SECTION 600

2. PORTLAND CEMENT CONCRETE

2.1. Use Portland cement concrete for earth-placed elements as follows:

(a) 3,000 lb/ft³ (48 MPa) compressive strength.

(b) To be designed in accordance with Department of Transportation design specifications.

(c) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(d) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(e) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(f) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(g) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(h) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(i) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(j) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(k) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(l) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(m) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

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(u) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(v) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(w) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(x) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(y) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

(z) All earth placed concrete shall be designed in accordance with Department of Transportation design specifications.

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DEEP SPALL REPAIR NOTES
1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXCEED THE 0.5 C.Y. THRESHOLD IN A SINGLE AREA.
2. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
3. IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.
4. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.

REHABILITATION OF PCC MASONRY NOTES
1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXCEED THE 0.5 C.Y. THRESHOLD IN A SINGLE AREA.
2. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
3. THE CONTRACTOR SHALL REMOVE THE EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628.03(F).
4. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL REPAIR AREA IN ACCORDANCE WITH SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
5. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.

REMOVAL OF EXISTING DECK REPAIR NOTES
1. AFTER EXISTING DECK REPAIR IS REMOVED, REFER TO HYDRODEMOLITION, ANY DEEP SPALL REPAIRS THAT ARE EXPOSED SIMILARLY OR EXISTING PCC MASONRY WILL BE MEASURED BY THE ENGINEER AND PAID FOR IN FULL DEPTH.
2. THE CONTRACTOR SHALL REMOVE THE EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628.03(F).
3. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL REPAIR AREA IN ACCORDANCE WITH SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
4. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
5. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.

DECK REPAIR NOTES
1. AFTER EXISTING DECK REPAIR IS REMOVED, REFER TO HYDRODEMOLITION, ANY DEEP SPALL REPAIRS THAT ARE EXPOSED SIMILARLY OR EXISTING PCC MASONRY WILL BE MEASURED BY THE ENGINEER AND PAID FOR IN FULL DEPTH.
2. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
3. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL REPAIR AREA IN ACCORDANCE WITH SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.
4. 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 SUBSECTION 628.03(F) AND SUBSECTION 625.03-E.

HYDRODEMOLITION AND DECK REPAIR (WITH OVERLAY)
### LMC Overlay Notes:

1. Longitudinal construction joints shall be limited to only those necessary to complete the work. Remove the contraction joint prior to placing any concrete. The contractor is responsible for the location of the joint.

### Additional Notes:

- The contractor is responsible for the location of the joint.
- The joint shall be placed at the location of the final lane centers.

### Summary of Proposed Repair and Reconstruction Items

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**NOT FOR CONSTRUCTION**
NOTES:
1. THICKNESS OF EXISTING DECK AND PROPOSED LMC OVERLAYS
   SEE DWG. PA-01 FOR DETAILS.
2. FOR PARAPET DETAIL AND DRIP NOTCH DETAIL SEE DWG. PA-01.

EXISTING TYPICAL SECTION

PROPOSED TYPICAL SECTION

DELTA DEPARTMENT OF TRANSPORTATION

REHABILITATION OF I-95
FROM I-495 TO NORTH OF
BRANDYWINE RIVER BRIDGE
1. Set up the Stage 1 NB and shift traffic to the new lane configuration.

2. No bridge deck work in Stage 1. Shown for informational purposes only.

NOTES:
1. Protective shields not shown.
2. No bridge deck work in Stage 1. Shown for informational purposes only.
LEGEND:

- PROPOSED CONSTRUCTION
- REMOVAL LIMITS

NOTES:

1. PROTECTIVE SHIELDS NOT SHOWN.
2. SET UP THE STAGE 2 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
3. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 2 CONSTRUCTION.

SEQUENCE OF CONSTRUCTION NOTES:

1. SET UP THE STAGE 2 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 2 REMOVAL.
3. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 2 CONSTRUCTION.
SEQUENCE OF CONSTRUCTION NOTES:
1. SET UP THE STAGE 3 NB AND SB TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3 REMOVAL.
3. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3 CONSTRUCTION.

LEGEND:
- Removal Limits
- Proposed Construction

NOTES:
1. PROTECTIVE SHIELDS NOT SHOWN.
NOTES:
1. NO BRIDGE DECK WORK IN STAGE 4.
CONSTRUCTION BASELINE I-95

CONCRETE REPAIR QUANTITIES

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NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON FIELD NOTES (SEE NOTE 11 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION. PRIOR TO STARTING REPAIRS, THE LIMITS MUST BE AGREED ON BY THE CONTRACTOR AND THE ENGINEER.

2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED SPALL. IF THE SPALL EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, THE CRACKS REPAIR MAY BE FULLY REMOVED TO THE TOP OF REMOVAL. THE LIMITS OF THE SPALL REPAIR ARE BASED ON THE LIMITS OF CONCRETE REMOVAL. THE CONTRACTOR SHALL REMOVE EXCESSIVE CONCRETE UNTIL THE CRACK IS FULLY REMOVED. THE LIMITS OF REMOVAL MUST BE PREFERRED TO THE ORIGINAL FACE OF CONCRETE. ALL WORK IN THE REPAIR AREA MUST BE CONSIDERED INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

4. CONTRACTOR SHALL TAKE STEP TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER, AND CLEAN UP PROCEED TO REMOVE THE SEALER FROM THE BEARINGS. ALL WORK IN THE REPAIR AREA MUST BE CONSIDERED INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

5. IN-LINE OR ACROSS THE BEAM SEAT FROM APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCURRED TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

6. FOR SECTIONS A-A, B-B, AND ABUTMENT BACKWALL RECONSTRUCTION DETAILS, SEE DWG. AB-03.

7. FOR CONCRETE REPAIR DETAILS, SEE DWG. AB-02.

8. FOR CONCRETE REPAIR DETAILS, SEE DWG. AB-04.

9. FOR SECTION A-A, B-B, AND ABUTMENT BACKWALL RECONSTRUCTION DETAILS, SEE DWG. AB-03.

NOTES (CONTINUED):

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON FIELD NOTES (SEE NOTE 11 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION. PRIOR TO STARTING REPAIRS, THE LIMITS MUST BE AGREED ON BY THE CONTRACTOR AND THE ENGINEER.

2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED SPALL. IF THE SPALL EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, THE CRACKS REPAIR MAY BE FULLY REMOVED TO THE TOP OF REMOVAL. THE LIMITS OF THE SPALL REPAIR ARE BASED ON THE LIMITS OF CONCRETE REMOVAL. THE CONTRACTOR SHALL REMOVE EXCESSIVE CONCRETE UNTIL THE CRACK IS FULLY REMOVED. THE LIMITS OF REMOVAL MUST BE PREFERRED TO THE ORIGINAL FACE OF CONCRETE. ALL WORK IN THE REPAIR AREA MUST BE CONSIDERED INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

4. CONTRACTOR SHALL TAKE STEP TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER, AND CLEAN UP PROCEED TO REMOVE THE SEALER FROM THE BEARINGS. ALL WORK IN THE REPAIR AREA MUST BE CONSIDERED INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

5. IN-LINE OR ACROSS THE BEAM SEAT FROM APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCURRED TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

6. FOR SECTIONS A-A, B-B, AND ABUTMENT BACKWALL RECONSTRUCTION DETAILS, SEE DWG. AB-03.

7. FOR CONCRETE REPAIR DETAILS, SEE DWG. AB-02.
LEGEND:

- GENERAL LIMITS - ITEM 211000
- PROPOSED CONSTRUCTION

NOTES:

- EXISTING REINFORCING TO REMAIN SHALL BE 1'-0"± (TYP.)
- REMOVAL LIMITS - ITEM 211000
- SEE SECTION C-C AND D-D FOR APPROACH SLAB PARAPET REINFORCEMENT
- CUT EXISTING REINFORCEMENT TO PROVIDE 2" CLR. (TYP.)
- PARAPET REINFORCEMENT AND PARAPET ON DWG. AS-05 FOR APPROACH SLAB
- SEE SECTION A-A ON DWG. AS-05 FOR APPROACH SLAB REINFORCEMENT

COURSE, TYPE B AGGREGATE BASE

1'-0" DEPTH GRADED WW501 (TYP.)

SECTION C-C REMOVAL

SECTION C-C RECONSTRUCTION

NOT FOR CONSTRUCTION
**Erosion Repair Placement Procedure:**

1. Remove any vegetation and excavate existing unstable soils within the limits of the proposed erosion repair.
2. Place geotextile fabric and construct geotextile lapping detail at each edge of erosion repair adjacent to existing soils.
3. Place a depth of Delaware No. 3 Stone as shown.
4. Fill remaining depth with R-5 Riprap to match existing groundline.

**Notes:**

1. Repair areas shown are approximate, erosion areas to be excavated as directed by the engineer.
2. Place R-5 Riprap along the existing abutment footing to a minimum of 2'-0" above the top of footing.
LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

LIMITS OF EPOXY CONCRETE SEALER, SEE NOTE 4

NOT FOR CONSTRUCTION
PIER 2 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)

REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

DEEP SPALL REPAIR

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON PROVISIONS SHOWN ON DWG. PN-01. THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

2. REMOVAL OF CONCRETE MAY BE CONDUCTED UP TO BUT NOT BEYOND THE LIMITS OF THE SPALL REPAIR. REMOVAL OF CONCRETE THE SPALL REPAIR EXTENDS INTO THE ORIGINAL FACE OF THE PIER SHALL BE SHOWN FOR INSPECTION IN FIELD AND COMPLETE CONCRETE REMOVAL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. ANY CLEAN-UP AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER. CONTRACTOR SHALL REMOVE AND BEARING PEDESTALS. PAYMENT WILL BE MADE UNDER ITEM 613000 - EPOXY CONCRETE SEALER.

3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

4. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEAT AND JACKET REPAIR DETAILS. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.

5. CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT THE BEARINGS DURING APPLICATION OF THE EPOXY SEALER. ANY CLEAN-UP REQUIRED TO TRIM THE JACKET FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

6. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED UNLESS THE REPAIRS SHOWN IN SHEETS PN-01 AND PN-02. PROJECTED CONTINUED TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000 - EPOXY CONCRETE SEALER.

7. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE SEALER MAY BE APPLIED ALONG ANY CONCRETE AREAS THAT ARE USED TO COMPLETE EACH PIERS.

8. FOR FRP JACKET REPAIR DETAILS, SEE DWG. PR-13.

9. FOR CONCRETE REPAIR QUANTITIES TABLE, SEE DWG. PR-03.

DEPARTMENT OF TRANSPORTATION
DELAWARE
NEW CASTLE COUNTY
BRIDGE NO. T201407404
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
**NOT FOR CONSTRUCTION**

**LEGEND:**
- **Repair of Concrete Structures by Epoxy Injection**
- **Deep Spall Repair**

## CONCRETE REPAIR QUANTITIES

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<th>Code</th>
<th>Unit</th>
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<td>3.</td>
<td>Epoxy Concrete Sealer</td>
<td>B6</td>
<td>SF</td>
<td>11</td>
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</tbody>
</table>

### Notes:
1. **Location and quantities of the repairs shown on this drawing are based on inspection field notes (see note 16).** The repairs are approximate and are subject to verification by the Contractor following the presence of the Engineer.
2. **Where cracks and spalls exist concurrently, complete the crack repair completely removing the spalled concrete, and the spall repair completely removing the spalled concrete.** If the spall extends beyond the limits of the crack repair, complete both repairs. The limits of the crack repair may be extended by the addition of concrete matching the existing concrete color. For additional concrete below the crack, use concrete of the same color. The depth of repair may be extended above the original face of concrete, all other repairs shall be completed as required.
3. **Concrete repair shall only be applied after all concrete repairs are complete.**
4. **Concrete repair shall be applied to the beam seats and bearing pedestals.** Payment will be made under item 613000 - Epoxy Concrete Sealer. Contractor shall remove and bearing pedestals. Payment will be made under item 613000 - Epoxy Concrete Sealer.
5. **Contractor shall take care to protect the bearings during application of the epoxy concrete sealers.** Any cleanup required to remove the sealers from the bearings will be at the expense of the Contractor.
6. **Epoxy Concrete Sealer shall be applied to all exposed concrete slabs surfaces that are required to be sealed.** Payment will be made under item 613001 - Epoxy Concrete Sealer. Any cleanup required to remove the sealers from the bearings will be at the expense of the Contractor.
7. **Epoxy Concrete Sealer and silicone-based acrylic concrete sealers shall not be applied after all concrete repairs are complete.**
8. **For prop jacket repair details, see DWG. PR-13.**
LIMITS OF DEMOLITION - STAGE 2
(STAGE 3 OPPOSITE HAND)

SUGGESTED SEQUENCE OF CONSTRUCTION:
1. INSTALL TEMPORARY WORKS INCLUDING PROTECTIVE SHIELDS, ETC. AS NECESSARY TO PROTECT THE WORK ZONE AND AREAS UNDER AND NEARBY TO THE CONSTRUCTION.
2. REMOVE EXISTING LMC OVERLAY VIA PAVEMENT MILLING WITHIN THE LIMITS OF TOTAL SURFACE HYDRODEMOLITION AS SHOWN.
3. PERFORM TOTAL SURFACE HYDRODEMOLITION TO THE LIMITS SHOWN.
4. PLACE NEW LMC OVERLAY.

LEGEND:
- LIMITS OF REMOVAL, PAVEMENT MILLING (ITEM 760013)
- LIMITS OF REMOVAL, HYDRODEMOLITION (ITEM 7605XX)

DEMOPTION NOTES:
1. REGULATIONS OF THE HYDRODEMOLITION EQUIPMENT MAY BE REQUIRED BETWEEN THE ORIGINAL AND WIDENED PORTIONS OF THE STRUCTURE AT EXISTING SLAB CUT LINE.
2. THICKNESS OF EXISTING LMC OVERLAY SHOWN ON SHEET CORRESPONDING THE OVERLAY THICKNESS SHOWN IN NOVEMBER/DECEMBER 2014. THE CORING REPORT IS INCLUDED WITH THE CONTRACT DOCUMENTS.
3. VEHICLES AND EQUIPMENT SHOULD BE KEPT ONE LINE OF LANE OR THE AREA THAT HAVE RECEIVED TOTAL SURFACE HYDRODEMOLITION AS MUCH AS POSSIBLE. EQUIPMENT NECESSARY TO COMPLETE THE WORK WILL BE ALLOWED ON THESE AREAS.

STATE: DELAWARE
CONTRACT: 1-744 DM-01
NEW CASTLE COUNTY

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE
MILLING AND HYDRODEMOLITION DETAILS

LIMITS OF REMOVAL - STAGE 2
EXISTING DECK TO REMAIN (TYP.)
EXISTING LMC OVERLAY TO BE REMOVED - THICKNESS VARIES
EXISTING LMC OVERLAY TO BE SCARIFIED " MIN. TO MAX. VIA TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION

TOTAL SURFACE HYDRODEMOLITION DETAIL
PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE
EXISTING LONGITUDINAL REINFORCEMENT TO REMAIN
EXISTING TRANSVERSE REINFORCEMENT TO REMAIN
EXISTING TRANSVERSE REINFORCEMENT TO REMAIN (STAGE 3 OPPOSITE HAND)
EXISTING LMC OVERLAY TO BE SCARIFIED " MIN. TO MAX. VIA TOTAL SURFACE HYDRODEMOLITION
EXISTING LMC OVERLAY TO BE REMOVED - THICKNESS VARIES
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION

LIMITS OF DEMOLITION - STAGE 2
EXISTING DECK TO REMAIN (TYP.)
EXISTING LMC OVERLAY TO BE REMOVED - THICKNESS VARIES
EXISTING LMC OVERLAY TO BE SCARIFIED " MIN. TO MAX. VIA TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION

HYDRODEMOLITION AMPLITUDE DETAIL
PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE
EXISTING LONGITUDINAL REINFORCEMENT TO REMAIN
EXISTING TRANSVERSE REINFORCEMENT TO REMAIN
EXISTING TRANSVERSE REINFORCEMENT TO REMAIN (STAGE 3 OPPOSITE HAND)
EXISTING LMC OVERLAY TO BE SCARIFIED " MIN. TO MAX. VIA TOTAL SURFACE HYDRODEMOLITION
EXISTING LMC OVERLAY TO BE REMOVED - THICKNESS VARIES
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION
EXISTING DECK SURFACE PROFILE AFTER TOTAL SURFACE HYDRODEMOLITION

LIMITS OF REMOVAL, HYDRODEMOLITION (ITEM 7605XX)
LIMITS OF REMOVAL, PAVEMENT MILLING (ITEM 760013)
NOT FOR CONSTRUCTION
JOINT RECONSTRUCTION NOTES:

1. For joint assembly detail and strip seal expansion joint notes, see DWG. EX-02.
2. For parapet reconstruction at joints, see DWG. EX-04.
3. For typical joint plan, see DWG. EX-03.

REMOVAL DETAIL - ALL PIERS

EXISTING JOINT ASSEMBLY TO BE REMOVED

EXISTING JOINT HEADER TO BE REMOVED

EXISTING JOINT OPENING TO REMAIN, CUT LONGITUDINAL BARS 2" CLEAR OF NEW EDGE OF JOINT.

EXISTING JOINT OPENING TO REMAIN, CUT LONGITUDINAL BARS 2" CLEAR OF NEW EDGE OF JOINT.

JUNCTION DETAILS - ALL PIERS

EXISTING JOINT ASSEMBLY TO BE REMOVED

EXISTING JOINT HEADER TO BE REMOVED

EXISTING JOINT OPENING TO REMAIN, CUT LONGITUDINAL BARS 2" CLEAR OF NEW EDGE OF JOINT.

DECK JOINT OPENINGS

LOCATION
1'-10" ±
2'-3" ±
3'-0" ±

TEMPERATURE (°F)
20
30
40
50
60
68
70
80
90

MECHANICAL CLASSIFICATION
2º
3º
3º

NOTES:
1. For joint assembly detail and strip seal expansion joint notes, see DWG. EX-02.
2. For parapet reconstruction at joints, see DWG. EX-04.
3. For typical joint plan, see DWG. EX-03.
STRIP SEAL EXPANSION JOINT NOTES:

1. Strips for each joint and shear expansions shall be assembled as specified in the detail shown.

2. Ensure expansion is installed as specified in the expansion joint system.

3. The expansion joint shall be capable of sealing the joint to prevent moisture and other contaminants from passing through the joint.

4. The contractor shall adjust the strip joint as specified in the expansion joint system.

5. Strips shall be installed in one piece across the bridge width.

6. The expansion joint system shall be used for the over item 124000 - prefabricated expansion joint system.

7. Steel expansion joints shall be 100% allowed. The expansion joint shall be 100% placed for the existing steel structure.

8. Lubricants, adhesives, and bonding compounds shall be used in the expansion joint system.

9. Steel for deck joints and steel extrusions shall be AASHTO M270, Grade 36.

10. Anchor plate and steel extrusion shall be welded to watertight at the color of the proposed frame system.

11. Steel extrusions shall be 100% allowed. The expansion joint system shall be 100% placed for the existing steel structure.

12. Steel extrusions shall be 100% allowed. The expansion joint system shall be 100% placed for the existing steel structure.

NOTES:

1. For each joint, see detail 6-31-1.

2. For each joint opening, see detail 6-31-1.

3. For each joint opening, see detail 6-31-1.

4. For each joint opening, see detail 6-31-1.

5. For each joint opening, see detail 6-31-1.

6. For each joint opening, see detail 6-31-1.

7. For each joint opening, see detail 6-31-1.

8. For each joint opening, see detail 6-31-1.

9. For each joint opening, see detail 6-31-1.

10. For each joint opening, see detail 6-31-1.

11. For each joint opening, see detail 6-31-1.

12. For each joint opening, see detail 6-31-1.

13. For each joint opening, see detail 6-31-1.

14. For each joint opening, see detail 6-31-1.
PARAPET JOINT PLATE NOTES:

1. For concrete panels in parapet and guard to provide smooth surface, as required by AASHTO and ODOT. Refer to Section 3.11 of the Engineer's Specifications for proper details. Parapets shall be flush with face of parapet as required to maintain existing parapet and glass edge, to provide smooth surface.

2. Place parapets concrete with steel, plates, inserts, and bolts in place to ensure smooth transition from parapets and glass edge of steel plates. Place plates at parapet and glass edge to ensure smooth transition of parapets and glass edge of steel plates.

3. For all steel plates exposed to traffic to be galvanized.

4. Bolts shall be ASTM A304 stainless steel countersunk screw with 3" long A108 concrete threaded anchor or threaded insert (type 3).

5. Plates shall be placed with steel, plates, inserts, and bolts in place to ensure smooth transition.

6. For additional joint notes and details, see DWG. EX-01 and EX-02.

7. Parapets shall be flush with face of parapet as required.

8. For additional joint notes and details, see DWG. EX-01 and EX-02.

TYPICAL SECTION AT JOINT

LEAF 1 Joint shown, others similar

1' = 1'-0"
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
Legend:
- REMOVAL LIMITS

Notes:
1. Existing bars to remain shall be cleaned in accordance with Section 628.03(E)7.
2. Bars with corrosion, broken, or missing shall be replaced in accordance with Section 628.03(E)7.

1. Dimension shown is parallel to the parapet at the front face of the parapet.
2. Existing gaps to remain shall be cleaned in accordance with Section 628.03(E)7.

Paraflue (TYP.)
- 2'-11" LAP
- 1'-10" LAP
- 2" CLR.
- 1" CLR.

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Reconstruction at Deck Over
10" x 1'-0"

Parapet Detail at Deck Over
10" x 1'-0"

Section C-C
(West Parapet Shown, East Parapet Similar)

Notes:
1. Dimension shown is parallel to the parapet at the front face of the parapet.
2. Existing gaps to remain shall be cleaned in accordance with Section 628.03(E)7.

Paraflue (TYP.)
- 2'-11" LAP
- 1'-10" LAP
- 2" CLR.
- 1" CLR.

Paraflue (TYP.)
- 2'-11" LAP
- 1'-10" LAP
- 2" CLR.
- 1" CLR.

Paraflue (TYP.)
- 2'-11" LAP
- 1'-10" LAP
- 2" CLR.
- 1" CLR.

Paraflue (TYP.)
- 2'-11" LAP
- 1'-10" LAP
- 2" CLR.
- 1" CLR.

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

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10" x 1'-0"

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10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"

Parapet Removal at Deck Over
10" x 1'-0"
NOT FOR CONSTRUCTION
APPROACH SLAB WORKING POINTS

<table>
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<th>OFFSET</th>
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NOTES:
1. FOR SECTIONS A-A AND B-B, SEE DWG. AS-05.
2. FOR LANE AND MEDIAN CONFIGURATION AND ADDITIONAL REQUIREMENTS, SEE DWG. AS-03.
3. PRECAST EXPANSION JOINT SYSTEM, 3" SEE DWG. AS-09, FOR DETAILS.
4. FACE OF MEDIATE PARAPET, SEE NOTE 3.
5. PREFABRICATED EXPANSION JOINT SYSTEM, 3"
6. CONSTRUCTION BASELINE I-95.
7. FACE OF EXISTING BACKWALL.
8. CONSTRUCTION BASELINE I-95.
9. PRECAST EXPANSION JOINT SYSTEM, 3"
10. FACE OF EXISTING BACKWALL.

APPROACH SLAB A EAST PLAN

APPROACH SLAB A EAST REINFORCEMENT PLAN
NOT FOR CONSTRUCTION
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**APPROACH SLAB WORKING POINTS**

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<td>WP2</td>
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<td>12.3 4.56</td>
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</table>

**NOTES:**

1. For sections A-A and B-B, see plain AS-05.
2. For lane and shoulder configuration and additional requirements, see plans AS-04.
3. Planks at parapets shall also match plank line of parapet on bridge and parapet.
4. Concrete parapets shall be constructed flush with front face of existing parapet.

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**APPROACH SLAB B EAST PLAN**

<table>
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<tr>
<td>WP2</td>
<td>12345 678</td>
<td>12.3 4.56</td>
<td>35.67</td>
</tr>
</tbody>
</table>

**APPROACH SLAB B EAST REINFORCEMENT PLAN**

<table>
<thead>
<tr>
<th>Location</th>
<th>Point</th>
<th>System Offset</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP1</td>
<td>12345 678</td>
<td>12.3 4.56</td>
<td>35.67</td>
</tr>
<tr>
<td>WP2</td>
<td>12345 678</td>
<td>12.3 4.56</td>
<td>35.67</td>
</tr>
</tbody>
</table>

**NOTES:**

1. For sections A-A and B-B, see plain AS-05.
2. For lane and shoulder configuration and additional requirements, see plans AS-04.
3. Planks at parapets shall also match plank line of parapet on bridge and parapet.
4. Concrete parapets shall be constructed flush with front face of existing parapet.
NOT FOR CONSTRUCTION
SLEEPER SLAB WORKING POINTS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>POINT</th>
<th>STATION</th>
<th>OFFSET</th>
<th>ELEVATION</th>
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<tr>
<td>WP1</td>
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<tr>
<td>WP10</td>
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</tbody>
</table>

NOTES:
1. FOR DETAIL B, SEE DWG. AS-08.
2. FOR DETAIL C, SEE DWG. AS-09.
3. FOR DETAIL E, SEE DWG. TS-01.
4. FOR DETAIL F, SEE DWG. AS-10.
5. PARAFOAMED EXPANSION JOINT SYSTEM, 3" SEE DWG. AS-11 FOR DETAILS.
6. OUTSIDE FACE OF PARAPET, SEE NOTE 5.

SLEEPER SLAB B PLAN

SLEEPER SLAB B REINFORCEMENT PLAN

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SECTION E-E

NOTE:
APPROACH SLAB NOT SHOWN FOR CLARITY.

SECTION F-F

SECTION K-K

NOTES:
1. INDICATED DIMENSIONS ARE MEASURED PARALLEL TO FACE OF PARAPET.
2. APPROACH SLAB NOT SHOWN FOR CLARITY.

NOTE: SLEEPER SLAB NOT SHOWN FOR CLARITY.

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DELTADEPARTMENT OF TRANSPORTATION

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
STRIPE SEAL EXPANSION JOINT NOTES:
1. STRIPE SEAL JOINTS AND STEEL EXTRUSIONS SHALL BE AWAY FROM, OR 30 INCHES APART.
2. STRIPE SEAL EXPANSION JOINTS ARE REQUIRED. (PLEASE TEST EXPANSION JOINTS)
3. THE EXPANSION JOINTS SHALL BE CLOSED TO THE APPROACH SLAB TO ALLOW FOR}
   EXPANSION JOINT TO PREVENT MOISTURE AND STORM WATER FROM INGRESS THROUGH THE JOINT.
4. THE CONTRACTOR SHALL ADJUST THE OPEN JOINT (Y) AS REQUIRED BY THE WIDTH
   OF THE STEEL EXTRUSION USED SO AS TO PROVIDE A Y" JOINT OPENING AT 68°F.
5. THE STRIPE SEAL SHALL BE INSTALLED IN ONE PIECE ACROSS THE APPROACH SLAB
   USING METAL SPLINTING OF THE STRIPE SEAL IS NOT PERMITTED.
6. THE EXPANSION JOINT SYSTEM SHAKE BE FASTENED TO THE FIELD EXISTING —
   TYPICAL EXPANSION JOINT SYSTEM, 2".
7. STEEL EXTRUSIONS SHAKE BE 3". SAME EXPANSION JOINT SHALL BE WELDED TO WATERTIGHT AT CONSTRUCTION JOINTS.
8. ELONGATION SHALL REMAIN LIQUID FROM 65% TO 85%.
9. EXPANSION JOINTS SHAKE BE INSTALLED IN ONE PIECE ACROSS THE APPROACH SLAB
   FOR THE EXISTING STEEL STRUCTURE.
10. STRIPE SEAL JOINTS AND STEEL EXTRUSIONS SHALL BE AASHTO M270, GR. 36
    STEEL FOR DECK JOINTS AND STEEL EXTRUSIONS SHALL BE HOT-DIP GALVANIZED. ENTIRE EXPANSION DAM
    SHALL BE PAINTED AFTER FABRICATION USING URETHANE SYSTEM. COLOR OF PAINT
    SYSTEM TO BE APPLIED SHALL MATCH THE COLOR OF THE PROPOSED PAINT SYSTEM
    OF THE STEEL EXTRUSION USED SO AS TO PROVIDE A Y" JOINT OPENING AT 68°F.
    THE CONTRACTOR SHALL ADJUST THE OPEN JOINT (Y) AS REQUIRED BY THE WIDTH
    OF THE STEEL EXTRUSION USED SO AS TO PROVIDE A Y" JOINT OPENING AT 68°F.

NOTES:

LEGEND:
100 CLASSIFICATION
MOVEMENT
TEMPERATURE (°F)
LOCATION
APPROACH SLAB JOINT OPENINGS

<table>
<thead>
<tr>
<th>LOCATION</th>
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<th>40</th>
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<th>80</th>
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<th>100</th>
<th>110</th>
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</thead>
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<tr>
<td>APPROACH A WEST JOINT</td>
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<td>3&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
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<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>APPROACH A EAST JOINT</td>
<td>3&quot;</td>
<td>3&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1&quot;</td>
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<td>1&quot;</td>
</tr>
</tbody>
</table>

NOT FOR CONSTRUCTION
2. Existing reinforcing to remain shall be cleaned in accordance with Section 6.28.

For Approach Slab A West and Existing Barrier Wall Partial Demolition Plan, see DWG. AS-11.

NOTE:
- Approach Slab Mounted Parapet, see DWGs. AS-01 and AS-05 for details.
- Existing BLP may be removed to provide 2" CLR. (Typ.)
- Existing Slab reinforcement to remain, see note 2 (Typ.).

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Bending Dimensions Feet-Inches Quarter Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Bending Dimensions

- **Feet-Inches**:
  - 2.257
  - 1.128
  - 1.693

- **Quarter Inch**:
  - 0.310

### Notations

- Any marks with suffix "E" denotes epoxy coated reinforcing steel.

### Figures

- Figures shown in circles represent bar bend types.

### Notes

1. Any marks with suffix "E" denotes epoxy coated reinforcing steel.
3. Standard T bar bends include only those listed above for use in concrete.
4. S bends are shown only where necessary to fit within the section and are not to be used in the end zones.
6. Strips and tie hooks are to be shown as needed to fit within the section and are not to be used in the end zones.
8. Fill-in-the-blanks (IF) are to be shown as needed to fit within the section and are not to be used in the end zones.
9. Figures shown in circles represent bar bend types.
10. Any marks with suffix "E" denotes epoxy coated reinforcing steel.
SECTION 600

6. STRUCTURAL STEEL

(a) Do not use form support systems that will cause undesirable stresses or deformation to temporary bridge members.

(b) Work shall be done to keep the entire bridge deck system in uniform condition, and the work shall be done to keep the entire bridge deck system in uniform condition.

(c) All work shall be done to keep the entire bridge deck system in uniform condition when necessary.

(d) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

(e) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

(f) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

7. CLEAN AND PAINT EXISTING STRUCTURAL STEEL

(a) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(b) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(c) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(d) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(e) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(f) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

(g) All existing structural steel shall be cleaned and painted in accordance with AASHTO LRFD Bridge Design Specifications.

8. MISCELLANEOUS

(a) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

(b) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

(c) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

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(x) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

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(z) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

AA. RAILROAD COORDINATION - NORFOLK SOUTHERN

(a) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

(b) All work shall be done to keep the entire bridge deck system in uniform condition whenever possible.

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DEEP SPALL REPAIR NOTES
1. Deep spall repairs are defined as patches that extend below the top mat of reinforcing steel or concrete and have been observed as deep spall repairs.
2. All work involving methods of concrete removal; cleaning of concrete surface and existing reinforcement; repairing or replacing damaged reinforcement is subject to construction activities in Section 625.04. Concrete repair will be performed in accordance with subsections 628.03(E) and 628.03(F) of the Standard Specifications. Payment incidental to 628.041 - Deep Spall Repair.

REHABILITATION OF PCC MASONRY NOTES
1. Rehabilitation of PCC masonry is defined as repairs that exceed the 0.5" threshold in a single area.
2. All work involving methods of concrete removal; cleaning of concrete surface and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities in Section 625.04. Concrete repair will be performed in accordance with subsections 628.03(E) and 628.03(F) of the Standard Specifications. Payment incidental to 628.041 - Rehabilitation of PCC Masonry.

DECK REPAIR NOTES
1. After existing overlay is removed prior to rehabilitation, any existing deck repairs that are loose, partially deteriorated, or partially sound, will be measured by the Engineer and paid for separately.
2. The Contractor shall remove existing deck repairs in accordance with Section 628.041.
3. The removal shall not include any unsound original bridge deck concrete.
4. Refer to deck 628.041 - Removal of Existing Deck Repair for payment and accounting information.
5. If removal of existing deck repairs extends full depth and with the approval of the Engineer, the deck area shall be gridded in accordance with subsection 628.041 and paid for under item 628.053 - Deep Deck Repair, Full Depth. Removal of existing deck repairs that are changed to deck repair, full depth shall only be paid for once under item 628.053.

DEEP SPALL REPAIRS
1. Deep spall repairs are defined as patches that extend below the top mat of reinforcing steel or concrete and have been observed as deep spall repairs.
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5. If removal of existing deck repairs extends full depth and with the approval of the Engineer, the deck area shall be gridded in accordance with subsection 628.041 and paid for under item 628.053 - Deep Deck Repair, Full Depth. Removal of existing deck repairs that are changed to deck repair, full depth shall only be paid for once under item 628.053.
1. Longitudinal Construction Joints shall be limited to only those necessary to complete the work. Where possible, the contractor shall use an approach to place an optimal construction joint at the location of the final lane closure. Longitudinal Construction Joints in the lane overlay may only be placed at the location of the final lane closure.

### Table: Summary of Proposed Repair and Reconstruction Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Location</th>
<th>Remarks</th>
<th>Unit</th>
<th>Cont</th>
<th>Total</th>
</tr>
</thead>
</table>

Note: 1. For construction only.

---

**LCO Overlay Notes:**

1. Longitudinal construction joints shall be limited to only those necessary to complete the work. Where possible, the contractor shall use an approach to place an optimal construction joint at the location of the final lane closure. Longitudinal construction joints in the lane overlay may only be placed at the location of the final lane closure.

---

**Delaware Department of Transportation**

**Summary of Proposed Repair and Reconstruction Items**
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION

NOTES:
1. DEMO SHIELDS NOT SHOWN.
2. NO BRIDGE DECK WORK IN STAGE 1. SHOWN FOR INFORMATIONAL PURPOSES ONLY.

SEQUENCE OF CONSTRUCTION NOTES:
1. SET UP THE STAGE 1 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
NOT FOR CONSTRUCTION
SEQUENCE OF CONSTRUCTION NOTES:
1. SET UP THE STAGE 3 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3 REMOVAL.
3. PLACE NEW LANE OVERLAY WITHIN THE LIMITS OF STAGE 3 CONSTRUCTION.

NOTES:
1. DEMO SHIELDS NOT SHOWN.

SCALE AS NOTED

NOT FOR CONSTRUCTION
NOTES:
1. No Bridge Deck Work in Stage 4.

TOTAL SHEETS: 1

SEQUENCE OF CONSTRUCTION: 4
ABUTMENT A - PLAN VIEW


CONCRETE REPAIR QUANTITIES

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>TOTAL SHTS.</th>
<th>SCALE AS NOTED</th>
<th>DATE</th>
<th>REV.</th>
<th>CONTRACT NO.</th>
<th>DESIGNATION/REVISION</th>
<th>ABUTMENT A CONCRETE REPAIR DETAILS</th>
<th>CHECKED BY:</th>
<th>DESIGNED BY:</th>
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<tbody>
<tr>
<td>AB-01</td>
<td>2-66</td>
<td>SCALE AS NOTED</td>
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<td></td>
<td>1 745 069</td>
<td>1-745</td>
<td>1-745</td>
<td>PAS</td>
<td>JRQ</td>
</tr>
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</table>
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER

NOTES:
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 13 ON DWG. PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION. PRIOR TO STARTING EACH CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

2. DEEP SPALL REPAIR, REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION REMOVAL LIMITS - ITEM 211000

3. FOR WINGWALL PARAPET DEMOLITION LIMITS AND DETAILS, SEE DWG. AB-04.

4. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER CONCRETE REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE WORK SHALL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

5. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

6. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT FOR THIS CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

7. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE AREAS AND PENETRATIONS. PAYMENT WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

8. CONCRETE REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

9. AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.


11. EXISTING BEAM

12. DEEP SPALL REPAIR

13. SILICONE-BASED ACRYLIC CONCRETE SEALER SHAAL ONLY BE APPLIED AFTER CONCRETE REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE WORK WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

14. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

15. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT FOR THIS CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

16. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE AREAS AND PENETRATIONS. PAYMENT WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.
NOT FOR CONSTRUCTION
EROSION REPAIR PLACEMENT PROCEDURE:

1. Remove all vegetation and excavate existing unsuitable soils within the limits of the proposed erosion repair.
2. Place geotextile fabric and construct geotextile lapping detail, at each end of erosion repair adjacent to existing soil.
3. Place at depth of Delaware No. 3 stone as shown.
4. Fail remaining depth with R-5 riprap to match existing ground slope.

NOTES:

1. Repair areas shown are approximate. Erosion areas to be repaired as directed by the engineer.

EXISTING RIPRAP TO REMAIN

PROPOSED EROSION REPAIR

EROSION REPAIR PLACEMENT PROCEDURE:

1. Remove all vegetation and excavate existing unsuitable soils within the limits of the proposed erosion repair.
2. Place geotextile fabric and construct geotextile lapping detail, at each end of erosion repair adjacent to existing soil.
3. Place at depth of Delaware No. 3 stone as shown.
4. Fail remaining depth with R-5 riprap to match existing ground slope.

NOTES:

1. Repair areas shown are approximate. Erosion areas to be repaired as directed by the engineer.
1. The location and quantities of the repairs shown on this drawing are based on inspection field notes and do not include all deficiencies. Necessary field verification is required prior to starting each repair. The limits shown are at the discretion of the Engineer.

2. In the event of repairs exceeding 1'-0" beyond the limits of the repair, the Engineer is to be notified immediately. The repair is to be completed within 1'-0" of the limit. The repair is to be completed in the same manner as specified in the drawings.

3. No defects observed on the south face of Pier 1.

4. Silica-based acrylic concrete sealer shall only be applied to all exposed concrete repair surfaces. Contractors shall ensure all cracks are repaired prior to applying the sealer. Contractors shall ensure that the sealer is applied in accordance with the specifications. Any cracks shall be repaired to the limits of the repair. Any cracks that are repaired shall be repaired to a depth of at least 6" from the original face. The sealer shall be applied in two coats, each coat being at least 1/16" thick. The sealer shall be applied to all exposed concrete repair surfaces. Any cracks shall be repaired to the limits of the repair. Any cracks that are repaired shall be repaired to a depth of at least 6" from the original face. The sealer shall be applied in two coats, each coat being at least 1/16" thick. The sealer shall be applied to all exposed concrete repair surfaces.

5. Silicone-based acrylic concrete sealer shall only be applied to all exposed concrete repair surfaces. Contractors shall ensure all cracks are repaired prior to applying the sealer. Contractors shall ensure that the sealer is applied in accordance with the specifications. Any cracks shall be repaired to the limits of the repair. Any cracks that are repaired shall be repaired to a depth of at least 6" from the original face. The sealer shall be applied in two coats, each coat being at least 1/16" thick. The sealer shall be applied to all exposed concrete repair surfaces. Any cracks shall be repaired to the limits of the repair. Any cracks that are repaired shall be repaired to a depth of at least 6" from the original face. The sealer shall be applied in two coats, each coat being at least 1/16" thick. The sealer shall be applied to all exposed concrete repair surfaces.

6. No defects observed on the south face of Pier 1.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOTES:
1. The location and quantities of the repairs shown on this plan are based on inspection field notes, site visits, and the contractor’s own inspection. Prior to commencing each repair, the limits shall be verified by the contractor in the presence of the engineer.
2. Prior to starting each repair, the limits shall be verified by the contractor in the presence of the engineer.
3. Precision concrete repair is required. The crack repair must be completed by the contractor in the presence of the engineer. Prior to starting each repair, the limits shall be verified by the contractor in the presence of the engineer.
4. The crack repair shall be applied to all exposed concrete. The contractor shall complete the crack repair prior to the concrete repair.
5. The crack repair shall be applied to all exposed concrete. The contractor shall complete the crack repair prior to the concrete repair.
6. The crack repair shall be applied to all exposed concrete. The contractor shall complete the crack repair prior to the concrete repair.
7. For concrete repair details, see the plan.
8. Silicone-based acrylic concrete sealer shall be applied to all exposed concrete. The contractor shall complete the concrete repair prior to the concrete repair.
9. Silicone-based acrylic concrete sealer shall be applied to all exposed concrete. The contractor shall complete the concrete repair prior to the concrete repair.
10. Silicone-based acrylic concrete sealer shall be applied to all exposed concrete. The contractor shall complete the concrete repair prior to the concrete repair.
11. No defects observed on north face of pier 3.
12. No defects observed on north face of pier 3.
13. No defects observed on north face of pier 3.
14. No defects observed on north face of pier 3.
15. Silicone-based acrylic concrete sealer shall be applied to all exposed concrete. The contractor shall complete the concrete repair prior to the concrete repair.

CONCRETE REPAIR QUANTITIES

<table>
<thead>
<tr>
<th>PIER 3</th>
<th>CONCRETE REPAIR QUANTITIES</th>
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<td>37</td>
<td>628041</td>
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NOTE: QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

DEPARTMENT OF TRANSPORTATION

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

SCALE AS NOTED

DESIGNER: CHECKED BY: DRAWN BY:

CONTRACT NO.: 1 745 069

DELAWARE COUNTY

ADDENDUM / REVISIONS

NOT FOR CONSTRUCTION
### CONCRETE REPAIR QUANTITIES

#### PIER 4

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
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<td>34</td>
<td>DEEP SPALL REPAIR</td>
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<td>37</td>
<td>DEEP SPALL REPAIR</td>
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<tr>
<td>44</td>
<td>SILICONE-BASED ACRYLIC CONCRETE SEALER</td>
<td>1559 SF</td>
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**NOTE:** QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

---

**LEGEND:**
- **SS**: DEEP SPALL REPAIR
- **CS**: SILICONE-BASED ACRYLIC CONCRETE SEALER

---

**NOTES:**
1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS SHEET ARE BASED ON INSTRUCTION AND CONSTRUCTION FIELD NOTES. ALL WORK MUST BE APPROVED AND SIGNED BY THE ENGINEER PRIOR TO COMPLETION. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ENGINEER IN WRITING OF ANY CONCRETE REPAIRS BEFORE THE REPAIRS ARE MADE. ALL WORK MUST BE APPROVED AND SIGNED BY THE ENGINEER PRIOR TO COMPLETION.
2. DEEP CONCRETE REPAIRS WILL BE COMPLETED USING THE ASSOCIATED DETAIL. IF THE CRACK EXTENDS MORE THAN 1'-0" INTO THE KERF OF THE CONCRETE, ALL WORK MUST BE APPROVED AND SIGNED BY THE ENGINEER PRIOR TO COMPLETION.
3. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE PIER SURFACES. CONTRACTOR SHALL REMOVE DEBRIS FROM THE TOPS OF COLUMNS PRIOR TO APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. CONTRACTOR SHALL REMOVAL DEBRIS FROM THE TOPS OF COLUMNS PRIOR TO APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. CONTRACTOR SHALL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO ITEM 628001 - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION BEYOND THE LIMITS OF THE SPALL REPAIR. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO REPAIR N 34 - DEEP SPALL REPAIR.
4. FOR CONCRETE REPAIR DETAILS, SEE DRAWING PN-01. DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 13 ON DRAWING PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION.
5. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION

NOTES:

1. FOR LOCATIONS OF REPAIRS, SEE DWGS. BM-01 AND BM-02.
2. FOR LOCATION OF REPAIR A, SEE DWG. BM-02.
3. SEE DWG. PN-04 FOR REPAIR PAY ITEMS AND QUANTITIES.
4. PROPOSED "E" PLATE.
5. INSTALL NEW BOLTS (TYP.)
6. REPLACE LOOSE OR MISSING BOLTS AT BOLSTER (TYP.)
NOT FOR CONSTRUCTION
1. Provide all steel reinforced elastomeric bearings in accordance with Section 623 - "Bearing Devices" of the Standard Specifications.

2. Anchor bolts shall be installed accordance with Section 620.1.18.1.2. All plates shall be bolted to the beam with a 5/8" high-strength and as produced (in accordance with the manufacturer's recommendations). After receipt of the full plans will be provided to the contractor for the design and installation of bearing devices. All parts shall conform to Section 606.2 of the Standard Specifications and match the color of the proposed paint system. On completion of bearing installation, all paint shall conform to Section 606.2 of the Standard Specifications and match the color of the proposed paint system.

3. Sole plates shall meet a flatness requirement of 0.5% in the direction being measured (width, length, and diagonal), but not exceeding 0.250".

4. Steel reinforced elastomeric bearings shall be 60±5 duro neoprene, and the interior layers varie. Thickness shall be 0.250" for 0.442" thick internal layer at equal spaces.

5. The proposed bearing installation shall be modified to accommodate the existing bearing. All parts shall conform to Section 606.2 of the Standard Specifications and match the color of the proposed paint system.

6. Contractor to field verify all existing dimensions.

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
**KEY:**

1. **SOFFIT REPAIR DEFECT NUMBER**

**NOTES:**

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 11 ON DMV-PN-011). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE ESTABLISHED BY A CONTRACTOR IN THE PRESENCE OF THE EMPL. PN-CO.

2. FOR CONCRETE REPAIR DETAILS, SEE DMV-PN-CO.

3. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES OF THE EXTERIOR PARAPETS, EXTERIOR ELEVATIONS AND THE METAL PIER TOPS AS SHOWN ON DMV-12-05. PAYMENT WILL BE MADE UNDER ITEM 813001 - SILICONE-BASED CONCRETE SEALER.

4. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED ON EACH SPAN.

**CONCRETE SOFFIT REPAIRS**

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<th>DEFECT NO.</th>
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<th>QUANTITY OF REPAIRS</th>
<th>DEEP SPALL REPAIR SIZE</th>
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<tr>
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<td>3</td>
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<td>6</td>
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**CONCRETE SOFFIT REPAIRS**

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<td>31</td>
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</table>

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**SCALE:**

0
200
400
600
800
1000
FOOT

**NOTE:**

- NOT FOR CONSTRUCTION
- NOT FOR CONSTRUCTION
RAILROAD PROTECTIVE BARRIER REMOVAL AND PARTIAL PARAPET DEMOLITION

LEGEND:
- PARAPET REMOVAL LIMITS
- RAILROAD PROTECTIVE BARRIER REMOVAL LIMITS - ITEM 211000
- REPAIR NUMBER AS SHOWN ON DWG. PN-04

FENCE LAYOUT

NOTES:
1. FOR FENCE DETAILS, SEE BRIDGE SAFETY FENCE, TYPE 1, STANDARD NO. M-10.
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOTES:

1. Use joint assembly detail and strip seal expansion joint notes, see mg-Ex-02.
2. Run parapet reconstruction at joints, see mg-Ex-04.
3. For typical joint plan, see mg-Ex-03.

JOINT RECONSTRUCTION NOTES:

1. New joint detail assembly design and strip seal expansion joint notes. All new joints and assembly shall be in accordance with this drawing. Minimum expansion joint system, see Figure 1 for removal of existing strip seal expansion joint material shall be in accordance with this drawing.
2. Class 2 concrete shall be in accordance with I-410.6.4.1, construction. Class 2, clean and dry joint system designed to all removal and associated surfaces prior to placing concrete. Cost for this work will be incidental to item 4800.
3. Existing joint shall remain so as to be in accordance with existing reference. Part with connection, including water entrance joint, shall be replaced in accordance with section 624.1.5.3.4. Cost for this work will be incidental to item 4800, minimum expansion joint system.
4. All new reinforcing steel required to complete the joint header repairs shall be Type 1, clean and dry joint system designed to all removal and associated surfaces prior to placing concrete. Cost for this work will be incidental to item 4800.
5. Contractor shall use care during the removal of the existing concrete and finishing in the joint system to avoid damage to the existing concrete. The structure of the expansion joint shall be designed by the contractor to complete satisfaction of the Engineer at no additional cost to the Department.
6. Prior to repair of the existing roadway joint and fabrication of the proposed joint panel, the contractor shall field identify the cross slope of the roadway at each individual joint location.
7. Joint reinforcement bars are used to maintain existing top longitudinal reinforcing bars, all spacing and quantities indicated are for new construction.

DECK JOINT OPENINGS

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
TYPICAL JOINT PLAN
(See Notes 1 and 4)

LEGEND:

- Existing Cross Cuts (Typ.)
- Existing Interior Beam
- Existing Exterior Beam
- Steel Extrusion (Typ.)
- Stainless Steel Countersunk Screw (Typ.)
- Concrete Threaded Anchor or Threaded Insert (Typ.)
- Field Adjustment Plate (Typ.)
- Anchor Plate (Typ.)
- Steel Strap (Typ.)
- 1' = 1'-0"

NOTES:

1. Filler concrete inserted in parapet and grouted to provide consistent surface. Apply one coat or approved joint sealer to the joint area. The joint must be sealed as outlined in the standard specifications to avoid joint opening. Joint opening will be identified by a 1" gap to the top of the joint.

2. Place filler concrete with steel bent plates, inserts, and bolts in place to ensure proper alignment of joints and ends in the steel plates. Parapet plates to install after bent plates finish installation.

3. Grind all steel edges exposed to traffic to 1" minimum radius.

4. Paint parapet joint plates compatible with the black color specified. Paint the top plate and associated concrete members with a 1" clear to the top surface.

5. Bolts shall be 3/8" A304 Stainless Steel Countersunk Screw with a 1" minimum diameter and 1" long. Heads of bolts shall be flush with face of steel plate.

6. The contractor shall submit working drawings or shop drawings for review and approval.

7. For additional joint notes and details, see Notes 1 and 4.

8. Payments for parapet joint plates and partial removal of parapet for joint reconstruction will be made based on shop drawings. TYPICAL JOINT PLAN

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

EXPANSION JOINT DETAILS - 3
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
APPROACH SLAB JOINT OPENINGS

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NOTES:

1. FOR APPROACH SLAB PLAN AND DETAILS, SEE DRWS. AS-01 AND AS-02.
2. FOR SLEEPER SLAB PLAN AND SECTIONS, SEE DRWS. AS-03 AND AS-04.
3. REMAINING SLEEPER SLAB AND APPROACH SLAB REINFORCEMENT NOT SHOWN.
4. DRAW ALL STEEL BARS EXPOSED TO TRAFFIC TO 3/8" MIN. RADIUS.

APPROACH SLAB JOINT DETAILS

DEPARTMENT OF TRANSPORTATION

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

APPROACH SLAB JOINT ASSEMBLY DETAIL

SECTION H-H

SECTION J-J

NOTE:

APPROACH SLAB NOT SHOWN FOR CLARITY.
<table>
<thead>
<tr>
<th>Specifications</th>
<th>Bending Dimensions Feet-Inches Quarter Inch</th>
<th>Specifications</th>
<th>Bending Dimensions Feet-Inches Quarter Inch</th>
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</table>

**Standard Bar Bends**

- **NOTE:** STANDARDS SHOWN ARE TO BE USED TO GUIDE THE DESIGNER IN THE PLACEMENT OF BARS.
- **Diagrams:** The diagrams represent typical bends for various sections. For detailed information, refer to the bar bending schedule.
- **Lettering:** The letters A, B, C, etc., are used to identify the bends and sections.

**Addenda/Revisions:**

- REV-01
- REV-02

**Declarations:**

- **NOT TO SCALE:**
- **Design:**
- **Rehabilitation of I-95 from I-495 to Northern Brandywine River Bridge**

**Delaware Department of Transportation**
**SECTION 600**

1. **FOR REINFORCEMENT DISTRIBUTION REQUIREMENTS, CONSIDER CLASS 1 EXPOSURE CRITERIA FOR DECKS.**

2. **-FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 3,910 IN YEAR**

3. **LOADING:**

4. **(C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE 2016 DELDOT STANDARD DESIGN SPECIFICATIONS:**

5. **-WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.**

6. **ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY, EXCEPT AS NOTED ON THE PLANS.**

7. **REINFORCING STEEL SHALL HAVE A 3" CLEAR COVER IF CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.**

8. **CONSTRUCTION METHOD:**

9. **PRIORITY OF CONSTRUCTION DETAILS:**

10. **RESERVED FOR CONSTRUCTION**
### QUANTITIES

<table>
<thead>
<tr>
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<th>ITEM TITLE</th>
<th>UNIT</th>
<th>QUANTITY</th>
</tr>
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**NOTE:** QUANTITIES INCLUDE CONTINGENT PERCENTAGE AS NOTED IN NOTE 9 ON DWG. PN-03 AND AS SHOWN IN THE REPAIR TABLE ON DWG. PN-01.

### LOAD RATING SUMMARY

<table>
<thead>
<tr>
<th>DESIGN VEHICLE</th>
<th>FORD</th>
<th>TRUCK</th>
<th>TRUCK TRAM</th>
<th>TRAM</th>
<th>COMBINED VEHICLE</th>
<th>COMBINED LOAD</th>
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<td>1.80</td>
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</tr>
</tbody>
</table>

**NOTE:** LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.
2. In DGN, "Edit -> DDE Links....", click "Open All Links".

3. Replace abutment joint with deck-over seal deck with HMWM concrete sealer.

4. Repair deep spall in concrete substructure.

5. Seal cracks in concrete substructure.

6. Clean and paint existing steel structure.

7. Replace anchor bolt nuts.

8. Remove and replace concrete approach slab.


10. Furnish and install LMC overlay.


12. Replace anchor bolt nuts.

13. Remove and replace concrete approach slab.


15. Furnish and install LMC overlay.


17. Replace anchor bolt nuts.

18. Remove and replace concrete approach slab.


20. Furnish and install LMC overlay.


22. Replace anchor bolt nuts.

23. Remove and replace concrete approach slab.


25. Furnish and install LMC overlay.
SEQUENCE OF CONSTRUCTION NOTES - STAGE 1:

1. SET UP THE STAGE 1 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.

NOTES:

1. DEMO SHIELDS NOT SHOWN.
2. NO BRIDGE DECK WORK IN STAGE 1, SHOWN FOR INFORMATION PURPOSE ONLY.
LEGEND:

- Limits of Removal
- Proposed Construction

SEQUENCE OF CONSTRUCTION NOTES - STAGE 2:

1. Set up the Stage 2 Mot and shift traffic to the new lane configuration.
2. Perform Stage 2 Removal.
3. Place new lane overlay within the limits of Stage 2 Construction.

NOTES:

1. Demo shields not shown.

SCALE AS NOTED
SEQUENCE OF CONSTRUCTION NOTES - STAGE 3:
1. SET UP THE STAGE 3 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3 REMOVAL.
3. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3 CONSTRUCTION.

NOTES:
1. DEMO SHIELDS NOT SHOWN.

SCALE AS NOTED
SEQUENCE OF CONSTRUCTION - 4

COMPLETED TYPICAL SECTION

NOTES:
1. NO BRIDGE DECK WORK IN STAGE 4.
FOR WINGWALL PARAPET DEMOLITION LIMITS AND DETAILS, SEE DWG. AB-01.

FOR SECTIONS A-A, B-B, AND ABUTMENT BACKWALL RECONSTRUCTION.

SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER COMPLETION OF CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. ANY CLEANING REQUIRED TO REMOVE CONCRETE FROM THE BEARINGS WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

EXPOSED CONCRETE ABUTMENT AND WINGWALL SURFACES. PAYMENT WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT WILL BE INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.

CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND CRACKS EXTEND DEEPER THAN THE LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL CONCRETE UNTIL THE CRACK IS EXTENDED MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE.


DEEP SPALL REPAIR QUANTITIES - ABUTMENT A

<table>
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<td>DEEP SPALL REPAIR</td>
<td>SF</td>
<td>1.78</td>
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</tbody>
</table>

NOTES (CONTINUED):

4. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. ANY CLEANING REQUIRED TO REMOVE CONCRETE FROM THE BEARINGS WILL BE MADE UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

5. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE ABUTMENT AND WINGWALL SURFACES. PAYMENT ON THIS WORK WILL BE INCURRED UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

6. CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO APPLICATION OF SILICONE-BASED CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCURRED UNDER ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER.

7. SILICONE-BASED ACRYLIC CONCRETE SEALER SHAL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT THE ABUTMENT.

8. FOR SECTION A-A, AND ABUTMENT BACKWALL RECONSTRUCTION DETAIL, SEE DWG. PN-02.

8. FOR REMOVAL LIMITS AND DETAIL LIMITS, SEE DWG. AB-01.

NOT FOR CONSTRUCTION
NOTES (CONTINUED):

1. The location and quantities of the repairs shown on this drawing are based on inspection field notes and are subject to change. The contractor shall be responsible for tracking each repair, and the location and quantity shall be verified by the engineer in the presence of the inspector.

2. Doc cracks and spalls exist concurrently, complete the repair works concurrently with the associated crack. If the crack extends beyond the limits of the repair works, the contractor shall extend the repair works to encompass the crack. If the crack extends beyond the limits of the repair works and the crack extends for a distance greater than 1', the contractor shall extend the repair works to encompass the crack. If the crack extends for a distance greater than 1', the repair works shall extend for a distance greater than 1'.

3. Pay for concrete repair details, see sheet 1-10.

CONCRETE REPAIR QUANTITIES - ABUTMENT B

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CONCRETE REPAIR QUANTITIES - ABUTMENT B (SOUTH ELEVATION)

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<td>REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION</td>
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<td>SF</td>
<td>201</td>
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</table>

NOTES (CONTINUED):

4. Contractor shall take care to protect the bearings during application of the silicone-based acrylic concrete sealer. Any cleaning or minor repairs to the bearings will be made under Item 613001 - Silicon-based acrylic concrete sealer.

5. Contractor shall use all exposed concrete areas and exposed surfaces, payment will be made under Items 613001 - Silicon-based acrylic concrete sealer. The quantities shown on this sheet includes top areas of wingwall.

6. Contractor shall remove concrete from the bearing seat prior to application of silicone-based acrylic concrete sealer. Payment for this work will be made under Item 613001 - Silicon-based acrylic concrete sealer.

7. Silicone-based acrylic concrete sealer shall only be applied after all concrete repairs are completed at the abutment.

8. For sections 4-6, 8-7, and abutment section, see drawing AB-02.

9. For repair and rehabilitation of concrete repair details, see drawing AB-04.

DELWARE DEPARTMENT OF TRANSPORTATION

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

CONTRACT NO. 1746059

ABUTMENT B CONCRETE REPAIR DETAILS (SOUTH ELEVATION)
TYPICAL ABUTMENT BACKWALL REINFORCEMENT ELEVATION

1. FOR SECTION A-A, ABUTMENT BACKWALL RECONSTRUCTION DETAILS, NOTE:

TOP OF BACKWALL 2" CLR.

1'-0" 2'-11" LAP (TYP.)

56'-3" 1" JOINT

LIMITS OF SILICONE BASED ACRYLIC CONCRETE SEALER

TYPICAL ABUTMENT BACKWALL REINFORCEMENT PLAN

DEPARTMENT OF TRANSPORTATION

CONTRACT

DESIGNED BY:

CHECKED BY:

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

LIMITS OF SILICONE BASED ACRYLIC CONCRETE SEALER

TYPICAL ABUTMENT BACKWALL REINFORCEMENT ELEVATION

NOTE:

1. FOR SECTION A-A, ABUTMENT BACKWALL RECONSTRUCTION DETAILS, AND ADDITIONAL NOTES, SEE DWG. AB-04.
ABUTMENT BACKWALL RECONSTRUCTION DETAILS

FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.3.

WILL BE CONSIDERED INCIDENTAL TO ITEM 628041 - DEEP SPALL REPAIR.
CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND FOR UNDER ITEM 628001 BEYOND THE LIMITS OF THE SPALL REPAIR.

CONCRETE THE CRACK SHALL BE REPAIRED BY EPORXY INJECTION AND PAID 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND.

SHALL BE NOTIFIED IMMEDIATELY.

IF THE CRACK EXTENDS MORE THAN CONCRETE, ALL WORK ON THE REPAIR SHALL STOP AND THE ENGINEER REMOVAL REACHES MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE UNTIL THE CRACK IS FULLY REMOVED.

IF THE DEPTH OF CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL THE CRACK.

IF THE CRACK EXTENDS DEEPER THAN THE LIMITS OF REPAIR, EXTEND THE LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK.

IF THE CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK.

WHERE CRACKS AND SPALLS ARE SHOWN CONCURRENTLY, COMPLETE THE 2.

BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED Dwg. PN-01) AND ARE APPROXIMATE AND DO REQUIRE VERIFICATION.

DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 13 ON THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS 1.

FOR WINGWALL PARAPET DEMOLITION LIMITS AND DETAILS, SEE DWG. AB-05.8.

AFTER ALL ABUTMENT CONCRETE REPAIRS AND CONSTRUCTIONS ARE COMPLETED.

SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED 7.

SATISFACTION OF THE ENGINEER.

ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER.

CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING 6.

APPLICATION OF SILICONE-BASED ACRYLIC CONCRETE SEALER.

FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED APPLICATION OF SILICONE-BASED ACRYLIC CONCRETE SEALER. PAYMENT CONTRACTOR SHALL REMOVE DEBRIS FROM THE BEAM SEAT PRIOR TO 5.

BE MADE UNDER ITEM 613001 - SILICONE BASED ACRYLIC CONCRETE SEALER EXPOSED CONCRETE ABUTMENT AND WINGWALL SURFACES. PAYMENT WILL 4.

SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL 3.

DEPARTMENT OF TRANSPORTATION

DELAWARE

COUNTY

DESIGNED BY:

CHECKED BY:

BRIDGE NO.

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DELTA CORPORATION

COUNTY

STATE OF DELAWARE

COUNTY OF NEW CASTLE

DEPARTMENT OF TRANSPORTATION

COUNTY OF NEW CASTLE

3. REMOVE EXISTING HORIZONTAL REINFORCEMENT WITHIN ABUTMENT BACKWALL REMOVAL LIMITS.

NOTE:

1. REMOVE EXISTING HORIZONTAL REINFORCEMENT WITHIN ABUTMENT BACKWALL REMOVAL LIMITS.

LEGEND:

NOT FOR CONSTRUCTION

NOT FOR CONSTRUCTION
NOTES:

1. The locations and quantities of the repairs shown in this drawing are based on inspection field notes as noted in Note 9 on the drawings and are approximate and do not require verification. Prior to starting each repair, the limits shall be verified by the Contractor in the presence of the Engineer.

2. Repair of cracks and spalls shown concurrently. Complete the spall repair completely removing the associated crack. If the crack extends less than 1'-0" beyond the limits of the spall repair, extend the limits of the spall repair to encompass the crack. If the crack extends beyond the limits of concrete repair, the Contractor shall remove additional concrete until the crack is fully repaired. If the depth of the crack exceeds 12" the Contractor shall remove additional concrete. All work on the repair stop and the Engineer will be notified. If the Engineer determines that the crack is less than 1'-0" beyond the limits of the spall repair into sound concrete, the crack shall be repaired by epoxy injection. Chocks located within spall repairs will not be paid for and shall be considered incidental to item 628041 - deep spall repair.

3. For concrete repair details, see EOG PN-02.

4. Epoxy concrete sealers shall be applied to the beam seats and at least 1'-6" on each side of each crack. Payment will be made under Item 613000 - Epoxy Concrete Sealer. Application of epoxy concrete sealers payment for this work will be incidental to Item 613001 - Epoxy Concrete Sealer.

5. Contractor shall take care to protect the bearings during application of the epoxy concrete sealers. Any clean-up required to repair the sealers from the sealers will be at no additional cost to the Department and to the satisfaction of the Engineer.

6. Silicone-based acrylic concrete sealers shall be applied to all concrete repairs that comprise that does not require epoxy sealers. Payment will be made under Item 613000 - Epoxy Concrete Sealer.

7. Epoxy concrete sealers and silicone-based acrylic concrete sealers shall only be applied after all epoxy concrete repairs are completed at each pier.

CONCRETE REPAIR QUANTITIES - PIER 1

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<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
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NOTE: Quantities shown are total for each pier and do not include contingencies.

DEPARTMENT OF TRANSPORTATION

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

1-746 059

DELTA CONCRETE REPAIR DETAILS (SOUTH ELEVATION)
NOTES:

1. The location and quantities of the repairs shown on this drawing are based on inspection field notes. See note 9 on the back of this drawing for verification. Pay for repairs that extend beyond the limits of the repair shall be verified by the contractor in the presence of the engineer.

2. Where cracks and spalls are shown concurrently, complete the spall repair completely removing the associated cracks. If the crack extends less than 1'-0" beyond the limits of the spall repair, extend the limits of the spall repair to encompass the crack. If the crack extends deeper than the limits of concrete removal, the contractor shall remove additional concrete until the crack is fully repaired. If the depth of removal reaches into the original concrete, all work on the repair shall stop and the engineer notified. The contractor shall then complete the repair. Crack repair work shall extend to 1'-0" below the limits of the spall repair into sound concrete. Cracks located within spall repairs will not be paid for and will be considered incidental to item 613000 - Deep Spall Repair.

3. For concrete repair details, see DWG. PN-02.

4. Epoxy concrete sealers shall be applied to the beam seats and at least 1'-0" beyond the limits of any spall repair made under item 613000. Contractor shall follow these instructions when performing work to ensure correct application of epoxy concrete sealers. For this work, an incremental fee, Item 613001 - Epoxy Concrete Sealer, shall be paid by the Department to the satisfaction of the Engineer.

5. Contractor shall take care to protect the bearings during application of the epoxy concrete sealers. Any clean-up required to remove the sealers from the bearing will be at no additional cost to the Department and to the satisfaction of the Engineer.

6. Silicone-based acrylic concrete sealers shall be applied to all exposed concrete faces supplied that not require epoxy concrete sealers. Payment will be made under Item 613000 - Silicone-based Acrylic Concrete Sealers.

7. Epoxy concrete sealers and silicone-based acrylic concrete sealers shall only be applied after all pier concrete repairs are completed at each pier.

8. For plan view and concrete repair quantities see DWG. PN-02.
NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INVESTIGATION FIELD NOTES PREPARED ON-
ONE, AND ARE APPROXIMATE AND DO NOT REQUIRE VERIFICATION.
PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED
BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

2. WHERE CRACKS AND SPALLS ARE SHOWN CONCURRENTLY, COMPLETE THE
SMALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACKS. IF THE
CRACK EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF THE SMALL
REPAIR, EXTEND THE LIMITS OF THE SMALL REPAIR TO ENCOMPASS
THE CRACK. IF THE CRACK EXTENDS BEYOND THE LIMITS OF
CONCRETE REMOVAL, THE CONTRACTOR SHALL REMOVE ADDITIONAL
CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF
REPAIR REACHES MORE THAN 1'-0" BEYOND THE LIMITS OF THE SMALL
REPAIR, EXTEND THE LIMITS OF THE SMALL REPAIR INTO SOUND
CONCRETE. ALL WORK ON THE REPAIR SHALL BE PERFORMED UNDER THE
SUPERVISION OF THE ENGINEER. IF THE DEPTH OF CONCRETE REMOVAL
REACHES MORE THAN 1'-0" BEYOND THE LIMITS OF THE SMALL REPAIR
INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION.
WHERE CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND
WILL NOT CONSTITUTE REPAIR UNLESS CLEARLY SHOWN WITHIN THE
SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE
DEEP SPALL REPAIR EXTENDS LESS THAN 1'-0" BEYOND THE LIMITS OF
SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE
CRACK EXTENDS DEEPER THAN THE LIMITS OF THE SMALL REPAIR, EXTEND THE
LIMITS OF THE SPALL REPAIR TO ENCOMPASS THE CRACK.

3. EPOXY CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL PIER
CONCRETE REPAIRS ARE COMPLETED AT EACH PIER. INDIANAPOLIS CONCRETE
SEALER. PAYMENT WILL BE MADE UNDER ITEM 613001 - SILICONE BASED
ACRYLIC CONCRETE SEALER. ANY CLEAN-UP COST TO THE DEPARTMENT AND TO THE SATISFACTION OF
THE ENGINEER.

4. ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND
AT LEAST 1'-0" BEYOND THE LIMITS OF THE SMALL REPAIR PRIOR TO THE
APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT UNDER ITEM 613000 - EPOXY CONCRETE
SEAT PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT
UNDER ITEM 613000 WILL BE MADE AT NO ADDITIONAL COST TO THE
DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER.

5. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO
ALL EXPOSED CONCRETE SURFACES THAT DO NOT REQUIRE EPOXY
CONCRETE SEALER. PAYMENT WILL BE MADE UNDER ITEM 613000 - SILICONE BASED
ACRYLIC CONCRETE SEALER.

6. EPOXY CONCRETE SEALER AND SILICONE-BASED ACRYLIC CONCRETE
SEALER SHALL ONLY BE APPLIED AFTER ALL PIER CONCRETE REPAIRS
ARE COMPLETED AT EACH PIER.

7. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-02.

8. FOR CONCRETE REPAIR QUANTITIES SEE DWG. PR-03.

9. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON
THIS DRAWING ARE BASED ON INVESTIGATION FIELD NOTES PREPARED ON-
ONE, AND ARE APPROXIMATE AND DO NOT REQUIRE VERIFICATION.
PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED
BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

10. DEEP SPALL REPAIR REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION.

LEGEND:

- - - REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

DEEP SPALL REPAIR
NOT FOR CONSTRUCTION
LIMITS OF MILLING AND TOTAL SURFACE HYDRODEMOLITION - ITEMS 760013 AND 7605XX

LIMITS OF DEMOLITION - STAGE 3

NOTES:
1. STAGE 3 SHOWN, STAGE 2 OPPOSITE HAND.
2. SEE NOTE 3.
3. SHEET 5 OF 30
4. SHEET 6 OF 30

DEMOlITION NOTES:
1. THICKNESS OF EXISTING LMC OVERLAY VARIES. DECK CORES DEPICTING THE THICKNESS WERE TAKEN IN NOVEMBER/DECEMBER 2014. THE CORE REPORT IS AVAILABLE UPON REQUEST.
2. JULIES AND EQUIPMENT SHOULD BE KEPT OFF OF AREAS OF THE DECK THAT HAVE RECEIVED TOTAL SURFACE HYDRODEMOLITION AS MUCH AS POSSIBLE - ONLY EQUIPMENT NECESSARY TO COMPLETE THE WORK WILL BE ALLOWED IN THESE AREAS.
3. RECALIBRATION OF THE HYDRODEMOLITION EQUIPMENT MAY BE REQUIRED BETWEEN THE ORIGINAL AND WIDENED PORTIONS OF THE STRUCTURE. AT EXISTING SLAB CUT LINE.
4. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE LIMITED TO ONLY THOSE NECESSARY TO COMPLETE THE WORK. HOWEVER, THE CONTRACTOR MAY ELECT TO PLACE AN OPTIONAL LONGITUDINAL CONSTRUCTION JOINT IN THE LMC OVERLAY IN STAGE 1 AS NECESSITATED BY THE WIDTH OF THE BRIDGE. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE LIMITED TO ONLY THOSE NECESSARY TO COMPLETE THE WORK. HOWEVER, THE CONTRACTOR MAY ELECT TO PLACE AN OPTIONAL LONGITUDINAL CONSTRUCTION JOINT IN THE LMC OVERLAY IN STAGE 1 AS NECESSITATED BY THE WIDTH OF THE BRIDGE.

NOT FOR CONSTRUCTION
JOINT RECONSTRUCTION NOTES:

1. NEW STRIP SEAL ASSEMBLY SHOWN FOR GENERAL PURPOSE ONLY. DETAILS MAY VARY BY MANUFACTURER. STRIP SEAL AND ASSEMBLY SHALL BE IN ACCORDANCE WITH ITEM 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".

2. REMOVAL DETAIL - PIER

3. ALL NEW REINFORCING STEEL REQUIRED TO COMPLETE THE JOINT REPAIRS SHALL HAVE 2" MIN. CONCRETE COVER UNLESS SHOWN OTHERWISE.

4. ITEM 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".

5. LONGITUDINAL BARS WITH CORROSION, BROKEN, OR WITH INADEQUANTED BOND SHALL BE REPAIRED IN ACCORDANCE WITH SECTION 628.03(E). REPAIR FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 070017 - P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D.

6. THE CONTRACTOR SHALL USE CARE DURING THE REMOVAL OF THE EXISTING CONCRETE AND REMOVE AND ROUGHENED SURFACES PRIOR TO PLACING CONCRETE. COST FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 070017 - P.C.C. MASONRY, SUPERSTRUCTURE, CLASS D.

7. NEW STRIP SEAL ASSEMBLY SHOWN FOR GRAPHICAL PURPOSES ONLY. DETAILS MAY VARY BY MANUFACTURER. STRIP SEAL AND ASSEMBLY SHALL BE IN ACCORDANCE WITH SECTION 628.03(E). PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 624000 - PREFABRICATED EXPANSION JOINT SYSTEM, 3".

8. CUT EXISTING LONGITUDINAL DECK REINFORCEMENT 2" CLEAR OF NEW EDGE OF JOINT.

NOTES:

1. FOR JOINT ASSEMBLY DETAIL AND STRIP SEAL EXPANSION JOINT NOTES, SEE DWG. EX-02.

2. REMOVAL DETAIL - PIER

3. REMOVAL DETAIL - PIER

4. REMOVAL DETAIL - PIER

5. REMOVAL DETAIL - PIER

6. REMOVAL DETAIL - PIER

7. REMOVAL DETAIL - PIER

8. REMOVAL DETAIL - PIER

LEGEND:

- LIMITS OF REMOVAL

NOTES:

- FOR JOINT ASSEMBLY DETAIL AND STRIP SEAL EXPANSION JOINT NOTES, SEE DWG. EX-02.

DECK JOINT OPENINGS

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<th>TEMPERATURE (°F)</th>
<th>MINIMUM CLASSIFICATION</th>
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<tr>
<td></td>
<td>20 30 40 50 60 80 90 100</td>
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<td>PIER 1</td>
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<td>PIER 2</td>
<td>1&quot; 1&quot; 1&quot; 1&quot; 1&quot; 1&quot; 1&quot; 1&quot;</td>
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Tabla de estados de limpieza
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
EXTERIOR PARAPET DETAIL AT EXPANSION JOINT

PARAPET REMOVAL AT EXPANSION JOINT

PARAPET RECONSTRUCTION

MEDIAN PARAPET DETAIL AT EXPANSION JOINT

LEGEND:
- Limits of Removal

SCALE AS NOTED

1" = 1'-0" (TYP.)

1" = 1'-0" (TYP.)

PARAPET REMOVAL AT EXPANSION JOINT

PARAPET RECONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SLEEPER SLAB TYPICAL SECTION

EXPANSION JOINT DETAILS NOT SHOWN FOR CLARITY.
NOTE:

SECTION D-D

SECTION E-E

SECTION F-F
**NOT FOR CONSTRUCTION**
### Standard Bar Bends

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Dimensions</th>
<th>90°</th>
<th>180°</th>
<th>270°</th>
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</thead>
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<tr>
<td>S1-S6</td>
<td>Standard 90° hook</td>
<td>0.940</td>
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<tr>
<td>S7-S8</td>
<td>Standard 180° hook</td>
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<tr>
<td>S9-S10</td>
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<td>S11</td>
<td>Standard 90° hook</td>
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### Special Bar Bends

<table>
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<th>Description</th>
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<th>180°</th>
<th>270°</th>
</tr>
</thead>
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<td>0.350</td>
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<tr>
<td>T4-T6</td>
<td>Tapered 180° hook</td>
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<td>0.700</td>
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<td>T7-T9</td>
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### Stirrup and Tie Hooks

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<thead>
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<th>Type</th>
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<th>90°</th>
<th>180°</th>
<th>270°</th>
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</thead>
<tbody>
<tr>
<td>S1</td>
<td>Standard 90° hook</td>
<td>0.940</td>
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<td>Standard 180° hook</td>
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<td>0.700</td>
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<tr>
<td>S3</td>
<td>Standard 270° hook</td>
<td>1.350</td>
<td>0.700</td>
<td>0.700</td>
<td>0.700</td>
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### Spiral Notes

- **Plain Spiral with Standard Bar Bends**: Use type 0 or 1000. For hook spacing, refer to the drawing and the standard bar bends.
- **Plain Spiral with Special Bar Bends**: Use type 10 or 2000. For hook spacing, refer to the drawing and the special bar bends.

### Notes

1. **180° and 90° End Hooks**: Refer to the drawing and the standard bar bends.
2. **Hooked Bar Details**: Refer to the drawing and the standard bar bends.
3. **Standard Bar Bends**: Refer to the drawing and the standard bar bends.
4. **Special Bar Bends**: Refer to the drawing and the special bar bends.
5. **Stirrup and Tie Hooks**: Refer to the drawing and the stirrup and tie hooks.
6. **Spiral Notes**: Refer to the drawing and the spiral notes.

### Scale

- **Delaware Department of Transportation**: Use the drawing as noted.

### Rehabilitation of I-95

- **From I-495 to North of Brandywine River Bridge**: Use the drawing as noted.

---

**NOT FOR CONSTRUCTION**
SECTION 600

SECTION 600 (CONTINUED)

8.

9. TEMPORARY WEATHER BARRELS

10. CONTRACTOR'S SUPPLY FOR THE PARAPETS, BRIDGE DECK, AND APPROACH SLABS.

11. TEMPORARY WEATHER BARRELS

12. CONTRACTOR'S SUPPLY FOR THE PARAPETS, BRIDGE DECK, AND APPROACH SLABS.

13. TEMPORARY WEATHER BARRELS

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107. TEMPORARY WEATHER BARRELS

108. CONTRACTOR'S SUPPLY FOR THE PARAPETS, BRIDGE DECK, AND APPROACH SLABS.
INDEX OF BRIDGE 1-748 SHEETS

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<td>BRIDGE PROJECT NOTES</td>
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<tr>
<td>PE-01 TO PE-08</td>
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<td>SC-01 TO SC-10</td>
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TOTAL BRIDGE SHEETS: 114

WAG

DEIGNED BY:
DEEP SPALL REPAIR NOTES
1. Deep spall repairs are defined as spall areas that extend beneath the top half of the deck. Delaminations, chippings, or cracks located below the top half of the deck are considered deep spall repairs.
2. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement or replica damage replacement as result of construction activities or section losses must be performed in accordance with Section 628.03 of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
3. If depth of repair extends more than 6" below surface of concrete, contractor shall stop work and notify the engineer immediately.

REHABILITATION OF PCC MASONRY
1. Rehabilitation of PCC masonry is defined as deep spall patches that exceed the 0.5 C.C. threshold in a single area.
2. All work involving methods of concrete removal, cleaning of concrete surfaces, and existing reinforcement or replica damage replacement as result of construction activities or section losses must be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
3. Detail shown for "remediation of existing PCC masonry" utilizes a genetic example, including partial reconstruction of an existing pier cap. See detail and plan for additional information.
4. In all areas with LMC overlay, the removal shall not include any unsound original bridge concrete.
5. If removal of existing deck repair reaches full depth, and with the approval of the engineer, the repair area shall be removed in accordance with Section 628.03(E) and paid for under Item 628053 - Deck Repair, Full Depth. Removal of existing deck repairs that extend to full depth will not be paid for once under Item 628041.

DECK REPAIR NOTES
1. After existing overlay is removed, prior to hydrodemolition, existing areas of deep spall repairs that are visible by the naked eye shall be repaired. Delaminations, chippings, or cracks located below the top half of the deck are considered deep spall repairs. Delaminated concrete has been assumed as deep spall repairs. Deep spall repairs are defined as patches that extend below the top mat of PCC masonry.
2. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement or replica damage replacement as result of construction activities or section losses must be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
3. Hydrodemolition, and Item 628502 - Removal of existing deck repairs for payment and additional information.
4. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities or section losses; presence of contraction or expansion joints; surface preparation; and concrete placement shall be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
5. If removal of existing deck repair reaches full depth, and with the approval of the engineer, the repair area shall be removed in accordance with Section 628.03(E) and paid for under Item 628053 - Deck Repair, Full Depth. Removal of existing deck repairs that extend to full depth will not be paid for once under Item 628041.

REMOVAL OF EXISTING DECK REPAIR NOTES
1. Prior to hydrodemolition, existing areas of delaminations, chippings, or cracks located below the top half of the deck shall be repaired. Delaminations, chippings, or cracks located below the top half of the deck are considered deep spall repairs. Delaminated concrete has been assumed as deep spall repairs. Deep spall repairs are defined as patches that extend below the top mat of PCC masonry.
2. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement or replica damage replacement as result of construction activities or section losses must be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
3. Hydrodemolition, and Item 628502 - Removal of existing deck repairs for payment and additional information.
4. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities or section losses; presence of contraction or expansion joints; surface preparation; and concrete placement shall be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.

PCC SAND MIX FOR RUMBLE STRIPS
1. If removal of existing deck repair reaches full depth, and with the approval of the engineer, the repair area shall be removed in accordance with Section 628.03(E) and paid for under Item 628053 - Deck Repair, Full Depth. Removal of existing deck repairs that extend to full depth will not be paid for once under Item 628041.
2. Hydrodemolition, and Item 628502 - Removal of existing deck repairs for payment and additional information.
3. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities or section losses; presence of contraction or expansion joints; surface preparation; and concrete placement shall be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
4. If removal of existing deck repair reaches full depth, and with the approval of the engineer, the repair area shall be removed in accordance with Section 628.03(E) and paid for under Item 628053 - Deck Repair, Full Depth. Removal of existing deck repairs that extend to full depth will not be paid for once under Item 628041.
5. Hydrodemolition, and Item 628502 - Removal of existing deck repairs for payment and additional information.
6. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities or section losses; presence of contraction or expansion joints; surface preparation; and concrete placement shall be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
7. If removal of existing deck repair reaches full depth, and with the approval of the engineer, the repair area shall be removed in accordance with Section 628.03(E) and paid for under Item 628053 - Deck Repair, Full Depth. Removal of existing deck repairs that extend to full depth will not be paid for once under Item 628041.
8. Hydrodemolition, and Item 628502 - Removal of existing deck repairs for payment and additional information.
9. All work involving methods of concrete removal, cleaning of concrete slabs, and existing reinforcement; repairing or replacing damaged reinforcement as result of construction activities or section losses; presence of contraction or expansion joints; surface preparation; and concrete placement shall be performed in accordance with Section 628.03(E) of the standard specifications. Payment incidental to Item 628041 - Deep Spall Repair.
### Quantities

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<th>Item No</th>
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### Load Rating Summary BR 1-74B

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<th>Controlling Member</th>
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**Note:** Load rating includes future wearing surface as noted in the plans.

### Load Rating Summary BR 1-748S

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<th>Design Vehicle</th>
<th>Rating Factor</th>
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<tr>
<td>HL-93 Truck (Operating)</td>
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**Note:** Load rating includes future wearing surface as noted in the plans.
**LMC OVERLAY NOTES:**

1. **REPLACE SCUPPER DOWNSPOUT**
   - Replace scupper downsput

2. **REPLACE EXISTING JOINTS IN DECK SLAB**
   - Replace existing joints in deck slab

3. **REPLACE EXISTING DECK ASSESSMENT**
   - Replace existing deck assessment

4. **REPAIR OR REPLACEMENT OF MISSING DECK SURFACE**
   - Repair or replacement of missing deck surface

5. **REPAIR AND REPLACE LCM OVERLAY**
   - Repair and replace LCM overlay

**COLUMN 1; PIER 27N, COLUMN 2; PIER 28N, COLUMN 1, SOUTH ABUTMENT; PIER 1, COLUMN 1; PIER 5, COLUMN 1; PIER 11, COLUMN 2; 42 NB, 42 SB, 43 NB, 43 SB, 44 SB, 45 NB, 45 SB, 46 NB, 46 SB, 47 NB, 37 SB (NEW), 38 NB, 38 SB, 39 SB (NEW), 40 NB, 40 SB, 41 NB, 41 SB, SPANS 0 SB, 1 SB, 2 SB, 3 SB, 4 NB, 4 SB, 5 NB, 5 SB, 6 NB, 7 NB, 8 NB, SPAN 0 NB; SPAN 5 SB; SPAN 6 SB; SPAN 7 SB; SPAN 12 SB; 56S, 58N, 58S PIERS 29N, 31N, 33N, 36N, 38N, 40N, 42N, 51N, 51S, 53N, 53S, 55N, 55S, 57N, 57S, 59N, 59S 41N, 41S, 43N, 43S, 45N, 45S, 47N, 47S, 49N, 49S**

**NOT TO SCALE**

**PORTION OF THE DECK AND OVERHANG THROUGH 39S**

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE BRIDGE**

**BAW-01**

**NOT FOR CONSTRUCTION**
<table>
<thead>
<tr>
<th>REPAIR NO.</th>
<th>REPAIR DESCRIPTION</th>
<th>REMARKS</th>
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<td>STAND 23C SHEET METAL, EAST SIDE</td>
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<td>INTERIOR OF TRANSVERSE BOX SPANS AT SPANS 10, 11, 12, 20 THROUGH 26</td>
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<td>CLEANING AND PAINTING EXISTING STEEL</td>
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**TOTAL # OF ITEMS:** 36

**TOTAL # OF SHEETS:** 15

**TOTAL # OF ITEMS:** 234

**TOTAL # OF SHEETS:** 15
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION

EXISTING TYPICAL SECTION
(SA. 1265+18.61 TO 1284+16.61)

PROPOSED TYPICAL SECTION
(SA. 1265+18.61 TO 1284+16.61)

NOTES:
1. FOR PARAPET DETAIL, DRIP NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL, SEE DWG. PA-01.
2. THICKNESSES OF EXISTING DECK AND PROPOSED LMC OVERLAYS VARY. SEE DWGS. DM-01 THROUGH DM-04 FOR DETAILS.
3. SUPERELEVATION VARIES. SECTION TAKEN WITHIN TANGENT PORTION OF I-95.
4. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS SEE DETAILS ON DWGS. DM-01 THROUGH DM-03.
5. PAYMENT FOR REMOVAL OF EXISTING FENCE WILL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
6. THE TOP SURFACE OF THE CLASS D CONCRETE DECK SHALL BE區域 FINISHED TO A FULL AMPLITUDE OF 3". THE CONCRETE SHALL BE STRUCTURED STRONGLY WITH A COMPLIANT RATE WHICH TO REMOVE ALL EXISTING AND THE EXISTING SURFACE.

LIMITS OF LMC OVERLAY AND HMWM CONCRETE SEALER

SCALE AS NOTED

REV.

1748 059

BRIDGE TYPICAL SECTIONS
STA. 1265+18 TO 1284+16

FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

BRIDGE NO.

TS-01

COUNTY

BRANDYWINE RIVER BRIDGE

FROM I-495 TO NORTH OF

REHABILITATION OF I-95

DESIGNED BY:
WAG
CHECKED BY:
DAN

NEW CASTLE
COUNTY
TS-01

SCALE AS NOTED

NOT FOR CONSTRUCTION

CONTRACT

COUNTY

N:
3 19 8 7 -0 0 4
C o n t r a c t _ I-9 5
C A D D 
B r i d g e 
B R 1-7 4 8 _ T S 0 1.d g n

5 /3 1/2 0 19
12 :11:4 7  P M

1748 059
EXISTING TYPICAL SECTION
(STA. 1288+18.64 TO STA. 1292+31.55)

NOTES:
1. THICKNESSES OF EXISTING DECK AND PROPOSED LMC OVERLAYS VARY, SEE INSET, 30'-0" WIDE FOR DETAILS.
2. REMOVAL OF RAILROAD PROTECTIVE BARRIER WILL BE INCIDENTAL TO ITEM 171000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SEQUENCE OF CONSTRUCTION NOTES:

1. SET UP THE STAGE 3A MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3A REMOVAL.
3. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3A CONSTRUCTION.

NOTES:
1. DEMO SHIELDS NOT SHOWN.
2. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS, SEE DETAILS ON DWGS.
3. EXISTING 1" OPEN JOINT.
SEQUENCE OF CONSTRUCTION NOTES:
1. SET UP THE STAGE 3B MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3B REMOVAL.
3. CONSTRUCT NEW OVERHANG AND PARAPET.
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3B CONSTRUCTION.

NOTES:
1. DEMO SHIELDS NOT SHOWN.
2. LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS, SEE DETAILS ON DWGS. DM-01 AND DM-03.
3. EXISTING 1" OPEN JOINT CL.
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3B CONSTRUCTION.
NOTES:
1. NO BRIDGE DECK WORK IN STAGE 4.

EXISTING 1" OPEN JOINT

SCALE AS NOTED
NOT FOR CONSTRUCTION
STAGE 2 REMOVAL
(STA. 1305+08 TO 1319+82 I-95 SB, STA. 1300+34 TO 1313+05 I-95 NB)

1/4" = 1'-0"
(STA. 1305+08 TO 1319+82 I-95 SB, STA. 1300+34 TO 1313+05 I-95 NB)

1. SET UP THE STAGE 2 MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 2 REMOVAL.
3. CONSTRUCT NEW OVERHANGS AND PARAPETS.
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 2 CONSTRUCTION.

LEGEND:
- LIMITS OF REMOVAL
- PROPOSED CONSTRUCTION

NOTES:
- Demolition not shown.
- For location of deck overhang reconstruction limits, see details on Dwg. DM-03 through DM-03.

SEQUENCE OF CONSTRUCTION NOTES:
1. Set up the stage 2 mot and shift traffic to the new lane configuration.
2. Perform stage 2 removal.
3. Construct new overhangs and parapets.
4. Place new lmc overlay within the limits of stage 2 construction.
STAGE 3A REMOVAL
(STA. 1305+08 TO 1319+82 I-95 SB, STA. 1300+34 TO 1313+05 I-95 NB)

SEQUENCE OF CONSTRUCTION NOTES:
1. SET UP STAGE 3A MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.
2. PERFORM STAGE 3A REMOVAL.
3. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS, SEE DETAILS ON DWGS.
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3A CONSTRUCTION.

LEGEND:
- Limits of Removal
- Proposed Construction

NOTES:
1. DEMO SHIELDS NOT SHOWN.
2. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS, SEE DETAILS ON DWGS.
3. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS, SEE DETAILS ON DWGS.
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF STAGE 3A CONSTRUCTION.

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

SCALE AS NOTED
STAGE 3B REMOVAL  
(STA. 1305+08 TO 1319+82 I-95 SB, STA. 1300+34 TO 1313+05 I-95 NB)  

1. SET UP STAGE 3B MOT AND SHIFT TRAFFIC TO THE NEW LANE CONFIGURATION.  
2. PERFORM STAGE 3B REMOVAL.  
3. CONSTRUCT THE NEW OVERHANG AND PARAPET.  
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF THE STAGE 3B REMOVAL.  

SEQUENCE OF CONSTRUCTION NOTES:  
1. DEMO SHIELDS NOT SHOWN.  
2. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS SEE DETAILS ON DWG.  
3. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS SEE DETAILS ON DWG.  
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF THE STAGE 3B REMOVAL.  

STAGE 3B CONSTRUCTION  
(STA. 1305+08 TO 1319+82 I-95 SB, STA. 1300+34 TO 1313+05 I-95 NB)  

NOTES:  
1. DEMO SHIELDS NOT SHOWN.  
2. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS SEE DETAILS ON DWG.  
3. FOR LOCATION OF DECK OVERHANG RECONSTRUCTION LIMITS SEE DETAILS ON DWG.  
4. PLACE NEW LMC OVERLAY WITHIN THE LIMITS OF THE STAGE 3B REMOVAL.
NOT FOR CONSTRUCTION
LEGEND:
1" OPEN JOINT
EXISTING TO REMAIN
MEDIAN LIMITS OF REMOVAL, HYDRODEMOLITION (ITEM 7605xx OR 7605xy)
LIMITS OF REMOVAL, PAVEMENT MILLING (ITEM 760013)

SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL TEMPORARY WORKS INCLUDING PROTECTIVE SHIELDS, RAILINGS, ETC. AS NECESSARY TO PROTECT THE WORK ZONE AND AREAS UNDER AND ADJACENT TO THE CONSTRUCTION.
2. REMOVE EXISTING EXTERIOR PARAPET TO THE LIMITS SHOWN.
4. PERFORM DEEP CUT HYDRODEMOLITION TO THE LIMITS SHOWN.
5. FOR THE PURPOSES OF HYDRODEMOLITION EQUIPMENT CALIBRATION, THE WILMINGTON VIADUCT SHALL BE CONSIDERED THREE SEPARATE BRIDGES: BR 1-748, BR 1-748N, AND BR 1-748S.
6. THICKNESS OF EXISTING LMC OVERLAY VARIES. DECK CORES DEPICTING THE OVERLAY THICKNESS WERE TAKEN IN NOVEMBER/DECEMBER 2014. THE CORING REPORT IS INCLUDED
7. CONSTRUCT NEW 36" F-SHAPE PARAPET. SEE DWG. DK-xx FOR DETAILS.
8. REMOVE EXISTING LMC OVERLAY VIA PAVEMENT MILLING WITHIN THE LIMITS OF TOTAL SURFACE HYDRODEMOLITION
9. PERFORM TOTAL SURFACE HYDRODEMOLITION TO THE LIMITS SHOWN.
10. PLACE NEW LMC OVERLAY.

TYPICAL LIMITS OF DEMOLITION - STAGE 2
(1285+16.61 TO 1284+16.61 I-95 NB)

DEMOLITION NOTES:
1. EXISTING TOP AND BOTTOM TRANSVERSE REINFORCEMENT BARS TO REMAIN SHALL BE UNDERCUT AND NEW OVERHANG. DEEP CUT HYDRODEMOLITION SHALL BE PERFORMED TO THE DEPTH SHOWN IN THE DETAIL ON DWG. DM-04. NEW OVERHANG SHALL BE LEFT UNTOPPED AND TO REMAIN AT THE CONTRACTOR'S EXPENSE. CONTRACTOR MAY CHOOSE TO REPLACE THE EXISTING BRIDGE DECK CORES DEPICTING THE OVERLAY THICKNESS WITHIN THE LIMITS OF FULL DEPTH REMOVAL SHALL BE REMOVED AND REPLACED. EXISTING LONGITUDINAL REINFORCEMENT NOT TO REMAIN, REMOVE AND REPLACE ALL EXISTING SHEAR CONNECTORS ON FACTS CORRECT TO THE DEPTH SHOWN FOR CLARITY. SEE DK-xx FOR ADDITIONAL DETAILS.
2. EXISTING STUD SHEAR CONNECTORS ON TOP FLANGE OF FASCIA GIRDERS SHALL REMAIN IN PLACE FOLLOWING FULL DEPTH REMOVAL OF THE OVERHANG. EXISTING STUD SHEAR CONNECTORS SHALL BE CLEANED OF ALL LOOSE CONCRETE, DEBRIS, OIL, ETC. PAYMENT FOR CLEANING EXISTING STUD SHEAR CONNECTORS WILL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
4. RECALIBRATION OF THE HYDRODEMOLITION EQUIPMENT MAY BE REQUIRED BETWEEN THE ORIGINAL AND WIDENED PORTIONS OF THE STRUCTURE AT EXISTING SLAB CUT LINE.
5. FOR THE PURPOSES OF HYDRODEMOLITION EQUIPMENT CALIBRATION, THE WILMINGTON VIADUCT SHALL BE CONSIDERED THREE SEPARATE BRIDGES: BR 1-748, BR 1-748N, AND BR 1-748S.
6. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
7. TYPICAL SECTION SHOWN IS VALID FOR STATION LIMITS AS NOTED. NORTHBOUND SUPERSTRUCTURE WIDTH VARIES AT OTHER SECTIONS OF THE BRIDGE. ALL PROCEDURES FOR REMOVAL AND REPLACEMENT OF THE OVERHANG SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 628.03(E)(7). PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
8. VEHICLES AND EQUIPMENT SHALL NOT BE ALLOWED ON THE AREAS OF THE DECK THAT HAVE RECEIVED DEEP CUT HYDRODEMOLITION. VEHICLES AND EQUIPMENT SHALL ONLY BE ALLOWED ON THOSE AREAS.
9. BASEMENT MULLIONS SHALL BE ALLOWED ON THOSE AREAS.
10. P/R TRAFFIC PLANS FOR ADDITIONAL INFORMATION REGARDING STAGING LIMITS.

SCALE AS NOTED
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
HYDRODEMOLITION AMPLITUDE DETAIL

TOTAL SURFACE HYDRODEMOLITION DETAIL

DEEP CUT HYDRODEMOLITION DETAIL

MILLING TRANSITION ZONE DETAIL

NOTES:

- LIMITS OF REMOVAL, HYDRODEMOLITION (ITEM 7605xx OR 7605xy)
- LIMITS OF REMOVAL, PAVEMENT MILLING (ITEM 760013)
- MILLING TRANSITION ZONE DETAIL
- EXISTING #5 BAR (TYP.)
- EXISTING #4 BAR (TYP.)
- OTHER LOCATIONS SIMILAR.

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DM-04

NOT FOR CONSTRUCTION
AMTRAK RAILROAD PROTECTIVE SHIELD NOTES:

1. The railroad protective shield shown on this sheet only applies to areas shown. For layout of railroad protective shields over Amtrak Southern Railroad, see dwgs. DM-06 and DM-09.

2. Use dwg. 8-748-059 for additional railroad protective shield layout plan at ramp A and B for I-95.

3. AMTRAK approved railroad protective shields have been designed and detailed on dwgs. 8-748-059. Contractor shall shop fabricate, paint, install, and fasten railroad protective shields per approved details.

4. Railroad protective shields shall be fabricated in accordance with AASHTO Guide Design Specifications for Bridge Temporary Works Article 4. Per Amtrak I&C Specification Section 01520A, live load for temporary protective shield is 100 psf. Calculations will not be required. Contractor is to have changes to approved design on design submittal. It shall be determined in accordance with section 604 and Amtrak criteria and submitted to the engineer and Amtrak for approval. Any delays due to approval of changes or alternate system not be grounds for time extension or contract.

5. Per AASHTO RC-S1-06 specification section of blast design, load for temporary protective shield is 100 psf. Amtrak I&C design specifications for bridge temporary works Article 4. Per Amtrak I&C Specification Section 01520A, live load for temporary protective shield shown is assumed to be less than 407 above ground.

6. Structural steel including shear shall conform to ASTM A36 grade 50.

7. Timber shall be Southern yellow pine no. 2 or approved equal.

8. Roof decking shall be from the following manufacturer's or approved equal:
   A. DAC'S IPE DECK
   B. HILTI INC.
   C. VERCO DECKING INC.

9. Metal screws shall be from the following manufacturer's or approved equal:
   A. C. ITW BUILDEX
   B. ASC STEEL ROOF DECK
   C. SIMPSON STRONG-TIE

10. Metal decking shall be from the following manufacturer's or approved equal:
    A. SIMPSON STRONG-TIE
    B. HILTI INC.
    C. VERCO DECKING INC.

11. All nuts shall be conform to ASTM A563.

12. All bolts shall conform to ASTM A325.

13. All plates shall conform to ASTM A709.

14. All washers shall conform to ASTM F436.

15. No welding to existing steel will be permitted.

16. Existing railroad protective shield type I, type II, and type III shall be in accordance with section 604.03.1 and will be paid for under Item 604001 - Protective Shields.
RAILROAD PROTECTIVE SHIELD - TYPE II

1-748 MAINLINE

RAILROAD PROTECTIVE SHIELD - TYPE III - STA. 1293+33 TO STA. 1293+65

NOTES:
1. FOR PROTECTIVE SHIELD NOTES, SEE DM-05.
RAILROAD PROTECTIVE SHIELD - TYPE III - STA. 1293+65 TO STA. 1295+23

NOTES:
1. FOR PROTECTIVE SHEILD NOTES, SEE DM-05.

SECTION D-D
NOT FOR CONSTRUCTION
EXISTING Bracket REMOVAL DETAIL TYPE 3

LEGEND:

EXISTING DECK FOR PARTIAL HYDRODEMOLITION DETAILS

EXISTING DEC. TO REMAIN

EXISTING BOLTS (10)

EXISTING 10" x ½ PLATE

EXISTING 10" x ½ PLATE TO BE REMOVED

EXISTING 14WF87

EXISTING 12WF62

EXISTING 10" x ½ PLATE TO BE PARTIALLY REMOVED

EXISTING LMC OVERLAY

EXISTING FILL

EXISTING 10" x ½ PLATE

EXISTING 10" x ½ PLATE AND GRIND SMOOTH

EXISTING 10" x ½ PLATE AND GRIND SMOOTH

NOTES:

1. FOR NOTES SEE DWG. DM-09.

2. SEE DWGS. DM-01 TO DM-04 HYDRODEMOLITION DETAILS, EXISTING DECK, FOR PARTIAL DM-01 AND DM-03 REMOVED, SEE DWGS. DECK OVERHANG TO BE EXISTING PARAPET AND CONTRACT COUNT.

DESIGNED BY:

CHECKED BY:

BRIDGE NO.

SHEET NO.
DEEP SPALL REPAIR
SILICONE-BASED ACRYLIC CONCRETE SEALER

CONCRETE REPAIR QUANTITIES

<table>
<thead>
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<th>ITEM NO.</th>
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<th>QUANTITY</th>
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<td>REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION</td>
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<td>18</td>
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<td>DEEP SPALL REPAIR</td>
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<td>12</td>
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<td>SILICONE-BASED ACRYLIC CONCRETE SEALER</td>
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<td>1024</td>
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NOTE: QUANTITIES SHOWN ARE TOTAL PER ABUTMENT AND DO NOT INCLUDE CONTINGENT PERCENTAGE.

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES (SEE NOTE 1 ON DWG. PN-01). PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.

2. WHERE CRACKS AND SPALLS EXIST CONCURRENTLY, COMPLETE THE SPALL REPAIR COMPLETELY REMOVING THE ASSOCIATED CRACK PRIOR TO THE CONCRETE REPAIRS. EXTENDING THE LIMITS OF THE SPALL REPAIR TO COMPREHENSIVELY REMOVED THE CRACKS WILL RESULT IN THE CONTRACTOR REMOVING ADDITIONAL CONCRETE UNLESS THE CRACK EXTENDS MORE THAN 6" BEYOND THE LIMITS OF THE SPALL REPAIR. IF THE CRACK EXTENDS MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR INTO SOUND CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER ITEM 613001. CRACKS LOCATED WITHIN SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO THE REPAIR.

3. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE ABUTMENT SURFACES. THE PRESENCE OF THE ENGINEER.

4. CONTRACTOR SHALL TAKE CARE TO PROTECT THE BEARINGS DURING APPLICATION OF THE SILICONE-BASED ACRYLIC CONCRETE SEALER. ANY CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 613001.

5. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH ABUTMENT.

6. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL NOT BE APPLIED TO ANY EXPOSED CONCRETE ABUTMENT SURFACES, Any CLEAN-UP REQUIRED TO REMOVE THE SEALER FROM THE BEARINGS WILL BE AT NO ADDITIONAL COST TO THE DEPARTMENT AND TO THE SATISFACTION OF THE ENGINEER. PAYMENT WILL BE MADE UNDER ITEM 613001.

7. EACH ABUTMENT.

8. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AT EACH ABUTMENT.

9. REPAIRS TO BACKWALL SHALL BE PERFORMED IN CONJUNCTION WITH BACKWALL RECONSTRUCTION. SEE DETAILS ON DWGS. NOT FOR CONSTRUCTION
PIER 23 - NORTH ELEVATION

NOTES:
1. The location and quantities of the repairs shown on this drawing are based on inspection field notes. See note 1 on DWG. PR-03. This repair drawing is not the final contract repair. The limits shall be defined by the contractor in the presence of the engineer.
2. Where cracks and spalls exist concurrently, separate the repair details into crack repairs and spall repairs. The repair details shall conform to the design of the original bridge.
3. For concrete repair details, see DWG. PN-01. Prior to starting each repair, the limits shall be verified by the contractor in the presence of the engineer.
4. Repair concrete sealers shall be applied to the new concrete, and repair details. Payment will be made under item 613001. Contractors shall remove debris from the beam seat. Application of repair concrete sealers will be at no additional cost to the department and to the satisfaction of the engineer.
5. Contractor shall take care to protect the beam seat during application of the repair concrete sealers. Any cleanup required will be at no additional cost to the department and to the satisfaction of the engineer.
6. Epoxy concrete sealers shall be applied to all exposed concrete pier surfaces that do not require epoxy injection. Payment will be under item 613001.
7. Epoxy concrete sealers and silicone-based acrylic concrete sealers shall be applied upon completion of all concrete repairs and repairs to each pier.
8. For plan view and concrete repair quantities see DWG. PR-02.

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DATE: 05/12/18

SHEET NO: 1

CONTRACT N: 748 059

PIER 23 - CONCRETE REPAIR DETAILS (NORTH ELEVATION)
CONTRACT COUNTY

DESIGNED BY:

CHECKED BY:

BRIDGE NO.

ADDENDA / REVISIONS

SECTION

SHEET NO.

5 /3 1/2 0 19

12 :12 :19 P M

DEEP SPALL REPAIR

SILICONE-BASED ACRYLIC CONCRETE SEALER

41

628001

628041

613001

REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

NOTES:

1. THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE BASED ON INSPECTION FIELD NOTES TAKEN 1/4 IN. PRIOR TO STARTING EACH REPAIR. THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.


3. FOR CONCRETE REPAIR DETAILS, SEE DWG. PN-03.

4. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PENDANTS. PAINTED SEALER WILL BE MADE UNDER ITEM 613000. CONSTRUCTION SHALL REMOVE BEARING SEATS PRIOR TO APPLICATION OF EPOXY CONCRETE SEALER. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613000.

5. SILOMONE-BASED ACRAIC CONCRETE SEALER SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. PAYMENT WILL BE MADE UNDER ITEM 613000.

6. SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO REPAIR DETAILS. SPALL REPAIRS WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO THE PRESENCE OF THE ENGINEER.

7. EPOXY CONCRETE SEALER AND SILICOONE-BASED ACRYLIC CONCRETE SEALER SHALL NOT BE APPLIED AFTER ALL CONCRETE REPAIRS ARE COMPLETED AS EACH REPAIR.

NOTES TO QUANTITIES SHOWN ARE TOTAL PER PIER AND DO NOT INCLUDE CONTINGENT PERCENTAGE.
NOT FOR CONSTRUCTION
DEEP SPALL REPAIR
SILICONE-BASED ACRYLIC CONCRETE SEALER

CONCRETE REPAIR QUANTITIES

<table>
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REPAIR OF CONCRETE STRUCTURES BY EPOXY INJECTION

CONCRETE REPAIRS ARE COMPLETED AT EACH PIER.
CONCRETE SEALER SHALL ONLY BE APPLIED AFTER ALL
CONCRETE THE CRACK SHALL BE REPAIRED BY EPOXY INJECTION AND PAID FOR UNDER
EXTEND MORE THAN 1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF
CONCRETE SEALER. ANY CRACKS LOCATED WITHIN
LIMITS OF CONCRETE REMOVAL, THE CONTRACTOR SHALL COMPLETE CONCRETE
REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN
SPALL REPAIR TO ENCOMPASS THE CRACK. IF THE CRACK EXTENDS DEEPER THAN
SPALL REPAIR WILL NOT BE PAID FOR AND WILL BE CONSIDERED INCIDENTAL TO
CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES
COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN
1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE
SPALL REPAIR INTO SOUND
SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. IF THE CRACK
MAY BE MORE THAN 6" FROM THE ORIGINAL FACE OF CONCRETE, ALL WORK ON THE REPAIR
CONCRETE UNTIL THE CRACK IS FULLY REMOVED. IF THE DEPTH OF REMOVAL REACHES
COMPLETELY REMOVING THE ASSOCIATED CRACK. IF THE CRACK EXTENDS LESS THAN
1'-0" BEYOND THE LIMITS OF THE SPALL REPAIR, EXTEND THE LIMITS OF THE
SPALL REPAIR INTO SOUND
**NOT FOR CONSTRUCTION**
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
- Replace with proposed bearing type FS-2 (refer to Dwg. BB-06)
- Replace with proposed bearing type FS-3 (refer to Dwg. BB-07)
- Replace with proposed bearing type ES-3 (refer to Dwg. BB-11 and BB-12)
- Cut pintles at existing bearing (refer to Dwg. BB-14)

BEARING PLAN - SPANS 48 TO 54

BEARING SYMBOL LEGEND

△ - Replace with proposed bearing type FS-2 (refer to Dwg. BB-06)
○ - Replace with proposed bearing type FS-3 (refer to Dwg. BB-07)
□ - Replace with proposed bearing type ES-3 (refer to Dwg. BB-11 and BB-12)
○ - Cut pintles at existing bearing (refer to Dwg. BB-14)
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
FABRICATION.

THE FACTORED LOADS FOR JACKING USE A DEAD LOAD FACTOR OF 1.30 SPANS WERE USED TO SIZE THE HYDRAULIC JACK ASSEMBLIES.

LIVE LOAD SHALL BE TEMPORARILY REMOVED FROM THE BRIDGE DURING THE MAXIMUM DIFFERENTIAL DISPLACEMENT BETWEEN ANY TWO ADJACENT PROVIDE AN EQUAL AND BALANCED LIFTING FORCE.

ACCEPTED BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

JACKING OPERATIONS. THE PROPOSED BEARING ASSEMBLIES MUST BE PROVIDED ANEQUAL AND BALANCED LIFTING FORCE.

THE CONTRACTOR SHALL HAVE THE PROPOSED BEARING ASSEMBLIES FOR PRIOR TO THE JACKING OPERATIONS. ALL CONCRETE REPAIRS SHALL BE WHERE CONCRETE REPAIRS TO THE PIER CAPS AND PEDESTALS OVERLAP IF ANY DEFECTS ARE FOUND THE CONTRACTOR SHALL STOP WORK AT THAT POINT.

MAY IMPACT THE LOAD CARRYING CAPACITY OF THE BEAM DURING JACKING. THE CONDITION OF THE EXISTING STEEL BEAMS FOR ANY DEFECTS WHICH ARE REGISTERED IN THE STATE OF DELAWARE. ANY ALTERNATE DESIGN SHALL BE ACCEPTED BY THE ENGINEER.

ENGINEER.

IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL INSPECT CONFORMATION WITH ALL PERTINENT CONTRACT PROVISIONS.

ENSURE CONFORMANCE WITH ALL PERTINENT CONTRACT PROVISIONS.

THE FOLLOWING IS A SUGGESTED SEQUENCE OF CONSTRUCTION FOR THE GIRDERS.

THE CONTRACTOR SHALL VERIFY COMPATIBILITY OF THE JACKING ASSEMBLY THAT MAY BE REQUIRED PRIOR TO PERFORMING JACKING OPERATIONS IS SPECIFIED STRENGTH.

INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS LOCATED ON DWGS. PR-01 TO PR-06.

THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD DIMENSIONS PRIOR TO THE JACKING OPERATIONS. THE HOT ELBOWS OF THE BEARING ASSEMBLY, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL ALL NECESSARY PERMANENT WORK PLATFORMS AND/OR JACKING OPERATIONS. THE PROPOSED LOCATION OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.

2. INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.

3. PLACE NON-SLIP GRIP LEVELING PADS AS REQUIRED AND CAREFULLY SPECIFIED STRANDING.

4. INSTALL ALL JACKING ASSEMBLIES AS NECESSARY.

5. REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.

6. TEMPORARILY DISCONNECT 1-9 TRAFFIC AND JACK BEAMS OFF OF BRIDGE. SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUTS OF THE HYDRAULIC JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES.

7. SUBSEQUENTLY JUDGE THE EXISTING BEARINGS AND JUMP COUNT TO THE JACK TO TRANSFER ALL LOAD TO THE JACKING STIFFENERS, AND TEMPORARY BEARING ASSEMBLIES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL ALL NECESSARY PERMANENT WORK PLATFORMS AND/OR JACKING OPERATIONS. THE PROPOSED LOCATION OF BEARING DEVICES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES.

2. INSTALL ALL TEMPORARY OR PERMANENT JACKING DIAPHRAGMS AS NECESSARY.

3. PLACE NON-SLIP GRIP LEVELING PADS AS REQUIRED AND CAREFULLY SPECIFIED STRANDING.

4. INSTALL ALL JACKING ASSEMBLIES AS NECESSARY.

5. REMOVE NUTS AND WASHERS OF THE EXISTING ANCHOR BOLTS.

6. TEMPORARILY DISCONNECT 1-9 TRAFFIC AND JACK BEAMS OFF OF BRIDGE. SECURE JACKING DIAPHRAGMS IN PLACE WITH LOCK-NUTS OF THE HYDRAULIC JACKS AT LOCATIONS AS SHOWN IN THE JACKING SCHEMES.

7. SUBSEQUENTLY JUDGE THE EXISTING BEARINGS AND JUMP COUNT TO THE JACK TO TRANSFER ALL LOAD TO THE JACKING STIFFENERS, AND TEMPORARY BEARING ASSEMBLIES, JACKING DIAPHRAGMS, AND JACKING ASSEMBLIES, AND PRIOR TO DRILLING HOLES IN EXISTING STEEL BEAMS.

CHECKED BY:

DESIGNED BY:

BRIDGE NO.
### Loads for Jacking

<table>
<thead>
<tr>
<th>Span No.</th>
<th>Substructure Unit</th>
<th>Beam No.</th>
<th>Beam Spacing (in)</th>
<th>Beam Width (in)</th>
<th>Angle **</th>
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<td>DL +LL +IMP</td>
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### Scale as Noted

**Not for Construction**
PIER E52 JACKING SCHEME - ELEVATION
(Span 51N shown looking north)

PIER E52 JACKING SCHEME - PLAN
(Span 51N shown)

NOTES:
1. For bridge jacking notes, refer to DDG. RH-01.
2. For loads for jacking for span 51N at pier E52, refer to DDG. RH-10.
3. For jacking details, refer to DDG. RH-10.
4. Before the office is set on the new bearings, the permanent jacking diaphragms are to remain in place as part of the completed structure.
5. Angle A is taken on the left side of the structure where it is shown on the plan.
6. The contractor shall verify all existing connections at the locations to be in contact with permanent jacking diaphragms. The diaphragms are to remain in place as part of the completed structure.
7. The diaphragms are to remain in place as part of the completed structure.
8. The diaphragms are to remain in place as part of the completed structure.
9. All holes at this location shall be 7⁄32" dia. All holes for bolts shall be 3⁄16" dia.
10. Place a non-shrinking epoxy grout bed under the jacking plate. Refer to DDG. RH-01 for details.
11. For loads for jacking for span 51N at pier E52, refer to DDG. RH-01.

LEGEND:
- Existing steel beams to be removed and new steel beams to be installed
- Non-shrine glass

This page is not for construction.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION

CONFORMANCE WITH SECTION 616.

MATCH THE COLOR OF THE EXISTING GIRDER. CAULK AROUND PERIMETER OF REPAIR PLATES IN

AFTER REPAIRS ARE COMPLETE, PAINT AREA IN CONFORMANCE WITH SECTION 616. PAINT COLOR SHOULD

INSTALLING NEW PLATES. METAL EPOXY FILLER SHALL CONFORM TO THE SPECIAL PROVISIONS.

AREAS OF SECTION LOSS SHALL BE COATED WITH A METAL REINFORCING EPOXY FILLER PRIOR TO

HARDENED WASHER SHALL CONFORM TO ASTM F 436.

HEAVY HEX NUTS SHALL CONFORM TO ASTM A 563, GRADE DH.

HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A 325, TYPE 1.

DIAMETER BOLTS SHALL BE 3".

UNLESS SHOWN OTHERWISE, THE MINIMUM ACCEPTABLE CENTER-TO-CENTER BOLT SPACING FOR "

UNLESS SHOWN OTHERWISE, THE MINIMUM ACCEPTABLE EDGE DISTANCE FOR " DIAMETER BOLTS SHALL BE

OF ALL MATERIALS.

PROPOSED REPAIR PLATES IN THE PRESENCE OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS INCLUDING THE SIZE AND LIMITS OF ALL

DIMENSIONS OF DETAIL PLATES ON THE PREMISES OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

OF ALL MATERIALS.

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS INCLUDING THE SIZE AND LIMITS OF ALL

DIMENSIONS OF DETAIL PLATES ON THE PREMISES OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

OF ALL MATERIALS.

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS INCLUDING THE SIZE AND LIMITS OF ALL

DIMENSIONS OF DETAIL PLATES ON THE PREMISES OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

OF ALL MATERIALS.

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS INCLUDING THE SIZE AND LIMITS OF ALL

DIMENSIONS OF DETAIL PLATES ON THE PREMISES OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

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OF ALL MATERIALS.

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OF ALL MATERIALS.

1. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS INCLUDING THE SIZE AND LIMITS OF ALL

DIMENSIONS OF DETAIL PLATES ON THE PREMISES OF THE ENGINEER PRIOR TO ORDERING AND/OR FABRICATION

OF ALL MATERIALS.
NOT FOR CONSTRUCTION
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<th>DESCRIPTION</th>
<th>OVERHANG LOCATION</th>
<th>SPAN LENGTH MEASURED ALONG FLUSH LINE</th>
<th>PARAPET WIDTH</th>
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**Notes:**
- Scale as noted.
- Rehabilitate of I-95 from I-495 to North of Brandywine River Bridge
- Addenda/Revisions
- Not for Construction

**Locations:**
- Northbound
- Southbound
- Interior
- Exterior

**Dimensions:**
- Estimated No. of Longitudinal Lays per Day:
  - 1

**Span Lengths:**
- 58'-9 7/8" (DK-04)
- 93'-3 1/8" (DK-04)
- 81'-6 6/8" (DK-04)
- 69'-9 3/8" (DK-04)
- 69'-8 5/8" (DK-04)
- 78'-8 6/8" (DK-04)
- 74'-7 2/8" (DK-04)
- 74'-8 4/8" (DK-04)
- 78'-9 6/8" (DK-04)
- 81'-11" (DK-04)
- 74'-12" (DK-04)
- 1'-7 1/2" (DK-04)
- 1'-5" (DK-04)

**Overhangs:**
- 2.0
- 2.1
- 2.2
- 2.3
- 2.4
- 2.5
- 2.6
- 2.7
- 2.8
- 2.9
- 3.0

**Additional Spans:**
- 3

**Development Length:**
- 5 1/8" (DK-04)
- 6 1/8" (DK-04)

**DK-04**
- 1748 069
- 1 748 069
- 1 748 069
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- 1 748 069
- 1 748 069
- 1 748 069
- 1 748 069
CASE NO. 1:
Flowline is >60'-0" and < 70'-0".

CASE NO. 2:
Flowline is > 70'-0" and < 81'-0".

CASE NO. 3:
Flowline is > 108'-0" and < 132'-0".

CASE NO. 4:
Flowline is > 132'-0" and < 150'-0".

CASE NO. 5:
Flowline is >150'-0" and < 170'-0".

NOTES:
1. For parapet reinforcement tables, refer to Dwg. No. PA-01 through PA-05.
2. For deck reinforcement, refer to Dwg. No. DR-01 through DR-04.
3. Spaces between protective handrail and decorative barriers with urban scale clarity, refer to RA-01 through RA-04 for location.
4. For RA-08 for locations.
5. For parapet reinforcement tables, refer to Dwg. No. PA-01 through PA-05.
6. For parapet reinforcement tables, refer to Dwg. No. PA-01 through PA-05.
7. For parapet reinforcement tables, refer to Dwg. No. PA-01 through PA-05.
8. Control joint spacing.
10. Control joint spacing.

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOTES:
1. FOR PARAPET REINFORCEMENT TABLES, REFER TO DWG. NO. RA-01 THROUGH RA-08.
2. FOR DECK REINFORCEMENT, REFER TO DWG. NO. RA-01 THROUGH RA-08.
3. FENCE, BARRIER PROTECTIVE BARRIER, AND DECORATIVE BARRIER NOT SHOWN FOR CLARITY, REFER TO DWG. NO. RA-01 THROUGH RA-08.
4. CASE NO. 1: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 108'-0" AND < 132'-0".
5. CASE NO. 5: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 92'-0" AND < 108'-0".
6. CASE NO. 4: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 81'-0" AND < 92'-0".
7. CASE NO. 3: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 70'-0" AND < 81'-0".
8. CASE NO. 2: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 60'-0" AND < 70'-0".
9. CASE NO. 1: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS > 50'-0" AND < 60'-0".
10. CASE NO. 1: LENGTH OF PARAPET MEASURED ALONG THE FLOWLINE IS < 50'-0".

PARAPET REINFORCEMENT DEVELOPED ELEVATION - CASE NO. 6

PARAPET REINFORCEMENT DEVELOPED ELEVATION - CASE NO. 7
<table>
<thead>
<tr>
<th>Case No.</th>
<th>Parapet Width</th>
<th>Parapet Location</th>
<th>Length Between Parapet</th>
<th>Case No.</th>
<th>Parapet Length</th>
<th>Length Between Parapet</th>
<th>Notes</th>
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<td>E110-15'</td>
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NOTES:
1. **Case No.** indicates the case number. **NOT FOR CONSTRUCTION**
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<tr>
<th>Span No.</th>
<th>Direction of Traffic</th>
<th>Parapet Location</th>
<th>Parapet Length Measured Along Bridge</th>
<th>Parapet Width</th>
<th>Case No.</th>
<th>Length Between Parapet Bar Spacing Varies</th>
<th>Control Joint Spacing Varies</th>
<th>No. of Parapet and Deck Bars Between Parapet Bars</th>
<th>Notes</th>
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<tr>
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**NOTES:**
1. FOR CASE NO. 50E SEE D/CSL. PA-05 THROUGH PA-05.
2. SEE DRAWING NO. 293-10 FOR CONSTRUCTION.

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**BRANDYWINE RIVER BRIDGE**

**REHABILITATION OF I-95**

**PA5 SERIES**

**PA5YXE**

**LONGITUDINAL BAR**

**PARAPET DETAILED - 7**

**SCALE AS NOTED**

**NOT FOR CONSTRUCTION**
<table>
<thead>
<tr>
<th>Span No.</th>
<th>Direction of Traffic</th>
<th>Parapet Location</th>
<th>Parapet Length Measured Along Run Line</th>
<th>Parapet Width</th>
<th>Case No.</th>
<th>Length Between Contraction Joints Varies</th>
<th>Control Joints Spacing Varies</th>
<th>Parapet Vertical Spacing Varieties</th>
<th>No. of Parapet and Deck Bars Between Contraction Joints</th>
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<td>56</td>
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<td>1'-5/8&quot;</td>
<td>Case No. 6</td>
<td>29'-10 4/8&quot;</td>
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<td>9'-11 6/8&quot;</td>
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<td>11'-7 3/8&quot;</td>
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<td>EXTERIOR</td>
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<td>32'-8 3/8&quot;</td>
<td>11'-7 3/8&quot;</td>
<td>11'-5&quot;</td>
<td>53</td>
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</tbody>
</table>

NOTES:
1. For Case No., refer to DWG. PA-03
2. Diagram PA-03

NOT FOR CONSTRUCTION
PLAN - I-95 SB PARAPET LAYOUT, SPANS 21 TO 26

NOTES:
1. ORIENTATION DIMENSIONS BY STATION ARE MEASURED FROM CONSTRUCTION BASELINE I-95 TO FLOW LINE AT ENDS OF PARAPETS. MEASUREMENTS ARE PERPENDICULAR TO LOCAL TANGENT AT NOTED STATION.

2. FENCE, RAILROAD PROTECTIVE BARRIERS, DECORATIVE BARRIER, LIG...
SECTION AT 2" POWER UPPER J.B. 

SECTION AT 2" POWER LOWER J.B. 

SECTION AT 4" ITS J.B. 

ELEVATION - PARAPET W/ J.B.'S ON BRIDGE 

NOTES: 

1. Junction boxes should be placed centered between joints in the parapet. 

2. Expansion, contraction, and control joints are shown for graphical purposes only. Junction boxes may be located between any combination of the TJs. 

3. For additional parapet and reinforcement details, see DWG. PA-01. 

4. Cut of junction boxes, conduit, and drains embedded in parapets and boxes shall be at parapet edge - Portland cement concrete; weight, parapet, Class A. 

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE 

SCALE AS NOTED 

CONTRACT SIGNED:

DEPARTMENT OF TRANSPORTATION

COUNTY OF NEW CASTLE 

WAG 

WRA 

NEW CASTLE 

BRANDYWINE RIVER BRIDGE 

FROM I-495 TO NORTH OF 

REHABILITATION OF I-95 

T201407404 

PA-11 

NOT FOR CONSTRUCTION
NOTES:

1. Junction boxes should be placed centered between joints in the parapet.

2. Contraction, control, and expansion units shown in PA-01 are shown for graphical purposes only. Junction boxes may be located between any contraction of these. 

3. For additional parapet and reinforcement details, see drawing PA-01.

4. Costs of junction boxes, conduit, and drains enclosed in parapets and other shall be determined to nearest $1000 - Portland cement concrete masonry, parapet, class A.

5. See lighting plans for locations and details on conduit extensions.

J. B. CONNECTION TO SUBSTRUCTURE POWER FEED AND LIGHTING

1" = 1'-0"
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
<table>
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<th>SPAN NO.</th>
<th>DIRECTION OF TRAFFIC</th>
<th>LIGHT STANDARD NO.</th>
<th>LIGHT POLE STATION</th>
<th>LIGHT POLE OFFSET</th>
<th>OVERHANG LENGTH</th>
<th>DEVELOPMENT LENGTH</th>
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<td>SOUTHBOUND</td>
<td>LS-30</td>
<td>1334+525.1</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>44</td>
<td>SOUTHBOUND</td>
<td>LS-31</td>
<td>1334+543.7</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>45</td>
<td>SOUTHBOUND</td>
<td>LS-32</td>
<td>1334+562.3</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>46</td>
<td>SOUTHBOUND</td>
<td>LS-33</td>
<td>1334+580.9</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>47</td>
<td>SOUTHBOUND</td>
<td>LS-34</td>
<td>1334+609.5</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>48</td>
<td>SOUTHBOUND</td>
<td>LS-35</td>
<td>1334+628.1</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>49</td>
<td>SOUTHBOUND</td>
<td>LS-36</td>
<td>1334+646.7</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>50</td>
<td>SOUTHBOUND</td>
<td>LS-37</td>
<td>1334+665.3</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>51</td>
<td>SOUTHBOUND</td>
<td>LS-38</td>
<td>1334+683.9</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>52</td>
<td>SOUTHBOUND</td>
<td>LS-39</td>
<td>1334+702.5</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>53</td>
<td>SOUTHBOUND</td>
<td>LS-40</td>
<td>1334+721.1</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>54</td>
<td>SOUTHBOUND</td>
<td>LS-41</td>
<td>1334+739.7</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
<tr>
<td>55</td>
<td>SOUTHBOUND</td>
<td>LS-42</td>
<td>1334+758.3</td>
<td>56.8 ft.</td>
<td>5.36</td>
<td>5.75</td>
</tr>
</tbody>
</table>

**NOTES:**
1. FOR LIGHT BRACKET DETAILS, REFER TO BT-02.
2. SCALE AS NOTED.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
FENCE AND BARRIER LAYOUT

NOTES:
1. FOR DECORATIVE BARRIER DETAILS, SEE DRAWING RA-10.
2. PARAPET IN SPANS WITH DECORATIVE BARRIER IS 1'-7" WIDE, SEE DRAWING RA-07 FOR DETAIL.
3. IN SPANS 51N THROUGH 59N, POSTS AND PANELS OF REFURBISHED DECORATIVE BARRIER SHALL BE MOUNTED ON EXISTING REBAR REELS.

BASELINE CONSTRUCTION RAMP E

BASELINE CONSTRUCTION I-95

PROPOSED LIGHT POLE (TYP.)

EXISTING ANCHOR RODS.

Refurbished decorative barrier shall be re-mounted on existing rebar reels.

Parapet in spans with decorative barrier is 1'-7" wide, see drawing RA-07 for detail.

Refs: in spans 51N through 59N, posts and panels of refurbished decorative barrier shall be mounted on existing rebar reels.

For decorative barrier details, see drawing RA-10.
NOT FOR CONSTRUCTION
1. For decorative barrier details, see Dwg. RA-10.
2. Parapet in spans with decorative barrier is 1'-7" wide. See Dwg. PA-10 for details.
3. In spans 51N through 59N, posts and new panels of rehabilitated decorative barriers shall be mounted on existing anchor rods.

STA. 1315+98.71
End Decorative Barrier,

STA. 1316+00
Begin 36" F-shape barrier,

STA. 1316+73.92
69'-11"±

STA. 1317+00
90'-0"

STA. 1318+00
76'-0"

STA. 1319+00
69'-11"±

51N - 59N
Base Line Construction I-95

SCALE
FEET
0
10
20
30

1315+00
80'-8"

1316+00
80'-7"

1317+00
80'-7"

1318+00
80'-8"

1319+00
80'-8"

NOTES:

1. For decorative barrier details, see Dwg. RA-10.
2. Parapet in spans with decorative barrier is 1'-7" wide. See Dwg. PA-10 for details.
3. In spans 51N through 59N, posts and new panels of rehabilitated decorative barriers shall be mounted on existing anchor rods.
NOT FOR CONSTRUCTION
RAILROAD PROTECTIVE BARRIER NOTES:

1. COST TO REMOVE THE EXISTING RAILROAD PROTECTIVE BARRIER WILL BE INCIDENTAL TO ITEM 21300 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

2. ALUMINUM PANELS, POSTS, AND BASE PLATES SHALL BE IN ACCORDANCE WITH SECTION 1044. PAYMENT WILL BE MADE UNDER ITEM 7270xx - RAILROAD PROTECTIVE BARRIER.

3. EXISTING DECORATIVE BARS ON THE EXISTING BARRIER SHALL BE SALVAGED, CLEANED AND PAINTED TO ACCURATELY MATCH THE EXISTING BARRIERS. PAYMENT WILL BE INCIDENTAL TO ITEM 7270xx - RAILROAD PROTECTIVE BARRIER.

4. NUTS AND BOLTS SHALL BE IN CONFORMANCE WITH ASTM A 320 TYPE 304 (S.S.). WASHERS SHALL BE OVERSIZED TO COVER THE 1/2" HOLES IN BASE PLATE. PAYMENT FOR ALL HARDWARE IN EXISTING STRUCTURES WILL BE INCIDENTAL TO ITEM 7270xx - RAILROAD PROTECTIVE BARRIER.

5. ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL BE IN ACCORDANCE WITH SUBSECTION 520.33.C.8.
DECORATIVE BARRIER NOTES:

1. COST TO REMOVE AND SALVAGE THE EXISTING DECORATIVE BARRIER WILL BE INCIDENTAL TO ITEM 7275xx - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

2. ALUMINUM PANELS SHALL BE IN ACCORDANCE WITH SECTION 1044. PAYMENT FOR NEW ALUMINUM PANELS WILL BE MADE UNDER ITEM 7275xx - INSTALL DECORATIVE BARRIER.

3. EXISTING ALUMINUM POSTS TO BE SALVAGED, CLEANED AND REPLACED IN ACCORDANCE WITH THE REPAIRS' SPEC. PAYMENT WILL BE INCIDENTAL TO ITEM 7275xx - REINSTALL DECORATIVE BARRIER.

4. EXISTING DECORATIVE BARRIER ON THE EXISTING PANELS SHALL BE SALVAGED, CLEANED AND REPLACED IN ACCORDANCE WITH THE REPAIRS' SPEC. PAYMENT WILL BE INCIDENTAL TO ITEM 7275xx - REINSTALL DECORATIVE BARRIER.

5. NUTS AND WASHERS SHALL BE IN CONFORMANCE WITH ASTM A 320 TYPE 304 (S.S.). PAYMENT FOR NEW NUTS AND WASHERS WILL BE INCIDENTAL TO ITEM 7275xx - REINSTALL DECORATIVE BARRIER.

6. ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 626.03.C.8.
**Legend:**
- **Red** = Removal Limits
- **Blue** = Access to Parapet

**Addenda / Revisions**
- SCALE AS NOTED
- MEDIAN PARAPET RECONSTRUCTION - REINFORCEMENT (PIERS 1 THROUGH 9)

**Notes:**
1. Diagrams shown for a 32" median parapet, 36" parapet and rectangular similar.

**Typical Section at Joint**

**Parapet Joint Plate Notes:**
1. Form concrete recess area in parapet and grind to provide smooth surface. Apply one coat of asphalt primer to allow concrete to adhere to steel. Apply 1-1/2" asphalt emulsion system, followed by two coats of asphalt. Allow to dry for 10 days. (Note: Additional coating thickness may be required.)
2. Place parapet concrete with steel bent plates, inserts, and bolts in place to ensure proper alignment of inserts and bolts. Remove plates to install seal. Apply approved sealant to locations where plates were removed.
3. Grind all steel edges exposed to traffic to 3/16" radii.
4. Bolts shall be ASTM A304 stainless steel countersunk screw with ASTM A108 concrete threaded anchor or threaded inserts. Head of bolts shall be flush with face of steel plate.
5. The contractor shall submit working drawings of traffic barrier plates for approval.
6. For additional notes and details, see DWG. EX-XX.
7. BY PARAPET PLATES SHALL BE UNPAINTED GALVANIZED STEEL. PAYMENT FOR PARAPET JOINT PLATES AND PARTIAL REMOVAL OF PARAPET FOR JOINT RECONSTRUCTION WILL BE INCIDENTAL TO ITEM NO. 624000 - PREFABRICATED JOINT SYSTEM.
8. PLACE PARAPET CONCRETE WITH STEEL BENT PLATES, INSERTS, AND BOLTS IN PLACE TO ENSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE PLATES TO INSTALL SEAL. APPLY APPROVED SEALANT TO LOCATIONS WHERE PLATES WERE REMOVED.

**Existing Median Parapet Removal at Expansion Joints** (PIERS 1 THROUGH 9)

**Existing Parapet Joint Plates:**
- MEDIAN PARAPET RECONSTRUCTION - REINFORCEMENT (PIERS 1 THROUGH 9)

**NOTE:**
- SEE DETAIL ON DWG. PA-XX FOR MEDIAN PARAPET DIMENSIONS.
- MEDIAN PARAPET RECONSTRUCTION - REINFORCEMENT (PIERS 1 THROUGH 9)

**Parapet Joint Plate Notes:**
1. Form concrete recess area in parapet and grind to provide smooth surface. Apply one coat of asphalt primer to allow concrete to adhere to steel. Apply 1-1/2" asphalt emulsion system, followed by two coats of asphalt. Allow to dry for 10 days. (Note: Additional coating thickness may be required.)
2. Place parapet concrete with steel bent plates, inserts, and bolts in place to ensure proper alignment of inserts and bolts. Remove plates to install seal. Apply approved sealant to locations where plates were removed.
3. Grind all steel edges exposed to traffic to 3/16" radii.
4. Bolts shall be ASTM A304 stainless steel countersunk screw with ASTM A108 concrete threaded anchor or threaded inserts. Head of bolts shall be flush with face of steel plate.
5. The contractor shall submit working drawings of traffic barrier plates for approval.
6. For additional notes and details, see DWG. EX-XX.
7. BY PARAPET PLATES SHALL BE UNPAINTED GALVANIZED STEEL. PAYMENT FOR PARAPET JOINT PLATES AND PARTIAL REMOVAL OF PARAPET FOR JOINT RECONSTRUCTION WILL BE INCIDENTAL TO ITEM NO. 624000 - PREFABRICATED JOINT SYSTEM.
8. PLACE PARAPET CONCRETE WITH STEEL BENT PLATES, INSERTS, AND BOLTS IN PLACE TO ENSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE PLATES TO INSTALL SEAL. APPLY APPROVED SEALANT TO LOCATIONS WHERE PLATES WERE REMOVED.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
### Notes:
1. For joint reconstruction notes, see EX-01.
2. For section, see EX-08.

### Section
- Plan - Piers 13 through 17
  - Note: 1'-0" = "
- Plan - Pier 18
  - Note: 1'-0" = "
  - Note: For section, see EX-08.

### Addenda / Revisions
- See DWG. PA-XX for parapet reconstruction.
- See DETAIL B, DWG. EX-XX for median parapet reconstruction.

### Scale
- Scale as noted.
NOT FOR CONSTRUCTION
EXISTING MEDIAN PARAPET REMOVAL AT EXPANSION JOINTS (PIERS 13 THROUGH 19)  
1'-0" + 1'-0"

MEDIAN PARAPET RECONSTRUCTION - REINFORCEMENT (PIERS 13 THROUGH 19)  
1'-0" + 1'-0"

NOTES:
1. DETAILS SHOWN FOR 32" MEDIAN PARAPET, 36" PARAPET SIMILAR.
2. FOR INFORMATION OF VIEW B-B, TYPICAL SECTION AT JOINT, AND PARAPET JOINT PLATE NOTES SEE DWG. EX-02.

LEGEND:
- REBAR LIMITS
- REBAR IN PARAPET

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOTE ON DWG. EX-02:
* SEE PARAPET JOINT PLATE
  3" RECESS IN CONCRETE, SEE TABLE ON DWGS. EX-XX AND EX-XX
  EXPANSION JOINT OPENING + 3" GAP = EXP. JOINT

TRAFFIC

FLOWLINE

VIEW A-A

VIEW B-B

NOTE ON DWG. EX-02 (TYP.)
SEE PARAPET JOINT PLATE

†" RECESS IN CONCRETE, (SEE TABLE ON DWGS. EX-XX AND EX-XX)

X", EXP. JOINT OPENING

PARAPET JOINT PLATE NOTES SEE DWG. EX-02.
NOT FOR CONSTRUCTION
STRIP SEAL EXPANSION JOINT NOTES:

1. Steel for deck joints and steel expansions shall be ASTM A709, CR 36 with A325 at minimum.

2. Neoprene expansion joint shall be capable of sealing the deck to prevent moisture and other contaminants from traveling through the joint.

3. The expansion joint shall include a stop joint, if required by the elevation geometry of the expansion joint used, to provide a 1" joint opening at deck.

4. The expansion joint shall be installed in one piece across the bridge, with splicing of the strip seal not permitted.

5. The expansion joint system is plan for use over expansion joint - prefabricated expansion joint system, 2".

6. Steel expansion shall be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

7. Steel expansion shall be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

8. Lubrication of holes for use in metal and concrete expansion elements and steel joint components shall be a one-quart moisture-curing polyurethane and hydrocarbon solvent mixture having the following physical properties:

   - Film strength, as per ASTM D-412: 250%
   - Solids content: 65%
   - Average weight, pounds per gallon: 8±10%

9. Limits of joint opening (Y) as noted in the table shall be calculated as noted. The minimum joint opening shall be 2". The maximum joint opening shall be 2 3/8".

10. The expansion joint system shall be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

11. Anchor plate and steel expansion shall be made to be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

12. Anchor plate and steel expansion shall be made to be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

13. Anchor plate and steel expansion shall be made to be not小于1/4" on average, fitting joint requirements. Distortion of parts from fabrication will be corrected at site to ensure proper alignment of components when assembling the joint system.

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LIMITS OF APPROACH SLAB REMOVAL

21'-1"±

LMC OVERLAY TO BE REMOVED

TO REMAIN

EXISTING GIRDER

1'-3"±

1'-6"±

4"±

TO REMAIN

EXISTING DECK

EXISTING REINFORCEMENT TO REMAIN

BEARING NORTH ABUTMENT

PROPOSED LMC OVERLAY

LEGEND:

REMOVAL LIMITS

PROPOSED CONSTRUCTION

SEE PLAN THIS SHEET)

DK5XXE (BETWEEN GIRDERS - 3 - DK5XXE SPACED AS SHOWN

BEARING NORTH ABUTMENT

C

L

TO REMAIN

EXISTING GIRDER

EXISTING DECK

EXISTING REINFORCEMENT TO REMAIN

NOTE:

1. FOR SECTION B-B, SEE DWG. EX-XX.

BOND BREAKER

SEE DWG. AS-03 FOR DETAILS

APPROACH SLAB CONSTRUCTION JOINT

OF 4 MIL POLYETHYLENE SHEETING AS A BOND BREAKER

FOR SLIDING SURFACE, TROWEL AND PROVIDE 2 LAYERS CONCRETE

1'-0"

HEADER

FOR DETAILS THROUGH AS-12

SEE DWGS. AS-09

APPROACH SLAB

NORTH ABUTMENT

C

L

TO REMAIN

BACKWALL

OF EXISTING

REAR FACE

TO REMAIN

BACKWALL

OF EXISTING

FRONT FACE

TO REMAIN

BACKWALL

OF EXISTING

FRONT FACE

NORTH ABUTMENT

C

L

D E L D O T

B R I D

G E N

D E S

I G N

N O T E S :
PLAN - TYPICAL DECKOVER DETAIL AT OVERHANG
(SOUTH ABUTMENT, EAST END SHOWN, OTHER LOCATIONS SIMILAR)

SECTION A-A
1/8" = 1'-0"

SECTION B-B
1/8" = 1'-0"

EXISTING GIRDERS

DECK OVERHANG

TOP OF BACKWALL
1" CLOUSER CELL NEOPRENE SPONGE JOINT MATERIAL, FASTENED TO VERTICAL FACE OF BACKWALL WITH COPPER NAILS

FACE OF EXISTING ABUTMENT

FACE OF EXISTING ABUTMENT

EXISTING GIRDERS

ABOVE LINE ON EACH FACE, PULL TOP OF BACKWALL

ABOVE (BOLDED) WITH EXISTING REINFORCEMENT TO PROVIDE 2" CL. (TYP.)

EXISTING REINFORCEMENT

NECK, E.F.

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

SCALE AS NOTED

DECKOVER DETAILS

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SCUPPER DETAILS

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SECTION A-A - NORTHBOUND APPROACH SLAB

SECTION A-A - SOUTHBOUND APPROACH SLAB

NOTES:
1. FOR APPROACH SLAB A PLAN, SEE DWG. AS-01.
2. OUTSIDE FACE OF PARAPETS SHALS BE CONSTRUCTED FlUSH WITH FRONT FACE OF EXISTING PARAPETS.
3. LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET.
   FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF POLYETHYLENE SHEETING SLIDING SURFACE

LIMIT OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET.

PARAMETERS Coupled

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
SEE SECTION E-E ON DWG. AS-04
FOR MEDIAN PARAPET REINFORCEMENT,
LIMITS OF POLYETHYLENE SHEETING SLIDING SURFACE
55'-7"±

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF SILICONE ACRYLIC CONCRETE SEALERS SHALL EXTEND
FRONT FACE OF EXISTING WINGWALLS.
OUTSIDE FACE OF PARAPETS SHALL BE CONSTRUCTED FLUSH WITH

TROWEL AND PROVIDE
FOR SLIDING SURFACE,
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET
LIMITS OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET

LIMITS OF SILICONE-BASED NOURISH
CONCRETE SEALER ON PARAPET

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF SILICONE ACRYLIC CONCRETE SEALERS SHALL EXTEND
FRONT FACE OF EXISTING WINGWALLS.
OUTSIDE FACE OF PARAPETS SHALL BE CONSTRUCTED FLUSH WITH

TROWEL AND PROVIDE
FOR SLIDING SURFACE,
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET
LIMITS OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET

LIMITS OF SILICONE-BASED NOURISH
CONCRETE SEALER ON PARAPET

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF SILICONE ACRYLIC CONCRETE SEALERS SHALL EXTEND
FRONT FACE OF EXISTING WINGWALLS.
OUTSIDE FACE OF PARAPETS SHALL BE CONSTRUCTED FLUSH WITH

TROWEL AND PROVIDE
FOR SLIDING SURFACE,
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET
LIMITS OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET

LIMITS OF SILICONE-BASED NOURISH
CONCRETE SEALER ON PARAPET

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF SILICONE ACRYLIC CONCRETE SEALERS SHALL EXTEND
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OUTSIDE FACE OF PARAPETS SHALL BE CONSTRUCTED FLUSH WITH

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FOR SLIDING SURFACE,
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET
LIMITS OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET

LIMITS OF SILICONE-BASED NOURISH
CONCRETE SEALER ON PARAPET

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.

LIMIT OF SILICONE ACRYLIC CONCRETE SEALERS SHALL EXTEND
FRONT FACE OF EXISTING WINGWALLS.
OUTSIDE FACE OF PARAPETS SHALL BE CONSTRUCTED FLUSH WITH

TROWEL AND PROVIDE
FOR SLIDING SURFACE,
LIMITS OF SILICONE-BASED ACRYLIC CONCRETE SEALER ON PARAPET
LIMITS OF SILICONE-BASED POLYUREA CONCRETE SEALER ON PARAPET

LIMITS OF SILICONE-BASED NOURISH
CONCRETE SEALER ON PARAPET

SEE SECTION D-D ON DWG. AS-03
FOR EXTERIOR PARAPET REINFORCEMENT,
PARAPET, SEE NOTE 3
OF EXTERIOR
OUTSIDE FACE
FROM INSIDE FACE OF PARAPET TO EXISTING GROUNDLINE.
APPRAOCH SLAB AND MEDIAN PARAPET

NOTES:
1. FOR ADDITIONAL APPROACH SLAB AND MEDIAN PARAPET DETAILS SEE DWG. AS-01 THROUGH AS-03.

APPROACH SLAB MEDIAN PARAPET REINFORCEMENT ELEVATION

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
PLAN - SOUTH ABUTMENT SLEEPER SLAB

---

1. For approach slab plan and details, see Dwg. AS-01 through AS-04.
2. For Sections F-F, G-G, and H-H, see Dwg. AS-06.
4. For approach slab plan and details, see Dwg. AS-01 through AS-04.
5. Note: Armor angles not shown for clarity.
NOT FOR CONSTRUCTION
SECTION M-M - SOUTHBOUND APPROACH SLAB

SECTION M-M - NORTHBOUND APPROACH SLAB

NOTES:
1. FOR APPROACH SLAB 3 PLAN, SEE DWG. AS-08.

SEE SECTION S-S ON DWG. AS-11 FOR INTERIOR PARAPET REINFORCEMENT.

SEE SECTION R-R ON DWG. AS-10 FOR EXTERIOR PARAPET REINFORCEMENT.

NOT FOR CONSTRUCTION
**Bridge No. BR-1-748_05**

### Section N-N

- **Note A:**
  - Transverse reinforcement changes are shown in the existing backwall.
  - Footings are shown for the approach slab.
  - Approach slab construction joint details are shown.

### Section P-P

- **Note:**
  - Transverse reinforcement not shown in the sleeper slab and approach slab for clarity.
  - Transverse reinforcement is shown for the approach slab.

### Section R-R

- **Notes:**
  1. For armored strip seal expansion joint details, see Dwg. AS-15.
  2. For additional approach slab reinforcement details, see Dwg. AS-08 and AS-09.
  3. For polymer concrete paving, bonded dowel, waterstop, deep saw cut, PVC pipe, and other polyethylene sheeting, see Dwg. AS-10.
  4. For additional rubber seal expansion joint details, see Dwg. AS-15.

### Approach Slab Parapet Reinforcement Elevation - Interior and Northbound Exterior Parapet

- **Details:**
  - See section R-R on Dwg. AS-09 for additional details.
  - See section N-N on Dwg. AS-08 for additional details.

---

**NOT FOR CONSTRUCTION**
NOTE:
REINFORCEMENT NOT SHOWN IN SLEEPER SLAB AND APPROACH SLAB FOR CLARITY.

NOTES:
1. FOR ADDITIONAL APPROACH SLAB B REINFORCEMENT DETAILS SEE DWG. AS-08

SEE SECTION M-M ON DWG. AS-09 FOR APPROACH SLAB REINFORCEMENT

See Section 4-W on DWG. AS-08
FOR PARAPET DIMENSIONS, SEE DWG. PA-01
FOR APPROACH SLAB REINFORCEMENT

SCALE AS NOTED

NOT FOR CONSTRUCTION
PLAN - NORTH ABUTMENT SLEEPER SLAB

NOTES:
1. FOR APPROACH SLAB B PLAN AND DETAILS, SEE DWG. AS-08 THROUGH AS-11.

1. FOR APPROACH SLAB B PLAN AND DETAILS, SEE DWG. AS-08 THROUGH AS-11.

NOTES:
1. FOR APPROACH SLAB B PLAN AND DETAILS, SEE DWG. AS-08 THROUGH AS-11.

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NOTES:
1. FOR APPROACH SLAB B PLAN AND DETAILS, SEE DWG. AS-08 THROUGH AS-11.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
DESIGN SPECIFICATIONS:

3. STRUCTURAL STEEL:
- PERMANENT BRIDGE MEMBERS.
- PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION.
- TACK WELDING IS PERMITTED EXCEPT AS NOTED ON THE PLANS.
- NO OTHER TACK WELDING WILL BE PERMITTED, EXCEPT AS NOTED ON THE PLANS.
- MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE.
- REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.
- BAR REINFORCEMENT:
  - RAILROAD PROTECTIVE BARRIER (TO BE SALVAGED)
  - TRAFFIC SIGNS
  - DECK JOINTS
  - SHEAR STUDS
  - CONCRETE DECK
  - ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND APPROPRIATE ONLY.
  - CONTRACTOR SHALL NOTIFY BRIAN MITCHELL AT (302) 576-3089 AT LEAST 1 WEEK PRIOR TO COMMENCEMENT OF WORK ON ALL EXISTING UTILITY ITEMS.
  - LIVE LOAD DISTRIBUTION TO THE GIRDERS IS BASED ON THE AASHTO SIMPLIFIED METHOD.
  - LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
  - THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO SPECIFICATIONS.
  - NEW CASTLE COUNTY
  - WILMINGTON
  - CITY OF NEWARK
  - CITY OF WILMINGTON
  - ENAMEL PAINT
  - HORIZONTAL CLEARANCES
  - ROADWAY CLEARANCES:
    - ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND APPROPRIATE ONLY.
    - LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
    - THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO SPECIFICATIONS.
    - NEW CASTLE COUNTY
    - WILMINGTON
    - CITY OF NEWARK
    - CITY OF WILMINGTON
    - ENAMEL PAINT
    - HORIZONTAL CLEARANCES
    - ROADWAY CLEARANCES:
      - ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND APPROPRIATE ONLY.
      - LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.
      - THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO SPECIFICATIONS.
19. Norfolk Southern will be provided as-built drawings of the bridges showing the actual clearances as constructed. Depths, size, and location of all foundation components shall be shown on the drawings.

20. All railroad safety training:
   All personnel shall receive Norfolk Southern Safety training prior to entering Norfolk Southern Railroad Company Property. Norfolk Southern Safety Training expires after one (1) year. Such personnel may need to repeat the training course. In addition, the Contractor shall comply with all OSHA regulations. Refer to the specifications and item 801501 - Maintenance of railroad traffic for additional information.
DEEP SPALL REPAIR NOTES

1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT. DELAMINATED CONCRETE HAS BEEN ASSUMED AS DEEP SPALL REPAIRS.

2. 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 WITHOUT CONSENT OF CONTRACTOR IS PERMITTED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO DEEP SPALL REPAIRS.

3. IF DEPTH OF REPAIR EXCEEDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

REHABILITATION OF PCC MASONRY NOTES

1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXTEND RELATIVE TO THE C.C. SURFACE."A" IN A SINGLE AREA.

2. 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 WITHOUT CONSENT OF CONTRACTOR IS PERMITTED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO REHABILITATION OF PCC MASONRY.

3. DETAIL SHEET FOR "REHABILITATION OF EXISTING PCC MASONRY" UTILIZES A GENERIC EXAMPLE USING PARTIAL RECONSTRUCTION OF AN EXISTING PIER CAP. SEE ATTACHMENT AND PLAN DETAIL SHEETS FOR SIZE AND LOCATION OF REPAIRS AT EACH SUBSECTION UNIT.

4. IF DEPTH OF REPAIR EXCEEDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.
## Quantities

<table>
<thead>
<tr>
<th>Item No</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
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<tr>
<td>31001</td>
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<tr>
<td>31003</td>
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### Load Rating Summary

**Design Vehicle**
- HL-93 Truck (Inventory)
- HL-93 Tandem (Inventory)
- HS-20 (Inventory)
- HL-93 Truck (Operating)
- HL-93 Tandem (Operating)

**Service Levels**
- DES220 & Legal-Lane (Legal)
- DES335 & Legal-Lane (Legal)
- DES437 & Legal-Lane (Legal)
- DES330 & Legal-Lane (Legal)
- DES435 & Legal-Lane (Legal)
- DES540 & Legal-Lane (Legal)

**Load Effect**

<table>
<thead>
<tr>
<th>Load Effect</th>
<th>Rating</th>
<th>Rating Weight</th>
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**Note:** Load rating includes future wearing surface as noted in the plans.

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### Load Rating Summary

**Design Vehicle**
- HL-93 Truck Train (Operating)
- HL-93 Truck Train (Inventory)
- HS-20 (Operating)

**Service Levels**
- DES220 & Legal-Lane (Legal)
- DES335 & Legal-Lane (Legal)
- DES437 & Legal-Lane (Legal)
- DES330 & Legal-Lane (Legal)
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- DES540 & Legal-Lane (Legal)

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### Load Rating Summary

**Design Vehicle**
- HL-93 Truck Train (Operating)
- HL-93 Truck Train (Inventory)
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**Service Levels**
- DES220 & Legal-Lane (Legal)
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- DES437 & Legal-Lane (Legal)
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- DES435 & Legal-Lane (Legal)
- DES540 & Legal-Lane (Legal)

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**Note:** Load rating includes future wearing surface as noted in the plans.
### Demolition Notes:
1. All work shall include removal of street signs. Care shall be taken to avoid damage to the existing structure. Any damage to the existing structure to remain shall be repaired at the contractor's expense to the satisfaction of the engineer.

### LMC Overlay Notes:
1. Penetrating construction joints in the LMC overlay will not be permitted. The overlay shall be placed full width of the bridge deck from edge to edge.

#### Repair Description

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item Description</th>
<th>Unit Qty</th>
<th>QTY</th>
<th>Location</th>
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<td>CY 10</td>
<td>166</td>
<td>Entire Bridge</td>
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<tr>
<td>1.000001</td>
<td>Deep Spall</td>
<td>CY 10</td>
<td>166</td>
<td>Entire Bridge</td>
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<tr>
<td>1.000002</td>
<td>Epoxy Concrete</td>
<td>CY 10</td>
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<td>Entire Bridge</td>
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<tr>
<td>1.000003</td>
<td>Deep Spall</td>
<td>CY 10</td>
<td>166</td>
<td>Entire Bridge</td>
</tr>
</tbody>
</table>

#### Addenda / Revisions

- Brandewine River Bridge
- Rehabilitation of I-95 from I-495 to North of Brandywine River Bridge
- Contract I-95
- CAD Bridge Bridge BR 1-749 _ PN 02.dgn
- 5/31/20

#### Additional Notes

- See demolition notes below.
- See LMC overlay notes below.

---

NOT FOR CONSTRUCTION
EXISTING TYPICAL SECTION
(STA. 110+32.19 TO 112+71.84

NOTES:
1. FOR PARAPET DETAIL, DRIP NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL SEE ENG. PA-01.
2. FOR LIMITS OF BRIDGE SAFETY FENCE AND RAILROAD PROTECTIVE BARRIER, SEE ENG. RA-01. FOR DETAILS SEE STANDARD NO. M-10 BRIDGE SAFETY FENCE AND RAILROAD PROTECTIVE BARRIER. APPLY SILICONE-BASED ACRYLIC SEALER ON PARAPET PRIOR TO INSTALLATION OF BRIDGE SAFETY FENCE AND RAILROAD PROTECTIVE BARRIER.
3. EXISTING BRIDGE I-748N ADJACENT TO BRIDGE I-749 NOT SHOWN FOR CLARITY.
4. SEE TABLE ON DWG. FD-01 FOR CROSS SLOPE TRANSITIONS.
5. ALL WORK ON BR 1-749 TO BE PERFORMED IN STAGE 2.
6. THE TOP SURFACE OF THE CLASS D CONCRETE DECK SHALL BE ROUNDED FINISHED TO A RADIUS NOT HIGHER THAN 1/16" IN ORDER TO PROVIDE A RESILIANT SURFACE FOR BONDING WITH THE LMC OVERLAY.

PROPOSED TYPICAL SECTION
(STA. 110+32.19 TO 112+71.84

LEGEND:
1 + X = SPAN NUMBER

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOTE: FOR CONSTRUCTION
EXISTING TYPICAL SECTION
(STA. 113+46 TO 114+20)

PROPOSED TYPICAL SECTION
(STA. 113+46 TO 114+20)

NOTES:
1. THICKNESS OF DECK AND WEARING SURFACE VARY AT WIDENED PORTION OF BRIDGE.
2. FOR PARAPET DETAIL, DRIP NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL SEE SHEET PA-01.
3. EXISTING BRIDGE I-748 NOT SHOWN FOR CLARITY.
4. SEE TABLE ON DWG. FD-01 FOR CROSS SLOPE TRANSITIONS.
5. ALL WORK ON BR 1-749 TO BE PERFORMED IN STAGE 2.
6. THE TOP SURFACE OF THE CLASS D CONCRETE DECK SHALL BE ROUGH FINISHED TO A FULL AMPLITUDE OF ." THE CONCRETE SHALL BE EXAMINED TRANSVERSELY WITH A SCALE AND BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGH FINISHED SURFACE FOR BONDING WITH THE LMC OVERLAY.
EXISTING TYPICAL SECTION  
(STA. 114+20.42 TO 114+94.50)  
5'-0" x 1'-0"

PROPOSED TYPICAL SECTION  
(STA. 114+20.42 TO 114+94.50)  
5'-0" x 1'-0"

NOTES:
1. THICKNESS OF DECK AND WEARING SURFACE VARY AT WIDENED PORTION OF BRIDGE.
2. FOR PARAPET DETAIL, DRIP NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL SEE DWG. FN-01.
3. EXISTING BRIDGE 1-HAR TO BRIDGE 1-HAR NOT SHOWN FOR CLARITY.
4. SEE TABLE ON DWG. FD-01 FOR CROSS SLOPE TRANSITIONS.
5. ALL WORK ON BR 1-749 TO BE PERFORMED IN STAGE 2.
6. THE TOP SURFACE OF THE CLASS D CONCRETE DECK SHALL BE HOUGH FINISHED TO A FULL AMPLITUDE OF '. THE CONCRETE SHALL BE SCRUBBED TRANSVERSELY WITH A COURSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING WITH THE LMC OVERLAY.

SEE NOTE 4
CONTRACT
COUNTY
DESIGNED BY:
CHECKED BY:
BRIDGE NO.
ADDENDA / REVISIONS
SECTION
SHEET NO.

NOTES:

LEGEND:

DEEP SPALL REPAIR
SILICONE-BASED ACRYLIC CONCRETE SEALER

CONCRETE REPAIR QUANTITIES

ITEM NO.
ITEM TITLE
UNIT
QUANTITY

RAMP A ABUTMENT

CONCRETE REPAIR DETAILS

NOTE:

LEFT PILES NOT SHOWN FOR CLARITY.

RAMP A ABUTMENT ELEVATION

RAMP A ABUTMENT

SCALE AS NOTED

REHABILITATION OF I-95
FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOTES:

1. The location and quantities of the repairs shown on this drawing are based on inspection field notes. These notes do not reflect the conditions when the repairs are to be completed. Before starting each repair, the limits shall be verified on site by the Contractor in the presence of the Engineer.

2. Where cracks and spalls are shown concurrently, complete the deep spall repair first and then proceed with the crack repair. The Contractor shall remove the spall repair to expose the full extent of the crack and then repair the crack. If the crack extends beyond the limits of the spall repair, the Contractor shall remove the spall repair to full depth and then repair the crack.

3. For concrete repair details, see DWG. PN-01 and are approximate and do require verification.

4. Epoxy concrete sealer shall be applied to the beam seat and existing girder. Payment for this work will be incidental to Item 628001.

5. Contractor shall take care to protect the beam seat during application of the epoxy concrete sealer. Any cleanup required to clean the sealer from the beam seat will be at no additional cost to the Department and/or the Engineer.

1. The location and quantities of the repairs shown on this drawing are based on inspection field notes. These notes do not reflect the conditions when the repairs are to be completed. Before starting each repair, the limits shall be verified on site by the Contractor in the presence of the Engineer.

2. Where cracks and spalls are shown concurrently, complete the deep spall repair first and then proceed with the crack repair. The Contractor shall remove the spall repair to expose the full extent of the crack and then repair the crack. If the crack extends beyond the limits of the spall repair, the Contractor shall remove the spall repair to full depth and then repair the crack.

3. For concrete repair details, see DWG. PN-01 and are approximate and do require verification.

4. Epoxy concrete sealer shall be applied to the beam seat and existing girder. Payment for this work will be incidental to Item 628001.

5. Contractor shall take care to protect the beam seat during application of the epoxy concrete sealer. Any cleanup required to clean the sealer from the beam seat will be at no additional cost to the Department and/or the Engineer.

6. The Contractor shall notify the Engineer if the Crack extends beyond the limits of the spall repair into sound concrete. The Crack shall be repaired by Epoxy Injection and the Contractor shall take care to protect the beam seat and existing girder. Payment for this work will be incidental to Item 628001.

7. Epoxy concrete sealer and silicone-based acrylic concrete sealer shall be applied as noted. All repairs are completed at each pier.
AMTRAK RAILROAD PROTECTIVE SHIELD NOTES:

1. The protective shields are to be located in areas that affect Amtrak.

2. The protective shields are to be located in areas that affect Amtrak.

3. The protective shields are to be located in areas that affect Amtrak.

4. Transmission line shall be assumed to be less than 40' above ground.

5. Wind speed was assumed to be 70 MPH and the height of the temporary shield was 2.25 with 2008 Interims used to determine the wind load. Wind speed will not be grounds for time extension on contract. Any delays due to changes or approval of alternate system section 604 and Amtrak criteria submitted to the engineer and Amtrak or design an alternate system, it shall be designed in accordance with subsection 604.03.1 except calculations will not be required. If contractor elects to make changes to approved design or design an alternate system, it shall be designed in accordance with section 604 and Amtrak system and submitted to the engineer and Amtrak for approval. Any delays due to changes or approval of alternate system will not be grounds for time extension on contract.

6. Roof decking shall be from the following manufacturer's or approved equal:
   - C. ITW BUILDEX
   - B. HILTI INC.
   - A. SIMPSON STRONG-TIE

7. Metal screws shall be from following manufacturer's or approved equal:
   - A. C. VERCO DECKING INC.
   - B. ASC STEEL ROOF DECK
   - A. DACS INC.

8. Roof decking shall be from the following manufacturer's or approved equal:
   - A. DACS INC.

9. Structural steel including shims shall conform to ASTM A572 Grade 50.

10. All bolts shall conform to ASTM A325.

11. All nuts shall conform to ASTM F436.

12. All plates shall conform to ASTM A709.

13. All nuts shall conform to ASTM A563.

14. All threaded rod shall conform to ASTM A307.

15. No welding to existing steel will be permitted.

16. Amtrak protective shield type I, type II, and type III shall be in accordance with section 604 and will be paid for under Item 604001 - Protective Shields.
RAILROAD PROTECTIVE SHIELD - TYPE II

RAILROAD PROTECTIVE SHIELD - TYPE III - STA. 108+90 TO STA. 110+30

NOTES:
1. FOR PROTECTIVE SHIELD NOTES, SEE DM-01.
RAILROAD PROTECTIVE SHIELD - TYPE III - STA. 110+30 TO STA. 1200+03

NOTES:
1. FOR PROTECTIVE SHIELD NOTES, SEE DM-01.

SECTION C-C

W201407404

NOT FOR CONSTRUCTION
NOTES:

1. New H.S. bolts shall be ASTM F3125, GR. A325, TYPE 1.
2. See existing plans for additional sign support details.
3. After removal, rough up paints as required in accordance with Section 4.6 and as directed by the Engineer.

LEGEND:
- Limits of existing steel bracket to be removed

EXISTING BRACKET REMOVAL DETAIL

<table>
<thead>
<tr>
<th>REMOVE STRUCTURAL SIGN SUPPORT BRACKET</th>
</tr>
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<tbody>
<tr>
<td>REMARK</td>
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<tr>
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</tr>
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<td>120-06</td>
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</tbody>
</table>

NOT FOR CONSTRUCTION
### Existing Bearing Type FS-2

**Front Elevation**

- **Top of Existing Concrete Pedestal**
- **Existing End Diaphragm Connection Plate (Typ.)**
- **End of Existing Steel Beam**
- **Top of Existing Concrete Pedestal**

**Side Elevation**

- **Existing Plate to be Modified**
- **Existing End Outer Plate**
- **Existing End Diaphragm Connection Plate (Typ.)**
- **End of Existing Steel Beam**

**Notations**
- **1'-2" ±**
- **3" ±**
- **6" ±**

**现有轴承类型FS-2**

**正立面**

- **现有混凝土底座顶部**
- **现有端部连杆连接板（典型）**
- **现有钢梁端部**

**侧立面**

- **现有要修改的板**
- **现有端部内板**
- **现有端部连杆连接板（典型）**

**注释**
- **1'-2" ±**
- **3" ±**
- **6" ±**

### Bearing Modification Detail

**Pintle Detail**

1. **Cut Along This Line**
2. **Cut through Plates with a Penetrant/Lubricant**
3. **See Pintle Detail This Sheet**

**NOTES**

1. For existing fixed bearings, cut the pintle along line shown. The pintle shall be cleaned, dressed, and painted as per instructions.
2. The slots shall be drilled or burned to the size shown, or as directed by the designer.
3. Care shall be taken not to damage existing beam flanges, bearing assemblies, and anchor bolts.
4. Product for cutting the pintles and lubricating plates shall be provided to the contractor - cutting/bracing.
5. After the pintles are cut, vehicles and equipment shall be kept off of span 3a as much as reasonably possible until the Link Slab is poured. Only equipment necessary to complete work will be allowed on span 3a.
6. Overcut of pintle should be limited to the region of the cutting element and to ensure the two halves of the pintle can move freely.

### Link Slab Sequence of Construction

1. Lower Bridge and Remove Jacks.
2. Jack the Bridge as shown on DWG. RH-01.
3. Cut the pintles as shown in the details on this sheet.
4. Lower Bridge and Remove Jacks.
5. Construct New Deck.
6. Prep and Pour the UHPC for the Link Slab as shown on DWG. EX-02.
7. Construct LMC Overlay.
8. Grease Bearings in accordance with Item 623004 - Clean and Grease Bridge Bearings.

### Table of Bearing Modification Details

<table>
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<tr>
<th>Support</th>
<th>Span</th>
<th>Existing Bearing Type</th>
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<td>FS-2</td>
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**Scale as Noted**

- **1 749 8562**
- **BB-01**
NOT FOR CONSTRUCTION
NOTES:

1. Dimensions for cross-frame spacing are measured along proposed exterior facing stringer.
2. Contractor to verify existing stringer spacing along the transverse girder and the existing cross-frame spacing prior to ordering or fabricating any materials.
3. Existing intermediate cross-frames are normal to the existing girder centerlines at all locations, unless otherwise noted.

FRAMING PLAN - SPANS 4A TO SPAN 5A

EXISTING GIRDER CENTERLINES AT ALL LOCATIONS, UNLESS OTHERWISE NOTED.
EXISTING GIRDER ELEVATION
NOT TO SCALE

EXISTING STUD REMOVAL DETAIL
1" = 1'-0"

1" MAX.

REMNANT OF EXISTING STUDS
1" MIN.

SHEAR STUD DETAIL
1" = 1'-0"

TOP OF CONCRETE DECK
STUDS TO BE AUTO END WELDED
TOP OF LMC overlay

TOP FLANGE COMPRESSION ZONE
L - SPAN

GIRDER DETAILS

A - STUDS AT 6" SPACING
B - STUDS AT 10" SPACING
C - STUDS AT 6" SPACING

A - STUDS AT 6" SPACING
B - STUDS AT 10" SPACING
C - STUDS AT 6" SPACING

NOTES:
1. NEW SHEAR STUDS MAY BE ADJUSTED TO AVOID REMNANTS OF EXISTING STUDS WITHIN 1" OF PROPOSED LMC SHEAR ZONE OR IN HATCHED AREA (TYP.).
2. REMNANTS OF EXISTING STUDS MAY BE UP TO 1" RIER.
NOT FOR CONSTRUCTION
4.

STAY-IN-PLACE FORMS FOR REVIEW AND APPROVAL BY THE ENGINEER IN THE FIELD.

REQUIRED HAUNCH THICKNESS. ALL THE DATA SHALL BE SUBMITTED WITH DETAILS OF
BEEN REMOVED, THE CONTRACTOR SHALL OBTAIN ELEVATIONS AT TENTH POINTS SHOWN
ELEVATIONS AT FIFTEENTH POINTS SHOWN OF ALL GIRDERS. AFTER THE DECK HAS
BEFORE THE DECK IS REMOVED, THE CONTRACTOR SHALL OBTAIN TOP OF DECK
SHOWN ON THESE PLANS. THE CAMBER TOLERANCE IS ZERO UNDER TO 1/2 INCH OVER.

NOTES:
1. THE GIRDERS SHALL BE PLUMB UNDER FULL DEAD LOAD.
2. THERE SHALL BE NO FIELD WELDING TO THE TOP FLANGE, EXCEPT FOR SHEAR STUDS.
STEEL GIRDER CAMBER NOTES:
1. ALL GIRDERS SHALL BE CAMBERED FOR DEAD LOAD DUE TO TF. BID SHEET.
3. VARY THICKNESS OF HAUNCH TO ACCOUNT FOR ANY INCORRECTNESS IN CAMBER.
4. POSITIVE CAMBER VALUES IN THE TABLE INDICATE THE UPWARD DIRECTION.

DEFLECTION AND TOTAL CAMBER (INCHES)

<table>
<thead>
<tr>
<th>EXISTING GIRDERS</th>
<th>L1/2 L1</th>
<th>3/12 L1</th>
<th>3/12 L1</th>
<th>3/12 L1</th>
<th>3/12 L1</th>
<th>3/12 L1</th>
<th>3/12 L1</th>
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<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
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<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
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</tr>
<tr>
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<td>1 1/16</td>
<td>1 1/16</td>
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<td>1 1/16</td>
<td>1 1/16</td>
<td>1 1/16</td>
</tr>
</tbody>
</table>

NOTES:
1. THE GIRDERS SHALL BE PLACED UNDER FULL DEAD LOAD.
2. THERE SHALL BE NO FIELD WELDING TO THE TOP PLANCE, EXCEPT FOR SMALL STUDS.

BRANDYWINE RIVER BRIDGE
NEW CASTLE COUNTY
CONTRACT NO. 1749-8542
SPAN 1A
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE
STEEL GIRDER CAMBER NOTES:
1. All girders shall be cambered per this line of notes to the dimensions shown on these plans. The camber tolerance is zero under 1500 lb. dead load.
2. Before the deck is removed, the contractor shall obtain field elevations at tenth points shown on all girders. After the deck has been removed, the contractor shall obtain elevations at twentieth points shown on the girders. In all cases, the top elevation of the girders shall be checked for the camber tolerance of the girders.
3. The contractor shall check the details for the cambered girder and notify the work contractor of any changes in the field.
4. Positive camber values in the table indicate the upward direction.

LEGEND:
- SDL = denotes deflection due to structural steel
- DLC = denotes deflection due to concrete slab, haunch, and S.I.P. forms
- VCO = denotes deflection due to property line, clearly marked & approved by the engineer in the field
- TD&C = denotes deflection due to vertical curve or changes in road profile

NOTES:
1. There shall be no field welding to the top flange, except for shear studs.
2. There shall be no field welding to the top flange, except for shear studs.
3. There shall be no field welding to the top flange, except for shear studs.

DEFLECTION AND TOTAL CAMBER (INCHES)

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<thead>
<tr>
<th>EXISTING GIRDERS</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
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</table>

SHAPE OF CAMBERED GIRDER

DEAD LOAD ORDINATES TO THE DIMENSIONS OF THE ENCLOSURE PIER 2A.


CL BRIDGE NO. 1749-6142 SHEET NO. 2-452D

NOT FOR CONSTRUCTION
**STEEL GIRDER CAMBER NOTES**

1. All girder spans shall be cambered for vertical loads due to the dimensions, brand on these plans. The girder tolerances at zero under no dead loads.
2. Before the deck is removed, the contractor shall obtain the top of deck elevations at each point shown on all girder spans. The girder tolerances at the points shown on these plans shall be used to determine the top of girder elevations of the girder spans. The girder spans shall be cambered for vertical loads due to dead loads and future wearing surface.
3. Vary thickness of haunch to account for any inaccuracies in camber.
4. Positive camber values in the table indicate the upward direction.

**SHAPE OF CAMBERED GIRDER**

**DEFLECTION AND TOTAL CAMBER (INCHES)**

<table>
<thead>
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<th>Existing Girder</th>
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<th>5/10 LT</th>
<th>5/20 LT</th>
<th>6/10 LT</th>
<th>7/10 LT</th>
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<th>14/10 LT</th>
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<td>III</td>
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<td>VIII</td>
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</table>

**NOTES:**

1. All girder spans shall be cambered for vertical loads due to dead loads.
2. These shall be no field welding to the top flange, except for shear studs.

**LEGEND:**

- SL: Denotes deflection due to structural steel
- DL: Denotes deflection due to concrete slab, haunch, & S.I.P. forms
- SL+: Denotes deflection due to property line, & future wearing surface
- DL+: Denotes deflection due to parapet, LMC overlay & future wearing surface
- VMX: Denotes total live load deflection & camber
- CD: Denotes camber for vertical curve ordinate due to roadway profile

**ADDENDA / REVISIONS**

- VCO
- TD&C
- SDL
- DLC
- DSL
STEEL GIRDER CAMBER NOTES:
1. All girders shall be cambered for dead load ordinates to the dimensions shown on these plans. The camber tolerance is zero under 5' span girders.
2. Before the deck is removed, the contractor shall obtain a pop-off of each elevation at ten points shown on all girders. After the deck has been removed, the contractor shall obtain elevations at the points shown on the top flanges of all girders to determine the girder rebound and removed, the contractor shall obtain elevations at tenth points shown on these plans. The camber tolerance is zero under to 1/2 inch over.
3. Vary thickness of haunch to account for any inaccuracies in camber.
4. Positive camber values in the table indicate the upward direction.

DEFLECTION AND TOTAL CAMBER (INCHES)

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<th>EXISTING GIRDER</th>
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</tbody>
</table>

NOTES:
1. The girders shall be plumb under full dead loads.
2. There shall be no field welding to the top flange, except for shear studs.
NOT FOR CONSTRUCTION
NOT PREPARED FOR CONSTRUCTION
DECK SLAB REINFORCEMENT PLAN – SPAN 3A

NOTE:
1. FOR JOINT REINFORCEMENT DETAILS, SEE DWGS. EX-01 AND EX-02.
2. FOR ADDITIONAL DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DWG. DT-01.

PARAPET REINFORCEMENT DEVELOPED ELEVATION – SPAN 3A

NOTES:
1. FOR ADDITIONAL DECK SLAB AND PARAPET REINFORCEMENT DETAILS, SEE DWG. DT-01.
2. FOR JOINT REINFORCEMENT DETAILS, SEE DWGS. EX-01 AND EX-02.

SCALE AS NOTED
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
**DECK SLAB CONSTRUCTION JOINT**

- **Top of Deck Slab**
- **Deck Slab Reinforcement (Typ.)**
- **Honor Surface, Blast Clean Then**
- **Apply a neat clean coat of bonding material immediately**
- **Prior to Placing the Adjacent Pour**

**STAY-IN-PLACE FORM DETAIL**

- **Stay-In-Place Galvanized Steel**
- **Deck Forms with Tapered Ends**

**DECK SLAB REINFORCEMENT (Typ.)**

**COMPRESSION FLANGE STAY-IN-PLACE FORM CONNECTION DETAIL**

- **Top of Deck Slab**
- **Support Angle (Typ.)**
- **Screws (Typ.)**
  - **GALVANIZED SELF TAPPING**

**NOTES:**

1. **See Eng. A-01 for laps of Compression Flange.**

**SCALE AS NOTED**

**REHABILITATION OF I-95**

**FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**ADDENDA / REVISIONS**

**SECTION**

**SHEET NO.**

**CONTRACT COUNTY**

**DESIGNED BY:**

**CHECKED BY:**

**WAG DAN**

**NEW CASTLE BRANDYWINE RIVER BRIDGE**

**SUPERSTRUCTURE DETAILS**

**T201407404**

**NOT FOR CONSTRUCTION**
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
RAILROAD PROTECTIVE BARRIER

RAILROAD PROTECTIVE BARRIER NOTES:

1. COST TO REMOVE THE EXISTING RAILROAD PROTECTIVE BARRIER WILL BE INCURRED TO ITEM 711000 - REMOVAL OF STRENGTHENED AND RECONSTRUCTION.

2. ALUMINUM PANELS, POSTS, AND BASE PLATES SHALL BE IN ACCORDANCE WITH SECTION 2044. PAYMENT WILL BE MADE UNDER ITEM 7275xx - RAILROAD PROTECTIVE BARRIER.

3. EXISTING DECORATIVE WORK ON THE EXISTING BARRIER SHALL BE SALVAGED, CLEANED AND REFINISHED IN ACCORDANCE WITH THE PERTINENT ITEM. PAYMENT WILL BE MADE UNDER ITEM 7275xx - RAILROAD PROTECTIVE BARRIER.


5. ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL BE IN ACCORDANCE WITH SUBSECTION 500.03.06.06.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
CONTRACT
COUNTY
DESIGNED BY:
CHECKED BY:
BRIDGE NO.

ADDENDA / REVISIONS
SECTION
SHEET NO.

113 + 00
PT 112+84.81

NOTES:

FLOW LINE AT PARAPET

CONSTRUCTION BASELINE RAMP A

FLOW LINE AT PARAPET

7'-4" (-)
7'-4" (-)
7'-4" (-)
7'-4" (-)
7'-4" (-)
7'-0" ±

FINISHED BRIDGE DECK ELEVATIONS - SPAN 3A

EAST EDGE OF DECK AND PARAPET

WEST EDGE OF DECK AND PARAPET

LOCATION OF FINISHED BRIDGE DECK ELEVATIONS

NO. (TYP.)
EXISTING GIRDER

VARIES
EXISTING STEEL

DECK ELEVATION SPACING TABLE

NOTES:
1. FINISHED BRIDGE DECK ELEVATIONS SHOWN ARE TOP OF LMC.
2. FOR VERTICAL CURVE DATA, SEE DWG. PE-01.
3. FOR CROSS SLOPE TRANSITIONS, SEE TABLE ON DWG. FD-01.
4. LEFT SHOULDER LINE HOLDS CONSTRUCTION BASELINE RAMP A. SEE SEPARATE PLAN ON DWG. 55-10 FOR MORE INFORMATION.
NOT FOR CONSTRUCTION
**NOT FOR CONSTRUCTION**

**LOCATIONS OF FINISHED BRIDGE DECK ELEVATIONS**

1. Finished bridge deck elevations shown are top of LMC.
2. For vertical curve data, see drawing PE-01.
3. For cross slope transitions, see table on drawing FD-01.
4. Left shoulder line following construction baseline ramp A.

**NOTES:**

**FINISHED BRIDGE DECK ELEVATIONS - SPAN 5A**

**DECK ELEVATION SPACING TABLE**

<table>
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<tr>
<th>Line</th>
<th>Flow Line At Parapet</th>
<th>Beam No. (Typ.)</th>
<th>Beam (Typ.)</th>
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<td>5A-W1</td>
<td>5A-W2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7'-0&quot; (-)</td>
<td>5A-1</td>
<td>8' DECK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7'-0&quot; (-)</td>
<td>5A-2</td>
<td>1&quot; LMC OVERLAY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7'-0&quot; (-)</td>
<td>5A-3</td>
<td>MITR H LMC</td>
<td></td>
</tr>
</tbody>
</table>

**SCALE AS NOTED**

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**CONTRACT COUNTY**

**ADDENDA / REVISIONS**

**SECTION SHEET NO.**

**NOTES:**

- Flow line at parapet
- Construction baseline ramp A and P.G.L.
- Ramp A and P.G.L.
- North of Brandywine River Bridge
- 10 spaces at A & B, see table this sheet
- Ramp A and P.G.L.
- West edge of deck and parapet
- East edge of deck and parapet
- Left shoulder line following construction baseline ramp A.
REMOVAL DETAIL - PIER 24
1/8" = 1'-0"

NOTE:
SEE ENG. EX-07 FOR ADDITIONAL BARS AT OVERHANGS.

JOINT DETAIL - PIER 24
1/8" = 1'-0"

NOTE:
SEE ENG. EX-07 FOR ADDITIONAL BARS AT OVERHANGS.

LEGEND:
- REMOVAL LIMITS
- CLASS D CONCRETE
- LMC OVERLAY

NOTES:
1. NEW STRIP SEAL ASSEMBLY SHOWN FOR GRAPHICAL PURPOSES ONLY. DETAILS MAY VARY BY MANUFACTURER. STRIP SEAL AND ASSEMBLY SHALL BE IN ACCORDANCE WITH DRAWING "PREFABRICATED EXPANSION JOINT SYSTEM".
2. FOR PARAPET JOINT PLATE DETAILS, SEE BR 1-748. CONSTRUCT PARAPET RECESS ON SPAN OR SIDE OF JOINT AS SHOWN IN PARAPET JOINT PLATE DETAILS ON ENG. EX-03.
3. FOR JOINT ASSEMBLY AND STEEL EXTENSION DETAILS AND STRIP SEAL EXPANSION JOINT DETAILS, SEE ENG. EX-05.

REHABILITATION OF I-95
FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

SHEET NO.
CONTRACT
COUNTY
DESIGNED BY:
CHECKED BY:
BRIDGE NO.
ADDENDA / REVISIONS
SECTION
SCALE AS NOTED

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOTE:

AB503 E.F. PLACED AS SHOWN
3 - AB501
2 - AB501
9" ± 2" 1" BEARING L

PARAPET NOT SHOWN FOR CLARITY.

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
APPROACH SLAB EAST PARAPET REINFORCEMENT (LOOKING EAST)

NOTES:
1. FOR WEST PARAPET REINFORCEMENT, SEE ORIG. AS-XX.
2. FOR END POST REINFORCEMENT DETAILS SEE SECTION E-E ON DWG. AS-03.
<table>
<thead>
<tr>
<th>Specifications</th>
<th>Dimensions (inches)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Western Union</td>
<td>5.50 x 12.0</td>
<td>Length: 10.5 ft, Width: 12.0 ft, Height: 5.50 ft</td>
</tr>
<tr>
<td>2. Eastern Railroad</td>
<td>4.50 x 10.0</td>
<td>Length: 8.0 ft, Width: 4.50 ft, Height: 10.0 ft</td>
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<tr>
<td>3. Southern Railway</td>
<td>3.00 x 6.0</td>
<td>Length: 6.0 ft, Width: 3.00 ft, Height: 6.0 ft</td>
</tr>
</tbody>
</table>

Stirrup and Tie Hooks:
- 90° and 135° end hooks
- 180° end hooks

Standard Bar Bends:
- 180° and 90° bends
- Bending details shown in circles

Special Bar Bends:
- Additional bends not shown

Addenda/Revisions:
- Refer to CRSI or ACI tables where applicable and required.

Bridge No.: BRANDYWINE RIVER BRIDGE
Rehabilitation of I-95
SECTION 200

1. REMOVAL OF STRUCTURES AND OBSTRUCTIONS:

- Item 211000 - Removal of structures and obstructions associated with bridge 1-758E shall include, but not limited to the following:
  - Decorative barrier

SECTION 600

2. PORTLAND CEMENT CONCRETE:

Use Portland cement concrete for cast-in-place elements as follows:

- Class A - Portland cement
  - Minimum class concrete may be substituted for a lower class concrete at no additional cost to the Department with approval of the Engineer.
- Contractor shall supply concrete for the parapets, bridge deck, and approach slabs that include a shrinkage-compensating admixture. Payment for admixture will be made to the specific concrete supplier's retail cost, and models. The admixture may be supplied by one product that provides both expansion and pore water surface tension on two separate products each kept at temperature recommended by manufacturer's technical data sheets and having the following characteristics:
  (a) Designed to provide both the following characteristics:
      1. Reduces the shrinkage surface tension of the concrete pore water.
      2. Provides an early and sustained reduction in modulus and elongation by field performance.
  (b) Formulated for use in freezing and thawing weather.

3. REINFORCING STEEL:

- Reinforcing steel shall conform to AASHTO M31 (ASTM A615), Grade 60.
- Bar reinforcement:
  - Reinforcing steel shall have a 3" clear cover if cast against earth or a 2" clear cover elsewhere, unless otherwise specified on the plans.
  - All reinforcing steel shall be protected with fusion bonded epoxy. Epoxy coated reinforcing steel may be substituted for epoxy-coated reinforcing steel at no additional cost to the Department with approval of the Engineer.
  - Welding of reinforcement during fabrication or construction is not permitted unless specified.

4. CONCRETE SEALER:

CONCRETE SEALER: REFER TO DIAGRAMS CONTAINING SILICONE ACRYLIC CONCRETE SEALER LIMITS ON DWG. TS-01 TO TS-03 AND PR-01.

- Silicohne acrylic concrete sealer shall be applied to the remaining exposed concrete surfaces at NOTE INTENTIONALLY DELETED.

5. AASHTO LRFD BRIDGE DESIGN MANUAL, 2017 EDITION.

B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIM.

LOADING:

- Formulated for use in freezing and thawing weather.
- Expands at a rate that closely compensates for shrinkage of the concrete mix.
- For reinforcement distribution requirements, consider Class 1 exposure criteria for decks.

6. REMOVE OBSURATIONS AND OBSTRUCTIONS:

ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATED WITH BRIDGE 1-758E SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

(A) DELDOT BRIDGE DESIGN MANUAL, 2017 EDITION.
(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIM.

LOADING:

- Fatigue design is based on the following one directional traffic volumes: ADTT = 430 in year 2040.
- Live load distribution to the girders is based on the AASHTO simplified method.
- Thermal loads and movements are based on the AASHTO LRFD design specifications as stated in the AASHTO LRFD design specifications as stated in the AASHTO LRFD design specifications as stated in the AASHTO LRFD design specifications.

UTILITIES:

- See utility standards and utility association plan sheets for further information on utility coordination.

ENVIRONMENTAL COMPLIANCE:

Refer to the Environmental Compliance Plan for restrictions and additional guidance that may be associated with this project.
DEEP SPALL REPAIR

REHABILITATION OF PCC MASONRY

REMOVAL OF EXISTING DECK REPAIRS (ITEM 628502)

DECK REPAIR, FULL DEPTH (ITEM 628053)

HYDRODEMOLITION AND DECK REPAIR (WITHOUT OVERLAY)

DEEP SPALL REPAIR NOTES

1. Deep spall repairs are defined as patches that extend below the top of the concrete surface. Deep spall repairs have been assumed as deep spall repairs.

2. All work involving methods of concrete repair on existing surface and existing reinforcement is performed in accordance with details of construction activities on section loss prevention or conversion to expansion joint surface preparation and concrete placement shall be performed in accordance with subsection B22310.50 of the standard specification for pavements. Payment for deep spall repairs will be made under item 628053.

3. If depth of repair extends more than 3" beyond the surface of concrete, contractors shall stop work and notify the engineer immediately.

4. Removal of existing deck repairs should be made under item 628053.

5. Deep spall repairs are defined as patches that extend below the top of the concrete surface. Delaminated concrete has been assumed as deep spall repairs.

6. All work involving methods of concrete repair on existing surface and existing reinforcement is performed in accordance with details of construction activities on section loss prevention or conversion to expansion joint surface preparation and concrete placement shall be performed in accordance with subsection B22310.50 of the standard specification for pavements. Payment for deep spall repairs will be made under item 628053.

7. Payment for removal of deep spall repairs will be made under item 628053.

REHABILITATION OF PCC MASONRY

1. Rehabilitation of PCC Masonry is defined as deep spall patches that exceed 0.5 C.Y. threshold in a single area.

2. All work involving methods of concrete repair on existing surface and existing reinforcement shall be performed in accordance with subsection B22310.50 of the standard specification for pavements. Payment for rehabilitation of PCC Masonry shall be made under item 760013.

3. Deep spall repairs shall be removed using hand tools. Removal of existing concrete shall be performed in accordance with subsection B22310.50 of the standard specification for pavements.

4. If depth of repair extends more than 3" beyond the surface of concrete, contractors shall stop work and notify the engineer immediately.

5. Rehabilitation of PCC Masonry is defined as deep spall patches that exceed 0.5 C.Y. threshold in a single area.
### QUANTITIES

<table>
<thead>
<tr>
<th>Item No</th>
<th>Item Title</th>
<th>Unit</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>211000</td>
<td>REMOVAL OF STRUCTURES AND ObSTRUCTIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>220000</td>
<td>DRAINAGE DEVICES, SCAFFOLDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>230000</td>
<td>PRE-ENGINEERING REPORT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>240000</td>
<td>PROTECTIVE SHEETS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>251000</td>
<td>POCKET LIST OF CONSTRUCTION ADVISORY, CLASS A</td>
<td></td>
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<tr>
<td>261000</td>
<td>POCKET LIST OF CONSTRUCTION ADVISORY, CLASS B</td>
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</tr>
<tr>
<td>301000</td>
<td>REPORTED MATERIALS, SELF-CAST CONCRETE</td>
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### LOAD EFFECT

<table>
<thead>
<tr>
<th>Design Vehicle</th>
<th>Tons</th>
<th>RATING WEIGHT</th>
<th>FACTOR</th>
<th>Rating Point</th>
<th>Rating Type</th>
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<tbody>
<tr>
<td>HL-93 TRUCK (OPERATING)</td>
<td>1.57</td>
<td>1.96</td>
<td>1.199</td>
<td>153</td>
<td>FLUSH</td>
</tr>
<tr>
<td>HL-93 TRUCK (INVENTORY)</td>
<td>1.57</td>
<td>1.96</td>
<td>1.199</td>
<td>153</td>
<td>FLUSH</td>
</tr>
<tr>
<td>HS-20 TRUCK (OPERATING)</td>
<td>1.57</td>
<td>1.96</td>
<td>1.199</td>
<td>153</td>
<td>FLUSH</td>
</tr>
<tr>
<td>HS-20 TRUCK (INVENTORY)</td>
<td>1.57</td>
<td>1.96</td>
<td>1.199</td>
<td>153</td>
<td>FLUSH</td>
</tr>
</tbody>
</table>

**NOTE:** LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

**DEPARTMENT OF TRANSPORTATION**

**CONTRACT NO.:** 2-731

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**COUNTY:** NEW CASTLE

**DESIGNED BY:**

**CHECKED BY:**

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**NOT FOR CONSTRUCTION**
### Summary of Reconstruction Items

Not to Scale

**TABLE:**

<table>
<thead>
<tr>
<th>NO.</th>
<th>REPAIR DESCRIPTION</th>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>QTY.</th>
<th>CONTINGENT QTY.</th>
<th>TOTAL QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Joint Replacement (Full Replacement)</td>
<td>Removal of Joint at Pier E11, See Bridge 1-758E Structural Plan</td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2</td>
<td>Remove Existing Deck/Overlay</td>
<td></td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Rehabilitation of Existing Deck Surface</td>
<td></td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Furniture and Structural Deck Overlay</td>
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<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Clean Scour and Repairs</td>
<td></td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Install Decorative Barrier</td>
<td></td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Replace Bridge Lighting</td>
<td></td>
<td>SF</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**LMC Overlay Notes:**

1. Longitudinal construction joints in the LMC overlay shall not be permitted to occur in piers 1-11. The overlap shall be placed full width of the bridge deck from piersline to piersline.

---

**DEPARTMENT OF TRANSPORTATION**

**NEW CASTLE**

**DESIGNED BY:**

**CHECKED BY:**

---

**DM-01, PN-02**

**DM-01, PN-02**

**DM-01, PN-02**

**DM-01, PN-02**

**DM-01, PN-02**

**DM-01, PN-02**

---

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

---

**NOT FOR CONSTRUCTION**
NOTES:
1. Dimensions shown are measured perpendicular to construction baseline ramp E, except as noted.
2. Dimensions shown at Pier E are measured perpendicular to construction baseline and 0.0 from the west end to the theoretical intersection of the west parapet.
3. Dimensions shown at Pier E11 are measured perpendicular to construction baseline ramp E, except as noted.
4. Beam spacing shown is measured along the right centerline.
5. For Proprietary Data see engineering plans and architectural design details. See ENG. 5-06.
6. See ENG. 2-07 for demolition details.
NOTES:
1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E.
2. FOR PROPERTY DETAILS, SEE NOTE 2. ARCHITECTURAL CONSTRUCTION BASELINE RAMP E. SEE DWG. PA-01.
3. FOR BEAM SPACING, SEE BEAM / GIRDER SPACING TABLE ON DWG. EX-02.
4. SEE DWG. EX-02 FOR ELEVATION DETAILS. SEE DWG. PA-01.
5. 3 EQUAL SPA. VARY FROM 8'-4"± TO 6'-10"±.

EXISTING TYPICAL SECTION
(STA. 504+67.33 TO STA. 506+00.53 AND STA. 507+89.83 TO STA. 508+62.10)
1'-7"± (SPAN E6)
1'-4"± (TYP.)

PROPOSED TYPICAL SECTION
(STA. 504+67.33 TO STA. 506+00.53 AND STA. 507+89.83 TO STA. 508+62.10)
1'-7"± (SPAN E6)
1'-4"± (TYP.)
NOT FOR CONSTRUCTION
LIMITS OF DEMOLITION

(SPANS E7 AND E8 SHOWN. SPANS E9, E10 AND E11 SIMILAR)

EXISTING DECK SURFACE PRIOR TO PAVEMENT MILLING

EXISTING DECK SURFACE AFTER TOTAL SURFACE HYDRODEMOLITION

LEGEND:

- Limits of Removal, Pavement Milling (Item 760013)
- Limits of Removal, Hydrodemolition (Item 760500)

DEMOLITION NOTES:

Deck areas that were received Total Surface Hydrodemolition shall only be accessed by equipment necessary to complete the work.

REHABILITATION OF I-95
FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

MILLING AND HYDRODEMOLITION DETAILS
NOT FOR CONSTRUCTION
**DECORATIVE BARRIER INSTALLATION LIMITS**

- **LEGEND:**
  - Decorative Barrier Removal Limits
  - Decorative Barrier Reinstallation Limits

- **SECTION A-A REMOVAL**
  - Decorative Barrier Removal on Bridge 1-758E, STA. 508+63.03±
  - Expansion Joint E6 and E7
  - Existing Post and Base Plate
  - Removal and Reinstallation

- **SECTION B-B REMOVAL**
  - Decorative Barrier Removal on Bridge 1-758E, STA. 506+96.43±
  - Expansion Joint E8
  - Existing Post and Base Plate
  - Removal and Reinstallation

- **SECTION A-A REINSTALLATION**
  - Decorative Barrier Reinstallation on Bridge 1-758E, STA. 508+63.03±
  - Expansion Joint E6 and E7
  - Existing Post and Base Plate
  - Reinstallation

- **SECTION B-B REINSTALLATION**
  - Decorative Barrier Reinstallation on Bridge 1-758E, STA. 506+96.43±
  - Expansion Joint E8
  - Existing Post and Base Plate
  - Reinstallation

**NOTES:**

1. **EXISTING BARRIER POST LOCATION DATA:**
   - Data is based on existing condition.
   - All posts located based on field measurement.
   - Data includes expansion joint locations.

2. **EXISTING 4 x 4.85 ALUMINUM H-BEAM POST AND BASE PLATE:**
   - Removal and replacement as required.
   - Reinstallation as required.

3. **EXISTING 4 x 4.85 ALUMINUM H-BEAM POST AND BASE PLATE:**
   - Removal and replacement as required.
   - Reinstallation as required.

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**SCALE: 1" = 1'-0'**

**NOT FOR CONSTRUCTION**
### Specifications

<table>
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<tr>
<th>DIMENSIONS</th>
<th>MILLIMETERS</th>
<th>INCHES</th>
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<tr>
<td>$a$</td>
<td>120</td>
<td>4.72</td>
</tr>
<tr>
<td>$b$</td>
<td>300</td>
<td>11.81</td>
</tr>
<tr>
<td>$c$</td>
<td>75</td>
<td>2.95</td>
</tr>
<tr>
<td>$d$</td>
<td>12</td>
<td>0.47</td>
</tr>
<tr>
<td>$e$</td>
<td>15</td>
<td>0.59</td>
</tr>
</tbody>
</table>

### Stirrup and Tie Hooks

- **180° and 90° End Hooks**
- **180° and 90° Hooks**

### Dimensional Detailing

#### Notes:
1. Includes dimensions shown in circles with type 11弯钩。
2. Standard bar bends include only those tolerances indicated as such.
3. All dimensions 305 x 450, except $a$ and $e$ are 180° and 135° bends.
4. All dimensions shown are only where necessary to ensure correct fitting and positioning. All models are to be used.
5. Where $d$ is not shown, it will be not equal to or less than $d$.
6. Where $e$ is not shown, it will be less than $e$.
7. All bends are to be formed as necessary to fit within the minimum bend radius.
8. Dimensions of stirrups to be shown as needed to fit within the minimum bend radius.

### Standard Bar Bends

- **Reduced End HOOKS**
- **90° and 135° HOOKS**
- **180° and 90° End HOOKS**

### Special Bar Bends

#### Notes:
1. Reduced end hooks for other sizes, etc., refer to table above. "Red End" is an end where applicable and required.
2. Type 11 bend, 11-32 and 11-30 are only to be used when specified.

### Reinforcement Schedule

<table>
<thead>
<tr>
<th>Section</th>
<th>Reinforcement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE</td>
</tr>
<tr>
<td>2</td>
<td>REINFORCEMENT SCHEDULE</td>
</tr>
</tbody>
</table>

### Scale as Noted

**BRANDYWINE RIVER BRIDGE**

**FROM I-495 TO NORTH OF NEW CASTLE COUNTY**

**REHABILITATION OF I-95**

**TOTAL SHTS.**

**DELAWARE DEPARTMENT OF TRANSPORTATION**

**DESIGNED BY:**

**JRM**

**REINFORCEMENT SCHEDULE**

**1.7558 1861**

**CONSTRUCTION NOT FOR CONSTRUCTION**
SECTION 600

REFER TO DIAGRAMS CONTAINING SILICONE ACRYLIC CONCRETE SEALER LIMITS ON DWG. TS-01 TO TS-03, AB-01, CONCRETE SURFACES AT THE ABUTMENT, PIERS AND U-WALLS. PEDESTALS AT EACH PIER. SILICONE ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO THE REMAINING EXPOSED NOTE INTENTIONALLY DELETED. ON THE PLANS. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A775. ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.

- GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO DEPARTMENT WITH APPROVAL OF THE ENGINEER.
- CHAMFER ALL EXPOSED EDGES ½" X ½" UNLESS OTHERWISE NOTED.

CLASS A - PARAPETS, ABIUTMENT (f'c = 4.5 ksi)

I. DESIGNED TO PROVIDE BOTH THE FOLLOWING CHARACTERISTICS:

A. PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.
B. EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR SHRINKAGE OF THE CONCRETE MIX.
C. REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER.

68° F.
LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800.

FOR REINFORCEMENT DISTRIBUTION REQUIREMENTS, CONSIDER CLASS 1 EXPOSURE CRITERIA FOR DECKS.

EXISTING CONDITIONS:
AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.

ROADWAY CLEARANCES:
SEE UTILITY STATEMENT AND UTILITY RELOCATION PLAN SHEETS FOR FURTHER INFORMATION ON UTILITY COORDINATION.

ENVIRONMENTAL COMPLIANCE:
ASSOCIATED WITH THIS PROJECT.

ABUT. = ABUTMENT
BOT. = BOTTOM
BRG. = BEARING
C/C = CENTER TO CENTER
CLR. = CLEAR
DIA. = DIAMETER
DWG. = DRAWING
E.F. = EACH FACE
EQ = ENTIRE QUANTITY
EXP. = EXPANSION
FIX. = FIXED
GR. = GRADE
L.L.V. = LONG LEG VERTICAL
LT = LEFT
LMC = LATEX MODIFIED CONCRETE
MAX. = MAXIMUM
MIN. = MINIMUM
N.T.S. = NOT TO SCALE
OH = OVERHEAD
P.C.C. = PORTLAND CEMENT CONCRETE
R.F. = REAR FACE
RT = RIGHT
S.W. = SHOP WELD
STA. = STATION
SHLD. = SHOULDER
TYP. = TYPICAL
UG = UNDERGROUND

### Load Rating Summary

<table>
<thead>
<tr>
<th>Design Vehicle</th>
<th>Rating Factor</th>
<th>Rating Weight (Ton)</th>
<th>Controlling Member</th>
<th>Controlling Point</th>
<th>Load Effect</th>
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<tbody>
<tr>
<td>HS-20 Truck (Operating)</td>
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<td>NA</td>
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<td>NA</td>
<td>Span F2, Beam 50</td>
<td>No</td>
<td>Shear</td>
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<tr>
<td>HS-20 Truck (Operating)</td>
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<td>NA</td>
<td>Span F2, Beam 50</td>
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<td>Shear</td>
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<tr>
<td>HS-20 Truck (Operating)</td>
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<td>NA</td>
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<td>Shear</td>
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<tr>
<td>HS-20 Truck (Operating)</td>
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<td>NA</td>
<td>Span F2, Beam 50</td>
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### Quantities

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**Note:**
- Quantities include contingency percentages as noted in Note 11 on DWG. PN-01 and as shown in the repair table on DWG. PN-04.
- The total quantity includes future wearing surface as noted in the plans.
**LMC OVERLAY NOTES:**

1. Longitudinal construction joints in the LMC overlay shall not be permitted in bridge 1-758F. The joints shall be placed full width of the bridge deck from parapet to parapet.

**REHABILITATION OF I-95 FROM 1-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**DEPARTMENT OF TRANSPORTATION**

**NOT TO SCALE**

**SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS**

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY.</th>
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<th>TOTAL</th>
<th>I-495</th>
<th>1-758F</th>
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<td>JOINT REPLACEMENT (FULL REPLACEMENT)</td>
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<td>REMOVAL OF STRUCTURES AND OBSTRUCTIONS</td>
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**DELAWARE COUNTY CONTRACT**

**NEW CASTLE COUNTY CONTRACT**

**REFERENCES:**

- [DEPARTMENT OF TRANSPORTATION](#)
- [REHABILITATION OF I-95 FROM 1-495 TO NORTH OF BRANDYWINE RIVER BRIDGE](#)
- [SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS](#)

**ADDITIONS / REVISIONS:**

- [DEPARTMENT OF TRANSPORTATION](#)
- [REHABILITATION OF I-95 FROM 1-495 TO NORTH OF BRANDYWINE RIVER BRIDGE](#)
- [SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS](#)
Horizontal Curve Data

**Curve 1**
- P.C. STA. = 704+48.00
- P.C. STA. = 703+43.00
- P.C. STA. = 702+75.00
- P.C. STA. = 701+12.00
- P.C. STA. = 700+20.00
- P.C. STA. = 699+37.00
- P.C. STA. = 698+37.00
- P.C. STA. = 695+80.00
- P.C. STA. = 693+10.00

**Curve 2**
- P.C. STA. = 704+48.00
- P.C. STA. = 704+23.00
- P.C. STA. = 704+13.00
- P.C. STA. = 704+15.00
- P.C. STA. = 703+43.00
- P.C. STA. = 702+75.00
- P.C. STA. = 701+12.00
- P.C. STA. = 700+20.00
- P.C. STA. = 699+37.00

**Curve 3**
- P.C. STA. = 704+48.00
- P.C. STA. = 704+23.00
- P.C. STA. = 704+13.00
- P.C. STA. = 704+15.00
- P.C. STA. = 703+43.00
- P.C. STA. = 702+75.00
- P.C. STA. = 701+12.00
- P.C. STA. = 700+20.00
- P.C. STA. = 699+37.00
- P.C. STA. = 698+37.00
- P.C. STA. = 695+80.00
- P.C. STA. = 693+10.00

**Notes**
1. Dimensions shown are measured along construction baseline ramp F.
2. Piles shown are for information purposes only.
3. Minimum vertical clearance is based on 2014 NBIS Inspection Report. Minimum clearance above road surface = 12'-11 ½".

**Legend**
- Wall and Overlay deck
- Removal and Reconstruction

**Key**
- [Diagram details and key information]

**General Plan and Elevation**
- Rehabilitation of I-95 from I-495 to North of Brandywine River Bridge

**Design**
- Delaware Department of Transportation

**Scale**
- [Scale details]
NOTES:

1. Dimensions shown are measured perpendicular to the construction baseline ramp F, except as noted.

2. Dimensions shown at pier H1 are measured parallel to the construction baseline ramp F, except as noted.

3. Dimensions shown at pier F4 are measured parallel to the construction baseline ramp F, except as noted.

4. Existing typical section varies from 7'-2"± at pier F4 to 3'-5"± at pier H1 See Note 1.

5. For parapet detail, see Notes 1 and 2.

6. See DWG. PA-01 for parapet detail, drip notch detail, and architectural groove detail.

EXISTING TYPICAL SECTION
(STA. 703+52.79 TO 704+28.31)

PROPOSED TYPICAL SECTION
(STA. 703+52.79 TO 704+28.31)
NOTES:
1. Dimensions shown are measured perpendicular to construction baseline ramp F.
2. For parapet detail, see Note 3.
3. For joint spacing, see Note 4.
4. See Notes 3 & 4 for demolition details.

EXISTING TYPICAL SECTION
(STA. 704+28.31 TO 705+03.18 AND 706+33.01 TO 706+94.97)

PROPOSED TYPICAL SECTION
(STA. 704+28.31 TO 705+03.18 AND 706+33.01 TO 706+94.97)
NOT FOR CONSTRUCTION
THICKNESS VARIES EXISTING DECK TO REMAIN

ITEM 760500 LIMITS OF TOTAL SURFACE HYDRODEMOLITION
1 ' AMPLITUDE VIA TOTAL SURFACE HYDRODEMOLITION MIN. TO MAX. SCARRIFICATION PLUS ADDITIONAL AMPLITUDE 1 ' MIN. TO MAX.

LEGEND:

HYDRODEMOLITION AMPLITUDE DETAIL 0' x 1'-0'

LIMITS OF DEMOLITION
(Spars F1 and F3 shown, Spans F2 and F4 similar)

EXISTING DECK SURFACE PRIOR TO PAYMENT MILLING
EXISTING DECK SURFACE AFTER PAYMENT MILLING
EXISTING DECK SURFACE AFTER TOTAL SURFACE HYDRODEMOLITION

TOTAL SURFACE HYDRODEMOLITION DETAIL (NO OVERLAY) 6' x 1'-0'

DEMOlITION NOTES:
1. DECK FEET THAT HAVE RECEIVED TOTAL SURFACE HYDRODEMOLITION SHALL ONLY BE ACCESSED BY EQUIPMENT NECESSARY TO COMPLETE DECK WORK.

DELARORE DEPARTMENT OF TRANSPORTATION

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

MILLING AND HYDRODEMOLITION DETAILS

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
JOINT RECONSTRUCTION NOTES:

1. For joint at Pier H1, see DWG. 1-758H EX-01.
2. For joint assembly detail, see DWG. EX-02.
3. For typical joint plan, see DWG. EX-02.

NOTES:

1. For joint at Pier H1, see DWG: 1-758H EX-01.
2. For joint assembly detail, see DWG: EX-02.
3. For typical joint plan, see DWG: EX-02.
4. For typical joint plan, see DWG: EX-02.
NOT FOR CONSTRUCTION
LEGEND:
- REMOVAL LIMITS
- RECESS IN PARAPET

PARAPET JOINT PLATE NOTES:
1. Form concrete recess area in parapet and grind to provide smooth surface. Apply one coat of asphalt cement to entire joint and to joint limits of removal to encase reinforcement. The recess shall be grinded to provide a minimum radius of 5" minimum. Any concrete exposed to traffic shall be grinded to a minimum radius of 5" minimum.
2. Place parapet concrete with steel, bent plates, inserts, and bolts in place to ensure proper joint system. Alignment of inserts and bolts shall be in the face of traffic. Paper and Gorilla Joint Plate shall be flameproofed by applying one coat of asphalt cement in accordance with Section 1012 of the Standard Specifications to allow bent sliding plate to move freely without friction. Payment will be incidental to Item 610008 - Prefabricated Expansion Joint Plate.
3. Apply one coat of asphalt cement to free side of joint in accordance with Section 1012 of the Standard Specifications to form concrete recess area in parapet and grind to provide a minimum radius of 5" minimum. Any concrete exposed to traffic shall be grinded to a minimum radius of 5" minimum.
4. Steel plates shall be 3/16" thick stainless steel, bent plates, inserts, and bolts in place to ensure proper joint system. Alignment of inserts and bolts shall be in the face of traffic. Paper and Gorilla Joint Plate shall be flameproofed by applying one coat of asphalt cement in accordance with Section 1012 of the Standard Specifications to allow bent sliding plate to move freely without friction. Payment will be incidental to Item 610008 - Prefabricated Expansion Joint Plate.
5. The contractor shall submit working drawings of traffic barrier plates for approval. Payment for parapet joint plate notes and partial removal of parapet for joint reconstruction will be incidental to Item 610008 - Prefabricated Expansion Joint Plate.

PARAPET DETAIL AT EXPANSION JOINTS

PARAPET RECONSTRUCTION AT EXPANSION JOINTS

NOTE: Not for construction. All dimensions and tolerances are approximate and subject to change. All details are subject to the contract documents and plans. Not for construction.
**NOT FOR CONSTRUCTION**

**LEGEND:**
- **NOTES:**
- **PROPOSED CONSTRUCTION**
- **PROPOSED LMC OVERLAY**
- **ABUTMENT F1**
- **DECK OVER DETAILS - 1**
- **REMOVAL LIMITS - ITEM 211000**
- **MASONRY, SUPERSTRUCTURE, CLASS D. WORK WILL BE INCIDENTAL TO ITEM 610017 - PORTLAND CEMENT CONCRETE WILL BE REPAIRED IN ACCORDANCE WITH SECTION 628.03(E)7. PAYMENT FOR THIS**
  - **BARS WITH CORROSION, BROKEN, OR WITH INADEQUATE BOND SHALL EXISTING BARS TO REMAIN SHALL BE CLEANED IN ACCORDANCE WITH SECTION 3. CUT EXISTING REINFORCEMENT TO REMAIN 2" CLEAR OF NEW TOP OF BACKWALL.**
  - **BARS SPACED TO MATCH EXISTING TOP LONGITUDINAL BARS BETWEEN GIRDERS.**

**NOTE:**
1. Bars spaced to match existing top longitudinal bars between girder.
2. Cut existing reinforcement to remain 2" clear of her top of backwall.
LEGEND:

1. ABUTMENT F1

NOTES:

1. EXISTING LIGHTING REINFORCEMENT TO REMAIN, EAST PARAPET ONLY

EXISTING BAR TO REMAIN SHALL BE CLEANED IN ACCORDANCE WITH SECTION 628.03(E)7. BARS WITH CORROSION, BROKEN, OR WITH INADEQUATE BOND SHALL BE EXISTING BARS TO REMAIN SHALL BE CLEANED IN ACCORDANCE WITH SECTION 628.03(E)7.

PARAPET REMOVAL AT DECK OVER

DECK OVER AT OVERHANG PLAN

SECTION D-D

SECTION C-C

PARAPET DETAIL AT DECK OVER

PARAPET RECONSTRUCTION AT DECK OVER

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
STRIP SEAL EXPANSION JOINT NOTES:

1. Steel for deck joints and steel extrusions shall be ASTM A36 (min. 36 ksi). Hot Dip Galvanized Steel Exclusions.

2. Composite expansion joint to meet ODOT-M1 Modified, Quality Tests Required.

3. The expansion joint shall be capable of sealing the approach slab to sleepers, slabs, and other components within and adjacent to the joint.

4. The contractor shall adjust the joint opening (Y) as required by the width of the steel extrusion used so as to provide a X" joint opening at 68°F.

5. The strip seal shall be installed in one piece across the approach slab to prevent flaking of the strip seal in poor weather and laps between the strip seal.

6. The expansion joint system shall be paid for under Item 624000 - Prefabricated Expansion Joint System, 3".

7. Steel extrusions shall be hot-dip galvanized prior to fabrication. Polished Extrusion Shall Be Hot-Dip Galvanized. Entire Expansion Dam Structure.

8. Lubricant-adhesive for use in installing and bonding rubber seal elements to steel joint components shall be a one part adhesive for use in installation and reinstallation of rubber seal elements. The following physical properties:

   - Average density: 35 pounds per gallon
   - Soapy material: 0.050 Max.
   - Minimum SIII Reflex Strength: 1500 psi
   - Maximum SIII Reflex Strength: 2,000 psi

9. Steel extrusions and joint angles shall be continuous across the full width of the expansion, as specified, unless variations are shown on detail. Extra-02 and Extra-03 and Joint Opening Table, Item 211000.

10. Steel extrusions and joint angles shall be continuous across the full width of the expansion, as specified, unless variations are shown on detail. Extra-02 and Extra-03 and Joint Opening Table, Item 211000.

NOTES:

1. For sections F-F and G-G, see DWG. Extra-05.

2. FOR CONSTRUCTION
NOT FOR CONSTRUCTION
### Reinforcement Schedule

#### Specifications

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#### Details

- **Wingwall**
- **Abutment**
- **End**

#### Standard Bar Bends

- **Stirrup and Tie Hooks**
  - **180° and 90° End Hooks**
  - **Details**

#### Special Bar Bends

- **END**
- **SPACERS MOUNTED**
- **PLAIN SPIRAL WITH**
- **CONTRACT**
- **2ND степени**
- **PREPARED**
- **SHEET NO.**
- **NOT FOR CONSTRUCTION**

#### Scale as Noted

### Rehabilitation of I-95 from I-495 to North of Brandywine River Bridge

- **Contract No.**
- **07/07 P.F.**
- **Work No.**
- **1758F 6149**

---

**Left Field:**
- **Delaware Department of Transportation**

**Right Field:**
- **Delaware Department of Transportation**

---

**Contractual Drawings:**
- **Scale as Noted**
- **Reinforcement Schedule**

---

**Tabular Data:**

- **Area Dimensions**
- **Beam Details**
- **Concrete Details**
- **Steel Details**

---

**Diagramic Data:**

- **Hook Details**
- **Bar Bending Dimensions**
- **Tolerances**
- **Bending Dimensions Requiring Closer Fabrication**

---

**Notes:**

1. Figures shown in circles represent bar bend types.
2. Standard bar bends include single wire tensile bars, indicated as seen.
3. All dimensions 1/2" to 12" except "A" and "D" on end 90° and 135° models.
4. Dimensions on 1/8" bars to be shown only where necessary.
5. Where 0.625" will not be used, it will be shown as "0.500"".
6. "H" dimensions of stirrups to be shown as needed to fit within the concrete.
7. Dimensions of stirrups to be shown as needed to fit within the concrete.
SECTION 600

3. STRUCTURAL STEEL:

- PORTION #623000 - ELASTOMERIC BEARINGS: METHOD B, AND SHALL CONFORM TO SECTION 623 OF THE STANDARD SPECIFICATIONS. PAYMENT WILL BE MADE TO BE PAINTED AS INDICATED ON THE PLANS. COLOR SHALL MATCH EXISTING STEEL.

- SET ANCHOR BOLTS TO TEMPLATE IN CORED HOLES. FILL THE HOLES WITH NON-SHRINK GROUT TO BE FLUSH WITH THE TOP CONCRETE SURFACE.

- DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.

- CODE, AND CONTRACT DOCUMENTS. MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE OTHERWISE NOTED.

- JACKING DIAPHRAGMS

- SUPPLEMENTAL NOTCH TOUGHNESS REQUIREMENTS ARE MANDATORY FOR: 'CVN' ON PLANS) OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED.

- EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS OTHERWISE NOTED.

- PEDESTALS AT EACH PIER. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO THE PR-01 TO PR-08, AND TS-01. EPOXY CONCRETE SEALER SHALL BE APPLIED TO THE BEAM SEATS AND BEARING PEDASTALS.

- REFER TO DIAGRAMS CONTAINING SILICONE-BASED ACRYLIC CONCRETE SEALER LIMITS ON DWGS. AB-01, ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.

- ANY FIELD CUTTING OR FIELD BENDING MUST BE APPROVED BY THE ENGINEER. PAYMENT SHALL BE INCURRED TO ITEM #763501 - REINFORCING STEEL SHALL HAVE A 3" CLEAR COVER IF CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWISE.

4. PORTION OF CONCRETE PARAPETS AT ABUTMENT

- PORTION OF CONCRETE BACKWALL AND U-WALLS

- CONCRETE APPROACH SLAB

- EXPANSION JOINT AT ABUTMENT

- Expansion Joint at Amenity.

- Portion of Concrete Parapets at Amenity.

- Calculator:

(2) A SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. PAYMENT FOR ADMIXTURE WILL BE INCIDENTAL TO ITS USE.

- CONTRACTOR SHALL SUPPLY CONCRETE FOR THE PARAPETS, BRIDGE DECK, AND APPROACH SLABS THAT INCLUDES A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE CONTRACTOR WITH APPROVAL OF THE EXAMINER.

- CHAMFER ALL EXPOSED EDGES 1/8" X 1/8" UNLESS OTHERWISE NOTED.

- A MINIMUM OF 16'-6" SHALL BE MAINTAINED ABOVE ALL ROADWAYS.

- THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS, SHOP DRAWINGS, AND THE CONTRACTOR SHALL PROVIDE THE CONTRACTOR 30" OF TIME TO lay HIS HANDS ON THE PLANS SHALL BE DISTRIBUTED ACCORDINGLY TO THE CONTRACT PROPOSAL, CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DATA SHOWN ON THE PLANS SHALL BE SUBJECT TO THE ENGINEER FOR MODIFICATION.

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

- PORTLAND CEMENT CONCRETE:

(A) 2017 DELDOT BRIDGE DESIGN MANUAL.

(B) 2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, U.S. CUSTOMARY UNITS INCLUDING 2015 AND 2016 INTERIM REVISIONS.

- LMC = LATEX MODIFIED CONCRETE

- L.L.V. = LONG LEG VERTICAL

- EQ = ENTIRE QUANTITY

- EXP. = EXPANSION

- EL. = ELEVATION

- DWG. = DRAWING

- DIA. = DIAMETER

- CLR. = CLEAR

- C/C = CENTER-TO-CENTER

- BOT. = BOTTOM

- ABBREVIATIONS:

- REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE NECESSARY.

- SEE UTILITY STATEMENT AND UTILITY RELOCATION PLAN SHEETS FOR FURTHER INFORMATION ON UTILITY COORDINATION.

- UTILITIES:

- SUMMARY OF PROPOSED REPAIR AND RECONSTRUCTION ITEMS

- NOT TO SCALE

- INDEX OF BRIDGE 1-758G SHEETS

- TYP. = TYPICAL

- TRK = TRACK

- STA. = STATION

- SCH. = SCHEDULE

- L L S = CENTERLINE

- WRS = CENTER-TO-CENTER
EXISTING REINFORCEMENT (TYP.)

CONCRETE

CLASS D CONCRETE

NOT FOR CONSTRUCTION

LEGEND:

- Limits of Removal, Mechanical Milling (Item 6285xx)
- Limits of Hydrodemolition (Item 7605xx)
- Limits of Removal (Item areas on Section)
- Class D Concrete

DEEP SPALL REPAIR

REHABILITATION OF PCC MASONRY

HYDRODEMOLITION AND DECK REPAIR (WITH OVERLAY)

HYDRODEMOLITION AND DECK REPAIR (WITHOUT OVERLAY)
### QUANTITIES

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM TITLE</th>
<th>UNIT</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DESIGN VEHICLE</td>
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<tr>
<td></td>
<td>HL-93 TRUCK (INVENTORY)</td>
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<tr>
<td></td>
<td>HL-93 TANDEM (INVENTORY)</td>
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<td>HS-20 (INVENTORY)</td>
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<tr>
<td></td>
<td>HL-93 TRUCK (OPERATING)</td>
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<td></td>
<td>HL-93 TANDEM (OPERATING)</td>
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<tr>
<td></td>
<td>DES200 &amp; LEGAL-LANE (LEGAL)</td>
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<td>DES300 &amp; LEGAL-LANE (LEGAL)</td>
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<td>DES400 &amp; LEGAL-LANE (LEGAL)</td>
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<tr>
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<td>DES500 &amp; LEGAL-LANE (LEGAL)</td>
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</table>

### LOAD RATING SUMMARY

<table>
<thead>
<tr>
<th>DESIGN VEHICLE</th>
<th>RATING FACTOR</th>
<th>RATING WEIGHT POINT</th>
<th>CONTROLLING MEMBER</th>
<th>LOAD EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HL-93 TRUCK (INVENTORY)</td>
<td>1.64</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
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<tr>
<td>HL-93 TRUCK (OPERATING)</td>
<td>1.99</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
</tr>
<tr>
<td>HS-20 (OPERATING)</td>
<td>2.13</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
</tr>
<tr>
<td>DES200 &amp; LEGAL-LANE (LEGAL)</td>
<td>1.64</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
</tr>
<tr>
<td>DES300 &amp; LEGAL-LANE (LEGAL)</td>
<td>1.99</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
</tr>
<tr>
<td>DES400 &amp; LEGAL-LANE (LEGAL)</td>
<td>2.13</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
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<tr>
<td>DES500 &amp; LEGAL-LANE (LEGAL)</td>
<td>2.58</td>
<td>N/A</td>
<td>AVERAGE</td>
<td>BEAMING</td>
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</tbody>
</table>

**NOTE:** LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.
LMC Overlay Notes:
1. Longitudinal construction joints in the LMC Overlay shall not be permitted on or in this work. The Overlay shall be placed full width of the bridge deck from cleaning to sealing.
NOT FOR CONSTRUCTION
1. Thickness of existing LMC overlay varies. Deck cores depicting the overlay thickness were taken in November/December 2014. A coring report is available upon request.

2. Vehicles and equipment should be kept off of areas of the deck that have received total surface hydrodemolition as much as reasonably possible. Only equipment necessary to complete the work will be allowed on those areas.

Demolition Notes:

- Limits of demolition, mechanical milling (Item 760013)
- Limits of demolition, hydrodemolition (Item 7605xx)

Legend:

- Limits of demolition, mechanical milling (Item 760013)
- Limits of demolition, hydrodemolition (Item 7605xx)

Survey Data

- New Castle
- Brandewine River Bridge
- From I-495 to North of Brandewine River Bridge

Scale as noted

Rehabilitation of I-95

Milling and Hydrodemolition Details

Contract No. 1758G 8149
### Steel Reinforced Elastomeric Bearing Notes:

1. Provide all steel reinforced elastomeric bearings in accordance with Section 616, bearing details of the standard specifications.

2. Anchor bolts shall be designed in accordance with Section 15.12. Locations of bolts in the sole plate shall comply with Section 15.12.6.2 and other Section 15.12 requirements.

3. Use square-inch holes. If not, they shall be considered to be circular holes. The squared holes shall have a diameter of 3/4", when coding applies. Do not combine any dimensions in the bearing pads.

4. Steel plates and steel plates shall be placed in a 300 grade or Su grade steel. Steel plates shall be placed in accordance with Section 15.12 requirements. Steel surfaces of steel plates to be machine finished shall be placed in the details, as defined in accordance with Section 616.

5. Steel plates shall meet a flatness requirement of 0.5 percent in the direction being measured (width, length, and diagonals).

6. All stainless steel shall be ASTM A 240 Type 304. 16-gauge stainless steel shall be used for the stainless steel load plate. The stainless steel load plate shall be factory mechanized to the elastomeric bearing.

7. Bearing assembly shall be supplied from factory with Type 304 or when specified to be machine finished. The stainless steel loads plate shall be factory mechanized to the elastomeric bearing.

8. Bearing assembly shall be placed normal to the centerline of the beam.

9. Steel reinforced elastomeric bearings shall be attached to the top or bottom flange of a beam in accordance with the bearing pad to be machine finished and Torus bearing assembly will not be machine finished. The Torus assembly will be placed in the plate system to be the bearing assembly.

10. Payment for fabrication and installation of steel reinforced elastomeric bearings shall be considered as an assembly unit to be inserted when the steel plates are placed on the Torus bearing assembly. The Torus assembly will be placed in the plate system to be the bearing assembly.

11. Steel plate shall be shop painted in accordance with Section 616, coordination of the stainless steel pad to be machine finished, and the Torus assembly shall be placed in the plate system. The Torus assembly will be placed in the plate system to be the bearing assembly.

12. PTFE sheet shall be dimpled lubricated meeting the requirements of ASTM F 470. The sheet shall have the same plan area as the load plate.

### Steel Reinforced Elastomeric Bearing Table

<table>
<thead>
<tr>
<th>Location</th>
<th>Work</th>
<th>Type</th>
<th>Section 616 Thickness</th>
<th>Total No. of Holes</th>
<th>Capacity per Pad</th>
<th>Welding</th>
<th>THK</th>
<th>L</th>
<th>Width</th>
<th>THK</th>
<th>Lateral Thickness</th>
<th>Overall Thickness</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX1</td>
<td>EX1</td>
<td>EX1</td>
<td>88°51'57&quot; ± 8&quot; ±</td>
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<td></td>
</tr>
<tr>
<td>EX2</td>
<td>EX2</td>
<td>EX2</td>
<td>88°51'57&quot; ± 8&quot; ±</td>
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</tbody>
</table>

### Steel Keeper Bar System

1. Steel keeper bars shall be ASTM A 709 Grade 36 galvanized steel. Anchors shall be ASTM A 153.

2. Nut and washers shall be uncoated ASTM A 127.

### Elastomeric Bearing Pad Plan

- **LEGEND:**
  - W: Non-factory service (friction and dynamic load allowance).
  - T: Temperature modifiers.

### Elastomeric Bearing Pad Elevation

- **NOT TO SCALE:**
  - Elastomeric bearing pad, see detail on this sheet
  - Stainless steel load plate, see detail on this sheet
  - Stainless steel load plate, see detail on this sheet
  - Stainless steel load plate, see detail on this sheet

### Expansion Bearing Elevation

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Expansion Bearing Plan

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section A-A

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section B-B

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section C-C

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section D-D

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section E-E

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section F-F

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section G-G

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section H-H

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section I-I

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section J-J

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section K-K

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section L-L

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section M-M

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section N-N

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section O-O

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section P-P

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section Q-Q

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section R-R

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section S-S

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section T-T

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section U-U

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section V-V

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section W-W

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section X-X

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section Y-Y

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet

### Section Z-Z

**NOT TO SCALE**

- Elastomeric bearing pad, see detail on this sheet
NOT FOR CONSTRUCTION

SECTION 12: 15:34 P.M.

DL+LL+IMP

T201407404

S3

S2

S2

DL+LL+IMP

7'-2"±

NOT FOR CONSTRUCTION

TO REMAIN

CONCRETE EXISTING REMOVED AND REPLACED (TYP.)

EXISTING BEARING TO BE REMOVED (TYP.)

AND ANCHOR BOLT TO ABUTMENT F36

C BEARING

REMAIN (TYP.)

PEDESTAL TO EXISTING

"2

EXISTING C15x33.9 DIAPHRAGMS IN BAYS 1 AND 3 TO BE REMOVED (NOT SHOWN).

CONCRETE DECK AND CONCRETE END DIAPHRAGM NOT SHOWN FOR CLARITY.

EXISTING †" x 7" CONNECTION PAD (TYP.), SEE GROUT LEVELING C JACKING ASSEMBLY (TYP.)

C JACKING STIFFENER AND (TYP.)

JACKING STIFFENER

DETAIL, DWG. RH-02

DIAPHRAGM

W21x50 JACKING

MATCH EXISTING 1'-10" C EXISTING BEAM (TYP.)

C EXISTING CONNECTION PLATE

L

BEAM (TYP.)

EXISTING W36x160 (LOOKING BACK STATION)

BEARINGS, AND INSTALLING NEW ELASTOMERIC BEARING BEAMS ALONG THE BEARING LINE, REMOVING THE EXISTING THE WORK SHALL CONSIST OF JACKING THE EXISTING AND LEVEL BEARING.

ASSEMBLIES FOR THE BEARING LINE BEING REPLACED ON OPERATION.

OPERATIONS TO ENSURE CONFORMANCE WITH ALL PERTINENT BEARINGS.

THE CONTRACTOR MAY REMOVE THE EXISTING STEEL CONNECTION PLATES AT LOCATIONS TO BE RELATED TO STRUCTURAL EQUIVALENCY.

STRUCTURALLY EQUIVALENT AND MAY BE REJECTED BY THE APPROVAL. ANY ALTERNATIVE DESIGN SHALL BE

RELATED TO CONSTRUCTION OF THE NEW DECK AND APPROACH SLAB.

REDESIGN OF THESE ELEMENTS WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD RELATED TO THE DESIGN OF THE JACKING ASSEMBLY AND THE FACTORED LOADS FOR JACKING USE A DEAD LOAD

THE CONTRACTOR SHALL USE ONLY THOSE JACKS WITH THE CONTRACTOR SHALL SET PLUMB TO VERTICAL.

THE CONTRACTOR SHALL ADVANCE THE LOCK-NUTS ON ALL JACKS SUCH THAT THE MAXIMUM VERTICAL DISPLACEMENT OF ANY BEAM IS LIFTED EVENLY.

ANY TIME DURING THE JACKING PROCEDURE.

ANY TWO ADJACENT BEAMS IS NOT TO EXCEED "" AT ANY TIME.

TO DRILLING HOLES IN EXISTING CONNECTION PLATES.

THE CONTRACTOR SHALL DRILL "" DIAMETER ASTM F3125 GR. A325. ALL BOLTS ARE AASHTO M270 GRADE 50 MATERIAL.
NOT FOR CONSTRUCTION
ARCHITECTURAL GROOVE DETAIL

DRIP NOTCH DETAIL

ARCHITECTURAL GROOVE TERMINATION DETAIL

NOTES:
1. 2" DIAMETER CONDUIT SHALL BE GALVANIZED STEEL IN ACCORDANCE WITH SPECIFICATIONS 106.2. PARAPET REQUIRES INCORPORATING TO TERMS ABOVE - PORTLAND CEMENT CONCRETE MASONRY, PARAPET, CLASS A.

ARCHITECTURAL GROOVE (TYP.)

FLOWLINE (TYP.)

ARCHITECTURAL GROOVE TERMINATION DETAIL

PARAPET DETAIL

SEE DETAIL THIS SHEET

ARCHITECTURAL GROOVE TERMINATION DETAIL

SEE NOTE 1

EAST PARAPET ONLY,

2" DIA. CONDUIT EXIT PARAPET ONLY, SEE NOTE 1.

2" x 4" ALLOY CONSTRUCTION JOINT

PARAPET DETAILS

SCALE AS NOTED

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE
NOT FOR CONSTRUCTION
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
**LEGEND:**
- **Remove Limits**
- **Access in Parapet**

**REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE**

**SCALE AS NOTED**

---

**CONTRACT**

**COUNTY**

**DESIGNED BY:**

**CHECKED BY:**

**BRIDGE NO.**

**ADDENDA / REVISIONS**

**SECTION**

**SHEET NO.**

---

**MATERIALS:**
- **PLATE (TYP.)**
- **EXTRUSION STEEL**
- **JOINT**
- **ADJUSTMENT**
- **DIA. x 8" STUDS**
- **FLOWLINE (TYP.)**
- **RECESSION IN PARAPET 1" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**

**NOTES:**
1. **FORM CONCRETE RECESS AREA IN PARAPET AND GRIND TO PROVIDE SMOOTH SURFACE.**
2. **PLACE PARAPET CONCRETE WITH STEEL BENT PLATES, INSERTS, AND BOLTS IN PLACE TO ENSURE PROPER ALIGNMENT OF JOINTS.**
3. **PLATE EDGE OF JOINT SHALL BE UNPAINTED GALVANIZED STEEL.**
4. **BOLTS SHALL BE ASTM TYPE 304 STAINLESS STEEL COUNTERSUNK SCREW WITH ASTM A108 CONCRETE THREADED ANCHOR OR THREADED INSERT. HEAD OF BOLTS SHALL BE FLUSH WITH FACE OF STEEL PLATE.**
5. **REMOVE EXISTING LONGITUDINAL REINFORCEMENT FROM JOINT SYSTEM.**

---

**VIEW A-A**

**VIEW B-B**

---

**PERIODIC AND TEMPORARY PROVISIONS:**
- **1" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**
- **2" CLR.**

**NOTES:**
- **BOLTS SHALL BE ASTM TYPE 304 STAINLESS STEEL COUNTERSUNK SCREW WITH ASTM A108 CONCRETE THREADED ANCHOR OR THREADED INSERT. HEAD OF BOLTS SHALL BE FLUSH WITH FACE OF STEEL PLATE.**
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- **REMOVE EXISTING LONGITUDINAL REINFORCEMENT FROM JOINT SYSTEM.**

---

**NOT FOR CONSTRUCTION**
CONTRACT
COUNTY
DESIGNED BY:
CHECKED BY:
BRIDGE NO.
ADDENDA / REVISIONS
SECTION
SHEET NO.
N :
19 8 7 -0 0 4 
C o n t r a c t_ I-9 5 
C A D D 
B r i d g e 
B R 1-7 5 8 G _ E X 0 6 .d g n
5 /3 1/2 0 19
12 :15 :4 1 P M
BEARING ABUTMENT F36
CL
1'-0"±
2'-0"±
1'-0"±
2'-0"±
SEE DWG. AS-02 FOR DETAILS
APPROACH SLAB
SEE DWG. AS-02 FOR DETAILS
APPROACH SLAB CONSTRUCTION JOINT
1 '- 6 " ±
DELD
OT
BR
ID
GE
N
ECTIO
N
TO REMAIN, SEE NOTE 2
EXISTING REINFORCEMENT
TO REMAIN
EXISTING GIRDER
TO REMAIN
EXISTING DECK
TO REMAIN
REINFORCEMENT
EXISTING

= 1'-0"
PLAN - DECKOVER

DECKOVER DETAIL
1/8" × 1'-0"

NOTES:
1. BARS SPACED TO MATCH EXISTING TOP LONGITUDINAL BARS BETWEEN GIRDERS.
2. CUT EXISTING REINFORCEMENT TO REMAIN 2" CLEAR OF NEW TOP OF BACKWALL.
3. EXISTING BARS TO REMAIN SHALL BE CLEANED IN ACCORDANCE WITH SUBSECTION 628.03(E)7.
   BARS WITH CORROSION, BROKEN, OR WITH INADEQUATE BOND SHALL BE REPLACED IN ACCORDANCE WITH SUBSECTION 628.03(E)7.

LEGEND:

ABUTMENT F36 JOINT AND BACKWALL REMOVAL DETAIL
1/8" × 1'-0"

NOTE:
APPROACH SLAB CONSTRUCTION JOINT
SEE DWG. AS-02 FOR DETAILS

EXISTING ENDER NO. 177,
EXISTING ENDER NO. 177,
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PLAN - TYPICAL DECKOVER DETAIL AT OVERHANG

FROM END OF STRUCTURE TO BE SHOWN, EASILY AND SIMILARLY

1" THICK ELASTOMERIC PD #1750 VENTED

TOP OF BACKWALL CEMENTED TO AVAILABLE FLEXIBLE AND SPONGE MATERIAL

DECK OVERHANG AT DECK OVER

ABOVE PENETRATION NEW EXISTING REINFORCEMENT

S - ADD 0 3' - 12" TYP. 1

ADDS 6.1 - ADD 0 12" TYP. 1

SECTION C-C

1/2" = 1'-0"

SECTION D-D

1/2" = 1'-0"

DECK OVERHANG AT DECK OVER

HEAL FACE OF EXISTING BACKWALL

ABOVE PENETRATION NEW EXISTING REINFORCEMENT

1 1/2" CLOSED CELL NEOPRENE SPONGE JOINT FASTENED TO VERTICAL FACE OF BACKWALL WITH COPPER NAILS

1" THICK ELASTOMERIC PD #1750 VENTED

POLYETHYLENE SHEETING AS BOND BREAKER AND PROVIDE 2 LAYERS OF 4 MIL POLYETHYLENE SHEETING AS SLIDING SURFACE TROWEL
NOT FOR CONSTRUCTION
### NOMINAL DIMENSIONS

<table>
<thead>
<tr>
<th>Diameter (in)</th>
<th>3/8</th>
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<th>1/4</th>
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### JOINT F33

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### JOINT F34

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### STIRRUP AND TIE HOOKS

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<th>Diameter (in)</th>
<th>90° Width (in)</th>
<th>90° Depth (in)</th>
<th>180° Width (in)</th>
<th>180° Depth (in)</th>
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### STANDARD BAR BENDS

<table>
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<th>Diameter (in)</th>
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### SPECIAL BAR BENDS

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<tr>
<td><strong>D</strong></td>
<td>0.500</td>
<td>0.625</td>
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</table>
SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. PAYMENT FOR ADMIXTURE WILL BE INCIDENTAL TO ITS RESPECTIVE CONCRETE ITEM (ITEMS 610008, 610017, AND 610018). THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT DOSAGE RECOMMENDED BY MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:

- Provides both expansion and pore water surface tension or two separate products each added at

PROVIDES EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT

DEPARTMENT WITH APPROVAL OF THE ENGINEER.

- Chamfer all exposed edges f" x f" unless otherwise noted.

PORTLAND CEMENT CONCRETE:

ELSEWHERE, UNLESS OTHERWISE SPECIFIED ON THE PLANS. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO AASHTO M284 (ASTM D3963).

- Any field cutting or field bending must be approved by the engineer. Payment shall be incidental to the bar reinforcement item.

ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE ENGINEER.

- Welding of reinforcement during fabrication or construction is not permitted unless specified.

CONCRETE SEALER:

PEDESTALS AT EACH PIER. SILICONE ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO THE REMAINING EXPOSED CONCRETE EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING (DENOTED AS 'CVN' ON PLANS) OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS SHALL BE INCLUDED. SUPPLEMENTAL TESTING IS RECOMMENDED FOR THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED, EXCEPT AS NOTED ON THE PLANS.

PERMANENT BRIDGE MEMBERS.

- Parapets at abutment

- Parapets at span H4

(A) DELEOD BRIDGE DESIGN MANUAL, 2016 EDITION.

(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2014, 7TH EDITION, CUSTOMARY U.S. UNITS INCLUDING 2015 AND 2016 INTERIMS.

LOADING:

- All existing dimensions and tolerances shown are based on the most accurate information available and are approximate only. The contractor shall verify all existing dimensions, geometry, and elevations as necessary prior to ordering any materials and coordinating construction to ensure proper fit of the proposed construction package shall be incidence to N.J. DOT - CONSTRUCTION ENGINEERING.

ROADWAY CLEARANCES:

- Contingent quantities:

ITEM CONTINGENCY PERCENTAGES.

UTILITIES:

COORDINATION.

REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE APPLICABLE.

PROJECT NOTES

THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS AND FIELD INSPECTION NOTES TAKEN FROM NOVEMBER 16, 2014 THROUGH FEBRUARY 5, 2015. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION TO THE PROPOSED CONSTRUCTION.

THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.

NOT FOR CONSTRUCTION
DEEP SPALL REPAIR NOTES

1. DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP OF THE PCC MASONRY OR DECK SURFACE.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL/REPAIRING OR EXISTING SPALL REPAIRS ON I-95 BRIDGE DECK ARE PERFORMED AFTER MILLING AND HYDRODEMOLITION AS DIRECTED BY THE ENGINEER.
3. SPALLED AREA NOT TO SCALE.

REHABILITATION OF PCC MASONRY NOTES

1. REMOVAL OF EXISTING PCC MASONRY IS DEFINED AS DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND THE SURFACE OF CONCRETE.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL/REPAIRING OR EXISTING SPALL REPAIRS ON I-95 BRIDGE DECK ARE PERFORMED AFTER MILLING AND HYDRODEMOLITION AS DIRECTED BY THE ENGINEER.
3. SPALLED AREA NOT TO SCALE.

REMOVAL OF EXISTING DECK REPAIRS

1. AFTER MILLING PRIOR TO HYDRODEMOLITION, ANY EXISTING DECK REPAIRS THAT ARE LOOSE, PARTIALLY DELAMINATED, OR OTHERWISE UNSOUND WILL BE MEASURED BY THE ENGINEER AND NOT INCLUDED.
2. THE CONTRACTOR SHALL REMOVE ANY EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628.03 (E).
3. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
4. PRIORITY TO DECK REPAIR - REMOVAL OF EXISTING DECK REPAIR FOR FULL DEPTH.
5. IF DEPTH OF EXISTING DECK REPAIR REACHES FULL DEPTH AND WITH THE APPROVAL OF THE ENGINEER, REPAIR AREA SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 628.03 (F) AND PAID FOR UNDER ITEM 628053 - DECK REPAIR, FULL DEPTH.

DECK REPAIR, FULL DEPTH

1. AFTER MILLING PRIOR TO HYDRODEMOLITION, ANY EXISTING DECK REPAIRS THAT ARE LOOSE, PARTIALLY DELAMINATED, OR OTHERWISE UNSOUND WILL BE MEASURED BY THE ENGINEER AND NOT INCLUDED.
2. THE CONTRACTOR SHALL REMOVE ANY EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628.03 (E).
3. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
4. PRIORITY TO DECK REPAIR - REMOVAL OF EXISTING DECK REPAIR FOR FULL DEPTH.
5. IF DEPTH OF EXISTING DECK REPAIR REACHES FULL DEPTH AND WITH THE APPROVAL OF THE ENGINEER, REPAIR AREA SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 628.03 (F) AND PAID FOR UNDER ITEM 628053 - DECK REPAIR, FULL DEPTH.

HYDRODEMOLITION AND DECK REPAIR (WITHOUT OVERLAY)

1. MILLING MACHINERY AND LMC OVERLAY WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
2. MILLING MACHINERY AND LMC OVERLAY WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
3. MILLING MACHINERY AND LMC OVERLAY WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

CONCRETE REPAIR NOTES

1. CONCRETE REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP OF THE PCC MASONRY OR DECK SURFACE, AS DIRECTED BY THE ENGINEER.
2. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03 (E) OF THE STANDARD SPECIFICATIONS.
3. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03 (E) OF THE STANDARD SPECIFICATIONS.
4. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03 (E) OF THE STANDARD SPECIFICATIONS.
5. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03 (E) OF THE STANDARD SPECIFICATIONS.

NOT FOR CONSTRUCTION
### QUANTITIES

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM TITLE</th>
<th>UNIT</th>
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<td>020100</td>
<td>STRUCTURAL EXCAVATION</td>
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<td>020105</td>
<td>REMOVAL OF TRUCK CLEARANCES</td>
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<td>TRASH CONTAINER BASE COURSE, TYPE B</td>
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<td>TRENCHING, BRIDGE DECK</td>
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<td>PROTECTIVE SHOES</td>
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**NOTE:**

Quantities include contingent percentages as noted in Response Plan, PC-01 and as shown in the tabs thereof on Plan PK-01.
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DEPARTMENT OF TRANSPORTATION

SUMMARY OF PROPOSED REPAIRS AND RECONSTRUCTION ITEMS

NOT FOR CONSTRUCTION
NOTES:

1. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP F STARTING AT STA. 500+00.
2. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E STARTING AT STA. 700+00.
3. DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP H, EXCEPT AS NOTED.
4. CORE NOT SHOWN FOR CLARITY. EXISTING CORE WIDTH VARIES FROM 1'-4"± TO 3'-10"± IN SPANS H3-H7. PROPOSED CORE WIDTH VARIES FROM 1'-4"± TO 3'-10"± FOR ADDITIONAL INFORMATION.
5. FOR SPAN IN TYPICAL SECTION INFORMATION, SEE ERM. 8-3-20.
6. FOR PARAPET DETAIL, DRIP NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL, SEE ERM. 8-3-20.
7. SEE ERM. 8-3-47 FOR DEMOLITION DETAILS.

PROPOSED TYPICAL SECTION

(STA. 816+13.90 TO STA. 818+61.99 AND STA. 819+44.89 TO STA. 820+31.82)

W = 1'-4"

EXISTING TYPICAL SECTION

(STA. 816+13.90 TO STA. 818+61.99 AND STA. 819+44.89 TO STA. 820+31.82)

W = 1'-4"

LIMITS OF LMC OVERLAY AND HMWM CONCRETE SEALER

LMC OVERLAY

SEE NOTE 7

8"± DECK,

LIMITS OF LMC OVERLAY AND HMWM CONCRETE SEALER

CONCRETE SEALER

SILICONE ACRYLIC

T201407404

NEW CASTLE COUNTY

BRIDGE NO.

BRIDG E 1-758H

2 /8 /2018

6 :4 6 :4 3 P M

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DEPARTMENT OF TRANSPORTATION

DEL A W E

COUNTY

DESIGNED BY:

CHECKED BY:

CONTRACT

COUNTY

TOTAL SHTS.

SHEET NO.

REVISIONS

ADDENDUMS / REVISED

REVISIONS

TOTAL SHTS.
NOTES:
1. ALL LINES SHOWN ARE MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP H, EXCEPT AS NOTED.
2. DIMENSIONS MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP F.
3. DIMENSIONS MEASURED PERPENDICULAR TO CONSTRUCTION BASELINE RAMP E.
4. FOR PAVER DETAIL, Curb NOTCH DETAIL, AND ARCHITECTURAL GROOVE DETAIL SEE ENG. EM-98.
5. FOR VAS JIELD DETAIL, SEE SEG. DM-01 FOR VAS JIELD DETAIL.
6. SEE ENG. EM-91 FOR VAS JIELD DETAIL.
NOTES:

1. Dimensions shown are measured perpendicular to construction baseline RAMP H, except as noted.

2. Dimensions measured perpendicular to construction baseline RAMP E.

3. Dimensions measured perpendicular to construction baseline RAMP F.

4. For project details, shop notes, details, and construction drawings, see the respective project plans.

5. Removal of existing overhead sign structure in accordance with C.S. Section 4-1556 - Removal of Sign Structures and Extensions.

6. See CR. 6-0 for demolition details.
NOTES:

1. Dimensions shown are measured perpendicular to
   construction baseline ramp B, except as noted.

2. Dimensions measured perpendicular to construction
   baseline ramp B.

3. Dimensions measured perpendicular to construction
   baseline ramp E.

4. For parapet detail, see note 5, and
   architectural groove detail, see note 1 (Typ.).

5. See note DM-01 for demolition details.

EXISTING TYPICAL SECTION
(STA. 821+18.68 TO 822+05.76)
N ± 1'-0" ±

OUT-TO-OUT VARIES 14'-6" TO 17'-0" ±
CURB-TO-CURB VARIES 17'-2" TO 17'-5" ±
GORE AREA VARIES 14'-4" ± TO 35'-7" ±
OUT-TO-OUT VARIES 54'-8" ± TO 74'-7" ±
CURB-TO-CURB VARIES 51'-11" ± TO 71'-10" ±
P/R VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 19'-10" ± TO 17'-4" ±
VARIES 7'-8" ± TO 6'-0" ±
GORE AREA VARIES 15'-11" ± TO 37'-4" ±
TO 4'-6" ± SHLD.
TO 4'-8" ± SHLD.
TO 3'-8" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 15'-10" ± TO 16'-0" ±
4'-6" ±
4'-6" ±
4'-6" ±
GORE AREA VARIES 15'-11" ± TO 37'-4" ±
TO 4'-6" ± SHLD.
TO 4'-8" ± SHLD.
TO 3'-8" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 15'-10" ± TO 16'-0" ±
4'-6" ±
4'-6" ±
4'-6" ±

PROPOSED TYPICAL SECTION
(STA. 821+18.68 TO 822+05.76)
N ± 1'-0" ±

OUT-TO-OUT VARIES 14'-6" TO 17'-0" ±
CURB-TO-CURB VARIES 17'-2" TO 17'-5" ±
GORE AREA VARIES 14'-4" ± TO 35'-7" ±
OUT-TO-OUT VARIES 54'-8" ± TO 74'-7" ±
CURB-TO-CURB VARIES 51'-11" ± TO 71'-10" ±
P/R VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 19'-10" ± TO 17'-4" ±
VARIES 7'-8" ± TO 6'-0" ±
GORE AREA VARIES 15'-11" ± TO 37'-4" ±
TO 4'-6" ± SHLD.
TO 4'-8" ± SHLD.
TO 3'-8" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 15'-10" ± TO 16'-0" ±
4'-6" ±
4'-6" ±
4'-6" ±
GORE AREA VARIES 15'-11" ± TO 37'-4" ±
TO 4'-6" ± SHLD.
TO 4'-8" ± SHLD.
TO 3'-8" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 6'-10" ±
VARIES 12'-9" ± TO 12'-6" ±
VARIES 15'-10" ± TO 16'-0" ±
VARIES 35'-9" ± TO 50'-1" ±
VARIES 15'-10" ± TO 16'-0" ±
4'-6" ±
4'-6" ±
4'-6" ±

NOTES:

1. Beam (Typ.)

2. Existing steel No. (Typ.)

3. Existing beam No. (Typ.)

4. Architectural groove detail, see DWG. PA-01.

5. See DWG. DM-01 for demolition details.

DATE: 2/8/2018

SHEET:

DELTA
department of transportation

TOTAL SHTS.

REHABILITATION OF I-95
FROM I-495 TO NORTH OF
BRANDYWINE RIVER BRIDGE

REHABILITATION OF I-95
FROM I-495 TO NORTH OF
BRANDYWINE RIVER BRIDGE

COUNTY

DESIGNED BY:

CHECKED BY:

BRIDGE NO.

ADDENDUMS / REVISIONS

NEW CASTLE

DEPARTMENT OF TRANSPORTATION

...Bridge 1758H 758H TS_04.dgn

...Bridge 1758H 057

6:46:44 PM

1 758H 057

BRIDGE TYPICAL SECTIONS STA. 821+18 TO 822+05
SUGGESTED SEQUENCE OF CONSTRUCTION:

1. Remove existing deck to the limits shown.
2. Place new LMC overlay.
3. Construct new 32" F-shape parapets. See DWGs. PA-01 and DT-01 for details.
4. Typical limits of demolition.

DEMOlITION NOTES:

1. Existing deck surface to be removed (typ.) prior to pavement milling.
2. All existing reinforcement shall be removed and replaced with new, new deck shall be lapped with top slab, see DWG. 760013 for additional details.
3. Existing longitudinal reinforcement not shown for clarity, see DWG. 760013 for additional details.
4. All existing longitudinal reinforcement within the limits of full (both steel) shall be removed and replaced. Existing longitudinal reinforcement not shown for clarity, see DWG. 760013 for additional details.
5. Existing steel shear connectors in top flange of fascia beam shall remain, see DWG. 760013 for additional details.
6. Existing deck surface after removal operations shall be scarified to 1" min. to 3/4" max. via hydrodemolition.
7. New cast-in-place concrete after removal operations shall be scarified to 1" min. to 3/4" max. via hydrodemolition.
8. Existing top and bottom transverse reinforcement to remain shall be integrated into new deck, new deck bars shall be lapped with top slab. See DWG. 760013 for additional details.

TOTAL SURFACE HYDRODEMOLITION DETAIL (NO OVERLAY)

EXISTING DECK SURFACE AFTER REMOVAL OPERATIONS

EXISTING DECK SURFACE BEFORE TOTAL SURFACE HYDRODEMOLITION
NOT FOR CONSTRUCTION

1. Steel for beam designations, see dwgs. TS-01 through TS-03.

2. For beam designations, see dwg. TS-04.

3. Dimensions by beam spacing and based on as-built plans dated April 6, 1977. Field verify all dimensions prior to fabricating expansion joints.

4. For beam joint dimensions, see dwg. TS-05.

5. Steel for deck joints and steel extrusions shall be AASHTO M270, graded 36 (ASTM A36) at minimum.

6. Expansion joints shall be made of an approved, moisture-curing, moisture cure epoxy adhesive. The expansion joint system shall be applied to the entire interior area of the existing steel structure. The expansion joint system will be paid for under item 624000 - Prefabricated Expansion Joint System, 3".

7. Steel extrusions shall be hot-dip galvanized. Entire expansion can be painted after fabrication using a urethane system. Steel for deck joints and steel extrusions shall be a moisture-curing, moisture cure epoxy adhesive. The expansion joint system shall be applied to the entire interior area of the existing steel structure.

8. Lubricant-adhesive for use in installing and securing expansion joint elements shall be to steel joint components or for one half inches during installation. The expansion joint system is to be fabricated in sections which will fit over the steel extrusion. All materials used in the fabrication of the expansion joint system are to be listed by the National Fire Protection Association (NFPA) as fireproof.

9. Expansion joint system shall be installed so that the field joints are spaced at least 12 inches (300 mm) apart. Expansion joint system shall be designed to accommodate thermal movement of the steel members, including movement due to temperature changes, wind loading, and seismic activity. The expansion joint system shall be designed to accommodate any movement of the steel members, including the movement due to temperature changes, wind loading, and seismic activity.

10. Bonding plate and steel extrusion shall be installed at the joint line to maintain the joint system. The bonding plate and steel extrusion shall be designed to accommodate any movement of the steel members, including movement due to temperature changes, wind loading, and seismic activity.

11. If field option is proposed, field joints in 30" plate and 6" x 4" x 8" may be omitted.

12. At joint design, steel members are to be specified. Use of complete joint components or for one half inches during installation.

13. Use typical joint plan for layout of 6" x 4" x 8" and steel extrusion.

NOTES:

1. For beam designations, see dwgs. TS-01 through TS-03.

2. For beam designations, see dwg. TS-04.

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12. At joint design, steel members are to be specified. Use of complete joint components or for one half inches during installation.

13. Use typical joint plan for layout of 6" x 4" x 8" and steel extrusion.
LEGEND:

- REMOVAL LIMITS
- RECESS IN PARAPET

1. MATCH JOINT

2. PLACE PARAPET CONCRETE WITH STEEL BENT PLATE, INSERTS, AND BOLTS IN PLACE TO INSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION.

3. CUT EXISTING REINFORCEMENT 2" CLR. OF NEW EDGE OF JOINT (TYP.).

4. CUT EXISTING REINFORCEMENT 2 1/2" CLR. (TYP.).

5. LONGITUDINAL EXISTING REINFORCEMENT TO REMAIN.

6. PLACE PARAPET CONCRETE WITH STEEL BENT PLATE, INSERTS, AND BOLTS IN PLACE TO INSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION.

7. LONGITUDINAL EXISTING REINFORCEMENT TO REMAIN.

PARAPET JOINT PLATE NOTES:

1. PLACE PARAPET CONCRETE WITH STEEL BENT PLATE, INSERTS, AND BOLTS IN PLACE TO INSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION.

2. LONGITUDINAL EXISTING REINFORCEMENT TO REMAIN.

3. PLACE PARAPET CONCRETE WITH STEEL BENT PLATE, INSERTS, AND BOLTS IN PLACE TO INSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION.

4. PLACE PARAPET CONCRETE WITH STEEL BENT PLATE, INSERTS, AND BOLTS IN PLACE TO INSURE PROPER ALIGNMENT OF INSERTS AND HOLES IN THE STEEL PLATE. REMOVE EXISTING JOINT PLATES. APPLY APPROVED BONDBREAKER TO SLIDING PLATES PRIOR TO INSULATION.

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NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
APPROACH SLAB PLAN

1. APPROACH SLAB TO PARAPET CONNECTION

2. APPROACH SLAB PLAN

3. LIMITS OF POLYETHYLENE SHEETING SLIDING SURFACE

4. SECTION A-A

NOTES:

1. POLYETHYLENE SHEETING SHALL EXTEND FROM INSIDE FACE 4" OF PARAPET TO EXISTING GROUNDLINE AT OUTSIDE FACE OF WINGWALL AND LIMITS OF SILICONE ACRYLIC CONCRETE SEALER SHALL EXTEND FROM INSIDE FACE 4" OF PARAPET ON BRIDGE. EXISTING WINGWALL. FLOWLINE AT PARAPET SHALL MATCH FLOWLINE OF EXISTING PARAPET ON BRIDGE AND RETAINING WALL. FLOWLINE AT PARAPET SHALL MATCH OUTSIDE FACE OF PARAPET SHALL BE CONSTRUCTED FLUSH WITH FRONT FACE OF EXISTING BACKWALL.

2. FOR SECTION B-B, SEE DWG. AS-02.

3. FOR WINGWALL AND RETAINING WALL RECONSTRUCTION DETAILS, SEE DWG. AS-06

4. LIMITS OF POLYETHYLENE SHEETING SLIDING SURFACE

FOR SLIDING SURFACE, POLYETHYLENE SHEETING SHALL BE REPLACE WITH A NEW SHEET AS A BOND BREAKER (TYP.)

FOR PARAPET REINFORCEMENT, VARIIES

APPROACH SLAB REINFORCEMENT PLAN

APPROACH SLAB PLAN AND TYPICAL SECTION
NOT FOR CONSTRUCTION
NOTES:

1. FOR APPROACH SLAB PLAN AND DETAILS, SEE DWGS. AS-01 AND AS-02.
3. FOR APPROACH SLAB PLAN AND DETAILS, SEE DWGS. AS-01 AND AS-02.
4. SEE NOTE 4.
5. SEE NOTE 5.

NOTE: APPROACH SLAB NOT SHOWN FOR CLARITY.

SECTION F-F

SLEEPER SLAB REINFORCEMENT PLAN

SLEEPER SLAB PLAN

NOTES:

1. FOR APPROACH SLAB PLAN AND DETAILS, SEE DWGS. AS-01 AND AS-02.
3. FOR APPROACH SLAB PLAN AND DETAILS, SEE DWGS. AS-01 AND AS-02.
4. SEE NOTE 4.
5. SEE NOTE 5.

NOTE: APPROACH SLAB NOT SHOWN FOR CLARITY.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
### Bending Dimensions

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<td>Length</td>
<td>Size</td>
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### Deck Numbers

| QTY. | 155 |

### Diameter

| Dia. | 5 |

### Stirrup and Tie Hooks

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### Standard Bar Bends

- Dimensions shown in circles refer to bend type.
- All standard bar bends are shown in isometric view as drawn.
- All dimensions are given in inches, except "A" and "B" on end 90° and 135° bends.
- Dimensions are shown to the nearest 1/8" unless otherwise noted. Standard "O" is the same for all bends and hooks. Each bend type is identified by the letters "A" and "B".
- Where exact spacing from "O" is critical, "A" and "B" must be shown.
- Where dimensions shown are not critical, standard spacing for specific bend type is used.
- All bends shown are to be used for reinforcing purposes only and may not be used for other purposes.

### Special Bar Bends

- For all special bends, "O" of steel, hooks, etc., refer to type above.
SECTION 200

1. 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. All work related to
   moving and reinstallation of the sign shall be incidental to item #211000 - removal of structures
   and obstructions. If the sign is damaged during construction, the sign must be replaced at the
   contractor's expense.

MISCELLANEOUS

2. DEFINITIONS:
   A MINIMUM OF 1' - 6" SHALL BE MAINTAINED ABOVE ALL ROADWAYS.

3. UTILITIES:
   SEE UTILITY STATEMENT AND UTILITY RELOCATION PLAN SHEETS FOR FURTHER INFORMATION ON UTILITY
   COORDINATION.

4. ENVIRONMENTAL COMPLIANCE:
   REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE
   ASSOCIATED TO THIS PROJECT.

5. THE WORK PROPOSED HEREIN APPLIES TO THE FOLLOWING BRIDGES IN THE CONTRACT:

   - I-751 000
   - I-752 000
   - I-753 000
   - I-754 000
   - I-755 000
   - I-756 6167
   - I-757 000

6. SCOPE OF WORK:
   - CLEAN AND PAINT STRUCTURAL STEEL
   - CLEAN AND GREASE BRIDGE BEARINGS

INDEX OF BRIDGE 1-751 TO 1-757 SHEETS

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QUANTITIES

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<td>TESTING AND DISPOSAL OF EXISTING HAZARDOUS STEEL COATING</td>
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<td>616000</td>
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NOT FOR CONSTRUCTION
SECTION 600

200. CONCRETE DECKS

REINFORCING STEEL DAMAGED DURING CONCRETE REMOVAL SHALL BE REPAIRED OR REPLACED TO THE EXISTING DETERIORATED REINFORCEMENT SHALL BE REPLACED IN-KIND, AS DIRECTED BY THE ENGINEER.

ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.

(A) CHARACTERISTICS:

DO NOT SLIP-FORM BARRIERS.

A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE CONTRACTOR.

MATERIALS WHICH ARE TO REMAIN IN PLACE OR WHICH ARE TO REMAIN THE PROPERTY OF THE STATE, THE DAMAGED THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE THE CONTRACTOR SHALL PREVENT DEBRIS FROM FALLING INTO THE AREAS BELOW THE BRIDGE. CONTRACTOR SHALL DEMOLITION:

- PARTIAL REMOVAL OF WINGWALLS
- PARTIAL REMOVAL OF ABUTMENT BACK WALL

FORMULATED FOR USE IN FREEZING AND THAWING WEATHER.

PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.

DESIGNED TO PROVIDE BOTH THE FOLLOWING CHARACTERISTICS:

DESIGN SPECIFICATIONS:

PROJECT NO: 20-074-05

sheet NO. 20-074-05

PLAN NO: 82-091-02

INDEX SHEET: 77-07-003

BRANDYWINE RIVER BRIDGE

REHABILITATION OF I-95 FROM 495 TO NORTH OF BRANDYWINE RIVER BRIDGE

BRIDGE PROJECT NOTES

SECTION 600

1. Any damage to items noted to be indicated or noted by the contractor, at the direction of the engineer, shall be removed and/or replaced in kind by the contractor’s expense.

2. Damage to be repaired under new stone - removal of structures and obstructions shall include, but not be limited to the following:

- Partial removal of header bay wall
- Partial removal of parapet walls
- Steel deck repairs

3. The contractor shall preserve edges from falling and the areas below the bridge. The contractor shall construct access to, from, and around the bridge, and the contractor shall promptly repair damage to the satisfaction of the engineer.

4. Adequate protective devices are not being employed. The work shall be suspended until adequate protection is provided.

5. Cost of fundings, installations, maintaining, demising and securing of all sheathing, platforms, mats, sills or other protective devices shall be included in the line prices for (for basic protection).

6. During work the contractor shall use care to collect all debris and waste used for construction promptly and prevent any pollution of the project area, the collection and disposal of waste and debris shall not be included but will be considered reasonable to the work done when generated the water and debris.

7. No special protection is not permitted for any part of structure removal operations.

8. The contractor shall perform all work with care so that any material which may be removed in place, or which are to remain the property of the State, will be damaged. If the contractor damaged any materials which are to remain in place or which are to remain the property of the State, the damaged materials shall be repaired or replaced in a manner satisfactory to the engineer at the expense of the contractor.

9. All exposed costs shall be charged by the State without notice.

10. Contractor supply contractors for the protection, bridge deck, and approach slab that includes a workable, realistic, and consistent, time schedule for the work to be performed. In its report, the contractor shall include scope of work and cost estimates for the concrete free-form design. Details and scales shall be prepared by professional engineer and documented in technical proposal. Contractor shall submit drawings for approval.

11. The information shown on these plans for the existing bridge may not be accurate and should not be considered the final plans for construction purposes. The engineer shall assume that the information shown on these plans is the best available information and is accurate. The contractor shall field verify all existing dimensions, geometry, and elevations as necessary prior to ordering any materials and constructing or fabricating any items required for the proposed construction. Payment shall be incidental to Item 703-05 - demolition
eering.

12. The contractor shall construct access to, from, and around the bridge, and the contractor shall promptly repair damage to the satisfaction of the engineer.

13. The contractor shall remove and/or replace the damaged or removed in a manner satisfactory to the engineer at the expense of the contractor.

14. Any damage to items noted to be indicated or noted by the contractor, at the direction of the engineer, shall be removed and/or replaced in kind by the contractor’s expense.

15. Construction shall achieve those characteristics necessary to prevent any pollution of the project area, the collection and disposal of waste and debris shall not be included but will be considered reasonable to the work done when generated the water and debris.

16. No special protection is not permitted for any part of structure removal operations.

17. The contractor shall perform all work with care so that any material which may be removed in place, or which are to remain the property of the State, will be damaged. If the contractor damaged any materials which are to remain in place or which are to remain the property of the State, the damaged materials shall be repaired or replaced in a manner satisfactory to the engineer at the expense of the contractor.

18. All exposed costs shall be charged by the State without notice.

19. Contractor supply contractors for the protection, bridge deck, and approach slab that includes a workable, realistic, and consistent, time schedule for the work to be performed. In its report, the contractor shall include scope of work and cost estimates for the concrete free-form design. Details and scales shall be prepared by professional engineer and documented in technical proposal. Contractor shall submit drawings for approval.

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<td>REMOVE AND REPLACE CONCRETE APPROACH SLAB</td>
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<td>CLEAN SCRUPPER AND DOWNSPOUT</td>
<td>ENTIRE BRIDGE DRAINAGE SYSTEM</td>
<td>CLEAN SCRUPPER AND DOWNSPOUT</td>
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<td>BRIDGE DRAINAGE SYSTEM REPAIRS AND MODIFICATIONS</td>
<td>ALL SCUPPERS SEE DWG, DT 04 FOR DRAINAGE REPAIR LOCATIONS.</td>
<td>MODIFY BRIDGE SCUPPERS AND DRAINAGE GRATE ELEVATIONS TO ADJUSS DECK OVERLAY THICKNESS REPLACE ALL BRIDGE SCRUPPER DRAINAGE GRATE REPAIR DRAINAGE SYSTEM AS SHOWN ON THE Planes</td>
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**NOT FOR CONSTRUCTION**
DEEP SPALL REPAIR NOTES
1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP OF THE REINFORCEMENT.
2. 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 SUBSECTION 628.03(F) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
3. ALL WORK INVOLVING METHODS OF CONCRETE REMOVE, 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 SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628042 - REHABILITATION OF PCC MASONRY.
4. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
5. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, REPAIR AREA SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628042 - REHABILITATION OF PCC MASONRY.
6. REMOVAL OF EXISTING DECK REPAIRS THAT ARE LOOSE, PARTIALLY DELAMINATED, OR OTHERWISE UNSOUND, WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
7. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, REPAIR AREA SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628042 - REHABILITATION OF PCC MASONRY.
8. 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 SUBSECTION 628.03(F) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR OR REHABILITATION OF PCC MASONRY REPAIR EFFECTS ENCOUNTERED DURING SUBSURFACE REMOVAL SHALL BE FILLER MIXTURES AND REINFORCEMENT AS SHOWN FOR DEEP SPALL REPAIR.

REHABILITATION OF PCC MASONRY
1. REHABILITATION OF PCC MASONRY IS DEFINED AS DEEP SPALL PATCHES THAT EXCEED THE LIMITS SHOWN FOR DEEP SPALL REPAIR OR REHABILITATION OF PCC MASONRY REPAIR.
2. THE CONTRACTOR SHALL REMOVE THE EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628053 - DECK REPAIR, FULL DEPTH. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
3. IF REMOVAL OF EXISTING DECK REPAIR REACHES FULL DEPTH, AND WITH THE APPROVAL OF THE ENGINEER, REPAIR AREA SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628042 - REHABILITATION OF PCC MASONRY.
4. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
5. THE CONTRACTOR SHALL REMOVE THE EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628053 - DECK REPAIR, FULL DEPTH.

DECK REPAIR NOTES
1. DEEP SPALLS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP OF THE REINFORCEMENT.
2. ALL WORK INVOLVING METHODS OF CONCRETE REMOVE, 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 SUBSECTION 628.03(F) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
3. ALL WORK INVOLVING METHODS OF CONCRETE REMOVE, 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 SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628042 - REHABILITATION OF PCC MASONRY.
4. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
5. THE CONTRACTOR SHALL REMOVE THE EXISTING DECK REPAIRS IN ACCORDANCE WITH SECTION 628053 - DECK REPAIR, FULL DEPTH. THE REMOVAL SHALL NOT INCLUDE ANY UNSOUND ORIGINAL BRIDGE DECK CONCRETE.
6. ALL WORK INVOLVING METHODS OF CONCRETE REMOVE, 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 SUBSECTION 628.03(F) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR OR REHABILITATION OF PCC MASONRY REPAIR.
NOTES:
1. After Sawcut, intentionally roughen surface and remove all loose concrete to provide a sound bond between existing and new concrete.
2. Do not damage existing vertical reinforcement to retain its integrity. See DWG. AB-01 and AB-02 for details.
3. For limits of wingwall and retaining wall demolition, see DWG. SR-01.
4. For sequence of construction, see DWG. CS-01.

ELEVATION - ABUTMENT A

ELEVATION - ABUTMENT B
PAID FOR UNDER ITEM 626001, SEE DWG. PA-02.

SALVAGING AND REINSTALLING STEEL RAIL SHALL BE REMAIN. SEE DWG. WW-01 FOR DETAILS.

1. AFTER SAWCUT, INTENTIONALLY DEFORM SURFACE AND REMOVE ALL LOOSE CONCRETE TO PROVIDE A SOUND BOND BETWEEN EXISTING AND NEW CONCRETE.

2. DO NOT DAMAGE EXISTING VERTICAL REINFORCEMENT TO PREVENT SEE DWG. WW-02 FOR DETAILS.

3. SALVAGING AND REINSTALLING STEEL RAIL SHALL BE PAID FOR UNDER ITEM 626001, SEE DWG. PA-02.

NOTES:

1. "‰" = 1'-0"

2. "=' = 1'-0"

3. "ƒ" = 1'-0"

4. "SECTION A-A

5. "SECTION B-B"
REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

CONTRACT NO. 1790 059

WINGWALL AND RETAINING WALL DETAILS

NOT FOR CONSTRUCTION

DELTA
DEPARTMENT OF TRANSPORTATION

SCALE AS NOTED

TOTAL SHEETS

ITEM 0000) (INCIDENTAL TO POLYSTYRENE CELLULAR PREFORMED 1" THICK)

Sheet No. 04 - WINGS/RETAILING WALL

APPROACH SLAB

BARRIER

TO REMAIN REINFORCEMENT

EXISTING

TO REMAIN REINFORCEMENT

EXISTING

NOTE:

1. FOR WINGWALL AND RETAINING WALL DEMO DETAILS, SEE Dwg. 81-07.
2. FOR WINGWALL DETAILS, SEE Dwg. PA-01 THROUGH PA-04.
3. FOR APPROACH SLAB DETAILS, SEE Dwg. AS-01 THROUGH AS-07.

RECONSTRUCTION NOTES:

1. APPLY AN EPOXY BONDING COMPOUND BETWEEN EXISTING AND NEW CONCRETE (REFER TO ITEM 610002).
2. CUT EXISTING MORTAR, REMOVAL TO REMAIN 2" BELOW TOP OF PROPOSED TOP OF WINGWALL/RETAINING WALL ELEVATION.
3. EXISTING REINFORCING STEEL TO REMAIN SHOWN IN ELEVATION VIEWS AND POLYSTYRENE NOT SHOWN.

SECTION A-A

SECTION B-B

SOUTHWEST WINGWALL - ELEVATION

SOUTHWEST RETAINING WALL - ELEVATION

SOUTHEAST WINGWALL - ELEVATION

SOUTHEAST RETAINING WALL - ELEVATION

NORTHWEST WINGWALL - ELEVATION

NORTHWEST RETAINING WALL - ELEVATION

NORTHEAST WINGWALL - ELEVATION

NORTHEAST RETAINING WALL - ELEVATION

91-WL5XXX @ 8" MAX.

91-WL5XXX @ 8" MAX.

6 - WL5XXX

6 - WL5XXX

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.

3-WL5XXX E.F.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
1. Engineer shall confirm contractor delineation of crack and spall areas prior to commencement of repairs.
2. For deep spall repair details, see DWG. DT-01.
3. Existing pedestals not shown for clarity. Existing pedestals shall be removed to the top of existing pier cap.
4. For proposed pedestal details, see DWG. PR-27.
5. For pier strengthening details, see DWG. PR-26.

FOR CONSTRUCTION NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
1. ENGINEER SHALL CONFIRM CONTRACTOR DELINEATION OF CRACK AND SPALL AREAS PRIOR TO COMMENCEMENT OF REPAIRS.
2. FOR DEEP SPALL REPAIR DETAILS, SEE DWG. DT-01.
3. FOR CRACK REPAIR DETAILS, SEE DWG. PR-26.

NOTES:

CONCRETE REPAIR QUANTITIES

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NOTES:
1. ENGINEER SHALL CONFIRM CONTRACTOR DELINEATION.
2. DEEP SPALL AND CRACK AREAS PRIOR TO COMMENCEMENT OF REPAIRS.
3. FOR DEEP SPALL REPAIR DETAILS, SEE DWG. DT-01.
4. SHEET INCLUDED PENDING DESIGN LEVEL INSPECTION.
NOT FOR CONSTRUCTION

CONCRETE REPAIR QUANTITIES

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NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOTES:
1. CONTRACTOR SHALL CONFIRM DELAMINATION PRIOR TO COMMENCEMENT OF REPAIRS.
2. DEEP SPALL REPAIR DETAILS: SEE DWG. PR-25.
3. EXISTING PEDESTALS NOT SHOWN FOR CLARITY. EXISTING PEDESTALS SHALL BE REMOVED TO THE TOP OF EXISTING PIER CAP.
4. SOUTH PEDESTALS NOT SHOWN FOR CLARITY, SEE DWG. PR-21.
5. FOR PROPOSED PEDESTAL DETAILS, SEE DWG. PR-27.
6. FOR DEEP SPALL REPAIR DETAILS, SEE DWG. DT-01.
7. ENGINEER SHALL CONFIRM CONTRACTOR DELINEATION OF CRACK AND SPALL AREAS PRIOR TO COMMENCEMENT OF REPAIRS.

DEPARTMENT OF TRANSPORTATION

CONCRETE REPAIR QUANTITIES

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1. SHEAR BLOCKS AND SOUTH PEDESTALS NOT SHOWN FOR CLARITY
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
FRP STRENGTHENING SYSTEM DESIGN CRITERIA

1. **Orthotropic Stiffness:**
   - The orthotropic stiffness of the FRP material shall be calculated using the following formula:
   
   \[ E_{xy} = \frac{E_w}{2(f'c/c_0)^{1/2}} \]

   Where:
   - \( E_{xy} \) is the orthotropic stiffness in the direction of FRP fibers.
   - \( E_w \) is the modulus of elasticity of the concrete.
   - \( f'c \) is the compressive strength of the concrete.
   - \( c_0 \) is the effective concrete cover.

2. **Effective Concrete Depth:**
   - The effective concrete depth shall be calculated as:
   
   \[ d = \frac{f'c}{f_{ctk}} \]

   Where:
   - \( d \) is the effective concrete depth.
   - \( f_{ctk} \) is the characteristic tensile strength of concrete.

3. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
   - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
   
   \[ F_{ap} = \frac{F_{ctk}}{2} \]

   Where:
   - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
   - \( F_{ctk} \) is the characteristic tensile strength of concrete.

4. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
   - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
   
   \[ F_{ap} = \frac{F_{ctk}}{2} \]

   Where:
   - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
   - \( F_{ctk} \) is the characteristic tensile strength of concrete.

5. **Effective Concrete Depth:**
   - The effective concrete depth shall be calculated as:
   
   \[ d = \frac{f'c}{f_{ctk}} \]

   Where:
   - \( d \) is the effective concrete depth.
   - \( f_{ctk} \) is the characteristic tensile strength of concrete.

6. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
   - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
   
   \[ F_{ap} = \frac{F_{ctk}}{2} \]

   Where:
   - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
   - \( F_{ctk} \) is the characteristic tensile strength of concrete.

7. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
   - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
   
   \[ F_{ap} = \frac{F_{ctk}}{2} \]

   Where:
   - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
   - \( F_{ctk} \) is the characteristic tensile strength of concrete.

8. **Effective Concrete Depth:**
   - The effective concrete depth shall be calculated as:
   
   \[ d = \frac{f'c}{f_{ctk}} \]

   Where:
   - \( d \) is the effective concrete depth.
   - \( f_{ctk} \) is the characteristic tensile strength of concrete.

9. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
   - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
   
   \[ F_{ap} = \frac{F_{ctk}}{2} \]

   Where:
   - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
   - \( F_{ctk} \) is the characteristic tensile strength of concrete.

10. **Effective Concrete Depth:**
    - The effective concrete depth shall be calculated as:
    
    \[ d = \frac{f'c}{f_{ctk}} \]
    
    Where:
    - \( d \) is the effective concrete depth.
    - \( f_{ctk} \) is the characteristic tensile strength of concrete.

11. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
    - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
    
    \[ F_{ap} = \frac{F_{ctk}}{2} \]
    
    Where:
    - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
    - \( F_{ctk} \) is the characteristic tensile strength of concrete.

12. **Effective Concrete Depth:**
    - The effective concrete depth shall be calculated as:
    
    \[ d = \frac{f'c}{f_{ctk}} \]
    
    Where:
    - \( d \) is the effective concrete depth.
    - \( f_{ctk} \) is the characteristic tensile strength of concrete.

13. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
    - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
    
    \[ F_{ap} = \frac{F_{ctk}}{2} \]
    
    Where:
    - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
    - \( F_{ctk} \) is the characteristic tensile strength of concrete.

14. **Effective Concrete Depth:**
    - The effective concrete depth shall be calculated as:
    
    \[ d = \frac{f'c}{f_{ctk}} \]
    
    Where:
    - \( d \) is the effective concrete depth.
    - \( f_{ctk} \) is the characteristic tensile strength of concrete.

15. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
    - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
    
    \[ F_{ap} = \frac{F_{ctk}}{2} \]
    
    Where:
    - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
    - \( F_{ctk} \) is the characteristic tensile strength of concrete.

16. **Effective Concrete Depth:**
    - The effective concrete depth shall be calculated as:
    
    \[ d = \frac{f'c}{f_{ctk}} \]
    
    Where:
    - \( d \) is the effective concrete depth.
    - \( f_{ctk} \) is the characteristic tensile strength of concrete.

17. **Assumed Required (Factored) Tensile Strength of FRP Wrap:**
    - The assumed required (factored) tensile strength of FRP wrap shall be determined by the following formula:
    
    \[ F_{ap} = \frac{F_{ctk}}{2} \]
    
    Where:
    - \( F_{ap} \) is the assumed required (factored) tensile strength of FRP wrap.
    - \( F_{ctk} \) is the characteristic tensile strength of concrete.
## FRP STRENGTHENING SYSTEM DESIGN CRITERIA

### Pier Geometry

- **Positive Moment Capacity**: The table lists the capacity for different sections of the pier, indicated in kips/ft.
- **Negative Moment Capacity**: Similar capacity values are listed for negative moments.
- **Shear Capacity**: The shear capacity for each section is also provided.

### FPR Placement

- The placement of FPR materials is shown on the diagram, indicating the areas where FRP is applied and the overall structural layout.

### FRP STRENGTHENING SYSTEM DESIGN CRITERIA Table

<table>
<thead>
<tr>
<th>Pier</th>
<th>Positive Moment Capacity</th>
<th>Negative Moment Capacity</th>
<th>Shear Capacity</th>
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<tbody>
<tr>
<td></td>
<td>(STM Model - System Biaxial Tension Ties)</td>
<td>(STM Model - FPR Biaxial Tension Ties)</td>
<td>(STM Model - Vertical Tension Ties)</td>
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<tr>
<td></td>
<td>(kips/ft)</td>
<td>(kips/ft)</td>
<td>(kips/ft)</td>
</tr>
<tr>
<td>Pier 1</td>
<td>1200.0</td>
<td>1200.0</td>
<td>1200.0</td>
</tr>
<tr>
<td>Pier 2</td>
<td>1500.0</td>
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<td>1500.0</td>
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<tr>
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<td>1800.0</td>
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<td>1800.0</td>
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</table>

### Additional Notes

- **Not for Construction**: Certain sections of the document and drawings are marked to indicate they are not for construction.
- **Addendums/Revisions**: Details on revisions and additions to the design criteria and construction plans are provided.

---

*NOT FOR CONSTRUCTION*
**Delaware Department of Transportation**

**Location:** Rehabiliation of I-95 from I-495 to North of Brandywine River Bridge

**Not for Construction**

---

**Steel Reinforced Elastomeric Bearing Table**

<table>
<thead>
<tr>
<th>Location</th>
<th>Unit</th>
<th>Type</th>
<th>Steel No.</th>
<th>Reaction (kips)</th>
<th>Deflection</th>
<th>Shape Factor</th>
<th>Cover</th>
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<tbody>
<tr>
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<td>12</td>
<td>E1</td>
<td>3-5-100</td>
<td>76.51</td>
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<td>16</td>
<td>12.00</td>
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<td>12</td>
<td>E1</td>
<td>3-5-100</td>
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<td>E1</td>
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<td>105.4</td>
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<td>16</td>
<td>1.00</td>
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<td>70.94</td>
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**Solids Plate Table**

<table>
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<tr>
<th>Location</th>
<th>Unit</th>
<th>Width</th>
<th>Length</th>
<th>Hardness</th>
</tr>
</thead>
<tbody>
<tr>
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<td>20.00</td>
<td>14.00</td>
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</tr>
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<td>Pier 5</td>
<td>12</td>
<td>25.00</td>
<td>14.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Pier 6</td>
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<td>25.00</td>
<td>14.00</td>
<td>0.00</td>
</tr>
<tr>
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<td>12</td>
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<td>14.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Notes:**
1. Provide all Steel Reinforced Elastomeric Bearings in accordance with Section 533- Bearing Design of the Standard Specifications.
2. Sole plates shall be ASTM A36 or higher grade and to be delivered to the contractor in the marked condition as shown in the details, measured in accordance with ASME B15.1, but not to exceed 1/4 in.
3. Sole plates shall meet a flatness requirement of 2.5 percent in the direction being measured (width, length, and diagonal) minimum, but not to exceed 1/4 in.
4. Steel reinforced elastomeric bearings shall be attached to the top of the pier caps with an approved epoxy adhesive in accordance with Section 533-10 of the Standard Specifications in such a way that visible contact surfaces will not be simplex. Ensure the epoxy adhesive is set prior to placement of bearings.
5. Payment for fabrication and installation of Steel Reinforced Elastomeric Bearings and sole plates shall be incidental to Item 4303.
NOT FOR CONSTRUCTION
PROPOSED JACKING - PLAN
PIERS 2 AND 11

SECTION A-A

NOTES:
1. SEE DWG. BD-02 FOR BRIDGE JACKING NOTES.
2. WHERE TEMPORARY DIAPHRAGMS ARE REQUIRED, INSTALL TEMORARY DIAPHRAGMS AND INSTALL TEMPORARY DIAPHRAGMS. REMOVE EXISTING DIAPHRAGMS AFTER BRIDGE JACKING IS COMPLETE. REMOVAL SAVAGE DIAPHRAGMS.

PROPOSED JACKING - TYPICAL SECTION
PIERS 2 AND 11

NOT TO SCALE

GIRDER LOADS (KIPS)

<table>
<thead>
<tr>
<th>ORDER NO.</th>
<th>UNIT 11, PIER 2</th>
<th>UNIT 20, PIER 2</th>
<th>UNIT 19, PIER 2</th>
</tr>
</thead>
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<tr>
<td>S-1/S-2</td>
<td>65.6</td>
<td>77.4</td>
<td>80.5</td>
</tr>
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<td>S-2/S-3</td>
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<td>75.4</td>
<td>87.1</td>
</tr>
<tr>
<td>S-3/S-4</td>
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<td>S-4/S-5</td>
<td>91.7</td>
<td>85.9</td>
<td>86.6</td>
</tr>
<tr>
<td>S-5/S-6</td>
<td>93.6</td>
<td>84.0</td>
<td>94.7</td>
</tr>
</tbody>
</table>

FACTORED LOAD = DEAD LOAD * 1.30 LOAD FACTOR
UNFACTORED LOAD = DEAD LOAD ONLY
UNFACTORED LOAD + 10% LOAD FACTOR
NOT FOR CONSTRUCTION
UNIT 3

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.

1. Bridge span lengths are measured from centerline to centerline of bearings along the baseline.
2. For bearing details, see Secs. 5-22 and 5-24.
3. For bearing details, see Secs. 21-22.
4. For other details, see Secs. 21-22.
5. For seismic retrofit details, see Secs. 21-22 and 5-24.

NOTES:

FOR JACKING DETAILS, SEE DWG. PN-03.

FOR BEARING DETAILS, SEE DWG. BD-01.

FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.

FOR SEISMIC RETROFIT DETAIL, SEE DWG. DT-04.
UNIT 1N

SPAN 12
109'-6"±
SPAN 13
109'-6"±

BETWEEN DIAPHRAGMS AS SHOWN
INTERMEDIATE STIFFENERS EQUALLY SPACED

39°53'00"
C BRIDGE (TYP.)
EXISTING PLATE GIRDER

UNIT 1N

TYPE A
DIAPHRAGM

TOTAL SHTS.
SHEET NO.

DEPARTMENT OF TRANSPORTATION
DELTADE
CONTRACT
COUNTY

DESIGNED BY:
CHECKED BY:

ADDENDUMS / REVISIONS

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

NOTES:
1. BRIDGE SPAN LENGTHS ARE MEASURED FROM CENTERLINE BEARING TO CENTERLINE BEARING ALONG THE BASELINE.
2. FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.
3. FOR J ACKING DETAILS, SEE DWG. BD-01.
4. FOR BEARING DETAILS, SEE DWG. BD-01.

FOR JACKING DETAILS, SEE DWG. BD-01 AND BD-02.

4. FOR BEARING DETAILS, SEE DWG. BD-01.
3. FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.
2. FOR DIAPHRAGM REPAIR DETAILS, SEE DWG. DT-02.
1. BRIDGE SPAN LENGTHS ARE MEASURED FROM CENTERLINE BEARING TO CENTERLINE BEARING ALONG THE BASELINE.

NOT FOR CONSTRUCTION
NOT TO SCALE

DIAPHRAGM DETAILS

DIAPHRAGM REPAIR - TYPE A

NOTES:
1. CORE HOLE, 4"-DIAMETER, THROUGH DIAPHRAGM AND REPLACEMENT LOCATION.
2. FOR THE TYPE A REPAIR, THE REPAIR MUST BE COMPLETED TO BOTH ENDS OF THE DIAPHRAGM.
3. DIAPHRAGM REPAIRS SHALL BE PAID FOR UNDER ITEM 615000.

TYPE A REPAIR PROCEDURE:
1. CORE A 4" DIAMETER HOLE THROUG THE DIAPHRAGM NEAR CLOSE TO THE CONNECTION PLATE, BUT AVOID REMOVING MATERIAL FROM THE CONNECTION PLATE.
2. FLAME CUT THE PORTION OF THE DIAPHRAGM REMAINING, MAKING THE CUT TANGENT TO THE CORE.
3. GRIND THE FLAME CUT SURFACES SMOOTH. ALL SURFACES SHOULD BE GROUND SMOOTH TO AN ANSI ROUGHNESS OF 500 OR LESS.
4. PRIME AND PAINT ALL BARE STEEL. PRIMING AND PAINTING SHALL BE PAID FOR UNDER ITEM 616000.

NOTES:
- PAINTING SHALL BE PAID FOR UNDER ITEM 616000.
- PRIME AND PAINT ALL BARE STEEL.
- FOR THE TYPE A DIAPHRAGM REPAIR, THE REPAIR MUST BE COMPLETED TO BOTH ENDS OF THE DIAPHRAGM.
- DIAPHRAGM REPAIRS SHALL BE PAID FOR UNDER ITEM 615000.

REHABILITATION OF I-95 FROM I-495 TO NORTH OF BRANDYWINE RIVER BRIDGE

DEPARTMENT OF TRANSPORTATION

NEW CASTLE

NOT FOR CONSTRUCTION
LONGITUDINAL RESTRAINT
(S12 AT PIER 5 SHOWN, OTHER LOCATIONS SIMILAR)

2" = 1'-0"

NOTES:
1. LONGITUDINAL RESTRAINT PLATES SHALL BE ASTM A 709
   GRADE 50W. LONGITUDINAL RESTRAINT ROD SHALL BE ASTM
   A7-22 GRADE 150.

2. DRILLING BOLT HOLES THROUGH EXISTING GIRDER WEB IS
   INCIDENTAL TO ITEM 615000.
SECTION A-A

FINGER JOINT DATA TABLE

| LOCATION | TEMPERATURE (°F) | WITHOUT REPAIRS (IN) | WITH REPAIRS (IN) | TOOTH LENGTH | B (IN) | S of D 8 MFP | TOUCH PLATE 

<table>
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<th></th>
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EXISTING DIMENSIONS

- LOCATION X Y
- PIER 2 B (IN) - 1" + 3/4"
PLAN - APPROACH SLABS AT SOUTHBOUND ROADWAY ABUTMENTS

1. SEE DWG. PA-03 FOR BRIDGE PLAN AND ELEVATION.
2. SEE DWG. PA-03 FOR BRIDGE PLAN AND ELEVATION.
3. SEE DWG. PA-03 FOR BRIDGE PLAN AND ELEVATION.
4. SEE DWG. AS-03 FOR APPROACH SLAB DETAILS.
5. SEE DWG. AS-03 FOR APPROACH SLAB DETAILS.
6. SEE DWG. AS-03 FOR APPROACH SLAB DETAILS.

NOTES:

TOTAL SHTS.: 2-731
SHEET NO.: 2-718
NOT FOR CONSTRUCTION
PLAN - APPROACH SLABS AT NORTHBOUND ROADWAY ABUTMENTS

NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE ORIG. PE-1 THROUGH PE-03.
2. FOR ABUTMENT A PLAN AND ELEVATION, SEE ORIG. AB-01.
3. FOR ABUTMENT B PLAN AND ELEVATION, SEE ORIG. AB-02.
4. FOR APPROACH SLAB DETAILS, SEE ORIG. AS-03.
5. FOR APPROACH SLAB REINFORCING, SEE ORIG. AS-06 AND AS-07.
6. FOR RETAINING WALL ELEVATION AT SLEEPER SLAB, SEE "DETAIL A", ORIG. AS-03 AND ORIG. WW-02.
7. FOR SECTION OF APPROACH SLAB INSIDE OF EXISTING BARRIER, SEE "DETAIL B", ORIG. AS-03 AND DWG. WW-02.

FOR APPROACH SLAB DETAILS, SEE DWG. AS-03.

FOR APPROACH SLAB REINFORCING, SEE DWG. AS-06 AND AS-07.

FOR BRIDGE PLAN AND ELEVATION, SEE ORIG. PE-1 THROUGH PE-03.

FOR ABUTMENT A PLAN AND ELEVATION, SEE ORIG. AB-01.

FOR ABUTMENT B PLAN AND ELEVATION, SEE ORIG. AB-02.

FOR APPROACH SLAB DETAILS, SEE ORIG. AS-03.

FOR APPROACH SLAB REINFORCING, SEE ORIG. AS-06 AND AS-07.

FOR RETAINING WALL ELEVATION AT SLEEPER SLAB, SEE "DETAIL A", ORIG. AS-03 AND ORIG. WW-02.

FOR SECTION OF APPROACH SLAB INSIDE OF EXISTING BARRIER, SEE "DETAIL B", ORIG. AS-03 AND DWG. WW-02.

NOTES:
1. FOR BRIDGE PLAN AND ELEVATION, SEE ORIG. PE-1 THROUGH PE-03.
2. FOR ABUTMENT A PLAN AND ELEVATION, SEE ORIG. AB-01.
3. FOR ABUTMENT B PLAN AND ELEVATION, SEE ORIG. AB-02.
4. FOR APPROACH SLAB DETAILS, SEE ORIG. AS-03.
5. FOR APPROACH SLAB REINFORCING, SEE ORIG. AS-06 AND AS-07.
6. FOR RETAINING WALL ELEVATION AT SLEEPER SLAB, SEE "DETAIL A", ORIG. AS-03 AND ORIG. WW-02.
7. FOR SECTION OF APPROACH SLAB INSIDE OF EXISTING BARRIER, SEE "DETAIL B", ORIG. AS-03 AND DWG. WW-02.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
BARRIER CONTROL JOINT DETAIL
(REINFORCEMENT CONTINUOUS THROUGH JOINT)

NOTE: USE OF PARAFFIN COAT AT THE JOINT OR A "OPEN JOINT" IS PERMITTED.

SECTION A-A
(REINFORCEMENT NOT SHOWN FOR CLARITY)

1. FOR RAILING DETAILS, SEE DWG. PA-02.
2. FOR LOCATION OF BARRIER JOINTS AND BARRIER ELEVATION DETAILS, SEE DWG. PA-03 AND PA-04.
3. FOR APPROACH SLAB AND SLEEPER SLAB DETAILS, SEE DWG. AS-01 TO AS-07.
4. FOR MINOR DETAILS, SEE DWG. WW-01.

FOR APPROACH SLAB AND SLEEPER SLAB DETAILS, SEE DWG. AS-01 TO AS-07.
FOR LOCATION OF BARRIER JOINTS AND BARRIER ELEVATION DETAILS, SEE DWG. PA-03 AND PA-04.
FOR RAILING DETAILS, SEE DWG. PA-02.
FOR MINOR DETAILS, SEE DWG. WW-01.
NOT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
SEQUENCE OF CONSTRUCTION

SUBSTRUCTURE REPAIRS

1. Complete concrete substructure repairs.
2. Repair and/or replace corroded form-box, joints, diagonals with installation of top coat and application of epoxy and/or acrylic concrete sealants to the substructures.
3. Apply epoxy and/or acrylic concrete sealants to the substructures.
4. Install expansion joint details.
5. Mull existing deck joints and seal with marine grade sealant.
6. Apply new deck joint details.
7. Complete concrete substructure repairs.
8. Install expansion joint details.
10. Install expansion joint details.
11. Complete concrete substructure repairs.
12. Install expansion joint details.
13. Complete concrete substructure repairs.
15. Complete concrete substructure repairs.
16. Install expansion joint details.
17. Complete concrete substructure repairs.
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23. Complete concrete substructure repairs.
24. Install expansion joint details.
25. Complete concrete substructure repairs.
26. Install expansion joint details.
27. Complete concrete substructure repairs.
28. Install expansion joint details.
29. Complete concrete substructure repairs.
30. Install expansion joint details.

STAGE 2A

1. Implement Crossover Plan in accordance with the MOT Plans to perform work on the northbound bridge.
2. Install temporary roadway through full width of bridge under construction.
3. Utilize temporary roadway through full width of bridge under construction.
4. Install temporary roadway through full width of bridge under construction.
5. Install temporary roadway through full width of bridge under construction.
6. Install temporary roadway through full width of bridge under construction.
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26. Install temporary roadway through full width of bridge under construction.
27. Install temporary roadway through full width of bridge under construction.
28. Install temporary roadway through full width of bridge under construction.
29. Install temporary roadway through full width of bridge under construction.
30. Install temporary roadway through full width of bridge under construction.
31. Implement Crossover Plan in accordance with the MOT Plans to perform work on the southbound bridge.
32. Repeat Steps 1-30.
33. Install temporary roadway through full width of bridge under construction.
34. Install temporary roadway through full width of bridge under construction.
35. Implement Crossover Plan in accordance with the MOT Plans to perform work on the northbound bridge.
36. Implement Crossover Plan in accordance with the MOT Plans to perform work on the southbound bridge.
37. Complete construction of all work in accordance with the MOT Plans to perform work on the northbound bridge.
38. Implement Crossover Plan in accordance with the MOT Plans to perform work on the southbound bridge.
39. Complete construction of all work in accordance with the MOT Plans to perform work on the northbound bridge.