SCOPE OF WORK:

- Remove and replace existing abutments and construct new pier with stained faux-stone architectural treatment.
- Construct new superstructure girders.
- Removed and replace the existing rails on new abutments.
- Provide railings and a road barrier on each side of the bridge.
- Provide a pedestrian walkway on each side of the bridge.

SECTION ALONG % OF BRIDGE

PROJECT LOCATION

LOCATION MAP

PROPOSED PLAN

SECTION ALONG % OF BRIDGE

COMMODORE OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REHABILITATION

ON

JOHN G. LEWIS MEMORIAL BRIDGE AT RTE. 673
(HEATHERFIELD LANE) OVER CATOCTIN CREEK

LOUDOUN COUNTY - 0.5 MI. W. OF RTE. 665

PROJ. 0673-053-082
### ESTIMATED QUANTITIES - SUPERSTRUCTURE ONLY

<table>
<thead>
<tr>
<th>Description</th>
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<th>Date</th>
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<tr>
<td>Reinforcing Steel</td>
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### MISCELLANEOUS / ROAD ITEMS

#### ESTIMATED QUANTITIES - SUBSTRUCTURE ONLY

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### GENERAL NOTES (CONT.):

1. Includes concrete and all miscellaneous steel connections, castings, and bearing assemblies.
2. Includes 25% rock excavations.
3. Includes all metal hardware (castings and structural shapes) and bearing assemblies.
4. Includes temporary truss supports, bearings, and all miscellaneous steel connections, castings, and bearing assemblies.
5. Includes concrete and all miscellaneous steel connections, castings, and bearing assemblies.
6. Includes all metal hardware (castings and structural shapes) and bearing assemblies.
7. Includes 25% rock excavations.
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### ESTIMATED QUANTITIES AND INDEX OF SHEETS

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<th>SHEET NO.</th>
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<tr>
<td>1</td>
<td>Front Sheet, Plan, Profile, Design Exceptions</td>
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</table>
1. The use of property outside of the ROW and TCE for any construction activities will be permitted. Prior to VDOT approval of ROW, all construction activities, personal equipment and materials are prohibited from entering property other than the ROW. 

2. The site will be closed to public traffic during construction. 

3. The Contractor may submit alternate construction methods, including staged demolition and construction, for approval by the Engineer. 

4. The Contractor shall install a protective shield, as approved by the Engineer, to protect the stream from debris resulting from the construction operations. 

5. The Contractor shall submit shop drawings and calculations for temporary work platforms prepared by a professional engineer registered in the Commonwealth of Virginia prior to commencing work on the work platforms. 

6. The Contractor shall maintain boat access at all times except as required during demolition/removal of existing structure and construction of the new superstructure, at which time boat access under the bridge shall be blocked.

SUGGESTED SEQUENCE OF CONSTRUCTION:

Stage 1 - Site Preparation

1. Top roadway of the bridge and provide detours as shown in the plan.
2. Build proposed access road and temporary construction access ramp.
3. Build temporary supports for existing abutments on north side of the existing structure, with min. 15ft clearance between temporary supports and existing structure. 

Stage 2 - Disassembling/Removing Existing Structure

1. Build temporary bridges between thefuture vertical members (Min. 124 above existing deck - see Sheet 23), to provide stability during disassembly and lifting.
2. Remove rolling beams and posts, timber deck beams and u-beam stringers, and remaining U-beam stringers and bottom x-bracings.
3. Lift the truss with crane and move it to temporary supports located on north side of the existing structure.
4. Release bearing anchor bolts at the abutments.
5. Build proposed access road and temporary construction access road.
6. Remove existing abutments.

Stage 3 - Coating / Shotcrete

1. Build proposed access road and temporary construction access ramp.
2. Build temporary supports for existing abutments on north side of the existing structure, with min. 15ft clearance between temporary supports and existing structure.
3. Lift the truss with crane and move it to temporary supports located on north side of the existing structure.
4. Release bearing anchor bolts at the abutments.
5. Build proposed access road and temporary construction access ramp.
6. Remove existing abutments.

CONSTRUCTION STAGES I & II

Temporary support for existing x-bracings

Limit of grading / earthwork

EXISTING STRUCTURE

Temporary support

 Existing structure to be removed

Yes to be removed

Remove truss within the proposed temporary support locations.

Temporary location of steel members (min. 6 ft above existing deck - see Sheet 23), to provide stability during truss disassembly and lifting.

Provide temporary lateral bracings between the existing vertical members with Min. 124 above existing deck - see Sheet 23, to provide stability during disassembly and lifting.

6. Coat or shotcrete the substructure and superstructure as necessary to meet criteria specified by the Engineer.
SUGGESTED SEQUENCE OF CONSTRUCTION (CONT.):

1. Build proposed abutments.
2. Install cofferdam in creek and build pier.
3. Complete earth work (grading and benching) around the new structures as shown in the civil plans.
4. Install bearings, place steel plate girders and interior and exterior diaphragms.
5. Install railings and railing posts and beams.
6. Lift and place trusses onto new abutment bearings above the new bridge superstructure.
7. Install U-bolt connections between the truss pins and the existing superstructure.
8. Perform steel repairs to the existing steel truss as shown in temporary supports.
9. Remove all truss temporary bracings required for lifting and exterior diaphragms.
10. Install bearings, place steel plate girders and interior and exterior diaphragms for both spans.
11. Complete earth work (grading and benching) around the new structures.
12. Install glu-lam timber deck, and railing posts and beams.
13. Perform graded areas (seeding) and replace removed trees as shown on the civil plans and specifications.
Notes:
1. For footing reinforcement plan and details, see Sheet 7.
2. Drilled shafts shall extend a minimum of 2.5 feet into the bedrock. For drilled shaft details, see Sheet 14.
3. For anchor bolt sleeve details, see bearing details on Sheet 9.
4. For details and limits of architectural treatment, see Sheet 8.

For footing reinforcement plan and details, see Sheet 7.
1. For drilled shaft details, see Sheet 14.
2. Drilled shafts shall extend a minimum of 2.5 feet into the bedrock.
3. For anchor bolt sleeve details, see bearing details on Sheet 9.
4. For details and limits of architectural treatment, see Sheet 8.

For footing reinforcement plan and details, see Sheet 7.
1. For drilled shaft details, see Sheet 14.
2. Drilled shafts shall extend a minimum of 2.5 feet into the bedrock.
3. For anchor bolt sleeve details, see bearing details on Sheet 9.
4. For details and limits of architectural treatment, see Sheet 8.
Notes:
1. Faux-stone architectural treatment shall be incidental to pay item Concrete Class A3.
2. The contractor shall submit a shop drawing of the proposed architectural treatment layout to the Engineer for approval prior to beginning of construction.

Limit of treatment: 21'-8" north to beginning of construction.

Scale: 1" = 1'-0"
Notes:
1. Faux-stone architectural treatment shall be incidental to pay item Concrete Class A3.
2. The contractor shall submit a shop drawing of the proposed architectural treatment layout to the Engineer for approval prior to beginning of construction.

- North Wingwall Architectural Treatment
- South Wingwall Architectural Treatment
- Abut. Wall Architectural Treatment

Scale: 1" = 1'-0"
Notes:
1. For footing reinforcement plan, details and limits of architectural treatment, see Sheet 13.
2. Drilled shafts shall extend a minimum of xx feet into the bedrock. For drilled shaft details, see Sheet 14.
3. For anchor bolt sleeve details, see bearing details on Sheet 15.

Scale: ½" = 1'-0", unless otherwise noted.

For footing reinforcement plan, details and limits of architectural treatment, see Sheet 13.

For drilled shaft details, see Sheet 14.

Drilled shafts shall extend a minimum of xx feet into the bedrock. For drilled shaft details, see Sheet 14.

For anchor bolt sleeve details, see bearing details on Sheet 15.

Scale: ½" = 1'-0", unless otherwise noted.
Notes:
1. Faux-stone architectural treatment shall be incidental to pay item Concrete Class A3.
2. The contractor shall submit a shop drawing of the proposed architectural treatment layout to the Engineer for approval prior to beginning of construction.

Limit of treatment:
- 12'-9''
- 8'-6''
- 3'-0''
- 1'-11''
- Ordinar High Water Elev. 286.10
- 282-17C

Scale: 1/8'' = 1'-0''

FOOTING PLAN

PIER WALL ARCHITECTURAL TREATMENT

DETAIL B
Scale: 1/8'' = 1'-0''
**DRILLED SHAFT DETAILS**

**ELEVATION**
- Footing reinforcement not shown for clarity.
- Section A-A

**SECTION A-A**
- Permanent steel casing 8-DV11xx
- Footing typ.
- Top of footing
- Top of drilled shaft
- Bedrock
- Competent bedrock
- Min. rock socket
- CSL tube, typ.
- 2" dia. steel

**Notes**
1. All reinforcing bars shall be deformed and shall conform to ASTM A615 Grade 60.
2. Concrete in drilled shafts shall be Class A4. All drilled shafts shall be constructed in accordance with the special provisions.
3. Drilled shafts shall be located to the minimum tip elevations shown on the plan. Drilled shafts shall extend into competent bedrock, unless otherwise directed or authorized by the Engineer.
4. Pier drilled shafts shall extend a minimum of 2.5 feet into competent bedrock. Per drilled shafts shall extend a minimum of 2.5 feet into competent bedrock.
5. All drilled shafts shall be CSL tested. Install CSL tubes in the drilled shafts in accordance with the special provisions. CSL tubes shall be constructed in accordance with the special provisions, longitudinal reinforcement and in a symmetrical pattern.

**DRILLED SHAFT DATA**

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**Elevations**
- Elev. a: 273.23
- Elev. b: 274.40

**Dimensions**
- Scale: 1" = 1'0"
ELEVATION EXPANSION ASSEMBLY

SECTION B-B

Anchor bolt sleeve typ.

Laminated elastomeric bearing

1/2" x 3/8" shear plate

Centerline of girder

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION C-C

Anchor bolt sleeve typ.

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION D-D

Anchor bolt sleeve typ.

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

ELEVATION FIXED ASSEMBLY

SECTION B-B

Anchor bolt sleeve typ.

Laminated elastomeric bearing

1/2" x 3/8" shear plate

Centerline of girder

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION C-C

Anchor bolt sleeve typ.

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION D-D

Anchor bolt sleeve typ.

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION E-E

Anchor bolt sleeve typ.

Laminated elastomeric bearing

Anchor bolt sleeve typ.

Centerline of girder

SECTION A-A

LAMINATED ELASTOMERIC BEARING

ANCHOR BOLT SLEEVE

Not to scale unless otherwise noted

Not to scale except as noted

Not to scale unless otherwise noted

Preliminary Plans  Not to be Used for Construction

Copyright Commonwealth of Virginia

BEARING DETAILS

LAMINATED ELASTOMERIC BEARING

ANCHOR BOLT SLEEVE

Orientation pump pipe away from bearing

Standard steel pipe - ASTM A53 Grade B.

Shim - ASTM A36 or A1011 mild steel.

Elastomeric bearings shall be molded as a single unit.

Minimum of 2 exposed threads shall be provided above nuts.

Laminated elastomeric bearing.

All anchor bolts and washers shall be unpainted A709 Grade 36.

Unpainted A307 galvanized steel. All nuts shall be unpainted A307 galvanized steel.

R = 3". Plates shall not be painted on the surface in contact.

Fill with approved epoxy-resin and sand.

Centerline of girder (including center line and text) shall be marked on the top, bottom and side surfaces of the laminated elastomeric bearing. Plates shall be ASTM A709 Grade 50CR.

Threaded 1" pump pipe.

Material: 30mm diameter hardness. Design = ASTM A36 or A1011 mild steel.

Standard steel pipe - ASTM A53 Grade B.

Top of seat and cover with approved waterproof and sealant.

Precaution: Do not scratch or damage by sharp objects.

Cut 1/2" below anchor bolt and cover.

Written: ...........

Drawn: ................

Checked: ............
EXISTING STRUCTURE - TRANSVERSE SECTION

15" existing floorbeam
10" existing stringer typ.
Roadway
11'-2"

PROPOSED STRUCTURE - TRANSVERSE SECTION

Legend:
- Existing structure
- Existing structure to be removed
- Proposed structure

Notes:
1. For details of diaphragms and connector plates, see Diaphragm Details, Sheet 25.
2. For details of deck fastener, see Timber Deck and Joint Details, Sheet 20.
3. For details of proposed railing system, see Railing Details, see Sheets 21 and 22.
4. For details of connection between the truss and new superstructure, see Truss Connection Details, Sheet 25.
5. Beams shall be cambered 1/8" at the midpoint and 1/32" at quarterpoints in span C and 1/16" at the midpoint and 1/32" at quarterpoints in span B.
**BEARING STIFFENERS**

1. Bearing stiffeners on both sides, typ.
2. Line through center of bearings at Abut. A (Span a) or Pier (Span b) at midpoint.

**CONNECTOR PLATE**

- Detail A
- Typ. when stiffener is narrower than flange
- Typ. when stiffener is wider than flange

**WEB PLATE DIMENSION TABLE**

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<thead>
<tr>
<th>Span</th>
<th>ID</th>
<th>Web 1</th>
<th>Web 2</th>
<th>PL 1</th>
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**ORDER DIMENSION TABLE**

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**ORDER ELEVATION**

- Detail A
- Typ. when stiffener is narrower than flange
- Typ. when stiffener is wider than flange

**DIAPHRAGM CONNECTOR PLATE**

- 3/16" typ.
- PL 1/4" thick
- Weld to bearing typ.

**BEARING STIFFENERS**

- 1/4" typ.
- PL 1/4" thick
- Mill to bear typ.

**NOTES:**

1. For spacing of intermediate diaphragm connector plates and bearing stiffeners plates, see Framing Plan, Sheet 17.
2. For details of interior and exterior diaphragms, see Diaphragm Details, Sheet 18.
3. Beams shall be cambered 1/2" at the mid-span and 1/4" at bearing supports to span b, and 1/2" at the mid-span and 1/4" at
   bearing supports to span a.
4. The top and bottom flanges as shown in Order Detail and the web plates are classed in Group D by Energy Absorption Design
   Contribution: 2.5 ksi. Energy Absorption Specified Minimum: 1.0 ksi. Energy Absorption Performance Grade: 50 CR.
5. The Contractor shall submit their fabrication plans and details specifying all details such as cutting, welding, drilling, bending, and
   grinding methods, source of material, and welding procedures. In addition, the Contractor shall submit information on the modes
   and combinations of material such as those specifically outlined in Clause 14.5 of the Structural Specification, and all other plans
   and details as required by the Department, to the Department for review and approval.
6. The Contractor shall submit their fabrication plans and details along with the shop drawings to the Department for review and
   approval. The shipping and erection plans shall be signed and sealed by a Professional Engineer, having a valid license to
   practice engineering in the Commonwealth of Virginia.
7. The Contractor shall submit their fabrication plans and details along with the shop drawings to the Department for review and
   approval. The shipping and erection plans shall be signed and sealed by a Professional Engineer, having a valid license to
   practice engineering in the Commonwealth of Virginia.

**DIAPHRAGM**

- at Pier (Span a)
- at Abut. B (Span b)
- 1 at the midpoint and 3/8" at the quarterpoints in span b.
- 7. at the midpoint and 3/8" at the quarterpoints in span a.

**BEARING STIFFENERS**

- 1/4" typ.
- PL 1/4" thick
- Mill to bear typ.

**PLATE DIMENSION TABLE**

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**PREFABRICATION PLANS**

- Not to scale unless otherwise noted
- October 2018, Commonwealth of Virginia

**DIMENSIONS**

- DRAWN: WSP USA
- LOCATION: HERNDON, VA
- STRUCTURAL ENGINEER

**REVISIONS**

- SHEET 19
- FOR CONSTRUCTION

**NOTES:**

1. For spacing of intermediate diaphragm connector plates and bearing stiffeners plates, see Framing Plan, Sheet 17.
2. For details of interior and exterior diaphragms, see Diaphragm Details, Sheet 18.
3. Beams shall be cambered 1/2" at the mid-span and 1/4" at bearing supports to span b, and 1/2" at the mid-span and 1/4" at
   bearing supports to span a.
4. The top and bottom flanges as shown in Order Detail and the web plates are classed in Group D by Energy Absorption Design
   Contribution: 2.5 ksi. Energy Absorption Specified Minimum: 1.0 ksi. Energy Absorption Performance Grade: 50 CR.
5. The Contractor shall submit their fabrication plans and details specifying all details such as cutting, welding, drilling, bending, and
   grinding methods, source of material, and welding procedures. In addition, the Contractor shall submit information on the modes
   and combinations of material such as those specifically outlined in Clause 14.5 of the Structural Specification, and all other plans
   and details as required by the Department, to the Department for review and approval.
6. The Contractor shall submit their fabrication plans and details along with the shop drawings to the Department for review and
   approval. The shipping and erection plans shall be signed and sealed by a Professional Engineer, having a valid license to
   practice engineering in the Commonwealth of Virginia.
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**DIAPHRAGM**

- at Pier (Span a)
- at Abut. A (Span b)
- center of bearings: Line through center of bearings at Abut. A (Span a) or Pier (Span b) at midpoint.

**BEARING STIFFENERS**

- 1/4" typ.
- PL 1/4" thick
- Mill to bear typ.
Notes:
1. All connections shall be made with 3/4" diameter galvanized ASTM A325 bolts and ASTM A194 nuts. All washers shall be stainless steel.
2. For diaphragm connector plate and bearing stiffener details, see Sheet 18.

Deck is not shown for clarity.

For diaphragm connector plate and bearing stiffener details, see Sheet 18.

Sheet 18.

For diaphragm connector plate and bearing stiffener details, see Sheet 18.
Notes:
1. All wood shall be preservative treated in accordance with the specifications.
2. In order to obtain the necessary flattening of the boards, alternate the floor fasteners from the inside edge to the outside edge of the beam flange on alternate glue panels.
3. The essential precautions noted can be satisfied only by exercising extreme care in correctly locating the hole with respect to the edge of the beam flange and properly tightening the nut. Retightening may be necessary.
4. Nuts shall conform to the requirements of ASTM A663 and shall be self-locking. One square nut with bridge lock nut may be used in lieu of each self-locking nut.
5. Deck fasteners are to be made by cutting short leg of 4"x3"x3/8" angles, see Deck Fastener Details.
6. Saws and tools shall be sanitized in accordance with the section 222 of the specifications. Sanitizing for the bolts and nuts shall conform to the requirements of ASTM A495.

Sealer Notes:
1. The top of the sealer shall be approximately 1/16" below the top surface of deck or be recommended by the manufacturer. The minimum depth of sealant shall be 1/32".
2. Joints shall be sealed with Rapid Cure Silicone Joint Sealer, Class D as per section 212 of the specifications.
3. Sealer shall be applied in one continuous piece.
4. Prior to installing the primer for the sealer, joints shall be free of all foreign matter, oils, greases, curing compounds, and dirt. All faces shall be abraded blasted or brushed with a rotary wire brush. The sealant shall be cleaned with oil-free and water-free compressed air.
5. The sealer manufacturer's requirements for installation shall be consulted. The joint shall be installed with Rapid Cure Silicone Joint Sealer, Class D and shall be free of all foreign matter, oils, greases, curing compounds, and dirt. All faces shall be abraded blasted or brushed with a rotary wire brush. All joints shall be cleaned with oil-free and water-free compressed air.
6. The essential anti-rattle results can be obtained only by exercising extreme care in correctly locating the hole with respect to the edge of the beam flange and properly tightening the nut. Retightening may be necessary.

Notes:
1. Notes on the diagram shall not be made.
2. Joint details are to be made by cutting short leg of 4"x3"x3/8" angles, see Deck Fastener Details.
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For Standard Thrie-Beam Guardrail details, see Road and Bridge Standards, 2017.

1. Guardrail hardware shall be in accordance with VDOT Road and Bridge Standards. Hot dip galvanize all structural steel and hardware prior to fabrication. Fabricate railing to the horizontal and vertical alignment of the structure. Install posts normal to grade.

2. Limits for payment of thrie-beam rail and thrie-beam rail posts and required hardware and attachments to initial railing to glulam deck panels. The length of thrie-beam thrie-beam rail shall be sufficient for tip details described in plans.

3. All steel shall be hot dip galvanized.

4. For details of plates and fasteners in the proposed railing system, see Sheet 22.

5. All steel shall be hot dip galvanized.

VDOT NON-STANDARD RAILING DETAILS

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Quantity</th>
<th>Description</th>
<th>Material Specification</th>
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</thead>
<tbody>
<tr>
<td>a1</td>
<td>54</td>
<td># 4 x 4 (4'-0&quot; Long)</td>
<td>A992 or A572 Grade 50</td>
</tr>
<tr>
<td>a2</td>
<td>216</td>
<td>Rope Steel Washer (5/8&quot; Thick)</td>
<td>A36</td>
</tr>
<tr>
<td>a3</td>
<td>106</td>
<td>Rope Ringer Steel Washer (5/8&quot; Thick)</td>
<td>A36</td>
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<td>a4</td>
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Notes:
1. Contractor shall provide signed and sealed design for temporary supports to relocate the existing truss during the construction. The contractor shall provide calculations and foundation designs of all proposed construction. The contractor shall also provide temporary foundation details, including minimum 15 ft clearance from the foundation type.
2. Before designing temporary foundations, contractor shall perform a subsurface investigation to verify the soil capacity and geotechnical conditions.
3. Temporary lateral bracings between existing truss vertical members shall be designed and installed at both ends of the existing truss, see Sheet 3. The temporary lateral bracings shall be designed to provide stability during lifting.
4. After complete removal of existing structure, lateral bracings shall be installed at both ends of the existing truss between end posts, to provide stability during lifting.
5. During lifting and replacing of the existing truss, it shall not be disassembled completely. All temporary connections and bracings shall be replaced with identical galvanized or metalized members.
6. Contractor shall provide signed and sealed designs and shop drawings for temporary bracing, connection details to existing truss, location of jacks, methods of relocating and sequence of lifting the truss to the Engineer for review and approval.
7. Maximum anticipated load on each lift point shall be 10 tons, after removal of railing beams and posts, stringers, wire rope supports, U-bolts, floorbeams, and overlay, see notes for details and sequence of removing temporary bracings between existing truss vertical members.
8. Before fitting and moving the truss, contractor shall visit the site to verify the adequacy of the support system.
9. Contractor shall provide signed and sealed designs for temporary supports to relocate the existing truss during the construction. The contractor shall provide calculations and foundation designs of all proposed construction. The contractor shall also provide temporary foundation details, including minimum 15 ft clearance from the foundation type.
10. All dimensions shall be field verified by Contractor prior to purchasing materials and fabrication of bracing elements and assemblies.
Notes:

1. Material Expansion - 50 percent hardness.

2. The Contractor may select a variety of materials to meet the requirements, as long as they conform to the specified dimensions and tolerances.

3. All bearing parts shall be galvanized steel. All bolts shall be standard A307 bolts. All washers shall be standard A350 Grade 36.

4. Expansion joints shall be provided as a separate item.

5. Centerline of truss shall be marked on the top, bottom, and side surfaces of the bearing pads. The centerline shall be marked with an indelible ink or permanently marked with a permanently marked with a permanent ink.

6. Steel pipes shall be field verified by Contractor prior to purchasing.

7. Clean existing base plates, sole plates, and washers to remain. The Contractor shall verify size, location and soundness of existing. If any discrepancies are found, the Contractor shall notify the Engineer immediately.

8. All holes and slots removed from existing truss components shall be cleaned. The Contractor shall not remove any existing bearing components, but shall replace any damaged components with new, similar components.

9. All bearing parts shall be manufactured to the specified dimensions and tolerances. All bearing parts shall be field verified by Contractor prior to the existing truss being reassembled.

10. The new bearing parts shall be fabricated in accordance with the specifications provided. All bearing parts shall be field verified by Contractor prior to the existing truss being reassembled.

11. All anchor bolts and washers shall be unpainted. All anchor bolts shall be 3/4" A325 Grade 50.

12. All anchor bolts shall be provided with a washer and nut. The Contractor shall verify that all anchor bolts are provided with a washer and nut. The Contractor shall verify that all anchor bolts are provided with a washer and nut.

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Notes:
1. Missing rivets shall be replaced with galvanized new rivets.
2. Connection plates with cracks shall be replaced based on cracks specified on Sheet 27.
3. Loose bolts or rivets shall be replaced at connection plates.
4. Cracked diagonal angle in upper lateral bracing shall be replaced with same size galvanized new angle.
5. Deteriorating conditions shown are from the last inspection report dated 02/17/2017.
6. Construction shall inspect the truss after rehabilitation and inform the Engineer of any additional new defects beyond those specified in the last inspection report, which might have occurred during construction.
7. Construction is responsible for restoring damaged galvanized surfaces, which might have occurred during lifting, replacing, or repositioning of different truss members and components as specified here on this Sheet and Sheet 27.

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TRUSS REPAIR DETAILS

**VIEW C-C**  
Scale: 1" = 1'-0"

**VIEW D-D**  
Scale: 3" = 1'-0"

**DETAIL A - U3**  
Scale: 1/2" = 1'-0"

- Existing top chord & pin to remain, typ.
- Existing connection plates to be strengthened, typ.
- Existing top and bottom eccentric plates to be strengthened, typ.

**DETAIL B**  
Scale: 3" = 1'-0"

- Existing diagonal and nut to remain
- New 1/2" thick splice plates

**NOTES**

1. Repairs to be field verified by contractor prior to fabrication of repair plates.
2. Connections to be repaired shall be cleaned in accordance with the requirements of the Specifications.
3. The top splice plates, diagonal, and eccentric plates shall be designed to have a 1" eccentricity. The eccentricity shall be located in the location shown.
4. Remove the existing top row of battens and attach new 1/2" thick plates with 1 1/2" long H.S. bolts. The repair shall be performed one plate at a time.
5. Splice plates in new plates. Field verify batten spacing to use existing battens or new battens. Strengthen splice plates by using existing splice plates as template and drill new plates in field.

**PRELIMINARY PLANS**

These plans are preliminary and are not to be used for construction. Final plans shall be issued by the owner.

**DESIGNER**

**DATE**

**PRELIMINARY PLANS**

These plans are preliminary and are not to be used for construction. Final plans shall be issued by the owner.

**DESIGNER**

**DATE**
### REINFORCING STEEL SCHEDULE

<table>
<thead>
<tr>
<th>WORK NO.</th>
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<th>LENGTH</th>
<th>WEIGHT</th>
<th>LOCATION</th>
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### DIMENSION TABLE

|------|------|------|-------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|

### DIMENSION VARIATION TABLE

| MARK | NO. | LENGTH | EA. | DIMENSION | FROM | TO | VARY | FROM | TO | VARY |

### BENDING DIAGRAM

**NOTES:***
- Dimensions in Bending Diagram are out-to-out of bars.
- Weights in schedule are based on density of 490 lb/ft³.
- The cost of mechanical couplers shall be included to the relevant Reinforcing Steel pay item.
### WB-1C

**ABUTMENT A**

- **S T A T I O N**: 102+33
- **L A T I T U D E**: 39.252017°
- **O F F S E T**: 40° 8′
- **L O N G I T U D E**: 77.569562°
- **S U R F A C E E L E V A T I O N**: 291.7 ft
- **C O O R D. D A T U M**: NAD 83

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**Field Data**

- **Date(s) Dilled**: 3/7/2017 - 3/7/2017
- **Boring Method(s)**: 3 1/4″ HSA
- **Other Tests**: 10′ Trench
- **Logger**: All sheikholeslami
- **Driller**: Jonathan Monroe

**Groundwater**

- Initial encountered at 15.06 ft
- Stabilized at 14.95 ft

**Legend**

- 05 - 203.7
- 10 - 203.7
- 15 - 203.7
- 20 - 203.7

**Profile**

- 05 - 203.7
- 10 - 203.7
- 15 - 203.7
- 20 - 203.7

**Remarks**

- 102+33: 3/7/2017
- 102+20: 3/8/2017

**Notes**

- See Waterlist and Sample Symbols List.
- Groundwater, initially encountered
- Rock Quality Designation (RQD)
- SPT blow counts
- Stable groundwater
- Unstable groundwater
- Rock Quality Designation
- Borehole water level
- Bedrock

### WB-2C

**ABUTMENT A**

- **S T A T I O N**: 102+20
- **L A T I T U D E**: 39.252017°
- **O F F S E T**: 27° 1′
- **L O N G I T U D E**: 77.569797°
- **S U R F A C E E L E V A T I O N**: 290.01 ft
- **C O O R D. D A T U M**: NAD 83

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**Field Data**

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- Rock Quality Designation
- Borehole water level
- Bedrock

---

**A copy of the original signed geotechnical submittal is on file in the District Office.**

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**Construction of Virginia**

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**COMPREHENSIVE ENGINEERING**

**ENGINEERING GEOLOGY - 1**

---

**FOR CONSTRUCTION**

---

**THESE PLANS NOT TO BE USED**

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**PRELIMINARY PLANS**

---

**NOT FOR CONSTRUCTION**

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**FOR CONSTRUCTION USE ONLY**

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**THESE PLANS ARE NOT FOR CONSTRUCTION USE**

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**CONSTRUCTION USE ONLY**

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### ABUTMENT B

#### FIELD DATA

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<th>Soil</th>
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#### FIELD DESCRIPTION OF STRATA

- **Tops**
  - Depth: 0.00
  - Description: Silty sand with gravel, medium dense, moist
  - RQD: 30

- **Sandy CLAY**
  - Depth: 3.5' - 29.7'
  - Description: brown silty sand, very dense, moist
  - RQD: 10

- **Bedrock**
  - Depth: 29.7' - 104.0'
  - Description: brown silty sand, very dense, moist
  - RQD: 30

#### Notes

- See Material and Sample Symbols List.
- Groundwater, initially encountered at 4.5 ft.
- Stabilized at 4.5 ft.
- Groundwater, stabilized
- Rock Quality Designation
- RQD: 0.62
- Boring terminated at 17.7'

### ABUTMENT B

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- Groundwater, initially encountered at 4.5 ft.
- Stabilized at 4.5 ft.
- Groundwater, stabilized
- Rock Quality Designation
- RQD: 0.62
- Boring terminated at 17.7'