November 24, 2025

Project/File: Amtrak Wilmington Shops / 213403550

Matthew Jones
State of Delaware
Department of Natural Resources and Environmental Control
Wetlands and Waterways Section
89 King Highway
Dover, Delaware 19901

Dear Mr. Jones,

RE: WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION
AMTRAK Wilmington Shops Remediation
City of Wilmington, New Castle County

Stantec Consulting Services, Inc. (Stantec), on behalf of the National Railroad Passenger Corporation (Amtrak) and APU Consolidated, Inc. (APU), has prepared this Subaqueous Lands Permit Application (the Application) associated with implementation of the Department of Natural Resources and Environmental Control (DNREC) and United States Environmental Protection Agency (USEPA) approved remedial actions at the Amtrak Wilmington Shops located at 4001 Vandever Avenue in the City of Wilmington, Delaware. This Application was discussed at the DNREC coordination meeting for the project conducted on March 4, 2025, attended by yourself, Mr. Cargill, and other representatives of various Departments and Divisions within DNREC.

Attached to this Application, please find:

- Impact Summary Table (Table 1)
- Wetlands and Subaqueous Lands Permit Application
- Permit Application Attachments
  - Attachment 1 Project Purpose
  - Attachment 2 Vicinity Map
  - Attachment 3 List of Adjoining Property Owners (and map)
  - Attachment 4 List of Property Owners within 1,000 feet (and map)
  - Attachment 5 Copy of Deed and Survey
  - Attachment 6 Drawings
    - 90% Construction Drawings
    - Annotated NWP-38 Drawings
  - Attachment 7 Risk-Based Disposal Approval Application (RBDAA) (less Appendices)
  - Attachment 8 Wetland Delineation Report
  - Attachment 9 Regulatory Correspondence
- Permit Application Appendices

Site Description

The Project includes both the Former Fueling Facility (DE-0266) and Maintenance Facility (DE-0170), collectively referred to as the Wilmington Shops. The Maintenance Facility encompasses approximately 52 acres and is located north of the Former Fueling Facility. The Former Fueling Facility encompasses approximately 56 acres south of the Maintenance Facility. The DNREC

approved the Final Plan of Remedial Action for the Former Fueling Facility in July 2020 and the Final Plan of Remedial Action for the Maintenance Facility in March 2022. The USEPA approved the Risk-Based Disposal Approval Application on June 10, 2025.

The DNREC and USEPA approved remedial action at the Wilmington will address soil, sediment, and groundwater impacts associated with several contaminants including polychlorinated biphenyls (PCBs), lead, arsenic, and Volatile Organic Compounds (VOCs).

Much of the Site is located within the FEMA designated 100-year flood zone. Waters of the United States (WOTUS) were delineated for the project. A review of DNREC's State Regulated Wetlands Map Index indicates no State of Delaware jurisdictional Wetlands or Subaqueous Lands are present at the site. Previous studies and investigations have identified wetlands and subaqueous lands at the site. A total of 16.06 acres of federally jurisdictional, non-tidal wetlands have been delineated at the site. A total of 4.44 acres of subaqueous lands have been identified at the site and are the focus of this Application.

A portion of the total open waters consist of ponded waters at the facility and drain to Brandywine Creek through drainage ditches and monitored outfalls in accordance with Amtrak's NPDES permit #DE 0050962, state permit # WPCC 30896185. The balance of the facility total open waters drain to Shellpot Creek at the northern portion of the Wilmington Shops Facility.

Dams installed for oil pollution control are within the drainage ditches with inverted piping set to allow drainage through the dam to occur while facilitating skimming of oil with sorbent booms. The dams are referenced as Dam B in the East Ditch separating the Upper East Ditch from the Lower East Ditch, is also referred to as Outfall 001 and accommodates flow from outfalls 007 and the Upper East Ditch: Dam C, also referred to as Outfall 005 is in the West Ditch and accommodates flow from outfalls 004 and the Upper West Ditch: the dam at 12th street is also referred to as Outfall 006 and accommodates flow from the Confluence Area, East Ditch and West Ditch.

Outfalls 001, 004, 005, and 007 are internal to the facility and drain to outfall 006 at the southern portion of the facility, Outfall 006 drains to Brandywine Creek.

Outfall 002 is located in the northern portion of the facility and drains to Shellpot Creek.

A portion of the northeast drainage ditch location in the northern portion of the facility drains to Shellpot Creek through the adjacent Norfolk Southern property.

Project Description

The Project involves soil and sediment remediation efforts that include ground disturbance and the placement of fill material and structures (pipes, outfalls, sheet pile, etc.). Limited excavation of contaminated soils is anticipated largely in the western and northern portions of the Wilmington

Shops Site. Within Subaqueous Lands, the project will remove contaminated sediment from the site in the following Project Areas:

Western Drainage Ditch (and Confluence Area)
Eastern Drainage Ditch
Northeast Drainage Ditch
Outfall 002 Area.

A brief summary of activities within each Project Area is provided below. Impacts to subaqueous lands are discussed in a counterclockwise fashion, starting at the northwest corner of the Project (see attached drawings.)

Western Drainage Ditch

The Western Drainage Ditch is located along the western boundary of the project and is further divided into Upper Western Drainage Ditch, Lower Western Drainage Ditch, and Confluence Area (Outfall 006). Within the Upper Western Drainage Ditch, a small unnamed intermittent flow will be piped to limit the disturbance of contaminated soils through flow from the upslope drainage area onto a riprap outfall just above the Lower Western Drainage Ditch. The impacts can be seen as **ID-19** for fill, **ID-25** for the pipe run, and **ID-24** for the riprap outfall. In the Lower Western Drainage Ditch and Confluence Area, **ID-29** shows a temporary riprap outfall for dewatering measures during the construction in the Upper Western Drainage**, ID-17** for excavation of contaminated soils, **ID-18** for the clean fill placement following excavation, **ID-07** for Temporary Berm 2 (TB2) to redirect flow through temporary Outfall 006B (not in regulated resources), **ID-20** for the installation of a gabion basket wall to elevate the Outfall 006 berm and stabilize the bank, **ID-28** for a temporary discharge at Outfall 006C for Temporary Dam 5 (TD5) and Temporary Dam 2 (TD2), **ID-23** for three (3) pipe extensions with duckbill flap, **ID-21** for the step-out of sheet pile to support the existing 3 pipe Outfall 006, **ID-22** for the placement of fill behind the sheet pile step-out, and **ID-10** for the installation of a temporary ramp to complete sediment excavation and fill activities.

Eastern Drainage Ditch

The Eastern Drainage Ditch is predominantly comprised of two impounded bodies of water broken into the Lower Eastern Drainage Ditch and the Upper Eastern Drainage Ditch. A small intermittent flow, known as the Side Channel (or future Swale 1 in construction plans), drains into the Lower Eastern Drainage Ditch. The Eastern Drainage Ditch Complex drains into the Confluence Area, and the top of the system is located along the west side of Railcar Ave. The impacts can be seen as **ID-06, ID-08**, and **ID-09** respectively for TD-5, its riprap skimmer pad, and fill for the concrete riser pad and riprap skimmer pad. Impact **ID-05** is associated with temporary fills associated with Temporary Berm 1A (TB1A). Impact **ID-14** is associated with excavation of contaminated sediments within the Lower Eastern Drainage Ditch and Side Channel. Impact **ID-15** is associated with the clean fill placement following excavation within the Lower Eastern Drainage Ditch and Side Channel. Impact **ID-04** is associated with the installation of Temporary Dam 3 (TD3) to redirect flow to TD2 and ultimately temporary Outfall 006C. Impact **ID-03** is associated with the installation of a riprap stilling basin. Impact **ID-02** is related to the installation of riprap at existing Offsite Outfall 003, while Impact **ID-01** is related to the installation of riprap at Outfall 001 which captures upland runoff. Impact **ID-16** involves the complete filling of the Upper Eastern Drainage Ditch to act as the Containment Cell for all excavated and stabilized contaminated soils and sediments remaining onsite for the Project.

Northeast Drainage Ditch

The Northeast Drainage Ditch is an intermittent flow that runs along the northeast boundary of the Project and drains to both the Eastern Drainage Ditch and Shellpot Creek due to a relative high

point in the system. This multidirectional flow will be maintained by the Project. The impacts can be seen as **ID-11** for excavation of contaminated sediments and **ID-12** for the clean fill placement following excavation within the Northeast Drainage Ditch. **ID-26** is associated with the placement of riprap upstream and downstream of the existing pipe.

Outfall 002

Outfall 002 is a small flow with tailwater conditions from Shellpot Creek located in the northern portion of the Project area. The impacts can be seen as **ID-13** for the excavation of contaminated soils and sediments down to an existing concrete channel bottom while **ID-27** is associated with Temporary Outfall 002 to discharge upslope flows during construction

Impact Summary

The attached **Table 1** summarizes the impacts by Impact ID, DNREC Appendix, Impact Type, Impact Description, Area (square feet), and Volume (cubic yards) for activities within Subaqueous Lands. Area and/or Volume totals that are included in other Appendices have been noted in red and excluded from the summates. The Area and Volume totals in **Table 1** may share duplicative footprints with other activities within the same Subaqueous Lands. The total Permanent area of impact in Subaqueous Lands is approximately 194,300 square feet while the total permanent cubic yardage of impact, where excavation negates, is net +23,750 cubic yards; that volume total accounts for the contaminant excavation placement of stabilized sediments within the Containment Cell.

Each Impact ID is prepared on a single Appendix subset and as mentioned above, duplicative Area or Volume is indicated on the Appendix and in the attached **Table 1**. The attached Construction Plans and NWP38 Plans sets have been marked up to show the approximate Impact ID area or feature; the construction details have been marked as well.

The volumes proposed in the attached DNREC Subaqueous Lands Permit Application Appendices were calculated to the plane of the Ordinary High Water (OHW). As indicated in the Construction Plan Set, some limits of excavation and fill are approximate, and volume calculations have been provided as accurately as possible. Field observations during remedial action of In-situ contamination may result in the need to expand or reduce excavation volumes from permit application totals. The horizontal limits of activities are certain and should not result in an expanded footprint of disturbance.

While many of the sub-systems (such as the Lower Western Drainage Ditch, Confluence Area, Lower Eastern Drainage Ditch, Northeast Drainage Ditch, and Outfall 002) will be restored following the excavation of contaminated sediments, there will be loss of Subaqueous Lands in: the Upper Western Drainage Ditch due to the pipe run, the Side Channel of the Lower Eastern Drainage Ditch through the implementation of Swale 1 and surrounding Wetland Mitigation Creation area, and the Upper Eastern Drainage Ditch for the establishment of the Containment Cell. The applicant is proposing to offset the loss of Subaqueous Lands through the creation of a Wetland Mitigation Creation Area which additionally satisfies the compensatory need for the loss

of aquatic resources with the USACE. The Mitigation Monitoring framework is under preparation and will be provided to DNREC when complete.

The remedial action will result in a net gain of 3.41 acres of wetlands and a net loss of 2.22 acres of Subaqueous Lands. This yields a ***net gain of aquatic resources of 1.18 acres.***

Discussion

The following is a discussion of the ancillary elements of this Application.

- AMTRAK has applied for a Nationwide Permit (NWP-38: Cleanup of Hazardous and Toxic Waste) with the Philadelphia District of the USACE for this project.
- Water Quality Certification has been issued for NWP-38. Coastal Zone Management (CZM) Federal Consistency is issued for NWP-38. CZM notification will be provided to Delaware Coastal Management Program upon issuance of the NWP-38 from the USACE.
- The applicant has requested a waiver from the in-water-work restriction window (March 1-June 30) since the project area is precluded from anadromous fish migration by tide gates at Brandywine Creek and Shellpot Creek.
- Additionally, the applicant is proposing to perform any vegetation removal work outside of the time-of-year voluntary restriction window (April 1-July 31) for tri-color bat at the request of the USFWS. No other rare, threatened, or endangered species concerns are present from the USFWS and/or DNREC-Species Conservation Research Program.
- Section 106 consultation is ongoing. The applicant maintains a Programmatic Agreement (PA) with The Delaware SHPO and Federal Railroad Administration (FRA). A Request for Concurrence with the provisions of the PA has been submitted to SHPO. The results of Section 106 consultation will be provided to DNREC Wetlands and Waterways when received.
- A floodplain permit has been requested from the City of Wilmington and can be provided at DNREC's request when received. The results of extensive Hydrologic and Hydraulic studies indicate the project will not have a negative impact on floodplain characteristics.
- Construction plans are designed as 90% to allow for any comments received/revisions necessary by reviewing entities. Final plans can be provided when completed, at your request. We do not anticipate any changes in design and thus any changes to the calculated impacts within Subaqueous Lands presented here.
- The deed for the parcel(s) under consideration for the Project is included with the Basic Application as well as delegation of signature authority from the applicant.

Due to the limitations of file size upload, please contact me at TJ.Austin@stantec.com to receive attachments.

Reference: Subaqueous Lands Permit Application

Thank you for your assistance on this important project. Please contact me if you have any questions or require additional information.

Regards,

Stantec Consulting Services Inc.

T.J. Austin, PWS
Project Manager
Phone: 301-220-1890
TJ.austin@stantec.com

Frank Aceto, P.G.
Vice President
Phone: 610-704-9156
frank.aceto@stantec.com

Attachments:

Impact Summary Table (Table 1)
Wetlands and Subaqueous Lands Permit Application
Permit Application Attachments
Permit Application Appendices

Cc:

Steve Baggett
Paul Miller
Mark Onesky
Andrew Enzman (Amtrak)
John Cargill (DNREC)
Gina Marinacci (DNREC)
Amanda Michel (USEPA)

Table 1 Impact Summary Table

Table 1—Impact Summary Table

DNREC IMPACTS TABLE							
IMPACT ID	**DNREC APPENDIX**	**IMPACT TYPE**	**IMPACT DESCRIPTION**	**PROJECT FEATURE LOCATION**	**AREA (SF)**	**VOLUME (CY)**	**ADDITIONAL INFORMATION**
ID-01	App I	Permanent	Outfall 001R Riprap	Lower Eastern Drainage Ditch	150	8.58	Only portion of riprap in OHW
ID-02	App I	Permanent	Offsite Outfall	Eastern Drainage, Side Channel	80	4.18	Only portion of riprap in OHW
ID-03	App I	Permanent	Stilling Basin	Eastern Drainage, Side Channel	145	7.75	Only portion of riprap in OHW
ID-04	App D	Temporary	Temporary Dam 3 (TD3)	Eastern Drainage, Side Channel	590	4,382	Only portion of dam in OHW
ID-05	App H	Temporary	Temporary Berm 1 (TB1)	Lower Eastern Drainage Ditch	1,222	1,200	Only portion of berm in OHW
ID-06	App D	Temporary	Temporary Dam 5 (TD5)	Lower Eastern Drainage Ditch	1,030	5,007	Only portion of dam in OHW
ID-07	App D	Temporary	Temporary Berm 2 (TB2)	Lower Western Drainage Ditch	650	4,382	Only portion of berm in OHW
ID-08	App I	Temporary	TD5 Skimmer Riprap	Lower Eastern Drainage Ditch	16	0.5	Riprap pad for skimmer, not totaled; see ID-09
ID-09	App H	Temporary	TD5 Riser/Skimmer Pads	Lower Eastern Drainage Ditch	32	1.5	Includes riprap area/volume from ID-08
ID-10	App B	Temporary	Confluence Area Ramp	Confluence Area (Western Drainage Ditch)	935	35	Will be installed in dry (dewater)
ID-11	App R	Permanent	Contaminant Excavation	Northeast Drainage Ditch	19,670	2,400	Entire drainage ditch
ID-12	App H	Permanent	Contaminant Excavation, Fill	Northeast Drainage Ditch	19,670	2,404	Assumes equal fill to excavation total, includes area/volume from ID-26
ID-13	App R	Permanent	Contaminant Excavation	Outfall 002	1,354	313	Existing concrete below excavation
ID-14	App R	Permanent	Contaminant Excavation	Lower Eastern Drainage Ditch and Side Channel	59,580	6,340	
ID-15	App H	Permanent	Contaminant Excavation, Fill	Lower Eastern Drainage Ditch and Side Channel	61,844	5,821	Includes fill of Swale 1 (does not include TD3 or TB1 Fills)
ID-16	App H	Permanent	Containment Berm	Upper Eastern Drainage Ditch	88,017	24,793	Volume to OHW elevation
ID-17	App R	Permanent	Contaminant Excavation	Lower Western Drainage Ditch and Confluence Area	17,070	2,353	
ID-18	App H	Permanent	Contaminant Excavation, Fill	Lower Western Drainage Ditch and Confluence Area	17,070	871	
ID-19	App H	Permanent	Pipe Run Fill	Upper Western Drainage Ditch	5,313	1,225	Includes riprap area/volume from ID-24
ID-20	App K	Permanent	Gabion Basket Wall	Confluence Area (Western Drainage Ditch)	1,030	N/A	Volume of Gabion Basket not available
ID-21	App G	Permanent	Sheetpile	Confluence Area (Western Drainage Ditch)	N/A	N/A	Area/Volume included in ID-22
ID-22	App H	Permanent	Bulkhead Fill	Confluence Area (Western Drainage Ditch)	110	8.5	Concrete fill Area/Volume calculated to OHW elevation
ID-23	App C	Permanent	Pipe Extension(s) (3)	Confluence Area (Western Drainage Ditch)	20	N/A	Volume of Pipe not available
ID-24	App I	Permanent	Pipe Run Outfall	Upper Western Drainage Ditch	300	17.78	Area/Volume included in ID-19
ID-25	App C	Permanent	Pipe Run Pipe	Upper Western Drainage Ditch	5,313	N/A	Area/Volume included in ID-19
ID-26	App I	Permanent	NEDD 1 & NEDD 2 Riprap	Northeast Drainage Ditch	60	3.5	Includes upstream and downstream riprap
ID-27	App I	Temporary	Temporary Outfall 002	Outfall 002	133	11.8	
ID-28	App I	Temporary	Temporary Outfall 006C	Outfall 006C	205	11	
ID-29	App I	Temporary	Temporary Outfall 006B	Outfall 005 Temp	96	5.5	
				TOTAL PERMANENT IMPACT	**296,496**	**46,553**	**Highlighted Cell**=Totals not available or accounted for in other Appendix
				TOTAL TEMPORARY IMPACT	**4,893**	**15,036**	
				TOTAL PERMANENT FILL (Soil/Rock) (CY)	—	35,147	
				TOTAL PERMANENT EXCAVATION (Soil) (CY)	—	-11406	
				NET PERMANENT (LESS DUPLICITIVE ACTIVITY FOOTPRINTS/EXCAVATION) (CY)	**194,298**	**23,741**	

Wetlands and Subaqueous Lands Permit Application

WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM

For Subaqueous Lands, Wetlands, Marina and 401 Water Quality Certification Projects

State of Delaware
Department of Natural Resources and Environmental Control
Division of Water

Wetlands and Subaqueous Lands Section

APPLICATION FOR APPROVAL OF
SUBAQUEOUS LANDS, WETLANDS, MARINA
AND WATER QUALITY CERTIFICATION PROJECTS

Last Revised on: March 28, 2017

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

Application Instructions:

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.

2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.

3. All applications must have an original signature page and proof of ownership or permitted land use agreement.

4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee* (prepared in separate checks) to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

*Application and public notice fees are non-refundable regardless of the Permit decision or application status.

5. No construction may begin at the project site before written approval has been received from this office.

Helpful Information:

1.	Tax Parcel Information:	New Castle County	(302) 395-5400
		Kent County	(302) 736-2010
		Sussex County	(302) 855-7878
2.	Recorder of Deeds:	New Castle County	(302) 571-7550
		Kent County	(302) 744-2314
		Sussex County	(302) 855-7785

3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: http://www.nap.usace.army.mil/Missions/Regulatory.aspx.

4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

✓ Yes	BASIC APPLICATION
✓ Yes	SIGNATURE PAGE (Page 3)
✓ Yes	APPLICABLE APPENDICES
✓ Yes	SCALED PLAN VIEW
✓ Yes	SCALED CROSS-SECTION OR ELEVATION VIEW PLANS
✓ Yes	VICINITY MAP
✓ Yes	COPY OF THE PROPERTY DEED & SURVEY
✓ Yes	THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET
✓ Yes	APPROPRIATE APPLICATION FEE & PUBLIC NOTICE FEE (Separate checks made payable to the State of Delaware)

Submit 3 complete copies of the application packet to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

Before signing and mailing your application packet, please read the following:

The Department requests that the contractor or party who will perform the construction of your proposed project, if other than the applicant, sign the application signature page along with the applicant in the spaces provided. When the application is signed by the contractor as well as the applicant, the Department will issue the Permit to both parties. For Leases, the contractor will receive a separate construction authorization that will make them subject to all of the terms and conditions of the Lease relating to the construction

Section 1: Applicant Identification

1. Applicant's Name: Andrew Enzman
Mailing Address: Amtrak
4001 Vandever Ave, Wilmington, DE 19802
Telephone #: 302-353-0358
Fax #:
E-mail: enzmana@amtrak.com

2. Consultant's Name: T. J. Austin
Mailing Address: 1060 Andrew Drive, Suite 140
West Chester, PA 19380
Company Name: Stantec Consulting Services, Inc
Telephone #: 301-220-1890
Fax #:
E-mail: TJ.Austin@stantec.com

3. Contractor's Name: TBD
Mailing Address:
Company Name: ---
Telephone #:
Fax #:
E-mail:

Section 2: Project Description

4. Check those that apply:
☒ New Project/addition to existing project? ☐ Repair/Replace existing structure? (If checked, must answer #16)

5. Project Purpose (attach additional sheets as necessary):

See Attachment 1

6. Check each Appendix that is enclosed with this application:

	A. Boat Docking Facilities	X	G. Bulkheads		N. Preliminary Marina Checklist
X	B. Boat Ramps	X	H. Fill		O. Marinas
X	C. Road Crossings	X	I. Rip-Rap Sills and Revetments		P. Stormwater Management
X	D. Channel Modifications/Dams		J. Vegetative Stabilization		Q. Ponds and Impoundments
	E. Utility Crossings	X	K. Jetties, Groins, Breakwaters	X	R. Maintenance Dredging
	F. Intake or Outfall Structures		M. Activities in State Wetlands		S. New Dredging

Section 3: Project Location

7. Project Site Address:
4001 Vandever Avenue, Wilmington, DE 19802
County: ☑ N.C. ☐ Kent ☐ Sussex
Site owner name (if different from applicant):
Address of site owner:

Driving Directions: I-495 to 12th Street Exit. West on 12th Street to Railcar Avenue, Proceed 0.75 miles to office - **see Attachment 2 – Vicinity Map**
(Attach a vicinity map identifying road names and the project location)

8. Tax Parcel ID Number: 0615200011, 2603700007, 2673700013, 2603000064, 2603800003, 2603700005
Subdivision Name: Wilmington

WSLS Use Only: **Permit #s:**

Type **SP** ☐ **SL** ☐ **SU** ☐ **WE** ☐ **WQ** ☐ **LA** ☐ **SA** ☐ **MP** ☐ **WA** ☐

Corps Permit: SPGP 18 ☐ **20** ☐ **Nationwide Permit #:** **Individual Permit #**
Received Date: **Project Scientist:**
Fee Received? Yes ☐ **No** ☐ **Amt: $** **Receipt #:**
Public Notice #: **Public Notice Dates: ON** **OFF**

Section 3: Project Location (Continued)

9. Name of waterbody at Project Location: Shellpot Creek and Brandywine Creek
   waterbody is a tributary to: Christina and Delaware Rivers

10. Is the waterbody: ☐ Tidal ☑ Non-tidal Waterbody width at mean low or ordinary high water _____
    ☐ Controlled by tide gates

11. Is the project: ☐ On public subaqueous lands? ☑ On private subaqueous lands?*
    ☐ In State-regulated wetlands? ☑ In Federally-regulated wetlands?

*If the project is on private subaqueous lands, provide the name of the subaqueous lands owner:
National Railroad Passenger Corporation (AMTRAK)
(Written permission from the private subaqueous lands owner must be included with this application)

12. Present Zoning: ☐ Agricultural ☐ Residential ☐ Commercial ☑ Industrial ☐ Other

Section 4: Miscellaneous

13. A. List the names and complete mailing addresses of the immediately adjoining property owners on all sides of the project (attach additional sheets as necessary):

See Attachment 3

B. For wetlands and marina projects, list the names and complete mailing addresses of property owners within a 1,000 foot radius of the project (attach additional sheets as necessary):

See Attachment 4

14. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:

John Cargill, IV - DNREC	Matt Jones	Gordon Woodrow
Gina Marinacci	Elaine Webb	George Mwangi
Rick Galloway	Rob Youhas and Mike Yost @ USACE	

A. Have you had a State Jurisdictional Determination performed on the property? ☐ Yes ☑ No
B. Has the project been reviewed in a monthly Joint Permit Processing Meeting? ☑ Yes ☐ No
*If yes, what was the date of the meeting? August 18, 2022

15. Are there existing structures or fill at the project site in subaqueous lands? ☑ Yes ☐ No
*If yes, provide the permit and/or lease number(s):
Unknown – Historic Fill

*If no, were structures and/or fill in place prior to 1969? ☐ Yes ☐ No

16. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?
☐ No ☑ Pending ☐ Issued ☐ Denied Date: October 31, 2025

Type of Permit: NWP-38 Federal Permit or ID #: Pending

17. Have you applied for permits from other Sections within DNREC?
☐ No ☑ Pending ☐ Issued ☐ Denied Date: _____ Permit or ID #: Pending

Type of permit (circle all that apply): Septic Well NPDES Storm Water

Other: Temporary Discharge Authorization, Sediment and Storm Water Pollution Control (5101), Dewatering

Section 5: Signature Page

18. Agent Authorization:

If you choose to complete this section, all future correspondence to the Department may be signed by the duly authorized agent. In addition, the agent will become the primary point of contact for all correspondence from the Department.

I do not wish to authorize an agent to act on my behalf ☐

I wish to authorize an agent as indicated below ☐

I, Andrew Enzman (Name of Applicant), hereby designate and authorize T.J. Austin, Stantec Consulting Services, Inc (Name of Agent) to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

Authorized Agent's Mailing Address: 1060 Andrew Drive, Suite 140 West Chester, PA 19380 ATTN: Karen Middleton
Telephone #: 610-840-2500
Fax #:
E-mail: TJ.Austin@stantec.com

19. Agent's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Agent's Signature — Date: November 21, 2025

20. Applicant's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application. I grant permission to authorized Department representatives to enter upon the premises for inspection purposes during working hours.

Applicant's Signature — Date: 21 November 2025

Andrew Enzman
Print Name

21. Contractor's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge, and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

TBD
Contractor's Name — Date

Print Name

Permit Application Attachments

Attachment 1 Project Purpose

ATTACHMENT 1

PROJECT PURPOSE

The purpose of the AMTRAK Wilmington Shops Remediation Project is the remediation of polychlorinated biphenyls (PCBs) and other contaminants present in soil, sediment, and groundwater at the facility. The remedial action is in accordance with DNREC approvals of the Final Plans of Remediation (FRPA) for the Former Fueling Facility (DE-0266) and the Wilmington Maintenance Facility (DE-0170) and also USEPA approval of the Risk Based Disposal Approval Application (RBDAA) for the facilities. These facilities are collectively known as the Amtrak Wilmington Shops (Site).

The Amtrak Wilmington Shops are located in an industrial area in southeastern Wilmington, Delaware. The Former Fueling Facility (DE-0266) encompasses approximately 56 acres south of the Maintenance Facility and was used primarily to service locomotives with coal and later diesel fuel, lubricating oil and sand. The Maintenance Facility (DE-0170) encompasses approximately 52 acres and is located north of the Former Fueling Facility. The Maintenance Facility is used for the maintenance of locomotives and other railroad related equipment. It should be noted that a small portion of the remedial action, limited to a portion of the Northeast Drainage Ditch of less than two acres, is located on Norfolk Southern property.

Portions of the approved remedial action will occur in and around wetlands and subaqueous lands.

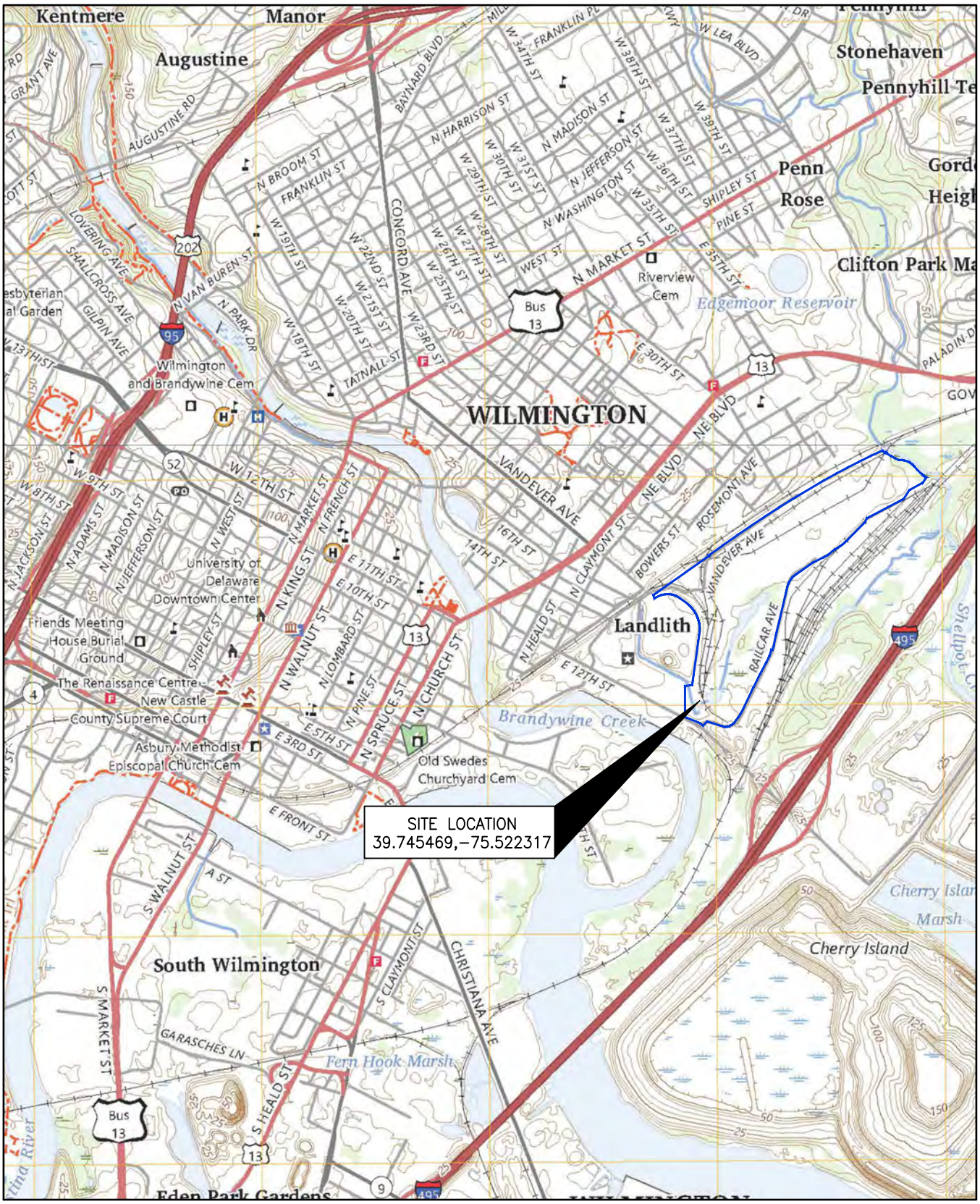
A Wetland Delineation was completed at the Site and published in a report dated June 19, 2025. The report was revised on August 29, 2025. The report concluded that:

- The majority of the study area is within a Federal Emergency Management Agency (FEMA) designated 100-Year Flood Hazard Area zone AE with a flood elevation of eight to nine feet.
- No mapped State tidal wetlands are located within the study area and none of the identified on-site wetlands are State-regulated tidal wetlands.
- Twelve wetlands with a total area of approximately 16.06 acres were identified within the study area.
- The dominant wetland type on-Site was PEM with areas of PFO and PSS.
- The NWI Map indicated areas of Freshwater Pond (PubHh) within the study area
- 4.44 acres of open water were identified.

The remedial action will result in a net gain of 3.41 acres of wetlands and a net loss of 2.22 acres of Subaqueous Lands. This yields a net gain of aquatic resources of 1.18 acres.

Details regarding the existing conditions, proposed remedial actions, and final conditions at the Site may be found on the attached drawing package included as **Attachment 6** to this application.

Attachment 2 Vicinity Map



Stantec

Project Location:
CITY OF WILMINGTON
NEW CASTLE COUNTY, DE

213403550
Prepared by TTN on 2025-06-05

Client/Project
AMTRAK WILMINGTON SHOPS REMEDIATION
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

Figure No. 1

Title
VICINITY MAP

NOTES:

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE DELAWARE FIPS 0700 FEET
2. SOURCE: STANTEC, USGS
3. COPYRIGHT: NATIONAL GEOSPATIAL PROGRAM US

DISCLAIMER: STANTEC ASSUMES NO RESPONSIBILITY FOR DATA SUPPLIED IN ELECTRONIC FORMAT. THE RECIPIENT ACCEPTS FULL RESPONSIBILITY FOR VERIFYING THE ACCURACY AND COMPLETENESS OF THE DATA. THE RECIPIENT RELEASES STANTEC, ITS OFFICERS, EMPLOYEES, CONSULTANTS AND AGENTS FROM ANY AND ALL CLAIMS ARISING IN ANY WAY FROM THE CONTENT OR PROVISION OF THE DATA.

LEGEND:

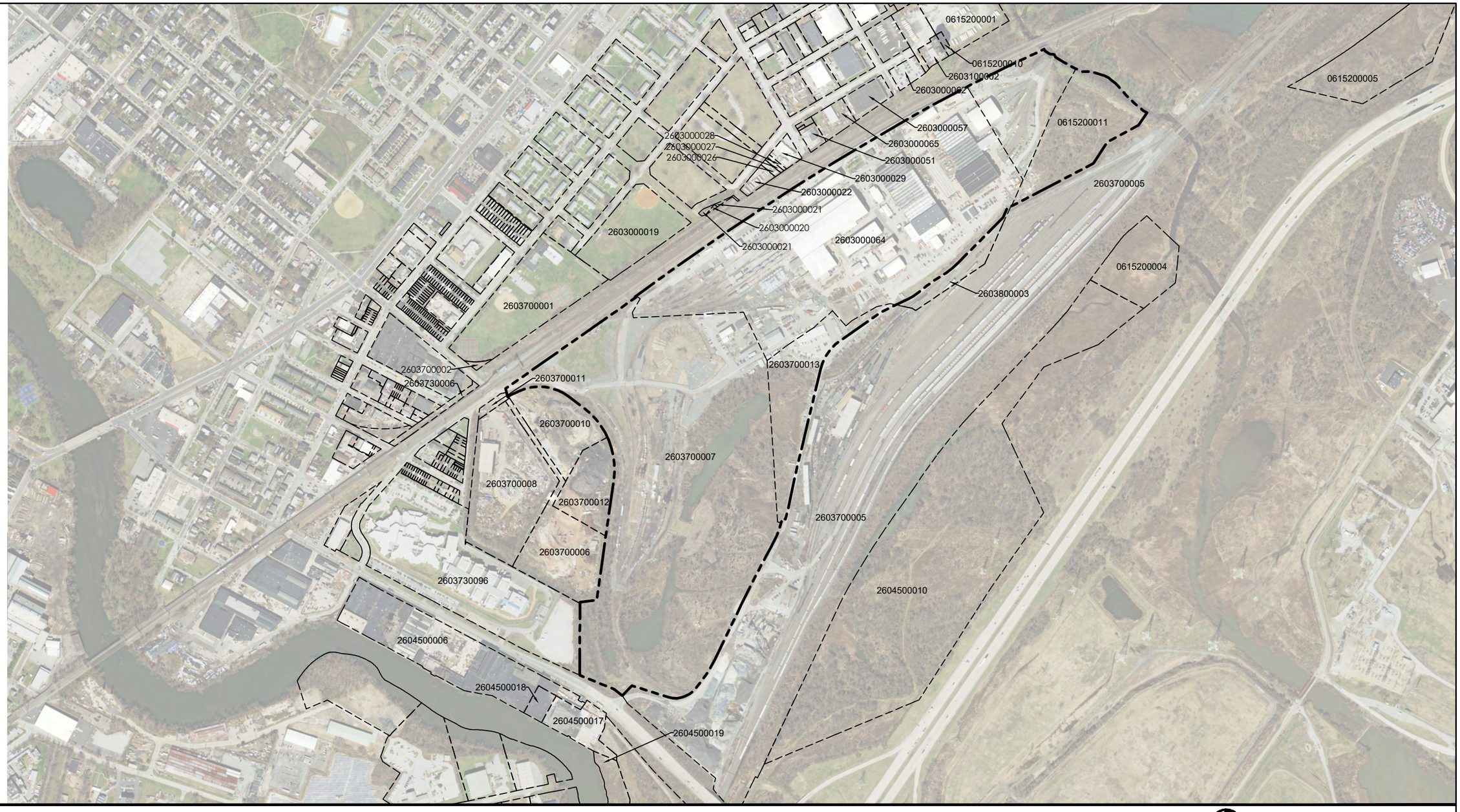
PROJECT AREA

U:\213402048\stormwater\SAS\SAS_Maps\SAS Figures.dwg[Vicinity Map]

Attachment 3 List of Adjoining Property Owners (and map)

Attachment 3 Amtrak Wilmington Shops Remediation - List of Adjoining Property Owners

PIN	ACRES	COUNTY	UPDATED	Property Address	Property Owner Name	Property Owner Mailing Address
0614900019	14.898761	New Castle	2/1/2025	4302 GOVERNOR PRINTZ BLVD WILMINGTON, DE 19802-	C & A HOLDING ASSOCIATES INC	C/O CONCORD MALL MANAGEMNT CO P.O. BOX 7189 WILMINGTON, DE 19803
0615200001	3.758528	New Castle	2/1/2025	3113 EDGEMOOR AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
0615200010	0.130602	New Castle	2/1/2025	1501 E THIRTY FIFTH ST WILMINGTON, DE 19802-	AP WIP TOWER LLC	9373 TOWNE CENTRE DRIVE SUITE 200 SAN DIEGO, CA 92130
2603000019	4.58483	New Castle	2/1/2025	2400 ROSEMONT AVE WILMINGTON, DE 19802-	KINGSWOOD COMM CENTER INC	1325 N CLAYMONT ST WILMINGTON, DE 19802
2603000020	0.023071	New Castle	2/1/2025	0 E TWENTY SEVENTH ST OFF WILMINGTON, DE 19802-	MENDINHALL CORRINE H C	OFF E TWENTY SEVENTH ST WILMINGTON, DE 19802
2603000021	0.101685	New Castle	2/1/2025	1620 E TWENTY SEVENTH ST WILMINGTON, DE 19802-	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000022	0.406677	New Castle	2/1/2025	2700 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	P O BOX 1186 WILMINGTON, DE 19899
2603000026	0.109784	New Castle	2/1/2025	2720 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000027	0.062119	New Castle	2/1/2025	2724 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000028	0.060883	New Castle	2/1/2025	2726 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000029	0.50175	New Castle	2/1/2025	1604 TODDS LN 1600 TODDS LN	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000051	0.376027	New Castle	2/1/2025	1607 TODDS LN WILMINGTON, DE 19802-	TODDS LANE HOLDINGS LLC	7330 TULIP ST PHILADELPHIA, PA 19136
2603000057	0.984879	New Castle	2/1/2025	3016 EDGEMOOR AVE WILMINGTON, DE 19802-	SHELLHORN & HILL INC	3016 EDGEMOOR AVE WILMINGTON, DE 19802
2603000062	0.58771	New Castle	2/1/2025	3400 EDGEMOOR AVE ES WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603000065	0.87855	New Castle	2/1/2025	3010 EDGEMOOR AVE WILMINGTON, DE 19802-	BAILEY VERNON G & JOHN H	P O BOX 4143 GREENVILLE, DE 19807
2603100001	1.155086	New Castle	2/1/2025	3101 EDGEMOOR AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603100002	0.448466	New Castle	2/1/2025	1501 E THIRTY FIFTH ST WILMINGTON, DE 19802-	AP WIP TOWER LLC	9373 TOWNE CENTRE DRIVE SUITE 200 SAN DIEGO, CA 92130
2603700001	7.400884	New Castle	2/1/2025	2300 BOWERS ST WILMINGTON, DE 19802-	KINGSWOOD COMM CENTER INC	2300 BOWERS ST WILMINGTON, DE 19802
2603700002	0.099554	New Castle	2/1/2025	1411 VANDEVER AVE WILMINGTON, DE 19802-	P B & W RR CO PENN CENTRAL	30TH STREET STATION - 5 SOUTH - BOX 25 PHILADELPHIA, PA 19104
2603700005	63.452572	New Castle	2/1/2025	3 addresses listed	PENNSYLVANIA LINES LLC	C/O NORFOLK SOUTHERN TAX DEPT 650 W PEACHTREE ST NW ATLANTA, GA 30308
2603700006	5.528495	New Castle	2/1/2025	1610 BOWERS ST WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	C/O DESIGN CONTRACTING P O BOX 25125 WILMINGTON, DE 19899
2603700010	3.852333	New Castle	2/1/2025	PURE GREEN INDUSTRIES INC		9 BELLECOR DR NEW CASTLE, DE 19720
2603700011	0.260699	New Castle	2/1/2025	0 MARSH RD WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	P O BOX 25125 WILMINGTON, DE 19899
2603700012	3.19729	New Castle	2/1/2025	0 BOWERS ST WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	P O BOX 25125 WILMINGTON, DE 19899
2603710092	3.34566	New Castle	2/1/2025	11 addresses listed	BIGBEN DE HOLDINGS LLC	508 NE 190TH STREET MIAMI, FL 33179
2603730006	0.502692	New Castle	2/1/2025	1225 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON UDAG CORPORATION	C/O CITY OF WILMINGTON WILMINGTON, DE 19801
2603730096	16.557747	New Castle	2/1/2025	2 addresses listed	STATE OF DELAWARE	DEPT OF CORRECTIONS WILMINGTON, DE 19802



Stantec

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, PA

Tel. 610.840.2500
Fax 610.840.2501
www.stantec.com

Note:

1. Coordinate System: NAD 1983 State Plan Delaware
2. Source: DNREC GIS, Delaware Tax Ditch Map, Division of Watershed Stewardship, Drainage Program

Legend:

Wilmington Shops Project Boundary

Adjacent Property Boundary

N

0 600 1200

APPROXIMATE SCALE IN FEET

Stantec

Project Location:
CITY OF WILMINGTON
NEW CASTLE COUNTY, DE

213403550
Prepared by TTN on 2024-10-16

Client/Project
AMTRAK WILMINGTON SHOPS REMEDIATION
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

Figure No. 1

Title
PARCEL BOUNDARY GIS MAP

FILEPATH(U:\213403549\Stormwater\GIS\GIS_Maps\Tax Parcel Map.dwg) tmguyen Jun 13, 2025 at 13:35 | Layout: Tax Map

Attachment 4 List of Property Owners within 1,000 feet (and map)

Attachment 4 - Amtrak Wilmington Shops Remediation Parcels Within 1,000 Feet

PIN	ACRES	COUNTY	UPDATED	Property Address	Property Owner Name	Property Owner Mailing Address
0614900017	2.176692	New Castle	2/1/2025	4014 GOVERNOR PRINTZ BLVD WILMINGTON, DE 19802-	NEW CASTLE COUNTY-FOR USE OF	800 NORTH FRENCH ST WILMINGTON, DE 19801-3590
0614900018	2.745345	New Castle	2/1/2025	4200 GOVERNOR PRINTZ BLVD WILMINGTON, DE 19802-	5356 ASSOCIATES LLC	C/O JEFFREY B HAUSERMAN P O BOX 9560 WILMINGTON, DE 19809-0560
0614900019	14.898761	New Castle	2/1/2025	4302 GOVERNOR PRINTZ BLVD WILMINGTON, DE 19802-	C & A HOLDING ASSOCIATES INC	C/O CONCORD MALL MANAGEMNT CO P.O. BOX 7189 WILMINGTON, DE 19803
0615200001	3.758528	New Castle	2/1/2025	3113 EDGEMOOR AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
0615200002	0.720811	New Castle	2/1/2025	0 DOWNING DR OFF WILMINGTON, DE 19802-	DELMARVA POWER & LIGHT CO	C/O ERNST & YOUNG LLP PO BOX 340014 NASHVILLE, TN 37203
0615200004	4.125492	New Castle	2/1/2025	1553 E TWELFTH ST WILMINGTON, DE 19802-	DELMARVA POWER & LIGHT CO-ELECTRIC FACILITIES	C/O ERNST & YOUNG LLP PO BOX 340014 NASHVILLE, TN 37203
0615200005	7.59864	New Castle	2/1/2025	0 EDGEMOOR RD WILMINGTON, DE 19802-	STEEN ANITA & HARDY KIMBERLY & HOFFMAN DEBORAH &	C/O HFSG MGMT LLC 103 FIESTA WAY FT LAUDERDALE, FL 33301-1416
0615200010	0.130602	New Castle	2/1/2025	1501 E THIRTY FIFTH ST WILMINGTON, DE 19802-	AP WIP TOWER LLC	9373 TOWNE CENTRE DRIVE SUITE 200 SAN DIEGO, CA 92130
0615200011	6.983704	New Castle	2/1/2025	0 RAILCAR AVE WILMINGTON, DE 19802-	P B & W RR CO PENN CENTRAL	TAX & INSURANCE DPT 400 N CAPITOL ST NW WASHINGTON, DC 20001
2602400003	0.594606	New Castle	2/1/2025	3606 DOWNING DR WILMINGTON, DE 19802-	ESCAPE TO MARATHON LLP	2408 OVERLOOK DRIVE WILMINGTON, DE 19810
2602400004	1.902407	New Castle	2/1/2025	3605 DOWNING DR WILMINGTON, DE 19802-	MOAT STREET LLC	P O BOX 25125 WILMINGTON, DE 19899
2602400005	1.140413	New Castle	2/1/2025	0 DOWNING DR WILMINGTON, DE 19802-	CHRF LLC	3604 DOWNING DRIVE WILMINGTON, DE 19802
2603000011	3.48841	New Castle	2/1/2025	10 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000015	0.626149	New Castle	2/1/2025	1400 E TWENTY FOURTH ST WILMINGTON, DE 19802-	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000019	4.58483	New Castle	2/1/2025	2400 ROSEMONT AVE WILMINGTON, DE 19802-	KINGSWOOD COMM CENTER INC	1325 N CLAYMONT ST WILMINGTON, DE 19802
2603000020	0.023071	New Castle	2/1/2025	0 E TWENTY SEVENTH ST OFF WILMINGTON, DE 19802-	MENDINHALL CORRINE H C	OFF E TWENTY SEVENTH ST WILMINGTON, DE 19802
2603000021	0.101685	New Castle	2/1/2025	1620 E TWENTY SEVENTH ST WILMINGTON, DE 19802-	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000022	0.406677	New Castle	2/1/2025	2700 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	P O BOX 1186 WILMINGTON, DE 19899
2603000026	0.109784	New Castle	2/1/2025	2720 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000027	0.062119	New Castle	2/1/2025	2724 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000028	0.060883	New Castle	2/1/2025	2726 EDGEMOOR AVE WILMINGTON, DE 19802-	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000029	0.50175	New Castle	2/1/2025	1604 TODDS LN 1600 TODDS LN	PETER D FURNESS ELECTRIC CO	1604 TODDS LANE WILMINGTON, DE 19802
2603000031	1.658105	New Castle	2/1/2025	3030 BOWERS ST WILMINGTON, DE 19802-	OPPORTUNITY CENTER INC	3030 BOWERS ST WILMINGTON, DE 19802

2603000038	0.091304	New Castle	2/1/2025	1303 TODDS LN WILMINGTON, DE 19802-	BRISCOE MELVIN	2407 N JEFFERSON ST WILMINGTON, DE 19802
2603000039	0.135295	New Castle	2/1/2025	1305 TODDS LN WILMINGTON, DE 19802-	BRISCOE MELVIN	2407 N JEFFERSON ST WILMINGTON, DE 19802
2603000040	0.155064	New Castle	2/1/2025	3001 ROSEMONT AVE WILMINGTON, DE 19802-	RUSTY TREE LLC	1401 TODDS LANE WILMINGTON, DE 19802
2603000041	0.233473	New Castle	2/1/2025	3007 ROSEMONT AVE WILMINGTON, DE 19802-	RUSTY TREE LLC	1401 TODDS LANE WILMINGTON, DE 19802
2603000042	0.422561	New Castle	2/1/2025	1401 TODDS LN WILMINGTON, DE 19802-	RUSTY TREE LLC	1401 TODDS LANE WILMINGTON, DE 19802
2603000043	0.470212	New Castle	2/1/2025	1405 TODDS LN WILMINGTON, DE 19802-	LTJ ENTERPRISES LLC	PO BOX 3985 WILMINGTON, DE 19807
2603000044	0.430452	New Castle	2/1/2025	3007 BELLEVUE AVE WILMINGTON, DE 19802-	LTJ ENTERPRISES LLC	PO BOX 3985 WILMINGTON, DE 19807
2603000045	0.520767	New Castle	2/1/2025	3011 BELLEVUE AVE WILMINGTON, DE 19802-	MILLS JAY R SR	3011 BELLEVUE AVE WILMINGTON, DE 19802
2603000046	0.873156	New Castle	2/1/2025	3015 BELLEVUE AVE WILMINGTON, DE 19802-	BERTHOLD LLC	3015 BELLEVUE AVENUE WILMINGTON, DE 19802
2603000047	1.225354	New Castle	2/1/2025	1500 EASTLAWN AVE WILMINGTON, DE 19802-	EASTLAWN AVENUE LLC	1500 EASTLAWN AV WILMINGTON, DE 19802
2603000048	0.852938	New Castle	2/1/2025	3010 BELLEVUE AVE WILMINGTON, DE 19802-	DOWNING DRIVE PARTNERS LP	3010 BELLEVUE AVE WILMINGTON, DE 19802
2603000049	0.93379	New Castle	2/1/2025	3004 BELLEVUE AVE WILMINGTON, DE 19802-	JONES HOWARD & DANNIE M	701 W LEA BLVD WILMINGTON, DE 19802
2603000050	0.081069	New Castle	2/1/2025	1601 TODDS LN WILMINGTON, DE 19802-	TOGETHER & BEYOND INVESTMENTS LLC SERIES 8	25 MAVISTA CIR NEWARK, DE 19713
2603000051	0.376027	New Castle	2/1/2025	1607 TODDS LN WILMINGTON, DE 19802-	TODDS LANE HOLDINGS LLC	7330 TULIP ST PHILADELPHIA, PA 19136
2603000052	0.019653	New Castle	2/1/2025	1603 TODDS LN WILMINGTON, DE 19802-	TOGETHER & BEYOND INVESTMENTS LLC SERIES 8	25 MAVISTA CIR NEWARK, DE 19713
2603000057	0.984879	New Castle	2/1/2025	3016 EDGEMOOR AVE WILMINGTON, DE 19802-	SHELLHORN & HILL INC	3016 EDGEMOOR AVE WILMINGTON, DE 19802
2603000059	0.525372	New Castle	2/1/2025	3400 BOWERS ST WILMINGTON, DE 19802-	KERNS PROPERTIES LLC	PO BOX 1186 FOLLY BEACH, SC 29439
2603000060	0.970175	New Castle	2/1/2025	1409 EASTLAWN AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603000061	0.986424	New Castle	2/1/2025	3410 BELLEVUE AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603000062	0.58771	New Castle	2/1/2025	3400 EDGEMOOR AVE ES WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603000064	40.459554	New Castle	2/1/2025	4001 VANDEVER AVE WILMINGTON, DE 19802-	P B & W RR CO PENN CENTRAL	TAX & INSURANCE DPT 400 N CAPITOL ST NW WASHINGTON, DC 20001
2603000065	0.87855	New Castle	2/1/2025	3010 EDGEMOOR AVE WILMINGTON, DE 19802-	BAILEY VERNON G & JOHN H	P O BOX 4143 GREENVILLE, DE 19807
2603000068	0.295298	New Castle	2/1/2025	3009 BELLEVUE AVE WILMINGTON, DE 19802-	EC CRANES INC	109 OLYMPIA DR CLAYMONT, DE 19703
2603000070	0.700539	New Castle	2/1/2025	3603 DOWNING DR WILMINGTON, DE 19802-	FERRANTE ROSARIO O	PO BOX 2543 WILMINGTON, DE 19805
2603000071	4.393716	New Castle	2/1/2025	3604 DOWNING DR WILMINGTON, DE 19802-	CHRF LLC	3604 DOWNING DRIVE WILMINGTON, DE 19802
2603000072	0.424529	New Castle	2/1/2025	1301 EASTLAWN AVE WILMINGTON, DE 19802-	OPPORTUNITY CENTER INC	3030 BOWERS ST WILMINGTON, DE 19802
2603000073	0.514433	New Castle	2/1/2025	0 DOWNING DR WILMINGTON, DE 19802-	MOAT STREET LLC	P O BOX 25125 WILMINGTON, DE 19899

2603000075	1.860714	New Castle	2/1/2025	37 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000077	2.904743	New Castle	2/1/2025	75 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000078	0.829249	New Castle	2/1/2025	14 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000079	0.949125	New Castle	2/1/2025	25 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000081	4.466391	New Castle	2/1/2025	67 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000082	0.51805	New Castle	2/1/2025	2800 ROSEMONT AVE WILMINGTON, DE 19802-	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603000083	2.800444	New Castle	2/1/2025	68 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603030018	0.039376	New Castle	2/1/2025	1135 E TWENTY SECOND ST WILMINGTON, DE 19802-	MARCUS MYLON	1502 NEW JERSEY AVE UNIT 1 NEW CASTLE, DE 19720
2603030020	0.219381	New Castle	2/1/2025	2110 NORTHEAST BLVD WILMINGTON, DE 19802-	MAX RENOVATIONS LLC	C/O ANDREW J FOX 1106 ARTWIN RD WILMINGTON, DE 19803
2603030021	0.745595	New Castle	2/1/2025	2102 NORTHEAST BLVD WILMINGTON, DE 19802-	MUSLIM CENTER OF WILMINGTON INC	2102 NORTHEAST BLVD WILMINGTON, DE 19802
2603030022	0.287875	New Castle	2/1/2025	2100 NORTHEAST BLVD WILMINGTON, DE 19802-	KNOTTS MANAGEMENT PROPERTIES LLC SERIES 10	1504 UPSAN DOWNS WILMINGTON, DE 19810
2603030024	0.077181	New Castle	2/1/2025	1301 E TWENTY THIRD ST WILMINGTON, DE 19802-	MOULTRIE JERAN	1301 E TWENTY THIRD STREET WILMINGTON, DE 19802
2603030025	0.050449	New Castle	2/1/2025	1303 E TWENTY THIRD ST WILMINGTON, DE 19802-	SMITH GARNELL	174 VINCENT CIR MIDDLETOWN, DE 19709
2603030026	0.050395	New Castle	2/1/2025	1305 E TWENTY THIRD ST WILMINGTON, DE 19802-	WANAMAKER MERLE	1305 EAST 23RD ST WILMINGTON, DE 19802
2603030027	0.055639	New Castle	2/1/2025	1307 E TWENTY THIRD ST WILMINGTON, DE 19802-	DORSEY CURTIS T & WF	1307 E 23RD ST WILMINGTON, DE 19802
2603030028	0.051596	New Castle	2/1/2025	1309 E TWENTY THIRD ST WILMINGTON, DE 19802-	BROADWATER SHAYNE	17 DEEP BRANCH DR TOWNSEND, DE 19734
2603030029	0.049274	New Castle	2/1/2025	1311 E TWENTY THIRD ST WILMINGTON, DE 19802-	HILL DOUGLAS	1311 EAST 23RD STREET WILMINGTON, DE 19802
2603030030	0.051834	New Castle	2/1/2025	1313 E TWENTY THIRD ST WILMINGTON, DE 19802-	REED VIRGINIA & GOODRIDGE JOHN	1313 E 23RD ST WILMINGTON, DE 19802
2603030031	0.050745	New Castle	2/1/2025	1315 E TWENTY THIRD ST WILMINGTON, DE 19802-	BROADWATER SHAYNE D	17 DEEP BRANCH DR TOWNSEND, DE 19734
2603030032	0.055005	New Castle	2/1/2025	1317 E TWENTY THIRD ST WILMINGTON, DE 19802-	DIXON TRACIE	13 COLESBURY DR NEW CASTLE, DE 19720
2603030033	0.052511	New Castle	2/1/2025	1319 E TWENTY THIRD ST WILMINGTON, DE 19802-	RINGGOLD WILLIAM	1319 E 23RD ST WILMINGTON, DE 19802
2603030034	0.04938	New Castle	2/1/2025	1321 E TWENTY THIRD ST WILMINGTON, DE 19802-	916 HOLDINGS LLC 1321 E 23RD SERIES	PO BOX 9246 WILMINGTON, DE 19809-0246
2603030035	0.048139	New Castle	2/1/2025	1323 E TWENTY THIRD ST WILMINGTON, DE 19802-	WING CONSTANCE L	1323 E 23RD ST WILMINGTON, DE 19802
2603030036	0.052667	New Castle	2/1/2025	1325 E TWENTY THIRD ST WILMINGTON, DE 19802-	MALONE GINETTE L	1325 E 23RD ST WILMINGTON, DE 19802
2603030037	0.04764	New Castle	2/1/2025	1327 E TWENTY THIRD ST WILMINGTON, DE 19802-	HOWELL GLENDA L	1327 E 23RD ST WILMINGTON, DE 19802
2603030038	0.051159	New Castle	2/1/2025	1329 E TWENTY THIRD ST WILMINGTON, DE 19802-	BALDWIN MAXINE	405 TAMARA CIR NEWARK, DE 19711
2603030039	0.04921	New Castle	2/1/2025	1331 E TWENTY THIRD ST WILMINGTON, DE 19802-	WILLIAMS SATIMAH	1331 E TWENTY THIRD ST WILMINGTON, DE 19802
2603030040	0.075171	New Castle	2/1/2025	1333 E TWENTY THIRD ST WILMINGTON, DE 19802-	WILLIAMS VANESSA A	1333 E 23RD STREET WILMINGTON, DE 19802

2603030041	2.165583	New Castle	2/1/2025	2200 N CLAYMONT ST WILMINGTON, DE 19802-	EBENEZER BAPTIST CHURCH	22 ND ST WILMINGTON, DE 19802
2603030042	0.488531	New Castle	2/1/2025	1320 E TWENTY THIRD ST WILMINGTON, DE 19802-	REACH RE II LLC	1121 THATCHER STREET WILMINGTON, DE 19802
2603030109	1.922916	New Castle	2/1/2025	24 addresses listed	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603030110	1.843798	New Castle	2/1/2025	2400 N CLAYMONT ST WILMINGTON, DE 19802-	WILMINGTON HOUSING AUTHORITY	400 N WALNUT ST WILMINGTON, DE 19801-4636
2603100001	1.155086	New Castle	2/1/2025	3101 EDGEMOOR AVE WILMINGTON, DE 19802-	BRANDYWINE SCHOOL DISTRICT	BUSINESS AND FINANCE 1311 BRANDYWINE BLVD WILMINGTON, DE 19809
2603100002	0.448466	New Castle	2/1/2025	1501 E THIRTY FIFTH ST WILMINGTON, DE 19802-	AP WIP TOWER LLC	9373 TOWNE CENTRE DRIVE SUITE 200 SAN DIEGO, CA 92130
2603620072	0.185009	New Castle	2/1/2025	1126 LODGE ST WILMINGTON, DE 19802-	GREAT RENAISSANCE HOLDINGS LLC	PO BOX 9258 WILMINGTON, DE 19809
2603620082	0.026851	New Castle	2/1/2025	1501 N CLAYMONT ST WILMINGTON, DE 19802-	HDC CLAYMONT STREET INC	8 W KING ST UNIT 821 LANCASTER, PA 17603
2603620083	0.02755	New Castle	2/1/2025	1503 N CLAYMONT ST WILMINGTON, DE 19802-	HDC CLAYMONT STREET INC	8 W KING ST UNIT 821 LANCASTER, PA 17603
2603620084	0.021398	New Castle	2/1/2025	1505 N CLAYMONT ST WILMINGTON, DE 19802-	HDC CLAYMONT STREET INC	8 W KING ST UNIT 821 LANCASTER, PA 17603
2603620142	0.09996	New Castle	2/1/2025	1400 N CLAYMONT ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603700001	7.400884	New Castle	2/1/2025	2300 BOWERS ST WILMINGTON, DE 19802-	KINGSWOOD COMM CENTER INC	2300 BOWERS ST WILMINGTON, DE 19802
2603700002	0.099554	New Castle	2/1/2025	1411 VANDEVER AVE WILMINGTON, DE 19802-	P B & W RR CO PENN CENTRAL	30TH STREET STATION - 5 SOUTH - BOX 25 PHILADELPHIA, PA 19104
2603700005	63.452572	New Castle	2/1/2025	3 addresses listed	PENNSYLVANIA LINES LLC	C/O NORFOLK SOUTHERN TAX DEPT 650 W PEACHTREE ST NW ATLANTA, GA 30308
2603700006	5.528495	New Castle	2/1/2025	1610 BOWERS ST WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	C/O DESIGN CONTRACTING P O BOX 25125 WILMINGTON, DE 19899
2603700007	52.303679	New Castle	2/1/2025	4001 VANDEVER AVE WILMINGTON, DE 19802-	NATIONAL RAILROAD PASSENGER CORP	400 N CAPITOL ST NW WASHINGTON, DC 20001
2603700008	8.205653	New Castle	2/1/2025	1600 BOWERS ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORP	PO BOX 9798 WILMINGTON, DE 19809
2603700010	3.852333	New Castle	2/1/2025	PURE GREEN INDUSTRIES INC		9 BELLECOR DR NEW CASTLE, DE 19720
2603700011	0.260699	New Castle	2/1/2025	0 MARSH RD WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	P O BOX 25125 WILMINGTON, DE 19899
2603700012	3.19729	New Castle	2/1/2025	0 BOWERS ST WILMINGTON, DE 19802-	DIFFLEY ANDREW & NANCY	P O BOX 25125 WILMINGTON, DE 19899
2603700013	6.095661	New Castle	2/1/2025	3975 VANDEVER AVE WILMINGTON, DE 19802-	NATIONAL RAILROAD PASSENGER CORP AKA AMTRAK	30TH STREET 5SOUTH PHILADELPHIA, PA 19104
2603710004	0.045325	New Castle	2/1/2025	1207 VANDEVER AVE WILMINGTON, DE 19802-	SMITH HOWARD A SR	1207 VANDEVER AVENUE WILMINGTON, DE 19802
2603710005	0.049014	New Castle	2/1/2025	1209 VANDEVER AVE WILMINGTON, DE 19802-	RANSOME CHARLES R & MAXCINE E	1209 VANDEVER AVE WILMINGTON, DE 19802
2603710006	0.060136	New Castle	2/1/2025	1213 VANDEVER AVE WILMINGTON, DE 19802-	JOHNSON JACQUELINE M	1213 VANDEVER AVENUE WILMINGTON, DE 19802
2603710007	0.026396	New Castle	2/1/2025	1215 VANDEVER AVE WILMINGTON, DE 19802-	TURNER DEBORAH H	1215 VANDEVER AV WILMINGTON, DE 19802

2603710008	0.02954	New Castle	2/1/2025	1217 VANDEVER AVE WILMINGTON, DE 19802-	OMDA PROPERTIES LLC	406 STANTON ROAD WILMINGTON, DE 19804
2603710009	0.035546	New Castle	2/1/2025	1219 VANDEVER AVE WILMINGTON, DE 19802-	ASWIN GROUP LLC	PO BOX 8175 WILMINGTON, DE 19803
2603710010	0.069244	New Castle	2/1/2025	2101 N CLAYMONT ST WILMINGTON, DE 19802-	FITZGERALD ALEXANDER R & NETTIE R	16 RAMBLETON DRIVE RAMBLETON ACRES NEW CASTLE, DE 19720
2603710011	0.07747	New Castle	2/1/2025	2 addresses listed	JIMEG LLC	1801 N FRANKLIN ST WILMINGTON, DE 19802
2603710013	0.144769	New Castle	2/1/2025	1220 VANDEVER AVE WILMINGTON, DE 19802-	JIMEG LLC	1801 N FRANKLIN ST WILMINGTON, DE 19802
2603710017	0.028382	New Castle	2/1/2025	1621 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710018	0.023158	New Castle	2/1/2025	1623 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710019	0.024639	New Castle	2/1/2025	1625 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710020	0.021568	New Castle	2/1/2025	1627 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710021	0.021587	New Castle	2/1/2025	1629 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710022	0.02128	New Castle	2/1/2025	1631 N CLAYMONT ST WILMINGTON, DE 19802-	DIAMOND STATE RECYCLING CORPORATION	P O BOX 9798 WILMINGTON, DE 19809
2603710024	0.019387	New Castle	2/1/2025	1128 LODGE ST WILMINGTON, DE 19802-	GREAT RENAISSANCE HOLDINGS LLC	PO BOX 9258 WILMINGTON, DE 19809
2603710027	0.429544	New Castle	2/1/2025	1605 N CLAYMONT ST WILMINGTON, DE 19802-	DUFFY CLAYMONT STREET LLC	154 HEYBURN RD CHADDS FORD, PA 19317
2603710031	0.072505	New Castle	2/1/2025	1517 N CLAYMONT ST WILMINGTON, DE 19802-	PERFECT LODGE ST DAVID 1 INC	1511 N CLAYMONT ST WILMINGTON, DE 19801
2603710032	0.061636	New Castle	2/1/2025	1511 N CLAYMONT ST WILMINGTON, DE 19802-	PERFECT LODGE ST DAVID	1511 N CLAYMONT ST WILMINGTON, DE 19801
2603710034	0.021993	New Castle	2/1/2025	1509 N CLAYMONT ST WILMINGTON, DE 19802-	PERFECT LODGE ST DAVID 1 INC	1511 N CLAYMONT ST WILMINGTON, DE 19801
2603710035	0.025662	New Castle	2/1/2025	1507 N CLAYMONT ST WILMINGTON, DE 19802-	PERFECT LODGE ST DAVID 1 INC	1511 N CLAYMONT ST WILMINGTON, DE 19801
2603710036	0.028843	New Castle	2/1/2025	1242 E TWENTY SECOND ST WILMINGTON, DE 19802-	RYCOL PROPERTIES LLC	5 DUNCAN AVE WILMINGTON, DE 19803
2603710037	0.027756	New Castle	2/1/2025	1240 E TWENTY SECOND ST WILMINGTON, DE 19802-	RYCOL PROPERTIES LLC	5 DUNCAN AVE WILMINGTON, DE 19803
2603710038	0.031423	New Castle	2/1/2025	1238 E TWENTY SECOND ST WILMINGTON, DE 19802-	HOXTER WILHEMINA	C/O PHILLIP HACKETT 59 BROOKFIELD DR NEWARK, DE 19702
2603710039	0.032993	New Castle	2/1/2025	1236 E TWENTY SECOND ST WILMINGTON, DE 19802-	JONES JAMIERA TYSHAY	1236 EAST 22ND STREET WILMINGTON, DE 19802
2603710040	0.033846	New Castle	2/1/2025	1234 E TWENTY SECOND ST WILMINGTON, DE 19802-	IKRAM TAHLAL I W	1234 E TWENTY SECOND ST WILMINGTON, DE 19802
2603710041	0.032691	New Castle	2/1/2025	1232 E TWENTY SECOND ST WILMINGTON, DE 19802-	RUSH PROPERTIES DE LLC	109 WEST SUMMIT AVENUE WILMINGTON, DE 19804
2603710042	0.034008	New Castle	2/1/2025	1230 E TWENTY SECOND ST WILMINGTON, DE 19802-	SUDLER REGINALD D JR	1230 E 22ND ST WILMINGTON, DE 19801
2603710043	0.03267	New Castle	2/1/2025	1228 E TWENTY SECOND ST WILMINGTON, DE 19802-	GARCIA YEISI VALDES & VALDES YASMANY	131 CHELTENHAM RD HOCKESSIN, DE 19707
2603710044	0.030092	New Castle	2/1/2025	1226 E TWENTY SECOND ST WILMINGTON, DE 19802-	SILKY SIMMS LLC	8 UNISON CT NEWARK, DE 19713
2603710045	0.034086	New Castle	2/1/2025	1224 E TWENTY SECOND ST WILMINGTON, DE 19802-	WATSON VAUGHN JR & PARSON LINDSAY	434 PIGEON VIEW LN NEW CASTLE, DE 19720
2603710046	0.028085	New Castle	2/1/2025	1222 E TWENTY SECOND ST WILMINGTON, DE 19802-	BRUNSWICK MARCIA A	151 HAUT-BRION AVE NEWARK, DE 19702

2603710047	0.036606	New Castle	2/1/2025	1220 E TWENTY SECOND ST WILMINGTON, DE 19802-	MOYER CARL & SCHMALBACH ROBERT L	504 GLENCOE AVENUE FORT WASHINGTON, PA 19034
2603710048	0.029551	New Castle	2/1/2025	1218 E TWENTY SECOND ST WILMINGTON, DE 19802-	WYNN JEFFREY	1351 GOLDEN EYE DRIVE NEW CASTLE, DE 19720
2603710049	0.032658	New Castle	2/1/2025	1216 E TWENTY SECOND ST WILMINGTON, DE 19802-	MGM PROPERTY LLC	228 W 25TH STREET WILMINGTON, DE 19802
2603710050	0.034426	New Castle	2/1/2025	1214 E TWENTY SECOND ST WILMINGTON, DE 19802-	BASS TONEESHIA BEL-AMI	1214 E 22ND ST WILMINGTON, DE 19802
2603710051	0.031814	New Castle	2/1/2025	1212 E TWENTY SECOND ST WILMINGTON, DE 19802-	HAYMAN JOANNE	1212 E TWENTYSECOND ST WILMINGTON, DE 19802
2603710052	0.030725	New Castle	2/1/2025	1210 E TWENTY SECOND ST WILMINGTON, DE 19802-	ABDUL-AHAD NADEEM	53 N FAWN DRIVE NEWARK, DE 19711
2603710053	0.035084	New Castle	2/1/2025	1208 E TWENTY SECOND ST WILMINGTON, DE 19802-	PERRY SHANIKA	C/O CARE COMMUNITY CONSULTING LLC PO BOX 25142 WILMINGTON, DE 19899
2603710054	0.030851	New Castle	2/1/2025	1206 E TWENTY SECOND ST WILMINGTON, DE 19802-	ALLEN JAMES & ANTOINETTE	1206 E 22ND STREET WILMINGTON, DE 19802
2603710055	0.029075	New Castle	2/1/2025	1204 E TWENTY SECOND ST WILMINGTON, DE 19802-	ALLEN JAMES	1206 E 22ND ST WILMINGTON, DE 19802
2603710056	0.034603	New Castle	2/1/2025	1202 E TWENTY SECOND ST WILMINGTON, DE 19802-	GREEN LUCY	1202 E 22ND ST WILMINGTON, DE 19802
2603710057	0.038348	New Castle	2/1/2025	1200 E TWENTY SECOND ST WILMINGTON, DE 19802-	BRISCOE SHKEA R	1200 EAST 22ND STREET WILMINGTON, DE 19802
2603710058	0.04103	New Castle	2/1/2025	2114 N CLAYMONT ST WILMINGTON, DE 19802-	BROWN MONICA C	2114 N CLAYMONT ST WILMINGTON, DE 19802
2603710059	0.050116	New Castle	2/1/2025	2112 N CLAYMONT ST WILMINGTON, DE 19802-	HARRIS JENNIFER	2112 N CLAYMONT ST WILMINGTON, DE 19802
2603710060	0.037866	New Castle	2/1/2025	2110 N CLAYMONT ST WILMINGTON, DE 19802-	HOLDEN VANESSA &LANORA &PERNEST &VALERIE &BAISE	2110 N CLAYMONT ST WILMINGTON, DE 19802
2603710061	0.042476	New Castle	2/1/2025	2108 N CLAYMONT ST WILMINGTON, DE 19802-	SOSA CARLOS	925 WILDEL AVE NEW CASTLE, DE 19720
2603710062	0.044687	New Castle	2/1/2025	2106 N CLAYMONT ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	404 N MARKET ST WILMINGTON, DE 19801
2603710063	0.040333	New Castle	2/1/2025	2104 N CLAYMONT ST WILMINGTON, DE 19802-	STRICKLAND JESSICA P	2104 N CLAYMONT STREET WILMINGTON, DE 19802
2603710064	0.037639	New Castle	2/1/2025	2102 N CLAYMONT ST WILMINGTON, DE 19802-	ROGERS DERKEYA CAPRI & LIVINGSTON DERRICK	205 SOUTH BOOTH DRIVE NEW CASTLE, DE 19720
2603710065	0.046294	New Castle	2/1/2025	2100 N CLAYMONT ST WILMINGTON, DE 19802-	DIXON JANICE L.	419 W. 35TH ST WILMINGTON, DE 19802
2603710066	0.091743	New Castle	2/1/2025	2 addresses listed	HEMRUP LLC	2 FORSYTHIA LANE BEAR, DE 19701
2603710068	0.027291	New Castle	2/1/2025	1305 VANDEVER AVE WILMINGTON, DE 19802-	PROPERTY EXCHANGE LOWER NORTH LLC	236 KELSEY LYNN CT TOWNSEND, DE 19734
2603710069	0.029562	New Castle	2/1/2025	1307 VANDEVER AVE WILMINGTON, DE 19802-	LOUIS DUMARY	357 HUNTERTON STREET NEWARK, NJ 07103
2603710070	0.023487	New Castle	2/1/2025	1309 VANDEVER AVE WILMINGTON, DE 19802-	PROPERTY EXCHANGE LOWER NORTH LLC	236 KELSEY LYNN CT TOWNSEND, DE 19734
2603710071	0.026894	New Castle	2/1/2025	1311 VANDEVER AVE WILMINGTON, DE 19802-	CRUCIAN ENTERPRISES INC	409 ELEVENTH ST NEW CASTLE, DE 19720
2603710072	0.029179	New Castle	2/1/2025	1313 VANDEVER AVE WILMINGTON, DE 19802-	PEREGRINUS VENTURES LLC	102 MIDDLEBORO RD WILMINGTON, DE 19804
2603710073	0.026733	New Castle	2/1/2025	1315 VANDEVER AVE WILMINGTON, DE 19802-	FERRANTE JUSTIN T	31 POLARIS DRIVE NEWARK, DE 19711
2603710074	0.027603	New Castle	2/1/2025	1317 VANDEVER AVE WILMINGTON, DE 19802-	TUCKER MUHOMMAD A & LYTONYA M	1317 VANDEVER AVE WILMINGTON, DE 19802
2603710075	0.027903	New Castle	2/1/2025	1319 VANDEVER AVE WILMINGTON, DE 19802-	ZAHRA REALTY LLC	43 NORWEGIAN WOOD DRIVE NEWARK, DE 19702

2603710076	0.028524	New Castle	2/1/2025	1321 VANDEVER AVE WILMINGTON, DE 19802-	DOUBLE DELS LLC	221 W 9TH ST #181 WILMINGTON, DE 19801-1619
2603710077	0.027089	New Castle	2/1/2025	1323 VANDEVER AVE WILMINGTON, DE 19802-	BALDWIN MAXINE	405 TAMARA CIRCLE NEWARK, DE 19711
2603710078	0.025912	New Castle	2/1/2025	1325 VANDEVER AVE WILMINGTON, DE 19802-	FREEMAN GREGORY & CAROLYN M	27 SIMONDS DRIVE NEW CASTLE, DE 19720
2603710079	0.027969	New Castle	2/1/2025	1327 VANDEVER AVE WILMINGTON, DE 19802-	2 GOOMBAHS LLC	1 SHAW ALY NEW CASTLE, DE 19720
2603710080	0.024664	New Castle	2/1/2025	1329 VANDEVER AVE WILMINGTON, DE 19802-	ORGERON PIERSON CHESTER & HEATHER MARIE	1329 VANDEVER AVENUE WILMINGTON, DE 19802
2603710081	0.028969	New Castle	2/1/2025	1331 VANDEVER AVE WILMINGTON, DE 19802-	CITY OF WILMINGTON	800 FRENCH ST-7TH FLOOR C/O DEPT OF REAL ESTATE & HOUSING WILMINGTON, DE 19801
2603710082	0.027804	New Castle	2/1/2025	1333 VANDEVER AVE WILMINGTON, DE 19802-	JOHNSON TYKENE	1333 VANDEVER AVENUE WILMNGTON, DE 19802
2603710083	0.026965	New Castle	2/1/2025	1335 VANDEVER AVE WILMINGTON, DE 19802-	LONCO PROPERTY INVESTMENTS LLC	54-4C ABBEY LANE NEWARK, DE 19711
2603710084	0.027041	New Castle	2/1/2025	1337 VANDEVER AVE WILMINGTON, DE 19802-	MILLER MILDRED	1337 VANDEVER AVENUE WILMINGTON, DE 19802
2603710085	0.022836	New Castle	2/1/2025	1339 VANDEVER AVE WILMINGTON, DE 19802-	MILLER MILDRED E & BRYANT BRENDA M & DEMBY SIDNEY	& KARVIN L & MARGARET A & JOHNNY L 1339 VANDEVER AV WILMINGTON, DE 19802
2603710086	0.025158	New Castle	2/1/2025	1341 VANDEVER AVE WILMINGTON, DE 19802-	CHAVEZ DELMY	1341 VANDEVER AV WILMINGTON, DE 19802
2603710087	0.032651	New Castle	2/1/2025	1343 VANDEVER AVE WILMINGTON, DE 19802-	DEMBY SIDNEY H	1343 VANDEVER AVENUE WILMINGTON, DE 19802
2603710088	0.032278	New Castle	2/1/2025	1345 VANDEVER AVE WILMINGTON, DE 19802-	OLIVER ZANTHIA & RJP PROPERTIES 302 LLC	1203 N ORANGE ST UNIT 3 WILMINGTON, DE 19801
2603710089	0.032715	New Castle	2/1/2025	1347 VANDEVER AVE WILMINGTON, DE 19802-	BLOOM RON	1347 VANDEVER AV WILMINGTON, DE 19802
2603710090	0.03286	New Castle	2/1/2025	2101 BOWERS ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	1007 N ORANGE STREET SUITE 400 WILMINGTON, DE 19801
2603710091	0.614062	New Castle	2/1/2025	2111 BOWERS ST WILMINGTON, DE 19802-	RYCOL PROPERTIES LLC BOWERS STREET SERIES	5 DUNCAN AVE WILMINGTON, DE 19803
2603710092	3.34566	New Castle	2/1/2025	11 addresses listed	BIGBEN DE HOLDINGS LLC	508 NE 190TH STREET MIAMI, FL 33179
2603710093	0.365019	New Castle	2/1/2025	1240 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ GUSTAVO	PO BOX 9526 WILMINGTON, DE 19809
2603710094	0.099686	New Castle	2/1/2025	1232 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710095	0.026185	New Castle	2/1/2025	1226 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710096	0.023846	New Castle	2/1/2025	1224 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710097	0.023819	New Castle	2/1/2025	1222 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710098	0.026332	New Castle	2/1/2025	1220 E SIXTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710099	0.524578	New Castle	2/1/2025	2 addresses listed	HDC CLAYMONT STREET INC	8 W KING ST UNIT 821 LANCASTER, PA 17603

2603710100	0.047075	New Castle	2/1/2025	1201 E FIFTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710101	0.118331	New Castle	2/1/2025	1207 E FIFTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710102	0.117736	New Castle	2/1/2025	1211 E FIFTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710103	0.051235	New Castle	2/1/2025	1501 N RAILROAD AVE WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710104	0.069123	New Castle	2/1/2025	1505 N RAILROAD AVE WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710105	0.221562	New Castle	2/1/2025	1410 N CLAYMONT ST WILMINGTON, DE 19802-	MINISTRY OF CARING INC	115 E 14TH ST WILMINGTON, DE 19801-3209
2603710106	0.781463	New Castle	2/1/2025	1212 E FIFTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710108	0.210827	New Castle	2/1/2025	1227 E FIFTEENTH ST SS WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	C/O SAM'S CONSTRUCTION LLC P O BOX 9827 WILMINGTON, DE 19809-0827
2603710110	0.197608	New Castle	2/1/2025	2109 N CLAYMONT ST WILMINGTON, DE 19802-	KNOTTS MANAGEMENT PROPERTIES LLC SERIES 10	1504 UPSAN DOWNS WILMINGTON, DE 19810
2603710112	0.128013	New Castle	2/1/2025	1202 E SIXTEENTH ST SS WILMINGTON, DE 19802-	CASABLANCA AUTO REPAIR LLC	806C VILLAGE CIRCLE NEWARK, DE 19713
2603730002	0.593437	New Castle	2/1/2025	1238 E FOURTEENTH ST WILMINGTON, DE 19802-	R G T HOLDINGS L L C	6301 KENNETT PIKE CENTREVILLE, DE 19807
2603730003	0.032165	New Castle	2/1/2025	1256 E FOURTEENTH ST WILMINGTON, DE 19802-	R.G.T. HOLDINGS LLC	1256 E 14TH STREET WILMINGTON, DE 19802
2603730004	0.020543	New Castle	2/1/2025	1254 E FOURTEENTH ST WILMINGTON, DE 19802-	R.G.T. HOLDINGS LLC	1256 E 14TH STREET WILMINGTON, DE 19802
2603730005	0.175951	New Castle	2/1/2025	1244 E FOURTEENTH ST WILMINGTON, DE 19802-	R.G.T. HOLDINGS LLC	1256 E 14TH STREET WILMINGTON, DE 19802
2603730006	0.502692	New Castle	2/1/2025	1225 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON UDAG CORPORATION	C/O CITY OF WILMINGTON WILMINGTON, DE 19801
2603730007	0.771831	New Castle	2/1/2025	1221 BOWERS ST WILMINGTON, DE 19802-	JAMB ENTERPRISES INC	207 OAKWOOD RD WILMINGTON, DE 19803
2603730008	0.202574	New Castle	2/1/2025	1420 BOWERS ST WILMINGTON, DE 19802-	COMMUNITY SOLUTIONS INC	340 W NEWBERRY RD STE B BLOOMFIELD, CT 06002-1393
2603730009	0.382482	New Castle	2/1/2025	2 addresses listed	BAIOCCO RUSSELL J & KRISTEN M	1704 CHICHESTER AVE BOOTHWYN, PA 19061
2603730010	0.04886	New Castle	2/1/2025	1319 E FOURTEENTH ST WILMINGTON, DE 19802-	BAIOCCO RUSSELL J & KRISTEN M	1704 CHICHESTER AVE BOOTHWYN, PA 19061
2603730011	0.039874	New Castle	2/1/2025	1321 E FOURTEENTH ST WILMINGTON, DE 19802-	PINNACLE HOMES LLC	1917 FLORAL DR WILMINGTON, DE 19810
2603730012	0.054418	New Castle	2/1/2025	1323 E FOURTEENTH ST WILMINGTON, DE 19802-	NORMAND WILBERT E & LUKISHA R	413 E 10TH ST WILMINGTON, DE 19801
2603730013	0.044633	New Castle	2/1/2025	1325 E FOURTEENTH ST WILMINGTON, DE 19802-	SIMPSON HELEN	1325 E 14TH ST WILMINGTON, DE 19802
2603730014	0.071844	New Castle	2/1/2025	1327 E FOURTEENTH ST WILMINGTON, DE 19802-	STANFORD KENNETH	63 MILLWOOD DRIVE MIDDLETOWN, DE 19709
2603730015	0.028396	New Castle	2/1/2025	1331 E FOURTEENTH ST WILMINGTON, DE 19802-	BAL EDUCATIONAL ATHLETICS FOUNDATION	302 WILDEL AVENUE NEW CASTLE, DE 19720
2603730016	0.024189	New Castle	2/1/2025	1333 E FOURTEENTH ST WILMINGTON, DE 19802-	WILM NGHBRHD CONSERV LAND BANK CORP	PO BOX 194 WILMINGTON, DE 19899

2603730017	0.024373	New Castle	2/1/2025	1335 E FOURTEENTH ST WILMINGTON, DE 19802-	ANDERSON MARY L	1335 E 14TH ST WILMINGTON, DE 19802
2603730018	0.022059	New Castle	2/1/2025	1337 E FOURTEENTH ST WILMINGTON, DE 19802-	FERRANTE JUSTIN	31 POLARIS DR NEWARK, DE 19711
2603730019	0.057988	New Castle	2/1/2025	1339 E FOURTEENTH ST WILMINGTON, DE 19802-	ERAK LLC	706 WHIFFLETREE LN WEST CHESTER, PA 19382
2603730021	0.018303	New Castle	2/1/2025	1401 MARSH RD WILMINGTON, DE 19802-	SLONE JOSEPH	112 NAVAHO COURT WILMINGTON, DE 19702
2603730022	0.014256	New Castle	2/1/2025	1403 MARSH RD WILMINGTON, DE 19802-	SLONE JOSEPH	112 NAVAHO COURT WILMINGTON, DE 19702
2603730023	0.072968	New Castle	2/1/2025	1405 MARSH RD WILMINGTON, DE 19802-	PASTOR ORLANDO ESPINOZA	7 VIRGINIA AVE CLAYMONT, DE 19703
2603730024	0.062274	New Castle	2/1/2025	1407 MARSH RD WILMINGTON, DE 19802-	HOLLEY WILLIAM C & SYLVIA A	C/O HOLLEY ENTERPRISES INC 105 VANDEVER AVE WILMINGTON, DE 19802
2603730025	0.110061	New Castle	2/1/2025	1409 MARSH RD WILMINGTON, DE 19802-	DIRADO PETER	411 MOCKINGBIRD WAY HOCKESSIN, DE 19707
2603730027	0.033736	New Castle	2/1/2025	1415 MARSH RD WILMINGTON, DE 19802-	DIRADO PETER P	411 MOCKINGBIRD WAY HOCKESSIN, DE 19707
2603730028	0.026663	New Castle	2/1/2025	1417 MARSH RD WILMINGTON, DE 19802-	DIRADO PETER	411 MOCKINGBIRD WAY HOCKESSIN, DE 19707
2603730029	0.028848	New Castle	2/1/2025	1419 MARSH RD WILMINGTON, DE 19802-	LITTLE NAKIA M	1419 MARSH STREET WILMINGTON, DE 19802
2603730030	0.049257	New Castle	2/1/2025	1356 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730031	0.037375	New Castle	2/1/2025	1354 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730032	0.054362	New Castle	2/1/2025	1352 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730033	0.084941	New Castle	2/1/2025	1350 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730034	0.042471	New Castle	2/1/2025	1336 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730035	0.101928	New Castle	2/1/2025	1334 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730036	0.025483	New Castle	2/1/2025	1328 E FOURTEENTH ST WILMINGTON, DE 19802-	A-FRAME PROPERTIES LLC	3602 SQUIRREL HILL CT WILMINGTON, DE 19808
2603730037	0.025481	New Castle	2/1/2025	1324 E FOURTEENTH ST WILMINGTON, DE 19802-	CHETAN REALTY SERIES LLC	2 LORI LN WILMINGTON, DE 19809
2603730038	0.025481	New Castle	2/1/2025	1322 E FOURTEENTH ST WILMINGTON, DE 19802-	BENNETT CHARLOTTE C	59 SAINT GEORGE TERRACE BEAR, DE 19701
2603730039	0.025485	New Castle	2/1/2025	1320 E FOURTEENTH ST WILMINGTON, DE 19802-	GIBSON BRENDA M & ROBERT	1320 E 14TH ST WILMINGTON, DE 19802
2603730040	0.025483	New Castle	2/1/2025	1318 E FOURTEENTH ST WILMINGTON, DE 19802-	BLIZZARD JEANETTE	1318 E FOURTEENTH ST WILMINGTON, DE 19802
2603730041	0.025483	New Castle	2/1/2025	1316 E FOURTEENTH ST WILMINGTON, DE 19802-	LOFLAND RAASHID, LOFLAND KWAME	2809 N JEFFERSON ST WILMINGTON, DE 19802
2603730042	0.02548	New Castle	2/1/2025	1314 E FOURTEENTH ST WILMINGTON, DE 19802-	BLIZZARD JEANNETTE B	1314 E. 14TH ST WILMINGTON, DE 19802
2603730043	0.025992	New Castle	2/1/2025	1312 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	1007 N ORANGE ST 4TH FLOOR WILMINGTON, DE 19801
2603730044	0.02684	New Castle	2/1/2025	1310 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	1007 N ORANGE ST 4TH FLOOR WILMINGTON, DE 19801
2603730045	0.023784	New Castle	2/1/2025	1308 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	1007 N ORANGE ST 4TH FLOOR WILMINGTON, DE 19801

2603730046	0.023786	New Castle	2/1/2025	1306 E FOURTEENTH ST WILMINGTON, DE 19802-	WILMINGTON NEIGHBORHOOD CONSERVANCY LAND BANK CORP	1007 N ORANGE ST 4TH FLOOR WILMINGTON, DE 19801
2603730096	16.557747	New Castle	2/1/2025	2 addresses listed	STATE OF DELAWARE	DEPT OF CORRECTIONS WILMINGTON, DE 19802
2603730132	0.199618	New Castle	2/1/2025	1421 MARSH RD WILMINGTON, DE 19802-	COMMUNITY SOLUTIONS INC	340 W NEWBERRY RD STE B BLOOMFIELD, CT 06002-1393
2603730133	0.358595	New Castle	2/1/2025	0 E FOURTEENTH ST WILMINGTON, DE 19802-	MARTINEZ PROPERTIES LLC	PO BOX 9827 WILMINGTON, DE 19809
2603800003	1.104687	New Castle	2/1/2025	0 RAILCAR AVE WILMINGTON, DE 19802-	NORFOLK SOUTHERN RAILWAY CO	C/O NORFOLK SOUTHERN TAX DEPT 650 W PEACHTREE ST NW ATLANTA, GA 30308
2604400018	4.794122	New Castle	2/1/2025	1225 E EIGHTH ST WILMINGTON, DE 19801-	ST CYPRIAN'S HOLDINGS LLC	1 LEWIS CIRCLE WILMINGTON, DE 19804
2604500006	8.844232	New Castle	2/1/2025	2 addresses listed	BRANDYWINE REALTY LLC	923 MARKET STREET PATERSON, NJ 075132
2604500009	11.038922	New Castle	2/1/2025	1145 E SEVENTH ST WILMINGTON, DE 19801-	VICSCOT L.L.C.	2392 LIMESTONE ROAD WILMINGTON, DE 19808
2604500010	38.677292	New Castle	2/1/2025	1551 E TWELFTH ST WILMINGTON, DE 19802-	DELMARVA POWER & LIGHT CO-ELECTRIC FACILITIES	C/O ERNST & YOUNG LLP PO BOX 340014 NASHVILLE, TN 37203
2604500011	5.492418	New Castle	2/1/2025	600 INDUSTRIAL ST WILMINGTON, DE 19801-	VERIZON DELAWARE LLC	ATTN LEASE ADMINISTRATION 7701 EAST TELECOM PKWY TEMPLE TERRACE, FL 33637
2604500012	3.007466	New Castle	2/1/2025	700 INDUSTRIAL ST WILMINGTON, DE 19801-	TRI-STATE INVESTMENTS LLC	2 S POPLAR STREET WILMINGTON, DE 19801
2604500013	5.349858	New Castle	2/1/2025	601 INDUSTRIAL ST WILMINGTON, DE 19801-	VICSCOT L.L.C.	2392 LIMESTONE ROAD WILMINGTON, DE 19808
2604500014	13.992632	New Castle	2/1/2025	0 E TWELFTH ST WILMINGTON, DE 19802-	STATE OF DELAWARE	BOX 8 BEAR, DE 19701
2604500015	1.742554	New Castle	2/1/2025	801 INDUSTRIAL ST WILMINGTON, DE 19801-	BRIGHTFIELDS ON THE BRANDYWINE LLC	801 INDUSTRIAL ST WILMINGTON, DE 19801
2604500017	1.903282	New Castle	2/1/2025	1330 E TWELFTH ST WILMINGTON, DE 19802-	CAHILL II LLC	1104 SLEEPY HOLLOW DR SUITE 201 MIDDLETOWN, DE 19709
2604500018	0.538368	New Castle	2/1/2025	1340 E TWELFTH ST S S WILMINGTON, DE 19802-	BRANDYWINE REALTY LLC	923 MARKET STREET PATERSON, NJ 075132
2604500019	2.033982	New Castle	2/1/2025	0 E TWELFTH ST S S WILMINGTON, DE 19802-	WILM ECONOMIC DEVELOPMENT CO	100 W. 10TH STREET, SUITE 706 WILMINGTON, DE 19801
2604500021	1.832278	New Castle	2/1/2025	800 INDUSTRIAL ST WILMINGTON, DE 19801-	ST CYPRIAN HOLDINGS LLC	1 LEWIS CIR WILMINGTON, DE 19804
2604500022	1.316813	New Castle	2/1/2025	701 INDUSTRIAL ST WILMINGTON, DE 19801-	BRIGHTFIELDS ON THE BRANDYWINE LLC	801 INDUSTRIAL ST WILMINGTON, DE 19801
2605200015	9.394866	New Castle	2/1/2025	0 E FOURTH ST WILMINGTON, DE 19802-	DELMARVA POWER & LIGHT CO	C/O ERNST & YOUNG LLP PO BOX 340014 NASHVILLE, TN 37203



Stantec

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, PA

Tel. 610.840.2500
Fax 610.840.2501
www.stantec.com

Note:

1. Coordinate System: NAD 1983 State Plan Delaware
2. Source: DNREC GIS, Delaware Tax Ditch Map, Division of Watershed Stewardship, Drainage Program

Legend:

- Wilmington Shops Project Boundary
- Adjacent Property Boundary
- 1000ft Radius Line

N

0 750 1500

APPROXIMATE SCALE IN FEET

Stantec

Project Location:
CITY OF WILMINGTON
NEW CASTLE COUNTY, DE

213403550
Prepared by TTN on 2024-10-16

Client/Project
AMTRAK WILMINGTON SHOPS REMEDIATION
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

Figure No. 2

Title
1000 FT RADIUS PARCEL MAP

FILEPATH(S):\213403549\stormwater\SAS\SAS_Main\Site Parcel Maps.dwg | Imgavert | Jun 13, 2025 at 13:36 | Layout: Tax Map 1000ft

Attachment 5 Copy of Deed and Survey

Survey under separate attachment

REC H103 PAGE 1 DOCUMENT NO.

DL-1/PB&W-CRC-ATK-RP-1

3590

DEED

CITY OF WILMINGTON
REALTY TRANSFER TAX
Validation Number
Amount of City Tax $ EXEMPT
Cancelled by

THIS DEED IS MADE BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

("Grantor"), a Pennsylvania corporation whose address is Six Penn Center, Philadelphia, Pennsylvania 19104

AND

NATIONAL RAILROAD PASSENGER CORPORATION

("Grantee"), a District of Columbia corporation, whose address is 400 North Capitol Street, N.W. Washington, D.C. 20001

CITY OF NEWARK STATE OF DELAWARE REALTY TRANSFER TAX 00.00

Whereas, pursuant to the Regional Rail Reorganization Act of 1973 (Public Law 93-236, 87 Stat. 985) as amended ("Act") and the Final System Plan, the United States Railway Association ("USRA"), pursuant to Section 209(c) of the Act, has certified to the Special United States District Court established pursuant to Section 209(b) of the Act ("Special Court") and pursuant to a certain Agreement of Purchase dated March 31, 1976 between Grantor and Grantee, the Grantor, for consideration paid, hereby grants and conveys to the Grantee:

A. All of the Grantor's right, title and interest, legal and equitable, in and to the real property located in the

County of New Castle in the State of Delaware

INDEXED

as described in Exhibit A attached to this Deed as a part hereof, together with all of the appurtenances, hereditaments, franchises, ways, waters, minerals, rights, privileges, improvements, fixtures, licenses, leaseholds, reversions, easements, rights under operating, trackage and joint facility agreements, rents, issues, profits and other interests and items belonging to or in any way appertaining to such real property, including (without limitation) the same easements and rights with respect to the real

BOARD OF ASSESSMENT, NEW CASTLE COUNTY ★ REGISTERED

RECEIVED FOR RECORD
OCT 20 2 59 PM '78
LEO J. DUGAN JR.
RECORDER

PB 0652

State of Delaware REALTY TRANSFER TAX = 00.00

property reserved and excepted from the conveyance to Grantor by Grantor's immediate predecessor in title as Grantor received with respect thereto under said conveyance, as well as all real property items that would properly be recorded in Accounts 1 through 45 and 90 of the Property Accounts prescribed by the Interstate Commerce Commission for Railroad Companies in its Uniform System of Accounts, 49 C.F.R. Part 1201, to the extent that such interests and items belong or in any way appertain to such real property, except as those interests and items belong or appertain to the real property hereinafter reserved and excepted.

B. 1. The easements and rights to use, operate, maintain, repair, renew, replace and remove on, under, over and across the real property conveyed to Grantor pursuant to the Act but not conveyed to Grantee hereby ("Grantor's Burdened Property"), any and all lines, poles, pipes, appliances, equipment, structures, facilities and appurtenances (each an "Easement Item") existing on and used or useful as of the date of delivery of this Deed as a part of any railroad communication, signal or interlocker system or as a part of any electric, telephone, telegraph, water, gas, steam, sanitary sewer, storm sewer or other utility system, together with the easement of reasonable access over the Grantor's Burdened Property to permit the exercise of the foregoing easements and rights, and the easement for lateral support of the real property conveyed by this Deed.

2. The easements and rights for the specific uses, if any, (each an "Easement Item") particularly described in Exhibit B attached to this Deed as a part hereof, if any, and burdening a certain portion of Grantor's Burdened Property.

3. The Grantee shall give the Grantor reasonable notice before entering on the Grantor's Burdened Property to exercise the easements and rights granted in this Paragraph B, and shall exercise such easements and rights (a) so as not to interfere unreasonably with the use and enjoyment of the Grantor's Burdened Property, (b) in compliance with generally applicable reasonable requirements established from time to time by the Grantor and (c) so as not to increase materially the burden on the Grantor's Burdened Property existing on the date of delivery of this Deed. The Grantee shall indemnify and save the Grantor harmless from any loss, damage or expense arising from the exercise of the foregoing easements and rights, without regard to negligence on the

part of the Grantor or the Grantee. Upon request of and at the expense of the Grantor, the Grantee shall execute and deliver to the Grantor a deed or other instrument releasing the Grantee's rights in any part of the Grantor's Burdened Property that is not used or reasonably needed by the Grantee in the exercise of the easements and rights conveyed in this Paragraph B.

4. If the location of any Easement Item would interfere with any proposed use or sale of any part of the Grantor's Burdened Property, the Grantor may, at the Grantor's expense and after obtaining the Grantee's written consent, relocate the interfering Easement Item or cause the same to be relocated. Such consent will be granted unless (a) the Easement Item cannot be relocated as proposed by the Grantor without unreasonable interference to the Grantee's operations or without damage to the integrity of the system of which the Easement Item is a part or (b) the Grantee will not have reasonable access to the relocated Easement Item. If the Grantee has previously released its easements and rights in any real property as provided in Paragraph B.3. and a relocated Easement Item falls, in whole or in part, within the area that has been so released, the Grantor and the Grantee shall exchange the following instruments promptly after the relocation is completed:

(a) The Grantor shall execute and deliver to the Grantee a supplementary deed of easement which conveys to the Grantee with respect to the relocated Easement Item the easements and rights described in this Paragraph B.

(b) The Grantee shall execute and deliver to the Grantor a deed or other instrument of release as provided in Paragraph B.3.

5. The Grantor shall bear all expenses and the cost of all transfer and recording taxes, fees and charges in connection with all deeds and other instruments delivered pursuant to this Paragraph B.

RESERVING AND EXCEPTING, HOWEVER, TO THE GRANTOR:

C. All the respective right, title and interest of the Grantor, legal and equitable, in and to the real property

described in Exhibit B attached to this Deed as a part hereof, if any, but subject, however, to the easements and rights conveyed pursuant to Paragraph B above.

D. 1. The easements and rights to use, operate, maintain, repair, renew, replace and remove on, under, over and across the real property conveyed by this Deed ("Grantee's Burdened Property"), any and all lines, poles, pipes, appliances, equipment, structures, facilities and appurtenances (each an "Easement Item") existing on and used or useful as of the date of delivery of this Deed as a part of any railroad communication, signal or interlocker system or as a part of any electric, telephone, telegraph, water, gas, steam, sanitary sewer, storm sewer or other utility system, together with the easement of reasonable access over the Grantee's Burdened Property to permit the exercise of the foregoing easements and rights, and the easement for lateral support of the real property reserved and excepted from this conveyance.

2. The easements and rights for the specific uses, if any, (each an "Easement Item") particularly described in Exhibit B to this Deed, if any, and burdening certain real property conveyed by this Deed.

3. The Grantor shall give the Grantee reasonable notice before entering on the Grantee's Burdened Property to exercise the easements and rights reserved and excepted in this Paragraph D, and shall exercise such easements and rights (a) so as not to interfere unreasonably with the use and enjoyment of the Grantee's Burdened Property, (b) in compliance with generally applicable reasonable requirements established from time to time by the Grantee and (c) so as not to increase materially the burden on the Grantee's Burdened Property existing on the date of delivery of this Deed. The Grantor shall indemnify and save the Grantee harmless from any loss, damage or expense arising from the exercise of the foregoing easements and rights, without regard to negligence on the part of the Grantee or the Grantor. Upon request of and at the expense of the Grantee, the Grantor shall execute and deliver to the Grantee a deed or other instrument releasing the Grantor's rights in any part of the Grantee's Burdened Property that is not used or reasonably needed by the Grantor in the exercise of the easements and rights reserved and excepted in this Paragraph D.

4. If the location of any Easement Item would interfere with any proposed use or sale of any part of the Grantee's Burdened Property, the Grantee may, at the Grantee's expense and after obtaining the Grantor's written consent, relocate the interfering Easement Item or cause the same to be relocated. Such consent will be granted unless (a) the Easement Item cannot be relocated as proposed by the Grantee without unreasonable interference to the Grantor's operations or without damage to the integrity of the system of which the Easement Item is a part or (b) the Grantor will not have reasonable access to the relocated Easement Item. If the Grantor has previously released its easements and rights in any real property as provided in Paragraph D.3. and a relocated Easement Item falls, in whole or in part, within the area that has been so released, the Grantor and the Grantee shall exchange the following instruments promptly after the relocation is completed:

(a) The Grantee shall execute and deliver to the Grantor a supplementary deed of easement which conveys to the Grantor with respect to the relocated Easement Item the easements and rights described in this Paragraph D.

(b) The Grantor shall execute and deliver to the Grantee a deed or other instrument of release as provided in Paragraph D.3.

5. The Grantee shall bear all expenses and the cost of all transfer and recording taxes, fees and charges in connection with all deeds and other instruments delivered pursuant to this Paragraph D.

E. The easements and rights described in Exhibit C to this Deed and burdening all of the real property conveyed by this Deed.

F. All mineral rights owned by the Grantor in any parcel as to which an interest in the surface is not conveyed by this Deed.

TO HAVE AND TO HOLD the real property and the easements and rights hereby conveyed to the Grantee, free and clear of any liens and encumbrances insofar as said real property, easements and rights were conveyed to Grantor so free and

clear by Grantor's immediate predecessor in title or interest therein, BUT SUBJECT, HOWEVER, to (i) those easements and rights reserved and excepted pursuant to Paragraphs D and E, (ii) all existing licenses, easements, leases (other than those which may have been created to secure payment of a financial obligation), and operating, trackage right and joint facility agreements, including (without limitation) the easements, rights and benefits reserved by Grantor's predecessor in title, (iii) Operating Rights Grants, if any, from the Grantor to a third party conveyed pursuant to the Act and identified in Exhibit B to this Deed; and (iv) the obligation of the Grantee to use, operate, maintain and repair the real property conveyed by this Deed so as to permit the Grantor freely to exercise the Freight Service Easement and the Commuter Passenger Service Easement described in Exhibit C.

The Grantor hereby covenants that the Grantor will perform, execute, acknowledge and deliver any and all such further acts, deeds, assignments and other instruments as may be reasonably requested by the Grantee to convey, confirm, clarify, identify or more precisely describe the real property and the easements and rights conveyed by this Deed or intended so to be in order to carry out the intent of this Deed in light of the designations contained in the Final System Plan which has been certified to the Special Court by the United States Railway Association pursuant to the Act and in light of the Agreement of Purchase between the Grantor and Grantee bearing the same date hereof, and to effect the recordation of, or otherwise perfect, this Deed and all such other deeds, assignments and instruments under any applicable statute, ordinance, rule or regulation.

The Grantee hereby covenants that the Grantee will perform, execute, acknowledge and deliver any and all such further acts, deeds, assignments and other instruments as may be reasonably requested by the Grantor to confirm, clarify, identify or more precisely describe the real property and the easements and rights reserved and excepted from this conveyance or intended so to be in order to carry out the intent of this Deed in light of the designations contained in such Final System Plan and in light of the Agreement of Purchase between the Grantor and Grantee bearing the same date hereof, and to effect the recordation of, or otherwise

perfect, this Deed and all such other deeds, assignments and instruments under any applicable statute, ordinance, rule or regulation.

By acceptance of this Deed, the Grantee (a) agrees to perform each of the obligations imposed on the Grantee by the terms of this Deed, and (b) assumes and agrees to perform and observe all obligations and conditions on the part of the Grantor or the Grantor's predecessor in title to be performed or observed that arise or accrue after the date of delivery of this Deed under all licenses, easements, leases (other than those which may have been created to secure payment of a financial obligation) and operating, trackage right and joint facility agreements (subject, however, to the terms thereof) which are conveyed by this Deed and under those to which this conveyance is made subject, provided that the Grantee assumes no obligation or liability that arises after the date of delivery of this Deed out of any event, act or failure to act that occurred prior thereto and, where an obligation or liability is related to a period which is both before and after such date, the Grantee assumes only that portion of the obligation or liability which is reasonably allocable to the part of the period after such date. Concurrently with the delivery of this Deed, the Grantee is delivering to the Grantor a separate instrument executed by the Grantee acknowledging receipt and acceptance of this Deed and affirming the provisions of this paragraph.

All of the covenants of the Grantor and the Grantee, respectively, shall be deemed to be real covenants and shall run with the land.

The words "Grantor" and "Grantee" used herein shall be construed as if they read "Grantors" and "Grantees", respectively, whenever the sense of this Deed so requires and, whether singular or plural, such words shall be deemed

to include in all cases the successors and assigns of the respective parties.

Pursuant to and in accordance with (a) Orders of the Special Court established under the Regional Rail Reorganization Act of 1973, as amended, and (b) covenants and agreements of the Grantor and the Grantee in deeds heretofore executed and delivered, certain deeds (including in said term other conveyance documents) to the Grantor, and certain deeds of the Grantor to the Grantee, which were executed on or prior to, and delivered on, April 1, 1976, have been altered and corrected; and said deeds of the Grantor to the Grantee, of which this is one, have, for convenience of setting forth the terms and provisions of said deeds in final form as so altered and corrected, been re-executed, nunc pro tunc, effective as of April 1, 1976, as if for all purposes said deeds (and other conveyance documents) had been so altered and corrected prior to their initial execution, and delivery on April 1, 1976.

IN WITNESS WHEREOF, Grantor has caused this Deed to be executed as of the 1st day of April, 1976, in its corporate name by Lawrence A. Huff, its Assistant Vice President, attested to by V. P. DiGiannantonio, its Assistant Secretary, and its corporate seal to be hereunto affixed, and does hereby appoint said Lawrence A. Huff, its Assistant Vice President, its true and lawful attorney-in-fact for it and in its name to acknowledge and deliver this Deed as its act and deed.

CONSOLIDATED RAIL CORPORATION

By: _____
Lawrence A. Huff
Assistant Vice President
Real Estate

Attest: _____
Assistant Secretary

[CORPORATE SEAL]

ACKNOWLEDGEMENT:

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF PHILADELPHIA, SS:

On this 11th day of October, 1978 before me, a Notary Public authorized to take acknowledgements and proofs in the Commonwealth of Pennsylvania, County of Philadelphia, personally appeared Lawrence A. Huff, to me personally known, who being by me duly sworn, says that he is Assistant Vice President, Real Estate of Consolidated Rail Corporation,

that the seal affixed to the foregoing Deed was signed and sealed on behalf of said corporation by authority of its Board of Directors, and he acknowledged that the execution of the foregoing Deed was the free act and deed of said corporation.



Francis J. Trout
Notary Public, Phila., Phila. Co.
My Commission Expires Sept. 4, 1982

DOCUMENT NO.

DL-1/PB&W-CRC-ATK-RP-1

EXHIBIT A

TO THE DEED BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

AND

NATIONAL RAILROAD PASSENGER CORPORATION

DESCRIPTION OF REAL PROPERTY

LOCATED IN

County of New Castle

State of Delaware

For the purpose of each description contained in this Exhibit A (and solely by way of illustration and not by way of limiting the generality of the term "adjacent"), adjacency shall be deemed to exist without regard to the existence of any public or private street, highway, alley or other way between one part of the Grantor's real property and another.

For the Grantor's title to the property conveyed by this Deed reference is made to Deed dated March 29, 1976, to the Grantor from Trustees of the Property of The Philadelphia, Baltimore and Washington Railroad Company and from transferors designated Providence Produce Warehouse Co., Manor Real Estate Co., Dispatch Shops Inc., Green Real Estate Co., New York Central Development Corp., and Penndiana Improvement Corp., recorded, prior to the recording of this Deed, with the recording office of the above specified jurisdiction.

This Exhibit A consists of pages A-1*, A-2, A-3, A-4, A-5, A-6 and A-7.

*

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being The Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as Penn Central's Philadelphia-Washington Main Line and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line enters the County near Claymont, near the Pennsylvania-Delaware State Line, passes through Wilmington, Edgemoor, and Newark, and leaves the County at the Delaware-Maryland State line near Rambo Road in Newark.

The line of railroad described herein is identified as Line Code 1201 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being The Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as the Penn Central Shellpot Branch and Secondary Track and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line originates in the County near New Castle Avenue in Edgemoor, connecting to another line of railroad known as the Penn Central Philadelphia-Washington Main Line, and terminates in the County at a connection with the Penn Central Philadelphia-Washington Main Line at Ragan.

The line of railroad described herein is identified as Line Code 1221 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being The Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as the Delmarva Branch, (N.D. and C), of the Penn Central Transportation Company, and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line originates in the County near South Chapel Street, in Newark, connecting to another line of railroad Transportation Company, and terminates in the County near the connection to the Delmarva Branch, at Porter.

The line of railroad described herein is identified as Line Code 1223 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being The Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as the Penn Central West Wilmington Track and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line originates in the County near the West Yard in Wilmington, and terminates in the County at the connection with the Penn Central Philadelphia-Washington Main Line.

The line of railroad described herein is identified as Line Code 1228A in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being The Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as the Penn Central Pomeroy Track and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line originates in the County near Newark, connecting to another line of railroad known as the Penn Central Philadelphia-Washington Main Line and terminates in the County near College Road in Newark Center.

The line of railroad described herein is identified as Line Code 1256 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being the Philadelphia, Baltimore and Washington Railroad Company's line of railroad known as the Penn Central Brandywine Track, and being all the real property in the County lying in, under, above, along, contiguous to, adjacent to or connecting to such line.

Such line enters the County near 14th Street in Edge Moor near the Penn Central Philadelphia-Washington Main Line and terminates in the County near Kentmere.

The line of railroad described herein is identified as Line Code 1263 in the records of the United States Railway Association.

Document No. DL-1/PB&W-CRC-ATK-RP-1

EXHIBIT B

TO THE DEED BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

AND

NATIONAL RAILROAD PASSENGER CORPORATION

DESCRIPTION OF REAL PROPERTY

LOCATED IN

County of New Castle, Delaware

RESERVED AND EXCEPTED BY THE GRANTOR

Each map referred to in this Exhibit B bears a certain Document Number. A copy of each map is on file in the office of the United States Railway Assocation and a copy of each map has been certified by the United States Railway Association to the Special Court and filed in the office of the Clerk of the Special Court in the United States District Courthouse in Washington, D.C., in connection with the conveyance by Grantor's predecessor in title to Grantor.

This Exhibit B consists of pages B-1, B-2, B-3, B-7, B-8, B-9 B-12*, B-12A*, B-19, B-20, B-21, B-22, B-23*, B-23A*, B-24 and B-25*.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in the County of New Castle, and State of Delaware being designated as Parcel No. 1201-24 on Railroad Valuation Map Number V-3/S.T.6 , as revised to December 31, 1967; and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at a point on the centerline of Marsh Road and the southern corner of land of other owners;

Thence, northeastwardly 85 feet, more or less, along northwestern property line of said Railroad as shown on said map;

Thence, southeastwardly 135 feet, more or less, along a northeastern property line of said Railroad to a point;

Thence, westwardly 51 feet, more or less, to a point;

Thence, southwardly 50 feet, more or less, to a point on said centerline of Marsh Road;

Thence, northwestwardly, 50 feet, more or less, along said centerline;

Thence, southwestwardly 30 feet, more or less, to a point;

Thence, southwardly and southwestwardly 708 feet, more or less, along the southeastern property line of said Railroad as shown on said map, to a point;

Thence, northeastwardly 733 feet, more or less, to a point on said centerline of Marsh Road;

Thence, southeastwardly 83 feet, more or less, along said centerline to the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-24.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in the County of New Castle, and State of Delaware, being designated as Parcel 1201-25 on Railroad Valuation Map No. V-3/7, as revised to December 31, 1966; and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies northerly of the following described lines:

Beginning at a point on the western bank of Shellpot Creek and on the northwesterly right-of-way line of said Railroad Company opposite Station 1143+58; thence, southwestwardly 75 feet, more or less, to a point on the northeasterly line of land of others, the point of ending.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-25.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in the City of Wilmington, County of New Castle, and State of Delaware, being designated as Parcel 1201-26C on Railroad Valuation Map No. V3/8, as revised to December 31, 1966; and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at the southeastern corner of the intersection of 13th and Bowers Streets; thence, eastwardly 580 feet, more or less, along the southern boundary of 13th Street to the corner of an unlabeled street; thence, southwardly 125 feet, more or less, along said unlabeled street to a point on the northern boundary of another unlabeled street; thence, westwardly 580 feet, more or less, along said northern boundary to a point on the eastern boundary of Bowers Street; thence, northwardly 125 feet, more or less, along said eastern boundary to the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-26.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in the City of Wilmington, County of New Castle, and State of Delaware, being designated as Parcel 1201-26B on Railroad Valuation Map No. V3/8, as revised to December 31, 1966; and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at a point on the southern boundary of Fourteenth Street and the northeastern end of a stonewall at the southwest corner of U.G. Brige No. 25.58 of said Railroad;

Thence, southwestwardly 88 feet, more or less, along said stonewall to a point 51 feet, distant southeastwardly, at right angles, from the centerline of the mainline tracks of said Railroad;

Thence, southwestwardly 662 feet, more or less, parallel to said centerline to a point on the northern boundary of Twelfth Street;

Thence, westwardly 250 feet, more or less, along said northern boundary to a point on the western boundary of Bowers Street;

Thence northwardly 338 feet, more or less, along said western boundary to a point on the northern boundary of Thirteenth Street;

Thence, eastwardly 39 feet, more or less, along said northern boundary to a point;

Thence, northeastwardly 165 feet, more or less, to a point on the southern boundary of Davis Street;

Thence, westwardly 22 feet, more or less, to a point on the northern boundary of said Davis Street;

Thence, eastwardly 30 feet, more or less, along said northern boundary to an angle point;

Thence, northeastwardly 151 feet, more or less, to a point on the southern boundary of Fourteenth Street.

Thence, westwardly 55 feet, more or less, along said southern boundary to the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-26.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the City of Wilmington, County of New Castle, State of Delaware, and being part of The Philadelphia Baltimore and Washington Railroad Company's line of railroad which is known as an industrial spur line and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line of railroad which lies beyond and initially northerly of the following described lateral cut line:

Beginning at a point on the northwestern property line said Railroad distant 238 feet, southwestwardly from Milepost 26 at Station 1212+94;

Thence, northeastwardly 250 feet, more or less, along a line parallel and 45 feet, distant northwestwardly, at right angles, from the centerline of the mainline tracks of said Railroad, to a point on the southwestern abutment of U.G. Bridge No. 25.97, the point of ending.

As shown on Railroad Valuation Map No. V-3/8 as revised to December 31. 1966.

The part of the line of railroad described herein begins at the lateral cut line near Eight Street, Wilmington.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-26.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situate in Christiana Hundred, County of New Castle, State of Delaware, being designated as Parcel 1201-28 on Railroad Valuation Map No. V-3/S.T.10, as revised to December 31, 1967, and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at a point on the northeastern property line of said railroad property, opposite Station 1313+28, distant 105 feet southeastwardly at right angles from the centerline of the mainline tracks; thence, southwestwardly 1150 feet, more or less, along the southeasternmost rail of the yard track which is 1639 feet long, as shown on said Map, to a point opposite Station 1324+82; thence, northwestwardly 64 feet, more or less, at right angles to the centerline of the mainline tracks, to a point distant 37 feet southeastwardly of said centerline; thence, northeastwardly 870 feet, more or less, parallel to said centerline, to a point opposite Station 1316+18; thence, southeastwardly 35 feet, more or less, at right angles to said centerline, to a point; thence, North 32° East 295 feet, more or less, to a point opposite Station 1313+21; thence, southeastwardly 20 feet, more or less, at right angles to the yard spur to a point on the northeastern property line of said railroad property opposite Station 1313+15; thence, southeastwardly 58 feet, more or less, along said northeastern property line to the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-28.

All that parcel of land situate in the County of New Castle, State of Delaware, being designated as Parcel No. 1201-29 on Railroad Valuation Map. V-3/11, as revised to December 31, 1966 being all the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at a point on the southerly property line of said Railroad on the middle of Mill Creek as shown on said map at a point distant 55 feet southeastwardly and radially from the centerline of the southeasternmost main track as it was located on April 1, 1976; thence, southwestwardly and southwardly 573 feet, more or less along the eastern property line of the West Wilmington Track to an angle point; thence northwestwardly 2,365 feet, more or less, along the southeastern property line of said Railroad's main line tracks to a point; thence, northwestwardly, 322 feet, more or less, at right angles to the previously described course, to a point 55 feet distant southeastwardly, at right angles, from the centerline of the southeasternmost main track opposite Station 1337+65; thence southwestwardly 1,865 feet, more or less, parallel to said centerline, to a point on the middle of said Mill Creek the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201—29.0

The above described property is reserved to the Grantor, but title thereto shall pass to the Grantee if and when within twenty years the Grantor ceases to use and operate the same for the purpose of carrying out Grantor's contract to provide maintenance services for an established commuter rail agency. (For the purpose of this paragraph the term "Grantor" shall refer, exclusively, to the Consolidated Rail Corporation and shall not be deemed to include any successors or assignees.)

Subject to a leasehold estate for a term beginning this date and ending June 30, 1979, without rent, in the portion now used by the Grantee for training purposes of the existing building situated on the southeasterly side of the Wilmington West Yard tracks, approximately opposite Station 1339+75, together with the right of access thereto.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in Pencader Hundred, County of New Castle, and State of Delaware, being designated as Parcel 1201-39-41 on Railroad Valuation Map Nos. V 3/21, V 3/22, and V 3/23, as revised to December 31, 1967, 1963, and 1962, respectively; and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies within the following described lines:

Beginning at a point on an interior southwestern corner of property of said Railroad distant 85 feet southwardly, at right angles, from the centerline of the mainline tracks of said Railroad, also distant eastwardly 135 feet from Milepost 39 at Station 1899+00; thence, westwardly 20 feet, more or less, parallel to said centerline; thence, northwardly 42 feet, more or less, perpendicular to the previous line to a point 45 feet distant southwardly, at right angles, from the centerline of the mainline track of said Railroad; thence, westwardly 185 feet, more or less, to a point distant 45 feet southwardly, at right angles, from the centerline of said mainline track opposite Station 1899+68; thence, westwardly and southwardly 1543 feet, more or less, to the Match Mark at Station 1915+10; 5280 feet, more or less, to the Match Mark at Station 1967+90; 575 feet, more or less, all parallel to said centerline for a total of 7398 feet, more or less, to a point; thence, South 3° East 80 feet, more or less, to a point; thence, northeastwardly 2331 feet, more or less, along a curve to the right of radius 10636.5 to a point; thence, North 62° East 204 feet, more or less, to a point; thence, South 30° East 110 feet, more or less, to a point on an interior southeastern corner of the southern property line of said Railroad; thence, northeastwardly and eastwardly 3290 feet, more or less, along said southern property line to said Match Mark at Station 1915+10; thence, North 71° East 1725 feet, more or less, along said property line to a point; thence, North 8° East 90 feet, more or less, along said southern property line to the point of beginning.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1201-39-41.

Situate in the County of New Castle, State of Delaware, and being part of The Philadelphia, Baltimore and Washington Railroad Company's line of railroad which is known as the Penn Central Shellpot Branch and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line of railroad which lies between the following described lateral cut lines:

Beginning at a point on the northwestern property line of said Railroad distant 166 feet at right angles southwestwardly from the southwestern line of 12th Street as shown on Railroad Valuation Map V3/34 and distant 180 feet on a bearing of North 5° 77' West along said property line from the centerline of an industrial spur track, as it was located on December 1, 1975; ; thence, northeastwardly 205 feet, more or less, at right angles to said line of 12th Street to a point 20 feet northeastwardly from the northeastern line of said 12th Street; thence, southeastwardly, eastwardly, and northeastwardly 1810 feet, more or less, parallel to said line of 12th Street to a point opposite the switch for Tracks Nos. 182 and 183 and distant 133 feet southwestwardly from said switch, at right angles to said 12th Street; thence, northwestwardly 990 feet, more or less, to a southern interior corner of the northern property line of said Railroad; thence, northeastwardly 485 feet, more or less, along said northern property line to a point; thence, southeastwardly 90 feet, more or less, to a point; thence, eastwardly 1,025 feet, more or less, along said northern property line to a point; thence, northeastwardly 1,260 feet more or less to a southeastern interior corner on the northwestern property line, the point of ending, as shown on Railroad Valuation Map No. V3/34A and V3/34 as revised to December 31, 1966.

The part of the line of railroad described herein extends from the lateral cut line in Edgemoor Yard near New Castle Avenue to the end of the line near Ragan at the connection with The Philadelphia-Washington Main Line.

The lateral cut line is identified as Line Code 1221-0.0 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

All that parcel of land situated in the County of New Castle, and State of Delaware, being the Shellpot Branch, as shown on Railroad Valuation Map No. V-3/S.T.5 as revised to December 31, 1966 and V-3/S.T.6 as revised to December 31, 1967, and being all of the land of The Philadelphia, Baltimore and Washington Railroad Company, as shown on the Map, which lies southerly of the following described lines:

Beginning at a point on the southeastern property line of said Railroad opposite Station 1037+03; thence, northwestwardly 325 feet, more or less, to a point 55 feet distant southeastwardly, at right angles, from the centerline of the southeasterly mainline track of said Railroad, as it was located on December 1, 1975, being also on the northeastern prolongation of the northernmost edge of track of the Edgemoor Yard Branch of said Railroad; thence, southwestwardly 530 feet, more or less, parallel to said centerline, to a point opposite Station 1042+39; thence, northwestwardly 35 feet, more or less, at right angles to said centerline to a point 25 feet distant, southeastwardly at right angles from said centerline; thence, southwestwardly 2790 feet, more or less, parallel to said centerline to a point on the Match Mark at Station 1070+30, which point is also 7 feet distant, northwardly, at right angles from the centerline of the northernmost freight track, as it was located on December 1, 1975; thence, continuing southwestwardly 2470 feet, more or less, parallel to said centerline of the freight track to the point of tangent, opposite Station 1094+85; thence, southwestwardly 1177 feet, more or less, to a point on the centerline of Marsh Road, on the southwestern property line of said Railroad, opposite Station 1106+66, the point of ending.

The above described parcel or parcels are identified in the records of the United States Railway Association as Line Code 1221-1.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being part of The Philadelphia, Baltimore and Washington Railroad Company's lines of railroad which is known as the Shellpot Secondary and the West Wilmington Track and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line of railroad which lies beyond and initially southeasterly of the following described lateral cut line:

Beginning at a northern corner of a property line running along a section of the Reading Company Delaware River Extension Railroad which runs South 12° 21' West distant 340 feet, more or less, northeastwardly along the southern property line of said Railroad from the middle of Mill Creek, as shown on the Map V-3/S.T.10; thence, North 12° 21' East 475 feet, more or less, along said Reading Company Extension to a point; thence, North 34° 31' West 19 feet, to a point; thence, North 27° 12' West 220 feet, more or less, to a point; thence, southwestwardly 2040 feet, more or less, along the northwestern property line of said Railroad to a point on the southeastern prolongation of the Match Mark at Station 1334+30; thence, southwestwardly 2,750 feet, more or less, along said northwestern property line to a point; thence, northwardly and northeastwardly 573 feet, more or less, along the eastern property line of said Railroad to a point on the middle of Mill Creek; thence, northwestwardly 25 feet, more or less, along said Mill Creek to a point on a property line of said Railroad, distant 35 feet southeastwardly and radially from the centerline of said mainline tracks; thence, southwestwardly 305 feet, more or less, parallel to said centerline and along said property line; thence, South 73° East 22 feet, more or less, to a point; thence, southwardly 380 feet, more or less, along said property line to a point; thence, southwestwardly and westwardly 1,560 feet, more or less, along said property line to a point; thence, southeastwardly 200 feet, more or less, radially to the previous line, to a point on the northeastern Low Water Mark of Christiana River, the point of ending, as shown on Railroad Valuation Map No. V-3/S.T.10, V-3/11, and V3/30 as revised to December 31, 1967, 1966, and 1954 respectively.

The part of the line of railroad described herein begins at the lateral cut line near West Yard in Wilmington and extends to the end of the line at a connection with The

Philadelphia, Baltimore and Washington Main Line of the Penn Central Transportation Company.

The lateral cut line is identified as Line Code 1228A-0.0 in the records of the United States Railway Association.

The part of the line of railroad described herein begins at the lateral cut line at a connection with the Penn Central Philadelphia-Washington Main Line at Ragan and extends to the County line near New Castle Avenue in Edgemoor.

The lateral cut line is identified as Line Code 1221-7.0 in the records of the United States Railway Association.

Subject to the easement and right of access between a public highway and property conveyed by the within Deed over the existing access road or roads on the above described property.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being part of The Philadelphia, Baltimore, and Washington Railroad's line of railroad which is known as the Delmarva Branch, and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line of railroad which lies beyond and initially southerly of the following described lateral cut line:

Being a line drawn north 86° 30' west at a point distant southwardly 486 feet, more or less, at right angles, from the centerline of the main line tracks and distant southeastwardly 870 feet, more or less, along the Delmarva Branch's centerline from the point of switch of said Branch, as shown on Railroad Valuation Map No. V3/20, as revised to December 31, 1967.

The part of the line of railroad described herein begins at the lateral cut line in Newark and extends to the County Line near Porter.

The line of railroad is identified as Line Code 1223-0.0 in the records of the United States Railway Association.

Document No.

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being part of The Philadelphia, Baltimore and Washington Railroad Company's line of railroad which is known as the Penn Central Pomeroy Track and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line which lies beyond and initially northerly of the following described lateral cut line:

Being a line drawn at right angles to the centerline of said Pomeroy Branch, 50 feet northerly along said centerline from a point of switch, being 780 feet, more or less, northerly from the original centerline of the mainline tracks of said railroad, as shown on Railroad Valuation Map No. V3/20, as revised to 1967.

The part of the line of railroad described herein begins at the lateral cut line near Chapel Street, Newark and extends to the end of the line in Newark.

The lateral cut line is identified as Line Code 1256-0.0 in the records of the United States Railway Association

PB&W-CRC-ATK-RP-1

Situate in the County of New Castle, State of Delaware, and being part of The Philadelphia, Baltimore and Washington Railroad's line of railroad which is known as the Brandywine Branch and is described in Exhibit A of this Deed, and being all of the real property in the County lying in, under, above, along, contiguous to and adjacent to that part of the line of railroad which lies beyond and initially southwesterly of the following described lateral cut line:

Beginning at a point on the northeastern boundary of Vandever Avenue distant 150 feet, more or less, southeastwardly from said Avenue's intersection with the southeastern boundary of Bowers Street, said point being also an angle point in the property line of said Railroad;

Thence, south 44° 07' east 155 feet, more or less, along said property line to a point on the northwestern corner of a bridge abutment said point being also a northeasterly prolongation of a stone wall;

Thence, southwestwardly 500 feet, more or less, along said stone wall, the point of ending, as shown on Railroad Valuation Map No. 3/8, as revised to December 31, 1966.

The part of the line of railroad described herein begins at Vandever Street and crosses 14th Street in Edgemoor and estends to the County line near Kentmere.

The line of railroad is identified as Line Code 1263-0.0 in the records of the United States Railway Association.

EXHIBIT C

TO THE DEED BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

AND

NATIONAL RAILROAD PASSENGER CORPORATION

RESERVING AND EXCEPTING TO THE GRANTOR:

1. The easement and right ("Freight Service Easement") contemplated for retention by the Grantor under the Final System Plan certified by USRA exclusive against any and all persons except Grantee, its subsidiaries and successors in interest, to operate upon the real property conveyed by this Deed to the Grantee ("real property") local and long-haul freight service (including mail and express) and special train service to the full extent required by (i) the Act, or (ii) the Interstate Commerce Act or any future law of like import, including, without limitation, to the extent so contemplated and so required, the exclusive easement and right:

(a) to operate freight trains, cars and locomotives;

(b) subject to availability of space in light of the needs of Grantee except in those facilities occupied by Grantor as of the date of this Deed as to which Grantor has no viable alternative, to occupy and use such portions of stations, buildings and other facilities now upon the real property (and replacements thereof) and subject as of space in light of the needs of Grantee, to construct operate and maintain additional or substitute stations, buildings and other facilities, which are reasonably necessary or legally required in connection with the provision of freight service;

(c) to use in conjunction with Grantee the presently existing railroad system telephone cable communication equipment and facilities now upon the real property (and replacements thereof) and, subject to the availability of space, to construct, operate and maintain such additions to or substitutions for the presently existing railroad system telephone cable communications equipment and facilities which are reasonably necessary or legally required in connection with the provision of freight service;

(d) to install track connections for rail lines and trackage connections for rail lines and trackage, now or hereafter owned, leased, controlled or operated by

Grantor, continguous or adjacent to the real property to secure its freight customers or to connect with its rail properties;

(e) to provide all new and additional freight service at any point along the real property;

(f) to use appropriate portions of the maintenance of equipment facilities now upon the real property (and replacements thereof) for the provision of maintenance of equipment service for equipment used in provision of freight service (including mail and express) and special train service; and

(g) to have reasonably access over the real property to permit the exercise of the foregoing easements and rights;

the exercise of which such exclusive easement and right shall be subject to such terms, provisions, qualifications and limitations as the Grantor and the Grantee have agreed upon in a certain Northeast Corridor Freight Operating Agreement, dated March 31, 1976, as said agreement may be amended, and as the Operations Review Panel established under Section 702 of the Railroad Revitalization and Regulatory Reform Act of 1976 may impose; in return for which exclusive easement and right, the Grantor shall pay the fair and equitable share

of the cost to the Grantee of operating rail service upon the real property occasioned by exercise of the Freight Service Easement, as determined by agreement between the parties, or, in the event of the failure of the parties to so agree, by the Interstate Commerce Commission under Section 402(a) of the Rail Passenger Service Act, as such provision may be amended; provided, that in the event that the Grantor shall elect to abandon or assign the Freight Service Easement in whole or in part, other than to a subsidiary, affiliate or successor entity, the Grantee shall have a first option to acquire such easement, or portion thereof, at the purchase price of one dollar ($1.00);

2. The easement and right ("Commuter Passenger Service Easement") contemplated for retention by the Grantor under the Final System Plan certified by USRA, to operate upon the real property conveyed by this Deed to the Grantee ("real property"), commuter passenger service to the full extent required by the Act, including, without limitation, to the extent so contemplated and so required, the easement and right:

(a) to operate commuter passenger trains, cars and locomotives;

(b) to provide commuter passenger service to the extent required by the Act and any agreements which Grantor, its parent, subsidiaries or affiliates is required to assume or enters into under the provisions of the Act;

(c) to use terminals and stations now upon the real property (and replacements thereof) for such commuter passenger service, jointly with the Grantee's use thereof; including without limitation, waiting areas, parking areas, facilities for sale of tickets and other related passenger facilities within, continguous or adjacent to the terminals and stations;

(d) to use the appropriate portions of the maintenance of equipment facilities now upon the real property (and replacements thereof) for the provision of maintenance of equipment service for equipment used in provision of such commuter passenger service; and

(e) to have reasonable access over the real property to permit the exercise of the foregoing easements and rights;

the exercise of such easement and right shall be subject to such terms, provisions, qualifications and limitations as the Grantor and the Grantee may agree and as the Operations Review Panel established under Section 702 of the Railroad

Revitalization and Regulatory Reform Act of 1976 may impose; in return for which right and easement, the Grantee shall be entitled to receive from the Grantor the cost of the Grantee of operating rail service upon the real property occasioned by reason of the exercise by the Grantor of the Commuter Passenger Service Easement, as determined by agreement between the parties, or, in the event of a failure of the parties to so agree, by the Interstate Commerce Commission under Section 402(a) of the Rail Passenger Service Act, as such provision may be amended; provided that in the event that the Grantor shall elect to abandon or assign the Commuter Passenger Service Easement, in whole or in part, other than to a subsidiary, affiliate or successor entity, the Grantee shall have a first option to acquire such easement, or portion thereof, at the purchase price of one dollar ($1.00).

ADDENDUM TO THE DEED

BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

AND

NATIONAL RAILROAD PASSENGER CORPORATION

Any other provision of this Deed to the contrary notwithstanding, this Deed does NOT convey any right, title or interest in, and this conveyance is NOT made subject to, the operating, trackage right and joint facility agreement or agreements identified in Exhibit D attached to this Deed.

EXHIBIT D

TO THE DEED BY AND BETWEEN

CONSOLIDATED RAIL CORPORATION

AND

NATIONAL RAILROAD PASSENGER CORPORATION

DESCRIPTION OF OPERATING, TRACKAGE RIGHT,

AND JOINT FACILITY AGREEMENTS

TO WHICH THIS CONVEYANCE OF REAL PROPERTY

IS NOT SUBJECT

This conveyance of real property is not subject to any joint facility agreements which are not necessary to Grantee's ownership, operation and maintenance of the real property conveyed hereunder or which are not necessary to the providing of intercity rail passenger service by Grantee.

REC'D FOR RECORD Oct 20 1978 2:59 P.M. LEO J. DUGAN, Jr. Recorder

Attachment 6 Drawings

Contact TJ.Austin@Stantec.com for Construction Plans and Impacts Drawings

Attachment 7 Risk-Based Disposal Approval Application (RBDAA)

Under separate attachment

Attachment 8 Wetland Delineation Report

Contact TJ.Austin@Stantec.com for Wetland Delineation Report

Attachment 9 Regulatory Correspondence

FINAL PLAN OF REMEDIAL ACTION

Amtrak Maintenance Facility, Operable Unit 1

4001 Vandever Avenue *March 2022*
Wilmington, Delaware *DNREC Project No. DE-0170*

This Final Plan of Remedial Action (Final Plan) presents clean-up actions required by the Department of Natural Resources and Environmental Control (DNREC) to address environmental contamination at the Amtrak Maintenance Facility Site, Operable Unit 1.

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on March 2, 2022 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments from the public; therefore, the Proposed Plan is adopted as the Final Plan.

Approval:
This Final Plan meets the requirements of the Hazardous Substance Cleanup Act.

Qazi Salahuddin, Program Administrator
Remediation Section

3/28/2022
Date

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DE-0170 II B9
QS22059

PROPOSED PLAN OF REMEDIAL ACTION

Amtrak Maintenance Facility OU-1
Amtrak Wilmington Shops, Wilmington, Delaware
DNREC Project No. DE-0170



February 2022

Delaware Department of Natural Resources and Environmental Control
Division of Waste and Hazardous Substances
Remediation Section
391 Lukens Drive
New Castle, Delaware 19720

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- Glossary of Terms

PROPOSED PLAN OF REMEDIAL ACTION

Amtrak Maintenance Facility OU-1
Amtrak Wilmington Shops, Wilmington, Delaware
DNREC Project No. DE-0170

Approval:
This Proposed Plan meets the requirements of the Hazardous Substance Cleanup Act.

Approved by:

Qazi Salahuddin, Environmental Program Administrator
Remediation Section

2.28.22

Date

What is the Proposed Plan of Remedial Action?

The Proposed Plan of Remedial Action (Proposed Plan) summarizes the clean-up (remedial) actions that are being proposed to address contamination found at the Site for public comment. A legal notice is published in the newspaper for a 20-day comment period. DNREC considers and addresses all public comments received and publishes a Final Plan of Remedial Action (Final Plan) for the Site.

What is the Amtrak Maintenance Facility, OU-1?

The Maintenance Facility is part of the Amtrak Wilmington Maintenance Shops located at 4001 Vandever Avenue in Wilmington, Delaware (Figure 1). The entire Amtrak Wilmington Shops includes both the Maintenance Facility (DE-0170) and the Former Fueling Facility (DE-0266). The Site is zoned for General Industrial (M-2) uses.

This proposed plan addresses the Maintenance Facility Operable Unit #1 (OU-1), which consists of portions of the Amtrak Wilmington Maintenance Shops. In total, the site comprises approximately 52 acres, and includes over 50 maintenance, storage and administrative buildings, and the northeast drainage ditch, among other features (Figure 2). Approximately 36 acres of the site is paved or under building roof and 16 acres is unpaved. Operable Unit #2 (OU-2, Wreck Track Improvement Project) and Operable Unit #3 (OU-3, Transfer Table Extension Project) were smaller projects within the footprint of OU-1 that were managed in 2016 and 2017, respectively. This proposed plan covers the remainder of the Maintenance Facility site, specifically those areas of the Amtrak property that drain to the Shellpot Creek. Soil, groundwater, surface water and sediment contamination associated with the areas of the site that drain to the Brandywine Creek were addressed through the Former Fueling Facility site (Final Plan of Remedial Action issued in August 2020).

What happened at the Maintenance Facility, OU-1?

According to a recent report compiled by Amtrak, the site, constructed in 1903, was originally used for the maintenance, fueling, and servicing of locomotives and passenger train cars with coal (later diesel fuel), lubricating oil, and sand. Historically, other operations were performed at the sites, including filling caboose cabin heaters with kerosene and providing steam engines with water, sand and coal. The Maintenance Facility site is actively used for the maintenance, service and overhaul of locomotives, rail cars and railroad equipment.

What is the environmental problem at the Maintenance Facility, OU-1?

Data gathered to assess the site indicates that polychlorinated biphenyls (PCBs) are present in site soils and sediments at concentrations that result in exceedances of applicable risk thresholds. In addition, residual diesel fuel, chlorinated solvents and associated dissolved phase

contaminants have been detected in groundwater samples at the site in excess of applicable criteria. For PCB remediation, the federal Toxic Substances Control Act (TSCA), enacted through the regulations in Title 40 Code of Federal Regulations (CFR) Part 761, has primacy and cannot be delegated to the states. Thus, EPA Region III has the primary authority for the PCB remediation, and Amtrak must prepare a cleanup plan for the PCB contamination at the site, consistent with Part 761.61(c) requirements, for review and approval by EPA Region III.

What clean-up actions have been taken at the Maintenance Facility, OU-1?

As indicated above, small clean-up projects associated with site improvements since 2016 (OU-2 and OU-3) have resulted in the removal and/or capping of PCB and metals contaminated soils encountered during excavations. Each of these projects were completed in compliance with a TSCA approved self-implementing plan in accordance with 40 CFR 761.61(a) for disposition of PCB contaminated soils.

Interim measures have been taken at the facility to eliminate the exposure of chlorinated compounds in air to occupants of the Amtrak Administrative Building, to eliminate the discharge of sump water containing chlorinated compounds to the Shellpot Creek, to characterize PCBs in free product (diesel fuel) beneath the site, and to conduct free product recovery to the extent practicable. In addition, erosion control and sediment reduction measures were implemented in order to reduce PCBs in storm water runoff from the site, as well as other measures in accordance with a Delaware River Basin Commission (DRBC) approved Pollutant Minimization Plan for the facility. Further, the site is located within the existing City of Wilmington Groundwater Exclusion Zone, meaning that groundwater cannot be used for any drinking water purposes, now or in the future.

Last, in 2018, Amtrak initiated a DNREC approved pilot test of Enhanced Reductive Dechlorination (ERD) to speed chemical breakdown of chlorinated compounds in soil and groundwater east of the Administrative Building. Due to its initial success, the technology will be incorporated into the overall cleanup requirements for the site.

What does the owner want to do at the Maintenance Facility, OU-1?

Amtrak intends to continue its use of the property for locomotive maintenance activities in the future, as this site is a critical element in Amtrak's Northeast Corridor passenger rail system.

What additional clean-up actions are needed at the Maintenance Facility, OU-1 Site?

DNREC and EPA propose the following remedial actions for the Site, which need to be completed before a Certificate of Completion of Remedy (COCR) can be issued:

1. Comply with the requirements of a Risk Based Disposal Approval Application (RBDAA) for disposition of PCB contaminated soils. These requirements shall include "hot spot" removal of heavily impacted soils to meet risk defined goals, followed by an engineered cap or soil/stone cover over any and all residual contaminated soils. The RBDAA must also include details related to the following required activities:

a. Performance of soil remediation as required in item #1 above.

b. Excavation and removal of impacted sediments from the site's drainage feature(s) that discharge to the Shellpot Creek (Outfall 002).

c. Completion of "Common Elements" of remedial options as defined in the Agency Approved Remedial Investigation and Focused Feasibility Study Report (RIFFS) that are not specifically listed in this Proposed Plan of Remedial Action.

d. Development of a Long-Term Stewardship (LTS) Plan to detail the site inspection schedule and monitoring requirements to be followed in order to ensure the long-term integrity of remedial components, including but not limited to:

    1. Caps and covers over impacted soils;

    2. Monitored Natural Attenuation of petroleum and PCBs in groundwater beneath the site; and

    3. Mass loading of contaminants from the site to the Shellpot Creek.

e. The LTS Plan must also include a maintenance schedule for "below track" excavation and disposal activities, including a No Later Than (NLT) date to complete these activities. In addition to the schedule, a detailed remedial plan for the "below track" excavation must also be included.

f. Completion of a Contaminated Materials Management Plan (CMMP) for guidance to enable construction workers to safely handle any potentially contaminated soil and groundwater at the Site.

The RBDAA and its components, as required by TSCA, will be considered equivalent to a DNREC Remedial Action Work Plan (RAWP) and LTS Plan for PCB impacts at the Site.

2. Provide DNREC with a separate RAWP and Monitoring/LTS Plan for continuation of the ERD program successfully piloted at the site to accelerate natural attenuation of chlorinated compounds in soil and groundwater.

3. A proposed Environmental Covenant must be submitted to DNREC and EPA for review as part of the RBDAA. Final approval of the Environmental Covenant by DNREC is required prior to recordation.

4. The Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (7 Del.C. Chapter 79, Subchapter II), must be recorded in the Office of the New Castle County Recorder of Deeds within 30 days of DNREC's approval of the proposed Environmental Covenant. The Environmental Covenant must include the following activity and/or use restrictions and reporting requirements:

[a.] Use Restriction. Use of the Property shall be restricted solely to those non-residential type uses permitted within Commercial, Manufacturing, or Industrial Districts;

[b.] Interference with Remedy. There shall be no digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activities within the remediated area without the prior written approval of DNREC and EPA.

[c.] Limitation of Groundwater Withdrawal. No groundwater wells shall be installed, and no groundwater shall be withdrawn from any well within the boundaries of the site without the prior written approval of DNREC-RS and DNREC Division of Water;

[d.] Annual Report. Annual reports shall be submitted to EPA and DNREC to include documentation of compliance with approved Long-Term Stewardship requirements and the approved Contaminated Materials Management Plan.

5. A Remedial Action Completion Report (RACR) must be submitted to DNREC and EPA within 60 days of the completion of the remedial actions required in this Proposed Plan.

6. A request for a Certification of Completion of Remedy (COCR) should be submitted to DNREC within 60 days after approval of the RACR.

What are the long term plans for the Site after the cleanup?

As mentioned previously, Amtrak intends to continue its use of the Amtrak Wilmington Shops for locomotive maintenance activities in the future, as this site is a critical element in Amtrak's Northeast Corridor passenger rail system. Further, the federal government holds a 999-year mortgage on the Amtrak Wilmington Shops and all assets transferred from the Penn Central Railroad. Terms of the mortgage restrict Amtrak's ability to use the property for anything other than railroad purposes. Note: remedial activities prescribed in a Final Plan of Remedial Action for the Maintenance Facility (DE-0170) site may be scheduled in concert with remedial activities required by DNREC and EPA for the Former Fueling Facility (DE-0266) site.

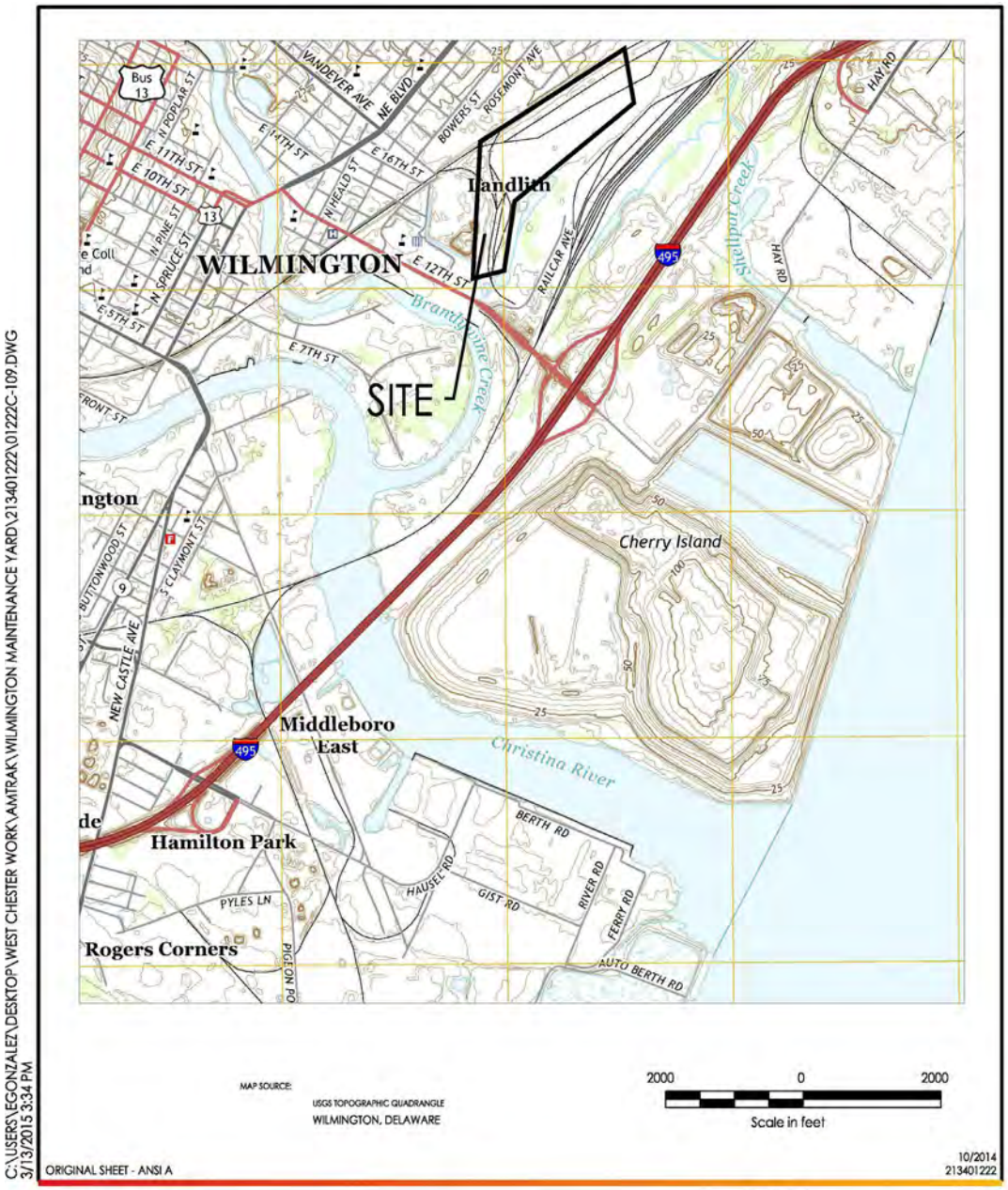
How can I find additional information or comment on the Proposed Plan?

The complete file on the Site is available online at: https://den.dnrec.delaware.gov/

The 20-day public comment period begins on March 2, 2022 and ends at close of business (4:30 pm) on March 22, 2022. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to John G. Cargill, IV, Project Officer or via email to RS_Public_Comments@delaware.gov.

Figure 1: Site Location and Topographic Map
Figure 2: Site Features

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QS22026



Stantec

400 Davis Drive, Suite 400
Plymouth Meeting, PA 19462

Client/Project
AMTRAK
WILMINGTON MAINTENANCE FACILITY
WILMINGTON, DELAWARE

Figure No.
1

Title
SITE LOCATION PLAN

Figure 1


AMTRAK MAINLINE TRACKS
SHELLPOT CREEK
MAINTENANCE FACILITY
NORTHEAST DRAINAGE DITCH
FORMER ROUNDHOUSE
NORFOLK SOUTHERN RAILYARD
FORMER FUELING FACILITY
EASTERN DRAINAGE DITCH
INTERSTATE 495
DAM C
DAM B
WESTERN DRAINAGE DITCH
12TH STREET DAM
BRANDYWINE CREEK
TIDE GATE
CHRISTINA RIVER
12TH STREET
ESRI Online Imagery 2010
Stantec
SITE VICINITY
FIGURE: 1-3
JOB NUMBER: 42/27.01/07.04
DRAWN BY: TFB
CHECKED BY:
APPROVED BY:
DATE: 3/04/2014
Document Path: V:\2134\resource\gis\Backup_4-4-07\Current_Projects\Amtrak_APU\Sept\MXD\Site_vicinity.mxd

Glossary of Terms Used in this Proposed Plan

Certification of Completion of Remedy (COCR)	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
DNREC Screening Levels and/or Reporting Levels	A set of concentration criteria for various contaminants potentially present in site media that are developed for protection of human health and the environment
Exposure	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
Final Plan of Remedial Action	DNREC's adopted plan for cleaning up a hazardous site.
Hazardous Substance Cleanup Act (HSCA)	Delaware Code Title 7, Chapter 91. The law that enables DNREC to identify parties responsible for hazardous substances releases and requires cleanup with oversight of the Department.
Polychlorinated biphenyls (PCBs)	A synthetic chemical, probable human carcinogen (EPA IRIS:B2) and described by the National Toxicology Program as reasonably anticipated to be a human carcinogen, formerly used in a wide variety of industrial applications but banned from most uses by the US EPA in 1979.
Restricted Use	Commercial or Industrial setting
RS	Remediation Section of DNREC, which oversees cleanup of sites that were contaminated as a result of past use
Toxic Substance Cleanup Act (TSCA)	The federal statute requiring and regulating the cleanup of PCBs.
EPA or USEPA	United States Environmental Protection Agency

FINAL PLAN OF REMEDIAL ACTION

Amtrak Former Fueling Facility, Operable Unit 3

4001 Vandever Avenue *August 16, 2020*
Wilmington, Delaware *DNREC Project No. DE-0266*

This Final Plan of Remedial Action (Final Plan) presents clean-up actions required by the Department of Natural Resources and Environmental Control (DNREC) to address environmental contamination at the Amtrak Former Fueling Facility Site, Operable Unit 3.

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on July 19, 2020 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments from the public; therefore, the Proposed Plan is adopted as the Final Plan of Remedial Action.

Approval:
This Final Plan meets the requirements of the Hazardous Substance Cleanup Act.

Qazi Salahuddin, Program Administrator
Remediation Section

August 13, 2020

Date

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JGC20007
DE-0266 II B9

PROPOSED PLAN OF REMEDIAL ACTION

Amtrak Former Fueling Facility OU-3
Amtrak Wilmington Shops, Wilmington, Delaware
DNREC Project No. DE-0266



July 2020

Delaware Department of Natural Resources and Environmental Control
Division of Waste and Hazardous Substances
Remediation Section
391 Lukens Drive
New Castle, Delaware 19720

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PROPOSED PLAN OF REMEDIAL ACTION

Amtrak Former Fueling Facility OU-3
Amtrak Wilmington Shops, Wilmington, Delaware
DNREC Project No. DE-0266

Approval:
This Proposed Plan meets the requirements of the Hazardous Substance Cleanup Act.

Approved by:

Qazi Salahuddin, Environmental Program Administrator
Remediation Section

July 16, 2020

Date

Amtrak Former Fueling Facility
OU-3

What is the Proposed Plan of Remedial Action?

The Proposed Plan of Remedial Action (Proposed Plan) summarizes the clean-up (remedial) actions that are being proposed to address contamination found at the Site for public comment. A legal notice is published in the newspaper for a 20-day comment period. The Department of Natural Resources and Environmental Control (DNREC) considers and addresses all public comments received and publishes a Final Plan of Remedial Action (Final Plan) for the Site.

What is the Amtrak Former Fueling Facility, OU-3?

The Former Fueling Facility is part of the Amtrak Wilmington Maintenance Shops located at 4001 Vandever Avenue in Wilmington, Delaware (Figure 1). The entire Amtrak Wilmington Shops includes both the Former Fueling Facility (DE-0266), and the Maintenance Facility (DE-0170). The Site is zoned for General Industrial (M-2) uses.

This proposed plan addresses the Former Fueling Facility Operable Unit #3 (OU-3), which consists of portions of the Amtrak Wilmington Maintenance Shops. In total, the area to be remediated comprises approximately 79 acres, and includes the former roundhouse, the eastern drainage ditch, the western drainage ditch and their confluence area, among other features (Figure 2). Operable Unit (OU) 1 (ACS-64 Locomotive Building), OU-2 (Car Shop Building) and OU-4 (Track 1 Area) of the Site were smaller projects within the footprint of OU-3 that were managed in 2014, 2015 and 2016, respectively. This proposed plan covers all portions of the Wilmington Maintenance Shops property that drain to the Brandywine Creek, including the 50 acre Former Fueling Facility Site and an additional 29 acres of the Outfall 007 drainage area. Soil, groundwater, surface water and sediment contamination associated with the areas of the property that drain to the Shellpot Creek will be addressed through the Maintenance Facility Site (DE-0170).

What happened at the Former Fueling Facility, OU-3?

According to a recent report compiled by Amtrak, the Site, constructed in 1903, was originally used for the maintenance, fueling, and servicing of locomotives and passenger train cars with coal (later diesel fuel), lubricating oil, and sand. Historically, other operations were performed at the Sites, including filling caboose cabin heaters with kerosene and providing steam engines with water, sand and coal. The Former Fueling Facility Site is now used as storage for passenger railcars and as a staging location site for maintenance-of-way and other equipment.

What is the environmental problem at the Former Fueling Facility, OU-3?

Data gathered to assess the Site indicates that polychlorinated biphenyls (PCBs) and/or metals (specifically arsenic and lead), are present in Site soils and sediments at concentrations that result

in exceedances of applicable risk thresholds under HSCA. In addition, residual diesel fuel and associated dissolved phase contaminants and PCBs have been detected in groundwater samples at the Site in excess of applicable criteria. The federal Toxic Substances Control Act (TSCA), and regulations promulgated under TSCA in Title 40 Code of Federal Regulations (CFR) Part 761, give primary authority to regulate PCB remediation to the United States Environmental Protection Agency (EPA) and Amtrak must prepare a cleanup plan for the PCB contamination at the Site, consistent with Part 761.61(c) requirements, for review and approval by EPA Region III. The Site was studied over many years and the results are summarized in the Revised Supplemental Focused Feasibility Study Report dated June 2017 (RSFFS), RSFFS Addendum 1 dated September 2018, RSFFS Addendum 2 dated October 2019, and the April 2020 response to EPA comments letter (together the RSFFS and Addenda). The RSFFS and Addenda have been approved by DNREC and EPA Region III, and now specify the cleanup goals and components of the proposed remedy.

What clean-up actions have been taken at the Former Fueling Facility, OU-3?

As indicated above, clean-up projects associated with Site improvements since 2014 (Operable Units 1, 2 and 4) have resulted in the removal and/or capping of PCB, PAH and metals contaminated soils encountered during excavations. Each of these projects were completed in compliance with a TSCA approved self-implementing plan in accordance with 40 CFR 761.61(a) as well as combined 40 CFR 761.61(a) and (c) plans for disposition of PCB contaminated soils.

Interim measures have been taken at the facility to characterize PCBs in free product (diesel fuel) beneath the Site, to conduct free product recovery (18,000 gallons recovered), and to further control/contain the surface occurrence of free product seepage to Site drainage ditches. In addition, erosion control and sediment reduction measures were implemented in order to reduce PCBs in storm water runoff from the Site, as well as other measures in accordance with a Delaware River Basin Commission (DRBC) approved Pollutant Minimization Plan for the facility. Further, the Site is located within the existing City of Wilmington Groundwater Exclusion Zone, meaning that groundwater cannot be used for any drinking water purposes, now or in the future.

Also, in 2016, Amtrak successfully completed a DNREC and EPA approved pilot test of In-Situ Stabilization (ISS) technologies to bind contaminants in sediments within the Eastern Drainage Ditch feature of the property. Due to its successful proof of concept, the technology will be incorporated into the overall cleanup requirements for the Site as described in the EPA approved RSFFS and Addenda referenced above.

What does the owner want to do at the Former Fueling Facility, OU-3?

Amtrak intends to continue its use of the property for locomotive maintenance activities in the future, as this property is a critical element in Amtrak's Northeast Corridor passenger rail system.

What additional clean-up actions are needed at the Former Fueling Facility OU-3 Site?

DNREC and EPA propose the following remedial actions for the Site, which need to be completed before a Certificate of Completion of Remedy (COCR) can be issued:

1. Comply with the requirements of a TSCA Risk Based Disposal Approval Application (RBDAA), consistent with Part 761.61(c). These requirements shall include "hot spot" removal of heavily impacted soils with PCBs and/or metals to meet risk defined goals as defined in the DNREC and EPA approved RSFFS and Addenda, followed by an engineered cap or soil cover over any and all soils within the Facility property boundary. The RBDAA must also include details related to the following required activities:

    a. Performance of soil remediation as required in item #1 above.

    b. Installation of a perimeter groundwater barrier walls to control groundwater seepage during Site remediation activities and to contain impacted groundwater while natural attenuation processes take place to degrade groundwater contaminants.

    c. Performance of In-Situ Stabilization of sediments in/from the Eastern Drainage Ditch, Western Drainage Ditch, Northeast Ditch and Confluence Area. Following stabilization, an approved cap/cover shall be placed over all amended sediments.

    d. Completion of "Common Elements" of remedial options as defined in the Agency Approved Revised Supplemental Focused Feasibility Study Report (RSFFS) and Addendum to the RSFFS that are not specifically listed in this Proposed Plan of Remedial Action.

    e. Development of a Long Term Stewardship (LTS) Plan to detail the Site inspection schedule to be followed in order to ensure the long-term integrity of remedial components, including but not limited to:

        1. Caps and covers over impacted soils;

        2. Perimeter groundwater barrier walls;

        3. Stabilized sediments;

        4. Monitored Natural Attenuation of petroleum, PCBs, and other constituents in groundwater beneath the Site;

    f. The LTS Plan must include a maintenance schedule for "below track" excavation and disposal activities, including a "No Later Than" (NLT) date to complete these activities. In addition to the schedule, a detailed remedial plan for the "below track" excavation must also be included.

g. Completion of a Contaminated Materials Management Plan (CMMP) for guidance to enable trained workers to assess potential PCB contamination in future proposed soil excavation areas, and to provide reporting requirements to DNREC and EPA.

The RBDAA and its components, as required by TSCA, will be considered equivalent to a DNREC Remedial Action Work Plan (RAWP) and LTS Plan.

2. A proposed Environmental Covenant must be submitted to DNREC and EPA for review as part of the RBDAA. Final approval of the Environmental Covenant by DNREC is required prior to recordation.

3. The Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (7 Del.C. Chapter 79, Subchapter II), must be recorded in the Office of the New Castle County Recorder of Deeds within 30 days of DNREC's approval of the proposed Environmental Covenant. The Environmental Covenant must include the following activity and/or use restrictions and reporting requirements:

   [a.] Use Restriction. Use of the Property shall be restricted solely to those non-residential type uses permitted within Commercial, Manufacturing, or Industrial Districts;

   [b.] Interference with Remedy. There shall be no digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activities within the remediated area without the prior written approval of DNREC and EPA.

   [c.] Limitation of Groundwater Withdrawal. No groundwater wells shall be installed, and no groundwater shall be withdrawn from any well within the boundaries of the Site without the prior written approval of DNREC-RS and DNREC Division of Water;

   [d.] Annual Report. Annual report**s** shall be submitted to EPA and DNREC to include documentation of compliance with approved Long Term Stewardship requirements and the approved Contaminated Materials Management Plan.

4. A Remedial Action Completion Report (RACR) must be submitted to DNREC and EPA within 60 days of the completion of the remedial actions required in this Proposed Plan.

5. A request for a Certification of Completion of Remedy (COCR) should be submitted to DNREC within 60 days after approval of the RACR.

What are the long term plans for the Site after the cleanup?

As mentioned previously, Amtrak intends to continue its use of the Amtrak Wilmington Shops for locomotive maintenance activities in the future, as this Site is a critical element in Amtrak's Northeast Corridor passenger rail system. Further, Amtrak reportedly executed a 999-year

mortgage on the Amtrak Wilmington Shops and all assets transferred from the Penn Central Railroad.

How can I find additional information or comment on the Proposed Plan?

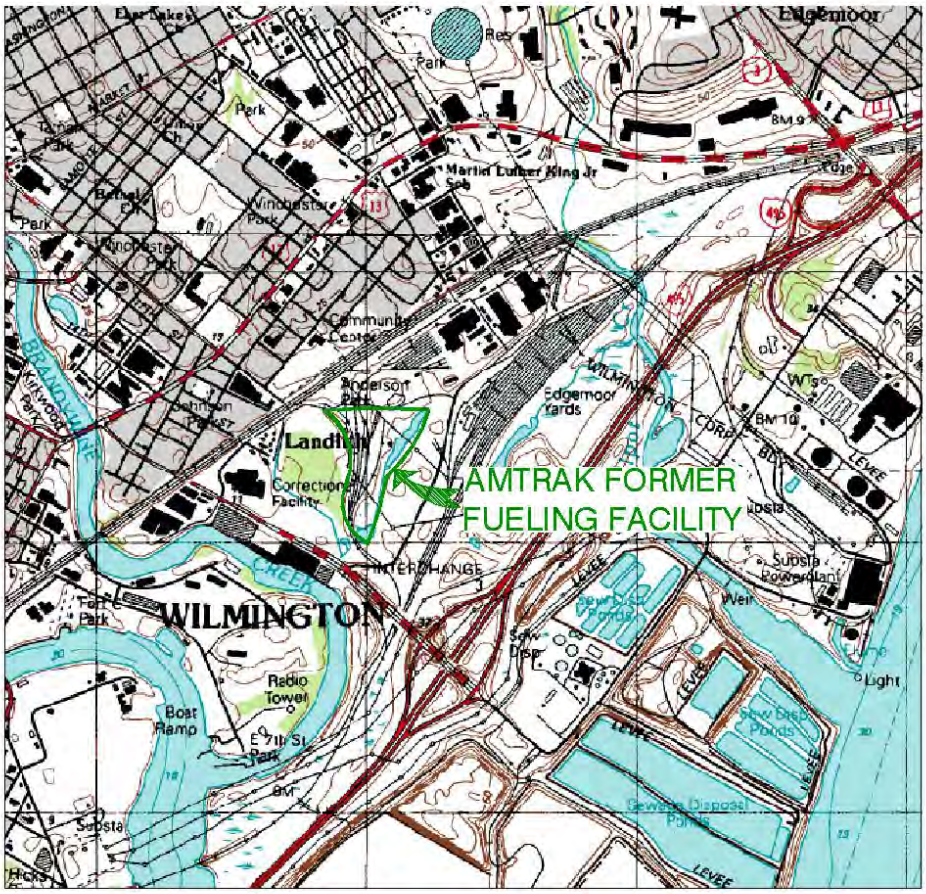
Documents for the Site are available online at:

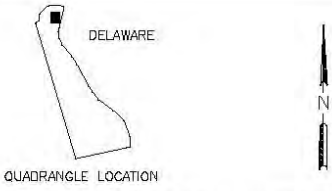
http://www.nav.dnrec.delaware.gov/DEN3/

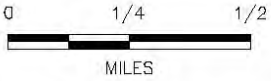
The 20-day public comment period begins on July 19, 2020 and ends at close of business (4:30 pm) on August 10, 2020. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to John G. Cargill, IV, Project Officer or via email to at RS_Public_Comments@delaware.gov.

Figure 1: Site Location and Topographic Map
Figure 2: Site Features

JGC:slw; JGC20005.doc; DE 0266 II B 8







REFERENCE: USGS 7.5 MINUTE QUADRANGLE; WILMINGTON SOUTH, DELAWARE/PENNSYLVANIA , 1997

Stantec 1060 ANDREW DRIVE, SUITE 140 WEST CHESTER, PENNSYLVANIA 19380 PHONE: (610) 840-2500/640-2501 (FAX)	FOR: AMTRAK FORMER FUELING FACILITY 4001 VANDEVER AVENUE WILMINGTON, DELAWARE	**AMTRAK FORMER FUELING FACILITY**		FIGURE: **1-1**
	JOB NUMBER:	DRAWN BY: TFB	CHECKED BY: SB	APPROVED BY:	DATE: 03/02/2010

SFFS

62OT-1057-1-1.DWG

Figure 1


AMTRAK MAINLINE TRACKS
SHELLPOT CREEK
MAINTENANCE FACILITY
NORTHEAST DRAINAGE DITCH
FORMER ROUNDHOUSE
NORFOLK SOUTHERN RAILYARD
FORMER FUELING FACILITY
EASTERN DRAINAGE DITCH
INTERSTATE 495
DAM C
DAM B
WESTERN DRAINAGE DITCH
12TH STREET DAM
BRANDYWINE CREEK
TIDE GATE
CHRISTINA RIVER
12TH STREET
ESRI Online Imagery 2010
Document Path: V:\2134\resource\gis\Backup_4-4-07\Current_Projects\Amtrak_APU\SeptMXD\Site_vicinity.mxd
Stantec
SITE VICINITY
1-3

Figure 2

Glossary of Terms Used in this Proposed Plan

Certification of Completion of Remedy (COCR)	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
DNREC Screening Levels and/or Reporting Levels	A set of concentration criteria for various contaminants potentially present in Site media that are developed for protection of human health and the environment
Exposure	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
Final Plan of Remedial Action	DNREC's adopted plan for cleaning up a hazardous Site.
Hazardous Substance Cleanup Act (HSCA)	Delaware Code Title 7, Chapter 91. The law that enables DNREC to identify parties responsible for hazardous substances releases and requires cleanup with oversight of the Department.
Polychlorinated biphenyls (PCBs)	A synthetic chemical, probable human carcinogen (EPA IRIS:B2) and described by the National Toxicology Program as reasonably anticipated to be a human carcinogen, formerly used in a wide variety of industrial applications but banned from most uses by the USEPA in 1979.
Restricted Use	Commercial or Industrial setting
RS	Remediation Section of DNREC, which oversees cleanup of Sites that were contaminated as a result of past use
Toxic Substance Cleanup Act (TSCA)	The federal statute requiring and regulating the cleanup of PCBs.
USEPA	United States Environmental Protection Agency

REGION 3
PHILADELPHIA, PA 19103

June 10, 2025

Transmitted by Electronic Mail

Mr. Steve Baggett
Stantec Consulting Services, Inc.
1060 Andrew Drive, Suite 140
West Chester, Pennsylvania 19380

Dear Mr. Baggett:

This letter is in response to the Risk-Based Disposal Approval Application (RBDAA) for Remediation Activities, Amtrak Wilmington Shops, 4001 Vandever Avenue, Wilmington DE prepared by Stantec Consulting Services, Inc. for National Railroad Passenger Corporation (Amtrak) and American Premier Underwriters, Inc. (APU). This RBDAA was provided to Region III of the United States Environmental Protection Agency (EPA) on December 20, 2024, pursuant to the requirements of 40 CFR § 761.61(c), Risk-based disposal approval.

In the RBDAA, Stantec has proposed the following multi-media PCB cleanup, capping and disposal plan for the Wilmington Shops soils and aquatic ditch sediments, as well as a long-term groundwater monitoring plan.

<u>Phase 0, Pre-Construction Activities, 330 Days</u>
This phase includes a minimum of 9 months to procure all necessary permits from EPA and DNREC, as well as site preparation activities, including construction of site support facilities and erosion and sedimentation controls. Additionally, this remediation project is dependent on the City of Wilmington repairing the tide gates on the Brandywine River and Shellpot Creek.

<u>Phase 1, Site Preparation and Soil Excavations, 306 Days</u>
This phase continues site preparation such as preparing temporary soil stockpile areas and the temporary water treatment system, as well as mapping the aquatic ditch sediment depths. This phase will complete all site soil excavations, such that the soil excavations will achieve a cumulative excess lifetime cancer risk for site workers of less than or equal to 1 in 10,000 (1E-4) and a non-cancer hazard index of less than or equal to 1, prior to any additional use of capping or engineered covers. There are 63 planned soil excavations for a total of 6,367 cubic yards, and the excavation areas are mostly pre-delineated. However, there will also be post-excavation confirmation sampling for those areas lacking complete delineation.

- All areas with soil results greater than or equal to 100 mg/kg PCBs will be excavated and disposed of off-site at an appropriately licensed landfill. However, three areas with results greater than 100 mg/kg PCBs will be the exception, and instead will be contained by a TSCA-equivalent cap due to the presence of utilities or infrastructure.
- Many areas with soil results greater than or equal to 50 mg/kg PCBs will also be excavated and disposed of off-site at an appropriately licensed landfill, because use of a TSCA-equivalent cap in these areas is not feasible due to logistics, location, or facility operations.
- Exposed remaining soils less than or equal to 50 mg/kg PCBs will be contained with engineered covers. The engineered covers include stone and geotextile, asphalt, concrete, or soil and vegetative cover. The cover systems have been thoroughly evaluated for resilience to climate change, as documented in the response to EPA comments which is included as the first section of the RBDAA.

Phase 2, Site Preparation for Ditch Sediment Removal and Initiation, 330 Days

This phase includes construction of the groundwater barrier for the Upper Eastern Drainage Ditch stabilized sediment containment cell. This phase also includes temporary drainage construction to route stormwater while PCB-contaminated sediments are being excavated from the Outfall 002 Drainage Ditch, Northeast Drainage Ditch, Confluence Area, Lower Eastern Drainage Ditch, and Western Drainage Ditch. Phase 2 will also include construction of two new swales to replace the previous ditch system, as well as some sediment removal and final grading/restoration for the previous Northeast Drainage Ditch.

Phase 3, Continued Ditch Sediment Removal and Final Restoration, 266 Days

Phase 3 includes sediment excavation and restoration of the previous Confluence Area, Lower Eastern Drainage Ditch, and Western Drainage Ditch. All sediments will be dewatered and dried in place prior to transport to the site stockpile area for sediments, Stockpile Area 3A. This stockpile will be constructed to fully contain the dewatered sediments prior to installation into the containment cell. Containment elements include berm construction, an impermeable geosynthetic clay liner with a drainage layer, and an anchored geosynthetic membrane cover with a wind protection cover.

Phase 4, Upper Eastern Drainage Ditch Containment Cell Consolidation and Stabilization, 275 Days

The stockpiled dried sediment will be mixed and stabilized into the Containment Cell utilizing a Portland cement mix determined in a comprehensive 2016 pilot test.

Phase 5, Final Grading and Restoration, 365 Days

Phase 5 includes TSCA-equivalent cap installations, final grading and complete surface restoration.

Long-Term Groundwater Monitoring and Reporting

Site groundwater is contaminated with PCB-containing Light Non-Aqueous Phase (LNAPL) that is diesel fuel-based. Many years of recovery and monitoring have resulted in an LNAPL Conceptual Model that demonstrates the LNAPL is not migrating and is no longer practically recoverable. Natural attenuation monitoring will be conducted and reported annually as part of the Long-Term Stewardship Program reporting.

Environmental Covenant

The proposed Environmental Covenant is included in Appendix 7-1 of the RBDAA, and includes residential land use restriction, no installation of groundwater supply wells, no interference with the remedy (no land disturbance without prior written approval from EPA and DNREC), and annual reporting of the Long-Term Stewardship Program.

EPA has reviewed the Wilmington Shops RBDAA and concluded that the proposed remediation will not pose an unreasonable risk of injury to health or the environment when conducted in accordance with the methods and procedures described in the RBDAA. EPA hereby approves the Amtrak Wilmington Shops Risk-Based Disposal Approval Application.

EPA's approval of the Amtrak Wilmington Shops RBDAA does not in any way constitute a finding by EPA that the soils will be safe or appropriate for any future use, does not insulate the owner of the site from action under any applicable law, and does not relieve Amtrak of its continuing responsibility to comply fully with 40 C.F.R. Part 761. Among other things, the regulations state that "[c]omplete compliance with 40 C.F.R. § 761.61 does not create a presumption against enforcement action for penalties for any unauthorized PCB disposal," 40 C.F.R. § 761.50(b)(3)(ii)(B). Further, "[a]ny person storing or disposing of PCBs is also responsible for determining and complying with all other applicable Federal, state, and local laws and regulations," 40 C. F.R. § 761.50(a)(6).

One important item that was not included in the RBDAA is progress reports. Because the Amtrak RBDAA calls for approximately a 6-year schedule, progress reports must be provided to the Agencies to track progress. Therefore, this approval will require that bimonthly (once every two months) progress reports be submitted to the EPA and DNREC project managers. The reports must include all project-related activities for the two-month reporting period, as well as deviations from the schedule and projected adjusted timeframes. The project managers are Amanda Michel, michel.amanda@epa.gov and Gina Marinacci, gina.marinacci@delaware.gov.

If you have any questions or comments, please contact Ms. Deborah Goldblum, RCRA Corrective Action Branch Chief at goldblum.deborah@epa.gov or 215-814-3432.

Sincerely,

David Campbell, Director
Land, Chemicals, and Redevelopment Division

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester PA 19380-5602

November 14, 2025

Project/File: 213403550

Mr. Joseph DiPinto
City of Wilmington
Department of Land Use and Planning
800 N French Street
Wilmington, Delaware 19801

Dear Mr. Joseph DiPinto,

Reference: Request for Letter of Concurrence
Plan Review Only Application
Construction Within Floodplain
Amtrak Wilmington Shops Remediation
4001 Vandever Avenue, Wilmington Delaware

The National Railroad Passenger Corporation (Amtrak) and American Premier Underwriters (APU) (collectively, the Applicant) have applied to the United States Army Corps of Engineers (USACE) for a Nationwide Permit under Section 404 of the Clean Water Act for Cleanup of Hazardous and Toxic Waste (NWP-38). General Condition 10 of the NWP-38 states:

> *"Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements."*

Stantec Consulting Services, Inc. (Stantec) on behalf of Amtrak and APU, respectfully requests written concurrence from the City of Wilmington that the proposed activity complies with the City of Wilmington Floodplain Management requirements as presented in the Code of Ordinances, Chapter 48 – Zoning, Article XII FLOODPLAINS AND FLOODPRONE AREAS (The Ordinance).

The Activity

The Wilmington Shops Remediation Project (the Activity) has been approved by the United States Environmental Protection Agency (USEPA) and the Delaware Department of Natural Resources and Environmental Control (DNREC). The Activity addresses the remediation of soil, sediment, and groundwater impacted by Polychlorinated Biphenyls (PCBs), metals, and Volatile Organic Compounds (VOCs). The Activity will include shallow excavation of impacted soil and sediment, the stabilization of sediments, and the placement of stabilized sediments within an engineered containment cell located on site. Much of this work is required to be completed within the 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA).

The Activity does not include the construction of any new structures as defined in Division 2 of the Ordinance or the alteration or substantial improvement of any existing structures. The Activity is limited to excavation, fill, and grading.

Previous Submission

Stantec, on behalf of Amtrak and APU submitted an Application for Building Permit to the City of Wilmington Department of Land Use and Planning on October 29, 2025. That Application included:

- Completed and signed APPLICATION FOR BUILDING PERMIT
- Copy of Stantec Consulting Services, Inc. (Stantec) current City of Wilmington Business License
- A copy of the floodplain analysis report entitled, “Hydrologic and Hydraulic (H&H) Analysis of Proposed Elevation Modifications Amtrak Wilmington Shops Former Fueling Facility (DE-0266) and Wilmington Maintenance Facility (DE- 0170)”
- A copy of selected portions of the construction plans for the project
- A copy of the digital appendix for the H&H analysis

On October 30, 2025, the City Permit Coordinator notified Stantec that a copy of the construction contract was required in order for the Application to be administratively complete. In subsequent discussions with the Floodplain Coordinator, Stantec relayed that Amtrak has not yet selected a contractor and that therefore no construction contract is in effect. During the discussions, it was resolved that in the absence of a current written contract for the Activity, the Floodplain Administrator would review a revised submission with the objective of securing a determination sufficient to satisfy the requirements of General Condition 10 of the USACE NWP-38. Therefore, this submission is considered a “Plan Review Only” application that will be kept on file. As discussed, after Amtrak initiates the formal purchasing/contracting process, the Building Permit Application will be revisited.

Current Submission

Attached please find the following documents that accompany this submission:

- Site Location Map based on USGS quadrangle
- A copy of FEMA Flood Insurance Rate Map for New Castle County Delaware
- Flood Data Overlay Map
- A copy of the floodplain analysis report entitled, Hydrologic and Hydraulic (H&H) Analysis of Proposed Elevation Modifications Amtrak Wilmington Shops Former Fueling Facility (DE-0266) and Wilmington Maintenance Facility (DE- 0170)”
- A copy of selected portions of the construction plans for the project
- A copy of the digital appendix for the H&H analysis
- Copies of DNREC and USACE notifications.

Reference: Request for Letter of Concurrence

Discussion

The following discussion is intended to demonstrate that all City of Wilmington requirements have been satisfied in order to receive the requested Letter of Concurrence. For ease of review, the discussion mimics the outline of the applicable Sections of Chapter 48 of the City of Wilmington Code of Ordinances – in lieu of a Building Permit Application were being submitted at this time.

Sec. 48-573. - Application required.

Application for a permit shall be made by the owner of the property or his/her authorized agent, herein referred to as the applicant, prior to the actual start of construction. The application shall be on a form furnished for that purpose.

(1) Application contents. At a minimum, applications shall include:

a. *Site plans drawn to scale showing the nature, location, dimensions, existing and proposed topography of the area in question, the limits of any portion of the site that was previously filled, and the location of existing and proposed structures, excavation, filling, storage of materials, drainage facilities, and other proposed activities.*

See attached scaled drawings titled "Construction Plan Set - Amtrak Wilmington Shops Remediation".

b. *Elevation of the existing natural ground where structures are proposed, referenced to the datum on the flood insurance rate map, and an elevation certificate that shows the ground elevation and proposed building elevations (identified in section C of the elevation certificate as "construction drawings").*

Not Applicable. As mentioned above – NO STRUCTURES ARE PROPOSED. However, spot elevations and existing surface contours are depicted on the attached Construction Plan Set.

c. *Delineation of special flood hazard areas, floodway boundaries, flood zones, and base flood elevations. Where surveyed natural ground elevations are lower than the base flood elevations, base flood elevations shall be used to delineate the boundary of special flood hazard areas.*

The location of special flood hazard areas, floodway boundaries, flood zones, and base flood elevations are depicted on the attached FEMA Flood Insurance Rate Map (FIRM) (Panel 1570F0475 Version 2.3.3.3 January 22, 2020). This FIRM Map was utilized to depict the Zone AE Floodway limits on an aerial photograph of the site as depicted on the attached Flood Overlay Data Map.

d. *For subdivision proposals and development proposals containing at least 50 lots or at least five acres, whichever is the lesser, and where base flood elevations are not shown on flood insurance rate maps, hydrologic and hydraulic engineering analyses and studies as required by section 48-579(d).*

Not applicable. Not a subdivision proposal.

e. *Elevation of the lowest floor, including basement, or elevation of the bottom of the lowest horizontal structural member, as applicable to the flood zone, of all proposed structures, referenced to the datum on the flood insurance rate maps.*

Not Applicable. NO STRUCTURES ARE PROPOSED.

f. Such other material and information as may be requested by the floodplain administrator necessary to determine conformance with these regulations.

Available upon request.

g. For work on an existing structure, including any improvement, addition, repairs, alterations, rehabilitation, or reconstruction, sufficient information to determine if the work constitutes substantial improvement, including: 1. Documentation of the market value of the structure before the improvement is started or before the damage occurred. 2. Documentation of the actual cash value of all proposed improvement work, or the actual cash value of all work necessary to repair and restore damage to the before damaged condition, regardless of the amount of work that will be performed.

Not Applicable. No work on existing structures is proposed.

h. Certifications and/or technical analyses prepared or conducted by an appropriate design professional licensed in the state, as appropriate to the type of development activity proposed and required by these regulations:

1. Floodproofing certificate for dry floodproofed non-residential structures, as required in section 48-588.

Not applicable no structures existing or proposed.

2. Certification that flood openings that do not meet the minimum requirements of section 48-587(b)(3)b. are designed to automatically equalize hydrostatic flood forces.

Not applicable.

3. Certification that the structural design, specifications and plans, and the methods of construction to be used, are in accordance with accepted standards of practice and meet the requirements of section 48-593(e).

Not applicable. No structural design, specifications or plans.

4. Technical analyses to document that the flood carrying capacity of any watercourse alteration or relocation will not be diminished and documentation of maintenance assurances as required in section 48-590(c).

See attached H&H Report. The results of the H&H analysis demonstrate increased flood storage capacity.

5. Hydrologic and hydraulic engineering analyses demonstrating that the cumulative effect of proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood by more than one foot in special flood hazard areas where the Federal Emergency Management Agency has provided base flood elevations but has not delineated a floodway, as required by section 48-590(b).

See attached H&H Report. The H&H analysis confirms that the proposed elevation modifications not only prevent an increase in the BFE but actively reduce flood levels, with an average decrease of approximately one foot across the site. These findings support the feasibility of the design and definitively demonstrate that the proposed development meets the regulatory requirements for preventing adverse increases in flood hazard conditions. The activity will result in a "No Rise" condition.

6. *Hydrologic and hydraulic engineering analyses of any development proposed to be located in an identified floodway, as required by section 48-590(a).*

   Not applicable. Activity is not located within a floodway.

7. *Hydrologic and hydraulic engineering analyses to develop base flood elevations for subdivisions and large-lot developments, as required by section 48-579(d) or otherwise required by the floodplain administrator.*

   Not applicable.

Sec. 48-582. - Fill.

(a) *Disposal of fill, including but not limited to rubble, construction debris, woody debris, and trash, shall not be permitted in special flood hazard areas.*

Not applicable. Fill placed as part of the activity will be soil or stabilized sediment from onsite sources or select borrow material. No debris or trash will be utilized for fill.

(b) *Where permitted by division 5 (Zones A, AE, and AO), fill placed for the purpose of raising the ground level and to support a building or structure shall meet the following requirements: (1) Extend laterally from the building footprint to provide for adequate access, as a function of use; the floodplain administrator may seek advice from the state fire marshal's office and/or the local fire services agency.(2)Placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling. (3) Consist of soil or rock materials only. (4) Sloped no steeper than one vertical on two horizontal, unless approved by the floodplain administrator. (5) Designed with provisions for adequate drainage and no adverse effect on adjacent properties.*

Not applicable. Fill is not being placed for the purpose supporting a building or structure.

(c) *Fill placed for a purpose other than to support a building or structure shall meet the requirements of subsections (b)(2) through (b)(5).*

As shown on the attached drawings and H&H Report:

- **All fill will be placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling. Note that all engineered covers for fill material have been designed to meet existing conditions and also projected conditions owing to future resiliency.**
- **Fill will consist of soil, stabilized sediments, and rock.**
- **No slopes shall not exceed one to two.**
- **The design provides for adequate drainage and will not result in any adverse effects on adjacent properties.**

In addition to the general requirements of division 4, the requirements of this section apply to all development proposed in special flood hazard areas other than coastal high hazard areas. These areas include Zones A, AE, and AO.

Sec. 48-590. - Protection of flood-carrying capacity.

(b) Development in areas with base flood elevations but no floodways. For development activities in a special flood hazard area with base flood elevations but no designated floodways, the applicant shall develop hydrologic and hydraulic engineering analyses and technical data reflecting the proposed activity and shall submit such analyses and data to the floodplain administrator and to FEMA. The analyses shall be prepared by a licensed professional engineer in a format required by FEMA for a conditional letter of map revision or letter of map revision. Submittal requirements and processing fees shall be the responsibility of the applicant.

Stantec has prepared the requested hydrologic and hydraulic engineering analyses and technical data reflecting the proposed activity (see attached H&H Report). The analysis has been prepared by a Professional Engineer licensed in the state of Delaware. Given the results of the H&H analysis discussed below, no Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR) is required or warranted for this Activity given the analysis demonstrates a "no-rise" condition.. The Applicant has not submitted any documents to FEMA.

(c) The proposed development activity may be permitted if the analyses demonstrate that the cumulative effect of the proposed development activity, when combined with all other existing and potential special flood hazard area encroachments will not increase the base flood elevation more than one-foot at any point.

The H&H analysis confirms that the proposed activity will not only prevent an increase in the BFE but actively reduces flood levels, with an average decrease of approximately one foot across the site. These findings support the feasibility of the design and definitively demonstrate that the proposed development meets the regulatory requirements for preventing adverse increases in flood hazard conditions.

(d) Deliberate alterations of a watercourse. For the purpose of these regulations, a watercourse is deliberately altered when a person causes a change to occur within its banks. Deliberate changes to a watercourse include, but are not limited to: widening, deepening or relocating of the channel; installation of culverts; construction of bridges, and excavation or filling of the channel or watercourse banks.

For any proposed deliberate alteration of a watercourse, the applicant shall develop hydrologic and hydraulic engineering analyses and technical data reflecting such changes and submit such technical data to the floodplain administrator and to FEMA. The analyses shall be prepared by a licensed professional engineer in a format required by FEMA for a conditional letter of map revision or letter of map revision. Submittal requirements and processing fees shall be the responsibility of the applicant.

Stantec has prepared the requested hydrologic and hydraulic engineering analyses and technical data reflecting the proposed activity (see attached H&H Report). The analysis has been prepared by a Professional Engineer licensed in the state of Delaware. The H&H analysis confirms that the proposed activity not only prevent an increase in the BFE but actively reduces flood levels, with an average decrease of approximately one foot across the site. These findings support the feasibility of the design and definitively demonstrate that the proposed development meets the regulatory requirements for preventing adverse increases in flood

hazard conditions. No Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR) is required or warranted for this Activity given the analysis demonstrates a "no-rise" condition.. The Applicant has not submitted any documents to FEMA.

The proposed alteration of a watercourse may be permitted upon submission, by the applicant, of the following:

(1) Documentation of compliance with subsection (a) if the alteration is in a floodway or subsection (b) if the alteration is in a watercourse with base flood elevations but no floodway.

Subsection (b) applies – no floodway.

(2) A description of the extent to which the watercourse will be altered or relocated as a result of the proposed development.

See attached H&H Report and Construction Drawings.

(3) A certification by a licensed professional engineer that the bankful flood-carrying capacity of the watercourse will not be diminished.

See H&H report.

(4) Evidence that adjacent communities, the U.S. Army Corps of Engineers, and the Delaware Department of Natural Resources and Environmental Control (Division of Watershed Stewardship) have been notified of the proposal and evidence that such notifications have been submitted to the Federal Emergency Management Agency.

The USACE has been notified of the project, and the NWP-38 application was submitted on October 31, 2025 (attached). DNREC has been notified in multiple permit applications including Sediment and Stormwater Management Plans, NPDES permit correspondence (attached), and in pending subaqueous Lands Permit Application correspondence.

(5) Evidence that the applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of the watercourse so that the flood carrying capacity will not be diminished. The floodplain administrator may require the permit holder to enter into an agreement with the city specifying the maintenance responsibilities; if an agreement is required, the permit shall be conditioned to require that the agreement be recorded on the deed of the property which shall be binding on future owners.

Available upon request.

Summary

The Applicant intends to implement the USEPA and DNREC approved Remedial Action at the Amtrak Wilmington Shops Facility. Prior to initiation the Invitation to Bid process, the Applicant is in the process of securing the necessary and appropriate Federal, State, and Local permits to implement the remedial action. Because a portion of the work is located within the boundary of delineated wetlands, Amtrak has applied for a USACE Nationwide Permit. A condition of that permit is compliance with local floodplain management requirements.

Reference: Request for Letter of Concurrence

Portions of the remedial action will be performed in special flood hazard area Zone AE. However, the Activity is limited to excavation, stabilization, and fill. Much of the work is temporary in nature. No existing structures will be modified. No new structures are proposed.

A series of detailed engineering analyses have been completed and prepared by a Professional Engineer licensed in the State of Delaware. The results of those engineering analyses conclude that the earthwork within the floodplain necessary to implement the approved remedial action meets all applicable City of Wilmington floodplain management requirements. The analysis demonstrates a “no-rise” condition. Moreover, the engineering associated with the project consciously considered the potential to affect flooding conditions. As a result, the final design will actually reduce flood levels across the site .

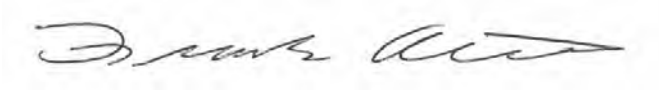
Therefore, on behalf of the Applicant, Stantec respectfully requests a letter of concurrence from the City of Wilmington in order to advise the USACE of the project’s compliance with City floodplain management requirements.

Thank you for your attention and assistance on this important project. Please reach out with any questions you may have or if you require additional information.

Thank you,

Stantec Consulting Services Inc.





Mark W. Onesky, P.E.
Senior Environmental Engineer
Mobile: (610) 476-8901
mark.onesky@stantec.com

Frank Aceto, P.G.
Vice President
Phone: 610-704-9156
frank.aceto@stantec.com

stantec.com

Attachments:

- Site Location Map
- FEMA Flood Insurance Rate Map
- Flood Data Overlay Map
- Hydrologic and Hydraulic (H&H) Analysis of Proposed Elevation Modifications Amtrak Wilmington Shops Former Fueling Facility (DE0266) and Wilmington Maintenance Facility (DE- 0170)”
- Construction Plans
- Digital Appendix to H&H Analysis
- DNREC and USACE Correspondence

c. Frank Aceto
Steve Baggett
Paul Miller
Ryan Veasy
TJ Austin
Craig Caldwell
Andrew Enzman, Amtrak
John Cargill IV, DNREC
Gina Marinacci, DNREC
Amanda Michel, USEPA

From:	Klejbuk, Margaret E
To:	suzanne.savery@delaware.gov
Cc:	Davis, Gwen (DOS); Carr, Sarah (DOS); dmartin@ci.wilmington.de.us; Amtrak_S106_Submissions; Enzman, Andrew; Onesky, Mark
Subject:	Wilmington Shops Remediation; Section 106 Consultation under PA
Date:	Monday, October 27, 2025 7:44:35 AM
Attachments:	image001.png 20251027_WL Shops Remediation_SHPO Letter.pdf WIL Shops Remediation Attachments.pdf

Ms. Savery,

On behalf of the Federal Railroad Administration (FRA), I am providing your office with the attached letter and related attachments regarding the proposed Wilmington Shops Remediation Project under the "Programmatic Agreement among the National Railroad Passenger Corporation Regarding the Wilmington Shops Located in Wilmington, Delaware (the Shops) Pursuant to 36 C.F.R.800.1a4(f)(1) et seq.".

If you have questions or would like an opportunity to visit the Remnant locations, please let me know.

Thank you,

Maggie Klejbuk (she/her)
Lead Archaeologist
Amtrak | 1801 Market Street, 8th Floor | Philadelphia, PA 19103
Email: margaret.klejbuk@amtrak.com | Phone: 267-608-4232

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AMTRAK
1801 Market Street, 8th floor, Philadelphia, PA 19103
Email margaret.klejbuk@amtrak.com | Tel 267-608-4232

October 27, 2025

Suzanne Savery
Director
Delaware Division of Historical and Cultural Affairs
29 North State Street
Dover, DE 19901

RE: Wilmington Shops Remediation
Wilmington, New Castle County, Delaware
Section 106 Consultation under Programmatic Agreement Regarding the Wilmington Shops Located in Wilmington, Delaware (The Shops)

Dear Ms. Savery:

The Federal Railroad Administration (FRA) is providing financial assistance to the National Railroad Passenger Corporation (Amtrak) for the proposed Wilmington Shops Remediation Project (Project) to remediate contaminated soils at the property. The Project is located at 4001 Vandever Avenue, Wilmington, New Castle County, Delaware (**Attachment 1; Figure 1**). The Project is an undertaking subject to Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR Part 800 (Section 106). Pursuant to the "Programmatic Agreement (PA) among the Federal Railroad Administration, the Delaware State Historic Preservation (SHPO) and the National Railroad Passenger Corporation Regarding the Wilmington Shops Located in Wilmington, Delaware (the Shops) Pursuant to 36 C.F.R.800.14(f)(1) et seq.," Amtrak is providing this letter to submit documentation to SHPO in accordance with the Design Guidelines attached to and made part of the PA.

Description of the Undertaking

The Project involves soil remediation efforts that include ground disturbance to remove contaminated soils and the placement of fill material (**Attachment 1; Figures 1-3**). Limited excavation of contaminated soils, anticipated to extend to a maximum of 6 feet deep, is anticipated largely in the western and northern portions of the Shops. Existing pavement in portions of the Shops will be patched and resurfaced with new pavement after replacement of contaminated soils. As part of the Project, the remnants of the foundation for Building E will be removed as necessary to allow for the construction of a semi-permanent stockpile in this area utilized for the duration of the project. At the conclusion of the Project, this area will be restored with an engineered cover consisting of geofabric and vegetated soil.

Building Classification and Treatment under the PA and Design Guidelines

The Wilmington Yard and Shops site was determined eligible for the National Register of Historic Places (NRHP) in 1979, for its significance in the areas of engineering, industry, and transportation. The period of significance is circa 1902 to circa 1929. The "Design Guidelines for Buildings, Structures and Open

Spaces, Amtrak Wilmington Shops" (January 2007) (Design Guidelines), attached to and part of the PA, categorize the existing buildings and open spaces based on their age, significance and integrity and provide parameters for each category. Due to the extensive amounts of ground disturbance and introduced fill during the initial 1903-era construction of the Shops, the PA states there shall be no restriction on excavation, demolition, and new construction in areas surrounding Category IV – Remnants of Buildings/Structures (see Design Guidelines page 15-16). However, Amtrak must prepare a scale topographic survey map documenting present-day utilities, roads, paths, railroad tracks, and other noteworthy site features prior to executing projects in the vicinity of Remnants B, C, D, E and F and provide the map to your office. The map is provided in **Attachment 2**. While the PA requires submittal of three copies of the map, Amtrak is submitting this documentation electronically per SHPO's current submittal procedures.

Amtrak's Secretary of the Interior's Qualified Professional (SOI-QP) consultant conducted a reconnaissance field survey of current conditions on April 30, 2024. In preparation for the reconnaissance survey, the consultant reviewed historical aerial photographs to document the footprints of the remnant buildings. Photo documentation from the reconnaissance survey is included in **Attachment 3**.

A summary of the field survey is presented below:

Building B

Building B is mapped as two structures in the Shops PA document. They are described as concrete foundations with unknown functions. The structures are shown on either side of the northwest side of a T-intersection of Bowers Street and an unnamed road leading to Building 30 and located roughly southeast of the roundhouse building. No evidence of the Building B structure was observed during the field survey and no photos were taken.

Building C

Building C consists of remnants of the former turntable (C-1), the foundations of two former roundhouse buildings (C-2 and C-3), and associated former turntable tracks (C-4). During the field survey, concrete slabs with brick veneer and outer wall remnants from the western and eastern portions of former roundhouses, turntable track pads, and remnant structures were observed (**Attachment 3; Figures 2-4**).

Building D

Building D is a brick one-story building east of the former coal trestle. The PA maps Building D as an L-shaped structure, but during the site visit, the remains were recorded as a roughly 30 ft. by 20 ft., square-shaped foundation. Only a square slab and a small remnant of brick veneer from one of the outer walls appear to remain (**Attachment 3; Figure 5**).

Building E

Building E was identified as a two-story, brick Roundhouse Office and Bunkhouse. During the field survey, an approximately two-foot-high elevated concrete pad, with concrete steps and a ramp along the northeastern side was observed (**Attachment 3; Figure 6**).

Building F

Building F was identified as a coal trestle south of the roundhouse. According to the PA maps, the

structure may have been as much as 450-feet long. No evidence of the structure was observed during the field reconnaissance, and no photos were taken.

Consulting Parties

For proposed work near Category IV Remnants of Buildings and Structures, the Wilmington Shops PA states that Amtrak shall permit DE SHPO and City of Wilmington staff an opportunity to visit the site at a mutually convenient date and time to take photographs and make notes of the remnants. Please let me know if your staff would like an opportunity to visit the Remnant locations at the Shops.

If you have questions or wish to discuss this Project, or would like to receive hard copies of the topographic map in Attachment 2, please contact me at margaret.klejbuk@amtrak.com and Amtrak_S106_Submissions@dot.gov within 30 calendar days from receipt of this letter. I can also be reached at the number below. Thank you for your cooperation on the Project.

Sincerely,

Maggie Klejbuk
Lead Archaeologist
Amtrak
267-608-4232

Attachments

1: Project Location Map
2: Proposed Excavation and Fill Deposition Locations Map
3: Topographic Map of Remnant Locations; including insert showing location of facility
4: Photographs of Field Survey

cc: Laura Shick, FRA Supervisory Environmental Protection Specialist
Andy Enzman, Amtrak
Debra Martin, City of Wilmington

Austin, TJ

From: CBFO Project Review, FW5 <cbfoprojectreview@fws.gov>
Sent: Tuesday, August 12, 2025 10:23 AM
To: Nowicki, Adam
Cc: Gindville, Benjamin; Aceto, Frank; Austin, TJ; Onesky, Mark
Subject: Re: [EXTERNAL] USFWS Section 7 Consultation Request, Project Code: 2025-0129895

Hi Adam-

Thank you for sending this project for review. For your official species list, two proposed species were on the list, tricolored bat (proposed as endangered) and monarch butterfly (proposed as threatened with a 4d rule).

The U.S. Fish and Wildlife Service has reviewed your project submittal form dated August 1, 2025. The ESA does not require conferencing on species proposed to be listed unless the action is likely to jeopardize the continued existence of the species. Our assessment is that the proposed action is not likely to jeopardize the proposed endangered tricolored bat (*Perimyotis subflavus*) or the proposed threatened monarch butterfly (*Danaus plexippus*).

If possible, as a voluntary conservation measure for the tricolored bat, we recommend avoiding tree clearing from May 15 to July 31. No further consultation is required at this time. However, if either of these species are listed under the ESA before this project is completed, please contact the USFWS to reinitiate consultation for this project.

Thank you,

Kathleen

From: Nowicki, Adam <Adam.Nowicki@stantec.com>
Sent: Friday, August 1, 2025 3:13 PM
To: CBFO Project Review, FW5 <cbfoprojectreview@fws.gov>
Cc: Gindville, Benjamin <Benjamin.Gindville@stantec.com>; Aceto, Frank <Frank.Aceto@stantec.com>; Austin, TJ <TJ.Austin@stantec.com>; Onesky, Mark <Mark.Onesky@stantec.com>
Subject: [EXTERNAL] USFWS Section 7 Consultation Request, Project Code: 2025-0129895

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good Afternoon,

Attached please find a consultation request and supporting documentation for the Amtrak Wilmington Shops Remediation Project, Project Code: 2025-0129895. If you have any questions or require any additional information, please feel free to contact me.

Thank You,

Adam Nowicki, PMP
Senior Ecologist

Direct: (856) 242-6062
adam.nowicki@stantec.com

Stantec

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Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester PA 19380

August 1, 2025

Chesapeake Bay Ecological Services Field Office
Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307

RE: Project Code: 2025-0129895
Project Name: Amtrak Wilmington Shops
4001 Vandever Avenue
Wilmington, New Castle County, DE 19802

To Whom It May Concern:

Stantec Consulting Services, Inc. (Stantec), on behalf of National Railroad Passenger Corporation (Amtrak), is writing to request a formal consultation under Section 7 of the Endangered Species Act (ESA) for the proposed Amtrak Wilmington Shops Remediation Project located at the Amtrak Wilmington Shops, 4001 Vandever Avenue, Wilmington, New Castle County, Delaware (the Site). Remediation of the Site is directed by the Delaware Department of Natural Resources and Environmental Control (DNREC) and the United States Environmental Protection Agency (USEPA) and will be accomplished under a Nationwide Permit 38 (NWP38) issued by the United States Army Corps of Engineers (USACE).

The proposed project implements the approved remedial actions at the Wilmington Shops. These actions will address environmental contamination in soils, sediment, and groundwater at the Maintenance Facility (DE-0170) and the Former Fueling Facility (DE-0266), which combined, represent the Wilmington Shops Remediation Project. Contaminants include PCBs, petroleum hydrocarbons, arsenic, lead, and chlorinated solvents. Remediation includes excavation and off-site disposal of contaminated soils, in-situ sediment stabilization, on-site placement of stabilized sediment and soil within containment cells, installation of caps, engineered covers, monitored natural attenuation of groundwater, and long-term stewardship activities. No significant site operational changes are anticipated, and the facility will continue to serve as the critical maintenance hub for Amtrak's Northeast Corridor operations. DNREC approved the Final Plan of Remedial Action for the Maintenance Facility (DE-0170) in March 2022. DNREC approved the Final Plan of Remedial Action for the Former Fueling Facility (DE-0266) in July 2020. The USEPA approved the Risk-Based Disposal Approval Application (RBDAA) on June 10, 2025.

The Project is located along Vandever Avenue in Wilmington, Delaware. The Former Fueling Facility (DE-0266) is south of the Maintenance Facility and was used to stage maintenance-of-way equipment as well as other non-PCB containing equipment. The Maintenance Facility (DE-0170) is located north of the Fueling Facility and used for locomotives and other railroad-related equipment.

The Wilmington Shops is an active railyard consisting of various workshop buildings and administration buildings. The majority of the northern portion of the property is impervious coverage comprised of buildings and asphalt pavement for driving and parking areas. In addition, there are large areas of aggregate

Reference: Project Code: 2025-0129895

composed of track ballast or gravel. The southern portion of the property has less impervious coverage with areas of vegetation, wetlands and open water drainage ditches more prevalent. The Wilmington Shops is comprised of several parcels, totaling approximately 113 acres. The total limit of disturbance for the remediation activity is approximately 47 acres.

Wetlands have been identified by both desktop review and field inspections. Twelve (12) wetland areas were identified totaling approximately 16 acres on the Wilmington Shops. A portion of the overall remediation areas, roughly 14 acres, are characterized as forested uplands or wetlands. The planned remediation involves cutting of forested areas to re-grade for wetland creation, installing drainage improvements, and/or installing engineering covers for containment of contamination.

Evaluation of the Site through the USFWS Information for Planning and Consultation (IPaC) system resulted in a determination of "May Affect", to tricolored bat (*Perimyotis subflavus*, proposed Endangered). In addition, the monarch butterfly (*Danaus Plexippus*, proposed Threatened) was highlighted. While foraging habitat for the monarch butterfly is present on the Site, cursory investigation of plant communities encountered during the wetland delineation on March 13 and 14, 2024 and June 4, 2024 did not identify plant communities containing members of the genus *Asclepias* required for monarch butterfly reproduction.

Evaluation of the determination key for tricolored bat results in a "May Affect" determination. While no caves, mines, or tunnels were identified on the Site for potential hibernacula habitat, the proposed Project will result in the clearing of trees to facilitate soil remediation activities. No buildings are proposed to be modified or demolished. A Site map depicting the limits of disturbance associated with the Project, as well as the IPaC Species List and Determination Key results are included with this letter.

Stantec is therefore requesting consultation to determine the steps necessary to ensure the Project complies with Section 7 of the ESA. If you have any questions or require any additional information, please do not hesitate to contact me at 856-242-6062 or via email at adam.nowicki@stantec.com. Your prompt attention to this matter is appreciated.

Respectfully,

Stantec Consulting Services Inc.



Adam Nowicki, PMP
Senior Environmental Scientist

Attachment: [Attachment]

c. Frank Aceto
Mark Onesky
Steve Baggett
Paul Miller
Gabe Pelletier
Andrew Enzeman (Amtrak)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: 07/31/2025 20:28:23 UTC
Project Code: 2025-0129895
Project Name: Amtrak Wilmington Shops

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

PROJECT SUMMARY

Project Code: 2025-0129895
Project Name: Amtrak Wilmington Shops
Project Type: Non-NPL Site Remediation
Project Description: The proposed project is intended to remove soil above PCB, arsenic and lead criteria, and placing caps and engineered covers over other areas of the site; 2) constructing new drainage features to re-route surface water in order to stabilize sediments in site drainage features using techniques developed in an on-site pilot study; and 3) implementing a Monitored Natural Attenuation program to monitor natural attenuation of contaminants in ground water.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.74386215,-75.52365268732643,14z



Counties: New Castle County, Delaware

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBHh

FRESHWATER EMERGENT WETLAND

- PEM1/SS4A
- PEM5/1A
- PEM5Ch
- PEM5C
- PEM5E
- PEM1E
- PEM1A

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/SS1A
- PFO1E
- PFO1/SS4A
- PSS1A

RIVERINE

- R2UBHx

IPAC USER CONTACT INFORMATION

Agency:	Stantec
Name:	Adam Nowicki - Stantec
Address:	10000 Midlantic Drive
Address Line 2:	Suite 300W
City:	Mount Laurel
State:	NJ
Zip:	08054
Email	adam.nowicki@stantec.com
Phone:	8562426062

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: 07/31/2025 20:31:06 UTC
Project code: 2025-0129895
Project Name: Amtrak Wilmington Shops

Federal Nexus: yes
Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Technical assistance for 'Amtrak Wilmington Shops'

Dear Adam Nowicki - Stantec:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 31, 2025, for 'Amtrak Wilmington Shops' (here forward, Project). This project has been assigned Project Code 2025-0129895 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	May affect

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

Conclusion

Consultation with the Service is not complete. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of "May Affect." A "May Affect" determination in this key indicates that the project, as entered, is not consistent with the questions in the key. Not all projects that reach a "May Affect" determination are anticipated to result in adverse impacts to listed species. These projects may result in a "No Effect", "May Affect, Not Likely to Adversely Affect", or "May Affect, Likely to Adversely Affect" determination depending on the details of the project. Please contact our Chesapeake Bay Ecological Services Field Office to discuss methods to avoid or minimize potential adverse effects to those species or designated critical habitats.

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate. Projects that receive a may affect determination for tricolored bat through the key, should contact the appropriate Ecological Services Field Office if they want to conference on this species.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Amtrak Wilmington Shops

2. Description

The following description was provided for the project 'Amtrak Wilmington Shops':

> The proposed project is intended to remove soil above PCB, arsenic and lead criteria, and placing caps and engineered covers over other areas of the site; 2) constructing new drainage features to re-route surface water in order to stabilize sediments in site drainage features using techniques developed in an on-site pilot study; and 3) implementing a Monitored Natural Attenuation program to monitor natural attenuation of contaminants in ground water.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.74386215,-75.52365268732643,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect" for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does the proposed action involve wind or solar energy?

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer 'yes' to this question.

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   Yes

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   Yes

9. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

   Automatically answered
   No

10. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

11. Will the action cause effects to a bridge?

    Note: Covered bridges should be considered as bridges in this question.

    No

12. Will the action result in effects to a culvert or tunnel at any time of year?

    No

13. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

14. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

15. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

16. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

17. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

19. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

20. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

21. Will the action include drilling or blasting?

    No

22. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

23. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    No

24. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

25. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

26. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

27. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

    No

28. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

    No

29. Does the project intersect with the 0- 9.9% forest density category?

    Automatically answered
    Yes

30. Does the project intersect with the 10.0- 19.9% forest density category map?

    Automatically answered
    No

31. Does the project intersect with the 20.0- 29.9% forest density category map?

    Automatically answered
    No

32. Does the project intersect with the 30.0- 100% forest density category map?

    Automatically answered
    No

33. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 0.5 acre in total extent?

    Yes

34. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

35. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known tricolored bat hibernacula? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

36. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

37. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?
(If unsure, answer ""Yes."")

    Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (Tillandsia usneoides), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    Yes

38. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

14.1

IPAC USER CONTACT INFORMATION

Agency: Stantec
Name: Adam Nowicki - Stantec
Address: 10000 Midlantic Drive
Address Line 2: Suite 300W
City: Mount Laurel
State: NJ
Zip: 08054
Email adam.nowicki@stantec.com
Phone: 8562426062

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

DRAFT

Stantec

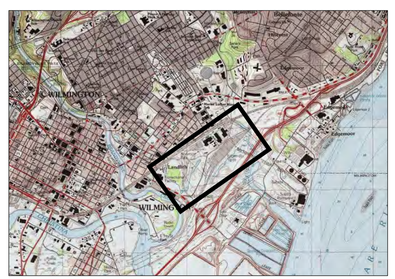
LEGEND

PROPERTY BOUNDARY

LIMITS OF DISTURBANCE

0 175 350 Feet

1:2,100 (At original document size of 22x34)



Notes

1. Coordinate System: NAD 1983 StatePlane Delaware FIPS 0700 FeetSource:
2. StantecTopo USA Topo Maps: Copyright:© 2013 National Geographic Society, i-cubed
3. Nearmap WMS Server: Nearmap Imagery

Project Location
CITY OF WILMINGTON
NEW CASTLE COUNTY, DE

213403550
Prepared by GWC on 7/28/2025
Technical Review by XXX on xx/xx/xxxx
Independent Review by XXX on xx/xx/xxxx

Client/Project
AMTRAK
WILMINGTON SHOPS

Figure No.
1

DRAFT

Title
LIMITS OF DISTURBANCE

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\Users\gcarroll.hawkes\Desktop\213403550-01\Work Area\213403550-01.aprx Revised: 2025-07-28 By: gcarroll

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
RICHARDSON & ROBBINS BUILDING
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

DIRECTOR'S OFFICE

PHONE
(302) 739-9910

July 24, 2025

Adam Nowicki
Stantec
810 Glen Eagles Court, Suite 300
Baltimore, MD 21286

Re: STAN 2025 Amtrak Wilmington Tax Parcel # 2603000064 & 2603700007

Dear Adam:

Thank you for contacting the Division of Fish and Wildlife (DFW) Species Conservation and Research Program about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

State Natural Heritage Site
A review of our database indicates that there are currently no records of state-rare or federally listed plants, animals or natural communities at this project site. As a result, at present, this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve which are two criteria used to identify "Designated Critical Resource Waters" in the U.S. Army Corps of Engineers (USACE) Nationwide Permit General Condition No. 22. A copy of this letter shall be included in any permit application or pre-construction notification submitted to the USACE for activities on this property.

Fisheries
After reviewing the project description, it does not appear that any waterways will be impacted; therefore, there are no fisheries concerns at present.

The DFW does not have fish community data for the project location. However, it is unlikely that habitat occurs in the project site that would support anadromous fish species. No time of year restrictions or other measures are requested for these species or for resident gamefish species.

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is

delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,



Matthew Young
Environmental Review Coordinator
Phone: (302) 735-8677
Email: matthew.young@delaware.gov
89 Kings Highway
Dover, DE 19901

(See invoice on next page)

INVOICE - PAYMENT DUE

It is our policy to charge a fee for this environmental review service. This letter constitutes an invoice for $35.00 ($35.00/hour for a minimum of one hour). Please make your check payable to "Delaware Division of Fish and Wildlife" and submit to:

DE Division of Fish and Wildlife
97 Commerce Way, Suite 106
Dover, DE 19904
ATTN: DFW Fiscal

In order for us to properly process your payment, you must reference "STAN 2025 Amtrak Wilmington**" on your check.**

cc: DFW Fiscal; Code to 72900

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 39º 44' 33" N, Longitude = 76º 28' 36" W
Decimal Degrees: Latitude = 39.742, Longitude = -75.523

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

***** W A R N I N G *****

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Butterfish	Adult, Larvae	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Atlantic Herring	Adult, Juvenile	New England	Amendment 3 to the Atlantic Herring FMP
		Black Sea Bass	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Bluefish	Adult, Juvenile	Mid-Atlantic	Bluefish
		Clearnose Skate	Adult, Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Little Skate	Adult, Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Longfin Inshore Squid	Eggs	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Red Hake	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
		Scup	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Summer Flounder	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Windowpane Flounder	Adult, Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Adult, Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

Link	Data Caveats	HAPC Name	Management Council
		Summer Flounder SAV	Mid-Atlantic Fishery Management Council

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

All EFH species have been mapped for the Greater Atlantic region,
Atlantic Highly Migratory Species EFH,
Bigeye Sand Tiger Shark,
Bigeye Sixgill Shark,
Caribbean Sharpnose Shark,
Galapagos Shark,
Narrowtooth Shark,
Sevengill Shark,
Sixgill Shark,
Smooth Hammerhead Shark,
Smalltail Shark

Amtrak Wilmington Shops Section 7 ESA Review

Area of Interest (AOI) Information

Area : 134.78 acres

Jul 24 2025 13:31:23 Eastern Daylight Time



Summary

Name	Count	Area(acres)	Length(mi)
Overall_LOD_7-24-25	5	N/A	3.27
Atlantic Sturgeon	0	0	N/A
Shortnose Sturgeon	0	0	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

Overall_LOD_7-24-25

#	FID	Entity	Handle	Layer	LyrFrzn	LyrOn	Color	Linetype
1	4	LWPolyline	3D	C-EROS-LODL-EED-STOCKPILE	0	1	102	DEMO8
2	1	LWPolyline	3A	C-EROS-LODL-EED-STOCKPILE	0	1	102	DEMO8
3	0	LWPolyline	37	C-EROS-LODL-EED-STOCKPILE	0	1	102	DEMO8
4	2	LWPolyline	3B	C-EROS-LODL-EED-STOCKPILE	0	1	102	DEMO8
5	3	LWPolyline	3C	C-EROS-LODL-EED-STOCKPILE	0	1	102	DEMO8

#	Elevation	LineWt	RefName	DocUpdate	DocId	GlobalWidt	Length(mi)
1	0	35	*No Data*	7/23/2025, 8:00 PM	1581721633490 0000000	2.99999773556	0.15
2	14	35	*No Data*	7/23/2025, 8:00 PM	1581721633490 0000000	2.99999773556	0.19
3	0	35	*No Data*	7/23/2025, 8:00 PM	1581721633490 0000000	2.99999773556	0.29
4	0	35	*No Data*	7/23/2025, 8:00 PM	1581721633490 0000000	2.99999773556	0.34
5	0	35	*No Data*	7/23/2025, 8:00 PM	1581721633490 0000000	2.99999773556	2.31

Permit Application Appendices

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 19LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing pond flanked by herbaceous and scrub-shrub vegetation with scattered trees. Only a portion of the riprap outfall will be located within the OHW.

5. What is the total number of cubic yards of rip-rap that will be used? 8.58CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.45 CY/LF (19 LF of stream, 1 bank)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: 17.5 (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 150 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X___ No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X___ Yes ___ No

   E. What is the average slope of the existing bank? 4:1

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of riprap outfall. The riprap will be installed at the end of the new pipe outfall. See construction detail for additional information. Work will be performed in the dry via dewatering. Surrounding area will be reseeded.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plant Sheets: 12, 26, 53, 54, 101, 103, 119

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 16LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing swale has small intermittent stream channel flanked by herbaceous and scrub-shrub vegetation with scattered trees. Above pipe outfall is Railcar Avenue.

5. What is the total number of cubic yards of rip-rap that will be used? 4.18

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.13CY/LF (16LF of stream x 2 banks)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: Entire (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 80 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X___ No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X___ Yes ___ No

   E. What is the average slope of the existing bank? 4:1

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of riprap outfall. The riprap will be installed at the end of the existing pipe outfall. See construction detail for additional information. Work will be performed in the dry via dewatering.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 14, 26, 53, 54, 101, 103, 119, 120

ID-03: Eastern Drainage Ditch
Side Channel Riprap Stilling Basin (PERMANENT)

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 20LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing swale has small intermittent stream channel flanked by herbaceous and scrub-shrub vegetation with scattered trees. Area will be reincorporated into Wetland Mitigation

5. What is the total number of cubic yards of rip-rap that will be used? 7.75CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.2 CY/LF (20LF stream x 2 banks)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 12" Core stone: 12"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)

   A. How many linear feet will the structure extend channelward of:

   Mean High Water: _____Mean Low Water: _____

   Ordinary High Water: Entire (for non-tidal waters)

   B. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____

   Channelward of Ordinary High Water: 145 (for non-tidal waters)

   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X No

   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X Yes ___ No

   E. What is the average slope of the existing bank? ~4:1 (bank slope)

   F. What is the proposed slope of the rip-rap revetment? 2:1 (channel), See Spec DE-ESC-3.3.11

   (See page 3 for a guide to calculating slopes).

9. Sill Projects:

   A. What is the base width of the proposed structure: _____

   B. What is the top width of the proposed structure: _____

   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____

   Channelward of Ordinary High Water: _____ (for non-tidal waters)

   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____

   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No

   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No

   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of the riprap stilling basin. See construction detail for additional information. Work will be performed in the dry via dewatering. Vegetation will be restored per Vegetated Cover Restoration Planset. Stilling Basin will be a component the drainage swale through the wetland mitigation area.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

CHANNEL MODIFICATIONS OR IMPOUNDMENT STRUCTURES (DAMS)

Please check applicable box(es) and complete all appropriate sections(s). Make sure answers to all of the questions in this appendix correspond to information on the application drawings

Section I. ☐ CHANNEL MODIFICATIONS Section II. ☒ IMPOUNDMENT STRUCTURES (DAMS)

I. CHANNEL MODIFICATIONS

1. What are the dimensions of the existing channel to be modified relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

2. What will be the dimensions of the new or modified channel relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

3. State type and approximate composition percentage of the existing stream bed (e.g. clay 10%, sand 10%, silt 45%, gravel 10%, etc.)

4. State the type and approximate composition percentage of the new or modified stream bed?

5. What are the approximate normal discharge rate and drainage area of the existing water body.

   2 yr. _____ cfs _____acres
   10yr. _____ cfs 100 yr. _____ cfs

6. What will be the approximate normal flow-rate and drainage area of the new or modified water body (for non-tidal areas only)?
   2 yr. _____ cfs _____acres
   10 yr. _____ cfs 100 yr. _____ cfs

7. What will be the change (if any) in slope and cross-sectional area?

8. What type of material(s) will be used to stabilize the banks of the new or modified channel (e.g. rip-rap, vegetation, bulkhead, etc.)? Complete additional Appendices as necessary.

9. What will be the change in floodplain area upstream of the channel modification for a two year or ten year storm? Please indicate change in area on plans.
   _____ 2 yr. _____ 10 yr.

II. IMPOUNDMENT STRUCTURES (DAMS)

1. What type(s) of material(s) will be used to construct the impoundment structure (e.g. earth, rock, concrete, etc.)?

   Clay core with 6" thick stone over geotextile on embankment slopes and 6" thick stone with 3/4" thick 1-inch crushed stone

2. How many cubic yards of material for the impoundment structure will be obtained from:

   a. Upland sources? 4,382 cubic yards
   b. Dredged material? _____ cubic yards
   c. Other? (explain below) _____ cubic yards

   Measurements are within OHW footprint.
   590 sq ft. of TD3 within OHW

3. What will be the dimensions of the impoundment structure relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   Measurements are within OHW footprint.

   Length: up to 59-feet stream feet long (upstream/downstream)
   Height: to 8.00, NAVD88
   Width: 14-feet (stream width)

4. What will be the impoundment's?

   Entire structure, via TD-2 discharge point

   Storage capacity: 50.1 acre-feet
   Surface area: 0.07 acres; 3007 square feet

5. What is the approximate drainage area of the water body upstream of the proposed impoundment? 70 acres

6. Have you obtained the appropriate County Conservation District office approval for an erosion and sediment control plan for your project? X Yes ____ No _____N/A

   If your answer is "No", contact the County Conservation District.

7. What is the approximate discharge rate from the 2, 10, 100 year frequency storm prior to construction?

   2 yr. 0 cfs
   10 yr. 10 cfs
   100 yr. 29 cfs

   Discharges through TD2 at Outfall 006B; see plan set
   CFS is for TD2

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? 15 ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of mean high water) 1,222 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? ~1200 cubic yards Includes Riprap volumes
   a. What is the total fill per running foot of shoreline? 9 cubic yards 135 LF Stream Channel

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   10 foot clay core with imported soil for 3:1 side slopes, seeded and stabilized.

7. How will the fill be retained? Complete appropriate appendix.
   Fill will be graded on 3:1 slopes and will be stabilized with seeding.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, fill submerged within impounded area, "Swale Area Mix" within swale.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   N/A

CHANNEL MODIFICATIONS OR IMPOUNDMENT STRUCTURES (DAMS)

Please check applicable box(es) and complete all appropriate sections(s). Make sure answers to all of the questions in this appendix correspond to information on the application drawings

Section I. ☐ CHANNEL MODIFICATIONS Section II. ☒ IMPOUNDMENT STRUCTURES (DAMS)

I. CHANNEL MODIFICATIONS

1. What are the dimensions of the existing channel to be modified relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

2. What will be the dimensions of the new or modified channel relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

3. State type and approximate composition percentage of the existing stream bed (e.g. clay 10%, sand 10%, silt 45%, gravel 10%, etc.)

4. State the type and approximate composition percentage of the new or modified stream bed?

5. What are the approximate normal discharge rate and drainage area of the existing water body.

   2 yr. _____ cfs _____acres
   10yr. _____ cfs 100 yr. _____ cfs

6. What will be the approximate normal flow-rate and drainage area of the new or modified water body (for non-tidal areas only)?
   2 yr. _____ cfs _____acres
   10 yr. _____ cfs 100 yr. _____ cfs

7. What will be the change (if any) in slope and cross-sectional area?

8. What type of material(s) will be used to stabilize the banks of the new or modified channel (e.g. rip-rap, vegetation, bulkhead, etc.)? Complete additional Appendices as necessary.

9. What will be the change in floodplain area upstream of the channel modification for a two year or ten year storm? Please indicate change in area on plans.
   _____ 2 yr. _____ 10 yr.

II. IMPOUNDMENT STRUCTURES (DAMS)

1. What type(s) of material(s) will be used to construct the impoundment structure (e.g. earth, rock, concrete, etc.)?

   Clay core with 6" thick stone over geotextile on embankment slopes and top for emergency spillway.

2. How many cubic yards of material for the impoundment structure will be obtained from:

   a. Upland sources? 5,007 cubic yards
   b. Dredged material? _____ cubic yards
   c. Other? (explain below) _____ cubic yards

   Measurements are within OHW footprint.
   1030 sq ft. of TD5 within OHW

3. What will be the dimensions of the impoundment structure relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   Measurements are within OHW footprint.

   Length: up to 30-feet stream feet long (upstream/downstream)
   Height: to 6.3, NAVD88 (7.5 total)
   Width: 48.5-feet (stream width)

4. What will be the impoundment's?

   Entire structure

   Storage capacity: 14.55 acre-feet
   Surface area: 0.03 acres; 1,458 square feet

5. What is the approximate drainage area of the water body upstream of the proposed impoundment? 23 acres

6. Have you obtained the appropriate County Conservation District office approval for an erosion and sediment control plan for your project? X Yes ____ No _____N/A

   If your answer is "No", contact the County Conservation District.

7. What is the approximate discharge rate from the 2, 10, 100 year frequency storm prior to construction?

   2 yr. 1.5 cfs
   10 yr. 4 cfs
   100 yr. 11 cfs

CHANNEL MODIFICATIONS OR IMPOUNDMENT STRUCTURES (DAMS)

Please check applicable box(es) and complete all appropriate sections(s). Make sure answers to all of the questions in this appendix correspond to information on the application drawings

Section I. ☐ CHANNEL MODIFICATIONS Section II. ☒ IMPOUNDMENT STRUCTURES (DAMS)

I. CHANNEL MODIFICATIONS

1. What are the dimensions of the existing channel to be modified relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

2. What will be the dimensions of the new or modified channel relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   _____ length _____ depth _____ base width _____ top width

3. State type and approximate composition percentage of the existing stream bed (e.g. clay 10%, sand 10%, silt 45%, gravel 10%, etc.)

4. State the type and approximate composition percentage of the new or modified stream bed?

5. What are the approximate normal discharge rate and drainage area of the existing water body.

   2 yr. _____ cfs _____acres
   10yr. _____ cfs 100 yr. _____ cfs

6. What will be the approximate normal flow-rate and drainage area of the new or modified water body (for non-tidal areas only)?
   2 yr. _____ cfs _____acres
   10 yr. _____ cfs 100 yr. _____ cfs

7. What will be the change (if any) in slope and cross-sectional area?

8. What type of material(s) will be used to stabilize the banks of the new or modified channel (e.g. rip-rap, vegetation, bulkhead, etc.)? Complete additional Appendices as necessary.

9. What will be the change in floodplain area upstream of the channel modification for a two year or ten year storm? Please indicate change in area on plans.
   _____ 2 yr. _____ 10 yr.

II. IMPOUNDMENT STRUCTURES (DAMS)

1. What type(s) of material(s) will be used to construct the impoundment structure (e.g. earth, rock, concrete, etc.)?

   10-foot wide clay core, imported soil for embankment slopes with a 6" clean fill cap. Will be temporarily stabilized with vegetation seed mix.

2. How many cubic yards of material for the impoundment structure will be obtained from:

   a. Upland sources? 4,382 cubic yards
   b. Dredged material? _____ cubic yards
   c. Other? (explain below) _____ cubic yards

   Measurements are within OHW footprint.
   650 sq ft. of TB2 within OHW

3. What will be the dimensions of the impoundment structure relative to mean high water (for tidal areas only) or ordinary high water (for non-tidal areas only)?

   Measurements are within OHW footprint.

   Length: up to 59-feet stream feet long (upstream/downstream)
   Height: to 8.00, NAVD88
   Width: 14-feet (stream width)

4. What will be the impoundment's?

   Entire structure

   Storage capacity: 15 acre-feet
   Surface area: .11 acres; 4,620 square feet

5. What is the approximate drainage area of the water body upstream of the proposed impoundment? 24 acres

6. Have you obtained the appropriate County Conservation District office approval for an erosion and sediment control plan for your project? X Yes ____ No _____N/A

   If your answer is "No", contact the County Conservation District.

7. What is the approximate discharge rate from the 2, 10, 100 year frequency storm prior to construction?

   2 yr. 17 cfs
   10 yr. 38 cfs
   100 yr. 89 cfs

   Discharges through Outfall 006B; see plan set
   CFS is for Outfall 006B

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 4 LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing pond flanked by herbaceous and scrub-shrub vegetation with scattered trees.
   Skimmer support pad will be located in water.

5. What is the total number of cubic yards of rip-rap that will be used? 0.5CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.1 CY/LF (4 LF of stream)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: #57 Core stone: #57
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: 10-20 (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 16 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X___ No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X___ Yes ___ No

   E. What is the average slope of the existing bank? 4:1

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Lower Eastern Drainage Ditch will be dewatered, temporary stone pad to support skimmer will be installed when TD5 is installed.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 38, 106, 107, 108

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? 10-20 ft.

4X4 Concrete Pad
and
4x4 Riprap Pad

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) 32 sq. ft.
   b. on vegetated wetlands? _____ sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 1CY-Concrete, 0.5CY Stone 1.5CY total cubic yards
   a. What is the total fill per running foot of shoreline? 0.1 cubic yards

5. What method will be used to place the fill?

   Excavator bucket (trackhoe/backhoe)

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Concrete Pad, 100% concrete; Riprap pad 100% #57 stone

7. How will the fill be retained? Complete appropriate appendix.

   Gravity in place, low velocity system

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, submerged

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   Riser pipe and skimmer, See TD-5 Cross-Section Detail.

BOAT RAMPS

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many boat ramps will be constructed? 1

2. What are the dimensions of the proposed boat ramp(s)?

   50-ft (in OHW) Length 20-ft Width
   _____ Slope _____ Thickness

3. How many feet will the boat ramp(s) extend channelward of:

   Tidal Waters: mean high water line? _____ ft.
   Non-tidal Waters: ordinary high water line? 50 ft.

4. How many square feet of the boat ramp(s) will be located:

   Below mean high water? 935 sq. ft.
   On vegetated wetlands? _____ sq. ft.

5. Will any docking facilities be constructed alongside of the boat ramp(s)? _____ Yes X No
   If your answer is yes, complete Appendix A and show structure on plans.

6. What type of material(s) will be used for construction of the boat ramp(s) (e.g. concrete, timber, gravel, etc.)? 4" crushed stone over 6" stone over geotextile.

7. Will any fill be required? X Yes _____ No If yes, complete the appropriate appendix.

8. Amount of material to placed? 35 cubic yards below OHW ~~MHW~~
   _____ cubic yards below MLW

9. Will any dredging or excavation be required? X Yes _____ No If yes, complete the dredging appendix.

10. What boat ramp(s) do you now use in the area? N/A, temporary ramp

11. Will this ramp be: _____ public, _____ commercial, _____ private? If public or commercial, complete Appendix N (Marinas). N/A, temporary ramp

Plan Sheets: 41, 42, 43, 44, 45, 92, 93, 94, 95, 96, 97

MAINTENANCE DREDGING OR EXCAVATING

- If dredged material is to be placed in a disposal site, a separate map showing the location of the disposal site should be attached. This drawing must indicate the proposed retention levees, weirs, spillways, and/or devices for retaining the materials. Onsite containment cell behind groundwater barrier, see plans.
- Bottom samples to determine heavy metals or other toxic materials must be taken and analyzed if deemed necessary by the DNREC staff. The responsibility, as well as the expense incurred for obtaining and analyzing these samples, must be borne by the applicant. DNREC Approvals: DE0266 & DE0170
- If maintenance dredging is to be done, evidence of previous dredging must be provided. Any previously issued permit with drawings which indicates the date the dredging occurred, the area involved and dredging depth constitutes acceptable proof.
- Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many cubic yards of material will be MAINTENANCE DREDGED or excavated channelward of the:

   a. Tidal waters: mean high water line? _____ cu. yds.
   mean low water line? _____ cu. yds.
   b. Non-tidal waters: ordinary high water line? 2400 cu. yds.

Does this account for the total volume of proposed dredging for the project? _____Yes X No
If there is new dredging associated with this project (dredging beyond previously authorized dimensions) please fill out appendix S for new dredging.

2. What will be the dimensions of the dredged or excavated area relative to mean low water (for tidal areas only) or ordinary water level (for non-tidal areas only)?
   ~2,535 length varies depth varies base width varies top width 19,670 sq. ft. total

3. What are average existing depths in area of proposed dredging? ~0-3 ft. (mlw/ohw)
   Include a survey of proposed and existing depths on application drawings.

4. What is the proposed dredging depth in relation to surrounding bathymetry? 0-10 ft.(mlw/ohw)
   Indicate both proposed depths and surrounding depths on attached drawings.

5. By what method(s) (hydraulic, clamshell or other) will the dredging be done? If other, explain:

   Excavator bucket (trackhoe/backhoe)

6. What is proximity of the dredging project to the nearest creek bank or banks? 0 _____ ft.
   What are existing land uses along this bank(s)?
   Industrial land uses flank both stream sides

   Describe the existing shoreline along this bank (vegetation, rip-rap, bulkhead, etc.).
   Emergent and scrub-shrub vegetation with scattered trees

7. Describe characteristics of the material to be disposed including:
   a. Physical nature of material (i.e. sand, silt, clay, etc.). Give percentages of various fractions if available.
   Sands and silts

   b. Chemical composition of material - Many areas have sediments with high concentration of pollutants (chemicals, organics etc.) which may be re-suspended or reintroduced into the water. For heavily industrialized sites, a chemical analysis of this material should be provided (if applicable). See RBDAA

   c. What are the dewatering properties of material to be disposal of?
   Excavated sediment will be temporarily stockpiled and a 5% quicklime applied for drying/handling

8. How will the dredged or excavated material be transported to its disposal area?
   Backhoe/Trackhoe or similar

9. Land Disposal Areas. For Section 9, see attached RBDAA and short summary below

   a. Describe dimensions, characteristics and exact locations of the proposed dredged material disposal site (provide photographs, directions to, and complete plans of disposal site).

   b. Describe method of dredged material containment (embarkment, behind bulkhead, etc.)

   c. What type of leachates will be produced by the spoil material and what is planned for the protection of groundwater?

   d. Disposal site coordinates _____ latitude _____ longitude

   e. What methods will be used to ensure that spoil water does not adversely affect water quality both during construction and after completion of the project?

   f. Describe present land use of the disposal site. Sediments excavated at the site will either be disposed of at a permitted solid waste disposal facility or stabilized and placed within engineered containment cells. Details regarding the location of all excavation areas and proposed on site disposal containment cells may be found on the attached drawings and are described in the attached RBDAA. Pore water generated during these activities will be managed as described in Item #10 below.

10. Water Disposal Areas/ Beneficial Use Projects
Describe methods to be used for water disposal including volumes and site selection, and containment (if applicable). Include Fill or Wetland Appendix if applicable.

Pore water from excavations to be treated on site prior to discharge to outfalls in accordance with DNREC Temporary Discharge Agreement. Treatment to include mechanical filtration, sand filters, organo-clay filters, and granulated activated carbon. See RBDAA for details regarding water treatment.

11. Describe the existing water characteristics at the site, including chemical analysis for water quality.

Existing surface water and groundwater quality at the site has been impacted by historical operation. Water quality has been affected by the presence of polychlorinated biphenyls (PCBs), metals, and Volatile Organic Compounds (VOCs). The approved remedial actions will improve surface water and groundwater quality at the site and will be monitored via a long term stewardship program. See RBDAA for details regarding water quality.

12. Identify the dredging and disposal schedule to ensure that operations do not degrade water quality during times of anadromous fish migration.

Not Applicable, precluded by tide gate

13. Has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

X Yes ____ No ____ Not required

Important time of year restriction information:

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

Not Applicable

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? Entire ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of mean high water) 19,670 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 2,404 cubic yards Includes riprap volumes, may be slightly less. Assumed dredge volume=fill volume
   a. What is the total fill per running foot of shoreline? 0.95 cubic yards 2,535 LF x 2 stream banks

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Clean fill, sand/gravel mix

7. How will the fill be retained? Complete appropriate appendix.
   Geotextile fabric will be keyed into top and bottom of 3:1 side slopes.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, submerged

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   N/A

Plan Sheets: 41, 46, 98

ID-13: Outfall 002
Contaminated Soils Excavation (PERMANENT)

MAINTENANCE DREDGING OR EXCAVATING

- If dredged material is to be placed in a disposal site, a separate map showing the location of the disposal site should be attached. This drawing must indicate the proposed retention levees, weirs, spillways, and/or devices for retaining the materials. Onsite containment cell behind groundwater barrier, see plans.
- Bottom samples to determine heavy metals or other toxic materials must be taken and analyzed if deemed necessary by the DNREC staff. The responsibility, as well as the expense incurred for obtaining and analyzing these samples, must be borne by the applicant. DNREC Approvals: DE0266 & DE0170
- If maintenance dredging is to be done, evidence of previous dredging must be provided. Any previously issued permit with drawings which indicates the date the dredging occurred, the area involved and dredging depth constitutes acceptable proof.
- Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many cubic yards of material will be MAINTENANCE DREDGED or excavated channelward of the:

   a. Tidal waters: mean high water line? _____ cu. yds.
   mean low water line? _____ cu. yds.
   b. Non-tidal waters: ordinary high water line? 313 cu. yds.

Does this account for the total volume of proposed dredging for the project? _____Yes X No
If there is new dredging associated with this project (dredging beyond previously authorized dimensions) please fill out appendix S for new dredging.

2. What will be the dimensions of the dredged or excavated area relative to mean low water (for tidal areas only) or ordinary water level (for non-tidal areas only)?
   ~55 length varies depth varies base width varies top width
   1,354 sq. ft. total

3. What are average existing depths in area of proposed dredging? ~1-2 ft. (mlw/ohw)
   Include a survey of proposed and existing depths on application drawings.

4. What is the proposed dredging depth in relation to surrounding bathymetry? 1 ft.(mlw/ohw)
   Indicate both proposed depths and surrounding depths on attached drawings.

5. By what method(s) (hydraulic, clamshell or other) will the dredging be done? If other, explain:

   Excavator bucket (trackhoe/backhoe)

6. What is proximity of the dredging project to the nearest creek bank or banks? 0 _____ ft.
   What are existing land uses along this bank(s)?
   Industrial land uses flank both stream sides

   Describe the existing shoreline along this bank (vegetation, rip-rap, bulkhead, etc.).
   Emergent and scrub-shrub vegetation with scattered trees

7. Describe characteristics of the material to be disposed including:
   a. Physical nature of material (i.e. sand, silt, clay, etc.). Give percentages of various fractions if available.
   Sands and silts

   b. Chemical composition of material - Many areas have sediments with high concentration of pollutants (chemicals, organics etc.) which may be re-suspended or reintroduced into the water. For heavily industrialized sites, a chemical analysis of this material should be provided (if applicable). See RBDAA

   c. What are the dewatering properties of material to be disposal of?
   Excavated sediment will be temporarily stockpiled and a 5% quicklime applied for drying/handling

8. How will the dredged or excavated material be transported to its disposal area?
   Backhoe/Tackhoe or similar

9. Land Disposal Areas. For Section 9, see attached RBDAA and short summary below

   a. Describe dimensions, characteristics and exact locations of the proposed dredged material disposal site (provide photographs, directions to, and complete plans of disposal site).

   b. Describe method of dredged material containment (embarkment, behind bulkhead, etc.)

   c. What type of leachates will be produced by the spoil material and what is planned for the protection of groundwater?

   d. Disposal site coordinates _____ latitude _____ longitude

   e. What methods will be used to ensure that spoil water does not adversely affect water quality both during construction and after completion of the project?

   f. Describe present land use of the disposal site. Sediments excavated at the site will either be disposed of at a permitted solid waste disposal facility or stabilized and placed within engineered containment cells. Details regarding the location of all excavation areas and proposed on site disposal containment cells may be found on the attached drawings and are described in the attached RBDAA. Pore water generated during these activities will be managed as described in Item #10 below.

10. Water Disposal Areas/ Beneficial Use Projects
Describe methods to be used for water disposal including volumes and site selection, and containment (if applicable). Include Fill or Wetland Appendix if applicable.

Pore water from excavations to be treated on site prior to discharge to outfalls in accordance with DNREC Temporary Discharge Agreement. Treatment to include mechanical filtration, sand filters, organo-clay filters, and granulated activated carbon. See RBDAA for details regarding water treatment.

11. Describe the existing water characteristics at the site, including chemical analysis for water quality.

Existing surface water and groundwater quality at the site has been impacted. Water quality has been affected by the presence of polychlorinated biphenyls (PCBs), metals, and Volatile Organic Compounds (VOCs). The approved remedial actions will improve surface water and groundwater quality at the site and will be monitored via a long term stewardship program. See RBDAA for details regarding water quality.

12. Identify the dredging and disposal schedule to ensure that operations do not degrade water quality during times of anadromous fish migration.

Not Applicable, precluded by tide gate

13. Has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

X Yes ____ No ____ Not required

Important time of year restriction information:

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

Not Applicable

MAINTENANCE DREDGING OR EXCAVATING

- If dredged material is to be placed in a disposal site, a separate map showing the location of the disposal site should be attached. This drawing must indicate the proposed retention levees, weirs, spillways, and/or devices for retaining the materials. Onsite containment cell behind groundwater barrier, see plans.
- Bottom samples to determine heavy metals or other toxic materials must be taken and analyzed if deemed necessary by the DNREC staff. The responsibility, as well as the expense incurred for obtaining and analyzing these samples, must be borne by the applicant. DNREC Approvals: DE0266 & DE0170
- If maintenance dredging is to be done, evidence of previous dredging must be provided. Any previously issued permit with drawings which indicates the date the dredging occurred, the area involved and dredging depth constitutes acceptable proof.
- Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many cubic yards of material will be MAINTENANCE DREDGED or excavated channelward of the:

   a. Tidal waters: mean high water line? _____ cu. yds.
   mean low water line? _____ cu. yds.
   b. Non-tidal waters: ordinary high water line? 6,340 cu. yds.

Does this account for the total volume of proposed dredging for the project? _____Yes X No
If there is new dredging associated with this project (dredging beyond previously authorized dimensions) please fill out appendix S for new dredging.

2. What will be the dimensions of the dredged or excavated area relative to mean low water (for tidal areas only) or ordinary water level (for non-tidal areas only)?
   ~850 length varies depth varies base width varies top width
   59,580 sq. ft total area

3. What are average existing depths in area of proposed dredging? ~0-8 ft. (mlw/ohw)
   Include a survey of proposed and existing depths on application drawings.

4. What is the proposed dredging depth in relation to surrounding bathymetry? 2-3 ft.(mlw/ohw)
   Indicate both proposed depths and surrounding depths on attached drawings.

5. By what method(s) (hydraulic, clamshell or other) will the dredging be done? If other, explain:

   Excavator bucket (trackhoe/backhoe)

6. What is proximity of the dredging project to the nearest creek bank or banks? 0 _____ ft.
   What are existing land uses along this bank(s)?
   Industrial land uses flank both stream sides

   Describe the existing shoreline along this bank (vegetation, rip-rap, bulkhead, etc.).
   Emergent and scrub-shrub vegetation with scattered trees

7. Describe characteristics of the material to be disposed including:
   a. Physical nature of material (i.e. sand, silt, clay, etc.). Give percentages of various fractions if available.
   Sands and silts

   b. Chemical composition of material - Many areas have sediments with high concentration of pollutants (chemicals, organics etc.) which may be re-suspended or reintroduced into the water. For heavily industrialized sites, a chemical analysis of this material should be provided (if applicable). See RBDAA

   c. What are the dewatering properties of material to be disposal of?
   Excavated sediment will be temporarily stockpiled and a 5% quicklime applied for drying/handling

8. How will the dredged or excavated material be transported to its disposal area?
   Backhoe/Tackhoe or similar

9. Land Disposal Areas. For Section 9, see attached RBDAA and short summary below

   a. Describe dimensions, characteristics and exact locations of the proposed dredged material disposal site (provide photographs, directions to, and complete plans of disposal site).

   b. Describe method of dredged material containment (embarkment, behind bulkhead, etc.)

   c. What type of leachates will be produced by the spoil material and what is planned for the protection of groundwater?

   d. Disposal site coordinates _____ latitude _____ longitude

   e. What methods will be used to ensure that spoil water does not adversely affect water quality both during construction and after completion of the project?

   f. Describe present land use of the disposal site. Sediments excavated at the site will either be disposed of at a permitted solid waste disposal facility or stabilized and placed within engineered containment cells. Details regarding the location of all excavation areas and proposed on site disposal containment cells may be found on the attached drawings and are described in the attached RBDAA. Pore water generated during these activities will be managed as described in Item #10 below.

10. Water Disposal Areas/ Beneficial Use Projects
Describe methods to be used for water disposal including volumes and site selection, and containment (if applicable). Include Fill or Wetland Appendix if applicable.

Pore water from excavations to be treated on site prior to discharge to outfalls in accordance with DNREC Temporary Discharge Agreement. Treatment to include mechanical filtration, sand filters, organo-clay filters, and granulated activated carbon. See RBDAA for details regarding water treatment.

11. Describe the existing water characteristics at the site, including chemical analysis for water quality.

Existing surface water and groundwater quality at the site has been impacted by historical operation. Water quality has been affected by the presence of polychlorinated biphenyls (PCBs), metals, and Volatile Organic Compounds (VOCs). The approved remedial actions will improve surface water and groundwater quality at the site and will be monitored via a long term stewardship program. See RBDAA for details regarding water quality.

12. Identify the dredging and disposal schedule to ensure that operations do not degrade water quality during times of anadromous fish migration.

Not Applicable, precluded by tide gate

13. Has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

X Yes ____ No ____ Not required

Important time of year restriction information:

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

Not Applicable

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? Entire ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of mean high water) 61,844 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 5,821 cubic yards Includes Riprap volumes
   a. What is the total fill per running foot of shoreline? 2 cubic yards ~2,888 perimeter bank feet

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Clay and sand/gravel mix

7. How will the fill be retained? Complete appropriate appendix.
   Fill will be placed similar to existing waterbody bottom within impounded area, herbaceous swale within wetland restoration area.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, fill submerged within impounded area, "Swale Area Mix" within swale.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   N/A

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? Entire ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of mean high water) 88,017 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill? 1-FT Depth, Clean Fill
   X Hauled in from upland sources: What is the source company/location/parcel number?
   X Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 24,793 cubic yards
   a. What is the total fill per running foot of shoreline? 11.75 cubic yards ~2115 LF perimeter

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Salvaged excavated contaminated soils from site.

7. How will the fill be retained? Complete appropriate appendix.
   Containment cell will be sloped 5:1 on side slopes and 0.25% on top. 1-FT of clean engineered cover will be placed to cap contaminated sediments. Cell will receive vegetative seed mix.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Vegetative "Area 4" Seed Mix

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   N/A

MAINTENANCE DREDGING OR EXCAVATING

- If dredged material is to be placed in a disposal site, a separate map showing the location of the disposal site should be attached. This drawing must indicate the proposed retention levees, weirs, spillways, and/or devices for retaining the materials. Onsite containment cell, see plans

- Bottom samples to determine heavy metals or other toxic materials must be taken and analyzed if deemed necessary by the DNREC staff. The responsibility, as well as the expense incurred for obtaining and analyzing these samples, must be borne by the applicant. DNREC Approvals: DE0266 & DE0170

- If maintenance dredging is to be done, evidence of previous dredging must be provided. Any previously issued permit with drawings which indicates the date the dredging occurred, the area involved and dredging depth constitutes acceptable proof.

- Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many cubic yards of material will be MAINTENANCE DREDGED or excavated channelward of the:

   a. Tidal waters: mean high water line? _____ cu. yds.
   mean low water line? _____ cu. yds.
   b. Non-tidal waters: ordinary high water line? 2,353 cu. yds.

Does this account for the total volume of proposed dredging for the project? _____Yes X No
If there is new dredging associated with this project (dredging beyond previously authorized dimensions) please fill out appendix S for new dredging.

2. What will be the dimensions of the dredged or excavated area relative to mean low water (for tidal areas only) or ordinary water level (for non-tidal areas only)?
   ~900 length varies depth varies base width varies top width ~17,070 sq. ft. area

3. What are average existing depths in area of proposed dredging? 0.5 — 3 ft. (mlw/ohw)
   Include a survey of proposed and existing depths on application drawings.

4. What is the proposed dredging depth in relation to surrounding bathymetry? 2-3 ft.(mlw/ohw)
   Indicate both proposed depths and surrounding depths on attached drawings.

5. By what method(s) (hydraulic, clamshell or other) will the dredging be done? If other, explain:
   Excavator bucket (trackhoe/backhoe) Excavation operations will be land based or performed under dewatered conditions

6. What is proximity of the dredging project to the nearest creek bank or banks? 0 _____ ft.
   What are existing land uses along this bank(s)?
   Industrial land uses flank both stream sides.

   Describe the existing shoreline along this bank (vegetation, rip-rap, bulkhead, etc.).

   Herbaceous and scrub-shrub vegetation with scattered trees. Banks will be stabilized per the Vegetated Cover Restoration Planset.

7. Describe characteristics of the material to be disposed including:
   a. Physical nature of material (i.e. sand, silt, clay, etc.). Give percentages of various fractions if available.

   Sands and silts along with contaminants.

   b. Chemical composition of material - Many areas have sediments with high concentration of pollutants (chemicals, organics etc.) which may be re-suspended or reintroduced into the water. For heavily industrialized sites, a chemical analysis of this material should be provided (if applicable). See RBDAA for detailed analysis of contaminants and for capture plan.

   c. What are the dewatering properties of material to be disposal of?

   Excavated sediment will be temporarily stockpiled and up to 5% quicklime applied for drying/handling before placement in the containment cell.

8. How will the dredged or excavated material be transported to its disposal area?
   Backhoe/Tackhoe or similar to loader bucket and/or dump truck.

9. Land Disposal Areas. For Section 9, see attached RBDAA and Containment Cell details from plans.
   a. Describe dimensions, characteristics and exact locations of the proposed dredged material disposal site (provide photographs, directions to, and complete plans of disposal site).

   b. Describe method of dredged material containment (embarkment, behind bulkhead, etc.)

   c. What type of leachates will be produced by the spoil material and what is planned for the protection of groundwater?

   d. Disposal site coordinates _____ latitude _____ longitude

   e. What methods will be used to ensure that spoil water does not adversely affect water quality both during construction and after completion of the project?

   f. Describe present land use of the disposal site. Sediments excavated at the site will either be disposed of at a permitted solid waste disposal facility or stabilized and placed within engineered containment cells. Details regarding the location of all excavation areas and proposed on site disposal containment cells may be found on the attached drawings and are described in the attached RBDAA. Pore water generated during these activities will be managed as described in Item #10 below.

10. Water Disposal Areas/ Beneficial Use Projects
Describe methods to be used for water disposal including volumes and site selection, and containment (if applicable). Include Fill or Wetland Appendix if applicable.

Pore water from excavations to be treated on site prior to discharge to outfalls in accordance with DNREC Temporary Discharge Agreement. Treatment to include mechanical filtration, sand filters, organo-clay filters, and granulated activated carbon. See RBDAA for details regarding water treatment.

11. Describe the existing water characteristics at the site, including chemical analysis for water quality.

Existing surface water and groundwater quality at the site has been impacted. Water quality has been affected by the presence of polychlorinated biphenyls (PCBs), metals, and Volatile Organic Compounds (VOCs). The approved remedial actions will improve surface water and groundwater quality at the site and will be monitored via a long term stewardship program. See RBDAA for details regarding water quality.

12. Identify the dredging and disposal schedule to ensure that operations do not degrade water quality during times of anadromous fish migration.

Not Applicable, precluded by tide gate

13. Has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

X Yes ____ No ____ Not required

Important time of year restriction information:

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

Not Applicable

Plan Sheets: 41, 57, 58, 66, 67

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? N/A ft.
      mean low water line? N/A ft.
   b. Non-tidal waters: ordinary high water line? Entire ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of ~~mean~~ high water) 17,070 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 871 cubic yards
   a. What is the total fill per running foot of shoreline? 0.5 cubic yards ~900 LF x 2 banks, 1800 bank feet

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Clay

7. How will the fill be retained? Complete appropriate appendix.

   Fill will be placed similar to existing waterbody bottom

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, fill submerged

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   N/A

Plan Sheets: 41, 50, 65, 109

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? Entire ft.

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of ~~mean~~ high water) 5,313 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 1,225 cubic yards Includes Riprap volume
   a. What is the total fill per running foot of shoreline? 0.82 cubic yards ~750 LF x 2 banks, 1500 bank feet

5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Sandy gravel

7. How will the fill be retained? Complete appropriate appendix.

   Flow will be directed through a pipe installed under the fill. Swale will be vegetated.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Swale area mix, see Vegetated Cover Restoration Planset

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   Manholes at pipe joints, see detail.

Plan Sheets: 57, 58, 60, 107, 110

JETTIES, GROINS, OR BREAKWATERS

* Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. What type of material(s) will be used for the construction of the structure(s) (e.g. quarry stone, timber, rock gabions, sandbags, etc.)? Rock Gabion Baskets

2. How many feet will the structure(s) be placed channelward of the:
   a. Tidal Waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? 0-10 ft.

3. How much of your project will be located:
   channelward of mean high water? 1,030 sq. ft.
   on vegetated wetlands? _____ sq. ft.

4. What will be the distance of separation between individual structures? N/A, one wall ft.

5. Are there similar structures in the vicinity of the project? ____ Yes X No
   If your answer is "Yes", describe the type and location(s) of the structures.

6. The structure(s) will be of: (check one)
   _____ Low-Profile design
   X Continuous height

7. How many feet will the structure(s) be placed landward of the:
   a. tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. non-tidal waters: ordinary high water line? 0–7.5 ft.

8. Will the area in the vicinity of the structure(s) be artificially nourished?
   X Yes _____ No If the answer if "Yes", complete Appendix H. Fill behind gabion baskets will be entirely in uplands

9. Approximately how many feet of shoreline have you lost over the last year?
   _____ ft. (width) _____ ft. (length) N/A, for height extension

Will the landward end(s) of the structure be protected from out flanking with rip-rap? _____ Yes X No If our answer is "Yes", complete Appendix

Plan Sheets: 57, 58, 60, 107

BULKHEADS

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. Will the project be considered new construction or repair and replacement of an existing and currently serviceable bulkhead?

   _____ New Construction
   X _____ Repair and Replacement
   If repair and replacement, attach photos of entire length of project.

1. What is the current condition of the shoreline at the site of the proposed bulkhead?

   Existing sheetpile does not provide adequate freeboard and there is erosion behind existing sheetpile, berm acts as dam and needs to be raised.

2. Please attach an analysis of all alternatives to bulkheading as a shoreline stabilization method for this project. Please examine options using vegetation and/or non-vertical walled structures. Include a justification of need, based on the extent of erosion and the rate of erosion. This application will not be reviewed if this answer is not completed. Alternatives to bulkheading would require substantial slope grading into subaqueous lands to ensure stability of existing berm.

3. If is this is a repair or replacement,

   Do you intend to step out in front of existing bulkhead? X _____Yes _____ No
   Is the current bulkhead creosote? _____Yes X _____ No
   Will the new bulkhead be placed on or off the applicant's property?
   X _____ On _____ Off Please indicate property lines on attached plans as well as MHW/MLW.

4. How many linear feet of shoreline are to be bulkheaded? 44 _____ ft. 22 ft sheet pile x 2 installations on either side of pipes

5. What will be the overall length of the bulkhead (including return walls)? 44 _____ ft.

6. How many ends of the bulkhead will be tied into existing bulkheads which are in good repair?
   X _____ None _____ One _____ Two
7. Will the return walls be protected from out flanking with rip-rap?
   _____ Yes X _____ No If your answer is "Yes", complete Appendix I.
8. Will the toe of your bulkhead be protected from undercutting with rip-rap?
   _____ Yes X _____ No If your answer is "Yes" complete Appendix I.
9. What type of material(s) will be used for construction of the bulkhead (e.g. reinforced concrete, steel sheet pilings, treated tongue-and-groove timber, etc.)?

   Steel sheetpile with concrete fill between new/existing sheetpile, galvanized fittings, tied with dows

10. Will deadmen be utilized _____ Yes X_____ No If your answer is "Yes", indicate the type and location on your drawings/ If your answer is "No", explain the method to be used to anchor the bulkhead.
Concrete fill will be poured between new and existing sheetpile.

11. Will wooden materials be: _____ Salt Treated _____ Other
Not applicable

12. Will all metal fittings, cables, or tie rods be galvanized? X_____ Yes _____ No

13. Will the bulkhead be backfilled? X_____ Yes _____ No If your answer is "Yes", complete Appendix H.

14. Will filter cloth be used? _____ Yes X_____ No If your answer is "No", explain the method to be used to control seepage of backfill from behind the bulkhead.
Void between new and existing sheetpile will be filled with concrete.

15. Have you consulted an engineer or other professional to assure that the design of your bulkhead will be adequate? X_____ Yes _____ No If your answer is "Yes", give the name and address of the party consulted.

Name: Stantec Consulting Services Inc.
Address:

Date:

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? N/A ft.
      mean low water line? N/A ft.
   b. Non-tidal waters: ordinary high water line? 2.5 ft. 2.5 ft, either side

2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of ~~mean~~ high water) 110 sq. ft. total, both sides
   b. on vegetated wetlands? N/A, nontidal sq. ft.

3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? 8.5 cubic yards
   a. What is the total fill per running foot of shoreline? 0.2 cubic yards ~22 LF x 2 banks, 44 bank feet

5. What method will be used to place the fill?

   Fill will be placed with concrete hose or sluice.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Concrete fill (to OHW behind step-out sheetpile), above OHW: concrete, 1' soil, 6" stone.

7. How will the fill be retained? Complete appropriate appendix.

   Fill within top of sheetpile

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, 6" engineered stone cover

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   Gravel road

Plan Sheets: 59, 60

Road Crossings

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

General Information

1. Will the project be:

X New Construction
____ Repair or Replacement of an Existing Structure

2. Describe the purpose for the proposed road crossing activity:
Not a road crossing activity; appendix utilized for pipe information. Pipe will be extended to accommodate sheetpile step-out.

3. Is the crossing a:

___ Bridge (preferred) ___ Bottomless or Arched Culvert X Pipe Culvert

___ Box Culvert ___ Multiple Barrel Culvert

___ Other (describe)_____

If other than a bridge is proposed, could bridging be constructed to avoid impacts to the waterbody? ___ Yes X No If no, please provide specific justification:
Existing pipe will be extended approximate 3.5 feet and duck-bill valve installed to prevent backflow into the site.

4. If culvert pipes are proposed, provide the pipe lengths and diameters:
Existing 24" pipe will receive approximately 3.5-foot extension

If a bridge, bottomless culvert or box culvert is proposed, provide the dimensions:
N/A

What will be the slope of the culvert?
Match existing

5. What materials will the structure(s) be made of?
Concrete

Waterbody Information

6. Name of the waterbody at the project location: Unnamed Tributary
   Waterbody is a tributary to: Unnamed Tributary to Brandywine Creek

7. What is the width of the waterbody at the project site? ~20 feet at discharge

8. How many linear feet of stream will be affected by the crossing?
   Pipe 3.5 ln ft. Inlet Structure _____ ln ft. Outlet Structure _____ ln ft.

9. What is the total area of impact in the waterbody? (including inlet and outlet protection structures, sideslope embankments, etc.): Discharge onto existing riprap

   Tidal Waters
   Below the mean high water line ____ sq. ft.
   Below the mean low water line ____ sq. ft.

   Non-tidal Waters
   Below the Ordinary high water line 20 sq. ft.

   In tidal wetlands _____ sq. ft. (attach appropriate appendix)

10. For non-tidal waters, what is the approximate median stream flow rate at the site:

    Before construction: 1.5 cfs
    After construction: 1.5 cfs

    What is the bankfull discharge (~1 yr storm) of the stream at the site? _____ cfs

11. What is the watershed area above the project site? 115 acres (acres or square miles)

12. If the road crossing is not over undeeded public subaqueous lands or a DelDOT right of way, who is the owner of the underwater lands? Applicant

13. Please include evidence of written permission from the underwater landowner indicated above (if other than the applicant) with this Appendix.

Design Features

14. Describe design features that will be incorporated to allow for fish passage:

Not applicable, fin fish are unlikely to occur within stream segment and fish passage is precluded by a downstream tide gate. Fish will further be precluded by duckbill valve.

15. Describe design features that will maximize the preservation of natural channel features and minimize adverse impacts to stream morphology and stability:

Not applicable, waterbody already includes current installation, to be extended ~3.5 feet.

16. If culvert pipes are proposed:

Will the pipe bottom be buried below the natural streambed? ___Yes X No
If yes, how far will the pipe invert be placed below the streambed elevation? _____ inches
If no, explain why:

Pipe will discharge slightly above original stream grade to meet elevations of riprap outfall and to retain proper slope for downstream stream segment.

For multiple barrel culvert designs, will a low flow barrel be incorporated?
___Yes X No
If no, explain why:

Not Applicable, existing pipes will only be extended.

17. What storm event is the structure designed to pass? (i.e. 10 yr storm, 25 yr storm)

100-yr

18. Will the structure include an apron or other inlet/outlet protection? ___Yes X No
If yes, describe the dimensions and materials that will be utilized:

Existing riprap outfall

19. Is any fill associated with the proposed activity? ___Yes X No If yes, attach the appropriate appendix.

20. Will any sideslope embankments be constructed in the waterbody? ___Yes X No
If yes, what is the average slope of the embankments? _____

21. Will any utilities be associated with the road crossing? ___Yes X No
If yes, attach the appropriate appendix.

Plan Sheets: 63, 65, 109, 110, 119

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 20LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing swale has small intermittent stream channel flanked by herbaceous and scrub-shrub vegetation with scattered trees. Area above will be piped and riprap will serve as outfall.

5. What is the total number of cubic yards of rip-rap that will be used? 17.78CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.44CY/FT (20LF of stream ~~x 2 banks~~)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: Entire (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 300 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X Yes ___ No

   E. What is the average slope of the existing bank? N/A, upstream bank will be filled for pipe run

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of pipe run upslope and placement of cover fill. The riprap outfall will be installed at the end of the flared-end pipe run. See construction detail for additional information. Work will be performed in the dry via dewatering. Vegetation will be restored per Vegetated Cover Restoration Planset.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 64, 65, 109

Road Crossings

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

General Information

1. Will the project be:

X New Construction
____ Repair or Replacement of an Existing Structure

2. Describe the purpose for the proposed road crossing activity:
Not a road crossing activity; appendix utilized for pipe information. Pipe will convey upslope flows to stabilized outfall for remediation of contaminated soils.

3. Is the crossing a:

___ Bridge (preferred) ___ Bottomless or Arched Culvert X Pipe Culvert

___ Box Culvert ___ Multiple Barrel Culvert

___ Other (describe)_____

If other than a bridge is proposed, could bridging be constructed to avoid impacts to the waterbody? ___ Yes X No If no, please provide specific justification:
The pipe run is required to convey upslope waters through contaminated soil area.

4. If culvert pipes are proposed, provide the pipe lengths and diameters:
Top to bottom: 132LF 14"x23" RCP, 183LF 30" HDPE, 181LF 30" HDPE, 295LF 30" HDPE

If a bridge, bottomless culvert or box culvert is proposed, provide the dimensions:
N/A

What will be the slope of the culvert?
0.23%

5. What materials will the structure(s) be made of?
See #4 above

Waterbody Information

6. Name of the waterbody at the project location: Unnamed Tributary
   Waterbody is a tributary to: Unnamed Tributary to Brandywine Creek

7. What is the width of the waterbody at the project site? 5-15 feet

8. How many linear feet of stream will be affected by the crossing?
   Pipe ~790 ln ft. Inlet Structure _____ ln ft. Outlet Structure 20 ln ft.

9. What is the total area of impact in the waterbody? (including inlet and outlet protection structures, sideslope embankments, etc.):

   Tidal Waters
   Below the mean high water line ____ sq. ft.
   ft.
   Below the mean low water line ____ sq. ft.

   Non-tidal Waters
   Below the Ordinary high water line 5313 sq.

   In tidal wetlands _____ sq. ft. (attach appropriate appendix)

10. For non-tidal waters, what is the approximate median stream flow rate at the site:

    Before construction: 17 cfs
    After construction: 17 cfs

    Based on outfall 006B design

    What is the bankfull discharge (~1 yr storm) of the stream at the site? 17 cfs

11. What is the watershed area above the project site? ~24 acres (acres or square miles)

12. If the road crossing is not over undeeded public subaqueous lands or a DelDOT right of way, who is the owner of the underwater lands? Applicant

13. Please include evidence of written permission from the underwater landowner indicated above (if other than the applicant) with this Appendix.

Design Features

14. Describe design features that will be incorporated to allow for fish passage:

Not applicable, fin fish are unlikely to occur within stream segment and fish passage is precluded by a downstream tide gate.

15. Describe design features that will maximize the preservation of natural channel features and minimize adverse impacts to stream morphology and stability:

Not applicable, upper West Drainage Ditch stream segment will be piped due to contaminated soils.

16. If culvert pipes are proposed:

Will the pipe bottom be buried below the natural streambed? ___Yes X No
If yes, how far will the pipe invert be placed below the streambed elevation? _____ inches
If no, explain why:

Pipe will discharge slightly above original stream grade to meet elevations of riprap outfall and to retain proper slope for downstream stream segment.

For multiple barrel culvert designs, will a low flow barrel be incorporated?
___Yes ___ No
If no, explain why:

Not Applicable

17. What storm event is the structure designed to pass? (i.e. 10 yr storm, 25 yr storm)

100 yr

18. Will the structure include an apron or other inlet/outlet protection? X Yes ___ No
If yes, describe the dimensions and materials that will be utilized:

Riprap outlet protection. 20' x 9'/23' x 1.83' (Length x Width at pipe/Width at end x Depth).
~~GS-1 geotectile fabric underlayment. 6" stone. See Riprap Appendix for additional detail.~~

19. Is any fill associated with the proposed activity? X Yes ___ No If yes, attach the appropriate appendix.

20. Will any sideslope embankments be constructed in the waterbody? ___Yes X No
If yes, what is the average slope of the embankments? _____

21. Will any utilities be associated with the road crossing? ___Yes X No
If yes, attach the appropriate appendix.

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 16 LF Stream (combined)

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing channel flanked by herbaceous and scrub-shrub vegetation with scattered trees. Only a portion of the riprap outfall(s) will be located within the OHW.

5. What is the total number of cubic yards of rip-rap that will be used? 3.5CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.1 CY/LF (16 LF of stream, 4 banks)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: Entire (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 60 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X___ No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X___ Yes ___ No

   E. What is the average slope of the existing bank? 4:1

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of riprap outfall. The riprap will be installed at the end of the new pipe outfall. See construction detail for additional information. Work will be performed in the dry via dewatering. Surrounding area will be reseeded.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 98, 119

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 15 LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Scattered trees and scrub-shrub vegetation

5. What is the total number of cubic yards of rip-rap that will be used? 11.8 CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.8 CY/FT (15 LF of stream)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 29" Core stone: 29"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: 17 _____ (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 133 _____ (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X___ No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X___ Yes ___ No

   E. What is the average slope of the existing bank? 4:1 _____

   F. What is the proposed slope of the rip-rap revetment? 0% _____
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for excavation work along Outfall 002; Temporary Outfall 002 will serve as stormwater bypass as work is performed

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 101, 106, 107, 108, 119

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 18.5 LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing riprap along shoreline, scattered trees along bank

5. What is the total number of cubic yards of rip-rap that will be used? 11 CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.6 CY/FT (18.5 LF of stream)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: 16 (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 205 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X Yes ___ No

   E. What is the average slope of the existing bank? N/A, upstream bank will be filled for pipe run

   F. What is the proposed slope of the rip-rap revetment? 1%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of gabion basket wall and slope grading. Temporary pipe discharges will occur on temporary riprap outfall. Area will be reseeded.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

III. 6/3= Slope of 2

Plan Sheets: 109, 119

Rip-Rap Sills and Revetments

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Will the project be:
   X New Construction (un-stabilized shoreline)
   _____ Repair or Replacement of an Existing Rip-Rap Structure or Rubble
   _____ Repair or Replacement of an Existing Bulkhead
   (If repair or replacement, submit photographs of the entire existing structure).

2. How many linear feet of shoreline are proposed to be stabilized? 16 LF Stream

3. Is the project a: X Standard rip-rap revetment ___ Free-standing sill

4. Describe the existing shoreline:
   Existing swale has small intermittent stream channel flanked by herbaceous and scrub-shrub vegetation with scattered trees. Temporary discharge for upslope work

5. What is the total number of cubic yards of rip-rap that will be used? 5.5 CY

6. What is the number of cubic yards of rip-rap per running foot of shoreline? 0.2 CY/FT (20LF of stream ~~x 2 banks~~)
   (See page 4 for a guide to calculating total cubic yards and cubic yards per running foot).

7. What will be the average weight of the stone used for the:
   Armor stone: 6" Core stone: 6"
   [If material other than stone, such as prefab geo-grid or other similar product is proposed, please describe here and include photographs or a brochure. The Department strongly discourages the use of broken concrete, cinderblocks or other materials that are less dense than stone, more apt to move off site due to currents or wave action, and/or are not aesthetically pleasing or in keeping with the natural environment.]
   Describe:

8. For Standard Revetments answer A–F, below: (for Sill projects, skip to Question #9)
   A. How many linear feet will the structure extend channelward of:
   Mean High Water: _____Mean Low Water: _____
   Ordinary High Water: Entire (for non-tidal waters)

   B. How many square feet of the structure will be located:
   Channelward of Mean High Water: _____Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: 96 (for non-tidal waters)
   On vegetated wetlands: _____

   C. Will the revetment be backfilled? ___ Yes X No
   If yes, complete Appendix H and include it in your application.

   D. Will filter cloth be used behind the rip-rap structure? X Yes ___ No

   E. What is the average slope of the existing bank? N/A, 4:1

   F. What is the proposed slope of the rip-rap revetment? 0%
   (See page 3 for a guide to calculating slopes).
9. Sill Projects:
   A. What is the base width of the proposed structure: _____
   B. What is the top width of the proposed structure: _____
   C. How many square feet of the structure will be located:

   Channelward of Mean High Water: _____ Channelward of Mean Low Water: _____
   Channelward of Ordinary High Water: _____ (for non-tidal waters)
   On vegetated wetlands: _____

   D. What will be the average height of the structure: _____
   E. How much of the structure (in inches) will extend vertically above:

   Mean High Water: _____ Ordinary High Water: _____ (for non-tidal waters)

   F. Are breaks or notches proposed in the sill to allow for greater flushing? ___ Yes___ No
   G. Will fill material be placed behind the sill? ___ Yes ___ No If yes, complete appropriate appendix.

   H. Will wetland vegetation be planted behind the sill? ___ Yes ___ No
   If yes, complete Appendix H and include it in your application.

10. Construction Techniques (Complete for both Revetment and Sill Projects):

A. Will any dredging be required? ___ Yes X___ No

If yes, please include appropriate dredging Appendix with your application).

B. Please describe the sequence of construction and any techniques that will be utilized to minimize adverse impacts on the aquatic environment, and to preserve existing vegetation (particularly woody vegetation) along the shoreline:

Existing vegetation will be cleared for installation of pipe run upslope and placement of cover fill. The riprap outfall will serve as the temporary discharge point while upslope construction is occurring.

CALCULATIONS

RUN = Base width of the structure (in feet) RISE = Vertical height of the structure (in feet)

I. How to calculate total cubic yards:

0.5 * RUN * RISE * Linear feet of shoreline stabilized/27 = Total Cubic Yards

II. How to calculate cubic yards per running foot of shoreline:

Total # Cubic Yards/ Linear feet of shoreline = Cubic yards per running foot

III. How to calculate slope: Slope = RUN/RISE

EXAMPLE:

If we propose to stabilize 100 linear feet of shoreline with a rip-rap revetment that has a basewidth of 6 feet and a height of 3 feet:

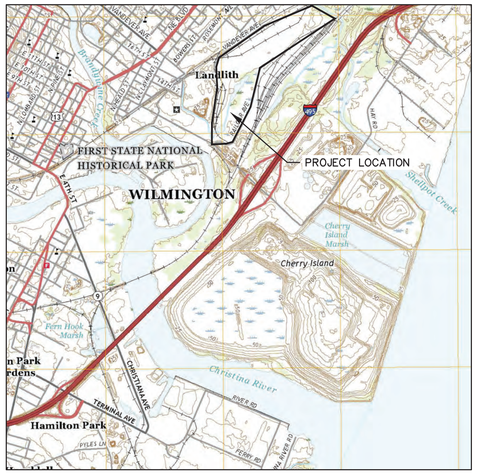
0.5 * 6 * 3 * 100/27 = 33.33 Total Cubic Yards

II. 33.33/ 100= 0.333 Cubic Yards per running foot

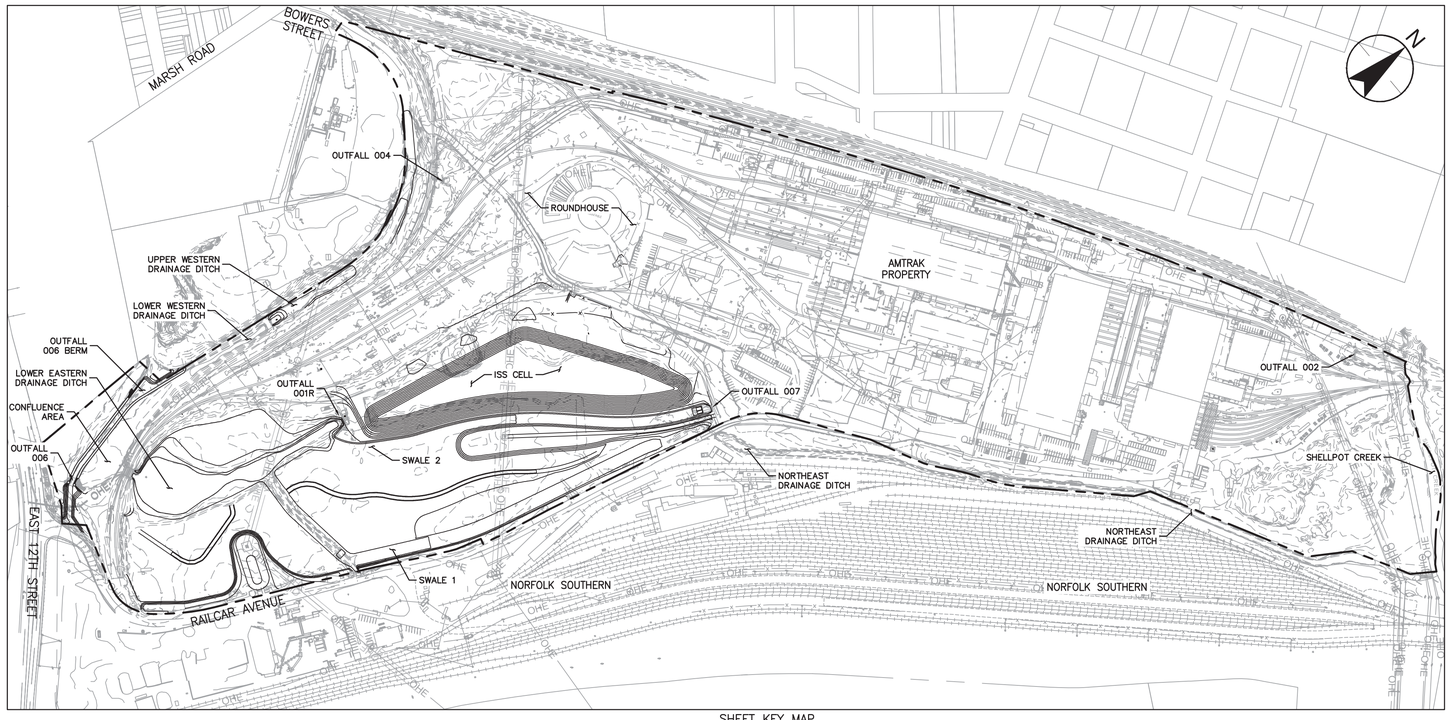
III. 6/3= Slope of 2

CONSTRUCTION PLAN SET
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
TAX PARCELS 2603700007, 2603700013, 2603000064, & 0615200011
CITY OF WILMINGTON, NEW CASTLE COUNTY, DELAWARE

AMTRAK®



USGS WILMINGTON SOUTH QUADRANGLE
DELAWARE-NEW JERSEY
SCALE 1"=2,000'



SHEET KEY MAP
SCALE 1"=250'

NOTIFICATION PRIOR TO CONSTRUCTION:

NOTIFY AMTRAK AT LEAST 60 DAYS PRIOR (AMTRAK TO CONFIRM) TO THE START OF ANY CONSTRUCTION ACTIVITIES FOR CLEARANCE AND ACCESS TO THE PROPERTY, ADVANCED NOTICE AS SPECIFIED, INCLUDING INSTRUCTIONS FOR WORK TIME FRAME, RAILROAD CLEARANCE AND SAFETY REQUIREMENTS.

NOTIFICATION TO NORFOLK SOUTHERN IS REQUIRED 60 DAYS PRIOR (AMTRAK TO CONFIRM) TO STARTING WORK AS DESCRIBED IN THE ACCESS AGREEMENT DATED XX.

NOTIFY THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL'S (DNREC) DIRECTOR OF WATERSHED STEWARDSHIP AT **(302) 608-5458** AT LEAST 5 DAYS PRIOR TO THE START OF ANY LAND DISTURBANCE TO SCHEDULE A PRE-CONSTRUCTION MEETING.

GENERAL NOTES:

1. DNREC ISSUED THE FINAL PLANS FOR REMEDIATION AT THE AMTRAK FORMER FUELING FACILITY (DE-0266) AND AMTRAK MAINTENANCE FACILITY (DE-0170) REFERRED TO AS THE AMTRAK WILMINGTON SHOPS. AMTRAK AND APU WILL BE REMOVING IMPACTED SEDIMENTS AND SOILS (IMPACTED BY PCBs) SITUATED ON AMTRAK AND NORFOLK SOUTHERN PROPERTY TO THE DEPTH OF UNDERLYING CLAY FOR SEDIMENT AND TO SPECIFIC DEPTHS FOR SOILS. THE EXCAVATED SEDIMENT WILL BE PLACED AT THE AMTRAK FACILITY, STAGED IN SECURE LOCATIONS AS SHOWN ON THIS PLAN, STABILIZED AND PLACED IN A CONTAINMENT CELL CONSTRUCTED ON AMTRAK PROPERTY. THE DITCHES WILL BE RESTORED, AFTER REMOVAL OF THE SEDIMENT. THE UPLAND AREAS OF THE WILMINGTON SHOPS WILL BE RESTORED WITH ENGINEERED COVERS AND TSCA EQUIVALENT CAPS, PLACED THROUGHOUT THE SHOPS.
2. THE EARTH MOVING CONTRACTOR OR EXCAVATOR MUST CONTACT DELMARVA 811 AT 800-282-8555 AND REQUEST THAT ALL UTILITY LINES BE MARKED IN THE FIELD ON THE PROJECT SITE "NOT LESS THAN 2 WORKING DAYS, BUT NO MORE THAN 10 WORKING DAYS, PRIOR TO THE EXCAVATION OR DEMOLITION ACTIVITIES".
3. AMTRAK IS THE RESPONSIBLE PARTY OF THIS PROJECT.
4. DURING EXCAVATION, ALL SEDIMENT WILL BE DEWATERED BY FIRST GRAVITY DRAINING SURFACE WATER, THEN REMOVING PORE WATER AND PUMPING TO FRAC TANKS FOR TREATMENT IN ACCORDANCE WITH NDPDES PERMIT. SEDIMENT WILL BE DRIED BY USING QUICK LIME. ADDITIONAL WATER ENCOUNTERED IN EXCAVATION AREAS WILL BE PUMPED INTO FRAC TANKS, WHICH THEN WILL BE TREATED IN ACCORDANCE WITH THE NPDES PERMIT PRIOR TO DISCHARGE.
5. PLAN REVISIONS OR DEVIATIONS FROM PROPOSED CONSTRUCTION WORK ON THE PLANS MUST BE APPROVED BY STANTEC PRIOR TO THOSE CHANGES BECOMING PERMANENT.
6. A COPY OF THE APPROVED CONSTRUCTION PLANS AND EROSION AND SEDIMENTATION CONTROL PLANS MUST BE ON SITE DURING CONSTRUCTION.
7. ANY EXCESS SOIL MATERIALS THAT MUST BE DISPOSED OFF-SITE AT A LICENSED DISPOSAL FACILITY SHOULD NOT BE LOCATED IN ANY WETLANDS, STREAM CHANNEL, FLOODWAY OR FLOODPLAIN UNLESS SPECIFIED.
8. STANTEC HAS PREPARED THE PROJECT PLANS AND DOCUMENTS WITH SKILL AND CARE AND IS NOT RESPONSIBLE FOR CONTRACTORS MEANS AND METHODS, PROJECT SEQUENCING, SCHEDULES OR SAFETY. WHILE ACTIVITIES MAY BE DESCRIBED IN REPORTS AND DOCUMENTS, THEY ARE FOR ILLUSTRATIVE PURPOSES FOR THE BENEFIT OF PROJECT UNDERSTANDING. STANTEC'S ROLE FOR THIS PROJECT IS FOR GENERAL CONFORMANCE, NOT SUPERVISION. STANTEC DOES NOT WARRANT OR GUARANTEE THE CONTRACTOR'S PERFORMANCE.

NATURAL RESOURCE NOTES:

1. WETLANDS ARE LOCATED WITHIN THE PROJECT'S WORK AREA. STATE AND FEDERAL ENROACHMENT PERMITS WILL BE OBTAINED PRIOR TO CONSTRUCTION.
2. A PORTION OF THE WILMINGTON SHOPS FACILITY PROPERTY THAT IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS MAPPED BY FEMA IS DEPICTED AS ALL AREAS AT ELEVATION 9 AND LOWER.

PROJECT NOTES:

1. ENTIRE WORK AREA IS WITHIN TAX MAP ID: PARCEL ID #2603700007, #2603700013, #2603000064, AND #0615200011
2. SITE ADDRESS: 4001 VANDEVER AVE. WILMINGTON, DE 19802
3. EXISTING SITE AREA: ENTIRE FACILITY = 113.91 ACRES (INCLUDES FORMER FUELING FACILITY, AMTRAK WILMINGTON SHOPS, AND OTHER PARCELS).
4. EXISTING WETLAND AREA = 16.06 ACRES.
5. TOTAL LIMIT OF DISTURBANCE AREA = 52.37 ACRES
6. SITE DISTURBANCE ON NORFOLK SOUTHERN'S PROPERTY = 1.96 ACRES
7. PROPOSED PROJECT AREA DISTURBANCE WILL DIFFER PER PHASE. REFER TO EACH DRAWING FOR LOD FOR EACH PHASE. NOTE THAT LOD INCLUDES UPLAND DISTURBANCE FOOTPRINT AND WETLAND AND SUBAQUEOUS LAND IMPACTS AUTHORIZED UNDER SEPARATE PERMITS.
8. PROPOSED DISCHARGE LOCATIONS: NO STORMWATER DISCHARGE POINTS VIA NEW OUTFALLS OTHER THAN TEMPORARY OUTFALLS AS DESCRIBED.
9. HORIZONTAL DATUM: NAD83 DELAWARE STATE PLANE COORDINATE SYSTEM.
10. DNREC SEDIMENT AND STORMWATER PROGRAM PROJECT APPLICATION I.D.: 2025-046
11. PROJECT PERMITS AND AGREEMENTS
    - 11.1. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING ALL ACTIVITIES IN COMPLIANCE WITH ALL PROJECT PERMITS, INCLUDING ACCESS AGREEMENTS.
    - 11.2. PROJECT RELATED PERMITS AND AGREEMENTS ARE LISTED ON SHEET 2, PROJECT PERMIT LEDGER.

OWNER CERTIFICATION:

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E., BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVER SHEET.

OWNER REPRESENTATIVE _____ DATE _____

AMTRAK
4001 VANDEVER AVE.
WILMINGTON, DE 19802
PHONE: 302-429-6458

SITE DESIGNER CERTIFICATION:

I, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

SITE DESIGNER _____ DATE _____

RYAN P. VEASY, P.E.
P.E. LICENSE #24754
1060 ANDREW DRIVE, SUITE 140
WEST CHESTER, PA 19380
PHONE: 610-840-2500

WETLAND CERTIFICATION:

THIS PROPERTY, TAX MAP #2603700007, #2603700013, #2603000064, AND #0615200011 HAS BEEN EXAMINED BY STANTEC CONSULTING SERVICES INC. FOR THE PRESENCE OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS (SECTION 404 AND SECTION 10), STATE SUBAQUEOUS LANDS AND STATE REGULATED WETLANDS AS ESTABLISHED BY THE REVIEWING AGENCIES IN THE FORM OF MANUALS, POLICIES AND PROCEDURES IN PLACE AT THE TIME THAT THE INVESTIGATION WAS CONDUCTED. THE WETLAND INFORMATION CONTAINED IN THIS PLAN SET IS IN ACCORDANCE WITH THIS CRITERIA, A SEPARATE SUBMISSION IS BEING PREPARED FOR REVIEW FOR THE NWP-38 AND WILL BE PROVIDED WHEN APPROVED.

SITE DESIGNER _____ DATE _____

RYAN P. VEASY, P.E.
P.E. LICENSE #24754
1060 ANDREW DRIVE, SUITE 140
WEST CHESTER, PA 19380
PHONE: 610-840-2500

DELMARVA 811:

IT IS THE DUTY OF THE EXCAVATOR COMPLETING THE EXCAVATION WORK SHOWN ON THESE PLANS TO "NOTIFY THE APPROVED NOTIFICATION CENTER NOT LESS THAN 2 WORKING DAYS, BUT NO MORE THAN 10 WORKING DAYS, PRIOR TO THE EXCAVATION OR DEMOLITION ACTIVITIES." THIS NOTIFICATION SHOULD BE COMPLETED BY THE EXCAVATOR CALLING "DELMARVA 811" AT 800-282-8555 AND REQUESTING THAT ALL UTILITY LINES BE MARKED IN THE FIELD ON THE PROJECT SITE AND THAT MAPPING BE PROVIDED PRIOR TO ALL EXCAVATION WORK.
STANTEC DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE OR GUARANTEE THAT THE INFORMATION RECEIVED PURSUANT TO THE SAID NOTICE OF INTENT TO EXCAVATE REQUEST OR WHAT IS REFLECTED ON THESE DRAWINGS IS CORRECT OR ACCURATE, BUT STANTEC IS REFLECTING THAT THE NOTICE OF INTENT TO EXCAVATE ON A DESIGN LEVEL HAS BEEN REPORTED.

KNOW WHAT'S BELOW.
CALL BEFORE YOU DIG.

UTILITIES ARE PLOTTED FROM FIELD LOCATION AND ANY RECORD INFORMATION AVAILABLE, AND SHOULD BE CONSIDERED APPROXIMATE. OTHER UTILITIES MAY EXIST WHICH ARE NOT EVIDENT OR FOR WHICH RECORD INFORMATION WAS NOT AVAILABLE. CONTRACTORS MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING. CALL BEFORE YOU DIG: 800-282-8555
WEBSITE: WWW.DELMARVA811.COM

NOTE FOR DNREC REVIEW:

Corresponding DNREC Appendices and Impacts are labeled herein.

Impacts are labeled for subsequent detail sheets; not every impact is labeled at every visible plan view instance.

Irrelevant sheets (for upland work) have been removed for document size.

BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK®
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-6458

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

COVER PAGE
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	G-001
SHEET:	1 OF 135
REV:	0

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ORIGINAL SHEET - ARCH D

WILMINGTON SHOPS REMEDIATION
PERMIT LEDGER
(INCLUDING ACCESS AGREEMENTS AND AGENCY LETTERS)

PERMIT/AUTHORIZATION		SUBMISSION DATE	SUBMISSION DATE	SUBMISSION DATE	SUBMISSION DATE	NOTES
USACE	NATIONWIDE PERMIT 38 CLEANUP OF HAZARDOUS AND TOXIC WASTE (NWP–38)					
DNREC	APPLICATION FOR APPROVAL OF SUBAQUEOUS LANDS, WETLANDS, MARINA, AND WATER QUALITY CERTIFICATION PROJECTS					
DNREC	APPLICATION FOR SEDIMENT AND STORMWATER MANAGEMENT PROJECTS (DNREC 5101)	9/19/2025				
DNREC	DISCHARGE AUTHORIZATION IN LIEU OF PERMIT FOR TEMPORARY MODIFICATIONS TO OUTFALL 006					
DNREC	DISCHARGE AUTHORIZATION IN LIEU OF PERMIT FOR TEMPORARY DISCHARGE FROM TREATMENT WORKS					
DNREC	DEWATERING PERMIT					
DE SHPO	REQUEST FOR CONSULTATION TO SHPO – SECTION 106 OF NATIONAL HISTORIC PRESERVATION ACT					
FRA	CATEGORICAL EXCLUSION REVIEW FORM FOR FRA DETERMINATION UNDER NEPA					
CITY OF WILMINGTON	CONSTRUCTION PERMIT					
NSRC	DELEGATION OF AUTHORITY FROM NORFOLK SOUTHERN RAILWAY COMPANY (NSRC) FOR PERMIT APPROVAL	7/7/2025				
NSRC	NORFOLK SOUTHERN RAILWAY COMPANY ACCESS AGREEMENT RIGHT OF ENTRY PERMIT					ADJACENT PROPERTY OWNER
TAX PARCEL 2603700006	ACCESS AUTHORIZATION FOR OUTFALL 006 BERM EXTENSION					ADJACENT PROPERTY OWNER
USFWS	SECTION 7, CONSULTATION; VOLUNTARY CONSERVATION MEASURE	8/12/2025				AVOID CLEARING MAY 15 TO JULY 31
USEPA	JUNE 2025 RISK BASED DISPOSAL APPROVAL APPLICATION	6/10/2025				
DNREC	VOLUNTARY CLEANUP PROGRAM, PURSUANT TO HAZARDOUS SUBSTANCE CLEANUP ACT (HSCA), 7 DEL.C.CHAPTER 91; VCP AGREEMENT					
AMTRAK	FACILITY PERMIT NPDES #DE0050962					

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REV	DATE	DESCRIPTION	APPROVED	BY

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THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

DRAWING INDEX AND PERMIT LEDGER
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: G-002
SHEET: 2 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

GENERAL NOTES:

1. THE EARTH MOVING CONTRACTOR OR EXCAVATOR MUST CONTACT DELMARVA 811 AT 800-282-8555 AND REQUEST THAT ALL UTILITY LINES BE MARKED IN THE FIELD ON THE PROJECT SITE "NOT LESS THAN 2 WORKING DAYS, BUT NO MORE THAN 10 WORKING DAYS, PRIOR TO THE EXCAVATION OR DEMOLITION ACTIVITIES". FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.
2. AMTRAK IS THE RESPONSIBLE PARTY OF THIS PROJECT.
3. DURING EXCAVATION, ALL SOILS WILL BE DEWATERED BY PUMPING ENCOUNTERED WATER INTO FRAC TANKS WITH OIL/WATER SEPARATORS, WHICH THEN WILL BE FILTERED THROUGH CARBON (AND OTHER TREATMENT) AND DISCHARGED IN ACCORDANCE WITH NPDES PERMITS. (SEE PERMIT LEDGER ON SHEET 2)
4. PLAN REVISIONS OR DEVIATION FROM PROPOSED CONSTRUCTION WORK ON THE PLANS MUST BE APPROVED BY STANTEC PRIOR TO THOSE CHANGES BECOMING PERMANENT INCLUDING ANY REQUESTED MODIFICATIONS TO PERMITS.
5. A COPY OF THE APPROVED CONSTRUCTION PLANS AND EROSION AND SEDIMENTATION CONTROL PLANS MUST BE ON SITE DURING CONSTRUCTION.
6. ANY EXCESS SOIL MATERIALS THAT MUST BE DISPOSED OFF-SITE AT A LICENSED DISPOSAL FACILITY SHOULD NOT BE LOCATED IN ANY WETLANDS, STREAM CHANNEL, FLOODWAY OR FLOODPLAIN UNLESS SPECIFIED. ANY SOIL DISPOSAL MUST BE CONSISTENT WITH THE APPROVED RBDAA DATED JUNE 2025, AND IN ACCORDANCE WITH TSCA AND OTHER FEDERAL & STATE REGULATIONS.

NATURAL RESOURCE NOTES:

1. WETLANDS ARE LOCATED WITHIN THE PROJECT'S WORK AREA. STATE AND FEDERAL ENROACHMENT PERMITS WILL BE OBTAINED PRIOR TO CONSTRUCTION FOR MINOR IMPACTS. WETLAND IMPACTS WILL BE RESTORED IN ACCORDANCE WITH APPLICABLE PERMITS.
2. A PORTION OF THE WILMINGTON SHOPS FACILITY PROPERTY THAT IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS MAPPED BY FEMA IS DEPICTED AS ALL AREAS AT ELEVATION 9 AND LOWER.
3. EXCAVATION MATERIAL FROM WETLANDS AT THE START AND THE END OF EACH RESTORATION PHASE SHOULD BE STOCKPILED SEPARATELY SO THAT HYDRIC SOILS CAN BE USED IN WETLAND RESTORATION. DETAILS FOR TEMPORARY SOIL STOCKPILES ARE SHOWN ON SHEET 118.
4. TWO SPECIES WERE NOTED ON THE PROPOSED ENDANGERED OR THREATENED LISTING. U.S. FISH AND WILDLIFE RECOMMENDS AMTRAK AVOID TREE CLEANING FROM MAY 15 TO JULY 31 AS A VOLUNTARY CONSERVATION MEASURE. ANY DEVIATION OF THIS VOLUNTARY CONSERVATION MEASURE REQUIRES AMTRAK PRE-APPROVAL.

PROJECT NOTES:

1. ENTIRE WORK AREA IS WITHIN TAX MAP ID: PARCELS ID #2603700007, #2603700013, #2603000064, AND #0615200011
2. SITE ADDRESS: 4001 VANDEVER AVE. WILMINGTON, NEW CASTLE COUNTY, DE 19802
3. EXISTING SITE AREA; ENTIRE FACILITY = 113.91 ACRES (INCLUDES FORMER FUELING FACILITY, AMTRAK WILMINGTON SHOPS, AND OTHER PARCELS).
4. COORDINATE WITH NORFOLK SOUTHERN FOR SITE ACCESS FOR THE NORTHEAST DRAINAGE DITCH RESTORATION WORKS AND COMPLY WITH ACCESS AGREEMENT.
5. UTILITIES DEPICTED HERE ON ARE BASED ON OBSERVABLE EVIDENCE AT THE TIME OF THE SURVEY. UNDERGROUND UTILITIES MAY NOT NECESSARILY BE COMPLETE AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. PRIOR TO ANY GROUND DISTURBANCE, EXCAVATION CONTRACTOR AND/OR OWNER MUST CONTACT DELMARVA 811 (800-282-8555). FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.
6. HORIZONTAL DATUM IS REFERENCED TO THE DE STATE PLANE COORDINATE SYSTEM (NAD 1983) AND ELEVATIONS ARE ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 1988).
7. PHYSICAL FEATURES AND TOPOGRAPHIC INFORMATION TAKEN FROM FIELD SURVEYS PERFORMED BY VARGO ASSOCIATES IN 2019 AND 2020.
8. BOUNDARY INFORMATION PROVIDED FROM "MINOR SUBDIVISION PLAN" PREPARED BY VARGO ASSOCIATES, DATED NOVEMBER 15, 2023.
9. PROPOSED PROJECT AREA DISTURBANCE WILL DIFFER PER PHASE. REFER TO EACH DRAWING FOR LOD FOR EACH PHASE. NOTE THAT LOD INLCUDES UPLAND DISTURBANCE FOOTPRINT AND WETLAND AND SUBAQUEOUS LAND IMPACTS AUTHORIZED UNDER SEPARATE PERMITS.
10. PROPOSED DISCHARGE LOCATIONS: NO NEW PERMANENT STORMWATER DISCHARGE POINTS VIA NEW OUTFALLS. TWO (2) TEMPORARY STORMWATER DISCHARGE POINTS ARE PROPOSED. LOCATIONS OF PROPOSED TEMPORARY OUTFALLS ARE SHOWN ON SHEET 36.

DEMOLITION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR A THOROUGH EXPLORATION OF EXISTING CONDITIONS AND SHALL ASSUME FULL RESPONSIBILITY FOR THE DEMOLITION AND REMOVAL OF EXISTING ENCROACHMENTS WITHIN THE PROJECT SITE WHICH INTERFERE WITH PROPOSED CONSTRUCTION WHETHER SHOWN ON THIS PLAN OR NOT. CONTRACTOR IS TO SECURE DEMOLITION PERMITS, IF REQUIRED, FOR THE WORK AND PAY FOR SAME. ANY DEMOLITION (WHOLE OR IN PART) REQUIRES PRIOR APPROVAL FROM ENGINEER AND AMTRAK AND IN ACCORDANCE WITH FACILITY REQUIREMENTS OF AMTRAK'S PROGRAMMATIC AGREEMENT WITH STATE OF DELAWARE AND FRA.
2. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE GOVERNING BUILDING AND ZONING CODES OF THE CITY OF WILMINGTON OR ANY OTHER AGENCY HAVING JURISDICTION.
3. ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS AND/OR FOUND ON THE SITE DURING DEMOLITION OR CONSTRUCTION SHALL BE, UNLESS OTHERWISE DIRECTED, THE CONTRACTOR'S PROPERTY AND SHALL BE PROMPTLY REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. RAILROAD EQUIPMENT, PARTS, MATERIALS ARE AMTRAK PROPERTY AND ANY REMOVAL/HANDLING REQUIRES PRIOR APPROVAL FROM AMTRAK FACILITY PERSONNEL.
4. LOCATIONS OF UTILITIES SHOWN ON THIS PLAN ARE NOT NECESSARILY COMPLETE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OPERATING WITHIN THE CONSTRUCTION AREA TO VERIFY THE LOCATION, SIZE, TYPE, AND ELEVATIONS OF ANY UTILITIES PRIOR TO COMMENCEMENT OF DEMOLITION OR EXCAVATION ACTIVITIES. LOCATION OF UTILITIES SHALL INCLUDE CONTACT WITH THE DELMARVA 811 (800-282-8555). FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.
5. APPLICABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO DEMOLITION. SUCH MEASURES SHALL BE LEFT IN PLACE UNTIL THE PROJECT IS COMPLETED OR THE AREA IS STABILIZED IN ACCORDANCE WITH THE DNREC APPROVED SOIL PERMIT.
6. ABOVE GRADE STRUCTURES SHOWN TO BE REMOVED OR DEMOLISHED INCLUDES COMPLETE REMOVAL OF BELOW GRADE STRUCTURES (FOOTINGS, ETC.) ASSOCIATED WITH THESE SITE IMPROVEMENTS AND BACKFILL OF OPEN AREAS WITH COMPACTED SELECT BACKFILL, UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CONDUCT DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS TO ENSURE MINIMAL INTERFERENCE WITH ROADS, WALKS AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. THE AREAS OF DEMOLITION SHALL BE PROTECTED TO ENSURE SAFE PASSAGE OF PERSONS IN THE RESPECTIVE AREAS.
8. CONTRACTOR SHALL PROTECT ALL STRUCTURES OR OBJECTS TO REMAIN SO AS TO AVOID DAMAGE DURING DEMOLITION ACTIVITIES. ANY AND ALL DAMAGE CAUSED TO ADJACENT FACILITIES BY DEMOLITION OPERATIONS SHALL BE PROMPTLY REPAIRED TO ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR AT NO COST TO THE OWNER.
9. THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL AS SITE SUPERVISOR, RESPONSIBLE FOR SITE SAFETY DURING THE COURSE OF DEMOLITION OPERATIONS.
10. CONTRACTOR SHALL SAW CUT ALONG THE EDGE OF EXISTING HARD MATERIALS (CONCRETE, ASPHALT, ETC.) SHOWN TO BE REMOVED, WHERE SUCH MATERIALS ABUT SURFACES OF LIKE MATERIALS TO REMAIN.
11. WHERE EXISTING HARDSCAPE MATERIAL IS SHOWN TO BE REMOVED (ASPHALT, CONCRETE, ETC.), CONTRACTOR MAY ALSO REMOVE EXISTING BASE COURSE MATERIALS (IF MATERIALS EXIST UNDER PAVED SURFACE), UNLESS OTHERWISE NOTED. CONTRACTOR MUST SEGREGATE AND STOCKPILE BASE COURSE MATERIAL ON SITE. NO REUSE WILL BE ALLOWED ON THIS PROJECT WITHOUT APPROVAL BY THE ENGINEER AND AMTRAK. SEGREGATED MATERIAL IS REQUIRED TO BE SAMPLED, CHARACTERIZED IN ACCORDANCE WITH THE APPROVED RBDAA DATED JUNE 2025, AND IN ACCORDANCE WITH TSCA AND FEDERAL AND STATE'S REGULATIONS.
12. DURING DEMOLITION WORK CONTRACTOR SHALL PROVIDE AND MAINTAIN ADEQUATE PROVISIONS FOR DUST CONTROL AND PROTECTION OF EXISTING FACILITIES FROM DUST. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCIDENTAL DAMAGE AS A RESULT OF INSUFFICIENT DUST CONTROL. A DUST CONTROL PLAN IS REQUIRED TO BE SUBMITTED TO ENGINEER AND AMTRAK'S APPROVAL PRIOR TO START OF WORK.

SITE PLAN NOTES:

1. CONTRACTOR SHALL INSPECT AND VERIFY ALL FIELD DIMENSIONS AND SITE CONDITIONS SHOWN HEREIN BEFORE PROCEEDING WITH THE WORK. DISCREPANCIES BETWEEN FIELD CONDITIONS AND THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF THE WORK. ONCE CONSTRUCTION HAS BEGUN, CONTRACTOR SHALL NOT USE FIELD INFORMATION DISCREPANCIES AS THE BASIS FOR CHANGE ORDER CLAIMS.
2. ALL WORK PERFORMED SHALL CONFORM TO ALL APPLICABLE CITY OF WILMINGTON STANDARDS (ALL REQUIRED NOTIFICATIONS TO CITY AGENCIES INCLUDED AND STANDARDS REFERENCED IN DOCUMENTS LISTED IN PERMIT LEDGER SHEET 2).
3. NO DISTURBANCES NOR PLACEMENT OF MATERIALS SHALL BE PERMITTED BEYOND THE PROJECT PROPERTY LINES WITHOUT THE WRITTEN CONSENT OF THE PROPERTY OWNER(S) INVOLVED. ALL DAMAGE CAUSED TO ADJACENT FACILITIES BY CONTRACTOR'S OPERATIONS AND/OR STORAGE OF MATERIALS OR EQUIPMENT SHALL BE PROMPTLY REPAIRED TO ORIGINAL CONDITION OR BETTER AT NO COST TO THE OWNER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL UTILITY SERVICES FOR EXISTING FACILITIES DURING THE WORK. CONTRACTOR SHALL COORDINATE CHANGEOVER FROM PERMANENT TO TEMPORARY SERVICE, AND BACK WITH THE AFFECTED PARTIES PRIOR TO COMMENCEMENT OF THE WORK.
5. CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL APPLICABLE OSHA REGULATIONS AND FOR PROVIDING FOR PUBLIC SAFETY DURING DEMOLITION AND CONSTRUCTION OPERATIONS AND HOLD THE OWNER AND OWNER'S REPRESENTATIVE HARMLESS FOR DAMAGES CREATED BY THE CONTRACTOR. CONTRACTOR SHALL SECURE THE PROPER INSURANCE COVERAGE FOR THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL SAFETY REQUIREMENTS AND ACCESS AGREEMENT FROM AMTRAK AND NORFOLK SOUTHERN WHILE CONDUCTING WORK ON RESPECTIVE PROPERTY.
6. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES AS REQUIRED AND COORDINATE WITH OWNER TO ALLOW SAFE INGRESS AND EGRESS FROM THE SITE DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN TRAFFIC FLOW AROUND THE SITE. IF IT BECOMES NECESSARY TO CLOSE A PORTION OF AN ADJACENT STREET DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY LOCAL AUTHORITY HAVING JURISDICTION AND SECURE ALL PERMITS REQUIRED FOR THE WORK.
7. APPLICABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. SUCH MEASURES SHALL BE LEFT IN PLACE UNTIL THE PROJECT IS COMPLETED IN ACCORDANCE WITH SITE PERMITS. (SEE PERMIT LEDGER ON SHEET 2)
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SECURING THE PROJECT SITE AT ALL TIMES. CONTRACTOR SHALL MAINTAIN ADEQUATE BARRICADE AND SECURITY FENCE WHICH SHALL CONFORM TO OWNER'S REQUIREMENTS.
9. CONTRACTOR IS TO PROVIDE ADEQUATE SECURITY LIGHTING DURING CONSTRUCTION.
10. ALL AREAS DISTURBED AS A RESULT OF CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER, UNLESS OTHERWISE INDICATED.
11. CONTRACTOR IS TO KEEP ALL AREAS CLEAN OF DIRT AND DEBRIS ON A DAILY BASIS. OWNER HAS A RIGHT TO CLEAN FOR CONTRACTOR NONCOMPLIANCE AT CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL EMPLOY A REGISTERED SURVEYOR TO LAY OUT THE WORK, AND TO ESTABLISH ALL POINTS, LINES, AND GRADES FROM THE BENCHMARKS, CENTER LINES, REFERENCE POINTS, AND BASELINES SHOWN ON THESE PLANS. ALL WORK SHALL BE LOCATED BY THE CONTRACTOR FROM THESE ESTABLISHED POINTS.
13. CLEARANCE REQUIRED FROM DELMARVA POWER PRIOR TO WORKING IN PROXIMITY AND UNDER TRANSMISSION POWER LINES.
14. CONTRACTOR SHALL FURNISH PRODUCT SUBMITTALS, SAMPLES, AND/OR SHOP DRAWINGS, FOR ALL ITEMS PERTAINING TO WORK OF THESE PLANS. SUBMISSIONS SHALL BE MADE IN SUFFICIENT ADVANCE TIME SO THAT THE ENGINEER OR PROJECT CONSULTANT'S REVIEW AND ACCEPTANCE MAY BE ACHIEVED NO LESS THAN (10) DAYS BEFORE THE WORK REPRESENTED BY THOSE SUBMITTALS IS SCHEDULED TO BE PERFORMED. WORK FOR WHICH SUBMITTALS ARE REQUIRED SHALL NOT BE STARTED UNTIL THE PROJECT CONSULTANT'S REVIEW AND ACCEPTANCE HAS BEEN RECEIVED. REFER TO PROJECT SPECIFICATIONS FOR COMPLETE LIST.

EARTHWORK NOTES:

1. EXCAVATION:
   A. REFER TO SPECIFICATION 31 30 00.
   B. REMOVE BOULDERS/CONCRETE PROTRUDING INTO SUBGRADE AREAS TO A DEPTH OF 6 INCHES BELOW FINISH SUBGRADE ELEVATIONS AND REPLACE WITH FILL AS INDICATED ON PLANS/SPECIFICATIONS.
   C. ALL EXCAVATION REQUIRES PRE-CLEARANCE WITH AMTRAK FACILITY PERSONNEL.
2. PROOF ROLLING OF VEHICULAR SURFACES:
   A. IN THE PRESENCE OF OWNERS REPRESENTATIVE PROOF ROLL EXPOSED SUBGRADE AREAS WITH A HEAVY SMOOTH DRUM ROLLER (MINIMUM 15 TON STATIC WEIGHT OR EQUIVALENT) TO DETECT THE PRESENCE OF LOOSE OR SOFT ZONES.
   B. REPAIR LOOSE OR SOFT ZONES TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
   C. PERFORM PROOF ROLLING OPERATIONS WITHIN FILL AREAS PRIOR TO PLACEMENT OR FILLS AND WITHIN CUT AREAS WHEN SUBGRADE ELEVATIONS HAVE BEEN REACHED AND IMMEDIATELY PRIOR TO PLACEMENT OF ADDITIONAL MATERIAL.
   D. OWNER'S REPRESENTATIVE SHALL EVALUATE ALL SUBGRADE AREAS PRIOR TO PLACEMENT OF ADDITIONAL MATERIAL.
   E. GRADE PAVEMENT AND SIDEWALK SUBGRADES TO DRAIN WATER AND PREVENT PONDING FROM BENEATH THE PAVEMENT AND ACCESS ROAD SYSTEMS.
3. ACCESS ROAD UTILITY TRENCHES:
   A. BACKFILL WITH STRUCTURAL FILL UNDER DIRECTION OF OWNER'S REPRESENTATIVE.
   B. REMOVE LARGE BOULDERS ENCOUNTERED DURING EXCAVATION WITH ROCK REMOVAL TECHNIQUES.
   C. OVER EXCAVATE TRENCH AS REQUIRED TO REMOVE ROCK.
   D. DEWATER TRENCH AS REQUIRED IN ACCORDANCE WITH PERMITS. (SEE PERMIT LEDGER ON SHEET 2)
   E. PARTIAL REMOVAL OF BOULDERS TO A MINIMUM 18 INCHES BELOW FOOTING/TRENCH BOTTOM MAY BE ACCOMPLISHED UNDER DIRECTION OF OWNER'S REPRESENTATIVE.
   F. BOULDER PROTRUSION INTO BOTTOM OR SIDE OF FOOTING IS NOT ACCEPTABLE.
4. FILL:
   A. ANY IMPORT IS REQUIRED TO BE DNREC CERTIFIED CLEAN FILL IN ACCORDANCE TO DNREC HSCA REQUIREMENTS.
   B. PLACE STRUCTURAL FILL WHEN SUPPORTING SLABS, PAVEMENTS AND FOUNDATIONS.
   C. PLACE ON APPROVED, PROOF ROLLED, NON-YIELDING SUBGRADE IN LIFTS NOT EXCEEDING 8 INCHES.
   D. MAINTAIN STRUCTURAL FILL AT NOMINAL OPTIMUM MOISTURE CONTENT (ASTM D 698).
   E. COMPACT TO 98 PERCENT OF MAXIMUM DRY DENSITY (ASTM D698).
   F. STRUCTURAL FILL SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
      1) CLEAN SOILS WITHOUT DELETERIOUS INCLUSIONS.
      2) MAINTAIN ON-SITE SOILS SELECTED BY OWNER'S REPRESENTATIVE AT NOMINAL OPTIMUM MOISTURE CONTENT BEFORE USE AS STRUCTURAL FILL. SOILS MAY REQUIRE AERATION AND DRYING WHICH IS BEST ACCOMPLISHED DURING SUMMER MONTHS.
   G. BORROW FILL SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
      1) CLEAN WELL GRADED SOILS WITH GOOD STRENGTH CHARACTERISTICS.
      2) MAXIMUM PARTICLE SIZE: 3 INCHES.
      3) CONTAIN NOT MORE THAN 20% SILT/CLAY (BY WEIGHT).
   H. SUPPLY TO OWNER'S REPRESENTATIVE CERTIFICATION OF DNREC CLEAN FILL 45 DAYS BEFORE USE ON-SITE.
5. PAVEMENT:
   A. PRIOR TO THE PLACING OF THE SURFACE COURSE, THE CONTRACTOR SHALL REPAIR ANY DEFECTS IN THE BASE COURSE. WHERE CRACKING OR ANY OTHER TYPE OF FAILURE HAS OCCURRED IN THE BASE COURSE, THE CONTRACTOR SHALL COMPLETELY REMOVE THE BASE COURSE, STABILIZE THE SUBGRADE IF NECESSARY AND CONSTRUCT NEW BASE COURSE. WHERE THE DEFICIENCY INVOLVES DEPRESSIONS OR RAVELING IN THE SURFACE OF THE BASE COURSE, THE REPAIR MAY BE MADE BY SKIN PATCHING WITH A SUITABLE BITUMINOUS MATERIAL.
   B. PRIOR TO THE PLACEMENT OF THE SURFACE COURSE, THE CONTRACTOR SHALL SUPPLY SUFFICIENT WATER AT THE HIGH POINTS AS SHOWN ON THE PLANS AND SHALL RUN SAID WATER INTO THE INLETS IN ORDER TO DETERMINE WHETHER OR NOT PAVEMENT GRADES ARE SATISFACTORY AND PONDING DOES NOT OCCUR.
   C. WHEREVER PUDDLES OCCUR, THE CONTRACTOR SHALL SKIN PATCH THE BASE COURSE TO ACHIEVE PROPER GRADES IN THE GUTTERS/PAVEMENT. AFTER REPAIR OF THE BASE COURSE, A TACK COAT SHALL BE APPLIED AS SPECIFIED IN SECTION 1011 OF THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. A STABILIZED PAD OF CRUSHED STONE (DELAWARE NO. 3) SHALL BE LOCATED AT POINTS WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE CONSTRUCTION SITE. USE CLEAN CRUSHED ANGULAR STONE. CRUSHED CONCRETE OF SIMILAR SIZE MAY BE SUBSTITUTED BUT WILL REQUIRE MORE FREQUENT UPGRADING AND MAINTENANCE.
2. STONE THICKNESS SHALL NOT BE LESS THAN 6". WIDTH SHALL NOT BE LESS THAN THE FULL WIDTH OF THE INGRESS OR EGRESS. LENGTH SHALL BE 50 FEET MINIMUM. THESE LENGTHS MAY BE INCREASED WHERE FIELD CONDITIONS DICTATE. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT SEDIMENT FLOW ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY.
4. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE. DETAIL FOR STABILIZED CONSTRUCTION ENTRANCE IS SHOWN ON SHEET 117.

UTILITY NOTES:

1. UTILITIES IDENTIFIED ON PLAN SET REPRESENT A PRELIMINARY EVALUATION BASED ON AVAILABLE DOCUMENTATION THAT WILL REQUIRE FIELD VERIFICATION. HAND CLEARING MAY BE CONDUCTED AT KNOWN AND SUSPECTED UTILITY LOCATIONS AS APPROPRIATE. THE FACILITY IS OVER 100 YEARS OLD, AS SUCH, VARIABILITY OF UTILITY PRESENCE (OR ABSENCE) SHOULD BE ANTICIPATED. PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES AT THE FACILITY, KNOWN UTILITIES WILL BE FIELD LOCATED THROUGH A DELMARVA 811 LOCATE TICKET SUBMISSION, PRIVATE UTILITY LOCATING COMPANY AND IN CONSULTATION WITH AMTRAK PERSONNEL. APPLICABLE SETBACKS BASED ON UTILITY TYPE WILL BE ADDRESSED WITH THE CONTRACTOR BASED ON AMTRAK'S AND THE UTILITY OWNERS' REQUIREMENTS.
2. ALL UTILITY CONTRACTORS SHALL PROCURE ALL REQUIRED PERMITS, LICENSES AND INSPECTIONS, PAY ALL CHARGES AND GIVE ALL NECESSARY NOTICES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. ALL METHODS AND MATERIALS OF CONSTRUCTION SHALL CONFORM, WHERE APPLICABLE, TO THE RULES AND REGULATIONS OF THE GOVERNING AUTHORITY HAVING JURISDICTION AND/OR THE LOCAL UTILITY COMPANY.
4. GENERAL CONTRACTOR SHALL EMPLOY AN INDEPENDENT SOILS INSPECTOR FOR 100% CONTINUOUS INSPECTION OF THE BEDDING AND BACKFILL OPERATION. COMPACTION TESTS SHALL BE TAKEN AT THE BOTTOM OF TRENCH AND AT EACH LIFT OF BACKFILL.
5. GENERAL CONTRACTOR SHALL EMPLOY A LICENSED SURVEYOR TO RECORD AS-BUILT TOP OF PIPE ELEVATIONS TAKEN WHEN BEDDING OPERATION IS 75% COMPLETE. THESE ELEVATIONS SHALL BE TAKEN AT POINTS OF CONNECTION, CHANGES IN DIRECTION AND AT MINIMUM 20' INTERVALS ALONG THE LENGTH OF THE PIPE. THESE ELEVATIONS SHALL BE RECORDED AS AS-BUILT DIMENSIONS ON A SITE PLAN FOR REVIEW BY THE PROJECT CIVIL ENGINEER.

STANDARDS FOR LAND GRADING

DEFINITION: RESHAPING THE GROUND SURFACE BY GRADING TO PLANED GRADES WHICH ARE DETERMINED BY TOPOGRAPHIC SURVEY AND LAYOUT.

1. THE CUT FACE OF EARTH EXCAVATIONS AND FILLS SHALL BE NO STEEPER THAN THE SAFE ANGLE OF REPOSE FOR THE MATERIALS ENCOUNTERED AND FLAT ENOUGH FOR PROPER MAINTENANCE.
2. THE PERMANENTLY EXPOSED FACES OF EARTH CUTS AND FILLS SHALL BE VEGETATED OR OTHERWISE PROTECTED FROM EROSION BY ENGINEERED COVERS AS SPECIFIED.
3. PROVISIONS SHALL BE MADE TO SAFELY CONDUCT SURFACE WATER TO STORM DRAINS OR SUITABLE WATER COURSES AND TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
4. SUBSURFACE DRAINAGE IS TO BE PROVIDED IN AREAS HAVING A HIGH WATER TABLE, TO INTERCEPT SEEPAGE THAT WOULD ADVERSELY AFFECT SLOPE STABILITY, BUILDING FOUNDATIONS OR CREATE UNDESIRABLE WETNESS.
5. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS
6. INSTALLATION REQUIREMENTS:
   A. TIMBER, LOGS, BRUSH, RUBBISH, ROCKS, STUMPS AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OR FILL AREAS SHALL BE REMOVED AND DISPOSED OF ACCORDING TO THE PLAN.
   B. TOPSOIL IS TO BE STRIPPED AND STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISH GRADING OF ALL EXPOSED AREAS REQUIRING TOPSOIL.
   C. FILL MATERIAL IS TO BE FREE OF BRUSH, RUBBISH, TIMBER, LOGS, VEGETATIVE MATTER AND STUMPS IN AMOUNTS THAT WILL BE DETRIMENTAL TO CONSTRUCTING STABLE FILLS.
   D. ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESSIVE SATURATION.
   E. ALL DISTURBED AREAS SHALL BE LEFT WITH A NEAT AND FINISHED APPEARANCE AND SHALL BE PROTECTED FROM EROSION.
   F. TREES TO BE RETAINED SHALL BE PROTECTED IF NECESSARY IN ACCORDANCE WITH THE STANDARD FOR TREE PROTECTION DURING CONSTRUCTION.

WATER TREATMENT – ALL DEWATERING FROM DITCHES & OTHERS:

1. INITIALLY, GRAVITY DRAIN SURFACE WATER IN DITCHES PER EACH WORK ZONE/AREA AS ESTABLISHED, AND DRAIN TO EXPOSED SEDIMENT.
2. PORE WATER REMAINING IN SEDIMENT IS CONTAMINATED, AND TO BE DRAINED/PUMPED TO TREATMENT SYSTEM CONSTRUCTED FOR THIS PROJECT (SEE NPDES PERMIT ON PERMIT LEDGER ON SHEET 2 FOR DETAILS).
3. ADDITIONAL WATER ENCOUNTERED DURING EXCAVATIONS IS TO BE REMOVED AND PUMPED TO TREATMENT SYSTEM AS NEEDED, INCLUDING ACTIVITIES OF BARRIER WALL INSTALLATION, BRICK SEWER CLOSURE.
4. ALL SURFACE WATER DISCHARGE IS TO BE IN COMPLIANCE WITH AMTRAK'S FACILITY, NPDES PERMIT #DE0050962 AND FACILITY PERMIT FOR THIS PROJECT (SEE SHEET 2, PERMIT LEDGER).

TREATMENT SYSTEM:

1. INITIALLY, GRAVITY DRAIN SURFACE WATER IN DITCHES PER EACH WORK ZONE/AREA AS ESTABLISHED. THE WATER TREATMENT SYSTEM IS TO BE ASSEMBLED AT LOCATION SPECIFIED IN NPDES PERMIT (SEE SHEET 2, PERMIT LEDGER).
2. THE WATER TREATMENT COMPONENTS, SEQUENCING, SIZING AND LAYOUT IS PRESENTED IN THE NPDES DOCUMENTS ONLY FOR COMMUNICATION TO DNREC EFFLUENT STANDARDS FOR THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION, DESIGN OF ALL SIZING, SEQUENCE COMPONENTS (NECESSARY TO MAINTAIN TREATMENT SYSTEM EFFLUENT STANDARDS) AND REQUIREMENTS LISTED IN THE SITE NPDES PERMIT (SEE SHEET 2, PERMIT LEDGER) FOR DISCHARGE WATER QUALITY.
3. CONTRACTOR IS RESPONSIBLE FOR PERMIT SAMPLING, MONITORING, AND CORRECTIVE ACTIONS, IF NECESSARY, WHICH MAY BE REQUIRED BY DNREC.

GENERAL NOTES:

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM (OR DELEGATED AGENCY) SHALL BE NOTIFIED IN WRITING 5 DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN. (SEE PERMIT LEDGER ON SHEET 2)
2. REVIEW AND/OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 5 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH. (SEE PERMIT LEDGER ON SHEET 2)
7. APPROVED PLANS REMAIN VALID FOR FIVE (5) YEARS FROM THE DATE OF APPROVAL. (SEE PERMIT LEDGER ON SHEET 2)
8. POST CONSTRUCTION VERIFICATION DOCUMENTS SHALL BE SUBMITTED TO THE DEPARTMENT (OR DELEGATED AGENCY) WITHIN 60-DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION. (EAST OF EAST DITCH WETLAND CONSTRUCTION)
9. APPROVAL OF A SEDIMENT AND STORMWATER MANAGEMENT PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEV

AMTRAK WILMINGTON SHOPS PROJECT PHASES:

A. DNREC ISSUED THE FINAL PLANS OF REMEDIAL ACTION AT THE AMTRAK FORMER FUELING FACILITY (DE-0266) AND AMTRAK MAINTENANCE FACILITY (DE-0170) REFERRED TO AS THE WILMINGTON AMTRAK SHOPS. AMTRAK AND APU WILL BE REMOVING IMPACTED SEDIMENTS AND SOILS (IMPACTED BY PCBs) SITUATED ON AMTRAK AND NORFOLK SOUTHERN PROPERTY TO THE DEPTH OF UNDERLYING CLAY FOR SEDIMENT AND TO SPECIFIC DEPTHS FOR SOILS. THE EXCAVATED SEDIMENT WILL BE PLACED AT THE AMTRAK FACILITY, STAGED IN SECURE LOCATIONS AS SHOWN ON THIS PLAN, STABILIZED, AND PLACED IN A CONTAINMENT CELL ON AMTRAK PROPERTY. THE DITCH AREAS WILL BE RESTORED AFTER REMOVAL OF THE SEDIMENT. THE UPLAND AREAS OF THE WILMINGTON SHOPS WILL BE RESTORED WITH ENGINEERED COVERS AND TSCA EQUIVALENT CAPS, PLACED THROUGHOUT THE RAILYARD.

B. IN JUNE 2025, THE USEPA APPROVED THE RISK BASED DISPOSAL APPROVAL APPLICATION (RBDAA). AMTRAK WILL COMPLY WITH THE RBDAA.

C. THE PROPOSED PROJECT WILL BE DIVIDED INTO MULTIPLE PHASES. THE PURPOSE OF THESE PLANS IS TO DEPICT THE SOIL EROSION AND SEDIMENT CONTROL MEASURES WHICH WILL BE PUT INTO PLACE FOR EACH PHASE.

D. EACH OF THE PHASES WILL INCLUDE TEMPORARY DAMS AND BERMING THAT WILL BE IMPLEMENTED TO DIRECT STORMWATER AND PREVENT THE RESTORED AREAS FROM CONTAMINATION OF THE PHASES OF WORK WHICH HAVE NOT BEEN COMPLETED. DETAILS FOR TEMPORARY DAMS AND BERMING ARE SHOWN ON SHEETS 37 & 38.

E. THE FOLLOWING ARE THE OVERALL ANTICIPATED PHASES OF WORK AND SOIL EROSION MEASURES TO BE INSTALLED:

E.1. NOTIFY AMTRAK FOR SAFETY AND ACCESS CLEARANCE AT LEAST **60** DAYS (AMTRAK TO VERIFY) PRIOR TO THE START OF CONSTRUCTION.

E.2. NOTIFY NORFOLK SOUTHERN FOR SAFETY AND ACCESS CLEARANCE AT LEAST **60** DAYS (AMTRAK TO VERIFY) PRIOR TO THE START OF CONSTRUCTION FOR WORK ON NORFOLK SOUTHERN PROPERTY.

E.3. NOTIFY THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC) SEDIMENT & STORMWATER PROGRAM IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION.

E.4. CALL DELMARVA 811 AT 1-800-282-8555 NOT LESS THAN 2 WORKING DAYS, BUT NO MORE THAN 10 WORKING DAYS, PRIOR TO THE DAY OF COMMENCEMENT.

E.5. CONTRACTOR TO FOLLOW THE TRACK MONITORING PROCEDURES AS REQUIRED FOR EACH PHASE OF WORK PER SHEET 5.

E.6. AMTRAK WILMINGTON SHOPS REMEDIAL ACTION WILL BE EXECUTED IN FOLLOWING PHASES:

THE FOLLOWING PHASES ARE PRESENTED FOR CONVEYANCE OF PROJECT CONTEXT AND PLANNING. CONTRACTOR MAY PRESENT A MODIFIED SEQUENCING FOR APPROVAL BY AMTRAK AND DNREC. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SEQUENCING AND SUBSEQUENT WORK ACTIVITY AND OUTCOMES.

1. PHASE 1 – PLANNED SOIL EXCAVATION WORK

1.1. PHASE 1A – TEMPORARY CONSTRUCTION ACCESS ROADS

1.1.1. THIS PHASE INCLUDES THE INSTALLATION OF TEMPORARY STONE CONSTRUCTION ROADS AND CONSTRUCTION FENCING FOR ACCESS THROUGH THE SITE. DETAIL FOR TEMPORARY CONSTRUCTION ACCESS ROADS IS SHOWN ON SHEET 76.

1.1.2. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNSTREAM DRAINAGE AREAS PRIOR TO IMPLEMENTING THIS WORK AS INDICATED ON THE PLANS. INSTALL STABILIZED CONSTRUCTION ENTRANCES. DETAIL FOR SILT FENCES AND STABILIZED CONSTRUCTION ENTRANCES ARE SHOWN ON SHEET 117.

1.1.3. INSTALL SOIL STOCKPILE 1 AND 2 AS SHOWN ON PLANS. DETAILS FOR SOIL STOCKPILES ARE SHOWN ON SHEET 77 & 78. STOCKPILE 2 SHALL BE UTILIZED FOR ANY CONCRETE DEBRIS ENCOUNTERED ONSITE.

1.1.4. REMOVE SOIL AS REQUIRED TO CONSTRUCT STABILIZED ACCESS ROADS AS SHOWN ON THE PLAN AND STOCKPILE SOIL IN SOIL STOCKPILE 1.

1.1.5. INSTALL THE TEMPORARY STONE ACCESS ROADS AND PHASE TO ALLOW FOR CONSTRUCTION OF THE ROAD WITH MINIMAL ACCESS THROUGH THE AMTRAK FACILITY. FOLLOW THE AMTRAK APPROVED ROUTING PLAN.

1.1.6. INSTALL THE CONSTRUCTION FENCE AS REQUIRED TO SEPARATE CONSTRUCTION AREAS FROM THE ACTIVE FACILITY.

1.1.7. REMOVE SILT FENCE INSTALLED FOR THIS PHASE. PROCEED TO IMPLEMENTATION OF SOIL EXCAVATIONS.

1.2. PHASE 1B– PLANNED SOIL EXCAVATION WORK

1.2.1. THIS PHASE WILL CONSIST OF PERFORMING PCB SOIL EXCAVATION WORK FOR THE FORMER FUELING FACILITY AND MAINTENANCE FACILITY EXCAVATIONS (UPLAND AREAS), AS WELL AS PERFORMING ARSENIC AND LEAD SOILS EXCAVATION WORK FOR EAST OF EAST DITCH (LOWLAND AREAS) AND INSTALLING ENGINEERED COVER WORK.

1.2.2. EXCAVATION AREAS ARE SHOWN ON SHEET 81 FOR EAST OF EAST DITCH LOWLAND AREAS ; SHEET 82 FOR FORMER FUELING FACILITY UPLAND AREAS AND SHEET 83 FOR FOR THE MAINTENANCE FACILITY UPLAND AREAS.

1.2.3. THE EXCAVATED SOILS ARE TO BE STORED AT TEMPORARY STOCKPILE 1 AS SHOWN ON SHEET 77. THIS STOCKPILE WILL BE HAULED OFFSITE ONCE THE PLANNED SOIL EXCAVATIONS ARE COMPLETE

1.2.4. PRIOR TO COMPLETING EACH EXCAVATION SILT FENCE, COMPOST FILTER LOG AND/OR INLET PROTECTION SHALL BE INSTALLED AS INDICATED ON EACH PLAN SHEET. DETAILS FOR COMPOST FILTER LOGS AND INLET PROTECTION ARE SHOWN ON SHEET 117.

1.2.5. FOR WORK IN THE EASTERN LOWLAND AREAS, ONLY CLEAR THE VEGETATION REQUIRED TO ACCESS THE EXCAVATIONS. TEMPORARY MATTING SHALL BE INSTALLED TO ACCESS EACH EXCAVATION AND PREVENT SOIL EROSION.

1.2.6. ONCE THE IMPACTED SOILS ARE REMOVED FROM EACH PHASE, THEY SHALL BE STOCKPILED AT TEMPORARY STOCKPILE 1.

1.2.7. ONCE THE EXCAVATED SOIL REMOVAL IS COMPLETE, THE AREAS SHALL BE REPLACED WITH ON-SITE FILL (SPECIFICATION 313000 ON-SITE BORROW) AND SHALL INCLUDE THE ENGINEERED COVERS AS INDICATED ON THE PLANS SHEETS. ENGINEERED COVERS WILL BE PLACED ON TOP OF GEOTECHNICAL FABRIC (SPECIFICATION 313419 GEOTEXTILE) OVER EXISTING SOILS, AND CONSISTS OF VARYING THICKNESS OF SOIL, BALLAST, AND STONE TO BE INSTALLED AS SPECIFIED. THE RESTORED COVERS ARE SHOWN ON SHEET 124.

1.2.8. FOR AREAS ASSOCIATED WITH THE EAST OF THE DRAINAGE DITCH, TEMPORARY VEGETATION SHALL BE ESTABLISHED IN THE AREAS WHICH HAVE BEEN EXCAVATED AND CLEARED. THESE AREAS SHALL NOT BE FILLED WITH ENGINEERED COVERS IN THIS PHASE. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE FOR THIS AREA.

1.2.9. THE MAIN SOIL EROSION AND SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED FOR THIS WORK INCLUDE COMPOST FILTER LOG/SILT FENCE AROUND THE PERIMETER OF THE PROPOSED AREAS OF WORK. ADDITIONAL CONTROLS TO BE INSTALLED INCLUDE INLET PROTECTION IN PHASES THAT CONTAIN THIS INFRASTRUCTURE. DETAILS FOR COMPOST FILTER LOGS AND INLET PROTECTION ARE SHOWN ON SHEET 117.

1.2.10. AFTER EACH INDIVIDUAL EXCAVATION IS COMPLETED AND RESTORED, THE SILT FENCE AND/OR SILT SOCK CAN BE REMOVED AFTER THE AREA IS STABILIZED. FOR VEGETATIVE AREAS, THE MEASURES REMAIN IN PLACE UNTIL THE VEGETATIVE COVER IS ESTABLISHED.

1.2.11. ONCE THE EXCAVATION WORK IS COMPLETED, THE CONTRACTOR SHALL PROCEED TO REMOVE/REMEDIATE THE ABANDONED BRICK SEWER PIPING LOCATED SOUTH OF THE ROUNDHOUSE. INSTALL FILTER FENCE TO REMOVE THE PORTION OF THE EXISTING LIFT STATION AS INDICATED ON THE PLANS. THE OIL/WATER/SEDIMENT THAT IS DISPLACED DURING THE SEWER CLOSURE IS TO BE REMOVED AND TREATED IN ACCORDANCE WITH THE NPDES PERMIT. ALL SOIL SEDIMENT AND DEBRIS FROM THE SEWER CLOSURE PROJECT ASSOCIATED WITH THIS WORK IS TO BE PROPERLY STOCKPILED FOR PLACEMENT IN STOCKPILE 3B UNTIL STABILIZED AND PLACED IN CONTAINMENT CELL.

1.3. PHASE 1C – TRACK MAINTENANCE WORK (AMTRAK WORK ONGOING THROUGH PHASES)

1.3.1. AMTRAK TO PERFORM THE TRACK MAINTENANCE WORK INCLUDING RAILROAD BALLAST AND STONE BUFFERS. ALL TSCA MATERIAL EXCAVATED IN THIS PHASE SHALL BE STOCKPILED IN TEMPORARY STOCKPILE.

1.3.2. THIS PHASE INCLUDES THE REMOVAL OF STONE BALLAST AND SHALL INCLUDE THE REMOVAL OF IMPACTED SOILS. PRIOR TO IMPLEMENTATION, THE APPLICABLE SOIL EROSION MEASURES WHICH INCLUDE SILT FENCE AND/OR SILT SOCK SHALL BE INSTALLED PRIOR TO COMPLETING THE WORK. DETAILS FOR COMPOST FILTER LOGS AND SILT FENCES ARE SHOWN ON SHEET 117 & 118. IF THE WORK OCCURS AFTER TEMPORARY STOCKPILE 1 IS REMOVED OFFSITE THEN STOCKPILE IN TSCA STOCKPILE 2 AS SHOWN IN SHEET 7.

1.3.3. THE MATERIAL SHALL THEN BE REMOVED AND RESTORED WITH STONE BALLAST.

1.3.4. ONCE THESE AREAS ARE COMPLETED, THE SOIL EROSION PREVENTION MEASURES SHALL BE REMOVED WITH EACH PHASE OF THE TRACK MAINTENANCE EVENT

1.4. PHASE 1D – FORMER FUELING FACILITY PAVEMENT INSTALLATION

1.4.1. THIS PHASE WILL INCLUDE THE INSTALLATION OF ASPHALT PAVEMENT AS WELL AS A STORMWATER CONVEYANCE SYSTEM INSTALLATION.

1.4.2. SILT FENCE AND COMPOST FILTER LOGS SHALL BE INSTALLED PRIOR TO STARTING EARTHWORK. DETAILS FOR COMPOST FILTER LOGS AND SILT FENCES ARE SHOWN ON SHEET 117 & 118.

1.4.3. REMOVE/RELOCATE EXISTING HARDSCAPE AND REMOVE THE SOIL SECTION REQUIRED TO INSTALL THE PAVING WORK AS INDICATED ON THE GRADING PLAN. STOCKPILE EXCESS SOIL IN SOIL STOCKPILE 1. ANY CONCRETE DEBRIS SHALL BE STOCKPILED IN SOIL STOCKPILE 2.

1.4.4. THIS PHASE SHALL INCLUDE THE INSTALLATION OF NEW STORMWATER CATCH BASINS AND STORM WATER PIPING. INSTALL STORMWATER CONVEYANCE SYSTEM, UTILIZE THE EXISTING FORMER RECOVERY TRENCHES AS SHOWN ON PLANS.

1.4.5. THE STORMWATER PIPE INSTALLED FROM INLET 2 TO HEADWALL 1 SHALL INCLUDE THE INSTALLATION OF EACH OF THE LOWER STRUCTURES WITHOUT THE FRAME AND GRATES AS THESE WILL BE EXTENDED IN A LATER PHASE. EACH STRUCTURE SHALL BE COVERED WITH PLYWOOD AND WEIGHED DOWN TO PREVENT THE WOOD FROM MOVING. A TEMPORARY DRAINAGE SWALE SHALL BE INSTALLED TO THE WEST OF THIS STORMWATER CONVEYANCE LINE TO CONVEY STORM WATER TO THE LOWER EASTERN DRAINAGE DITCH. THE INSTALLATION OF HEADWALL 1 SHALL INCLUDE CONDUIT OUTLET PROTECTION. DETAIL FOR RIPRAP OUTLET PROTECTION IS SHOWN ON SHEET 119.

1.4.6. DEWATER AS NECESSARY AND INSTALL THE REMAINING STORMWATER PIPES PER PLAN. THIS INCLUDES COORDINATION WITH AMTRAK FOR THE JACK AND BORE OR HDD OPERATIONS UNDER THE EXISTING TRACK. ALL JACK AND BORES?HDD MUST MAINTAIN A MINIMUM OF 5 FEET 6 INCHES OF COVER FROM THE EXISTING TRACK. AMTRAK CLEARANCE IS REQUIRED PRIOR TO FIELD WORK.

1.4.7. INSTALL THE REMAINING STORM WATER CATCH BASINS AND MANHOLES AND INCLUDE INLET PROTECTION ON NEWLY INSTALLED CATCH BASINS.

1.4.8. ONCE THE STORMWATER PIPES ARE INSTALLED, THE ASPHALT PAVEMENT SECTION SHALL BE CONSTRUCTED.

1.5. PHASE 1E – BARRIER WALL INSTALLATION

1.5.1. THIS PHASE INCLUDES THE INSTALLATION OF THE BARRIER WALLS IN THE FORMER FUELING FACILITY AND ALONG THE EAST SIDE OF THE UPPER EASTERN DRAINAGE DITCH.

1.5.2. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNSTREAM DRAINAGE AREAS PRIOR TO IMPLEMENTING THIS WORK. DETAILS FOR SILT FENCES ARE SHOWN ON SHEET 117 & 118.

1.5.3. TEMPORARY ACCESS MATTING SHALL BE INSTALLED IN VEGETATED AREAS TO PROVIDE A STABILIZED ACCESS AREA TO DRIVE EQUIPMENT AND EXCAVATE AND CONSTRUCT THE BARRIER WALLS PER PLAN. THE BARRIER WALLS SHALL BE CONSTRUCTED AND AN ENGINEERED COVER SHALL BE CONSTRUCTED ALONG THE SURFACE FOR THE AREAS WITHIN THE FORMER FUELING FACILITY. THE BARRIER ALONG THE UPPER EASTERN DRAINAGE DITCH SHALL BE BROUGHT TO SURFACE. NO ENGINEERED COVER WILL BE INSTALLED ALONG THIS WALL AS THIS WILL BE COMPLETED IN THE FUTURE UPPER EASTERN DRAINAGE DITCH PROJECT PHASE. HOWEVER, SURFACE PROTECTION IS REQUIRED (I.E. GEOTEXTILE)

1.5.4. THE SILT FENCE AND COMPOST FILTER LOG SHALL BE REMOVED ONCE THE ENGINEERED COVERS ARE INSTALLED AND THE AREA WITHIN THE UPPER EASTERN DRAINAGE DITCH IS RESTORED WITH TEMPORARY VEGETATIVE COVERS.

2. PHASE 2 – DRAINAGE DITCH RESTORATION

2.1. PHASE 2A – NORTHEAST DRAINAGE DITCH (NEDD) AND OUTFALL 002 PROJECT PHASE

2.1.1. EACH OF THE PHASES WILL INCLUDE TEMPORARY DAMS AND BERMING THAT WILL BE IMPLEMENTED TO DIRECT STORMWATER AND PREVENT THE RESTORED AREAS FROM CONTAMINATION OF THE PHASES OF WORK WHICH HAVE NOT BEEN COMPLETED. DETAILS FOR TEMPORARY DAMS AND BERMING ARE SHOWN ON SHEETS 37 & 38.

2.1.2. INSTALL SOIL STOCKPILE 3A WITHIN THE FORMER ROUNDHOUSE AREA TO STORE AND STAGE THE SEDIMENTS WHICH AREA TO BE REMOVED DURING THIS PHASE. DETAILS FOR SOIL STOCKPILE 3B IS SHOWN ON SHEET 100.

2.1.3. NORTHEASTERN DRAINAGE DITCH (NEDD) SEGMENT ONE (DRAINS TO RAILCAR AVENUE).

2.1.3.1. THIS PHASE WILL INCLUDE THE INSTALLATION OF TEMPORARY DAM 1 AT RAILCAR AVENUE ON AMTRAK'S PROPERTY AND A TEMPORARY DAM AT THE HIGHPOINT OF THE NEDD ON NORFOLK SOUTHERN'S PROPERTY. INTERMEDIATE STORMWATER COLLECTIONS WILL BE SETUP TO COLLECT STORMWATER WHICH DRAINS DIRECTLY INTO THE NEDD. THIS STORMWATER WILL BE PUMPED AROUND AND DISCHARGED JUST DOWNSTREAM OF THE PROPOSED DAMS.

2.1.3.2. PROTECT EXISTING NS OUTFALL AND INSTALL TEMPORARY BERM. TEMPORARILY ROUTE STORMWATER TO TEMPORARY DAM 1 BY RAILCAR AVENUE.

2.1.3.3. INSTALL SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY ACCESS MATTING. DETAILS FOR SILT FENCES AND STABILIZED CONSTRUCTION ENTRANCE ARE SHOWN ON SHEET 117 & 118.

2.1.3.4. ONCE THESE CONTROLS ARE IMPLEMENTED, THE EXISTING SEDIMENT CAN BE EXCAVATED TO THE LIMITS AS SPECIFIED. INSTALL CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") AND ENSURE POSITIVE DRAINAGE TOWARDS RAILCAR AVENUE. ENSURE THE CULVERT UNDER RAILCAR AVENUE IS CLEANED OUT IN THIS PHASE.

2.1.3.5. THE NEDD WILL BE STABILIZED WITH A COMBINATION OF ENGINEERED COVER CONSISTING OF CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL"), VEGETATION AND TEMPORARY SOIL STABILIZATION MATTING S75BN (NORTH AMERICAN GREEN OR EQUIVALENT APPROVED) ON BOTH THE BOTTOM AND THE RETURN SLOPES.

2.1.3.6. INSTALL THE LIVE STAKES AT RIGHT ANGLES TO THE SLOPE. THE LIVE STAKES SHALL BE INSTALLED 2 TO 3 FEET APART USING TRIANGULAR SPACING. THE DENSITY WILL RANGE FROM 2 TO 4 STAKES PER SQUARE YARD. ALL THE MATERIALS SHALL BE INSTALLED THE SAME DAY THAT THEY ARE PREPARED. REFER TO LIVE STAKE NOTES (SEE SHEET 119) FOR INSTALLATION PER DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK.

2.1.3.7. INSTALL ENGINEERED COVERS AS SHOWN ON SHEETS 125–128 AND REMOVE E&S CONTROLS ASSOCIATED WITH THIS PHASE ONCE THE VEGETATIVE COVERS HAVE BEEN ESTABLISHED.

2.1.3.8. AFTER INSTALLATION OF ENGINEERED COVER, INSTALL THE PROPOSED STONE BERM WITH 1:1 SIDE SLOPE AT THE TOP OF THE BANK ON THE AMTRAK SIDE. THE STONE BERM IS TO BE PLACED ALONG ALIGNMENT PER PLANS.

2.1.3.9. REMOVE THE TEMPORARY BERM AT THE NS OUTFALL AND INSTALL RIP RAP OUTLET PROTECTION.

2.1.3.10. BOTH DAMS WILL REMAIN IN PLACE AFTER THIS PHASE OF WORK. THE DAM AT RAILCAR AVENUE WILL REMAIN FOR ADDITIONAL REMEDIATION ACTIVITY ON AMTRAK PROPERTY.

2.1.4. NORTHEASTERN DRAINAGE DITCH (NEDD) SEGMENT TWO (DRAINS TO SHELLPOT CREEK).

2.1.4.1. THIS PHASE WILL INCLUDE THE INSTALLATION OF AN ADDITIONAL DAM AT SHELLPOT CREEK AT THE TWO 42 DISCHARGE PIPES. INTERMEDIATE STORMWATER COLLECTIONS WILL NEED TO BE SETUP TO COLLECT STORMWATER WHICH DISCHARGES DIRECTLY INTO THE NEDD. THIS STORMWATER WILL BE PUMPED AROUND AND DISCHARGED JUST DOWNSTREAM OF THE PROPOSED DAMS.

2.1.4.2. INSTALL SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY ACCESS MATTING.

2.1.4.3. ONCE THESE CONTROLS ARE IMPLEMENTED, THE EXISTING SEDIMENT CAN BE EXCAVATED TO THE LIMITS AS REQUIRED. INSTALL CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") AND ENSURE POSITIVE DRAINAGE BACK TO SHELLPOT CREEK. ENSURE THE 12 HDPE PIPE IS CLEANED OUT DURING THE SEDIMENT REMOVAL PRIOR TO INSTALLING CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL").

2.1.4.4. THE NEDD WILL BE STABILIZED WITH A COMBINATION OF ENGINEERED COVER CONSISTING OF CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL"), VEGETATION AND TEMPORARY SOIL STABILIZATION MATTING S75BN (NORTH AMERICAN GREEN OR EQUIVALENT APPROVED) ON BOTH THE BOTTOM AND THE RETURN SLOPES.

2.1.4.5. INSTALL THE RIP RAP OUTLET PROTECTION ALONG THE UPSTREAM AND DOWNSTREAM SIDE OF THE EXISTING 12 HDPE PIPE. (SEE SHEET 119)

2.1.4.6. INSTALL THE PROPOSED STONE BERM WITH 1:1 SIDE SLOPE AT THE TOP OF THE BANK ON THE AMTRAK SIDE. THE STONE BERM HAS 1 FOOT WIDE TOP WIDTH AND EMBEDDED 4 INCHES INTO THE GROUND. THE STONE BERM WILL NOT BE INSTALLED ON THE EXISTING PATH AROUND STATION 10+00. INSTALL ASPHALT ROAD SPEED HUMP AS SHOWN ON PLANS (REFER TO SHEET 119).

2.1.4.7. INSTALL THE LIVE STAKES AT RIGHT ANGLES TO THE SLOPE. THE LIVE STAKES SHALL BE INSTALLED 2 TO 3 FEET APART USING TRIANGULAR SPACING. THE DENSITY WILL RANGE FROM 2 TO 4 STAKES PER SQUARE YARD. ALL THE MATERIALS SHALL BE INSTALLED THE SAME DAY THAT THEY ARE PREPARED. REFER TO LIVE STAKE NOTES (SEE SHEET 119) FOR INSTALLATION PER DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK.

2.1.4.8. INSTALL ENGINEERED COVERS AS SHOWN ON SHEETS 125–128 AND REMOVE E&S CONTROLS ASSOCIATED WITH THIS PHASE ONCE THE VEGETATIVE COVERS ARE ESTABLISHED.

2.1.4.9. TWO TEMPORARY DAMS WILL BE REMOVED AFTER THIS PHASE OF WORK. THE TEMPORARY DAM AT RAILCAR AVENUE WILL REMAIN FOR ADDITIONAL REMEDIATION ACTIVITY ON AMTRAK PROPERTY.

2.1.5. OUTFALL 002 PHASE

2.1.5.1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AND TEMPORARY MATTING TO ACCESS THE WORK AREA. INSTALL SILT FENCE AS REQUIRED.

2.1.5.2. TEMPORARILY ROUTE STORMWATER FROM THE UPSTREAM MANHOLE FROM OUTFALL 002 TO THE SHELLPOT CREEK.

2.1.5.3. INSTALL A TEMPORARY TRANSITORY BERM ALONG SHELLPOT CREEK TO PREVENT THE EXISTING WATER FROM FLOWING INTO THE WORK AREA.

2.1.5.4. ONCE THESE CONTROLS ARE IMPLEMENTED, THE EXISTING SEDIMENT CAN BE EXCAVATED TO THE LIMITS AS REQUIRED. INSTALL CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") AND ENSURE POSITIVE DRAINAGE BACK TO SHELLPOT CREEK. INSTALL RIP RAP OUTLET PROTECTION DOWNSTREAM OF OUTFALL 002.

2.1.5.5. THE OUTFALL 002 AREA WILL BE STABILIZED WITH A COMBINATION OF ENGINEERED COVER CONSISTING OF CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL"), VEGETATION AND TEMPORARY SOIL STABILIZATION MATTING S75BN (NORTH AMERICAN GREEN OR EQUIVALENT APPROVED) ON BOTH THE BOTTOM AND THE RETURN SLOPES.

2.1.5.6. INSTALL THE LIVE STAKES AT RIGHT ANGLES TO THE SLOPE. THE LIVE STAKES SHALL BE INSTALLED 2 TO 3 FEET APART USING TRIANGULAR SPACING. THE DENSITY WILL RANGE FROM 2 TO 4 STAKES PER SQUARE YARD. ALL THE MATERIALS SHALL BE INSTALLED THE SAME DAY THAT THEY ARE PREPARED. REFER TO LIVE STAKE NOTES (SEE SHEET 119) FOR INSTALLATION PER DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK.

2.1.5.7. INSTALL ENGINEERED COVERS AS SHOWN ON SHEETS 125–128 AND REMOVE E&S CONTROLS ASSOCIATED WITH THIS PHASE ONCE THE VEGETATIVE COVERS ARE ESTABLISHED.

2.2. PHASE 2B

2.2.1. EAST OF THE EASTERN DRAINAGE DITCH (EEDD) GRADING – PHASE 2–B–1.

2.2.1.1. THIS PHASE WILL INCLUDE THE GRADING OF EEDD NEAR THE LOWER EASTERN DRAINAGE DITCH (LEDD) (PHASE 3C) AND THE AREA ALONG RAILCAR AVENUE ON THE EASTERN SIDE OF UPPER EASTERN DRAINAGE DITCH FOR TEMPORARY STOCKPILE (PHASE 2B–1).

2.2.1.2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AROUND THE LIMIT OF CONSTRUCTION IN THIS SUB–PHASE. THE EXISTING DRAINAGE PATTERN FROM RAILCAR AVENUE TO LEDD WILL REMAIN IN THIS PHASE TO MAINTAIN THE RUNOFF PATTERN TO OUTFALL 006.

2.2.1.3. CONSTRUCT SOIL STOCKPILE 3B FOR PLACEMENT OF CONCRETE DEBRIS WITHIN STOCKPILE 2 AND EXCESS SOIL IN STOCKPILES 1 AND 3B. (SEE SHEET 100)

2.2.1.4. ONCE THESE CONTROLS ARE IMPLEMENTED, THE GRADING OF THIS AREA CAN BE IMPLEMENTED. ANY CONCRETE DEBRIS WHICH IS UNCOVERED SHALL BE STOCKPILED IN SOIL STOCKPILE 2. (SEE SHEET 78)

2.2.1.5. CONSTRUCT NEW TEMPORARY DIVERSION SWALE 1 TO CONVEY THE RAILCAR AVENUE OUTFALL TO THE LEDD. STABILIZE THE DIVERSION SWALE WITH TEMPORARY CHANNEL LINING (NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED) AND VEGETATE. ONCE TEMPORARY VEGETATION IS ESTABLISHED, DIVERT THE FLOW INTO THIS SWALE.

2.2.1.6. INSTALL TEMPORARY WATER DAMS TO SEPARATE FLOW FROM THE LEDD IN ORDER TO DEWATER AND REMOVE THE SEDIMENT WITHIN THE DRAINAGE SWALE AS DEPICTED ON PLANS.

2.2.1.7. CONTINUE WITH GRADING IN THIS PHASE AND CONSTRUCT GRADES AS SHOWN ON THE PLANS. REMOVE THE SEDIMENTS WITHIN THE EXISTING SWALE. CONSTRUCT THE LOWER PORTION OF NEW PERMANENT SWALE 1. INSTALL PERMANENT EROSION CONTROL FABRIC FOR NEW SWALE 1. BRING IN CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") PLACE TO GRADE AND INSTALL TRM ON SURFACE.

2.2.1.8. CONSTRUCT TEMPORARY BERM 1A AND STABILIZE THE SIDE SLOPES WITH SLOPE STABILIZATION MATTING AND INSTALL TEMPORARY VEGETATIVE COVER. CONSTRUCT TEMPORARY DAM 3 AND THE END OF NEW SWALE 1. DETAIL FOR SLOPE STABILIZATION MATTING IS SHOWN ON SHEET 118.

2.2.1.9 BEGIN THE CONSTRUCTION OF SOIL STOCKPILE 4 FOR PLACEMENT OF EXCESS SOIL GENERATED FROM THE EEDD GRADING ACTIVITIES. (SEE SHEET 102)

2.2.1.10. ONCE THE AREA HAS BEEN GRADED BEGIN TO INSTALL TEMPORARY DAM 2 AND THE CONSTRUCTION OF NEW TEMPORARY OUTFALL 006C. THE CONTRACTOR SHALL NOTIFY AMTRAK PRIOR TO INSTALLING THE PIPES VIA A JACK AND BORE PROCESS UNDER THE EXISTING TRACKS (AMTRAK TO BE NOTIFIED).

2.2.1.11. INSTALL THE NECESSARY SILT FENCE AND TURBIDITY BARRIER WITHIN THE DITCH DOWNSTREAM OF OUTFALL 006 TO CONSTRUCT THE NEW OUTFALL PIPES. CONSTRUCT TEMPORARY DAM 2 AND THE ASSOCIATED OUTFALL PIPE TO OUTFALL 006C. INSTALL DUCKBILL VALVES ON THE END OF THESE PIPES AND INSTALL RIP RAP OUTLET PROTECTION.

2.2.1.12. ONCE THESE MEASURES ARE CONSTRUCTED FINISH GRADING THE AREA AND BRING IN CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") TO PLACE AS PART OF THE ENGINEERED VEGETATIVE COVER CONSTRUCTION.

2.2.1.13. INSTALL STONE SEDIMENT FOREBAY WITHIN SWALE 1.

2.2.1.14. INSTALL ENGINEERED COVERS AS SHOWN ON SHEETS 129 AND REMOVE E&S CONTROLS ASSOCIATED WITH THIS PHASE ONCE VEGETATIVE COVERS HAVE BEEN ESTABLISHED. REMOVE THE TEMPORARY DIVERSION OF THE RAILCAR AVENUE OUTFALL AND SUPPLEMENT EXISTING RIP RAP OUTLET PROTECTION AS NECESSARY TO CONVEY THE DRAINAGE INTO NEW SWALE 1.

2.2.2. EAST OF THE EASTERN DRAINAGE DITCH (EEDD) GRADING – PHASE 2–B.

2.2.2.1. THIS PHASE WILL INCLUDE THE GRADING OF PORTION OF UPPER END OF EEDD, A PORTION OF NEW SWALE 2 FROM THE LEDD, THE MIDDLE PORTION OF NEW SWALE 1 AND INSTALLATION OF TEMPORARY BERMS/DAMS WHICH WILL REMAIN UNTIL FUTURE PHASES OF WORK ARE COMPLETE.

2.2.2.2. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE. INSTALL SILT FENCE AROUND THE LIMIT OF CONSTRUCTION TO PREVENT RUNOFF. BEGIN TO CONSTRUCT TEMPORARY BERM 1C AND 1B ALONG THE LOWER AND UPPER EASTERN DRAINAGE DITCHES TO SEPARATE OUT THE WORK AREAS AND PREVENT STORMWATER FLOW. TEMPORARY BERM 1C SHALL UTILIZE THE SOIL FROM THIS AREA WHILE THE FINAL OUTER SURFACE SHALL HAVE AN ENGINEERED COVER INSTALLED PER THE PLAN SET. INSTALL TEMPORARY DAM 5. DETAIL FOR SILT FENCES AND STABILIZED CONSTRUCTION ENTRANCES ARE SHOWN ON SHEET 117.

2.2.2.3. INSTALL A TEMPORARY TRANSITORY DAM AT THE UPPER END OF THE WORK AREA TO CONNECT INTO TEMPORARY BERM 1C TO PREVENT STORMWATER FROM THE UEDD AND OUTFALL 007 FROM IMPACTING THIS WORK AREA.

2.2.2.4. ONCE THESE CONTROLS ARE IMPLEMENTED, THE CONSTRUCTION OF THIS AREA CAN BE IMPLEMENTED FOR UPPER SWALE 1 AND LOWER END OF SWALE 2. THE EXCESS SOIL WILL BE STOCKPILED IN THE DESIGNATED STOCKPILE AREAS.

2.2.2.5. BEGIN THE GRADING OF THIS AREA AND STOCKPILE EXCESS SOIL GENERATED FROM THE CONSTRUCTION OF THESE AREAS WITHIN SOIL STOCKPILE 1, 2 (CONCRETE DEBRIS), 3B AND 4.

2.2.2.6. TEMPORARY STORMWATER DIVERSION CONTROLS SHALL BE INSTALLED DURING THIS PHASE TO COLLECT OFFSITE STORMWATER RUNOFF FROM RAILCAR AVENUE WHICH WILL FLOW INTO NEW SWALE 1.

2.2.2.7. INSTALL PERMANENT EROSION CONTROL FABRIC FOR NEW DRAINAGE SWALE AREAS.

2.2.2.8. IMPORT IN CLEAN FILL (SPECIFICATION 313000 "IMPORT FILL") PLACE TO GRADE AND INSTALL TRM ON FINAL SURFACE.

2.2.2.9. INSTALL ENGINEERED COVERS AS SHOWN ON SHEETS 129 AND REMOVE E&S CONTROLS ASSOCIATED WITH THIS PHASE ONCE VEGETATIVE COVERS HAVE BEEN ESTABLISHED.

2.2.2.10. THE TEMPORARY DAM AND BERM ALONG THE UPPER EASTERN DRAINAGE DITCH WILL REMAIN IN PLACE AFTER THIS PHASE OF WORK. THE STORMWATER WILL BE PIPED AND DISCHARGED TO LEDD.

2.2.3. EAST OF THE EASTERN DRAINAGE DITCH (EEDD) GRADING – PHASE 2–C.

2.2.3.1. THIS PHASE WILL INCLUDE THE GRADING OF THE UPPER PORTION OF SWALES 1 & 2, THE PERMANENT BERM SEPARATING SWALES 1 AND 2 AND A GRAVEL ACCESS ROAD FOR DEL MARVA TO ACCESS THE UTILITY STRUCTURES.

2.2.3.2. INSTALL A STABILIZED CONSTRUCTION ENTRANCE. INSTALL SILT FENCE AROUND THE LIMIT OF CONSTRUCTION TO PREVENT THE RUNOFF. INSTALL A TEMPORARY STONE DRAINAGE SW

TRACK MONITORING FOR WORK DISTURBING ROADBED:

1. GENERAL

1.1. INTRODUCTION AND PURPOSE

TRACK MONITORING IS A METHOD OF ENSURING THE INTEGRITY OF TRACK GEOMETRY DURING CONSTRUCTION WORK THAT COULD AFFECT TRACK STABILITY, CALLED ROADBED DISTURBING WORK. THIS INCLUDES ANY EARTH DISTURBING CONSTRUCTION ACTIVITY EITHER UNDER THE TRACK (CALLED UNDERGROUND CROSSING WORK) OR WITHIN 50 FEET OF THE CENTERLINE OF THE NEAREST TRACK EFFECTING THE THEORETICAL RAILROAD EMBANKMENT LINE AS SHOWN ON FIGURE 1 (CALLED PARALLEL WORK).

EXAMPLES OF THE TYPES OF PROJECTS IN WHICH TRACK MONITORING IS REQUIRED:
- UNDERGROUND PIPE CROSSINGS BY JACKING OR HORIZONTAL DIRECTIONAL DRILLING.
- LOCAL WORK, SUCH AS FOR FOUNDATION EXCAVATION OR GROUND DEWATERING.
- EXCAVATION THAT IS PARALLEL TO THE TRACK, SUCH AS CONSTRUCTION OF A DITCH OR UTILITY TRENCH.
- PILE DRIVING ADJACENT TO THE TRACK, SUCH AS CONSTRUCTION OF AN ACCESS ROAD.

THE PURPOSE OF TRACK MONITORING IS TO RECORD RAILROAD TRACK GEOMETRY DATA BEFORE, DURING, AND AFTER THE COMPLETION OF CONSTRUCTION. THE COLLECTED GEOMETRY DATA IS COMPARED TO DETERMINE IF THE TRACK HAS BEEN ADVERSELY AFFECTED BY CONSTRUCTION. IF THE TRACK HAS BEEN ADVERSELY AFFECTED, THE DATA CAN BE USED TO ALERT AMTRAK PERSONNEL TO TAKE APPROPRIATE ACTION AND REESTABLISH PRE-CONSTRUCTION CONDITIONS.

1.2. RELATED DOCUMENTS

- AMTRAK STRUCTURES EP 3005 – PIPELINE OCCUPANCY
- AMTRAK STRUCTURES EP 3005, SPEC. 02082A – ADDITIONAL REQUIREMENTS FOR HORIZONTAL DIRECTIONAL DRILLING (HDD)/ DIRECTIONAL BORING
- AMTRAK TRACK DEPARTMENT FRAC – OUT CONTINGENCY PLAN (FCP) (INCLUDED IN STRUCTURES EP 3005, SPEC. 02082A)
- AMTRAK STRUCTURES EP 3014, SPEC. 02261 – REQUIREMENTS OR TEMPORARY SHEETING AND SHORING TO SUPPORT AMTRAK TRACKS
- AMTRAK LAND SURVEYING STANDARDS AND PROCEDURES MANUAL, VERSION 2.0

1.3. RESPONSIBILITIES

CONTRACTOR RESPONSIBILITIES:

- USING PROVEN SURVEYING METHODS AND MATERIALS TO ESTABLISH REMOTE MONITORING POINTS (RPMS) FOR COLLECTION OF TRACK DATA.
- GATHERING AND RECORDING TRACK DATA BEFORE CONSTRUCTION STARTS.
- GATHER, RECORDING, AND REPORT TRACK GEOMETRY DATA AT PRE-DETERMINED TIME INTERVALS DURING CONSTRUCTION.
- COMPARING PRE-CONSTRUCTION AND DURING-CONSTRUCTION DATA TO DETERMINE IF DIFFERENTIAL MOVEMENT HAS OCCURRED.
- REPORT TRACK MONITORING DATA AND COMPARISON TO AMTRAK CONSTRUCTION PROJECT MANAGER, ASSISTANT DIVISION ENGINEER OF TRACK, AND SYSTEM TRACK CONTRACTING OFFICE TECHNICAL REPRESENTATIVE (COTR).
- PAY FOR ANY REPAIRS REQUIRED IF TRACK MOVEMENT MEETS OR EXCEEDS ¼ INCH IN ANY DIRECTION OR CREATES CONDITIONS EXCEEDING TRACK GEOMETRY MAINTENANCE LIMITS AS DEFINED IN THE MW1000 FOR THE CLASS OF TRACK CONCERNED.

AMTRAK RESPONSIBILITIES:

- AMTRAK WILL IDENTIFY AND PROVIDE CONTACT INFORMATION FOR THE FOLLOWING: SYSTEM TRACK COTR FOR TRACK MONITORING, THE ASSISTANT DIVISION ENGINEER OF TRACK RESPONSIBLE FOR MAINTENANCE, AND THE CONSTRUCTION PROJECT MANAGER.
- PRIOR TO CONSTRUCTION AMTRAK WILL REVIEW/APPROVE THE SUBMITTED TRACK MONITORING PLAN.
- SCHEDULE TRACK INSPECTOR TO COVER THE ANTICIPATED DURATION OF ROADBED DISTURBING WORK.
- MONITOR TRACK MOVEMENT AND PRESCRIBE REPAIRS, RESTRICTIONS, OR REMOVAL TRACKS FROM SERVICE TO ENSURE THE SAFETY OF TRAIN OPERATIONS.

2. METHODS & MATERIALS

2.1. SURVEYING REQUIREMENTS

SURVEYOR IN CHARGE OF PERFORMING TRACK MONITORING MUST BE, OR BE WORKING UNDER THE DIRECT SUPERVISION OF, A PROFESSIONAL LAND SURVEYOR DULY REGISTERED IN THE STATE. CONTRACTOR SURVEYORS MUST HAVE WORKING KNOWLEDGE OF AMTRAK SURVEY SPECIFICATION AND HAVE CURRENT CONTRACTOR ORIENTATION TRAINING CREDENTIALS. DATUM AND ACCURACY WILL BE IN ACCORDANCE WITH AMTRAK LAND SURVEYING STANDARDS AND PROCEDURES MANUAL, VERSION 2.0:

- DATUMS – NAD 83 WITH APPROPRIATE UTM ZONE – NAVD 88
- ALL COORDINATES IN US SURVEY FEET.
- HORIZONTAL AND VERTICAL ACCURACY 0.01 FEET (⅛ INCH) FOR ALL REPORTS
- CONTROL MUST BE VERIFIED BEFORE AND DURING CONSTRUCTION WITH FREQUENCY SUFFICIENCY TO ENSURE CONTINUED ACCURACY.

2.2. EQUIPMENT REQUIREMENTS

MONITORING SHALL BE PERFORMED BY A TOTAL STATION INSTRUMENT HAVING A MINIMUM ANGULAR ACCURACY OF 1 – SECOND AND AN ELECTRONIC DISTANCE MEASUREMENT ACCURACY OF 1.0MM + 2PPM.

TOTAL STATION WILL LOCATE REMOTE MONITORING POINTS (RMPS) LOCATED ON THE TRACK TO BE MONITORED. POINTS SHOULD BE EITHER COMMERCIALLY AVAILABLE CALIBRATED REFLECTIVE TARGETS OR SMALL PRISMS. ALL TARGETS SHALL BE MOUNTED A UNIFORM ELEVATION BELOW TOP OF RAIL.

- REFLECTIVE TARGETS SHALL BE LESS THAN 3 INCHES SQUARE AND AFFIXED BY ADHESIVE TO THE WEB OF THE RAIL (AS SHOWN). COMMON TYPES ARE SHOWN IN FIGURE 1 BUT ARE NOT EXCLUSIVE. MINIMUM ANGLE OF 30 DEGREES FROM INSTRUMENT TO TARGET FACE IS ALLOWED. THEREFORE, MULTIPLE TARGET TYPES MAY BE USED TO AID IN VISIBILITY FROM THE INSTRUMENT. DURING APPLICATION THE RAIL SHOULD BE SPOT CLEANED AND DRIED TO ALLOW GOOD ADHESION.
- SMALL PRECISE PRISMS SHALL REMAIN AT LEAST 1 INCH BELOW THE TOP OF THE RAIL. THEY ARE TYPICALLY ON A BRACKET CLAMPED TO THE BASE OF THE RAIL AND MUST NOT INTERFERE WITH TRACK COMPONENTS.

3. MONITORING POINT LOCATIONS

3.1. GENERAL INSTRUCTIONS

BENCHMARKS TO BE OCCUPIED INCLUDING FORESIGHTS AND BACK SIGHTS, SHALL BE OUTSIDE OF THE ZOI FOR THE ROADBED DISTURBING WORK.

RMPS WILL BE INSTALLED AS PAIRS, WITH ONE TARGET ON EACH RAIL OF THE TRACK TO BE MONITORED. THE PAIRS SHALL BE SET PERPENDICULAR TO THE DIRECTION OF THE RAILS TO ALLOW FOR MEASUREMENT OF CROSS-LEVEL.

PAIRS OF RMPS WILL BE SPACED ALONG THE RAILS AT 15.5 FOOT INTERVALS. IN LOCATIONS OF SPECIAL TRACK WORK (I.E. TURNOUTS, CROSSINGS, AND MITER RAILS) THE SYSTEM TRACK COTR WILL DETERMINE AN ALTERNATE ARRANGEMENT.

3.2. UNDERGROUND CROSSING WORK

THIS METHOD FOR RMPS IS APPLICABLE FOR UNDERGROUND WORK THAT ENTERS ZONE 3 SHOWN ON FIGURE 2 AND/OR CROSSES UNDER THE TRACKS.

DETERMINE THE ZONE OF INFLUENCE FOR THE UNDERGROUND CROSSING WORK AT THE ELEVATION OF THE BOTTOM OF RAILROAD TIE. CALCULATE BY TAKING THE DIAMETER OR WIDTH OF THE UNDERGROUND WORK, EXTENDING TO THE GROUND SURFACE AT THE SOIL ANGLE OF REPOSE. SOIL ANGLE OF REPOSE SHOULD BE TAKEN FROM SOIL BORINGS PERFORMED AT THE CROSSING LOCATION THAT COVERS THE DEPTH FROM THE TRACK LEVEL TO THE DEPTH OF UNDERGROUND WORK. IF SOIL BORING DATA IS NOT AVAILABLE OR DOES NOT SATISFY THE SYSTEM TRACK COTR, USE 20 DEGREES AS A CONSERVATIVE SOIL ANGLE OF REPOSE. SEE FIGURE 2 FOR AN EXAMPLE.

IN EACH DIRECTION STARTING FROM THE INTERSECTION OF THE CENTERLINES OF UNDERGROUND WORK AND TRACK, PLACE RMPS EVERY 15.5 FEET UNTIL THE MONITORING POINT PAIRS ARE OUTSIDE THE ZONE OF INFLUENCE. CONTINUE THE RMPS FOR FIVE PAIRS OUTSIDE OF THE ZOI FOR A TIE-IN WITH UNDISTURBED TRACK. REFER TO FIGURE 3 FOR AN EXAMPLE.

3.3. WORK PARALLEL TO TRACK

THIS METHOD FOR PLACING RMPS IS APPLICABLE FOR UNDERGROUND WORK THAT ENTERS EITHER A ZONE 2 OR ZONE 3 FROM FIGURE 2, THAT DOES NOT CROSS UNDER TRACKS.

DETERMINE THE ZONE OF INFLUENCE FOR THE UNDERGROUND CROSSING WORK A THE ELEVATION OF THE BOTTOM OF RAILROAD TIE. CALCULATE BY TAKING THE LOWEST ELEVATION LIMITS OF THE UNDERGROUND WORK, EXTENDING TO THE GROUND SURFACE AT THE SOIL ANGLE OF REPOSE. SOIL ANGLE OF REPOSE SHOULD BE TAKEN FROM SOIL BORINGS PERFORMED AT THE CROSSING LOCATION THAT COVERS THE DEPTH FROM TRACK LEVEL TO THE DEPTH OF UNDERGROUND WORK. IF SOIL BORING DATA IS NOT AVAILABLE OR DOES NOT SATISFY THE SYSTEM TRACK COTR, USE 20 DEGREES AS A CONSERVATIVE SOIL ANGLE OF REPOSE. SEE FIGURE 4 FOR AN EXAMPLE.

ANY PLACE THE ZOI INTERSECTS ZONE 2 FROM FIGURE 1 REQUIRES MONITORING FOR THE TRACK DIRECTLY PERPENDICULAR TO THE INTERSECTION OF ZOI AND ZONE 2. IN EACH DIRECTION, PLACE RMPS EVERY 15.5 FEET UNTIL PERPENDICULAR TO THE INTERSECTION OF ZOI AND ZONE 2. IN EACH DIRECTION, PLACE RMPS EVERY 15.5 FEET UNTIL THE RMPS PAIRS ARE OUTSIDE THE ZONE OF INFLUENCE. CONTINUE THE RMPS FOR FIVE PAIRS OUTSIDE OF THE ZOI FOR A TIE IN WITH UNDISTURBED TRACK. SEE FIGURE 5 FOR AN EXAMPLE.

4. PRECONSTRUCTION ACTIVITIES

4.1. TRACK MONITORING PLAN SUBMITTAL

TRACK MONITORING PLAN SHALL BE SUBMITTED A MINIMUM OF 4 WEEKS PRIOR TO COMMENCEMENT OF ROADBED DISTURBING WORK. THE SYSTEM TRACK COTR WILL REVIEW AND PROVIDE COMMENTS OR APPROVAL. AS A MINIMUM, THE PACKAGE MUST INCLUDE THE FOLLOWING;

INFORMATION ON THE REGISTRATION AND EXPERIENCE OF THE FIELD SURVEYOR IN CHARGE PERFORMING THE TRACK MONITORING.

DESIGN SPECIFICATIONS OF THE TOTAL STATION INSTRUMENT TO BE USED, INCLUDING ANGULAR ACCURACY AND DISTANCE MEASUREMENT ACCURACY.

DESIGN SPECIFICATIONS OF THE PRISMS OR TARGETS TO BE USED, INCLUDE INFORMATION ON ADHESIVES, IF USED.

PLAN VIEWS, CROSS SECTIONS, PROFILE VIEWS, OR DIAGRAMS SHOWING HE ROADBED DISTURBING WORK AND THE RELATION TO THE ZONES SHOWN IN FIGURE 1. INCLUDE SOIL BORING LOGS AND LABORATORY DATA RELATED TO THE PROJECT SITE.

DETAILED PLAN SHOWING CONTROL LOCATIONS IN RELATIONSHIP TO THE TRACKS, ROADBED DISTURBING WORK, AND ZONE OF INFLUENCE. INCLUDE DETAILS ON METHODS AND FREQUENCY OF CONTROL VERIFICATION.

DETAILED TRACK MONITORING PLAN VIEW SHOWING THE LOCATION OF AL RMP LOCATIONS, CONTROL POINTS TO BE OCCUPIED DURING MONITORING, THE GROUND DISTURBING WORK AND THE ZOI. EACH RMP MUST BE NUMBERED, WITH THE HUNDREDTH BEING THE TRACK NUMBER, EVEN NUMBERED POINTS ON RIGHT RAIL, ODD NUMBERED POINTS ON THE LEFT RAIL IN THE DIRECTION OF INCREASING MILEPOST. SEE FIGURE 6 FOR AN EXAMPLE TRACK MONITORING PLAN.

4.2. CONTRACTOR SAFETY TRAINING

ALL CONTRACTORS THAT WORK ON AMTRAK OWNED OR LEASED PROPERTY ARE REQUIRED TO COMPLETE AMTRAK'S CONTRACTOR ORIENTATION TRAINING AVAILABLE AT: WWW.AMTRAKCONTRACTOR.COM

CONTRACTOR IDENTIFICATION BADGES MUST BE WORN/DISPLAYED ON THE OUTERMOST GARMENT, ABOVE THE WAIST, ALWAYS WHILE ON AMTRAK OWNED OR LEASED PROPERTY.

5. CONSTRUCTION

5.1. TRACK INSPECTOR

AMTRAK PERSON HAVING CURRENT QUALIFICATIONS IN MW1000 AND PHYSICAL CHARACTERISTICS FOR THE AREA WORK IS BEING PERFORMED. CAN INSPECT TRACK AND REPAIR, RESTRICT, OR REMOVE TRACK FROM SERVICE IF NECESSARY.

MUST BE ON-SITE WHEN LEADING END OF WORK ENTERS ZONE 2 AS SHOWN ON FIGURE 1 OR AS DIRECTED BY THE SYSTEM TRACK COTR. SHALL REMAIN ONSITE UNTIL THE COMPLETION OF ROADBED DISTURBING WORK, INCLUDING REAMING AND PULLBACK OPERATIONS OF HORIZONTAL DIRECTIONAL DRILLING AS DEFINED AS EP3005 SPEC. 02082.

WILL BE PROVIDED AT THE SOLE COST OF THE PROJECT.

WILL RESTRICT OR REMOVE TRACK FROM SERVICE IF NECESSARY, BASED ON THE MW1000 STANDARDS OF TRACK GEOMETRY FOR THE CLASS OF TRACK(S) INVOLVED. THE TRACK INSPECTOR HAS THE AUTHORITY TO HALT CONSTRUCTION AT ANYTIME SHOULD CONSTRUCTION ACTIVITIES JEOPARDIZE THE SAFE MOVEMENT OF TRAINS OVER THE WORK AREA.

5.2. MONITORING PROCEDURES

INITIAL BASELINE READING OF ALL MONITORING POINTS SHALL BE RECORDED WITHIN TEN TO FIVE DAYS PRIOR TO CONSTRUCTION. DURING THE INITIAL BASELINE READINGS, THE OFFSET FROM TOP OF RAIL TO THE TARGET SHALL BE RECORDED FOR USE IN TRACK MONITORING REPORTS.

DURING CONSTRUCTION, TRACK MONITORING SHALL START WHEN THE LEADING END OF WORK ENTERS ZONE 2 AS SHOWN IN FIGURE 2 OR AS DIRECTED NY THE SYSTEM TRACK COTR. ALL RPMS SHALL BE MEASURED AND RECORDED EACH TIME MONITORING OCCURS.

MONITORING SHALL BE PERFORMED AT THE BEGINNING AND THE END OF EVERY WORK SHIFT, A MINIMUM OF TWICE DAILY (12 HOUR INTERVALS). IF TRACK GEOMETRY MEETS OR EXCEEDS 0.03 FEET (⅛ INCH) OF MOVEMENT IN ANY DIRECTION, MONITORING MUST BE PERFORMED EVERY 4 HOURS UNTIL ROADBED DISTURBING WORK IS COMPLETE.

AFTER ROADBED DISTURBING WORK IS COMPLETE, MEASUREMENTS WILL CONTINUE ONCE A DAY UNTIL MOVEMENT LESS THAN 0.01 FEET (⅛ INCH) HAS BEEN OBSERVED FOR 5 CONSECUTIVE DAYS. FIELD CONDITIONS MAY WARRANT ADDITIONAL RMPS OR EXTENDING THE DURATION OF POST-CONSTRUCTION MONITORING AS DIRECTED BY THE TRACK INSPECTOR SYSTEM TRACK COTR.

5.3. COMMUNICATION

TRACK MONITORING REPORT SHALL BE PRODUCED IMMEDIATELY AFTER EACH MONITORING EVENT. MEASUREMENTS SHOWN WILL BE BASED ON TOP OF RAIL ELEVATIONS BASED ON THE OFFSET MEASURED DURING INITIAL SET UP. THIS WILL INCLUDE TOTAL DISPLACEMENT OF EACH RMP AND CROSS LEVEL BETWEEN RMP PAIRS.

TRACK MONITORING REPORTS MUST BE SIGNED AND SEALED BY THE SURVEYOR IN CHARGE AND CROSS-SIGNED BY THE TRACK INSPECTOR DURING WORK REQUIRING THEIR PRESENCE ON SITE. SEE FIGURE 6.7 FOR A SAMPLE TRACK MONITORING REPORT. THE QUICKNESS OF REPORTING TRACK CONDITIONS IS PARAMOUNT TO THE SAFETY OF AMTRAK OPERATIONS.

AN ONLINE SHARING PLATFORM, SUCH AS MICROSOFT SHAREPOINT EXCEL OR GOOGLE DRIVE SHEETS, MUST BE SET UP AND UTILIZED BY THE CONTRACTOR TO IMMEDIATELY HOST THE TRACK MONITORING DATA. A READ-ONLY LINK MUST BE MADE AVAILABLE TO THE SYSTEM TRACK COTR FOR DISTRIBUTION TO AMTRAK PERSONNEL AS NECESSARY. THIS REAL TIME ACCESS WILL ALLOW AMTRAK'S ENGINEERS TO TRACK MOVEMENT AND PLAN CORRECTIVE ACTION, IF REQUIRED.

5.4. REMEDIATION PROCEDURES FOR TRACK MOVEMENT

- AS A REMINDER: ANY PERSON MW1000 QUALIFIED CAN RESTRICT OR REMOVE A TRACK FROM SERVICE BASED ON TRACK GEOMETRY CONDITIONS. ANY PERSON CAN STOP THE WORK AND TRAINS SHOULD CONSTRUCTION ACTIVITIES JEOPARDIZE THE SAFE MOVEMENT OF TRAINS OVER THE WORK AREA.

ALL WORK ON TRACK SURFACE AND ALIGNMENT WILL BE PERFORMED SOLELY BY AMTRAK FORCES.

IF THE TRACK IS MEASURED TO HAVE MET OR EXCEEDS THE TRACK GEOMETRY MAINTENANCE LIMITS AS DEFINED IN THE MW1000 FOR CLASS OF TRACK CONCERNED OR MOVES 0.03 FEET (⅛ INCH) DISPLACEMENT FROM BASELINE IN ANY DIRECTION, THEN ALL WORK SHALL CEASE IMMEDIATELY. THE FOLLOWING TWO ITEMS MUST BE UNDERTAKEN:

- THE TRACK INSPECTOR MUST IMMEDIATELY INSPECT THE TRACK GEOMETRY AND TAKE ANY CORRECTIVE ACTION THAT MAY BE REQUIRED PER MW1000.
- THE CONTRACTOR MUST IMMEDIATELY AND CONTINUOUSLY ATTEMPT TO NOTIFY THE AMTRAK CONSTRUCTION PROJECT MANAGER, ASSISTANT DIVISION ENGINEER OF TRACK, AND SYSTEM TRACK COTR OF THE DEVIATIONS AND CONFIRM THAT CORRECTIVE ACTION IS BEING TAKEN ONSITE.

IT IS ASSUMED THAT SUBSIDENCE WILL CONTINUE, AND CORRECTIVE ACTIONS SHOULD BE TAKEN BEFORE TRACK GEOMETRY EXCEEDS THE SAFETY LIMITS SET FORTH IN MW1000.

ANY REPAIRS MADE TO CORRECT TRACK GEOMETRY BEYOND THE THRESHOLD, WILL BE MADE AT THE SOLE COST OF THE CONTRACTOR.

5.5. CONSTRUCTION RE-START

WORK MAY NOT RESUME UNTIL THE TRACK INSPECTOR HAS INSPECTED ALL TRACKS WITHIN THE LIMITS OF DISTURBANCE AND COMPLETED ANY APPROPRIATE ACTION TO REPAIR, RESTRICT, OR REMOVE THE TRACKS FROM SERVICE. IN ADDITION, ONE OF THE FOLLOWING REQUIREMENTS MUST BE MET:

- IF NO FURTHER SUBSIDENCE IS EXPECTED, THE CONSTRUCTION MANAGER MUST INSPECT THE SITE AND HAVE TAKEN CORRECTIVE ACTION TO ENSURE CONTINUED CONSTRUCTION ACTIVITIES WILL NOT CAUSE FURTHER SUBSIDENCE, TO THE SATISFACTION OF THE SYSTEM TRACK COTR.

- IF FURTHER SUBSIDENCE IS EXPECTED, THE CONSTRUCTION MANAGER, ASSISTANT DIVISION ENGINEER, AND SYSTEM TRACK COTR SHOULD AGREE ON HOW BEST TO PROTECT TRAIN OPERATIONS. ANY FURTHER ACTIONS REQUIRED TO ENSURE THE SAFE PASSAGE OF TRAINS, SUCH AS INCREASED FREQUENCY OF TRACK MONITORING, SHALL BE UNDERTAKEN AT THE SOLE EXPENSE OF THE CONTRACTOR.

REV	DATE	DESCRIPTION	APPROVED	BY

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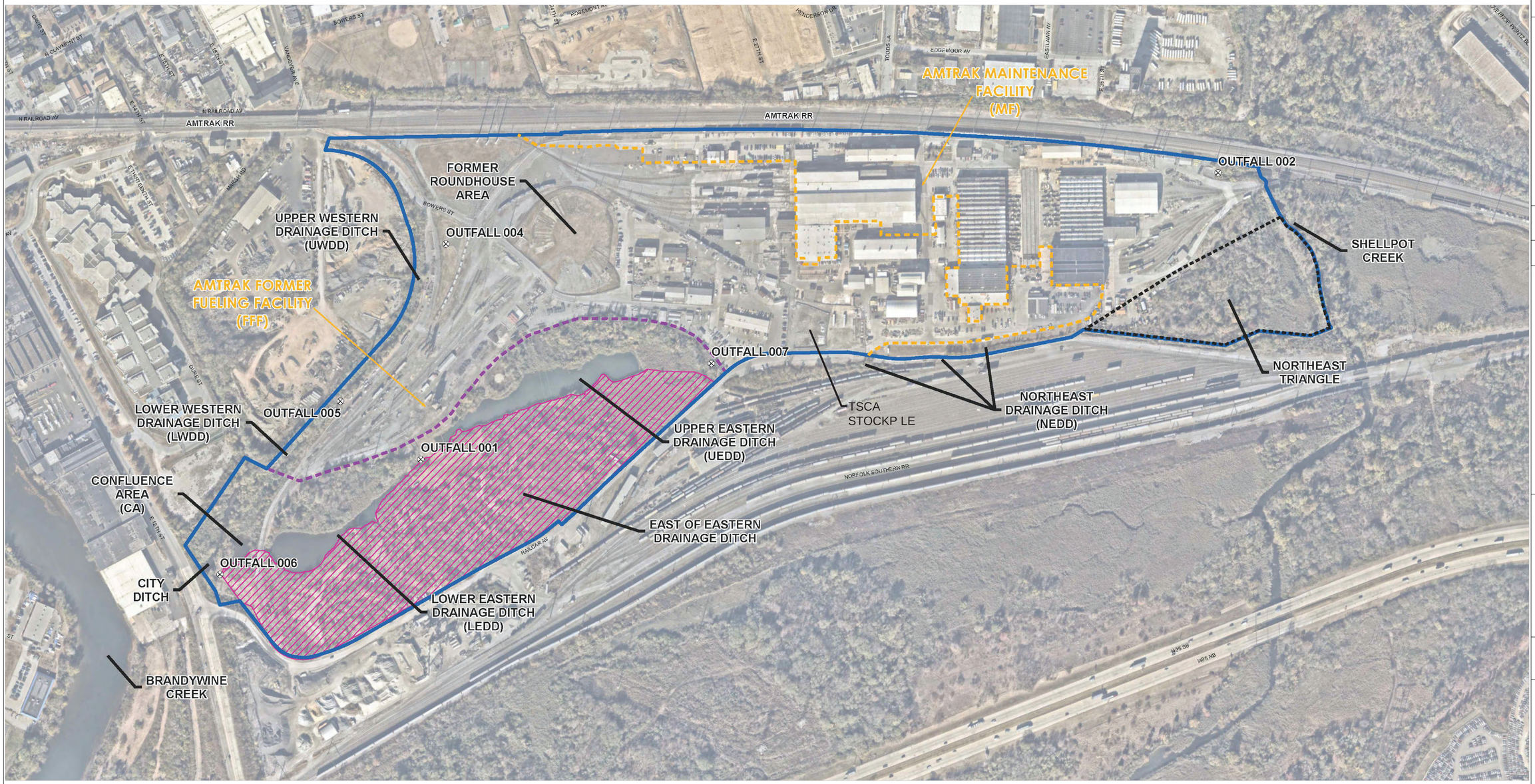
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STANTEC
TO:
AMTRAK

TRACK MONITORING PROCEDURES
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 5 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



NOTES

1. COORDINATE SYSTEM: NAD 1983 STATEPLANE DELAWARE FIPS 0700 FEET
2. SOURCE: STANTEC.
3. AERIAL & TOPO COPYRIGHT: 2013 NATIONAL GEOGRAPHIC SOCIETY, I–CUBED. NEARMAP IMAGERY.
4. THE NORTHEAST TRIANGLE PORTION OF THE AMTRAK PROPERTY IS SHOWN FOR COMPLETENESS. HOWEVER, NO REMEDIATION WORK IS PLANNED FOR THIS PORTION OF THE AMTRAK PROPERTY.

LEGEND

- OUTFALL LOCATION
- WILMINGTON SHOPS PROJECT BOUNDARY
- NORTHEAST TRIANGLE BOUNDARY
- UPLAND/LOWLAND BOUNDARY
- MAINTENANCE FACILITY / FORMER FUELING FACILITY
- EAST OF EASTERN DRAINAGE DITCH



APPRO MATE SCALE N EET

BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
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www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
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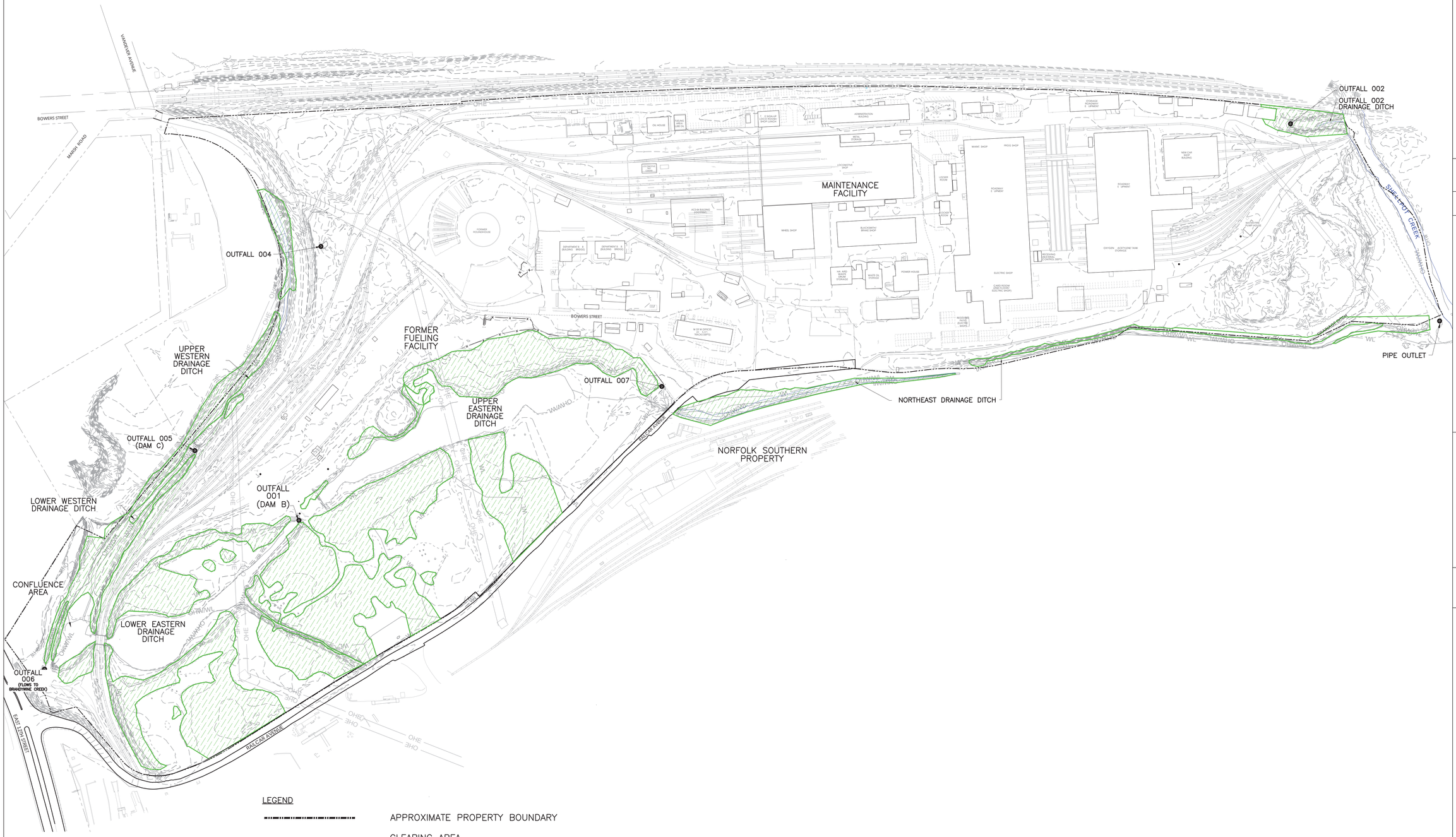
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TO:
AMTRAK

EXISTING CONDITIONS PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	C-101
SHEET:	7 OF 135
REV:	0

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ORIGINAL SHEET - ARCH D



LEGEND

APPROXIMATE PROPERTY BOUNDARY

CLEARING AREA

CLEAR AREAS ONLY PREPARED WITH E&S AND ONLY WHEN NECESSARY TO MINIMIZING SOIL EROSION

WL — NONTIDAL WETLAND

OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND

OHW — OHW — ORDINARY HIGH WATER

NOTE:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

RAPH C SCALE

N EET

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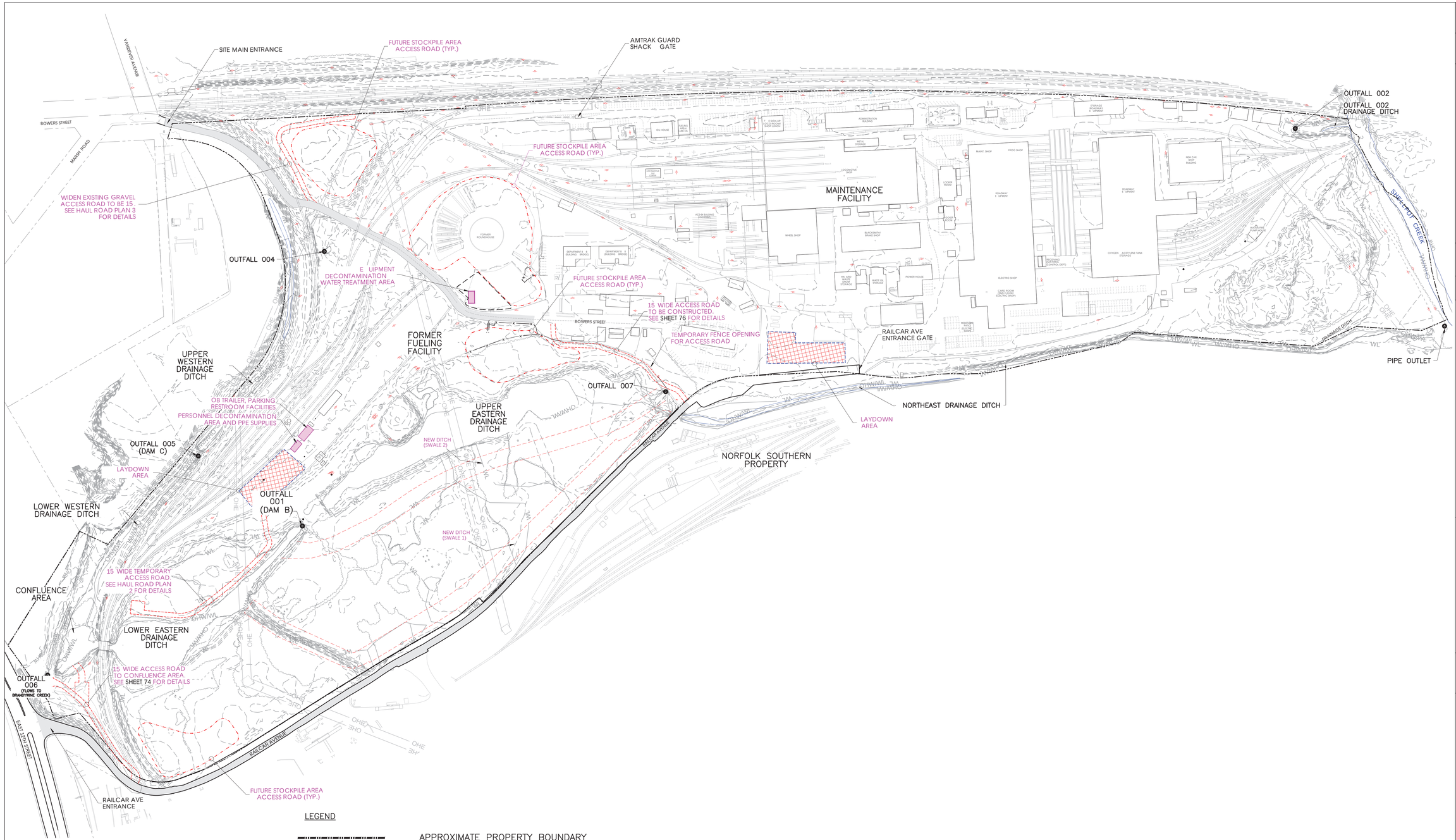
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CLEARING LOCATION MAP
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-101.03
SHEET: 10 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- ACCESS ROAD
- TEMPORARY ACCESS ROAD
- FUTURE STOCKPILE AREA
- LAYDOWN AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

1. ACTUAL LOCATIONS MAY CHANGE AND REQUIRE AMTRAK FACILITY APPROVAL.
2. FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

RAPH C SCALE

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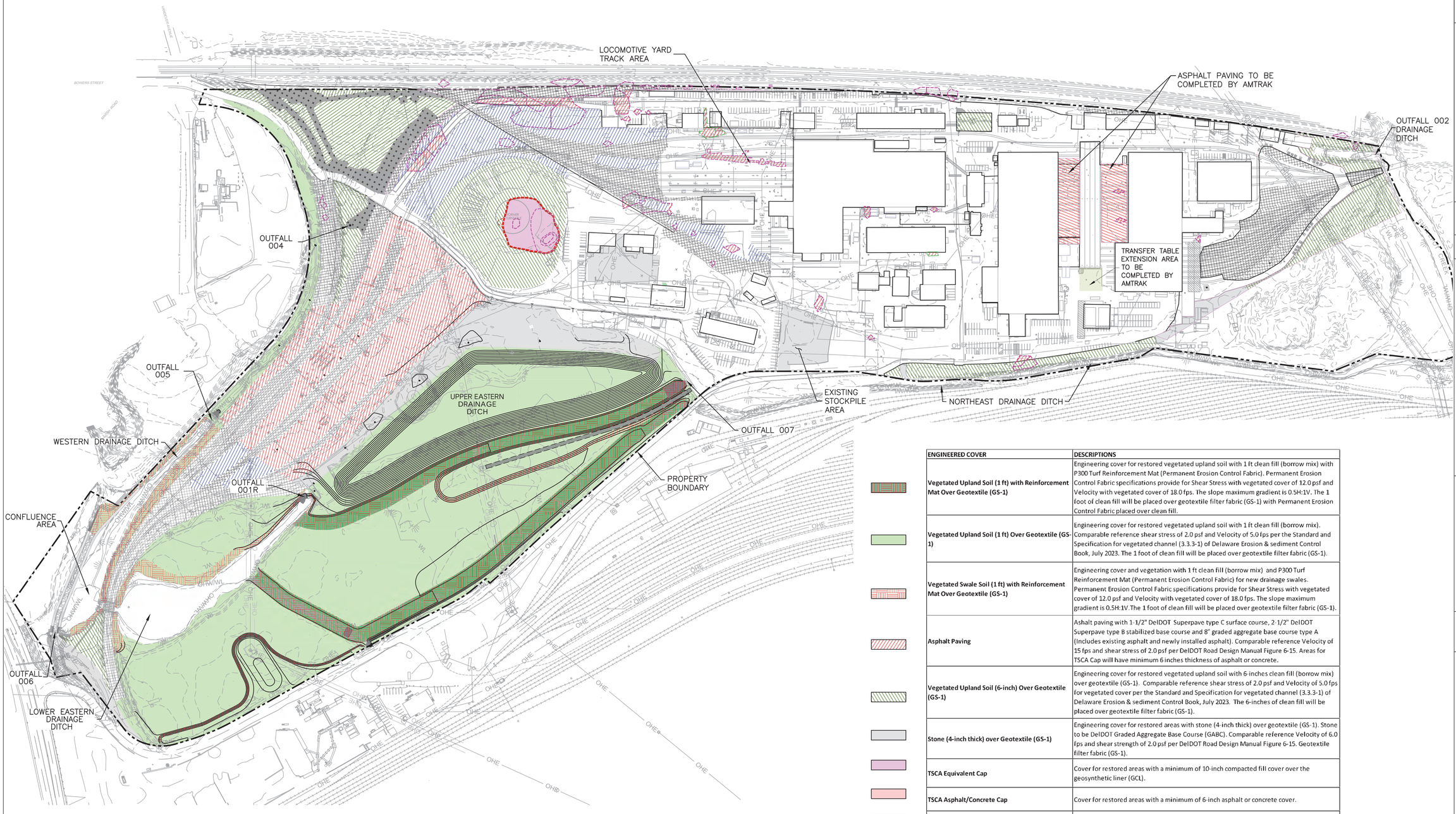
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TO:
AMTRAK

PRELIMINARY CONSTRUCTION MANAGEMENT SUPPORT FACILITIES FOR AMTRAK WILMINGTON SHOPS REMEDIATION FORMER FUELING FACILITY (DE-0266) WILMINGTON MAINTENANCE FACILITY (DE-0170) CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-101.04
SHEET: 11 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



ENGINEERED COVER	DESCRIPTIONS
Vegetated Upland Soil (1 ft) with Reinforcement Mat Over Geotextile (GS-1)	Engineering cover for restored vegetated upland soil with 1 ft clean fill (borrow mix) with P300 Turf Reinforcement Mat (Permanent Erosion Control Fabric). Permanent Erosion Control Fabric specifications provide for Shear Stress with vegetated cover of 12.0 psf and Velocity with vegetated cover of 18.0 fps. The slope maximum gradient is 0.5H:1V. The 1 foot of clean fill will be placed over geotextile filter fabric (GS-1) with Permanent Erosion Control Fabric placed over clean fill.
Vegetated Upland Soil (1 ft) Over Geotextile (GS-1)	Engineering cover for restored vegetated upland soil with 1 ft clean fill (borrow mix). Comparable reference shear stress of 2.0 psf and Velocity of 5.0 fps per the Standard and Specification for vegetated channel (3.3.3-1) of Delaware Erosion & sediment Control Book, July 2023. The 1 foot of clean fill will be placed over geotextile filter fabric (GS-1).
Vegetated Swale Soil (1 ft) with Reinforcement Mat Over Geotextile (GS-1)	Engineering cover and vegetation with 1 ft clean fill (borrow mix) and P300 Turf Reinforcement Mat (Permanent Erosion Control Fabric) for new drainage swales. Permanent Erosion Control Fabric specifications provide for Shear Stress with vegetated cover of 12.0 psf and Velocity with vegetated cover of 18.0 fps. The slope maximum gradient is 0.5H:1V. The 1 foot of clean fill will be placed over geotextile filter fabric (GS-1).
Asphalt Paving	Ashalt paving with 1-1/2" DelDOT Superpave type C surface course, 2-1/2" DelDOT Superpave type B stabilized base course and 8" graded aggregate base course type A (Includes existing asphalt and newly installed asphalt). Comparable reference Velocity of 15 fps and shear stress of 2.0 psf per DelDOT Road Design Manual Figure 6-15. Areas for TSCA Cap will have minimum 6 inches thickness of asphalt or concrete.
Vegetated Upland Soil (6-inch) Over Geotextile (GS-1)	Engineering cover for restored vegetated upland soil with 6-inches clean fill (borrow mix) over geotextile (GS-1). Comparable reference shear stress of 2.0 psf and Velocity of 5.0 fps for vegetated cover per the Standard and Specification for vegetated channel (3.3.3-1) of Delaware Erosion & sediment Control Book, July 2023. The 6-inches of clean fill will be placed over geotextile filter fabric (GS-1).
Stone (4-inch thick) over Geotextile (GS-1)	Engineering cover for restored areas with stone (4-inch thick) over geotextile (GS-1). Stone to be DelDOT Graded Aggregate Base Course (GABC). Comparable reference Velocity of 6.0 fps and shear strength of 2.0 psf per DelDOT Road Design Manual Figure 6-15. Geotextile filter fabric (GS-1).
TSCA Equivalent Cap	Cover for restored areas with a minimum of 10-inch compacted fill cover over the geosynthetic liner (GCL).
TSCA Asphalt/Concrete Cap	Cover for restored areas with a minimum of 6-inch asphalt or concrete cover.
Stone Access Road	DelDOT Graded Aggregate Base Course (GABC), 6" thick over Biaxial Geogrid.

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING STONE COVER AS ENGINEERED COVER TO REMAIN
- EXISTING STONE COVER AS ENGINEERED COVER/RAILROAD BALLAST REPLACED (6 INCHES) PER RAILROAD OPERATIONAL AREAS, OVER GEOTEXTILE FILTER FABRIC (OUTSIDE TRACK CROSSTIES PER DESIGN), (WITHIN CROSSTIES BALLAST REPLACED PER AMTRAK SPECIFICATIONS)
- EXISTING STONE COVER AS ENGINEERED COVER/RAILROAD BALLAST REPLACED (6 INCHES) PER CONTRACTOR, OVER GEOTEXTILE FILTER FABRIC.
- TSCA EQUIVALENT CONCRETE/ASPHALT CAP LOCATION
- TSCA EQUIVALENT GCL/SOIL CAP LOCATION
- PROPOSED GRADING CONTOUR
- EXISTING TOPOGRAPHIC CONTOUR
- WL — NONTIDAL WETLAND
- OHWWL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

NOTES

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

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THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

OVERALL ENGINEERED COVERS AND TSCA CAP PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-101.07
SHEET: 12 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

PROPOSED BERM RECONSTRUCTION

RESTORED CONFLUENCE AREA

UPPER WESTERN DRAINAGE DITCH RESTORATION

PROPOSED RIPRAP

RESTORED LOWER EAST DRAINAGE DITCH

PROPOSED RIPRAP. EXTEND RIPRAP 10 FT.

ID-01

CONTAINMENT CELL

PROPOSED SWALE 2

PROPOSED 12 FT WIDE ACCESS GRAVEL ROAD

ID-03

PROPOSED SEDIMENT FOREBAY

PROPOSED RIPRAP

ID-02

PROPOSED SWALE 1

OFFSITE RUN-ON CONTROL & NED DRAINAGE

PROPOSED RIPRAP

OUTFALL 007 DRAINAGE

PROPOSED SEDIMENT FOREBAY

BOWERS STREET

RALCAR AVENUE

FORMER TURNTABLE

ROUNDHOUSE

EAST STREET

LEGEND

- PROPOSED SWALES
- PROPOSED CONTOUR (20)
- 45.45 EXISTING SPOT GRADE
- 25 EXISTING TOPOGRAPHIC CONTOUR
- WL NONTIDAL WETLAND
- OHW/WL ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW ORDINARY HIGH WATER

SWALE	DRAINAGE
1	OFFSITE RUN-ON CONTROL & NED DRAINAGE
2	OUTFALL 007

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

1 inch = 80 ft.

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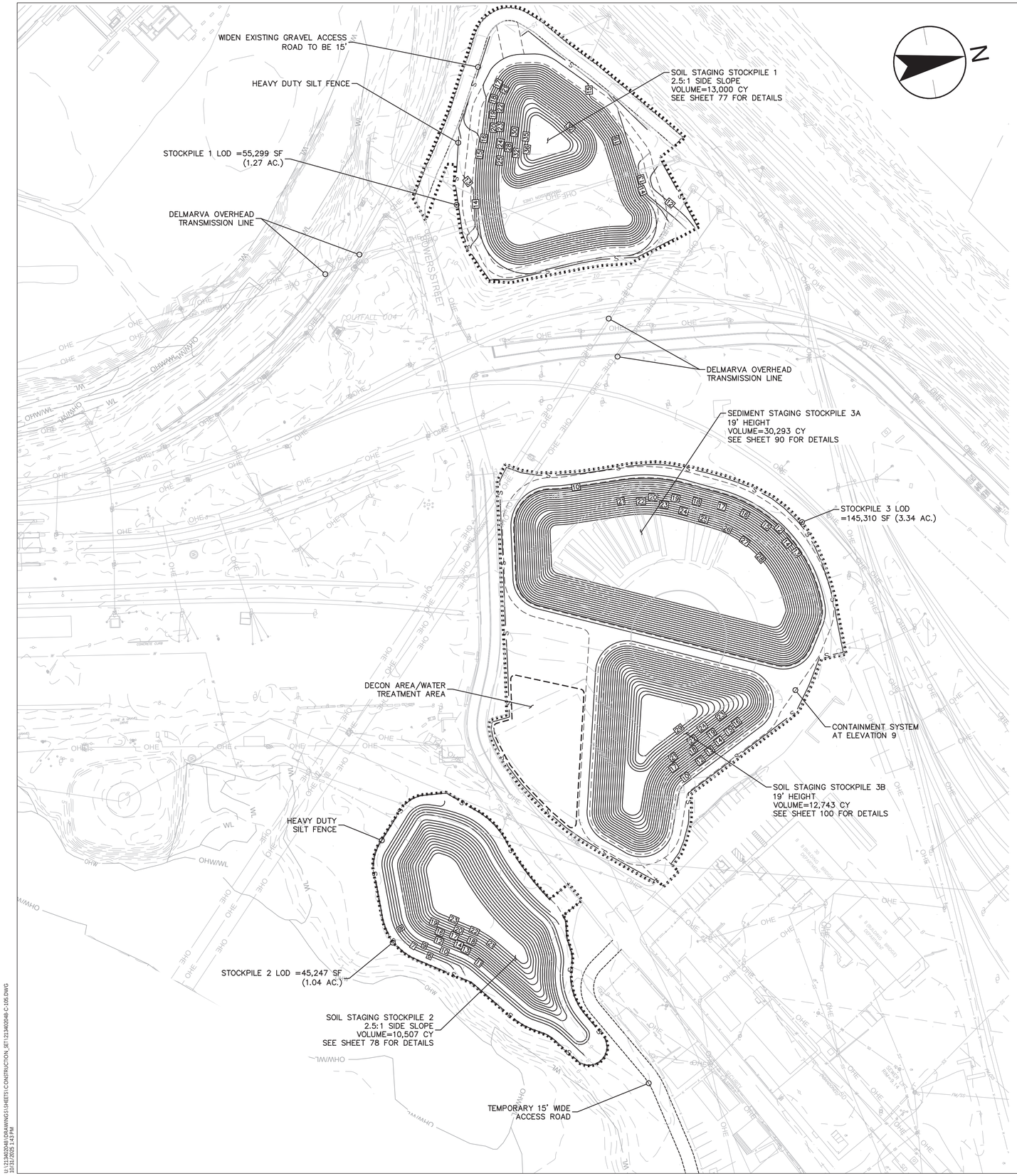
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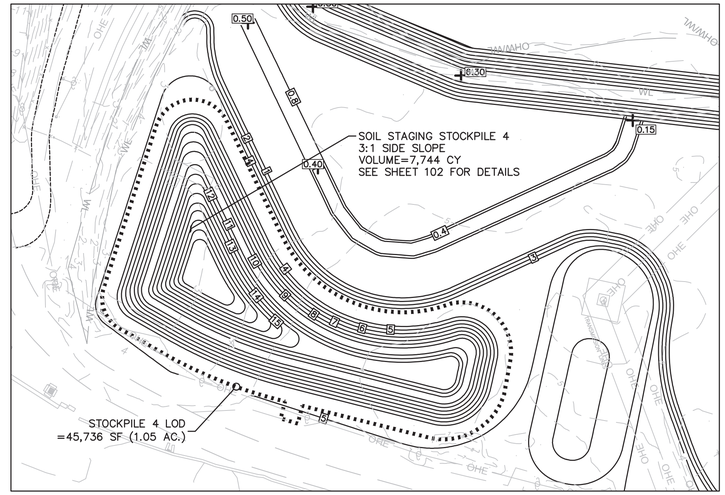
OVERALL DRAINAGE IMPROVEMENT PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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DESIGNED BY: RPV
FILE NO.: C-102
SHEET: 14 OF 135
REV: 0

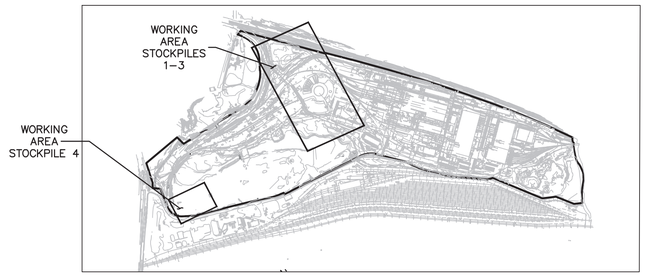
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ORIGINAL SHEET - ARCH D





TEMPORARY STOCKPILE 4
SCALE: 1" = 60'



KEY MAP
SCALE: 1" = 1000'

NOTE:

ALL QUANTITIES ARE APPROXIMATE AND DEPENDANT UPON AS FOUND CONDITIONS.

SOIL STAGING STOCKPILE CONSTRUCTION MAY CHANGE BASED UPON USEPA REGIONAL APPROVAL. APPROVAL IN PROCESS AS OF THE PREPARATION OF THIS PLAN.

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

SOIL STAGING STOCKPILES VOLUME:

TOTAL STOCKPILES VOLUME = 74,287 CY

SOIL STAGING STOCKPILES LOD:

TOTAL STOCKPILES LOD = 291,592 SF (6.69 AC.)

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 25 — PROPOSED CONTOUR
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
- S — SILT FENCE
- C L — COMPOST FILTER LOG
- SCE — CONSTRUCTION ENTRANCE
- SD — STREAM DIVERSION CHANNEL
- SM S — STABILIZATION MATTING—SLOPE
- TEMPORARY ACCESS ROAD
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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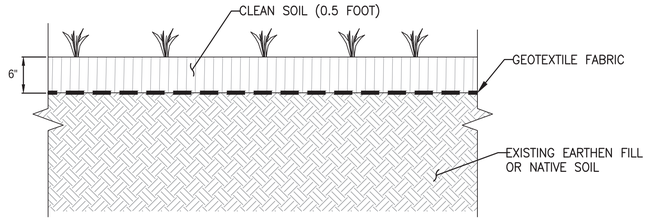
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STOCKPILES LOCATIONS PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

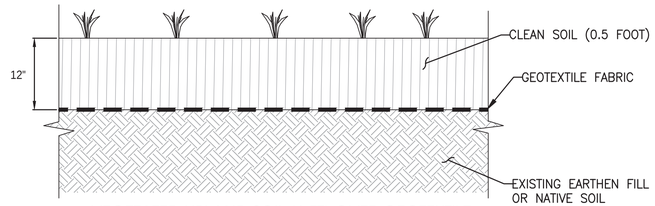
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SHEET: 15 OF 135
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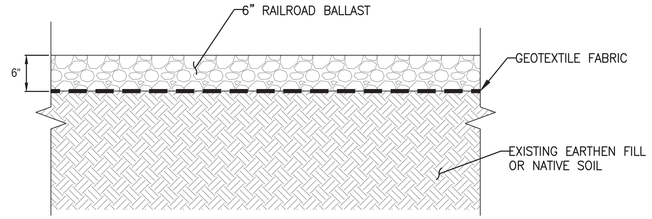
ORIGINAL SHEET - ARCH D



VEGETATED COVER (6-INCH) OVER GEOTEXTILE
N.T.S

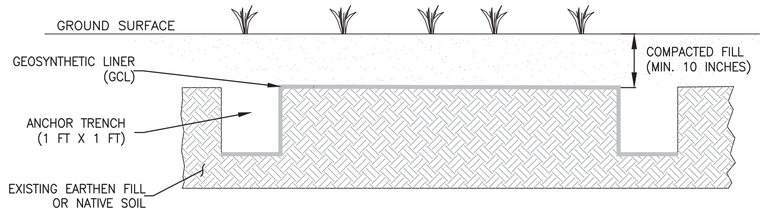


VEGETATED UPLAND SOIL (1 FT) OVER GEOTEXTILE
N.T.S

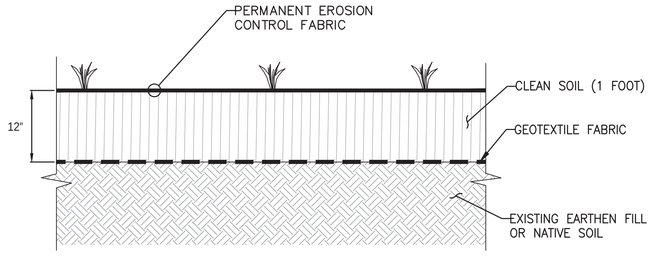


STONE (RAILROAD BALLAST) OVER GEOTEXTILE
N.T.S

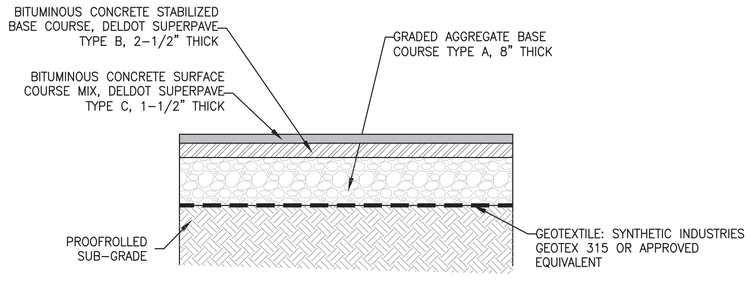
NOTES:
1. TSCA EQUIVALENT MEETS PERFORMANCE REQUIREMENTS OF 40 CFR CHAPTER 761.61(a)(7) AND 40 CFR 761.75(c)(4).
2. SOIL WILL BE REMOVED AS NECESSARY TO PROVIDE A MINIMUM COMPACTED FILL COVER OF 10 INCHES AND MAINTAIN GRADES CONSISTENT WITH FACILITY OPERATIONS
3. REFER TO ENGINEERED COVERS SECTION FROM EARTHWORK SPECIFICATION 313000.



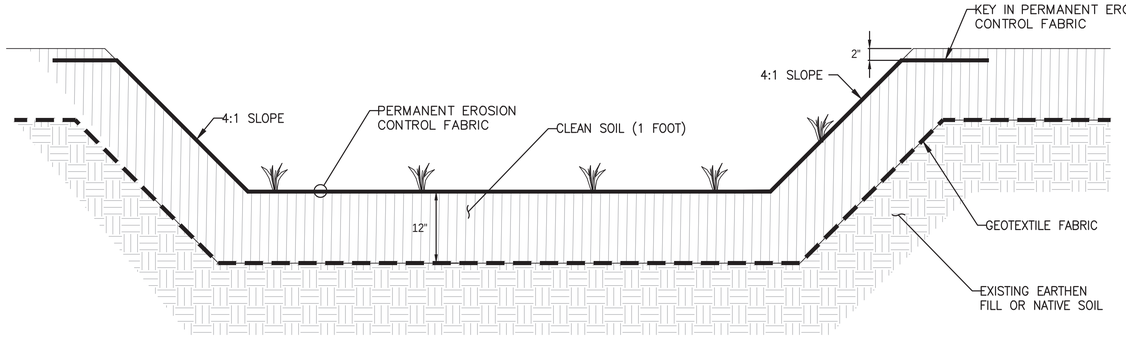
TSCA E UIVALENT CAP
N.T.S



VEGETATED UPLAND SOIL (1 FT) WITH REINFORCEMENT MAT OVER GEOTEXTILE
N.T.S



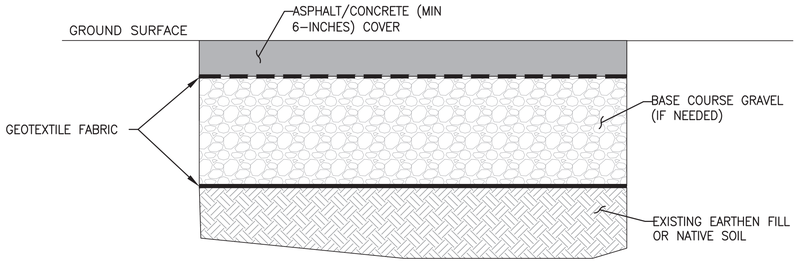
ASPHALT PAVING
N.T.S



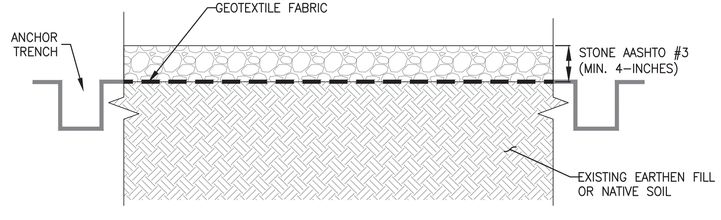
VEGETATED SWALE SOIL (1 FT) OVER GEOTEXTILE
N.T.S

ID-02,
ID-03

NOTES:
1. ASPHALT/CONCRETE BASED UPON AMTRAK REQUIREMENTS, SUFFICIENT THICKNESS/STRENGTH TO MAINTAIN EFFECTIVENESS AND INTEGRITY DURING USE OF SURFACE. ASPHALT OR CONCRETE MUST BE AT LEAST 6–INCHES THICK TO COMPLY WITH TSCA.
2. CONCRETE REINFORCEMENT BASED UPON AMTRAK REQUIREMENTS.
3. REFER TO ENGINEERED COVERS SECTION FROM EARTHWORK SPECIFICATION 313000



ASPHALT/CONCRETE TSCA CAP
N.T.S



STONE (4-INCH) OVER GEOTEXTILE
N.T.S

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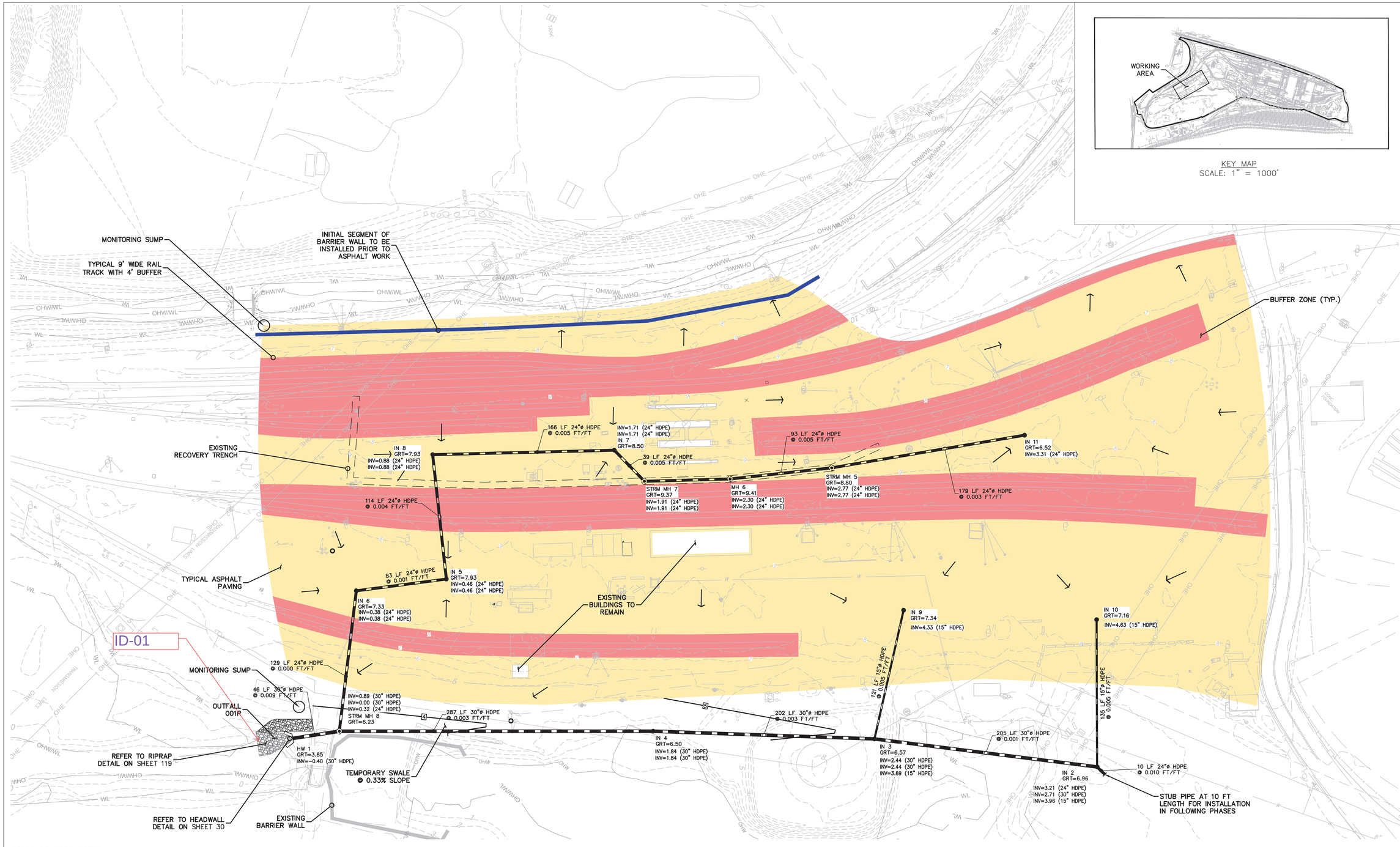
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400 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE (302) 429-8458

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STANTEC
TO:
AMTRAK

TYPICAL TSCA E UIVALENT CAP COVER DETAILS
ENGINEERED FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	C-101.21
SHEET:	26 OF 135
REV:	0

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

SCOPE OF WORK NOTES

1. AMTRAK TO PERFORM MAINTENANCE EVENT.
2. CUT SOILS TO MAKE ROOM FOR PAVING.
3. INSTALL SEWERS AND BACKFILL USING REMOVED SOILS.
4. DEWATER AS NECESSARY.
5. INSTALL ASPHALT PAVING PER DETAIL ON SHEET 29.

RESTORATION NOTES

AMTRAK TO PERFORM RESTORATION INSIDE OF BUFFER ZONES.

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

LEGEND

- TYPICAL 9' WIDE RAILROAD TRACK WITH 8 FT BUFFER ON EACH SIDE
- PROPOSED ASPHALT PAVING
- 4 INCHES STONE OVER GEOTEXTILE
- EXISTING BARRIER WALL
- NONTIDAL WETLAND (WL)
- ORDINARY HIGH WATER/NONTIDAL WETLAND (OHW/WL)
- ORDINARY HIGH WATER (OHW)
- PROPOSED CONTOUR
- EXISTING SPOT GRADE (45.45)
- EXISTING TOPOGRAPHIC CONTOUR (25)
- FLOW ARROW
- PROPOSED STORMWATER PIPE
- PROPOSED MONITORING SUMP
- PROPOSED STORMWATER MANHOLE
- PROPOSED OPEN GRATE STORMWATER INLET

VOLUME OF CUT & FILL FOR TEMPORARY FILL

NET CUT VOLUME OF BETWEEN EXISTING SURFACE AND TEMPORARY FILL SURFACE = 1,308.36 CY

NET FILL VOLUME OF BETWEEN EXISTING SURFACE AND TEMPORARY FILL SURFACE = 1,010.93 CY

NET VOLUME = 297.43 CY (CUT)

NOTES:

ASPHALT PAVING AREA

APPROXIMATE RAILROAD YARD PAVED AREA = 226,316 SF

VOLUME OF CUT & FILL FOR ASPHALT PAVING

VOLUME OF 12 INCHES DEEP ASPHALT PAVING = 9,823.52 CY

NET CUT VOLUME OF BETWEEN EXISTING SURFACE AND PROPOSED PAVING SURFACE (-1FT) = 5,803.26 CY

NET FILL VOLUME OF BETWEEN EXISTING SURFACE AND PROPOSED FILL SURFACE = 852.73 CY

NET VOLUME = 4,950.53 CY (CUT)

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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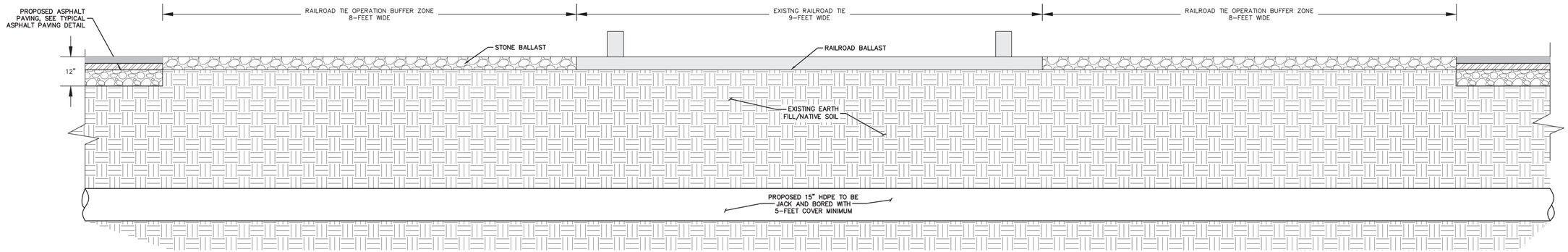
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RAIL YARD CONSTRUCTION PLAN - PAVING PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

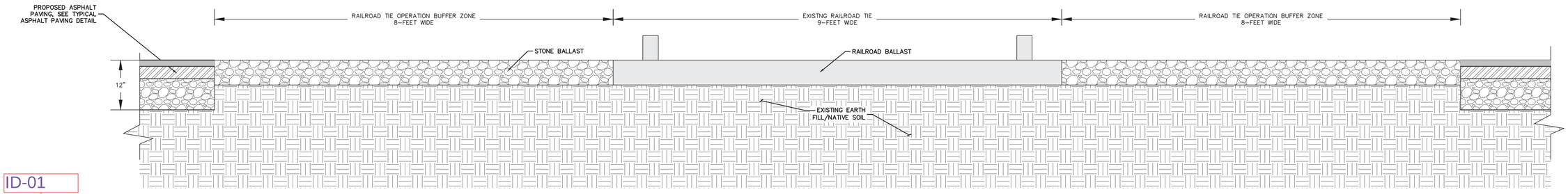
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FILE NO.:	C-101.22
SHEET:	28 OF 135
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ORIGINAL SHEET - ARCH D

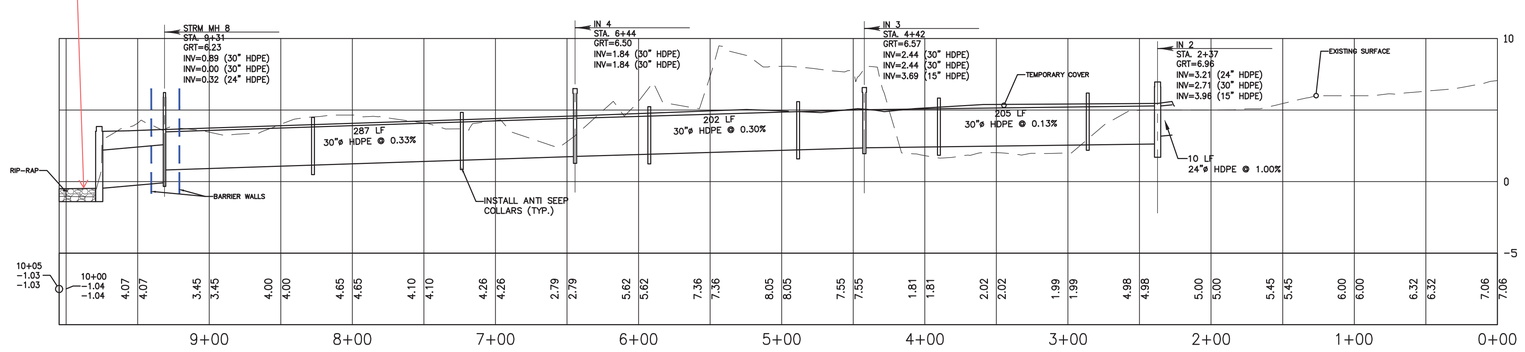


RAILROAD TRACK JACK AND BORED TYPICAL DETAIL
N.T.S

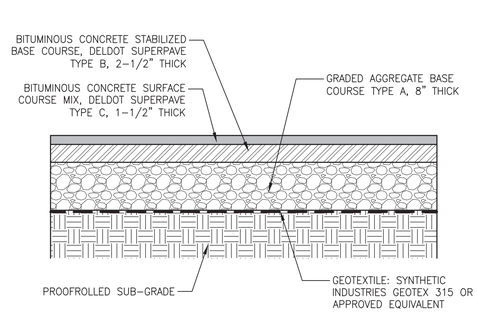


RAILROAD TRACK TYPICAL CROSS SECTION DETAIL
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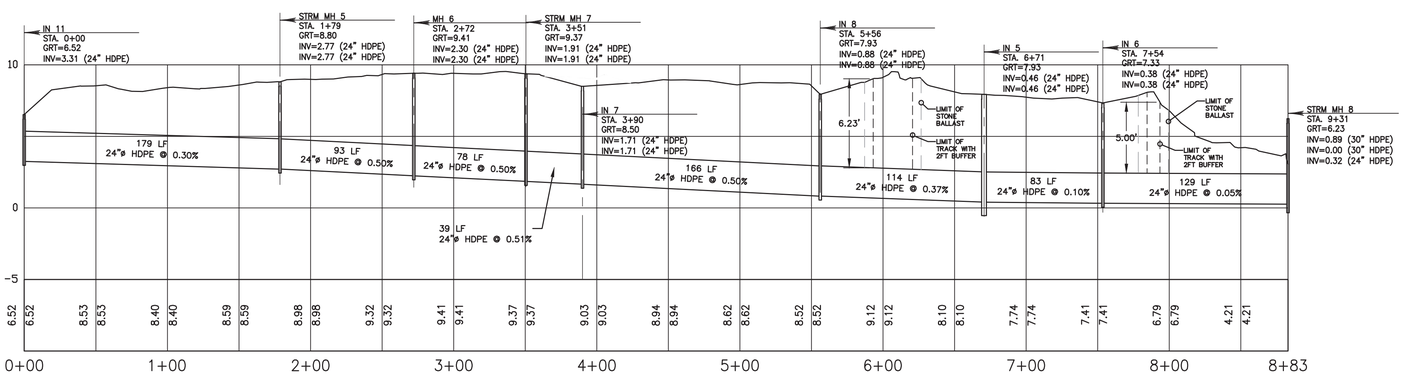
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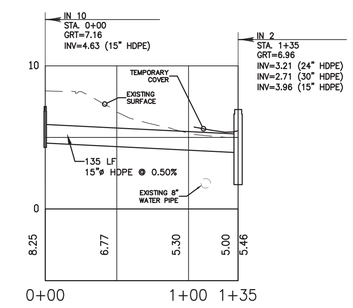
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1"=5' V



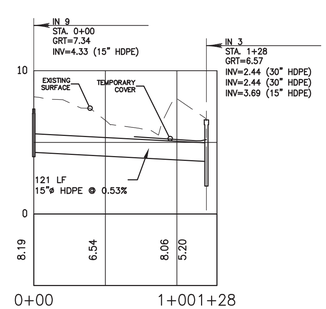
FUELING FACILITY ASPHALT PAVING
N.T.S



IN 11–MH 8
SCALE: 1"=50' H
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IN 10–IN 2
SCALE: 1"=50' H
1"=5' V



IN 9–IN 3
SCALE: 1"=50' H
1"=5' V

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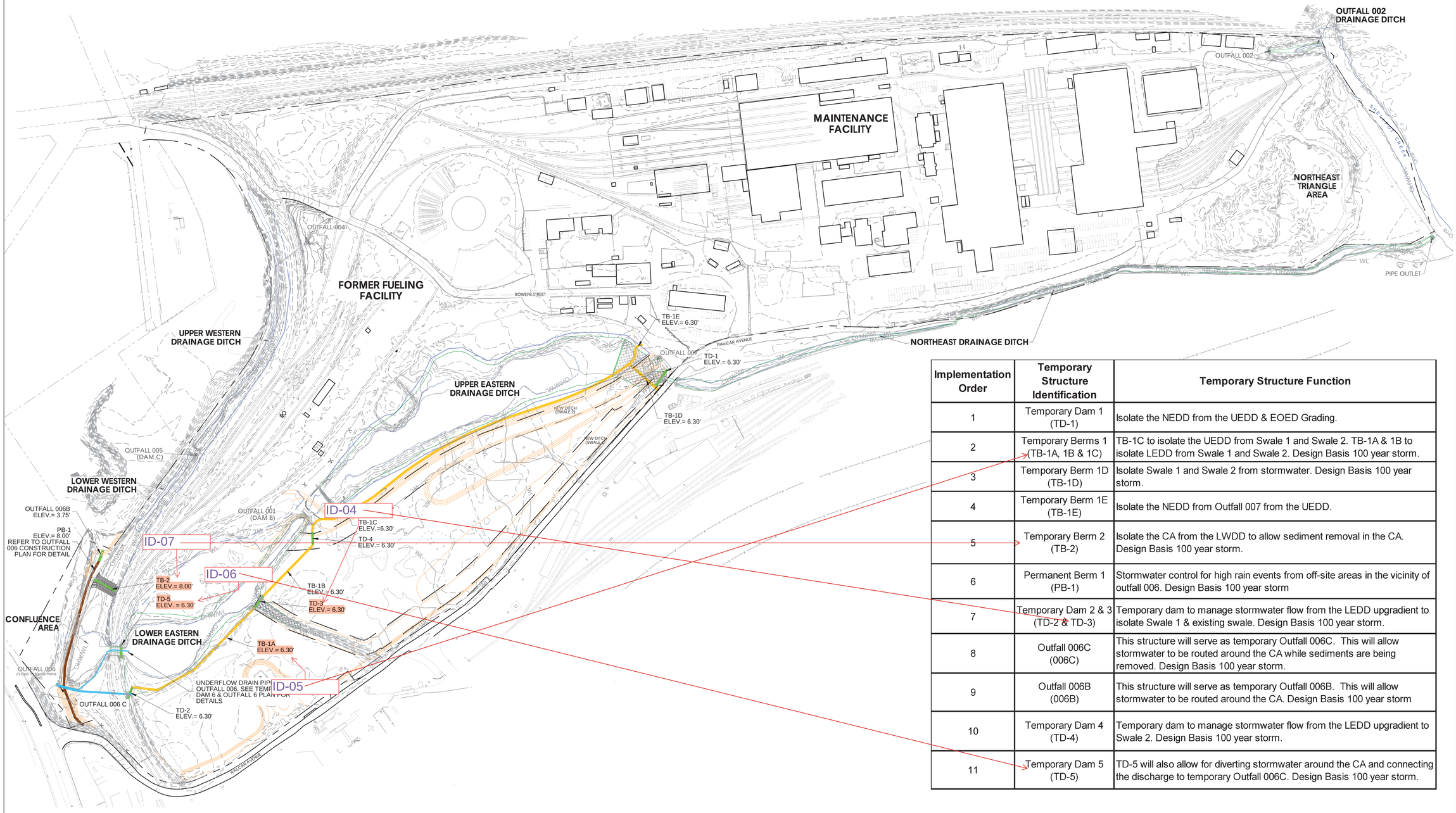
ASPHALT PAVING CROSS SECTION STORM SEWER PROFILES
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-101.23
SHEET: 29 OF 135
REV: 0

REV	DATE	DESCRIPTION	APPROVED	BY

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ORIGINAL SHEET - ARCH D



Implementation Order	Temporary Structure Identification	Temporary Structure Function
1	Temporary Dam 1 (TD-1)	Isolate the NEDD from the UEDD & EOED Grading.
2	Temporary Berms 1 (TB-1A, 1B & 1C)	TB-1C to isolate the UEDD from Swale 1 and Swale 2. TB-1A & 1B to isolate LEDD from Swale 1 and Swale 2. Design Basis 100 year storm.
3	Temporary Berm 1D (TB-1D)	Isolate Swale 1 and Swale 2 from stormwater. Design Basis 100 year storm.
4	Temporary Berm 1E (TB-1E)	Isolate the NEDD from Outfall 007 from the UEDD.
5	Temporary Berm 2 (TB-2)	Isolate the CA from the LWDD to allow sediment removal in the CA. Design Basis 100 year storm.
6	Permanent Berm 1 (PB-1)	Stormwater control for high rain events from off-site areas in the vicinity of outfall 006. Design Basis 100 year storm
7	Temporary Dam 2 & 3 (TD-2 & TD-3)	Temporary dam to manage stormwater flow from the LEDD upgradient to isolate Swale 1 & existing swale. Design Basis 100 year storm.
8	Outfall 006C (006C)	This structure will serve as temporary Outfall 006C. This will allow stormwater to be routed around the CA while sediments are being removed. Design Basis 100 year storm.
9	Outfall 006B (006B)	This structure will serve as temporary Outfall 006B. This will allow stormwater to be routed around the CA. Design Basis 100 year storm
10	Temporary Dam 4 (TD-4)	Temporary dam to manage stormwater flow from the LEDD upgradient to Swale 2. Design Basis 100 year storm.
11	Temporary Dam 5 (TD-5)	TD-5 will also allow for diverting stormwater around the CA and connecting the discharge to temporary Outfall 006C. Design Basis 100 year storm.

LEGEND

- SEDIMENT EXCAVATION FOOTPRINT INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH
- PROPOSED CONTOUR
- HANGING GROUNDWATER BARRIER WALL
- FULL DEPTH GROUNDWATER BARRIER WALL
- TEMPORARY BERM (TB)
- TEMPORARY DAM/ OUTFALL (TD)
- PERMANENT BERM (PB)
- SEDIMENT EXCAVATION AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTE:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

0 150 300
APPROXIMATE SCALE IN FEET

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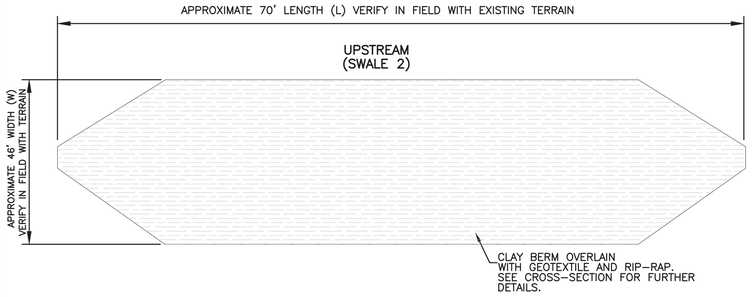
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TEMPORARY STORMWATER CONTROL STRUCTURES PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
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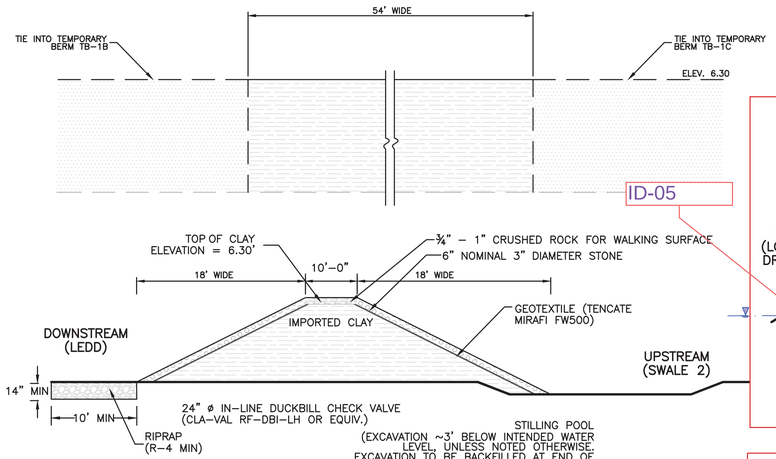
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ORIGINAL SHEET - ARCH D



TEMPORARY DAM 4 (TD-4) DRAIN PIPING PLAN VIEW

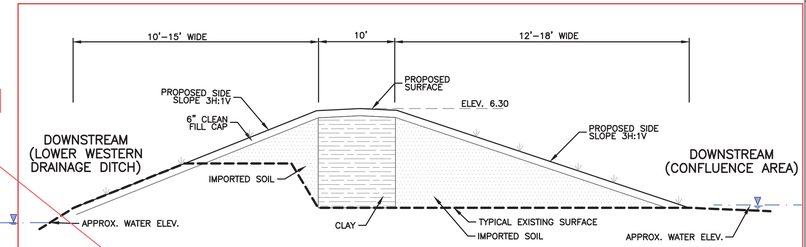
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TEMPORARY DAM 4 (TD-4) CROSS-SECTION

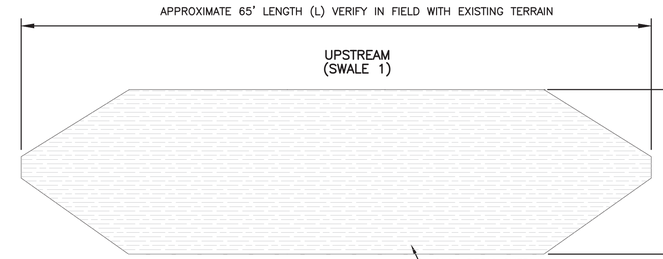
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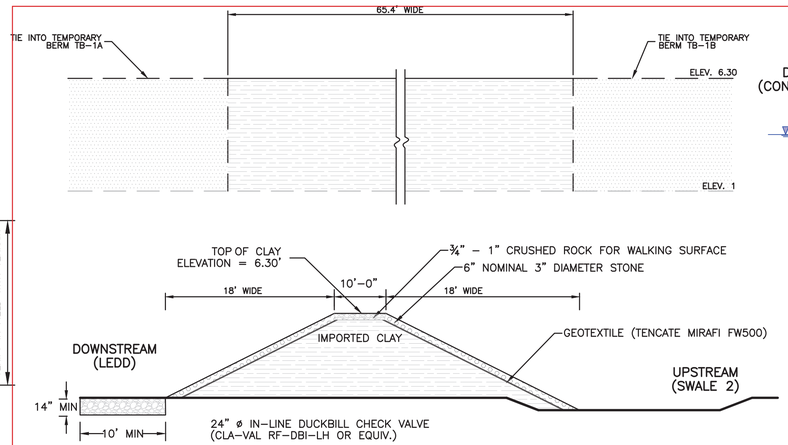
TEMPORARY BERMS 1 (TB-1A,1B & 1C) DETAIL

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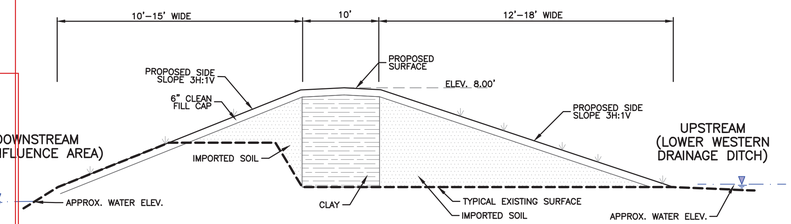
TEMPORARY DAM 3 (TD-3) PLAN VIEW

NOT TO SCALE



TEMPORARY DAM 3 (TD-3) CROSS-SECTION

NOT TO SCALE

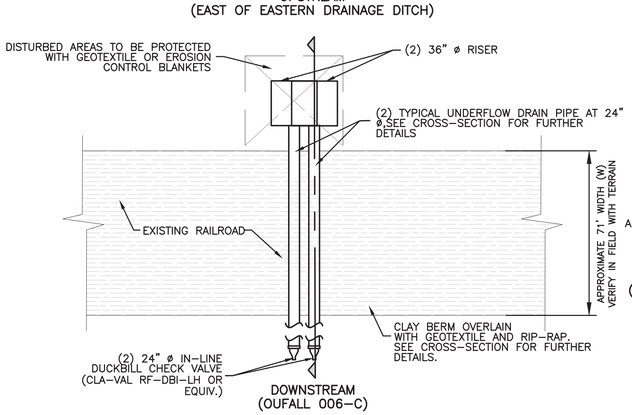


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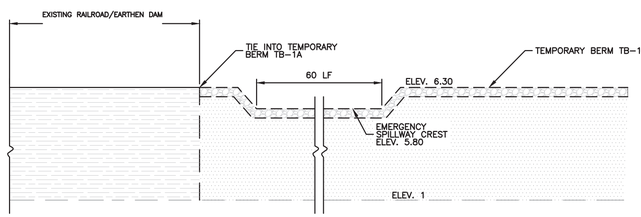
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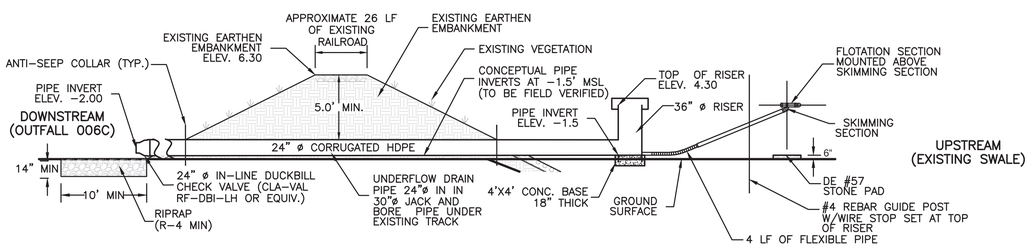
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EXISTING EARTHEN EMBANKMENT (TD-2) DRAIN PIPING PLAN VIEW

NOT TO SCALE





EXISTING EARTHEN EMBANKMENT (TD-2) CROSS-SECTION

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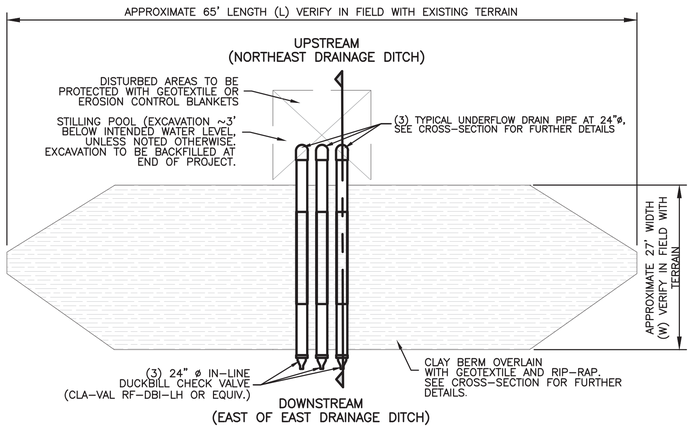
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TEMPORARY STORMWATER CONTROL STRUCTURES DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

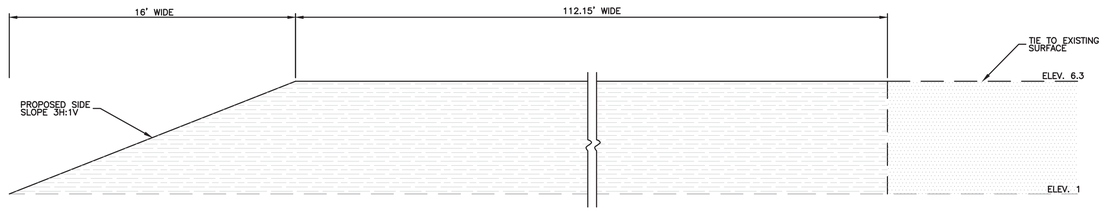
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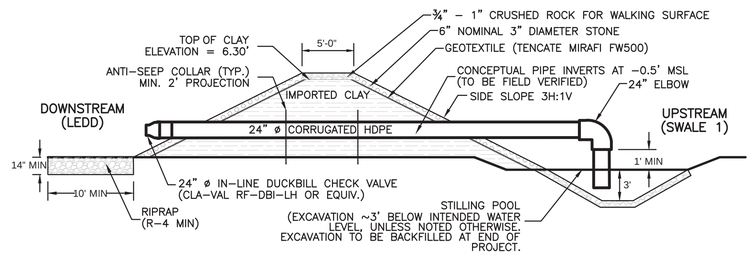
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ORIGINAL SHEET - ARCH D



TEMPORARY DAM 1 (TD-1) DRAIN PIPING PLAN VIEW

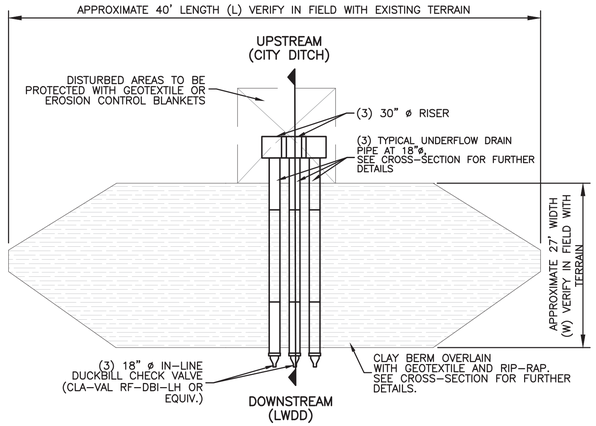
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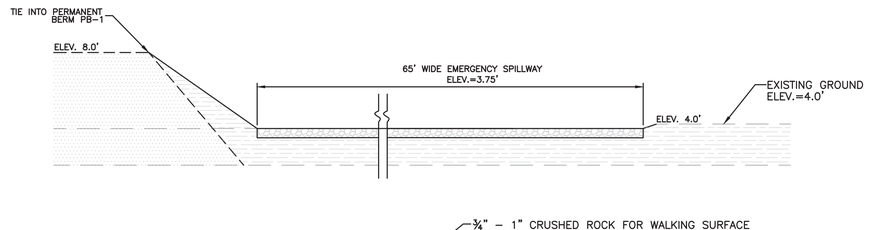
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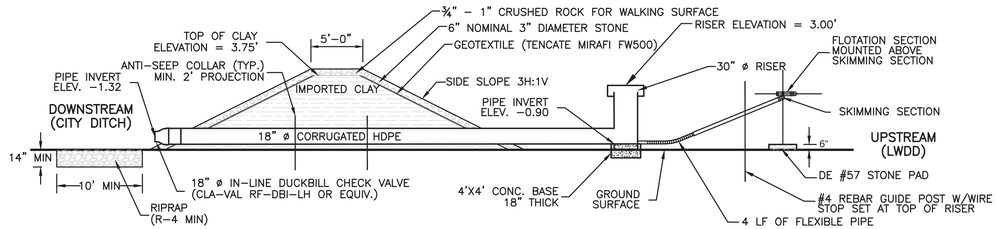
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OUTFALL 006B (006B) DRAIN PIPING PLAN VIEW

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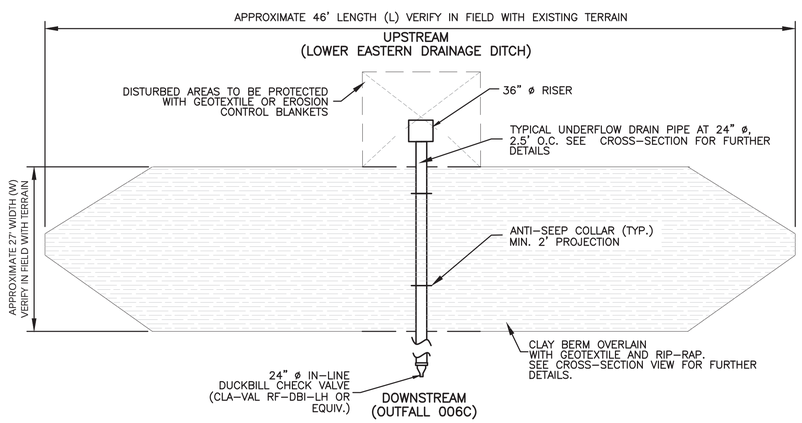
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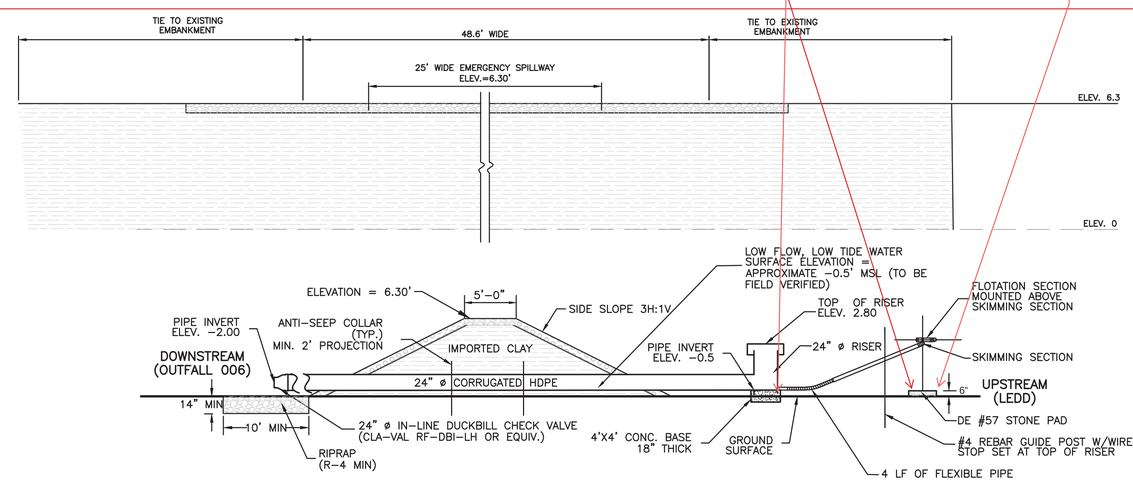
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ID-08



TEMPORARY DAM 5 (TD-5) DRAIN PIPING PLAN VIEW

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TEMPORARY DAM 5 (TD-5) CROSS-SECTION

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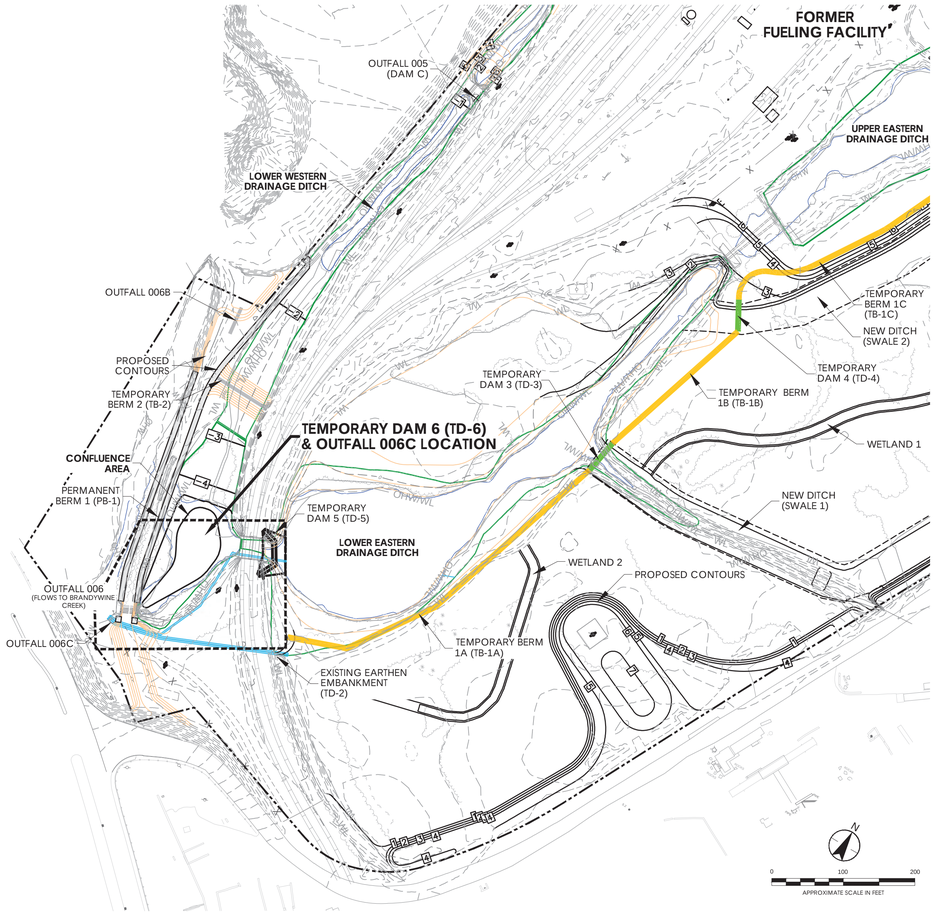
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TEMPORARY STORMWATER CONTROL STRUCTURES DETAILS 2
FOR
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FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

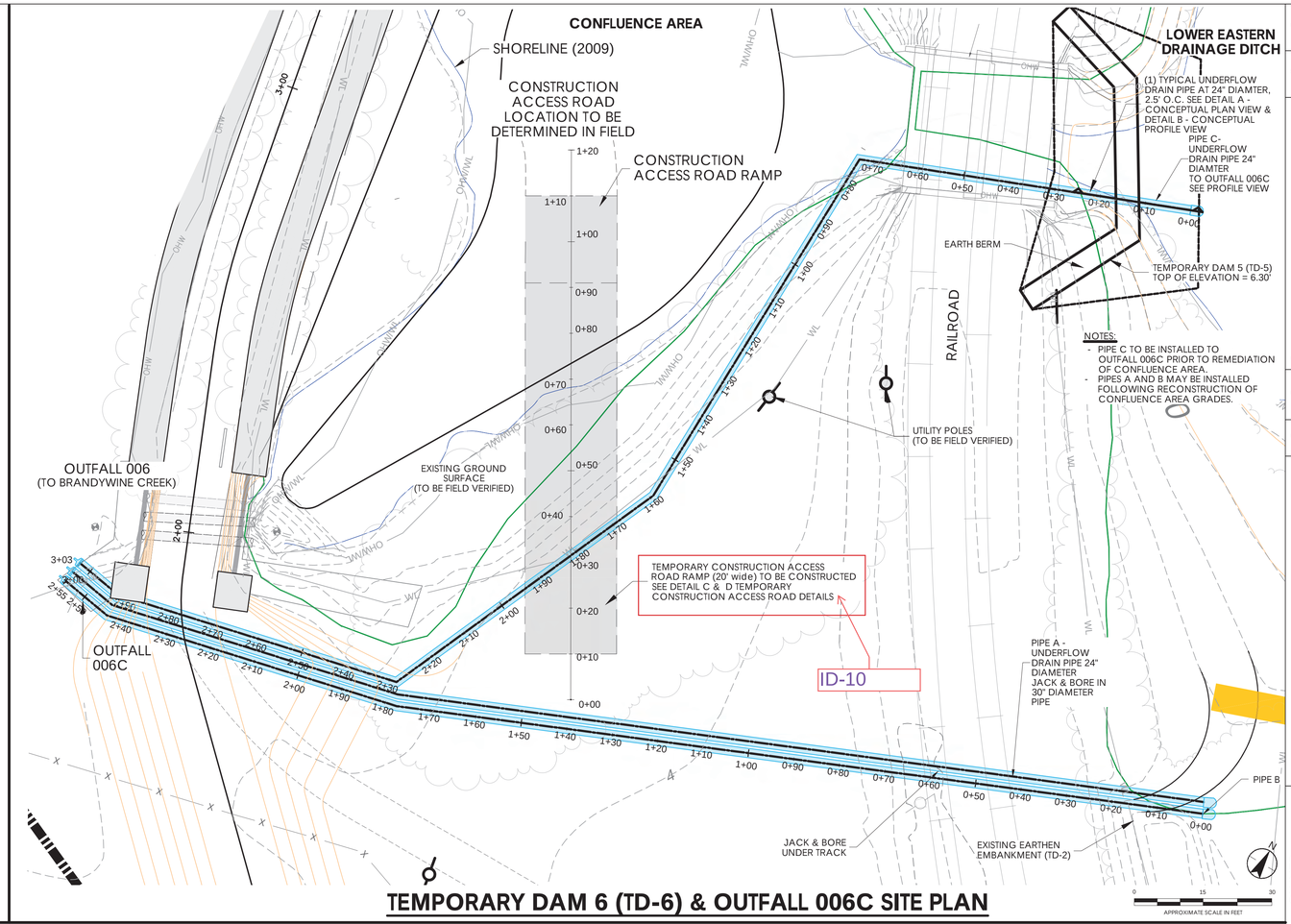
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FILE NO.: ----
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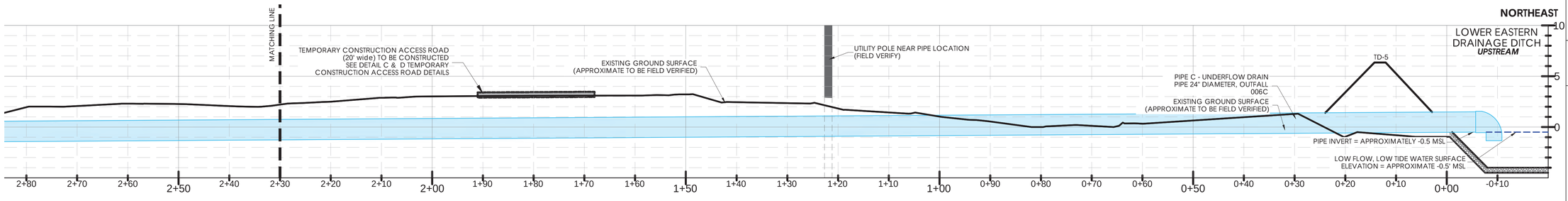
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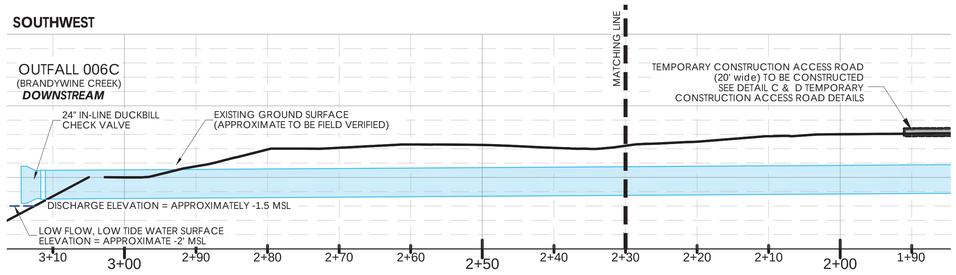


SITE PLAN



TEMPORARY DAM 6 (TD-6) & OUTFALL 006C SITE PLAN





PIPE C (OUTFALL 006C) - PROFILE VIEW

Legend

- APPROXIMATE PROPERTY BOUNDARY
- AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH.
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER

NOTE:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

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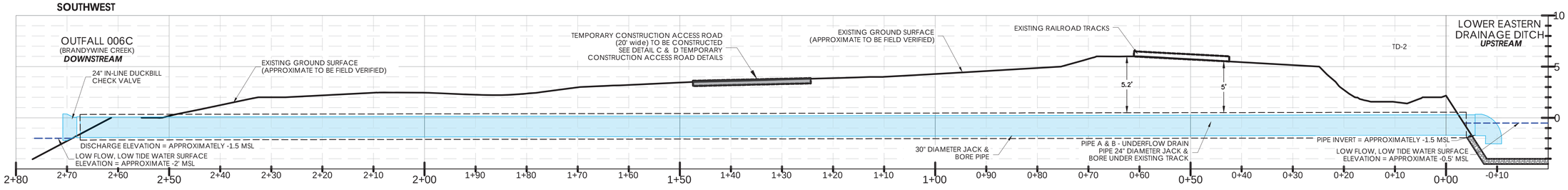
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TEMPORARY DAM 6 & OUTFALL 006 PLAN AND PROFILE
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

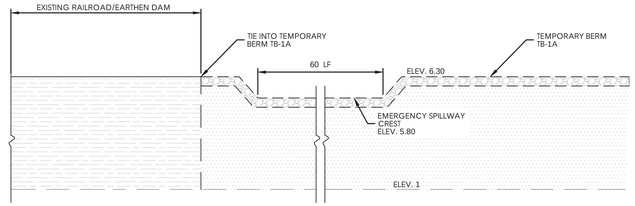
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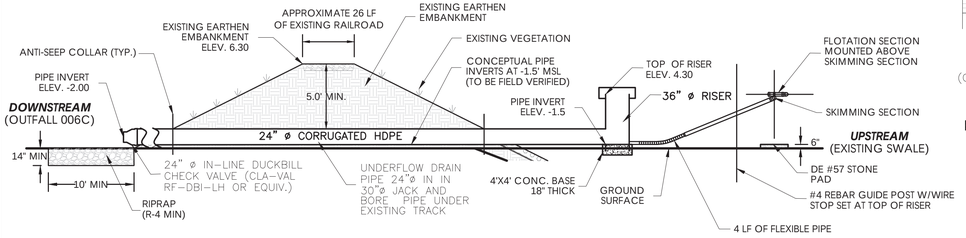


PIPES A & B (OUTFALL 006C) - PROFILE VIEW



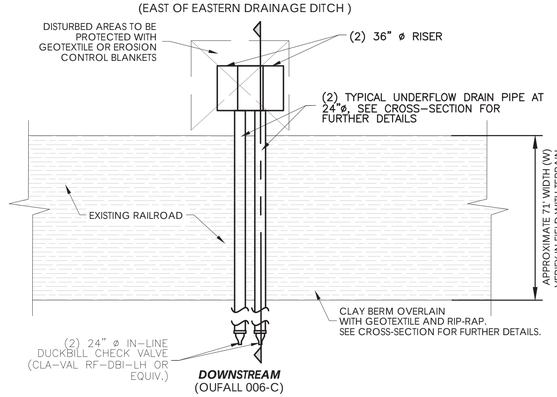
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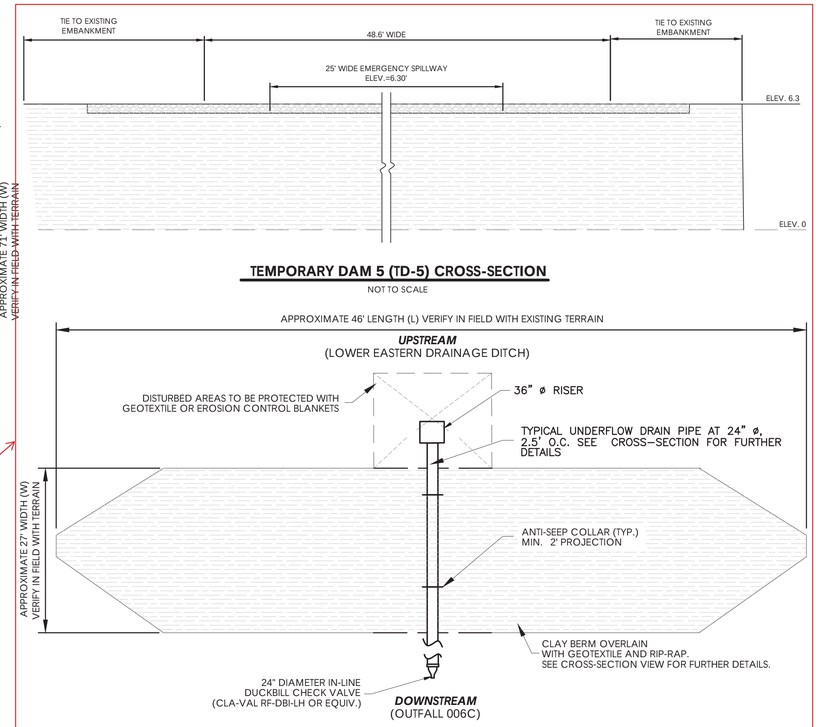
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NOT TO SCALE



EXISTING EARTHEN EMBANKMENT (TD-2) DRAIN PIPING PLAN VIEW

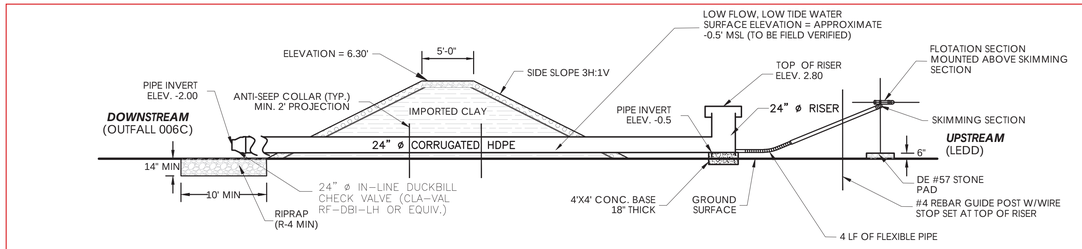
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TEMPORARY DAM 5 (TD-5) CROSS-SECTION

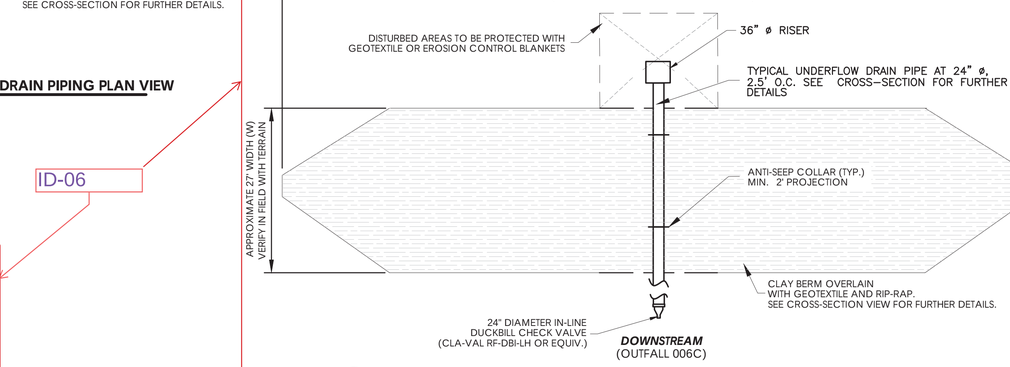
NOT TO SCALE

ID-06



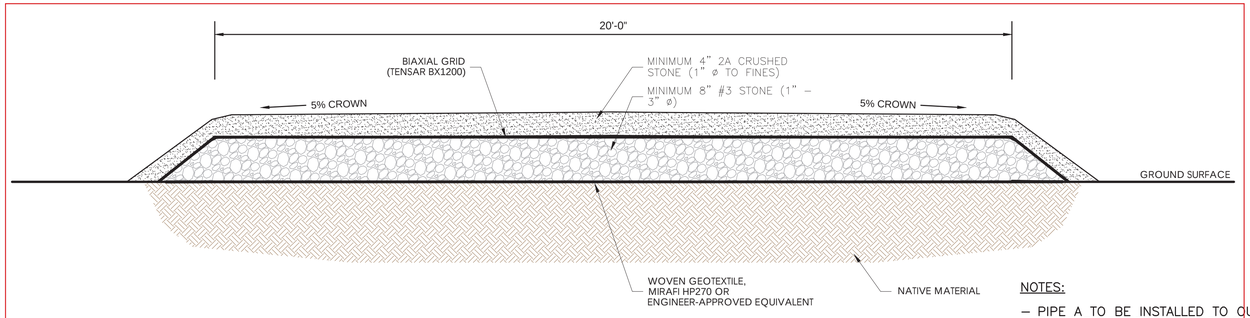
B CONCEPTUAL TEMPORARY DAM 5 (TD-5) CROSS-SECTION

NOT TO SCALE



C TEMPORARY CONSTRUCTION ACCESS ROAD RAMP PROFILE VIEW

NOT TO SCALE



D TEMPORARY CONSTRUCTION ACCESS ROAD DETAIL

NOTE : ROCK CONSTRUCTION ENTRANCE TO BE MAINTAINED WITH FRESH STONE.

NOT TO SCALE

NOTES:

- PIPE A TO BE INSTALLED TO OUTFALL 006C PRIOR TO REMEDIATION OF CONFLUENCE AREA.
- PIPES B AND C MAY BE INSTALLED FOLLOWING RECONSTRUCTION OF CONFLUENCE AREA GRADES.
- FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

ID-10

						BY
						APPROVED
						DESCRIPTION
						DATE
						REV

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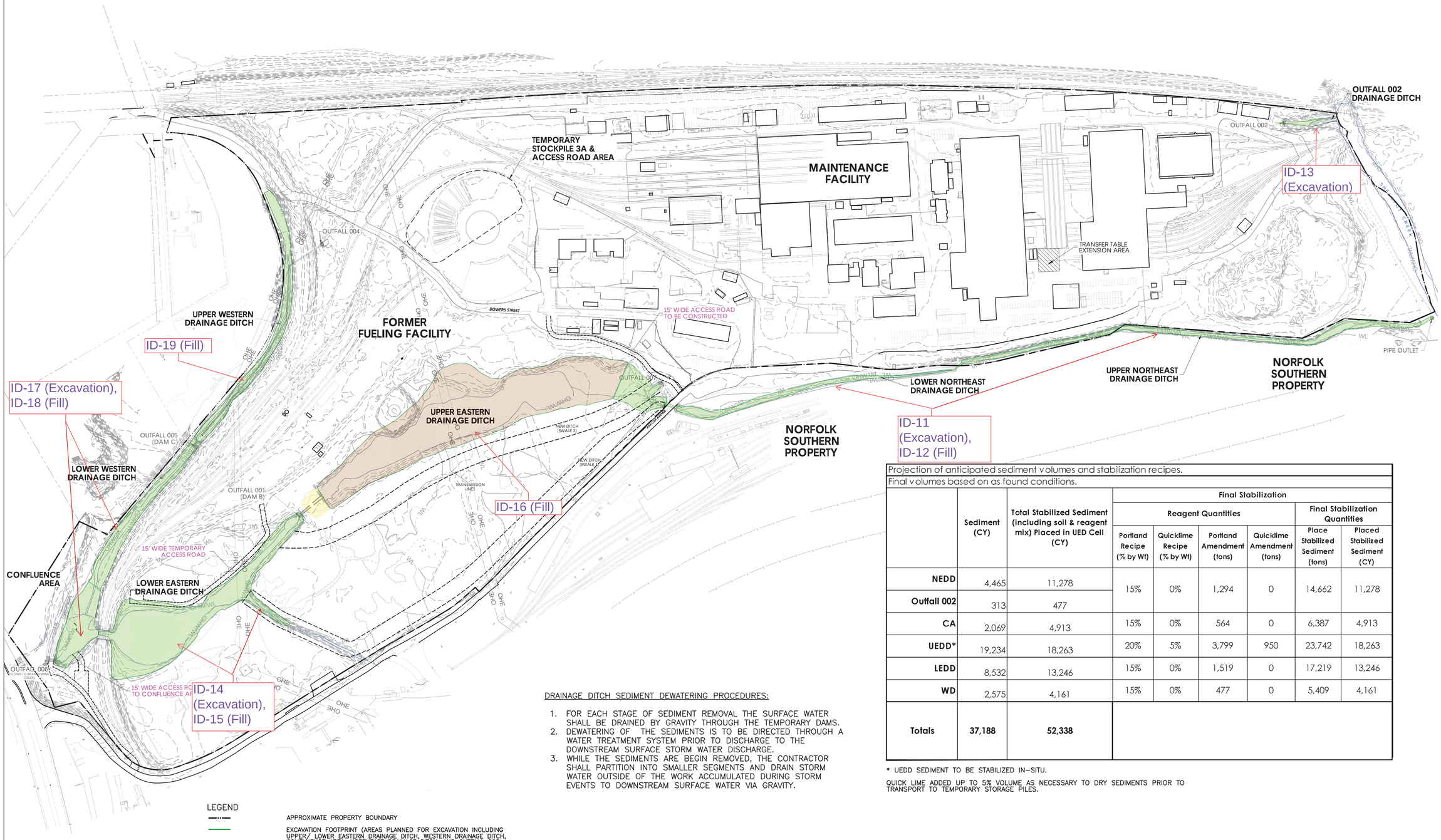
THIS DOCUMENT WAS PREPARED BY:
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TO:
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TEMPORARY DAM 6 CONSTRUCTION ACCESS ROAD DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.05
SHEET: 40 OF 135
REV: 0

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ORGINAL SHEET - ARCH D



Projection of anticipated sediment volumes and stabilization recipes.								
Final volumes based on as found conditions.								
			Final Stabilization					
			Reagent Quantities				Final Stabilization Quantities	
	Sediment (CY)	Total Stabilized Sediment (including soil & reagent mix) Placed in UED Cell (CY)	Portland Recipe (% by Wt)	Quicklime Recipe (% by Wt)	Portland Amendment (tons)	Quicklime Amendment (tons)	Place Stabilized Sediment (tons)	Placed Stabilized Sediment (CY)
NEDD	4,465	11,278	15%	0%	1,294	0	14,662	11,278
Outfall 002	313	477						
CA	2,069	4,913	15%	0%	564	0	6,387	4,913
UEDD*	19,234	18,263	20%	5%	3,799	950	23,742	18,263
LEDD	8,532	13,246	15%	0%	1,519	0	17,219	13,246
WD	2,575	4,161	15%	0%	477	0	5,409	4,161
Totals	**37,188**	**52,338**						

* UEDD SEDIMENT TO BE STABILIZED IN-SITU.

QUICK LIME ADDED UP TO 5% VOLUME AS NECESSARY TO DRY SEDIMENTS PRIOR TO TRANSPORT TO TEMPORARY STORAGE PILES.

DRAINAGE DITCH SEDIMENT DEWATERING PROCEDURES:

1. FOR EACH STAGE OF SEDIMENT REMOVAL THE SURFACE WATER SHALL BE DRAINED BY GRAVITY THROUGH THE TEMPORARY DAMS.
2. DEWATERING OF THE SEDIMENTS IS TO BE DIRECTED THROUGH A WATER TREATMENT SYSTEM PRIOR TO DISCHARGE TO THE DOWNSTREAM SURFACE STORM WATER DISCHARGE.
3. WHILE THE SEDIMENTS ARE BEGIN REMOVED, THE CONTRACTOR SHALL PARTITION INTO SMALLER SEGMENTS AND DRAIN STORM WATER OUTSIDE OF THE WORK ACCUMULATED DURING STORM EVENTS TO DOWNSTREAM SURFACE WATER VIA GRAVITY.

NOTE:

1. NEED ON NORFOLK SOUTHERN PROPERTY SUBJECT TO ACCESS AGREEMENT.
2. UEDD SEDIMENT TO BE MIXED IN-SITU. SEE SPECIFICATIONS.
3. NO FREE LIQUID/ADD UP TO 5% QUICK LIME.
4. REFERENCE SEDIMENT STABILIZATION SPECIFICATION, SECTION 313223.
5. FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)
- PILOT STUDY STABILIZATION AREA WITH ISOLATION BARRIER FULL SEDIMENT STABILIZATION AND CAP INSTALLATION
- SEDIMENT REMOVAL AND PLACEMENT INTO TEMPORARY STORAGE PILE FOR RELOCATION TO UPPER EASTERN DRAINAGE DITCH FOR STABILIZATION
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

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						APPROVED
						DESCRIPTION
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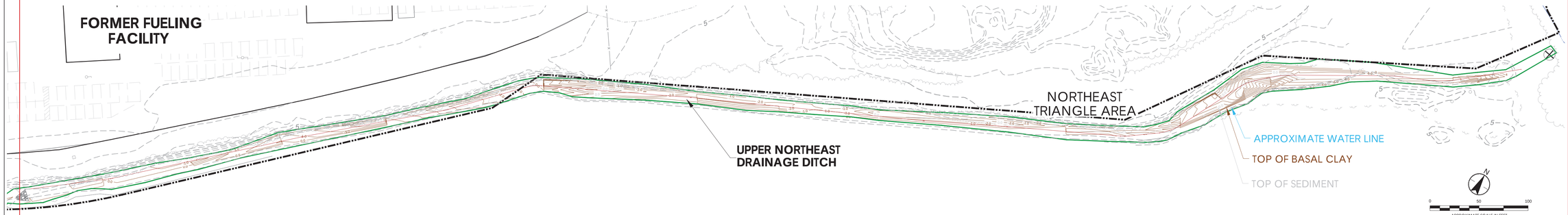
DRAINAGE DITCH SEDIMENT REMOVAL AREAS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

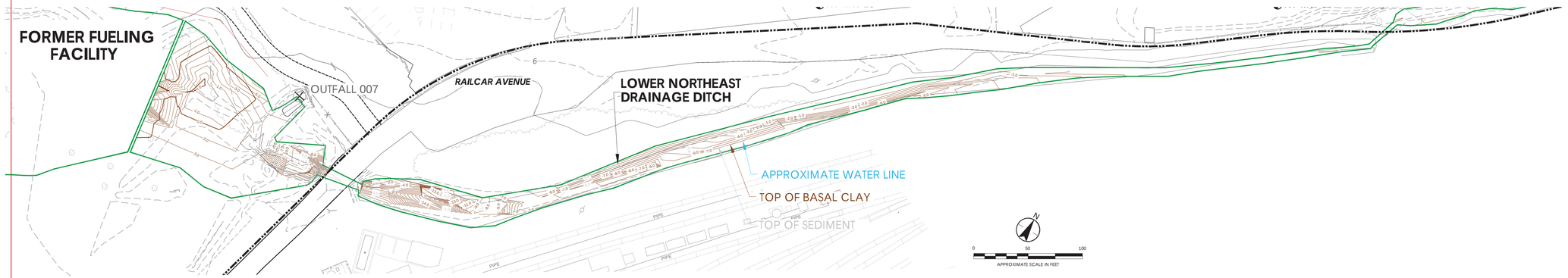
DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.06
SHEET: 41 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

THIS SHEET, ID-11





LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER

NOTES:

SEDIMENT EXCAVATION TO TOP OF BASAL CLAY AT SPECIFIED DEPTHS. PROPOSED EXCAVATION DEPTHS MAY CHANGE BASED UPON SAFE EXCAVATION AS DETERMINED OF FIELD CONDITIONS AND APPROVED BY THE ENGINEER.IN THESE AREAS, A GEOTEXTILE AND EARTHEN COVER IS PLANNED.

SCOPE NOTES:

1. NO FREE LIQUID/ADD UP TO 5% QUICKLIME.

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

	In-Place Sediment	
	Calculated Volume[1] (CY)	Tentative passing stabilization pool limit for final stabilization
Northeastern Drainage Ditch		
Totals [2]	4,465	

NOTES:

[1] ESTIMATED 80–90 LB/CY (CONSERVATIVE FOR SOFT CLAY = 90 LB/CY), AVERAGE FROM BASELINE SEDIMENT SAMPLES COLLECTED FROM ISS PILOT TEST WAS 81 LB/CY

[2] TOTAL SEDIMENT VOLUME DETERMINED BY CAD COMPARISON OF SURFACES USING 2016 AND 2019 SOUNDING DATA AND THE INTERIOR BOUNDARY OF THE BANK SOILS FOOTPRINT.

[3] QUANTITIES ARE APPROXIMATE & ACTUAL QUANTITIES DEPENDANT UPON AS FOUND CONDITIONS.

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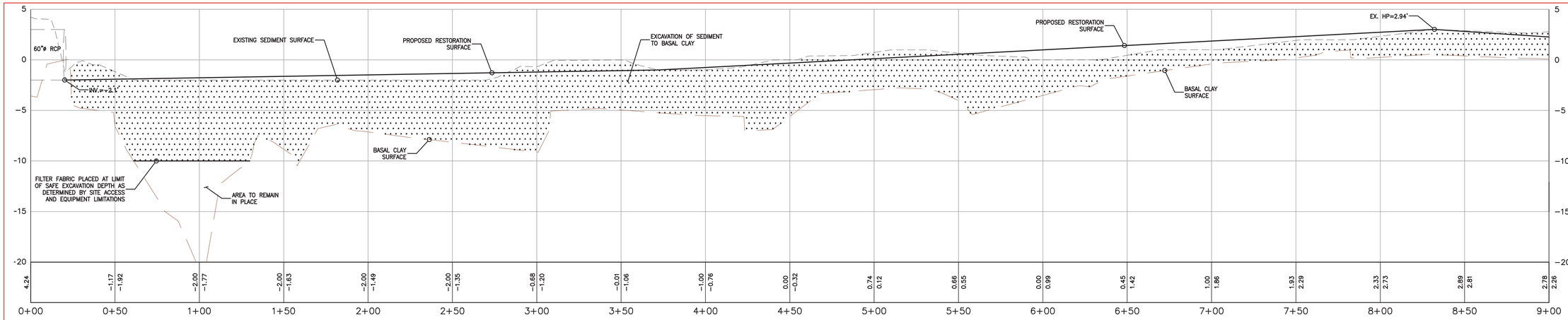
THIS DOCUMENT WAS PREPARED BY:
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NORTHEAST DRAINAGE DITCH SEDIMENT REMOVAL AREA
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

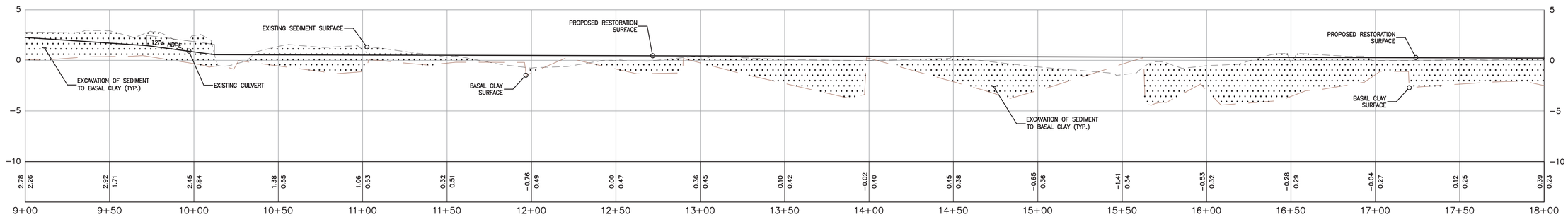
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SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.18
SHEET: 42 OF 135
REV: 0

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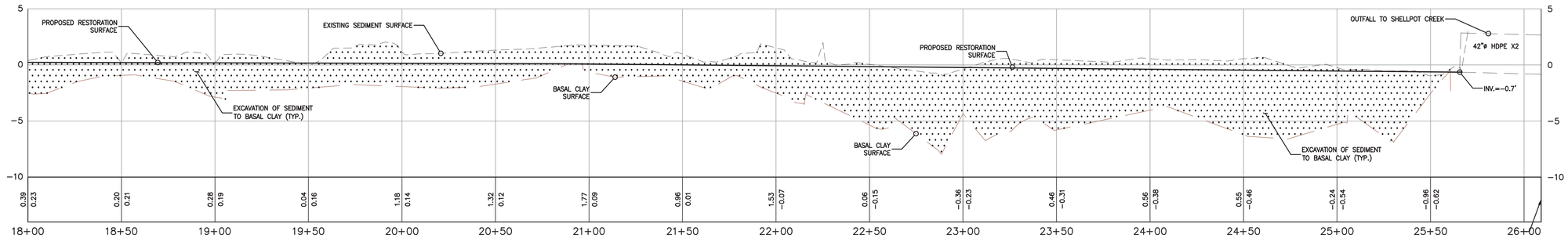
ORIGINAL SHEET - ARCH D



NEDD RESTORATION
SCALE: 1"=30' H
1"=5' V



NEDD RESTORATION
SCALE: 1"=30' H
1"=5' V



NEDD RESTORATION
SCALE: 1"=30' H
1"=5' V

THIS SHEET, ID-11
(Excavation) & ID-12 (Fill)

LEGEND:

- EXISTING SEDIMENT SURFACE
- PROPOSED RESTORATION SURFACE
- BASAL CLAY SURFACE
- EXCAVATION OF SEDIMENT TO BASAL CLAY

REV	DATE	DESCRIPTION			APPROVED	BY

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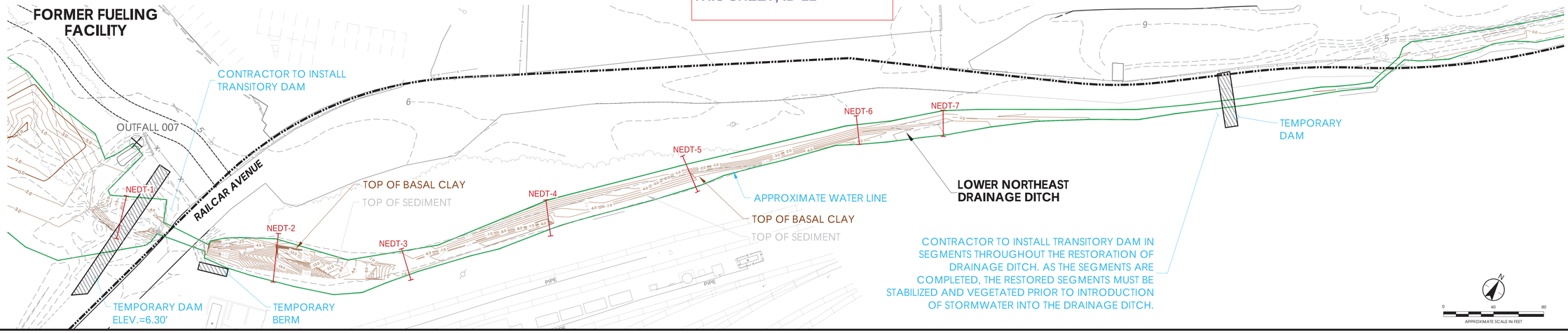
NEDD SEDIMENT EXCAVATION & SURFACE RESTORATION PROFILE FOR AMTRAK WILMINGTON SHOPS REMEDIATION FORMER FUELING FACILITY (DE-0266) WILMINGTON MAINTENANCE FACILITY (DE-0170) CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-105.27
SHEET: 43 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

THIS SHEET, ID-11



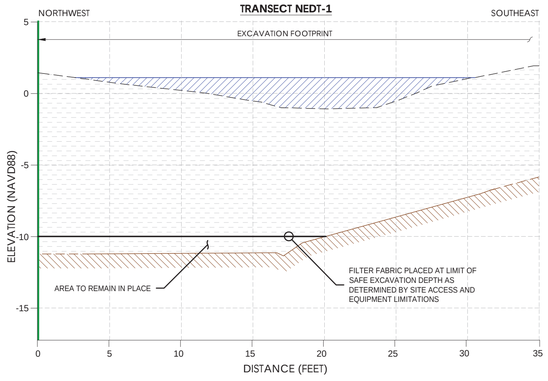
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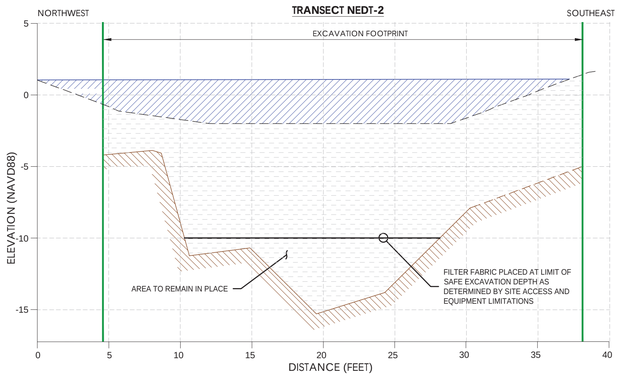
- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, AND NORTHEAST DRAINAGE DITCH)
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- TOP OF BASAL CLAY (1-FOOT INTERVAL)
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER
- EXISTING SURFACE; DASHED WHERE INFERRED
- SEDIMENT
- BASAL CLAY
- TEMPORARY DAM

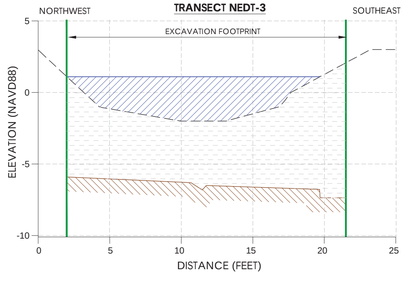
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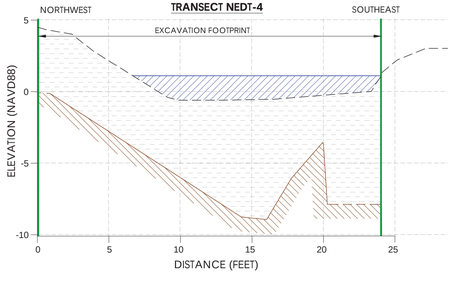
FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH NORFOLK SOUTHERN.

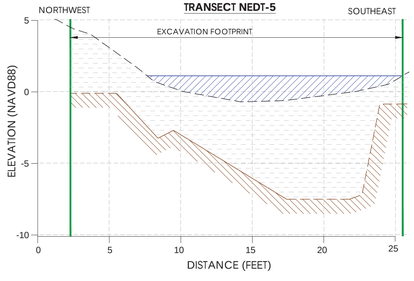
SEDIMENT EXCAVATION TO TOP OF BASAL CLAY AT SPECIFIED DEPTHS. PROPOSED EXCAVATION DEPTHS MAY CHANGE BASED UPON SAFE EXCAVATION AS DETERMINED OF FIELD CONDITIONS AND APPROVED BY THE ENGINEER.IN THESE AREAS, A GEOTEXTILE AND EARTHEN COVER IS PLANNED.

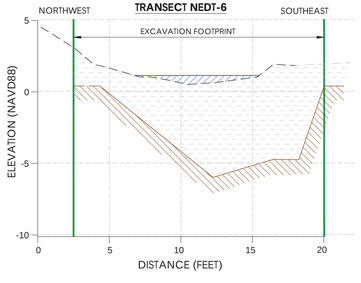


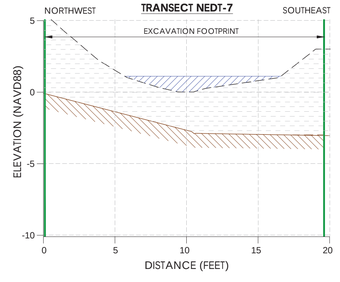












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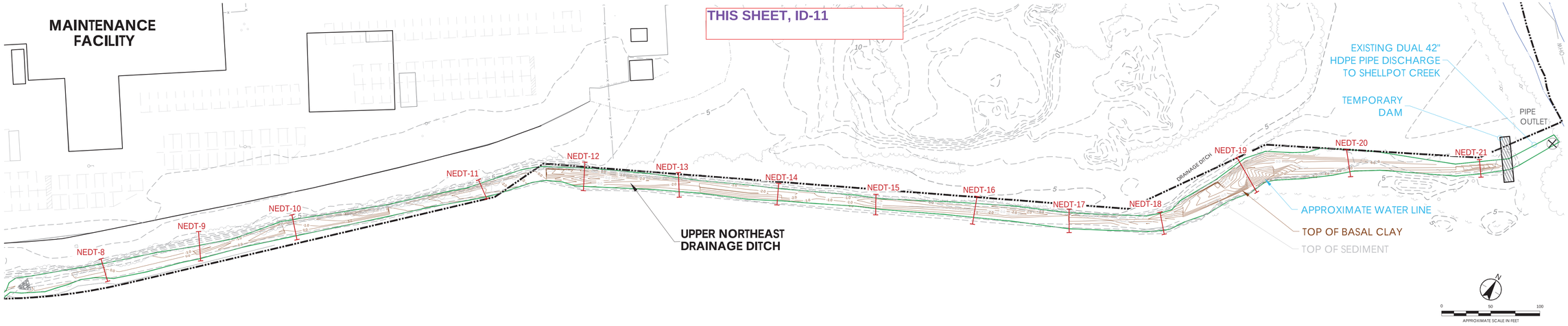
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LOWER NORTHEAST DRAINAGE DITCH PLAN AND CROSS-SECTIONS FOR AMTRAK WILMINGTON SHOPS REMEDIATION FORMER FUELING FACILITY (DE-0266) WILMINGTON MAINTENANCE FACILITY (DE-0170) CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	C-102.19
SHEET:	44 OF 135
REV:	0

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ORIGINAL SHEET - ARCH D



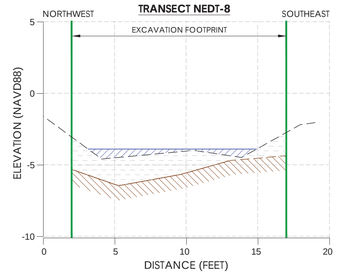
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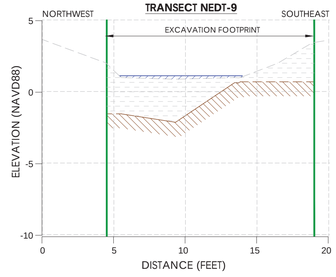
- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, AND NORTHEAST DRAINAGE DITCH)
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- SEDIMENT
- BASAL CLAY

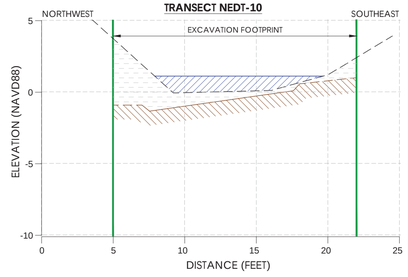
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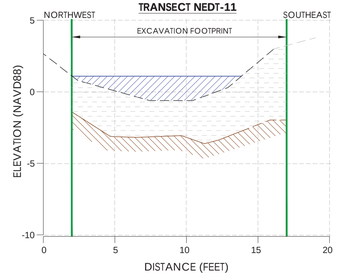
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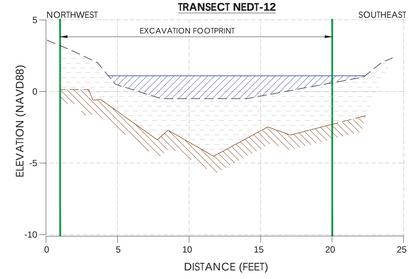
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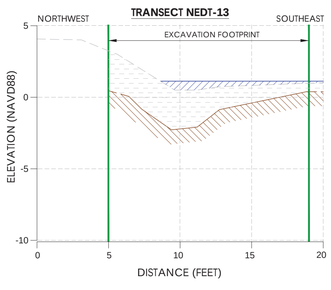


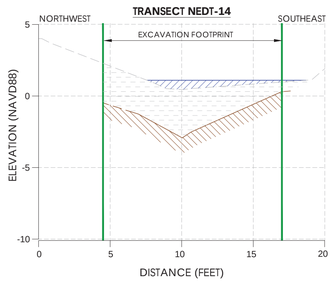


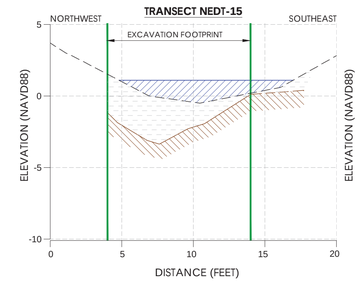


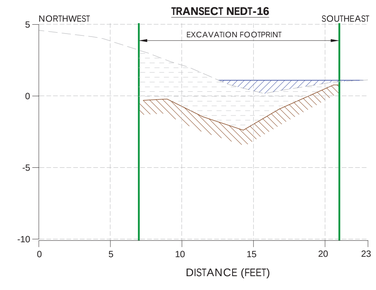


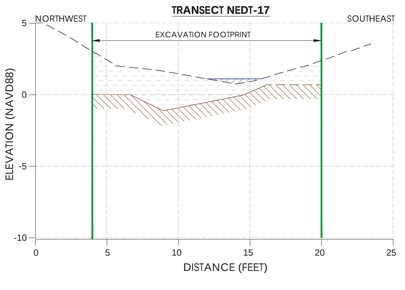


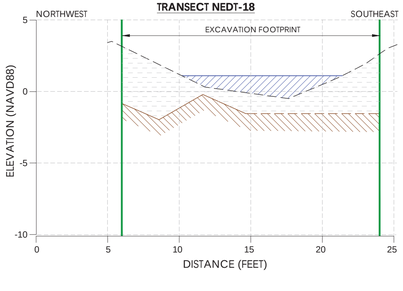


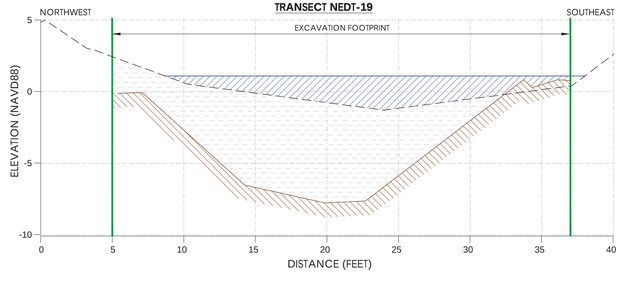


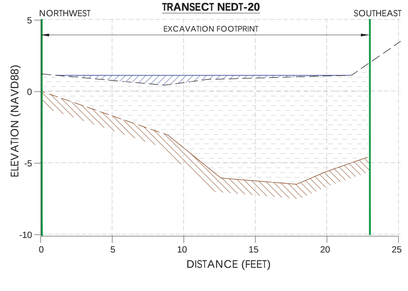


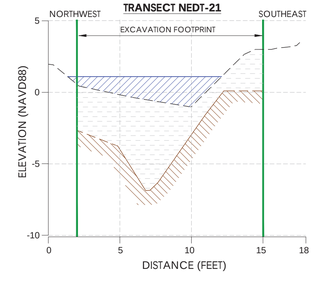












BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8468

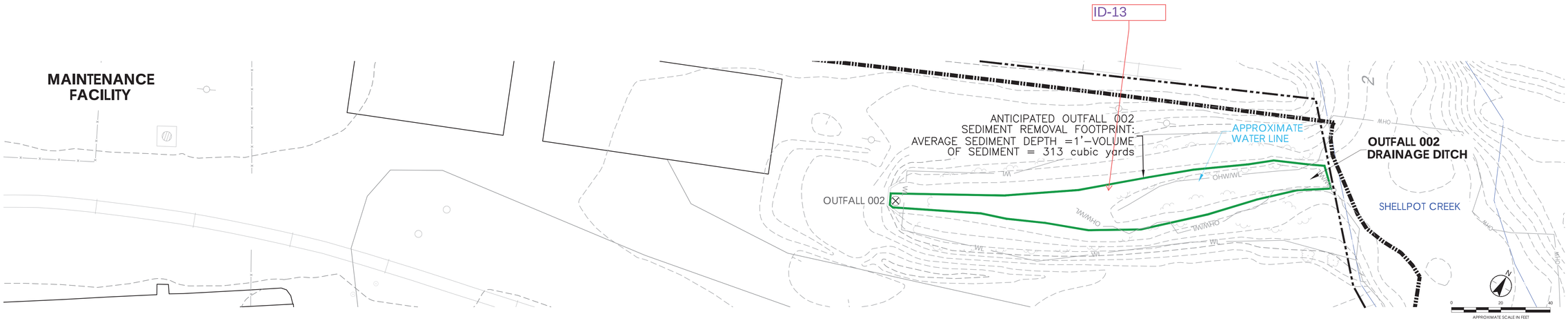
THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

UPPER NORTHEAST DRAINAGE DITCH PLAN AND CROSS-SECTIONS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.20
SHEET: 45 OF 135
REV: 0

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10/31/2025 1:56 PM

ORGINAL SHEET - ARCH D



LEGEND

APPROXIMATE PROPERTY BOUNDARY

EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)

WL — NONTIDAL WETLAND

OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND

OHW — OHW — ORDINARY HIGH WATER

NOTES:

SEDIMENT EXCAVATION TO TOP OF BASAL CLAY AT SPECIFIED DEPTHS. PROPOSED EXCAVATION DEPTHS MAY CHANGE BASED UPON SAFE EXCAVATION AS DETERMINED OF FIELD CONDITIONS AND APPROVED BY THE ENGINEER.IN THESE AREAS, A GEOTEXTILE AND EARTHEN COVER IS PLANNED.

SCOPE NOTES:

1. NO FREE LIQUID/ADD UP TO 5% QUICKLIME.

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8458

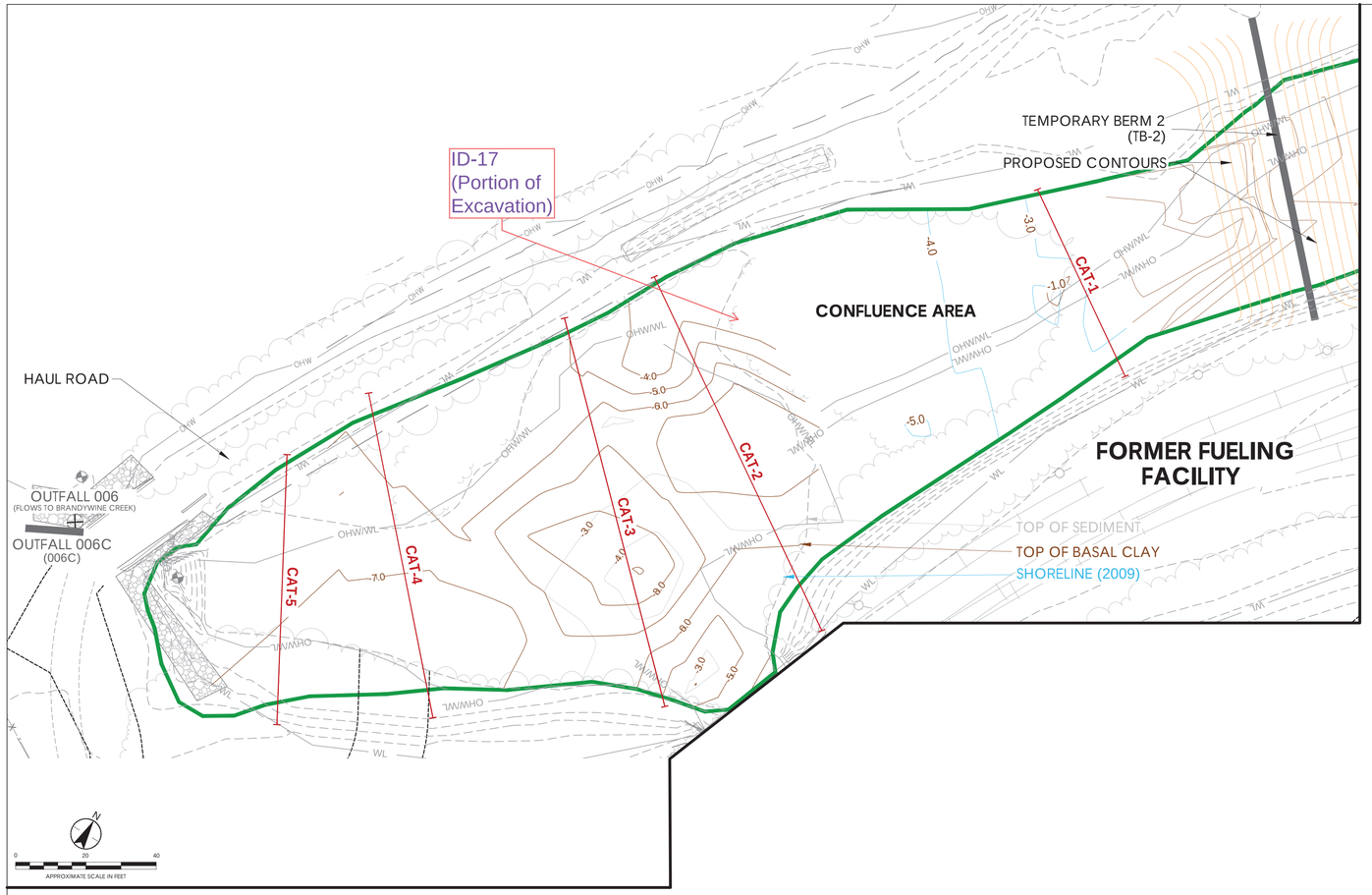
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STANTEC
TO:
AMTRAK

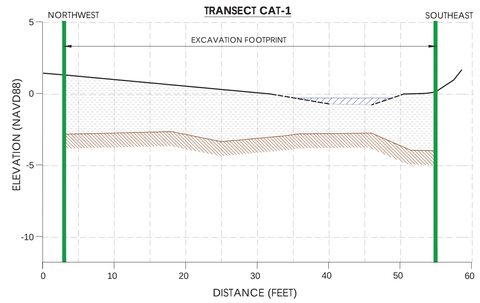
OUTFALL 002 SEDIMENT REMOVAL AREA
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

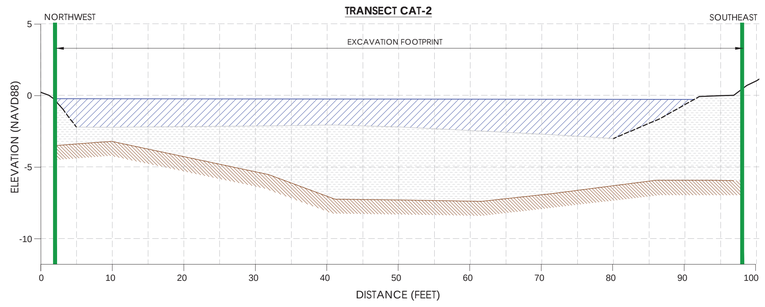
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SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: ----
SHEET: 46 OF 135
REV: 0

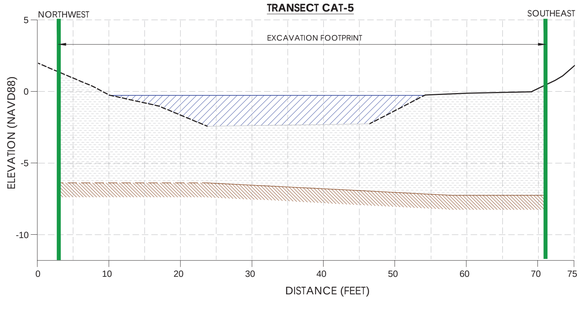
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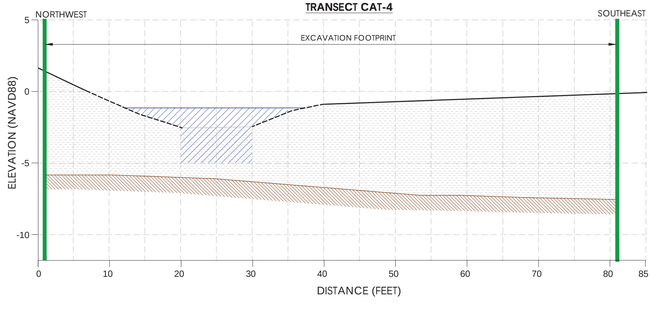
ORIGINAL SHEET - ARCH D

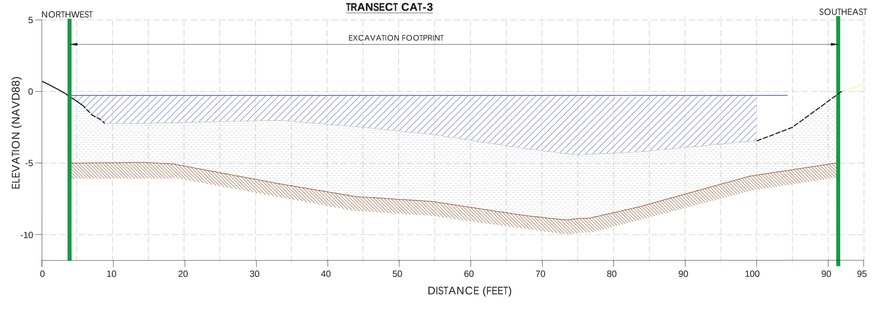












LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, AND NORTHEAST DRAINAGE DITCH)
- PROPOSED CONTOUR
- TOP OF SEDIMENT CONTOUR (1–FOOT INTERVAL)
- TOP OF BASAL CLAY (1–FOOT INTERVAL)
- EXISTING SURFACE; DASHED WHERE INFERRED
- SEDIMENT
- BASAL CLAY
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

SEDIMENT EXCAVATION TO TOP OF BASAL CLAY AT SPECIFIED DEPTHS. PROPOSED EXCAVATION DEPTHS MAY CHANGE BASED UPON SAFE EXCAVATION AS DETERMINED OF FIELD CONDITIONS AND APPROVED BY THE ENGINEER.IN THESE AREAS, A GEOTEXTILE AND EARTHEN COVER IS PLANNED.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
400 S VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8458

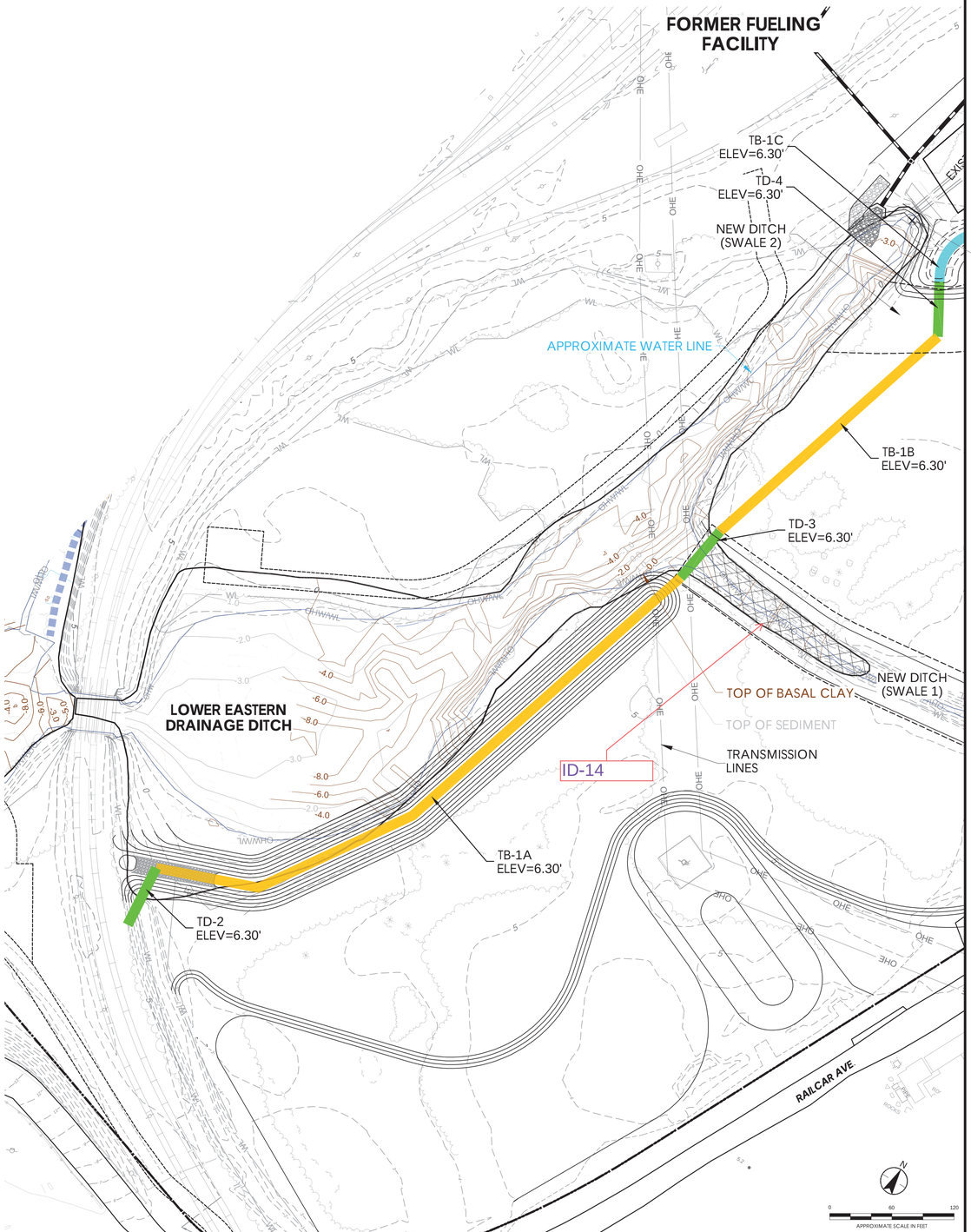
THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

CONFLUENCE AREA SEDIMENT PLAN & CROSS SECTIONS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.08
SHEET: 47 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)
- TOP OF SEDIMENT CONTOUR (1–FOOT INTERVAL)
- TOP OF BASAL CLAY (1–FOOT INTERVAL)
- SEDIMENT EXCAVATION AREA
- TEMPORARY DAM
- TEMPORARY BERM
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER

NOTES:

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REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
400 LVANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-3458

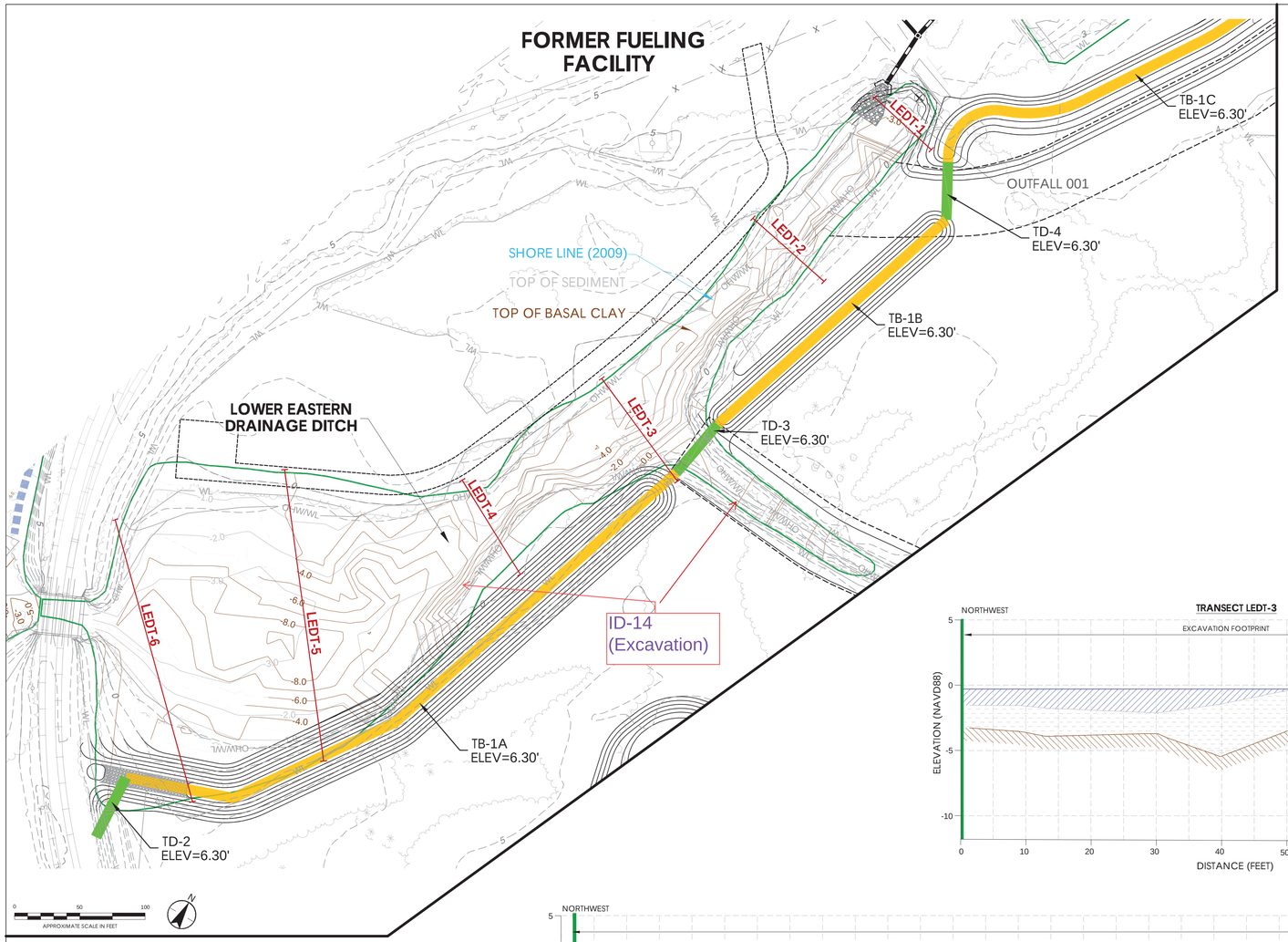
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TO:
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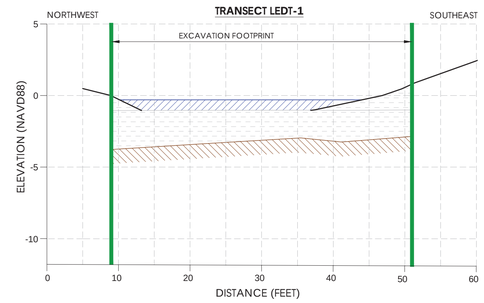
LOWER EASTERN DRAINAGE DITCH SEDIMENT REMOVAL AREA
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

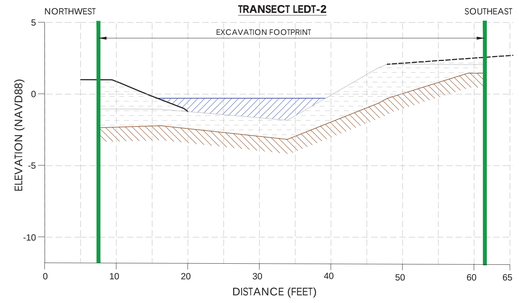
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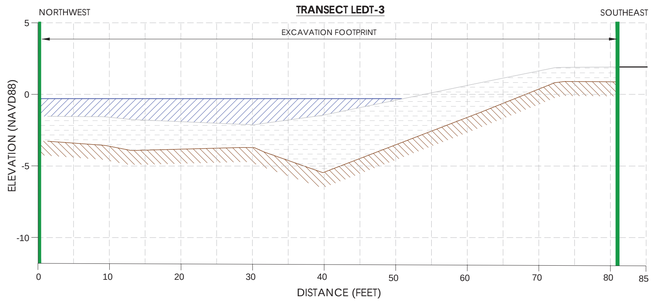
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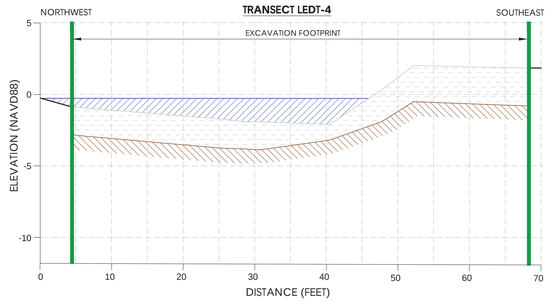
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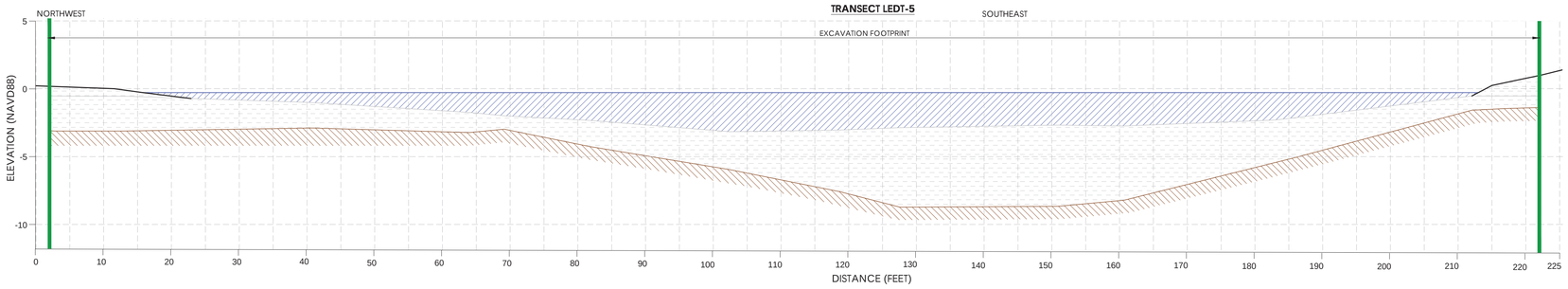


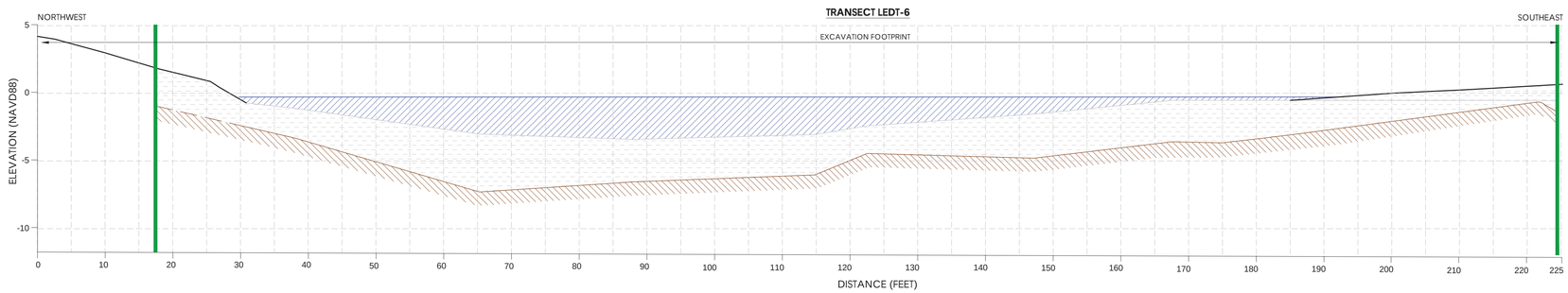












LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, AND NORTHEAST DRAINAGE DITCH)
- TOP OF SEDIMENT CONTOUR (1–FOOT INTERVAL)
- TOP OF BASAL CLAY (1–FOOT INTERVAL)
- EXISTING SURFACE; DASHED WHERE INFERRED
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NOTES:

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BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
1001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8458

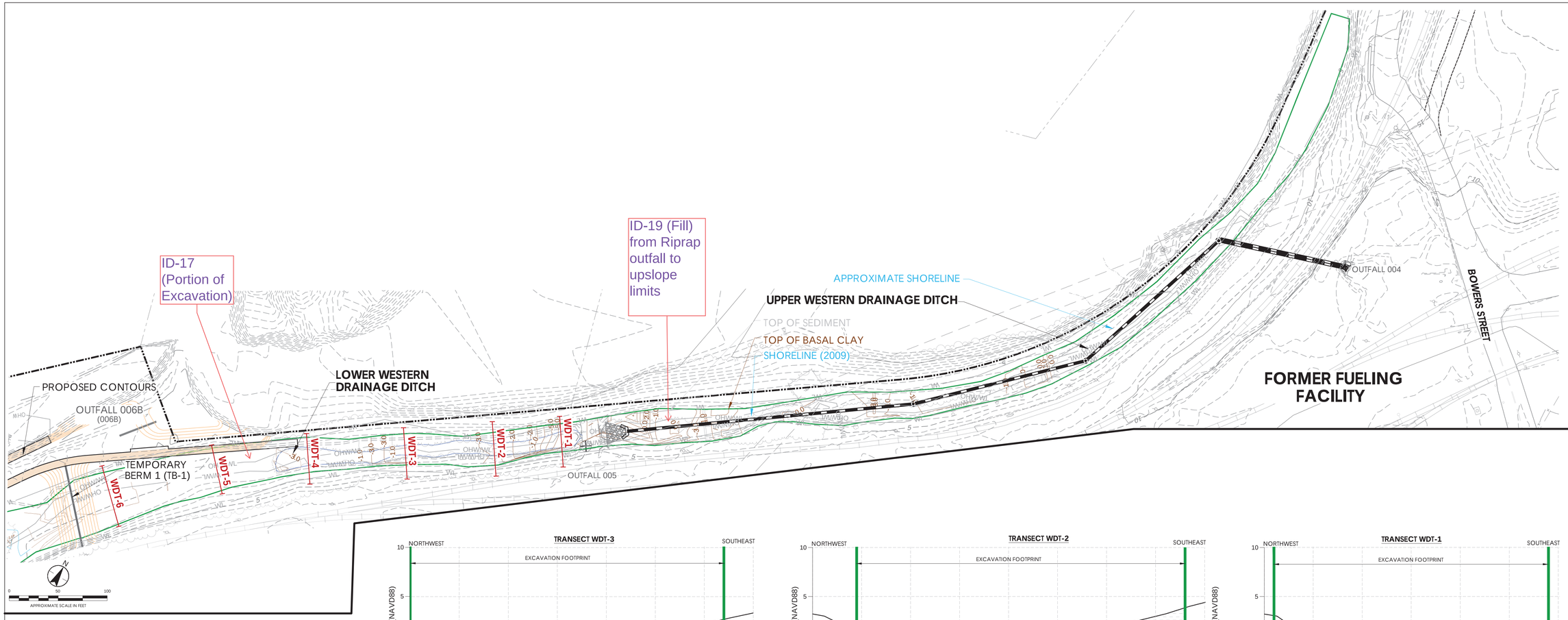
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STANTEC
TO:
AMTRAK

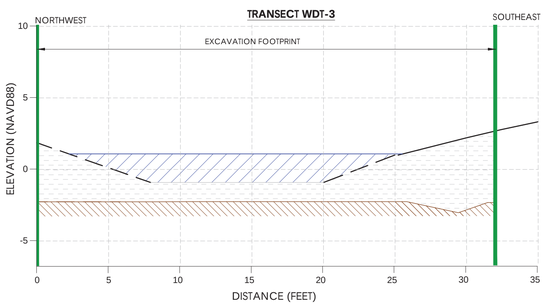
LOWER EASTERN DRAINAGE DITCH PLAN & CROSS SECTIONS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

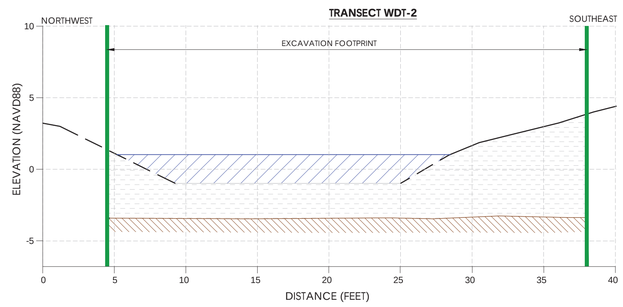
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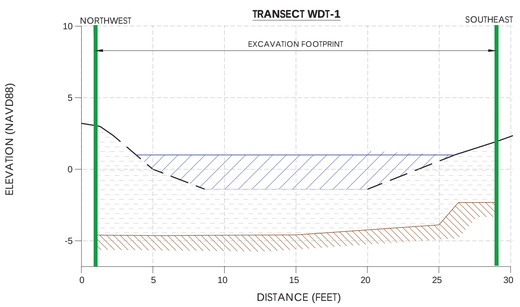
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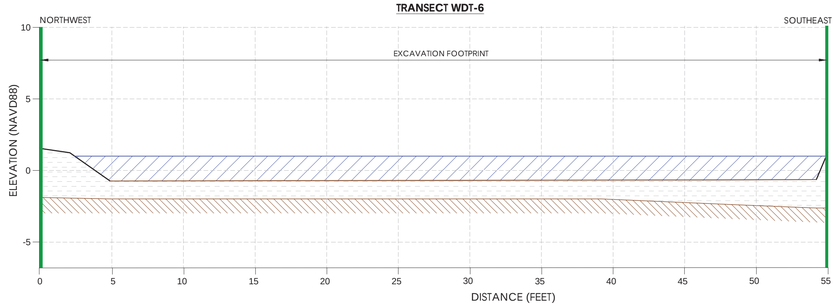
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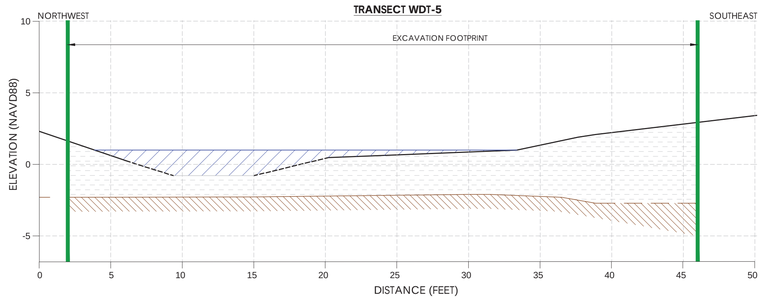


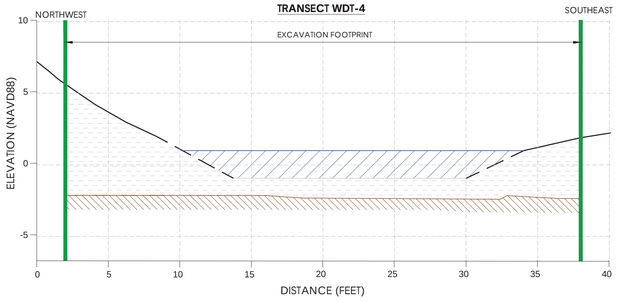












LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, AND NORTHEAST DRAINAGE DITCH)
- TOP OF SEDIMENT CONTOUR (1-FOOT INTERVAL)
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- EXISTING SURFACE; DASHED WHERE INFERRED
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- WL — NONTIDAL WETLAND
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NOTES:

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							BY
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							DESCRIPTION
							DATE
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Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
2001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-4458

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

LOWER WESTERN DRAINAGE DITCH PLAN & CROSS SECTIONS

FOR

AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25

SCALE: AS NOTED

DESIGNED BY: RPV

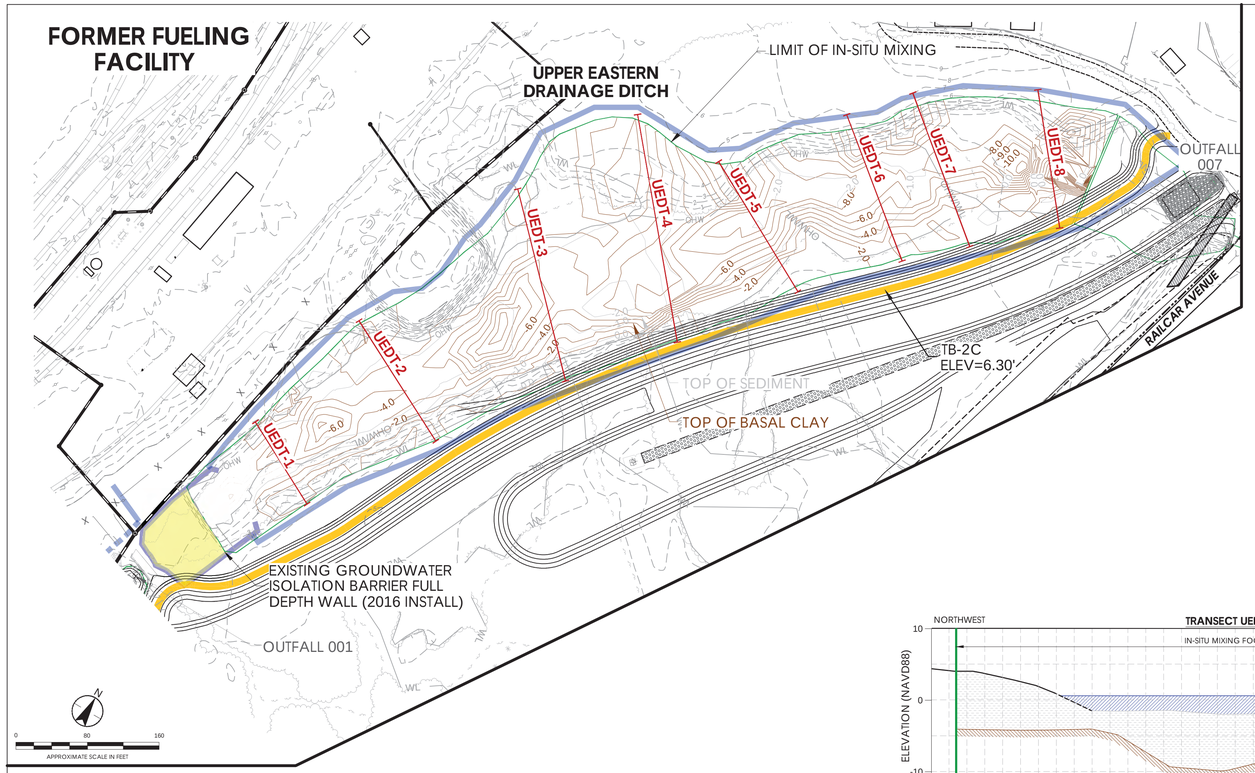
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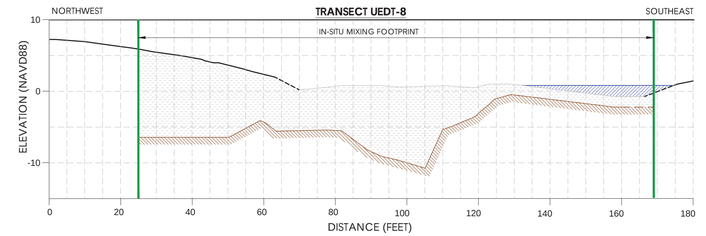
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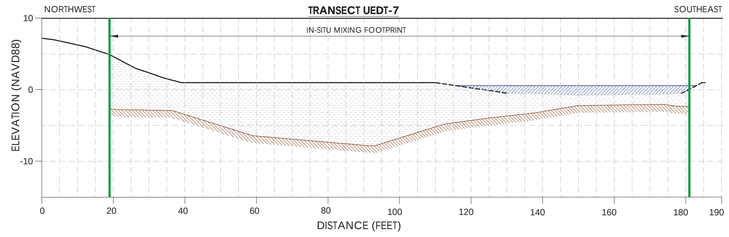
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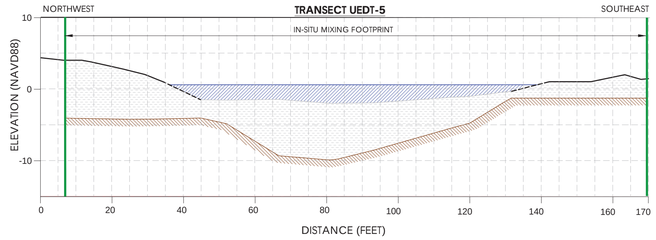
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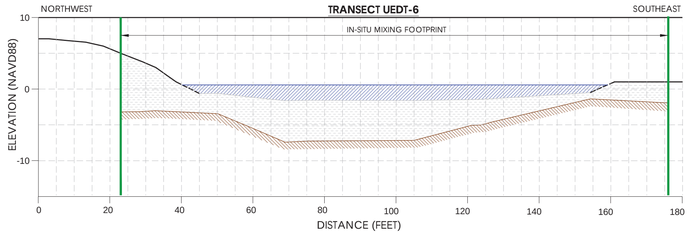
ORIGINAL SHEET - ARCH D

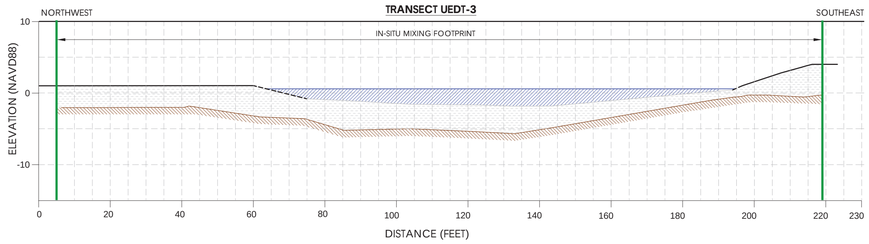


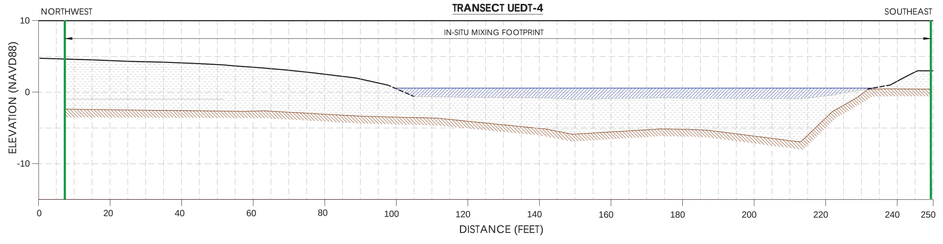


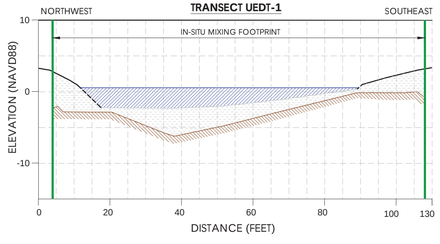


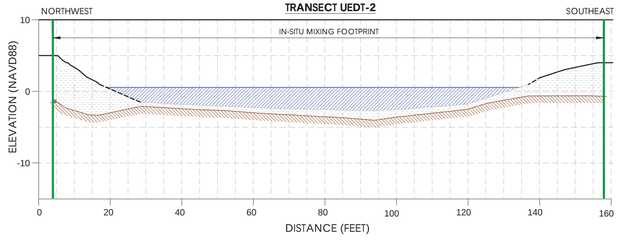












LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)
- GROUNDWATER ISOLATION BARRIER FULL DEPTH WALL
- PILOT STUDY STABILIZATION AREA WITH ISOLATION BARRIER FULL DEPTH WALL
- TOP OF SEDIMENT CONTOUR (1–FOOT INTERVAL)
- TOP OF BASAL CLAY (1–FOOT INTERVAL)
- EXISTING SURFACE; DASHED WHERE INFERRED
- SEDIMENT
- BASAL CLAY
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — OHW — ORDINARY HIGH WATER

NOTES:

CONSTRUCTION SEQUENCE TO BE DETERMINED BASED ON SITE LOGISTICS WITH CONTRACTOR INPUT.

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

SEDIMENT EXCAVATION TO TOP OF BASAL CLAY AT SPECIFIED DEPTHS. PROPOSED EXCAVATION DEPTHS MAY CHANGE BASED UPON SAFE EXCAVATION AS DETERMINED OF FIELD CONDITIONS AND APPROVED BY THE ENGINEER.IN THESE AREAS, A GEOTEXTILE AND EARTHEN COVER IS PLANNED.

	BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8458

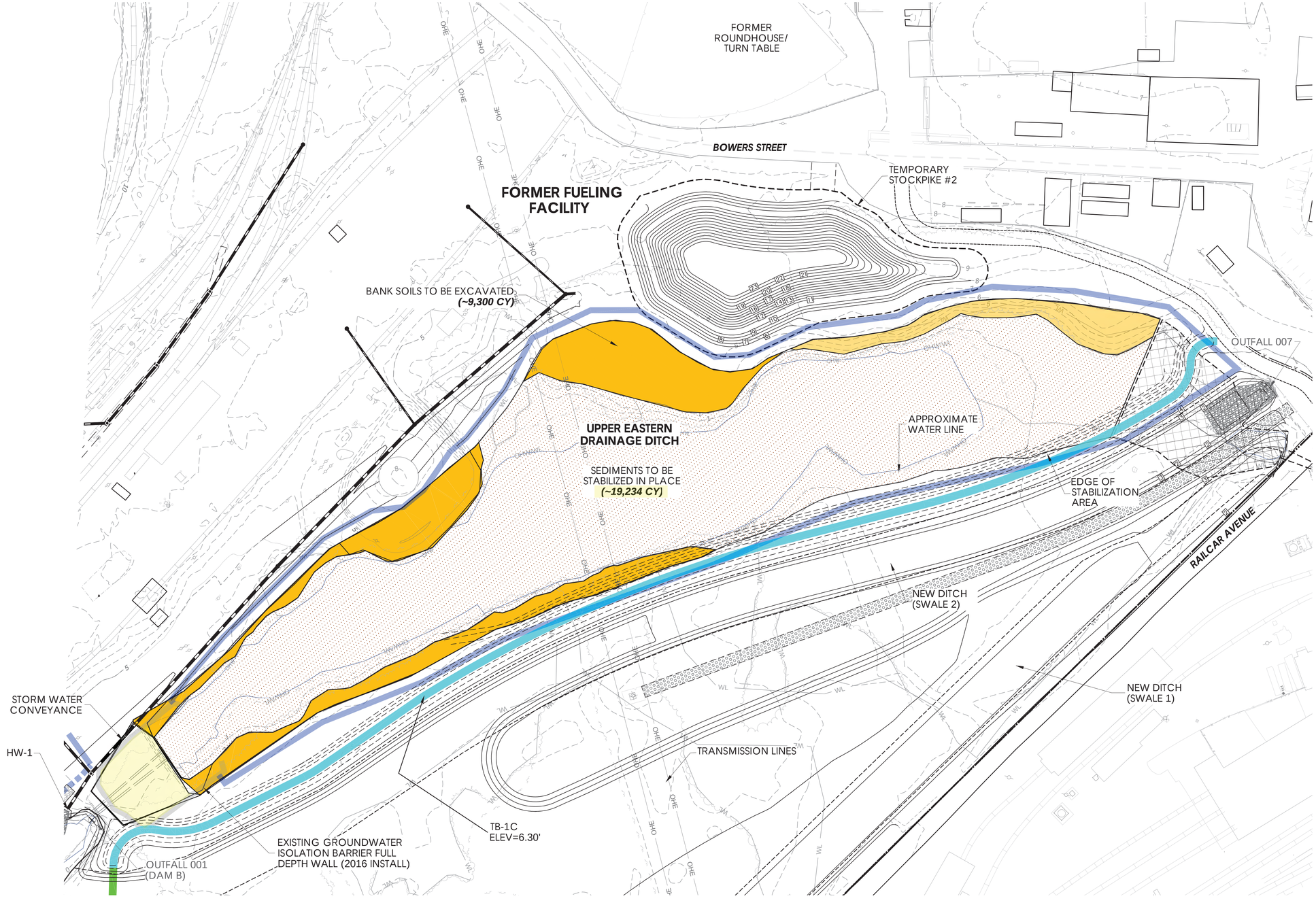
THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

UPPER EASTERN DRAINAGE DITCH PLAN & CROSS SECTIONS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.14
SHEET: 51 OF 135
REV: 0

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10/31/2025 1:59 PM

ORIGINAL SHEET - ARCH D



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXCAVATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION INCLUDING UPPER/ LOWER EASTERN DRAINAGE DITCH, WESTERN DRAINAGE DITCH, CONFLUENCE AREA, NORTHEAST DRAINAGE DITCH, AND OUTFALL 002 DRAINAGE DITCH)
- GROUNDWATER ISOLATION BARRIER FULL DEPTH WALL
- BANK SOILS TO BE EXCAVATED AND UTILIZED AS REAGENT
- SEDIMENTS TO BE STABILIZED IN PLACE
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

SEQUENCE OF UPPER EASTERN DITCH SEDIMENT WORK

1. IN SITU.
2. EXCAVATE BANK SOIL AS INDICATED .
3. STABILIZE SEDIMENT IN PLACE.

NOTES:

CONSTRUCTION SEQUENCE TO BE DETERMINED BASED ON SITE LOGISTICS WITH CONTRACTOR INPUT.

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8468

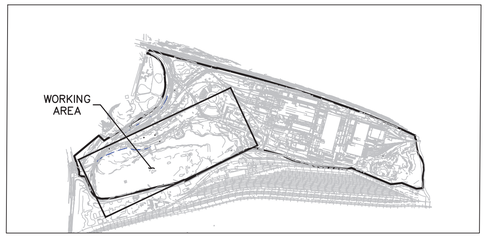
THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

UPPER EASTERN DRAINAGE DITCH BANK SOIL REMOVAL
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-102.16
SHEET: 52 OF 135
REV: 0

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10/31/2025 1:59 PM

ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

OUTFALL 001R
24+00–24+60 SECTION TOP WALL ELEV=4.50
23+00–23+99 SECTION TOP WALL ELEV=4.00
SEDIMENT TO BE EXCAVATED
SWALE 2–C'
TEMPORARY BERM 3A ELEV.=6.30'
22+00–22+99 SECTION TOP WALL ELEV=4.00
21+00–21+99 SECTION TOP WALL ELEV=4.50
20+00–20+99 SECTION TOP WALL ELEV=4.50
19+00–19+99 SECTION TOP WALL ELEV=4.50
18+00–18+99 SECTION TOP WALL ELEV=3.50
17+00–17+99 SECTION TOP WALL ELEV=2.00
16+00–16+99 SECTION TOP WALL ELEV=1.00
15+00–15+99 SECTION TOP WALL ELEV=1.50
14+00–14+99 SECTION TOP WALL ELEV=1.00
12+00–12+99 SECTION TOP WALL ELEV=6.50
13+00–13+99 SECTION TOP WALL ELEV=4.00
LIMIT OF INSITU MIXING
FORMER TURNTABLE
FORMER ROUNDHOUSE
WETLAND
PERMANENT EARTHEN BERM
ID-05
ID-14, ID-15 (portion of)
ID-03
ID-02
SWALE 1
SWALE 2
SWALE 2–B
SWALE 2–B'
SWALE 2–A
SWALE 2–A'
SWALE–1–A
SWALE–1–A'
SWALE–1–B
SWALE–1–C
SWALE–1–C'
OUTFALL 007 DRAINAGE
OFFSITE 003 RUN–ON CONTROL & NED DRAINAGE
OFFSITE RUN–ON CONTROL & NED DRAINAGE
GRAVEL ACCESS FOR MAINTENANCE
RAILCAR AVENUE
LOWER STREET

LEGEND

- PROPOSED SWALES
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- HANGING GROUNDWATER BARRIER WALL
- EXISTING BARRIER WALL
- FULL DEPTH GROUNDWATER BARRIER WALL
- RIPRAP
- GRAVEL ROAD
- SEDIMENT TO BE REMOVED
- SEDIMENT EXCAVATION LIMIT
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

SWALE	DRAINAGE
1	OFFSITE RUN–ON CONTROL & NED DRAINAGE
2	OUTFALL 007

NOTE: FIELD VERIFICATION PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

N

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 80 ft.

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4001 VANDEVER AVENUE
WILMINGTON, DE 19802
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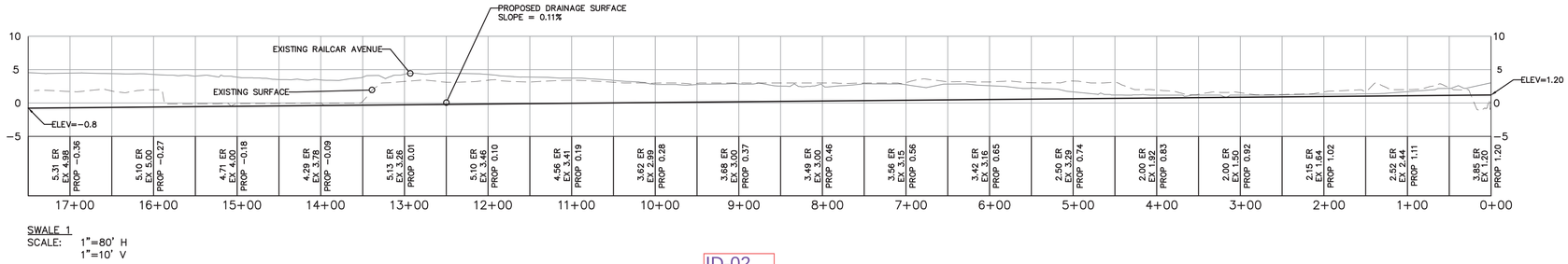
THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

UPPER EASTERN DRAINAGE DITCHES GRADING PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.01
SHEET: 53 OF 135
REV: 0

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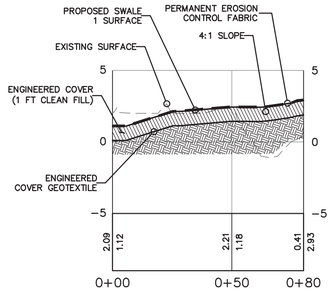
ORIGINAL SHEET - ARCH D



SWALE 1
SCALE: 1"=80' H
1"=10' V

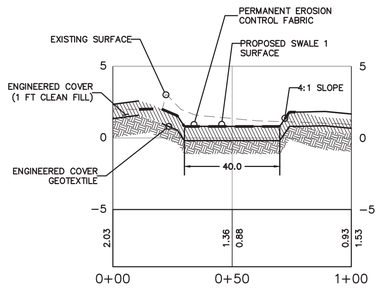
SWALE 1 PROFILE

ID-02,
ID-03,
ID-04,
ID-14,
ID-15



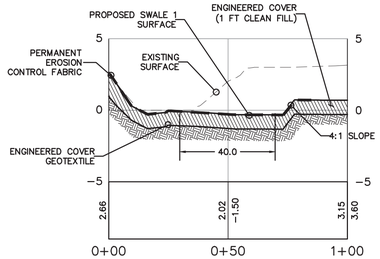
SWALE 1–A–A'
SCALE: 1"=30' H
1"=5' V

SWALE 1–A–A' CROSS–SECTION



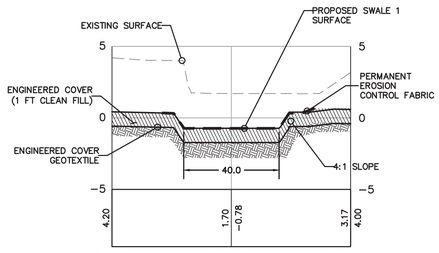
SWALE 1–B–B'
SCALE: 1"=30' H
1"=5' V

SWALE 1–B–B' CROSS–SECTION



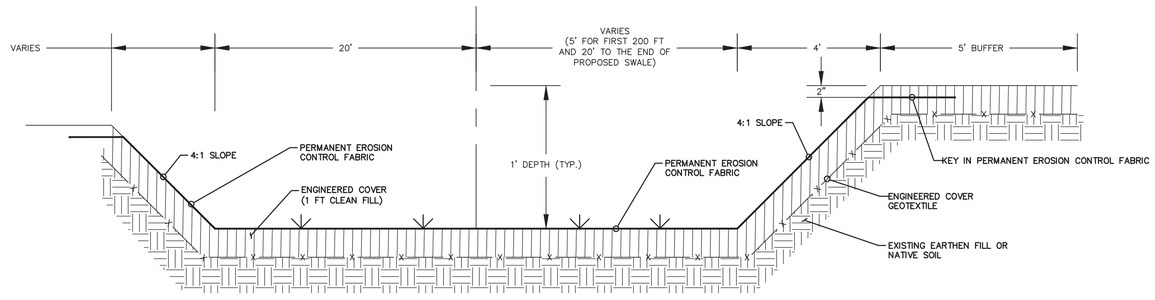
SWALE 1–C–C'
SCALE: 1"=30' H
1"=5' V

SWALE 1–C–C' CROSS–SECTION



SWALE 1–D–D'
SCALE: 1"=30' H
1"=5' V

SWALE 1–D–D' CROSS–SECTION



TYPICAL SWALE 1 CROSS–SECTION DETAIL

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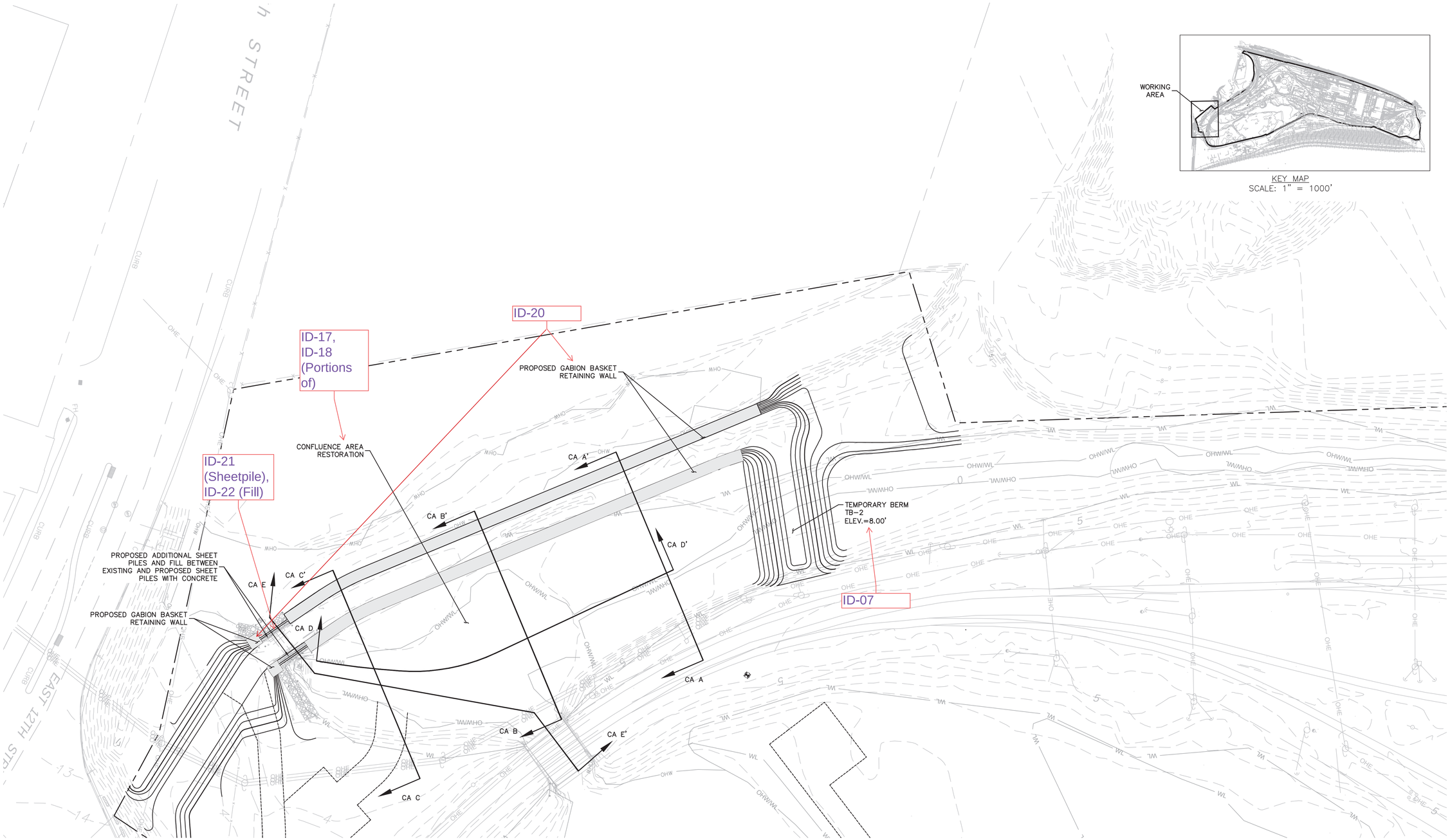
SWALE 1 PROFILE AND TYPICAL DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.02
SHEET: 54 OF 135
REV: 0

BY | APPROVED | DESCRIPTION | DATE | REV

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

AMTRAK TO BE CONSULTED IN PROXIMITY TO RAILROAD TRESTLE. REFER TO SPECIAL PROCEDURES FOR RAILROAD FACILITIES SPECIFICATION #013513.23

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 573-3043

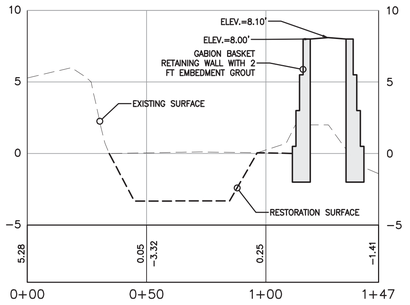
THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

CONFLUENCE AREA SURFACE RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.14
SHEET: 57 OF 135
REV: 0

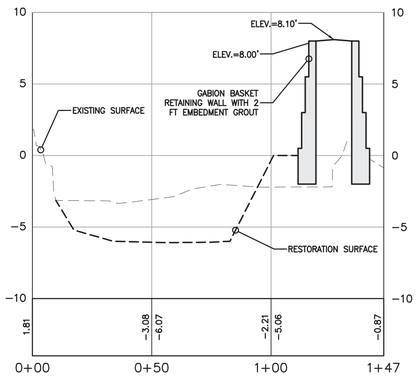
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ORIGINAL SHEET - ARCH D



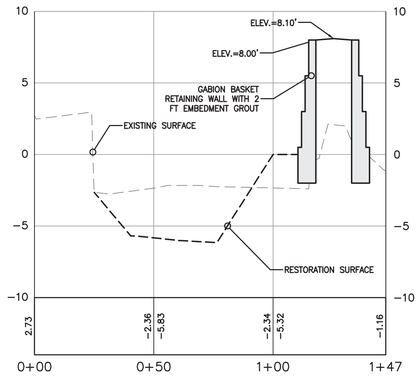
CA A–A'
SCALE: 1"=30' H
1"=5' V

CA A-A' CROSS-SECTION



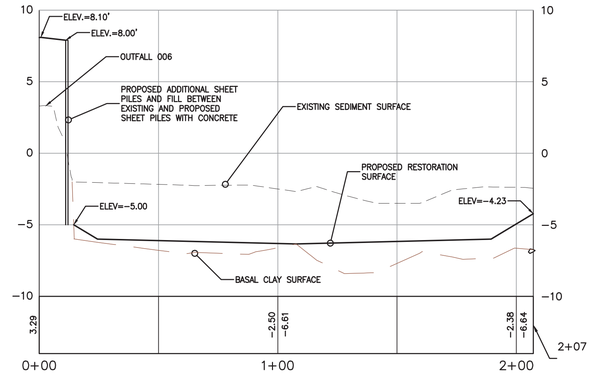
CA B–B'
SCALE: 1"=30' H
1"=5' V

CA B-B' CROSS-SECTION



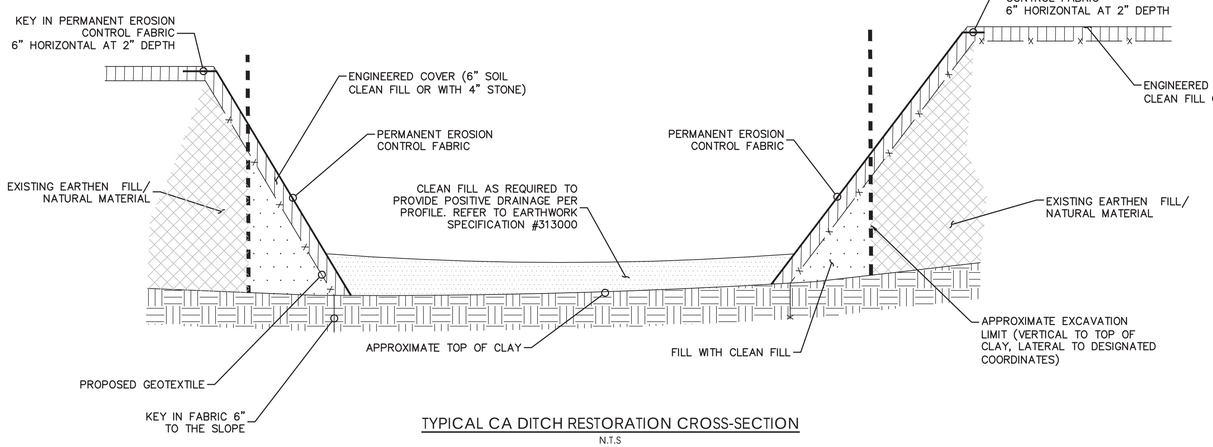
CA C–C'
SCALE: 1"=30' H
1"=5' V

CA C-C' CROSS-SECTION



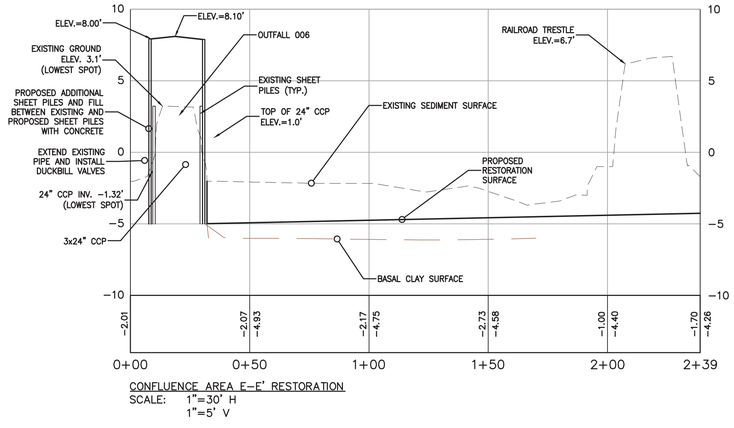
CONFLUENCE AREA D–D' RESTORATION
SCALE: 1"=30' H
1"=5' V

CA D-D' RESTORATION PROFILE



TYPICAL CA DITCH RESTORATION CROSS-SECTION
N.T.S

ID-17 (portion)
ID-18 (portion)
ID-20,
ID-21,
ID-22



CONFLUENCE AREA E–E' RESTORATION
SCALE: 1"=30' H
1"=5' V

CA E-E' RESTORATION PROFILE

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							APPROVED
							DESCRIPTION
							DATE
							REV

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WILMINGTON, DE 19802
PHONE: (302) 429-8458

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

CONFLUENCE AREA RESTORATION PROFILES
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.15
SHEET: 58 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

PB–1 PROFILE

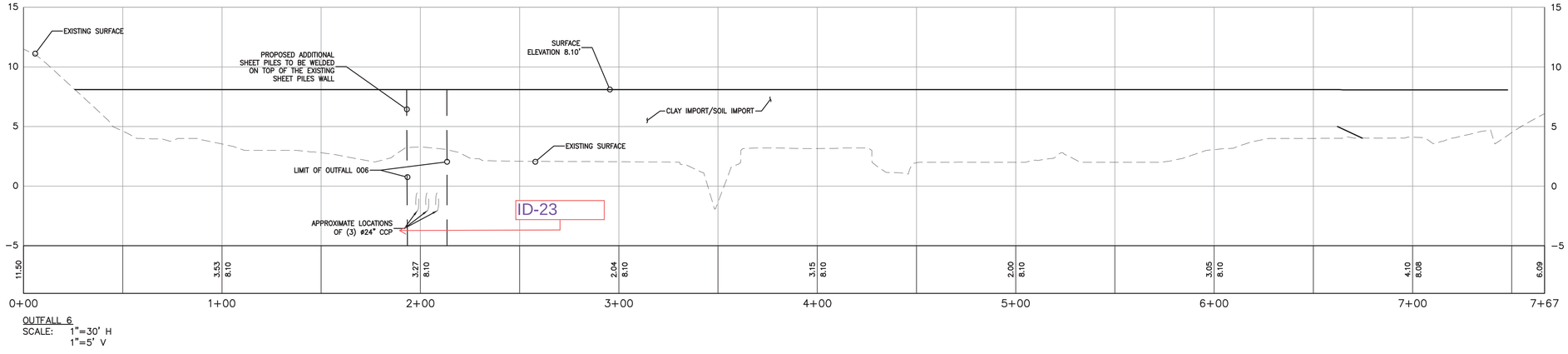
TYPICAL PB–1 CROSS SECTIONS

PROPOSED GABION BASKET RETAINING WALL

PROPOSED ADDITIONAL SHEET PILES AND FILL BETWEEN EXISTING AND PROPOSED SHEET PILES WITH CONCRETE

PROPOSED GABION BASKET RETAINING WALL

EAST 12TH STREET



OUTFALL 6
SCALE: 1"=30' H
1"=5' V

LEGEND:

PROPOSED CONTOUR	
EXISTING SPOT GRADE	
EXISTING TOPOGRAPHIC CONTOUR	
NONTIDAL WETLAND	
ORDINARY HIGH WATER/NONTIDAL WETLAND	
ORDINARY HIGH WATER	

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8540

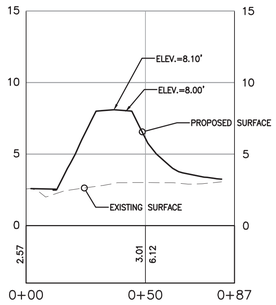
THIS DOCUMENT WAS PREPARED
BY:
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TO:
AMTRAK

OUTFALL 006 BERM RECONSTRUCTION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

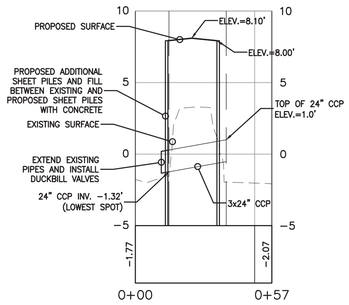
DATE: 10.31.25
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DESIGNED BY: RPV
FILE NO.: C-103.04
SHEET: 59 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

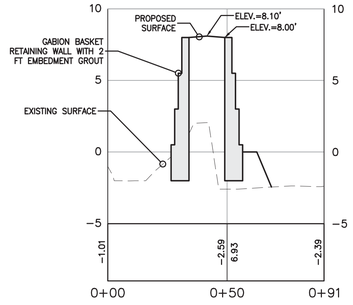


OUTFALL 6 A–A'
SCALE: 1"=30' H
1"=5' V



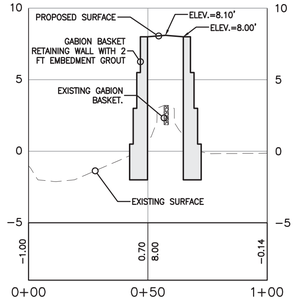
OUTFALL 006 B–B'
SCALE: 1"=30' H
1"=5' V

ID-21,
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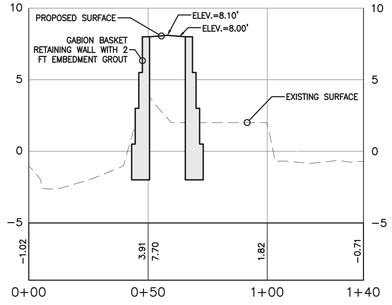
OUTFALL 006 C–C'
SCALE: 1"=30' H
1"=5' V

ID-20



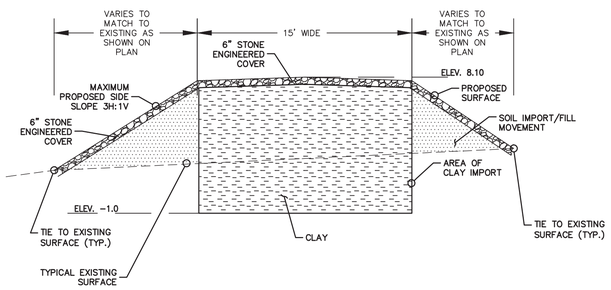
OUTFALL 006 D–D'
SCALE: 1"=30' H
1"=5' V

ID-20

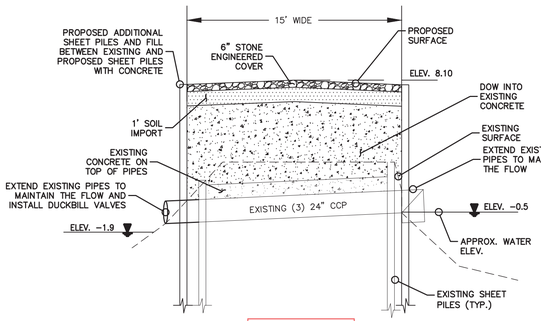


OUTFALL 006 E–F'
SCALE: 1"=30' H
1"=5' V

ID-20

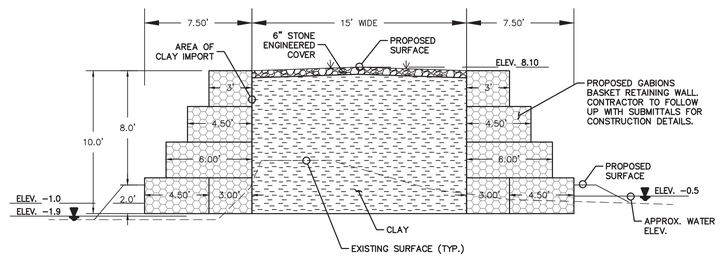


TYPICAL OUTFALL 006 BERM CROSS-SECTION
STATION 0+38 TO 1+84
N.T.S



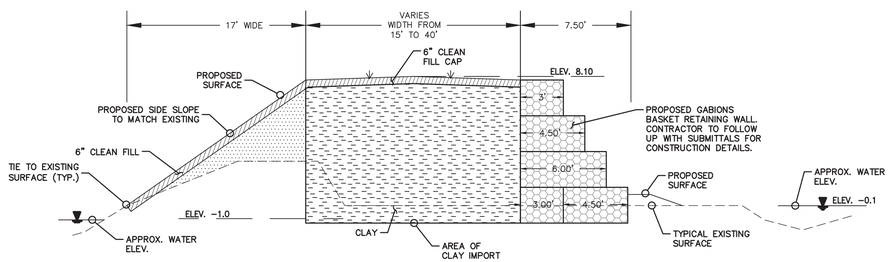
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TYPICAL OUTFALL 006 BERM CROSS-SECTION
STATION 1+84 TO 2+14
N.T.S

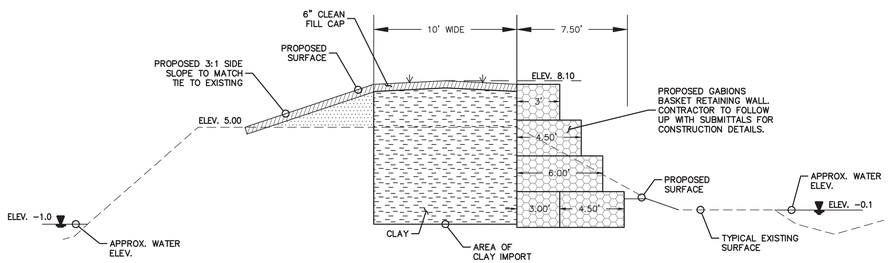


ID-20

TYPICAL OUTFALL 006 BERM CROSS-SECTION
STATION 2+14 TO 5+44
N.T.S



TYPICAL OUTFALL 006 BERM CROSS-SECTION
STATION 5+44 TO 6+25
N.T.S



TYPICAL OUTFALL 006 BERM CROSS-SECTION
STATION 6+25 TO 7+67
N.T.S

						BY
						APPROVED
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						DATE
						REV

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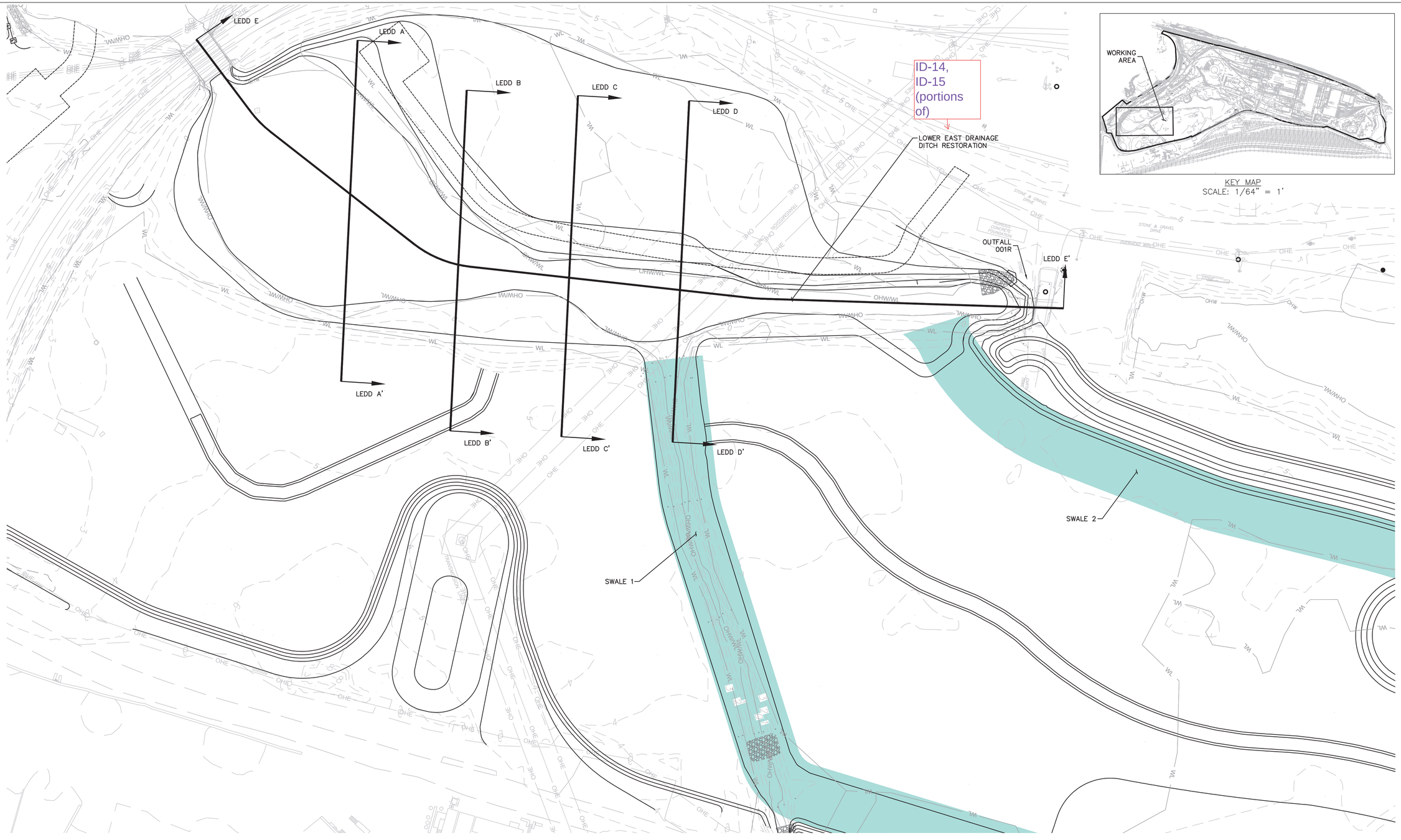
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OUTFALL 006 BERM RECONSTRUCTION DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.05
SHEET: 60 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1/64" = 1'

LEGEND:

- CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

SWALE	DRAINAGE
1	OFFSITE RUN-ON CONTROL & NED DRAINAGE
2	OUTFALL 007

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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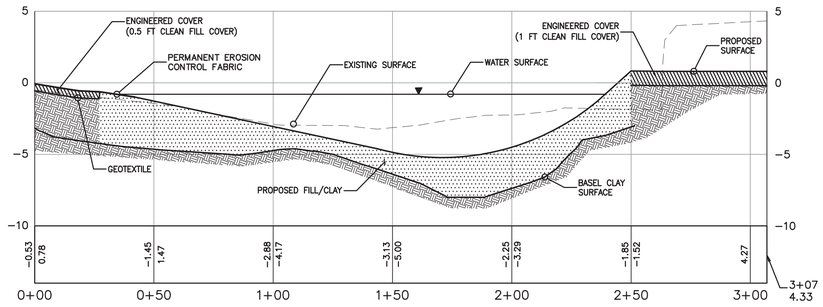
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LOWER EASTERN DITCH SURFACE RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.08
SHEET: 61 OF 135
REV: 0

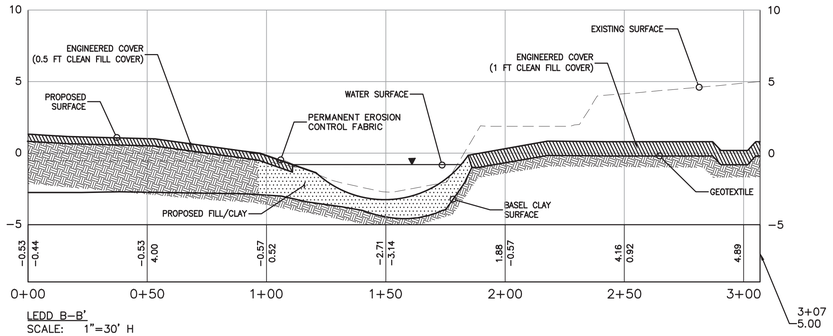
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ORIGINAL SHEET - ARCH D



LEDD A–A'
SCALE: 1"=30' H
1"=5' V

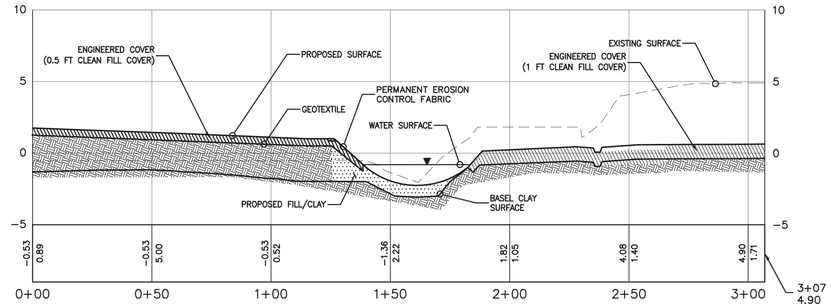
LEDD-A-A' CROSS-SECTION



LEDD B–B'
SCALE: 1"=30' H
1"=5' V

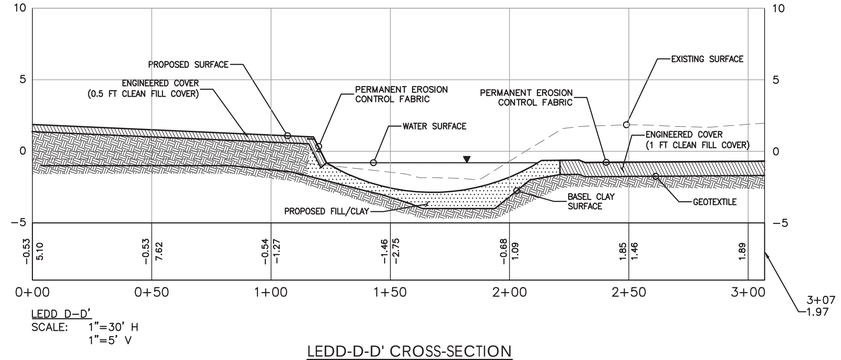
LEDD-B-B' CROSS-SECTION

ID-14, ID-15



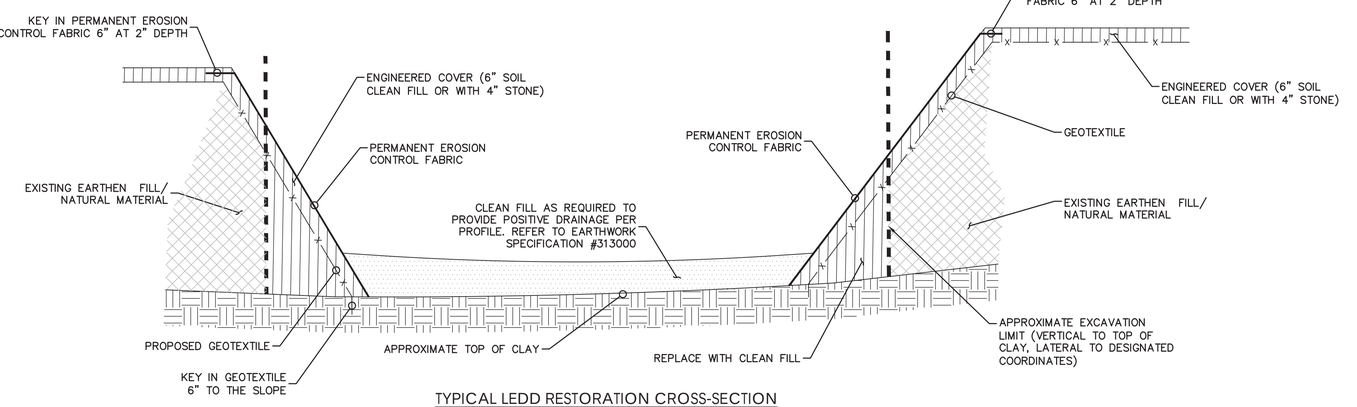
LEDD C–C'
SCALE: 1"=30' H
1"=5' V

LEDD-C-C' CROSS-SECTION

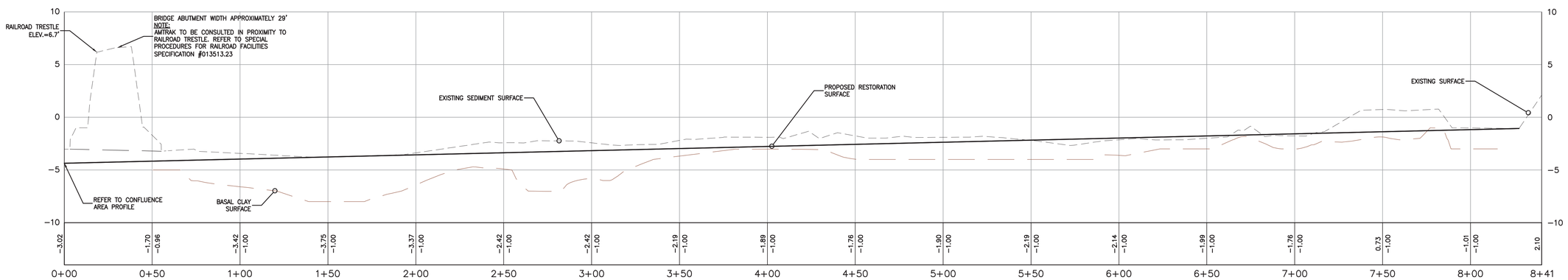


LEDD D–D'
SCALE: 1"=30' H
1"=5' V

LEDD-D-D' CROSS-SECTION



TYPICAL LEDD RESTORATION CROSS-SECTION
N.T.S



LEDD RESTORATION
SCALE: 1"=30' H
1"=5' V

LEDD-E-E' SECTION

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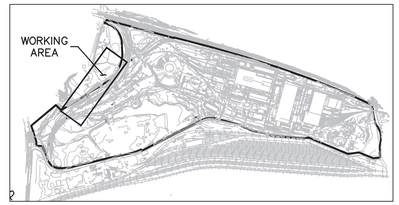
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LOWER EASTERN DITCH SURFACE RESTORATION PROFILES
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
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FILE NO.: C-103.09
SHEET: 62 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

ID-24

STRM MH 1
GRT=6.25

EX INLET
GRT=4.65

STRM MH 2
GRT=5.68

STRM MH 3
GRT=4.97

FES 1
GRT=4.06

1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
9+45

OUTFALL 004

BOWERS STREET

TANK

OHE
OHW/WL
WL

LEGEND:

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- APPROXIMATE DITCH CENTERLINE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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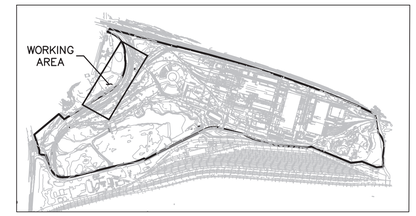
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UPPER WESTERN DRAINAGE DITCH RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.10
SHEET: 63 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

REMOVE EXISTING 12" CMP & CORE DRILL TO CONNECT A NEW 24" DIP TO EXISTING INLET AT OUTFALL 004.

PROPOSED 30" HDPE

PROPOSED STORM MANHOLE. SEE DETAIL ON SHEET 65

PROPOSED RIPRAP. SEE SHEET 119 FOR DETAIL.

ID-25

STRM MH 1
GRT=6.25
INV=1.99 (30" HDPE)
INV=2.49 (24" DIPx2)

132 LF 24" DIPx2 @ 0.003 FT/FT

EX INLET
GRT=4.65
INV=2.85 (24" DIP x2)

STRM MH 2
GRT=5.68
INV=1.71 (30" HDPE)
INV=1.71 (30" HDPE)

181 LF 30"ø HDPE @ 0.002 FT/FT

STRM MH 3
GRT=4.97
INV=1.43 (30" HDPE)
INV=1.43 (30" HDPE)

295 LF 30"ø HDPE @ 0.002 FT/FT

FES 1
GRT=4.06
INV=0.98 (30" HDPE)

OUTFALL 004

LEGEND:

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED STORMWATER PIPE
- APPROXIMATE DITCH CENTERLINE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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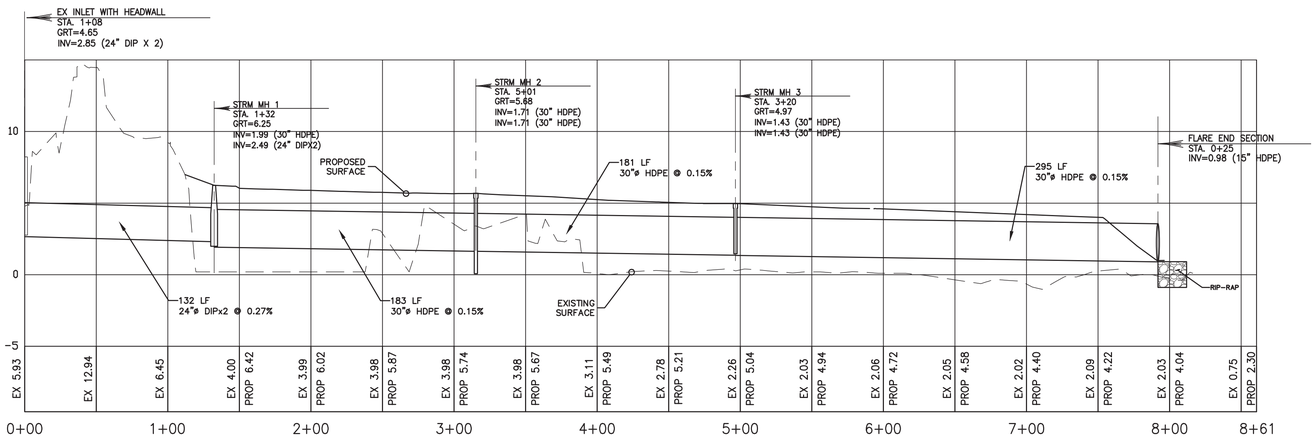
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WESTERN DITCH STORM SEWER PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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FILE NO.: C-104.02
SHEET: 64 OF 135
REV: 0

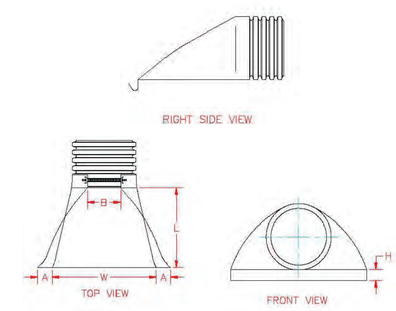
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ORIGINAL SHEET - ARCH D



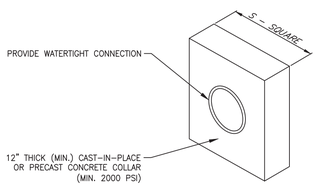
ID-19,
ID-24,
ID-25

WESTERN DRAINAGE DITCH PIPE
SCALE: 1"=50' H
1"=5' V



	WING SIZE (A)	WIDTH (W)	WIDTH AT OUTLET (B)	LENGTH (L)	THICKNESS (T)
FES-1	6.5"	29"	10"	25"	6.5"

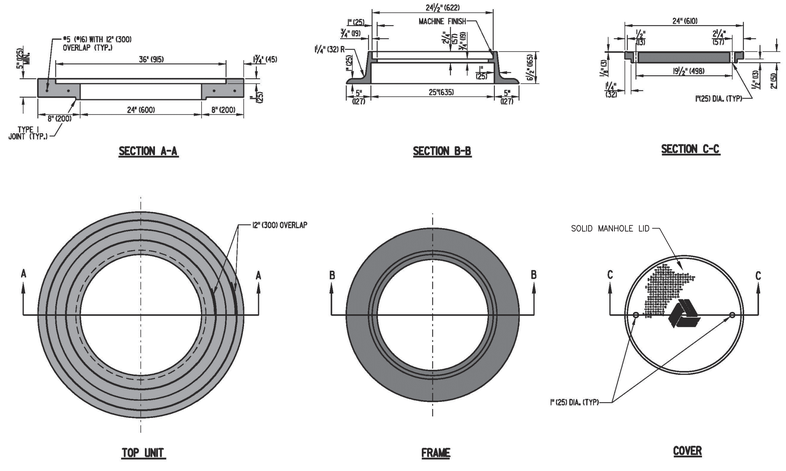
FLARED END SECTION DETAIL
N.T.S



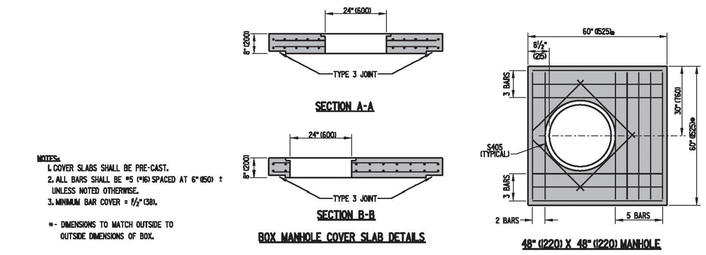
NOTES:
1. ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
2. COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

BASIN OR TRAP NO.	PIPE SIZE (IN)	S (IN)	NO. OF COLLARS	RISER TO FIRST COLLAR (FT)	COLLAR SPACING (FT)
OUTFALL 004	30	48	6	25	102

ANTI-SEEP COLLAR
N.T.S



STORM MANHOLE DETAIL (DELDOT)



NOTES:
1. COVER SLABS SHALL BE PRE-CAST.
2. ALL BARS SHALL BE #5 (#16) SPACED AT 6" (150) ± UNLESS NOTED OTHERWISE.
3. MINIMUM BAR COVER = 1½" (38).
*- DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

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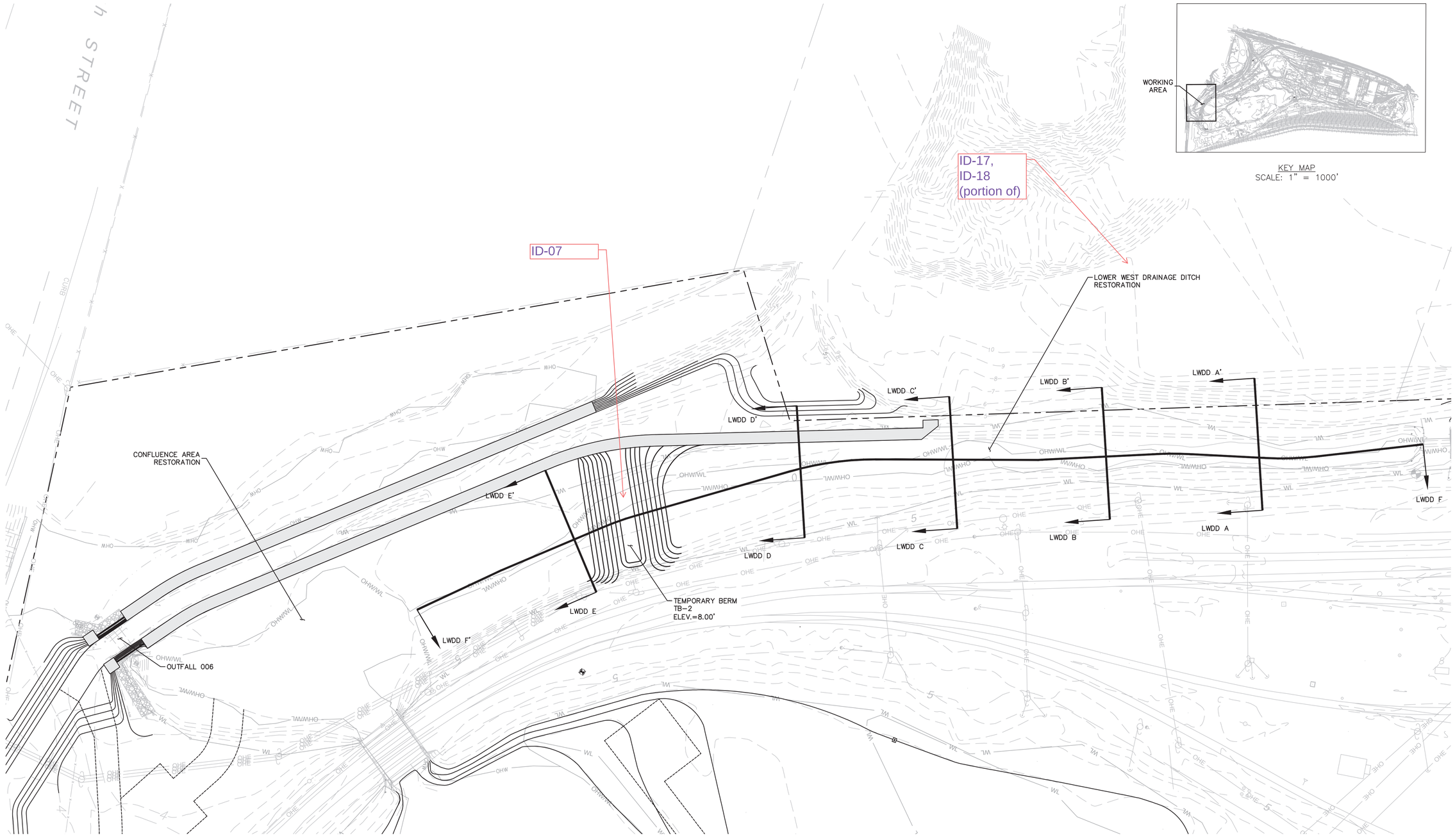
WESTERN DITCH STORM SEWER PROFILE AND DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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DESIGNED BY: RPV
FILE NO.: C-104.03
SHEET: 65 OF 135
REV: 0

REV	DATE	DESCRIPTION	APPROVED	BY
:	:	:	:	:
'	'	'	'	'

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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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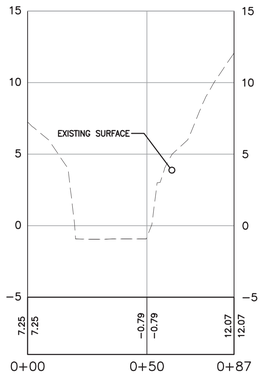
THIS DOCUMENT WAS PREPARED
BY:
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TO:
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LOWER WESTERN DITCH SURFACE RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	C-103.12
SHEET:	66 OF 135
REV:	0

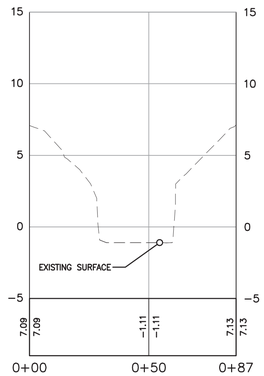
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ORIGINAL SHEET - ARCH D



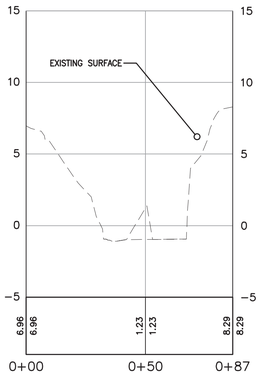
LWDD A–A'
SCALE: 1"=30' H
1"=5' V

LWDD A-A' CROSS-SECTION



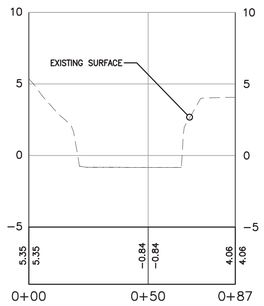
LWDD B–B'
SCALE: 1"=30' H
1"=5' V

LWDD B-B' CROSS-SECTION



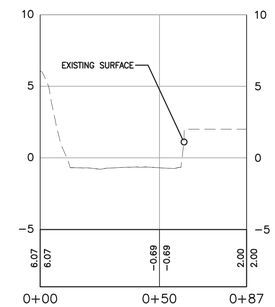
LWDD C–C'
SCALE: 1"=30' H
1"=5' V

LWDD C-C' CROSS-SECTION



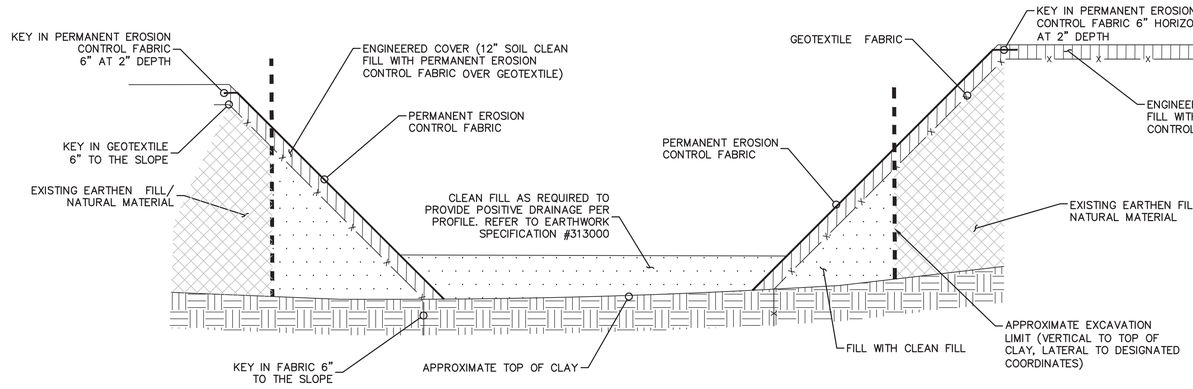
LWDD D–D'
SCALE: 1"=30' H
1"=5' V

LWDD D-D' CROSS-SECTION

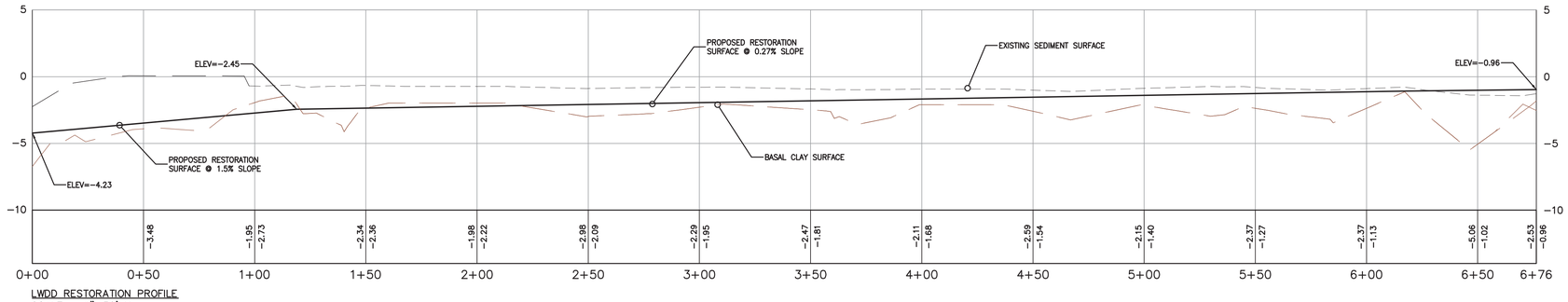


LWDD E–E'
SCALE: 1"=30' H
1"=5' V

LWDD E-E' CROSS-SECTION



TYPICAL LWDD DITCH RESTORATION CROSS-SECTION
N.T.S



LWDD RESTORATION PROFILE
SCALE: 1"=30' H
1"=5' V

LWDD F-F' CROSS-SECTION

ID-17,
ID-18
(portion of)

BY	APPROVED	DESCRIPTION	DATE	REV

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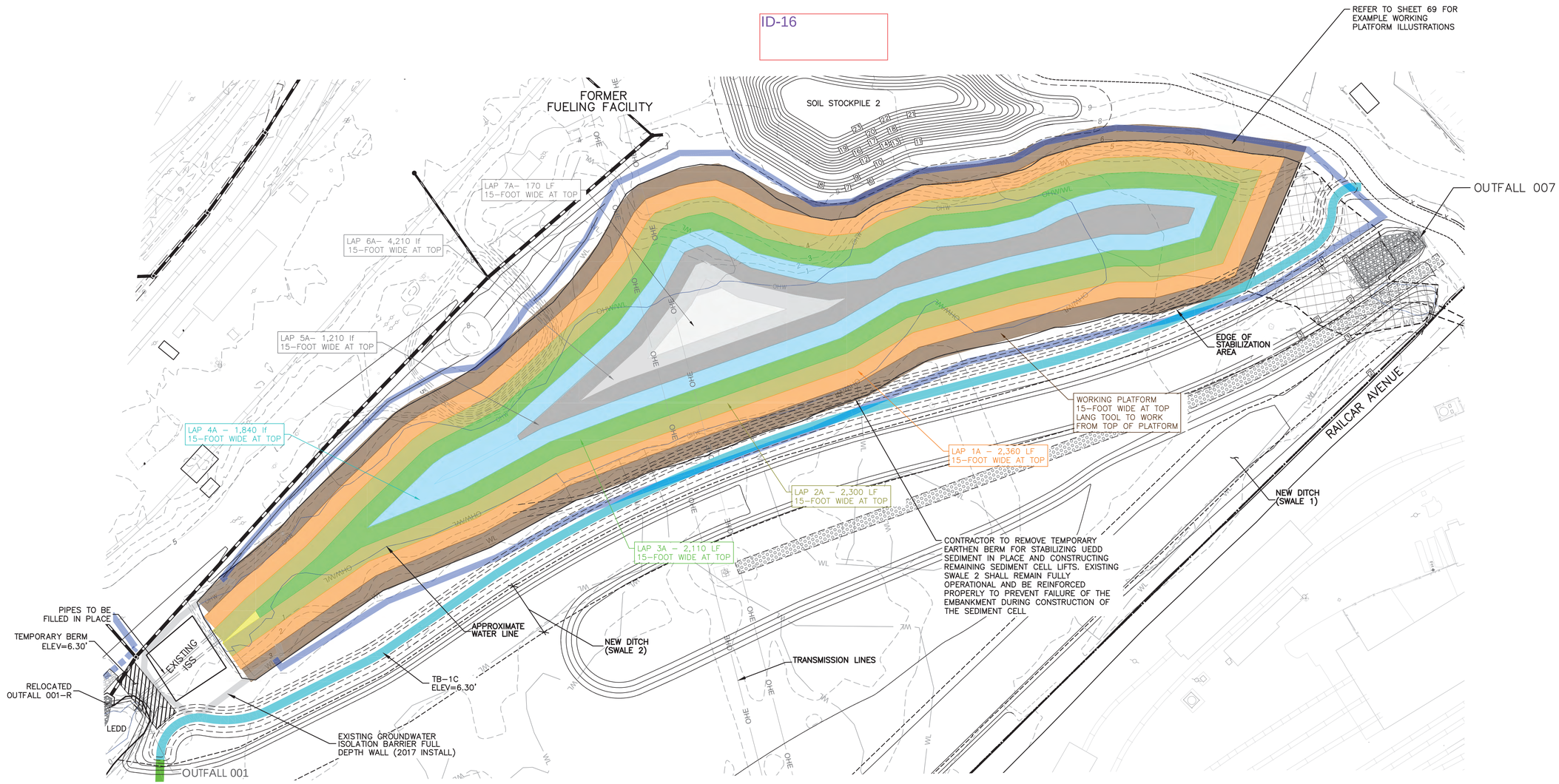
THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

LOWER WESTERN DITCH SURFACE RESTORATION PROFILES
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.13
SHEET: 67 OF 135
REV: 0

U:\213402048\DRAWINGS\SHEETS\CONSTRUCTION_SET\213402048-C-103.11.DWG
10/31/2025 2:09 PM
ORIGINAL SHEET - ARCH D

ID-16



LAP LEGEND

- LAP 1A
- LAP 2A
- LAP 3A
- LAP 4A
- LAP 5A
- LAP 6A
- LAP 7A

LEGEND

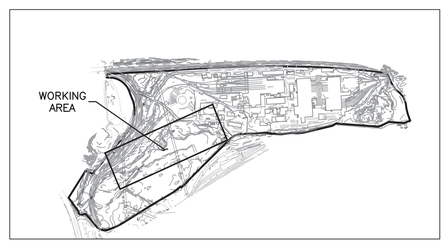
- APPROXIMATE PROPERTY BOUNDARY
- STABILIZATION FOOTPRINT FOR UEDD
- GROUNDWATER ISOLATION BARRIER FULL DEPTH WALL
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- TEMPORARY BERM
- RIPRAP APRON/STILLING BASIN
- GRAVEL ACCESS ROAD
- EXISTING ENGINEERING COVER

NOTES:

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1. STABILIZATION SEQUENCE PRESENTED FOR ILLUSTRATIVE PURPOSES
2. LAPS 1–7 SHOW THE DEVELOPMENT OF THE WORKING PLATFORM FROM WHICH SUBSEQUENT VERTICAL PLACEMENT OF STABILIZED SEDIMENTS IS PLANNED
3. FOR UEDD SEDIMENTS, MIX E455 IS PLANNED
4. FOR ALL OTHER SEDIMENTS MIX E355 OR E252 IS PLANNED
5. CONTRACTOR TO PREPARE SEDIMENT STABILIZATION EXECUTION PLAN FOR ENGINEER/AMTRAK APPROVAL, SEE SPECIFICATION 02 55 00



KEY MAP
SCALE: 1" = 1000'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

:	:	:	:	:	:	BY
:	:	:	:	:	:	APPROVED
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UEDD SEDIMENT STABILIZATION SEQUENCE FOR WORKING PLATFORM
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

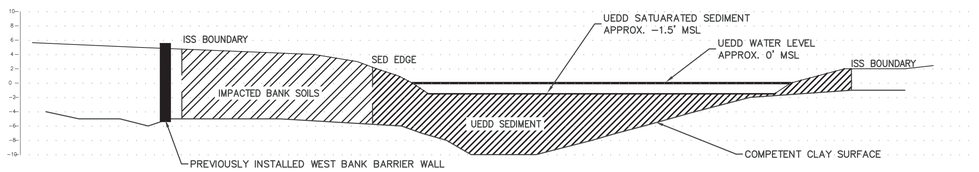
DATE: 10.31.25
SCALE: AS NOTED
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FILE NO.: ----
SHEET: 68 OF 135
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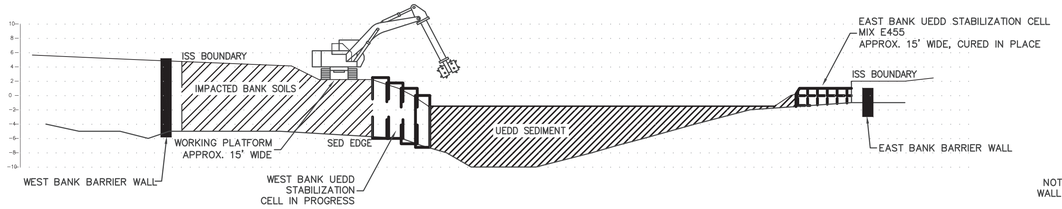
ORIGINAL SHEET - ARCH D

ID-16

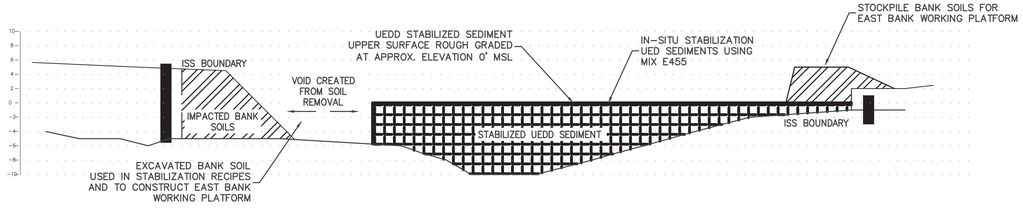
1. CURRENT CONDITIONS



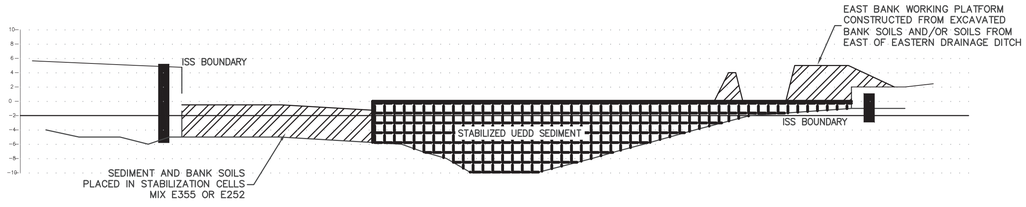
2. STABILIZE UEDD SEDIMENT, WORK FROM PERIMETER TO INTERIOR



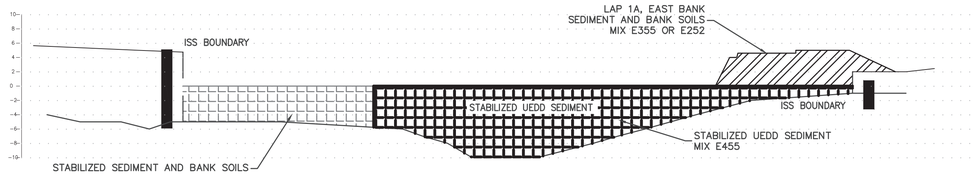
3. EXCAVATE BANK SOILS; IN-SITU STABILIZE UEDD SEDIMENTS



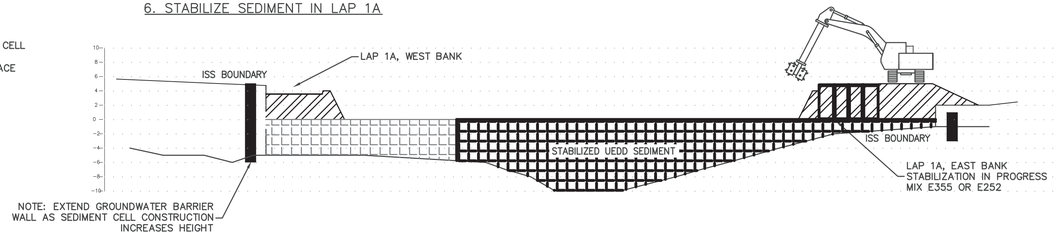
4. STABILIZE NED SEDIMENT IN PERIMETER VOID AND CONSTRUCT EAST BANK WORKING PLATFORM



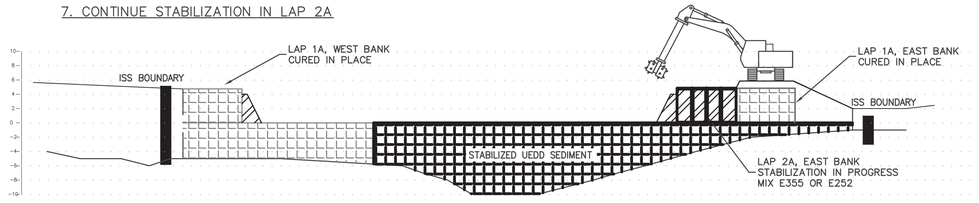
5. COMPLETE STABILIZATION IN BANK SOIL VOID AND CONSTRUCT STABILIZATION CELL FOR LAP 1A



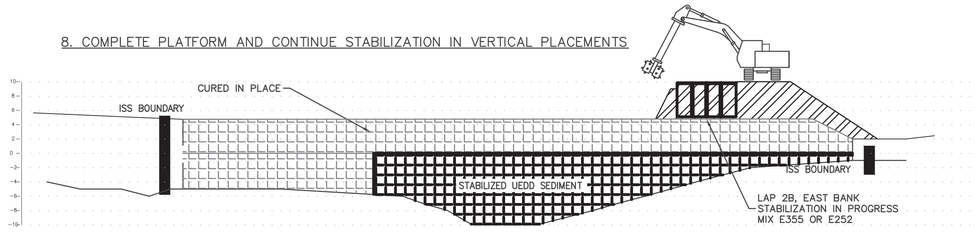
6. STABILIZE SEDIMENT IN LAP 1A



7. CONTINUE STABILIZATION IN LAP 2A



8. COMPLETE PLATFORM AND CONTINUE STABILIZATION IN VERTICAL PLACEMENTS



LEGEND

- IMPACTED BANK SOILS
- STABILIZED SEDIMENT
- SATURATED SEDIMENT
- SEDIMENT CURED IN PLACE

SELECTED MIXES

E455 – 5% QUICKLIME + 20% PORTLAND CEMENT

E355 – 0.5:1 SOIL + 15% PORTLAND CEMENT

E252 – 0.5:1 CINDER + 15% PORTLAND CEMENT

SCALE:

NOT TO SCALE

NOTES:

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THIS DOCUMENT WAS PREPARED
BY:
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TO:
AMTRAK

UEDD SEDIMENT STABILIZATION EXAMPLE WORKING PLATFORM
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0286)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25

SCALE: AS NOTED

DESIGNED BY: RPV

FILE NO.: ----

SHEET: 69 OF 135

REV: 0

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ORIGINAL SHEET - ARCH D

OUTFALL 001-R

TEMPORARY BERM
ELEV=6.30'

FILL IN PLACE EXISTING PIPES 18" CPP (TYP. OF 4) IN EXISTING OUTFALL 001

EXISTING ISS

TEMPORARY SWALE WITH SOIL STABILIZATION MATTING TO CONVEY STORMWATER TO LEDD

PREVIOUSLY INSTALLED BARRIER WALL, EXTEND GROUNDWATER BARRIER WALL TO BE 2 FEET ABOVE STABILIZED SEDIMENT

COMPLETE STABILIZATION IN PLACE AND BEGIN CONSTRUCTING CELL
REFER TO SHEET 68 & 69

TEMPORARY BERM
TB-1C
ELEV=6.30'

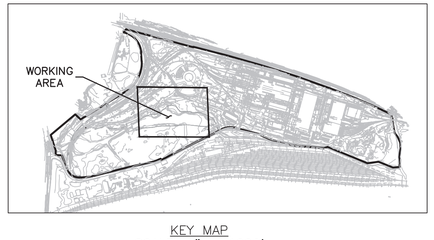
REFER TO SHEET 73
FOR CROSS-SECTION

SWALE 2
LIMITS

STOCKPILE 3B TO BE PLACED WITHIN STABILIZED SEDIMENT CELL

STOCKPILE 2 MATERIAL TO BE PLACED WITHIN THE STABILIZED SEDIMENT CELL

ID-16



KEY MAP
SCALE: 1" = 1000'

LEGEND

- LIMIT OF ISOLATION BARRIER
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- STABILIZATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION)
- GROUNDWATER ISOLATION BARRIER FULL DEPTH WALL
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- RIPRAP APRON/STILLING BASIN
- GRAVEL ACCESS ROAD

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

N

NOTES:

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CONTAINMENT CELL CONSTRUCTION PREPARATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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SHEET: 70 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

129 LF 24"ø HDPE
@ 0.000 FT/FT

OUTFALL
001R

EXISTING GROUNDWATER
ISOLATION BARRIER FULL
DEPTH WALL (2016 INSTALL)

PREVIOUSLY INSTALLED
BARRIER WALL EXTEND
GROUNDWATER BARRIER WALL
TO BE 2 FEET ABOVE
STABILIZED SEDIMENT

FINISH GRADE AREA WITH ON-SITE
BORROW SOIL <50 PPM FROM
STOCKPILE AREAS AND SET GRADE
WITHIN 4" OF FINAL SURFACE GRADE.
INSTALL GEOTEXTILE ON TOP AND
PLACE 4" OF FINAL STONE COVER.

REFER TO SHEET
72 FOR CROSS
SECTION OF GCL
LINER PLACING

REFER TO SHEET
73 FOR CROSS
SECTION OF FINAL
CELL

CONDUCTOR ELEVATION: 53.3'
FINISHED GROUND ELEVATION: 17.0'
MAXIMUM WORK SEPARATION FROM
EQUIPMENT TO SEPARATION FROM
TRANSMISSION LINES IS XX FEET FOR
XX KVA. CONTRACTOR TO COORDINATE
WITH DELMARVA FOR FINAL SEPARATION
REQUIREMENT DURING CONSTRUCTION.

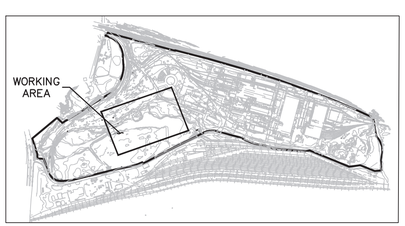
ID-16

FINAL CAPPED
CONTAINMENT CELL

SWALE 2
LIMITS

17.07
17.10
17.17
17.23
17.13

A
A'
B
B'



KEY MAP
SCALE: 1" = 1000'

LEGEND

- TEMPORARY BERM
- 25 — PROPOSED CONTOUR
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
- STABILIZATION FOOTPRINT (AREAS PLANNED FOR EXCAVATION)
- EXISTING GROUNDWATER ISOLATION BARRIER WALL
- GROUNDWATER ISOLATION BARRIER FULL DEPTH WALL
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER
- RIPRAP APRON/STILLING BASIN
- GRAVEL ACCESS ROAD

NOTES:

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CLEARANCE REQUIRED FROM DELMARVA POWER PRIOR TO WORKING IN PROXIMITY AND UNDER TRANSMISSION POWER LINES.

N

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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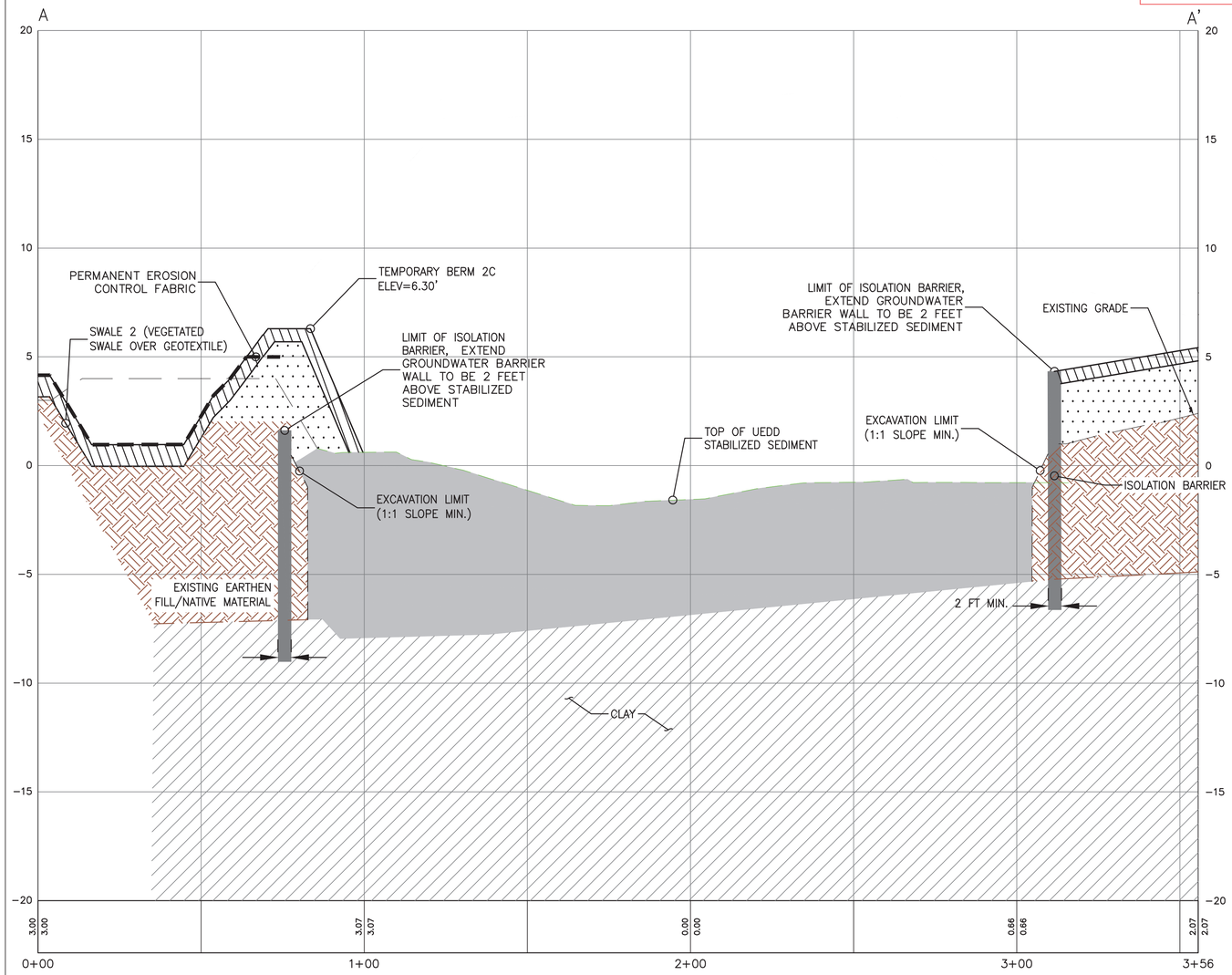
CONTAINMENT CELL FOR STABILIZED SEDIMENTS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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SHEET: 71 OF 135
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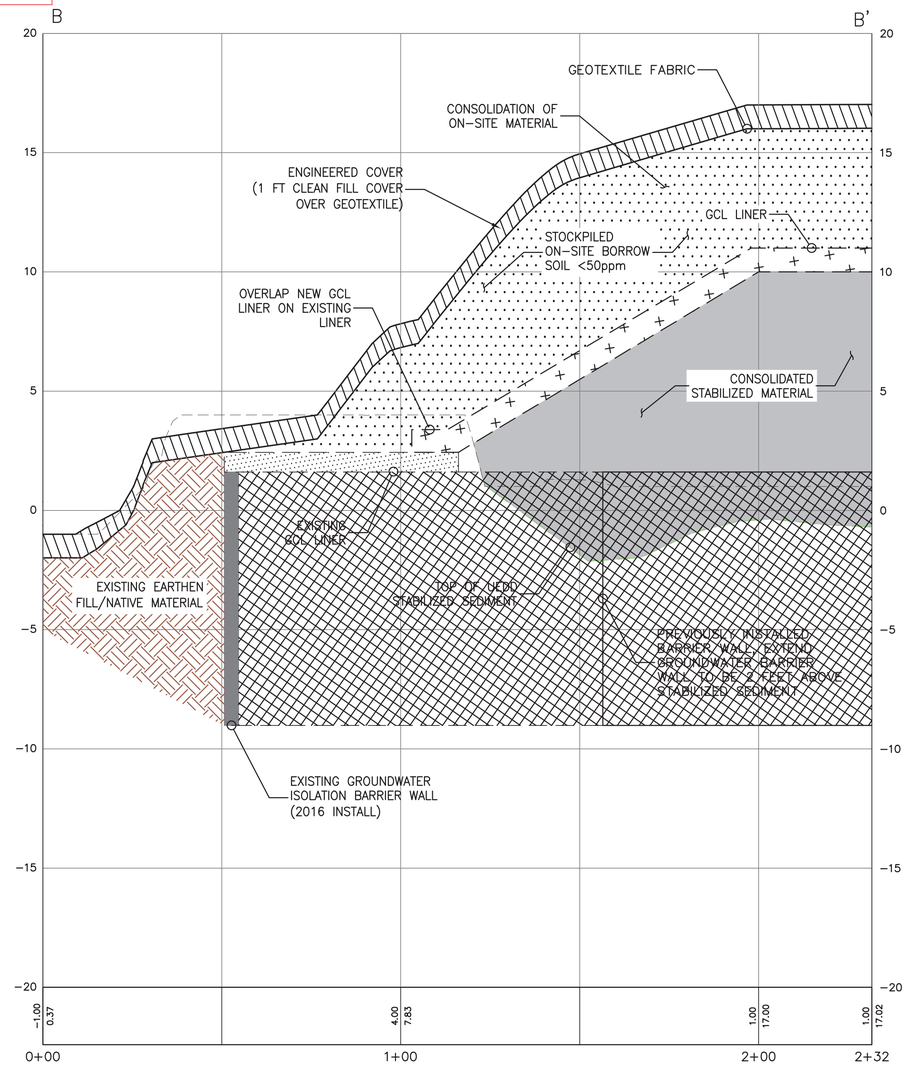
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ORIGINAL SHEET - ARCH D

ID-16



UPPER EASTERN DRAINAGE DITCH SEDIMENT STABILIZATION CROSS–SECTION
SCALE: 1"=20' H
1"=3' V



UEDD CONNECTION TO LEDD CROSS SECTION
SCALE: 1"=20' H
1"=3' V

LEGEND

- EXISTING EARTHEN FILL/NATIVE MATERIAL
- CONSOLIDATION OF ON–SITE MATERIAL
- ENGINEERED COVER (1 FT CLEAN FILL COVER OVER GEOTEXTILE)
- UEDD STABILIZED MATERIAL
- CLAY
- GCL LINER

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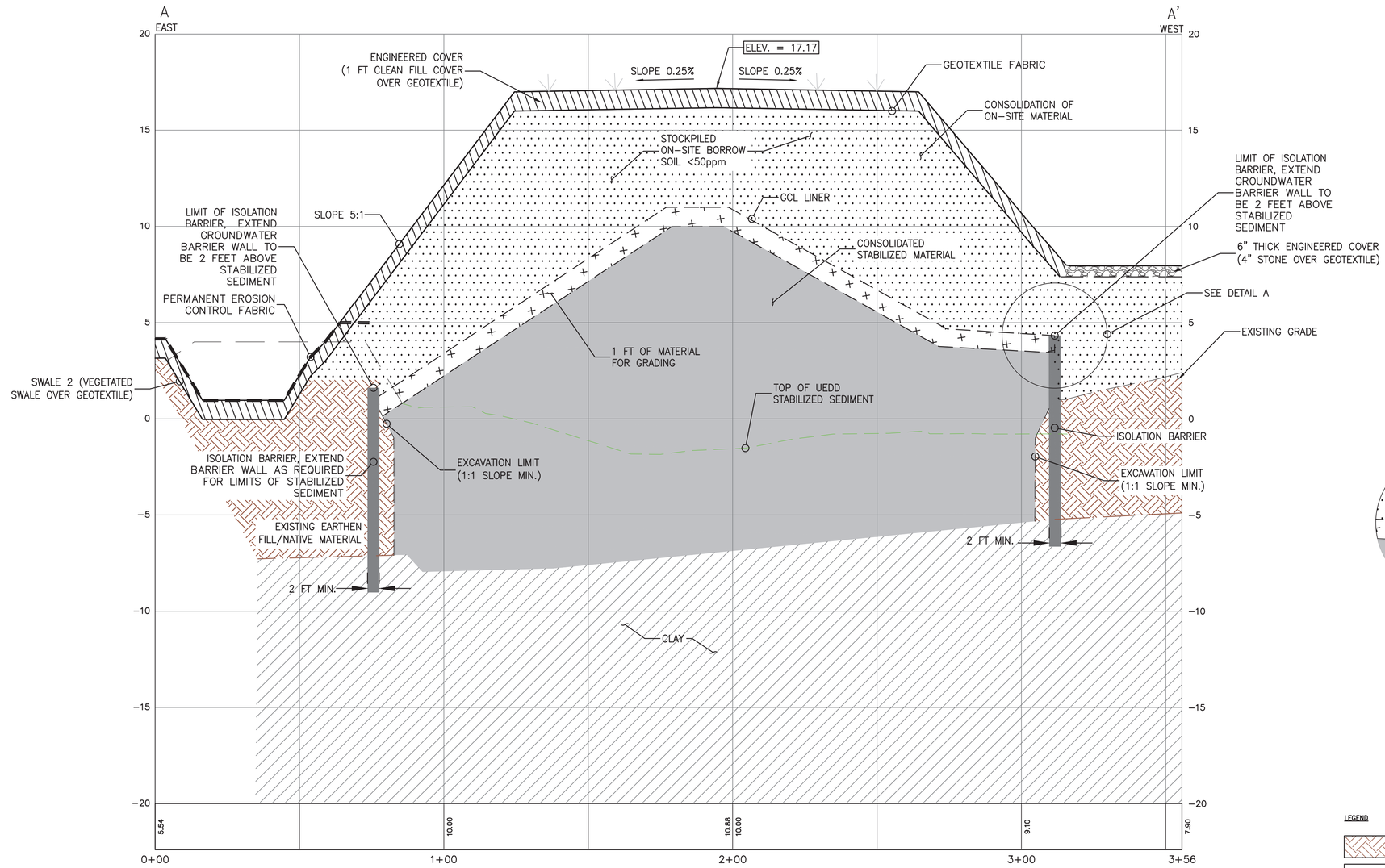
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STABILIZED SEDIMENT TREATMENT AREA TO TOP UEDD
STABILIZED SEDIMENT
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

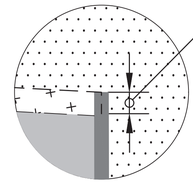
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ORIGINAL SHEET - ARCH D

ID-16



ISS PLACEMENT CELL CROSS-SECTION A-A'
SCALE: 1"=20' H
1"=3' V



DETAIL A

LEGEND

- EXISTING EARTHEN FILL/NATIVE MATERIAL
- CONSOLIDATION OF ON-SITE MATERIAL
- ENGINEERED COVER (1 FT CLEAN FILL COVER OVER GEOTEXTILE)
- CONSOLIDATED STABILIZED MATERIAL
- CLAY
- GEOSYNTHETIC CLAY LINER (GCL)

BY	APPROVED	DESCRIPTION	DATE	REV

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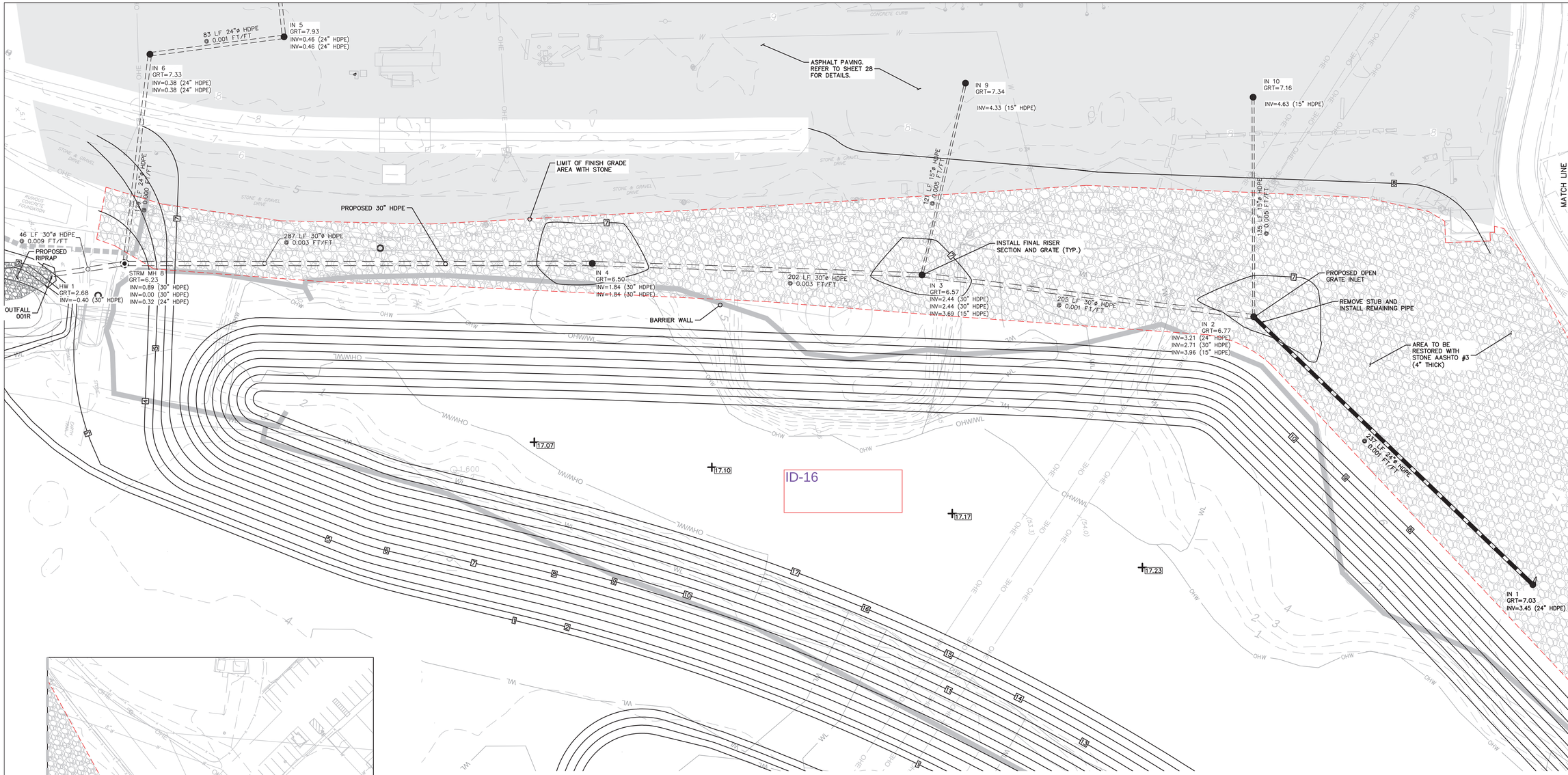
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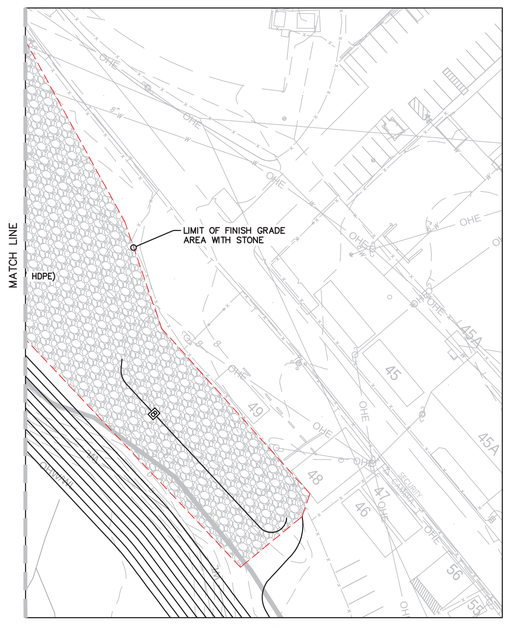
STABILIZED SEDIMENT TREATMENT AREA AND PLACEMENT
CELL DETAIL
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-103.17
SHEET: 73 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

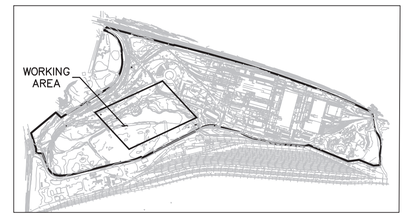




SCALE
1"=50'

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED STORMWATER PIPE
- PREVIOUSLY INSTALLED STORMWATER PIPE
- BARRIER WALL
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- 6" THICK OF 4" STONE COVER
- PROPOSED ASPHALT PAVING



KEY MAP
SCALE: 1" = 1000'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 340
West Chester, PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8436

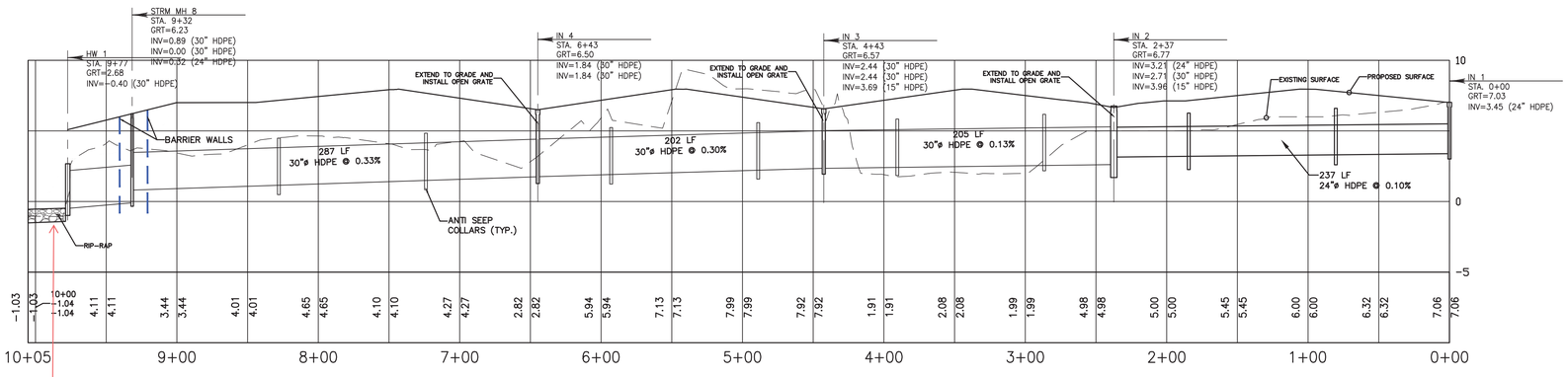
THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

WEST OF CELL STORM SEWER PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	C-104
SHEET:	74 OF 135
REV:	0

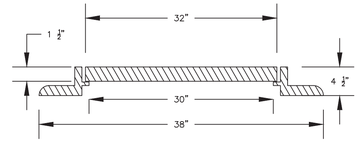
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ORIGINAL SHEET - ARCH D

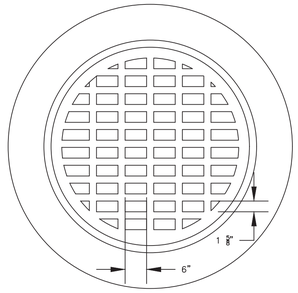


IN 1 – HW 1
SCALE: 1"=50' H
1"=5' V

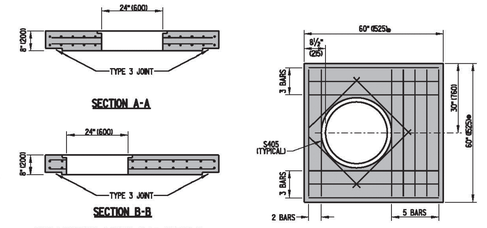
ID-01



NOTES:
1. REFER TO NEENAH FOUNDRY INLET FRAMES & GRATE 1011-5624 OR EQUIVALENT APPROVED FOR MORE DETAILS.



OPEN GRATE INLET

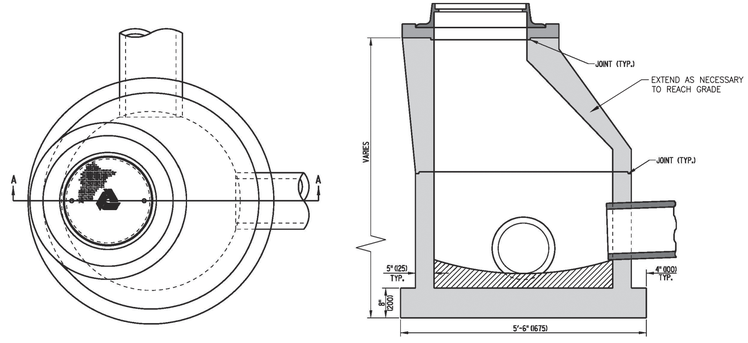


NOTES:
1. COVER SLABS SHALL BE PRE-CAST.
2. ALL BARS SHALL BE #5 (#16) SPACED AT 6"(150) ± UNLESS NOTED OTHERWISE.
3. MINIMUM BAR COVER = 1½"(38).

#- DIMENSIONS TO MATCH OUTSIDE TO OUTSIDE DIMENSIONS OF BOX.

BOX MANHOLE COVER SLAB DETAILS

48"(1220) X 48"(1220) MANHOLE



PLAN

SECTION A-A

ROUND MANHOLE ASSEMBLY

NOTE: ROUND MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.

STORM INLET DETAIL

						BY
						APPROVED
						DESCRIPTION
						DATE
						REV

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THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

WEST OF CELL STORM SEWER PROFILE AND DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: C-104.01
SHEET: 75 OF 135
REV: 0

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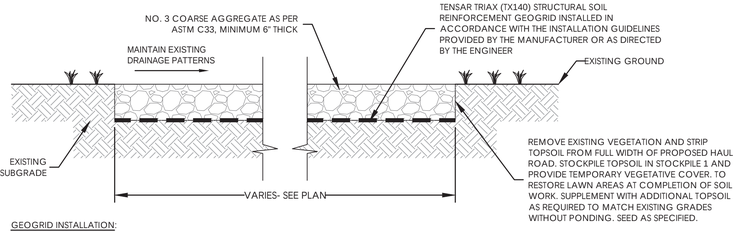
ORIGINAL SHEET - ARCH D

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- TEMPORARY ACCESS ROAD
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SF — SILT FENCE
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

NOTES:

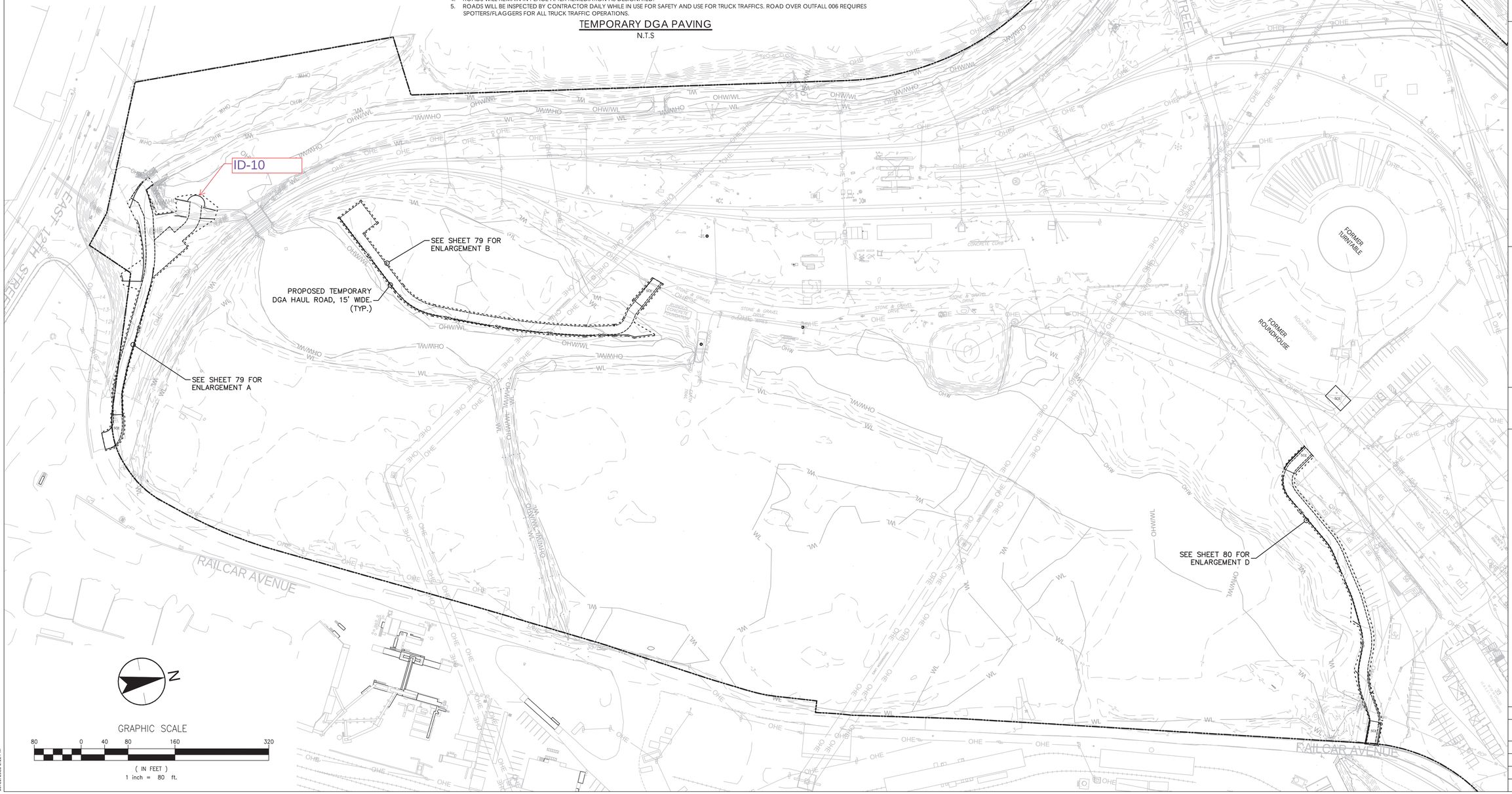
1. ACTUAL LOCATIONS MAY CHANGE AND REQUIRE AMTRAK FACILITY APPROVAL.
2. FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.
3. SOIL WILL BE PLACED AT STOCKPILE #1 FOR CONSTRUCTING ROADS.



GEOGRID INSTALLATION:

1. PREPARE THE SUBGRADE AS INDICATED ON THE PLANS OR AS DIRECTED. SET STRING LINES FOR ALIGNMENT, IF DIRECTED. INSTALL GEOGRID IN ACCORDANCE WITH THE LINES AND GRADES AS SHOWN ON THE PLANS OR AS DIRECTED. PLACE BASE MATERIAL IN LIFT THICKNESSES AND COMPACT AS SHOWN ON THE PLANS OR AS DIRECTED. DO NOT OPERATE TRACKED CONSTRUCTION EQUIPMENT ON GEOGRID WITHOUT A MINIMUM FILL COVER OF SIX (6) INCHES. RUBBER TIRE CONSTRUCTION EQUIPMENT MAY OPERATE DIRECTLY ON THE GEOGRID AT SPEEDS LESS THAN FIVE (5) MPH IF THE UNDERLYING MATERIAL SUPPORTS THE LOADS. WHERE EXCESSIVE SUBSTRUCTURE DEFORMATION IS APPARENT, CORRECT THE GRID PLACEMENT OPERATION AS RECOMMENDED BY THE MANUFACTURER OR AS DIRECTED.
2. PLACEMENT: ORIENT THE GEOGRID LENGTH AS UNROLLED PARALLEL TO THE DIRECTION OF ROADWAY. OVERLAP GEOGRID SECTION AS INDICATED BELOW OR AS DIRECTED. USE PLASTIC TIES AT OVERLAP JOINTS. PLACEMENT OF GEOGRID AROUND CORNERS MAY REQUIRE CUTTING AND DIAGONAL LAPPING. PIN GEOGRID AT THE BEGINNING OF THE BACKFILL SECTION AS REQUIRED. KEEP GEOGRID TAUT AT THE BEGINNING OF THE BACKFILLING SECTION BUT NOT RESTRAINED FROM STRETCHING OR FLATTENING.
   - 2.1. LONGITUDINAL JOINTS: OVERLAP LONGITUDINAL JOINTS BY A MINIMUM OF 1 FT. SPACE LONGITUDINAL TIES 10 FT TO 15 FT OR AS DIRECTED.
   - 2.2. TRANSVERSE JOINTS: OVERLAP TRANSVERSE JOINTS BY A MINIMUM OF 1 FT. SPACE TRANSVERSE TIES 4 FT TO 5 FT OR AS DIRECTED.
3. DAMAGE/REPAIR: AS DIRECTED, REMOVE AND REPLACE CONTRACTOR DAMAGED OR EXCESSIVELY DEFORMED AREAS WITHOUT ADDITIONAL COMPENSATION. LAP REPAIR AREAS A MINIMUM OF 3 FT IN ALL DIRECTIONS. TIE EACH SIDE OF REPAIR GRID IN AT LEAST THREE (3) LOCATIONS BUT DO NOT EXCEED NORMAL CONSTRUCTION SPACING; TIE SPACING FOR ODD SHAPES WILL BE AS DIRECTED. REPAIR EXCESSIVELY DEFORMED MATERIALS UNDERLYING THE GRID AS DIRECTED.
4. ROADS WILL REMAIN IN PLACE AFTER REMEDIATION AS DESIGNATED.
5. ROADS WILL BE INSPECTED BY CONTRACTOR DAILY WHILE IN USE FOR SAFETY AND USE FOR TRUCK TRAFFICS. ROAD OVER OUTFALL 006 REQUIRES SPOTTERS/FLAGGERS FOR ALL TRUCK TRAFFIC OPERATIONS.

TEMPORARY DGA PAVING
N.T.S



BY	APPROVED	DESCRIPTION	DATE	REV

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
400E. VANDEVER AVENUE
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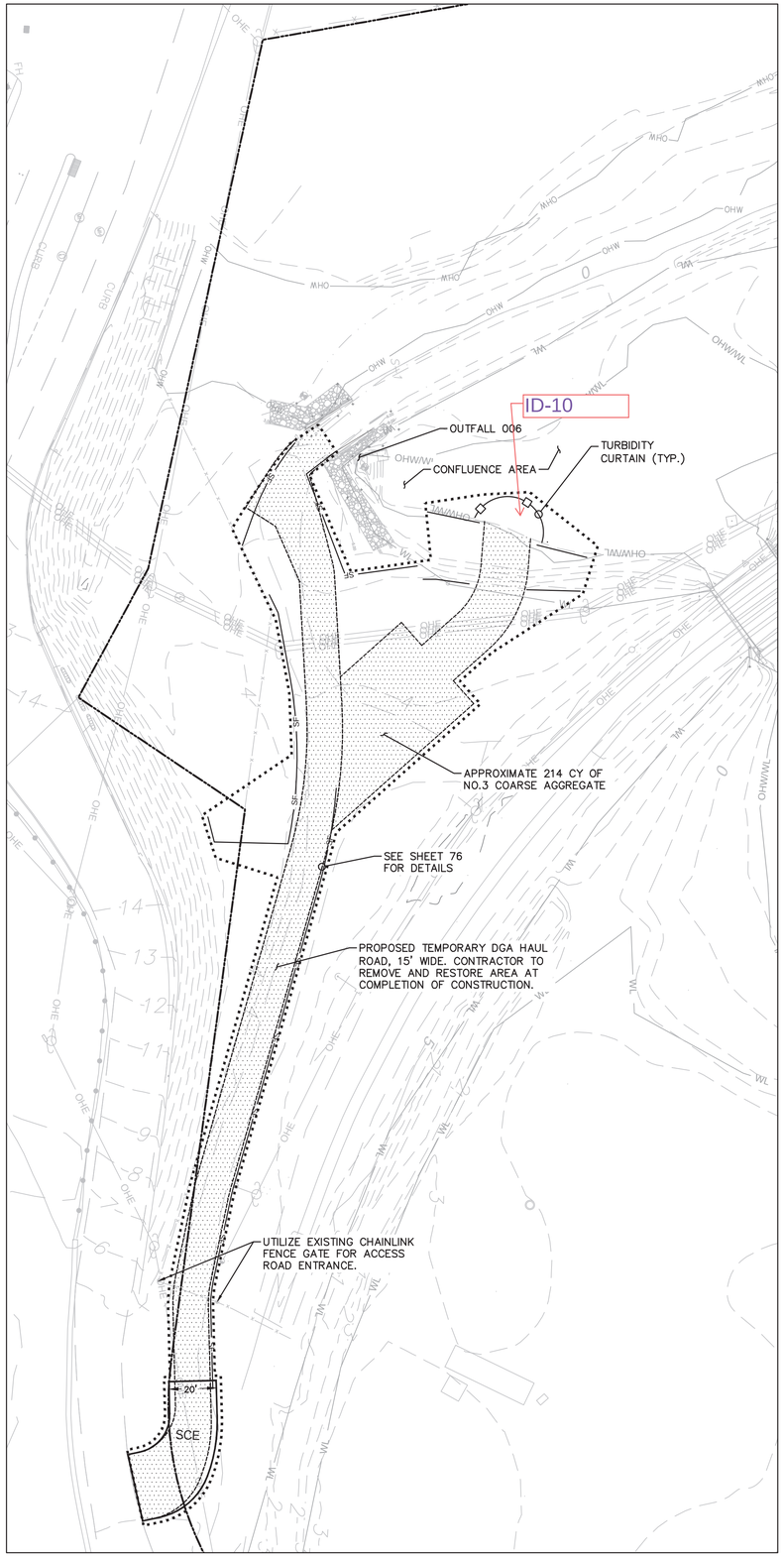
THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

PHASE 1A-OVERALL TEMPORARY CONSTRUCTION ACCESS ROAD
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

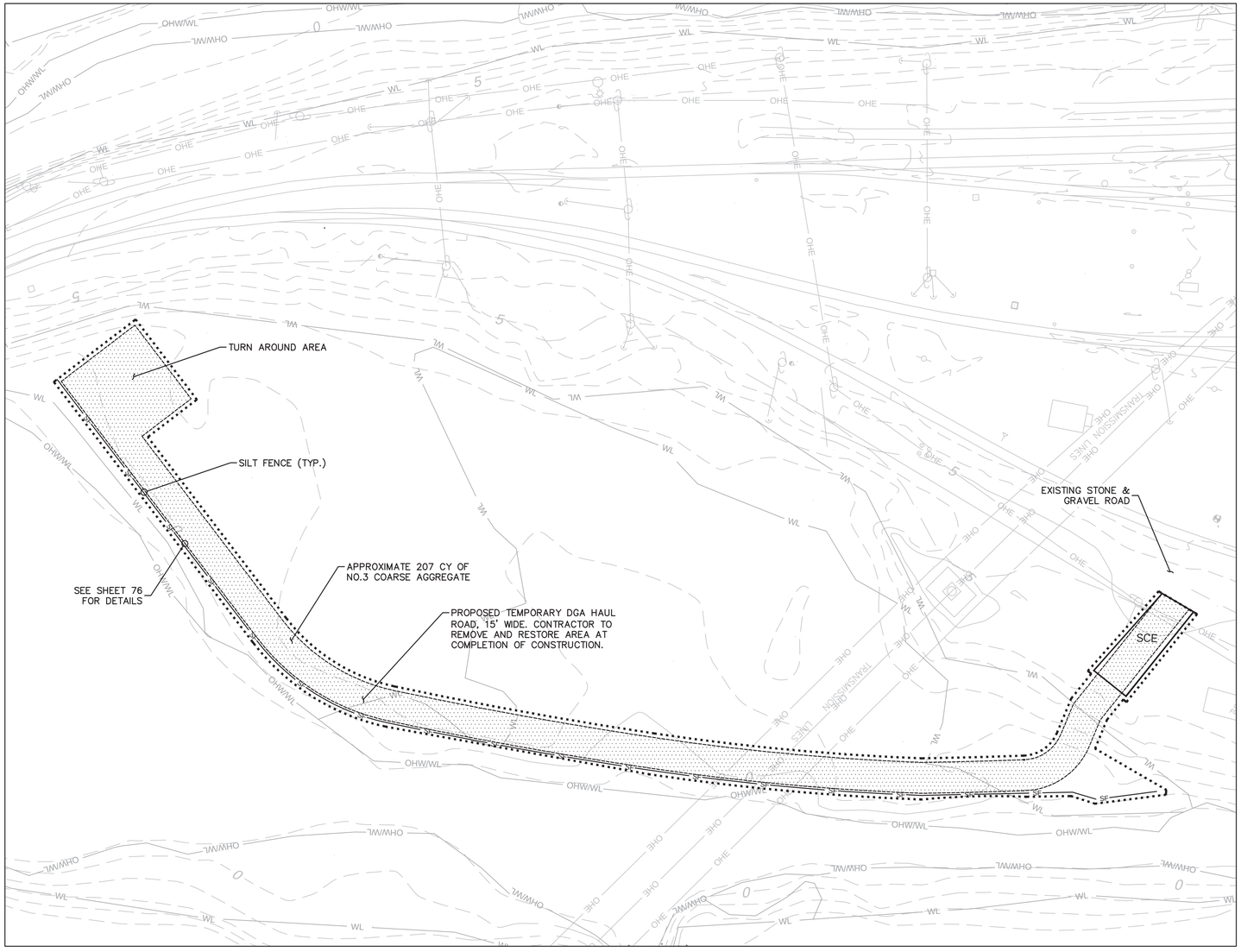
DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550-CS
SHEET: 76 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



ENLARGEMENT A



ENLARGEMENT B

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING CONTOURS
- PROPOSED CONTOURS
- TEMPORARY ACCESS ROAD
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SF — SILT FENCE
- TURBIDITY CURTAIN
- TEMPORARY DGA ACCESS ROAD
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

NOTES:

1. ACTUAL LOCATIONS MAY CHANGE AND REQUIRE AMTRAK FACILITY APPROVAL.
2. FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.
3. SOIL WILL BE PLACED AT STOCKPILE #1 FOR CONSTRUCTING ROADS.

N

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

BY	APPROVED	DESCRIPTION	DATE	REV

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West Chester, PA
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AMTRAK
400 VANDEVER AVENUE
WILMINGTON, DE 19802
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THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

PHASE 1A-TEMPORARY CONSTRUCTION ACCESS ROAD
PLAN 1
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 79 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

TEMPORARY DGA HAUL ROAD (TYP.)

PHASE 1 STARTS

OUTFALL 007

TD-1

PROPOSED STONE BERM

EXISTING NS OUTFALL

NORTHEAST DRAINAGE DITCH RESTORATION SEGMENT 1 LOD=1.14 AC.

LOCATION OF SEGMENT 1 ENDS AND SEGMENT 2 STARTS

ID-11 & ID-12

NORTHEAST DRAINAGE DITCH RESTORATION

NORTHEAST DRAINAGE DITCH RESTORATION SEGMENT 2 LOD=2.05 AC.

PHASE 2 ENDS

EXISTING DUAL 42" HDPE PIPE DISCHARGE TO SHELLPOT CREEK

STOCKPILE 3A LOD =85,175.99 SF (1.96 AC.)

REFER TO SHEET 90 FOR DETAILS

FORMER TURNTABLE

ROUNDHOUSE STOCKPILE 3A

LOCATED ON AMTRAK PROPERTY AND PLANNED FOR USE TO STOCKPILE REMOVED SEDIMENT

LEGEND:

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- EXISTING PROPERTY LINE
- PROPOSED STONE FILTER BERM
- LIMIT OF DISTURBANCE
- EXCAVATION AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8400

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

PHASE 2A-NEDD EROSION AND SEDIMENT CONTROL OVERALL PLAN FOR AMTRAK WILMINGTON SHOPS REMEDIATION FORMER FUELING FACILITY (DE-0266) WILMINGTON MAINTENANCE FACILITY (DE-0170) CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25

SCALE: AS NOTED

DESIGNED BY: RPV

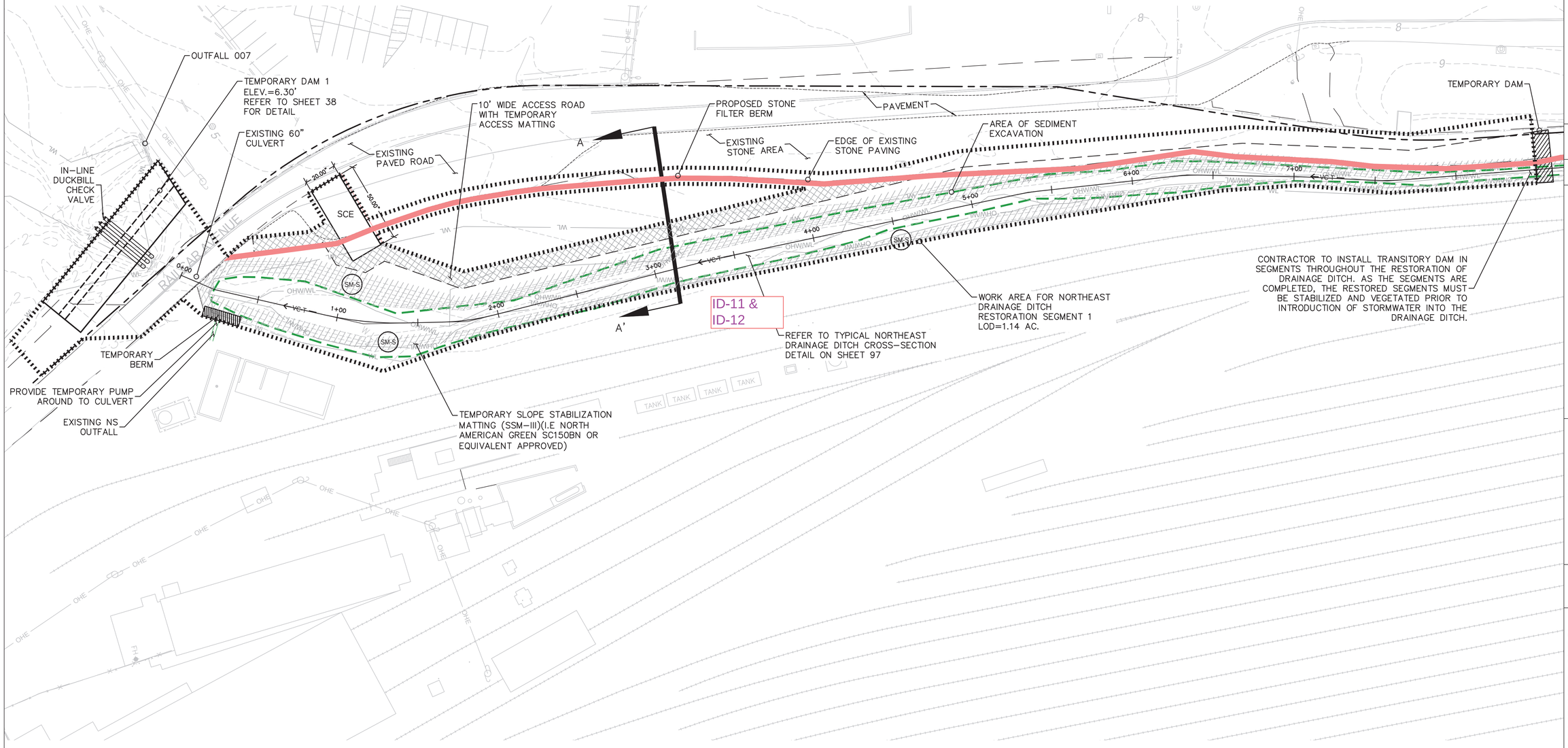
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SHEET: 92 OF 135

REV: 0

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ORIGINAL SHEET - ARCH D



NOTES:
ROAD CROSSING DRAINAGE PIPE ON RAILCAR AVENUE TO BE HYDRAULIC CLEANED IN PLACE ALL LIQUIDS AND SOLIDS CAPTURED AND MANAGED.

EACH SEGMENT THAT IS RESTORED MUST BE STABILIZED AND VEGETATED PER SHEETS 125 & 126 PRIOR TO REINTRODUCING STORMWATER FLOW.

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
- SF — SILT FENCE
- CFL — COMPOST FILTER LOG
- EXISTING PROPERTY LINE
- PROPOSED STONE BERM
- LIMIT OF SEDIMENT EXCAVATION
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER
- SM-S — STABILIZATION MATTING-SLOPE
- UwA — SOIL TYPE DESGINATION
- VC-T — VEGETATED CHANNEL-TRI./TRAP.
- SCE — CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS MATTING

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

N

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
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400 L VANDEVER AVENUE
WILMINGTON, DE 19802
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THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

PHASE 2A-NEDD SOIL EROSION & SEDIMENT CONTROL
SEGMENT 1
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 93 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

ID-11 &
ID-12

TEMPORARY SLOPE STABILIZATION MATTING (SSM–III)(I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

TEMPORARY DAM

EDGE OF PAVEMENT

WORK AREA FOR NORTH EAST DRAINAGE DITCH RESTORATION SEGMENT 2 LOD=2.05 AC.

CONTRACTOR TO INSTALL TRANSITORY DAM IN SEGMENTS THROUGHOUT THE RESTORATION OF DRAINAGE DITCH. AS THE SEGMENTS ARE COMPLETED, THE RESTORED SEGMENTS MUST BE STABILIZED AND VEGETATED PRIOR TO INTRODUCTION OF STORMWATER INTO THE DRAINAGE DITCH.

LOD; SILT FENCE AND TEMPORARY DAM LOCATION DEPEND UPON NORFOLK SOUTHERN'S AUTHORIZATION IN PROXIMITY TO RAILROAD TRACK

MATCHING LINE SHEET 21

MATCHING LINE SHEET 22

EXISTING ASPHALT ROAD

AREA OF SEDIMENT EXCAVATION

PROPOSED STONE FILTER BERM

10' WIDE ACCESS ROAD WITH TEMPORARY ACCESS MATTING

PAVEMENT

REFER TO TYPICAL NORTHEAST DRAINAGE DITCH CROSS–SECTION DETAIL ON SHEET 97

TEMPORARY DAM

EXISTING DUAL 42" HDPE PIPE DISCHARGE TO SHELLPOT CREEK

SHELLPOT CREEK

REFER TO SHEET 95 FOR ENLARGEMENT

REFER TO SHEET 96 FOR ENLARGEMENT

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 45.45 EXISTING SPOT GRADE
- 25 EXISTING TOPOGRAPHIC CONTOUR
- SF SILT FENCE
- CFL COMPOST FILTER LOG
- EXISTING PROPERTY LINE
- PROPOSED STONE BERM
- LIMIT OF SEDIMENT EXCAVATION
- WL NONTIDAL WETLAND
- OHW/WL ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW ORDINARY HIGH WATER
- SM-S STABILIZATION MATTING–SLOPE
- UwA SOIL TYPE DESGINATION
- VC-T VEGETATED CHANNEL–TRL/TRAP.
- SCE CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS MATTING

NOTES:
ROAD CROSSING DRAINAGE PIPE ON RAILCAR AVENUE TO BE HYDRAULIC CLEANED IN PLACE ALL LIQUIDS AND SOLIDS CAPTURED AND MANAGED.

EACH SEGMENT THAT IS RESTORED MUST BE STABILIZED AND VEGETATED PER SHEETS 125 & 126 PRIOR TO REINTRODUCING STORMWATER FLOW.

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

N

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
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4001 WANDERER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8548

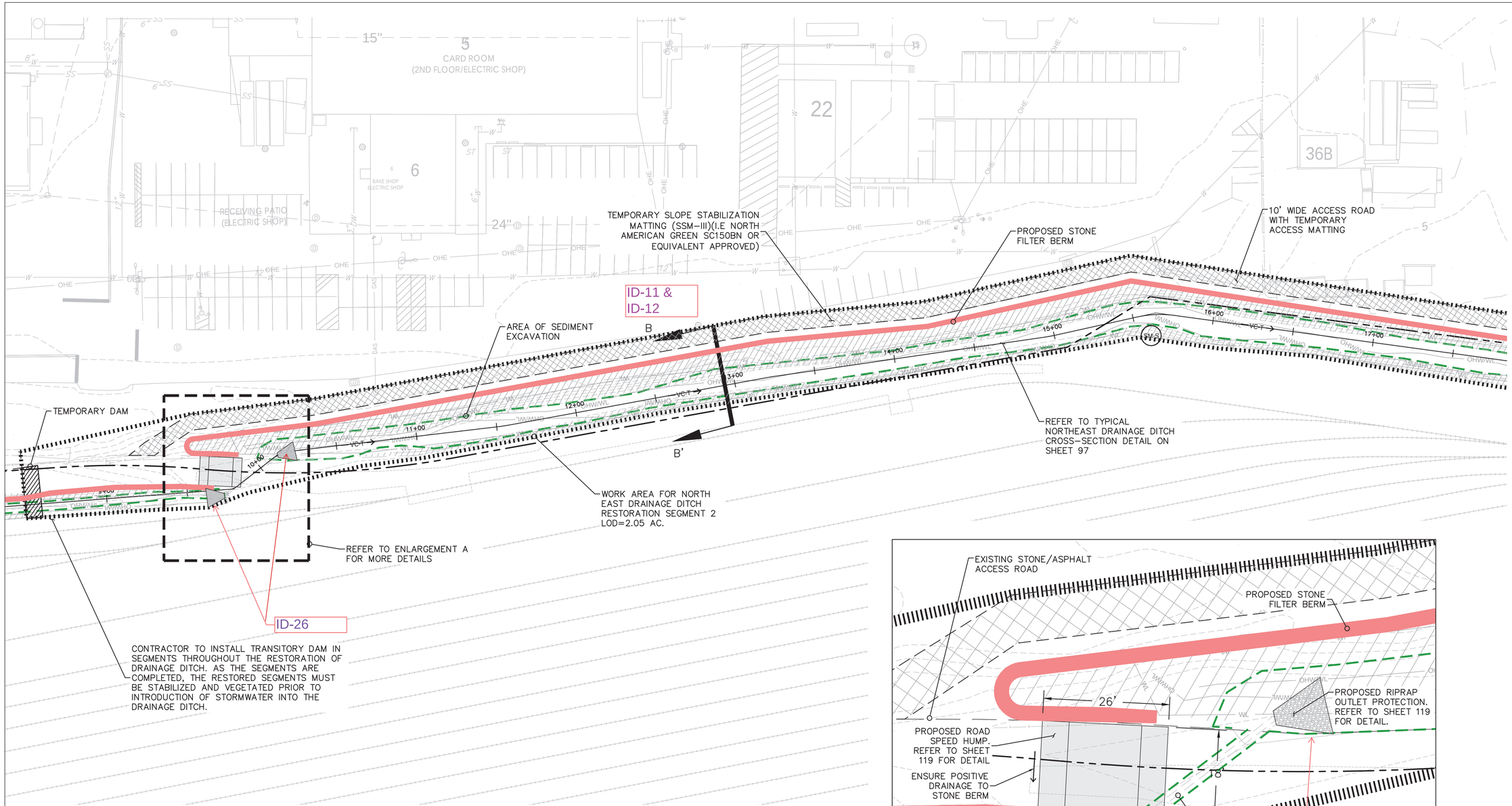
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TO:
AMTRAK

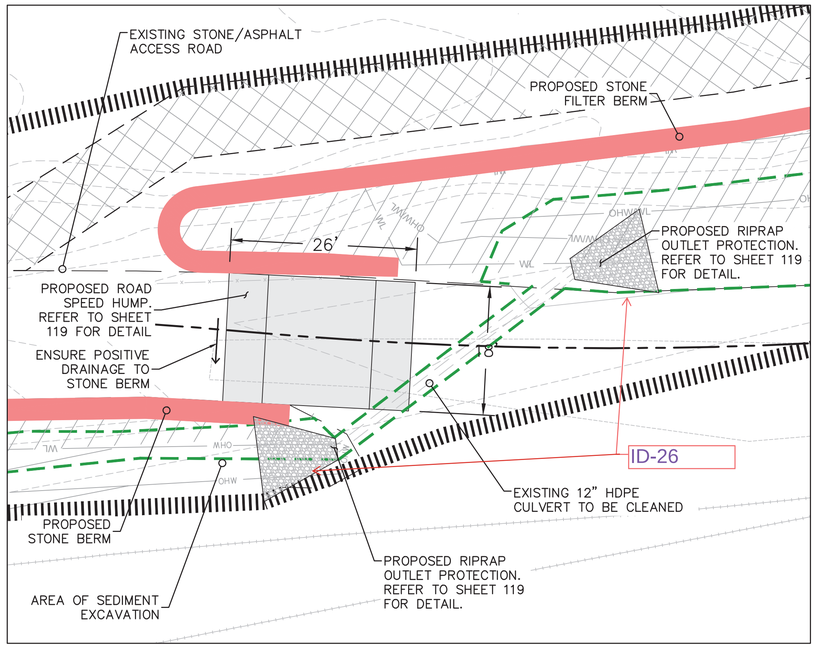
PHASE 2A-NEDD SOIL EROSION & SEDIMENT CONTROL
SEGMENT 2
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 94 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D





ENLARGEMENT A–EXISTING 12" HDPE CULVERT
SCALE 1" = 10'

NOTES:

EACH SEGMENT THAT IS RESTORED MUST BE STABILIZED AND VEGETATED PER SHEETS 125 & 126 PRIOR TO REINTRODUCING STORMWATER FLOW.

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EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
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- PROPOSED STONE BERM
- LIMIT OF SEDIMENT EXCAVATION
- WL — NONTIDAL WETLAND
- OHWWL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER
- SM-S — STABILIZATION MATTING–SLOPE
- UwA — SOIL TYPE DESIGNATION
- VC-T — VEGETATED CHANNEL–TRI./TRAP.
- SCE — CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS MATTING

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

N

BY	APPROVED	DESCRIPTION	DATE	REV

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400 L VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8958

THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

PHASE 2A-NEDD SOIL EROSION & SEDIMENT CONTROL
SEGMENT 2-1
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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FILE NO.: 213403550
SHEET: 95 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

NOTES:

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EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
- SF — SILT FENCE
- CFL — COMPOST FILTER LOG
- EXISTING PROPERTY LINE
- PROPOSED STONE BERM
- LIMIT OF SEDIMENT EXCAVATION
- SM-S — STABILIZATION MATTING–SLOPE
- UwA — SOIL TYPE DESGINATION
- VC-T — VEGETATED CHANNEL–TRI./TRAP.
- SCE — CONSTRUCTION ENTRANCE
- TEMPORARY ACCESS MATTING
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

SHELLPOT CREEK

35 WATER/FIRE PUMPHOUSE

5 SPACE HEATER BUMP SHED

10' WIDE ACCESS ROAD WITH TEMPORARY ACCESS MATTING

TEMPORARY SLOPE STABILIZATION MATTING (SSM–III)(I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

WORK AREA FOR NORTH EAST DRAINAGE DITCH RESTORATION SEGMENT 2 LOD=2.05 AC.

ID-11 & ID-12

C

C'

PROPOSED STONE FILTER BERM

AREA OF SEDIMENT EXCAVATION

PROPOSED STONE FILTER BERM

REFER TO TYPICAL NORTHEAST DRAINAGE DITCH CROSS–SECTION DETAIL ON SHEET 97.

TEMPORARY DAM

EXISTING DUAL 42" HDPE PIPE DISCHARGE TO SHELLPOT CREEK

17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 26+12

SM-S

VC-T

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

N

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ORIGINAL SHEET - ARCH D

REV	DATE	DESCRIPTION	APPROVED	BY

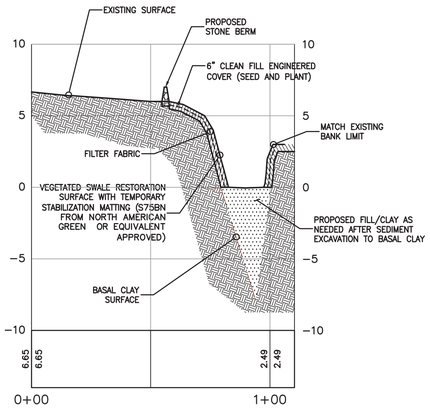
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AMTRAK
4001 VANDEVER AVENUE
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PHONE: (302) 429-8580

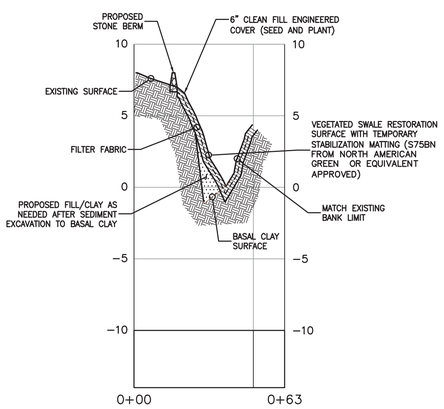
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TO:
AMTRAK

PHASE 2A-NEDD SOIL EROSION & SEDIMENT CONTROL
SEGMENT 2-2
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

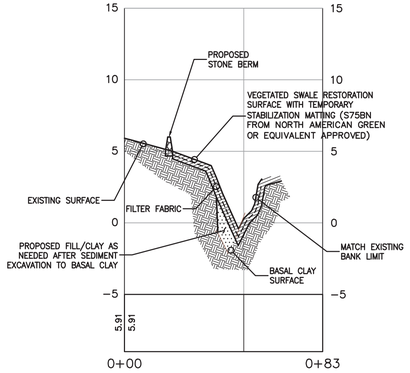
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SHEET:	96 OF 135
REV:	0



NEDD RESTORATION SECTION A–A'
SCALE: 1"=30' H
1"=5' V

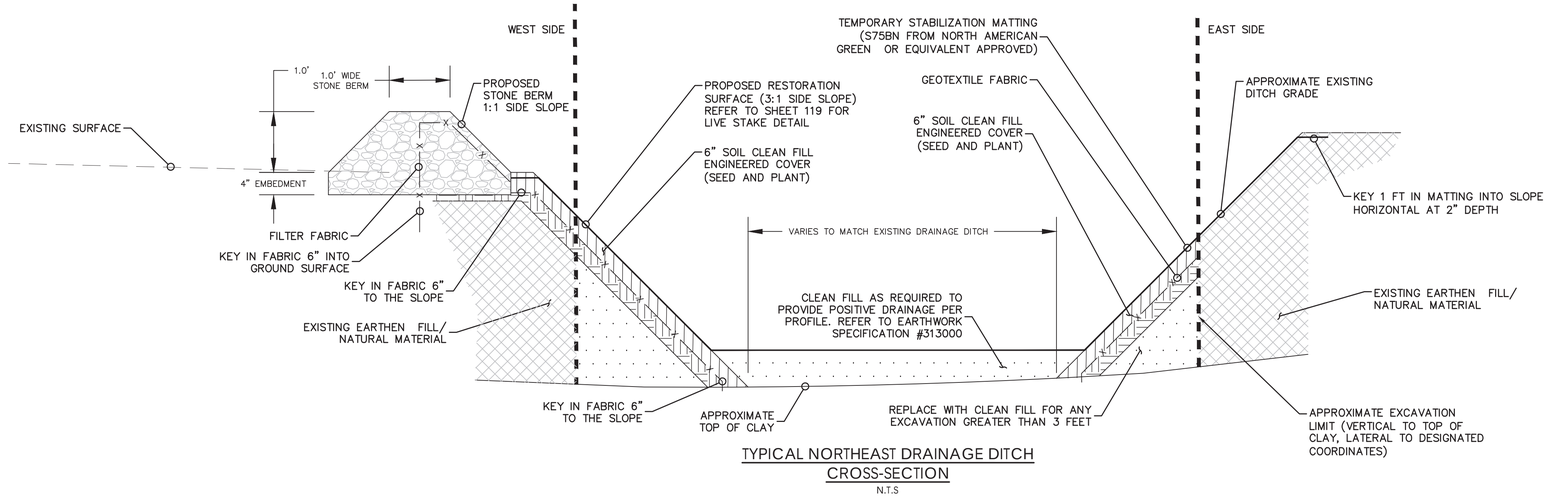


NEDD RESTORATION SECTION B–B'
SCALE: 1"=30' H
1"=5' V



NEDD RESTORATION SECTION C–C'
SCALE: 1"=30' H
1"=5' V

ID-11 &
ID-12



TYPICAL NORTHEAST DRAINAGE DITCH
CROSS-SECTION
N.T.S

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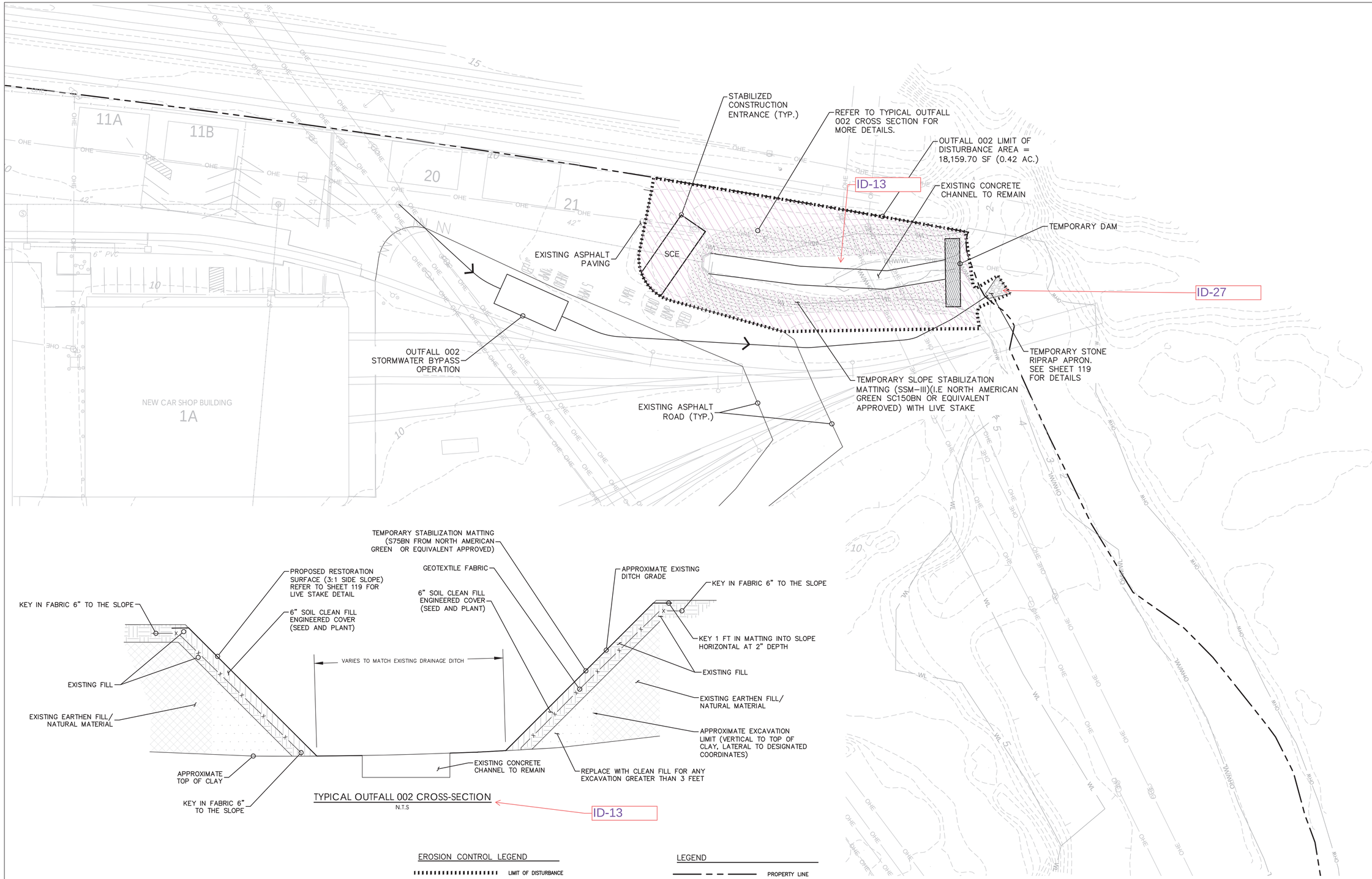
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TO:
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PHASE 2A-NEDD RESTORATION CROSS SECTION AND DETAIL
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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SHEET: 97 OF 135
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ORIGINAL SHEET - ARCH D



TYPICAL OUTFALL 002 CROSS-SECTION
N.T.S

ID-13

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- SF — SILT FENCE
- CFL — COMPOST FILTER LOG
- ENGINEERED COVER WITH 6" SOIL OVER GEOTEXTILE
- EXISITING EARTHEN FILL
- SCE — CONSTRUCTION ENTRANCE
- SM-S — STABILIZATION MATTING–SLOPE WITH LIVE STAKE

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

N

NOTE:
OUTFALL 002 AREA OF DISTURBANCE = 18,159.70 SF OR 0.42 ACRES

NOTES:
FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

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THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

PHASE 2A-OUTFALL 002 EXCAVATION AND RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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ORIGINAL SHEET - ARCH D

TEMPORARY DGA HAUL ROAD (TYP.)

SILT FENCE 220 LF

CHANNEL RESTORATION. STABILIZE WITH TEMPORARY CHANNEL LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

SILT FENCE 331 LF

SILT FENCE (TYP.)

SILT FENCE 84 LF

ID-05

TURBIDITY CURTAIN (TYP.)

SILT FENCE 197 LF

TURBIDITY CURTAIN (TYP.)

REMOVE EXCAVATION EROSION CONTROL MEASURES FROM PHASE 1B

ID-14 (Portion of)

CONSTRUCT TEMPORARY DIVERSION SWALE. STABILIZE WITH TEMPORARY CHANNEL LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

REFER TO SHEET 135 FOR TEMPORARY DIVERSION SWALE

SEDIMENT EXCAVATION AREA (5,100 SF)

SILT FENCE 417 LF

ASPHALT PAVING

ASPHALT PAVING TO BE REMOVED

PHASE 2B-1 LOD = 337,594.04 SF (7.75 AC.)

EXISTING RAILCAR AVENUE OUTFALL CULVERT (PIPE SIZE TO BE FIELD VERIFIED)

SCE

SM-C

RAILCAR

WORKING AREA

KEY MAP
SCALE: 1" = 1000'

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- SOIL STOCKPILE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- STREAM DIVERSION CHANNEL
- STABILIZATION MATTING–SLOPE
- STABILIZATION MATTING–CHANNEL
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL–TRL./TRAP.
- TURBIDITY CURTAIN
- PREVIOUSLY INSTALLED BARRIER WALLS
- SEDIMENT EXCAVATION AREA

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

NOTE:

PHASE 2B–1 AREA OF DISTURBANCE = 337,594.04 SF OR 7.75 ACRES

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THIS DOCUMENT WAS PREPARED BY:
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TO:
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PHASE 2B-1-EAST OF EAST DITCH SEC INSTALLATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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FILE NO.: XX
SHEET: 99 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

RIPRAP OUTLET PROTECTION. REFER TO SHEET 119

ID-28

OUTFALL 006-C

OUTFALL 006

CA

TEMPORARY DRAIN PIPES ø24" REFER TO SHEETS 37 & 38 FOR DETAILS.

PREVIOUSLY INSTALLED BARRIER WALLS

ID-05

LEDD

JACK & BORE 24"ø PIPES A MINIMUM OF 5 FT UNDER EXISTING RAIL.

TEMPORARY DGA HAUL ROAD (TYP.)

EXISTING EATHERN DAM TD-2 ELEV.=6.30'

SILT FENCE 84 LF

SILT FENCE 220 LF

TURBIDITY CURTAIN (TYP.)

CHANNEL RESTORATION. STABILIZE WITH TEMPORARY CHANNEL LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

TEMPORARY BERM (TB-1A) TOP ELEV.=6.30'

SILT FENCE 197 LF

TURBIDITY CURTAIN (TYP.)

ID-04

TEMPORARY DAM (TD-3) TOP ELEV.=6.30'

SILT FENCE 331 LF

COMPOST FILTER LOG (TYP.)

STABILIZE WITH TEMPORARY SLOPE LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

PERMANENT EROSION CONTROL FABRIC

CONSTRUCT TEMPORARY DIVERSION SWALE. STABILIZE WITH TEMPORARY CHANNEL LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

SILT FENCE (TYP.)

ID-15 (portion of)

PERMANENT EROSION CONTROL FABRIC

SILT FENCE 417 LF

PROPOSED SWALE 1. REFER TO SHEET 54 FOR DETAIL

REFER TO SHEET 132 FOR SEEDING /PLANTING RESTORATION

SILT FENCE 325 LF

PROPOSED TEMPORARY CONSTRUCTION FENCE

PROPOSED STOCKPILE 4. REFER TO SHEET 102 FOR DETAIL.

RIPRAP STILLING BASIN 1. SEE SHEET 120 FOR DETAILS.

ID-03

ASPHALT PAVING

SILT FENCE 276 LF

ID-02

PHASE 2B-1 LOD = 337,594.04 SF (7.75 AC.)

EXISTING RAILCAR AVENUE OUTFALL CULVERT (PIPE SIZE TO BE FIELD VERIFIED)

SCE

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- SOIL STOCKPILE
- STREAM DIVERSION CHANNEL
- STABILIZATION MATTING-SLOPE
- STABILIZATION MATTING-CHANNEL
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- REINFORCED MAT OVER GEOTEXTILE
- PREVIOUSLY INSTALLED BARRIER WALLS
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- BAFFLE BOARD
- BAFFLE BOARD WATER FLOW LINE

CUT & FILL ANALYSIS:

EXISTING SURFACE & PHASE 2B-1 (-1FT)
TOTAL CUT = 20,676.43 CY
TOTAL FILL = 2,049.58 CY
ADDITIONAL EXCAVATION (CUT) = 1,887 CY (EX 65-73)

REMAINING SOIL TO BE PLACED = 16,739.85 CY

NOTE:

PHASE 2B-1 AREA OF DISTURBANCE = 345,066.54 SF OR 7.92 ACRES

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WILMINGTON, DE 19802
PHONE: (302) 429-8458

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

PHASE 2B-1-EAST OF EAST DITCH GRADING
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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REV: 0

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ORIGINAL SHEET - ARCH D

ID-01

ID-04

ID-15
(portion of)

ID-03

ID-02

OUTFALL 001-R
(HEADWALL 1)

COMPOST FILTER
LOG (TYP.)

TEMPORARY DAM
(TD-3)
TOP ELEV.=6.30'

TEMPORARY DAM (TD-4)
TOP ELEV.=6.30'

TEMPORARY BERM 1C
ELEV.=6.30'

TEMPORARY BERM
(TB-1B)
TOP ELEV.=6.30'

STABILIZE WITH TEMPORARY
SLOPE LINING (I.E NORTH
AMERICAN GREEN SC150BN
OR EQUIVALENT APPROVED)

STABILIZE WITH TEMPORARY
SLOPE LINING (I.E NORTH
AMERICAN GREEN SC150BN
OR EQUIVALENT APPROVED)

PERMANENT EROSION
CONTROL FABRIC

PERMANENT EROSION
CONTROL FABRIC

PERMANENT EROSION
CONTROL FABRIC

GRAVEL ACCESS FOR
MAINTENANCE
SEE SHEET 135 FOR DETAILS

RIPRAP STILLING BASIN 1.
SEE SHEET 120 FOR
DETAIL.

RIPRAP OUTLET
PROTECTION FOR
OFFSITE 3. SEE SHEET
119 FOR DETAILS

STOCKPILE 2

UwA

TEMPORARY
TRANSITORY DAM
ELEV.=6.30'

PHASE 2B LOD =467,405 SF
(10.73 AC.)

WORKING
AREA

KEY MAP
SCALE: 1" = 1000'

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- SOIL STOCKPILE
- STREAM DIVERSION CHANNEL
- STABILIZATION MATTING-SLOPE
- STABILIZATION MATTING-CHANNEL
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- REINFORCED MAT OVER GEOTEXTILE
- GRAVEL ACCESS FOR MAINTENANCE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTE:

PHASE 2B AREA OF DISTURBANCE = 467,405 SF OR 10.73 ACRES

CUT & FILL ANALYSIS:

EXISTING SURFACE & PHASE 2B (-1 FT)
TOTAL CUT = 47,608.94 CY
TOTAL FILL = 2,658.43 CY
ADDITIONAL EXCAVATION (CUT) = 3,737.00 CY (EX 64, 74-80, 81-84)

REMAINING SOIL TO BE PLACED IN STOCKPILE = 41,213.50 CY (CUT)

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TO:
AMTRAK

PHASE 2B-EAST OF EAST DITCH GRADING
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D

TEMPORARY OUTFALL 006-B ELEV.=3.75'

65 LF WIDE EMERGENCY SPILLWAY ELEV.=3.75'

EXISTING BERM ELEV.=4.00'

CITY DITCH

CONFLUENCE AREA RESTORATION LOD = 83,903.78 SF (1.93 AC.)

ID-28

EXISTING PIPES TO BE PLUGGED DURING SEDIMENT REMOVAL. INSTALL TEMPORARY DUCKBILL VALVES.

EXISTING OUTFALL 006

TEMPORARY BERM TB-2 ELEV.=8.00'

LWDD

FLOATING OIL BOOM FIXED TO GROUND AT ELEVATION 5.50'.

ID-07

FLAPPER VALVES

TEMPORARY OUTFALL 006-C

REFER TO SHEET 124 FOR COVER RESTORATION

PERMANENT EROSION CONTROL FABRIC

TURBIDITY CURTAIN (TYP.)

CA

CONTRACTOR TO ENSURE EXISTING RAILROAD TRESTLE FOUNDATION IS NOT UNDERMINED DURING SEDIMENT EXCAVATION

NOTIFY AMTRAK TO VERIFY WORK IN AND AROUND TRESTLE

FLOATING OIL BOOM FIXED TO GROUND AT ELEVATION 5.50'.

FLOW TO OUTFALL 006

ID-06, ID-08, ID-09

ELEV.=6.30

25' WIDE EMERGENCY SPILLWAY ELEV. 6.30'

TEMPORARY DRAIN PIPES ø24" REFER TO SHEET 37 & 38 FOR DETAILS.

36" RISER (TYP. OF 1) REFER TO SHEET 37 & 38 FOR DETAIL

LEDD

EXISTING EARTHEN EMBANKMENT (TD-2) ELEV.=6.30'

60' WIDE EMERGENCY SPILLWAY ELEV. 5.80'

36" RISER (TYP. OF 2) REFER TO SHEET 37 & 38 FOR DETAIL

ID-05

TEMPORARY BERM (TB-1A)

ID-04

TEMPORARY DAM (TD-3) ELEV.=6.30'

TEMPORARY BERM (TB-1B)

EAST 12TH STREET

SCE

WORKING AREA

KEY MAP
SCALE: 1" = 1000'

EROSION CONTROL LEGEND

	LIMIT OF DISTURBANCE
25	PROPOSED CONTOUR
45.45	EXISTING SPOT GRADE
25	EXISTING TOPOGRAPHIC CONTOUR
SF	SILT FENCE
CFL	COMPOST FILTER LOG
SCE	CONSTRUCTION ENTRANCE
SM-S	STABILIZATION MATTING-SLOPE
UwA	SOIL TYPE DESIGNATION
VC-T	VEGETATED CHANNEL-TRI./TRAP.
	TURBIDITY CURTAIN
	REINFORCED MAT OVER GEOTEXTILE
	TEMPORARY ACCESS ROAD
WL	NONTIDAL WETLAND
OHW/WL	ORDINARY HIGH WATER/NONTIDAL WETLAND
OHW	ORDINARY HIGH WATER
	BAFFLE BOARD
	BAFFLE BOARD WATER FLOW LINE
	FLOATING OIL BOOM

NOTE:

PHASE 3A AREA OF DISTURBANCE = 83,903.78 SF OR 1.93 ACRES

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

N

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

PHASE 3A-CONFLUENCE AREA WATER MANAGEMENT PREPARATION FOR AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D

ID-20

ID-21,
ID-22

ID-28

GABION BASKET
RETAINING WALL (TYP.)
REFER TO SHEET 60

OUTFALL 006 LOD = 61,882.12 SF
(1.42 AC.)

STONE ACCESS ROAD. NO.3
COARSE AGGREGATE AS PER
ASTM C33, 6" THICK MINIMUM
SEE SHEET 135

RIPRAP APRON. SEE
SHEET 119 FOR DETAIL

TEMPORARY OUTFALL 006-B
ELEV.=8.00'

PB-1
ELEV.=8.10'

EXISTING PIPES TO BE PLUGGED
DURING SEDIMENT REMOVAL.
INSTALL TEMPORARY DUCKBILL
VALVES ON EXTENDED
DISCHARGE PIPES.

PROPOSED ADDITIONAL SHEET
PILES AND FILL BETWEEN
EXISTING AND PROPOSED SHEET
PILES WITH CONCRETE.

EXISTING
RIPRAP

SILT FENCE (TYP.)

TURBIDITY CURTAIN (TYP.)

TEMPORARY BERM
TB-2
ELEV.=8.00'

STABILIZE WITH TEMPORARY
SLOPE LINING (i.E NORTH
AMERICAN GREEN SC150BN OR
EQUIVALENT APPROVED)

EXISTING
SHEET PILE

EXISTING
DAM

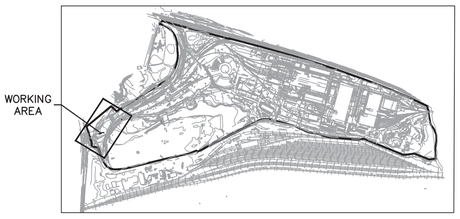
EXISTING
RIPRAP

TEMPORARY BYPASS PIPES TO BE
REMOVED AND RESTORE AFTER
RESTORATION PHASE

TEMPORARY DAM (TD-5)
TOP ELEV.=6.30'

ID-06,
ID-08,
ID-09

TEMPORARY DAM
TD-2
ELEV.=6.30'



KEY MAP
SCALE: 1" = 1000'

NOTE:

AREA OF DISTURBANCE = 61,882.12 SF OR 1.42 ACRES

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER SOCK
- CONSTRUCTION ENTRANCE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- STABILIZATION MATTING-SLOPE
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- REINFORCED MAT OVER GEOTEXTILE
- STONE ACCESS ROAD

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 INCH = 20 FEET

N

REV	DATE	DESCRIPTION	APPROVED	BY

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1060 Andrew Drive, Suite 140
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OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-8458

THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

PHASE 3B-OUTFALL 006 MODIFICATIONS PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: XX
SHEET: 107 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

ID-28

ID-06,
ID-08,
ID-09

ID-05

ID-04

FLOATING OIL BOOM FIXED TO GROUND AT ELEVATION 5.50'.

PERMANENT EROSION CONTROL FABRIC

LEDD PHASE LOD =
217,279.04 SF (4.99 AC.)

TEMPORARY GRAVITY DRAINAGE CULVERT

TEMPORARY DAM (TD-5) ELEV=6.30'

25' WIDE EMERGENCY SPILLWAY ELEV. 6.30'

REFER TO SHEET 124 FOR COVER RESTORATION

LIVE STAKE (TYP.) REFER TO SHEET 119 FOR DETAILS

PROPOSED TEMPORARY DGA HAUL ROAD, 15' WIDE. CONTRACTOR TO REMOVE AND RESTORE AREA AT COMPLETION OF LEDD RESTORATION TO RESTORE REMAINDER OF AREA.

SCE

EXISTING EARTHEN EMBANKMENT (TD-2) ELEV.=6.30'

60' WIDE EMERGENCY SPILLWAY ELEV. 5.80'

TURBIDITY CURTAIN (TYP.)

OUTFALL 001-R (HEADWALL 1)

TEMPORARY BERM (TB-1A) TOP ELEV.=6.30'

TEMPORARY BERM (TB-1B) TOP ELEV.=6.30'

TEMPORARY DAM (TD-4) ELEV.=6.30'

TEMPORARY DAM (TD-3) TOP ELEV.=6.30'

TEMPORARY BERM (TB-1C) ELEV.=6.30'

EROSION CONTROL LEGEND

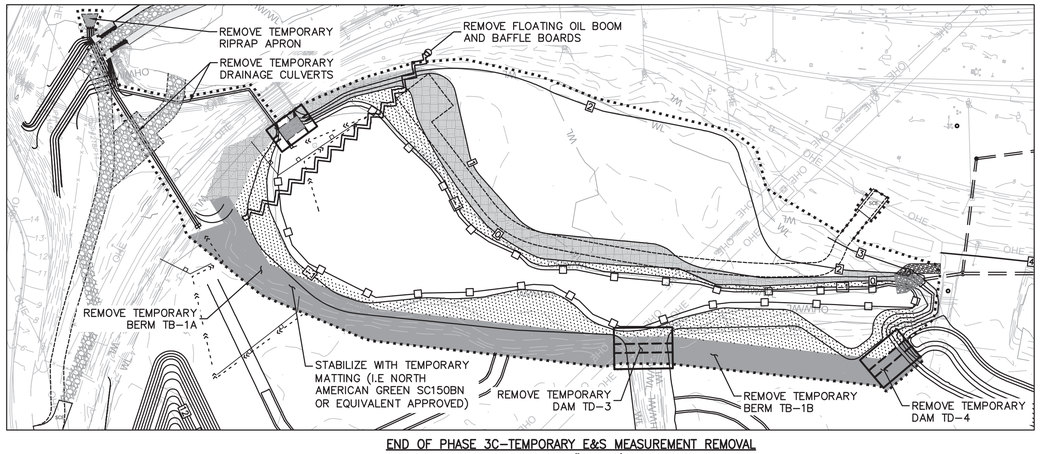
- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SF — SILT FENCE
- CFL — COMPOST FILTER LOG
- SCE — CONSTRUCTION ENTRANCE
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER
- SM-S — STABILIZATION MATTING-SLOPE
- UwA — SOIL TYPE DESGINATION
- VC-T — VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- REINFORCED MAT OVER GEOTEXTILE
- LIVE STAKE
- TEMPORARY MATTING
- BAFFLE BOARD
- BAFFLE BOARD WATER FLOW LINE
- FLOATING OIL BOOM

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

N



END OF PHASE 3C-TEMPORARY E&S MEASUREMENT REMOVAL
SCALE: 1" = 80'

NOTE:

PHASE 3C AREA OF DISTURBANCE = 217,279.04 SF OR 4.99 ACRES

NOTES:

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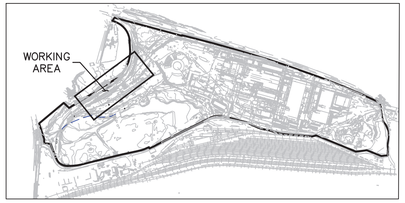
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PHASE 3C-LEDD EXCAVATION AND RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D



KEY MAP
SCALE: 1" = 1000'

ID-29

JACK AND BORE 24" DIP PIPES MINIMUM 5 FT UNDER RAILROAD TRACK

OUTFALL 004

OUTFALL 004 STORMWATER BYPASS OPERATION

UWDD RESTORATION LOD = 65,848.66 SF (1.51 AC.)

REFER TO SHEET 124 FOR COVER RESTORATION

OUTFALL 005

INSTALL TEMPORARY SEDIMENT RISER ON EXISTING PIPES

OUTFALL 005 TEMPORARY STONE APRON

TURBIDITY CURTAIN (TYP.)

FLARED END SECTION RIPRAP PROTECTION. SEE SHEET 119 FOR DETAILS.

FLARED END SECTION

STABILIZE WITH TEMPORARY SLOPE MATTING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

15' ACCESS ROAD FROM TOP OF SLOPE

PROPOSED 30" HDPE STORMWATER CONVEYANCE PIPES

TANK

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- STABILIZATION MATTING-SLOPE
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- INLET PROTECTION
- ROUTING FOR OUTFALL BYPASS SYSTEM
- TEMPORARY MATTING
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

NOTE:

PHASE 3D AREA OF DISTURBANCE = 65,848.66 SF OR 1.51 ACRES

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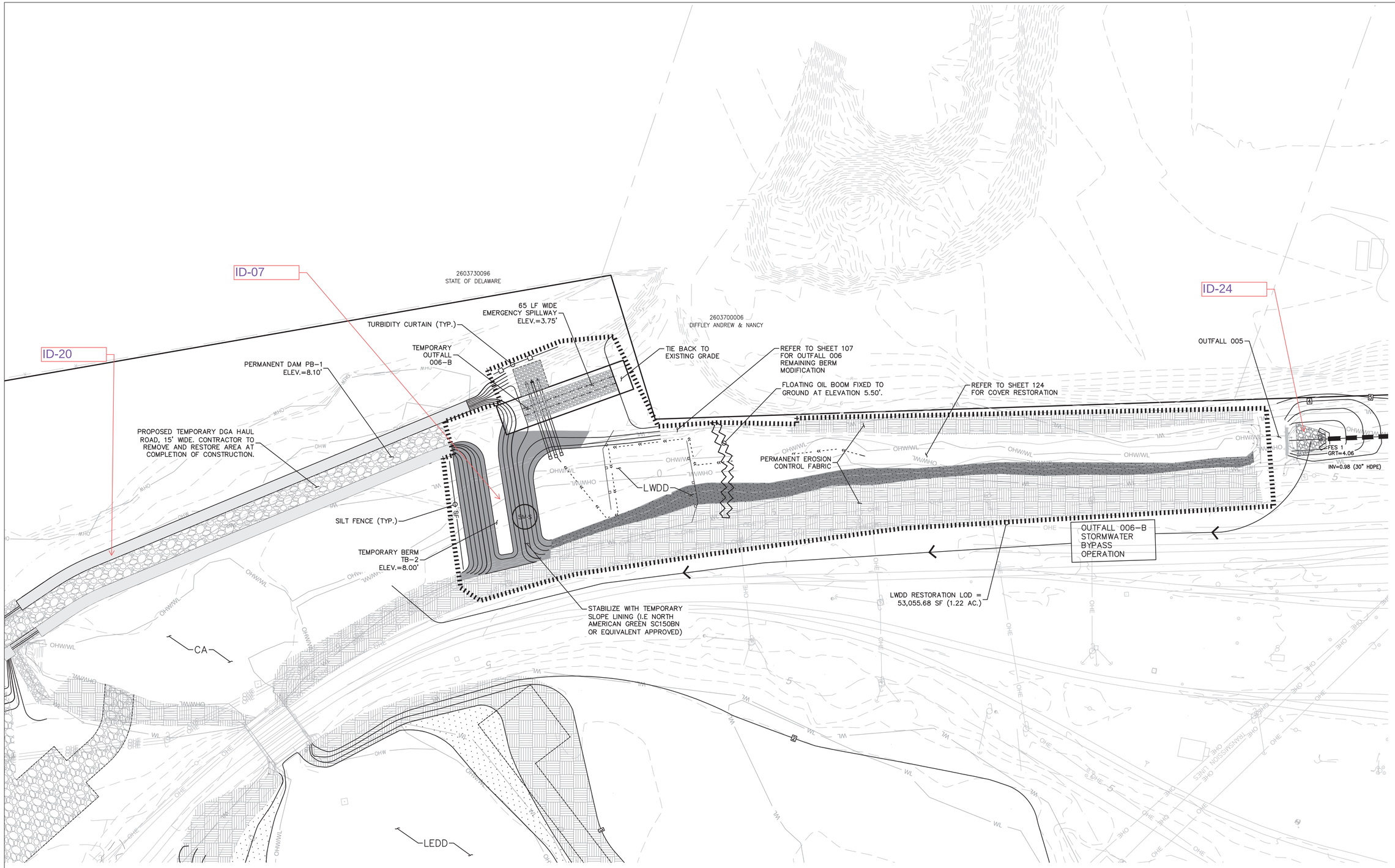
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PHASE 3D-UPPER WESTERN DRAINAGE DITCH EXCAVATION AND RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- STABILIZATION MATTING-SLOPE
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- REINFORCED MAT OVER GEOTEXTILE
- LIVE STAKE WITH TEMPORARY MATTING
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- BAFFLE BOARD
- BAFFLE BOARD WATER FLOW LINE
- FLOATING OIL BOOM

NOTES:

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NOTE:

PHASE 3E AREA OF DISTURBANCE = 53,055.68 SF OR 1.22 ACRES

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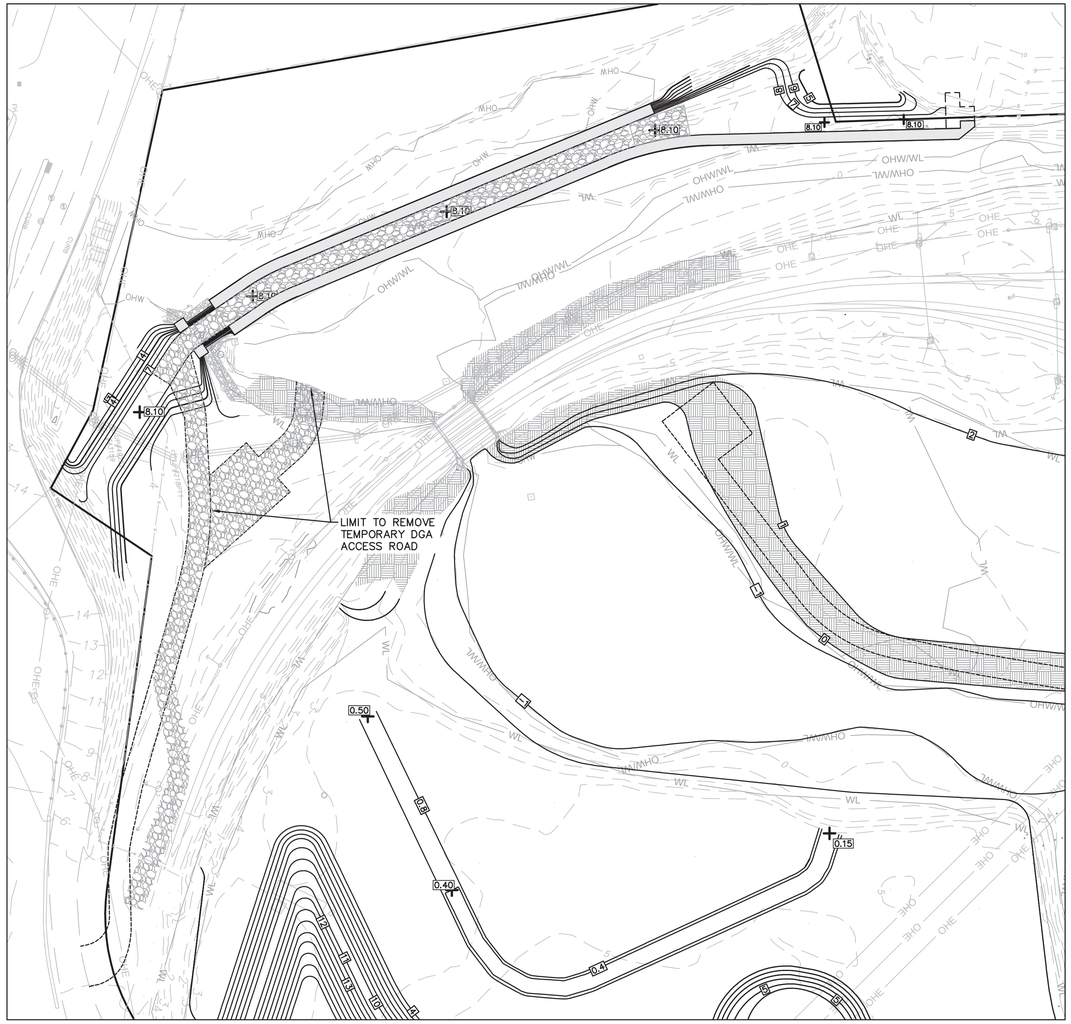
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TO:
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PHASE 3E-LOWER WESTERN DRAINAGE DITCH EXCAVATION AND RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

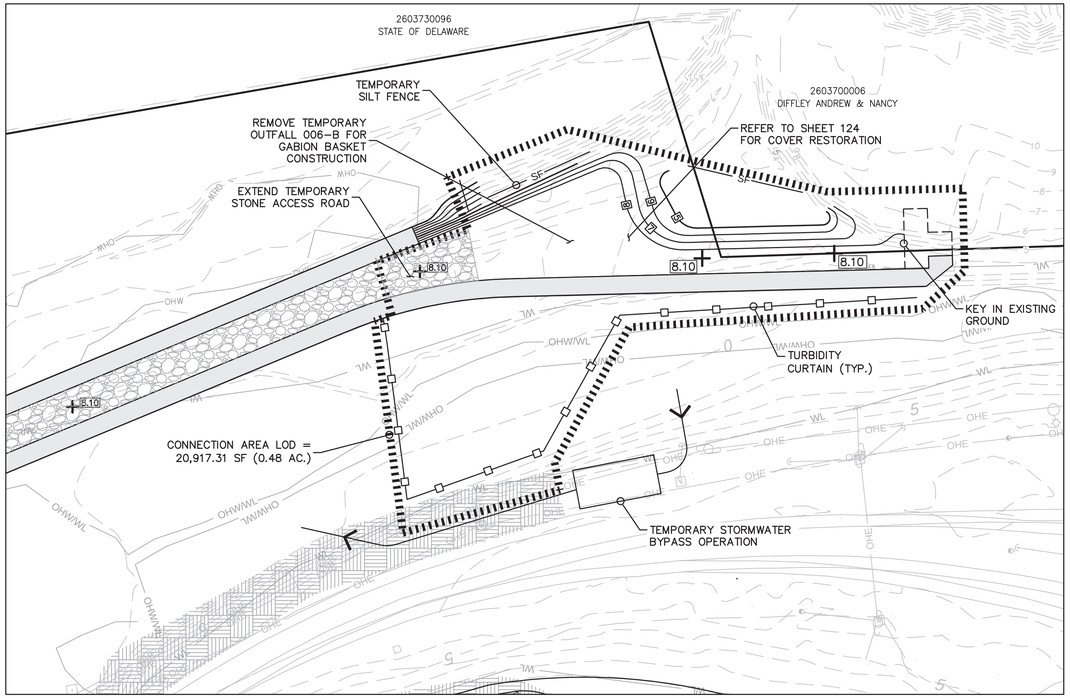
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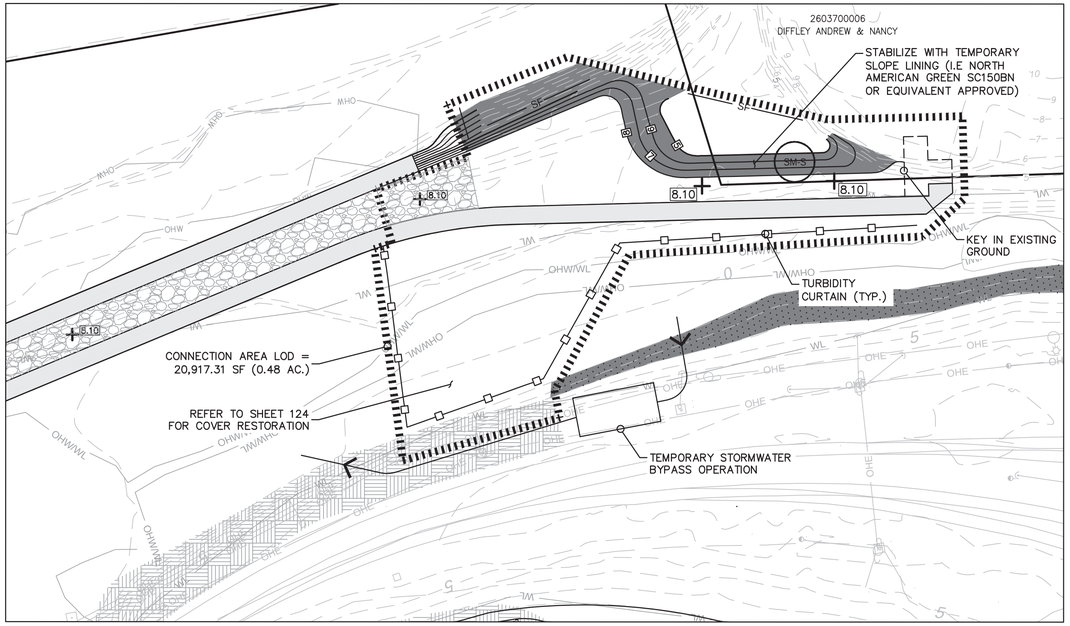
ORIGINAL SHEET - ARCH D



PHASE 3F–TEMPORARY HAUL ROAD REMOVAL
SCALE: 1" = 50'



PHASE 3F–GABION RETAINING WALL CONSTRUCTION
SCALE: 1" = 30'



PHASE 3F–TEMPORARY BERM REMOVAL AND RESTORATION
SCALE: 1" = 30'

EROSION CONTROL LEGEND

	LIMIT OF DISTURBANCE
250	PROPOSED CONTOUR
45.45	EXISTING SPOT GRADE
25	EXISTING TOPOGRAPHIC CONTOUR
SF	SILT FENCE
CFL	COMPOST FILTER LOG
SCE	CONSTRUCTION ENTRANCE
SM-S	STABILIZATION MATTING–SLOPE
UwA	SOIL TYPE DESIGNATION
VC-T	VEGETATED CHANNEL–TRI./TRAP.
	TURBIDITY CURTAIN
	REINFORCED MAT OVER GEOTEXTILE
	LIVE STAKE WITH TEMPORARY MATTING
WL	NONTIDAL WETLAND
OHW/WL	ORDINARY HIGH WATER/NONTIDAL WETLAND
OHW	ORDINARY HIGH WATER

NOTE:

PHASE 3F AREA OF DISTURBANCE = 20,917.31 SF OR 0.48 ACRES

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

N

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PHASE 3F-WESTERN DRAINAGE DITCH CONNECTION TO CONFLUENCE AREA
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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ORIGINAL SHEET - ARCH D

OUTFALL 001-R

TEMPORARY BERM
ELEV=6.30'

EXISTING
ISS

OUTFALL
001

PREVIOUSLY INSTALLED
BARRIER WALL

COMPLETE STABILIZATION IN PLACE
AND BEGIN CONSTRUCTING CELL

BANK SOIL

ISS EXCAVATION LIMIT

ISS PHASE LOD =
433,465.27 SF (9.95 AC.)

STOCKPILE 2

ID-16

WORKING
AREA

KEY MAP
SCALE: 1" = 1000'

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 25 — PROPOSED CONTOUR
- 45.45 — EXISTING SPOT GRADE
- 25 — EXISTING TOPOGRAPHIC CONTOUR
- SF — SILT FENCE
- CFL — COMPOST FILTER LOG
- SCE — CONSTRUCTION ENTRANCE
- SM-S — STABILIZATION MATTING-SLOPE
- UwA — SOIL TYPE DESGINATION
- BARRIER WALLS
- VC-T — VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- BANK SOIL
- WL — NONTIDAL WETLAND
- OHW/WL — ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW — ORDINARY HIGH WATER

NOTE:
PHASE 4A AREA OF DISTURBANCE = 433,465.27 SF OR 9.95 ACRES

NOTE:
BANK SOILS TO BE EXCAVATED. SEDIMENT TO BE STABILIZED IN PLACE.

NOTES:
FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

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PHASE 4A-ISS CELL EXCAVATION AND STABILI ATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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REV: 0

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ORIGINAL SHEET - ARCH D

REMOVE STONE FROM TEMPORARY RIPRAP

OUTFALL 001R

TEMPORARY SWALE TO BE REMOVED AND FINAL GRADING

INSTALL REMAINING STRUCTURE AND GRATE TO GRADE AND INSTALL INLET PROTECTION (TYP.)

REMOVE CAP AND INSTALL REMAINING PIPE

ISS PHASE LOD = 430,924.20 SF (9.89 AC.)

HEAVY DUTY SILT FENCE (TYP.)

INSTALL 237 LF OF 24"ø HDPE PIPE.

INSTALL INLET 1 AND INSTALL INLET PROTECTION (TYP.)

STABILIZE WITH TEMPORARY SLOPE LINING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

ID-16

REFER TO SHEET 124 FOR COVER RESTORATION

STABILIZATION MATTING (TYP.)

WORKING AREA

KEY MAP
SCALE: 1" = 1000'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- SILT FENCE
- COMPOST FILTER LOG
- CONSTRUCTION ENTRANCE
- STABILIZATION MATTING-SLOPE
- SOIL TYPE DESGINATION
- VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- INLET PROTECTION
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTE:

PHASE 4C AREA OF DISTURBANCE = 430,924.20 SF OR 9.89 ACRES

NOTES:

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PHASE 4C-ISS CELL CONSTRUCTION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

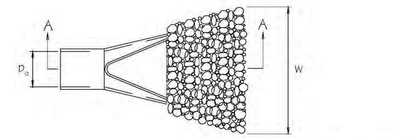
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ORIGINAL SHEET - ARCH D

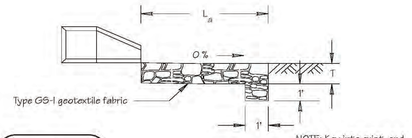
Standard Detail & Specifications

Riprap Outlet Protection - 1



Plan

NOTE: Depress centerline of apron slightly to prevent edge-cutting



NOTE: Key into exist. grd

Section A-A

DATA

Pipe diameter (D_o)
Apron length (L_a)
Apron width (W)
Riprap size (R No.)
Riprap thickness (T)

$T_w < 0.5\,D_o$

Source:	Symbol:	Detail No.
Adapted from MD Stds. & Specs. for ESC	ROP-1	DE-ESC-3.3.10.1 Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Riprap Outlet Protection - 1

Construction Notes:

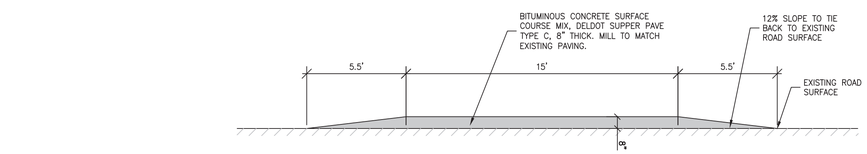
1. The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The riprap shall conform to the grading limits as shown on the plan.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter cloth.
4. Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

	OUTLET PROTECTION	LENGTH (L_a)	WIDTH (W)	q_{50}	THICKNESS (T)
	OUTFALL 007	32'	36'	12"	29"
ID-24	UWDD FES	16'	18.5'	6"	18"
ID-01	HW 1	16'	18.5'	6"	18"
ID-02	OFFSITE 3	16'	18.5'	6"	18"
ID-27	OUTFALL 002 TEMP	14'	15'	12"	29"
ID-26	NEDD 12" CULVERT	12'	13'	6"	18"
	OUTFALL 006B	12'	13'	6"	18"
ID-28	OUTFALL 006C	16'	18.5'	6"	18"
ID-29	OUTFALL 005 TEMP	9'	10'	6"	18"

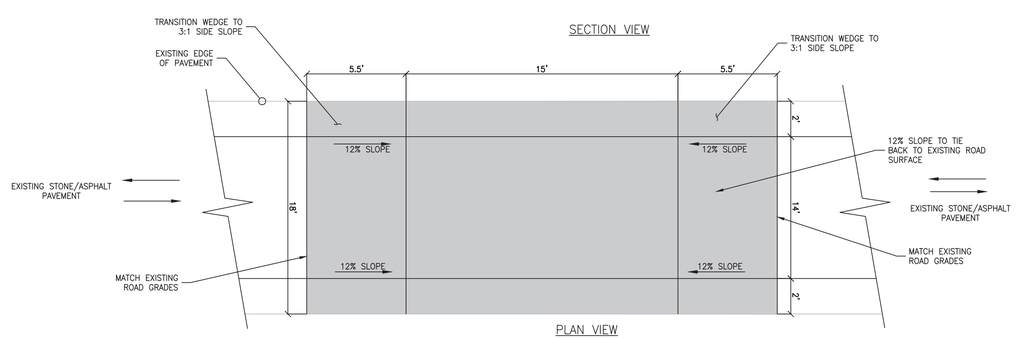
Source:	Symbol:	Detail No.
Adapted from MD Stds. & Specs. for ESC	ROP-1	DE-ESC-3.3.10.1 Sheet 2 of 2 Effective July 2023

LIVE STAKE NOTES:

1. LIVE MATERIAL SIZES: THE STAKES GENERALLY ARE 0.5 TO 1.5 INCHES IN DIAMETER AND 2 TO 3 FEET LONG. THE SPECIFIC SITE REQUIREMENTS AND AVAILABLE CUTTING SOURCE DETERMINE SIZES.
2. LIVE MATERIAL PREPARATION
   - 2.1. THE MATERIALS MUST HAVE SIDE BRANCHES CLEANLY REMOVED WITH THE BARK INTACT.
   - 2.2. THE BASAL ENDS SHOULD BE CUT AT AN ANGLE OR POINT FOR EASY INSERTION INTO THE SOIL. THE TOP SHOULD BE CUT SQUARE.
   - 2.3. MATERIALS SHOULD BE INSTALLED THE SAME DAY THAT THEY ARE PREPARED.
3. INSTALLATION
   - 3.1. EROSION CONTROL FABRIC SHOULD BE PLACED ON SLOPES SUBJECT TO EROSIVE INUNDATION.
   - 3.2. TAMP THE LIVE STAKE INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE AND DIVERTED DOWNSTREAM. THE INSTALLATION MAY BE STARTED AT ANY POINT ON THE SLOPE FACE.
   - 3.3. THE LIVE STAKES SHOULD BE INSTALLED 2 TO 3 FEET APART USING TRIANGULAR SPACING. THE DENSITY OF THE INSTALLATION WILL RANGE FROM 2 TO 4 STAKES PER SQUARE YARD. SITE VARIATIONS MAY REQUIRE SLIGHTLY DIFFERENT SPACING.
   - 3.4. PLACEMENT MAY VARY BY SPECIES. FOR EXAMPLE, ALONG MANY STREAMS, TREE-TYPE WILLOW SPECIES ARE PLACED ON THE INSIDE CURVES OF POINT BARS WHERE MORE INUNDATION OCCURS, WHILE SHRUB WILLOW SPECIES ARE PLANTED ON OUTSIDE CURVES WHERE THE INUNDATION PERIOD IS MINIMAL.
   - 3.5. THE BUDS SHOULD BE ORIENTED UP.
   - 3.6. FOUR-FIFTHS OF THE LENGTH OF THE LIVE STAKE SHOULD BE INSTALLED INTO THE GROUND, AND SOIL SHOULD BE FIRMLY PACKED AROUND IT AFTER INSTALLATION.
   - 3.7. DO NOT SPLIT THE STAKES DURING INSTALLATION. STAKES THAT SPLIT SHOULD BE REMOVED AND REPLACED.
   - 3.8. AN IRON BAR CAN BE USED TO MAKE A PILOT HOLE IN FIRM SOIL.
   - 3.9. TAMP THE STAKE INTO THE GROUND WITH A DEAD BLOW HAMMER (HAMMER HEAD FILLED WITH SHOT OR SAND).

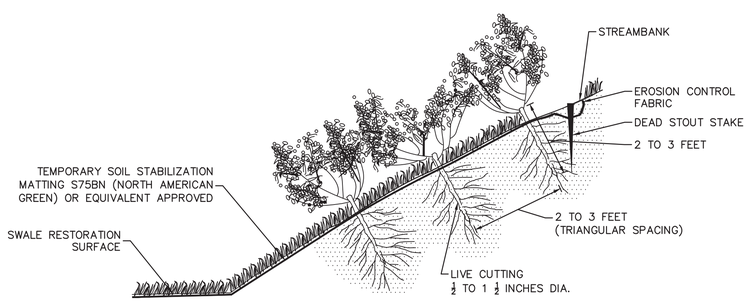


SECTION VIEW



PLAN VIEW

ROAD SPEED HUMP
N.T.S



NOTE:
ROOTED/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.

LIVE STAKE DETAIL
N.T.S

BY | APPROVED | DESCRIPTION | DATE | REV

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OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
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THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

EROSION & SEDIMENT CONTROL DETAILS 4
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

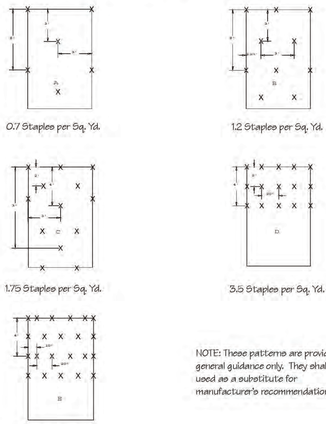
DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 119 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

Standard Detail & Specifications

Stabilization Matting - Channel



NOTE: These patterns are provided for general guidance only. They shall not be used as a substitute for manufacturer's recommendations.

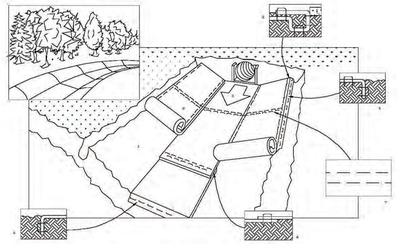
Stapling Patterns

Source:	Symbol:	Detail No.
Adapted from North American Green, Inc.	SM-C	DE-ESC-3.4.6.2 Sheet 3 of 3 Effective July 2023

DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK – JULY 2023 VERSION

Standard Detail & Specifications

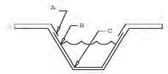
Stabilization Matting - Channel



Perspective

CRITICAL POINTS

A. Overlaps and seams
B. Projected waterline
C. Channel bottom/side slope vertices



Note: Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

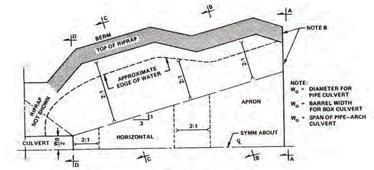
Use manufacturer's recommendations for stapling patterns for channel installations.

Source:	Symbol:	Detail No.
Adapted from North American Green, Inc.	SM-C	DE-ESC-3.4.6.2 Sheet 1 of 3 Effective July 2023

DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK – JULY 2023 VERSION

Standard Detail & Specifications

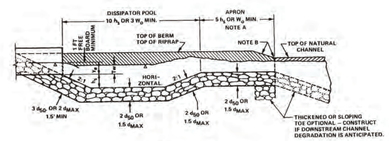
Riprap Stilling Basin



Half - Plan

NOTE A – IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS-SECTIONAL AREA AT SECTION A–A SUCH THAT Q_{DES} ACROSS SECTION AREA AT SEC. A–A) = SPECIFIED EXIT VELOCITY.

NOTE B – WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT THE SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A.



Profile thru ℄ Basin

Source:	Symbol:	Detail No.
Adapted from FHWA HEC-14	RSB	DE-ESC-3.3.11 Sheet 1 of 3 Effective July 2023

DELAWARE EROSION & SEDIMENT CONTROL HANDBOOK – JULY 2023 VERSION

Standard Detail & Specifications

Riprap Stilling Basin

Construction Notes:

1. The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The riprap shall conform to the grading limits as shown on the plan.
3. Geotextile shall be a Type GS-I. Fabric shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire section.
4. Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the geotextile fabric. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

	RIPRAP STILLING BASIN	W_D	H_S	d_{50}	POOL LENGTH	APRON LENGTH	APPROACH THICKNESS	REMAINDER THICKNESS
ID-03	BASIN 1	4'	1'	12"	12'	5'	2'	1.5'
	BASIN 2	5'x3'	2'	12"	20'	10'	4'	3'

Source:	Symbol:	Detail No.
Adapted from FHWA HEC-14	RSB	DE-ESC-3.3.11 Sheet 3 of 3 Effective July 2023

Standard Detail & Specifications

Stabilization Matting - Channel

Construction Notes:

1. Prepare soil before installing matting, including application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact the trench after stapling.
3. Roll center mat in direction of water flow on bottom of channel.
4. Place mats end over end (shingle style) with a 6" overlap, use a double row of staggered staples 4" apart to secure mats.
5. Full Length edge of mats at top of side slopes must be anchored in 6" deep X 6" wide trench; backfill and compact the trench after stapling.
6. Mats on side slopes must be overlapped 4" over the center mat and stapled.
7. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4" apart over entire width of the channel. Place a second row 4" below the first row in a staggered pattern.
8. The terminal end of the mats must be anchored in a 6" X 6" wide trench. Backfill and compact the trench after stapling.

Source:	Symbol:	Detail No.
Adapted from North American Green, Inc.	SM-C	DE-ESC-3.4.6.2 Sheet 2 of 3 Effective July 2023

Standard Detail & Specifications

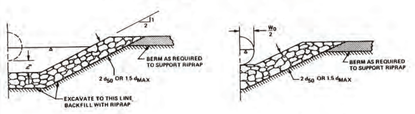
Riprap Stilling Basin



Section A-A

Section B-B

NOTE B – WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT THE SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A.



Section C-C

SectionD-D

DATA

Culvert dimension (w_c)
Depth of basin from culvert invert (h_s)
Riprap size (R No.)

Source:	Symbol:	Detail No.
Adapted from FHWA HEC-14	RSB	DE-ESC-3.3.11 Sheet 2 of 3 Effective July 2023

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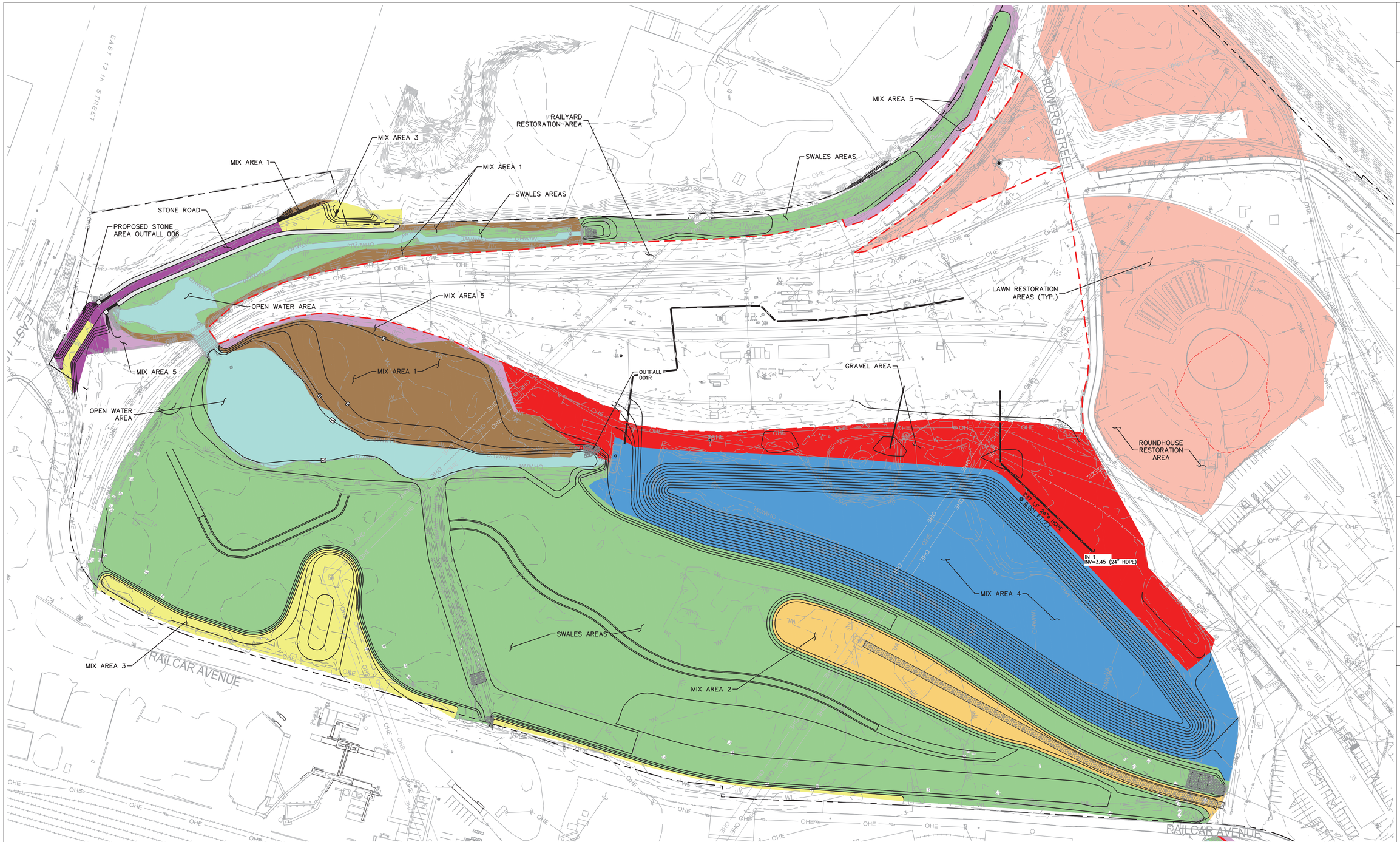
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THIS DOCUMENT WAS PREPARED BY:
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TO:
AMTRAK

EROSION & SEDIMENT CONTROL DETAILS 5
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
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FILE NO.: 213403550
SHEET: 120 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D



LEGEND

- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- PROPERTY LINE
- PROPOSED WETLAND AREA
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 1 (INCLUDES SHRUB PLANTINGS)
- PROPOSED MIX AREA 2 (INCLUDES SHRUB PLANTINGS)
- PROPOSED MIX AREA 3
- PROPOSED MIX AREA 4
- PROPOSED MIX AREA 5
- PROPOSED OPEN WATER (OHW) AREAS
- LAWN RESTORATION AREA
- GRAVEL AREA
- OUTFALL 006 STONE
- PROPOSED WETLAND AREA
- PROPOSED STONE BERM

NOTES

1. PROPOSED COVERS FOR MIX/RESTORATION AREAS TO BE APPLIED AS EACH SECTION IS COMPLETED.
2. REFER TO E&S PLANS FOR LIMIT OF RIPRAP PLACEMENT.

PROPOSED MIX AREAS

PROPOSED MIX AREA 1	= 123,249 SF (2.83 AC.)
PROPOSED MIX AREA 2	= 52,327 SF (1.20 AC.)
PROPOSED MIX AREA 3	= 59,653 SF (1.37 AC.)
PROPOSED MIX AREA 4	= 270,362 SF (6.21 AC.)
PROPOSED MIX AREA 5	= 48,885 SF (1.12 AC.)
PROPOSED SWALE AREA	= 759,813 SF (17.44 AC.)

PROPOSED OTHER AREAS

PROPOSED RAILYARD RESTORATION	= 448,289 SF (10.29 AC.)
GRAVEL-PAVED ROAD/GRAVEL AREA	= 118,186 SF (2.71 AC.)
PROPOSED STONE AREA FOR OUTFALL 006	= 12,079 SF (0.28 AC.)
RESTORED OPEN WATER (OHW) AREAS	= 96,340 SF (2.21 AC.)

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

PLANTING AND SEED DETAILS ON SHEET 132.

N

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

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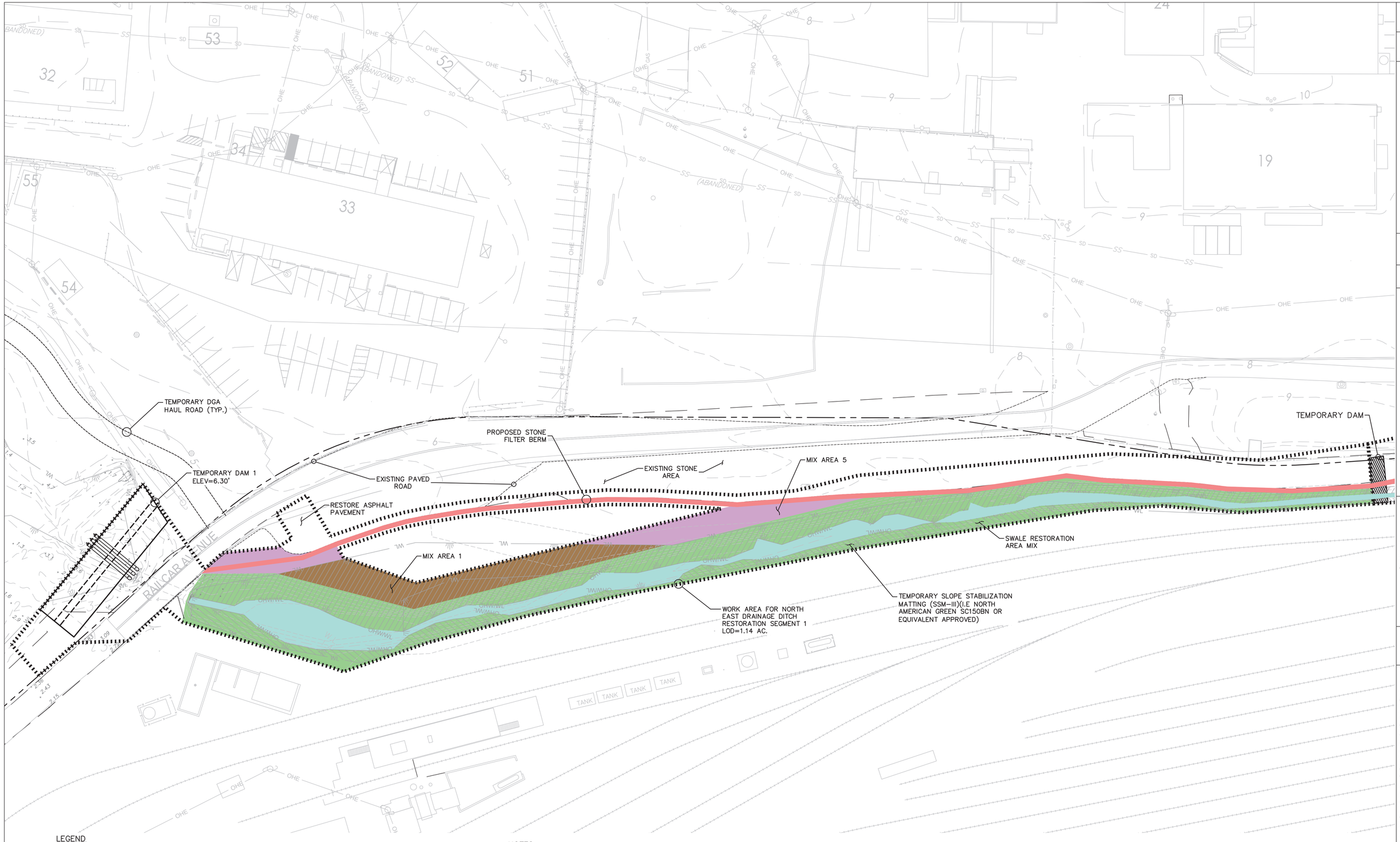
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TO:
AMTRAK

OVERALL VEGETATIVE COVER RESTORATION PLAN FOR AMTRAK WILMINGTON SHOPS REMEDIATION FORMER FUELING FACILITY (DE-0266) WILMINGTON MAINTENANCE FACILITY (DE-0170) CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
SCALE:	AS NOTED
DESIGNED BY:	RPV
FILE NO.:	XX
SHEET:	124 OF 135
REV:	0

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ORIGINAL SHEET - ARCH D



LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 5
- PROPOSED MIX AREA 1
- STABILIZATION MATTING--SLOPE
- OPEN WATER AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES

1. PROPOSED COVERS FOR MIX/RESTORATION AREAS TO BE APPLIED AS EACH SECTION IS COMPLETED.
2. REFER TO E&S DETAILS FOR RIPRAP PLACEMENT AND SIZING.
3. REFER TO VEGETATIVE RESTORATION DETAIL SHEET 132 FOR MIX DETAILS.

PROPOSED MIX AREAS--NEDD PHASE 1

PROPOSED MIX AREA 1	=	3,920 SF (0.09 AC.)
PROPOSED MIX AREA 5	=	2,987 SF (0.07 AC.)
PROPOSED SWALE RESTORATION AREAS	=	15,980 SF (0.37 AC.)

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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400 VANDEVER AVENUE
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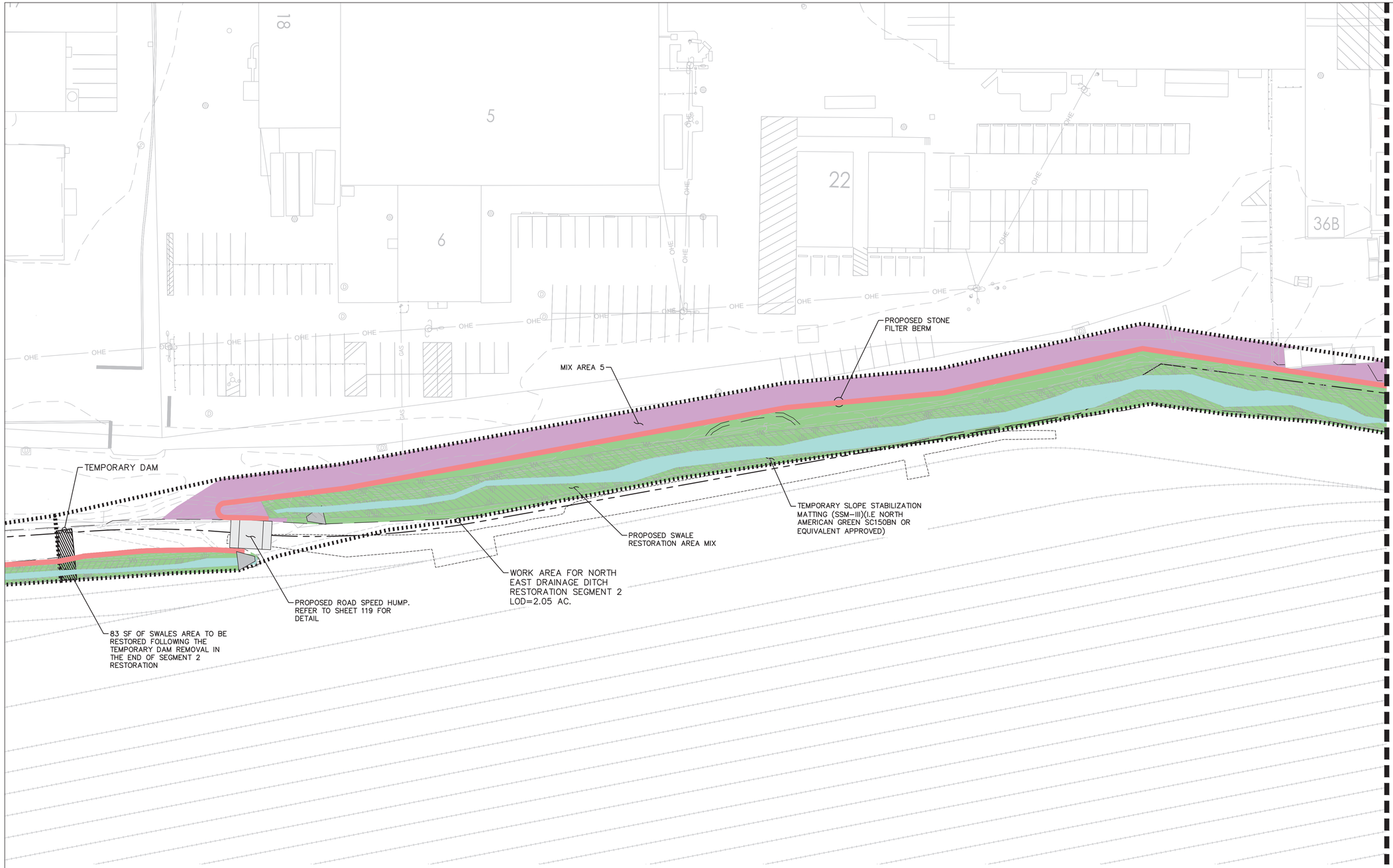
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PHASE 2A-NEDD VEGETATIVE COVER RESTORATION
SEGMENT 1
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D



LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 5
- PROPOSED MIX AREA 1
- STABILIZATION MATTING-SLOPE
- OPEN WATER AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES

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2. REFER TO E&S DETAILS FOR RIPRAP PLACEMENT AND SIZING.
3. REFER TO VEGETATIVE RESTORATION DETAIL SHEET 132 FOR MIX DETAILS.

PROPOSED MIX AREAS-NEDD PHASE 2

PROPOSED MIX AREA 1	= 5,713 SF (0.13 AC.)
PROPOSED MIX AREA 5	= 24,128 SF (0.55 AC.)
PROPOSED SWALE RESTORATION AREAS	= 36,778 SF (0.84 AC.)

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

GRAPHIC SCALE

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PHASE 2A-NEDD VEGETATIVE COVER RESTORATION
SEGMENT 2-1
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
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ORIGINAL SHEET - ARCH D

MATCHING LINE SHEET 47

PROPOSED STONE FILTER BERM

MIX AREA 5

MIX AREA 1

TEMPORARY DAM

WORK AREA FOR NORTH EAST DRAINAGE DITCH RESTORATION SEGMENT 2 LOD=2.05 AC.

PROPOSED SWALE RESTORATION AREA MIX

TEMPORARY SLOPE STABILIZATION MATTING (SSM-II)(I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

171 SF OF SWALES AREA TO BE RESTORED FOLLOWING THE TEMPORARY DAM REMOVAL IN THE END OF SEGMENT 2 RESTORATION

PAVEMENT

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 5
- PROPOSED MIX AREA 1
- STABILIZATION MATTING-SLOPE
- OPEN WATER AREA
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES

1. PROPOSED COVERS FOR MIX/RESTORATION AREAS TO BE APPLIED AS EACH SECTION IS COMPLETED.
2. REFER TO E&S DETAILS FOR RIPRAP PLACEMENT AND SIZING.
3. REFER TO VEGETATIVE RESTORATION DETAIL SHEET 132 FOR MIX DETAILS.

PROPOSED MIX AREAS-NEDD PHASE 2

PROPOSED MIX AREA 1	= 5,713 SF (0.13 AC.)
PROPOSED MIX AREA 5	= 24,128 SF (0.55 AC.)
PROPOSED SWALE RESTORATION AREAS	= 36,778 SF (0.84 AC.)

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY AND NORFOLK SOUTHERN FACILITY PERSONNEL.

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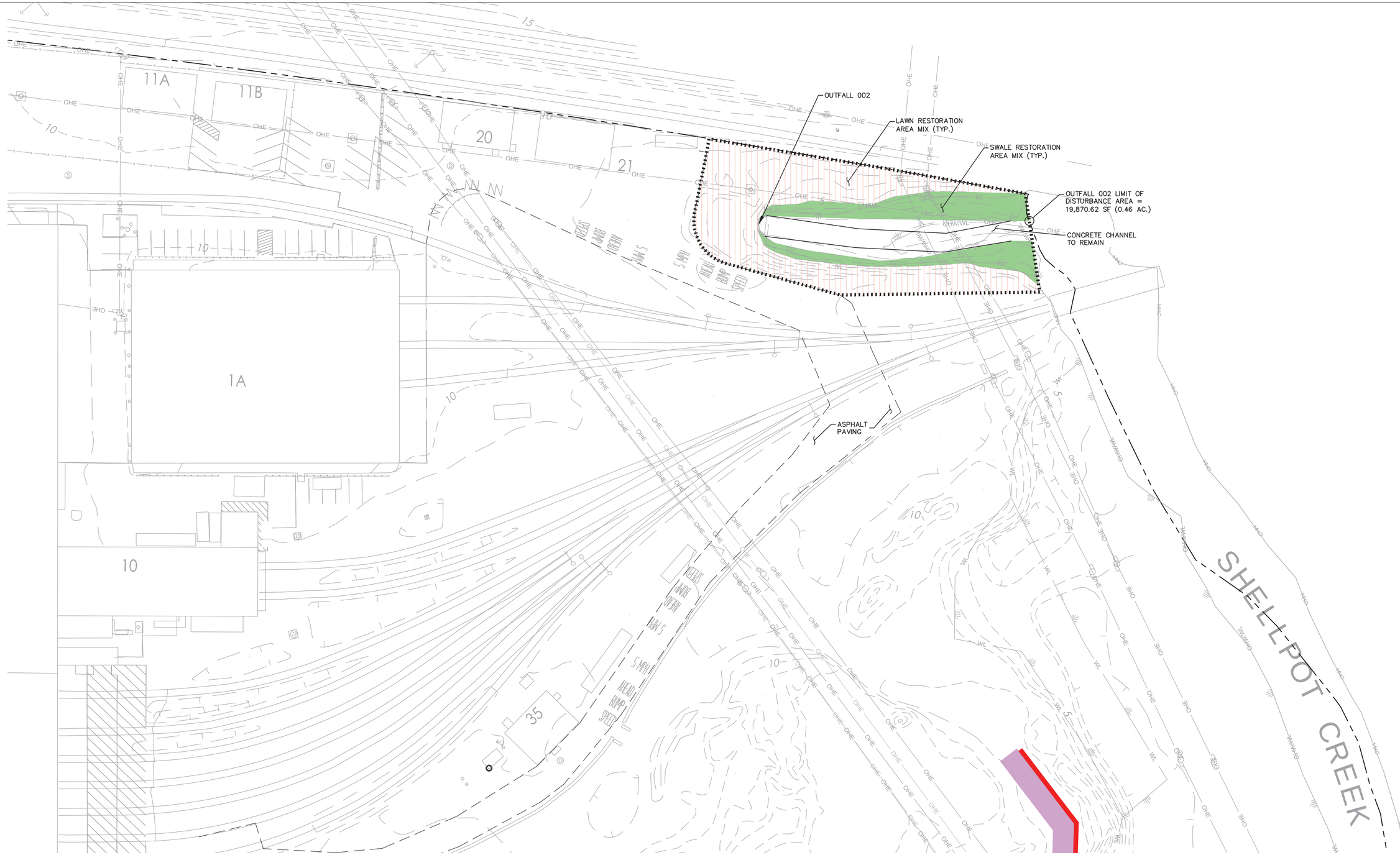
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TO:
AMTRAK

PHASE 2A-NEDD VEGETATIVE COVER RESTORATION
SEGMENT 2-2
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

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ORIGINAL SHEET - ARCH D



LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- LAWN RESTORATION AREA MIX
- SWALE RESTORATION AREA MIX
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

NOTES

1. PROPOSED COVERS FOR MIX/RESTORATION AREAS TO BE APPLIED AS EACH SECTION IS COMPLETED.
2. REFER TO E&S DETAILS FOR RIPRAP PLACEMENT AND SIZING.
3. REFER TO VEGETATIVE RESTORATION DETAIL SHEET 132 FOR MIX DETAILS.

PROPOSED MIX AREAS–OUTFALL 002

PROPOSED LAWN AREAS = 19,870.62 SF (0.46 AC.)

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

PLANTING AND SEED DETAILS ON SHEET 132.

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

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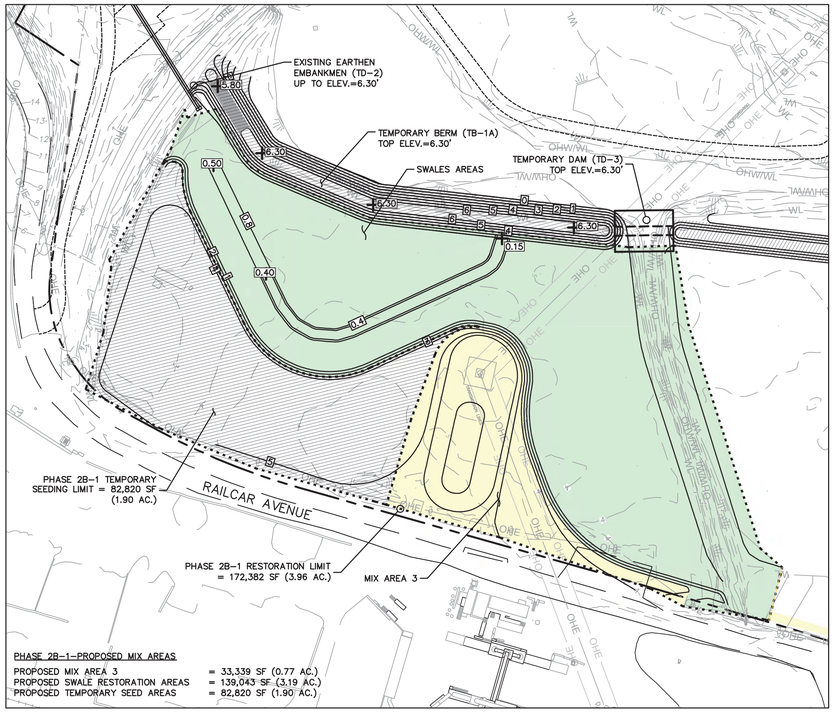
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PHASE 2A-OUTFALL 002 VEGETATIVE COVER
RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

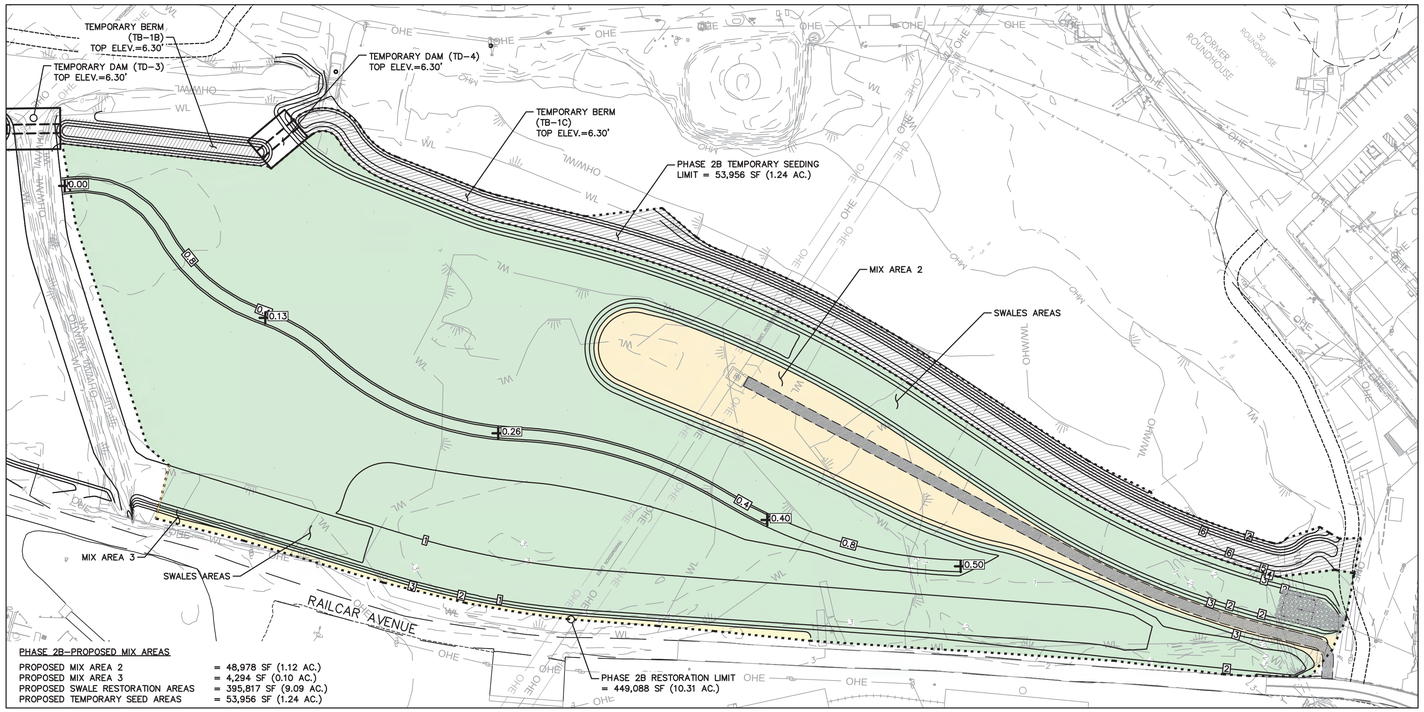
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FILE NO.: XX
SHEET: 128 OF 125
REV: 0

\\213402548\DRAWINGS\SHEETS\E&S\213402548-E&S-RESTORATION.DWG
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ORIGINAL SHEET - ARCH D



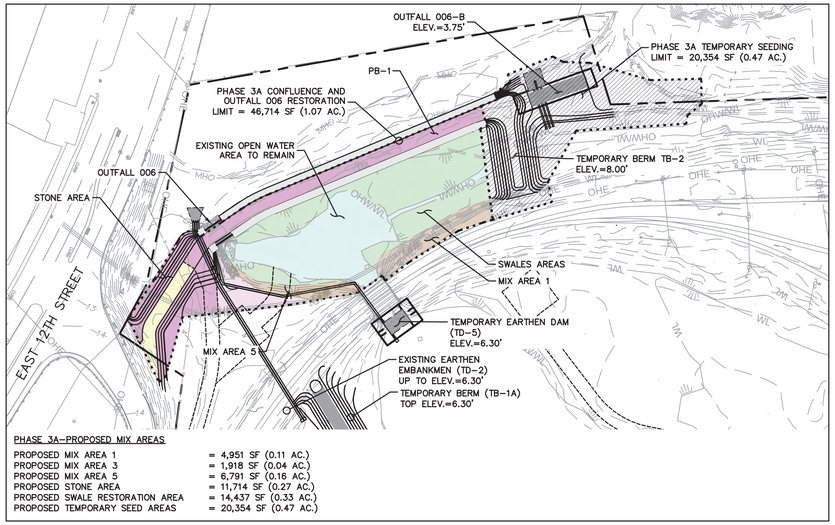
PHASE 2B-1-EAST OF EASTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'



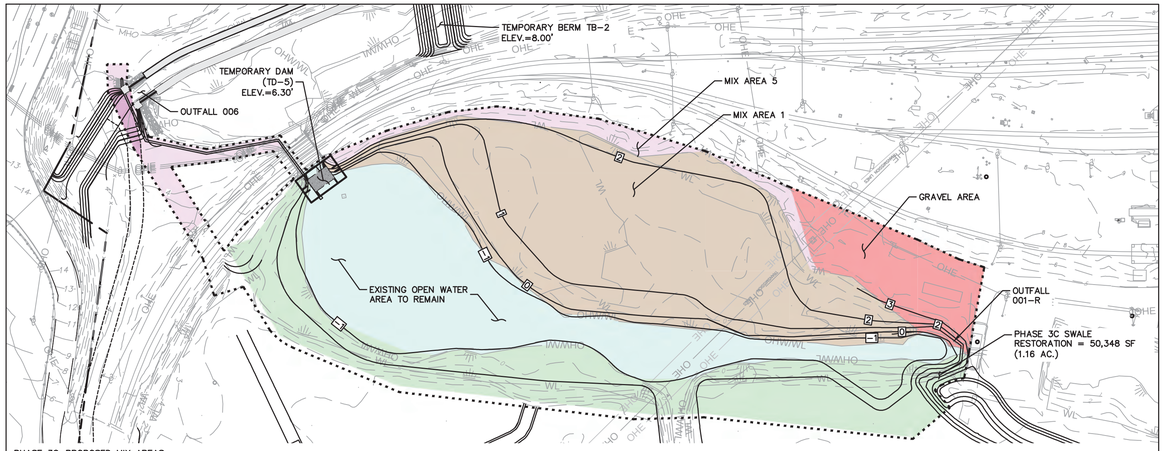
PHASE 2B-EAST OF EASTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'



PHASE 3A-CONFLUENCE AREA & OUTFALL 006 VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'



PHASE 3C-LOWER EASTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 1
- PROPOSED MIX AREA 2
- PROPOSED MIX AREA 3
- LIMIT OF RESTORATION AREAS
- PROPOSED MIX AREA 4
- PROPOSED MIX AREA 5
- PROPOSED OPEN WATER AREAS
- LAWN RESTORATION AREA
- TEMPORARY SEEDING MIX
- GRAVEL AREA
- OUTFALL 006 STONE
- SWALE 2 STONE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

1 inch = 80 ft.

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

PLANTING AND SEED DETAILS ON SHEET 132.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester, PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE (302) 429-8458

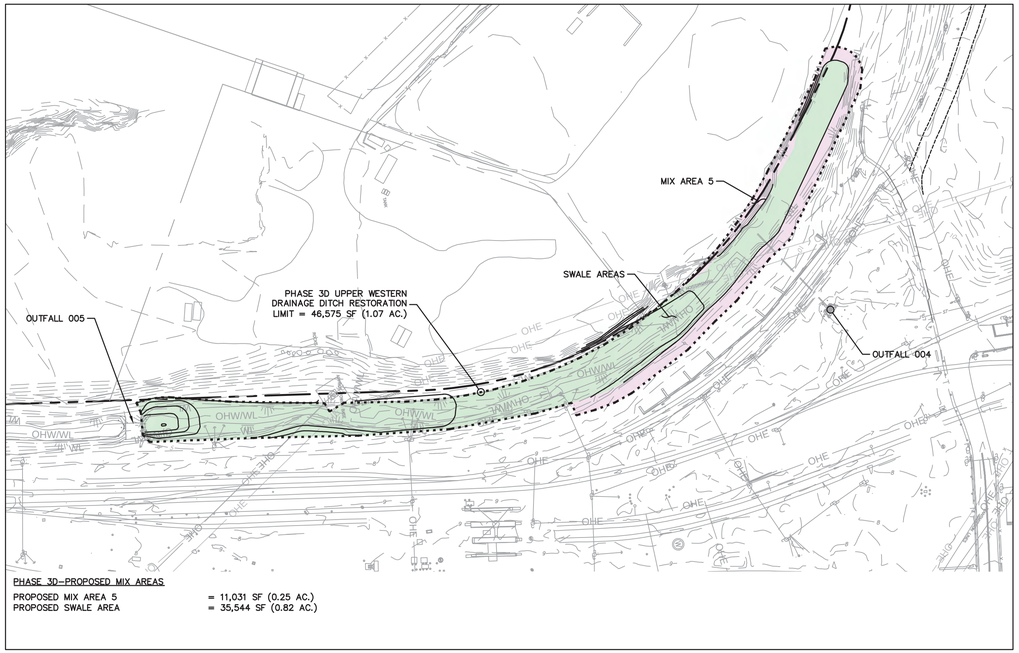
THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

EASTERN DRAINAGE DITCH & OUTFALL 006 COVER
RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: 213403550
SHEET: 129 OF 135
REV: 0

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ORIGINAL SHEET - ARCH D

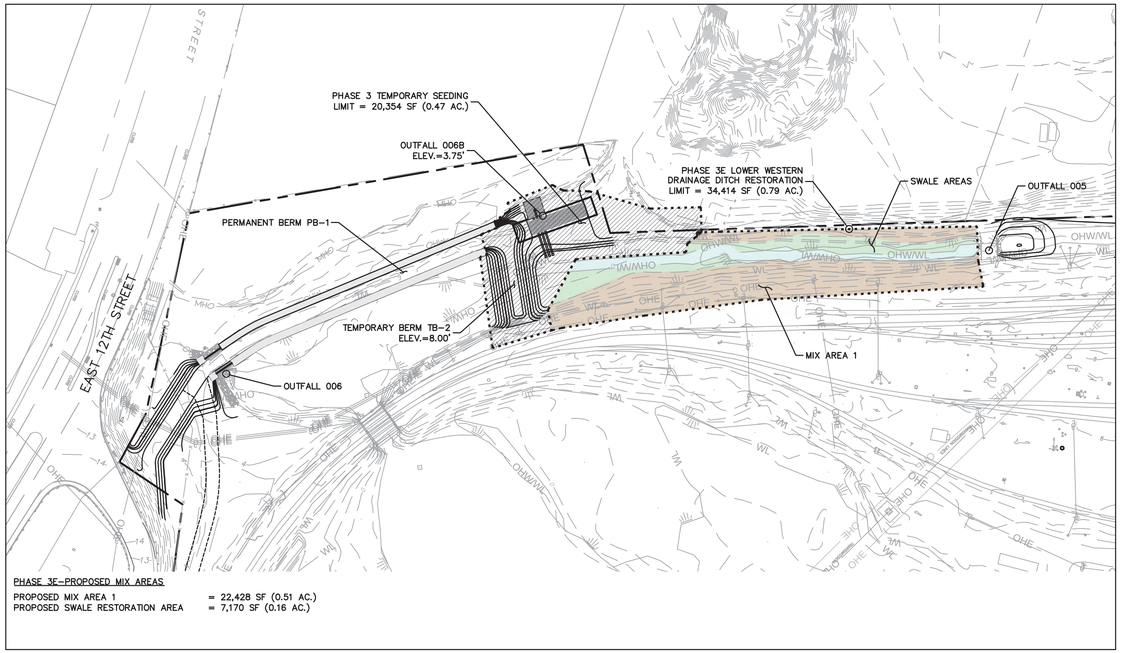


PHASE 3D-PROPOSED MIX AREAS

PROPOSED MIX AREA 5 = 11,031 SF (0.25 AC.)
PROPOSED SWALE AREA = 35,544 SF (0.82 AC.)

PHASE 3D–UPPER WESTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'

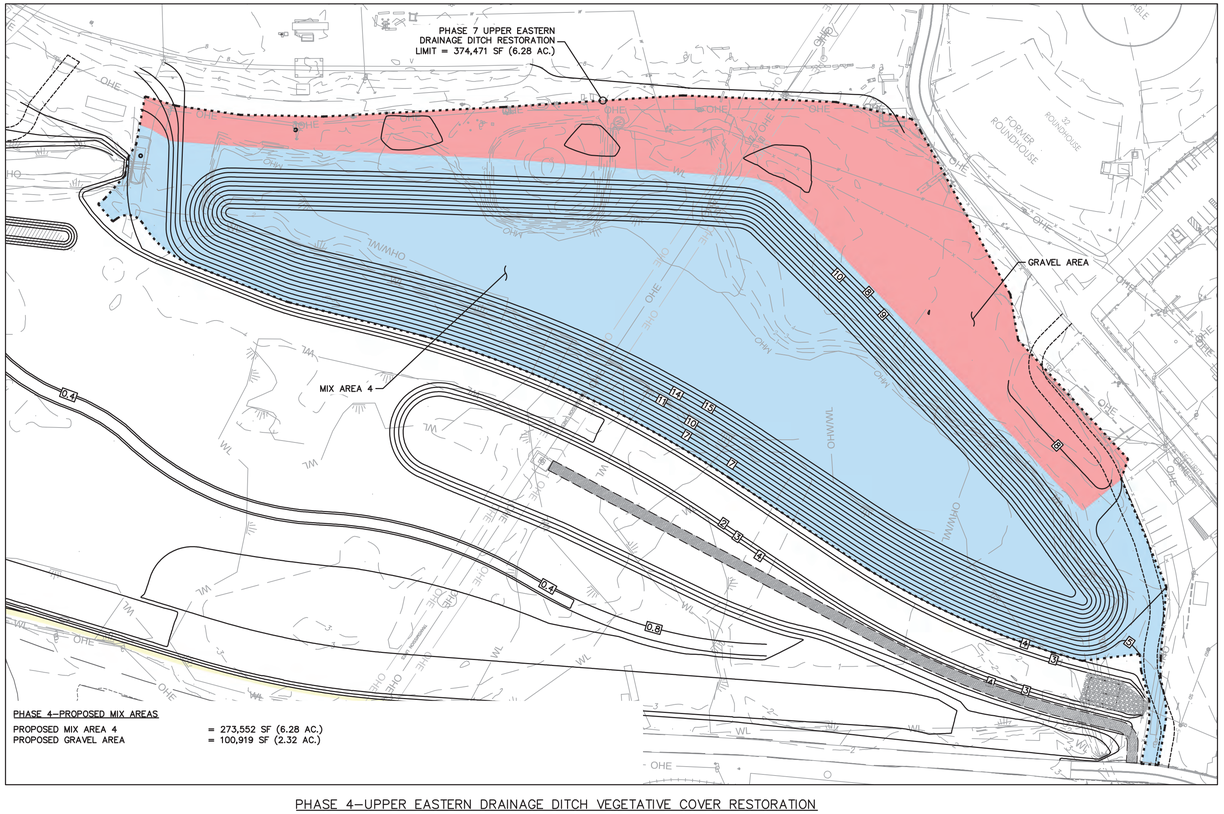


PHASE 3E-PROPOSED MIX AREAS

PROPOSED MIX AREA 1 = 22,428 SF (0.51 AC.)
PROPOSED SWALE RESTORATION AREA = 7,170 SF (0.16 AC.)

PHASE 3E–LOWER WESTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'



PHASE 4-PROPOSED MIX AREAS

PROPOSED MIX AREA 4 = 273,552 SF (6.28 AC.)
PROPOSED GRAVEL AREA = 100,919 SF (2.32 AC.)

PHASE 4–UPPER EASTERN DRAINAGE DITCH VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'

NOTES:

FIELD VERIFICATION IS REQUIRED PRIOR TO IMPLEMENTATION OF ANY CONSTRUCTION ACTIVITY AND IN CONSULTATION WITH AMTRAK FACILITY PERSONNEL.

PLANTING AND SEED DETAILS ON SHEET 132.

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 1
- PROPOSED MIX AREA 2
- PROPOSED MIX AREA 3
- LIMIT OF RESTORATION AREAS
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER
- PROPOSED MIX AREA 4
- PROPOSED MIX AREA 5
- PROPOSED OPEN WATER AREAS
- LAWN RESTORATION AREA
- TEMPORARY SEEDING MIX
- GRAVEL AREA
- OUTFALL 006 STONE
- SWALE 2 STONE

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
West Chester PA
www.stantec.com

OWNER
AMTRAK
4001 VANDEVER AVENUE
WILMINGTON, DE 19802
PHONE: (302) 429-4458

THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

WESTERN AND UPPER EASTER DRAINAGE DITCHES COVER RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
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REV: 0

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ORIGINAL SHEET - ARCH D

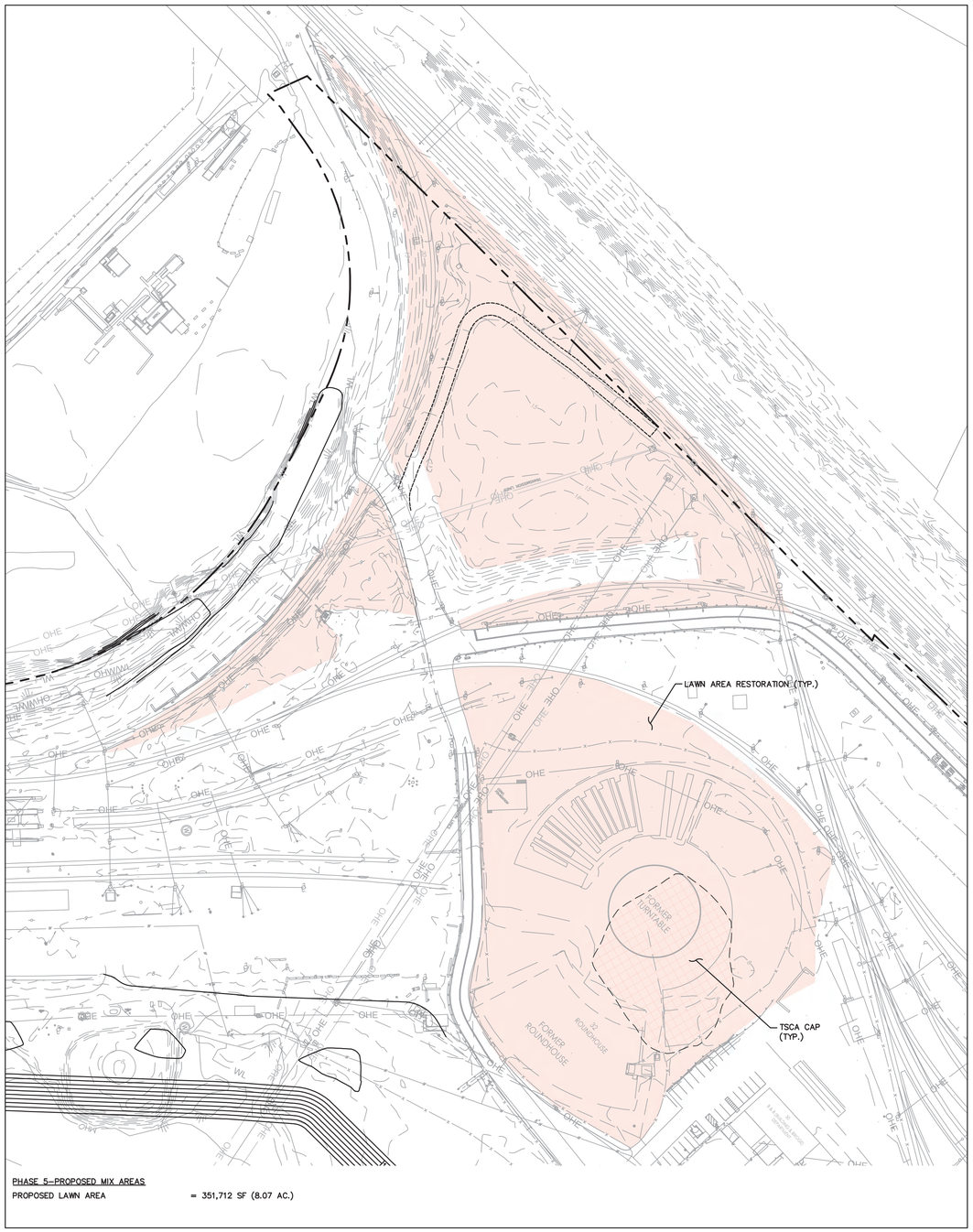


PHASE 4B–PROPOSED MIX AREAS

PROPOSED MIX AREA 1	= 2,951 SF (0.07 AC.)
PROPOSED MIX AREA 3	= 20,315 SF (0.47 AC.)
PROPOSED SWALE RESTORATION AREA	= 109,528 SF (2.51 AC.)

PHASE 4B–TEMPORARY STORMWATER CONTROL REMOVAL VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'



PHASE 5–PROPOSED MIX AREAS

PROPOSED LAWN AREA	= 351,712 SF (8.07 AC.)

PHASE 5–FORMER ROUNDHOUSE AREA VEGETATIVE COVER RESTORATION

SCALE: 1"= 80'

LEGEND

- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- EXISTING TOPOGRAPHIC CONTOUR
- PROPOSED SWALE RESTORATION AREAS
- PROPOSED MIX AREA 1
- PROPOSED MIX AREA 2
- PROPOSED MIX AREA 3
- LIMIT OF RESTORATION AREAS
- PROPOSED MIX AREA 4
- PROPOSED MIX AREA 5
- PROPOSED OPEN WATER AREAS
- LAWN RESTORATION AREA
- TEMPORARY SEEDING MIX
- GRAVEL AREA
- OUTFALL 006 STONE
- SWALE 2 STONE
- NONTIDAL WETLAND
- ORDINARY HIGH WATER/NONTIDAL WETLAND
- ORDINARY HIGH WATER

GRAPHIC SCALE

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(IN FEET)

1 inch = 80 ft.

NOTES:

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PLANTING AND SEED DETAILS ON SHEET 132.

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
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West Chester, PA
www.stantec.com

OWNER
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400 VANDEVER AVENUE
WILMINGTON, DE 19802
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THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

OUTFALL 004 & ROUNDHOUSE AREA VEGETATIVE COVER RESTORATION PLAN
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE:	10.31.25
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SHEET:	131 OF 135
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ORIGINAL SHEET - ARCH D

AMTRAK – AREA 1

BASIN BOTTOM MIX (10 LBS/AC.)(WETLAND SEED MIX)

Botanical Name	Indicator Status	% of Mix
Asclepias incarnata	OBL	1.0%
Calamagrostis canadensis	OBL	4.0%
Carex lurida	OBL	16.0%
Carex vulpinoidea	FACW	9.0%
Elymus virginicus	FAC	13.0%
Glyceria striata	OBL	8.0%
Helenium autumnale	FACW	7.0%
Hibiscus moscheutos	OBL	0.5%
Iris versicolor	OBL	1.0%
Juncus effusus	OBL	14.0%
Kosteletzkya pentacarpos	OBL	0.5%
Lobelia siphilitica	OBL	8.0%
Mimulus ringens	OBL	5.0%
Panicum clandestinum	FACW	5.0%
Scirpus cyperinus	OBL	2.0%
Verbena hastata	FAC	1.0%
Verbesina alternifolia	FAC	2.0%
Vernonia noveboracensis	FACW	1.0%
Veronicastrum virginicum	FACW	2.0%
TOTAL		100.0%

AMTRAK – AREA 1

SHRUB

Botanical Name	Indicator Status
Baccharis halimifolia	FACW
Cephalanthus occidentalis	OBL
Ilex verticillata	FACW
Itea virginica	OBL
Cornus racemosa	FAC

SHRUB PLANTING NOTES (AREA 1 & 2)

1. SHRUBS WILL BE PLANTED ON 8 FOOT CENTERS AT A RATE OF 680 PER ACRE.
2. SHRUBS SHALL BE CONTAINER-GROWN STOCK: HEALTHY, VIGOROUS, WELL-ROOTED PLANTS GROWN IN A CONTAINER, WITH A WELL-ESTABLISHED ROOT SYSTEM REACHING SIDES OF CONTAINER AND MAINTAINING A FIRM BALL WHEN REMOVED FROM CONTAINER. ALL SHRUBS TO BE FURNISHED IN #1 CONTAINER SIZE ACCORDING TO ANSI Z60.1 FOR TYPE AND SIZE OF PLANT REQUIRED.
3. ALL PLANTS WILL HAVE A NORMAL GROWTH HABIT WITH A WELL DEVELOPED HEALTHY BRANCH AND ROOT SYSTEM. PLANTS THAT ARE INJURED OF OBVIOUSLY DISEASED WILL NOT BE ACCEPTED.
4. ALL PLANTS WILL BE INSTALLED IN A NATURALIZED PLANTING SCHEME, ALLOWING FOR SHRUB AND HERBACEOUS POCKETS.
5. BROKEN AND/OR DEAD BRANCHES WILL BE PRUNED.
6. PLANTS WILL NOT BE INSTALLED IN FROZEN GROUND.
7. PLANTS WILL BE WATERED IF NECESSARY TO PREVENT MORTALITY.
8. PLANTS WILL BE PROTECTED FROM EXCESSIVE HERBIVORY.

RESTORATION SEEDING NOTES

1. SEED MIX UPDATED FROM JULY 2025 RDBDA. SEED MIX MAY BE UPDATED IN ACCORDANCE WITH DNREC REGULATIONS.
2. SIMULTANEOUSLY SOW COVER CROP OATS OR GRAIN (CEREAL) RYE AT A RATE OF 30LBS/ACRE FOR EROSION CONTROL.
3. PERMANENT GRASS SEEDING - DRY GROUND (PGS-DG) FOR LAWN RESTORATION AREAS SHALL FOLLOW REQUIREMENTS OF SECTION 908 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED AUGUST 2016.
4. MIX COMPOSITIONS ARE SUBJECT TO CHANGE DEPENDING ON SEED AVAILABILITY. CHANGES TO THE MIX WILL NOT AFFECT ITS FUNCTION.
5. SEED MIXES SHALL NOT CONTAIN ANY SPECIES OF NON-NATIVE VASCULAR PLANTS. REFER TO "NON-NATIVE PLANTS OF DELAWARE, DNREC, 2024" OR CURRENT LIST.

KEY TO WETLAND INDICATOR STATUS

OBL (OBLIGATE) – ALMOST ALWAYS IS A HYDROPHYTE
FACW (FACULTATIVE WETLAND) – USUALLY IS A HYDROPHYTE BUT OCCASIONALLY FOUND IN UPLANDS
FAC (FACULTATIVE) – COMMONLY OCCURS AS EITHER A HYDROPHYTE OR NON-HYDROPHYTE
FACU (FACULTATIVE UPLAND) – OCCASIONALLY IS A HYDROPHYTE BUT USUALLY OCCURS IN UPLANDS
UPL (UPLAND) – RARELY IS A HYDROPHYTE, ALMOST ALWAYS IN UPLANDS
NI (NO INDICATOR) – THIS PLANT WILL NOT BE FOUND IN A WETLAND

AMTRAK – AREA 2

BUTTERFLY AND HUMMINGBIRD MIX (20 LBS/AC)

Botanical Name	Indicator Status	% of Mix
Asclepias incarnata	OBL	3%
Asclepias syriaca	UPL	2%
Baptisia tinctoria	NI	1%
Chrysopsis mariana	UPL	5%
Coreopsis lanceolata	UPL	9%
Elymus virginicus	FAC	8%
Helenium autumnale	FACW	9%
Heliopsis helianthoides	UPL	10%
Lobelia cardinalis	FACW	1%
Monarda punctata	FACU	5%
Oenothera biennis	FACU	2%
Penstemon digitalis	FAC	5%
Schizachyrium scoparium	FACU	13%
Solidago sempervirens	FACW	6%
Symphyotrichum laeve	UPL	4%
Tradescantia virginiana	FAC	6%
Tridens flavus	FACU	4%
Verbena hastata	FAC	4%
Verbesina alternifolia	FAC	1%
Vernonia noveboracensis	FACW	2%
TOTAL		100%

AMTRAK – AREA 2

SHRUB

Botanical Name	Indicator Status
Baccharis halimifolia	FACW
Clethra alnifolia	FAC
Ilex glabra	FACW
Morella pensylvanica	FAC
Prunus maritima	UPL
Rhus aromatica	UPL
Viburnum dentatum	FAC

AMTRAK – AREA 5

SLOPE MIX (15 LBS/AC)

Botanical Name	Indicator Status	% of Mix
Andropogon gerardii	FAC	12
Chamaecrista fasciculata	FACU	5
Coreopsis lanceolata	UPL	3
Echinacea purpurea	NI	1
Elymus virginicus	FAC	11
Eragrostis spectabilis	FACU	24
Helianthus angustifolius	FACW	1
Monarda punctata	FACU	3.5
Panicum clandestinum	FACW	1
Panicum virgatum	FAC	3
Rudbeckia hirta	FACU	1
Schizachyrium scoparium	FACU	5
Solidago juncea	NI	1
Solidago nemoralis	NI	2
Sorghastrum nutans	FACU	5
Symphyotrichum laeve	UPL	2
Tridens flavus	FACU	19
Zizia aurea	FAC	0.5
TOTAL		100%

AMTRAK – AREA 3

LOW-GROW MIX (15 LBS/AC)

Botanical Name	Indicator Status	% of Mix
Asclepias syriaca	UPL	8%
Baptisia tinctoria	NI	2%
Chamaecrista fasciculata	FACU	3%
Chrysopsis mariana	UPL	7%
Coreopsis lanceolata	UPL	14%
Elymus virginicus	FAC	12%
Conoclinium coelestinum	FAC	6%
Monarda punctata	FACU	5%
Penstemon hirsutus	NI	3%
Rudbeckia hirta	FACU	11%
Schizachyrium scoparium	FACU	12%
Solidago nemoralis	NI	5%
Symphyotrichum laeve	UPL	5%
Tradescantia virginiana	FAC	5%
Zizia aurea	FAC	2%
TOTAL		100%

AMTRAK – AREA 4

POLLINATOR MEADOW MIX (15 LBS/AC)

Botanical Name	Indicator Status	% of Mix
Andropogon gerardii	FAC	10%
Asclepias syriaca	UPL	7%
Chamaecrista fasciculata	FACU	2%
Coreopsis lanceolata	UPL	7%
Echinacea purpurea	NI	6%
Elymus virginicus	FAC	7%
Conoclinium coelestinum	FAC	4%
Eupatorium purpureum	FAC	4%
Euthamia graminifolia	FAC	4%
Heliopsis helianthoides	UPL	5%
Monarda punctata	FACU	2%
Panicum virgatum	FAC	3%
Penstemon hirsutus	NI	4%
Schizachyrium scoparium	FACU	11%
Solidago nemoralis	NI	3%
Symphyotrichum laeve	UPL	8%
Tridens flavus	FACU	7%
Verbesina alternifolia	FAC	2%
Zizia aurea	FAC	4%
TOTAL		100%

AMTRAK – LAWN RESTORATION

DELDOT MIX PGS-DG (200 LBS/AC)

SEEDING CHART

Type	Species	Max. % Weed Seed[1]	% Purity	% Germination	Seeding Rate (lb/acre)
PGS-DG (≤ 1V:3H) or	Turf Type Tall Fescue *(Lolium arundinaceum, formerly; Festuca arundinacea)*	0.5	98	90	200

AMTRAK – GENERAL AREA

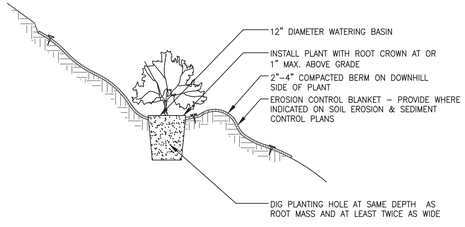
QUICK COVER MIX (20 LBS/AC)

Botanical Name	Indicator Status	% of Mix
Coreopsis lanceolata	UPL	8%
Echinacea purpurea	NI	11%
Elymus virginicus	FAC	15%
Conoclinium coelestinum	FAC	2%
Heliopsis helianthoides	UPL	11%
Monarda punctata	FACU	7%
Oenothera biennis	FACU	1%
Panicum virgatum	FAC	9%
Rudbeckia hirta	FACU	8%
Schizachyrium scoparium	FACU	13%
Symphyotrichum laeve	UPL	11%
Tridens flavus	FACU	4%
TOTAL		100%

AMTRAK – SWALES

WATERWAY RUNOFF EROSION MIX (15 LBS/AC) (WETLAND SEED MIX)

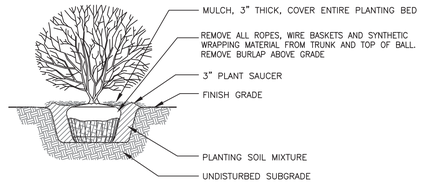
Botanical Name	Indicator Status	% of Mix
Andropogon gerardii	FAC	3
Chasmanthium latifolium	FAC	1
Elymus virginicus	FACW	22
Glyceria striata	OBL	1
Heliopsis helianthoides	NI	10
Juncus effusus	FACW	1
Panicum virgatum	FAC	7
Pycnanthemum virginianum	FACW	6
Rudbeckia hirta	FACU	8
Schizachyrium scoparium	FACU	16
Solidago nemoralis	NI	10
Sorghastrum nutans	UPL	3
Tridens flavus	UPL	11
Vernonia noveboracensis	FACW	1
TOTAL		100



2 L-501 CONTAINER- GROWN PLANTS ON SLOPE
NOT TO SCALE

NOTES:

1. BACKFILL PLANT PITS IN 12" COMPACTED LIFTS. THOROUGHLY WATER EACH LIFT WHILE PLANTING.
2. ROOT BALLS GREATER THAN 2" ø SHALL SIT ON A MOUND OF UNDISTURBED SOIL TO PREVENT SETTLEMENT.
3. ROOT BALLS SMALLER THAN 2" ø SHALL SIT ON COMPACTED PLANTING SOIL.
4. TOP OF ROOT BALL SHALL BE 1" TO 2" ABOVE FINISH GRADE.
5. PLANTING HOLE FOR ROOT BALL SIZES 2" ø AND LARGER SHALL BE 2" LARGER ON ALL SIDES THAN DIAMETER OF ROOT BALL.
6. PLANTING HOLE FOR ROOT BALL SIZES LESS THAN 2" ø SHALL BE TWICE THE DIAMETER OF THE ROOT BALL.



1 L-501 CONTAINER SHRUB PLANTING DETAIL
NOT TO SCALE

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
1060 Andrew Drive, Suite 140
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WILMINGTON, DE 19892
PHONE: (302) 429-8439

THIS DOCUMENT WAS PREPARED
BY:
STANTEC
TO:
AMTRAK

VEGATATIVE RESTORATION DETAILS
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 10.31.25
SCALE: AS NOTED
DESIGNED BY: RPV
FILE NO.: L-501
SHEET: 132 OF 135
REV: 0

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10/31/2025 1:52 PM

ORIGINAL SHEET - ARCH D

ID-24

ID-29

ID-19

ID-25

OUTFALL 005

INSTALL TEMPORARY SEDIMENT RISER ON EXISTING PIPES

TURBIDITY CURTAIN (TYP.)

TEMPORARY STONE APRON

FLARED END SECTION RIPRAP PROTECTION. SEE SHEET 123 FOR DETAILS.

FLARED END SECTION

STABILIZE WITH TEMPORARY SLOPE MATTING (I.E NORTH AMERICAN GREEN SC150BN OR EQUIVALENT APPROVED)

UWDD RESTORATION LOD = 65,848.66 SF (1.51 AC.)

REFER TO SHEET 111 FOR COVER RESTORATION

15' ACCESS ROAD FROM TOP OF SLOPE

PROPOSED 30" HDPE STORMWATER CONVEYANCE PIPES

JACK AND BORE 24" DIP PIPES MINIMUM 5 FT UNDER RAILROAD TRACK

OUTFALL 004

OUTFALL 004 STORMWATER BYPASS OPERATION

TANK

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

N

EROSION CONTROL LEGEND

- LIMIT OF DISTURBANCE
- 25 PROPOSED CONTOUR
- +45.45 EXISTING SPOT GRADE
- 25 EXISTING TOPOGRAPHIC CONTOUR
- SF SILT FENCE
- CFL COMPOST FILTER LOG
- SCE CONSTRUCTION ENTRANCE
- SM-S STABILIZATION MATTING-SLOPE
- UwA SOIL TYPE DESGINATION
- VC-T VEGETATED CHANNEL-TRI./TRAP.
- TURBIDITY CURTAIN
- IP INLET PROTECTION
- ROUTING FOR OUTFALL BYPASS SYSTEM
- TEMPORARY MATTING
- WL NONTIDAL WETLAND
- OHW/WL ORDINARY HIGH WATER/NONTIDAL WETLAND
- OHW ORDINARY HIGH WATER

Notes:

Field verification is required prior to implementation of any construction activity and in consultation with Amtrak Facility personnel.

NOTE:

PHASE 3D AREA OF DISTURBANCE = 65,848.66 SF OR 1.51 ACRES

REV	DATE	DESCRIPTION	APPROVED	BY

Stantec
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THIS DOCUMENT WAS PREPARED BY:
STANTEC
TO:
AMTRAK

PHASE 3D-UPPER WESTERN DRAINAGE DITCH EXCAVATION AND RESTORATION
FOR
AMTRAK WILMINGTON SHOPS REMEDIATION
FORMER FUELING FACILITY (DE-0266)
WILMINGTON MAINTENANCE FACILITY (DE-0170)
CITY OF WILMINGTON, NEW CASTLE COUNTY, DE

DATE: 09.11.25

SCALE: AS NOTED

DESIGNED BY: RPV

FILE NO.: XX

SHEET: 109 OF 134

REV: 0

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ORIGINAL SHEET - ARCH D

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? N/A ft.
      mean low water line? N/A ft.
   b. Non-tidal waters: ordinary high water line? 50 ft. Channelward ramp length
2. What is the area of fill that will be located: Ordinary
   a. on subaqueous land (channelward of ~~mean~~ high water) 935 sq. ft.
   b. on vegetated wetlands? N/A, nontidal sq. ft.
3. What is the source of the fill?
   X Hauled in from upland sources: What is the source company/location/parcel number? TBD
   _____ Obtained from dredged material: Complete Dredging Appendix.
4. What is the total volume of fill? 35 cubic yards
   a. What is the total fill per running foot of shoreline? 1.75 cubic yards ~20 LF (ramp width)
5. What method will be used to place the fill?

   Fill will be placed with excavator/dozer/tilt bed truck on top of geotextile.
6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   4" crushed stone over 6" stone over geotextile.
7. How will the fill be retained? Complete appropriate appendix.

   Stone will be placed over geotextile to prevent loss and removed following construction activities
8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   N/A, temporary stone fill. Area will return to submerged following dewatering and removal of stone haul ramp.
9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   A temporary stone haul ramp will be constructed on top of geotextile to haul contaminants from the stream bottom. Following construction the stone ramp will be moved in its entirety.