GENERAL NOTES

1. This project is to be constructed in accordance with the Delaware Department of Transportation “Standard Specifications”, dated August 2016 and the Delaware Department of Transportation “Standard Construction Details”, dated 2016, excluding all revisions up to the date of advertisement.

2. Electronic project files that will be made available to the awarded contractor, include:
   - All plan sheets, in.dgn format.
   - Existing digital terrain model, in .dtm file format, compatible with software currently used by DelDOT.
   - Proposed digital terrain model, in .dtm file format, compatible with software currently used by DelDOT.
   - Design file, in .dgn file format, containing only the proposed 3D triangles of the proposed digital terrain model.

NOTE: the document entitled “Release for Delivery of Documents in Electronic Form to a Contractor” must be signed by all parties prior to the delivery of any electronic project files.

PROJECT NOTES

SECTION 100

1. Any damage to forms noted to be indicated or noted by the contractor, at the discretion of the engineer, shall be repaired and/or replaced in kind at the contractor’s expense.

2. The contractor will contact the Delaware TMC at 302-659-4600 prior to any Unmanned Aircraft Vehicle (UAV) flights. The contractor will be required to provide the following information: the registration number of the UAV, the flight time, location of the flight, the pilot’s name, and the pilot’s contact number during the flight.

SECTION 200

1. Items to be removed under Item 211000 - Removal of Structures and Obstructions shall include, but may not be limited to the following:
   - Existing Excavations as Shown
   - Existing Footing Shown As Shown and Electromagnetic As Shown
   - Existing Site Form in Span 1, Bay B as Shown
   - Existing Culverts
   - Existing Light Pole Bases
   - Existing Signal Post Bases, Cabinet Bases and Junction Wells
   - Existing Chain Link Fence, as shown

2. Storm and elevation grade surveys for drainage structures are to be applied to the center of the grate for inlets, and to the center of the structure for junction boxes and manholes.

SECTION 700

1. Any work where proposed curb meets existing curb and the two curb types are not similar, the proposed curb shall be transitioned in 10 linear feet unless otherwise directed by the engineer. Payment for this work, including law cutting existing curb shall be incidental to the proposed curb type.

2. Where proposed concrete sidewalk is constructed to meet existing sidewalk, the existing sidewalk shall be removed at the tie-in point or meet the newly existing sidewalk, all saw cutting shall be full depth, unless otherwise noted on the plans or directed by the engineer and shall be paid for under Item 762001 - SAW CUTTING, CONCRETE, FULL DEPTH.

3. The contractor shall deliver all existing paved material to the Delaware Department of Transportation’s talies maintenance yard. The material shall be neatly stockpiled at the yard. Costs for this work shall be incidental to Item 760010 - PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT. Contractor should contact Stewart Talley Maintenance Yard at (302) 894-6319 for coordination.

4. In areas where proposed concrete sidewalk meets existing sidewalk and the two curb types are not similar, the proposed curb shall be transitioned in 10 linear feet unless otherwise directed by the engineer. Payment for this work, including law cutting existing curb shall be incidental to the proposed curb type.

5. Where proposed concrete sidewalk is constructed to meet existing sidewalk, the existing sidewalk shall be removed at the tie-in point or meet the newly existing sidewalk, all saw cutting shall be full depth, unless otherwise noted on the plans or directed by the engineer and shall be paid for under Item 762001 - SAW CUTTING, CONCRETE, FULL DEPTH.

6. All paved areas to be reconstructed or widened shall be sawed at the point where new pavement is to tie into the existing pavement.

7. Stormwater drainage at the intersection between the curbs shall be coordinated with the engineer.

8. Stormwater drainage to the center of structures and manholes shall be included in the proposed grade.

SECTION 900

1. This project is covered under an NPDES General Permit for Construction. Under the general permit, compliance with the Delaware Department of Transportation’s Stormwater Management Plan will constitute compliance with the NPDES General Permit. Permit and NOI is kept on file in each of the construction offices and the Department’s Stormwater Section.

2. This project is to be constructed in accordance with the Delaware Department of Transportation “Standard Specifications”, dated August 2016 and the Delaware Department of Transportation “Standard Construction Details”, dated 2016, excluding all revisions up to the date of advertisement.

3. This project is to be constructed in accordance with the Delaware Department of Transportation “Standard Specifications”, dated August 2016 and the Delaware Department of Transportation “Standard Construction Details”, dated 2016, excluding all revisions up to the date of advertisement.

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15. This project is to be constructed in accordance with the Delaware Department of Transportation “Standard Specifications”, dated August 2016 and the Delaware Department of Transportation “Standard Construction Details”, dated 2016, excluding all revisions up to the date of advertisement.

16. This project is to be constructed in accordance with the Delaware Department of Transportation “Standard Specifications”, dated August 2016 and the Delaware Department of Transportation “Standard Construction Details”, dated 2016, excluding all revisions up to the date of advertisement.
BRIDGE NO. 1-577 ON N050
NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

LEGEND

1. ITEM 401001 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, PG 64-22, THIN LIFT
2. ITEM 401020 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, PG 64-22, THIN LIFT
3. ITEM 401016 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE B, PG 64-22, THIN LIFT
4. ITEM 401029 - SUPERPAVE, TYPE B, PG 64-22, PATCHING
5. ITEM 401053 - SUPERPAVE, TYPE C, PG 64-22, THIN LIFT
6. ITEM 701012 - PORTLAND CEMENT CONCRETE CURB, TYPE 1-6
7. ITEM 701013 - PORTLAND CEMENT CONCRETE CURB, TYPE 1-8
8. ITEM 700010 - PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT
9. ITEM 401046 - BITUMINOUS CONCRETE, SUPERPAVE, TYPE C, PG 64-22
10. ITEM 301002 - GRADED AGGREGATE BASE COURSE, PATCHING
11. ITEM 760010 - PAVEMENT MILLING, BITUMINOUS CONCRETE PAVEMENT

NOT TO SCALE
ROADWAY PAVEMENT PATCH AT CURB REPLACEMENT

NOT TO SCALE

NORTHEAST BOULEVARD
STA 6+34 TO STA 6+53, R
STA 6+34 TO STA 9+83, L
STA 7+43 TO STA 7+68, L

LEGEND

1. ITEM 400229 - SUPERPAVE, TYPE C, PG 64-22, PATCHING
2. ITEM 400230 - SUPERPAVE TYPE B, PG 64-22 PATCHING
3. ITEM 400231 - SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, PG 64-22 PATCHING
4. ITEM 301002 - GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING
5. ITEM 705001 - PORTLAND CEMENT CONCRETE SIDEWALK, 4"

COORDINATE LIST

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SCALE AS NOTED

ITEM 400229 - SUPERPAVE, TYPE C, PG 64-22, PATCHING
ITEM 400230 - SUPERPAVE TYPE B, PG 64-22 PATCHING
ITEM 400231 - SUPERPAVE BITUMINOUS CONCRETE BASE COURSE, PG 64-22 PATCHING
ITEM 301002 - GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING
ITEM 705001 - PORTLAND CEMENT CONCRETE SIDEWALK, 4"
BR 1-577 ON NORTHEAST BOULEVARD OVER BRANDYWINE CREEK
BR 1-577 ON N050
NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

12TH STREET

TOTAL SHTS.
SHEET NO.
CONTRACT
COUNTY
DESIGNED BY:
CHECKED BY:
BRIDGE NO.
ADDENDUMS / REVISIONS

EXISTING GROUND

STATION

ELEVATION (FT)

SCALE

UNOFFICIAL WEBSITE COPY
1. **DESIGN SPECIFICATIONS**

   1.1.3. 2017 DEPT BRIDGE DESIGN MANUAL
   1.1.4. 2016 AASHTO LTPP BRIDGE SPECIFICATIONS, 7TH EDITION
   1.1.5. CUSTOMARY UNITS AS SPECIFIED

2. **LOADS**

   VEHICLE LOADS ARE ASSIGNED TO LOAD RATING TABLE, WHICH CONSISTS OF A DESIGN TABLE OF TANDEM WITH A SINGLE LONG HANGING AXLE LOAD.

3. **CONCRETE**

   CONCRETE SHALL CONFORM TO AASHTO M31 ASTM A615, GRADE 60.

4. **STRUCTURAL STEEL**

   STRUCTURAL STEEL SHALL CONFORM TO AASHTO M31 ASTM A615, GRADE 60.

5. **REINFORCING STEEL**

   REINFORCING STEEL SHALL CONFORM TO AASHTO M31 ASTM A615, GRADE 60.

6. **REINFORCING STEEL SCHEDULE**

   REINFORCEMENT SCHEDULES SHALL CONFORM TO SECTION 1022 OF THE STANDARD SPECIFICATIONS.

7. **CONCRETE SEALER**

   CONCRETE SEALER SHALL BE SILICONE-BASED ACRYLIC CONCRETE SEALER.

8. **DIAPHRAGM DETAIL-1**

   DIAPHRAGM DETAIL-1 SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.

9. **DEPENDENT CLERAMIC CONCRETE**

   CONCRETE SUPERSTRUCTURE REPAIR DETAILS

10. **CONCRETE DECK DETAILS-2**

    CONCRETE DECK DETAILS-2 SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.

11. **DIAMOND BLADE SAW CUTTING**

    DIAMOND BLADE SAW CUTTING FOR CONCRETE REMOVAL OPERATIONS. BLASTING OR USE OF EXPLOSIVES IS NOT ALLOWED IN THIS AREA.

12. **RELOCATING GUARDRAIL**

    RELOCATING GUARDRAIL SHALL BE INSTALLED AT THE END OF THE WORK AREA.

13. **TEMPORARY JACKING DETAILS-2**

    TEMPORARY JACKING DETAILS-2 SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.

14. **VIEWING SCREEN DETAILS**

    VIEWING SCREEN DETAILS SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.

15. **FABRICATED CONSTRUCTION DETAILS**

    FABRICATED CONSTRUCTION DETAILS SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.

16. **TEMPORARY ACCOMMODATION**

    TEMPORARY ACCOMMODATION SHALL SHOW ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE.
ITEMS OF WORK:

1. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 604000 AND 623000)

2. REMOVE AND REPLACE ELASTOMERIC BEARING PADS AT PIER 3 AND 4 (ITEM NO. 604000 AND 623000)

3. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

4. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

5. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

6. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

7. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

8. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

9. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

10. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

11. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

12. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

13. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

14. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

15. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

16. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

17. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

18. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

19. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

20. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

21. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

22. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

23. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

24. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

25. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

26. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

27. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

28. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

29. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

30. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

31. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

32. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)

33. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 613501)

34. REMOVE CRACKS IN CONCRETE BEAMS AND DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628040 AND 628041)

35. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLAB, WINGWALLS, AND PIERS AS INDICATED. (ITEM NO. 628001)

NOTES:

1. FOR PROJECT NOTES, LOCATIONS FOR "ITEMS OF WORK" ARE IDENTIFIED ON SHEETS 11-13.

2. FOR PROJECT NOTES, LOCATIONS FOR "ITEMS OF WORK" ARE IDENTIFIED ON SHEETS 11-13.

LEGEND:

- PROPERTY LINE
- OVERHEAD UTILITY LINE
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND ELECTRIC LINE

TOTAL SHTS. 11-13
TYPICAL SECTIONS - SPANS 1, 2, 3, 5 & 6

EXISTING TYPICAL SECTION - SPANS 1, 2, 3, 5 & 6

TYPICAL SECTIONS - SPAN 4

LEGEND:

1. GIRDER A NORTH TO BE REPLACED IN SPANS 1, 2, 3 ONLY.
2. GIRDER B SOUTH TO BE REPLACED IN SPANS 1, 2, 3 ONLY.
3. GIRDER C SOUTH TO BE REPLACED IN SPAN 3 ONLY.
4. FOR CONCEPTUAL TEMPORARY SUPPORT BEAM DETAILS, SEE SHEET 33.

ITEMS OF WORK:

1. REMOVE AND REPLACE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED. (ITEM NO. 615511)
2. REMOVE AND REPLACE STRIP SEAL JOINT AT WEST ABUTMENT. (ITEM NO. 624000)
3. REMOVE LEAKING SIP FORM IN SPAN 1, BAY 9 ADJACENT TO WEST ABUTMENT. CABLE AMONG BASE PLATE OF ALL ASTHETIC LIGHTING ON THE BRIDGE. (ITEM NO. 615500)
4. REPAIR CONCRETE SPALLS AND DELAMINATION IN CONCRETE BEAMS, DIAPHRAGMS, ABUTMENTS, UNDERDECK SLABS, WINGWALLS, AND Piers AS INDICATED. (ITEM NO. 615501)
5. REPAIR CONCRETE SPALLS IN SIDEWALKS, CURB, AND PEDESTRIAN WALKING AS INDICATED. (ITEM NO. 615502)
6. REPAIR CRACKS, IN CONCRETE BEAMS AND DIAPHRAGMS, AS INDICATED. (ITEM NO. 615503)
7. REMOVE AND REPLACE ELASTOMERIC BEARING PADS AT PIER 3 AND PIER 4 AT NORTH AND SOUTH.
8. REMOVE NICKER BEARING, MODIFY BEAM SEAT, AND INSTALL ELASTOMERIC BEARINGS AT PIER 3, 4, AND 5. (ITEM NO. 211000, 614000, 615004, 615005, AND 615006)
9. INSTALL TEMPORARY SUPPORT PLATES IN FLUSHBEAM DESIGN. INSTALL CONCRETE BEAMS, Insets AS INDICATED. (ITEM NO. 615507)
10. PERFORM ZONE PAINTING ON STRUCTURAL STEEL IN SPAN 4 AS INDICATED. CLEAN EXISTING STEEL STRUCTURES. (ITEM NO. 615508)
11. REMOVE SERRIS FROM T-SHEAR SYSTEM AT PIER 3 AND 4 AND REPAIR T-SHEAR BEAMS AS INDICATED. (ITEM NO. 211000, 615004, 615005, AND 615006)
12. REMOVE DAMAGED BRIDGE RAIL SECTIONS AS INDICATED AND INSTALL NEW SCUPPERS. (ITEM NO. 604000, 610004, 611001, AND 623000)
13. CLEAN THE INTERIOR OF THE BASCULE HOUSING TO REMOVE PIGEON DEBRIS AND MISCELLANEOUS CONSTRUCTION DEBRIS. INSTALL VARMINT SCREEN AND ACRYLIC SEALER TO EXTERIOR SURFACES. (ITEM NO. 615512, 615513, AND 615514)
14. CLEAN EXISTING BRIDGE DRAWER. (ITEM NO. 615515)
15. REPLACE CONCRETE T-BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED. (ITEM NO. 211000 AND 621504)
16. REPLACE T-SHEAR BEAMS, DIAPHRAGMS AND CONCRETE DECK AS INDICATED AND INSTALL NEW SCUPPERS. (ITEM NO. 604000, 610004, 611001, AND 623000)
17. CLEAN EXISTING STEEL STRUCTURES.
ITEMS OF WORK:

1. Remove and replace damaged bridge rail sections as indicated. (Item No. 615511)
2. Remove and replace strip seal joint at west abutment. (Item No. 624000)
3. Remove leaking SIP form in Span 1, Bay 8 adjacent to west abutment. Clean around exists. Per all aesthetic lighting on the bridge. (Item No. 617000 and 613501)
4. Repair concrete spalls and delamination in concrete beams, diaphragms, abutments, underslab slab, railheads, and piers as indicated. (Item No. 626000 and 626040)
5. Repair concrete spalls in sidewalks, curbs, and pedestrian railings as indicated. (Item No. 620029 and 620040)
6. Repair cracks in concrete beams and diaphragms, as indicated. (Item No. 620000)
7. Remove and replace elastomeric bearing pads at pier 3 and pier 4. (Item No. 620000 and 620000)
8. Remove rocker bearing, modify beam seat, and install elastomeric bearings at piers 1, 2, 3, 4, 5. (Item No. 211000, 620000, 610000, 617000, and 620000)
9. Install steel retrofit plates in elastomeric bearing system as indicated. (Item No. 617000)
10. Perform zone painting on structural steel in span 4 as indicated. Paint existing steel structure. (Item No. 610000)
11. Remove debris from fender system at pier 3 and pier 4 and repair fender boards as indicated. (Item No. 610000 and 620000)
12. Replace concrete T-beams, diaphragms, and concrete deck as indicated and install new spacers. (Item No. 610000, 610000, 610000, 610000, 610000, and 620000)
13. Clean the interior of the bascule house to remove pigeon debris and miscellaneous construction debris. Install hardwire screen and apply acrylic sealers to exterior surfaces. (Item No. 211000, 610000, 610000, 610000, 610000)
14. Clean existing bridge drains. (Item No. 615513)
SEQUENCE OF CONSTRUCTION:

STAGE 1 - BELOW DECK CONSTRUCTION

- Complete substructure spall and crack repairs
- Complete steel substructure repairs
- Complete cleaning and painting of superstructure steel at repair locations
- Clean the top of all pier caps
- Replace elastomeric bearings at Pier 3 back and Pier 4 back
- Replace rocker bearings, modify beam seat and install new elastomeric bearings at Piers 1, 2, and 3
- Remove debris from fence system at Pier 3 and 4 and complete fence repairs
- Remove existing bridge rail and all bridge rail components at the sidewalk

- Change SSI grade of the existing aesthetic lighting poles located on EB sidewalk

STAGE 2 - CLOSE BRIDGE AND EB SIDEWALK

- Close bridge and install EB sidewalk detour
- Install chain link fence
- Repair EB bridge rail as indicated
- Clean gusset plate and apply acrylic sealer
- Remove and replace strip seal joint at west abutment and EB sidewalk and position of removed
- Begin removal and reconstruction of South girder E in Spans 1, 2, and 3
- Begin removal and reconstruction of South girder D1 in Span 2
- Clean the base plates of the existing aesthetic lighting poles located on EB sidewalk

STAGE 3 - CLOSE BRIDGE AND WB SIDEWALK

- Install WB sidewalk detour
- Install chain link fence
- Repair WB bridge rail as indicated
- Complete barrier and sidewalk repair
- Complete removal and reconstruction of South girder E in Spans 1, 2, and 3
- Complete removal and reconstruction of South girder D in Span 2
- Remove and replace strip seal joint at west abutment and sidewalk and balance of removed
- Remove and reconstruct normal girder D1 in Span 1 and 2. Remove and restore bridge rail and aesthetic lighting poles for reinstallation. Remove fiber optic and electrical conduit from bridge rail, the entire length of the bridge to prevent damage to shift away from the girder demolition limits
- Complete cleaning and painting of superstructure steel at repair locations
- Remove debris from fender system at Pier 3 and 4, and complete fender repairs
- Complete cleaning and painting of superstructure steel at repair locations

NOTES:

1. For Construction Notes, see Sheet 10.
2. The sketches on this sheet display a partial view of the traffic control, necessary for construction. For a complete description of traffic control needs, refer to the drawings
3. One sidewalk shall remain open to pedestrians at all times throughout construction.
4. Stage 1 work shall be performed from below the structure. Short term emergency lane closures are permitted for delivery of materials and equipment only.
5. Refer to construction phasing, M.O.T., and Erosion Control Plans, SHeets 44-47 for staging details.

SCALe: ‰" = 1'-0"
BR 1-577 ON NO50
NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

CONCRETE REPAIR QUANTITIES

WEST ABUTMENT

<table>
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<tr>
<th>Repair Type</th>
<th>Quantity</th>
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<td>Shallow Spall Repair</td>
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<tr>
<td>Deep Spall Repair</td>
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NOTES:

1. Concrete repair dimensions in feet and inches.
2. Contractor to field verify all repair dimensions.
3. Engineer shall confirm contractor delineation of cracks and spall areas prior to commencement of repairs.
4. Where cracks and spall are shown concurrently, complete the spall repair and then complete any remaining crack repair.
5. Shallow spall repair paid for under item no. 628041.
6. Deep spall repair paid for under item no. 628040.
7. Repair quantities in the table were been increased by 30% to account for progresses deterioration since the time of the bridge inspection (Nov. 2014).
**NOTES:**

1. Concrete repair dimensions in feet and inches.
2. Contractor to field verify all repair dimensions.
3. Engineer shall confirm contractor delineation of crack and spall areas prior to commencement of repairs.
4. Where cracks and spalls are shown concurrently, complete the spall repair and then complete any remaining crack repair.
5. Shallow spall repair paid for under Item No. 628040.
7. Repair quantities in the table have been increased by 30% to account for progressed deterioration since the time of the bridge inspection (Nov. 2014).

**Legend:**

- **X** Length & width of deep spall repair
- **□** Length & width of shallow spall repair

---

**Concrete Repair Quantities**

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<tr>
<th>Pier 1</th>
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<td>Pier 1</td>
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**Scale:** 1/8" = 1'-0"
NOTES:
1. CONCRETE REPAIR DIMENSIONS IN FEET AND INCHES.
2. CONTRACTOR TO FIELD VERIFY ALL REPAIR DIMENSIONS.
3. ENGINEER SHALL CONFIRM CONTRACTOR DELINEATION OF CRACK AND SPALL AREAS PRIOR TO COMMENCEMENT OF REPAIRS.
4. WHERE CRACKS AND SPALLS ARE SHOWN CONSTRUCTIVELY, COMPLETE CRACK REPAIR AND THEN COMPLETE ANY REPAIRING SPALL REPAIRS.
5. SHALLOW SPALL REPAIR PAID FOR UNDER ITEM NO. 628040.
6. DEEP SPALL REPAIR PAID FOR UNDER ITEM NO. 628041.
7. REPAIR QUANTITIES IN THE TABLE HAVE BEEN INCREASED BY 30% TO ACCOUNT FOR PROGRESSED DETERIORATION SINCE THE TIME OF THE BRIDGE INSPECTION (NOV. 2014).
8. PIER 2 CONCRETE REPAIRS

CONCRETE REPAIR QUANTITIES

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LEGEND:

- L: LENGTH
- W: WIDTH
- L x W: LENGTH X WIDTH
- DEEP SPALL REPAIR
- SHALLOW SPALL REPAIR

SCALE: 1/8" = 1'-0"
CONCRETE REPAIR QUANTITIES

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NOTES:

1. Concrete repair dimensions in feet and inches.
2. Contractor to field verify all repair dimensions.
3. Engineer shall confirm contractor delineation of crack and spall areas prior to commencement of repair.
4. Where cracks and spalls are shown concurrently, complete the spall repair and then complete any remaining crack repair.
5. Smaller spall repair paid for under item No. 628040.
6. Deep spall repair paid for under item No. 628041.
7. Repair quantities in the table have been increased by 30% to account for progressed deterioration since the time of the bridge inspection (Nov. 2014).
CONCRETE REPAIR QUANTITIES

PIER 4 - INTERIOR WALL

SHALLOW SPALL REPAIR: 6 CF
DEEP SPALL REPAIR: 30 CF

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL REPAIR DIMENSIONS.
2. CONCRETE REPAIR DIMENSIONS IN FEET AND INCHES.
3. CONCRETE REPAIR QUANTITIES IN THE TABLE HAVE BEEN INCREASED BY 30% TO ACCOUNT FOR CRACK REPAIR.
4. CRACKS AND SPALLS ARE SHOWN CONCURRENTLY, COMPLETE THE SPALL REPAIRS AND THEN COMPLETE ANY REMAINING CRACK REPAIRS.
5. SCALE IN FEET OF THE BRIDGE INSPECTION (NOV. 2014) PROGRESSED DETERIORATION SINCE THE TIME ITEM NO. 628040. DEEP SPALL REPAIR PAID FOR UNDER ITEM NO. 628041.
6. SCALE IN FEET OF THE BRIDGE INSPECTION (NOV. 2014) PROGRESSED DETERIORATION SINCE THE TIME ITEM NO. 628040. DEEP SPALL REPAIR PAID FOR UNDER ITEM NO. 628041.
7. DIMENSIONS SHOWN ON SHEET MAY BEEN INCREASED BY 30% TO ACCOUNT FOR CRACK REPAIRS AND THEN COMPLETE ANY REMAINING SPALL REPAIRS.

CONTRACTOR TO FIELD VERIFY ALL REPAIR QUANTITIES IN THE TABLE.
CONCRETE REPAIR QUANTITIES

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NOTES:
1. CONCRETE REPAIR DIMENSIONS IN FEET AND INCHES.
2. CONTRACTOR TO FIELD VERIFY ALL REPAIR DIMENSIONS.
3. ENGINEER SHALL CONFIRM CONTRACTOR DELINEATION OF CRACK AND SPALL AREAS PRIOR TO COMMENCEMENT OF REPAIRS.
4. WHERE CRACKS AND SPALLS ARE SHOWN CONCURRENTLY, COMPLETE THE SPALL REPAIR AND THEN COMPLETE REMAINING CRACK REPAIR.
5. SHALLOW SPALL REPAIR PAID FOR UNDER ITEM NO. 628040.
6. DEEP SPALL REPAIR PAID FOR UNDER ITEM NO. 628041.
7. REPAIR QUANTITIES IN THE TABLE HAVE BEEN INCREASED BY 30% TO ACCOUNT FOR PROGRESSIVE DEGRADATION SINCE THE TIME OF THE BRIDGE INSPECTION (NOV. 2014).

LEGEND:
- (LENGTH x WIDTH) DEEP SPALL REPAIR
- (LENGTH x WIDTH) SHALLOW SPALL REPAIR
**LEGEND:**
- **□**  LENGTH x WIDTH: DEEP SPALL REPAIR
- **□**  LENGTH x WIDTH: SHALLOW SPALL REPAIR

**NOTES:**
1. Concrete repair dimensions in feet and inches.
2. Contractor to field verify all repair dimensions.
3. Engineer shall confirm contractor delineation of crack and spall areas prior to commencement of repairs.
4. Where cracks and spalls are shown concurrently, complete the spall repair and then complete any remaining crack repairs.
5. Shallow spall repair paid for under item no. 628040.
6. Deep spall repair paid for under item no. 628041.
7. Repair quantities in the table have been increased by 30% to account for progression of deterioration since the time of the bridge inspection (Nov. 2014).

**CONCRETE REPAIR QUANTITIES**

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**SCALE:** 3/16” = 1'-0”

**LOOKING AHEAD STATION:**
- 7.
- 6.
- 5.
- 4.
- 3.
- 2.
- 1.

**ENGINEER:**
- JGW
- RJH

**CONTRACTOR TO FIELD VERIFY ALL REPAIR DIMENSIONS:**

**SCALE IN FEET:**
- 6'-0" x 3'-0"
- 8'-0" x 2'-0"
- 8'-0" x 2'-6"
- 5'-0" x 3'-0"
- 2'-0" x 7'-0"
- 4'-0" x FULL
### CONCRETE T-BEAM SECTION

**PLAN - SHALLOW SPALL REPAIR**

1. **CONCRETE T-BEAM SECTION** (LOOKING AHEAD STATION)

   - A (WEST)
   - B (DEEP) (CF)
   - C (EAST)

#### CONCRETE T-BEAM REPAIRS

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### CONCRETE REPAIR QUANTITIES

**CONCRETE T-BEAM**

- **SHALLOW SPALL REPAIRS**
  - 24 CF
- **DEEP SPALL REPAIRS**
  - 20 CF
- **CRACK REPAIR**
  - 18 LF

**SHALLOW SPALL REPAIRS**

1. Shallow spalls are defined as those that do not extend below the top of beam.
2. All work involving methods of concrete repair, cleaning of concrete surface, surface preparation, and concrete placement shall be performed in accordance with subsection 628.03(E)(2) of the standard specifications. Payment incidental to 628041 - deep spall repair.
3. For any shallow spall repair to take place within the spalled zone of undermining, the contractor shall submit a working drawing for approval in accordance with subsection 628.03(E)(2).

**DEEP SPALL REPAIRS**

1. Deep spalls are defined as those that extend below the top of beam.
2. All work involving methods of concrete repair, cleaning of concrete surface, surface preparation, and concrete placement shall be performed in accordance with subsection 628.03(E)(2) of the standard specifications. Payment incidental to 628041 - deep spall repair.
3. For any deep spall repair to take place within the spalled zone of undermining, the contractor shall submit a working drawing for approval in accordance with subsection 628.03(E)(2).
1. See Sheet 27 and 28.

2. End diaphragm at the west abutment, provide 1" minimum haunch depth over bars except as noted.

3. Provide 2" concrete cover on reinforcement.

4. Provide threaded inserts in the precast beam for intermediate diaphragms and end diaphragm at the west abutment, see Sheets 27 and 28.

5. Existing diaphragm location and dimensions indicated prior to beam fabrication.

6. As-designed beams can be installed as existing beam depths to confirm the top and bottom of beam.

7. The contractor shall field verify the existing beam depths to confirm the top and bottom of beam.

8. Provide 1" minimum haunch depth over bars except as noted.

9. The contractor shall field verify the existing diaphragm location and dimensions prior to beam fabrication.

10. Provide threaded inserts in the precast beam for intermediate diaphragms and end diaphragm at the west abutment, see Sheets 27 and 28.
GIRDER B (SPAN 1)

GIRDER B (SPAN 2)

GIRDER D (SPAN 2)

SECTION R-R

SECTION S-S

SECTION T-T

NOTES:
1. FOR PROJECT NOTES, SEE SHEET 6.
2. PROVIDE 2" CONCRETE COVER ON REINFORCEMENT BARS EXCEPT AS NOTED.
3. PROVIDE 1" MINIMUM HAUNCH DEPTH OVER SPANS.
4. PROVIDE IMPROVED INSERTS FOR BAR CONTINUITY AS DEPICTED ON GIRDER B AT PIER 2 AND END AT BOTH ENDS.
5. PRECAST BEAM TO FACILITATE CURB RECONSTRUCTION.
6. BM407E SHALL EXTEND 16" ABOVE TOP OF BEAM TO FACILITATE CURB RECONSTRUCTION.
7. PROVIDE THREADED INSERTS FOR BAR CONTINUITY AS DEPICTED ON GIRDER B AT PIER 2 AND END AT BOTH ENDS.
8. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING DIAPHRAGM LOCATION AND PROVIDE THREADED INSERTS IN THE PRECAST DIMENSIONS PRIOR TO BEAM FABRICATION.
9. AS-DESIGNED BEAMS CAN BE INSTALLED AS EXISTING BEAM DEPTHS TO CONFIRM THE EXISTING DIAPHRAGM LOCATION AND DIMENSIONS PRIOR TO BEAM FABRICATION.
10. PROVIDE IMPROVED INSERTS FOR THE PRECAST BEAM FOR INTERMEDIATE DIAPHRAGMS AND END DIAPHRAGM AT THE WEST ABUTMENT, SEE SHEET 27 AND 28.
TYPICAL PROTECTIVE COATING LIMITS

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

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

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

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

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

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

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

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

NOTES:
1. FOR PROJECT NOTES, SEE SHEET 10.
2. ALL EXISTING STEEL IDENTIFIED TO REMAIN SHALL BE CLEANED AND EPOXY COATED IN THE FIELD. THIS WORK IS INCIDENTAL TO Item No. 610017.
3. CONTRACTOR SHALL PROVIDE-TIMBER BLOCKS TO SUPPORT THE PRECAST DIAPHRAGMS OVER THE PIERS TO REMAIN PRIOR TO THE START OF BEAM AND DIAPHRAGM DEMOLITION.
4. MECHANICAL SPLICE LOCATIONS MAY BE ADJUSTED TO FACILITATE CONSTRUCTION.
5. INSTALL TEMPORARY SUPPORT FOR PRECAST BEAMS PRIOR TO ERECTION AND MAINTAIN TEMPORARY SUPPORT UNTIL ALL SUPERSTRUCTURE CONCRETE HAS BEEN PLACED, CURED, AND ACCEPTED BY THE ENGINEER.
6. CONTRACTOR TO PROVIDE METHODS OF TEMPORARY SUPPORT FOR THE SUPERSTRUCTURE AND ALLIANCE "E" OVERHANG. THE TEMPORARY SUPPORT PLAN AND SUPPORTING CALCULATIONS SHALL BE SUBJECT TO APPROVAL PRIOR TO ERECTION. THIS WORK IS INCIDENTAL TO Item No. 211000.
7. FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 31.
8. PROVIDE PROTECTIVE COATING IN ACCORDANCE WITH SECTION 11-1 OF THE STANDARDS SPECIFICATION TO THE LIMITS DEPICTED IN THE PLANS. THIS INCLUDES ALL PRECAST, EXISTING AND UNDER DECK CONCRETE SURFACES. THIS WORK IS INCIDENTAL TO Item No. 610017.
NOTES:
1. FOR PROJECT NOTES. SEE SHEET 10.
2. ALL EXISTING STEEL IDENTIFIED TO REMAIN SHALL BE CLEANED AND EPOXY COATED IN THE FIELD. THIS WORK IS INCIDENTAL TO ITEM NO. 610017.
3. CONTRACTOR SHALL PROVIDE TIMBER BLOCKING TO SUPPORT THE EXISTING DIAPHRAGMS OVER THE PIER TO MAINTAIN TEMPORARY SUPPORT UNTIL ALL SUPERSTRUCTURE CONCRETE HAS BEEN PLACED, CURED, AND ACCEPTED BY THE ENGINEER.
4. ALL EXISTING STEEL IDENTIFIED TO REMAIN SHALL BE CLEANED AND EPOXY COATED IN THE FIELD. THIS WORK IS INCIDENTAL TO ITEM NO. 610017.
5. CONTRACTOR TO PROVIDE METHOD OF TEMPORARY SUPPORT FOR THE DIAPHRAGMS OVER THE PIER TO MAINTAIN TEMPORARY SUPPORT UNTIL ALL SUPERSTRUCTURE CONCRETE HAS BEEN PLACED, CURED, AND ACCEPTED BY THE ENGINEER.
6. CONTRACT TO PROVIDE METHOD OF TEMPORARY SUPPORT FOR THE MEMBERS IDENTIFIED IN DRAWING. THE TEMPORARY SUPPORT PLAN AND SUPPORTING CALCULATIONS SHALL BE SUBMITTED FOR REPRESENTATIVE REVIEW AND APPROVAL PRIOR TO INSTALLATION. THIS WORK IS INCIDENTAL TO ITEM NO. 610000.
7. FOR REINFORCEMENT SCHEDULE, SEE SHEET 31.

8. FOR REINFORCEMENT SCHEDULE, SEE SHEET 31.

For incidence to item no. 211000.

REVIEW AND APPROVAL PRIOR TO INSTALLATION. THIS WORK IS INCIDENTAL TO ITEM NO. 610000.

DELTAHILL TRANSPORTATION

TOTAL SHTS.

65

SHEET NO.

28

BRIDGE NO.

1-577

NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

DIAPHRAGM DETAILS - 2

INSERT (TYP)

MIN 3" THREADED SPICE (TYP)

MECHANICAL SPICE (TYP)

SECTION Q-Q

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

SECTION G-G

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

SECTION H-H

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

SECTION J-J

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

SECTION K-K

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

SECTION M-M

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

SECTION N-N

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

SECTION P-P

SCALE: 1/2" = 1'-0"
NOTES:
1. FOR PROJECT NOTES, SEE SHEET 10.
2. ALL EXISTING STEEL IDENTIFIED TO REMAIN SHALL BE CLEANED AND EPOXY COATED. DAMAGED OR DETERIORATED REINFORCEMENT SHALL BE REPLACED. THIS WORK IS INCIDENTAL TO ITEM NO. 610017.
3. SCUPPERS SHALL BE PAID FOR UNDER ITEM NO. 610017.
4. FOR REINFORCEMENT BAR SCHEDULE, SEE ITEM NO. 615512.

SCUPPER THROUGH CURB
SCALE: 3/4" = 1'-0"

SCUPPER PLAN
SCALE: 3/4" = 1'-0"

SECTION A-A
SCALE: 3/4" = 1'-0"

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

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

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

BR 1-577 ON N050
NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

CONCRETE DECK
RJH
DPR

SCUPPER PLAN
SCALE: 3/4" = 1'-0"

SECTION A-A
SCALE: 3/4" = 1'-0"

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

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

SECTION D-D
SCALE: 1/2" = 1'-0"
### Reinforcement Schedule

#### Deck

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#### Beam

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### Notes:

1. "E" denotes epoxy reinforcement.
2. Figures in circles show bend types.
3. All reinforcement shall be ASTM A615 Grade 60.
4. Reinforcement bar schedule is for informational purposes only. Dimensions shall be verified prior to fabrication.
5. "H" modifiers on 100 hooks are shown only where necessary to restrict hook size. Other hooks may be used.
6. Bar length includes threaded end.

**Additional Information**

- **DeSign**
  - **Delaware Department of Transportation**
  - **NEW CASTLE DELAWARE DEPARTMENT OF TRANSPORTATION**
  - **65 T201407403 BRANDYWINE RIVER NORTHEN BOULEVARD OVER BR 1-577 ON N050**

**Diagram**

- **Not to scale**
- **Diagram of reinforcement schedule**
- **Notation for different types and sizes of reinforcement elements**

**Bar Length and Thread Specifications**

- **Thread one end**
- **Standard hook**
- **Mechanical coupler**
- **Epoxy reinforcement**

**Detailed Measurements**

- **Dimensions**
- **Markings for precise placement**

---

**Notation for Figures in Circles**

- **1.**
- **2.**
- **3.**
- **4.**
- **5.**
- **6.**

---

**UNOFFICIAL WEBSITE COPY**
EXISTING STEEL FRAMING PLAN

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

NOTES:
1. FOR PROJECT NOTES, SEE SHEET 10.
2. FOR STEEL REPAIR DETAILS, SEE SHEET 33.
### Drawings

**Detail A**

**Conceptual Temporary Support Beam Section**

**Conceptual Temporary Support Beam Elevation**

**Section A-A**

**Repair Procedure Notes:**

1. The contractor shall prepare the repair area by removing the existing paint system from areas of existing riveted connections designated for removal. Areas to be cut for access. See Sheet 32 for removal limits.

2. Cut and remove Floor Beams 20 ft limits shown in Detail A to provide an access hole to connect the proposed plate to the existing Bearing Stiffener.

3. Prepare the existing Bearing Stiffener surface by removing the existing rivets from the Floor Beams 00 Bearing Stiffeners to the limits shown on Detail B.

4. Field verify bolt hole locations and ensure that all existing Bearing Stiffener hole locations are concentric with the proposed Bearing Stiffener Repair Plate holes.

5. Bolt the repair plate to the existing Bearing Stiffener using 7/8" Dia. ASTM A325 bolts through the existing rivet holes.

6. Paint the areas of exposed steel.

7. All Steel Repair Work Paid for Under Item No. 615006 and 616000.

8. All work relating to the temporary support beam is incidental to Item No. 211000.

---

**Legend:**

- New Bearing Stiffener Plate to be fitted over existing
- Limits of access hole to be left 0.5" in Floor Beams 00

**Notes:**

1. For project notes, see Sheet 10.
REMOVE EXISTING BEARING PADS AND INSTALL NEW ELASTOMERIC BEARINGS.
INSTALL TEMPORARY SHIM STACKS AT PIER 1 AND PIER 2
INSTALL NEW ELASTOMERIC BEARING PADS, EXCEPT WHERE INDICATED IN NOTE 5.
INSTALL NEW FILL PLATE WITH GUIDE PLATES FOR ALL NEW BEARINGS.
CONSTRUCT NEW CONCRETE BEAM SEAT AND NEW ANCHOR BOLTS.
REMOVE JACKS AND SHIMS TO COMPLETE THIS ITEM OF WORK.

REMARKS
MAINTAIN BLOCKED CONDITION AND REMOVE JACKS AT PIERS.
RELEASE JACKS AND LOWER SUPERSTRUCTURE ON NEW BEARINGS.
COMPLETE CONCRETE BEAM INSTALLATION AND POURED CONCRETE.
RELEASE JACKS AND LOWER ON TO NEW BEARINGS AND TEMPORARY JACK BEAMS AT PIERS 1, 2, AND 5 AS INDICATED IN THE PLANS AND BLOCK THE SUPERSTRUCTURE.
JACK BEAMS AND REMOVE TEMPORARY BLOCKING.

BEARING REPLACEMENT SEQUENCE (PIERS 1, 2, AND 5)
1. INSTALL JACKING MEASURES AT EACH PIER BEARING LINE.
2. JUMP BEAMS AT PIER 1, PIER 2, AND AS INDICATED IN THE PLANS AND BLOCK THE SUPERSTRUCTURE.
3. POSITION JACKING MEASURES AND REMOVE JACKS AT PIERS 1, 2, AND 5.
4. CONSTRUCT NEW CONCRETE BEAM SEAT AND NEW ANCHOR BOLTS EXCEPT WHERE INDICATED IN THE PLANS.
5. INSTALL TEMPORARY SHIM STACKS AT PIER 1 AND PIER 2.
6. INSTALL NEW FILL PLATE WITH GUIDE PLATES FOR ALL NEW BEARINGS, EXCEPT WHERE INDICATED IN NOTE 5.
7. RELEASE JACKPLATES FOR INSTALLATION EXCEPT WHERE INDICATED IN NOTE 5.
8. INSTALL NEW ELASTOMERIC BEARING PADS, EXCEPT WHERE INDICATED IN NOTE 5.
9. INSTALL NEW ANCHOR BOLTS, NUTS AND WASHERS AND SHALL BE INCIDENTAL TO ITEM NO. 623000.
10. PAYMENT FOR FABRICATION OF STEEL REINFORCED ELASTOMERIC BEARINGS, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE INCIDENTAL TO ITEM ND. 62.0000.
BEARING REPLACEMENT SEQUENCE (PIER 3 AHEAD AND PIER 4 BACK)
1. INSTALL JACKING MEASURES AT EACH PIER BEARING LINE.
2. JUMP BEAMS AT Piers 3 AHEAD AND PIER 4 BACK AS INDICATED IN THE PLANS AND BLOCK THE SUPERSTRUCTURE.
3. REMOVE EXISTING BEARING PADS AND INSTALL NEW ELASTOMERIC BEARINGS.
4. REMOVE JACKS AND LOWER SUPERSTRUCTURE ON NEW BEARINGS.
5. REMOVE JACKS AND SHIMS TO COMPLETE THIS ITEM OF WORK.

NOTE:
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
2. NEW BEAM SEAT MODIFICATIONS PAID FOR UNDER ITEM NO. 611001 AND 610004.
3. FOR PROJECT NOTES, SEE SHEET 10.
4. FOR JACKING DETAILS AND INFORMATION, SEE SHEETS 37-38.

REINFORCEMENT SCHEDULE

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**Jacking Load Notes:***

1. Jacks must provide a safety factor not less than 1.65 (1.5*1.10) and the "sticky force" based on the calculated unfactored design jacking loads.

2. Factored loads may be used for contractor design of temporary structural supports.

3. Lifting of the bridge through hydraulic pressure under live load is prohibited.

4. Loads are per jacking location. For Piers 1, 2, and 5 provide 2 jacking points per beam end.

5. Refer to pier jacking detail for suggested locations of temporary shims to support bracing and bearing seat modifications, see section 5 providing temporary shims to support bridge during bearing replacement. See temporary support details on sheet 38.

6. Jacking concepts shown on sheets 37 and 38 for jacking and temporary structural supports. The contractor may design and construct jacking and temporary structural supports, including lift at Piers 1, 2, 3, and 5. The contractor must design and construct temporary structural supports for approval prior to work, in accordance with section 5 of the standard specification. The contractor must provide a professional engineer licensed in the state of Delaware.

7. All work associated with jacking the bridge, including temporary support, is paid for under item no. 604.

---

**Legends:**

- **Jacking Location**
- **Shim Location**
- **Beam Designation**
- **Bearing Designation**

---

**Unfactored Loads for Jacking**

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**Factored Loads for Jacking**

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BR 1-577 ON N050
NORTHEAST BOULEVARD OVER BRANDYWINE RIVER

NOTES:
1. FOR PROJECT NOTES, SEE SHEET 10.
2. FOR Blockout limits and joint details see sheet 40.
3. REMOVAL AND REPLACEMENT OF THE SIDEWALK PLATE IS INCIDENTAL TO ITEM NO. 624000.

SCALE: 3/8" = 1'-0"
SECTION AT ROADWAY OVER ABUTMENT
SCALE: 1/8" = 1'-0"

SECTION AT SIDEWALK OVER ABUTMENT
SCALE: 1/8" = 1'-0"

JOINT NOTES:

1. All steel members of the expansion joint system shall be hot-dipped galvanized Grade 36.

2. The strip seal shall be installed in one piece across the bridge width. Splicing of the strip seal is not permitted.

3. Neoprene seal to meet T-6326-81 modified (incorporating tests included).

4. The deck joint shall be capable of sealing the deck to prevent moisture and other contaminants from descending through the joint.

5. The contractor shall adjust the open joint as required by the width of steel extrusion used to provide a 2" opening.

6. Entire deck joint shall be painted after fabrication using an approved sealer.

7. Lubricant-adhesive shall remain liquid from -20°F to 120°F.

8. The strip seal shall be installed in one piece across the bridge width. Slicing of the strip seal is not permitted.

9. Elastomeric concrete binder shall have the following physical properties:
   - Tensile strength = 1500 PSI (AASHTO M270)
   - Tensile stress = 500 PSI (AASHTO M270)
   - Hardness = 90+/- 3A (ASTM D2240)

NOTES:

1. For bridge project notes, see sheet 10.

2. For deck joint elevations, see sheet 19.
NOTES:
1. FOR PROJECT NOTES, SEE SHEET 10.
2. DEBRIS REMOVAL AS DIRECTED BY ENGINEER. PAYMENT FOR THIS WORK WILL BE PAID UNDER ITEM NO. 201000.
3. CONTRACTOR TO REATTACH OR REPLACE TIMBER SHEATHING AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL BE PAID UNDER ITEM NO. 201001.
PIER 4 - WEST FACE

NOTES:

1. FOR PROJECT NOTES, SEE SHEET 10.
2. THE CONTRACTOR SHALL UTILIZE A LASER PVC PRIOR TO INSTALLATION TO LOCATE AND MARK COMPACT WITH THE EXISTING REBAR
3. ANCHOR BOLT PRE-CASTMENT DETAIL SHALL BE A MINIMUM OF 2 3/4" INTO CONCRETE.

SCREEN JOINT

6" (MAX)

6" (MAX)

C-C SPACING

BOLT (TYP)

ANCHOR BOLT (TYP)

SCREEN JOINT

DETAIL A

DETAIL B

BRIDGE NO.

COUNTY

DESIGNED BY:

CHECKED BY:

DELAWARE DEPARTMENT OF TRANSPORTATION

T201407403

BRANDYWINE RIVER
NORTHEAST BOULEVARD OVER BR 1-577 ON N050

CL BRIDGE

G1

G2

G2

G1

( T Y P )

6 '- 8 "

2 '- 0 "

2'-6"

4'-0"

7'-3"

6'-6"

STEEL VARMINT SCREEN

~

ANCHOR BOLT EMBEDMENT DEPTH SHALL BE A MINIMUM OF 2 3/4" INTO CONCRETE.

W/ REBAR

WITH THE EXISTING REBAR

TO INSTALLATION TO LOCATE AND AVOID CONFLICT WITH THE CONTRACTOR SHALL UTILIZE A PACHOMETER PRIOR

FOR PROJECT NOTES, SEE SHEET 10.

VARMINT SCREEN PROPOSED VARMINT (TYP)

MINIMUM OF 2"

WHILE THE CONTRACTOR SHALL UTILIZE A PACHOMETER PRIOR TO INSTALLATION TO LOCATE AND MARK COMPACT WITH THE EXISTING REBAR

ANCHOR BOLT PRE-CASTMENT DETAIL SHALL BE A MINIMUM OF 2 3/4" INTO CONCRETE.

W/ REBAR

WITH THE EXISTING REBAR

TO INSTALLATION TO LOCATE AND AVOID CONFLICT WITH THE CONTRACTOR SHALL UTILIZE A PACHOMETER PRIOR

FOR PROJECT NOTES, SEE SHEET 10.
1. MAINTENANCE OF TRAFFIC DURING DELIMBING CLOSURES, LANE CLOSURES, AND LANE SHIFTS SHALL COMPLY WITH TYPICAL APPLICATION TA10, TA21, TS2, TS2A, TA23, AND TA27 OF THE DELAWARE MUTCD.

2. ON ALL INTERSECTIONS APPROACHING THE WORK AREA, "ROAD WORK AHEAD" SIGNS SHALL BE PLACED AS SHOWN ON THE CONSTRUCTION, M.O.T., AND EROSION CONTROL PLAN.


4. THE DISTURBED AREA FOR THIS PROJECT IS 0.226 ACRES.

5. THE ADDITIONAL IMPERVIOUS AREA FOR THIS PROJECT IS 0 SF.

6. REMOVE ALL TRAFFIC CONTROL DEVICES.

7. THE CONTRACTOR SHALL SUPPLY MESSAGE BOARDS TO PLACE AT LOCATIONS WITHIN 1 MILE OF THE PROJECT LIMITS AS SHOWN ON THE CONSTRUCTION, M.O.T., AND EROSION CONTROL PLAN.

8. IMPLEMENT PEDESTRIAN DETOUR PLANS AS SHOWN ON THE TEMPORARY SIGNAL PLANS.

9. REMOVE TEMPORARY CURB RAMP, TEMPORARY PAVEMENT MARKINGS, AND IMPLEMENT PEDESTRIAN DETOUR AS SHOWN ON THE CONSTRUCTION, M.O.T., AND EROSION CONTROL PLAN.

10. THE CONTRACTOR SHALL NOTIFY THE DELAWARE SEDIMENT & STORMWATER PROGRAM OF ANY DELAYS TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS.
SOUTHWEST CORNER OF NORTHEAST BOULEVARD AND 13TH STREET
* WORK TO BE PERFORMED AT THE END OF PHASE C.
NOTES:
1. TRAFFIC SIGNAL HEADS FOR EASTBOUND E. 11TH STREET WILL BE OPERATIONAL DURING STAGES 2 AND 3.
2. SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS FOR NORTHBOUND N. SPRUCE STREET WILL BE OPERATIONAL DURING STAGES 2 AND 3.
3. LIFTING COMPLETION OF STAGE 3, OPEN CROSSWALKS ALONG N. SPRUCE STREET AND E. 11TH STREET, REMOVE BAGS AND RECONNECT PEDESTRIAN SIGNAL HEADS, WESTBOUND N. SPRUCE STREET TRAFFIC SIGNAL HEADS AND OVERHEAD FLASHING BEACON.
4. SEE VEHICULAR DETOUR PLAN FOR DETAILS OF THE DETOUR ROUTE.
5. CONSTRUCTION SHALL DEPLOY AND EROSION CONTROL PLAN - SHEET 2 OF 2.
6. CONSTRUCTION SHALL DEPLOY AND EROSION CONTROL PLAN - SHEET 2 OF 2.
7. PAYMENTS FOR THIS WORK WILL BE MADE UNDER ITEM NUMBER 273000 - TEMPORARY CONSTRUCTION FENCE, 150 FT.
8. PAYMENTS FOR THIS WORK WILL BE MADE UNDER ITEM NUMBER 270000 - ROAD CLOSURES.
NOTES:

1. See WOODCUT DETAIL PLAN for details of the Woodcut Post.
2. See SHEETS 53 AND 54 FOR THE PEDESTRIAN DETOUR PLANS.
3. Use the Interim Intersection Signage shown in Item 119-01-01 to assist in the setup of the Woodcut-Gate Temporary Traffic Signal Plans.
4. Payment for this work will be made under Item Number 737002 - Temporary Construction Fence.
5. Payment for this work will be made under Item Number 737000 - Fence Relocation.

TEMPORARY PAVEMENT MARKINGS LEGEND

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<th>ITEM</th>
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<td>D</td>
<td>6&quot; BLACKOUT TAPE (ITEM 817008)</td>
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<td>E</td>
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<td>4&quot; DASHED YELLOW TEMPORARY PAINT PAVEMENT STRIPING (ITEM 817032)</td>
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<td>G</td>
<td>REMOVAL OF PAVEMENT STRIPING (ITEM 817033)</td>
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GENERAL NOTES

1. ALL DETOUR SIGNING, INCLUDING TRAILBLAZERS, ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR IN COMPLIANCE WITH "THE DELAWARE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD).

2. THE CONTRACTOR SHALL COMPLY WITH GUIDELINES IN "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD PART 6) FOR BARRICADES AND SIGNS (AS PER LATEST REVISION).

3. DESIGN OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FHWA STANDARD HIGHWAY SIGNS BOOK.

4. SIZES OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

5. SIGNS NO LONGER IN USE SHALL BE COMPLETELY COVERED WITH NO RETROREFLECTIVE MATERIAL SHOWING, OR SHALL BE REMOVED, AS DIRECTED BY THE ENGINEER.

6. FIELD CONDITIONS MAY DISTURB CHANGES AT SOME TIMES DURING THE LIFE OF THE CONTRACT. IN THE EVENT OF OMISSIONS OR CORRECTIONS, THE SIGNING PROVISIONS OF "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD) WILL PREVAIL.

7. WARNING SIGNS AND DETOUR TRAILBLAZERS SHALL BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT ORANGE SHEETING.

8. "O" BARRICADE SHALL COMPLETELY RUN THE FULL WIDTH OF SIDEWALK OR PEDESTRIAN PATH.
**Panelboard - Northeast Blvd/12th Street**

- **120/240 Volts, 3 Wire + GND**: 100 Amp M.C.B.
- **200 Amp Bus**: 100 Amp 3P Contactor
- **Luminaires Voltage**: 120 Volts

**Equipment Served**

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<tr>
<th>Ext.</th>
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<th>Connected Load</th>
<th>Phase and Volts</th>
<th>Branch Circuit Breaker</th>
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**Equipment Served Volts**

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**Lighting Standard Schedule**

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<th>Arm</th>
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<td>55</td>
<td>15</td>
<td>W-11+5.00 HPS COBRA HEAD</td>
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**Notes**

1. **Electrical Work** shall be performed and all materials provided shall be in accordance with the material and installation standards as specified in the drawings. Such materials shall conform to the minimum requirements for the electrical work as specified in the drawings. The electrical work shall be capable of proper operation of any system shall be provided whether or not they are specifically called for by specifications or drawings.

2. The electrical contractor shall coordinate his work with the all the contractors involved in the project. Electrical installations shall be coordinated with the engineer and the general superintendent the locations of all conduit and pole to luminaire connections, to avoid conflicts.

3. The electrical contractor shall provide and secure all electrical inspections as required.

4. The electrical contractor shall verify all dimensions and coordinates at site prior to work.

5. All electrical work includes furnishing labor, material, equipment and service necessary and reasonable to perform completion of the electrical work. As detailed in the construction documents. All work shall be conducted in a manner that avoids conflicts with all existing and proposed features approved by the engineer. All conduit and poles shall be located within existing and proposed right-of-way or permanent easement.

6. The electrical contractor shall obtain all necessary permits and certificates as required.

7. The existing conduits shown on the plans are approximate. It shall be the responsibility of the contractor to verify the exact locations prior to commencing work.

8. All conduits shall be bonded with the ground wire.

9. **Conduit Runs** shall be made in the pole base. Splices in junction wells shall not be fused.

10. Use caution when installing conduit under existing structures. When complete, ensure all storm water management facilities are restored to existing conditions.

11. Do not share highway lighting equipment with signal or I-250W HPS equipment.

12. Keep existing lighting energized to serve as temporary lighting until the new luminaires are energized.

13. Coordinate the installation of luminaires on utility poles with the local electric utility.

14. Conduit runs and junction wells are shown in approximate locations. The contractor shall locate the conduit runs and install junction wells in a manner to avoid conflicts with all existing and proposed features as dictated by field conditions.

**Legend**

- **Lighting Standard**
- **Lighting Service Run Identifier**
- **Junction Well & Type**
- **Existing Light Standard**
- **Proposed Cobra Head**
- **Luminaires, Single Head Arm**
- **Proposed Meter Service Pedestal**
- **Proposed Lighting Control Pedestal**
- **Proposed Junction Well**
1. Replace existing twin mounted ornamental light pole fixtures with LumeC Serenade 35W LED fixture. All pole fixtures to be replaced.

2. Replace lighting conduit and cable on north side of bridge. Provide 2" PVC conduit attached to metal railing. Provide 2" PVC and one conductor specified in existing junction well.

3. Coordinate with the City of Wilmington Department of Public Works for information regarding existing lighting service and circuit information.

4. Refer to bridge plans for additional lighting and conduit information.
<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>PLAN IDENTIFIER</th>
<th>SIGN IDENTIFICATION</th>
<th>DESCRIPTION</th>
<th>SIGN WIDTH (N)</th>
<th>SIGN HEIGHT (N)</th>
<th>SIGN AREA (SF)</th>
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<th>POST INSTALLATION TYPE</th>
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NOTE:

1. THIS SHEET SHALL BE USED FOR RIGHT-OF-WAY ACQUISITION PURPOSES ONLY.

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### Fig TCE_1L

**Area = 14323.2787 SQ. FT. (0.3288 ACRES)**

**Type of Acquisition:**
- **A**: Assessment
- **R**: Remaining

**Acquisition Codes:**
- **R**: Right-of-Way
- **BR**: Brandewyne Creek

**Design:**
- **ADM**: Delaware Department of Transportation

**Sheet:**
- **66**

#### Parcel Description

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**Ownership of Record:**
- **112**
- **MAST ASSOCIATES LLC**
- **PRESTIGE ACADEMY FOUNDATION LLC**

**Assessment Number:**
- **2000**
- **26-036.40-002**
- **1004**

**Type of Acquisition Codes:**
- **ACQ:** Acquisition
- **AS:** Assessment
- **R:** Remaining

**County Assessor:**
- **C: 2004**
- **C: 2004**

**Address:**
- **12 ST - 12 ST BASELINE**
- **BRANDYWINE CREEK**