LINE 5TGJ-51001 AND CP NOTE.	8/3/17	DEC	KC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION	5/19/17	MZ	KC	LON	LA	SF	SO
ISSUED FOR PERMIT	4/27/17	MZ	RET	LON	LA	LP/SF	SO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 16

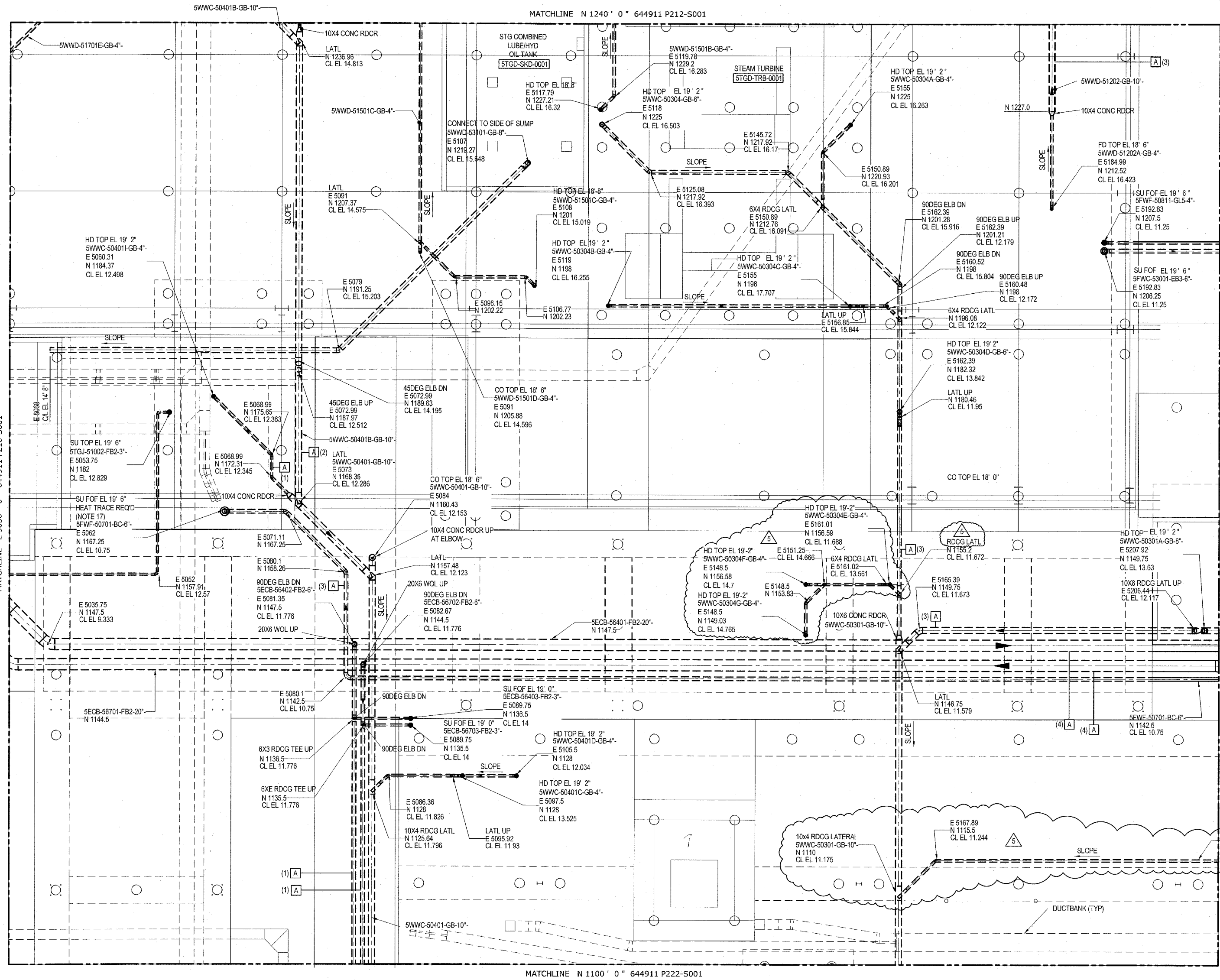
PARTIAL SITE PLAN

VENDOR NO.

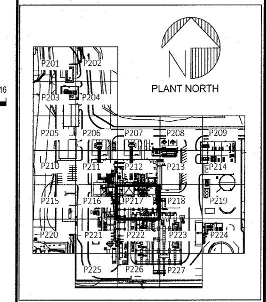
644911 P216-S001

REVIEW/ SEEN BY | PROCESS PIPING HVAC | PIPING | ELECT. INSTR. | PROJECT MECH.

PRINTED DATE: 8/15/2017 1:40:13 PM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SJ - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WWC-503; ADDED SEGMENT 5WWC50304F AND G AND SEGMENT FOR 5WWC50301L							
5	10/16/17						
REVISED LINE 5FWF-507; CHANGED LINE SIZE TO 6" FOR LINE 5WWC-50304							
4	9/13/17	DEC	REP	LON	REP	SF	
ADDED LINES 5TGJ-510 AND 5WWD-531 REVISED ELEVATION OF LINE 5WWC-50304; SU OF 5FWF-507							
3	8/3/17	DEC	KC	LON	LA	SF	SO
REVISED LINE 5WWD-515							
2	7/11/17	DEC	KC	LON	AR/LA	LP/SF	
ISSUED FOR CONSTRUCTION							
1	5/18/17	MZ	KC	LON	LA	SF	SO
ISSUED FOR PERMIT							
0	4/27/17	MZ	J2	LON	LA	LP/SF	SO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 17

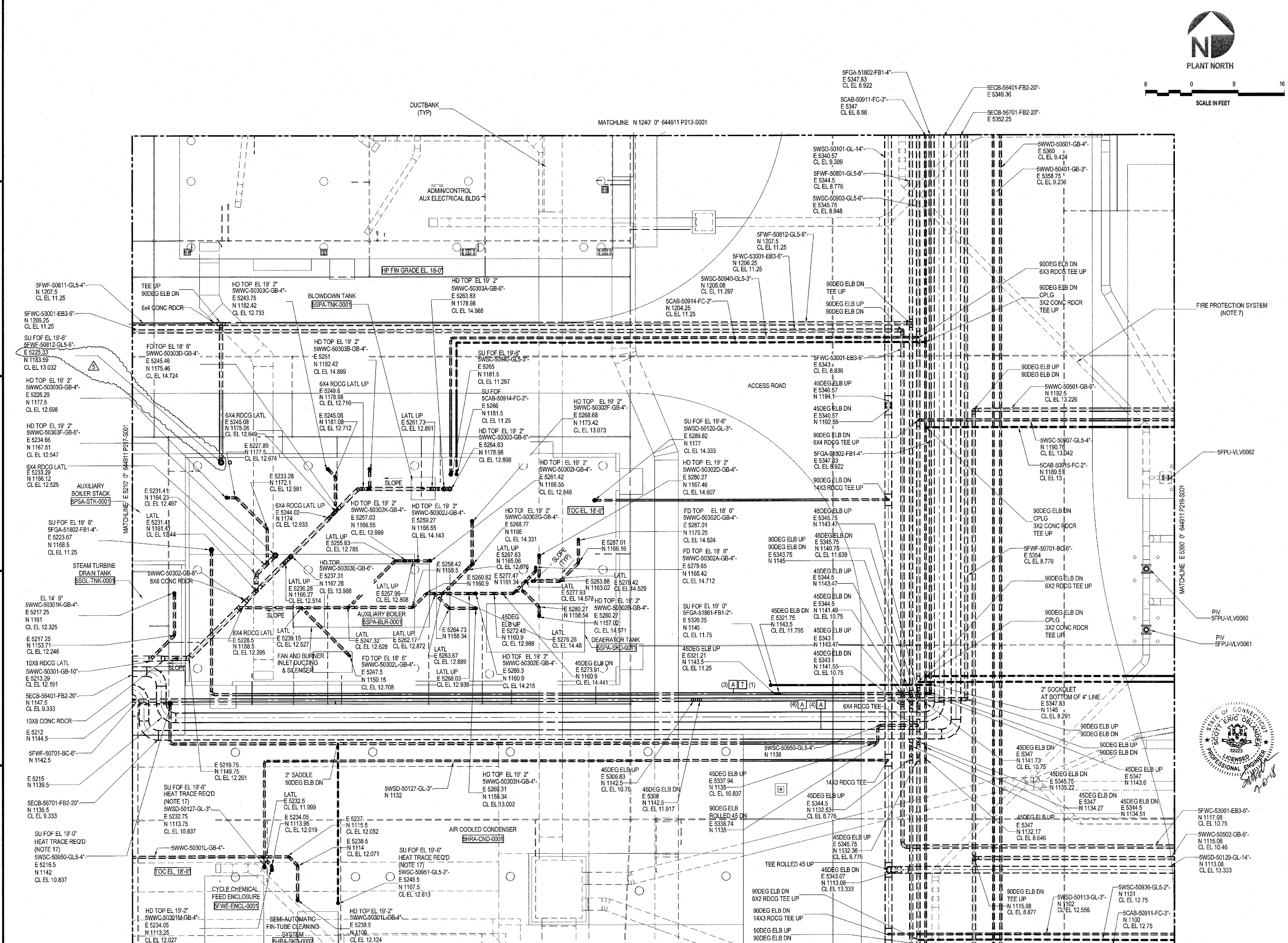
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

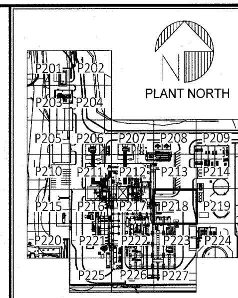
644911 P217-S001 — REV 5

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

23 Oct 2017

PRINTED DATE: 10/18/2017 1:32:41 PM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
5	9/1/18						
INCORORATED FCCR 0369: REVISED LINE 5FWF-50812, MOVED EAST 1'-6"							
4	10/20/17	DEC	REP	LON	REP /LA	SF	SO
REVISED LINE SIZE 5WSC-50950 TO 4"; ADDED LINES 5WWC-5031M AND L.							
3	10/6/17	DEC	REP	LON	LA	LP /SF	SO
REVISED LINE SIZE 5FWF-50812							
2	9/13/17	DEC	REP	LON	REP /LA	SF	
REVISED LINE 5FWF-507							
1	8/3/17	DEC	KC	LON	LA	SF	SO
REVISED LINES 5FGA-518, 5FWF-508, 5WWC-503, REVISED NORTHINGS, EASTINGS AND ELEVATION AS NOTED.							
0	5/29/17	VT	DEC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION							

STATE OF CONNECTICUT · SCOTT ERIC OBLANDER · 32223 · LICENSED · PROFESSIONAL ENGINEER

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC · LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

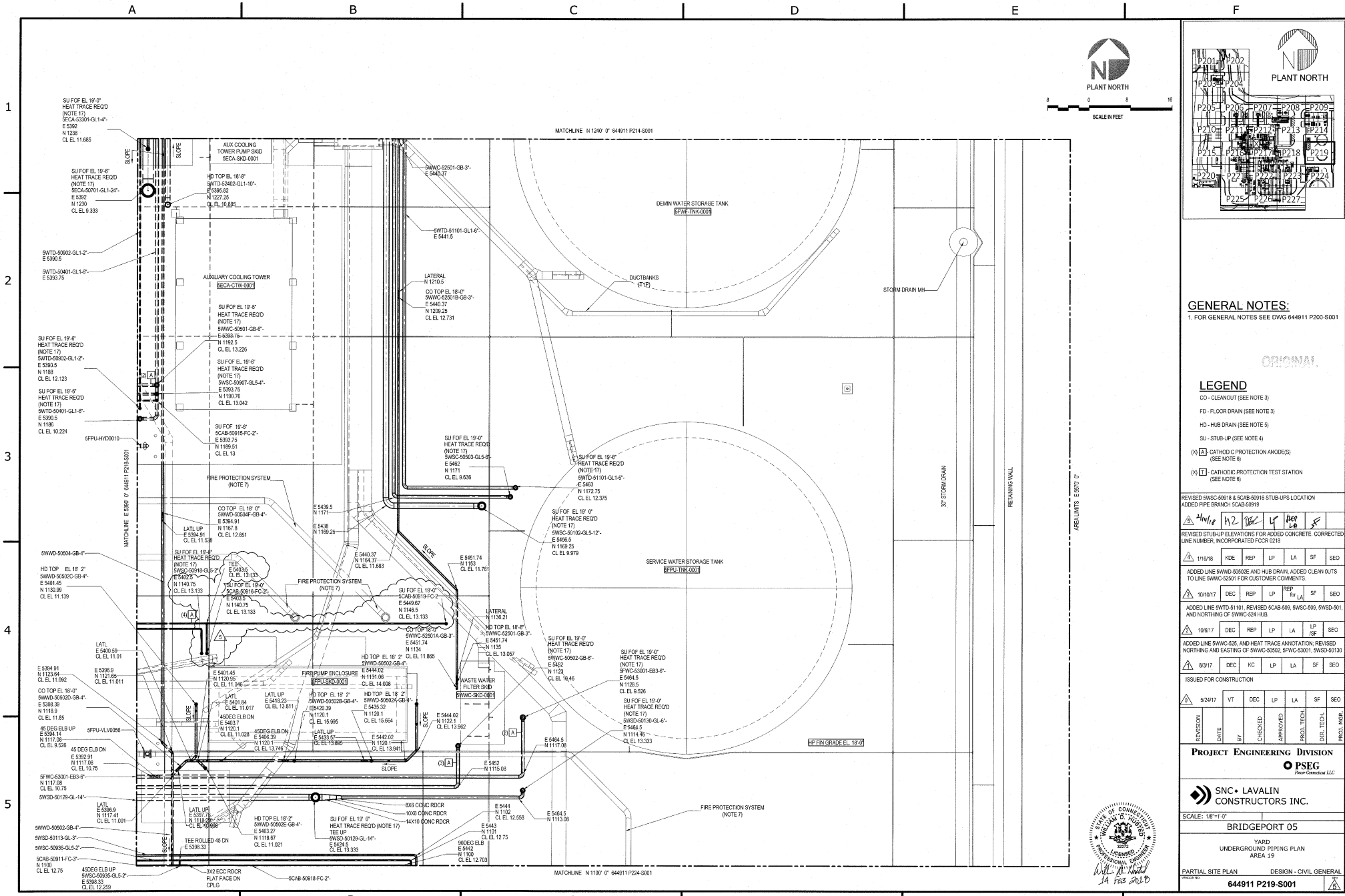
YARD
UNDERGROUND PIPING PLAN
AREA 18

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

644911 P218-S001 — REV. 5

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

PRINTED DATE: 9/10/2018 10:12:40 AM



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
5 REVISED 5WSC-50918 & 5CAB-50916 STUB-UPS LOCATION ADDED PIPE BRANCH 5CAB-50919	2/14/18	MZ		LP	REP for LP	SF	
4 REVISED STUB-UP ELEVATIONS FOR ADDED CONCRETE. CORRECTED LINE NUMBER, INCORPORATED FCOR 0216	1/16/18	KDE	REP	LP	LA	SF	SEO
3 ADDED LINE 5WWD-50502E AND HUB DRAIN, ADDED CLEAN OUTS TO LINE 5WWC-52501 FOR CUSTOMER COMMENTS.	10/10/17	DEC	REP	LP	REP for LA	SF	SEO
2 ADDED LINE 5WTD-51101, REVISED 5CAB-509, 5WSC-509, 5WSD-501, AND NORTHING OF 5WWC-524 HUB.	10/6/17	DEC	REP	LP	LA	LP /SF	SEO
1 ADDED LINE 5WWC-525, AND HEAT TRACE ANNOTATION; REVISED NORTHING AND EASTING OF 5WWC-50502, 5FWC-53001, 5WSD-50130	8/3/17	DEC	KC	LP	LA	SF	SEO
0 ISSUED FOR CONSTRUCTION	5/24/17	VT	DEC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

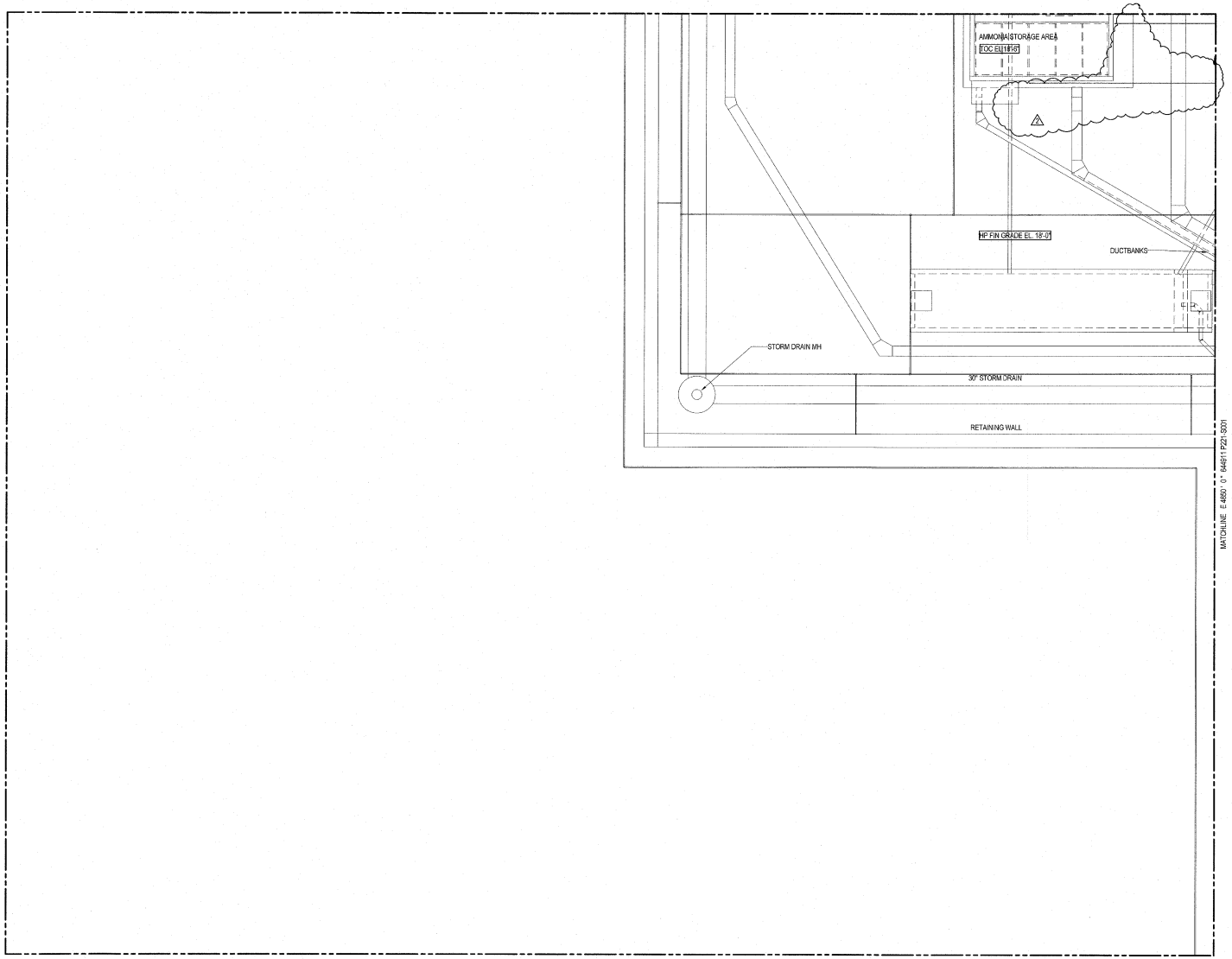
YARD UNDERGROUND PIPING PLAN AREA 19

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

DRAWING NO. 644911 P219-S001 — REVISION NO. 5

REVIEW/SEEN BY: ELECT, MECH, PROJECT, PIPING, PROCESS, DISTR

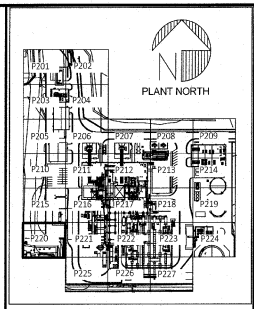
PRINTED DATE: 2/14/2018 11:37:58 AM



PLANT NORTH

8 0 8 16

SCALE IN FEET



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 6)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5WSD-501 BRANCH LINES AND STUB-UPS, PER CUSTOMER COMMENTS. REMOVED 2ND SAFETY SHOWER	11/9/17	VT	DEC	KC	LP	LA	SF	SEO
REVISED LOCATION OF EMERGENCY SHOWER AND LINE 5WSD-50116	8/3/17	DEC	KC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION	5/24/17	VT	DEC	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 20

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

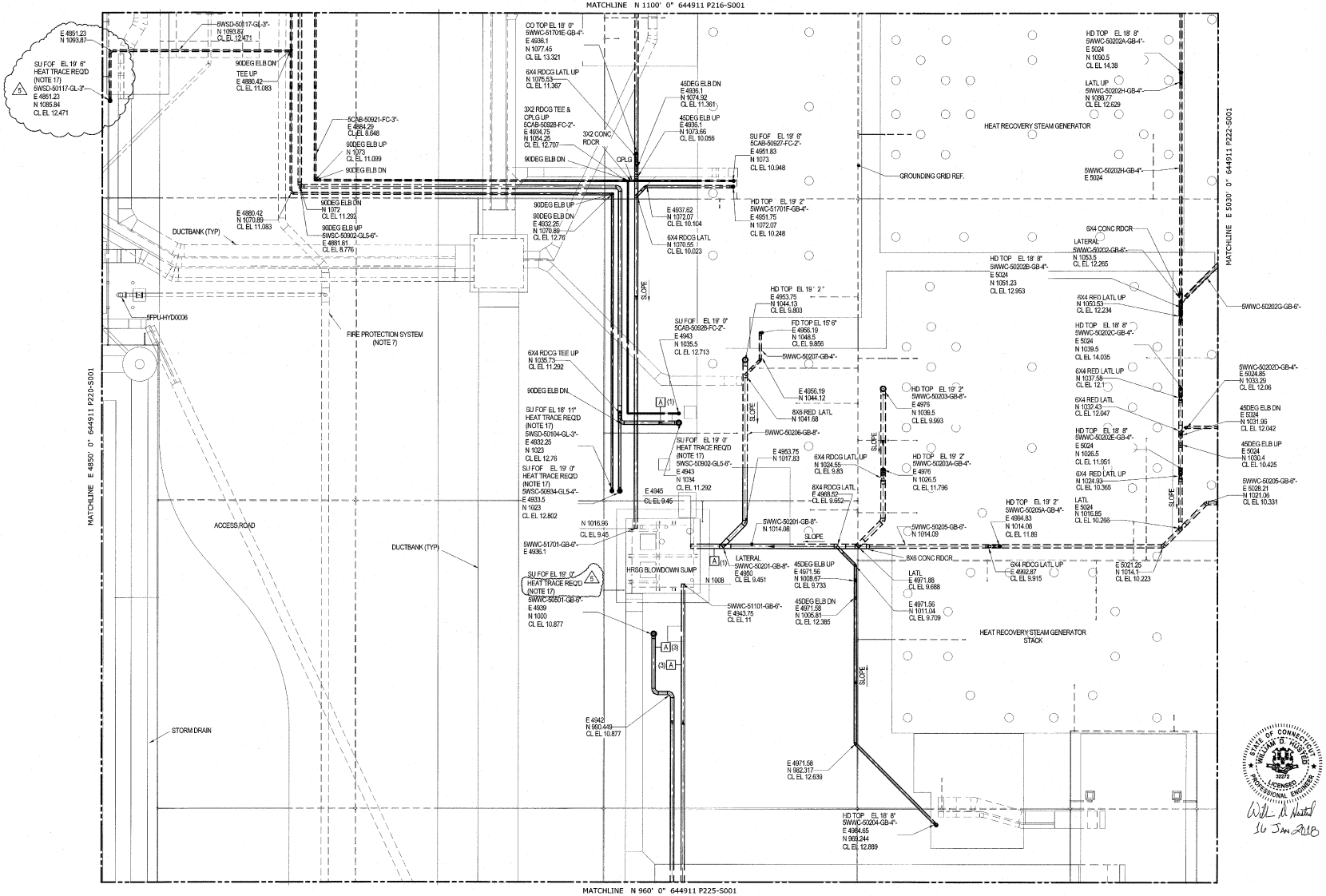
644911 P220-S001

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

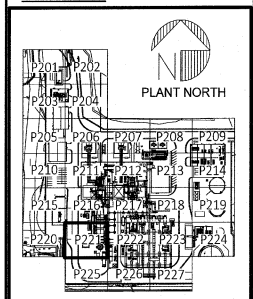
STATE OF CONNECTICUT — WILLIAM D. HOUSTED — 25278 — LICENSED PROFESSIONAL ENGINEER

09 Nov 2017

PRINTED DATE: 11/7/2017 2:42:05 PM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
6	3/16/18			LP			
REVISED LINE 5WSD-50117 TO ACCOMODATE SAFETY SHOWER CONNECTION AND INCORPORATED FCOR 0218							
4	11/8/17	DEC	REP	LP	LA	SF	SEO
REVISED BRANCH LINE 5WSD-50117, REMOVED OTHER BRANCHES. PER CUSTOMER COMMENTS.							
3	8/3/17	DEC	KC	LP	LA	SF	SO
REVISED BRANCH LINES 5WSD-50117 AND 5WSD-50116, REVISED 5WWC-50202; ADDED BRANCH 5WWC-50207.							
2	7/11/17	DEC	KC	LP	AR/LA	LP/SF	SO
ADDED BRANCH LINES TO 5WWC-502; 5WSD-501; CP ANODE NOTE. REVISED 5WWC-50202D.							
1	5/18/17	MZ	KC	LON	LA	SF	SO
ISSUED FOR CONSTRUCTION							
0	4/27/17	MZ	KC	LON	LA	LP/SF	SO
ISSUED FOR PERMIT							

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 21

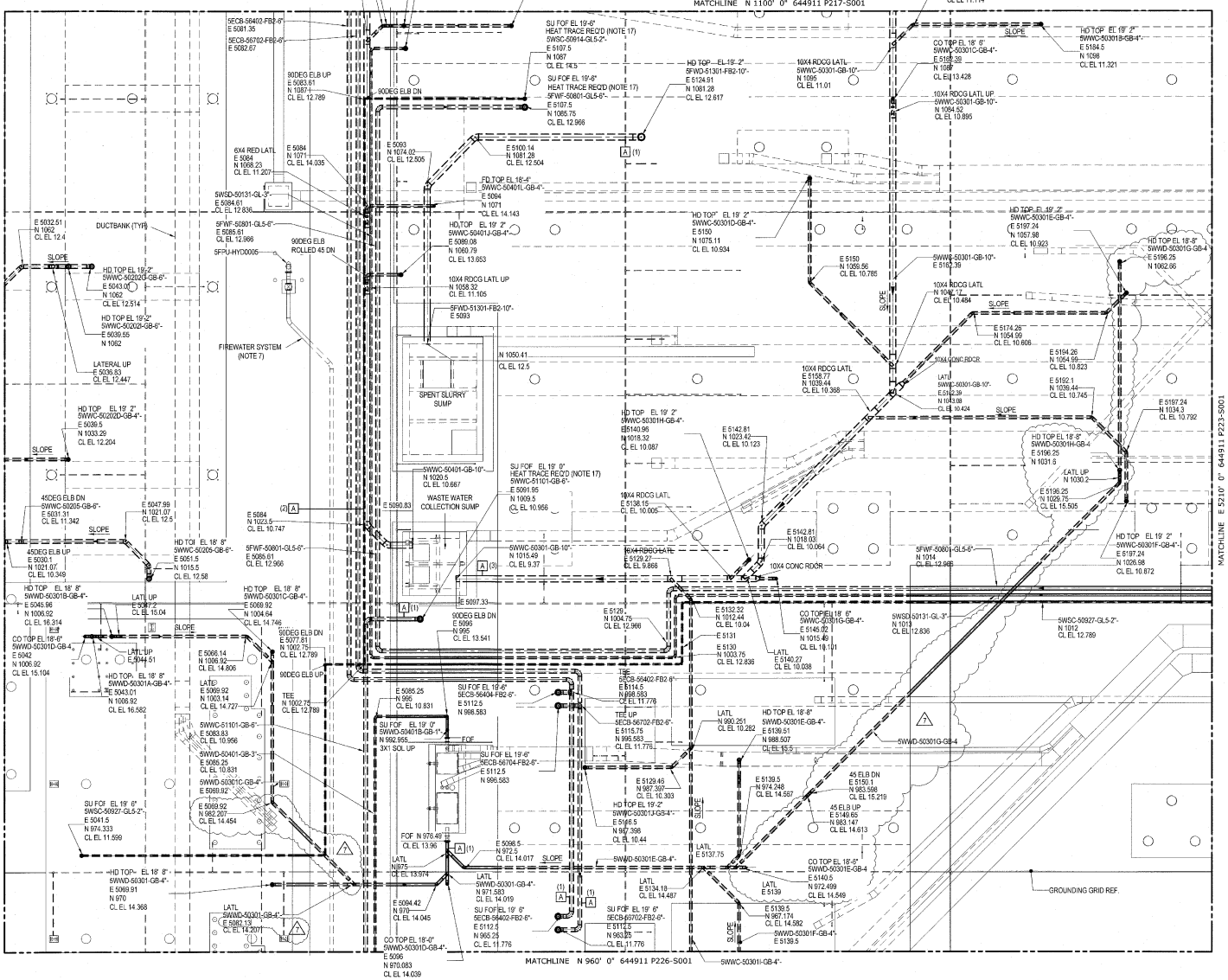
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

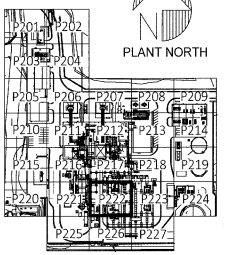
644911 P221-S001

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

PRINTED DATE: 1/16/2018 7:22:37 AM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

INCORPORATED FCCR 0286:
ADDED BRANCH LINE 5WWD-50301G AND 5WWD-50301H DRAIN HUBS FOR CONDENSATE PUMP DRAINS. REVISED 5WWD-50301 TO CLEAR UNDERGROUND DUCT BANK AT ZONE 5-B.

1	9/4/18	DEC	REP	LON	LA	SF	SO

ADDED BRANCH LINE 5WWV-50401L AND FLOOR DRAIN, PER CLIENT REQUEST

0	11/8/17	DEC	REP	LON	LA	SF	SO

ADDED LINE 5WWD50301E AND F, REVISED LINE 5WWC-50301J AND I ADDED CLEAN OUTS FOR LINES 5WWD-503 PER CUSTOMER COMMENTS

5	10/20/17	DEC	REP	LON	REP /LA	SF	SO

REVISED LINE 5FWF-507, ADDED NOTE 17 ANNOTATION

4	9/13/17	DEC	REP	LON	REP /LA	SF	

ADDED BRANCH LINE 5WWC-50202I; REVISED SIZE TO 6" ON LINE 5WWC-50202

3	8/3/17	DEC	KC	LON	LA	SF	SO

REVISED LOCATION ANNOTATION, ADDED LINE 5WWC-50202G

2	7/11/17	DEC	KC	LP	AR/LA	LP/SF	SO

ISSUED FOR CONSTRUCTION

1	5/18/17	MZ	KC	LON	LA	SF	SO

ISSUED FOR PERMIT

0	4/27/17	MZ	KC	LON	LA	LP/SF	SO

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

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 22

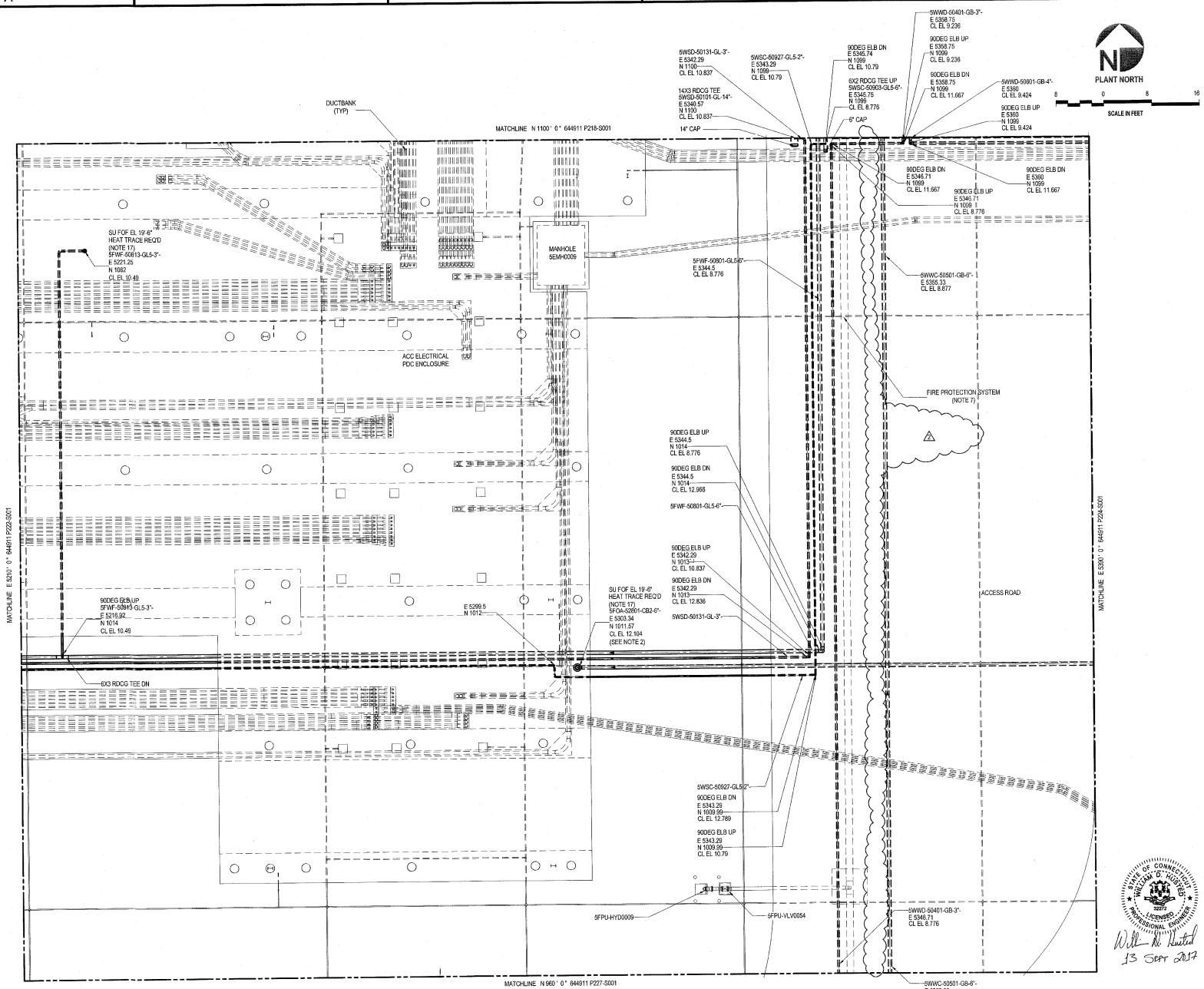
PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

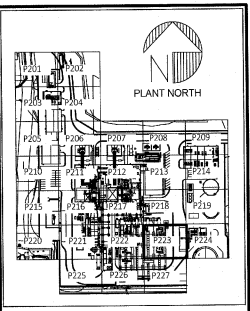
VENDOR NO.

644911 P222-S001

REVIEWED / SEEN BY: MSTR | ELECT | MECH | STRUCT | PIPING | PROCESS

PRINTED DATE: 9/10/2018 11:28:12 AM





GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001
2. REFER TO NOTE 2 ON DWG 644911-P224-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
REVISED LINE 5FWF-507	9/13/17	DEC	KC	LON	LP	LA	SF
REVISED SU ELEVATION FOR 5FOB-528. REVISED NOTE 2	8/3/17	DEC	KC	LON	LA	SF	SO
ISSUED FOR CONSTRUCTION	5/24/17	VT	RET	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 23

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

644911 P223-S001

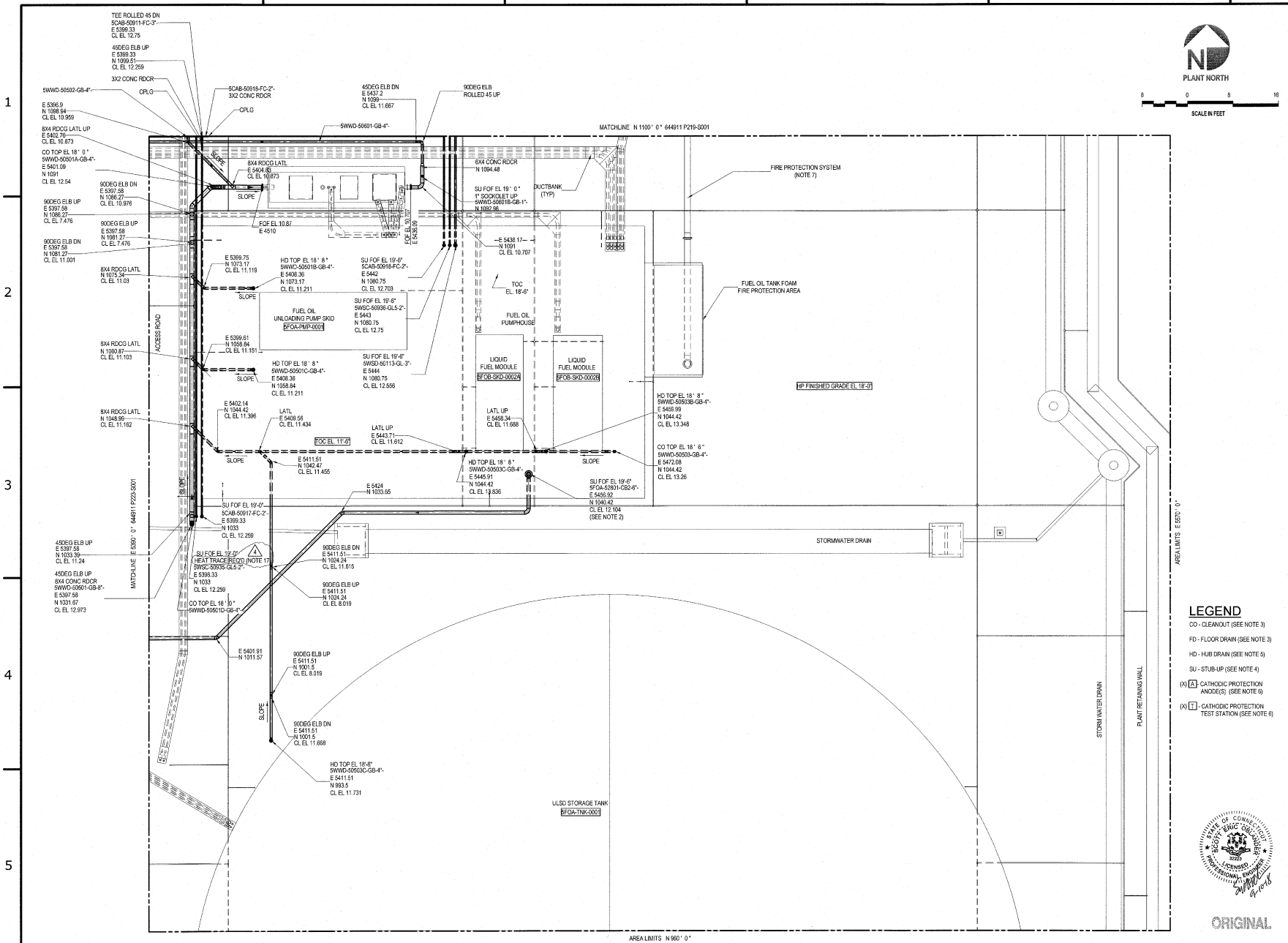
2

E-EST | MECH | STRUCT | PIPING | PROCESS | REVIEW | DMSTR

STATE OF CONNECTICUT WILLIAM D. FOSTER 32272 LICENSED PROFESSIONAL ENGINEER

13 Sept 2017

PRINTED DATE: 9/13/2017 6:35:14 AM



LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001
2. FOR LINE 6FOA-528
   - A. PROVIDE PERMA-PIPE DOUBLE-PIPE TYPE-HT PREFABRICATED SECONDARY PIPING SYSTEM OR APPROVED EQUAL. THE SYSTEM SHALL INCLUDE PRIMARY (CARRIER) PIPING AND FITTINGS, SECONDARY CONTAINMENT PIPING, INTERNAL SUPPORT FOR PRIMARY PIPING AND PAL-AT LEAK DETECTION SYSTEM.
   - B. DESIGN SYSTEM TO ACCOMIDATE ULTRA LOW SULFUR FUEL OIL (ULSFO).
   - C. PRIMARY (CARRIER) PIPING MATERIALS AND FABRICATION SHALL BE
   - D. FABRICATE SECONDARY CONTAINMENT FROM ASTM A53 GR B ERW OR A135 GR B PIPE, 10 GAUGE (0.141" WALL) MINIMUM FOR PIPING 6" NPS.
   - E. UNLESS A LARGER SIZE IS REQUIRED TO ACCOMIDATE THE LEAK DETECTION SYSTEM, SECONDARY CONTAINMENT PIPING FOR 6" NPS CARRIER PIPING SHALL BE 10" NPS.
   - F. FACTORY APPLY 30 MILS URETHANE COATING TO EXTERIOR SURFACE OF SECONDARY CONTAINMENT PIPING.
   - G. INTERNAL SUPPORTS FOR PRIMARY PIPING (CENTRALIZERS), END SEALS AND FIELD CLOSURES SHALL BE OF CARBON STEEL MATERIALS SUITABLE FOR USE AT LOW DESIGN TEMERATURES OF -20 F (-29 C).
   - H. DESIGN INTERNAL SUPPORTS FOR PRIMARY PIPING TO ALLOW FOR CONTINUOUS AIRFLOW AND DRAINAGE OF THE SECONDARY CONTAINMENT PIPING. PROVIDE SUPPORTS AT INTERVALS OF 10 FT (3 M) OR LESS. PROVIDE GUIDES TO PREVENT DAMAGE TO LEAK DETECTION CABLE.
   - I. DESIGN AND SEALS TO PREVENT THE INGRESS OF MOISTURE INTO THE SYSTEM AND PROVIDE WITH DRAIN AND/OR VENT OPENINGS.
   - J. PROVIDE PORTS IN CONTAINMENT TO ALLOW FOR PULLING LEAK DETECTION CABLE. SPACE PORTS NO MORE THAN 500 FT (150 M) APART ON STRAIGHT SECTIONS AND REDUCE BY 150 FT (45 M) FOR EVERY 90 DEG CHASE IN DIRECTION.
   - K. PROVIDE PAL-AT MODEL AT300 LEAK DETECTION SYSTEM WITH
     - 2BP MODULE INTEGRALLY MOUNTED INTO NEMA 4X ENCLOSURE
     - 120 VAC POWER SUPPLY TO CONTROL PANEL
     - MONITORING UNIT WITH DRY CONTACTS RATED 0.5 A AT 48 VDC REPRESENTING "COMMON ALARM" AND "LEAK DETECTED" SIGNALS; CONTACTS DE-ENERGIZE OPEN TO ALARM.
     - CONTROL PANEL FAN AND HEATER APPROPRIATE FOR OUTDOOR INSTALLATION AT AMBIENT TEMPERATURES -10 F TO 105 F (-23 C TO 41 C)
     - SENSOR CABLE FOR DETECTION OF BOTH ULSFO AND WATER, ACCEPTABLE FOR INSTALLATION IN CLASS I, DIV 2, GROUPS C AND D HAZARDOUS AREAS; CAPABLE OF BEING FLUSHED AND DRIED IN PLACE; NO REPLACEMENT REQUIRED AFTER LEAK EVENT.
     - CABLES, WIRING, CONNECTORS, FITTINGS, JUMPERS, CABLE GRIPS, CABLE PULLING ACCESSORIES, AND ANY OTHER DEVISES AND MATERIAL FOR COMPLETE, FUNCTIONAL SYSTEM.

INCORPORATED FCCR 0218: ADDED HT NOTE 0N5WDC-50935

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
4	9/10/18	DEC	KC	LP	LA	SF	
REVISED 5CAB-509, 5WSC-509 AND 5WSD-501; HD NORTH OF 5WWD-505							
3	8/3/17	DEC	KC	LP	LA	SF	
REVISED HD ELEVATION OF LINE 5WWD-50501B AND 5WWD-50501C							
2	9/13/17	DEC	REP	LP	REP /LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD UNDERGROUND PIPING PLAN AREA 24

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

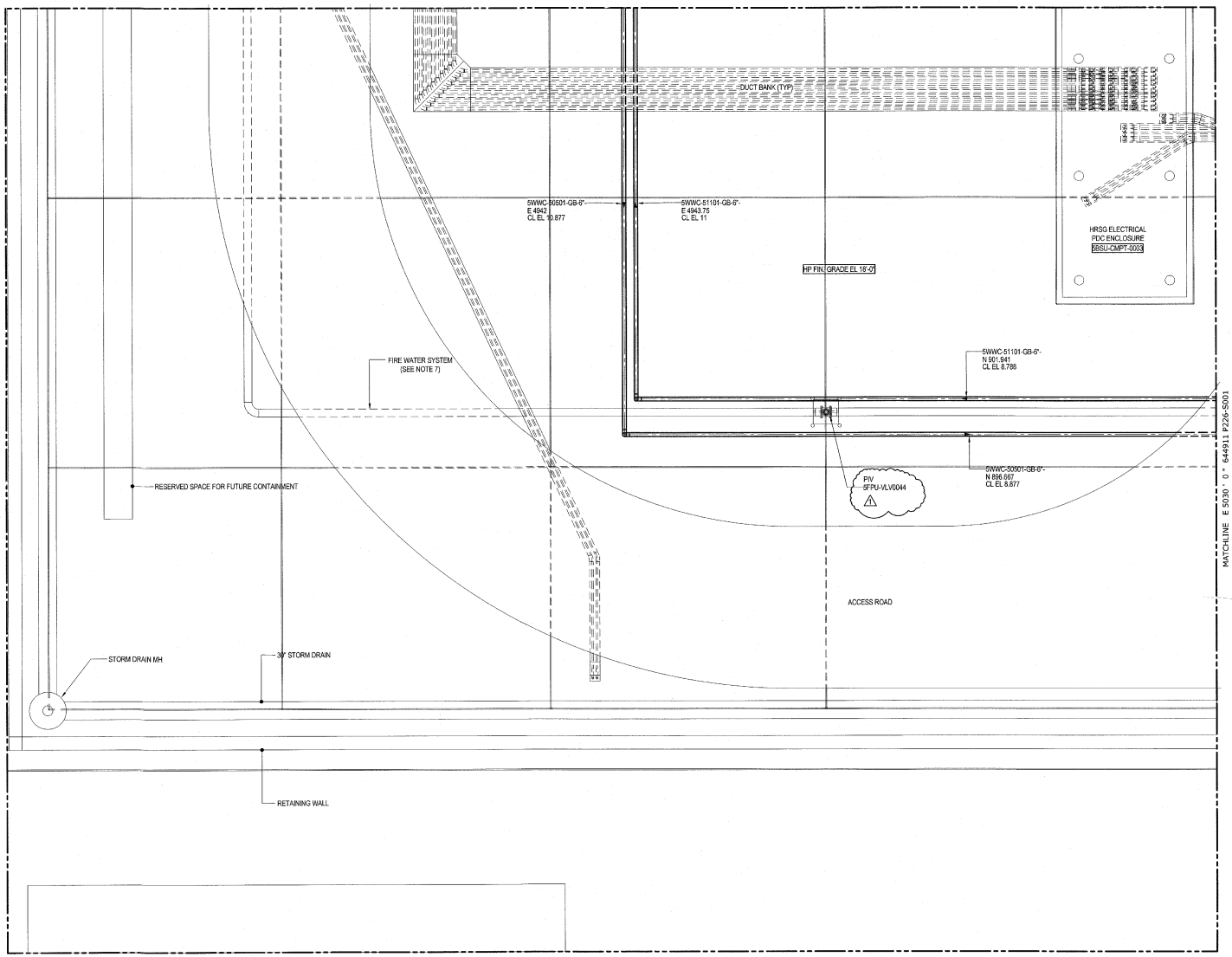
644911 P224-S001

4

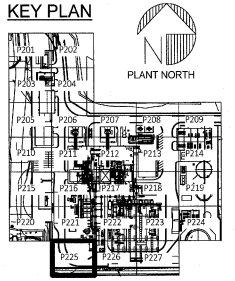
ORIGINAL

PRINTED DATE: 9/10/2018 10:16:57 AM

INSTR | ELECT | MECH | STRUCT | PIPING | PROCESS | SURVEY SEISMIC



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

ORIGINAL

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ADDED FPU VALVE NUMBER

5/3/17

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
0	5/24/17	VT	RET	LP	LA	SF	SEO

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 25

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

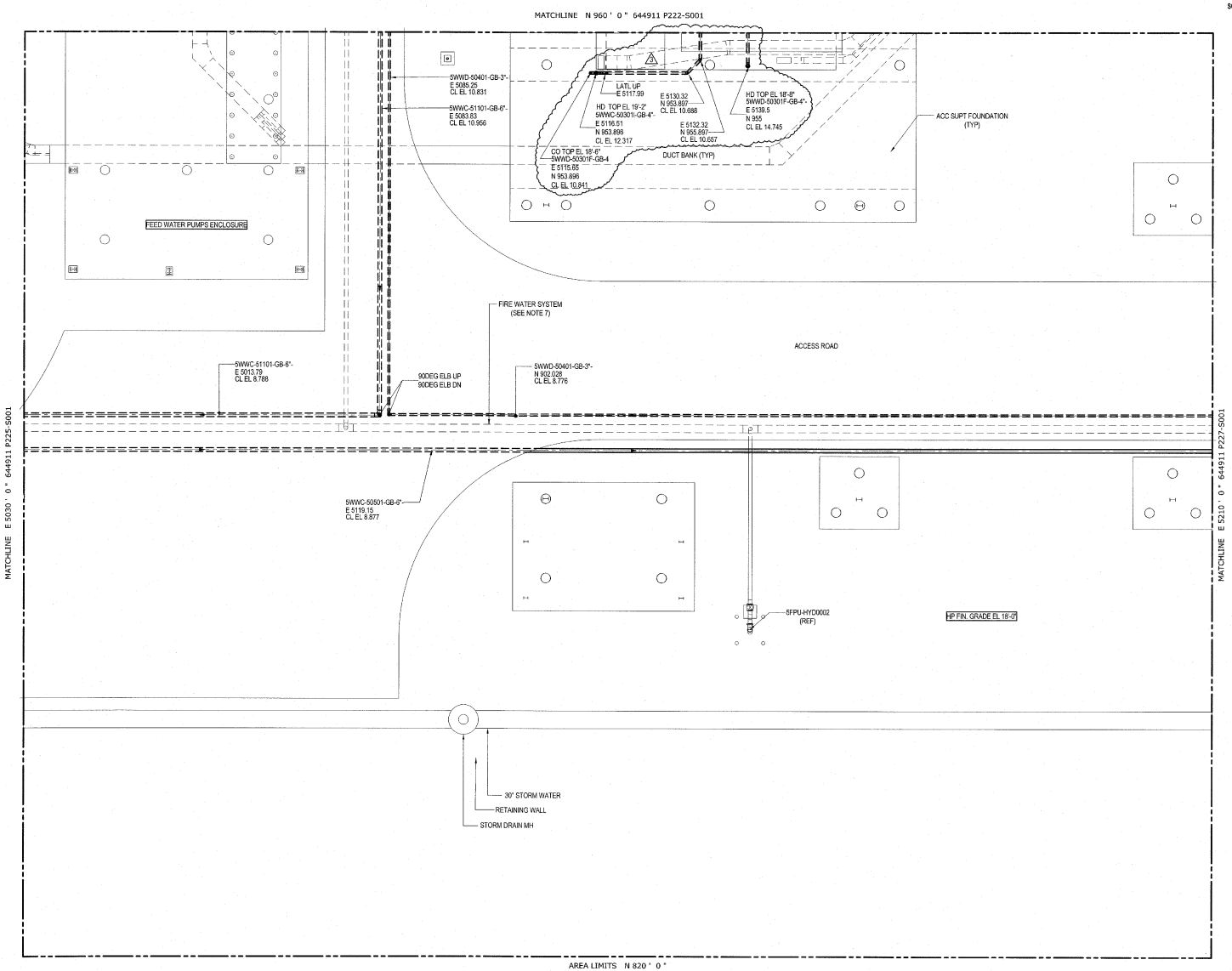
644911 P225-S001

REV. 0

INSTR. ELEC. MECH. CIVIL PIPING PROCESS HVAC

REVIEW/SEIS BY

PRINTED DATE: 7/17/2017 8:03:00 AM

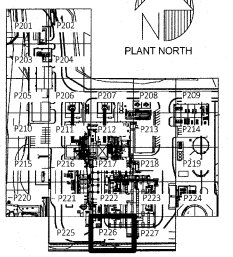


PLANT NORTH

8 0 8 16

SCALE IN FEET

KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
3	10/24/17	DEC	KC	LON	LA	SF	SO
REVISED LINE 5WWC-50301, ADDING CLEAN OUTS; ADDED LINE 5WWD-50301F.							
2	9/13/17	DEC	REP	LON	REP/LA	SF	
REVISED LINE 5FWF-507							
1	8/3/17	DEC	KC	LON	LA	SF	SO
ADDED 90 DEG ELBOW REFERENCES							
0	5/24/17	AL	KC	LP	LA	SF	SEO
ISSUED FOR CONSTRUCTION							

PROJECT ENGINEERING DIVISION

PSEG

Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

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

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 26

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

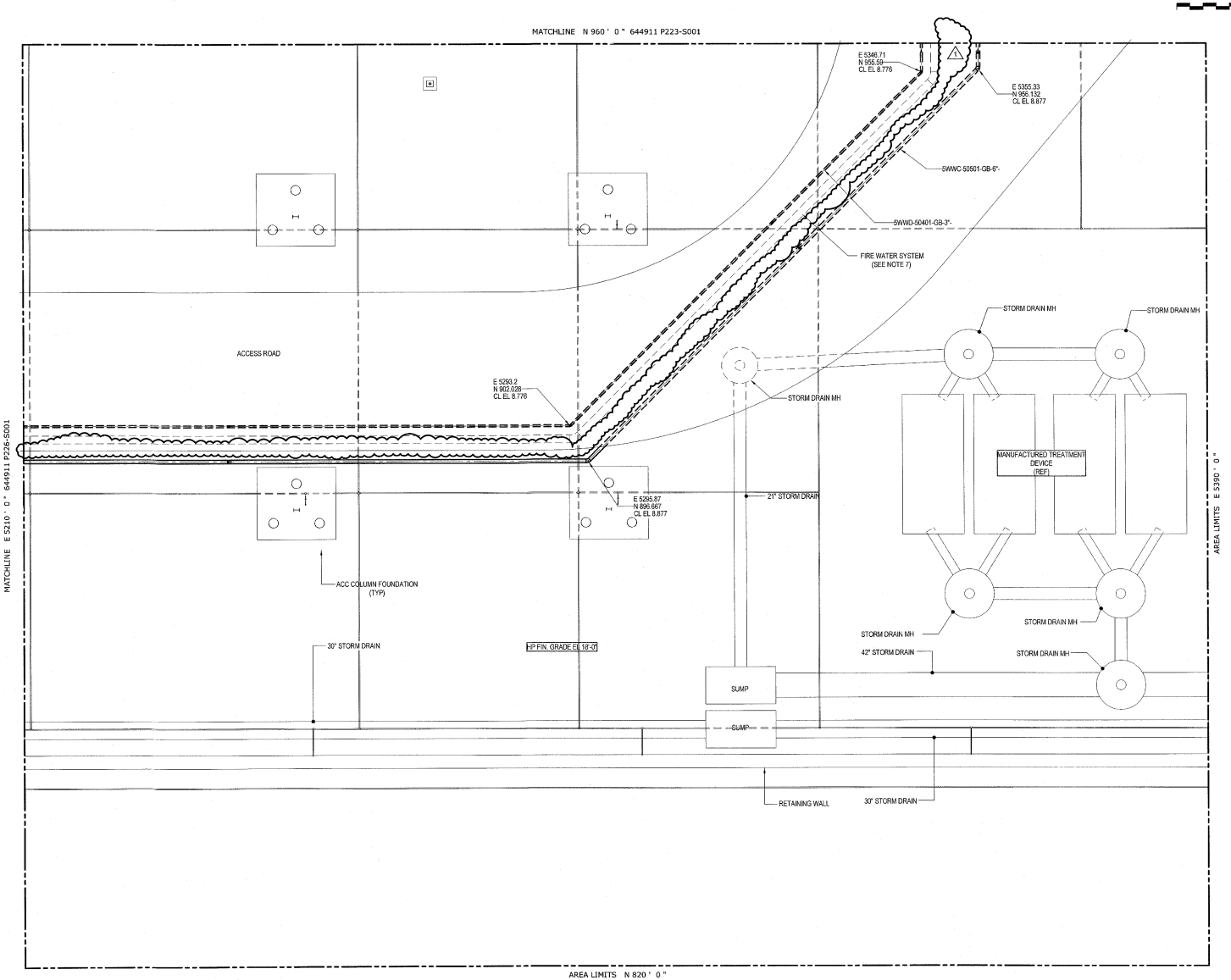
VERSION NO. 644911 P226-S001 — 3

REVIEW / SEEN BY: PROJECT MGR. | PROJ. MGR. | DIR. TECH. | PROJECT | MECH. | ELECT. | PIPING | PROCESS

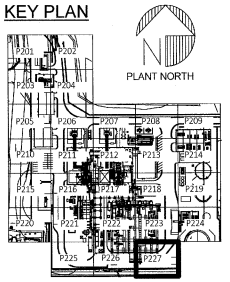
STATE OF CONNECTICUT
WILLIAM D. HASTED
10279
LICENSED PROFESSIONAL ENGINEER

23 Oct 2017

PRINTED DATE: 10/20/2017 10:50:18 AM



KEY PLAN



GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001

LEGEND

CO - CLEANOUT (SEE NOTE 3)

FD - FLOOR DRAIN (SEE NOTE 3)

HD - HUB DRAIN (SEE NOTE 5)

SU - STUB-UP (SEE NOTE 4)

(X) [A] - CATHODIC PROTECTION ANODE(S) (SEE NOTE 6)

(X) [T] - CATHODIC PROTECTION TEST STATION (SEE NOTE 6)

ORIGINAL

REVISED LINE 5FWF-507

1	9/13/17	DE	WH	LP	WH	SF	

ISSUED FOR CONSTRUCTION

0	5/29/17	VT	RET	LP	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: 1/8" = 1'-0"

BRIDGEPORT 05

YARD
UNDERGROUND PIPING PLAN
AREA 27

PARTIAL SITE PLAN — DESIGN - CIVIL GENERAL

VENDOR NO.

644911 P227-S001

1

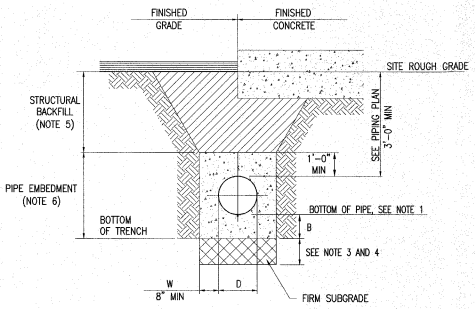
STATE OF CONNECTICUT
WILLIAM D. HOUSTED
22272
LICENSED PROFESSIONAL ENGINEER

13 Sept 2017

REVIEW/ SEEN BY	PROCESS	PIPING	STRUCT	MECH	ELECT	INSTR
	WH				BJS	

PRINTED DATE: 9/13/2017 6:39:43 AM

D	W	B
3" & 4"	12"	6"
6"	11"	6"
8"	10"	6"
10"	9"	6"
12"	8"	6"
15"	8"	6"
16" & 18"	8"	6"
20" & 21"	8"	6"
24"	12"	6"
27"	12"	6"
30"	12"	6"
33"	15"	6"
36"	15"	6"
42"	15"	6"
48"	18"	6"
54"	18"	6"
60"	18"	6"
66"	18"	6"
72"	18"	6"
78"	18"	6"
84"	18"	6"
90"	18"	6"
96"	18"	12"
102"	18"	12"
108"	18"	12"
114"	24"	12"
120"	24"	12"

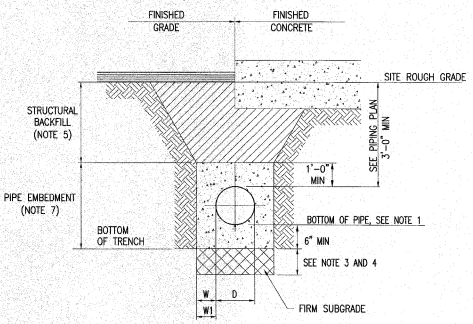


TYPICAL TRENCH/BEDDING FOR STEEL AND IRON PIPING

SCALE: NONE

NOTES:

1. ELEVATIONS AND ALIGNMENT OF THE PIPING SHALL BE AS SHOWN ON THE DRAWINGS.
2. THE TRENCH WIDTH SHALL BE SUFFICIENT TO PROVIDE ADEQUATE ROOM FOR JOINING THE PIPING IN THE TRENCH, INSPECTION OF PIPING JOINTS, AND PLACEMENT AND COMPACTION OF THE PIPE ZONE BEDDING AND BACKFILL MATERIALS.
3. IF HARD UNYIELDING MATERIALS OR ORGANIC MATERIALS ARE ENCOUNTERED IN THE TRENCH BOTTOM, THE TRENCH SHALL BE OVEREXCAVATED AN ADDITIONAL 4" BELOW THE BEDDING ZONE AND THE MATERIAL REPLACED WITH BEDDING MATERIAL COMPACTED TO A MINIMUM DENSITY OF 98% OF THE STANDARD PROCTOR DENSITY.
4. IF THE TRENCH BOTTOM IS UNSTABLE, THE TRENCH SHALL BE OVEREXCAVATED TO A DEPTH DETERMINED BY THE GEOTECHNICAL ENGINEER AND THE MATERIAL REPLACED WITH CLEAN COARSE-GRAINED MATERIAL "GRANULAR FILL" AS NOTED IN THE SOILS REPORT AND APPROVED BY THE SOILS ENGINEER, COMPACTED TO A MINIMUM DENSITY OF 98% OF THE STANDARD PROCTOR DENSITY.
5. BACKFILL SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE STANDARD PROCTOR DENSITY WITHIN (±3%) OF OPTIMUM MOISTURE CONTENT. HAND TAMPERS OR VIBRATORY COMPACTORS SHALL BE USED FOR EMBEDMENT COMPACTION.
6. THE EMBEDMENT (BEDDING) MATERIALS SHALL BE THE FOLLOWING SOIL:
   FOR DUCTILE IRON PIPING:
   GRANULAR BEDDING ATSM C33 #67 CRUSHED STONE
   FOR CARBON STEEL AND STAINLESS STEEL PIPING:
   CLEAN COARSE GRAINED SOILS (AS DEFINED ABOVE) WITH 5% OR LESS PASSING THROUGH A #200 SIEVE.
   THE MAXIMUM PARTICLE SIZE FOR EMBEDMENT MATERIALS SHALL BE AS FOLLOWS
   - 1" DIA FOR PIPE SIZES 4" NPS AND SMALLER
   - 2" DIA FOR PIPE SIZES 6" NPS TO 8" NPS
   - 1" DIA FOR PIPE SIZES 10" NPS TO 16" NPS
   - 1 1/2" DIA FOR PIPE SIZES LARGER THAN 16" NPS



PLASTIC	
D	W
8"	10"
10"	9"
12"-21"	8"

FRP	
D	W1
<60"	20"
60"	22"
78"	32"

TYPICAL TRENCH/BEDDING FOR PLASTIC PIPING

SCALE: NONE

NOTES:

1. ELEVATIONS AND ALIGNMENT OF THE PIPING SHALL BE AS SHOWN ON THE DRAWINGS.
2. THE TRENCH WIDTH SHALL BE SUFFICIENT TO PROVIDE ADEQUATE ROOM FOR JOINING THE PIPING IN THE TRENCH, INSPECTION OF PIPING JOINTS, AND PLACEMENT AND COMPACTION OF THE PIPE ZONE BEDDING AND BACKFILL MATERIALS.
3. IF HARD UNYIELDING MATERIALS OR STONES LARGER THAN 1 1/2" ø ARE ENCOUNTERED IN THE TRENCH BOTTOM, THE TRENCH SHALL BE OVEREXCAVATED AN ADDITIONAL 4" BELOW THE BEDDING ZONE AND THE MATERIAL REPLACED WITH BEDDING MATERIAL COMPACTED TO A MINIMUM DENSITY OF 98% OF THE STANDARD PROCTOR DENSITY.
4. IF THE TRENCH BOTTOM IS UNSTABLE, THE TRENCH SHALL BE OVEREXCAVATED TO A DEPTH DETERMINED BY THE GEOTECHNICAL ENGINEER AND BACKFILLED WITH "GRANULAR FILL" MEETING THE REQUIREMENTS FOR "GRANULAR FILL" AS NOTED IN THE SOILS REPORT AND APPROVED BY THE SOILS ENGINEER, COMPACTED TO A MINIMUM DENSITY OF 98% OF THE STANDARD PROCTOR DENSITY.
5. BACKFILL SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE STANDARD PROCTOR DENSITY WITHIN (±3%) OF OPTIMUM MOISTURE CONTENT. HAND TAMPERS OR VIBRATORY COMPACTORS SHALL BE USED FOR EMBEDMENT COMPACTION.
6. THIS DETAIL DOES NOT APPLY TO STORM WATER SYSTEM. REFER TO CIVIL GRADING PLANS.
7. THE EMBEDMENT (BEDDING) MATERIALS SHALL BE THE FOLLOWING SOIL:
   FOR FRP PIPING:
   GRANULAR BEDDING ATSM C33 #67 CRUSHED STONE
   FOR HDPE AND PVC PIPING:
   CLEAN COARSE GRAINED SOILS (AS DEFINED ABOVE) WITH 5% OR LESS PASSING THROUGH A #200 SIEVE.
   THE MAXIMUM PARTICLE SIZE FOR EMBEDMENT MATERIALS SHALL BE AS FOLLOWS
   - 1" DIA FOR PIPE SIZES 4" NPS AND SMALLER
   - 2" DIA FOR PIPE SIZES 6" NPS TO 8" NPS
   - 1" DIA FOR PIPE SIZES 10" NPS TO 16" NPS
   - 1 1/2" DIA FOR PIPE SIZES LARGER THAN 16" NPS

STATE OF CONNECTICUT · WILLIAM G. NEWTON · 32372 · LICENSED PROFESSIONAL ENGINEER

18 MAY 2017

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001.

ORIGINAL

REFERENCE SPECS:

644911-SP-P200 PIPING MATERIALS
644911-SP-P171 UNDERGROUND PIPING FABRICATION AND INSTALLATION.

ISSUED FOR CONSTRUCTION							
1 5/18/17	WL	WJ	LP	JL	JF	LS	
ISSUED FOR PERMIT							
0 4/28/17	KDE	KC	LON	LA	LP/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: NONE

BRIDGEPORT 05

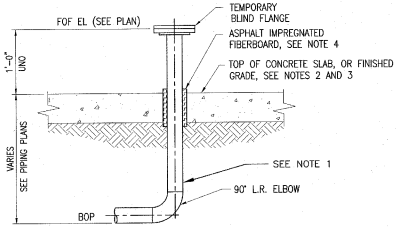
UNDERGROUND PIPING BEDDING DETAILS

STANDARDS DESIGN-PIPING

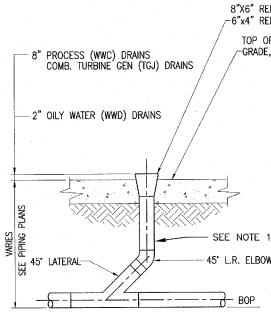
VENDOR NO.

644911 P230-S001

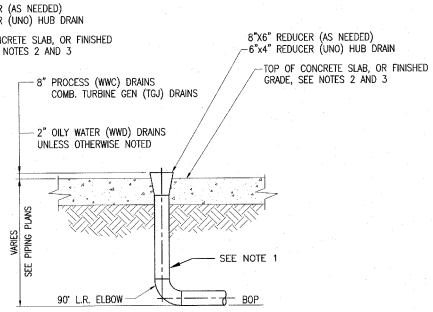
INSTR. | ELECT. | MECH. | STRUCT. | PIPING | PROCESS & H.V.A.C. | REVIEW / SEEN BY



ELEVATION



IN LINE ELEVATION



END OF RUN ELEVATION

TYPICAL STUB-UP DETAIL

SCALE: NONE

NOTES:

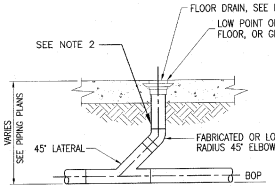
1. METALLIC PIPING SHALL BE COATED AND WRAPPED UP TO THE ABOVEGROUND FLANGE IN ACCORDANCE WITH THE PIPING MATERIAL SPECIFICATION.
2. METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ANY SLAB OR FOUNDATION REINFORCING STEEL OR OTHER CONDUCTIVE MATERIALS.
3. IF STUB-UPS 4" NPS AND SMALLER OF HDPE MATERIAL 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.

TYPICAL BELL UP (HUB DRAIN) DETAIL

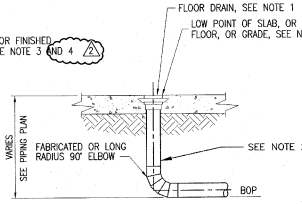
SCALE: NONE

NOTES:

1. METALLIC PIPING SHALL BE COATED AND WRAPPED 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 HUB DRAINS 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.



IN LINE ELEVATION



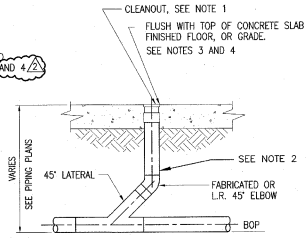
END OF RUN ELEVATION

TYPICAL FD (FLOOR DRAIN) DETAIL OR CONTAINMENT DRAIN

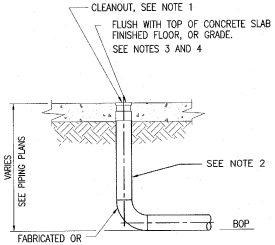
SCALE: NONE

NOTES:

1. FLOOR DRAINS SHALL BE ZURN MODEL Z-610-4NL-H OR EQUAL.
2. METALLIC PIPING SHALL BE COATED AND WRAPPED IN ACCORDANCE WITH THE PIPING MATERIAL SPECIFICATION.
3. METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ANY SLAB OR FOUNDATION REINFORCING STEEL OR OTHER CONDUCTIVE MATERIALS.
4. △2 FOR FINISH FLOOR AND LOW POINT SLOPE ELEVATION OF DRAIN SEE FOUNDATION DRAWING 644911 F002-S001.



IN LINE ELEVATION



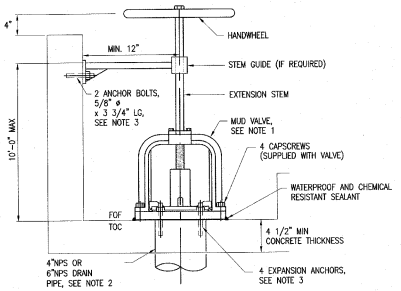
END OF RUN ELEVATION

TYPICAL CO (CLEANOUT) DETAIL

SCALE: NONE

NOTES:

1. CLEANOUTS SHALL BE ZURN MODEL Z-1400-4NL-HD OR EQUAL.
2. METALLIC PIPING SHALL BE COATED AND WRAPPED IN ACCORDANCE WITH THE PIPING MATERIAL SPECIFICATION.
3. METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ANY SLAB OR FOUNDATION REINFORCING STEEL OR OTHER CONDUCTIVE MATERIALS.
4. IF CLEANOUTS 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.

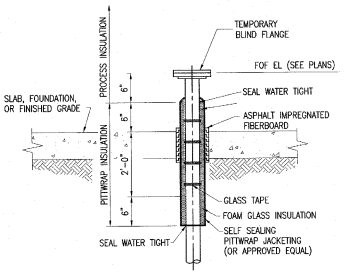


CONTAINMENT MUD VALVE

NO SCALE

NOTES:

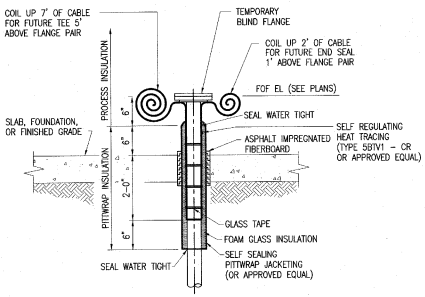
1. MUD VALVE SHALL BE M&H VALVE STYLE 140-02 WITH HANDWHEEL, EXTENSION STEM, AND STEM GUIDE, OR EQUAL.
2. DRAIN PIPE SHALL BE PLAIN CUT FLUSH WITH THE TOP OF CONCRETE.
3. EXPANSION ANCHORS SHALL BE HILTI KWIK II, OR EQUAL, AND SIZED AS FOLLOWS:
   FOR 4" NPS VALVES, 5/8" ø x 5" LG, MIN EMBED = 2 3/4"
   FOR 6" NPS VALVES, 3/4" ø x 6" LG, MIN EMBED = 3 1/4"



TYPICAL STUB-UP WITH FREEZE PROTECTION INSULATION

NO SCALE

SEE UNDERGROUND PIPING PLAN FOR LOCATIONS IDENTIFIED BY "FREEZE PROTECTION REQ'D" LABEL



TYPICAL STUB-UP WITH INSULATION/HEAT TRACE

NO SCALE

TYPICAL FOR ALL STUB UP LOCATIONS THAT REQUIRE INSULATION AND HEAT TRACE.
SEE UNDERGROUND PIPING PLAN FOR LOCATIONS IDENTIFIED BY "HEAT TRACE REQ'D" LABEL

△2 NOTE 1. ON ALL NON-METALIC PIPE - INSTALL ALUMINUM TAPE LONGITUINALLY ALONG ALL TRACER CABLE THAT COMES IN CONTACT WITH NON-METALIC PIPE. USE THERMON AL-20H ALUMINUM TAPE OR APPROVAL EQUAL.
2. USE THERMON TRACER CABLE BSX 5-1 OJ OR APPROVAL EQUAL (120V, 5 WATTS/FT WITH OVER JACKET).

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001.

REFERENCE SPECS:

644911-SP-P200 PIPING MATERIALS
644911-SP-P171 UNDERGROUND PIPING FABRICATION AND INSTALLATION.

ORIGINAL

ADDED NOTE 4 FOR FLOOR DRAIN DETAIL. ADDED SPECIAL TAPE FOR PLASTIC PIPE HEAT TRACED. ADDED NOTE 1 AND 2 FOR HEAT TRACE DETAIL.

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
△2	10/20/17	[illegible]	[illegible]	LP	[illegible] LP	SF	LP
ISSUED FOR CONSTRUCTION							
△1	5/18/17	DEC	KC	LP	LA	SF	SEO
ISSUED FOR PERMIT							
△1	4/27/17	KDE	KC	LON	LA	LP/SF	SEO

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: NONE

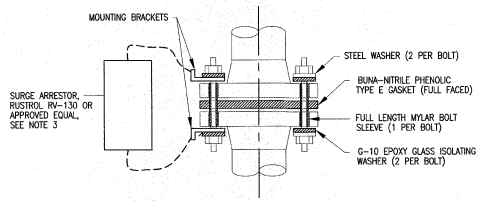
BRIDGEPORT 05

UNDERGROUND PIPING DETAILS

STANDARDS | DESIGN PIPING

VENDOR NO. | 644911 P231-S001 | REV △2

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

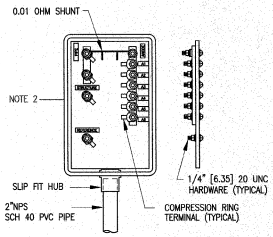


TYPICAL ISOLATING FLANGED JOINT

NO SCALE

NOTES:

1. ISOLATING FLANGE KITS SHALL BE INSTALLED AFTER THE CATHODIC PROTECTION SYSTEM HAS BEEN TESTED AND COMMISSIONED.
2. ALL COMPONENTS SHALL BE COMPATIBLE WITH THE PRESSURE RATING AND DIMENSIONS OF THE MATING FLANGES AND THE FLUID DESIGN TEMPERATURE.
3. SURGE ARRESTORS ARE REQUIRED FOR NATURAL GAS PIPING SYSTEMS ONLY. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. REPLACE STEEL WASHERS FOR ONE FLANGE BOLT WITH MOUNTING BRACKETS.

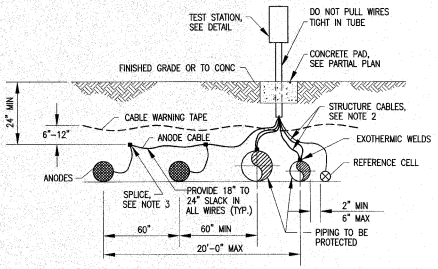


TYPICAL TEST STATION

NO SCALE

NOTES:

1. EACH ANODE INSTALLED FOR NATURAL GAS PIPING SHALL BE CONNECTED TO A TEST STATION. NO MORE THAN 6 ANODES SHALL BE CONNECTED TO A SINGLE TEST STATION. 2 CABLES SHALL CONNECT THE PIPING (STRUCTURE) TO EACH TEST STATION.
2. TEST STATION JUNCTION BOXES SHALL HAVE NEMA GRADE C PHENOLIC PANELS AND NEMA TYPE 4X FIBERGLASS ENCLOSURES.
3. TEST STATION CABLE CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S WIRING DIAGRAMS. ANODE AND REFERENCE CELL CONNECTIONS SHOULD NOT BE COMPLETED UNTIL INITIAL SYSTEM TESTING.



TYPICAL ANODE AND TEST STATION INSTALLATION

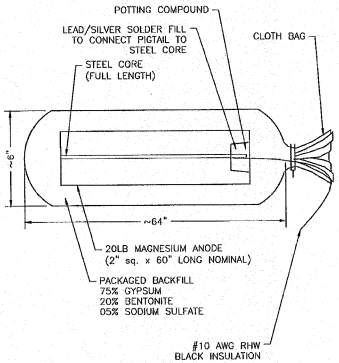
NO SCALE

NOTES:

1. SEE BILL OF MATERIALS FOR COMPLETE COMPONENT DESCRIPTIONS.
2. STRUCTURE CABLES SHALL BE PERMANENTLY LABELED TO IDENTIFY THE PIPING TO WHICH IT IS CONNECTED.
3. THE USE OF SPLICES SHALL BE KEPT TO A MINIMUM. IF THE CABLE SUPPLIED WITH THE ANODE IS OF SUFFICIENT LENGTH TO CONNECT DIRECTLY TO THE TEST STATION, NO SPLICE SHALL BE USED.

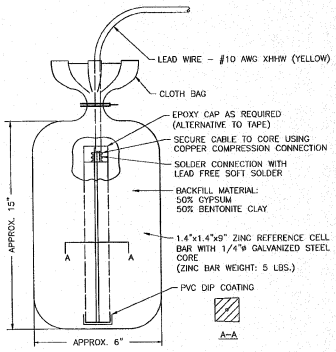
NOTES:

1. THE CATHODIC PROTECTION SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION 644911-SP-P171.
2. ALL PIPING SHALL BE ELECTRICALLY ISOLATED FROM ALL OTHER CONDUCTIVE PIPING, STRUCTURES, GROUND WIRES, AND HEAT TRACING. PIPING PASSING THROUGH CONCRETE SHALL BE ELECTRICALLY ISOLATED FROM ANY REINFORCING STEEL OR OTHER CONDUCTIVE MATERIAL.
3. SACRIFICIAL ANODES AND TEST STATIONS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THEY INDICATE THE NUMBER OF ANODES AND TEST STATIONS REQUIRED TO PROTECT THE ENTIRE LINE OR SYSTEM. ANODES CAN BE GROUPED INTO BEDSWITH MULTIPLE ANODES IN ONE LOCATION. TEST STATIONS ARE SHOWN IN GENERAL AREAS AND CAN BE FIELD LOCATED AS NECESSARY TO BE INSTALLED WITH A MINIMUM OF 2 ADJACENT ANODES AND A REFERENCE CELL AS SHOWN ON THE DETAIL.
4. ANODES AND REFERENCE CELLS SHALL BE LOCATED AT APPROXIMATELY THE SAME ELEVATION AS THE BOTTOM OF PIPING TO BE PROTECTED.
5. BACKFILL AROUND THE ANODES AND REFERENCE CELLS SHALL BE FREE OF ROCKS, CLODS, OR OTHER FOREIGN MATERIALS. BACKFILL SHALL BE PLACED IN 6" LIFTS AND THEN WELL COMPACTED. WHEN SOIL HAS BEEN PLACED TO THE TOP OF THE ANODES OR CELLS, WATER SHALL BE POURED INTO THE TRENCH TO SATURATE THE ANODES, CELLS, AND SURROUNDING SOIL.
6. ISOLATING FLANGE KITS SHALL BE INSTALLED BETWEEN FLANGES ON EACH PIPE WHERE IT RISES ABOVEGROUND. ISOLATING FLANGE KITS SHALL BE INSTALLED AFTER THE CATHODIC PROTECTION SYSTEM IS COMMISSIONED.
7. FOR UNDERGROUND PIPING AND ANODE AND TEST STATION LOCATION SEE DWG 644911 P201-S001 THROUGH 644911 P227-S001.
8. ALL STEEL FIREWATER RISERS SHALL BE PROVIDED WITH A GALVANIC ANODE.
9. PROVIDE CATHODIC PROTECTION FOR THE FOLLOWING UNDERGROUND PIPING SYSTEMS:
   - -WWD (OILY WATER SYSTEM)
   - -WWC (WASTE WATER DRAINS)
   - -TGJ (WATER WASH DRAINS)
   - -FPV (FIRE WATER RISERS)
   - -FGA (NATURAL GAS)
   - -ECB (CLOSED COOLING WATER)
   - -CAB (COMPRESSED AIR)
   - -WWB (SANITARY SEWER)



PREPACKAGED GALVANIC ANODE

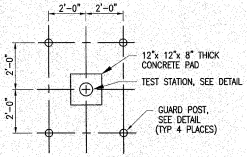
NO SCALE



ELECTRONICALLY PURE ZINC: 99.99%
ELECTRODE SURFACE AREA: 50 SQ. IN.
APPROXIMATE WEIGHT: 16 LBS.

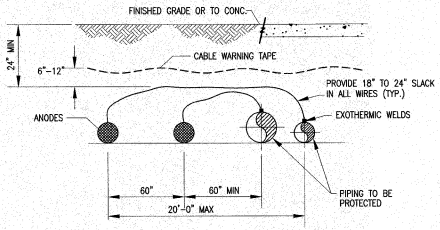
REFERENCE CELL

NO SCALE



TYPICAL TEST STATION AREA PARTIAL PLAN

NO SCALE



TYPICAL ANODE INSTALLATION

NO SCALE

NOTES:

1. SEE BILL OF MATERIALS FOR COMPLETE COMPONENT DESCRIPTIONS.

CATHODIC PROTECTION SYSTEM BILL OF MATERIALS

NO SCALE

DESCRIPTION
PREPACKAGED 20 LB MAGNESIUM ANODE WITH #12 AWG SINGLE CONDUCTOR, STRANDED COPPER, BLACK HMW PE INSULATED CABLE
TEST STATION JUCTION BOX
PREPACKAGED ZINC REFERENCE CELL WITH #14 AWG SINGLE CONDUCTOR, STRANDED COPPER, YELLOW HMW PE INSULATED CABLE
#12 AWG SINGLE CONDUCTOR, STRANDED COPPER, BLACK HMW PE INSULATED ANODE CABLE
#12 AWG SINGLE CONDUCTOR, STRANDED COPPER, WHITE RHW PE INSULATED STRUCTURE CABLE
EXOTHERMIC WELDER FOR CONNECTIONS ON HORIZONTAL PIPING SMALLER THAN 4"NPS, CADWELD PART NUMBER CAHAA-1HA
EXOTHERMIC WELDER FOR CONNECTIONS ON HORIZONTAL PIPING 4"NPS AND LARGER, CADWELD PART NUMBER CAVAT-1H
EXOTHERMIC WELDER FOR CONNECTIONS ON VERTICAL PIPING SMALLER THAN 4"NPS, CADWELD PART NUMBER CAVST-1HA
EXOTHERMIC WELDER FOR CONNECTIONS ON VERTICAL PIPING BETWEEN 4"NPS AND 10"NPS, CADWELD PART NUMBER CAVST-1HB
EXOTHERMIC WELDER FOR CONNECTIONS ON VERTICAL PIPING 12"NPS AND LARGER, CADWELD PART NUMBER CAVST-1H
EXOTHERMIC WELD METAL, CADWELD PART NUMBER CA-15
EXOTHERMIC WELD SLEEVE FOR #12 CONDUCTOR, CADWELD PART NUMBER CAB-133-1H OR APPROVED EQUAL
TAPECOAT QUICK PATCH EXOTHERMIC WELD SEALER
6" WIDE RED CABLE WARNING TAPE
GAS ELECTRONICS INSULATION TESTER, MODEL 601

10 May 2017

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001.

ORIGINAL

REFERENCE SPECS:

644911-SP-P200 PIPING MATERIALS
644911-SP-P171 UNDERGROUND PIPING FABRICATION AND INSTALLATION.

ISSUED FOR CONSTRUCTION

1	5/18/17	DK	WJ	LP	JA	JF	JF

ISSUED FOR PERMIT

0	4/27/17	KDE	KC	LON	LA	LP/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: NONE

BRIDGEPORT 05

UNDERGROUND PIPING CATHODIC PROTECTION DETAILS

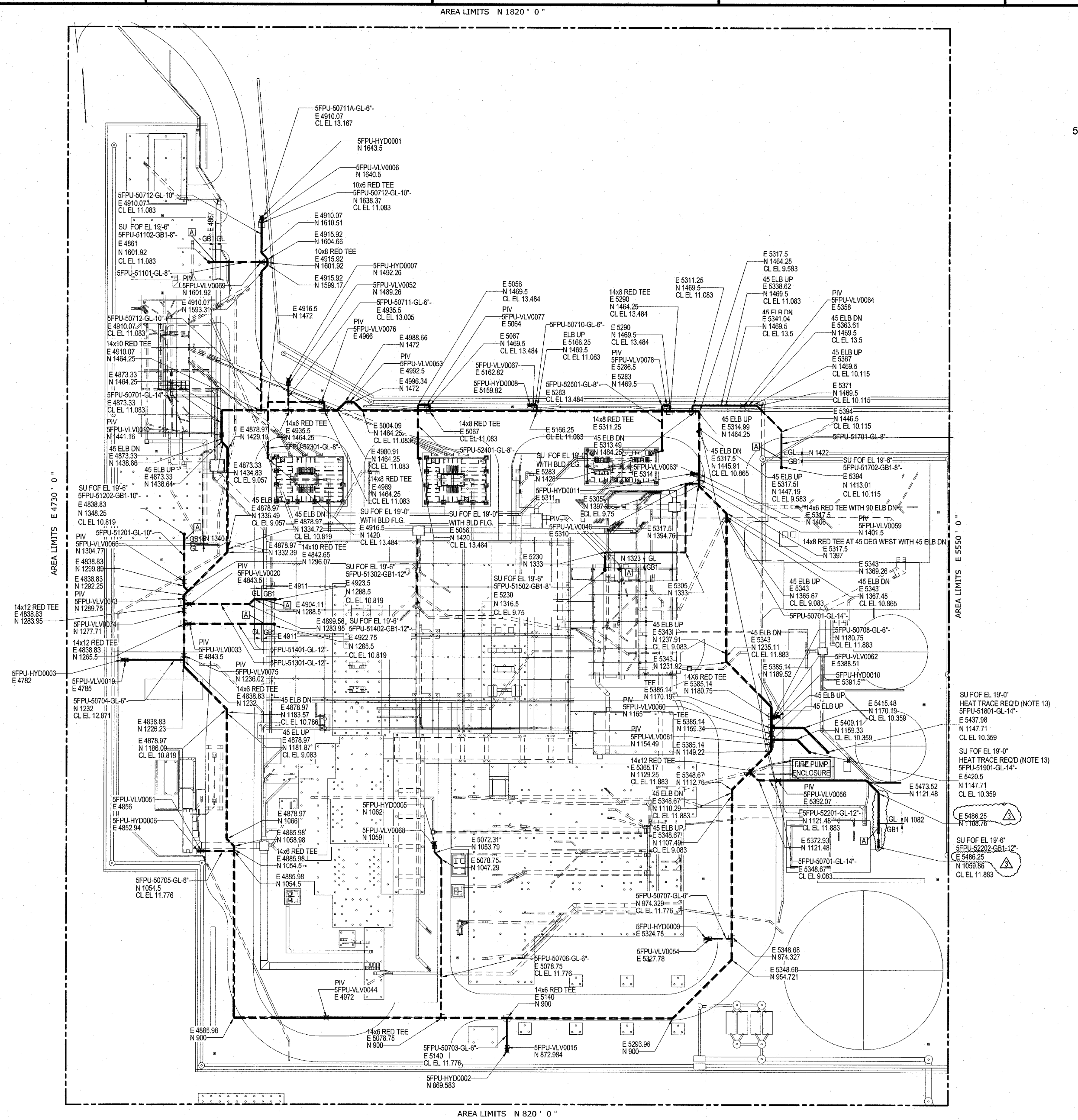
STANDARDS DESIGN-PIPING

VENDOR NO.

644911 P232-S001

1

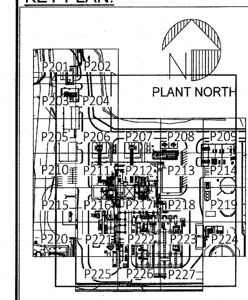
REVIEW	PROCESS	PIPING	STRUCT	MECH	ELECT	INSTR
SEEN BY	H-MAT					



LEGEND

- ● - STUB-UP (SU)
- FIRE HYDRANT
- POST INDICATOR VALVE
- VALVE IN BOX
- A - CATHODIC ANODE LOCATION

KEY PLAN:



GENERAL NOTES:

1. FIREWATER PIPING AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 24 AND SPECIFICATIONS:
   SP-P170 - SHOP FABRICATED PIPING.
   SP-P171 - UNDERGROUND PIPING FABRICATION AND INSTALLATION.
2. ALL UNDERGROUND FIREWATER SHALL HAVE A MINIMUM OF 3'-6" COVER.
3. FOR TYPICAL UNDERGROUND FIREWATER PIPING DETAILS SEE DWG 644911 P233-S002.
4. FOR OTHER UNDERGROUND PIPING PLANS SEE DWG 644911 P200 THROUGH P221.
5. FOR UNDERGROUND PIPING STANDARDS DETAILS SEE DWG 644911 P230 THROUGH P232.
6. FOR FOUNDATION LOCATION PLAN SEE DWG 644911 F002-S001.
7. FOR UNDERGROUND ELECTRICAL INFORMATION SEE DWG 644911 E300 SERIES FOR DUCTBANK AND 644911 E400 SERIES FOR GROUNDING.
8. FOR STORM WATER DRAINAGE PLAN, SEE DWG 644911 C003-S001 THROUGH C003-S006.
9. HIGH POINT OF FINISHED GRADE IS EL 18'-0". SEE FINAL GRADING PLAN DWG 644911 C004-S001.
10. HIGH POINT OF CONCRETE FLOOR FOR TURBINE BUILDING IS EL. 18'-6".
11. HIGH POINT OF CONCRETE FLOOR UNDER FIREWATER PUMP BUILDING IS EL 18'-6".
12. FOR STUB-UP WITH INSULATION / HEAT TRACE DETAIL SEE DRAWING 644911 P233-S002.
13. FOR STUB-UP WITH INSULATION FOR FREEZE PROTECTION OR INSULATION / HEAT TRACE DETAILS SEE DRAWING 644911 P233-S002.

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
3 — REVISED LINE 5FPU-52202; REMOVED HOLD	4/5/18	DEC	NR	LP	DL	SF	[illegible]
2 — ADDED CATHODIC ANODE TO LINES 5FPU-51302 AND 5FPU-51402	8/3/17	DEC	REP	LP	LA	SF	SEO
1 — REVISED SU LOCATION FOR LINES 5FPU-523, 5FPU-524 AND; 5FPU-515; REVISED EASTING FOR LINE 5FPU-515	8/3/17	DEC	KC	LP	LA	SF	SEO
0 — ISSUED FOR CONSTRUCTION	5/15/17	DEC	RET	LP	LA	SF	SEO

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

PROJECT ENGINEERING DIVISION

PSEG Power Connecticut LLC

SNC• LAVALIN CONSTRUCTORS INC.

SCALE: 1" = 50'-0"

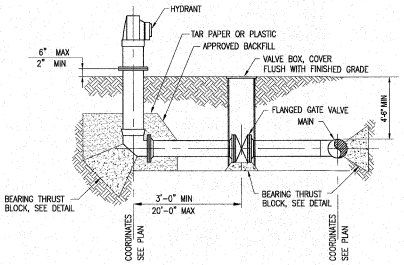
BRIDGEPORT 05

UNDERGROUND FIRE PROTECTION PIPING
FIREWATER LOOP
SHT 1 OF 2

SITE PLAN — DESIGN - CIVIL GENERAL

644911 P233-S001 — REV 3

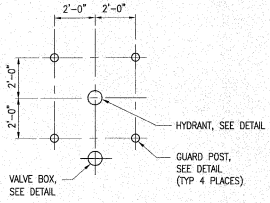
PRINTED DATE: 4/5/2018 7:26:34 AM



TYPICAL HYDRANT INSTALLATION

NOTES: SCALE: NTS

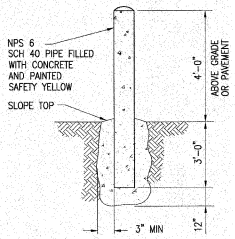
1. AFTER INSTALLATION, ALL RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES (EXCEPT THRUST BLOCKS) SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION RETARDING MATERIAL.
2. GUARD POSTS SHALL BE INSTALLED AROUND HYDRANT. SEE PARTIAL PLAN.



TYPICAL HYDRANT AREA PARTIAL PLAN

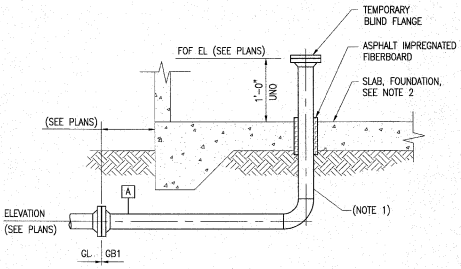
SCALE: NTS

NOTE: COORDINATE THE NORTH HYDRANTS AND PIV LOCATIONS OF BOLLARDS WITH CIVIL DRAINAGE PLACEMENT.



TYPICAL GUARD POST

SCALE: NTS



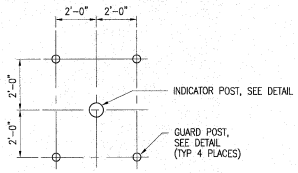
TYPICAL FIREWATER STUB-UP IN BLDG.

SCALE: NTS

NOTES:

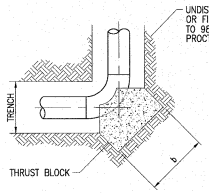
1. METALLIC PIPING SHALL BE COATED AND WRAPPED UP TO THE ABOVEGROUND FLANGE IN ACCORDANCE WITH THE PIPING MATERIAL SPECIFICATION.
2. METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ANY SLAB OR FOUNDATION REINFORCING STEEL OR OTHER CONDUCTIVE MATERIALS.

TYPICAL BEARING THRUST BLOCKS



TYPICAL POST INDICATOR AREA PARTIAL PLAN

SCALE: NTS



ELEVATION AT HYDRANT RISER

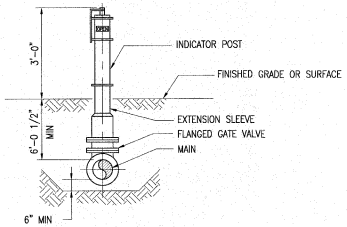
SCALE: NTS

NOTES:

1. THRUST BLOCKS SHALL BE CONSTRUCTED OF CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
2. THRUST BLOCKS SHALL BE PLACED AT EACH VALVE, HYDRANT, AND TEE AT A HYDRANT. THRUST BLOCKS ARE NOT REQUIRED ELSEWHERE.
3. THRUST BLOCKS SHALL BE PLACED SUCH THAT PIPE JOINTS WILL BE ACCESSIBLE FOR INSPECTION AND REPAIR.
4. BEARING SURFACES SHOULD BE PLACED AGAINST UNDISTURBED SOIL. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL SHALL BE COMPACTED TO AT LEAST 90% OF THE STANDARD PROCTOR DENSITY.
5. BLOCK HEIGHT (h) SHOULD BE EQUAL TO OR LESS THAN 1/2 THE TOTAL DEPTH TO THE BOTTOM OF THE BLOCK (Ht), BUT NOT LESS THAN THE PIPE DIAMETER.
6. BLOCK HEIGHT (h) SHOULD BE CHOSEN SUCH THAT THE CALCULATED BLOCK WIDTH (b) VARIES BETWEEN 1 AND 2 TIMES THE HEIGHT. b x h EQUALS AREA OF BEARING FACE (SQ FT).
7. BLOCK BEARING AREAS ARE FOR PIPING 4'-9" OR MORE BELOW GRADE AND ARE BASED ON SOIL ALLOWABLE PASSIVE PRESSURE OF 504 PSF/FT.

GRAVITY THRUST BLOCK

PIPE DIA	AREA OF BEARING FACE (SQ FT) 90	45	DEAD END	VOLUME CU.FT	LAT. AREA SQ.FT.	REBAR SIZE	EMBEDMENT
6"	22.82	12.35	16.13	38.03	3.16	#3	5 IN
8"	38.67	20.93	27.34	64.45	5.34	#4	7 IN
10"	60.07	32.51	42.48	100.12	8.29	#5	10 IN
12"	84.50	45.73	59.75	140.84	11.67	#6	15 IN
14"	101.88	55.14	72.04	169.81	14.07	#6	15 IN

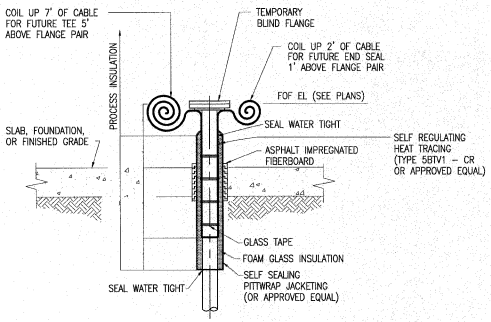


TYPICAL POST INDICATOR VALVE (PIV)

SCALE: NTS

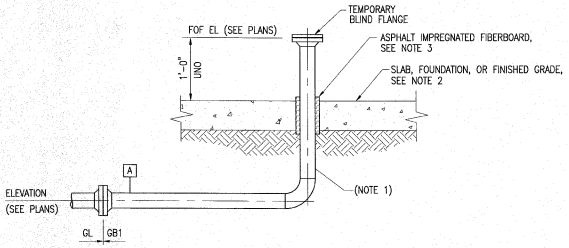
NOTES:

1. INSTALL INDICATOR FACING TOWARD NEAREST ROADWAY.
2. GUARD POSTS SHALL BE INSTALLED AROUND INDICATOR POST. SEE TYPICAL POST INDICATOR AREA PARTIAL PLAN.



TYPICAL STUB-UP WITH INSULATION

SCALE: NTS



TYPICAL STUB-UP

SCALE: NTS

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 ARE LOCATED OUTSIDE SLABS OR FOUNDATIONS, INSTALLATION OF FIBERBOARD IS NOT REQUIRED.
4. AFTER INSTALLATION, ALL RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES (EXCEPT THRUST BLOCKS) SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION RETARDING MATERIAL.
5. GUARD POSTS SHALL BE INSTALLED AROUND STUB-UPS IN HEAVY TRAFFIC AREAS. SEE DETAIL.

15 MAY 2017

GENERAL NOTES:

1. FOR GENERAL NOTES SEE DWG 644911 P200-S001.

REFERENCE SPECS:

644911-SP-P200 PIPING MATERIALS
644911-SP-P171 UNDERGROUND PIPING FABRICATION AND INSTALLATION.

ORIGINAL

ISSUED FOR CONSTRUCTION

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
0	5/16/17	TRC	BBT	WDH	JM	JF	CW

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: NONE

BRIDGEPORT 05

UNDERGROUND FIRE PROTECTION PIPING SECTIONS AND DETAILS

SHT 2 OF 2

STANDARDS DESIGN-PIPING

VENDOR NO.

644911 P233-S002

REVIEW/PROCESS SEEN BY

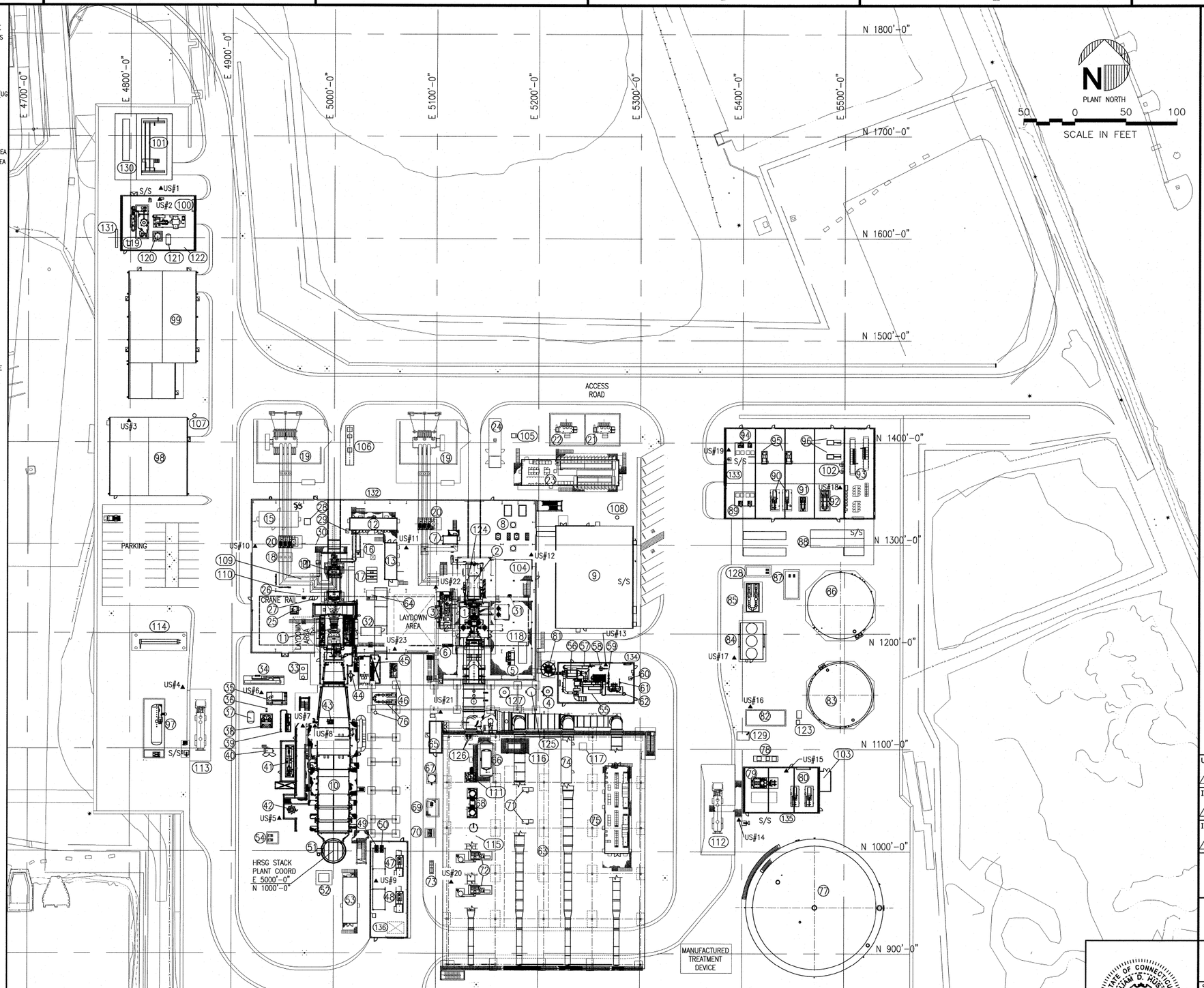
DISTR. ELECT. MECH. STRUCT. PIPING PROCESS

Exhibit 4 General Arrangement and Foundation Plan Update

The most recent General Arrangement drawing is included to update the CSC records and for reference. There have been no changes of significance since the previous submittal in April 2018. Additionally, the specific Plans and Details for the Recycle Sump (No. 128 on the General Arrangement) and the overall Foundation Location Plan are included.

Drawing No.	Rev.	Drawing Title
644911 GA002-S001	**1**	**Plant Layout – Power Block General Arrangement**
644911 F043-S001	**1**	**Recycle Water Sump – Foundation Plan**
644911 F002-S001	**16**	**Foundation Location Plan Sheet 1 of 1**

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



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

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
UPDATED EQUIPMENT LIST							
1	11/6/17	[illegible]	[illegible]	[illegible]	LP	LA	SF	SO
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

PROJECT ENGINEERING DIVISION
PSEG
Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

STATE OF CONNECTICUT WILLIAM D. HUSSEY 32272 LICENSED PROFESSIONAL ENGINEER
Nov 2017

SCALE: 1"=50'-0"

BRIDGEPORT 05

PLANT LAYOUT
POWER BLOCK
GENERAL ARRANGEMENT

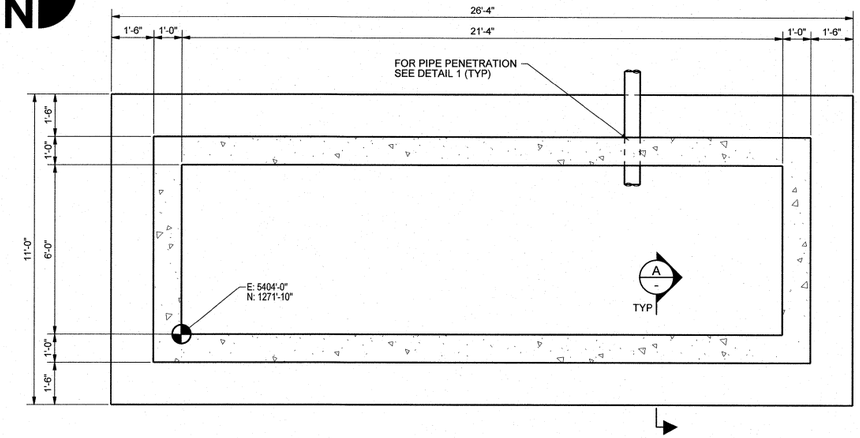
ARRANGEMENT DESIGN-CIVIL GENERAL

VENDOR NO.

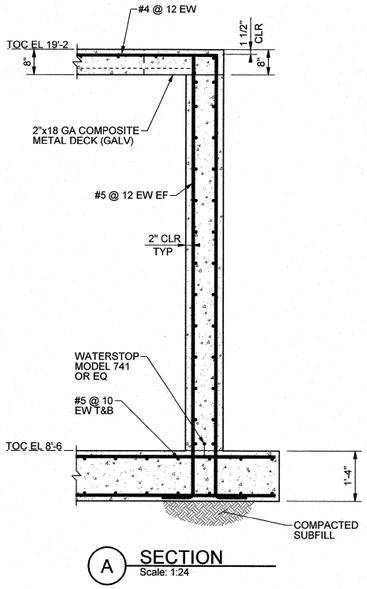
644911 GA002-S001

REV 1

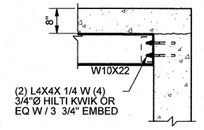
INSTR. ELECT MECH STRUCT PIPING PROCESS REVIEW/ SEEN BY



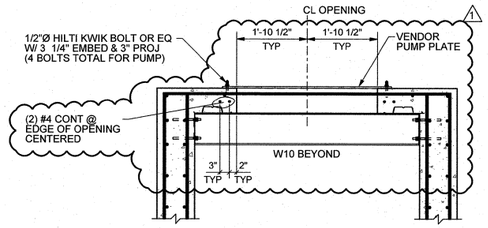
PLAN AT TOC EL 8'-6"
CONC VOL = 59.0 CU YDS SCALE: 1:32



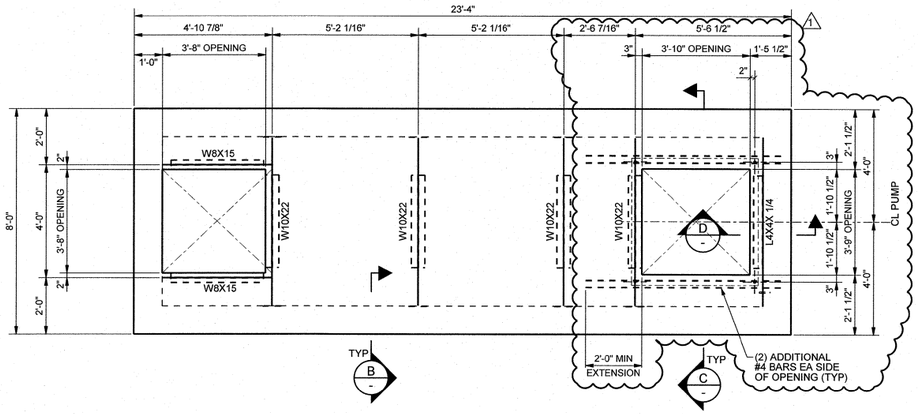
A SECTION
Scale: 1:24



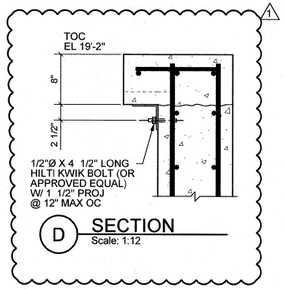
B SECTION
Scale: 1:24



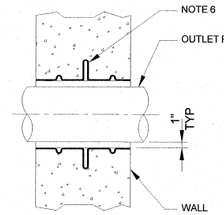
C SECTION
Scale: 1:24



PLAN AT TOC EL 19'-2"
SCALE: 1:32



D SECTION
Scale: 1:12



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

1 DETAIL
NTS

GENERAL NOTES:

1. FOR STRUCTURAL NOTES SEE DRAWING 644911 S001-S001
2. FOR STANDARD CONCRETE DETAILS SEE DRAWING 644911 F001-S001 & S002
3. CONCRETE STRENGTH @ 28 DAYS = 5000 PSI.
4. LID LIVE LOAD = 200 PSF.
5. HATCH LIDS SHALL BE NEENAH R6660-RP LIGHT DUTY LID AND FRAME OR APPROVED ALTERNATE.
6. PROVIDE 'CENTRY-LINE SLEEVE' OR APPROVED ALTERNATE FOR ALL PIPE PENETRATIONS. INSTALL PER MANUFACTURERS WRITTEN RECOMMENDATIONS.
7. BACKFILL SHALL BE DOT STANDARD M.02.06 TYPE C, COMPACTED TO TO 95% MAX DRY DENSITY.
8. ALL STEEL TO BE GALVANIZED.
9. FOR UNDERGROUND PIPING SEE DRAWING 644911 P200-S001.
10. FOR UNDERGROUND ELECTRICAL SEE DRAWING 644911 E303-S001.

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISED RECYCLE WATER PUMP OPENING						
1 5/4/18	BS	CL	CL			
ISSUED FOR CONSTRUCTION						
0 10/16/2017	AS	MK	GG	GG/LA	SF	SD
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
MOHAMMED R. KOURETCHIAN
32688
LICENSED PROFESSIONAL ENGINEER
5/4/18

SCALE: AS NOTED

BRIDGEPORT 05

RECYCLE WATER SUMP
FOUNDATION PLAN

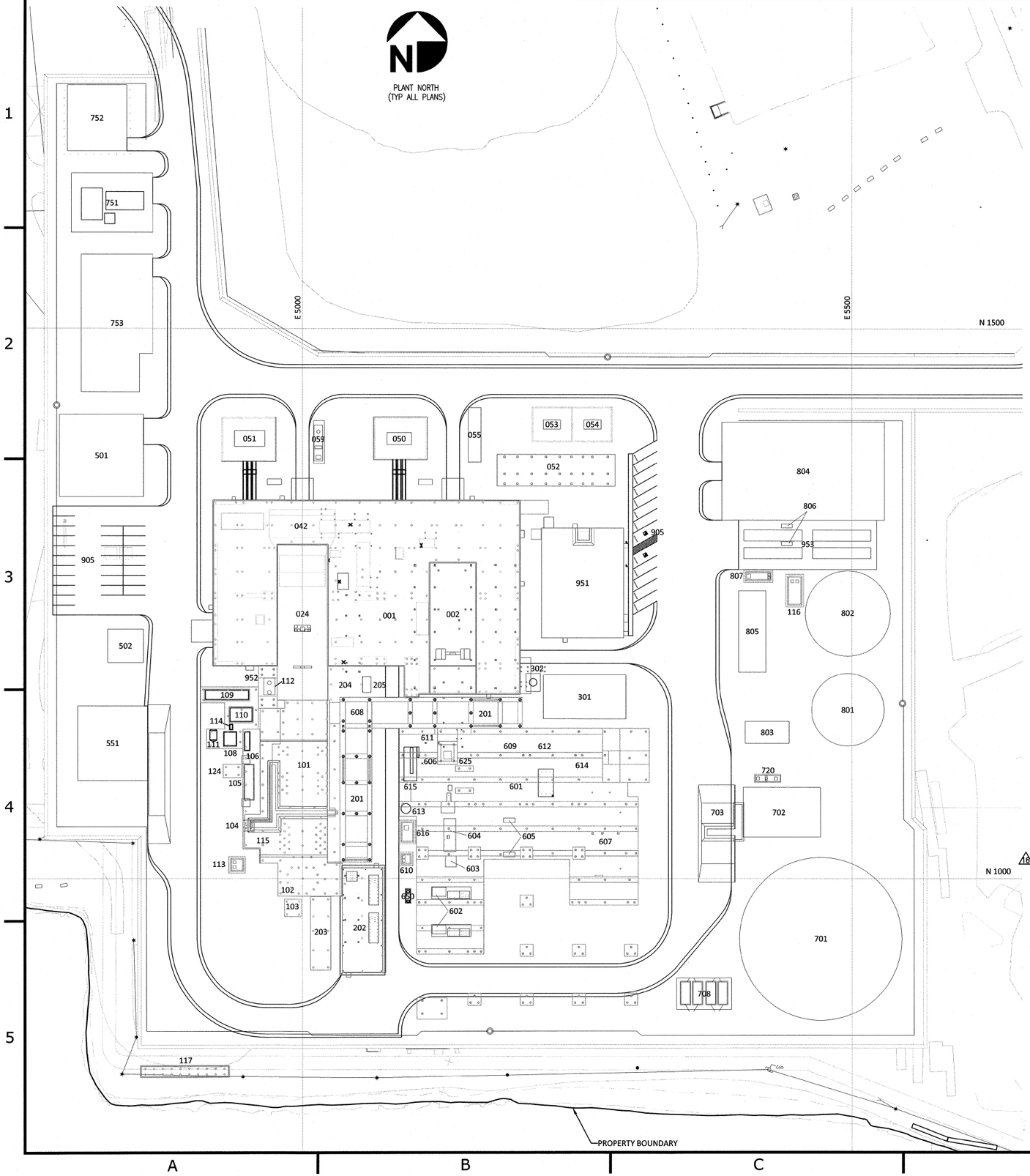
SHT 1 OF 1

PLAN DESIGN-CIVIL CONCRETE

VENDOR NO. 644911 F043-S001 REV 1

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

MODEL NAME: F_UG



FOUNDATION DRAWING SCHEDULE		
ITEM	DESCRIPTION	FOUNDATION DWG No.
001	TURBINE/GENERATOR ENCLOSURE (PEMB) FOUNDATION	644911 F003–S005 (PILE PLAN) 644911 F005–S001
002	STG FOUNDATION	644911 F003–S006 (PILE PLAN) 644911 F006–S001
024	GAS TURBINE GENERATOR FOUNDATION	644911 F003–S002 (PILE PLAN) 644911 F004–S001
042	CTG AIR INLET FOUNDATION	644911 F004–S001
050	STG GSU TRANSFORMER FOUNDATION	644911 F003–S004 (PILE PLAN) 644911 F007–S001
051	CTG GSU TRANSFORMER FOUNDATION	644911 F003–S004 (PILE PLAN) 644911 F008–S001
052	MV ELECTRICAL PDC ENCLOSURE FOUNDATION	644911 F009–S001
053	UNIT AUX TRANSFORMER 2000 FOUNDATION	644911 F003–S010 (PILE PLAN) 644911 F010–S001
054	UNIT AUX TRANSFORMER 1000 FOUNDATION	644911 F003–S010 (PILE PLAN) 644911 F010–S001
055	STANDBY DIESEL GENERATOR FOUNDATION	644911 F047–S001
059	OIL/WATER SEPARATOR (UG) FOUNDATIONS	644911 F012–S003
101	HEAT RECOVERY STEAM GENERATOR FOUNDATION	644911 F003–S003 (PILE PLAN) 644911 F013–S001
102	HEAT RECOVERY STEAM GENERATOR STACK FOUNDATION	644911 F013–S001
103	CEMS EQUIPMENT MODULE FOUNDATION	644911 F054–S001
104	HRSG BLOWDOWN TANK FOUNDATIONS	644911 F013–S001
105	HRSG AMMONIA FLOW CONTROL SKID FOUNDATION	644911 F013–S001
106	HRSG BURNER FUEL SKID FOUNDATION	644911 F013–S001
108	FUEL GAS ABSOLUTE SEPARATOR FOUNDATION	644911 F017–S001
109	FUEL GAS PERFORMANCE HEATER FOUNDATION	644911 F017–S001
110	AUX STEAM TO WATER STARTUP FUEL HEATER FOUNDATION	644911 F017–S001
111	FUEL GAS CONDITIONING SKID DRAINS TANK	644911 F017–S001
112	WATER WASH/FALSE START DRAINS TANK (UG) FOUNDATION	644911 F020–S001
113	HRSG BLOWDOWN SUMP FOUNDATION	644911 F021–S001
114	FUEL GAS FLOW METER	644911 F017–S001
115	HRSG ACOUSTIC SHROUD FOUNDATION	644911 F013–S001
116	GENERAL SERVICES ENCLOSURE SUMP FOUNDATION	644911 F056–S001
117	BARGE UNLOADING FOUNDATION	644911 SK012–S001
124	CEMS SHELTER INLET	644911 F017–S001
201	HRSG UTILITY RACK FOUNDATION	644911 F003–S018 (PILE PLAN) 644911 F023–S001
202	BOILER FEEDWATER PUMP ENCLOSURE (PEMB) FOUNDATION	644911 F003–S012 (PILE PLAN) 644911 F024–S001
203	HRSG ELECTRIC PDC ENCLOSURE FOUNDATION	644911 F025–S001
204	CT LUBE OIL RESERVOIR FOUNDATION	644911 F026–S001
205	CT LIQUID FUEL FILTER SKID FOUNDATION	644911 F026–S001
301	AUX BOILER ENCLOSURE (PEMB) FOUNDATION	644911 F003–S007 (PILE PLAN) 644911 F028–S001
302	AUX BOILER STACK FOUNDATION	644911 F003–S007 (PILE PLAN) 644911 F028–S001
501	WAREHOUSE/MAINTENANCE BUILDING FOUNDATION	644911 F029–S001
502	BULK HYDROGEN SYSTEM FOUNDATION	644911 F030–S001
551	AQUEOUS AMMONIA STORAGE & UNLOADING AREA FOUNDATION	644911 F003–S014 (PILE PLAN) 644911 F031–S001
601	AIR COOLED CONDENSER (ACC) FOUNDATION	644911 F003–S009 (PILE PLAN) 644911 F032–S001
602	LIQUID RING VACUUM PUMPS A & B	644911 F032–S001
603	POLISHER AIR RECIEVER	644911 F032–S001
604	PRECOAT POLISHING SKID A & B	644911 F032–S001
605	CONDENSATE PUMPS A & B	644911 F032–S001
606	ADVANCED PRECOAT SKID	644911 F032–S001
607	ACC ELECTRIC PDC ENCLOSURE FOUNDATION	644911 F032–S001
608	CT AIR INLET HEATING CLOSED COOLING WATER SKID	644911 F023–S001
609	STEAM JET AIR EJECTOR	644911 F032–S001
610	WASTE WATER COLLECTION SUMP FOUNDATION	644911 F035–S001
611	STEAM DUCT DRAIN POT PUMPS A & B	644911 F032–S001
612	CYCLE CHEMICAL FEED ENCLOSURE	644911 F032–S001
613	RESIN RECOVERY TANK FOUNDATION	644911 F032–S001
614	FIN TUBE CLEANING SYSTEM	644911 F032–S001
615	HRSG SAMPLE PANEL ENCLOSURE	644911 F032–S001
616	SPENT SLURRY SUMP FOUNDATIONS	644911 F037–S001
625	ACC CONDENSATE COLLECTION TANK AND DEAERATOR FOUNDATION	644911 F032–S001
650	OIL/WATER SEPARATOR (UG) FOUNDATION	644911 F012–S001
701	ULSD TANK (ULTRA LOW SULFUR DIESEL) FOUNDATION	644911 F038–S001
702	FUEL OIL FORWARDING PUMP ENCLOSURE (PEMB) FOUNDATION	644911 F039–S001
703	FUEL OIL TRUCK UNLOADING AREA	644911 F039–S002
708	MANUFACTURED TREATMENT DEVICE FOUNDATION	644911 C003–S001
720	OIL/WATER SEPARATOR (UG) FOUNDATIONS	644911 F012–S002
751	FUEL GAS PROCESSING ENCLOSURE (PEMB) FOUNDATIONS	644911 F003–S013 (PILE PLAN) 644911 F040–S001
752	FUEL GAS METERING STATION FOUNDATIONS	644911 F041–S001
753	GIS ENCLOSURE FOUNDATIONS	644911 F042–S001 (PILE PLAN) 644911 F042–S001
801	SERVICE/FIRE WATER STORAGE TANK FOUNDATION	644911 F044–S001
802	DEMIN WATER TANK FOUNDATION	644911 F045–S001
803	FIRE PUMP ENCLOSURE FOUNDATION	644911 F050–S001
804	GENERAL SERVICES ENCLOSURE (PEMB) FOUNDATION	644911 F051–S001
805	AUX COOLING TOWER FOUNDATION	644911 F052–S001
806	DEMIN TRAILER HOOKUP SUMPS	644911 F058–S001
807	RECYCLE WATER SUMP FOUNDATION	644911 F043–S001
905	PARKING/SIDEWALK	–
951	ADMIN/CONTROL/AUX ELECT BUILDING (PEMB) FOUNDATION	644911 F003–S008 (PILE PLAN) 644911 F046–S001
952	SOUND WALL FOUNDATION	644911 F003–S015 (PILE PLAN) 644911 F057–S001
953	DEMIN WATER TRAILERS/CYCLE MAKEUP TREATMENT FOUNDATION	644911 F053–S001

GENERAL NOTES:

LEGEND:

REFERENCE DWGS:

REFERENCE SPECS:

ORIGINAL

REVISION	DATE	BY	CHECKED	APPROVED	PROJ. TECH.	DIR. TECH.	PROJ. MGR.
16	11/20/17	BS	MK	GG	GG/LA	SF	SF/SO
ADDED FOUNDATION							
15	11/15/17	AS	MK	GG	GG/LA	SF	SF/SO
ADDED NOTES							
14	11/10/17	DC	MK	GG	LA	SF	SO
ADDED FOUNDATION & DRAWING NO.'S							
13	10/26/17	BS	MK	GG	GG/LA	SF	SO
ADDED FOUNDATIONS							
12	10/16/17	AS	MK	GG	GG/LA	SF	
ADDED FOUNDATION & DRAWING No.'s							
11	10/9/17	AS	MK	MK/GG	LA	SF/BT	
ADDED DRAWING No.'s							
10	9/28/17	BS	MK	GG	LA	SF	SO
ADDED FOUNDATIONS							
9	9/25/17	DC	MK	GG	LA	SF	
ADDED FOUNDATIONS							
8	09/08/17	DC	GG	GG	LA	SF	

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

PROJECT ENGINEERING DIVISION
PSEG Power Connecticut LLC

SNC•LAVALIN CONSTRUCTORS INC.

SCALE: 1"=50'

BRIDGEPORT 05

FOUNDATION LOCATION PLAN

SHT 1 OF 1

PLAN — DESIGN - CIVIL CONCRETE

VENDOR NO.

644911 F002-S001

REV 16

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