SECTION 905 -- PROPOSAL (CONTINUED)

I (We) hereby certify by digital signature and electronic submission via Bid Express of the Section 905 proposal below, that all certifications, disclosures and affidavits incorporated herein are deemed to be duly executed in the aggregate, fully enforceable and binding upon delivery of the bid proposal. I (We) further acknowledge that this certification shall not extend to the bid bond or alternate security which must be separately executed for the benefit of the Commission. This signature does not cure deficiencies in any required certifications, disclosures and/or affidavits. I (We) also acknowledge the right of the Commission to require full and final execution on any certification, disclosure or affidavit contained in the proposal at the Commission's election upon award. Failure to so execute at the Commission's request within the time allowed in the Standard Specifications for execution of all contract documents will result in forfeiture of the bid bond or alternate security.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

ADDENDUM NO.	1	DATED	5/21/2019	ADDENDUM NO.		DATED	
ADDENDUM NO		DATED		ADDENDUM NO.		DATED	
ADDENDUM NO		DATED		ADDENDUM NO.		DATED	

Number	Description
1	Revised Plan Sheets Nos. 8001 & 8003; Amendment EBS Download Required.

TOTAL ADDENDA: 1
(Must agree with total addenda issued prior to opening of bids)

Respectfully Submitted,

DATE _____

_____
Contractor

BY _____
Signature

TITLE _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

FAX _____

E-MAIL _____

(To be filled in if a corporation)

Our corporation is chartered under the Laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

_____
President Address

_____
Secretary Address

_____
Treasurer Address

The following is my (our) itemized proposal.

NH-0056-01(102)/ 108015301000
Hinds County(ies)

Revised 01/26/2016

ADDENDUM

STATE	PROJECT NO.
MISS.	NH-0055-02(254)

DESCRIPTION OF SHEETS SPECIAL DESIGN SHEETS ~ BRIDGE DRAWINGS	WORKING NUMBER	SHEET NUMBER
DETAILED INDEX (BRIDGE)	DI-BR-1	8001
UNDERPASS AT STA. 227+95.89 (I-55 SOUTHBOUND UNDER LAKELAND DR.)		
UNDERPASS AT STA. 227+95.89 LAYOUT, GENERAL NOTES & ESTIMATED QUANTITIES	1 OF 2	8002
EPOXY REPAIR AND FRP WRAP DETAILS	2 OF 2	8003

SPECIAL DESIGN SHEETS INFORMATION PLANS	WORKING NUMBER	SHEET NUMBER
INFORMATION PLANS ONLY (ORIGINAL SHEET NO. A7 OF 29)	INFO-1	8004
INFORMATION PLANS ONLY (ORIGINAL SHEET NO. A16 OF 29)	INFO-2	8005
INFORMATION PLANS ONLY (ORIGINAL SHEET NO. A24 OF 29)	INFO-3	8006
INFORMATION PLANS ONLY (ORIGINAL SHEET NO. 5 OF 7)	INFO-4	8007
INFORMATION PLANS ONLY (ORIGINAL SHEET NO. E6 OF 20)	INFO-5	8008

BRIDGE DIVISION		
REVISIONS		
DATE	SHEET NO.	BY
05/14/19	8003	L. Burt

PLAN
BRIDGE DIVISION
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

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MISSISSIPPI DEPARTMENT OF TRANSPORTATION

UNDERPASS AT STA. 227+95.89

DETAILED INDEX
(BRIDGE)

FMS: 108015 / 301000

COUNTY: HINDS

PROJECT NUMBER: NH-0055-02(254)

DESIGNER Lon Burt
DETAILER Lon Burt
CHECKER Paul Dees
ISSUE DATE 03-13-2019

DIRECTOR OF STRUCTURES, STATE BRIDGE ENGINEER - JUSTIN WALKER, P.E.
DEP. DIR. OF STRUCTURES, ASST. STATE BRIDGE ENGINEER - SCOTT WESTERFIELD, P.E.

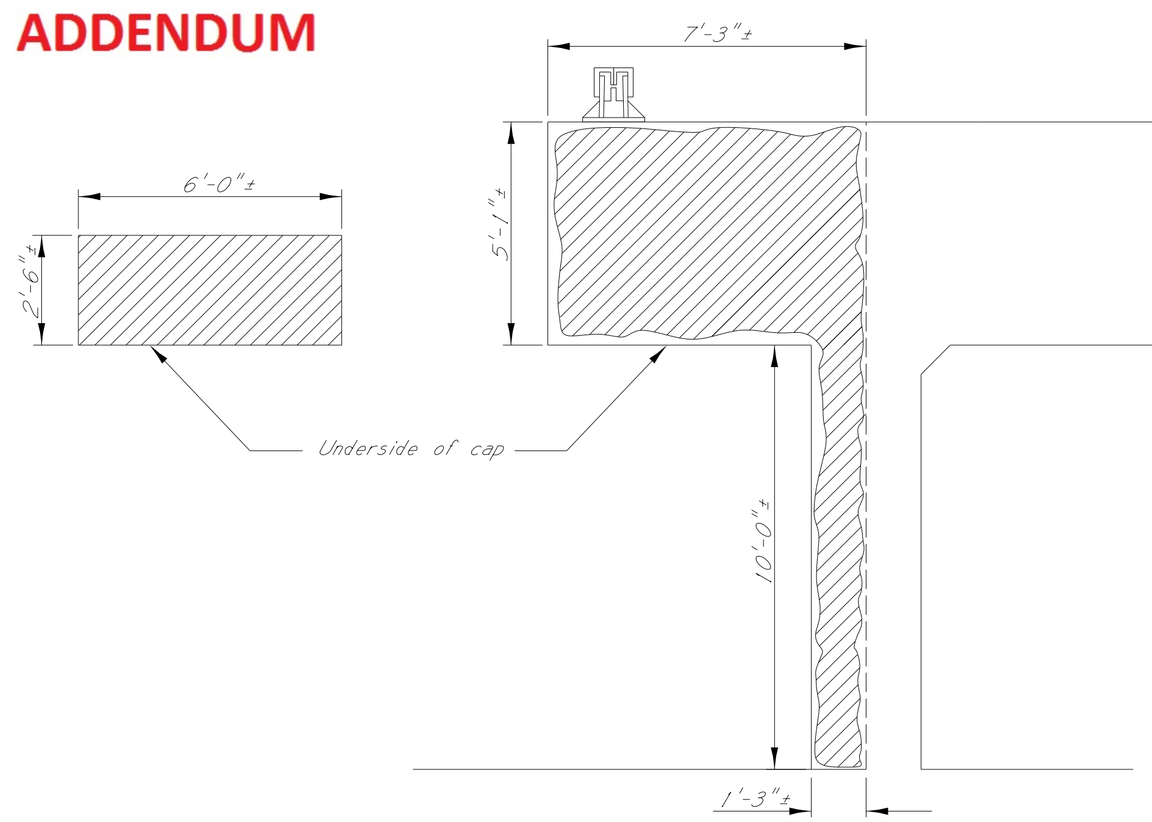
DATE | REVISION | BY

WORKING NUMBER
DI-BR-1

SHEET NUMBER
8001

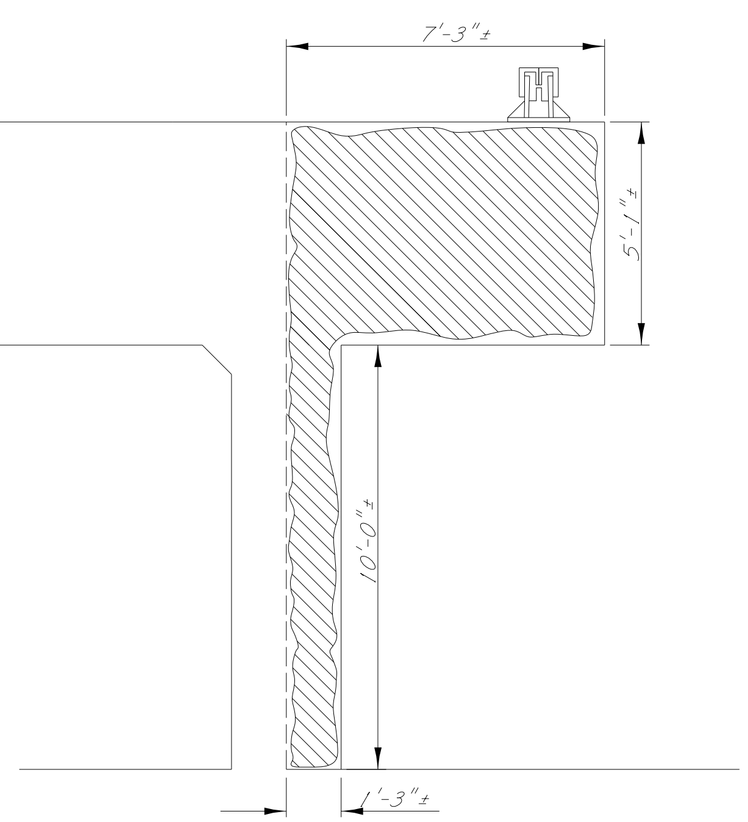
ADDENDUM

STATE	PROJECT NO.
MISS.	NH-0055-02(254)



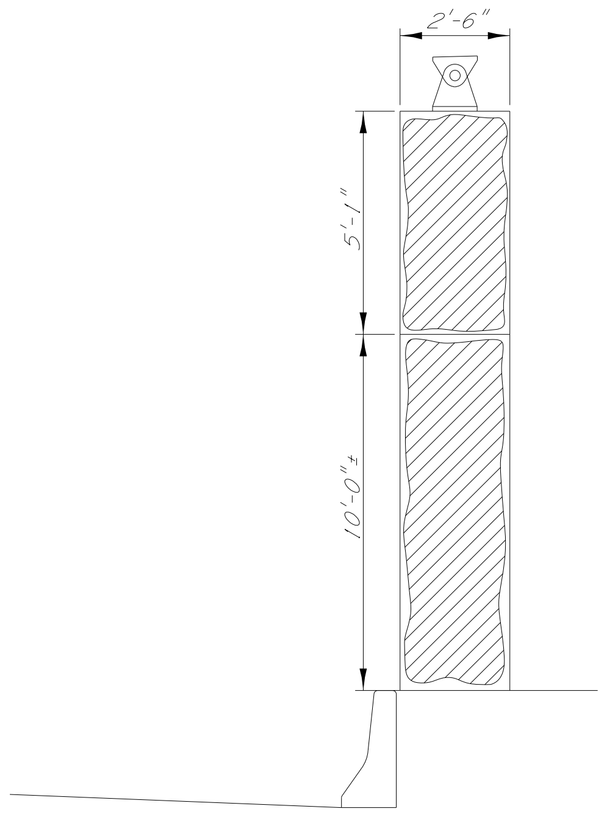
ELEVATION VIEW (Looking East)

Showing Epoxy Repair @ Bent No. 2, Column No. 1.



ELEVATION VIEW (Looking West)

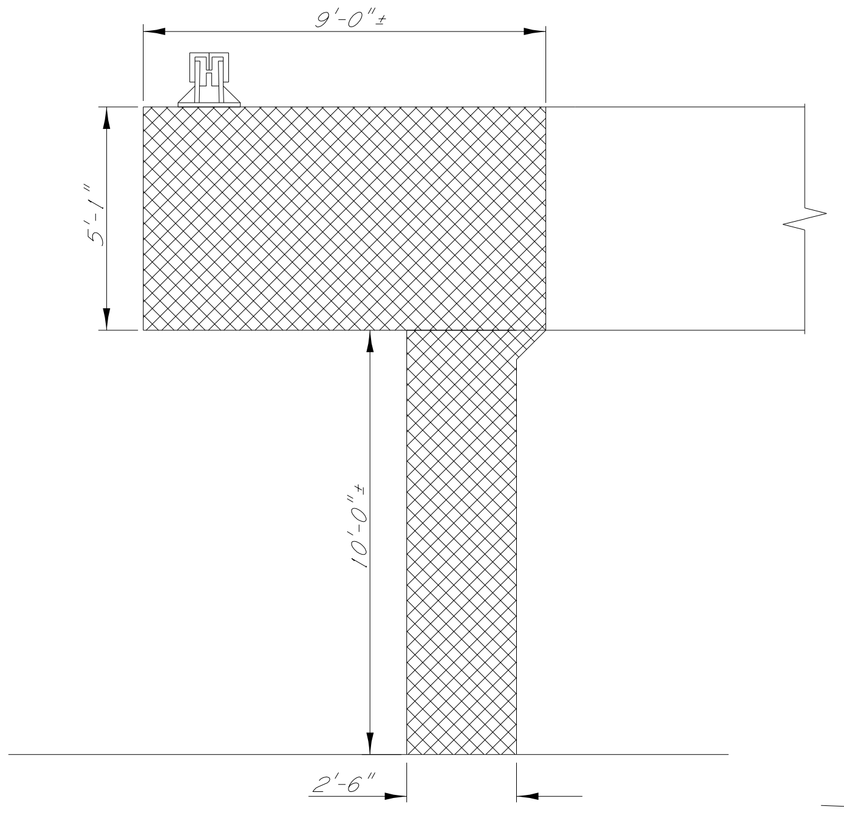
Showing Epoxy Repair @ Bent No. 2, Column No. 1.



ELEVATION VIEW (Looking South)

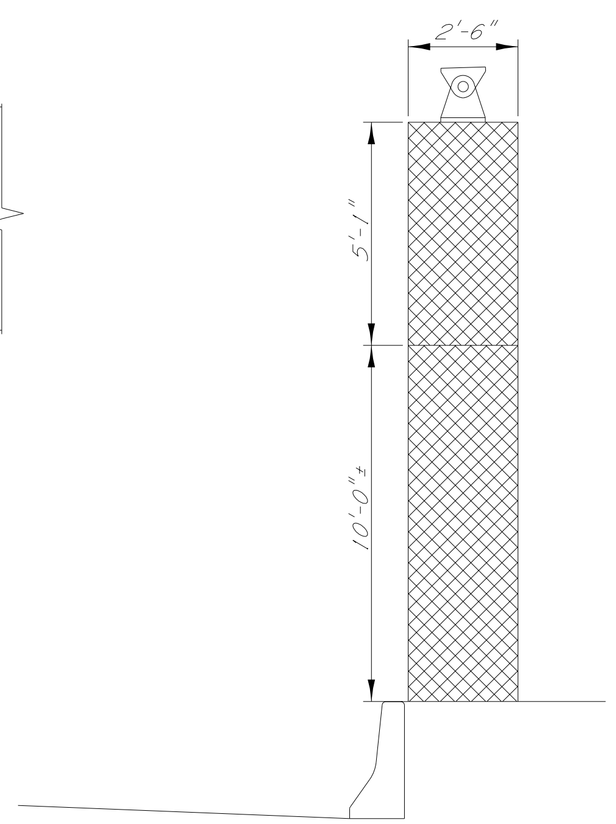
Showing Epoxy Repair @ Bent No. 2, Column No. 1.

NOTE: FRP Wrap includes all sides of the cap and column to the dimensions shown.



ELEVATION VIEW (Looking East)

Showing Epoxy Repair @ Bent No. 2, Column No. 1.



ELEVATION VIEW (Looking South)

Showing FRP Wrap @ Bent No. 2, Column No. 1.

FRP WRAP NOTES:

1. FRP wrap shall be one of the following products or an approved equal and shall be applied according to the manufacturer's recommendations:
   a. "FRP Wrap" as manufactured by Fyfe Co. LLC, www.aegion.com/about/our-brands/fyfe
   b. "FRP Wrap" as manufactured by BASF Building Systems LLC www.master-builders-solutions.basf.us
   c. "FRP Wrap" as manufactured by QuakeWrap Inc. www.quakewrap.com
2. The Contractor shall furnish all submittals indicating the materials, tools, equipment, transportation, necessary storage, labor, installation plan and supervision required for the application of the composite or polymer system to the Director of Structures, State Bridge Engineer prior to construction.
3. Products shall be stored according the manufacturer's requirements and shall avoid contact with moisture, dust and chemical exposure.
4. All FRP composite systems shall be proprietary systems consisting of all associated fiber reinforcement and polymer adhesives/resins. FRP composites consisting of fiber reinforcement and polymers provided by more than one manufacturer are not allowed.
5. The FRP composite system shall utilize carbon fiber reinforcement as the primary fiber material (primary structural component).
6. The FRP system shall be top coated with a coating approved by the FRP system supplier. The coating color shall be selected by the Project Engineer.
7. FRP wraps shall not be installed when the ambient temperature is below 40°F or above 130°F. In cold conditions, auxiliary heat may be applied to raise the ambient temperature to a suitable level. Clean heat sources shall be utilized for this purpose (e.g., electric or propane) that do not contaminate the substrate with carbonation.
8. FRP wraps shall not be installed when surface moisture is present on the substrate or when rainfall or condensation is anticipated in the work areas. If water leakage exists through cracks or concrete joints, water flow shall be stopped prior to FRP installation.
9. Resins (including primers and fillers) shall be mixed according to the FRP system manufacturer's installation instructions. All resin components shall be at a proper temperature and mixed in the manufacturer's prescribed mix ratio until there is a uniform and complete mixing of components. Resin components are often contrasting colors, so full mixing is achieved when color streaks are eliminated. Resins should be mixed for the Manufacturer's prescribed mixing time and visually inspected for uniformity of color.
10. A representative of the FRP wrap manufacturer must be present for sufficient time to assure that the Contractor is properly schooled in the installation of FRP wrap.
11. Prior to installation of FRP wraps, the Contractor shall repair concrete spall areas in accordance with concrete patching details and notes shown on this sheet.
12. All labor, materials, and surface preparation associated with the installation of FRP wraps, including epoxy mortar repairs, shall be included in pay item 907-824-PP008, Bridge Repair, FRP Wrap.
13. The fibrous reinforcement system shall have a minimum tensile force of 2.1 kips/in. in the direction of the shear reinforcement.
14. Prior to wrapping the bent cap and column, the bent cap end shall be wrapped parallel to the bent. The direction of the fiber wrap shall be in the direction of the shear reinforcement (vertical for bent caps; horizontal for column).

ADDITIONAL FRP WRAP NOTES: (1)

In addition to the Manufacturer's requirements, the Contractor shall ensure the structural integrity and durability of the reinforced fiber wrap system by meeting the following acceptance guidelines:

- Small delaminations, less than 2 in. each, are permissible as long as the delaminated area is less than 5% of the total laminate area and there are no more than 10 such delaminations per 10 ft.
- Large delaminations, greater than 25 in., can affect the performance of the installed system and shall be repaired by selectively cutting away the affected sheet and applying an overlapping sheet patch of equivalent piles; and
- Delaminations less than 25 in. may be repaired by ply replacement.

Before repairing any delaminated areas, the Contractor shall submit a FRP repair procedure to the Director of Structures, State Bridge Engineer for review and approval.

Epoxy Mortar Repair Notes:

1. Repair concrete spalled areas on the bridge as directed by the Project Engineer using epoxy mortar.
2. Repair all concrete spalled areas listed on this page and as directed by the Project Engineer.
3. Repair any additional concrete spalled areas not listed on this page as directed by the Project Engineer.
4. Contractor shall sawcut around the perimeter of the damaged and unsound concrete.
5. The Contractor shall determine the depth of reinforcement prior to any saw cutting.
6. Spalled areas where pack rust has developed around or on reinforcement shall be removed by small hand tools or pressure washing (using 3500 psi pressure). Hammers used to remove concrete shall be limited to 30 pounds.
7. All areas of the bridge repaired with epoxy mortar shall be restored to the original dimensions and details as shown in the information plans, unless noted otherwise.
8. Materials:
   a. Epoxy Resin: Resin shall be selected from the MDOT approved materials list.
   b. Silica Sand: Silica sand material shall be bagged general purpose blast cleaning sand.
   c. Epoxy Mortar Mix: Epoxy mortar mix shall consist of part liquid epoxy and part clean, dry sand mixed in the ratio recommended by the manufacturer.
9. Application:
   a. A representative of the epoxy manufacturer must be present for sufficient time to ensure the Contractor is properly schooled in the use of the epoxy materials.
   b. Prior to placement of the mortar mix the prepared surface shall be lightly primed with neat epoxy.
   c. Curing time shall be in accordance with manufacturer's recommendations.
10. The cost of saw cutting, removing spalled or cracked concrete, cleaning exposed reinforcing steel, patching material, labor and any miscellaneous materials necessary to complete the repairs as shown shall be paid for on a square feet basis as Bridge Repair, Epoxy Repair. This item shall be bid such that this item may be increased, decreased, or eliminated as directed by the Project Engineer.

Locations To Be Repaired:

Area as shown around Bent No. 2, Column No. 1.

Denotes areas of existing spalled or damaged concrete to be repaired with epoxy mortar.

Denotes areas of existing spalled or damaged concrete to be wrapped with FRP.

PLAN
BRIDGE DIVISION
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

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DATE	REVISION	BY
05/14/19	Added Additional Notes	OLB

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

UNDERPASS AT STA. 227+95.89

EPOXY REPAIR & FRP WRAP DETAILS

FMS: 108015 / 301000

COUNTY: HINDS

PROJECT NUMBER: NH-0055-02(254)

DESIGNER Lon Burt CHECKER Paul Dees

DETAILER Lon Burt ISSUE DATE 03-13-2019

DIRECTOR OF STRUCTURES, STATE BRIDGE ENGINEER - JUSTIN WALKER, P.E.
DEP. DIR. OF STRUCTURES, ASST. STATE BRIDGE ENGINEER - SCOTT WESTERFIELD, P.E.

WORKING NUMBER 2 OF 2

SHEET NUMBER 8Ø03