

THE STATE OF DELAWARE



**DEPARTMENT OF TRANSPORTATION
TRANSPORTATION SOLUTIONS, BRIDGE MAINTENANCE & CONSTRUCTION
DETAILS AND SPECIFICATIONS FOR**

REHABILITATION OF BRIDGE 3-440 ON SR20 ARMORY ROAD

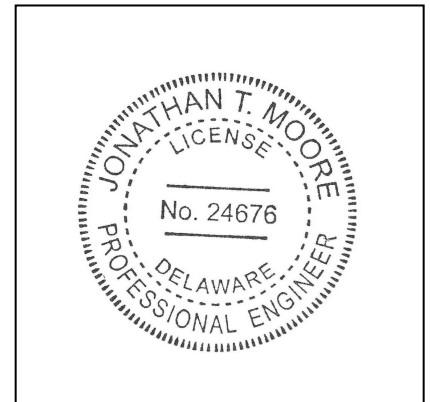
CONTRACT NUMBER – T202407603

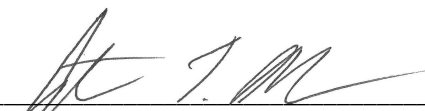
PROJECT ID – 2024-00107

FEDERAL AID NUMBER – N/A

COUNTY: Sussex County

PLANS PREPARED BY: Jonathan T. Moore, P.E., B.C.I.
DeIDOT – Project Manager



 9/16/2024
DELDOT – PROJECT MANAGER: Jonathan T. Moore, P.E., B.C.I. DATE
TRANSPORTATION SOLUTIONS

THIS SEAL APPLIES TO ALL SHEETS WITHIN THIS REPORT

APPROVED FOR ADVERTISEMENT

 09/17/2024
DIRECTOR OF TRANSPORTATION SOLUTIONS DATE

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GENERAL NOTES

1. This project is to be constructed in accordance with Delaware Department of Transportation “Standard Specifications”, dated January 2024 and the Delaware Department of Transportation “Standard Construction Details”, dated 2024, including all revisions up to the date of advertisement.

2.

Erosion potential for this project	Site reviewer requirement
(X) Insignificant	None
() Minor	Contractor training program, as defined in Section 6.2 of the Delaware Sediment and Stormwater Regulations.
() Medium	Contractor training program, as defined in Section 6.2 of the Delaware Sediment and Stormwater Regulations.
() Major	Certified construction reviewer (CCR) as defined in Section 6.3 of the Delaware Sediment and Stormwater Regulations.

3. Electronic project files that will be made available to the Contractor include: None.
4. Project files that will be made available to the Contractor include: Archived Construction Plans.
5. The disturbed area for this project is 0 acres. Added impervious area for this project is 0 acres.

PROJECT NOTES

1. Bridge 3-440 is located on Armory Rd. over Vines Creek, southeast of Dagsboro.
2. The purpose of this contract is to rehabilitate Bridge 3-440 by replacing the east and west strip seals, replacing the east and west approach slabs, milling, and overlaying the deck, spall repair in the substructure, crack sealing in the substructure and cleaning and painting of all structural steel and concrete.
3. All concrete work on the substructure shall be completed and cured for 7 days prior to the start of any cleaning or painting activities. Cleaning and painting of the structural steel and concrete can take place while the deck ends, deck overlay and approach slabs are curing.
4. The north and south strip seals have a difference in plane between the two armor angles. This has allowed plows to impact them causing cracks and gouges in the armoring as well as the glands to start leaking. In addition, the difference in plane has created a bump as vehicles travel across each joint. Each strip seal will be removed and replaced with a prefabricated expansion joint system in accordance with the provided details. The replacement deck end and abutment backwall shall be wet cured for 14 days. The work will be paid under the following Item Numbers:
 - a. 211000 – Removal of Structures and Obstructions
 - b. 624000 – Prefabricated Expansion Joint System. 3”
 - c. 610008 – PCC Masonry, Parapet, Class A
 - d. 610016 – PCC Masonry, Class D
 - e. 611001 – Bar Reinforcement, Epoxy Coated
 - f. 624010 – Silicone Joint Seal, 1”
5. The north and south approach slabs have large edge spalls, dense map cracking and general deterioration. Both approach slabs will be removed and reconstructed in accordance with the provided details. The new approach slabs shall be wet cured for 14 days. This work will be paid under the following Item Numbers:
 - a. 211000 – Removal of Structures and Obstructions
 - b. 301001 – GABC
 - c. 610016 – PCC Masonry, Class D
 - d. 611001 – Bar Reinforcement, Epoxy Coated
6. The deck has dense cracking and a rough riding surface. To smooth the riding surface and tie in with the new joints, the deck will be milled and overlayed in accordance with the provided details. Any areas of unsound concrete found after the milling of the deck will be sounded and marked out by the engineer. These areas will be chipped out following the guidance in the Special Provision 628518 – Removal of PCC, 1” to 3” Depth. Once the surface is prepped, the overlay will be poured back monolithically. The overlay shall be wet cured for 14 days. This work will be paid for under the following Item Numbers:
 - a. 625004 – Providing Modified Class D PCC Overlay
 - b. 625012 – Modified Class D PCC Overlay Placement
 - c. 628053 – Deck Repair, Full Depth
 - d. 628518 – Removal of PCC, 1” to 3” Depth
 - e. 760013 – Pavement Milling, PCC Pavement

7. Once the bridge deck overlay, approach slabs, new deck ends and new abutment backwalls have cured for 28 days, seal the surface with silane and methacrylate as required. This work will be paid for under the following Item Numbers:
 - a. 613002 – Silane-Based Concrete Sealer
 - b. 628011 – Crack Sealing Bridge Decks, Approach Slabs, Sidewalks, ETC
8. The pavement at the end of each approach slab will need to be cut back 20 feet and removed for the new approach slabs to be built. Additionally, the asphalt approach roadways should be saw cut at 100 feet from the end of the area to be reconstructed then milled and overlaid in accordance with the provided details. This work will be paid under the following Item Numbers:
 - a. 211000 – Removal of Structures and Obstructions
 - b. 301001 – GABC
 - c. 401005 – Superpave, Type C, 9.5 mm, PG 64-22 (Carbonate Stone)
 - d. 401014 – Superpave, Type B, PG 64-22
 - e. 401021 – Superpave, Type BCBC, PG 64-22
 - f. 720030 – Relocating Guardrail
 - g. 760010 – Pavement Milling, Bituminous Concrete Pavement
 - h. 762000 – Sawcutting, Bituminous Concrete
9. There are small CMP drain pipes in the curb lines adjacent to the approach slabs at all corners of this bridge. Remove these CMP drains and replace them with the curb openings and stone outlets in accordance with the provided details. Install R-4 riprap at the northwest embankment as shown in the provided details. This work will be paid under the following Item Numbers:
 - a. 211000 – Removal of Structures and Obstructions
 - b. 302002 – Delaware NO. 3 Stone
 - c. 701031 – Curb Opening, 2' Opening
 - d. 707001 – Riprap, R-4
 - e. 708003 – Geotextiles, Riprap
 - f. 907017 – Compost Filter Logs
 - g. 908004 – Topsoil, 6" Depth
 - h. 908014 – Permanent Grass Seeding, Dry Ground
 - i. 908020 – Erosion Control Blanket Mulch
10. The deck has contacted the top of each cheekwall and caused them to spall. The cheekwalls will be removed and reconstructed in accordance with the provided details. This work will be paid under the following Item Numbers:
 - a. 211000 – Removal of Structures and Obstructions
 - b. 610008 – PCC Masonry, Parapet, Class A
 - c. 611001 – Bar Reinforcement, Epoxy Coated
11. After completion and full cure of all pavement and concrete work, the deck, approach slabs and approach roadways will be stripped in accordance with the provided details. Temporary striping may be needed until the asphalt and concrete have cure. This work will be paid under the following Item Number:
 - a. 817003 – Temporary Markings, Paint, 4"
 - b. 817018 – Permanent Pavement Striping, Epoxy Resin Paint, Black, 3"
 - c. 817042 – Permanent Pavement Striping, Epoxy Resin Paint, White/ Yellow, 6"

12. Both abutment backwalls and breastwalls have visible cracks, cracks with rust staining and cracks with leaching efflorescence. Repair these cracks by cleaning away any rust or efflorescence, then rout and seal the cracks less than 1/16 inch or epoxy inject any cracks greater than 1/16 inch. Any areas of delamination or spalls in the concrete will be marked out by the engineer and be repaired in accordance with the provided details. This work will be paid under the following Item Number:
 - a. 628001 – Repair of Concrete Structures By Epoxy Injection
 - b. 628020 – Rout and Seal Cracks
 - c. 628041 – Deep Spall Repair
13. The structural steel paint color shall be cyan blue (#25183) as per the Aerospace Material Specification Standard 595A. The color shall be submitted for approval prior to performing work.
14. The perimeter of all faying surfaces shall be sealed with a paintable caulk as directed in Section 616 or the manufacturer's recommendations. Faying surfaces are described as "crevices ½ inch or less, rivets, bolts, nuts, between built-up members, interfaces of steel and concrete surfaces, and/or where pack rust occurs." Areas that exhibit pack rust, as directed by the engineer, shall be treated with a 100% solids penetrating sealer before being sealed using a paintable caulk as directed by the manufacturer's recommendations and requirements. The caulk material to be used shall be compatible with the proposed paint system and submitted for approval. The caulk shall be applied to mid-coat and shall be fully cured prior to the application of the finish coat. This work will be paid under the following Item Number:
 - a. 616000 – Cleaning and Painting Existing Steel
15. All steel weep hole pipes that protrude from the abutments shall be painted with the steel paint system after receiving an S.S.P.C. SP-6 (commercial blast cleaning) finish. This work will be paid under the following Item Number:
 - a. 616000 – Cleaning and Painting Existing Steel
16. All bearings shall be abrasive blast cleaned to an S.S.P.C. SP-10 (near-white blast cleaning) finish. Care shall be taken when cleaning "frozen" bearings because abrasive blasting operations sometimes cause the bearings to "unfreeze." All pitted areas of the structural steel shall be brush painted along with spraying when applying each coat of paint. After all bearings have been painted and cured, and all concrete has been sealed, the Contractor shall coat all bearings with a NLGI grade 2 grease that is black in color and either Mobil Centaur Moly grease, Shell Rhodina SDX 2 grease, or an approved equal. Bearings shall be coated from the interface between the abutment and the masonry plate to the top of the sole plate or the bottom of the beam. This work will be paid under the following Item Number:
 - a. 616000 – Cleaning and Painting Existing Steel
17. During the cleaning operation, the Contractor shall report to the engineer any defects in the steel. These defects include, but are not limited to, loss of section, cracking, buckling, loose bolts, and loose rivets.
18. The bearing seats, bearing pedestals, abutment backwalls and inside faces of abutment cheek walls shall be prepared and sealed with epoxy concrete sealer. The abutment breastwalls, outer faces of the abutment cheekwalls, wingwalls, all faces of the bridge railing and the soffit overhangs shall be sealed with silicone-based acrylic concrete sealer. The color of both sealers shall be insignia white (#37925) as per the Aerospace Material Specific Standard 595A. This work will be paid under the following Item Numbers:
 - a. 613000 – Epoxy Concrete Sealer

- b. 613001 – Silicone-Based Acrylic Concrete Sealer
19. Quality assurance hold points for steel coatings are:
- a. Power Wash Steel
 - b. Steel Surface Chloride Test
 - c. Blast/ Surface Preparation
 - d. Primer
 - e. Primer Touch-Up
 - f. Primer Stripe
 - g. Penetrating Sealer
 - h. Mid-Coat Stripe
 - i. Mid-Coat
 - j. Caulk
 - k. Finish Coat
20. Quality assurance hold points for concrete coating are:
- a. Power Wash/ SP-13
 - b. Concrete Sealer
21. The Contractor is required to adhere to the testing and disposal of hazardous steel coatings, including air monitoring. Air monitoring requirements for paint removal will include all blasting and cleanup activities. This work will be paid under the Item Number:
- a. 616003 – Testing and Disposal of Existing Hazardous Steel Coating
22. Removal of trash, rubbish, debris or vegetation within the project limits that fouls the painting of the structure shall be considered incidental to Item Number:
- a. 616000 – Cleaning and Painting Existing Steel
23. Environmental permits are required for the removal and replacement of the CMP drains at each corner of this bridge. These permits will be provided by the Department.
24. The Contractor may store the equipment needed for this project at a pre-approved area or in the nearest State of Delaware maintenance yard. The Contractor must remove equipment as directed by the engineer when the district deems it necessary. Areas in which the soil and vegetation have been damaged from the equipment during this contract, shall be repaired with topsoil, seed, and mulch in accordance with Section 908 at no additional cost to the Department. If the Contractor wishes to store equipment in the DelDOT maintenance yard, an agreement will have to be executed between the Department and the Contractor. A generic copy of this agreement is attached with the bidding documents. The Contractor should notify the engineer if they wish to store equipment in a DelDOT maintenance yard.
25. Staging areas - Proper erosion and sediment (E&S) control measures as determined by the engineer shall be installed in all staging areas and at the bottom of the riprap slope drains during construction. All areas used by the Contractor for staging operations shall be fully restored by the Contractor upon completion of the project. If the staging area is paved, it shall be restored to its original condition. If the staging area is unpaved, it shall be re-graded, top soiled, seeded and mulched in accordance with Standard Specification Section 908. The seed shall adhere to the specifications for item 908014, Permanent Grass Seeding, Dry Ground. All costs associated with installing erosion and sediment controls and the restoration of the staging area shall be at no additional cost to the Department. If the engineer determines that a satisfactory stand of grass does not exist at the time of primary inspection, all costs associated with re-establishing a

satisfactory stand of grass shall be at the Contractor's expense. No staging and/or stockpiling shall take place in wetland or archaeological sensitive upland areas.

26. 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 archeologist. Contact the construction area engineer who will coordinate with DelDOT's archeologist.

Within 30 days, DelDOT will;

1. Approve the use of the proposed staging and stockpile area(s);
 2. Reject the request; or
 3. Perform an archeological survey to determine whether to approve or reject the request, which may take up to 3 months. If an archeological survey is necessary, DelDOT or a consultant on its behalf will undertake the survey.
27. The Contractor shall have an approved E&S plan for staging and stockpiling. When staging outside of DelDOT Right of Way (R/W) or property, Contractor must attain an agreement from the property owner and approval from appropriate delegating agency.
28. All work shall be performed within the existing right-of-way limits.
29. Night work is not permitted on this project unless the contractor obtains the following:
- a. Approval from the engineer
 - b. Acceptable responses on night work surveys
 - c. Acceptance from the municipality

Method and format of nightwork 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 will not warrant extending the contract time. Night work is considered from 6pm to 7am.

MAINTENANCE OF TRAFFIC NOTES

1. A full detour has been provided by the Department. If the contractor elects to deviate from the plans provided, the Contractor shall be responsible for preparing traffic control plans in accordance with the Standard Specification Section 104.8 Maintaining Traffic, for approval by the engineer. Any alternative traffic control plans prepared by the Contractor shall be signed and sealed by a professional engineer registered in the State of Delaware. This work will be paid under the following Item Numbers:
 - a. 801000 – Maintenance of Traffic
 - b. 803001 – Provide and Maintain Portable Changeable Message Sign
 - c. 810001 – Temporary Warning Signs and Plaques
 - d. 813001 – Temporary Barricades, Type III
2. For work to be completed outside of the detour such as permanent striping, deck sealing or punch list items, maintenance of traffic shall conform to Typical Application 10 of the Delaware MUTCD during the hours of 9 a.m. to 3:00 p.m. Monday through Friday. This work will be paid under the following Item Numbers:
 - a. 805001 – Plastic Traffic Control Drums
 - b. 808002 – Provide and Maintain Truck Mounted Attenuator, Type II
 - c. 810001 – Temporary Warning Signs and Plaques
 - d. 811003 – Flagger, Sussex County
3. 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.
4. DelDOT's Oversize, Overweight Permitting Section must be notified of the detour at least 14 days prior to the installation or any construction. The Permit Section may be reached at 302-744-2700 or haulpermit@delaware.gov. DelDOT's area engineer shall be included on all correspondence.
5. The Contractor shall notify Indian River High School 14 days prior to the installation of the detour or any construction. Indian River High School's points of contact are Michael Williams at William.Williams@IRSD.K12.de.us and Shawn Tidwell at Shawn.Tidwell@IRSD.K12.de.us. DelDOT's area engineer shall be included on all correspondence.
6. Assessment of the Road User Cost (RUC) will be made through the following Item Number:
 - a. 763525 – Road User Cost
7. Storage of equipment shall be in accordance with Table 6G-2 of the Delaware MUTCD. Portable Changeable Message Signs (PCMS) shall be placed off the shoulder for emergency vehicle access.
8. PCMS shall be placed at this location, ten days prior to the start of setting up the detour, to notify drivers of the detour and impending construction activity. The message, location, and number of PCMS required are included on the approved detour plan. This work will be paid under the following Item Number:
 - a. 803001 – Provide and Maintain Portable Changeable Message Sign

9. American Traffic Safety Association (ATSSA) Certified Traffic Control Supervisor Requirement for the 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 AND THAT PERSON'S SOLE RESPONSIBILITY SHALL BE THE MANAGEMENT AND SUPERVISION OF THE PROJECT'S TEMPORARY TRAFFIC CONTROL ACTIVITIES. THIS PERSON SHALL NOT HAVE ANY OTHER ROLE ON THE PROJECT. RESPONSIBILITIES AND REQUIREMENTS OF THE ATSSA SUPERVISOR ARE DEFINED IN SECTION 812 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 801000.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. The Stormwater Pollution Prevention Plan (SWPPP) has been approved by DelDOT’s stormwater engineer under DelDOT’s delegated authority. Plan approval is valid for a one-year period beginning on the date of the stormwater engineer’s signature. Any deviation to the SWPPP need approval from the engineer.

<i>Steven Sisson</i> <hr style="width: 80%; margin: auto;"/>	9/6/2024 <hr style="width: 80%; margin: auto;"/>
DelDOT Stormwater Engineer	Date
<p>“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.”</p>	

Bridge	3-440
Amount of disturbed area for the project	~0.07 AC (3080 SF)
Added impervious for the project	0 SF
HUC-10 watershed	Indian River Bay

2. Assign a responsible person to be on site during all earth disturbing activities and be an active DNREC Blue Card holder as defined in section 6.2 of the Delaware Sediment and Stormwater Regulations (DSSR). Be familiar with and comply with all aspects of the NPDES construction general permit.
3. File as a co-permittee in accordance with section 901 of the Standard Specifications. Posting and maintenance of the NOI permit coverage is incidental to the contract.
4. Revisions to the SWPPP or environmental compliance plan sheet(s) shall be approved prior to initiation in the field. The engineer is responsible for approving all redlines and revisions to the SWPPP.
5. Implementing and maintaining pollution prevention devices and practices is required under the Delaware construction general permit and the DSSR and are incidental to the contract.
6. A soil stockpile, as described in DelDOT Standard Specifications and defined in the Delaware Erosion & Sediment Control Handbook, is any location within the limits of construction where a temporary deposit of excavated soil is being reserved for future use. A soil stockpile shall be located a minimum of 50 feet from a storm drain inlet, open channel, wetland, or waterbody. A request may be made by the engineer to permit locating a soil stockpile less than 50 feet from a storm drain inlet or open channel. Upon approval, if any part of a soil stockpile is less than 50

feet from a storm drain inlet or open channel, install a super silt fence perimeter to protect the soil stockpile. The super silt fence must be constructed in accordance with 905.3.B.3 of the Standard Specifications. The cost for installation and maintenance of the stockpile super silt fence is incidental to the contract.

7. Protect against sediment or debris laden runoff from leaving the site. Check perimeter controls daily and adjust or repair to fully contain and control sediment from leaving the site. Remove accumulated sediment before it has reached half of the effective capacity of the control. Adjust or alter measures in times of adverse weather conditions, or as directed by the engineer. If taken offsite, sediment disposal will be the contractor's responsibility. Sediment disposal should conform to DNREC's current Environmental Guidelines and Best Practices.
8. Any sediment laden discharge leaving the limit of construction shall immediately be addressed through best available technologies to control any further sediment laden discharge. Remediation may include standard E&S practices or other methods as approved by the engineer.
9. All temporary concentrate flow areas including channel side slopes shall have erosion control blanket mulch as directed by the engineer. Install within seven calendar days upon construction initiation. A temporary concentrated flow area may include ditches, swales, berms, concentrated runoff areas, etc.
10. For any permanent stormwater management facility, follow that facility's sequence of construction as noted on the stormwater management sheets.
11. Maintain positive drainage in existing and proposed drainage systems by cleaning existing drainage systems and properly disposing of sediment throughout the duration of the project.

ENVIRONMENTAL COMPLIANCE NOTES

1. Natural Resource Issues:

A. Permit Requirements/ Approvals*:

U.S. Army Corps of Engineers (COE): National Permit #3 (a) and (c) (No PCN)

DNREC – Wetlands & Subaqueous Lands (WLSL): Project consistent with Del. Code CH. 72, Section 7217, Special Exemption (A)

DNREC – Water Quality (WQC) & Coastal Zone Consistency (CZM): Issued

*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 area(s) and ensure they are displayed on-site during the entire construction period.

B. Construction Restrictions:

No in-water work permitted from March 1st to June 30th.

ESTIMATED STEEL AND CONCRETE COATING QUANTITIES

Bridge No.	Facility Carried	Feature Intersected	Area of Steel (ft²)	Area of Concrete (ft²)
3-440	Armory Rd.	Vines Creek	3874	3012

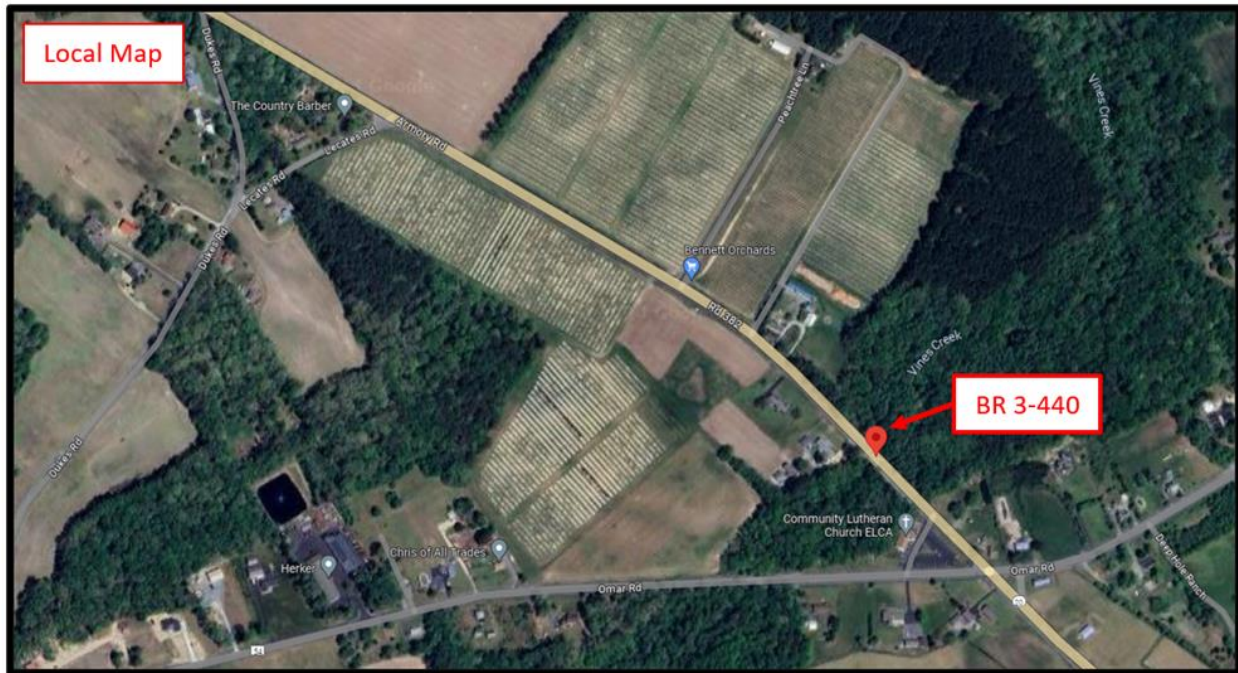
Quantities given are estimates only. It is the responsibility of the contractor to verify all quantities.

LANE CLOSURE MATRICES

		Allowable Detour Hours for BR 3-440 Armory Rd. (permanent striping, deck sealing, punchlist)																							
		12:00AM	01:00AM	02:00AM	03:00AM	04:00AM	05:00AM	06:00AM	07:00AM	08:00AM	09:00AM	10:00AM	11:00AM	12:00PM	01:00PM	02:00PM	03:00PM	04:00PM	05:00PM	06:00PM	07:00PM	08:00PM	09:00PM	10:00PM	11:00PM
Sunday																									
Monday																									
Tuesday																									
Wednesday																									
Thursday																									
Friday																									
Saturday																									

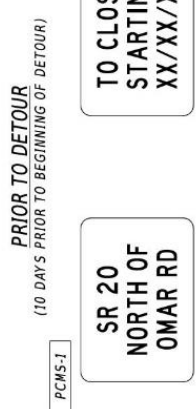
	Single Lane Closure
	All Lane Open

Location Maps

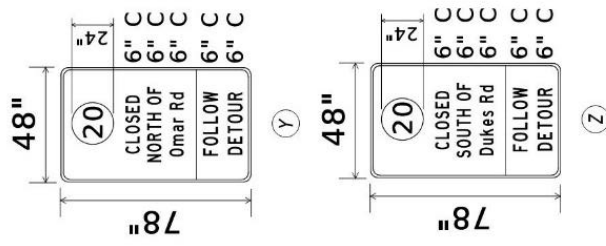


DETOUR

PORTABLE CHANGEABLE MESSAGE SIGNS



SPECIAL SIGNS



PREPARED BY
DELDOT - TRANSPORTATION SOLUTIONS
TRAFFIC SAFETY

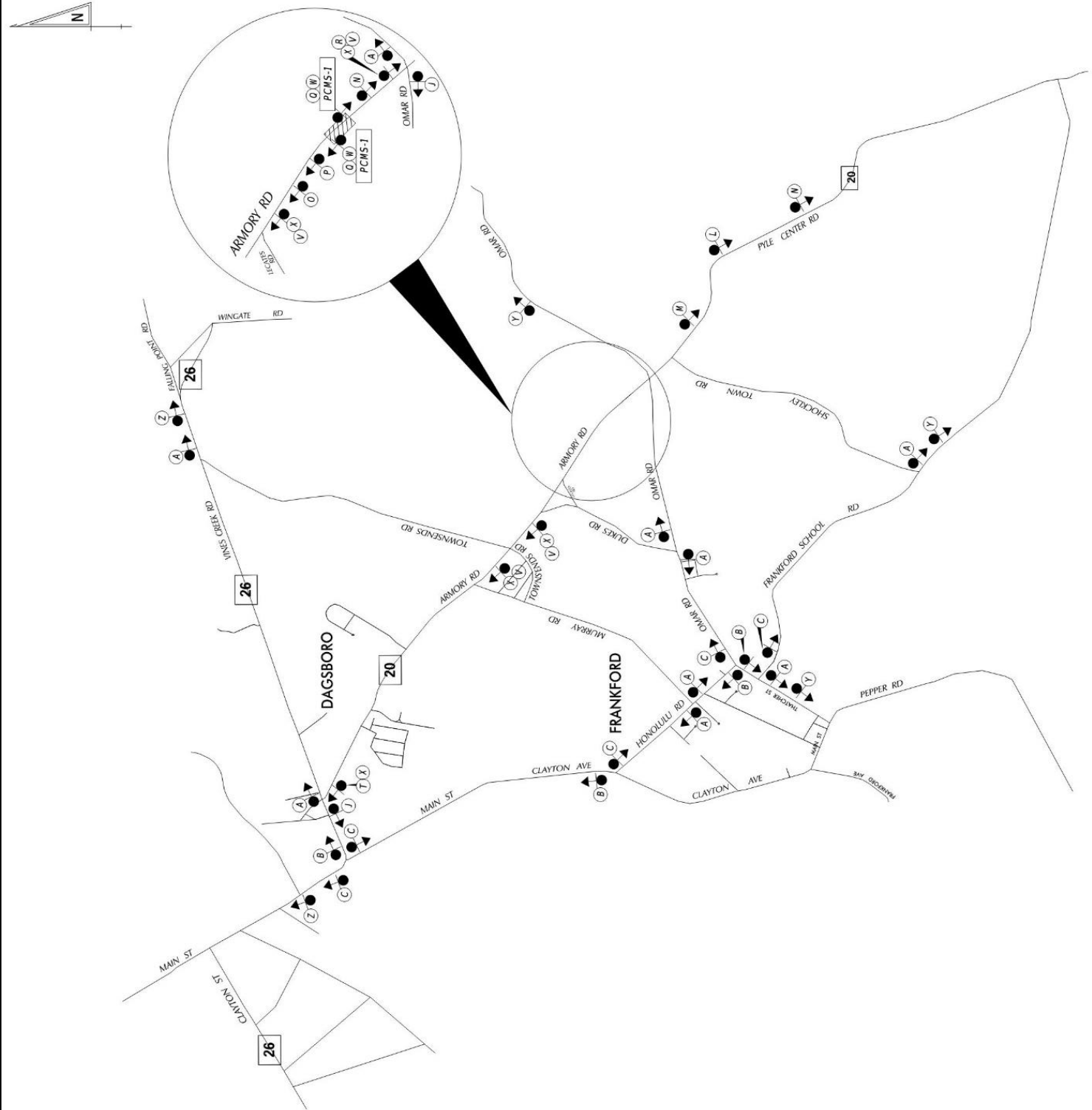
THIS SEAL ONLY APPLIES TO THIS DETOUR SHEET

DATE: 08/17/2023

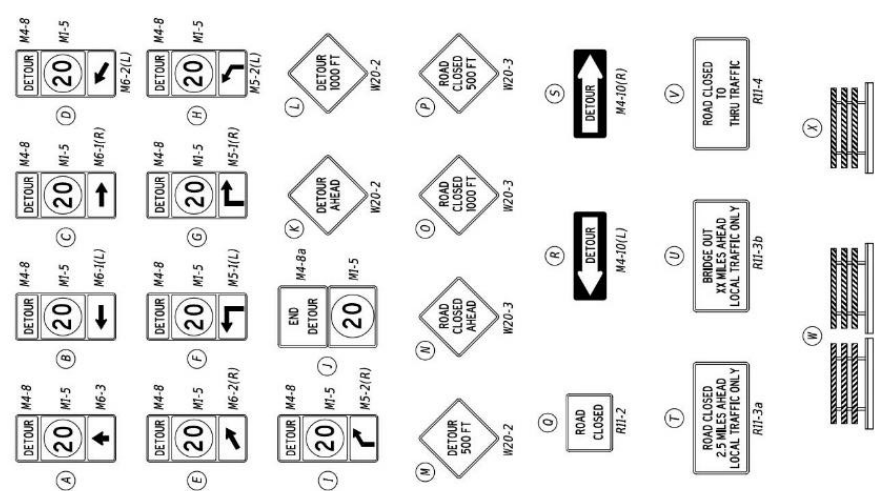
QA/QC REVIEWER: *David A. Stapp*

DATE: 8/16/23

THIS SHEET IS THE BEST OF MY KNOWLEDGE AND BELIEF THAT THIS DETOUR PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



LEGEND



GENERAL NOTES

- ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN COMPLIANCE WITH THIS PLAN AND THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
- SIGNS "M" THROUGH "O" AND "T" AND "Y" THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
- "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY UPSTREAM OF THE ROAD CLOSURE. "X" TYPE 3 BARRICADES SHALL BE PLACED AT THE EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
- BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

DETOUR DESCRIPTION:

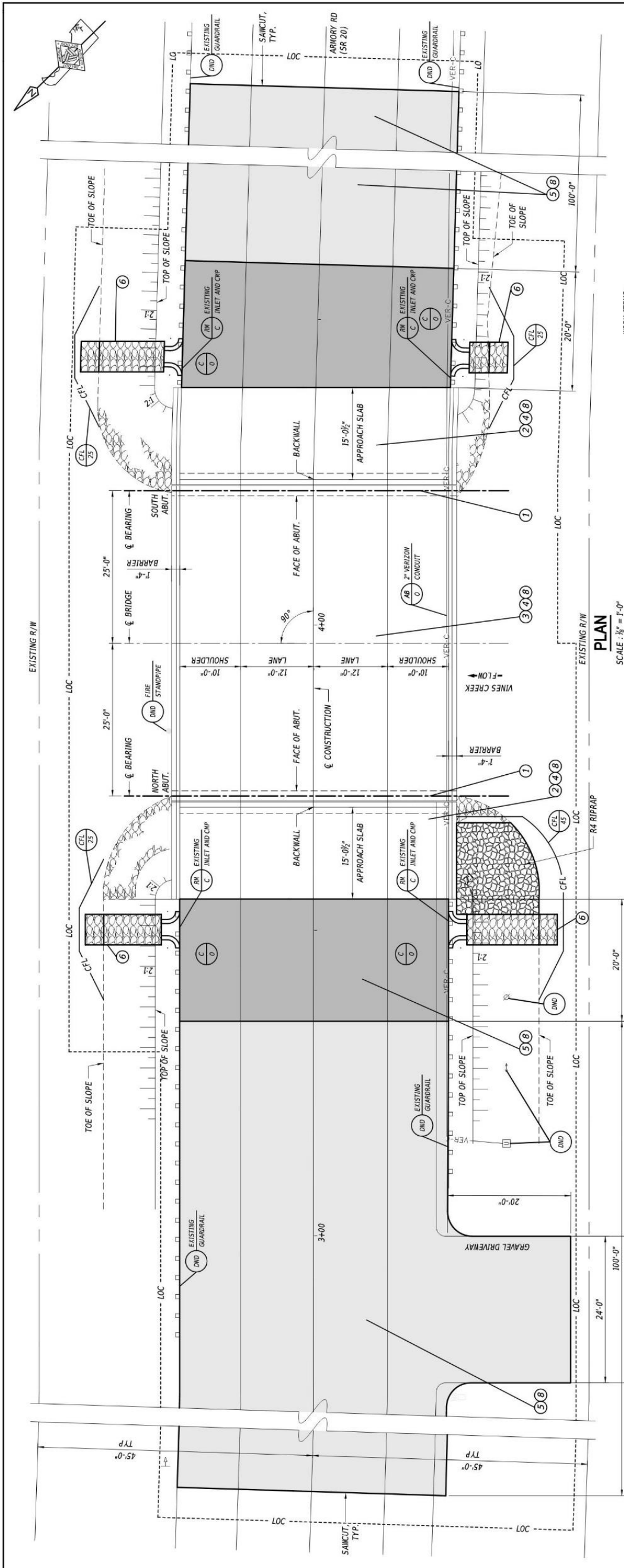
- Drivers wanting to head north on SR 20 will turn onto Omar Road heading westbound, then take a right on Honolulu Road, then right onto Clayton Avenue, then right onto Vines Creek Road and back to SR 20.
- Drivers wanting to head south on SR 20 will turn onto Main Street heading southbound, then take a left at Honolulu Road, then left on Omar Road and back to SR 20.

CONCURRENCE FOR IMPLEMENTATION

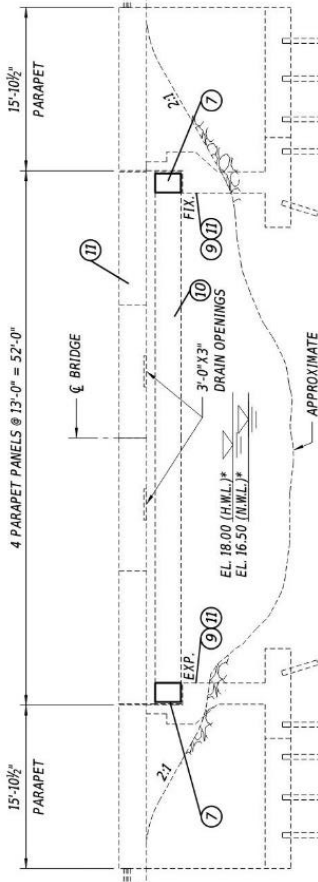
TRAFFIC SAFETY	DATE	SECTION
<i>James D. Osborne</i>	8/11/2023	SAFETY
PERMIT NO. BR 3-440	DESIGNED BY: L. CHAUDHRY	SHEET NO. X
CONTRACT T202407602	COUNTY SUSSEX	SHEET NO. X
SOUTH DISTRICT STRUCTURE MAINTENANCE BR 3-440 ON SR 20		
DETOUR PLAN - VEHICULAR SR 20 @ BR 3-440		
NOT TO SCALE	CHECKED BY: GAN	

ADDENDA / REVISIONS

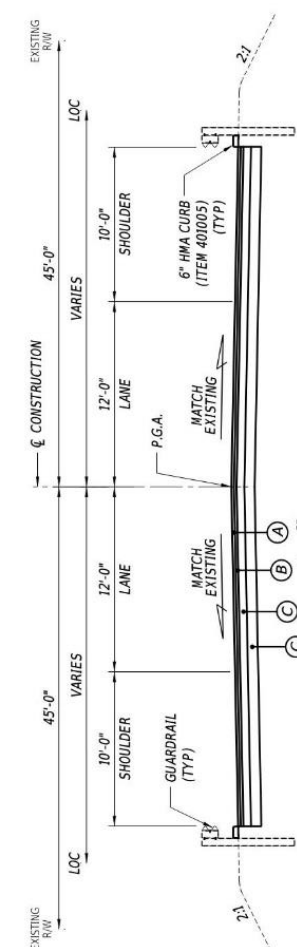
CONSTRUCTION DETAILS



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



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



TYPICAL ROADWAY SECTION SCALE: 1/8" = 1'-0"

MATERIAL TYPE	BINDER GRADE	LIFT THICKNESS (IN)	
		MINIMUM	MAXIMUM
TYPE C (4.75 MM MIX)	ALL	0.5	1.0
TYPE C (9.5 MM MIX)	ALL	1.25	2.0
TYPE B (12.5 MM MIX)	ALL	1.5	2.0
TYPE B (19 MM MIX)	76-22, 70-22	2.25	4.0
TYPE B (19 MM MIX)	64-22	2.25	6.0
TYPE BCBC (25 MM MIX)	64-22	3.0	6.0
GABC		4.0	8.0

LEGEND

- (A) ITEM 401005 - SUPERPAVE TYPE C, PG 64-22 CARBONATE STONE
- (B) ITEM 401014 - SUPERPAVE TYPE B, PG 64-22
- (C) ITEM 401021 - SUPERPAVE TYPE BCBC, PG 64-22
- (D) ITEM 301001 - GABC

PAVEMENT SECTION(S)

- MILL AND OVERLAY PAVEMENT WITH 2" SUPERPAVE, TYPE C
- RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS

NOTES:
 1. FOR CONCRETE REPAIR DETAILS, SEE SHEET 2.
 2. FOR APPROACH SLAB REPLACEMENT DETAILS, SEE SHEET 3.
 3. FOR JOINT REPLACEMENT DETAILS, SEE SHEETS 4-5.
 4. FOR STONE OUTLET DETAILS, SEE SHEET 6.
 5. EXISTING RIGHT-OF-WAY DETERMINED FROM CONTRACT 80-073-01 AND SHOWN FOR INFORMATIONAL PURPOSES ONLY.

- WORK ITEMS:
- 1 REMOVE AND REPLACE EXISTING STRIP SEAL DECK JOINT (SEE SHEETS 4 AND 5)
 - 2 REMOVE AND REPLACE EXISTING APPROACH SLAB (SEE SHEET 3)
 - 3 MILL AND OVERLAY EXISTING DECK WITH MODIFIED CLASS D PCC (SEE SHEET 2)
 - 4 SEAL NEW APPROACH SLAB, DECK ENDS, BACKWALL HEADER, AND DECK OVERLAY
 - 5 REPLACE FULL PAVEMENT BOX WITHIN 20' OF EACH END OF THE BRIDGE, MILL AND OVERLAY EXISTING APPROACH ROADWAY BEYOND THESE LIMITS AS SHOWN ON THE PLAN.
 - 6 REMOVE EXISTING CMP AND REPLACE WITH STONE OUTLET (SEE SHEET 6)
 - 7 REMOVE AND REPLACE CHECKWALL (SEE SHEET 5)
 - 8 REPLACE PERMANENT STRIPING (SEE SHEET 7)
 - 9 REPAIR EXISTING SUBSTRUCTURE
 - 10 CLEAN AND PAINT SUPERSTRUCTURE
 - 11 CLEAN AND PAINT THE BARRIER AND SUBSTRUCTURE
 - 12 ITEMS 613000, 613001

PREPARED BY: [Signature]

DATE: 9/06/24

THIS SEAL APPLIES TO ALL SHEETS BEARING THE "TY" SECTION DESIGNATION.

BRIDGE NO. BR 3-440

DESIGNED BY: G. SKIVA

CHECKED BY: D. CLEM

SECTION: PLAN, ELEVATION AND TYPICAL ROADWAY SECTION

TY SHEET NO. 1

REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD

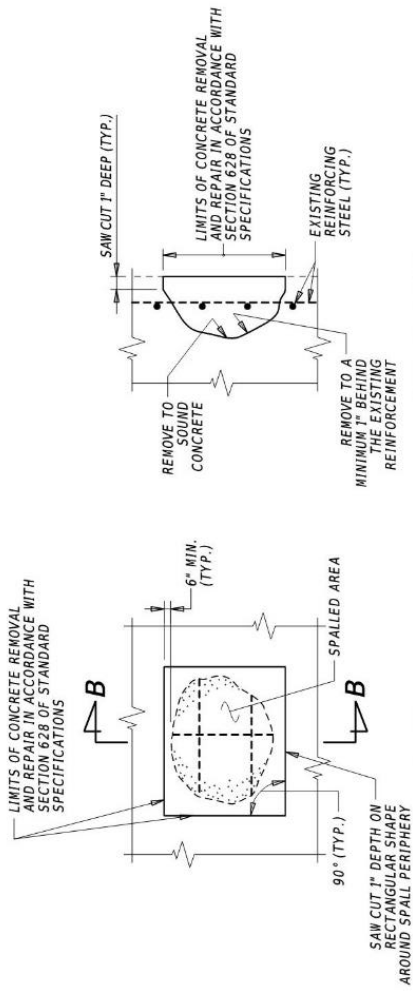
AS NOTED

CONTRACT	COUNTY	SUSSEX
T202407603		

ADDENDA / REVISIONS

DEEP SPALL REPAIR NOTES

1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL, CLEANING OF CONCRETE SURFACE, REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES OR SECTION LOSS; PRESENCE OF CONTRACTION OR EXPANSION JOINTS; SURFACE PREPARATION; AND CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.3.4 OF THE STANDARD SPECIFICATIONS EXCEPT THAT EXISTING BARS TO REMAIN NEED ONLY BE CLEANED TO A SSPC SP-7 SURFACE CONDITION. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
3. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.



SECTION B-B

PLAN

REMOVE TO A SOUND CONCRETE

REMOVE TO A MINIMUM 6\"/>

SAW CUT 1\"/>

LIMITS OF CONCRETE REMOVAL AND REPAIR IN ACCORDANCE WITH SECTION 628 OF STANDARD SPECIFICATIONS

EXISTING REINFORCING STEEL (TYP.)

SAW CUT 1\"/>

LIMITS OF CONCRETE REMOVAL AND REPAIR IN ACCORDANCE WITH SECTION 628 OF STANDARD SPECIFICATIONS

REMOVE TO A SOUND CONCRETE

REMOVE TO A MINIMUM 6\"/>

SAW CUT 1\"/>

LIMITS OF CONCRETE REMOVAL AND REPAIR IN ACCORDANCE WITH SECTION 628 OF STANDARD SPECIFICATIONS

EXISTING REINFORCING STEEL (TYP.)

SAW CUT 1\"/>

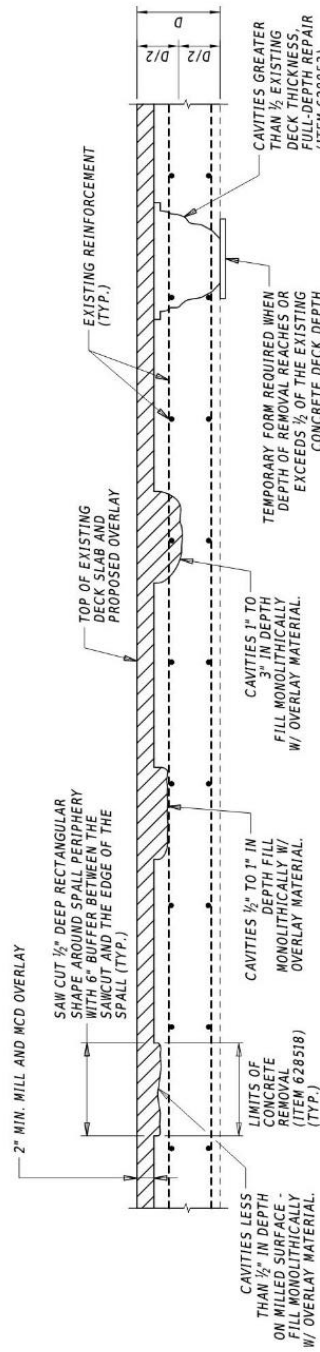
LIMITS OF CONCRETE REMOVAL AND REPAIR IN ACCORDANCE WITH SECTION 628 OF STANDARD SPECIFICATIONS

REMOVE TO A SOUND CONCRETE

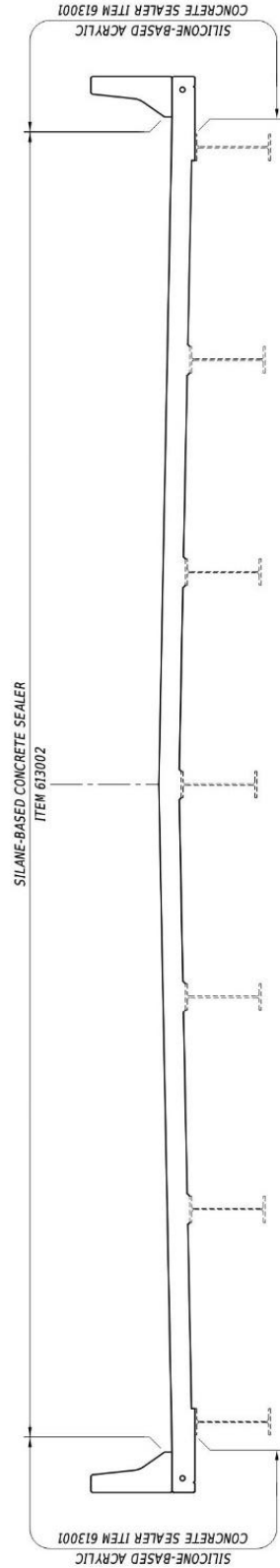
REMOVE TO A MINIMUM 6\"/>

SAW CUT 1\"/>

DEEP SPALL REPAIR



DECK REPAIR (WITH OVERLAY)



CONCRETE SEALER LIMITS

DECK REPAIR NOTES

1. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL, CLEANING OF CONCRETE SURFACE AND EXISTING REINFORCEMENT, REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES OR SECTION LOSS; PRESENCE OF CONTRACTION OR EXPANSION JOINTS; SURFACE PREPARATION, AND CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 628.3.5 OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628039 - REMOVAL OF PCC DECK, 1\"/>
- 2. AFTER MILLING OPERATIONS, THE EXISTING DECK SHALL BE SOUNDED AND ANY DELAMINATED OR OTHERWISE UNSOUND CONCRETE WILL BE MEASURED AND MARKED BY THE ENGINEER FOR DECK REPAIR. ALL MARKED CONCRETE SHALL BE REMOVED TO SOUND CONCRETE. PAID UNDER ITEM 628518 - REMOVAL OF PCC DECK, 1\"/>
- 3. MILLING AND OVERLAY SHALL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

MCD OVERLAY NOTES

1. THE EXISTING CONCRETE DECK SHALL BE MILLED 2\"/>
- 2. THE MCD OVERLAY SHALL BE CURED WITH A MIN. 14 NET CURE PROCESS. CONTRACTOR SHALL SUBMIT OVERLAY PLACEMENT AND CURING PLAN.
- 3. THE PROPOSED OVERLAY FINISHED ELEVATIONS SHALL MATCH EXISTING.

CONCRETE SEALER LIMITS

1. APPLY SILICONE-BASED ACRYLIC CONCRETE SEALER TO THE BRIDGE BARRIER AND BARRIER ATTACHED TO THE WINGWALLS. TO BE PAID UNDER ITEM 613001.
2. APPLY SILANE-BASED CONCRETE SEALER TO THE APPROACH SLABS AND DECK. TO BE PAID UNDER ITEM 613002.

ADDENDA / REVISIONS

NOT TO SCALE

REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD

CONCRETE REPAIR DETAILS

BRIDGE NO. BR 3-440

DESIGNED BY: G. SAYVA

CHECKED BY: D. CLEM

CONTRACT T202407603

COUNTY G. SAYVA

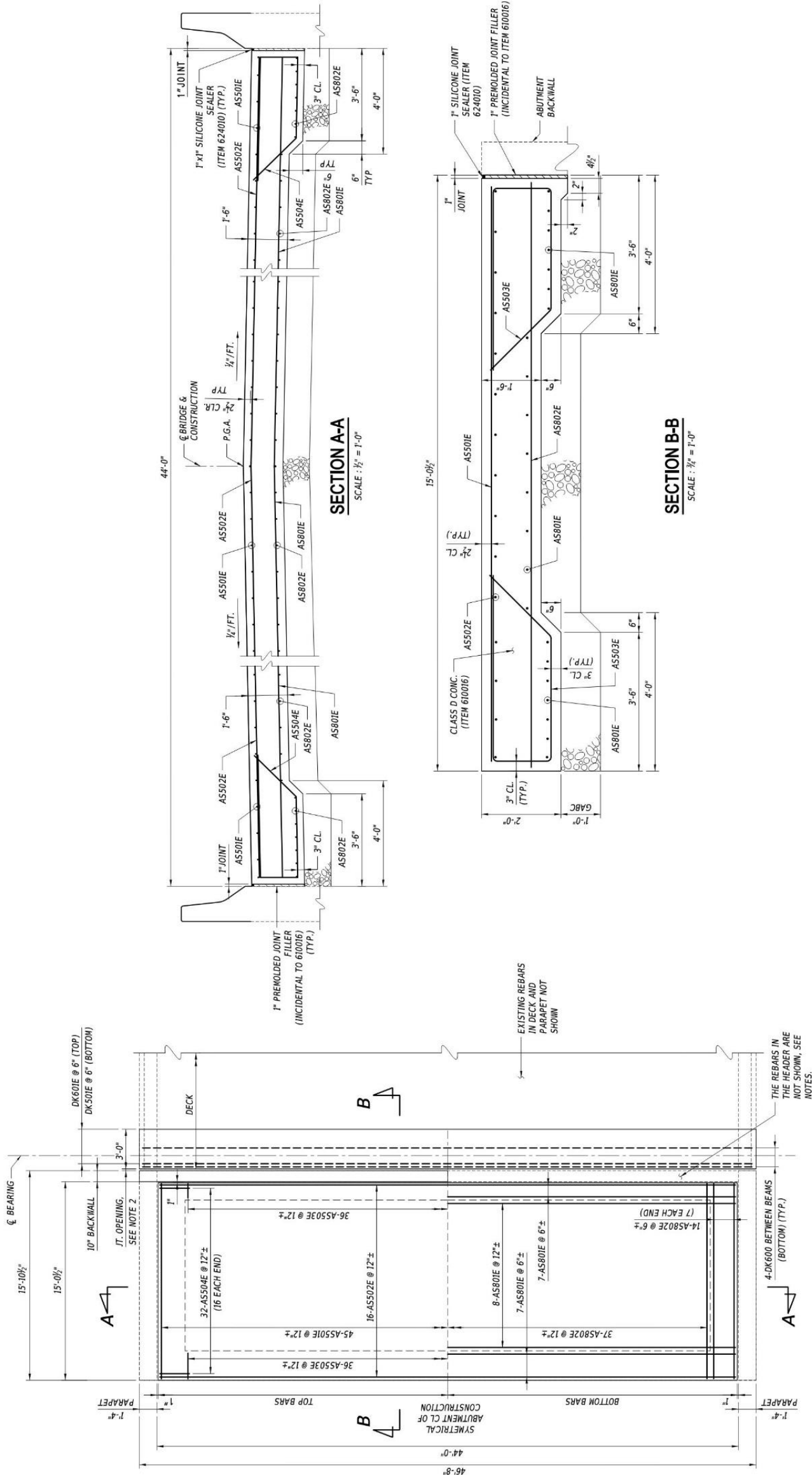
SUSSEX

SECTION

TY

SHEET NO.

2

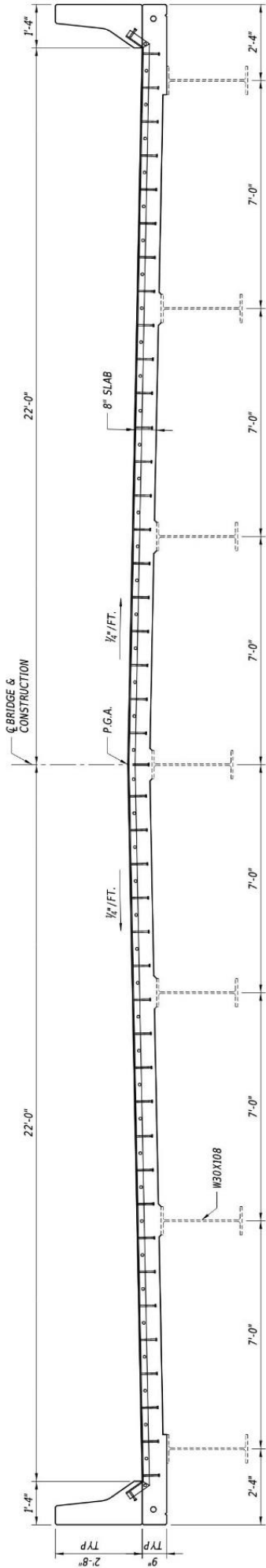


APPROACH SLAB PLAN
 (NORTH APPROACH SLAB IS SHOWN)
 ROTATE 180° FOR SOUTH ABUTMENT APPROACH SLAB
 SCALE: 3/8" = 1'-0"

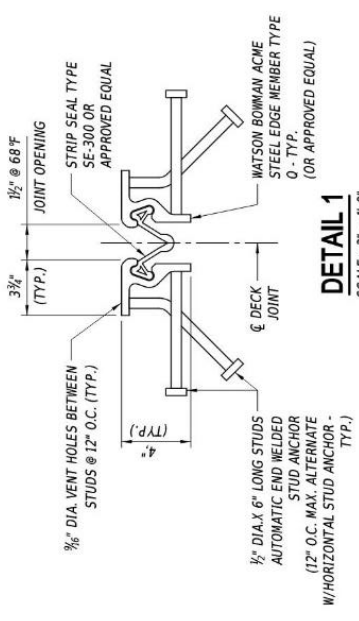
- NOTES:
- FOR REINFORCEMENT SCHEDULE, SEE SHEET 5.
 - FOR HEADER AND JOINT RECONSTRUCTION DETAILS, SEE SHEET 4.
 - THE CLASS D CONCRETE SHALL BE CURED WITH A MIN. 14 DAY WET CURE PROCESS. CONTRACTOR SHALL SUBMIT PLACEMENT AND CURING PLAN.

REVISIONS		APPENDIX / REVISIONS	
AS NOTED			
REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD		CONTRACT T202407603	BRIDGE NO. BR 3-440
		COUNTY SUSSEX	DESIGNED BY: G. SAVVA
			CHECKED BY: D. CLEM
		APPROACH SLAB PLAN, SECTIONS AND DETAILS	
SECTION	TY	SHEET NO.	
		3	

T:\2024\T202407603\Drawings\BR3-440\1011_BR3-440.dgn 12/27/24 12:53 PM



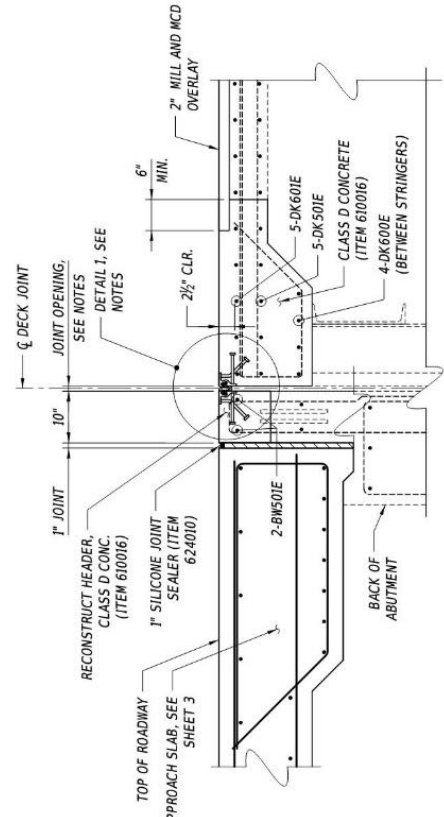
TYPICAL SECTION
SCALE : 1/2" = 1'-0"



DETAIL 1
SCALE : 3" = 1'-0"

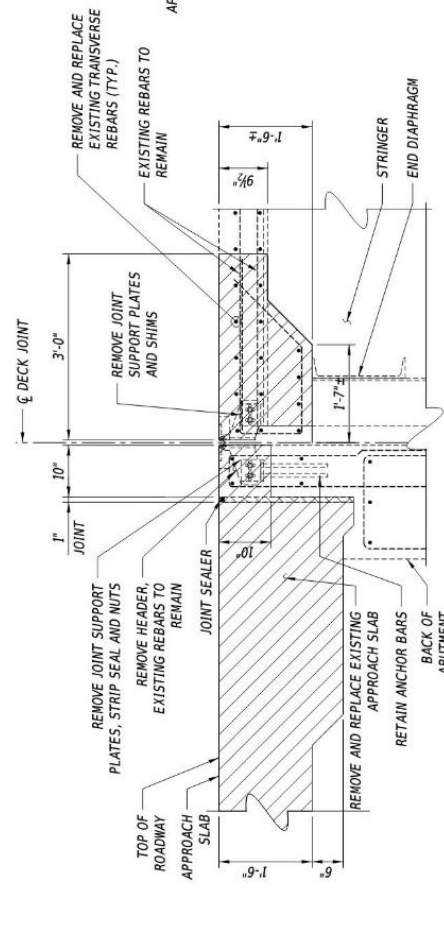
NOTES:

1. THE STRIP SEAL JOINT SHALL BE CAPABLE OF SEALING THE DECK TO PREVENT MOISTURE AND OTHER CONTAMINANTS FROM DESCENDING THROUGH THE JOINT AND IN ACCORDANCE WITH SECTION 624 OF THE STANDARD SPECIFICATIONS.
2. THE STRIP SEAL JOINT STEEL SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1039 OF THE STANDARD SPECIFICATIONS.
3. THE STRIP SEAL JOINTS SHALL BE SET TO MATCH THE EXISTING ELEVATION AND CROSS SLOPE OF THE BRIDGE DECK.
4. AT AREAS WHERE STEEL MEMBERS ARE TO BE SPICED, USE OF COMPLETE JOINT PENETRATION (CJP) AND PARTIAL JOINT PENETRATION (PJP) WELD ARE BOTH PERMITTED. THE THICKNESS OF PJP WELD SHALL BE MINIMUM HALF OF THE STEEL MEMBER THICKNESS. THE TOP OF THE STEEL MEMBER THAT THE TRAFFIC WILL BE RIDING SHALL BE GRINDED SMOOTH AFTER THE WELDING.
5. THE CONTRACTOR SHALL ADJUST THE OPEN JOINT BETWEEN DECK ENDS AS REQUIRED BY THE WIDTH OF THE STEEL EXTRUSION USED SO AS TO PROVIDE A 1/2" JOINT OPENING AT 68 °F.
6. THE STRIP SEAL SHALL BE INSTALLED IN ONE PIECE ACROSS THE BRIDGE DECK. SPlicing OF STRIP SEALS IS NOT PERMITTED. THE CONTRACTOR SHALL SUBMIT A WORKING PLAN FOR PLACEMENT OF STRIP SEAL.
7. EXISTING REINFORCEMENT SHALL BE CUT AND/OR BENT TO ACCOMMODATE NEW EXPANSION JOINT ASSEMBLY.
8. BAR REINFORCEMENT WHICH IS DESIGNATED TO REMAIN SHALL BE CLEANED BY GRIT BLASTING AND SHALL BE FIELD EPOXY COATED.
9. ALL BEAM ENDS SURFACES EXPOSED DURING REMOVAL DECK ENDS AND HAUNCHES SHALL BE CLEANED TO MEET SSPC-SP10 NEAR WHITE BLAST CLEANING AND PRIMED PRIOR TO CONCRETE PLACEMENT IN ACCORDANCE WITH SECTION 616 OF THE STANDARD SPECIFICATIONS.
10. REMOVAL OF EXISTING JOINT SYSTEM, BACKWALL HEADER, ASSOCIATED CONCRETE SHALL BE PAID FOR UNDER ITEM 210000.
11. THE CLASS D CONCRETE SHALL BE CURED WITH A MIN. 14 WET CURE PROCESS. CONTRACTOR SHALL SUBMIT OVERLAY PLACEMENT AND CURING PLAN.
12. ALL REINFORCING BARS TO REMAIN SHALL BE CLEANED AND FIELD EPOXY COATED, INCIDENTAL TO ITEM 610016.



PROPOSED

STRIP SEAL DECK JOINT DETAIL
SCALE : 3/4" = 1'-0"



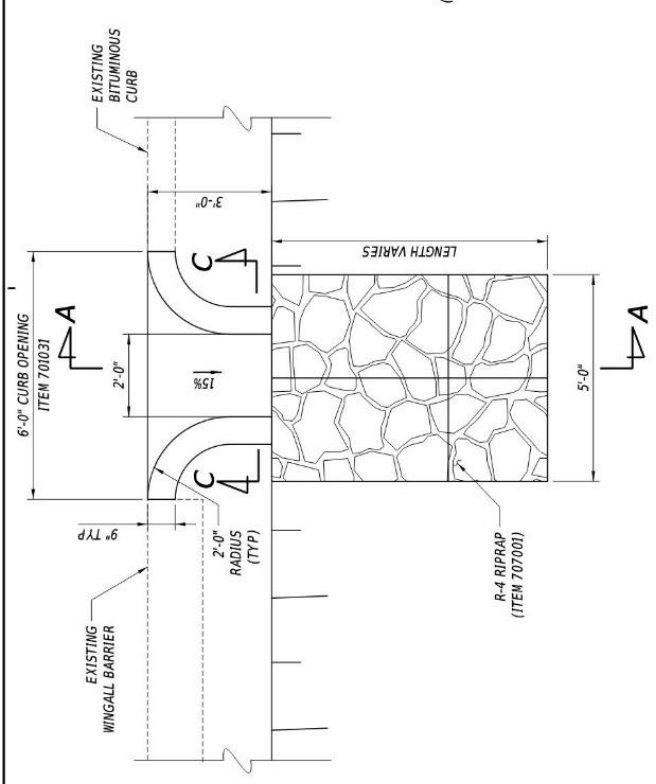
EXISTING / REMOVALS

EXTENTS OF DEMOLITION

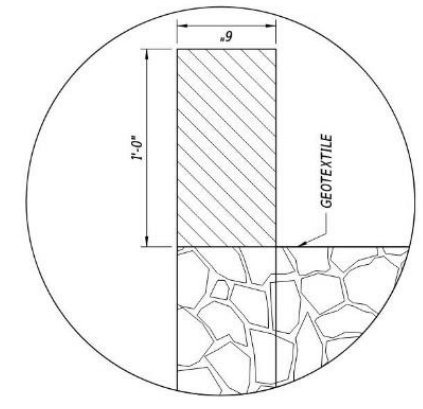
JOINT OPENING TABLE (INCH)

LOCATION	TEMPERATURE (°F)											MOVEMENT CLASSIFICATION			
	0	20	40	60	68	80	100	120	139	1440	1500				
NORTH ABUT.	1.843	1.742	1.641	1.540	1.500	1.440	1.339	1.238	1.137	1.036	0.935	0.834	0.733	0.632	3"
SOUTH ABUT.	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	3"

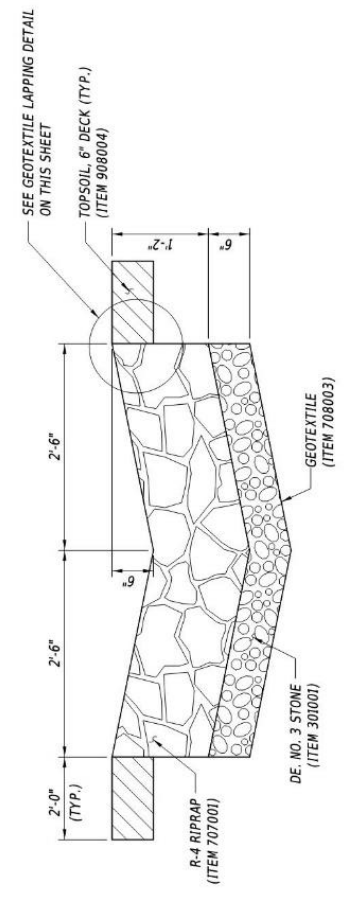
ADDENDA / REVISIONS	AS NOTED	REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD
CONTRACT: T202407603 COUNTY: SUSSEX BRIDGE NO.: BR 3-440 DESIGNED BY: G. SAVVA CHECKED BY: D. CLEM	JOINT DETAILS	
SECTION: TY SHEET NO.: 4		



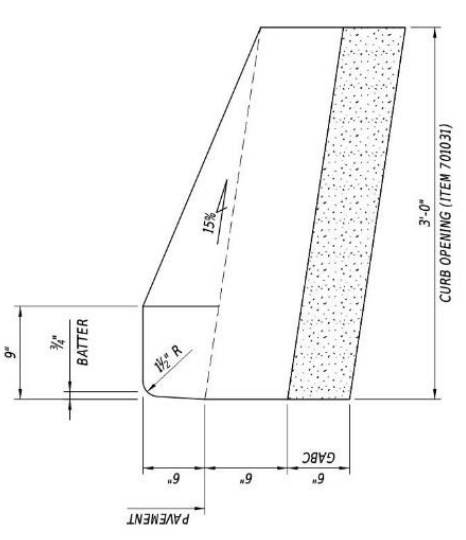
PLAN
(GUARDRAIL NOT SHOWN FOR CLARITY)



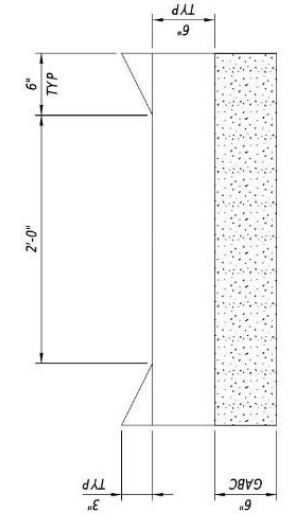
GEOTEXTILE LAPPING DETAIL



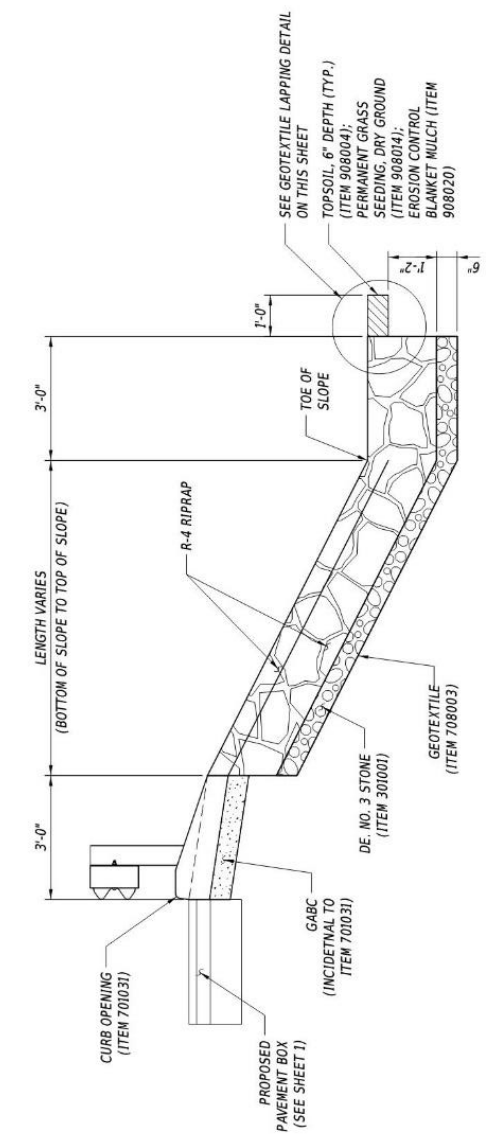
SECTION B-B



CURB OPENING SECTION



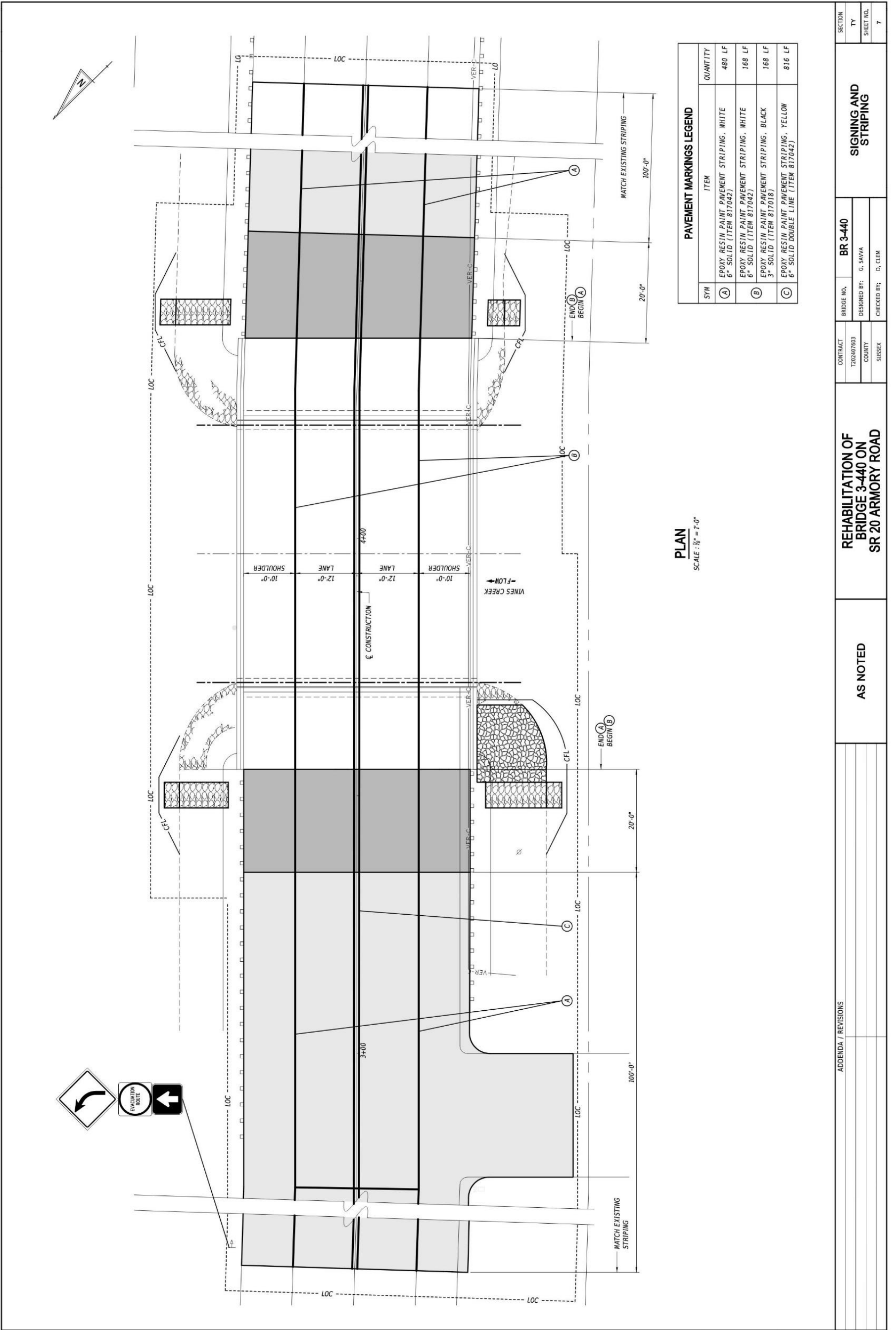
SECTION C-C



SECTION A-A

- NOTES:
1. PLACEMENT OF CURB OPENING AND STONE OUTLET MAY NEED TO BE ADJUSTED TO AVOID CONFLICT WITH GUARDRAIL POSTS.
 2. REMOVAL OF EXISTING CONCRETE AND HMA CURB SHALL BE PAID FOR UNDER ITEM 21000.

REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD		CONTRACT T202407603	BRIDGE NO. BR 3-440	SECTION TY
NOT TO SCALE		COUNTY SUSSEX	DESIGNED BY: G. SAVVA	SHEET NO. 6
ADDENDA / REVISIONS		CHECKED BY: D. CLEM		



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

SYM	ITEM	QUANTITY
A	EPOXY RESIN PAINT PAVEMENT STRIPING, WHITE 6" SOLID (ITEM 817042)	480 LF
B	EPOXY RESIN PAINT PAVEMENT STRIPING, WHITE 6" SOLID (ITEM 817042)	168 LF
C	EPOXY RESIN PAINT PAVEMENT STRIPING, BLACK 3" SOLID (ITEM 817018)	168 LF
C	EPOXY RESIN PAINT PAVEMENT STRIPING, YELLOW 6" SOLID DOUBLE LINE (ITEM 817042)	816 LF

SECTION		BRIDGE NO.		CONTRACT		REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD		AS NOTED		SIGNING AND STRIPING	
TY	7	BR 3-440	BR 3-440	T202407603	SR 20 ARMORY ROAD	REHABILITATION OF BRIDGE 3-440 ON SR 20 ARMORY ROAD	AS NOTED	SIGNING AND STRIPING	SIGNING AND STRIPING	SIGNING AND STRIPING	SIGNING AND STRIPING
SHEET NO.	7	DESIGNED BY:	G. SAVVA	COUNTY	SUSSEX						
		CHECKED BY:	D. CLEM	SUSSEX							