T. L. Harpster
VP-Bell Bend Project-Development

PPL Bell Bend, LLC
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

November 14, 2011

Mr. Justin Dresch
Pennsylvania DEP Northeast Regional Office
Bureau of Watershed Management
2 Public Square
Wilkes-Barre, Pennsylvania 18711-1915

BELL BEND NUCLEAR POWER PLANT
JOINT PERMIT APPLICATION: PPL RESPONSE TO ADMINISTRATIVE INCOMPLETENESS NOTIFICATION
BNP-2011-210 Docket No. 52-039

References: 1) J. Dresch, PADEP, to T. L. Harpster, "Acknowledgement Letter/Administrative Incompleteness Notification, DEP Application No. E40-720", October 25, 2011

Attached are PPL's responses to the specific comments in the referenced notification letter. In addition, we are providing a cross reference table to facilitate your review.

The changes to the JPA requested in Reference 1 are being included in Revision 1 of the JPA, which we expect to provide to the PADEP within several days.

Please do not hesitate to contact Brad Wise of my staff [610-774-6508 or bawise@pplweb.com] directly with any questions you may have regarding this response to your comments.

Respectfully,

Terry L. Harpster

TLH/kw

Enclosure: PPL Responses to PADEP Administrative Incompleteness Notification

cc: (W/ Enclosure)

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Joshua Longmore
Luzerne Conservation District
485 Smiths Pond Road
Shavertown, PA 1 8708

Ms. Karen J. Karchner
Zoning/Building Code Official
38 Bomboy Lane
Berwick, Pa 18603

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

Enclosure

PPL Responses to PADEP Administrative Incompleteness Notification

Responses to the PADEP October 25, 2011:

Administrative Incompleteness Notification
DEP Application No. E40-720
APS No. 753143
Bell Bend Nuclear Power Plant
Salem Township, Luzerne County

Comments:

1. Please more clearly define which wetland areas are "to be created" and which wetland areas are existing natural features. This comment is applicable to Impacts: B,C,D,E, I, J, K, M, P, Q, and R.

   Response: No wetland creation is proposed in conjunction with any impacts with letter identifiers. All Wetland impacts are depicted in detail on the Impacts Map (Enclosure D2, Section R, Binder 1B). Wetland mitigation areas are shown as a hatched area on the JPA Plans. More detailed information regarding creation and enhancement areas are provided in Section R (Binder 1C) in the mitigation design reports and plans.

2. Please provide a delineation of the 100-year floodway and the 100-year floodplain associated with all watercourses impacted by the project. If a FEMA Flood Insurance Rate Map depicting the limits of the 100-year floodway and/or the 100-year floodplain is not available, then the 100-year floodway is assumed to extend 50' laterally from the point at which the normal water elevation within the stream channel meets the stream's bank. This comment is applicable to watercourses altered as a result of Impacts: A, B, C, D, E, E, G, H, N, O, U, and V.

   Response: The floodway has been added to the Impacts Map (Enclosure D2, Section R, Binder 1B). Enlargements have been added to this plan to depict all impacts affecting the regulatory floodway.

3. Please provide a "utility detail map" on sheet "B2-S2" for Bridge #6.

   Response: A Utility Detail Table has been added to Sheet B2-S2 of the Bridge Drawings.

4. Please note that "Wetland #10" on sheet "B3-S1" should be labeled as "Wetland #12." This comment is applicable to "Impact B."

   Response: The existing wetland boundary and wetland labels have been corrected on Sheet B3-S1 of the Bridge Drawings.

5. Please provide the size and material type utilized for the water intake and blowdown pipeline associated with "Impact M."

   Response: The sizes and materials of the intake and blowdown lines have not yet been finalized. However, likely sizes and materials have been noted on Figure 8P on sheet CS3206 of the JPA Plans (Binder 1A), with a note that these are subject to final design. Text descriptions have also been added to Section H, Project Narrative (Binder 1) and Section J, Environmental Assessment, Enclosure D (Binder 1B).

6. Please provide more details on the intake structure ("Impact S") within the floodway.

   Response: The existing and proposed floodway have been added to Figure 8F on Sheet CS3205 of the JPA Plans (Binder 1A). This figure shows a cross section of the intake structure area, including the existing river bank.

7. Please add the relocation of Walker Run to the overall impacts table under "Impact V."

   Response: Enclosure D4 has been revised to clarify the proposed relocated length of Walker Run associated with the Walker Run mitigation area. Because this is not an impact associated directly with the construction of the power plant, this impact has not been assigned a letter. However the impacts quantities associated with the mitigation sites have now been clarified in the mitigation section of Enclosure D4 of the Environmental Assessment (Section J, Binder 1B)

Attachments:

1. Table of where to find various plans and tables within the JPA application.
2. Revised Enclosure D2 – BBNPP Wetland & Watercourse Impact Location Map – DEP
3. Revised Enclosure D2- Enlargements - BBNPP Wetland & Watercourse Impact Location Map – DEP
4. Revised Enclosure D4 – BBNPP Wetland & Watercourse Impacts – DEP
5. Revised Bridge drawings B2-S2, B3-S1 and revised drawings CS3205 and CS3206

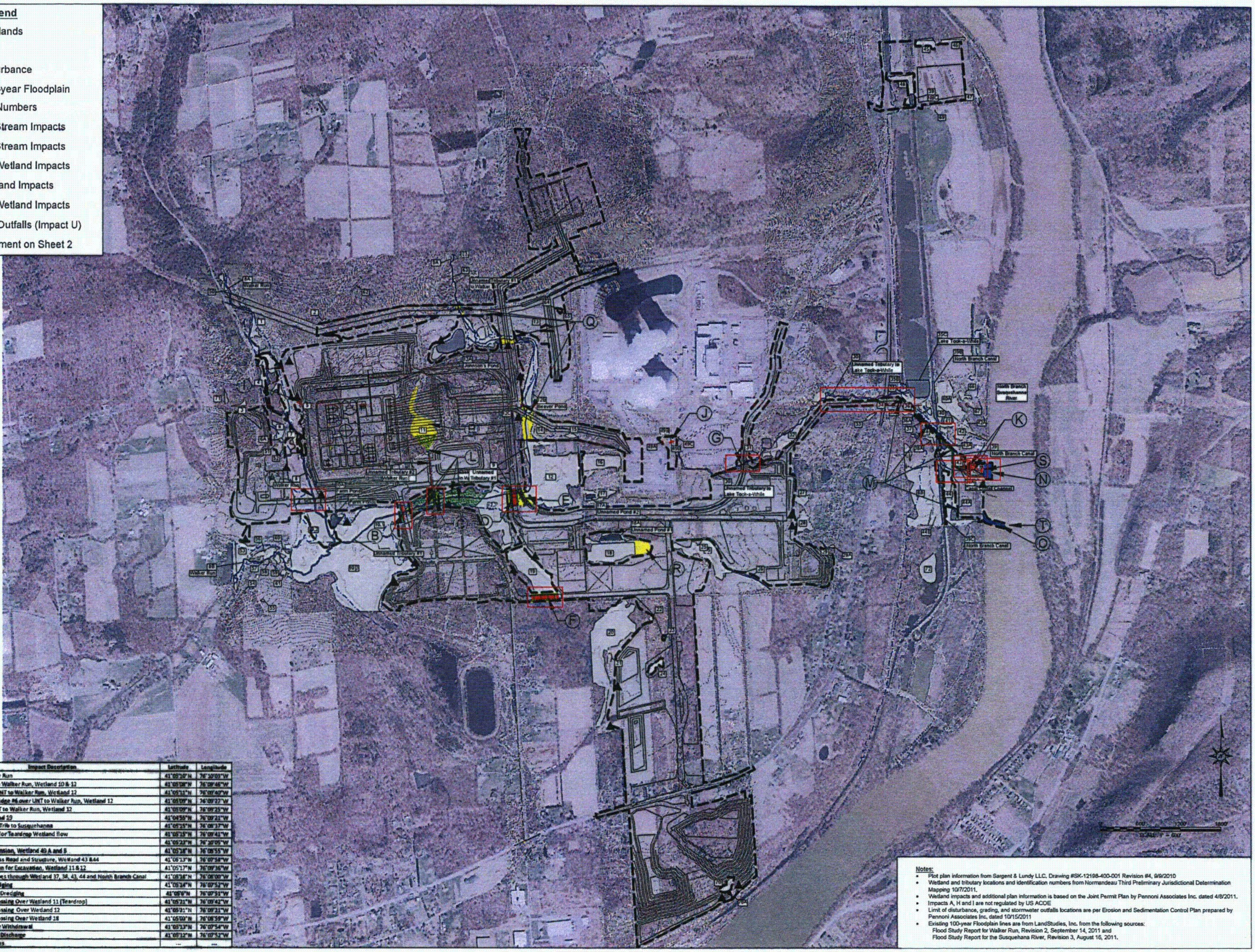
In an effort to aid DEP in the review of the BBNPP JPA, the following table is being provided with the intent of clarifying the purpose of the various plans and tables included in the JPA document and the identifying the pertinent information contained in those plans.

BBNPP Joint Permit Application Roadmap

Document	Location in JPA	Purpose	Pertinent information
Joint Permit Application (JPA) Plans	Section F, Binder 1A	Meets the requirement of Item F of the JPA Checklist. Provides plan view of entire site, with details of features to be permitted as well as overall site improvements for context.	Includes plan view showing locations of existing and proposed features as well as cross sections, profiles, and details of proposed improvements. Existing wetlands, streams, and floodplains are shown, as well as the overall extent of proposed impacts and mitigation sites.
Bridge Drawings	Section F, Binder 1A	Depicts the structural design of the proposed bridges	Details bridge configurations, materials, and dimensions. Shows plan view, profile, and cross sections, as well as typical details of structural components. Existing jurisdictional features are shown for reference only
Impacts Map, Enclosure D2	Section R, Binder 1B	Defines extent and categorizes water obstructions and encroachments per Chapter 105 regulations. **This plan should be the primary source for the identification of the extent of and type of project impacts to Waters of the Commonwealth,** as it provides more specific detail on impacts than the JPA plans.	Defines the extent of permanent, temporary, and indirect project impacts to Waters of the Commonwealth. Impacts are identified by a letter, which is consistently shown on the JPA Plans and Impacts Table. Existing wetlands, watercourses, floodway, and floodplain are shown and identified. Enlargements of impact areas are provided for clarity where needed.
Impacts Table, Enclosure D4	Section R, Binder 1B	Companion to Impacts Map, this table quantifies wetland impacts in terms of permanent (by Cowardin Classification and total), temporary, and indirect, as well as stream impacts (temporary and permanent). Wetland and stream mitigation acreages and lengths are also provided in a separate section of this table. **This table should be the primary source for impact and mitigation quantities.**	Includes latitude/ longitude, EV status, water-dependent status, GP or waiver qualification, permanent and temporary stream and wetland impacts, indirect impacts, lost functions/ values, and PFO loss. Also includes Summary of mitigation quantities including net wetland creation (by Cowardin classification and total), net stream restoration, functions/ values gained and PFO created.
Walker Run Floodplain Map	Section N, Binder 1	As part of the Flood Study Report for Walker Run and Unnamed Tributary #1, this plan delineates existing and proposed floodplains and floodways.	Delineates the existing and proposed 100-yr and 500-yr floodplain and the proposed floodway. Current Effective FEMA floodway, 100-yr and 500-yr floodplain are also shown. Proposed site features are shown for reference.
Susquehanna River Floodplain Map	Section N, Binder 1	As part of the Flood Study Report for the North Branch of the Susquehanna River, this plan delineates existing and proposed floodplains and floodways.	Delineates the existing and proposed 100-yr and 500-yr floodplain and existing and proposed floodway. Current Effective FEMA floodway, 100-yr and 500-yr floodplain are also shown. Proposed site features are shown for reference.
Mitigation Plans	Section R, Binder 1C	Provides detailed information regarding proposed mitigation sites	Detailed Mitigation Plans and Design reports are provided for the mitigation sites along Walker Run, at Confers Lane, and in and along the North Branch Canal at the Riverlands. Mitigation plans provide detailed grading, cross sections, and construction details as well as planting plans for all mitigation areas. Design reports include all pertinent design information and wetland and stream creation and enhancement quantities.

Legend

- Existing Wetlands
- Streams
- Limit of Disturbance
- Existing 100-year Floodplain
- Wetland ID Numbers
- Permanent Stream Impacts
- Temporary Stream Impacts
- Permanent Wetland Impacts
- Indirect Wetland Impacts
- Temporary Wetland Impacts
- ▲ Stormwater Outfalls (Impact U)
- See Enlargement on Sheet 2



Impact ID	Impact Description	Latitude	Longitude
A	Bridge #4 over Walker Run	41°05'10"N	76°10'03"W
B	Bridge #3 over UNT to Walker Run, Wetland 10 & 12	41°05'08"N	76°09'46"W
C	Pipe Bridge #7 over UNT to Walker Run, Wetland 12	41°05'11"N	76°09'40"W
D	Bridge #2 and pipe Bridge #6 over UNT to Walker Run, Wetland 12	41°05'09"N	76°09'27"W
E	RR Bridge #5 over UNT to Walker Run, Wetland 12	41°05'09"N	76°09'25"W
F	Bridge #1 over Wetland 19	41°04'55"N	76°09'21"W
G	Railroad culvert over Trib to Susquehanna	41°05'15"N	76°08'37"W
H	Culvert replacement for Teardrop Wetland flow	41°05'15"N	76°09'41"W
I	Power Block Fill	41°05'23"N	76°10'05"W
J	SSES Switchyard Expansion, Wetland 49 A and B	41°05'18"N	76°08'55"W
K	Intake Structure Access Road and Structure, Wetland 43 & 44	41°05'13"N	76°07'58"W
L	Dewatering Drawdown for Excavation, Wetland 11 & 12	41°05'17"N	76°09'36"W
M	Intake/ Blowdown lines through Wetland 37, 38, 43, 44 and North Branch Canal	41°05'18"N	76°08'00"W
N	Intake Line River Dredging	41°05'14"N	76°07'52"W
O	Blowdown Line River Dredging	41°05'6"N	76°07'51"W
P	Transmission Line Crossing Over Wetland 11 (Teardrop)	41°05'21"N	76°09'42"W
Q	Transmission Line Crossing Over Wetland 12	41°05'21"N	76°09'21"W
R	Transmission Line Crossing Over Wetland 18	41°05'03"N	76°08'59"W
S	Intake Structure River Withdrawal	41°05'13"N	76°07'54"W
T	Blowdown Line River Discharge	41°05'12"N	76°07'52"W
U	Stormwater Discharges	---	---

Notes:

- Plot plan information from Sargent & Lundy LLC, Drawing #SK-12198-400-001 Revision #4, 9/9/2010
- Wetland and tributary locations and identification numbers from Normandeau Third Preliminary Jurisdictional Determination Mapping 10/7/2011.
- Wetland impacts and additional plan information is based on the Joint Permit Plan by Pennoni Associates Inc. dated 4/8/2011.
- Impacts A, H and I are not regulated by US ACOE
- Limit of disturbance, grading, and stormwater outfalls locations are per Erosion and Sedimentation Control Plan prepared by Pennoni Associates Inc. dated 10/15/2011
- Existing 100-year Floodplain lines are from LandStudies, Inc. from the following sources:
  Flood Study Report for Walker Run, Revision 2, September 14, 2011 and
  Flood Study Report for the Susquehana River, Revision 3, August 16, 2011.

PA 042324

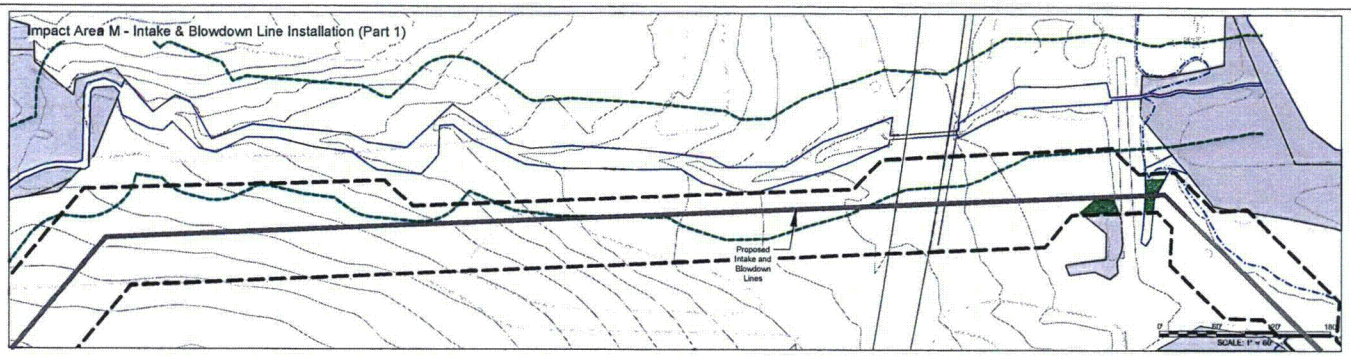
LandStudies
717-627-4440
fax: 717-627-4660
landstudies.com
land@landstudies.com
315 North Street | Lititz, PA 17543

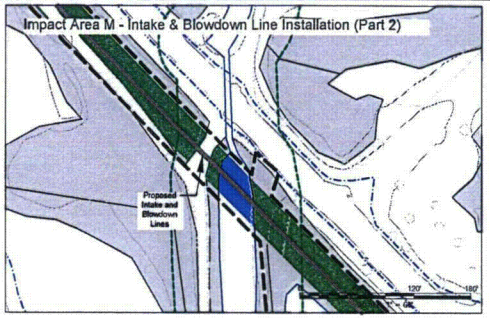
PROJECT:
PPL, BELL BEND
Bomboy Lane
Berwick, PA 18603

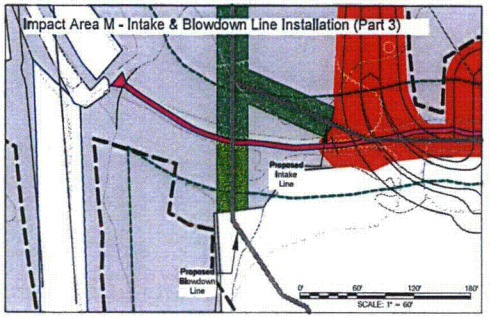
SHEET TITLE:
ENCLOSURE D2 - BBNPP WETLAND & WATERCOURSE IMPACT LOCATION MAP - DEP
Bell Bend Nuclear Power Plant
Salem Township
Luzerne County, PA

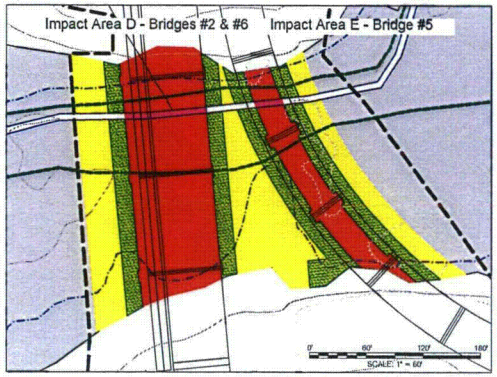
Revisions		
No.	Date	Description
1	6/14/11	UPDATE LOD & STORMWATER OUTFALLS
2	10/14/11	UPDATE LOD & WETLAND AREAS
3	11/8/11	ADD FLOODWAY ENLARGEMENTS

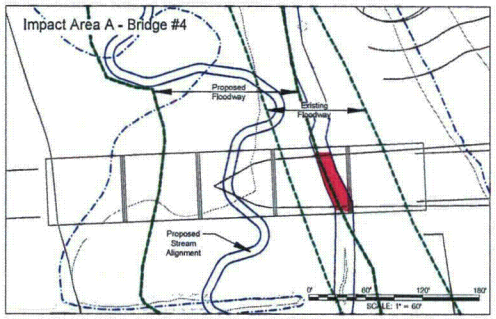
Project Number: E-726-L8
Drawn By: JS
Checked By: BE
Date: April 29, 2011
Scale: 1" = 600'
Drawing Number: WI-DEP-001
Sheet Number: **1 OF 3**

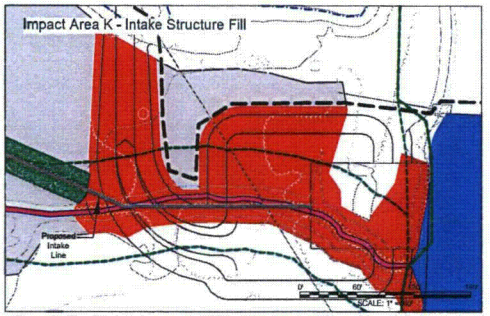


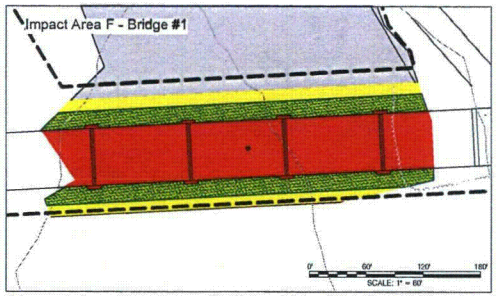


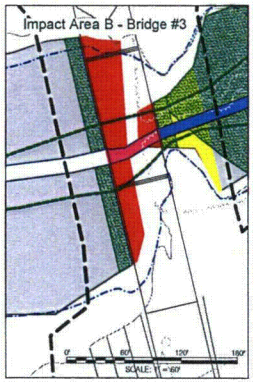


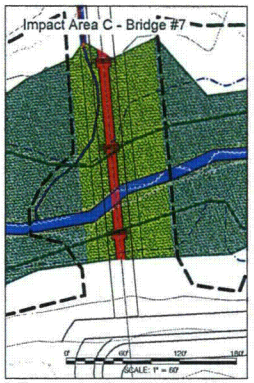


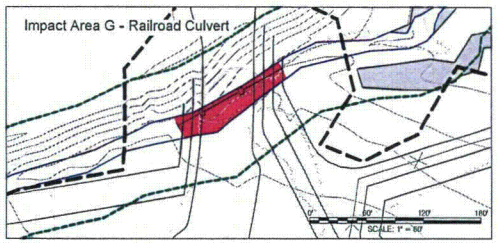


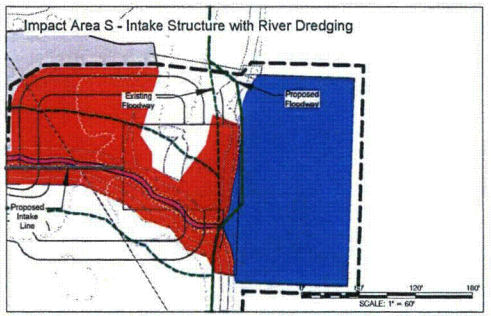












Legend

- Existing Wetlands
- Streams
- Limit of Disturbance
- Existing 100-year Floodplain
- Floodway (FEMA, LandStudies Inc. & 50' Buffer)*
- Wetland ID Numbers
- Permanent Stream Impacts
- Temporary Stream Impacts
- Permanent Wetland Impacts
- Indirect Wetland Impacts
- Temporary Wetland Impacts
- Stormwater Outfalls (Impact U)

* Regulatory floodways delineated on this plan are from the following sources:

- Susquehanna River: *Bell Bend Nuclear Power Plant Flood Study Report Susquehanna River (LSI Doc. No. FS-SR-001)* by LandStudies, Inc. Revision 3, August 16, 2011
- Walker Run: *FEMA Flood Insurance Study Panel 20 of 20 for the Township of Salem, Pennsylvania, Luzerne County Community-Panel Number 420625 0020 B, Effective March 18, 1980* and *Bell Bend Nuclear Power Plant Flood Study Report Walker Run (LSI Doc. No. FS-WR-001)* by LandStudies Inc. Revison 2, September 14, 2011
- All Other Areas: 50' from existing edge of water

PA 042324

717-627-4440
fax: 717-627-4660
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land@landstudies.com
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PROJECT: PPL, BELL BEND
Bomboy Lane
Berwick, PA 18603

SHEET TITLE: ENCLOSURE D2, ENLARGEMENTS - BBNPP WETLAND & WATERCOURSE IMPACT LOCATION MAP - DEP
Bell Bend Nuclear Power Plant
Salem Township
Luzerne County, PA

Revisions		
No.	Date	Description
1	6/14/11	UPDATE LOD & STORMWATER OUTFALLS
2	10/14/11	UPDATE LOD & WETLAND AREAS, ADD FLOODWAY ENLARGEMENTS
3	11/8/11	

Project Number: E-726-L8
Drawn By: JS
Checked By: BE
Date: April 29, 2011
Scale: 1" = 60'
Drawing Number: WH-DEP-001A

Sheet Number: 2 OF 3

Enclosure D4 11/1/2011

BBNPP Wetland and Watercourse Impacts and Mitigation

DEP Impacts and Mitigation

						DEP Jurisdictional Wetland Impacts					DEP Stream Impacts				DEP		
						Temporary	Permanent *	PFO	PSS	PEM	Permanent*		Temporary		Indirect Impacts	Fun./ Values Lost	PFO Loss
Impact ID	Impact Description	Latitude	Longitude	EV Wetland?	Water Dependent?	Qualifies for GP or Waiver?	(ac.)	(ac.)	(ac.)	(ac.)	(ac.)	(LF)	(ac.)	(LF)	(ac.)	(ac.)		(ac.)
A	Bridge B4 over Walker Run	41°05'10"N	76°10'05"W	NO	YES	YES -GP7	---	---	---	---	---	65	0.03	---	---	---	None	---
B	Bridge B3 over UNT to Walker Run, Wetland 10 & 12	41°05'08"N	76°09'46"W	YES	YES	NO	0.09	0.54	0.01	---	0.13	62	0.02	---	---	0.07	PFO wildlife habitat	0.09
C	Pipe Bridge #7 over UNT to Walker Run, Wetland 12	41°05'11"N	76°09'40"W	YES	YES	NO	0.16	0.05	0.05	---	---	12	0.00	---	---	0.37	PFO wildlife habitat	0.42
D	Bridge #2 and pipe Bridge B6 over UNT to Walker Run, Wetland 12	41°05'09"N	76°09'27"W	YES	YES	NO	0.18	0.50	0.50	---	---	87	0.01	---	---	0.50	PFO wildlife habitat	1.00
E	RR Bridge #5 over UNT to Walker Run, Wetland 12	41°05'08"N	76°09'25"W	YES	YES	NO	0.23	0.17	0.17	---	---	29	0.00	---	---	0.47	PFO wildlife habitat	0.64
F	Bridge #1 over Wetland 10	41°04'55"N	76°09'23"W	NO	YES	NO	0.33	0.55	0.55	---	---	---	---	---	---	0.52	PFO wildlife habitat	1.07
G	Railroad culvert over Trib to Susquehanna	41°05'15"N	76°08'37"W	NO	YES	NO	---	---	---	---	---	125	0.070	---	---	---	---	---
H	Culvert replacement for Teardrop Wetland flow	41°05'15"N	76°09'41"W	YES	YES	YES - Waiver 2	---	---	---	---	---	---	---	587	0.81	---	---	---
I	Power Block FIll	41°05'23"N	76°10'05"W	NO	NO	NO	0.00	0.12	---	---	0.12	---	---	---	---	---	---	---
J	SSES Switchyard Expansion, Wetland 49 A and B	41°05'18"N	76°08'55"W	NO	NO	NO	---	0.06	---	---	0.06	---	---	---	---	---	None	---
K	Intake Structure Access Road and Structure, Wetland 43 &44	41°05'18"N	76°07'58"W	NO	YES	NO	---	0.98	0.30	---	0.68	617	0.07	---	---	---	PFO wildlife habitat, fish habitat, floodflow alteration, all 4 values	0.98
L	Dewatering Drawdown for Excavation, Wetland 11 &12	41°05'17"N	76°09'36"W	YES	YES	NO	5.56	---	---	---	---	---	---	1396	0.30	---	Groundwater discharge	---
M	Intake/ Blowdown lines through Wetland 37, 38, 43, 44 and North Branch Canal	41°05'18"N	76°08'00"W	NO	YES	YES - GP5	0.78	---	---	---	---	---	---	47	0.04	0.07	Temporary PFO wildlife habitat	0.07
N	Intake Line River Dredging	41°05'14"N	76°07'52"W	NO	YES	NO	---	---	---	---	---	---	---	220	0.61	---	---	---
O	Blowdown Line River Dredging	41°05'5"N	76°07'51"W	NO	YES	NO	---	---	---	---	---	---	---	50	0.46	---	---	---
P	Transmission Line Crossing Over Wetland 18 (Teardrop)	41°05'21"N	76°09'43"W	YES	NO	YES-GP5	---	---	---	---	---	---	---	---	---	3.46	PFO wildlife habitat	3.46
Q	Transmission Line Crossing Over Wetland 12	41°05'21"N	76°09'21"W	YES	NO	YES-GP5	---	---	---	---	---	---	---	---	---	1.72	PFO wildlife habitat	1.72
R	Transmission Line Crossing Over Wetland 38	41°05'02"N	76°08'50"W	NO	NO	YES-GP5	---	---	---	---	---	---	---	---	---	0.75	PFO wildlife habitat	0.75
S	Intake Structure River Withdrawal	41°05'13"N	76°07'54"W	NO	YES	YES-GP4	---	---	---	---	---	---	---	---	---	---	---	---
T	Blowdown Line River Discharge	41°05'12"N	76°07'52"W	NO	YES	NO	---	---	---	---	---	---	---	---	---	---	---	---
U	Stormwater Discharges	---	---	YES/NO	YES	YES - GP4	---	---	---	---	---	---	---	---	---	---	None	---
						Subtotals	7.33	2.57	1.58	0.60	0.99	997	0.23	2280	1.42	7.35		9.91
						EV Totals	6.22	0.86	0.72	0.00	0.13	190.00	0.04	1968	0.31	6.99		7.32
						Requiring Mitigation	0.00	1.39	0.51	0.00	0.88	742.00	0.14	0	0.00	7.93		9.91

*Bridge span shadows over wetlands and streams are permanent DEP impacts that do not require mitigation.

Minimum Wetland Replacement Acreage

DEP (1:1 Ratio) 1.39 ac.

Mitigation Sites	Wetland Creation						Stream Restoration					Description of Primary Functions and Values Created/ Enhanced	PFO created/ converted
	Total (ac.)	PFO Created (ac.)	PFO Impacted*	PSS (ac.)	PEM Created	PEM Impacted* (ac.)	Total (LF)	Abandoned* (LF)	Created (LF)	Net Creation (LF)	Enhancement (LF)		(ac)
Walker Run, Site A and B	7.87	8.20	-0.08	0.00	0.00	-0.25	2213	-2799	4159	1360	853	PFO wildlife habitat, fish habitat, stream stabilization, groundwater recharge, sediment reductions, flood flow alteration	13.72
Riverlands- North Branch Canal Restoration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Uniqueness/heritage, recreation, educational/scientific value, flood flow alteration, PFO wildlife habitat	0.48
Conifers Lane Removal	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	PFO wildlife habitat	0.40
Total Mitigation Sites	8.23	8.56	-0.08	0.00	0.00	-0.25	2213	-2799	4159	1360	853.00		14.60

* Impacts associated with the relocation of the Walker Run stream channel are reported as negative values. Permanent wetland impacts are a result of the channel being relocated to wetland areas. Abandoned stream channel to be converted to wetlands. See Mitigation Narrative for more details.

Replacement Ratios Provided (Recommended Sites)	Total (ac.)	PFO (ac.)	PSS (ac.)	PEM (ac.)
Replacement Ratio (DEP)	5.94	16.78	N/A	-0.29

Note: Replacement Ratios based on impacts from project, excluding mitigation impacts

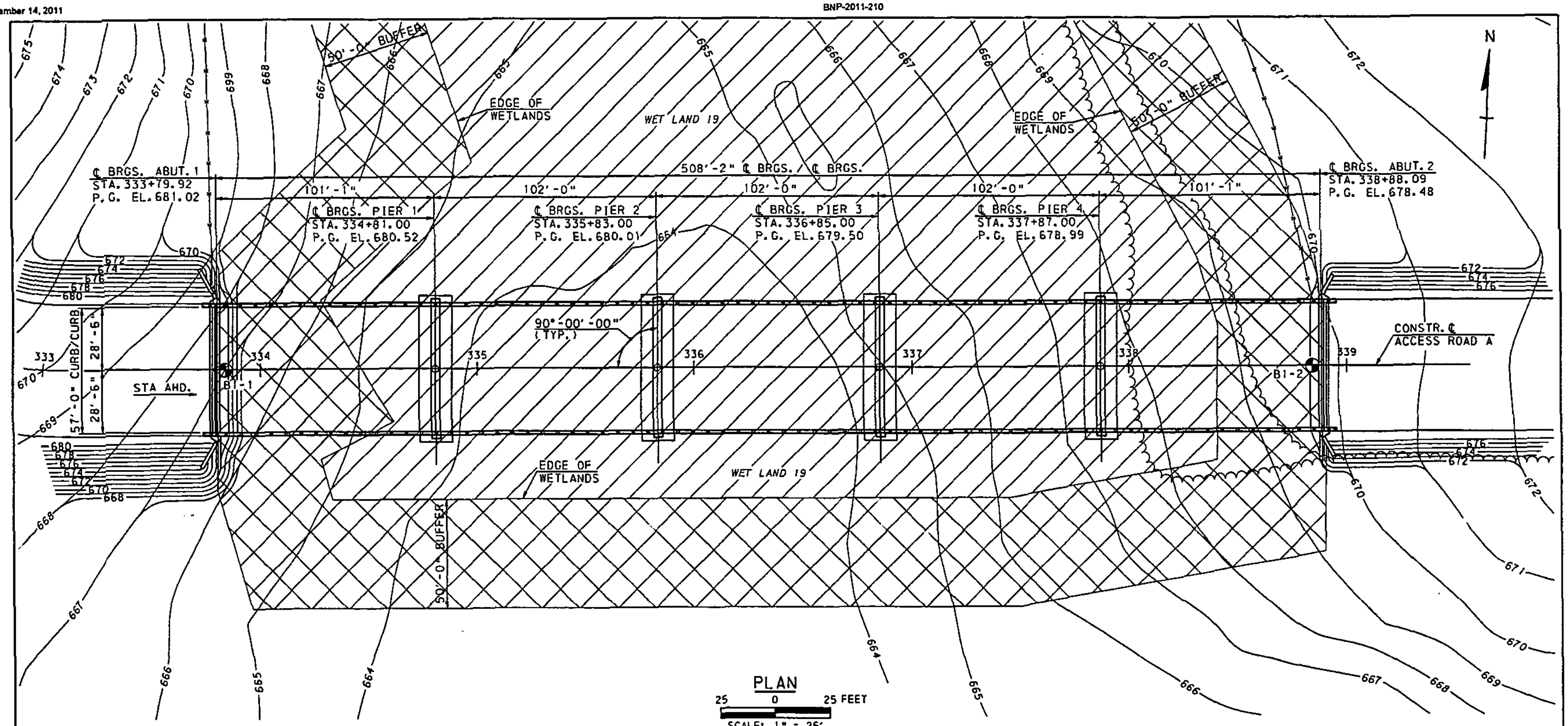
PA 042324
717-627-4440
fax: 717-627-4660
landstudies.com
lands@landstudies.com
315 North Street | Lititz, PA 17543
Land Studies

PROJECT:
PPL, BELL BEND
Bomboy Lane
Berwick, PA 18603

SHEET TITLE:
ENCLOSURE D4 - BBNPP WETLAND & WATERCOURSE IMPACTS - DEP
Bell Bend Nuclear Power Plant
Salem Township
Luzerne County, PA

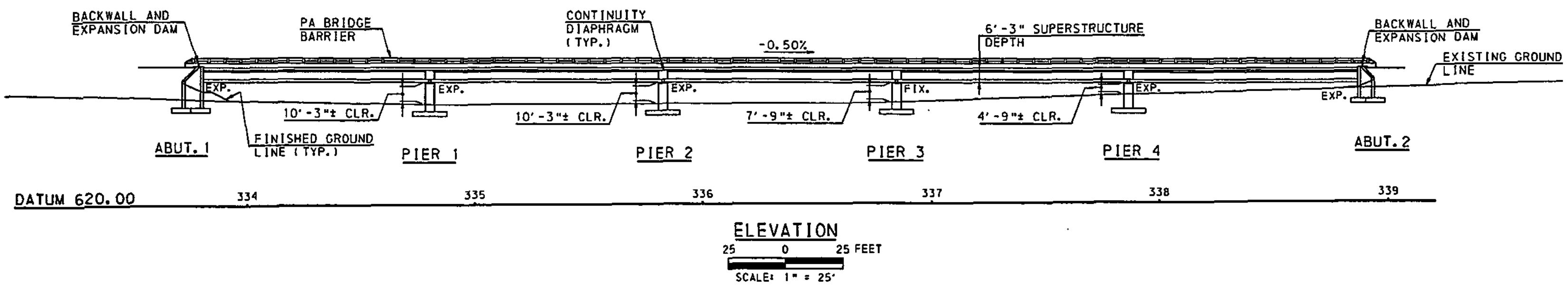
Revisions		
No.	Date	Description
0	10/14/11	--
1	11/0/11	REVISE TABLE

Project Number: E-726-L8
Drawn By: JS
Checked By: BE
Date: October 14, 2011
Scale: NA
Drawing Number: WI-DEP-002
Sheet Number:
3
OF 3



BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B1-1	337650.34	2407850.82
B1-2	337676.45	2408350.14

⊕ DENOTES BORING LOCATION.



DES: JJS | CKD: SMP | DWG: ASA | CKD: DFG

10/31/2011 2:33:32 PM

Pennoni

Engineers Surveyors Planners Landscape Architects

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702

4-19-11 | ISSUED FOR USE | DFG

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 1 ACCESS ROAD A OVER WETLAND 19
STATION 336+34.00
FIVE-SPAN CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE I-BEAM BRIDGE
GENERAL PLAN AND ELEVATION

JOB NO. PPLS 0902

SHEET 1 OF 2

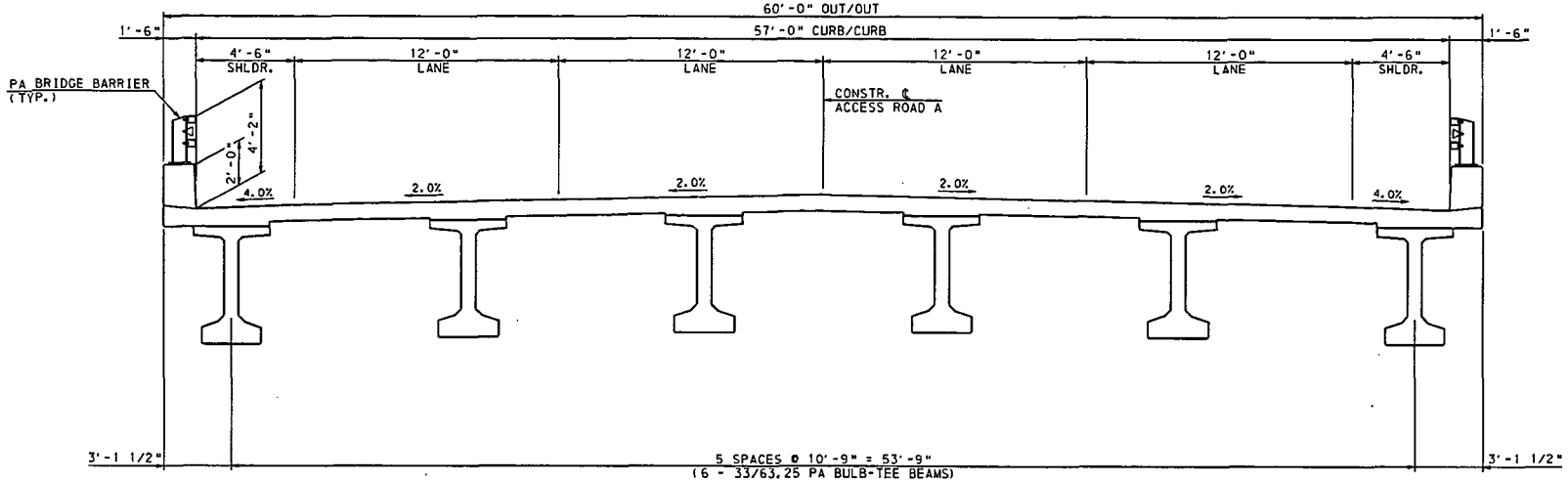
SCALE 1" = 25'

DRAWN BY ASA

DATE 1-28-11

APPROVED 4-19-11

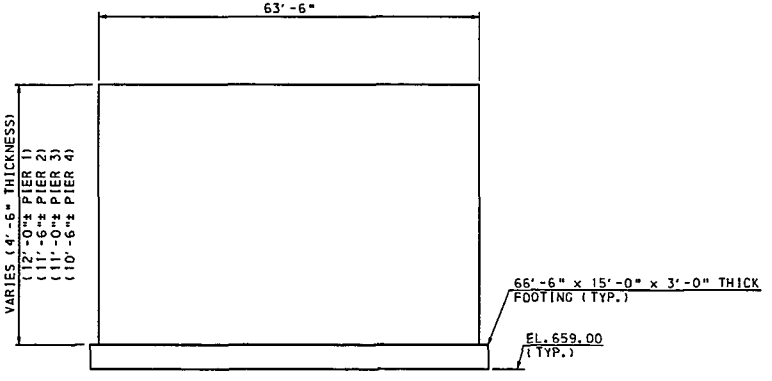
DRAWING NO. B1-S1



TYPICAL SECTION BRIDGE NO. 1

1 0 1 2 3 FEET

SCALE: 3/8" = 1'-0"



TYPICAL PIER AND FOOTING DIMENSIONS

NOT TO SCALE

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
CLASS AAA CEMENT CONCRETE
CLASS AA CEMENT CONCRETE
CLASS A CEMENT CONCRETE
PRESTRESSED CONCRETE I-BEAMS
NEOPRENE STRIP SEAL DAMS
METAL RAILING
REINFORCEMENT BARS
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL
NO. 2 COARSE AGGREGATE

10/28/2011 11:07:42 AM
#FILE#

DES: JJS	CKD: SMP	DWG: ASA	CKD: DFG

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702
Engineers Surveyors Planners Landscape Architects

Pennoni

NO.	DATE	REVISIONS	BY
1	4-19-11	ISSUED FOR USE	DFG

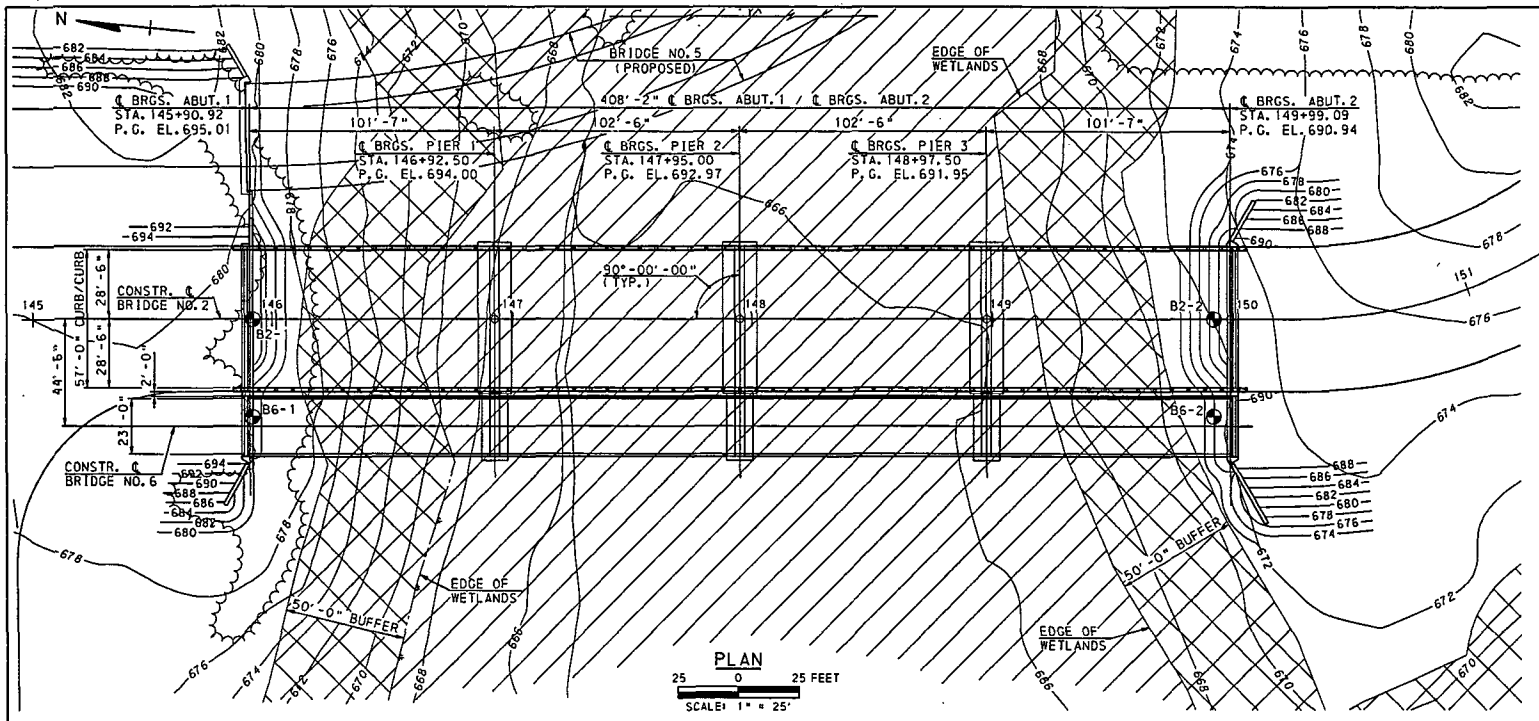
DAVID F. GAUSMAN — PROFESSIONAL ENGINEER

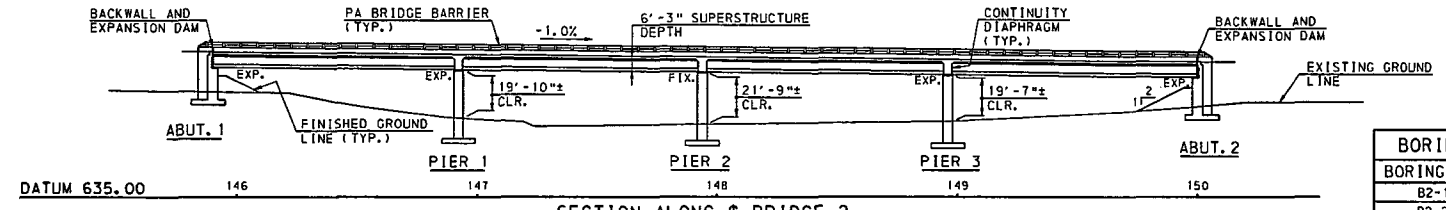
CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 1 ACCESS ROAD A OVER WETLAND 19
STATION 336+34.00
FIVE-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE I-BEAM BRIDGE
TYPICAL SECTION

JOB NO. PPLS 0902
SHEET 2 OF 2

SCALE: AS NOTED	DRAWING NO. B1-S2
DRAWN BY: ASA	
DATE: 1-28-11	
APPROVED: 4-19-11	

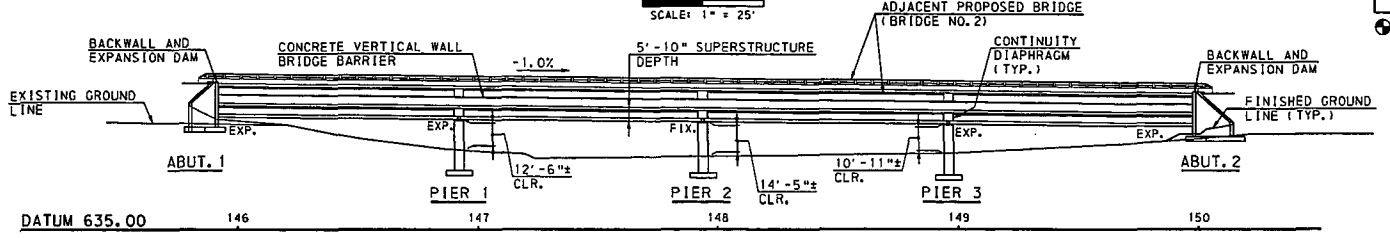




SECTION ALONG ℄ BRIDGE 2
25 0 25 FEET
SCALE: 1" = 25'

BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B2-1	339341.84	2407639.48
B2-2	338943.57	2407676.65
B6-1	339338.07	2407599.16
B6-2	338939.80	2407636.32

DENOTES BORING LOCATION.



ELEVATION - BRIDGE 6
25 0 25 FEET
SCALE: 1" = 25'

DES: RPD | CKD: JJS | DWG: ASA | CKD: RPD

10/31/2011 2:31:44 PM
BFILE8

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702
Engineers Surveyors Planners Landscape Architects

Pennoni

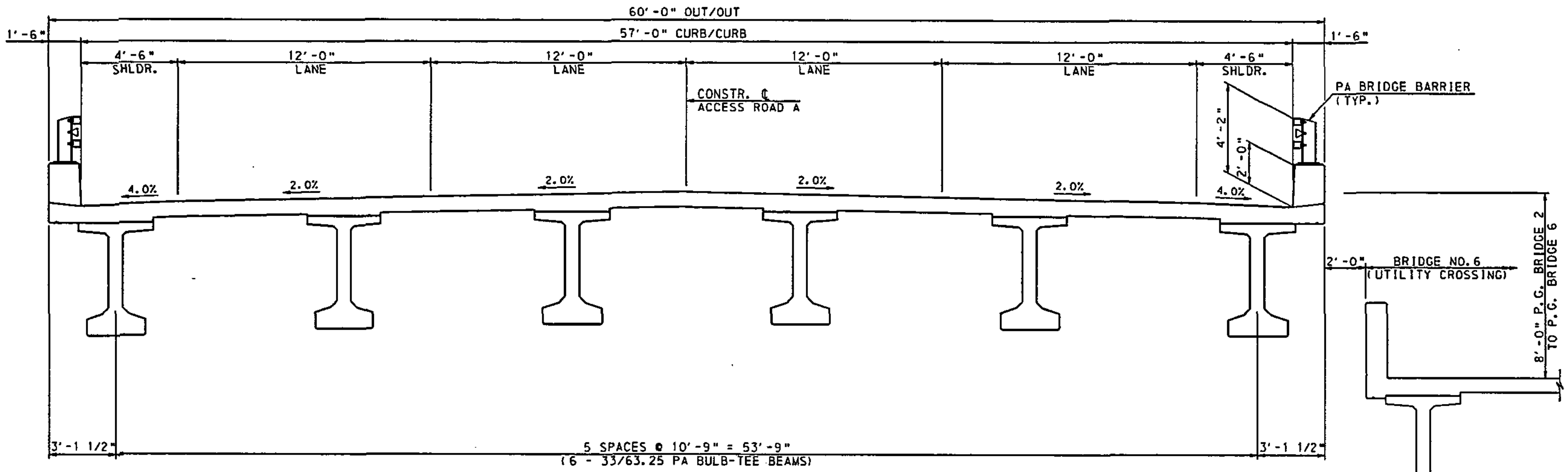
DATE	NO.	REVISIONS	BY
4-19-11	1	ISSUED FOR USE	DPD

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA
BRIDGE NO. 2 (MAIN ACCESS ROAD) & BRIDGE NO. 6 (UTILITY CROSSING) OVER WETLAND 12 & UNNAMED TRIB. TO WALKER RUN, STATION 147+95.00
FOUR-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE PA BULB-TEE BEAM BRIDGE
GENERAL PLAN AND ELEVATION

JOB NO. PPLS 0902
SHEET 1 OF 2

SCALE 1" = 25'
DRAWN BY ASA
DATE 1-28-11
APPROVED 4-19-11
DRAWING NO. B2-S1



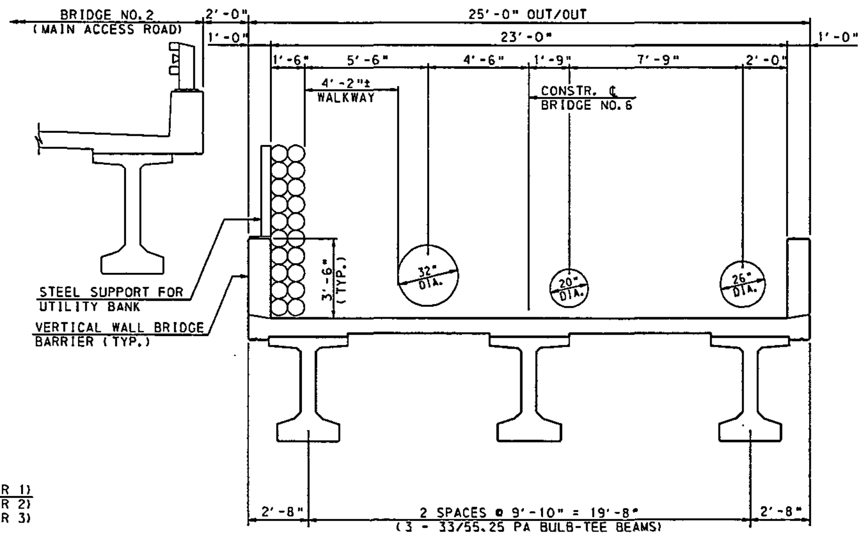
TYPICAL SECTION BRIDGE NO.2

1 0 1 2 3 FEET
SCALE: 3/8" = 1'-0"

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
CLASS AAA CEMENT CONCRETE
CLASS AA CEMENT CONCRETE
CLASS A CEMENT CONCRETE
PRESTRESSED CONCRETE I-BEAMS
NEOPRENE STRIP SEAL DAMS
METAL RAILING
REINFORCEMENT BARS
HP12 x 74 PILES
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL

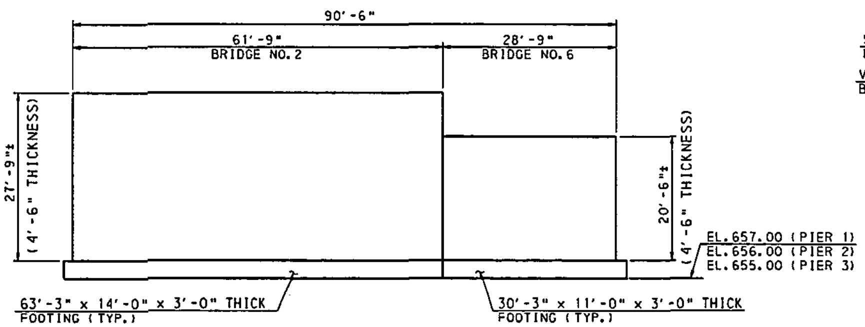
TABLE OF PROPOSED UTILITIES

TYPE	MATERIAL	DIAMETER	QUANTITY
ELECTRICAL	GALV. RIGID STEEL	6"	20
CIRC. WATER	CARBON STEEL	32"	1
BLOW DOWN WATER	HDPE	26"	1
WATER	CARBON STEEL	20"	1



TYPICAL SECTION BRIDGE NO.6

1 0 1 2 3 FEET
SCALE: 3/8" = 1'-0"



TYPICAL PIER AND FOOTING DIMENSIONS

NOT TO SCALE

DES: RPD | CKD: JJS | DWG: ASA | CKD: RPD

11/4/2011 2:20:32 PM

Pennoni Associates Inc. Engineers Surveyors Planners Landscape Architects

100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702

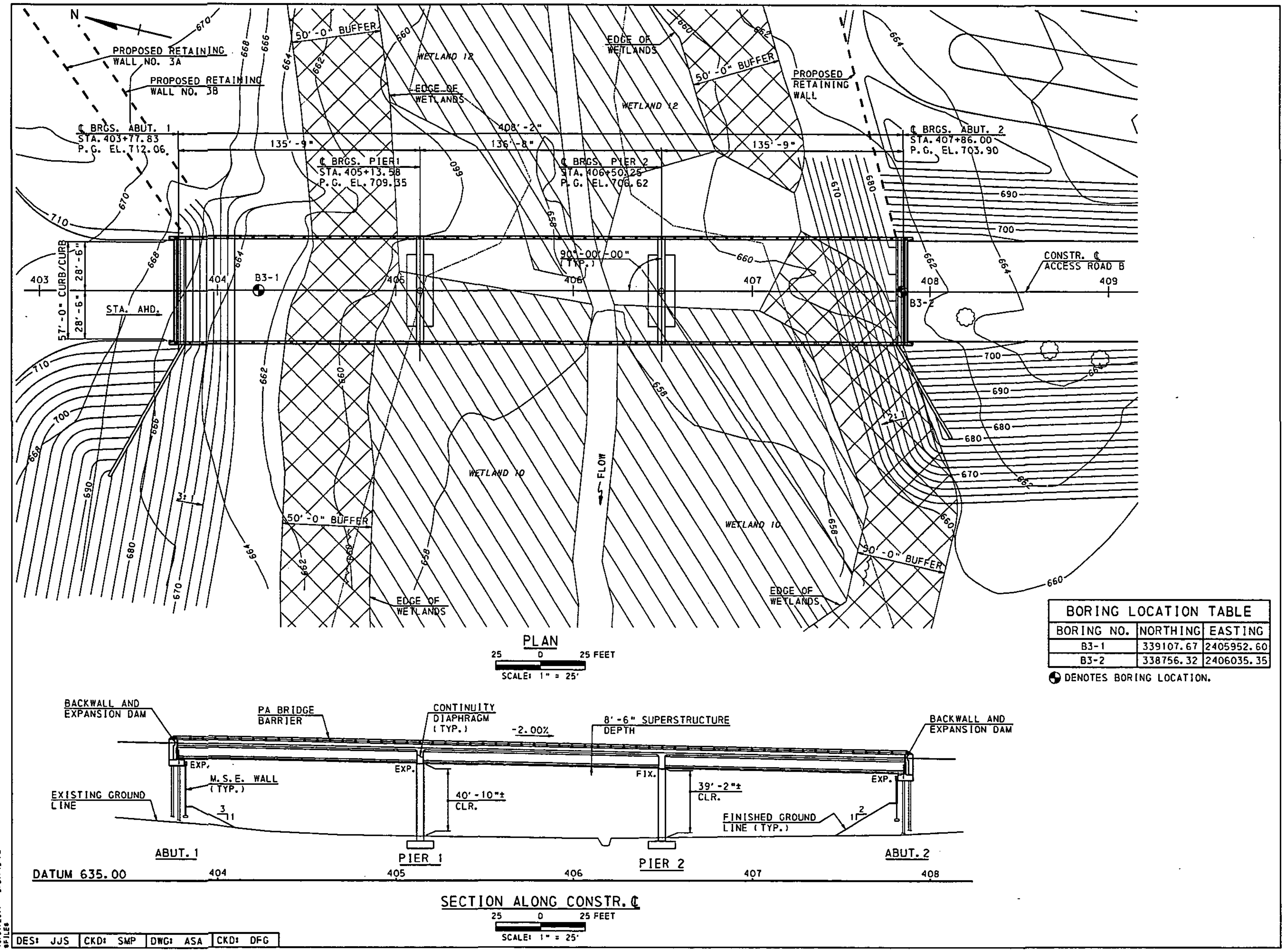
DATE	NO.	REVISIONS	BY
10-28-11	2	REVISED PIER THICKNESS	DFG
4-19-11	1	ISSUED FOR USE	DFG

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA
BRIDGE NO.2 (MAIN ACCESS ROAD) & BRIDGE NO.6 (UTILITY CROSSING) OVER WETLAND 12 & UNNAMED TRIB. TO WALKER RUN, STATION 147+95.00
FOUR-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE PA BULB TEE-BEAM BRIDGE
TYPICAL SECTIONS

JOB NO. PPLS 0902
SHEET 2 OF 2

SCALE AS NOTED
DRAWN BY ASA
DATE 1-28-11
APPROVED 4-19-11
DRAWING NO. B2-S2



BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B3-1	339107.67	2405952.60
B3-2	338756.32	2406035.35

⊕ DENOTES BORING LOCATION.

DES: JJS | CKD: SMP | DWG: ASA | CKD: DFG

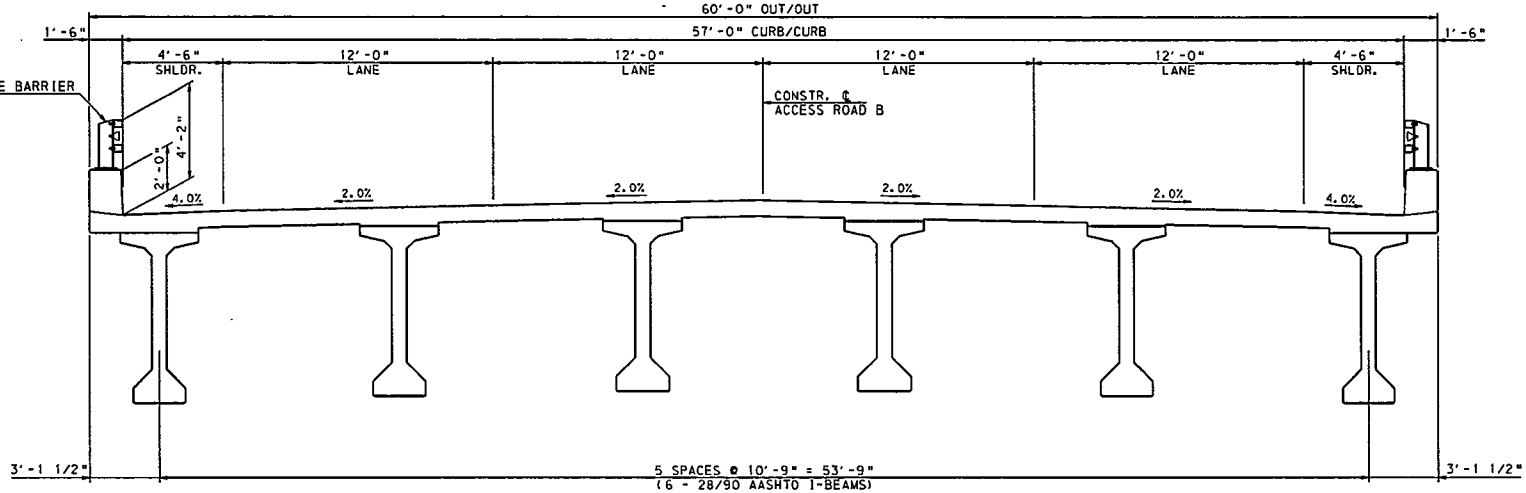
Pennoni
Engineers Surveyors Planners Landscape Architects
Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702

DATE	NO.	REVISIONS	BY
10-28-11	2	WETLAND REVISION	DFG
4-19-11	1	ISSUED FOR USE	DFG

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA
BRIDGE NO. 3 ACCESS ROAD B OVER WETLAND 10 & 12
STATION 405+81.92
THREE-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE I-BEAM BRIDGE
GENERAL PLAN AND ELEVATION

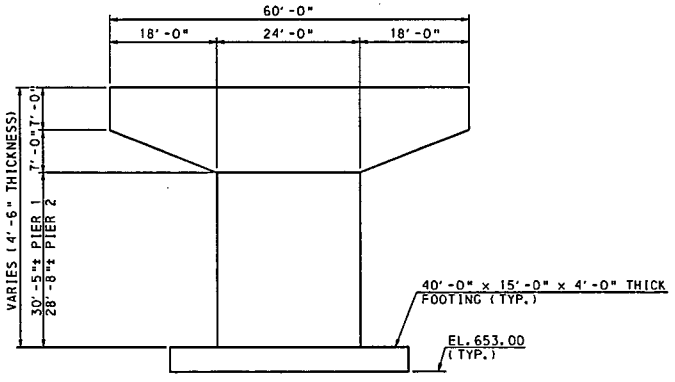
JOB NO. PPLS 0902
SHEET 1 OF 2
SCALE 1" = 25'
DRAWN BY ASA
DATE 1-28-11
APPROVED 4-19-11
DRAWING NO. B3-S1



TYPICAL SECTION BRIDGE NO. 3

1 0 1 2 3 FEET

SCALE: 3/8" = 1'-0"



TYPICAL PIER AND FOOTING DIMENSIONS

NOT TO SCALE

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
CLASS AAA CEMENT CONCRETE
CLASS AA CEMENT CONCRETE
CLASS A CEMENT CONCRETE
PRESTRESSED CONCRETE I-BEAMS
NEOPRENE STRIP SEAL DAMS
METAL RAILING
REINFORCEMENT BARS
HP12 x 74 PILES
MECHANICALLY STABILIZED EARTH ABUTMENTS
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL
NO. 2 COARSE AGGREGATE

10/28/2011 11:10:57 AM
#FILE#

DES: JJS | CKD: SMP | DWG: ASA | CKD: DFG

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702
Engineers Surveyors Planners Landscape Architects

Pennoni

NO.	DATE	ISSUED FOR USE / REVISIONS	DRN	BY
1	4-19-11			

DAVID F. GAUSMAN

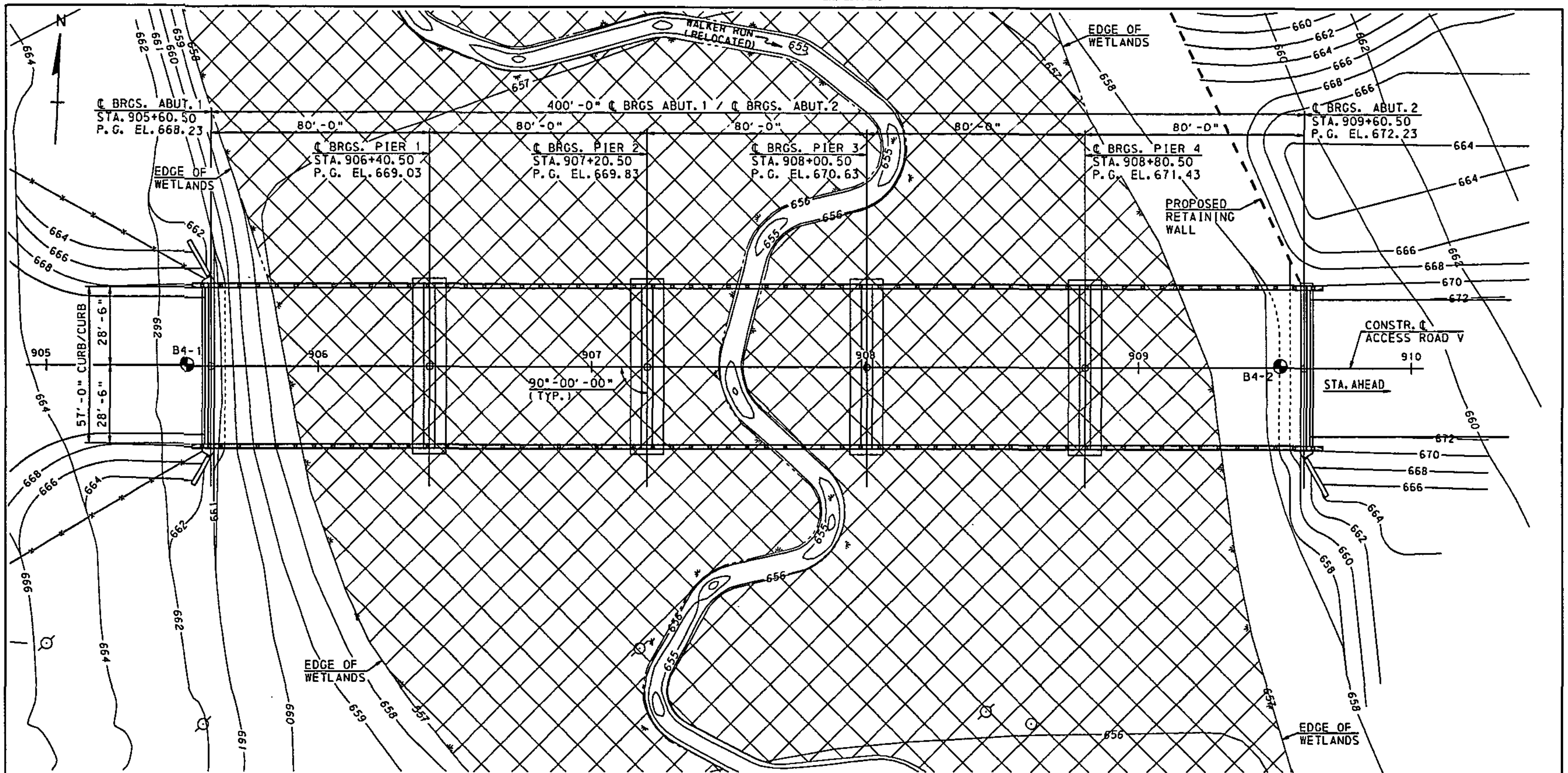
CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 3 ACCESS ROAD B OVER WETLAND 10
STATION 405+81.92
THREE-SPAN CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE I-BEAM BRIDGE
TYPICAL SECTION

JOB NO. PPLS 0902

SHEET 2 OF 2

SCALE: AS NOTED
DRAWN BY: ASA
DATE: 01-28-11
APPROVED: 4-19-11
DRAWING NO.: B3-S2

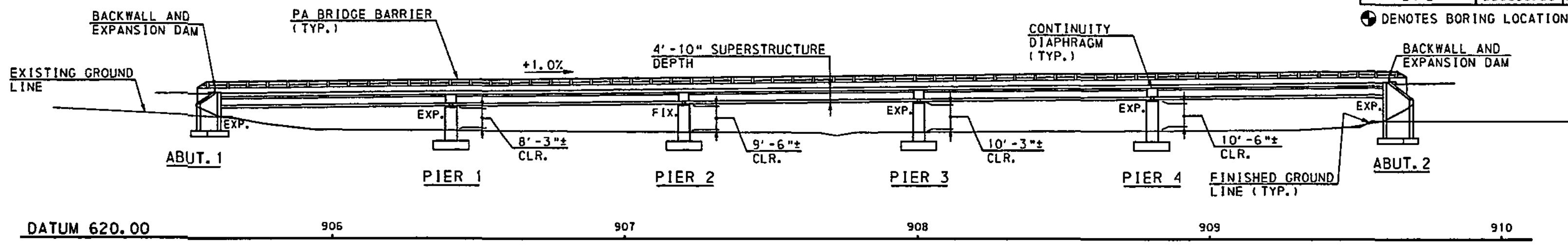


PLAN

20 0 20 FEET
SCALE: 1" = 20'

BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B4-1	339073.30	2404355.94
B4-2	339090.50	2404755.57

⊕ DENOTES BORING LOCATION.



ELEVATION

20 0 20 FEET
SCALE: 1" = 20'

DES: SMP | CKD: JJS | DWG: ASA | CKD: JJS

10/28/2011 11:10:13 AM

Pennoni Associates Inc.
100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702
Engineers Surveyors Planners Landscape Architects

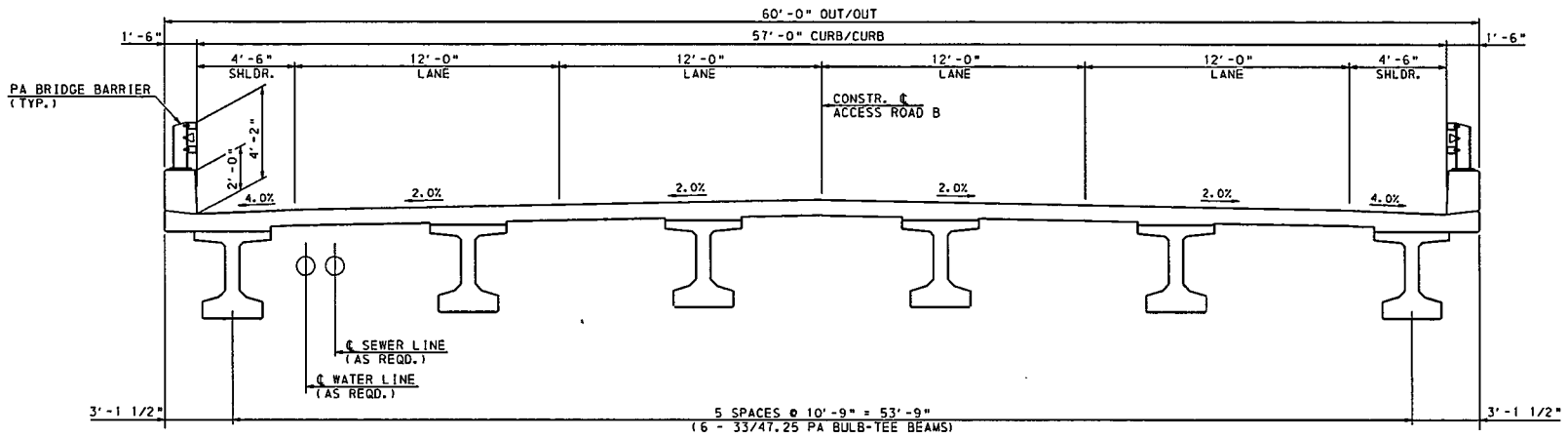
CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 4 ACCESS ROAD V OVER WALKER RUN
STATION 907+60.50
FIVE-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE I-BEAM BRIDGE
GENERAL PLAN AND ELEVATION

1 | 4-19-11 | ISSUED FOR USE

DAVID F. GAUSMAN, PROFESSIONAL ENGINEER, PENNSYLVANIA

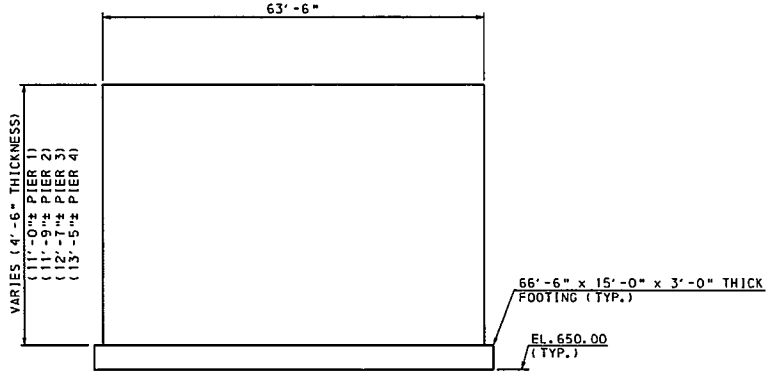
JOB NO. PPLS 0902
SHEET 1 OF 2
SCALE 1" = 20'
DRAWN BY ASA
DATE 1-28-11
APPROVED 4-19-11
DRAWING NO. B4-S1



TYPICAL SECTION BRIDGE NO. 4

1 0 1 2 3 FEET

SCALE: 3/8" = 1'-0"



TYPICAL PIER AND FOOTING DIMENSIONS

NOT TO SCALE

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
CLASS AAA CEMENT CONCRETE
CLASS AA CEMENT CONCRETE
CLASS A CEMENT CONCRETE
PRESTRESSED CONCRETE I-BEAMS
NEOPRENE STRIP SEAL DAMS
METAL RAILING
REINFORCEMENT BARS
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL
NO. 2 COARSE AGGREGATE

10/26/2011 11:09:50 AM
#FILES#

DES: SMP	CKD: JJS	DWG: ASA	CKD: JJS

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702
Engineers Surveyors Planners Landscape Architects

Pennoni

DATE	NO.	REVISIONS	BY
4-19-11	1	ISSUED FOR USE	DFG

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 4 ACCESS ROAD V OVER WALKER RUN
STATION 907+60.50
FIVE-SPAN CONTINUOUS COMPOSITE PRESTRESSED CONCRETE I-BEAM BRIDGE
TYPICAL SECTION

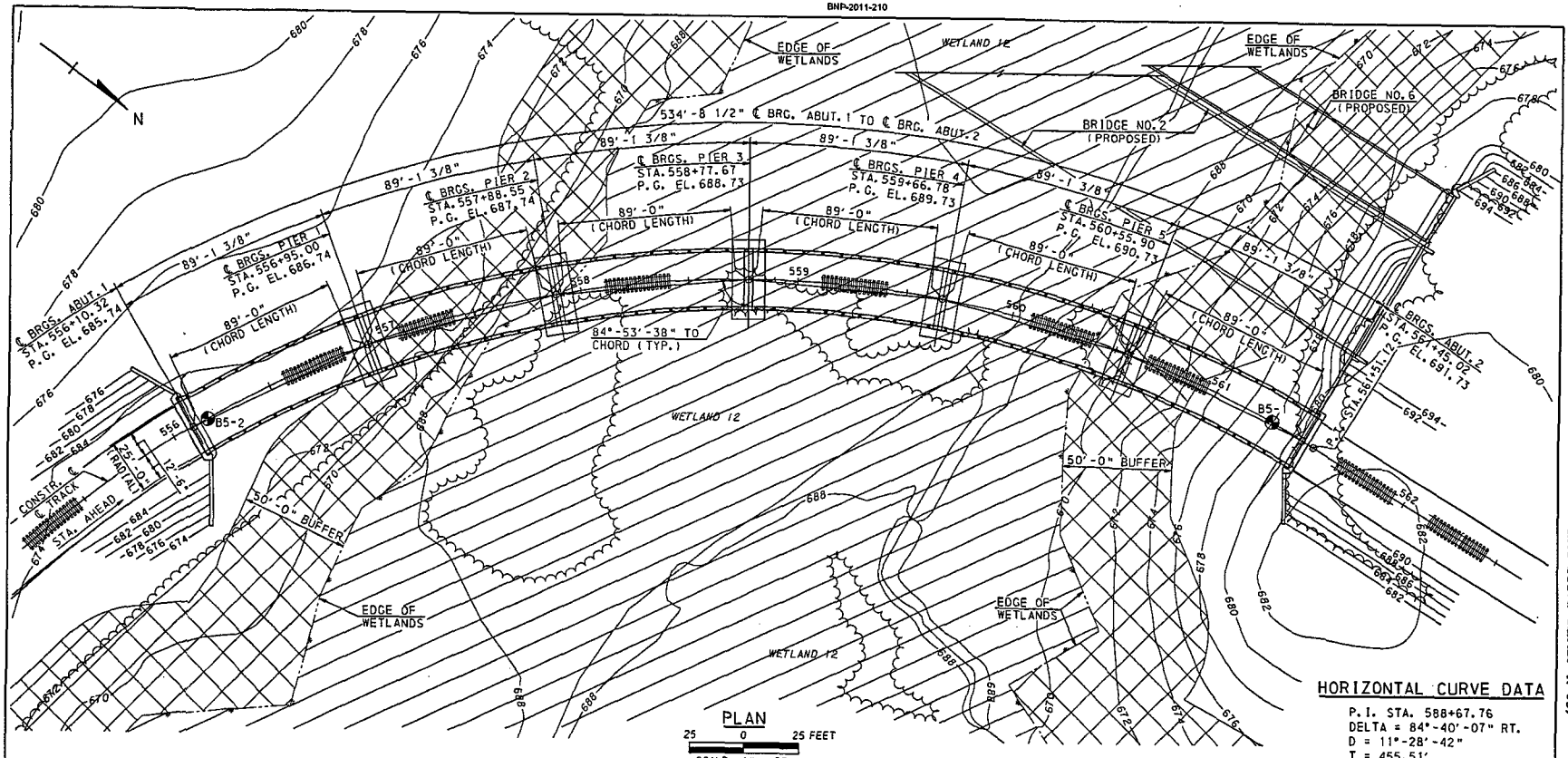
JOB NO. PPLS 0902
SHEET 2 OF 2

SCALE	DRAWING NO.
AS NOTED	B4-S2
DRAWN BY: ASA	
DATE: 01-28-11	
APPROVED: 4-19-11	

November 14, 2011

BNP-2011-210

Attachment 4



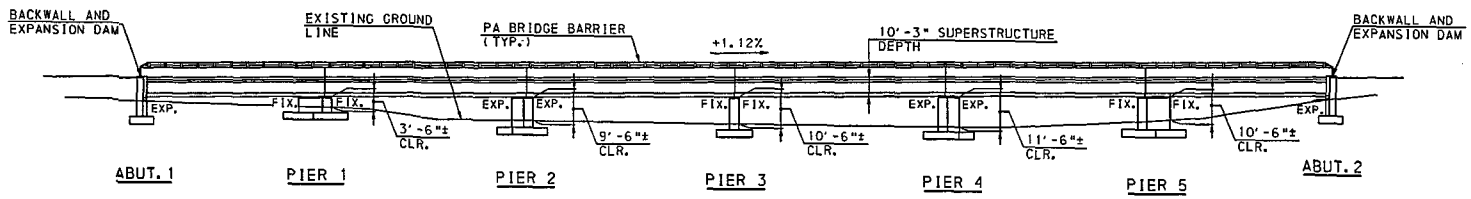
PLAN

25 0 25 FEET

SCALE: 1" = 25'

HORIZONTAL CURVE DATA

P.I. STA. 558+67.76
DELTA = 84°-40'-07" RT.
D = 11°-28'-42"
T = 455.51'
L = 738.87'
R = 500.00'
E = 130.39'



ELEVATION

25 0 25 FEET

SCALE: 1" = 25'

BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B5-1	339334.45	2407715.99
B5-2	338944.70	2408011.37

DENOTES BORING LOCATION.

DES: JDF | CKD: SMP | DWG: ASA | CKD: DFG

10/28/2011 11:12:15 AM
#FILE#

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702

Engineers Surveyors Planners Landscape Architects

NO.	DATE	ISSUED FOR USE / REVISIONS	DFG	BY
1	4-19-11			

DAVID F. GAUSMAN PROFESSIONAL ENGINEER

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 5 (RAILROAD) OVER WETLAND 12
STATION 558+77.67
SIX-SPAN COMPOSITE PRESTRESSED CONCRETE
AASHTO I-BEAM BRIDGE

GENERAL PLAN AND ELEVATION

JOB NO. PPLS 0902

SHEET 1 OF 2

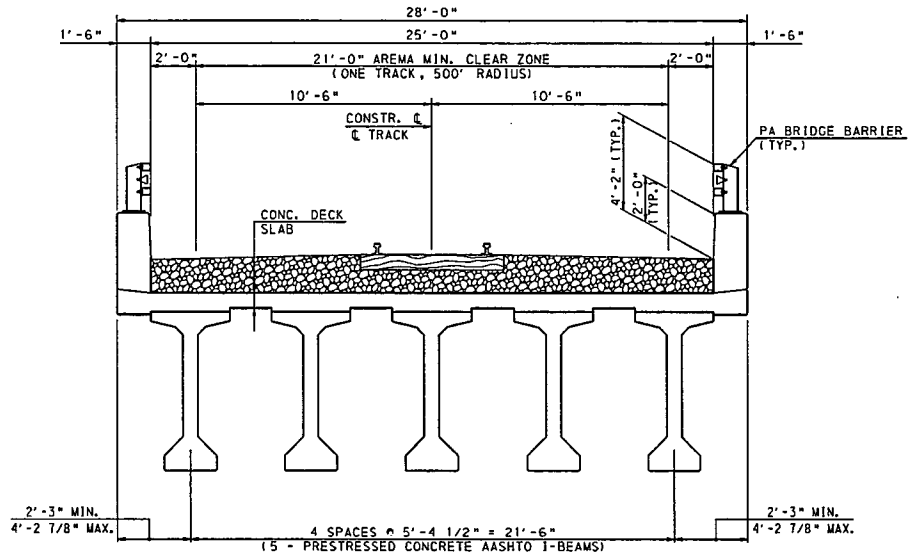
SCALE: 1" = 25'

DRAWN BY: ASA

DATE: 1-28-11

APPROVED: 4-19-11

DRAWING NO. B5-S1

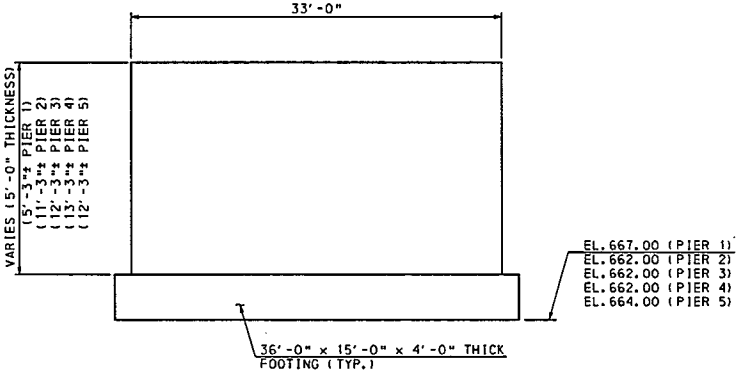


TYPICAL SECTION BRIDGE NO.5

1 0 1 2 3 FEET

SCALE: 3/8" = 1'-0"

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
CLASS AAA CEMENT CONCRETE
CLASS AA CEMENT CONCRETE
CLASS A CEMENT CONCRETE
PRESTRESSED CONCRETE I-BEAMS
NEOPRENE STRIP SEAL DAMS
METAL RAILING
REINFORCEMENT BARS
HP12 x 74 PILES
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL



TYPICAL PIER AND FOOTING DIMENSIONS

NOT TO SCALE

10/26/2011 11:12:36 AM
#FILES#

DES: JDF	CKD: SMP	DWG: ASA	CKD: DFG

Pennoni Associates Inc. 100 N. WILKES-BARRE BLVD. WILKES-BARRE, PA 18702

Engineers Surveyors Planners Landscape Architects

Pennoni

DATE	NO.	REVISIONS	BY
4-19-11	1	ISSUED FOR USE	DFG

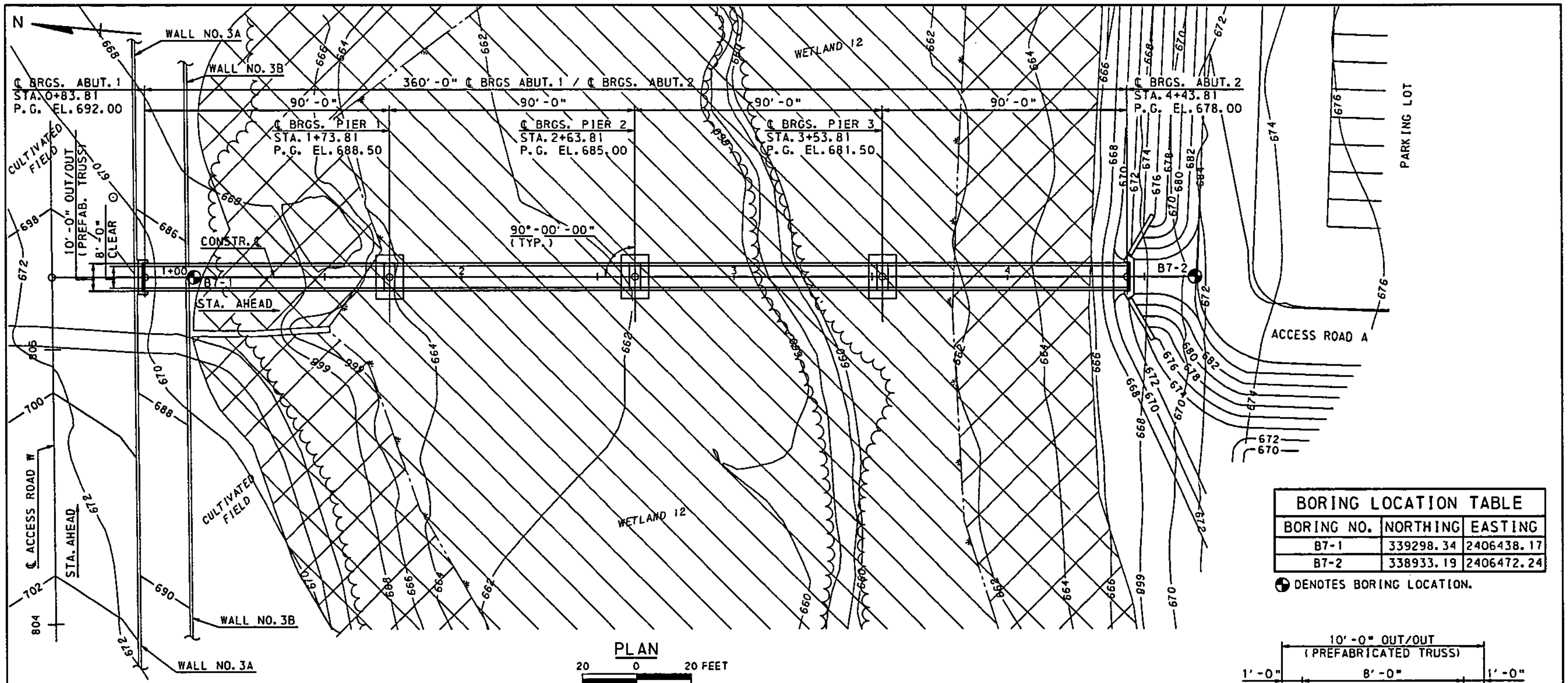
COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER DAVID F. GAUSMAN

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO.5 (RAILROAD) OVER WETLAND 12
STATION 558+77.67
SIX-SPAN COMPOSITE PRESTRESSED CONCRETE
AASHTO I-BEAM BRIDGE
TYPICAL SECTION

JOB NO. PPLS 0902
SHEET 2 OF 2

SCALE	DRAWING NO.
AS NOTED	B5-S2
DRAWN BY: ASA	
DATE: 1-28-11	
APPROVED: 4-19-11	

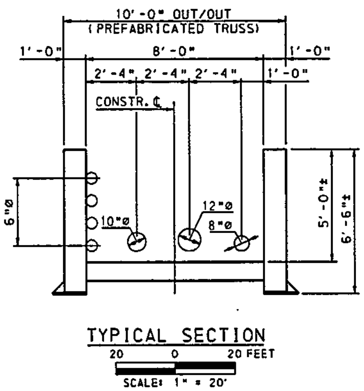


BORING LOCATION TABLE		
BORING NO.	NORTHING	EASTING
B7-1	339298.34	2406438.17
B7-2	338933.19	2406472.24

DENOTES BORING LOCATION.

PIER STEM HEIGHTS, "H"	
PIER LOCATION	"H"
PIER 1	30'-6"±
PIER 2	29'-0"±
PIER 3	26'-6"±

ANTICIPATED BRIDGE CONSTRUCTION ITEMS
PREFABRICATED TRUSS BRIDGE
CLASS A CEMENT CONCRETE
REINFORCEMENT BARS
CLASS 3 EXCAVATION
SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL



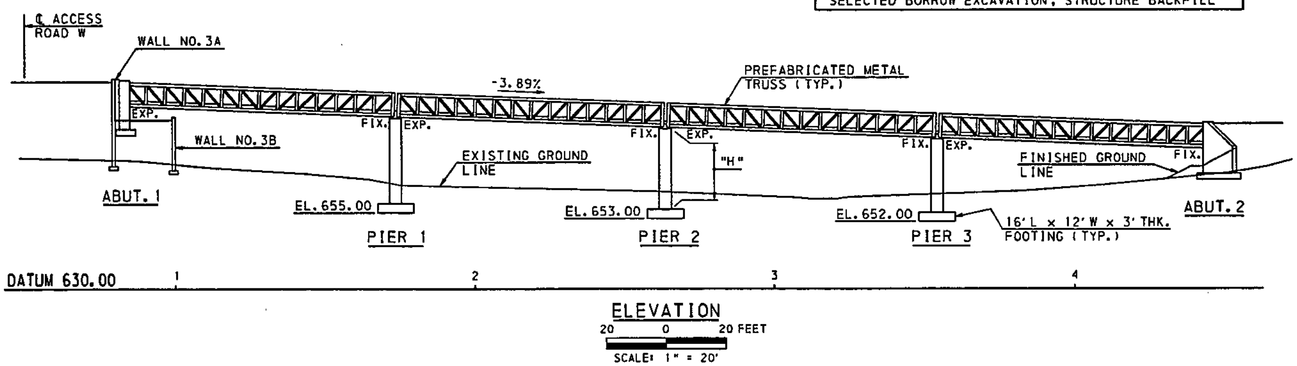


TABLE OF PROPOSED UTILITIES			
TYPE	MATERIAL	DIAMETER	QUANTITY
WATER	D.I.P.	8"	1
SEWER	D.I.P.	10"	1
FIRE	CEMENT LINED D.I.P.	12"	1
ELECTRICAL	GALV. RIGID STEEL	6"	4

DES: SMP	CKD: JJS	DWG: ASA	CKD: DFG

10/28/2011 11:11:59 AM

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Engineers Surveyors Planners Landscape Architects

4-19-11 ISSUED FOR USE DFG

CONCEPTUAL BRIDGE TYPE STUDIES
BELL BEND NUCLEAR PLANT, SALEM TOWNSHIP
LUZERNE COUNTY, PENNSYLVANIA

BRIDGE NO. 7 OVER WETLAND 12
STATION 2+63.81
FOUR-SPAN PREFABRICATED METAL TRUSS
UTILITY BRIDGE

GENERAL PLAN AND ELEVATION

JOB NO. PPLS 0902

SHEET 1 OF 1

SCALE 1" = 25'
DRAWN BY ASA
DATE 1-28-11
APPROVED 4-19-11

DRAWING NO. B7-S1

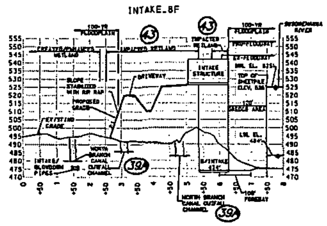


FIGURE 8F - INTAKE STRUCTURE CROSS SECTION

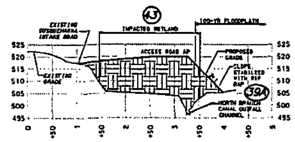


FIGURE 8G - INTAKE AREA CROSS SECTION

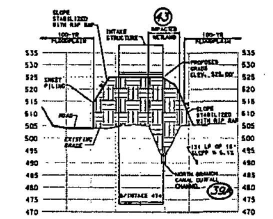


FIGURE 8H - INTAKE STRUCTURE CROSS SECTION

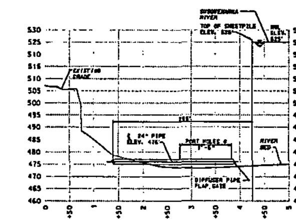


FIGURE 8I - END OF BLOWDOWN LINE

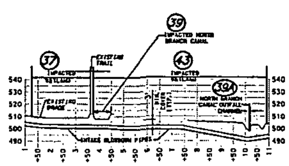


FIGURE 8J - UTILITY CORRIDOR CROSS SECTION

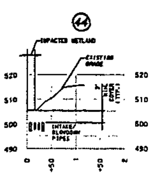


FIGURE 8K - INTAKE AREA CROSS SECTION

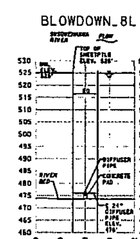
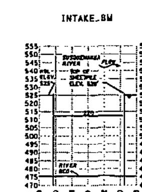


FIGURE 8L - BLOWDOWN LINE DREDGE AREA CROSS SECTION



NOTE: FLOOD ELEVATION FROM FEMA FIRM MAP PANEL NUMBER 420625 0025 E IS 512.8.

FIGURE 8M - INTAKE STRUCTURE DREDGE AREA CROSS SECTION

NOTE:
INFORMATION FROM MISSING FIGURES ARE PROVIDED THROUGHOUT THE PLAN SET.

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DATE	NO.	REVISIONS	BY
10/28/11	1	REVISED STREAM IMPACT NAMES / FIGURE OF	JMO
06/15/11	0	INITIAL SUBMISSION	LGB

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

Pennoni Associates Inc.
100 N. Wilkes-Barre Boulevard
Wilkes-Barre, PA 18702 (570) 824-2200

BELL BEND NUCLEAR POWER PLANT
SALEM TOWNSHIP, PENNSYLVANIA
JOINT PERMIT DETAILS
PPL BELL BEND, LLC
38 BOMBOY LANE, SUITE 2
BERWICK, PA 18603

JOB NO. PPLS0902
SHEET 43 OF 44

SCALE NTS
DRAWN BY WCK
DATE 06/15/2011
APPROVED JFM
DRAWING NO. CS3205

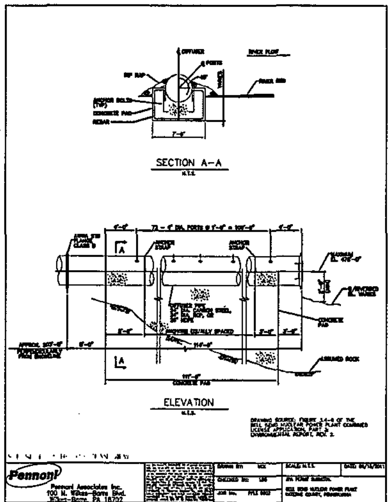

FIGURE 6H - DIFFUSER PIPE DETAIL

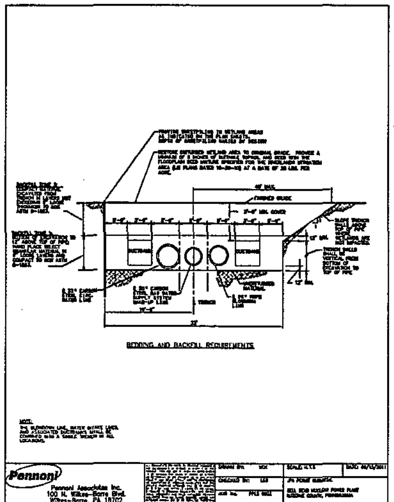

FIGURE 6P - BLOWDOWN + WATER INTAKE LINE SECTION

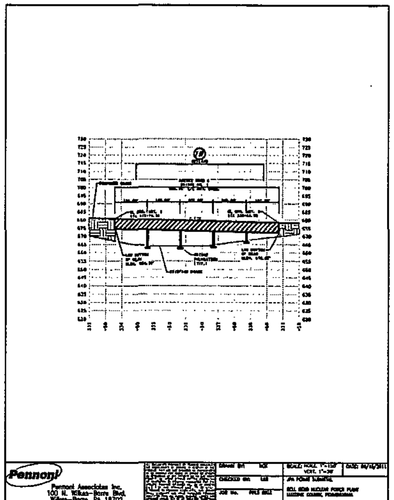

FIGURE 6B - BRIDGE NO. 1 CROSS SECTION

NOTE:
INFORMATION FROM MISSING FIGURES ARE PROVIDED THROUGHOUT THE PLAN SET.

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DATE	NO.	REVISIONS	BY
11/04/11	1	UPDATED FIGURE 6P	LGB
06/15/11	0	INITIAL SUBMISSION	LGB

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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100 N. Wilkes-Barre Boulevard
Wilkes-Barre, PA 18702 (570) 824-2200

BELL BEND NUCLEAR POWER PLANT
SALEM TOWNSHIP, PENNSYLVANIA

JOINT PERMIT DETAILS

PPL BELL BEND, LLC
38 BOMBOY LANE, SUITE 2
BERWICK, PA 18603

JOB NO. PPLS0902
SHEET 44 OF 44

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DATE 06/15/2011
APPROVED JFM
DRAWING NO. CS3206