



July 5, 2023

Delaware Department of Natural Resources and Environmental Control
ATTN: Kimberly Cole
Delaware Coastal Programs
100 W. Water Street, Suite 7B
Dover, DE 19904

RE: Federal Coastal Zone Consistency Determination
BR 3-164 on SR36 Cedar Beach Road over Cedar Creek (T202007301)
Delaware Department of Transportation
JMT Job No. 20-01543-006

Dear Ms. Cole:

The Delaware Department of Transportation (DelDOT) is proposing the replacement of bridge BR 3-164, which carries SR36 (Cedar Beach Road) over Cedar Creek in Slaughter Beach, Sussex County, Delaware. The project area is located within the Coastal Zone of Delaware; therefore, DelDOT is requesting a Coastal Zone Consistency Determination for the proposed project. Please see below for a summary of the proposed project.

Project Description Summary

The proposed project consists of the replacement of the existing BR 3-164 bridge, which carries SR36 (Cedar Beach Road) over Cedar Creek in Slaughter Beach, Sussex County, Delaware (see attached Project Location Map). The existing structure is DelDOT's most active movable bridge. The structure has been subject to significant corrosion which has caused section loss and continuous maintenance issues. The project consists of replacing the existing bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span and reconstructing the approach spans as well as the approach roadway. The existing structure is three spans with an overall length of 77'-9". The center span is a 59'-0" bobtail swing span, which provides a 22'-0" wide navigation channel. The proposed structure will be on the same alignment and will have an overall length of 76'-3" with two 18'-6" precast slab spans and a 41'-0" Dutch bascule center span that will provide a 27'-0" wide navigation channel.

Replacement of the bridge will include demolition of the existing structure and substructures, pile driving, integral fender installation, new bridge span installation, roadway approach reconstruction, and other miscellaneous construction activities (see attached Project Plans). A barge will be used for specific construction activities as needed, but will not be the primary means of construction. The substructure work will be done within cofferdams. Turbidity curtains will be installed for any demolition, removal, or installation work conducted within the Cedar Creek Canal. The navigational channel of the Cedar Creek Canal will generally remain open for boat traffic during construction; however, short-term temporary

closures of the navigational channel will be required for certain construction activities. The proposed project and resulting closures to boaters are being coordinated with the U.S. Coast Guard (USCG).

Sediment and Stormwater Management

Sediment and Stormwater Management Plans for this project have been approved by DelDOT's Stormwater Engineer under DelDOT's delegated authority. Implementation of the approved plans will minimize erosion and sedimentation impacts during construction. The Erosion Control Plan (see attached) consists of silt fence along the limits-of-construction (LOC) in all areas where water is being impacted (as shown on the attached Environmental Compliance sheets), as well as in any area where water or wetlands exist within 20 feet of the LOC. Turbidity curtains and cofferdams are also proposed within the Cedar Creek Canal to prevent sedimentation in the watercourse during substructure work.

Cedar Creek Impacts

A DNREC Wetlands & Subaqueous Lands Permit and USACE Nationwide Permit (NWP) 23 with Preconstruction Notification (PCN) and Section 408 Authorization will be required for aquatic resource impacts resulting from the proposed bridge replacement activities. Proposed open water impacts to Cedar Creek include 2,540.46 square feet (0.0583 acres) of permanent impacts and 791.41 square feet (0.0182 acres) of temporary impacts.

No direct permanent impacts to DNREC-regulated tidal wetlands or federally regulated wetlands are proposed. Impacts to DNREC-regulated tidal wetlands are limited to approximately 2,114 square feet (0.0485 acres) of temporary impacts. No temporary impacts to federally regulated wetlands are proposed. Silt fence will be installed within portions of the LOC to minimize any adverse effects to wetlands that are potentially located outside of the LOC.

The BR 3-164 bridge is within the jurisdiction of the Delaware Bay Sector of the 5th Coast Guard District. There are no downstream barriers to navigation associated with the project location; therefore, a U.S. Coast Guard Bridge Permit will be required.

In addition to the project summary above, please find attached the following documents to aid in your determination for the proposed project:

- DCMP Fed Con Form v.2.0 (with Detailed Project Description attached)
- Project Location Map
- Topographic Map
- Aerial Map
- Project Plans
- USFWS Response Letter, dated August 17, 2022
- DNREC SCRPP Response Letter, dated January 6, 2023
- DNREC SCRPP/USFWS Coordination Correspondence, dated January 5, 2023
- NMFS GARFO PRD – ESA NLAA Concurrence, dated June 16, 2022
- NMFS GARFO HCD – EFH Consultation Concurrence, dated August 15, 2022
- USCG Bridge Permit Application (currently under review by USCG)

We kindly request your review of the enclosed information and look forward to the receipt of your findings. If you have any questions or need further information, please do not hesitate to contact me at 717-741-6243 or kaiosa@jmt.com.

Sincerely,



Kristin J. Aiosa
JMT, Senior Environmental Scientist

CC: File; DelDOT

Enclosures:

- DCMP Fed Con Form v.2.0 (with Detailed Project Description attached)
- Project Location Map
- Topographic Map
- Aerial Map
- Project Plans
- USFWS Response Letter, dated August 17, 2022
- DNREC SCRIP Response Letter, dated January 6, 2023
- DNREC SCRIP/USFWS Coordination Correspondence, dated January 5, 2023
- NMFS GARFO PRD – ESA NLAA Concurrence, dated June 16, 2022
- NMFS GARFO HCD – EFH Consultation Concurrence, dated August 15, 2022
- USCG Bridge Permit Application



Initial Review: _____
Updated On: _____
Complete: _____
Official Use Only

Coastal Zone Management Act Federal Consistency Form

This document provides the Delaware Coastal Management Program (DCMP) with a Federal Consistency Determination or Certification for activities regulated under the Coastal Zone Management Act of 1972, as amended, and NOAA's Federal Consistency Regulations, 15 C.F.R. Part 930. Federal agencies and other applicants for federal consistency are not required to use this form; it is provided to applicants to facilitate the submission of a Consistency Determination or Consistency Certification. In addition, federal agencies and applicants are only required to provide the information required by NOAA's Federal Consistency Regulations.

Project/Activity Name:	BR 3-164 on SR36 Cedar Beach Road over Cedar Creek (T202007301)
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I. Federal Agency or Non-Federal Applicant Contact Information:

Contact Name/Title: Anna Maria Smith / DelDOT Environmental Specialist Supervisor

Federal Agency Contractor Name (if applicable): _____

Federal Agency: U.S. Army Corps of Engineers

(either the federal agency proposing an action or the federal agency issuing a federal license/permit or financial assistance to a non-federal applicant)

Mailing Address: 800 South Bay Road

City: Dover State: DE Zip Code: 19901

E-mail: anna.smith@delaware.gov Telephone #: 302-760-2126

II. Federal Consistency Category:

- Federal Activity or Development Project (15 C.F.R. Part 930, Subpart C)
- Outer Continental Shelf Activity (15 C.F.R. Part 930, Subpart E)
- Federal Financial Assistance (15 C.F.R. Part 930, Subpart F)
- Federal License or Permit Activity (15 C.F.R. Part 930, Subpart D)
- Federal License or Permit Activity which occurs wholly in another state (interstate consistency activities identified in DCMP's Policy document)

III. Detailed Project Description (attach additional sheets if necessary):

See Attached.

IV. General Analysis of Coastal Effects (attach additional sheets if necessary):

The proposed project consists of the replacement of the existing BR 3-164 bridge over the Cedar Creek canal. Construction activities will be conducted in accordance with an approved Erosion Control Plan. Silt fence, cofferdams, and in-water turbidity curtains will be installed to minimize any impacts of erosion and sedimentation within Cedar Creek, as well as adjacent aquatic resources located outside of the LOC. The navigational channel of Cedar Creek will generally remain open to boat traffic during construction; however, temporary closures of the navigational channel will be required. Minimal impacts to coastal resources are anticipated during the bridge replacement activities. Please see below for further description of how the proposed project impacts Coastal Resource Management Policies.

V. Detailed Analysis of Consistency with DCMP Enforceable Policies (attach additional sheets if necessary):

Policy 5.1: Wetlands Management

No direct permanent impacts to DNREC-regulated tidal wetlands or federally regulated wetlands are proposed. Impacts to DNREC-regulated tidal wetlands are limited to approximately 0.0485 acres of temporary impacts, which will be permitted under a Wetlands and Subaqueous Lands Permit. No temporary impacts to federally regulated wetlands are proposed. Silt fence will be installed within portions of the LOC to minimize any adverse effects to wetlands that are potentially located outside of the LOC.

Policy 5.2: Beach Management

The proposed project does not occur within or near a beach area defined in Section 5.2.3; therefore, Policy 5.2 does not apply to this project.

Policy 5.3: Coastal Waters Management (includes wells, water supply, and stormwater management. Attach additional sheets if necessary)

This project is covered under an NPDES General Permit for Construction. Under the General Permit, compliance with DeIDOT's approved Sediment and Stormwater Management Plans will constitute compliance with the NPDES Industrial Permitting requirements for this project. The proposed stormwater and sediment control measures will minimize any adverse effects to the water quality in the Cedar Creek Canal.

Policy 5.4: Subaqueous Land and Coastal Strip Management

The proposed project involves the replacement of an existing bridge over Cedar Creek Canal, which is a watercourse that would be covered under Delaware's Regulations Governing the Use of Subaqueous Lands. A Wetlands and Subaqueous Lands Permit will be obtained for the project. The project will not result in any land use changes and is not anticipated to result in any adverse impacts to subaqueous lands.

Policy 5.5: Public Lands Management

This project does not occur on or in the vicinity of state public lands; therefore, Policy 5.5 does not apply to this project.

Policy 5.6: Natural Lands Management

This project does not occur on or in the vicinity of any lands designated as natural preserves, and is not located within the Inland Bays Watersheds; therefore, Policy 5.6 does not apply to this project.

Policy 5.7: Flood Hazard Areas Management

The proposed project occurs within a FEMA-designated 100-Year Floodplain (Zone VE) of Cedar Creek and the Delaware Bay. No increases to the 100-Year water surface elevation are anticipated to result from the bridge replacement. The project is consistent with the applicable Flood Hazard Areas Management policies.

Policy 5.8: Port of Wilmington

This project is not located in an area that would impact the Port of Wilmington operations; therefore, Policy 5.8 does not apply to this project.

Policy 5.9: Woodlands and Agricultural Lands Management

The project will not involve impacts to woodlands or agricultural lands; therefore, Policy 5.9 does not apply to this project.

Policy 5.10: Historic and Cultural Areas Management

Based on current coordination, this project is clear for cultural resources and exempt from SHPO review under Stipulation III of DeIDOT's Programmatic Agreement with Federal Highways Administration (FHWA) and the Delaware State Historic Preservation Office (SHPO). DeIDOT Cultural Resource staff have issued a finding of No Historic Properties Affected for this project, and there are no cultural resource concerns.

Policy 5.11: Living Resources

Based on coordination with USFWS and DNREC SCRIP, no impacts to state-rare or federally listed species under USFWS jurisdiction are anticipated. Based on coordination with NMFS, the project is not likely to adversely affect ESA-listed species or critical habitat under NMFS jurisdiction, and is consistent with the programmatic EFH consultation. An in-stream work restriction period of March 1 through June 30 will be required for protection of fisheries of state concern. Per the DNREC SCRIP, avoidance measures and/or additional surveys and coordination may be required regarding potential impacts to migratory birds. Please see the attached USFWS, NMFS, and DNREC SCRIP coordination for additional details. The proposed project is consistent with the applicable Living Resources Management Policies.

Policy 5.12 Mineral Resources Management

No impacts to mineral resources are anticipated; therefore, Policy 5.12 does not apply to this project.

Policy 5.13: State Owned Coastal Recreation and Conservation

There are no state-owned coastal recreation areas associated with this project; therefore, Policy 5.13 does not apply to this project.

Policy 5.14: Public Trust Doctrine

Cedar Creek is a stream where the tide ebbs and flows; however, the replacement of Bridge 3-164 will not result in any long-term changes to public access to the stream. Access to the portion of Cedar Creek within the vicinity of the bridge will be temporarily impacted during construction. The width of the navigational channel opening beneath the bridge will be increased from 22 feet to 27 feet, thereby improving safety for boat traffic.

Policy 5.15: Energy Facilities

This project does not involve any energy facilities; therefore, Policy 5.15 does not apply to this project.

Policy 5.16: Public Investment

The proposed project is federally funded by the FHWA. No funding is being provided by the Delaware Water Pollution Control Revolving Fund (SRF); therefore, Policy 5.16 does not apply to this project.

Policy 5.17: Recreation and Tourism

This project is not based on recreation or tourism; therefore, Policy 5.17 does not apply to this project.

Policy 5.18: National Defense and Aerospace Facilities

No National defense or aerospace facilities are associated with this project; therefore, Policy 5.18 does not apply to this project.

Policy 5.19: Transportation Facilities

The project involves the replacement of an existing bridge on a state highway (SR36) due to continuous maintenance and safety issues. The project is consistent with the applicable Transportation Facilities policies.

Policy 5.20: Air Quality Management

Sussex County, Delaware is currently classified as non-attainment for the 8-hour Ozone NAAQS.

Construction activities will include the use of heavy machinery; however, short-term emissions of construction equipment will be minimal and are generally accounted for in the State Implementation Plan.

Policy 5.21: Water Supply Management

This project does not involve water withdrawals, well construction, or other activities related to water supply; therefore, Policy 5.21 does not apply to this project.

Policy 5.22: Waste Disposal Management

This bridge replacement project does not involve waste disposal management activities; therefore, Policy 5.22 does not apply to this project.

Policy 5.23: Development

This project does not involve new development; therefore, Policy 5.23 does not apply to this project.

Policy 5.24: Pollution Prevention

Pollution prevention will be incorporated into the construction activities when feasible.

Policy 5.25: Coastal Management Coordination

DeIDOT is actively coordinating with other state and federal agencies regarding the bridge replacement project, as needed. Additional permits and authorizations to be obtained include a USACE NWP #23 for Approved Categorical Exclusions and Section 408 Authorization, DNREC Wetlands and Subaqueous Lands Permit, DNREC Water Quality Certification, Sussex County Floodplain Review, and USCG Bridge Permit.

VI. JPP and RAS Review (Check all that apply):

Has the project been reviewed in a monthly Joint Permit Processing and/or Regulatory Advisory Service meeting?

- JPP
- RAS
- None

*If yes, provide the date of the meeting(s): _____

VII. Statement of Certification/Determination and Signature (Check one and sign below):

FEDERAL AGENCY CONSISTENCY DETERMINATION. Based upon the information, data, and analysis included herein, the federal agency, or its contracted agent, listed in (I) above, finds that this proposed activity is consistent to the maximum extent practicable with the enforceable policies of the Delaware Coastal Management Program.

OR

FEDERAL AGENCY NEGATIVE DETERMINATION. Based upon the information, data, and analysis included herein, the federal agency, or its contracted agent, listed in (I) above, finds that this proposed activity will not have any reasonably foreseeable effects on Delaware's coastal uses or resources (Negative Determination) and is therefore consistent with the enforceable policies of the Delaware Coastal Management Program.

OR

NON-FEDERAL APPLICANT'S CONSISTENCY CERTIFICATION. Based upon the information, data, and analysis included herein, the non-federal applicant for a federal license or permit, or state or local government agency applying for federal funding, listed in (I) above, finds that this proposed activity complies with the enforceable policies of the Delaware Coastal Management Program and will be conducted in a manner consistent with such program.

Signature:	<i>Anna Maria Smith</i>	
Printed Name:	Anna Maria Smith	Date: 1/25/2023

Pursuant to 15 C.F.R. Part 930, the Delaware Coastal Management Program must provide its concurrence with or objection to this consistency determination or consistency certification in accordance with the deadlines listed below. Concurrence will be presumed if the state's response is not received within the allowable timeframe.

Federal Consistency Review Deadlines:

Federal Activity or Development Project (15 C.F.R. Part 930, Subpart C)	60 days with option to extend an additional 15 days or stay review (15 C.F.R. § 930.41)
Federal License or Permit (15 C.F.R. Part 930, Subpart D)	Six months, with a status letter at three months. The six month review period can be stayed by mutual agreement. (15 C.F.R. § 930.63)
Outer Continental Shelf Activity (15 C.F.R. Part 930, Subpart E)	Six months, with a status letter at three months. If three month status letter not issued, then concurrence presumed. The six month review period can be stayed by mutual agreement. (15 C.F.R. § 930.78)
Federal Financial Assistance to State or Local Governments (15 C.F.R. Part 930, Subpart F)	State Clearinghouse schedule

OFFICIAL USE ONLY:

Reviewed By:	Fed Con ID:	Date Received:
Public notice dates: _____ to _____	Comments Received: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <i>[attach comments]</i>	
Decision type: <small>(objections or conditions attach details)</small>	Decision Date: _____	



Detailed Project Description

The proposed project involves the replacement of bridge BR 3-164, which carries SR36 (Cedar Beach Road) over Cedar Creek in Slaughter Beach, Sussex County, Delaware. The existing structure is DelDOT's most active movable bridge. The structure has been subject to significant corrosion which has caused section loss and continuous maintenance issues.

The project consists of replacing the current bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span and reconstructing the approach spans as well as the approach roadway. The existing structure is three spans with an overall length of 77'-9". The center span is a 59'-0" bobtail swing span, which provides a 22'-0" wide navigation channel. The proposed structure will be on the same alignment and will have an overall length of 76'-3" with two 18'-6" precast slab spans and a 41'-0" Dutch bascule center span that will provide a 27'-0" wide navigation channel.

Work associated with the proposed project will include demolition of the existing structure and substructures; installation of new piers, abutments, and fenders; placement of riprap for protection of the Cedar Creek canal bed; construction of a new control house; utility relocation; construction of the new flanking bridge spans; construction of the new movable bascule span and associated structural elements; and roadway approach reconstruction. Please see the attached plans for a detailed sequence of construction.

A barge will be used for specific construction activities as needed, but will not be the primary means of construction. The substructure work will be done within cofferdams. Turbidity curtains will be installed for any demolition, removal, or installation work conducted within the stream. The navigational channel of the Cedar Creek canal will generally remain open for boat traffic during construction; however, temporary closures of the navigational channel will be required. The proposed project and resulting closures to boaters are being coordinated with the U.S. Coast Guard (USCG), and a USCG Bridge Permit will be obtained. Construction activities requiring temporary closures of the navigational channel may include, but are not limited to, the following:

- Removal of existing bobtail swing structure on a barge
- Delivery of A-frame tower assemblies on a barge for bascule leaf erection
- Erection and alignment of bascule leaf on jacks and blocking at bascule and rest pier
- Erection and alignment of balance frame heel assembly
- Erection and alignment of balance frame toe assembly

Sediment and Stormwater Management Plans for this project have been approved by DelDOT's Stormwater Engineer under DelDOT's delegated authority. Implementation of the approved plans will minimize erosion and sedimentation impacts during construction. The Erosion Control Plan (see attached) consists of silt fence along the limits-of-construction (LOC) in all areas where water is being impacted (as shown on the attached Environmental Compliance sheets), as well as in any area where water or wetlands exist within 20 feet of the LOC.



DelDOT is in the process of obtaining the following permits and authorizations for the proposed project:

- USACE NWP #23 for Approved Categorical Exclusions, with Section 408 Authorization
- DNREC Wetlands and Subaqueous Lands Permit
- DNREC Water Quality Certification
- Sussex County Floodplain Review
- USCG Bridge Permit

According to NOAA's Section 7 Mapper, there are Atlantic and shortnose sturgeon mapped 0.20 river miles downstream of the project area. There are no downstream barriers associated with this project; therefore, DelDOT will assume the NWP G-6(b) time of year restriction applies. DelDOT coordinated with NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Protected Resources Division (GARFO PRD) and Habitat Conservation Division (GARFO HCD) regarding ESA-listed species and Essential Fish Habitat (EFH) under NMFS jurisdiction, respectively. On June 16, 2022, the GARFO PRD concurred with DelDOT's determination that the proposed project complies with all applicable Project Design Criteria (PDCs) and is not likely to adversely affect listed species or critical habitat. On August 15, 2022, the GARFO HCD concurred with DelDOT's determination that the proposed project is consistent with the programmatic EFH consultation.

Based on a response letter from the USFWS dated August 17, 2022, the proposed project will have "no effect" on federally endangered, threatened, or candidate species. Therefore, no further Section 7 consultation with the U.S. Fish and Wildlife Service is required. In order to keep agency response documents updated for the permitting process, the USFWS and DNREC SCRCP were contacted on January 5, 2023 for updated coordination.

Based on a response letter from the DNREC Species Conservation and Research Program (SCRCP) dated January 6, 2023, there are no known records of state-rare or federally listed plants, animals, or natural communities at the project site. It was noted that BR 3-164 has not been surveyed for the presence of nesting migratory birds. It is possible that barn swallow (*Hirundo rustica*) and/or Eastern phoebe (*Sayornis phoebe*) nest under the bridge. Additional surveys for migratory birds and/or avoidance measures may be required. DelDOT will conduct additional coordination regarding migratory birds as the project progresses.

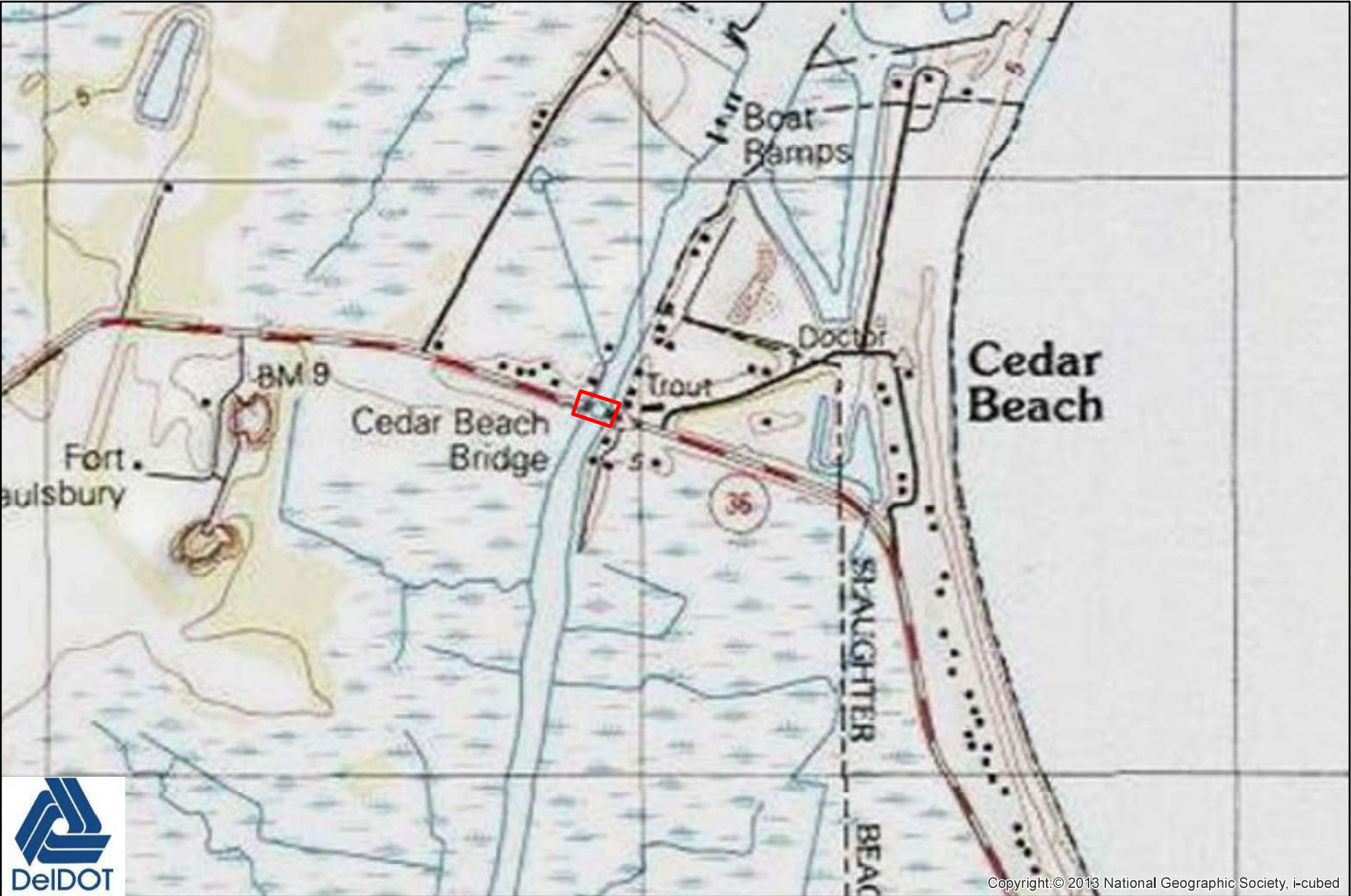
Fisheries data from DNREC SCRCP indicated that Cedar Creek provides spawning habitat for anadromous species including blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), and white perch (*Morone americana*). The blueback herring and alewife are listed as Species of Concern by the National Marine Fisheries Service (NMFS). In addition, Cedar Creek is used by large numbers of American eel (*Anguilla rostrata*). To protect these fisheries, a combined time of year restriction on in-water work activities will be required from March 1st through June 30th.

Replacement of BR 3-164 on SR36 Cedar Beach Road (T202007301)

Location Map



Replacement of BR 3-164 on SR36 Cedar Beach Road (T202007301)
Topographic Map



Replacement of BR 3-164 on SR36 Cedar Beach Road (T202007301)
Aerial Map



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ADDENDUM PREPARED BY DELDOT - TRANSPORTATION SOLUTIONS XXXXXXXXXXXXXXXXXXXXXXXX		
THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM #X: XX, XX-XX, XX	DATE	SEAL

REVISION PREPARED BY HARDESTY & HANOVER XXXXXXXXXXXXXXXXXXXXXXXX		
THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER REVISION #X: XX, XX-XX, XX	DATE	SEAL

INDEX OF SHEETS		
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ADDENDA / REVISIONS				REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD		FINAL PLANS		ADDENDUM AND REVISION AND INDEX OF SHEETS		
						CONTRACT	BRIDGE NO.	3-164	SECTION	AEC
						T202007301	DESIGNED BY:	G. CORREALE	SHEET NO.	2
						COUNTY	SUSSEX	CHECKED BY:	G. PERDICK	

MANMADE ROADSIDE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD - STEEL POLE	⊙		
BOLLARD - WOOD POST	⊠		
CURB, TYPE 1 AND TYPE 3	=====	=====	
CURB, TYPE 2	CURB, TYPE "A"	=====	(C 234)
CURB & GUTTER, TYPE 1	=====	=====	
CURB & GUTTER, TYPE 2	=====	=====	
CURB & GUTTER, TYPE 3	C&G, TYPE "A"	=====	
CURB OPENING - SUMP / ON GRADE			(C 235)
CURB OPENING WITH SIDEWALK			(C 236)
FENCE - CHAINLINK OR STRANDED	-----	-----	
FENCE - STOCKADE OR SPLIT RAIL	-----	-----	
FLAG POLE	F.P.		
GUARDRAIL - STEEL BEAM, TYPE 1	-----	-----	
GUARDRAIL - STEEL BEAM, TYPE 2	-----	-----	
GUARDRAIL - STEEL BEAM, TYPE 3	-----	-----	
GUARDRAIL - WIRE ROPE	-----	-----	
GUARDRAIL - END ANCHORAGE			(SR 237)
GUARDRAIL - END TREATMENT, TYPE 1			
GUARDRAIL - END TREATMENT, TYPE 2			
GUARDRAIL - END TREATMENT, TYPE 3			
GUARDRAIL - IMPACT ATTENUATOR			
LAMP AND POST - RESIDENTIAL	LAMP		
MAILBOX	MB	MP	
PARKING METER AND POST	P.M.		
PAVEMENT - FLEXIBLE	-----	-----	
PAVEMENT - RIGID	-----	-----	
PILE - BRIDGE	□		
PILLAR OR MISCELLANEOUS POST	○		
TRAFFIC SIGN AND POST	T	T	
WALL - BRICK OR BLOCK	=====	=====	
WALL - STONE	=====	=====	

DRAINAGE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BIOFILTRATION SWALE		← BFS →	
DITCH OR STREAM CENTERLINE	-----	-----	
DIRECTIONAL STREAM FLOW ARROW	→		
DRAINAGE INLET		■	(SR 238)
DRAINAGE JUNCTION BOX		■	(SR 239)
DRAINAGE MANHOLE	⊙	●	(SR 240)
DRAINAGE PIPE AND FLOW ARROW	=====	=====	(SR 241)
DRAINAGE PIPE HEADWALL			
FLARED END SECTION			(SR 242)
RIPRAP - AREA FEATURE			(SR 243)
RIPRAP - LINEAR FEATURE		-----	
SAFETY END SECTION			(SR 244)
UNDERDRAIN		-----	(SR 245)
UNDERDRAIN OUTLET		-----	(SR 246)
STONE INFILTRATION BMP		← S-BMP →	
TIDAL FLOW ARROW	↔		

UTILITY FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	
CABLE TV DISTRIBUTION BOX			
COMMUNICATIONS - UNDERGROUND	----- COMM	----- COMM	
ELECTRIC - UNDERGROUND	----- E	----- E	
ELECTRIC MANHOLE	⊙		
ELECTRIC METER			
ELECTRIC TRANSFORMER			
GAS - UNDERGROUND	----- G	----- G	
GAS MANHOLE	⊙		
GAS METER			
GAS VALVE	G.V.		
GAS PUMP - SERVICE STATION			
IRRIGATION - UNDERGROUND	----- IRI	----- IR	
ITMS - UNDERGROUND	----- ITMS	----- ITMS	
LIGHTING - UNDERGROUND	----- LI	----- LI	
LUMINAIRE - POLE MOUNTED			
MANHOLE - UNDETERMINED OWNER	⊙		
RAILROAD TRACKS	=====	=====	
SANITARY - UNDERGROUND	----- S	----- S	
SANITARY SEWER MANHOLE	⊙		
SANITARY SEWER VALVE			
SANITARY SEWER CLEANOUT OR VENT	S.C.V.		
SEPTIC DRAIN FIELD			
SIGNALIZATION - UNDERGROUND	----- SIG	----- SIG	
SOIL BORING LOCATION			
TELEPHONE BOOTH			
TELEPHONE MANHOLE	⊙		
TELEPHONE TEST POINT			
TRAFFIC - CONDUIT JUNCTION WELL			
TRAFFIC - LIGHT POLE AND BASE	⊙		
TRAFFIC - PEDESTRIAN POLE & BASE	⊙	●	
TRAFFIC - SIGNAL CABINET & BASE			
TRAFFIC - SIGNAL POLE AND BASE	⊙	⊙	
UTILITY BOX			
UTILITY POLE GUY WIRE ANCHOR	→	→	
UTILITY POLE	⊙	⊙	
UTILITY TEST HOLE LOCATION			
WATER - UNDERGROUND	----- W	----- W	
WATER - FIRE HYDRANT	F.H.	F.H.	
WATER METER			
WATER VALVE			
WELL HEAD			

PAVEMENT SECTION(S)	
OVERLAY PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS	
RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS	
DRIVEWAY AND ENTRANCE PAVEMENT - SEE NOTES FOR MATERIALS AND DEPTHS	

NATURAL ROADSIDE FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET		
MARSH BOUNDARY LINE	-----	
TREE - CONIFEROUS		
TREE - DECIDUOUS		
TREE STUMP		
SHRUBBERY		
WETLAND BOUNDARY - DELINEATED	-----	
WOODS LINE BOUNDARY	-----	

RIGHT-OF-WAY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
DENIAL OF ACCESS	----- DA	----- DA
EASEMENT - OTHERS	----- EASEMENT TYPE	
PERMANENT EASEMENT	----- PE	----- PE
PROPERTY LINE	-----	
PROPERTY MARKER - CONCRETE	C.M.	■
PROPERTY MARKER - IRON PIPE	I.P.	
RIGHT-OF-WAY BASELINE	100+00	100+00
RIGHT-OF-WAY LINE	----- R/W	----- R/W
RIGHT-OF-WAY & DENIAL OF ACCESS	R/W-DA	R/W-DA
RIGHT-TO-ENTER	----- RTE	----- RTE
TEMPORARY CONSTRUCTION EASEMENT	----- TCE	----- TCE

SURVEY CONTROL & MONUMENTATION	
FEATURE DESCRIPTION	EXISTING
POINT OF CURVATURE OR TANGENCY	⊙
POINT OF INTERSECTING TANGENTS	⊙
SURVEY BENCHMARK LOCATION	B.M.
SURVEY NGS POINT LOCATION	⊙
SURVEY TIE POINT LOCATION	T.P.
SURVEY TRAVERSE POINT	△

MISCELLANEOUS FEATURES	
FEATURE DESCRIPTION	PROPOSED
BARRIER, DOUBLE-FACED, PERMANENT	
BARRIER, SINGLE-FACED, PERMANENT, TEST LEVEL 1 / TEST LEVEL 2	
BRICK PATTERNED SURFACE	
BUTT JOINT	
CLEAR ZONE	----- CZ
CONSTRUCTION BASELINE	100+00
LATERAL OFFSET	----- LO
LIMIT OF CONSTRUCTION	----- LOC
PAVEMENT PATCH	
PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH	
P.C.C. SIDEWALK - 4"	
P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)	

IDENTIFIERS	
FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	(SR 247)
ABANDON BY OTHERS	(SR 248)
ADJUST BY CONTRACTOR	(SR 249)
ADJUST BY OTHERS	(SR 250)
BEST MANAGEMENT PRACTICE	(SR 251)
BUS STOP PAD / TYPE	(SR 252)
BUS STOP WITH SHELTER PAD / TYPE	(SR 253)
CONCRETE SAFETY BARRIER	(SR 254)
CONVERT TO JUNCTION BOX	(SR 255)
CONVERT TO DRAINAGE MANHOLE	(SR 256)
DO NOT DISTURB	(SR 257)
ENERGY DISSIPATOR	(SR 258)
FILL WITH FLOWABLE FILL	(SR 259)
LANDSCAPE PLANTINGS	(SR 260)
PEDESTRIAN CONNECTION / TYPE	(SR 261)
PEDESTRIAN CONNECTION / TYPE WITHOUT DETECTABLE WARNING SYSTEM	(SR 262)
RELOCATE BY CONTRACTOR	(SR 263)
RELOCATE BY OTHERS	(SR 264)
RELOCATE BY PROPERTY OWNER	(SR 265)
REMOVE BY CONTRACTOR	(SR 266)
REMOVE BY OTHERS	(SR 267)
REMOVE BY TRAFFIC CONTRACTOR	(SR 268)
RIGHT-OF-WAY MONUMENT	(SR 269)

ITMS	
FEATURE DESCRIPTION	PROPOSED
ITMS CONDUIT	----- ITMS-COW
CONDUIT JUNCTION WELL	■
RWS PUCK SENSOR	
MICROWAVE DETECTOR	
CCTV CAMERA	
POLE/POLE BASE	○
ITMS CABINET	■
RWS	

ADDENDA / REVISIONS

NOT TO SCALE

REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

LEGEND

SECTION	AEC
SHEET NO.	3

GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED JUNE 2021 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2021, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
- ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR AT ADVERTISEMENT, INCLUDE:

()	NONE
(X)	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
(X)	ALL PLAN SHEETS, IN PDF FORMAT.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY" OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

- PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

(X)	CROSS SECTIONS
(X)	RIGHT-OF-WAY PLANS

PROJECT NOTES

SECTION 100

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.
- NIGHT WORK IS NOT PERMITTED ON THIS PROJECT UNLESS THE CONTRACTOR OBTAINS: APPROVAL FROM THE ENGINEER, ACCEPTABLE RESPONSES ON NIGHT WORK SURVEYS, AND ACCEPTANCE FROM THE MUNICIPALITY. METHOD AND FORMAT OF NIGHT WORK SURVEYS WILL BE PROVIDED BY THE ENGINEER UPON REQUEST. NIGHT WORK, SURVEYS, AND COORDINATION WITH MUNICIPALITIES IS NOT COMPENSABLE AND THE TIME TO COMPLETE THE SURVEYS IS NOT EXCUSABLE.

SECTION 200

- THE CONTRACTOR SHALL REMOVE AND RESET ALL MAILBOXES TO MAINTAIN MAIL SERVICE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RELOCATE MAILBOXES AS REQUIRED BY THE PROPOSED GEOMETRICS AND AS DIRECTED BY THE ENGINEER. WHEN RELOCATING MAILBOXES IN CURBED SECTIONS, THE FACE OF THE MAILBOX SHALL BE FLUSH WITH THE BACK EDGE OF CURB. WHEN RELOCATING MAILBOXES IN OPEN SECTIONS, THE FACE OF THE MAILBOX SHALL SET BACK 8 INCHES FROM THE EDGE OF THE PAVED SHOULDER. THE BOTTOM OF THE MAILBOX SHALL BE POSITIONED IN ACCORDANCE WITH THE LATEST VERSION OF THE UNITED STATES POSTAL SERVICE GUIDELINES. MAILBOXES LOCATED AT DRIVEWAY ENTRANCES SHALL BE PLACED ON THE FAR SIDE OF THE DRIVEWAY IN THE DIRECTION OF TRAVEL. POSTS BEING RESET IN CONCRETE SIDEWALK SHALL BE IN AN APPROPRIATE SIZE PVC SLEEVE. ACCEPTABLE POSTS SHALL BE 4 INCH X 4 INCH OR 4 INCH DIAMETER WOOD POSTS, 4.5 INCH DIAMETER WOOD POSTS, AND 2 INCH DIAMETER STEEL PIPES. FOR RELOCATING MULTIPLE MAILBOXES TOGETHER ALL POSTS SHALL BE SEPARATED BY A DISTANCE OF NO LESS THAN 3/4 OF THEIR FULL HEIGHT ABOVE THE GROUND. MULTIPLE MAILBOXES ATTACHED TO A SINGLE HORIZONTAL BOARD SHALL NOT BE LOCATED INSIDE THE CLEAR ZONE. EACH MAIL BOX SHALL BE PLACED ON AN INDIVIDUAL POST MEETING THE CRITERIA ABOVE. ALL MAILBOXES SHALL BE SET NOT TO IMPEDE THE MINIMUM PAR (PEDESTRIAN ACCESS ROUTE) WIDTH AS DETERMINED BY THE CURRENT EDITION OF THE PEDESTRIAN ACCESSIBILITY STANDARDS FOR FACILITIES IN THE PUBLIC RIGHT OF WAY. IF MAILBOXES ARE NOT SET IN ACCORDANCE WITH THE ABOVE DIRECTIONS, RESETTING OF THE MAILBOXES WILL BE AT THE COST OF THE CONTRACTOR. COST FOR ALL WORK AND MATERIALS SHALL BE PAID UNDER ITEM 210000 - CLEARING AND GRUBBING.
- ITEMS TO BE REMOVED UNDER ITEM 210000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
 - POLES AND BASES.
 - GUARDRAIL.
- ITEMS TO BE REMOVED UNDER ITEM 211505 - REMOVAL OF EXISTING BRIDGE SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
 - WOOD DECK.
 - FENDERS.
 - REMAINING BRIDGE COMPONENTS.
 - CONTROL HOUSE.

- UNLESS OTHERWISE NOTED AS DO NOT DISTURB OR ADJUST BY CONTRACTOR/OTHERS, ALL EXISTING FEATURES, INCLUDING TREES, WITHIN THE PROPOSED LOC SHALL BE REMOVED BY THE CONTRACTOR AND PAID FOR UNDER THE RESPECTIVE BID ITEM. REMOVAL OF EXISTING STORM DRAIN PIPE SHALL BE PAID UNDER ITEM 202000 UNLESS NOTED WITH A FLOWABLE FILL IDENTIFIER. REMOVAL OF TREES AND SHRUBS SHALL BE PAID FOR UNDER 201000, AND REMOVAL OF ADDITIONAL EXISTING FEATURES SHALL BE PAID FOR UNDER ITEM 210000 AS NOTED IN SECTION 200 OF THE PROJECT NOTES.
- ONLY EXISTING FEATURES WITHIN THE LOC IDENTIFIED WITH REMOVE BY CONTRACTOR OR BY OTHER METHODS ARE TO BE REMOVED OR DISTURBED.

SECTION 400

- THE PAVEMENT SECTION FOR FLEXIBLE PAVEMENT RESIDENTIAL DRIVEWAYS SHALL BE 2" BITUMINOUS CONCRETE, TYPE 'C' OVER 8" GRADED AGGREGATE BASE COURSE, TYPE 'B', UNLESS OTHERWISE NOTED ON THE PLANS.

SECTION 600

- STATION AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED TO THE CENTER OF THE GRATE FOR INLETS AND TO THE CENTER OF THE STRUCTURE FOR JUNCTION BOXES AND MANHOLES.

SECTION 700

- ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT.

SECTION 900

- THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

- THE CONTRACTOR SHALL NOTIFY DART FIRST STATE AT DOT_DETOURS@DELAWARE.GOV AT LEAST 14 DAYS PRIOR TO THE START OF ANY DETOURS OR CONSTRUCTION, AND DOT_DTC_PROJECTDEVELOPMENT@DELAWARE.GOV AT SUCH TIME THE FACILITY IS COMPLETED AND OPERABLE FOR TRANSIT OPERATIONS. FOR EMERGENCY DETOUR INFORMATION ONLY, PLEASE CONTACT DTC'S CHIEF SCHEDULER AT 302-576-6019.
- ALL DART SIGNS HAVE BEEN UPDATED TO A NEW DESIGN. THE DELDOT SIGN SHOP DOES NOT FABRICATE THE UPDATED SIGN OR ANY SUPPLEMENTAL PLAQUES TO ALLOW FOR ADDITIONAL ROUTE NUMBERS. ALL REQUESTS FOR FABRICATION OF THESE SIGNS MUST BE MADE THROUGH DART TRANSIT AT 302-576-6132.
- ANY STAGING AND/OR STOCKPILE AREA(S) OUTSIDE THE PROJECT'S LIMIT OF CONSTRUCTION (LOC) THAT INDIVIDUALLY OR CUMULATIVELY ARE LARGER THAN 10,000 SQUARE FEET, MUST BE APPROVED BY DELDOT'S ARCHAEOLOGIST. CONTACT THE CONSTRUCTION AREA ENGINEER WHO WILL COORDINATE WITH DELDOT'S ARCHAEOLOGIST.

WITHIN 30 DAYS, DELDOT WILL:

- APPROVE THE USE OF PROPOSED STAGING AND STOCKPILE AREA(S);
- REJECT THE REQUEST; OR
- PERFORM AN ARCHAEOLOGICAL SURVEY TO DETERMINE WHETHER TO APPROVE OR REJECT THE REQUEST, WHICH MAY TAKE UP TO 3 MONTHS. IF AN ARCHAEOLOGICAL SURVEY IS NECESSARY, DELDOT OR A CONSULTANT ON ITS BEHALF WILL UNDERTAKE THE SURVEY.

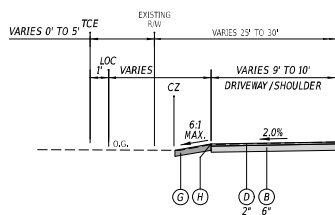
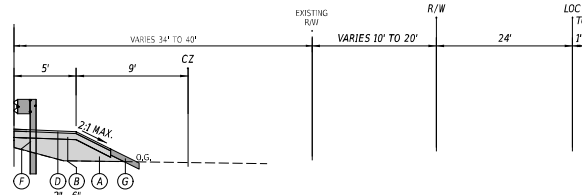
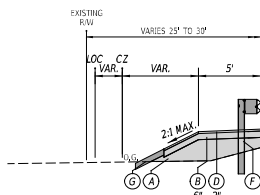
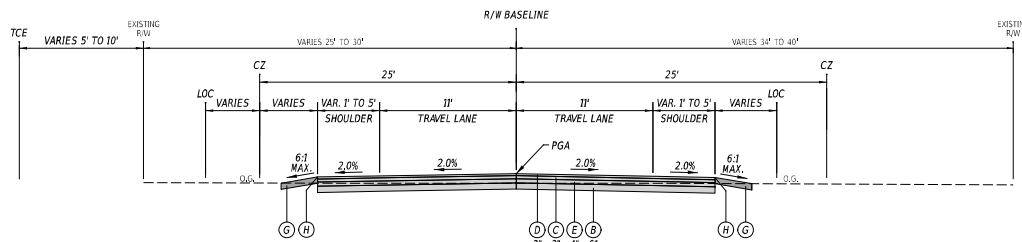
EARTHWORK SUMMARY	
EXCAVATION	
EXCAVATION FROM CROSS SECTIONS	1567 C.Y.
ROCK EXCAVATION FOR ROADWAY AND TRENCHES	0 C.Y.
TOPSOIL STRIPPING	0 C.Y.
TOTAL EXCAVATION	1567 C.Y.
EXCAVATION AVAILABLE FOR EMBANKMENT	
EXCAVATION MEETING BORROW TYPE 'A'	0 C.Y.
EXCAVATION MEETING BORROW TYPE 'F'	0 C.Y.
EXCAVATION MEETING TOPSOIL	0 C.Y.
EMBANKMENT REQUIREMENTS	
BORROW TYPE 'A' REQUIRED (INCLUDING UNDERCUT)	+612 C.Y.
BORROW TYPE 'F' REQUIRED	11 C.Y.
TOPSOIL REQUIRED	200 C.Y.
MATERIAL BALANCE ('+'= EXCESS, '-'= NEED)	
BORROW TYPE 'A'	-612 C.Y.
BORROW TYPE 'F'	-11 C.Y.
TOPSOIL	-200 C.Y.
UNSUITABLE MATERIAL	+1567 C.Y.
NOTES:	
1) THE VALUES LISTED IN THE EARTHWORK SUMMARY ARE APPROXIMATE AND ARE NOT TO BE USED AS A BASIS OF PAYMENT. THE EARTHWORK SUMMARY IS CONSIDERED FOR INFORMATIONAL PURPOSES ONLY.	
2) OTHER SOURCES OF EXCAVATION MAY INCLUDE PIPE TRENCH EXCAVATION, STRUCTURE EXCAVATION, UNDERCUT EXCAVATION, STORMWATER MANAGEMENT POND EXCAVATION, ENVIRONMENTAL SITE EXCAVATION, MAINTENANCE OF TRAFFIC EXCAVATION, ETC.	
3) UNSUITABLE MATERIALS INCLUDE UNDERCUT SOILS, BITUMINOUS PAVEMENT, ETC.	

FINAL PLANS

ADDENDA / REVISIONS	NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	<table border="1"> <tr> <td>CONTRACT</td> <td>BRIDGE NO.</td> <td>3-164</td> </tr> <tr> <td>T202007301</td> <td>DESIGNED BY:</td> <td>G. CORREALE</td> </tr> <tr> <td>COUNTY</td> <td>CHECKED BY:</td> <td>G. PERDICK</td> </tr> <tr> <td>SUSSEX</td> <td></td> <td></td> </tr> </table>	CONTRACT	BRIDGE NO.	3-164	T202007301	DESIGNED BY:	G. CORREALE	COUNTY	CHECKED BY:	G. PERDICK	SUSSEX			<table border="1"> <tr> <td>SECTION</td> </tr> <tr> <td>AEC</td> </tr> <tr> <td>SHEET NO.</td> </tr> <tr> <td>4</td> </tr> </table>	SECTION	AEC	SHEET NO.	4
CONTRACT	BRIDGE NO.	3-164																		
T202007301	DESIGNED BY:	G. CORREALE																		
COUNTY	CHECKED BY:	G. PERDICK																		
SUSSEX																				
SECTION																				
AEC																				
SHEET NO.																				
4																				
			NOTES																	

LEGEND

- (A) ITEM 209006 - BORROW, TYPE F
- (B) ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE B
- (C) ITEM 401014 - SUPERPAVE TYPE B, PG 64-22
- (D) ITEM 401044 - SUPERPAVE TYPE C, PG 64-22 (NON-CARBONATE STONE)
- (E) ITEM 401021 - SUPERPAVE TYPE BCBC, PG 64-22
- (F) ITEM 720037 - GALVANIZED STEEL BEAM GUARDRAIL SEE CP SHEETS FOR TYPE
- (G) ITEM 908000 - TOPSOIL
- (H) ITEM 908014 - PERMANENT GRASS SEEDING, DRY GROUND
- ITEM 908020 - EROSION CONTROL BLANKET MULCH
- (H) SAFETY EDGE FOR ROADWAY PAVEMENT



MATERIAL	BINDER GRADE	LIFT THICKNESS	
		MINIMUM	MAXIMUM
BITUMINOUS CONCRETE, TYPE C (4.75 mm mix)	ALL	1.25"	2"
BITUMINOUS CONCRETE, TYPE C (9.5 mm mix)	ALL	1.25"	2"
BITUMINOUS CONCRETE, TYPE C (12.5 mm mix)	ALL	1.25"	2"
BITUMINOUS CONCRETE, TYPE B (19 mm mix)	76-22, 70-22	2.25"	4"
BITUMINOUS CONCRETE, TYPE B (19 mm mix)	64-22	2.25"	6"
BITUMINOUS CONCRETE BASE COURSE	64-22	3"	6"
GRADED AGGREGATE BASE COURSE		4"	8"

FINAL PLANS

ADDENDA / REVISIONS	NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT T202007301 COUNTY SUSSEX	BRIDGE NO. 3-164 DESIGNED BY: G. CORREALE CHECKED BY: G. PERDICK	TYPICAL SECTIONS	SECTION AEC SHEET NO. 5
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CIRCULAR CURVE ①

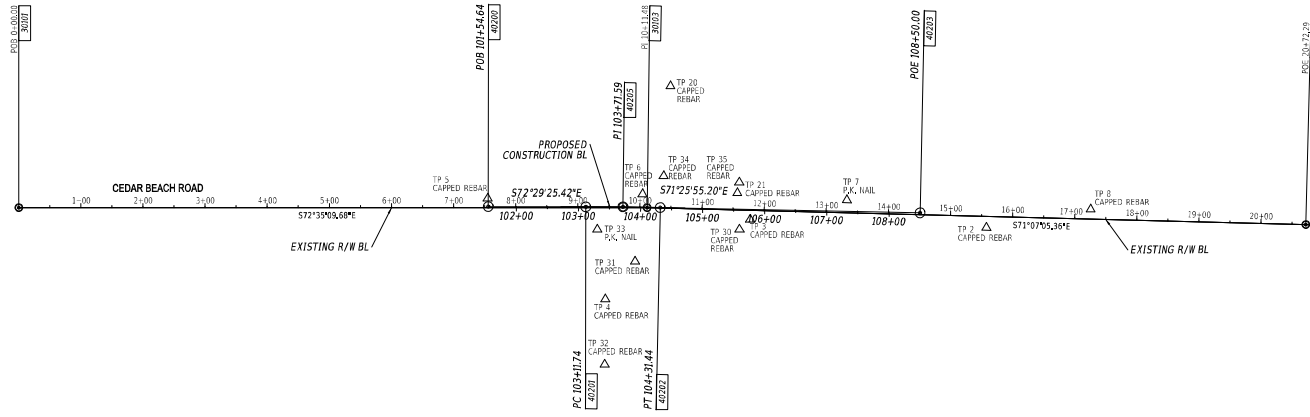
Element:	Circular	STATION	NORTHING	EASTING
PC	{	40201	103+11.74	340588.4250
PI	{	40205	103+71.59	340570.4174
CC	{	30203	104+31.44	334408.6659
PT	{	40202	104+31.44	340551.3586
Radius:			6480.00	
Delta:		1°03'30.22" Right		
Degree of Curvature(Arc):		0°53'03.10"		
Length:		119.70		
Tangent:		59.85		
Chord:		119.70		
Middle Ordinate:		0.28		
External:		0.28		
Tangent Direction:		S 72°29'25.42" E		
Radial Direction:		S 17°30'34.58" W		
Chord Direction:		S 71°57'40.31" E		
Radial Direction:		S 18°34'04.80" W		
Tangent Direction:		S 71°25'55.20" E		

CONSTRUCTION ALIGNMENT CONTROL

POINT	STATION	OFFSET	NORTHING	EASTING
30101	0+00.00	0.00	340860.2124	681536.5260
30102	5+00.00	0.00	340710.5756	682013.6096
30103	10+11.48	0.00	340557.5027	682501.6487
30104	15+00.00	0.00	340399.4095	682963.8789
30105	20+72.29	0.00	340214.2055	683505.3754
40200	101+54.64	0.00	340635.6900	682258.1203
40203	108+50.00	0.00	340418.0755	682918.5300

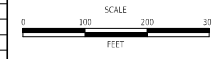
HORIZONTAL / VERTICAL CONTROL DATA

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP 2	15+58.36	18.27	340363.2399	683013.1878	5.30
TP 3	105+76.54	16.34	340489.6640	682654.0980	7.78
TP 4	103+44.21	148.49	340437.1920	682393.4960	4.61
TP 5	7+54.68	-15.03	340648.7020	682261.1150	4.69
TP 6	104+02.53	-21.32	340580.7440	682501.0290	7.04
TP 7	107+31.58	-18.08	340472.9210	682812.0320	5.76
TP 8	17+25.18	-15.53	340341.2310	683181.9670	5.49
TP 20	104+44.05	-195.89	340733.0311	682596.0903	4.69
TP 21	105+55.12	-25.98	340536.5998	682647.2685	7.41
TP 30	105+59.80	32.68	340479.5050	682633.0270	4.58
TP 31	103+92.45	87.28	340480.7590	682457.4660	3.68
TP 32	103+43.84	253.85	340336.9810	682360.9580	5.10
TP 33	103+30.58	36.63	340547.8310	682414.7800	6.33
TP 34	104+35.95	-50.72	340598.0020	682542.1840	4.99
TP 35	105+57.94	-43.08	340551.9150	682655.3910	5.20



DATUM REFERENCE:
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83/2011).
 VERTICAL - THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

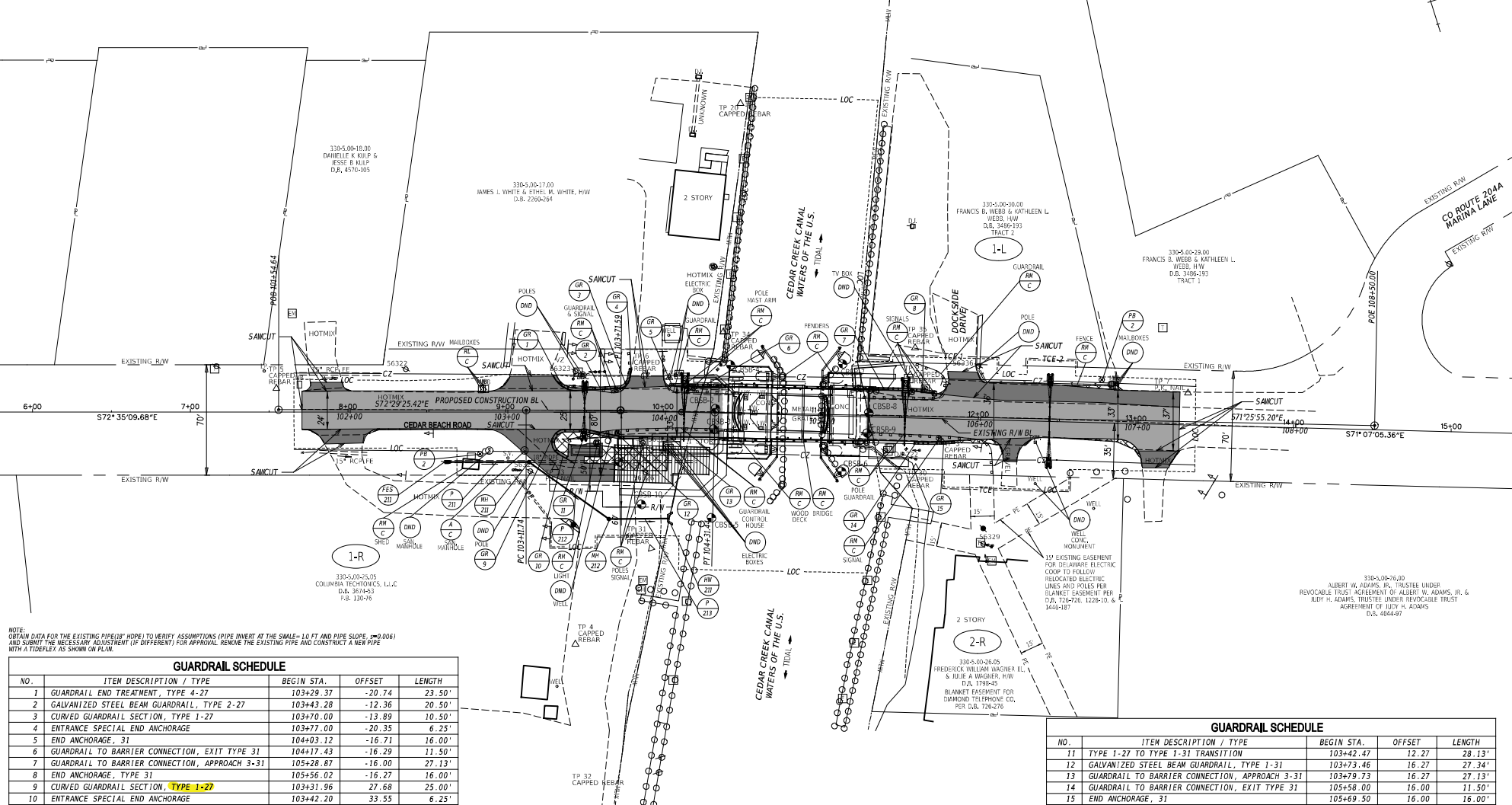
HORIZONTAL AND VERTICAL CONTROL

SECTION	AEC
SHEET NO.	6

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INVERT EL.	DIS. EL.
211	18" RCP	IV	51.57	0.006	1.00	0.69
212	18" RCP	IV	57.93	0.006	0.69	0.34
213	18" RCP	IV	36.04	0.006	0.34	0.13

DRAINAGE MANHOLE SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	T.G. EL.	I.W. EL.	
211	103+44.23	32.78	48" x 30"	6.02	0.69	
212	103+71.36	56.72	48" x 30"	3.37	0.34	

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
211	18" RCP	0.006	NO

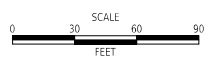


NOTE:
OBTAIN DATA FOR THE EXISTING PIPE(S) HERE TO VERIFY ASSUMPTIONS (PIPE INVERT AT THE SLOPE = 1.0 FT AND PIPE SLOPE = 0.006)
AND SUBMIT THE NECESSARY ADJUSTMENT (IF DIFFERENT) FOR APPROVAL. REMOVE THE EXISTING PIPE AND CONSTRUCT A NEW PIPE
WITH A TIDEFLX AS SHOWN ON PLAN.

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	GUARDRAIL END TREATMENT, TYPE 4-27	103+29.37	-20.74	23.50'
2	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 2-27	103+43.28	-12.36	20.50'
3	CURVED GUARDRAIL SECTION, TYPE 1-27	103+70.00	-13.89	10.50'
4	ENTRANCE SPECIAL END ANCHORAGE	103+77.00	-20.35	6.25'
5	END ANCHORAGE, 31	104+03.12	-16.71	16.00'
6	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	104+17.43	-16.29	11.50'
7	GUARDRAIL TO BARRIER CONNECTION, APPROACH 3-31	105+28.87	-16.00	27.13'
8	END ANCHORAGE, TYPE 31	105+56.02	-16.27	16.00'
9	CURVED GUARDRAIL SECTION, TYPE 1-27	103+31.96	27.68	25.00'
10	ENTRANCE SPECIAL END ANCHORAGE	103+42.20	33.55	6.25'

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
11	TYPE 1-27 TO TYPE 1-31 TRANSITION	103+42.47	12.27	28.13'
12	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	103+73.46	16.27	27.34'
13	GUARDRAIL TO BARRIER CONNECTION, APPROACH 3-31	103+79.73	16.27	27.13'
14	GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE 31	105+58.00	16.00	11.50'
15	END ANCHORAGE, 31	105+69.50	16.00	16.00'

ADDENDA / REVISIONS	



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORRALE
COUNTY	CHECKED BY:	G. PERDICK
SUSEX		

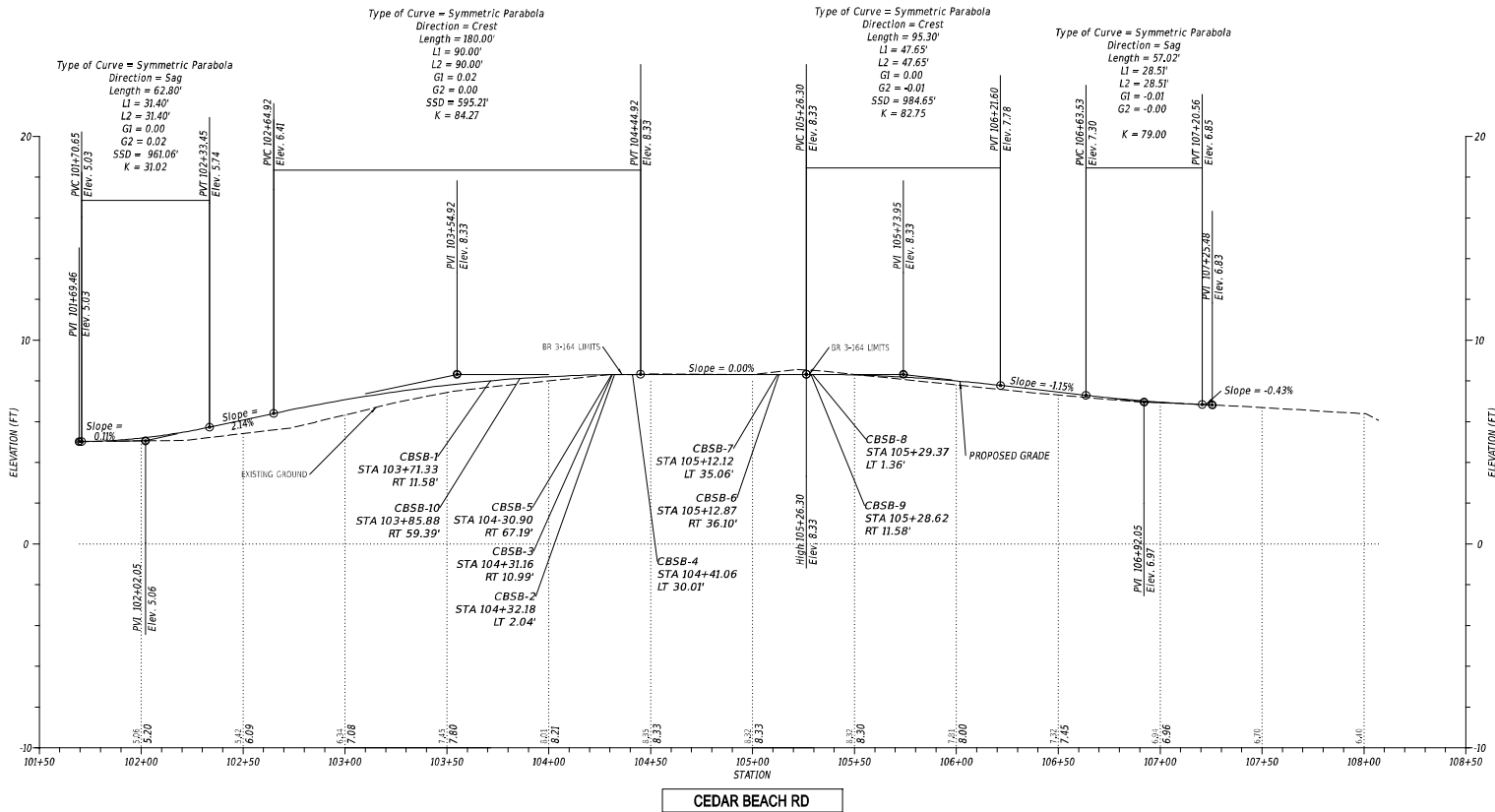
FINAL PLANS

CONSTRUCTION PLAN

SECTION
AEC
SHEET NO.
7

C:\PWORKING\AECOM_D521.LIN_2020\01012776.DWG.DGN

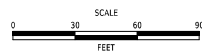
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NOTE: SOIL BORING LOGS AND CLASSIFICATIONS CAN BE FOUND ON SHEETS 91-102.

FINAL PLANS

ADDENDA / REVISIONS	



REPLACEMENT OF BR 3-164 ON S36 CEDAR BEACH ROAD

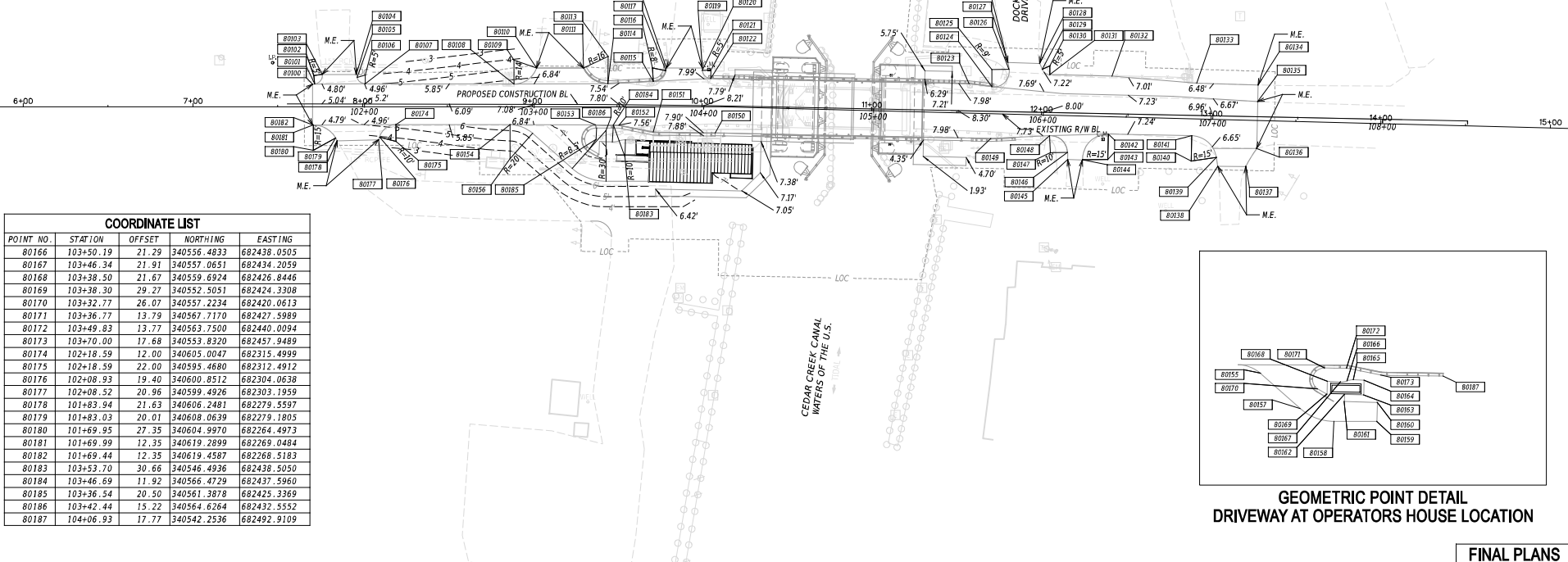
CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

PROFILES

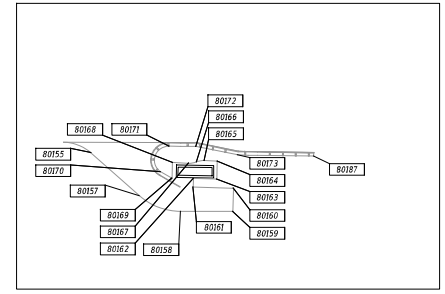
SECTION	9
AEC	6
SHEET NO.	3
	0

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
80100	101+69.40	-11.70	340642.4064	682275.7158
80101	101+70.71	-11.85	340642.1528	682277.0155
80102	101+70.10	-16.81	340647.0705	682277.9189
80103	101+75.05	-17.49	340646.2330	682282.8482
80104	101+95.17	-17.50	340640.1839	682302.0368
80105	101+95.60	-15.78	340638.4180	682301.9313
80106	102+00.45	-17.00	340638.1197	682306.9224
80107	102+00.45	-12.00	340633.3514	682305.4180
80108	102+88.09	-12.00	340606.9838	682388.9965
80109	102+88.09	-26.00	340620.3351	682393.2086
80110	103+01.35	-21.52	340612.0743	682404.5117
80111	103+28.94	-21.59	340603.8003	682430.8916
80113	103+43.39	-28.36	340605.8293	682446.7624
80114	103+43.28	-12.36	340590.6260	682441.7765
80115	103+69.99	-13.89	340583.8605	682467.7136
80116	103+69.52	-21.88	340591.6014	682469.7328
80117	103+77.34	-20.35	340587.7125	682476.7239
80118	103+77.66	-21.99	340589.1706	682477.5350
80119	103+98.69	-22.72	340582.8561	682497.6676
80120	103+98.79	-20.72	340581.3461	682497.2809
80121	104+03.76	-21.06	340580.1057	682502.1247
80122	104+03.74	-16.06	340575.3660	682500.5325
80123	105+56.00	-16.00	340526.8626	682644.9242
80124	105+69.43	-14.55	340521.2074	682657.2011
80125	105+69.20	-24.63	340530.8346	682660.1920
80126	105+79.28	-24.94	340527.9217	682669.8473
80127	105+78.64	-28.90	340531.8769	682670.4976
80128	105+97.29	-28.79	340525.8403	682688.1471
80129	105+98.89	-25.29	340522.0145	682688.5446
80130	106+03.44	-27.37	340522.5312	682689.3179
80131	106+03.41	-22.37	340517.8003	682691.8998
80132	106+39.97	-22.17	340505.9689	682726.4939
80133	106+89.97	-18.97	340487.0193	682772.8740

COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
80134	107+26.29	-18.70	340475.1956	682807.2153
80135	107+26.24	-8.99	340466.0115	682804.0741
80136	107+26.09	18.73	340439.7759	682795.1009
80137	107+19.87	29.50	340431.5500	682785.7855
80138	107+03.37	29.80	340436.5148	682770.0409
80139	107+02.49	24.53	340441.7938	682770.8858
80140	106+87.69	27.00	340444.1643	682756.0743
80141	106+87.69	12.00	340458.3835	682760.8507
80142	106+38.64	12.00	340474.0034	682714.3512
80143	106+38.64	27.00	340459.7842	682709.5747
80144	106+23.65	27.53	340464.0533	682695.1951
80145	106+14.96	27.48	340466.8642	682686.9768
80146	106+14.75	23.38	340470.8206	682688.0750
80147	106+03.82	24.64	340473.1100	682677.3159
80148	106+03.13	13.66	340483.7364	682680.1582
80149	105+69.50	16.00	340492.2280	682647.5362
80150	104+36.98	16.00	340534.4254	682521.9169
80151	103+70.33	15.94	340555.3817	682458.8057
80152	103+50.00	12.00	340565.3831	682440.7153
80153	103+36.21	12.01	340569.5794	682427.6058
80154	102+85.82	12.00	340584.7769	682379.6169
80155	102+99.08	17.03	340575.9934	682390.7495
80156	102+85.82	32.00	340565.7035	682373.5996
80157	103+22.55	37.74	340549.1916	682406.8304
80158	103+42.59	45.22	340536.0152	682423.5332
80159	103+68.00	45.04	340528.4268	682447.5979
80160	103+68.18	33.73	340539.1292	682451.2635
80161	103+48.67	33.40	340545.4187	682432.9000
80162	103+48.75	29.27	340549.3212	682434.2366
80163	103+46.08	29.48	340545.6651	682444.9112
80164	103+46.23	20.77	340553.9033	682447.7328
80165	103+53.88	20.66	340555.9541	682441.7452



COORDINATE LIST				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
80166	103+50.19	21.29	340556.4833	682438.0505
80167	103+46.34	21.91	340557.0651	682434.2059
80168	103+38.50	21.67	340559.6924	682426.8446
80169	103+38.30	29.27	340552.5051	682424.3308
80170	103+32.77	26.07	340557.2234	682420.0613
80171	103+36.77	13.79	340567.7170	682427.5989
80172	103+49.83	13.77	340563.7500	682440.0094
80173	103+70.00	17.68	340553.8320	682457.9489
80174	102+18.59	12.00	340605.0047	682315.4999
80175	102+18.59	22.00	340595.4680	682312.4912
80176	102+08.93	19.40	340600.8512	682304.0638
80177	102+08.52	20.96	340599.4926	682303.1959
80178	101+83.94	21.63	340606.2481	682279.5597
80179	101+83.03	20.01	340608.0639	682279.1805
80180	101+69.95	27.35	340604.9970	682264.4973
80181	101+69.99	12.35	340619.2899	682269.0484
80182	101+69.44	12.35	340619.4587	682268.5183
80183	103+53.70	30.66	340546.4936	682438.5050
80184	103+46.69	11.92	340566.4729	682437.5960
80185	103+36.54	20.50	340561.3878	682425.3369
80186	103+42.44	15.22	340564.6264	682432.5552
80187	104+06.93	17.77	340542.2536	682492.9109



GEOMETRIC POINT DETAIL
DRIVEWAY AT OPERATORS HOUSE LOCATION

FINAL PLANS

ADDENDA / REVISIONS			REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT T202007301	BRIDGE NO. 3-164	SECTION AEC SHEET NO. 9
				COUNTY SUSSEX	DESIGNED BY: G. CORRALE CHECKED BY: G. PERDICK	

GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED JUNE 2021, THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2021, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT AND THE SPECIAL PROVISIONS.
- ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR AT ADVERTISEMENT, INCLUDE:

()	NONE
()	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
(X)	ALL PLAN SHEETS, IN PDF FORMAT.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (.DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY" OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.
- PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

()	CROSS SECTIONS
()	RIGHT-OF-WAY PLANS

PROJECT NOTES

SECTION 200

- REMOVAL OF STRUCTURES AND OBSTRUCTIONS: REMOVE AND PROPERLY DISPOSE OF SITE THE FOLLOWING ITEMS UNDER ITEM #211505 - REMOVAL OF EXISTING BRIDGE ASSOCIATED WITH BRIDGE NUMBER 3164 036:
 - CONTROL HOUSE
 - SWING SPAN SUPERSTRUCTURE INCLUDING BRIDGE RAILING
 - SWING SPAN OPERATING MACHINERY
 - SWING SPAN ELECTRICAL SYSTEM
 - APPROACH SPAN SUPERSTRUCTURE INCLUDING BRIDGE RAILING
 - PIVOT PIER INCLUDING SUPPORTING PILES
 - REST PIER INCLUDING SUPPORTING PILES
 - FENDER SYSTEM INCLUDING SUPPORTING PILES
 - WEST AND EAST ABUTMENTS INCLUDING SUPPORTING PILES
 - PORTIONS OF WEST AND EAST BULKHEADS
- HAZARDOUS MATERIAL (timber): BE ADVISED THAT THE EXISTING STRUCTURE OVER THE CEDAR CREEK CANAL MAY CONTAIN CREOSOTED TIMBER. HANDLE ALL HAZARDOUS MATERIALS (i.e. creosote timber) IN ACCORDANCE WITH SPECIAL PROVISION 202560 PAYMENT INCIDENTAL TO ITEM #211505 - REMOVAL OF EXISTING BRIDGE.
- HAZARDOUS MATERIAL (steel only): BE ADVISED THAT THE EXISTING STRUCTURE OVER THE CEDAR CREEK CANAL DOES CONTAIN LEAD BASED PAINT. AS A RESULT, DETAIL METHODS OF CUTTING THE BEAMS AND/OR DIAPHRAGMS, IF REQUIRED, IN THE CONTRACTOR'S PROPOSED DEMOLITION PLAN AND HOW THOSE PERSONS PERFORMING SUCH WORK WILL BE PROTECTED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS. ADDITIONALLY, DETAIL WHEN AND HOW THE LEAD BASED PAINT WILL BE REMOVED FROM THE STRUCTURAL STEEL AND ALL RELATED BRIDGE COMPONENTS. IF THE WORK IS PERFORMED ON SITE, THEN INCLUDE PROPER PROTECTION, CONTAINMENT, AND FINAL LEAD PAINT DISPOSAL IN THE PROPOSED PLAN. IF THE BEAMS WILL BE TRANSPORTED WITH THE PAINT STILL INTACT, THEN DETAIL HOW THE STRUCTURAL COMPONENTS WILL BE PROTECTED DURING TRANSPORT, WHERE AND HOW THE PAINT WILL BE REMOVED, AND THE LOCATION OF FINAL PAINT DISPOSAL, AGAIN IN ACCORDANCE WITH OSHA REGULATIONS. PROVIDE WRITTEN DOCUMENTATION TO THE ENGINEER, PRIOR TO FINAL CONTRACT ACCEPTANCE, NOTING WHEN AND WHERE THE LEAD BASED PAINT WAS REMOVED, AND THE LOCATION OF FINAL PAINT DISPOSAL, ALL COSTS INVOLVED WITH THE ABOVE LISTED WORK IS INCIDENTAL TO ITEM #211505 - REMOVAL OF EXISTING BRIDGE.
- SIGNING: TO AVOID DAMAGE, SIGNS WITHIN PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED, BUT MUST BE REPLACED TO MATCH EXISTING CONDITIONS BEFORE REOPENING THE ROADWAY. INCLUDE PAYMENT FOR ALL WORK RELATED TO MOVING AND REINSTALLING THE SIGN IN ITEM #211505 - REMOVAL OF EXISTING BRIDGE. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, REPLACE THE SIGN AT THE CONTRACTOR'S EXPENSE.
- TEMPORARILY REMOVE EXISTING RUBBLE RIP RAP AND/OR CONCRETE DEBRIS ON THE CHANNEL BOTTOM THAT INTERFERES WITH INSTALLATION OF NEW BRIDGE FOUNDATIONS AND/OR SHEET PILE BULKHEADS. REMOVED RUBBLE RIP RAP MAY BE REINSTALLED TOGETHER WITH NEW RUBBLE RIP RAP.
- SEE DEMOLITION PLAN FOR ADDITIONAL INFORMATION.

SECTION 600

- PORTLAND CEMENT CONCRETE: USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:

(f'c = 28-DAY COMPRESSIVE STRENGTH)

CLASS A - ABUTMENT CAPS, BASCULE PIER CAP, REST PIER CAP, MAINTENANCE PLATFORM SLABS, FENDER PILE CAPS CONCRETE (f'c = 4.5 ksi)

CLASS B - STEEL PIPE PILE CONCRETE FILL (f'c = 3.0 ksi)

CLASS D - BRIDGE DECK, CURBS, COUNTERWEIGHT CONCRETE (f'c = 4.5 ksi)

UHPCC - PRESTRESSED SOLID SLAB SHEAR KEYWAYS AND CAVITIES (f'c = 22.0 ksi)

CHAMFER ALL EXPOSED EDGES 3/4" x 3/4" UNLESS NOTED OTHERWISE.

SUPPLY THE CONCRETE FOR THE BRIDGE DECK AND CONCRETE CURBS THAT INCLUDES A SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT PROVIDES BOTH EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT DOSAGE RECOMMENDED BY MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:

 - DESIGNED TO PROVIDE BOTH OF THE FOLLOWING CHARACTERISTICS:
 - EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR THE SHRINKAGE OF THE CONCRETE MIX.
 - REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER.
 - PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.
 - FORMULATED FOR USE IN FREEZING AND THAWING WEATHER.

USE ADMIXTURES THAT ARE COMPATIBLE WITH ALL OTHER CONCRETE MIX DESIGN CONSTITUENTS. CALCIUM CHLORIDE IS NOT PERMITTED; NO CHEMICAL ADMIXTURES WHICH CONTAIN MORE THAN 0.1% CHLORIDE BY WEIGHT, WILL BE PERMITTED FOR USE. DOSAGE RATE AND MIXING SEQUENCE WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- PORTLAND CEMENT CONCRETE (CONTINUED): USE PORTLAND CEMENT CONCRETE FOR PRECAST ELEMENTS AS FOLLOWS:

(f'c = 28-DAY COMPRESSIVE STRENGTH)

(f'ci = COMPRESSIVE STRENGTH AT INITIAL PRESTRESS)

FOR ALL PRESTRESSED CONCRETE SOLID SLAB BEAMS: f'c = 8.0 ksi; f'ci = 6.4 ksi

THE PRESTRESSED CONCRETE SOLID SLAB BEAMS WERE DESIGNED FOR SEVERE CORROSIVE CONDITIONS AS PER A5.9.2.2.3.2b.
- DECK SLAB: THE 8" DECK SLAB THICKNESS INCLUDES 1/2" INTEGRAL WEARING SURFACE.
- BAR REINFORCEMENT:
 - PROVIDE REINFORCING STEEL CONFORMING TO AASHTO M31 (ASTM A615), GRADE 60.
 - PROVIDE A 3" CLEAR COVER FOR ALL REINFORCING STEEL PLACED IN CONCRETE CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 - WHERE A SUFFIX IS INCLUDED IN BAR MARKS, PROTECT ALL REINFORCING STEEL WITH THE MATERIAL DENOTED. SUFFIX 'E' DENOTES EPOXY COATED BAR REINFORCEMENT
 - SUFFIX 'G' DENOTES GALVANIZED BAR REINFORCEMENT
 - SUFFIX 'S' DENOTES STAINLESS STEEL BAR REINFORCEMENT

WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER, GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO ADDITIONAL COST TO THE DEPARTMENT.
- STRUCTURAL STEEL: PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270 ARE MANDATORY FOR PRIMARY LOAD CARRYING MEMBERS. USE TESTING PARAMETERS FOR TEMPERATURE ZONE 2. PRIMARY LOAD CARRYING MEMBERS THAT SHALL BE SUBJECTED TO THE REQUIREMENTS FOR CHARPY V-NOTCH TESTING INCLUDE: ORTHOTROPIC STEEL DECK, FLOORBEAMS, KNEE BRACES, BASCULE GIRDERS, BALANCE FRAME GIRDERS, TRUNNION STRUT, CRANK ARM, TRUNNION TOWERS, CONNECTION PLATES, AND SPLICE PLATES.

STRUCTURAL MEMBERS LABELED WITH 'FCM' DENOTES FRACTURE CRITICAL MEMBERS. ALL CONNECTION MATERIAL FOR THESE MEMBERS, INCLUDING SPLICE PLATES, CONNECTION PLATES AND ANGLES, AND STIFFENERS USED AS CONNECTION PLATES SHALL ALSO BE CONSIDERED FRACTURE CRITICAL MEMBERS. ALL MEMBERS DESIGNATED AS FCM SHALL MEET THE REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270. USE TESTING PARAMETERS FOR TEMPERATURE ZONE 2.

ALL FASTENERS ARE 7/8" DIAMETER ASTM F3125 HIGH STRENGTH BOLTS, TYPE 1 GRADE A325 UNLESS OTHERWISE NOTED.

HSS SHAPES (LINK ARMS, FORWARD STRUT, AND INTERMEDIATE STRUT) SHALL BE ASTM A1085 GRADE 50 (OR APPROVED EQUIVALENT). THE TRUNNION STRUT SHALL BE API 5L GRADE X46 PSL2 (OR APPROVED EQUIVALENT).

REAM SUBDRILLED OR SUBPUNCHED HOLES FOR END CONNECTIONS AND FIELD SPLICES IN THE FABRICATION SHOP.

THE FAYING SURFACE CLASSIFICATION IS CLASS B.

WELDING:

 - MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED.
 - OVERHEAD WELDING IS NOT PERMITTED IN THE FIELD UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 - DO NOT MAKE WELDS BY MANUAL SHIELDED METAL ARC PROCESS FOR PRIMARY GIRDER WELDS SUCH AS FLANGE TO WEB WELDS OR FOR SHOP SPLICES OF WEB AND FLANGES.

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FINAL PLANS

S-01

ADDENDA / REVISIONS		NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	BRIDGE PROJECT NOTES - 1	SECTION
				T202007301	DESIGNED BY:	D. NEELY		H&H
			COUNTY	CHECKED BY:	G. PATTON	SHEET NO.		10
			SUSSEX					

SECTION 600 (CONTINUED)

11. STRUCTURAL STEEL (CONTINUED):
 SHOP ASSEMBLE AND ALIGN EACH ENTIRE STEEL BASCULE LEAF, BALANCE FRAME, AND A-FRAME SUBASSEMBLIES USING ERECTION PROCEDURES AND SUPPORT CONDITIONS THAT WILL ACHIEVE PROPER FIT-UP AND ALIGNMENT OF PRIOR TO DRILLING FROM SOLID OR REAMING SUBPUNCHED OR SUBDRILLED BOLT HOLES FOR SPLICES AND CONNECTION PLATES. SHOP ASSEMBLY OF THE ENTIRE BASCULE SPAN IS NOT REQUIRED (I.E., IT IS NOT REQUIRED TO SHOP ASSEMBLE THE BALANCE FRAME ON TOP OF THE A-FRAME TOWERS. SHOP CONNECT THE BASCULE LEAF TO THE A-FRAME TOWERS, OR CONNECT THE BASCULE LEAF TO THE BALANCE FRAME WITH THE LINK ARMS.)

SET ANCHOR BOLTS TO TEMPLATE OR IN PRE-FORMED HOLES. DO NOT DRILL UNLESS SPECIFICALLY INDICATED ON PLANS. FILL THE PRE-FORMED HOLES WITH NON-SHRINK GROUT IN MASONRY PLATES. FILL THE CLEARANCE BETWEEN ANCHOR BOLTS AND HOLES WITH APPROVED NON-HARDENING CAULKING COMPOUND UNLESS OTHERWISE NOTED.

THE FOLLOWING PROTECTIVE COATING SYSTEMS SHALL BE UTILIZED FOR EACH OF THE VARIOUS STRUCTURAL STEEL MEMBERS:
 -ORTHOTROPIC STEEL DECK = METALLIZED, SEAL COAT, AND TOP COAT
 -BASCULE GIRDERS = METALLIZED, SEAL COAT, AND TOP COAT
 -BALANCE ARMS & TRUNNION STRUT = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
 -COUNTERWEIGHT BOX = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
 -CRANK ARMS = METALLIZED, SEAL COAT, AND TOP COAT
 -A-FRAME TOWERS = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
 -LINK ARMS = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
 -INTERMEDIATE STRUT = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
 -FORWARD STRUT = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
 -BRIDGE RAILING = HOT-DIP GALVANIZED
 -STEEL CURB = HOT-DIP GALVANIZED

THE COLOR OF THE FINISHED PAINT COAT SHALL CONFORM TO FEDERAL STANDARD NO. 595 COLOR NO. 25183 (BLUE) UNLESS NOTED OTHERWISE. THE COLOR OF THE FINISHED PAINT COAT SHALL CONFORM TO FEDERAL STANDARD NO. 595B COLOR NO. 17925 (WHITE) FOR THE LINK ARMS, TRUNNION STRUT, CRANK ARMS, AND HYDRAULIC CYLINDERS. THE BRIDGE RAILING AND STEEL CURB SHALL NOT RECEIVE THE FINISHED PAINT COAT.

SECTION 800

12. MAINTENANCE OF TRAFFIC:
 MAINTAIN TRAFFIC AS PER DETOUR PLAN. ALL MOT ITEMS, WITH THE EXCEPTION OF PORTABLE CHANGEABLE MESSAGE SIGNS (ITEM 803001) AND FLAGGERS WILL BE INCLUDED IN ITEM #801500 - MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

MISCELLANEOUS

13. DESIGN SPECIFICATIONS:
 (A) DELDOT BRIDGE DESIGN MANUAL, 2011 EDITION
 (B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2020, 9TH EDITION, CUSTOMARY U.S. UNITS.
 (C) AASHTO LRFD MOVABLE HIGHWAY BRIDGE SPECIFICATIONS, 2007, 2ND EDITION, CUSTOMARY U.S. UNITS INCLUDING 2008, 2010, 2011, 2012, 2014, AND 2015 INTERIM REVISIONS.
 (D) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE DELDOT STANDARD SPECIFICATIONS, JUNE 2021.
14. LOADING:
 -DEAD LOADS CONSERVATIVELY INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB. THIS ADDITIONAL DEAD LOAD WAS NOT USED IN DETERMINING THE SPAN BALANCE.
 -DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
 -FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 237 (2020).
 -LIVE LOAD DISTRIBUTION FACTOR FOR BASCULE GIRDER IS 1.26.
 -THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0 TO 120 DEGREES FAHRENHEIT. THE NORMAL TEMPERATURE WILL BE CONSIDERED TO BE 68°F.
 -LIVE LOAD DEFLECTION LIMIT IS L/800.
 -FOR SEISMIC LOADS, CONSIDER SEISMIC PERFORMANCE ZONE 1, WITH A SITE CLASS = D AND OPERATIONAL CATEGORY = CRITICAL.
 -TRAFFIC BARRIERS HAVE BEEN DESIGNED FOR MASH TEST LEVEL 4 (TL-4).
15. EXISTING CONDITIONS:
 -ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT UNDER ITEM #76350 - CONSTRUCTION ENGINEERING.
 -DO NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS OR MADE AVAILABLE BY THE DEPARTMENT OR ITS AUTHORIZED AGENTS AS ACCURATE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.

MISCELLANEOUS (CONTINUED)

16. HYDRAULIC DATA:
 DRAINAGE AREA: xxx sq. miles DESIGN FREQ.: (insert design storm year) YEARS
 DESIGN DISCHARGE: xxx cfs 100-YEAR DISCHARGE: xxx cfs
 EXISTING (DESIGN STORM) WSE: xx.xx ft PROPOSED (DESIGN STORM) WSE: xx.xx ft
 EXISTING (DESIGN STORM) VELOCITY: xx.xx fps PROPOSED (DESIGN STORM) VELOCITY: xx.xx fps
 EXISTING 100-YEAR WSE: xx.xx ft PROPOSED 100-YEAR WSE: xx.xx ft
 EXISTING 100-YEAR VELOCITY: xx.xx fps PROPOSED 100-YEAR VELOCITY: xx.xx fps
 EXISTING WATERWAY OPENING: xxx sq. ft PROPOSED WATERWAY OPENING: xxx sq. ft
- MEAN HIGH WATER ELEVATION: 2.06 ft
 MEAN LOW WATER ELEVATION: -2.57 ft
 VERTICAL UNDER CLEARANCE: 4.04 ft (FROM MHW TO BASCULE LEAF)
17. SCOUR ANALYSIS:
 SCOUR DESIGN FREQUENCY: xxx YEARS OR OVERTOPPING
 SCOUR DESIGN FLOOD DISCHARGE: xxx cfs
 SCOUR DESIGN FLOOD VELOCITY: xx fps (AT BRIDGE OUTLET)
 WATER SURFACE ELEVATION: xx ft (IMMEDIATELY UPSTREAM OF BRIDGE)
 CALCULATED SCOUR DEPTH AT EACH SUBSTRUCTURE UNIT: xx ft
- SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE SCOUR DESIGN FLOOD IN ACCORDANCE WITH HEC 23 - BRIDGE SCOUR AND STREAM INSTABILITY COUNTERMEASURES and/or HEC 14 - HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS.
18. ROADWAY CLEARANCES:
 MAINTAIN A MINIMUM OF 16'-6" ABOVE ALL ROADWAYS.

LOAD RATING SUMMARY					
VEHICLE TYPE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.40	50.49	EXTERIOR (SPAN 1)	106	SERVICE III
HL-93 TANDEM (INVENTORY)	1.16	28.96	EXTERIOR (SPAN 1)	105	SERVICE III
HS20 (INVENTORY)	1.66	59.73	EXTERIOR (SPAN 1)	106	SERVICE III
HL-93 TRUCK (OPERATING)	2.22	79.89	EXTERIOR (SPAN 1)	103	STRENGTH I
HL-93 TANDEM (OPERATING)	1.98	49.53	EXTERIOR (SPAN 1)	105	STRENGTH I
HS20 (OPERATING)	2.57	92.47	EXTERIOR (SPAN 1)	103	STRENGTH I
DE S220	2.42	48.34	EXTERIOR (SPAN 1)	106	SERVICE III
DE S335	1.25	43.60	EXTERIOR (SPAN 1)	105	SERVICE III
DE S437	1.19	43.58	EXTERIOR (SPAN 1)	105	SERVICE III
DE T330	2.24	67.21	EXTERIOR (SPAN 1)	105	SERVICE III
DE T435	1.68	58.85	EXTERIOR (SPAN 1)	105	SERVICE III
DE T540	1.60	63.96	EXTERIOR (SPAN 1)	105	SERVICE III
EV2	1.73	49.75	EXTERIOR (SPAN 1)	106	SERVICE III
EV3	1.08	46.65	EXTERIOR (SPAN 1)	105	SERVICE III
SU4	1.64	44.37	EXTERIOR (SPAN 1)	105	SERVICE III
SU5	1.51	46.71	EXTERIOR (SPAN 1)	105	SERVICE III
SU6	1.38	47.85	EXTERIOR (SPAN 1)	105	SERVICE III
SU7	1.33	51.57	EXTERIOR (SPAN 1)	105	SERVICE III

NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE, SEE NOTE 14 THIS DRAWING.

BRIDGE 3-164 QUANTITIES

ITEM NO.	ITEM TITLE	UNIT	QUANTITY
21505	REMOVAL OF EXISTING BRIDGE	LS	1
605032	FURNISH STEEL PIPE PILE 36"	LF	240
60503X	FURNISH STEEL PIPE PILE 48"	LF	450
605132	INSTALL STEEL PIPE PILE 36"	LF	240
60513X	INSTALL STEEL PIPE PILE 48"	LF	450
605200	PILE RESTRIKE	EA	4
605201	DYNAMIC PILE TESTING BY CONTRACTOR FOR TEST PILE INITIAL DRIVE	EA	6
605202	DYNAMIC PILE TESTING BY CONTRACTOR FOR RE-STRIKE OR PRODUCTION PILE	EA	10
610005	PCC MASONRY, SUBSTRUCTURE, CLASS A	CY	100
610008	PCC MASONRY, PARAPET, CLASS A	CY	13
610017	PCC MASONRY, SUPERSTRUCTURE, CLASS D	CY	58
610018	PCC MASONRY, APPROACH SLAB, CLASS D	CY	26
610500	ULTRA HIGH PERFORMANCE CONCRETE	CF	1050
611001	BAR REINFORCEMENT, EPOXY COATED	LB	86,297
612020	PRESTRESSED REINFORCED CONCRETE MEMBERS, SOLID SLAB	LS	1
612500	PRECAST CONCRETE PIER CAP	CY	64
612503	PRECAST CONCRETE BEAMS	LS	1
613003	HIGH MOLECULAR WEIGHT METHACRYLATE CONCRETE SEALER	SF	2,213
615000	STEEL STRUCTURES	LB	874,301
615503	BRIDGE MECHANICAL SYSTEM	LS	1
615504	BRIDGE ELECTRICAL SYSTEM	LS	1
615512	BRIDGE SCUPPERS	EA	8
624000	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	LF	144
626010	ALUMINUM PEDESTRIAN RAILING	LF	165
626501	THREE STRAND TUBE RAIL PARAPET	LF	184
6XXXX	INTEGRAL FENDER SYSTEM	LS	1
6XXXX	COMBINED WALL SYSTEM	LS	1
707013	RIPRAP, R7	CY	360
763522	COAST GUARD SPECIFIC CONDITIONS	LS	1
909004	TURBIDITY CURTAIN, FLOATING	LF	1,345

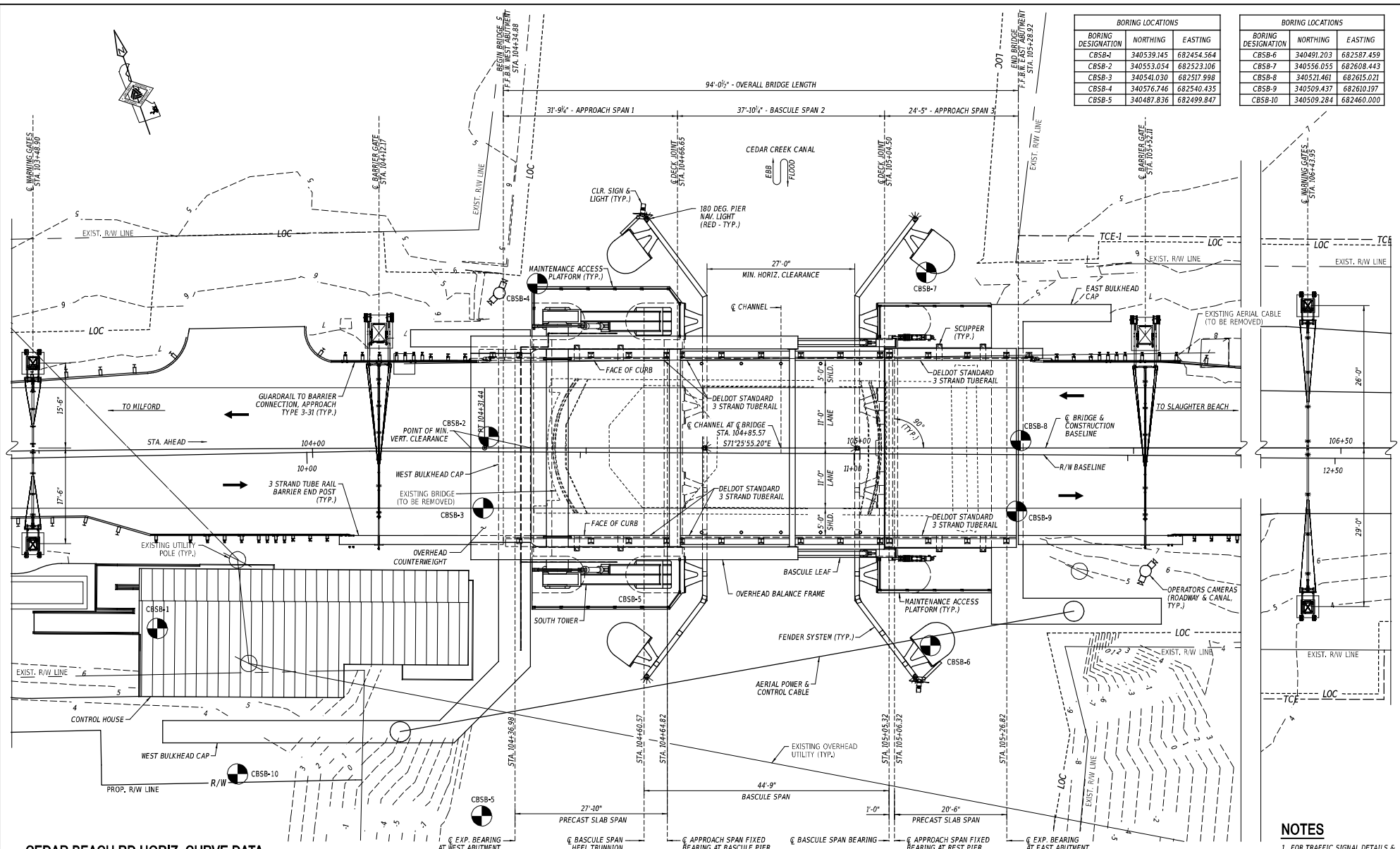
ANCHOR BOLT PROPERTIES

LOCATION	DIA.	GRADE	FINISH	REQUIRED TENSION (KIPS)
BARRIER GATE RECEIVER PLATE	3/4"	ASTM F1554 GR. 105	GALVANIZED	10
3 STRAND TUBE RAIL	7/8"	ASTM F1554 GR. 105	GALVANIZED	15
CENTERING DEVICE	1"	ASTM F1554 GR. 105	GALVANIZED	20
BASCULE GIRDER BEARING	1 1/2"	ASTM F1554 GR. 105	GALVANIZED	35
FORWARD TOWER BASEPLATE	1 1/2"	ASTM F1554 GR. 105	GALVANIZED	50
REAR TOWER BASEPLATE	1 1/2"	ASTM F1554 GR. 105	GALVANIZED	50
AERIAL CABLE POLE	2 1/2"	ASTM F1554 GR. 105	GALVANIZED	105
PRECAST SLAB SPAN FIXED BEARING	1"	ASTM F593H TYP 316	STAINLESS STEEL	10
PRECAST SLAB SPAN EXPANSION BEARING	1"	ASTM F593H TYP 316	STAINLESS STEEL	10

FINAL PLANS

ADDENDA / REVISIONS				NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	BRIDGE PROJECT NOTES - 2	S-02
						T202007301	DESIGNED BY:	D. NEELY		SECTION
						COUNTY	CHECKED BY:	G. PATTON		H5H
						SUSSEX			SHEET NO.	
								11		

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BORING LOCATIONS		
BORING DESIGNATION	NORTHING	EASTING
CBSB-1	340539.145	682454.564
CBSB-2	340553.054	682523.106
CBSB-3	340541.030	682517.998
CBSB-4	340576.746	682540.435
CBSB-5	340487.836	682499.847

BORING LOCATIONS		
BORING DESIGNATION	NORTHING	EASTING
CBSB-6	340491.203	682587.459
CBSB-7	340556.055	682608.443
CBSB-8	340521.461	682615.021
CBSB-9	340509.437	682610.197
CBSB-10	340509.284	682460.000

CDAR BEACH RD HORIZ. CURVE DATA

TANGENT
S71°25'55.20"E

PLAN

NOTES
1. FOR TRAFFIC SIGNAL DETAILS & LOCATIONS, SEE DWG. E-03.

ADDENDA / REVISIONS

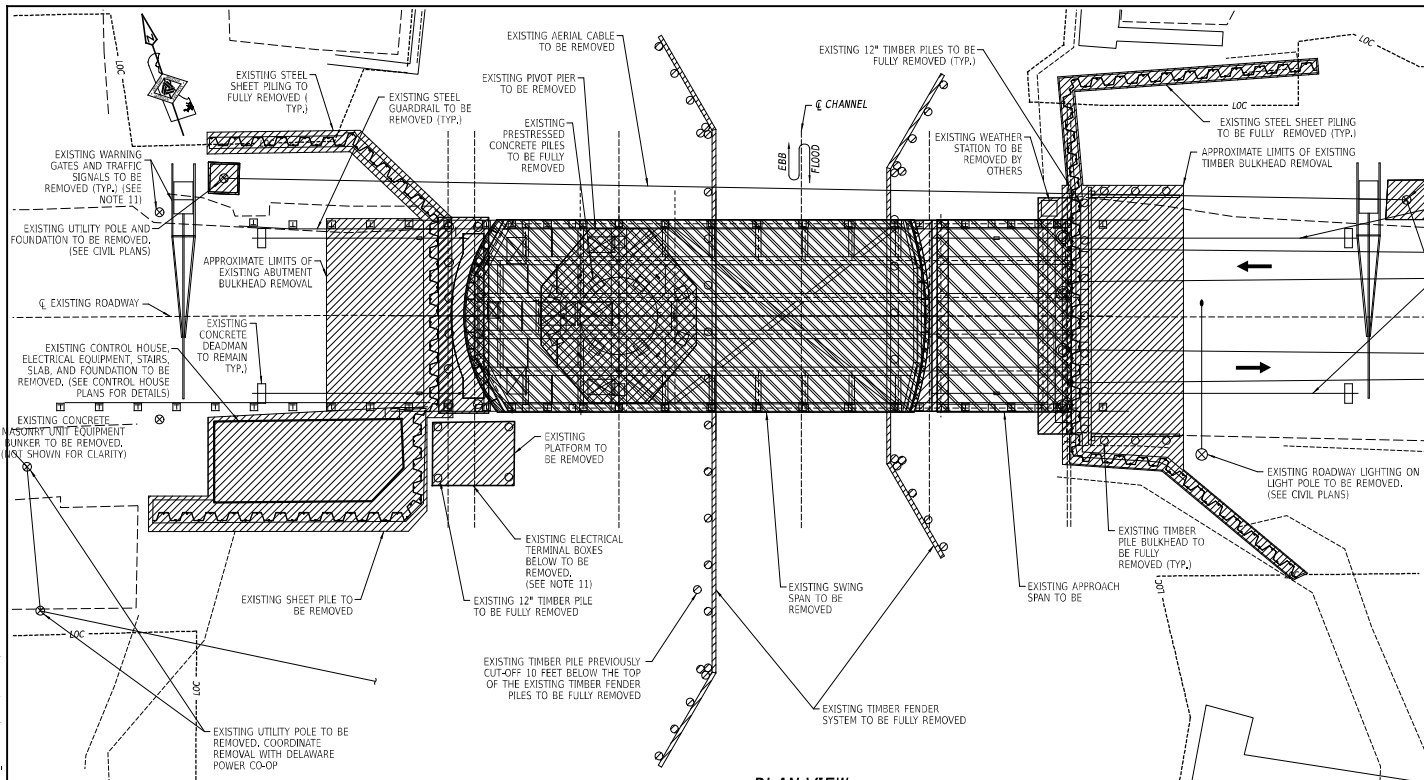


REPLACEMENT OF BR 3-164 ON SR 36 CDAR BEACH ROAD

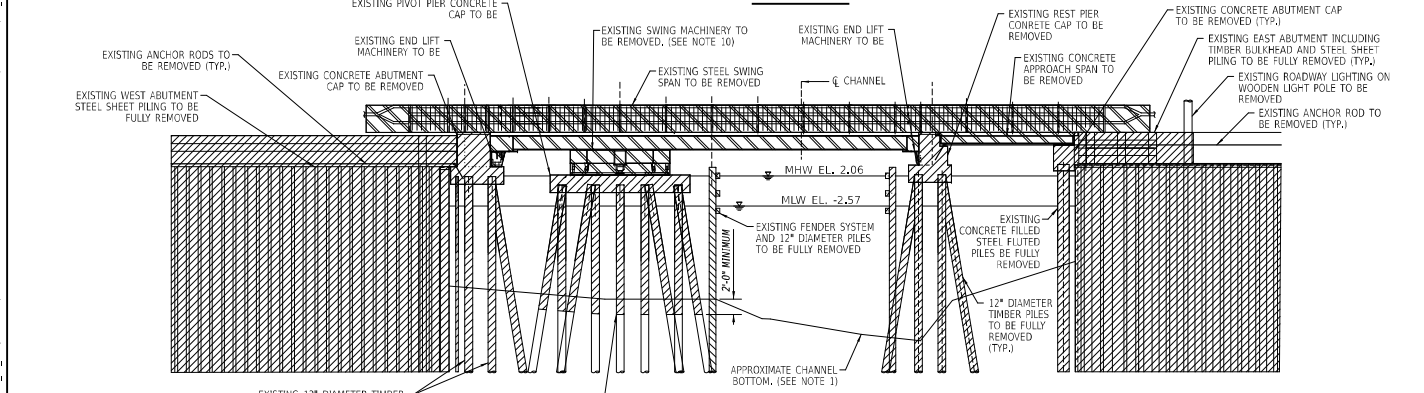
CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	A. MILLER
COUNTY	CHECKED BY:	D. NEELY
SUSSEX		

FINAL PLANS		S-03
BRIDGE GENERAL PLAN		H5H
		SHEET NO.
		12

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PLAN VIEW



ELEVATION VIEW

DEMOLITION NOTES

1. CHANNEL BOTTOM SHOWN IS AN APPROXIMATION BASED ON THE AUGUST 25, 2020 UNDERWATER INSPECTION REPORT. FIELD VERIFY ALL BRIDGE ELEMENT DIMENSIONS AND LOCATIONS. THE CHANNEL BOTTOM AND EMBANKMENTS CONTAIN RUBBLE RIPRAP THAT MEASURE APPROXIMATELY ONE FOOT TO THREE FOOT IN DIAMETER AND RANDOM CONCRETE DEBRIS MEASURING UP TO TWO FEET IN DIMENSION.
2. HATCHED AREAS SHOWN SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH SECTIONS 211 AND 207 OF THE DELDOT STANDARD SPECIFICATIONS. REFER TO EXISTING BRIDGE DRAWINGS FOR APPROXIMATE DIMENSIONS OF EXISTING STRUCTURES TO BE REMOVED.
3. SUBMIT A BRIDGE DEMOLITION PLAN TO THE ENGINEER AT LEAST 30 DAYS PRIOR TO THE START OF REMOVAL OPERATIONS. THE DEMOLITION PLAN SHALL INCLUDE AS A MINIMUM THE INTENDED SEQUENCE OF DEMOLITION, PLANS FOR TURBIDITY CONTROL AND ENVIRONMENTAL PROTECTION AND DISPOSAL OF ANY HAZARDOUS MATERIALS AS PER DELDOT STANDARD 109.1.2, CONTAINMENT PLANS AND LOCATIONS, AND VIBRATION MONITORING AND CONTROL PLAN PER DELDOT STANDARD 210.5.2.
4. IT IS ASSUMED THAT EXISTING TIMBER PILES CONTAIN CREOSOTE PRESERVATIVE TREATMENT AND THE EXISTING STRUCTURAL STEEL COATINGS CONTAIN HAZARDOUS LEVELS OF LEAD. REFER TO DRAWING S-01 AND DELDOT STANDARD SPECIFICATIONS FOR REMOVAL, HANDLING, STORAGE, TRANSPORTATION AND DISPOSAL REQUIREMENTS.
5. REMOVAL OF THE EXISTING ABUTMENTS REQUIRES EXCAVATION. REFER TO DRAWING S-01 AND DELDOT STANDARD SPECIFICATIONS FOR EXCAVATION AND BACKFILL REQUIREMENTS.
6. COORDINATE EXISTING ABUTMENT REMOVAL WITH NEW ABUTMENT WALL PLANS.
7. REMOVAL OF EXISTING BRIDGE, INCLUDING THE DEMOLITION PLAN, TO BE PAID FOR IN ITEM 211505 REMOVAL OF EXISTING BRIDGE.
8. SAW CUT AND REMOVE ALL EXISTING EMBEDDED CONDUIT WHERE IT INTERFERES WITH NEW WORK OR NEW CONDUIT RUNS.
9. AS-BUILT AND PREVIOUS BRIDGE REHABILITATION PLANS ARE PROVIDED FOR CONTRACTOR'S USE IN DETERMINING EXISTING CONDITIONS AND INFORMATION THAT IS NOT SHOWN IN THESE CONTRACT DOCUMENTS.
10. ALL EXISTING ELECTRICAL AND MECHANICAL EQUIPMENT IS TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. REFER TO SPECIAL PROVISIONS 615503 AND 615504 FOR DETAILS, LIMITS, AND METHOD OF PAYMENT.
11. THE FOLLOWING ITEMS ARE TO BE SALVAGED FROM THE BRIDGE SITE BY THE CONTRACTOR AND TO BE PROVIDED TO DELDOT: EXISTING WARNING GATES, EXISTING AERIAL CABLE POLES, AND ALL TRAFFIC SIGNAL POLES WITH SIGNAL ASSEMBLIES. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING, PROTECTING, AND TRANSPORTING THESE ITEMS TO A LOCATION SPECIFIED BY DELDOT.
12. REMOVAL OF ALL MATERIAL SHALL CONFORM TO SPECIAL PROVISION 202560 - CONTAMINATED MATERIAL.

HATCHING LEGEND

- SUPERSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING SWING SPAN STRUCTURAL STEEL AND ALL MECHANICAL AND ELECTRICAL COMPONENTS
- SUBSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING BRIDGE SUBSTRUCTURE, WEST AND EAST ABUTMENTS INCLUDING EXISTING TIMBER BULKHEAD AND STEEL SHEET PILING, PIVOT PIER, AND REST PIER CONCRETE

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 14-31
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ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	D. WIGGINS
COUNTY	CHECKED BY:	D. NEELY
SUSEX		



BRIDGE DEMOLITION PLAN

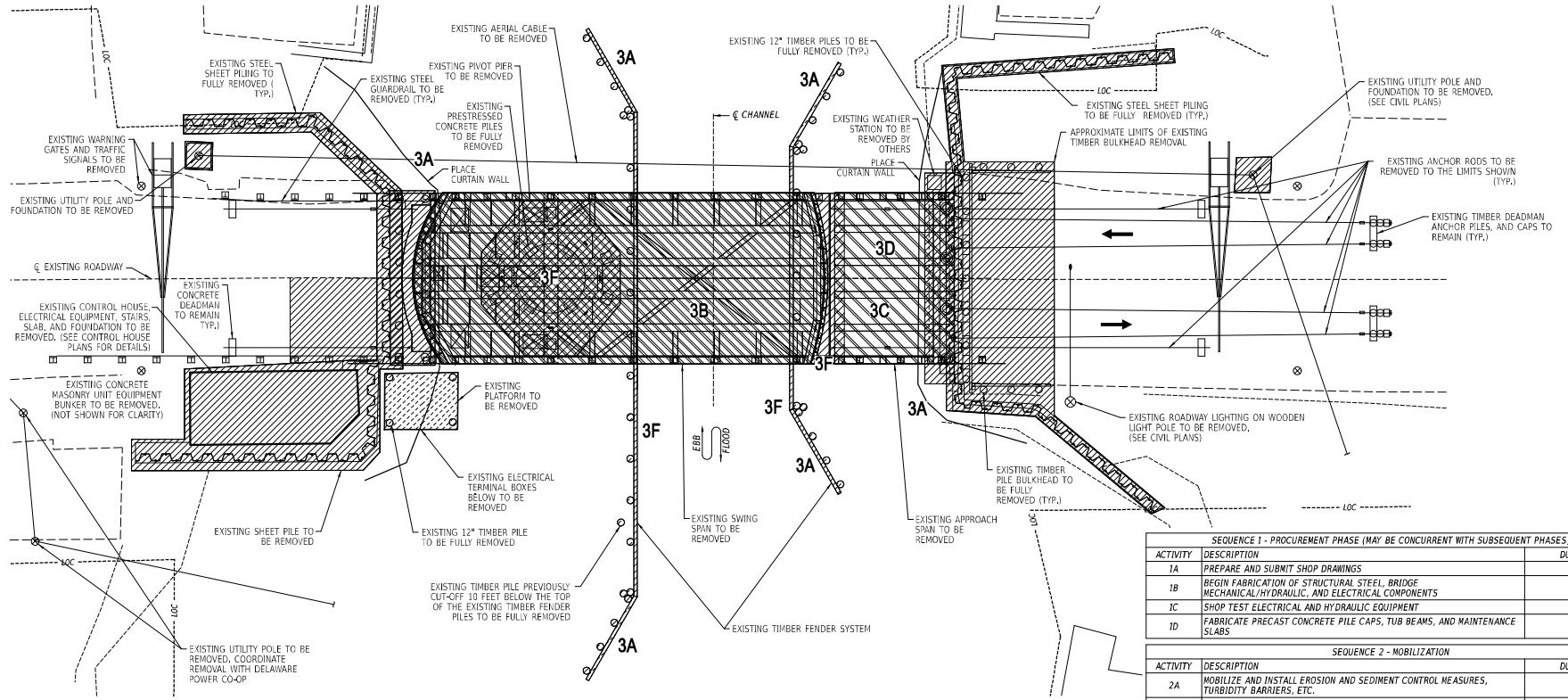
FINAL PLANS

S-07
SECTION
H5H
SHEET NO.
16



HATCHING LEGEND

-  SUPERSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING SWING SPAN STRUCTURAL STEEL AND ALL MECHANICAL AND ELECTRICAL COMPONENTS
-  SUBSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING BRIDGE SUBSTRUCTURE, WEST AND EAST ABUTMENTS INCLUDING EXISTING TIMBER BULKHEAD AND STEEL SHEET PILING, PIVOT PIER, AND REST PIER CONCRETE



CONSTRUCTION SEQUENCE 3 (PLAN VIEW)

NOTES

1. EXISTING ELECTRICAL SERVICE UTILITIES, ROADWAY LIGHTING, AND POLES TO BE REMOVED. COORDINATE REMOVAL WITH DELAWARE POWER CO-OP.
2. FOR ELEVATION VIEW OF CONSTRUCTION SEQUENCE 3, SEE DWG. S-08.

SEQUENCE 1 - PROCUREMENT PHASE (MAY BE CONCURRENT WITH SUBSEQUENT PHASES)		
ACTIVITY	DESCRIPTION	DURATION
1A	PREPARE AND SUBMIT SHOP DRAWINGS	
1B	BEGIN FABRICATION OF STRUCTURAL STEEL, BRIDGE MECHANICAL/HYDRAULIC, AND ELECTRICAL COMPONENTS	
1C	SHOP TEST ELECTRICAL AND HYDRAULIC EQUIPMENT	
1D	FABRICATE PRECAST CONCRETE PILE CAPS, TUB BEAMS, AND MAINTENANCE SLABS	

SEQUENCE 2 - MOBILIZATION		
ACTIVITY	DESCRIPTION	DURATION
2A	MOBILIZE AND INSTALL EROSION AND SEDIMENT CONTROL MEASURES, TURBIDITY BARRIERS, ETC.	
2B	COMMISSION CONSTRUCTION TRAILERS	
2C	PERFORM CONTROL SURVEY AND ESTABLISH BENCHMARKS	
2D	RELOCATE UTILITIES THAT CONFLICT WITH BRIDGE CONSTRUCTION	

SEQUENCE 3 - DEMO BRIDGE		
ACTIVITY	DESCRIPTION	DURATION
3A	REMOVE PORTIONS OF FENDER SYSTEM	
3B	REMOVE SWING SPAN (POSSIBLE LIFT/FLOAT OUT OPERATION)	
3C	PARTIAL DEMO DECK IN EAST END SPAN	
3D	REMOVE DECK/GIRDERS IN EAST END SPAN	
3E	EXCAVATE BEHIND EXISTING ABUTMENTS TO REDUCE LATERAL LOADS	
3F	DEMO PIVOT PIER AND REST PIER CAPS	
3G	PULL/CUT-OFF PILES IN PIVOT PIER AND REST PIER	
3H	PULL/CUT-OFF REMAINING FENDER PILES AND PLATFORM AT CONTROL HOUSE	

ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	D. NEELY / J. SOTO
COUNTY	CHECKED BY:	J. HEWKO / C. GRANADOS
SUSSEX		

CONSTRUCTION SEQUENCE (1 OF 6)

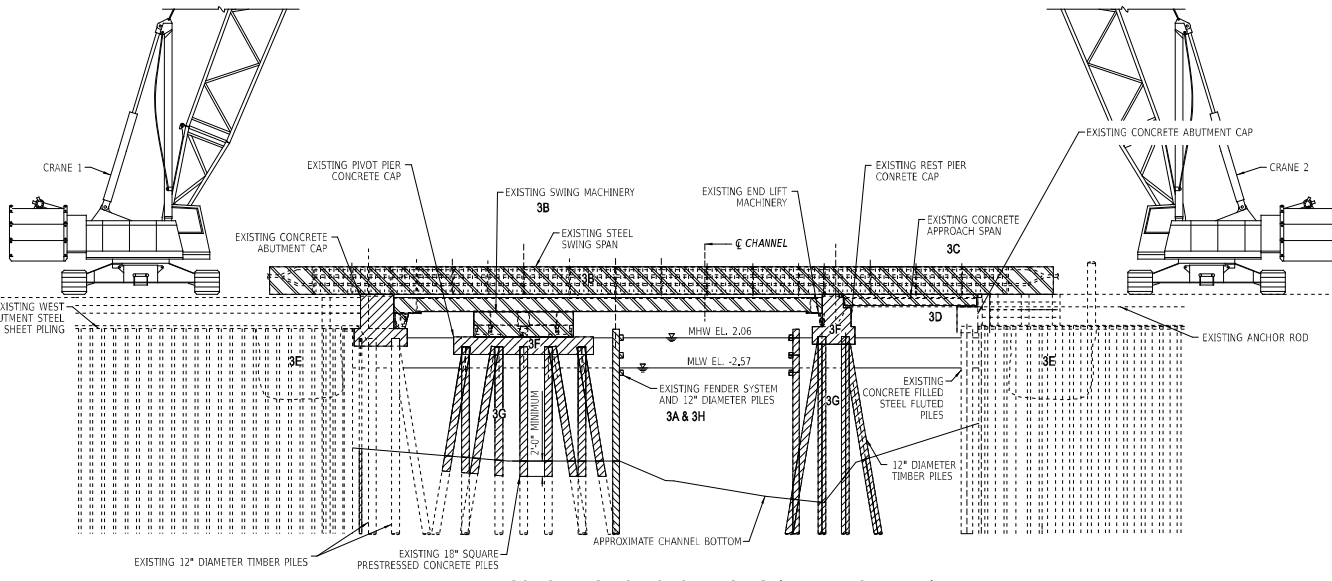
FINAL PLANS S-08

SECTION

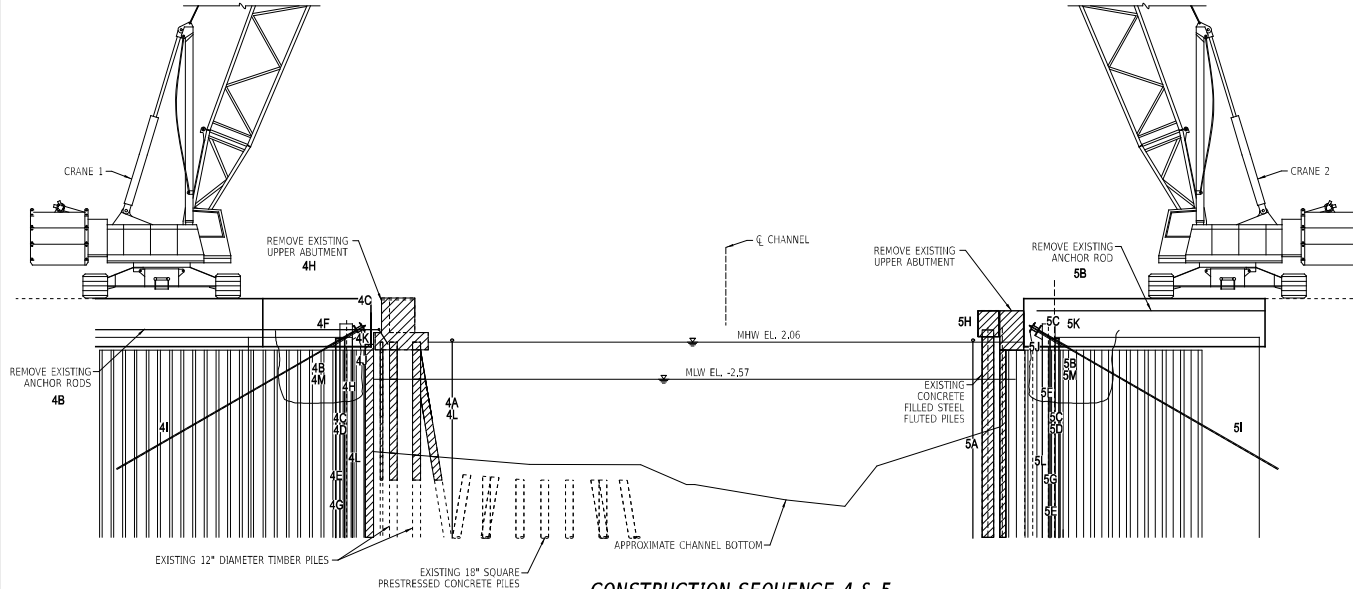
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SHEET NO.

17



CONSTRUCTION SEQUENCE 3 (ELEVATION VIEW)



CONSTRUCTION SEQUENCE 4 & 5

HATCHING LEGEND

- SUPERSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING SWING SPAN STRUCTURAL STEEL AND ALL MECHANICAL AND ELECTRICAL COMPONENTS
- SUBSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING BRIDGE SUBSTRUCTURE, WEST AND EAST ABUTMENTS INCLUDING EXISTING TIMBER BULKHEAD AND STEEL SHEET PILING, PIVOT PIER, AND REST PIER CONCRETE

SEQUENCE 3 - DEMO BRIDGE		
ACTIVITY	DESCRIPTION	DURATION
3A	REMOVE PORTIONS OF FENDER SYSTEM	
3B	REMOVE SWING SPAN (POSSIBLE LIFT/FLOAT OUT OPERATION)	
3C	PARTIAL DEMO DECK IN EAST END SPAN	
3D	REMOVE DECK/GIRDERS IN EAST END SPAN	
3E	EXCAVATE BEHIND EXISTING ABUTMENTS TO REDUCE LATERAL LOADS	
3F	DEMO PIVOT PIER AND REST PIER CAPS	
3G	PULL/CUT-OFF PILES IN PIVOT PIER AND REST PIER	
3H	PULL/CUT-OFF REMAINING FENDER PILES AND PLATFORM AT CONTROL HOUSE	

SEQUENCE 4 - CONSTRUCT WEST ABUTMENT		
ACTIVITY	DESCRIPTION	DURATION
4A	INSTALL TURBIDITY CURTAIN	
4B	CONTINUE EXCAVATION BEHIND WEST ABUTMENT, NW, SW CORNERS & AT CONTROL HOUSE. CUT EX. TIEBACKS	
4C	INSTALL PILE TEMPLATE AND DRIVE PPC TEST PILE. EVALUATE TEST PILE DATA TO ESTABLISH DRIVING CRITERIA	
4D	INSTALL REMAINING 14" PRESTRESSED, PRECAST CONCRETE PILES. REMOVE PILE TEMPLATE	
4E	INSTALL TEMPORARY COFFERDAMS / WALLS NEAR CORNERS OF EXISTING BRIDGE	
4F	INSTALL SHEETING TEMPLATE AND DRIVE NEW SHEETING FOR WEST ABUTMENT, NW, SW CORNERS & CONTROL HOUSE	
4G	REMOVE SHEETING TEMPLATE AND RESTRIKE PPC PILE	
4H	REMOVE UPPER PORTION OF EXISTING BRIDGE ABUTMENT INCLUDING EXISTING TIMBER PILES (IN FRONT OF NEW SHEETING)	
4I	INSTALL SOIL ANCHORS THRU NEW SHEETING ALONG THE FULL LENGTH OF THE WEST EMBANKMENT	
4J	INSTALL HORIZONTAL WALERS AND TEST/LOAD SOIL ANCHORS	
4K	CONSTRUCT NESTED CIP CONCRETE CAP ON WEST ABUTMENT, NW, SW CORNERS & ALONG CONTROL HOUSE (WITHOUT BACKWALL)	
4L	REMOVE COFFERDAMS / WALLS AND TURBIDITY CURTAIN	
4M	BACKFILL WEST ABUTMENT	

SEQUENCE 5 - CONSTRUCT EAST ABUTMENT		
ACTIVITY	DESCRIPTION	DURATION
5A	INSTALL TURBIDITY CURTAIN	
5B	EXCAVATE BEHIND EAST ABUTMENT & NE, SE CORNERS. CUT EX. TIEBACKS	
5C	INSTALL PILE TEMPLATE AND DRIVE PPC TEST PILE. EVALUATE TEST PILE DATA TO ESTABLISH DRIVING CRITERIA	
5D	INSTALL REMAINING 14" PRESTRESSED, PRECAST CONCRETE PILES. REMOVE PILE TEMPLATE	
5E	INSTALL TEMPORARY COFFERDAMS / WALLS NEAR CORNERS OF EXISTING BRIDGE	
5F	INSTALL SHEETING TEMPLATE AND DRIVE NEW SHEETING FOR EAST ABUTMENT, NE & SE CORNERS	
5G	REMOVE SHEETING TEMPLATE AND RESTRIKE PPC PILE	
5H	REMOVE UPPER PORTION OF EXISTING BRIDGE ABUTMENT INCLUDING EXISTING TIMBER PILES	
5I	INSTALL SOIL ANCHORS THRU NEW SHEETING ALONG THE FULL LENGTH OF THE EAST EMBANKMENT	
5J	INSTALL HORIZONTAL WALERS AND TEST/LOAD SOIL ANCHORS	
5K	CONSTRUCT NESTED CIP CONCRETE CAP ON EAST ABUTMENT, NE & SE CORNERS (WITHOUT BACKWALL)	
5L	REMOVE COFFERDAMS / WALLS AND TURBIDITY CURTAIN	
5M	BACKFILL EAST ABUTMENT	

FINAL PLANS

ADDENDA / REVISIONS



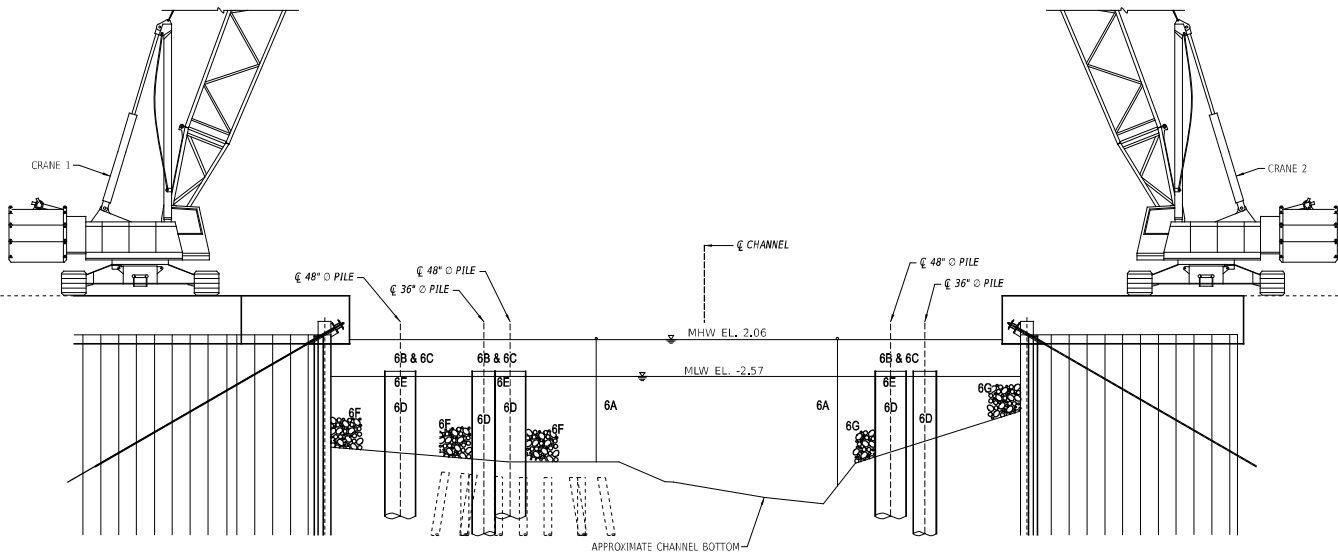
REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	D. NEELY / J. SOTO
COUNTY	CHECKED BY:	J. HENKO / C. GRANAPOS
SUSSEX		

CONSTRUCTION SEQUENCE (2 OF 6)



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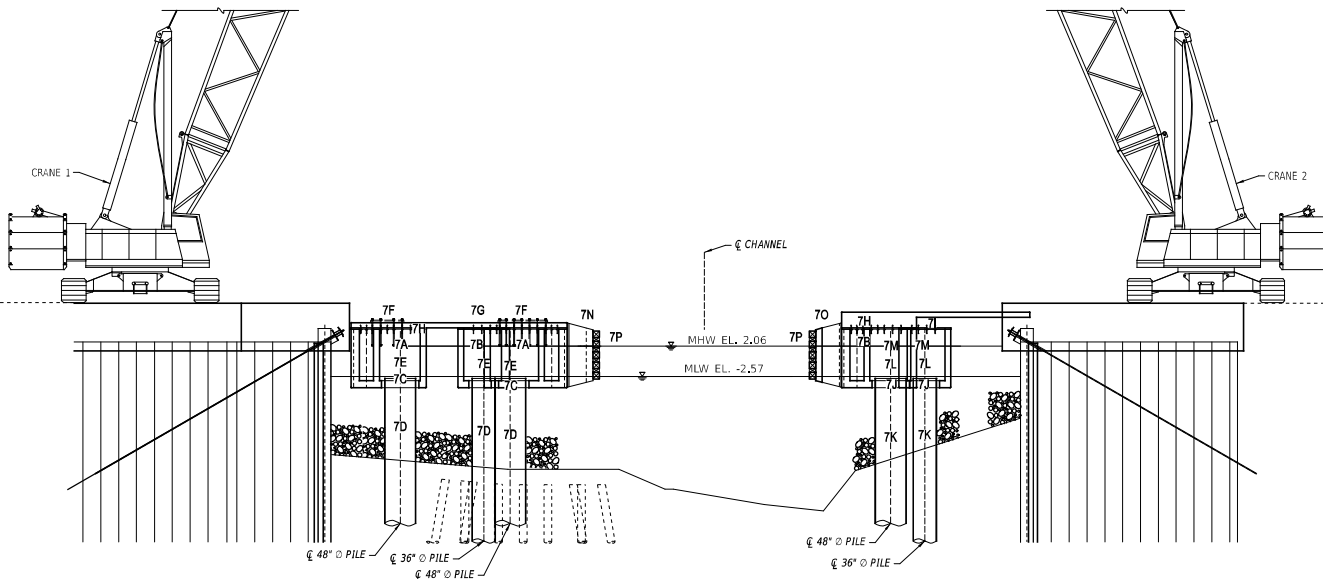


CONSTRUCTION SEQUENCE 6

HATCHING LEGEND

-  SUPERSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING SWING SPAN STRUCTURAL STEEL AND ALL MECHANICAL AND ELECTRICAL COMPONENTS
-  SUBSTRUCTURE DEMOLITION - REMOVE AND DISCARD EXISTING BRIDGE SUBSTRUCTURE, WEST AND EAST ABUTMENTS INCLUDING EXISTING TIMBER BULKHEAD AND STEEL SHEET PILING, PIVOT PIER, AND REST PIER CONCRETE

SEQUENCE 6 - CONSTRUCT PIER FOUNDATION		
ACTIVITY	DESCRIPTION	DURATION
6A	INSTALL TURBIDITY CURTAIN AND REMOVE EXISTING RIP RAP AT PROPOSED PILE LOCATIONS	
6B	INSTALL PILE TEMPLATE / FRAME FOR 48" DIAMETER PIPE PILES (OPEN END, CONCRETE FILLED IN FINAL CONDITION)	
6C	INSTALL TEST PILES & EVALUATE PDA DATA TO ESTABLISH DRIVING CRITERIA	
6D	INSTALL REMAINING PILES WITH PDA FOR PIERS AND FENDER	
6E	MODIFY PILE DRIVING TEMPLATE TO ACCOMMODATE INSTALLATION AND SUPPORT OF PRECAST SUBSTRUCTURE UNIT	
6F	INSTALL RIP RAP ALONG WEST ABUTMENT AND BASCULE PIER	
6G	INSTALL RIP RAP ALONG EAST ABUTMENT AND REST PIER	



CONSTRUCTION SEQUENCE 7

SEQUENCE 7 - CONSTRUCT PIER SUBSTRUCTURE		
ACTIVITY	DESCRIPTION	DURATION
7A	INSTALL PRECAST CONCRETE SUBSTRUCTURE UNIT OVER THE BASCULE PIER PILES	
7B	INSTALL PRECAST CONCRETE SUBSTRUCTURE UNITS OVER THE WEST FENDER PILES	
7C	POUR SEAL SLAB AT ALL BASCULE PIER AND WEST FENDER PILE LOCATIONS AND DEWATER PRECAST UNITS	
7D	PLACE PILE REINFORCING AND CONCRETE 36" AND 48" PILES (BASCULE PIER/WEST FENDER)	
7E	PLACE REINFORCING CAGES IN PRECAST UNITS AND POUR BASCULE PIER/WEST FENDER SUBSTRUCTURE CONCRETE IN LIFTS	
7F	INSTALL TOWER ANCHOR BOLTS AND PRECAST ACCESS PLATFORMS ON BASCULE PIER	
7G	INSTALL PRECAST CONCRETE CAPS OVER THE WEST FENDER PILES	
7H	INSTALL PRECAST CONCRETE SUBSTRUCTURE UNIT OVER THE REST PIER PILES	
7I	INSTALL PRECAST CONCRETE SUBSTRUCTURE UNITS OVER THE EAST FENDER PILES	
7J	POUR SEAL SLAB AT ALL REST PIER/EAST FENDER PILE LOCATIONS AND DEWATER PRECAST UNITS	
7K	PLACE PILE REINFORCING AND CONCRETE 36" AND 48" AT REST PIER/EAST FENDER PILES	
7L	PLACE REINFORCING CAGES IN PRECAST UNITS AND POUR REST PIER/EAST FENDER SUBSTRUCTURE CONCRETE IN LIFTS	
7M	INSTALL PRECAST CONCRETE CAPS OVER THE EAST FENDER PILES	
7N	INSTALL ARCH FENDER AT BASCULE PIER	
7O	INSTALL ARCH FENDER AT REST PIER	
7P	INSTALL FENDER RAILS AT BOTH PIERS AND FENDER PILES	

ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	D. NEELY / J. SOTO
COUNTY	CHECKED BY:	J. HENKO / C. GRANADOS
SUSSEX		

FINAL PLANS	S-10
CONSTRUCTION SEQUENCE (3 OF 6)	SECTION
	H6H
	SHEET NO.
	19

ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

- A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.
- B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, CONTACT THE ENVIRONMENTAL STUDIES SECTION AT 1302-760-2264 OR DOT-ENVIRONMENTALSTUDIES@DELAWARE.GOV TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.
- C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

2. NATURAL RESOURCE ISSUES:

- A. PERMIT REQUIREMENTS/APPROVALS *:
 U.S. ARMY CORPS OF ENGINEERS (COE): NATIONWIDE PERMIT (NWP) 23 WITH PRECONSTRUCTION NOTIFICATION (PCN) AND SECTION 408 AUTHORIZATION**
 DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): WETLANDS AND SUBAQUEOUS LANDS PERMIT**
 DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED NWP 23 US COAST GUARD (USCG): US COAST GUARD BRIDGE PERMIT
- * THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THESE APPROVALS.
- ** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREAS AND ENSURE THEY ARE DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.
- B. CONSTRUCTION RESTRICTIONS:
 FISHERIES - RESTRICT IN-STREAM WORK FROM MARCH 1-MAY 15 TO ALLOW UPSTREAM PASSAGE OF YOUNG AMERICAN EELS. ENDANGERED SPECIES - RESTRICT IN-STREAM WORK FROM MARCH 15-JUNE 30 TO PROVIDE SPawning HABITAT FOR ANADROMOUS SPECIES.
 MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES:

- A. NONE
- X. STREAM RESTORATION AND RIPRAP TREATMENT:

- A. FOLLOW THE SPECIAL PROVISION FOR ITEM 707500 - CHANNEL BED FILL IN REGARDS TO THE SAVAGING OF ON-SITE NATURAL STREAM BOTTOM MATERIAL OR THE FURNISHING OF OFFSITE MATERIAL. IF SUFFICIENT SOURCES FOR CHANNEL BED FILL DO NOT EXIST ON-SITE, ANY NEW MATERIAL MUST CONFORM TO THE REQUIREMENTS OF ITEM 707500 - CHANNEL BED FILL. RECESS ALL RIPRAP IN THE CHANNEL BOTTOM (I.E. BELOW THE WATER LINE) ONE FOOT BELOW STREAM BED ELEVATION AND CHOKES WITH BORROW TYPE "B" SO THAT ALL OF THE VOIDS IN THE RIPRAP ARE FILLED WITH SPECIFIED MATERIAL. PAYMENT UNDER ITEM 20002 - BORROW, TYPE B, COVER THE RIPRAP WITH A MINIMUM OF 12" CHANNEL BED FILL. MATCH THE FINAL CHANNEL ELEVATIONS WITH EXISTING ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM PROJECT LIMITS. THROUGH THE STRUCTURE, ELEVATIONS WILL BE AS NOTED ON THE PLANS. PAYMENT UNDER ITEM 707500 - CHANNEL BED FILL.
- B. RESTORE OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, TEMPORARY PIPES AND/OR SANDBAG DIKES AND DIVERSIONS) TO EXISTING CONDITIONS. FILL ANY CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES WITH CHANNEL BED FILL. PAYMENT UNDER ITEM 707500 - CHANNEL BED FILL.
- C. WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND AND ABOVE THE RIPRAP (I.E. THE FLOW CANNOT BE "LOST" IN THE RIPRAP OR BENEATH THE STRUCTURE). IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.
- D. CHOKe ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, WITH DELAWARE #57 STONE. PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF CHANNEL BED FILL OR TOPSOIL (DEPENDING ON LOCATION AS INDICATED BELOW) THROUGH THE RIPRAP.
 - 1. BENEATH THE BRIDGE: AFTER PLACING DELAWARE #57 STONE, PERFORM A FINAL CHOKe OF CHANNEL BED FILL SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. PAYMENT UNDER ITEM 707500 - CHANNEL BED FILL. DELAWARE #57 STONE IS INCIDENTAL TO THE RIPRAP ITEM.
 - 2. ALL OTHER LOCATIONS: FINISH FILLING THE VOIDS WITH TOPSOIL SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. PLACE AN ADDITIONAL 6-INCH TOPSOIL LAYER ON TOP OF THE RIPRAP. SLOPE SEEDING WILL BE DONE WITH ITEM 908019 - STREAMBANK SEED MIX, SEEDING. FOLLOWING THE SEEDING OPERATION, INSTALL ITEM 908020 - EROSION CONTROL BLANKET (ECB) MULCH, OR OTHER BLANKET AS SHOWN ON THE PLANS. ECB AT TOE OF SLOPE CAN BE EITHER TRENCHED IN OR STAPLED AT 6" ON CENTER. COMPLETE ALL WORK, STARTING WITH THE INITIAL CHOKING WITH TOPSOIL THROUGH THE SEEDING AND MULCHING PRIOR TO ANY RAIN EVENT. DELAWARE #57 STONE IS INCIDENTAL TO THE RIPRAP ITEM. ALL OTHER ITEMS WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
- E. THE TOPSOIL/SEED/MULCH CAN BE PLACED BEFORE OR AFTER THE REMOVAL OF THE STREAM DIVERSION, IF THE PLACEMENT OCCURS AFTER STREAM DIVERSION REMOVAL, USE A TURBIDITY CURTAIN TO MINIMIZE IN-STREAM SEDIMENTATION. PAYMENT WILL BE INCIDENTAL TO ITEM 908020 - STREAM DIVERSION.

4. PROTECTION OF RESOURCES:

- A. USE SILT FENCE OR CONSTRUCTION SAFETY FENCE ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER OR WETLANDS ARE BEING IMPACTED (AS SHOWN ON ENVIRONMENTAL COMPLIANCE SHEETS), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LIMIT OF CONSTRUCTION (AS SHOWN ON CONSTRUCTION PLAN SHEETS). ANY CONTRACTOR ACCESS BEYOND THE LIMIT OF CONSTRUCTION IS STRICTLY PROHIBITED.
- B. USE SANDBAGS OR COMPOST FILTER LOG (CFL) TO SECURE SILT FENCE AT AREAS ADJACENT TO WOODED UPLANDS; ALL WETLANDS IN LIEU OF TRENCHING UNLESS PROPER EROSION AND SEDIMENT CONTROL CANNOT BE MAINTAINED. REMOVE SANDBAGS AND CFLS (AND CONTENTS) IN THEIR ENTIRETY WHEN NO LONGER NEEDED. SANDBAGS/CFLS USED TO SECURE THE SILT FENCE IS INCIDENTAL TO ITEM 905001 - SILT FENCE. THE ENVIRONMENTAL STUDIES SECTION (DOT-ENVIRONMENTALSTUDIES@DELAWARE.GOV) CAN PROVIDE FURTHER GUIDANCE REGARDING THIS METHOD OF INSTALLATION.
- C. CLEARLY MARK ALL TREES TO BE REMOVED WITH PAINT PRIOR TO THE EROSION AND SEDIMENT CONTROL MEETING.

ORIGINAL SHEET PREPARED BY AECOM ON 1/31/2020. SHEET LAST UPDATED ON 7/28/2022.

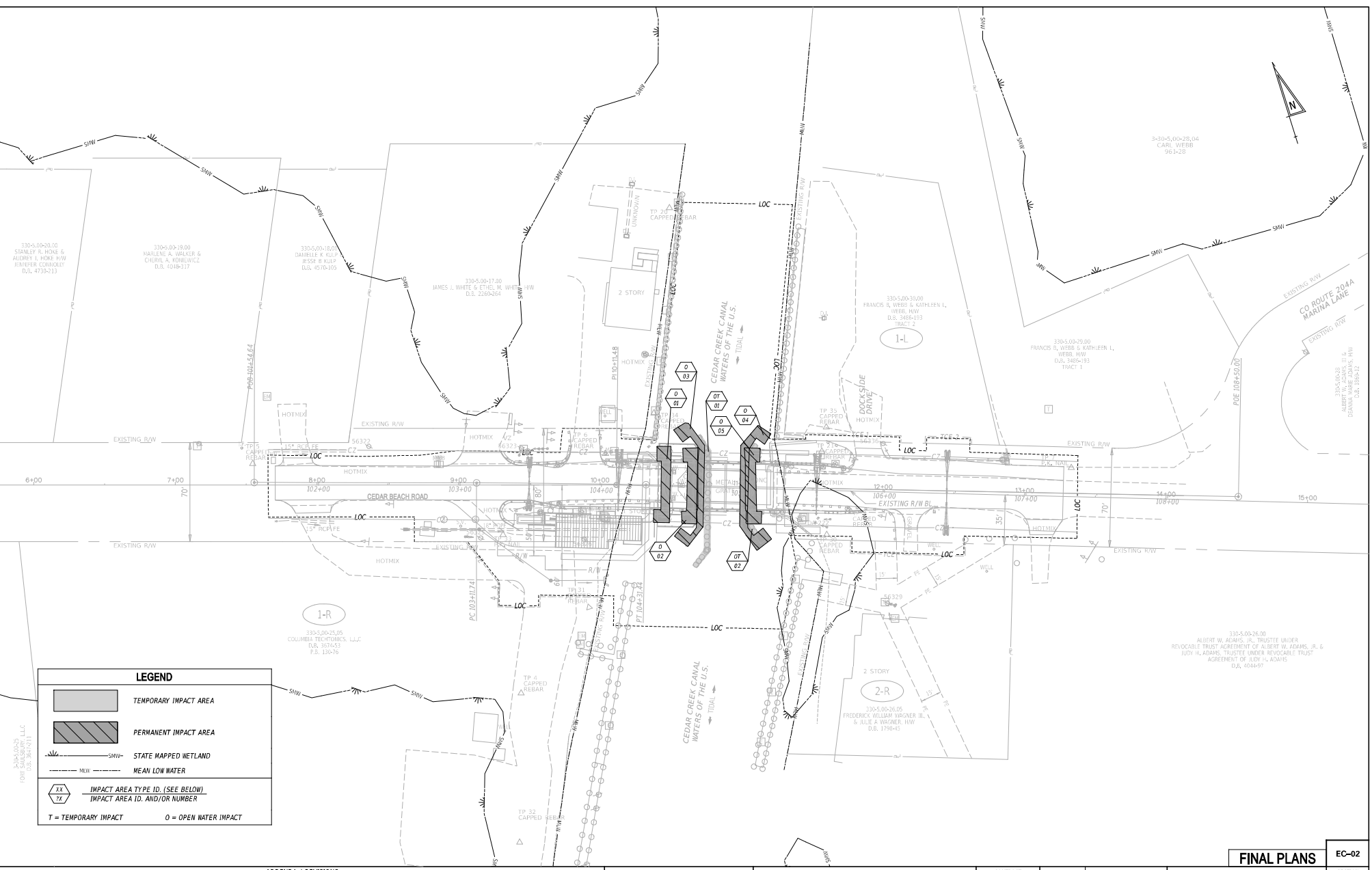
PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
0-01	SUBSTRUCTURE	426.15	0.0098	61.55	ACOE/DNREC
0-02	SUBSTRUCTURE	466.28	0.0107	67.35	ACOE/DNREC
0-03	FENDER INSTALLATION	547.98	0.0126	79.15	ACOE/DNREC
0-04	FENDER INSTALLATION	633.77	0.0145	91.54	ACOE/DNREC
0-05	SUBSTRUCTURE	466.28	0.0107	67.35	ACOE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		2540.46	0.0583	366.94	

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-01	FENDER REMOVAL	483.95	0.0111	69.90	ACOE/DNREC
OT-02	FENDER REMOVAL	307.46	0.0071	44.41	ACOE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		791.41	0.0182	114.31	

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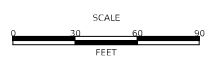
ADDENDA / REVISIONS	NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT T202007301 COUNTY SUSSEX	BRIDGE NO. 3-164 DESIGNED BY: G. CORREALE CHECKED BY: G. PERDICK	FINAL PLANS ENVIRONMENTAL COMPLIANCE PLAN	EC-01 SECTION AEC SHEET NO. 167
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LEGEND	
	TEMPORARY IMPACT AREA
	PERMANENT IMPACT AREA
	STATE MAPPED WETLAND
	MEAN LOW WATER
	IMPACT AREA TYPE ID. (SEE BELOW) IMPACT AREA ID. AND/OR NUMBER
T	TEMPORARY IMPACT
O	OPEN WATER IMPACT

ADDENDA / REVISIONS



**REPLACEMENT OF BR 3-164 ON
SR 36 CEDAR BEACH ROAD**

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

FINAL PLANS		EC-02
ENVIRONMENTAL COMPLIANCE PLAN		SECTION
		AEC
		SHEET NO.
		188

GENERAL MOT NOTES

- AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

(X)	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
()	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 801000.

- THE USE OF MILLINGS AND GRADED AGGREGATE BASE COURSE (GABC) IN THE TRAVEL WAY, TEMPORARY TRAVEL WAY, HIGH VOLUME ENTRANCES AND ACCESS RAMP FOR THE PURPOSE OF PROVIDING A TEMPORARY ROADWAY SURFACE, POTHOLE REPAIR, TAPERED EDGE FOR UTILITIES, BUTT JOINTS, AND LONGITUDINAL DROP-OFFS (MILLING AND PAVING OPERATIONS) IS PROHIBITED UNLESS IT IS OTHERWISE DESIGNATED TO BE USED IN THE CONTRACT PLANS. USE COLD PATCH, BITUMINOUS CONCRETE, BITUMINOUS CONCRETE WEDGE, OR TAPER MILL, AS NOTED IN THE CONTRACT DOCUMENTS OR APPROVED BY THE ENGINEER. PAYMENT FOR COLD PATCH, BITUMINOUS CONCRETE OR BITUMINOUS CONCRETE WEDGE SHALL BE PAID AS NOTED IN THE CONTRACT DOCUMENTS. TAPER MILL BITUMINOUS CONCRETE SHALL BE PAID UNDER THE BITUMINOUS CONCRETE MILLING ITEM. MILLINGS OR GABC SHALL BE USED AT THE FOLLOWING LOCATIONS WHERE ACCESS TO A BUSINESS, RESIDENCE, OR EDGE DROP-OFF NEEDS TO BE MAINTAINED UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER TO USE BITUMINOUS CONCRETE OR COLD PATCH. ALL MILLINGS AND GABC WILL BE ROLLED AND COMPACTED TO HELP PREVENT THE MATERIAL FROM UNROLLING.

- DRIVEWAYS
- ENTRANCES
- LOW VOLUME ACCESS RAMPS (IDENTIFIED IN THE CONTRACT DOCUMENTS)
- EDGE DROP-OFFS ADJACENT TO LIVE ROADWAY (LANES AND SHOULDER) AND THE PROPOSED ROAD CONSTRUCTION
- EDGE OF ROADWAY DROP-OFF

GRADING AND MAINTAINING BASE COURSE THAT IS BEING USED FOR ROADWAY WEDGE/FILLET BETWEEN TRAVEL LANES AND PAVEMENT BOX, EDGE OF TRAVELWAY, DRIVEWAY OR ENTRANCE ACCESS SHALL BE INCIDENTAL TO ITEM NO. 801000 - MAINTENANCE OF TRAFFIC. THE BASE COURSE MATERIAL SHALL BE PLACED AT NO GREATER THAN THE SLOPE SPECIFIED IN TABLE 6G-1 AND SHALL BE COMPACTED. EXCESS BASE COURSE MATERIAL SHALL BE PUSHED AHEAD AND USED IN THE NEXT SEGMENT AND SHALL BE INCIDENTAL TO THE PARTICULAR BASE COURSE PAY ITEM. NO SEPARATE PAYMENT SHALL BE MADE FOR MILLINGS OR GABC TEMPORARY ROADWAY MATERIAL (TRM) USED TO PROTECT EDGE DROP-OFFS, UNLESS THE MATERIAL IS EVENTUALLY UTILIZED AS PART OF A PERMANENT ROADWAY AT WHICH TIME THE MATERIAL WOULD BE PAID FOR UNDER THE RESPECTIVE CONTRACT MATERIAL ITEM.

VERTICAL DIFFERENCES SHALL BE CORRECTED IN ACCORDANCE WITH TABLE 6G-1 OF THE DELAWARE MUTCD.

- THIS PROJECT IS CONSIDERED A SIGNIFICANT PROJECT AS DEFINED BY DELDOT'S WORK ZONE MOBILITY PROCEDURES AND GUIDELINES. A MODIFIED TYPE B TRANSPORTATION MANAGEMENT PLAN (TMP) HAS BEEN PREPARED AND IS AVAILABLE FOR VIEWING BY CONTACTING THE DEPARTMENT'S SAFETY PROGRAMS MANAGER AT (302)659-4060. ALL MONITORING REQUIREMENTS OF THE TMP SHALL BE CONDUCTED BY DELDOT FORCES UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MODIFICATIONS TO THE TMP SHALL BE COMPLETED BY THE CONTRACTOR IN ACCORDANCE WITH THE RESTRICTIONS OR THE TRAFFIC CONTROL PLAN ARE DESIRED. THE MODIFIED TMP SHALL BE PREPARED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF DELAWARE.

SEQUENCE OF CONSTRUCTION

- INSTALL MOT DEVICES IN ACCORDANCE WITH THE DETOUR PLAN AND CLOSE CEDAR BEACH ROAD.
- INSTALL E&S CONTROLS AS SHOWN ON THE PLANS.
- DEMOLISH EXISTING TO INCLUDE: BRIDGE, DRIVE SYSTEMS, PIERS, ABUTMENTS, PILES FENDERS, AND CONTROL HOUSE.
- FABRICATE AND INSTALL NEW PIERS, ABUTMENTS, AND FENDERS. TURBIDITY CURTAINS T-3 AND T-3 MAY BE REMOVED AFTER EXISTING FENDER DEMOLITION AND PIER INSTALLATIONS ARE COMPLETE AT THEIR RESPECTIVE LOCATION AS APPROVED BY THE ENGINEER.
- PLACE RIPRAP FOR PROTECTION OF CANAL BED.
- RELOCATE UTILITY POLES AND ANY RELATED UTILITY LINES. FURNISH AND INSTALL AERIAL CABLES.
- EXCAVATE PAVEMENT AND ROADWAY BASE WITHIN THE LIMITS SHOWN ON THE CP SHEET.
- CONSTRUCT NEW CONTROL HOUSE.
- FURNISH AND INSTALL INCOMING SERVICE UPGRADES, PROPANE TANK AND NEW STAND-BY GENERATOR.
- CAST AND ERECT NEW PRECAST SLAB FLANKING SPANS.
- FABRICATE AND ERECT NEW BASCULE SPAN, TOWERS, COUNTERWEIGHT ARMS, AND COUNTERWEIGHT. VERIFY SPAN BALANCE, ADJUST AS NEEDED TO ACHIEVE DESIRED BALANCE CONDITION.
- FURNISH AND INSTALL NEW ELECTRICAL SYSTEMS.
- INSTALL PROPOSED PAVEMENT AS SHOWN ON THE PLANS AND COMPLETE ANY OTHER REMAINING WORK INCLUDING ROADWAY STRIPING AND GRADING. EXTEND PERIMETER CONTROLS TO THE ABUTMENT WALLS OR PAVEMENT AS INDICATED. SEED AND MULCH ALL DISTURBED AREAS DOWNSTREAM OF THE PERIMETER CONTROLS WITH ECB. REMOVE TURBIDITY CURTAINS T-1 AND T-4 AS APPROVED BY THE ENGINEER.
- FURNISH AND INSTALL NEW HYDRAULIC POWER UNIT, CYLINDER MOUNTS, CYLINDERS, AND SPAN LOCKS.
- FURNISH AND INSTALL TRAFFIC CONTROL EQUIPMENT.
- PERFORM COMMISSIONING AND TESTING OF NEW DRIVE SYSTEM.
- REMOVE ALL MOT DEVICES, NOTIFY TMC AND REOPEN CEDAR BEACH ROAD.
- REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER FINAL VEGETATIVE STABILIZATION OF ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS AS DIRECTED BY THE ENGINEER.

EROSION AND SEDIMENT CONTROL NOTES

- MAINTENANCE OF TRAFFIC DURING LANE CLOSURES SHALL CONFORM TO TYPICAL APPLICATION 20 OF THE DELAWARE MUTCD.

EROSION POTENTIAL FOR THIS PROJECT	CONTRACTOR EROSION AND SEDIMENT CONTROL SUPERVISOR REQUIREMENT
() INSIGNIFICANT	NONE
() MINOR	CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X) MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.

- THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A FIVE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE FIVE YEARS, THE CONTRACTOR WILL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS. THE STORMWATER ENGINEER WILL REVIEW THE CURRENT SEDIMENT AND STORMWATER MANAGEMENT PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

- THE DISTURBED AREA FOR THIS PROJECT IS 0.810 ACRES.
- ADDITIONAL IMPERVIOUS AREA FOR THIS PROJECT IS 0.057 ACRES.

CONSTRUCTION PHASING & M.O.T

	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION SAFETY FENCE / LENGTH
	CONSTRUCTION SAFETY FENCE
	CONSTRUCTION WARNING SIGN LOCATION
	CONSTRUCTION WARNING SIGN
	CRASH CUSHION ARRAY
	DRUM - TRAFFIC CONTROL
	FLAGGER LOCATION
	PHASING TRAFFIC FLOW ARROW
	TEMPORARY CONSTRUCTION
	TEMPORARY PAVEMENT MARKING ARROW
	TRUCK WITH MOUNTED ATTENUATOR
	WORK AREA - ACTIVE PHASE

EROSION & SEDIMENT CONTROL

	COMPOST FILTER LOG
	COMPOST FILTER LOG / LENGTH
	DEWATERING BAG
	DEWATERING BASIN
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE / LENGTH
	SILT FENCE
	REINFORCED SILT FENCE / LENGTH
	REINFORCED SILT FENCE
	SUPER SILT FENCE / LENGTH
	SUPER SILT FENCE
	SUMP PIT
	SEDIMENT TRAP / NUMBER
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
	TURBIDITY CURTAIN

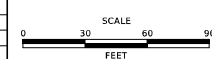
FINAL PLANS

CS-01

CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN

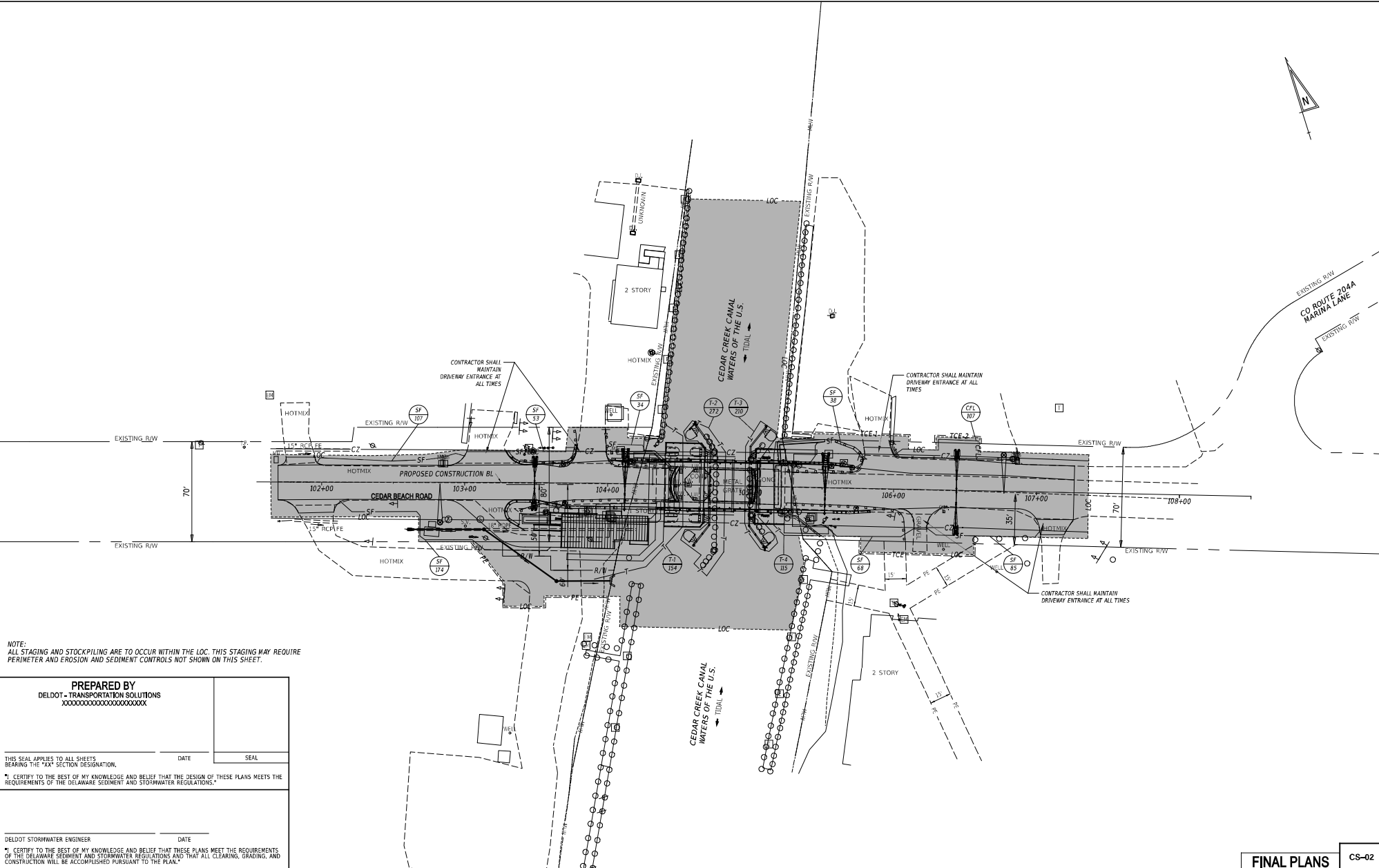
SECTION
AEC
SHEET NO.
169

ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

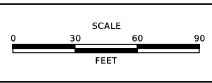
CONTRACT T202007301	BRIDGE NO. 3-164
COUNTY	DESIGNED BY: G. CORREALE
SUSSEX	CHECKED BY: G. PERDICK



NOTE:
 ALL STAGING AND STOCK PILING ARE TO OCCUR WITHIN THE LOC. THIS STAGING MAY REQUIRE PERIMETER AND EROSION AND SEDIMENT CONTROLS NOT SHOWN ON THIS SHEET.

PREPARED BY DELDOT - TRANSPORTATION SOLUTIONS XXXXXXXXXXXXXXXXXXXXXXXX	
THIS SEAL APPLIES TO ALL SHEETS BEARING THE "XX" SECTION DESIGNATION.	DATE _____ SEAL _____
I, CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN OF THESE PLANS MEETS THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.	
DELDOT STORMWATER ENGINEER	DATE _____
I, CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THESE PLANS MEET THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS AND THAT ALL CLEARING, GRADING, AND CONSTRUCTION WILL BE ACCOMPLISHED PURSUANT TO THE PLAN.	

ADDENDA / REVISIONS



REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

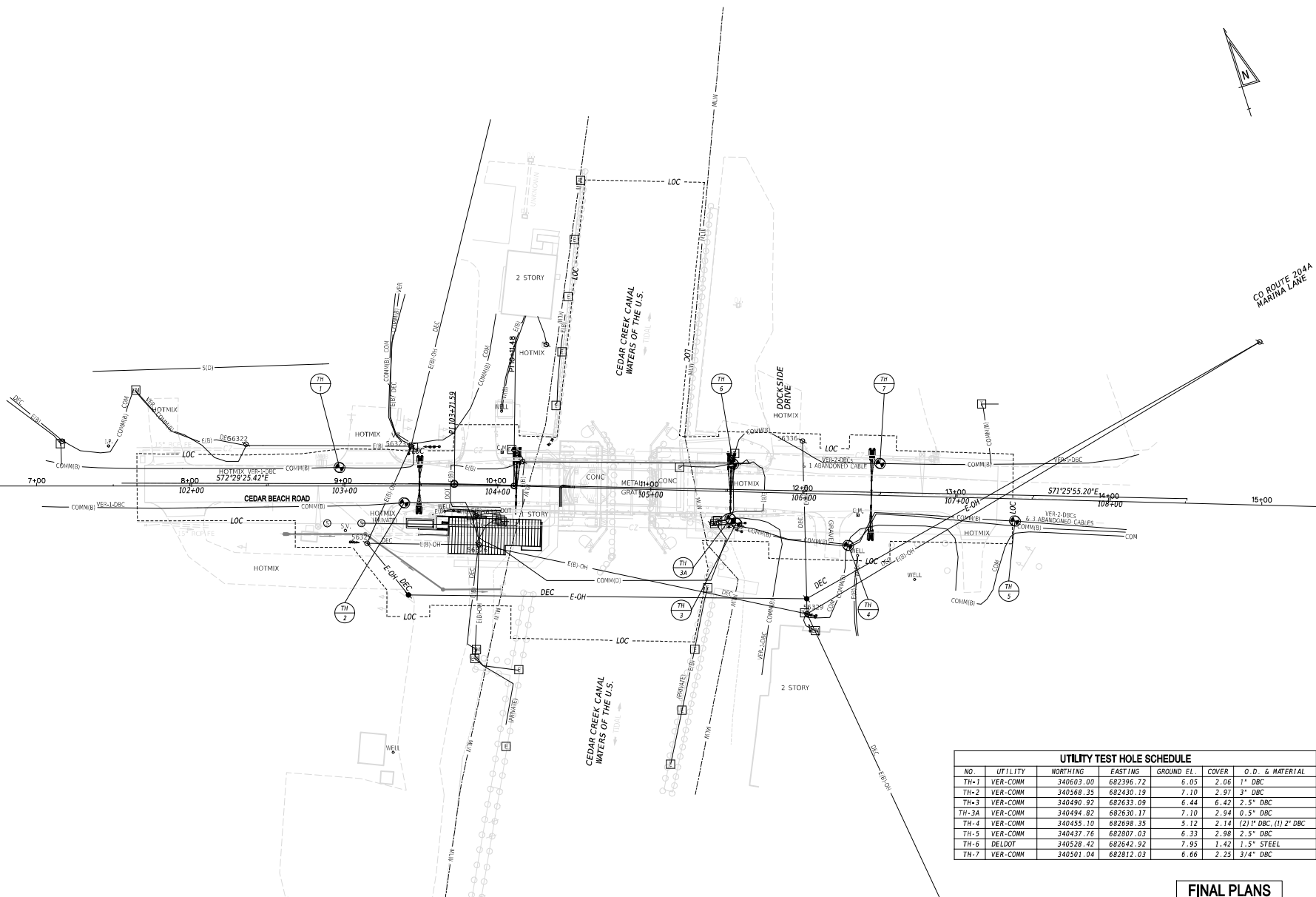
CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN

FINAL PLANS CS-02

SECTION
AEC
SHEET NO.
170

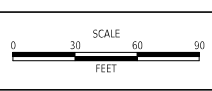
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UTILITY TEST HOLE SCHEDULE						
NO.	UTILITY	NORTHING	EASTING	GROUND EL.	COVER	O. D. & MATERIAL
TH-1	VER-COMM	340603.00	682386.72	6.05	2.06	1" DBC
TH-2	VER-COMM	340568.35	682430.18	7.10	2.97	3" DBC
TH-3	VER-COMM	340490.92	682633.09	6.44	6.42	2.5" DBC
TH-3A	VER-COMM	340494.82	682630.17	7.10	2.94	0.5" DBC
TH-4	VER-COMM	340455.10	682688.35	5.12	2.14	(2) 1" DBC, (1) 2" DBC
TH-5	VER-COMM	340437.76	682807.03	6.33	2.98	2.5" DBC
TH-6	DELDOT	340528.42	682642.92	7.95	1.42	1.5" STEEL
TH-7	VER-COMM	340501.04	682812.03	6.66	2.25	3/4" DBC

ADDENDA / REVISIONS	



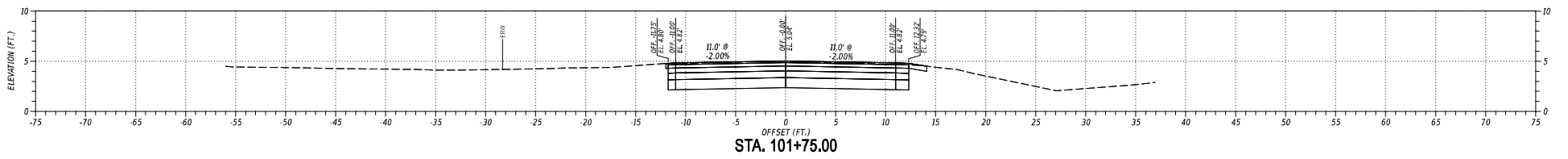
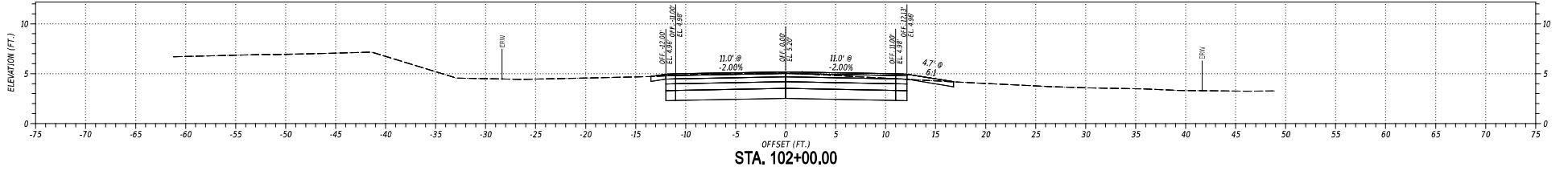
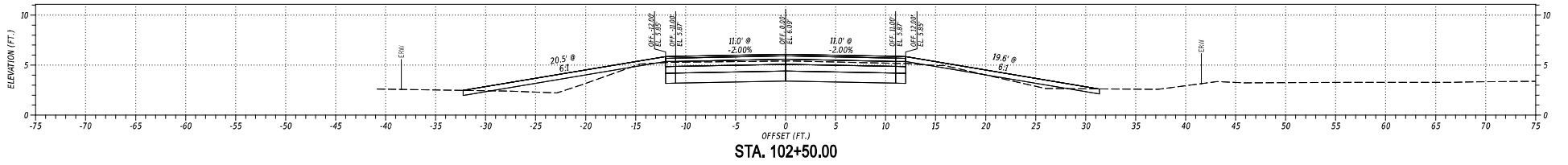
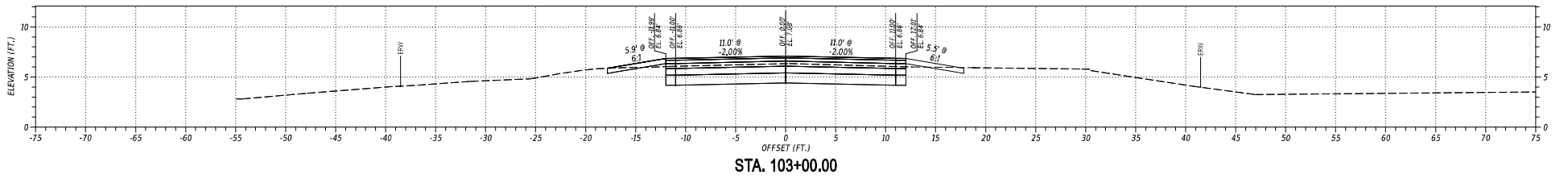
REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

UTILITY RELOCATION PLAN

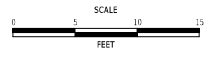
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AEC	
SHEET NO.	173

FINAL PLANS



FINAL PLANS

ADDENDA / REVISIONS

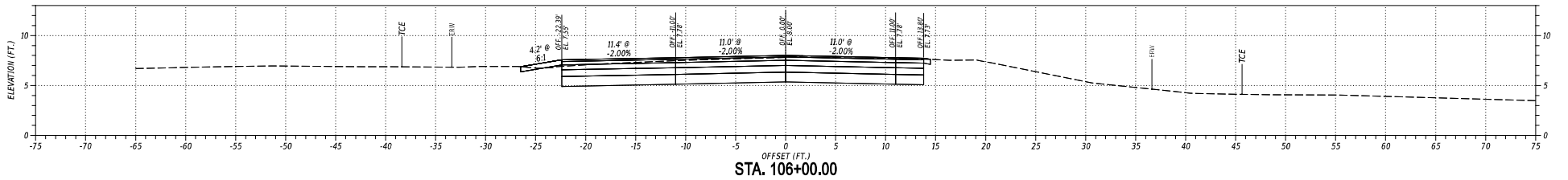


**REPLACEMENT OF BR 3-164 ON
SR 36 CEDAR BEACH ROAD**

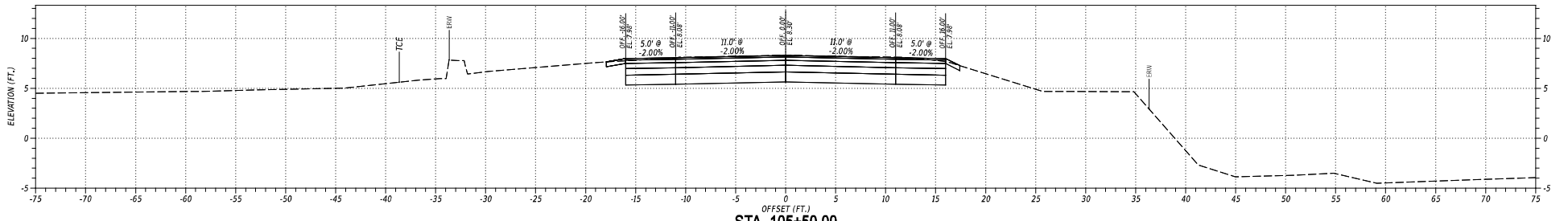
CONTRACT T202007301	BRIDGE NO. 3-164
COUNTY SUSSEX	DESIGNED BY: G. CORREALE
	CHECKED BY: G. PERDICK

CROSS SECTIONS

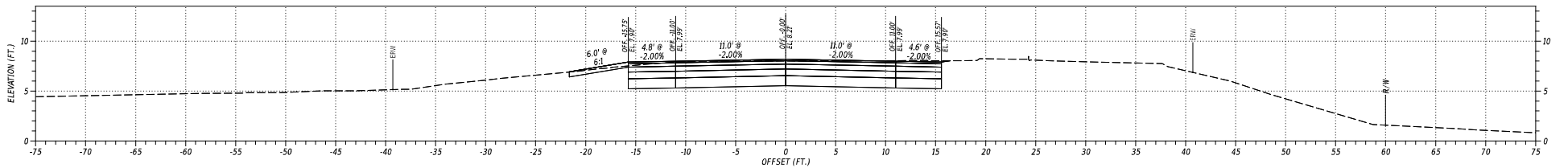
SECTION AEC
SHEET NO. 180



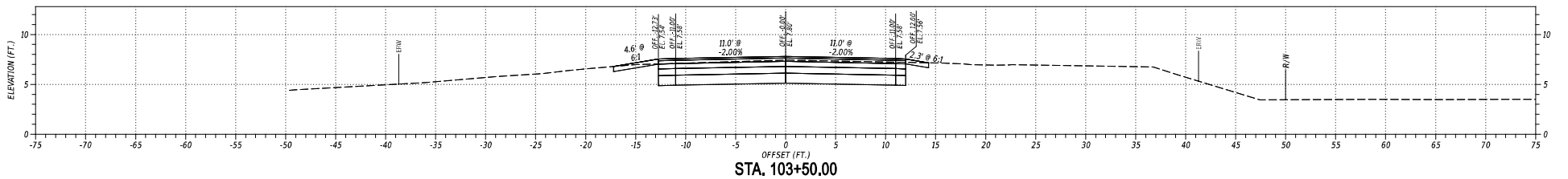
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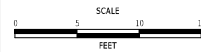
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FINAL PLANS

ADDENDA / REVISIONS

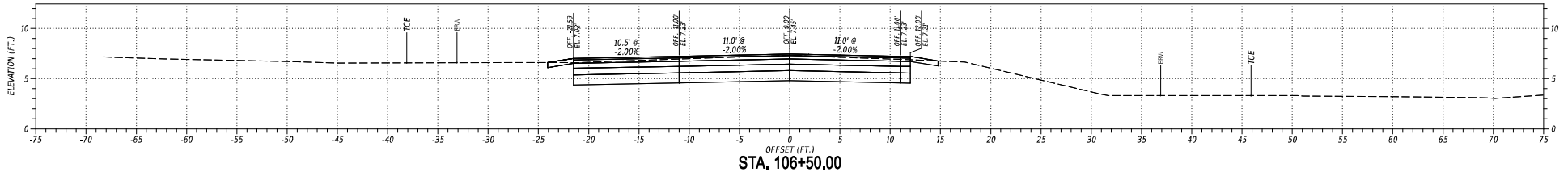
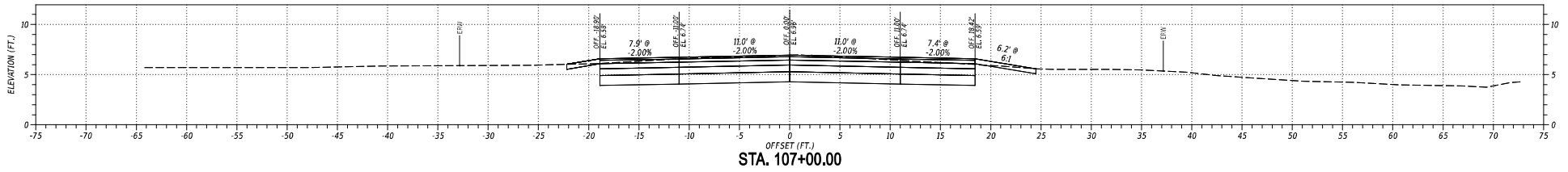


REPLACEMENT OF BR 3-164 ON
SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

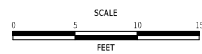
CROSS SECTIONS

SECTION
AEC
SHEET NO.
181



FINAL PLANS

ADDENDA / REVISIONS



**REPLACEMENT OF BR 3-164 ON
SR 36 CEDAR BEACH ROAD**

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	G. CORREALE
COUNTY	CHECKED BY:	G. PERDICK
SUSSEX		

CROSS SECTIONS

SECTION
AEC
SHEET NO.
182



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
<http://www.fws.gov/chesapeakebay>

August 17, 2022

Delaware Department of Transportation
800 Bay Rd
Dover, DE 19903

RE: Replacement of BR 3-164 on SR36 Cedar Beach Road (Slaughter Beach, DE)

Dear Rachel Hearon:

This responds to your letter, received August 5, 2022, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

This project as proposed will have “no effect” on the endangered, threatened, or candidate species listed on your IPaC species list because while the project is within the range of the species, it is unlikely that the species would occur within the project area that was submitted. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact the Delaware Division of Fish and Wildlife's Species Conservation and Research Program at DNREC_EnvReview@delaware.gov or (302) 735-3600 ext. 2. You may also obtain information on how to make such a request by visiting the Program website at <https://dnrec.alpha.delaware.gov/fish-wildlife/conservation/reviews/>.

An additional concern of the Service is wetlands protection. The Service's wetlands policy has the interim goal of no overall net loss of Delaware Bay's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Philadelphia District should be contacted for permit requirements. They can be reached at (215) 656-6728.



We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Kathleen Cullen at (410) 573-4579.

Sincerely,

A handwritten signature in blue ink that reads "G. LaRouche". The signature is written in a cursive style with a large initial "G" and a stylized "LaRouche".

Genevieve LaRouche
Supervisor



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

January 6, 2023

Maureen Kelley
800 Bay Road
P.O. Box 778
Dover, DE 19903

Re: DelDOT 2023 Replacement of BR 3-164 on SR36 Cedar Beach Road (T202007301)

Dear Maureen Kelley:

Thank you for contacting the Species Conservation and Research Program (SCRIP) 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 Army Corps of Engineers (ACOE) 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 Army Corps of Engineers for activities on this property.

Migratory Birds

Bridge 3-164 has not been surveyed for the presence of nesting migratory birds, which are protected by Title 7, Delaware Code, Chapter 7, Sections 734 and 735. It is possible that one or more pairs of barn swallow (*Hirundo rustica*) and/or Eastern phoebe (*Sayornis phoebe*) nest under the bridge(s). If work is proposed during the breeding season (**April 15 – August 1**), a survey should be completed prior to the start of work to determine if nests are present. If a survey detects nesting activity, the following steps should be taken to avoid nest destruction and take, which is a violation of state law:

1. Perform construction activities from **August 1 to April 15**.
2. If construction cannot be performed in this time period, a deterrent such as mesh netting should be used to block access to nesting sites on the underside of the bridge(s). The material would need to be in place no later than **April 15**, the underside of the bridge(s)

would need to be fully encapsulated, and the material should be left in place until construction begins.

If active nests are discovered during the course of work, activities should be halted immediately and SCRIP contacted for further guidance.

Fisheries

Cedar Creek provides spawning habitat for anadromous species including Blueback Herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), and White Perch (*Morone americana*). Alewife and blueback herring, often collectively referred to as 'river herring', are listed by the National Marine Fisheries Service as a Species of Concern. These species are also important to both commercial and recreational fisheries and form an important forage base for other animal species. We request a time of year restriction be put in place on in-water work activities. In-water work should not take place from **March 15th through June 30th**.

Cedar Creek is used by large numbers of American Eel (*Anguilla rostrata*). We request that in stream work not take place from **March 1st to May 15th** to allow upstream passage of elvers (young eels).

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,



Katie Kadlubar
Environmental Review Coordinator
Phone: (302) 735-8665
6180 Hay Point Landing Road
Smyrna, DE 19977

Nein, Craig

From: Aiosa, Kristin
Sent: Thursday, January 05, 2023 10:28 AM
To: EnvReview, DNREC (MailBox Resources); CBFO Project Review, FW5; Cullen, Kathleen M
Cc: Adams, Van (DeIDOT); Klejbuk, Margaret (DeIDOT); Prego, Joseph (DeIDOT); Smith, Anna (DeIDOT)
Subject: RE-QUERY: Replacement of BR 3-164 on SR36 Cedar Beach Road (T202007301)
Attachments: DeIDOT 2022 Replacement of BR 3-164 on SR 36 Cedar Beach Road_SCRP comments.pdf; DeIDOT Replacement of BR 3-164 on SR36 Cedar Beach Road (Slaughter Beach, DE).pdf; BR 3-164 on SR036 Cedar Beach Rd over Cedar Creek_5 Jan 23_Species List_ Chesapeake Bay Ecological Services Field Office.pdf; BR 3-164_Aerial Map.pdf; BR 3-164_Location Map.pdf; BR 3-164_Topo Map.pdf; EFH Mapper Replacement of BR 3-164 on SR36 Cedar Beach Road.pdf; Section 7 Mapper Replacement of BR 3-164 on SR36 Cedar Beach Road.pdf

Good Morning,

This email provides a brief description of an upcoming DeIDOT project. DeIDOT is requesting your review and response concerning the presence of rare, threatened or endangered species within the project area for the project described below. Additionally, please forward any information you have regarding State Natural Heritage Sites, Delaware National Estuarine Research Reserves, and Fisheries within the project area.

PLEASE NOTE: This is a re-query. The project scope has not changed. Agency coordination documents are nearing expiration and must be updated for the permitting process.

Replacement of [BR 3-164](#) on SR36 Cedar Beach Road (Slaughter Beach, DE). The existing structure is DeIDOT's most active movable bridge. The structure has been subject to significant corrosion which has caused section loss and continuous maintenance issues.

The project consists of replacing the current bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span and reconstructing the approach spans as well as the approach roadway. The existing structure is three spans with an overall length of 77'-9". The center span is a 59'-0" bobtail swing span, which provides a 22'-0" wide navigation channel. The proposed structure will be on the same alignment and will have an overall length of 76'-3" with two 18'-6" precast slab spans and a 41'-0" Dutch bascule center span that will provide a 27'-0" navigation channel.

Replacement of the bridge will include demolition of the existing structure and substructures, pile driving, integral fender installation, and roadway approach reconstruction. There will be barge use, but not as the primary means of construction. The substructure work will be done within cofferdams.

Kathleen, I included an updated IPaC species list for your review. There was a hit for red knot and monarch butterfly.

Fisheries: DeIDOT will implement Time of Year Restrictions requested from the previous Species Conservation and Research Program comments. DeIDOT will also coordinate with NOAA NMFS as the project is located within essential fish habitat.

If you have any questions or require additional information to complete your review, please do not hesitate to contact me via email or at the number below. Thank you for your assistance; we look forward to working with your agency to successfully complete this project.

Johnson, Mirmiran & Thompson, Inc.
An Employee-Owned Company

Kristin J. Aiosa, QP
Senior Associate
Natural & Cultural Resources

220 St. Charles Way, Suite 200
York, PA 17402
P. 717-741-6243
F. 717-741-9100
kaiosa@jmt.com

 Please consider the environment before printing this e-mail

This template has been developed to be used in conjunction with the Coast Guard Bridge Permit Application Guide (BPAG), COMDTPUB P16591.3(series), to complete the application material required by Section 3 of the BPAG for an application for a Coast Guard bridge permit or permit amendment. It is permissible to copy and paste this template onto letterhead before submitting to the Coast Guard. Please do not delete any language from the template. Double clicking on a box allows you to check/uncheck it.

Salutation (i.e. Dear Sir/Ma'am):

Application is hereby made for a Coast Guard bridge permit (or permit amendment).

A. ADMINISTRATIVE AND NAVIGATION INFORMATION

1. Application Date:

a. Applicant information:

- 1) Name: Jonathan Tice
- 2) Address: 800 S. Bay Road, Dover, DE 19904
- 3) Telephone number: (302) 760-2327
- 4) Email address: Jonathan.tice@delaware.gov

b. ~~Consultant/Agent information (if employed):~~

- 1) ~~Name (company or individual):~~
- 2) ~~Address:~~
- 3) ~~Telephone number:~~
- 4) ~~Email address:~~
- 5) ~~Letter authorizing a consultant/agent to obtain permits on behalf of the applicant included: Yes No~~

c. Name of Proposed Bridge(s): **Bridge No. 3-164**

- 1) Name of the waterway that the bridge(s) would cross: **Cedar Creek**
- 2) Number of miles above the mouth of the waterway where the bridge(s) would be located and provide latitude and longitude coordinates (degree/minute/second) at centerline of navigation channel (contact the local Coast Guard Bridge Office for guidance): **1 mile @ Latitude 38°56'5.87"N, Longitude 75°19'26.29"W.**
- 3) City or town, county/parish, and state where the bridge(s) would be located at, near, or between: **Sussex County, DE**

Coast Guard Bridge Permit/Permit Amendment Template

4) Brief description of project to include type of bridge(s) proposed [fixed or movable (drawbridge, bascule, vertical lift, swing span, pontoon), highway, railway, pedestrian, pipeline] and existing bridge(s) at project site, if applicable:

This project consists of replacing the current bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span and reconstructing the approach spans as well as the approach roadway.

5) Drawbridge Regulations (if applicable): **CFR 177.234**

6) Date of plans and number of plan sheets: **03/29/2023, 5 sheets.**

7) Estimated cost of bridge(s) and approaches:

a) Provide the estimated cost of the bridge(s) as proposed, with vertical and horizontal navigational clearances: **\$31 Million.**

b) Provide the estimated cost of a low-level bridge(s) on the same alignment with only sufficient clearance to pass high water while meeting the intended purpose and need: **N/A**

8) Type and source of project funding (federal, state, private, etc.): **80% Federal, 20% State.**

9) Proposed project timeline: **Construction to begin in June 2024 with a duration of 365 days.**

10) Other Federal actions (e.g., permits, approvals, funding, etc.) associated with the proposal:

NEPA was approved on 1/17/2023

USACOE - Nationwide Permit 23 (pending approval)

USACOE – Section 408 (pending approval)

d. ~~Legal authority for proposed action:~~

1) ~~Cite appropriate Bridge Act:~~

2) ~~If not the owner of the existing bridge(s) that is being replaced or modified, include a signed statement from the bridge owner authorizing the removal or modification work and cite its location:~~

3) ~~For privately owned bridges, cite authorization for right to build (e.g. deed or easement from the property owner authorizing the proposed construction or modification work):~~

e. ~~International bridges (if applicable):~~

1) ~~Cite the International Bridge Act of 1972, or a copy of the Special Act of Congress if constructed prior to 1972, as the legislative authority for international bridge construction:~~

2) ~~For permits issued under the International Bridge Act of 1972, cite Presidential approval, via the State Department, included with the application as required.~~

NOTE: Please include a copy of State Department approval for international bridges in the application package for a Coast Guard bridge permit.

f. Dimensions of the proposed bridge(s):

1) Vertical clearance as indicated on plan sheets:

Span open: Unlimited clearance from bridge. 35 foot from the aerial power and control cables.

Span closed: 4 feet.

2) Horizontal clearance as indicated on plan sheets: **27 feet.**

3) Length of bridge(s) project: **94 feet**

If no prior permit exists, and this is a modification or replacement project, is the length the same as the old bridge: **Yes**

~~If not, what is the difference:~~

4) Width of bridge(s) project: **50 feet.**

If no prior permit exists, and this is a modification or replacement project, is the width the same as the old bridge: **No**

If not, what is the difference: **An additional 25 feet.**

5) Depth of the waterway at project site at MHW if tidal or OHW if non-tidal, using the appropriate elevation and datum (e.g., NGVD 1929, NAVD 1988, etc.):

11 feet below MHW elevation of 2.06'.

6) Width of waterway at project site at MHW if tidal or OHW if non-tidal: **90 feet.**

7) Significant effect on flood heights and associated drift, if any, that could cause a navigation hazard: **N/A**

g. Temporary Bridge(s) dimensions (vertical clearance, horizontal clearance, length and width), if applicable: **N/A**

h. [Include the following language, if applicable] Enclosed are the waterway data requirements as determined by the Coast Guard District Bridge Office. If a navigation impact report was conducted please cite location(s) in the case file, list title and date of document as appropriate:

i. Existing bridge(s) if applicable:

Coast Guard Bridge Permit/Permit Amendment Template

- 1) Name of bridge(s): **3-164**
- 2) Type of bridge(s) and number of lanes (e.g., fixed or moveable (drawbridge, bascule, vertical lift, swing span, pontoon, etc.); highway, railway, pedestrian, pipeline): **Movable swing span roadway bridge.**
- 3) For movable spans identify the existing drawbridge operating regulation governing the structure (e.g. 33 CFR 117.XXX, if applicable): **CFR 117.234**

~~When applicable, identify if the local Coast Guard Bridge Office identified that modification of an existing drawbridge requires revision or removal of the existing regulation (e.g. if the bridge project involves replacing the existing drawbridge with a fixed bridge):~~

~~**NOTE: If the waterway is not already identified in 117 Subpart B, please note if an operating schedule other than open on demand is being considered.**~~

- 4) Latitude and longitude coordinates (degree/minute/second) at centerline of the bridge(s): **Latitude 38°56'5.87"N, Longitude 75°19'26.29"W.**
- 5) Dimensions of the existing bridge(s):
 - a) Vertical clearance(s) as indicated on previous plan sheets (include both the open and closed-to-navigation clearances for movable spans). [The proposed and existing vertical clearances must be compared using the same datums. This may require surveying the existing bridge]:
Open span: Unlimited clearance from bridge. 35 foot clearance from aerial power and control cables.
Closed span: 4 feet.
 - b) Horizontal clearance as indicated on previous plan sheets: **24 feet.**
 - c) Length of existing bridge(s): **83 feet.**
 - d) Width of existing bridge(s): **25 feet.**
- 6) Owner of the existing bridge(s): **Delaware Department of Transportation.**

j. Discuss construction methodology, if known, and removal of existing bridge(s), as applicable:

- 1) Discuss proposed construction methodology and restrictions:
In-stream work is restricted from March 1 to May 15 due to a fisheries restriction. The bridge will mostly be made up of prefabricated elements that will be shipped to the site for installation. During installation of the proposed bridge, traffic in the channel will be impacted for up to one week.
- 2) Discuss maintenance of land traffic during construction activities:
Roadway traffic will be detoured during construction. The detour length is

approximately 15 miles. The vehicular detour duration will be limited to one year.

3) Discuss extent of removal of existing bridge(s) (e.g. in its entirety, two feet below the mud line, down to or below the natural bottom of the waterway or to a specific elevation), time needed for removal, etc.:

The existing bridge and timber piles will be removed in its entirety. The existing prestressed concrete piles will be removed to a minimum depth of 24” below the existing mudline.

4) Discuss demolition methodology:

The contractor will submit a demolition plan to DelDOT at least 30 days prior to the start of removal operations. The demolition plan will include the sequence of demolition, plans for turbidity control and environmental protection and disposal of any hazardous materials per DelDOT standards, containment plans and locations, and vibration monitoring and control plan per DelDOT standards.

NOTE: In the interest of navigational safety, the Coast Guard must make the final decision concerning the extent of bridge(s) removal.

k. Other agencies with jurisdiction over the proposed project:

1) Agency:

2) Permits or type of approvals required for the project:

NEPA was approved 1/17/2023.

USACOE Nationwide Permit 23 with preconstruction notification. (pending)

USACOE Section 408 Authorization. (pending)

DNREC – Wetlands & Subaqueous Lands Permit (pending)

DNREC – Water Quality & Coastal Zone Consistency: Issued NWP 23 (pending)

B. ENVIRONMENTAL INFORMATION:

1. **National Environmental Policy Act**

Lead Federal Agency: **FHWA**

List Cooperating Agencies for project:

a. Type of environmental document.

Environmental Impact Statement/Record of Decision (EIS/ROD)

Cite location(s) in the application package:

Environmental Assessment/Finding of No Significant Impact (EA/FONSI)

Cite location(s) in the application package:

Categorical Exclusion (CE)

Cite location(s) in the application package:

b. Has the environmental document been modified, reevaluated, supplemented or rescinded for the proposed action?

Yes No

If yes, cite location(s) in the application package:

2. **Environmental Effects Abroad**

a. Does the proposed project involve a bridge connection to Canada or Mexico?

Yes No

If yes, cite location(s) in NEPA document where environmental effects abroad are described:

3. **Clean Water Act**

a. Has a Water Quality Certification (WQC), waiver or statement that the WQC is not required been obtained from the appropriate federal, interstate, or state agency?

Yes No

If yes, cite location(s) in the application package:

NOTE: The USCG will not accept an application package as complete if a WQC, waiver, or statement from the appropriate regulatory body has not been obtained.

b. Name of the Federal, State or Tribal certifying agency and point of contact with

phone and email address, if available:

DNREC

Matthew R. Jones Matthew.Jones@delaware.gov 302-739-9943

c. If the WQC is granted under a Programmatic Agreement (e.g., U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) include the date of the NWP, the type of NWP (14, 15, etc.) and the NWP number and title: **N/A**

d. For permit amendment actions, include a new WQC or a written confirmation from the certifying agency that the existing WQC has been reissued/renewed or is still valid for the proposed action.

New WQC Attached

Written Confirmation of WQC validity attached

4. **Wetlands**

a. Is the proposed project located in or adjacent to a wetland?

Yes No

b. If yes, what is the acreage of wetlands that will be permanently and temporarily impacted by the proposed project? **Temporary Wetland Impact: 0.0015 acres; Permanent: none.**

Include USACE permit (nationwide authorization or individual), if required, and cite where wetland mitigation measures are described in the application package: **pending**

5. **Coastal Zone Management Act** - The Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. § 1451), as amended, and its implementing regulations (15 CFR Part 930), requires all projects located within the designated coastal zone of a state to be consistent with the State's federally approved CZM plan (CZMP).

a. Is the project located in a state that has an approved Coastal Zone Management Act Plan (CZMP)?

Yes No

b. If yes, is the project within an area included in the federally approved CZMP?

Yes No

c. If yes, has the State specifically excluded this activity from its federally approved CZMP?

Yes No

Include State CZM concurrence/with consistency certification and cite location(s) in the application package: (pending)

6. **Floodplains**

a. Is the proposed project located in the base floodplain? An encroachment into the base floodplain does not exist when only the piers, pilings, or pile bents are located in the floodplain.

Yes No

b. Is there a significant encroachment (constituting a considerable probability of loss of human life; likely future damage associated with the encroachment that could be substantial in cost or extent; or a notable adverse impact on natural and beneficial floodplain values) into the floodplain?

Yes No

c. If yes, provide documentation and cite location(s) in the application package:

7. **Wild and Scenic Rivers**

a. Is the river involved in the proposed bridge project a designated Wild and Scenic River?

Yes No

b. If yes, attach correspondence with the river-administering agency and cite location(s) in the application package:

8. **Coastal Barrier Resources Act**

a. Does the proposed project connect to a unit of the Coastal Barrier Resources System?

Yes No

b. If yes, and the project is federally funded, cite location of Section 6 exception in the application package and any correspondence with the FWS:

9. **Land and Water Conservation Fund Act**

a. Does the proposed project involve a conversion of land or facilities funded under Section 6(f) of the Land and Water Conservation Fund Act?

Yes No

b. If yes, include correspondence with the NPS and authorization from the Secretary of the Interior for that conversion and cite location(s) in the application package:

10. **National Marine Sanctuaries Act**

a. Is the proposed project in or adjacent to a National Marine Sanctuary?

Yes No

b. Is the proposed bridge(s) likely to destroy, cause loss of, or injure a resource of a National Marine Sanctuary? (If no, provide evidence)

Yes No

c. If yes, include evidence of consultation with Office of National Marine Sanctuaries and the agency's findings/conditions and cite location(s) in the application package:

11. **Marine Protected Areas**

a. Is the proposed project in or adjacent to a Marine Protected Area (MPA) as defined in section 4(d) of Executive Order 13158?

Yes No

b. If yes, will the proposed project affect the natural or cultural resources that are protected by the MPA? (If no, provide evidence)

Yes No

c. If yes, include evidence of correspondence with MPA Center, if applicable, and cite location(s) in the application package:

12. **Endangered Species Act**

a. Are there federally designated threatened or endangered species and/or critical habitat in the area that the proposed project is located? (If no, provide evidence)

Yes No

b. May the proposed project affect federally designated threatened or endangered species and/or critical habitat? (If no, provide evidence)

Yes No

c. If yes, was there formal or informal consultation with the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS)?

Formal consultation

Informal consultation

d. If formal, provide date(s) and attach biological assessment, biological opinion, and any other relevant correspondence and cite location(s) in application package:

e. If informal, provide dates and include correspondence or documented phone conversations with and from USFWS/NMFS and cite location(s) in the application

package: NMFS – 8/15/2022; USFWS – 1/10/2023

f. Include Biological Assessment/Biological Evaluation, as appropriate.

13. **Fish and Wildlife Coordination Act**

a. Include any correspondence with USFWS and the relevant state wildlife agency regarding Fish and Wildlife Coordination Act coordination and cite location(s) in the application package: USFWS – 1/10/2023; DNREC – 1/6/2023

14. **Magnuson-Stevens Fishery Conservation and Management Act**

a. Will the proposed project likely adversely affect designated Essential Fish Habitats (EFH) as defined in the Magnuson-Stevens Act? (If no, provide evidence)

Yes No

b. Identify location of EFH assessment and relevant correspondence with NMFS in the application package: NMFS – 8/15/2022

15. **Marine Mammal Protection Act**

a. Does the proposed project involve a “take” of marine mammals as defined in the Marine Mammal Protection Act?

Yes No

b. If yes, include the incidental harassment authorization or letter of authorization from NMFS and any relevant correspondence and cite location(s) in the application package:

16. **Migratory Bird Treaty Act**

a. Does the proposed project involve a potential take of migratory birds as defined in the Migratory Bird Treaty Act? (If no, provide evidence)

Yes No (The underside of the existing bridge is not suitable habitat)

b. If yes, is a permit required?

Yes No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package:

17. **Bald and Golden Eagle Protection Act**

a. May the proposed project take or disturb bald or golden eagles (including nests) as defined in the Bald and Golden Eagle Protection Act? (If no, provide evidence)

Yes No

b. If yes, is a permit required?

Yes No

c. If a permit is required, include it and any correspondence with USFWS and cite location(s) in the application package.

18. **Invasive Species**

a. Does the proposed project have potential to introduce or foster the spread of invasive species?

Yes No

b. If yes, cite the document that describes measures that will be taken to minimize this risk and location(s) in the application package:

19. **Section 106**

a. Does the proposed project have potential to impact properties (including submerged abandoned shipwrecks) listed in or eligible for inclusion in the National Register of Historic Places?

Yes No

b. If yes, provide evidence of consultation with the State Historic Preservation Officer (and the Advisory Council on Historic Preservation, if applicable) and cite location (s) in the application package. Include:

Copies of the correspondence

Memorandum of Agreement

No effect determination

c. For projects involving Federal lands only provide:

Archeological clearances

Archeological reports

20. **Clean Air Act**

a. Does the proposed project occur in an area of nonattainment or maintenance for any criteria pollutant?

Yes No

b. If project occurs in a nonattainment or maintenance area, do the transportation or general conformity regulations, or both, apply?

Coast Guard Bridge Permit/Permit Amendment Template

General Transportation

c. Is the project exempt from a transportation conformity analysis for any of the reasons listed in 40 CFR § 93.126? Which reason?

Yes No Reason: **Transportation enhancement.**

d. Is the project exempt from a general conformity analysis for any of the reasons listed in 40 CFR § 93.153(c)?

Yes No (**Project results in no emissions increase**)

e. If general conformity applies, is the project listed in a conforming State Implementation Plan (SIP)?

Yes No

f. If a general conformity determination was prepared, include the draft and final determinations and any relevant correspondence and cite their location(s) in the application package:

g. If transportation conformity applies, is the project listed in a conforming SIP, Transportation Improvement Program (TIP), Regional Transportation Plan (RTP), or Federal Implementation Plan (FIP)?

Yes No

h. If yes, cite location of information regarding listing in the application package:

i. If transportation conformity applies, does the project contribute to any new localized CO, PM₁₀, or PM_{2.5} violations or increase the frequency or severity or any existing violations of the same?

Yes No

j. If yes, cite location of information in the application package:

21. **Actions to Address Environmental Justice in Minority or Low-Income Populations**

a. Does the proposed project involve disproportionate adverse impacts to minority and/or low-income populations as defined in Executive Order 12898?

Yes No

b. If yes, include the analysis describing the impacts and cite location(s) in the application package:

c. If yes, cite the location in the application package that describes measures to be taken to reduce those impacts:

22. **Hazardous Materials, Substances or Wastes**

a. Does the proposed project involve or is it located near a Superfund site or any site regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA) or State law regulating hazardous materials, substances or wastes?

Yes No

b. If yes, cite the location(s) in the NEPA document where hazardous materials, substances or wastes are discussed:

Appendix A. Verification Form (updated March 27, 2020)

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (DOT) shall submit a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA’s National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Protected Resources Division (GARFO PRD) at nmfs.gar.esa.section7@noaa.gov with “FHWA GARFO NLAA Program: [Project Title or Number]” in the subject line. **Note:** project design contractors and/or consultants may assist in preparing the form, but only FHWA/DOT staff shall sign off on it on the final page.

Project Activity Type (check all that apply to the entire action):

- 1. Bridge repair, demolition, or replacement project
- 2. Culvert repair or replacement project
- 3. Dock, pier, or waterway access project (includes construction, demolition, and repairs)
- 4. Slope stabilization project

Transportation Project Information

Name of Project:	Replacement of BR 3-164 on Cedar Beach Road		
Reinitiation (Yes/No):	No		
State DOT/Program:	Delaware DOT		
DOT ID Code:	T202007301		
Contact Person:	Rachel Hearon		
Phone:	302-760-2547	Email:	rachel.hearon@delaware.gov
Project Latitude (e.g., 42.625884):	38.935025		
Project Longitude (e.g., -70.646114):	-75.323894		
Maximum Water Depth (m)	5.0		
Anticipated Project Start Date:	11/1/22	Anticipated Project End Date:	6/1/23
City/Town:	Slaughter Beach, DE	Water body:	Cedar Creek
Project/Action Description and Purpose:	<p>Bridge 3-164 is located over Cedar Creek in Slaughter Beach, Delaware. The existing structure is DelDOT’s most active movable bridge. The structure has been subject to significant corrosion, which has caused section loss and continuous maintenance issues. This project will replace the current bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span. The existing structure is three spans with an overall length of 77’-9”. The center span is a 59’-0” bobtail swing span, which provides a 22’-0’ navigation channel. The proposed structure will be on the same alignment and will have an overall length of 76’-3” with two 18’-6” precast slab spans and a 41’-0” Dutch bascule center span that will provide a 27’-0” navigation channel. Replacement of the bridge will include demolition of the existing structure and substructures, pile driving, integral fender installation, and roadway approach reconstruction. There will be barge use, but not as the primary means of construction. The substructure work will be done within cofferdams.</p>		

ESA-listed species and/or critical habitats in the action area (Check all that apply)

<input type="checkbox"/>	Atlantic sturgeon (all DPSs)	<input checked="" type="checkbox"/>	Kemp's ridley sea turtle
<input type="checkbox"/>	Atlantic sturgeon critical habitat Indicate which DPS (GOM, NYB, Chesapeake Bay DPSs): <input type="text" value="Select DPS"/>	<input checked="" type="checkbox"/>	Loggerhead sea turtle (Northwest Atlantic DPS)
<input checked="" type="checkbox"/>	Shortnose sturgeon	<input checked="" type="checkbox"/>	Leatherback sea turtle
<input type="checkbox"/>	Atlantic salmon (GOM DPS)	<input checked="" type="checkbox"/>	North Atlantic right whale
<input type="checkbox"/>	Atlantic salmon critical habitat (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale critical habitat
<input checked="" type="checkbox"/>	Green sea turtle (North Atlantic DPS)	<input type="checkbox"/>	Fin whale

* Please consult GARFO PRD's ESA Section 7 Mapper for ESA-listed species and critical habitat information for your action area at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater>.

The following stressors are applicable to the action:

- Underwater Noise
- Impingement/Entrainment and Entanglement
- Water Quality/Turbidity
- Habitat Alteration
- Vessel Traffic

Impacts Table

Habitat Alteration		
	Permanent (acres)	Temporary (acres)
Sand (saline)	0.00	0.00
Silt/Mud/Clay (saline)	0.05	0.01
Hard bottom (saline)	0.00	0.00
Submerged Aquatic Vegetation (SAV) (saline)	0.00	0.00
Sand (freshwater)	0.00	0.00
Silt/Mud/Clay (freshwater)	0.00	0.00
Hard bottom (freshwater)	0.00	0.00
Submerged Aquatic Vegetation (SAV) (freshwater)	0.00	0.00
Total amount of habitat alteration	0.05	
In-water Construction Impacts		
	Amount in meters	
Width of water body in action area (m)	27.0	
Stressor category that extends furthest distance into water body (e.g.; underwater noise, turbidity plume)	underwater noise	
Maximum extent of stressor into the water body (m)	130.0	

Project Design Criteria (PDC) Checklist

FHWA/DOT shall incorporate all general PDCs and all applicable PDCs in the appropriate stressor categories. For any PDCs that are not incorporated, additional justification is required for a project to be eligible for the NLAA Program. FHWA/DOT shall check the corresponding box for each PDC that is, or will be, incorporated into the project or indicate if not applicable.

GENERAL PDCs			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.	Ensure all operators, employees, and contractors are aware of all FHWA environmental commitments, including these PDC, when working in areas where ESA-listed species may be present or in critical habitat.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2.	No portion of the proposed action will individually or cumulatively have an adverse effect on ESA-listed species or critical habitat.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3.	No portion of the proposed action that may affect the GOM DPS of Atlantic salmon will occur in the tidally influenced portion of rivers/streams where their presence is possible from <u>April 10 through November 7</u> . The range of the GOM DPS only occurs in Maine. Note: If the project will occur within the geographic range of the GOM DPS Atlantic salmon but their presence is not expected following the best available commercial scientific data, the work window does not need to be applied. Please attach best available information (i.e. local fisheries biologist correspondence).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as spawning grounds as follows: i. Gulf of Maine: Apr 1-Aug 31 ii. Southern New England/New York Bight: Mar 15-Aug 31 iii. Chesapeake Bay: Mar 15-Jul 1 and Sep 15-Nov 1 Note: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as overwintering grounds where dense aggregations are known to occur as follows: i. Gulf of Maine: Oct 15-Apr 30 ii. Southern New England/New York Bight: Nov 1-Mar 15 iii. Chesapeake Bay: Nov 1-Mar 15 Note: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6.	Within designated critical habitat for Atlantic sturgeon, no work will affect hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand) (PBF 1).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	Work will result in no or only temporary/short-term changes in water temperature, water flow, salinity, or dissolved oxygen levels.

Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8.	If ESA-listed species are (a) likely to pass through the action area at the time of year when project activities occur; and/or (b) the project will create an obstruction to passage when in-water work is completed, then a zone of passage (~50% of water body) with appropriate habitat for ESA-listed species (e.g., depth, water velocity, etc.) must be maintained (i.e., physical or biological stressors such as turbidity and sound pressure must not create barrier to passage).
<input checked="" type="checkbox"/>	<input type="checkbox"/>	9.	The project will not adversely impact any submerged aquatic vegetation (SAV) or oyster reefs.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	10.	No blasting or use of explosives will occur.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11.	No in-water work on large dams or tide gates (small dam and tide gate repairs may be permitted with prior review and approval from NMFS).

UNDERWATER NOISE PDCs			
Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	<p>If pile driving is occurring during a time of year when ESA-listed species may be present, and the anticipated noise is above the behavioral noise threshold, a “soft start” is required to allow animals an opportunity to leave the project vicinity before sound pressure levels increase. <i>In addition to using a soft start at the beginning of the work day for pile driving, one must also be used at any time following cessation of pile driving for a period of 30 minutes or longer.</i></p> <p><u>For impact pile driving:</u> pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one minute wait period, then two subsequent three-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving.</p> <p><u>For vibratory pile installation:</u> pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.</p>

Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	<p>If the project includes non-timber piles*, please attach your calculation to this verification form showing that the noise is below the injury thresholds of ESA-listed species in the action area. The GARFO Acoustic Tool can be used as a source, should you not have other information: https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-consultation-technical-guidance-greater-atlantic.</p> <p>*Effects from timber and steel sheet piles were analyzed in the NLAA programmatic consultation, so no additional information is necessary.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.	Any new pile-supported structure must involve the installation of no more than 50 piles (below MHW).

Pile material (e.g., steel pipe, concrete)	Pile diameter/width (inches)	Number of piles	Installation method (e.g., impact hammer, vibratory start and then impact hammer to depth, drilling)
Concrete filled steel pipes	48	6	Cushioned impact hammer

IMPINGEMENT/ENTRAINMENT AND ENTANGLEMENT PDCs			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.	<p>If excavating or dredging, only mechanical buckets, hydraulic cutterheads, or low volume hopper dredges (e.g., CURRITUCK, ≤300 cubic yard maximum bin capacity) may be used.</p> <p>Note: We consider excavating a smaller scale form of mechanical dredging.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	16.	<p>No new excavation or dredging in Atlantic sturgeon or salmon critical habitat (excavation in a prior construction footprint or maintenance dredging is permitted, but still must meet all other PDCs). New excavation or dredging outside Atlantic sturgeon or salmon critical habitat is limited to one-time events (e.g., burying a cable or utility line) and minor (≤2 acres) expansions of areas already subject to prior excavation or maintenance dredging. Locating a replacement bridge within 250 feet (centerline to centerline) of an existing bridge and excavation of sediment around bridge piers are considered work in a previous construction footprint.</p> <p>Note: We consider excavating a smaller scale form of mechanical dredging.</p>

Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	Temporary intakes related to construction are prohibited in sturgeon and salmon spawning, rearing, or overwintering habitat during the time of year windows identified in General PDCs 3-5. If utilized outside those areas and times of year and in an area with anticipated sturgeon and salmon presence, temporary intakes must be equipped with 2-millimeter wedge wire mesh screening and must not have greater than 0.5 feet per second intake velocities, to prevent impingement or entrainment of juvenile and early life stages of these species.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.	Work behind cofferdams, turbidity curtains, or other instruments that prevent access of animals to the project area is required when ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, access control measures are not necessary). Once constructed, work inside a cofferdam at any time of year may be permitted with NMFS approval, provided the cofferdam is installed/removed outside the time-restricted period.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	19.	No new permanent surface water withdrawal, water intakes, or water diversions.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	20.	Turbidity control measures, including cofferdams, must be designed to not entangle or entrap ESA-listed species.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	21.	Any in-water lines, ropes, or chains must be made of materials and installed in a manner to minimize or avoid the risk of entanglement by using thick, heavy, and taut lines that do not loop or entangle. Lines can be enclosed in a rigid sleeve.

WATER QUALITY/TURBIDITY PDCs			
Yes	N/A	PDC #	PDC Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	22.	In-water offshore disposal may only occur at designated disposal sites that have already been the subject of ESA section 7 consultation with NMFS and where a valid consultation is in place.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	23.	Any temporary discharges must meet state water quality standards (e.g., no discharges of substances in concentrations that may cause acute or chronic adverse reactions, as defined by EPA water quality standards criteria).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	24.	Only repair, upgrades, relocations, and improvements of existing discharge pipes or replacement in-kind are allowed; no new construction of untreated discharges.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	25.	Work behind cofferdams, turbidity curtains, or other instruments to control turbidity is required when operationally feasible and ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, turbidity control methods are not necessary).

HABITAT ALTERATION PDCs			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	26.	Minimize all new waterward encroachment and permanent fill.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	27.	In Atlantic salmon critical habitat, stream simulation design with a minimum span of 1.2 bankfull width will be used in areas with minimal tidal influence. In tidal areas, a design that allows for unimpeded flow will be used (no delay in water entering or exiting the area upstream of the crossing).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	28.	In Atlantic salmon critical habitat, no culvert end extensions, invert line culvert rehabilitation, or slipline culvert rehabilitation may occur.

VESSEL TRAFFIC PDCs			
Yes	N/A	PDC #	PDC Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	29.	Maintain project (i.e., construction) vessels operating within the action area to speed limits below 10 knots and dredge vessels to speeds of 4 knots maximum, while dredging.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	30.	Maintain a 1,500-foot buffer between project (i.e., construction) vessels and ESA-listed whales and a 300-foot buffer between project vessels and sea turtles. This also applies to dredge vessels.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	31.	The number of project (construction) vessels must be limited to the greatest extent possible, as appropriate to size and scale of project.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	32.	The project must not result in the permanent net increase of commercial vessels.

Justification for NLAA Determination if not Incorporating All PDC

If the project is not in compliance with all of the general and stressor-based PDCs, but you can provide justification and/or special conditions to demonstrate why the project still meets the NLAA determination and is consistent with the aggregate effects considered in the programmatic consultation, you may still certify your project through the NLAA program using this verification form. Please identify which PDCs your project does not meet (e.g., PDC 9, PDC 15, PDC 22, etc.) and provide your rationale and justification for why the project is still eligible for the verification form. Project modifications must not result in different effects not already considered.

To demonstrate that the project is still NLAA, you must explain why the effects on ESA-listed species or critical habitat are **insignificant** (i.e., too small to be meaningfully measured or detected) or **discountable** (i.e., extremely unlikely to occur). **Please use this language in your justification.**

PDC#	Justification

FHWA/DOT Verification of Determination (To be filled out by FHWA/DOT staff only)

By submitting this Verification Form, FHWA, or the state DOT as FHWA's designated non-federal representative, indicates that they determined that the proposed activity described above is not likely to adversely affect (NLAA) ESA-listed species or designated critical habitat under NMFS jurisdiction in accordance with the Program, and all effects (direct, indirect, interrelated, and interdependent) are either insignificant (so small they cannot meaningfully be measured, detected, or evaluated) or discountable (extremely unlikely to occur).

<input checked="" type="checkbox"/>	In accordance with the FHWA GARFO NLAA Program, we have determined that the action complies with all applicable PDCs and is not likely to adversely affect listed species.
<input type="checkbox"/>	In accordance with the FHWA GARFO NLAA Program, we have determined that the action is not likely to adversely affect listed species per the justifications and/or special conditions provided above.
FHWA/DOT Signature:	
Date:	
04/04/2022	

By providing your determination and signature, you are certifying that to the best of your knowledge the information provided in this form is accurate and based upon the best available scientific information. This form must be filled out and signed by FHWA or state DOT staff, as an officially designated non-federal representative.

GARFO PRD Concurrence (To be filled out by GARFO PRD)

After receiving the Verification Form, GARFO PRD will contact FHWA/DOT with any concerns and indicate whether GARFO PRD concurs with FHWA/DOT's determination.

<input checked="" type="checkbox"/>	In accordance with the FHWA GARFO NLAA Program, GARFO PRD concurs with FHWA/DOT's determination that the action complies with all applicable PDCs and is not likely to adversely affect listed species or critical habitat.
<input type="checkbox"/>	In accordance with the FHWA GARFO NLAA Program, GARFO PRD concurs with FHWA/DOT's determination that the action is not likely to adversely affect listed species or critical habitat per the justifications and/or special conditions provided above.
<input type="checkbox"/>	GARFO PRD does not concur with FHWA/DOT's determination that the action complies with the applicable PDCs (with or without justifications), and recommends an individual Section 7 consultation to be completed independent from the FHWA GARFO NLAA Program.
GARFO PRD Signature:	
Date:	
06/16/2022	


Appendix B. Verification Form

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (state DOT) will email a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (GARFO HCD) at NMFS.GAR.EFH.Consultation@noaa.gov, upon obtaining sufficient information. FHWA/state DOT must receive a response from GARFO HCD or wait at least 30 calendar days to proceed under the programmatic EFH consultation. FHWA will compile the information from the completed Verification Forms for the purposes of tracking and annual monitoring. FHWA/state DOT must include the completed Verification Form as part of a permit application with any other federal agency, such as U.S. Army Corps of Engineers or U.S. Coast Guard, to confirm that EFH consultation is complete.

Project Activity Type

1. Bridge repair, demolition, and replacement
2. Culvert repair and replacement
3. Docks, piers, and waterway access projects
4. Slope stabilization

Transportation Project Information

Project Name:	Replacement of BR 3-164 on Cedar Beach Road	Project Number:	T202007301
Project Sponsor:	FHWA (DelDOT)	Contact Person:	Rachel Hearon
Email:	rachel.hearon@delaware.gov	Phone:	302-760-2547
Latitude (e.g., 42.625884):	38.935025		
Longitude (e.g., -70.646114):	-75.323894		
City/Town, State:	Milford, Delaware	Waterway:	Cedar Creek
Project Description and Purpose:	Bridge 3-164 is located over Cedar Creek in Slaughter Beach, Delaware. The existing structure is DelDOT's most active movable bridge. The structure has been subject to significant corrosion, which has caused section loss and continuous maintenance issues. This project will replace the current bobtail swing movable bridge and its approaches with a single leaf Dutch bascule span. The existing structure is three spans with an 		
Anticipated Project Start Date:	9/1/22	Anticipated Project End Date:	6/1/23
Total area of impact to EFH (in acres): Include locus map with area of impact.	0.06		
Area of impacts to sensitive habitats (in square feet):	No impacts to submerged aquatic vegetation (SAV) or oyster reefs allowed.		
Natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel):	0		
Salt marsh:	0		
Areas containing shellfish (excluding oyster reefs):	0		
Intertidal mudflats:	0		
Area of impact to diadromous fish habitat:	0		

Potential Stressors Caused by the Activity (Check all that apply based on activity type)

- Underwater Noise
- Impingement/Entrainment and Entanglement
- Water Quality/Turbidity
- Habitat Alteration
- Vessel Traffic

EFH Conservation Recommendation Checklist

FHWA/state DOT will indicate how the project addresses each of the programmatic EFH conservation recommendations, by selecting the appropriate check box and providing a brief explanation where necessary. If the project is not in compliance with a particular programmatic EFH conservation recommendation and FHWA/state DOT has still determined that the effects of a project on EFH are not substantial and the project is otherwise consistent with the FHWA programmatic EFH consultation, provide justification below under the conservation recommendations that is not included.

Underwater Noise

- Check here if the EFH conservation recommendations in this section are not applicable because the project will not create underwater noise as a stressor. Proceed to the next stressor.
 1. Use a soft start each day of pile driving, after a break of 30 minutes or more, and if any increase in pile installation or removal intensity is required. Build up power slowly from a low energy start-up over a 20-minute period to warn fish to leave the vicinity. This buildup shall occur in uniform stages to provide a constant increase in output.
 - Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans
 - Included in description, other terms and conditions
 2. Noise-generating work conducted in diadromous streams within the spring diadromous fish TOY restriction listed in Appendix D must be isolated behind sealed, dewatered cofferdams, to avoid impeding fish migration.
 - Not met:
 - Not applicable, provide reasoning: No noise-generating work conducted during the spring TOYR.
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans
 - Included in description, other terms and conditions

Impingement/Entrainment and Entanglement

Check here if the EFH conservation recommendations in this section are not applicable because the project will not lead to impingement/entrainment and entanglement as a stressor. Proceed to the next stressor.

3. Turbidity control measures must be properly secured and monitored to ensure aquatic species are not entangled or trapped in the project area.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

4. Temporary intakes related to construction must be equipped with mesh size screening and approach velocity appropriate for the species and life stage anticipated. Per the NMFS Anadromous Salmonid Passage Facility Design manual, screen openings must not exceed 3/32 inch and screen approach velocity must be less than .25 feet per second (ft/sec).

- In New York, New Jersey, Delaware, Maryland, and Pennsylvania, 2 millimeter (mm) wedge wire screens must be used with a maximum intake velocity of 0.5 feet per second (ft/sec).
- In Virginia, a 1 mm wedge wire with a maximum intake velocity of 0.25 ft/sec).

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

5. No new permanent surface water withdrawal, water intakes, or water diversions.

Not met:

Not applicable, provide reasoning: Not part of the project scope.

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

Water Quality/Turbidity

Check here if the EFH conservation recommendations in this section are not applicable because the project will not negatively affect water quality or create turbidity. Proceed to the next stressor.

6. Install soil erosion, sediment, and turbidity controls and maintain them in effective operating condition during construction. Remove controls upon completion of work, after all exposed soil and other fills, as well as any work waterward of ordinary high water or the high tide line, are permanently stabilized.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

7. Install and remove any in-water soil erosion, sediment, and turbidity controls outside the TOY restrictions in Appendix D.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

8. Work that produces greater than minimal turbidity or sedimentation in diadromous streams or EFH must not be done during the TOY restriction(s) in Appendix D.

Not met:

Not applicable, provide reasoning: No in-water work will occur from March 1-June 30.

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

9. Prevent construction debris and sediment from entering aquatic areas and remove all construction debris and excess/deteriorated materials and dispose of in an upland area.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

10. Dredged and/or excavated materials, including any fine-grained materials removed from inside culverts, shall either be moved to an upland location and stabilized to prevent reentry into the waterway or disposed of at a previously approved disposal site.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

11. Completely remove and do not reuse existing creosote piles that are affected by project activities and do not install new creosote piles.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

12. Coat any chemically or pressure treated piles (CCA, ACQ, etc.) with an impact-resistant, biologically inert substance. Coat the piles at the point of manufacture, not on site.

Not met:

Not applicable, provide reasoning: No chemically or pressure treated piles.

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

13. Derelict, degraded, or abandoned piles, except for those inside of existing work footprints for piers, must be completely removed or cut and driven three feet below the surface.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

14. Ensure that raw concrete does not contact the water; wet pours of concrete must be confined within sealed forms until the concrete is set or pre-cast members installed.

Not met:

- Not applicable, provide reasoning:
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

Habitat Alteration

- Check here if the EFH conservation recommendations in this section are not applicable because the project will not cause habitat alteration. Proceed to the next stressor.

15. Remove temporary and/or obsolete structures and fills in their entirety. Use geotextile barriers prior to placement of temporary fill material to ensure complete removal.

Not met:

- Not applicable, provide reasoning:
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

16. Install a riprap bedding layer (such as a gravel filter blanket or geotextile) prior to riprap placement to prevent underlying soils from washing through the riprap during high water.

Not met:

- Not applicable, provide reasoning:
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

17. Return areas impacted by temporary activities, fills, or structures to pre-construction or better condition, including elevations and substrate, and replant with native species.

Not met:

- Not applicable, provide reasoning:
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

18. Temporary monitoring devices shall be removed and the substrate restored to preconstruction elevations no later than 24 months from initial installation, or upon completion of data acquisition.

- Not met:
 - Not applicable, provide reasoning: No monitoring devices.
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

19. Pipelines and cables that cross a waterway must not rest on the substrate. They may be attached to an overwater structure or be buried to allow an area to return to preexisting conditions.

- Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

20. Any fill, including planting media and placement of any seed shellfish, spatted-shell, or cultch must be free of all non-native or invasive species and/or contaminants. An invasive species control plan must be part of the project if the transportation agency cannot guarantee this.

- Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

21. Prevent dislodging of coir logs, mats, or native oyster shell.

- Not met:
 - Not applicable, provide reasoning: No coir logs, mats, or native oyster shell.
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

22. Incorporate measures to increase the ambient light transmission under overwater structures.

- Not met:
 - Not applicable, provide reasoning: The bridge footprint is remaining the same. There will not be new overwater structures, or structures outside of the previous

- Project is unable to accommodate, provide justification:
- Met:
 - Shown on project plans
 - Included in description, other terms and conditions
- 23. The lowermost part of floating docks must be ≥ 18 inches above the substrate at all times, to avoid grounding and propeller scour and to provide adequate circulation and flushing.
 - Not met:
 - Not applicable, provide reasoning: No floating docks.
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans
 - Included in description, other terms and conditions
- 24. Conduct and submit pre-dredge benthic biological surveys to determine benthic communities present and conduct post-dredge surveys to ensure targeted depths have been reached and to determine benthic recovery.
 - Not met:
 - Not applicable, provide reasoning: Dredging is not part of the project scope or design
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans
 - Included in description, other terms and conditions
- 25. Grain size of any sediment used as part of habitat restoration must be the same size or larger than the native material at the site.
 - Not met:
 - Not applicable, provide reasoning: No habitat restoration.
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans
 - Included in description, other terms and conditions
- 26. If rock relocation is necessary, move them to an area of equivalent depth and substrate.
 - Not met:
 - Not applicable, provide reasoning: No rock relocation.
 - Project is unable to accommodate, provide justification:
 - Met:
 - Shown on project plans

Included in description, other terms and conditions

27. Incorporate natural habitats (e.g., living shorelines) and soft approaches (e.g., vegetative plantings and large woody debris) into the stabilization design in addition to or instead of hardened structures. See NOAA's Guidance for Considering the Use of Living Shorelines for more information.

Not met:

Not applicable, provide reasoning: The project scope does not include stabilization

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

Sensitive Habitats (SAS, natural rocky habitats, intertidal areas, and areas containing shellfish)

28. Locate all temporary structures, construction, access, and dewatering actives outside of sensitive habitats.

Not met:

Not applicable, provide reasoning: No sensitive habitats at project site.

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

29. Prior to construction, identify and mark in the field any SAV at the project site. An SAV survey is required for activities adjacent to mapped or known SAV if a survey has not been conducted in three years.

Not met:

Not applicable, provide reasoning: No SAV - water depth is about 24 feet.

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

30. Provide compensatory mitigation for all permanent and temporary impacts to sensitive habitats. This could include a contribution to an existing in-lieu fee program. When impacts are unavoidable:

- conduct a biological survey to map the coverage of the sensitive habitats;
- develop a compensatory mitigation plan for biological resource losses, including success criteria, monitoring plan, and long-term maintenance plan;

- submit the results of the biological survey and the mitigation plan to GARFO HCD for review; and
- undertake compensatory mitigation prior to or concurrent with any impacts to sensitive habitat.

Not met:

- Not applicable, provide reasoning: No sensitive habitats at project site.
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

31. Where construction requires heavy equipment operation in or across wetlands or mudflats, the equipment shall have low ground pressure (typically ≤ 3 pounds per square inch); be placed on construction timber mats that are adequate to support the equipment; or be operated on dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats must not be dragged into position.

Not met:

- Not applicable, provide reasoning: No wetlands exist within the project limits.
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

32. Habitat restoration or mitigation projects must not result in a permanent conversion or loss of sensitive habitats.

Not met:

- Not applicable, provide reasoning: No habitat restoration or mitigation is proposed.
- Project is unable to accommodate, provide justification:

Met:

- Shown on project plans
- Included in description, other terms and conditions

33. No dredging shall occur within:

- intertidal areas;
- 100 feet of SAV; or
- 25 feet of SAS, natural rocky habitats, or areas containing shellfish.

Not met:

- Not applicable, provide reasoning: Dredging is not part of project scope
- Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

34. The height of docks and piers must be at least four feet above salt marsh substrate and must be greater than or equal to the width of the deck, to minimize shading impacts. The height must be measured from the marsh substrate to the bottom of the longitudinal support beam.

- Not met:
 - Not applicable, provide reasoning: No docks or piers.
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

35. Outlets must not discharge directly into sensitive habitats.

- Not met:
 - Not applicable, provide reasoning: No sensitive habitats exist at the project site.
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

Fish Passage/Migration Habitat

36. Design replacement crossings to provide diadromous and resident fish and aquatic organism passage. Structures must:

- provide sufficient water depth and maintain suitable water velocities during migration periods; and
- maintain or replicate natural stream channel and flow conditions.

- Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:

- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

37. Incorporate climate change projections into the project design. Use the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) 8.5/high greenhouse gas emission scenario and RCP 4.5/intermediate greenhouse gas emission scenario (IPCC 2014) and the global mean and regional sea level rise projections for

intermediate-high and extreme scenarios referenced in Sweet *et al.* (2017) in design calculations for replacement structures.

Not met:

Not applicable, provide reasoning:

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

38. Replaced or upgraded crossings must be “in kind” or go up in order of preference set out in NMFS’ Anadromous Salmonid Passage Facility Design:

- Road abandonment and reclamation or road realignment to avoid crossing the stream.
- Bridge or stream simulation spanning the stream flood plain, providing long-term dynamic channel stability, retention of existing spawning areas, maintenance of benthic invertebrate production, and minimized risk of failure. If a stream crossing is proposed in a segment of stream channel that includes a salmonid spawning area, only full-span stream simulation designs are acceptable.
- Embedded pipe culvert, bottomless arch designs or non-floodplain spanning stream simulation.
- Hydraulic design method, associated with more traditional culvert design approaches- limited to low stream gradients (0 to 1%) or for retrofits.
- Culvert designed with an external fishway (including roughened channels) for steeper slopes.
- Baffled culvert or internal weirs- to be used only for when other alternatives are infeasible.

Not met:

Not applicable, provide reasoning: There are no fish passages within project area

Project is unable to accommodate, provide justification:

Met:

Shown on project plans

Included in description, other terms and conditions

39. For activities that require soil erosion, sediment, and turbidity controls

- in non-tidal streams containing diadromous fish:
 - i. They must not encroach >25% of the stream width measured from ordinary high water during the diadromous TOY restriction; and
 - ii. They must maintain safe, timely, and effective downstream fish passage throughout the project.
- in tidal waters:
 - i. They must not encroach >50% of a tidal stream’s width as measured from mean high water.

- Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:
- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

Vessel Traffic

Check here if the EFH conservation recommendations in this section are not applicable because the project will not use vessels.

40. Project vessels shall be operated in adequate water depths to avoid propeller scour and grounding at all tides. Shallow draft vessels will be used in shallow areas to maximize the navigational clearance between the vessel and the bottom substrate. Spuds may be used to elevate the vessel.

- Not met:
 - Not applicable, provide reasoning:
 - Project is unable to accommodate, provide justification:
- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

41. Project vessels shall not be moored in or use spuds in SAV or be located in such a way that the vessel could shade SAV.

- Not met:
 - Not applicable, provide reasoning: No SAV exists at project site.
 - Project is unable to accommodate, provide justification:
- Met:
 - Shown on project plans
 - Included in description, other terms and conditions

NEW CLAUSE

Other Justification for Use of the Programmatic EFH Consultation

If the project is outside of the covered activities in the programmatic EFH consultation (i.e., is one of the actions described in the Excluded Activities list noted below) and FHWA/state DOT believes the effects are not any more significant and that the project should be eligible for programmatic EFH consultation, provide additional justification in the space below. FHWA/state DOT must provide appropriate rationale and GARFO HCD must review and approve it. The automatic concurrence period does not apply for transportation activities in this section that fall outside of the programmatic EFH consultation as described.

The project is not listed as an excluded activity.

The project is listed as an excluded activity.

Indicate the activity number from the list below (1 through 21):

Provide additional justification on why the activity should be eligible:

Activities that Require Individual Consultation

1. Any work (including anchoring) that results in impacts to:
 - existing or historically mapped submerged aquatic vegetation (SAV) beds or areas within 100 feet of existing or historically mapped SAV beds;
 - $\geq 1,000$ square feet of salt marsh, areas containing shellfish, and intertidal areas;
 - ≥ 100 square feet of natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel);
2. Stream channelization.
3. Any temporary structures, construction access, and dewatering activities proposed to be in place for \geq two years.
4. Slip-lining or invert lining existing culverts.
5. Any permanent structures longer than 150 linear feet over salt marsh.
6. Construction of new or expansion of existing boating facilities¹⁷ or ferry terminals.
7. Independent pedestrian trails or bridges located directly adjacent to an existing crossing.
8. New or improvement dredging.
9. Any nearshore disposal or beach nourishment activities.
10. New fill/stabilization placed below mean low water in excess of 200 linear feet (lf).
11. Replacement or maintenance of:
 - sloped stabilization structures > 200 lf and waterward of the existing toe, or
 - vertical structures > 18 inches waterward of the existing face and > 200 lf.
12. In-water utility lines ≥ 100 lf installed by trench excavation, or ≥ 200 lf installed by jetplow, fluidization or other direct burial methods.
13. Thin layer deposition as a part of wetland restoration.
14. Placement of any seed shellfish, spatting-shell, or cultch in SAS.
15. Any exploratory trenching or other similar survey activities.
16. Airgun seismic activities.
17. Any new permanent surface water withdrawal, water intakes, or water diversions.
18. Any blasting or use of explosives that affects EFH or diadromous species habitats.
19. Construction of new bridges or culverts, where no crossing existed previously.
20. Any new or replacement causeways (raised roadways across waters or wetlands).
21. Any in-water work on dams, tide gates, or breakwaters.

FHWA’s Determination of Effects to Essential Fish Habitat and Signature

After reviewing the programmatic EFH conservation recommendations in Appendix A, FHWA/state DOT will select the appropriate determination:

- The activity is in compliance with all programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation and adverse effects to EFH will not be substantial.
- The activity is not in compliance with all of the programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation, however, the justification below demonstrates that the adverse effects to EFH are not substantial. This does not apply to EFH conservation recommendations that are not applicable to the project.

Use the electronic fillable fields to include the name and signature of the FHWA/state DOT preparing this Verification Form, along with the date.

Delaware DOT

FHWA/state DOT Name

Signature

3/15/22

Date

By providing your determination and signature, you are certifying that to the best of your knowledge the information provided in this form is accurate and based upon the best available scientific information. This form must be filled out and signed by FHWA or state DOT staff, as an officially designated non-federal representative. Do not lock the form when saving, as HCD will be unable to sign and finalize. Email this Verification Form as a fillable PDF to NMFS.GAR.EFH.Consultation@noaa.gov.

GARFO HCD Determination and Signature (To be filled out by NMFS)

After receiving the Verification Form, GARFO HCD will contact FHWA/state DOT with any concerns. HCD will email the completed form back to the FHWA/state DOT for record keeping.

- GARFO HCD concurs with FHWA’s determination that the proposed project is consistent with the programmatic EFH consultation (without the need for justification).
- GARFO HCD concurs with FHWA’s determination that the proposed project is consistent with the programmatic EFH consultation, with justification described above.
- GARFO HCD does not concur with FHWA’s determination that the project is consistent with the programmatic EFH consultation. FHWA/state DOT must conduct additional coordination with GARFO HCD and a separate individual EFH consultation may be required.

Karen M. Greene

GARFO HCD Name

Signature

8/15/22

Date