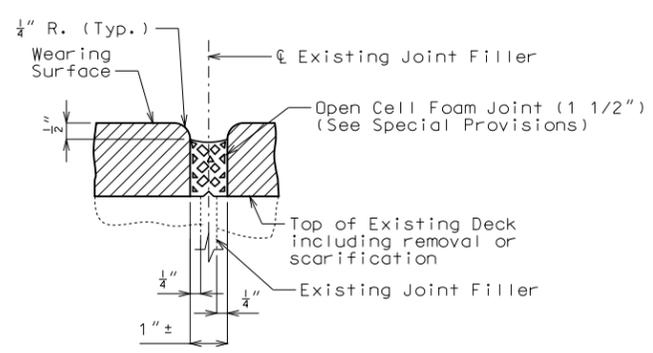


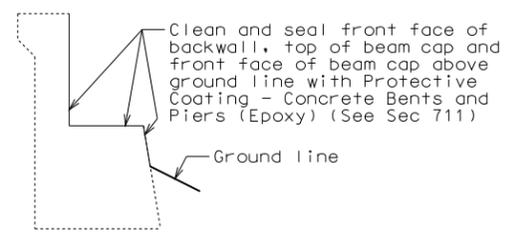
"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 1/7/2016	
ROUTE 70	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY COOPER	
JOB NO. J513132	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A02015	

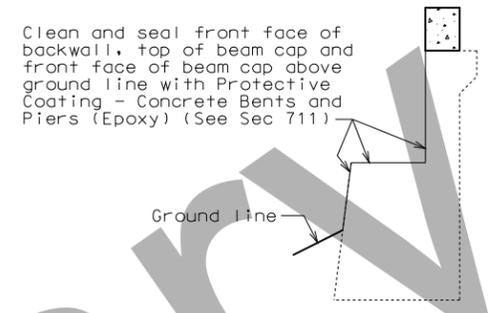


SECTION THRU JOINT AT INTERMEDIATE BENT NO. 8

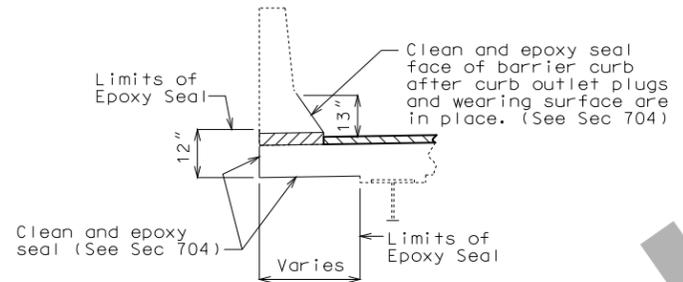
Note:
Payment for furnishing and installing the Open Cell Foam Joint over the filled joint at Intermediate Bent No. 8 will be considered completely covered by the contract unit price for Open Cell Foam Joint.



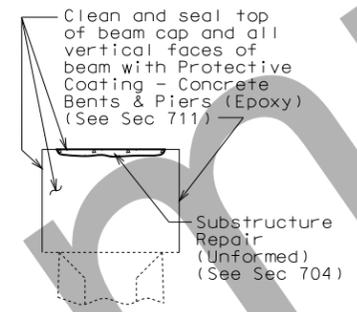
SECTION THRU END BENT NO. 1 SHOWING PROTECTIVE COATING



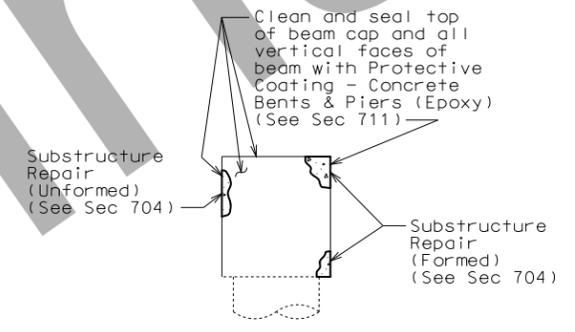
SECTION THRU END BENT NO. 9 SHOWING PROTECTIVE COATING



SECTION THRU EDGE OF SLAB SHOWING CLEAN AND EPOXY SEAL

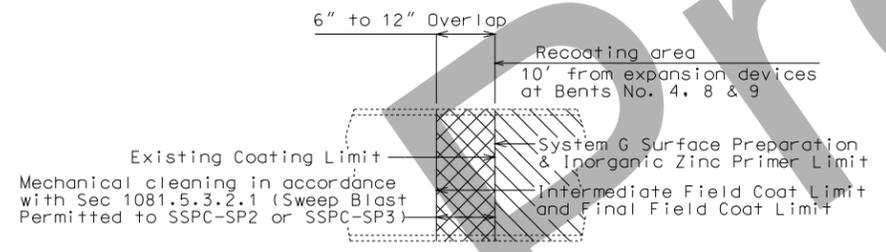


PART SECTION SHOWING SUBSTRUCTURE REPAIR AND PROTECTIVE COATING AT INT. BENT NO. 4



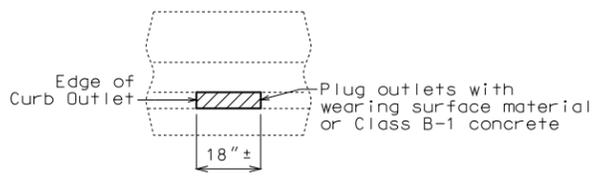
PART SECTION SHOWING SUBSTRUCTURE REPAIR AND PROTECTIVE COATING AT INT. BENT NO. 8

FOR INFORMATION ONLY NOT FOR CONSTRUCTION



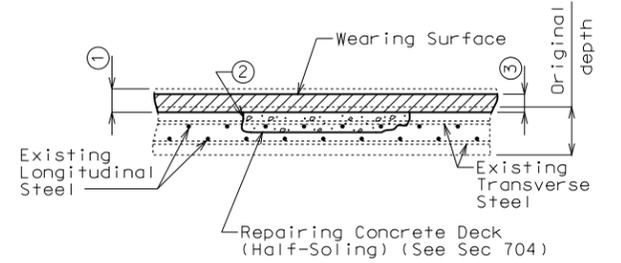
PART ELEVATION OF STRINGER/GIRDER SHOWING LIMITS OF PAINT OVERLAP

Note:
Limits of Paint Overlap: System G shall overlap the existing coating between 6 inches and 12 inches in order to achieve maximum coverage at the paint limit of each complete system near the expansion and contraction areas. The final field coating shall be masked to provide crisp, straight lines and to prevent overspray beyond the overlap required.



PART ELEVATION SHOWING OUTLETS TO BE PLUGGED

Notes:
New 2 1/2" Low Slump Concrete Overlay not shown for clarity.
Cost of labor and materials required to plug existing curb outlets will be considered completely covered by the contract unit price for Plugging Curb Outlet, per each.
Estimated material required to fill all curb outlets is 2.4 cubic yards.



HALF-SOLED REPAIR

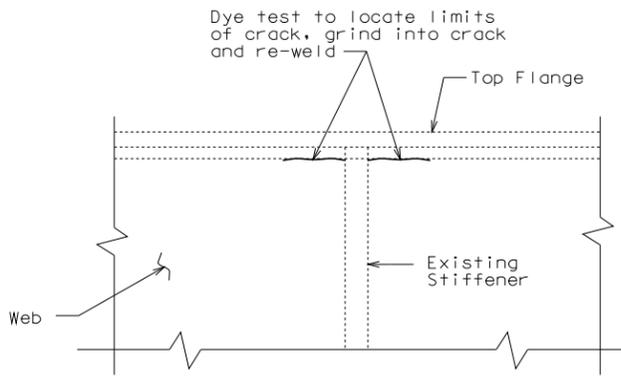
- ① Remove existing wearing surface plus 1/4" of existing deck.
- ② One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- ③ 2 1/2" (min.) for Latex Modified Concrete Wearing Surface
2 1/2" (min.) for Low Slump Concrete Wearing Surface

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

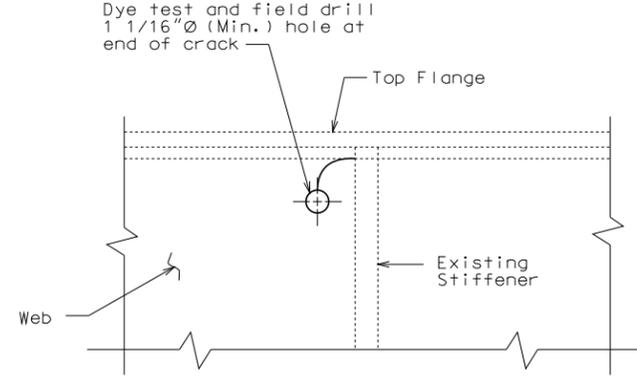


105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MDOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

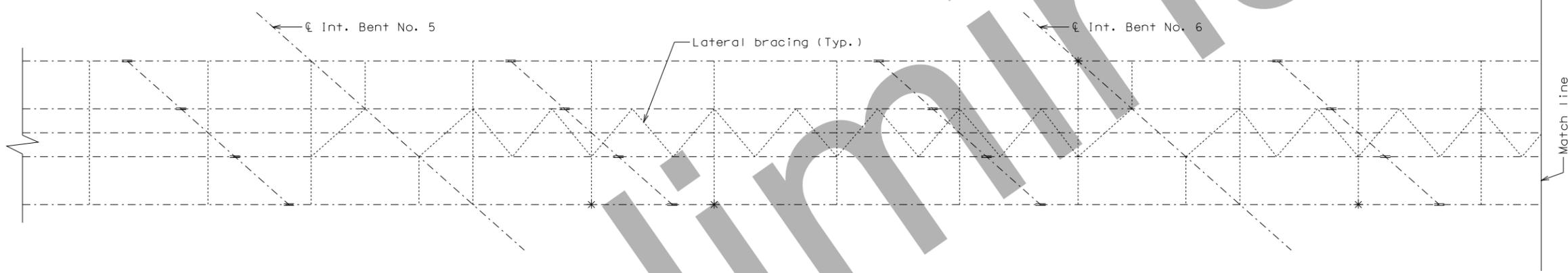


DETAIL OF CRACK REPAIR BETWEEN TOP FLANGE AND WEB @ WEB STIFFENER WHERE CRACKS ARE ENCOUNTERED

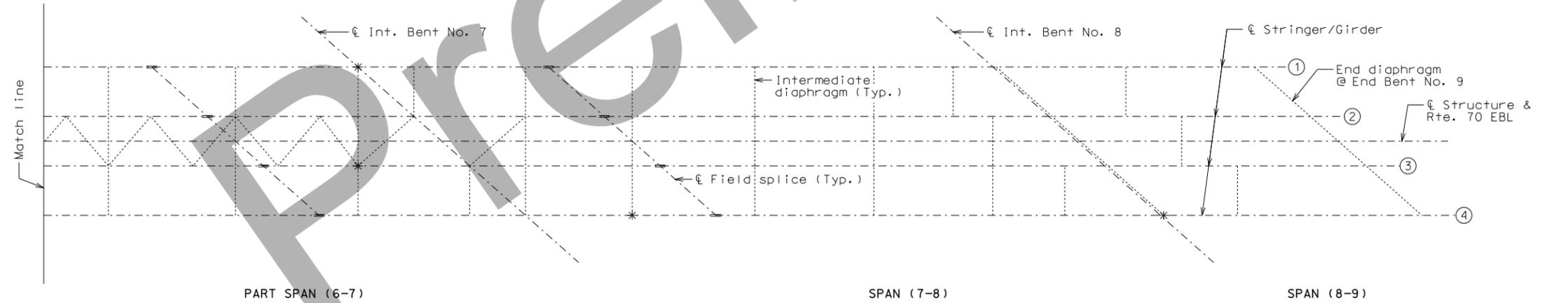


DETAIL OF WEB CRACK REPAIR @ WEB STIFFENERS WHERE CRACKS ARE ENCOUNTERED

Notes:
 Cost of fatigue crack repair including dye test, field drilling and field welding will be considered completely covered by the contract unit price for Fatigue Crack Repair.
 This work shall not be performed under live load directly applied on slab over girder being repaired.



PART SPAN (4-5) SPAN (5-6) PART SPAN (6-7)



PART SPAN (6-7) SPAN (7-8) SPAN (8-9)

PART PLAN OF STRUCTURAL STEEL SHOWING FATIGUE CRACK LOCATIONS

* Denotes location of known fatigue crack between top flange and web

**FOR INFORMATION ONLY
 NOT FOR CONSTRUCTION**

FATIGUE CRACK REPAIR

Detailed Dec. 2015
 Checked Dec. 2015

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

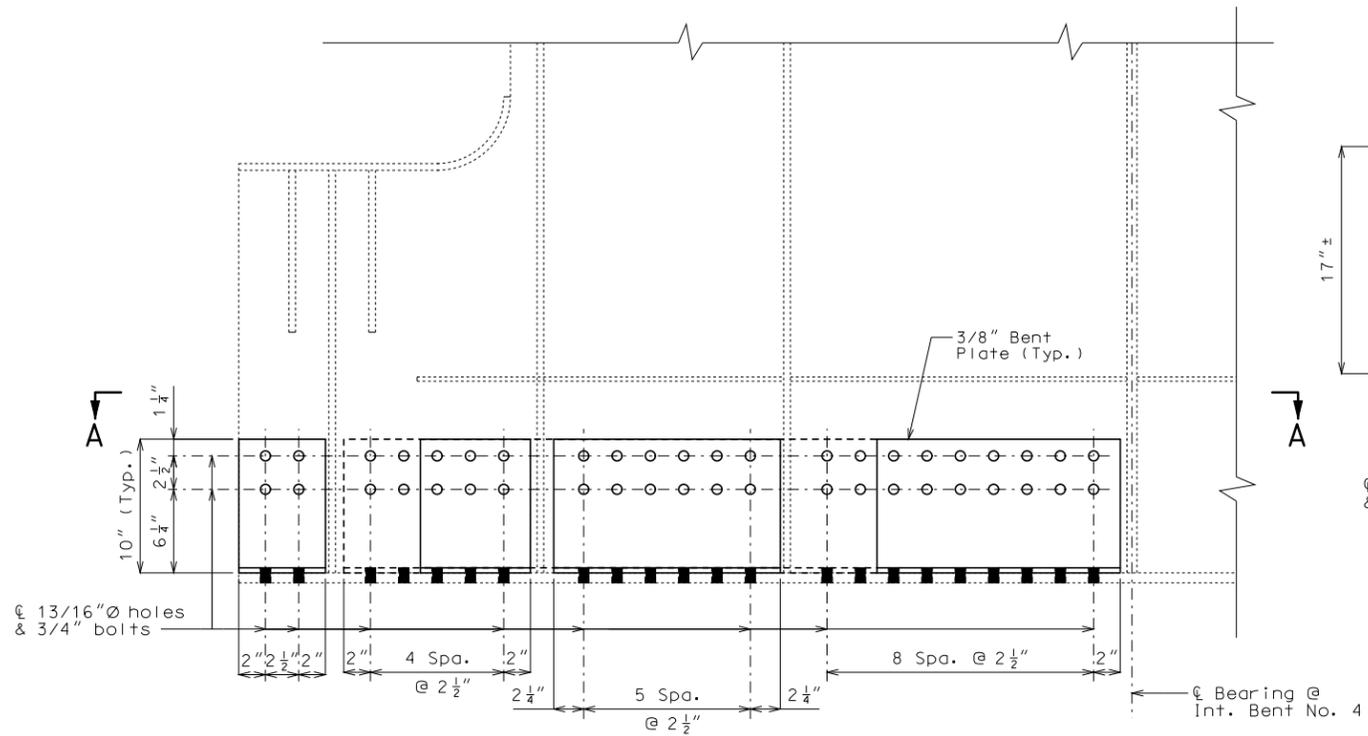
DATE PREPARED 1/7/2016	
ROUTE 70	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY COOPER	
JOB NO. J513132	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A02015	

DATE	DESCRIPTION

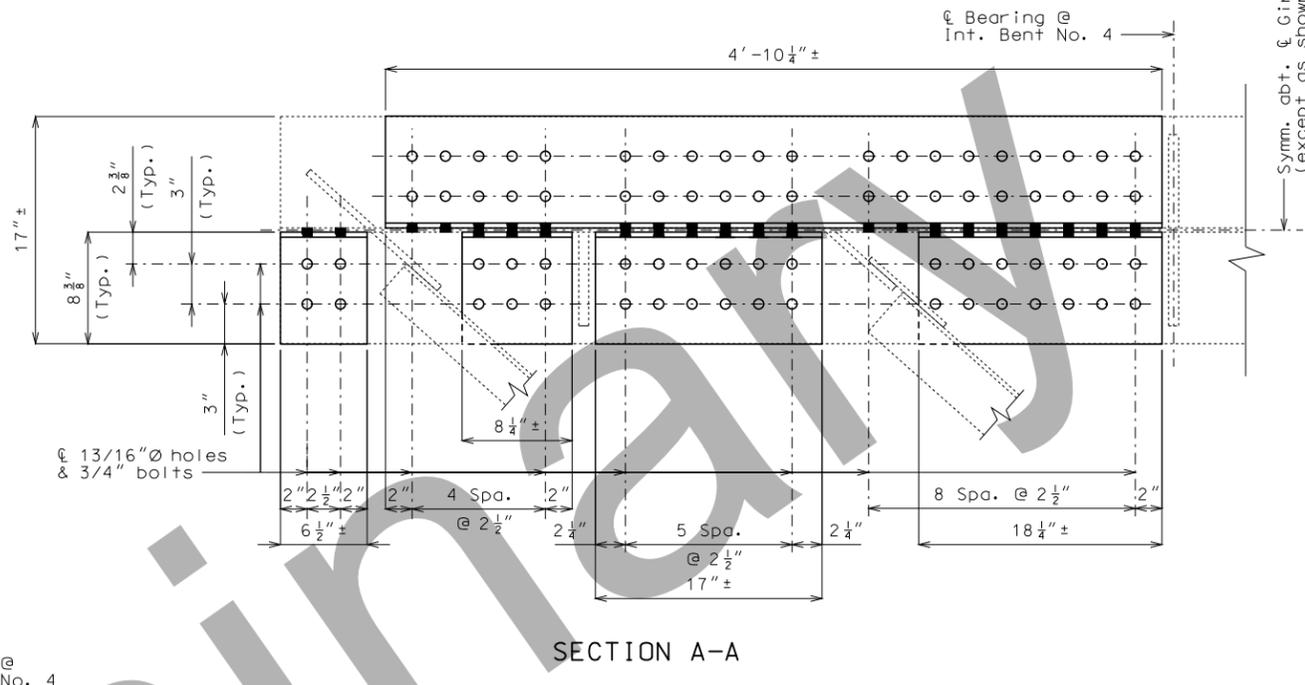
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

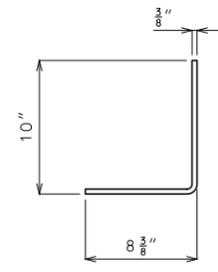
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



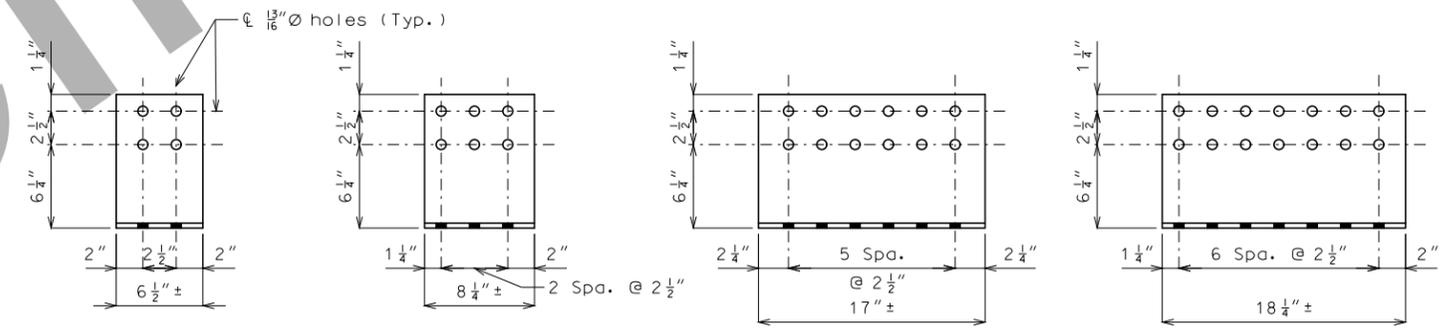
PART ELEVATION SHOWING WEB REPAIR



SECTION A-A



DETAIL OF WEB BENT PLATE
(5 required, as detailed to the right)
(120 bolts required)



Notes:
 Fabricated structural steel shall be ASTM A709 Grade 50.
 Use 3/4"Ø high strength bolts for 13/16"Ø holes (field drill).
 Contact surfaces shall be in accordance with Sec 1081 for surface preparation.
 Plate lengths and bolt locations may be adjusted as conditions warrant. The distance from the edge of the plate to the center of a bolt should be no less than 1 1/4" and no more than 3". The center to center spacing of bolts shall be no less than 2 1/2" and no more than 4 1/2", except as shown.

**FOR INFORMATION ONLY
 NOT FOR CONSTRUCTION**

EXTERIOR GIRDER NO. 1
 REPAIRS TO GIRDERS NEAR INTERMEDIATE BENT NO. 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

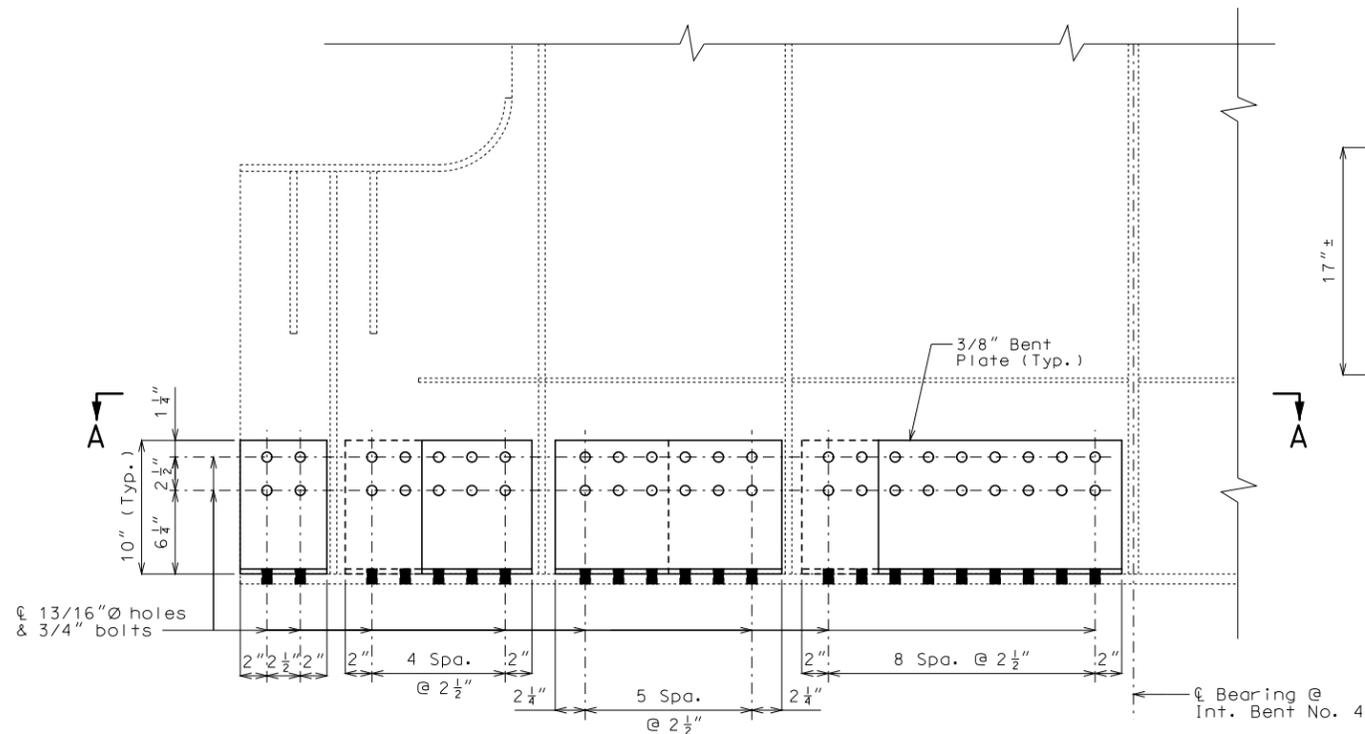
DATE PREPARED: 1/7/2016
 ROUTE: 70 STATE: MO
 DISTRICT: BR SHEET NO.: 4
 COUNTY: COOPER
 JOB NO.: J513132
 CONTRACT ID.:
 PROJECT NO.:
 BRIDGE NO.: A02015

DATE	DESCRIPTION

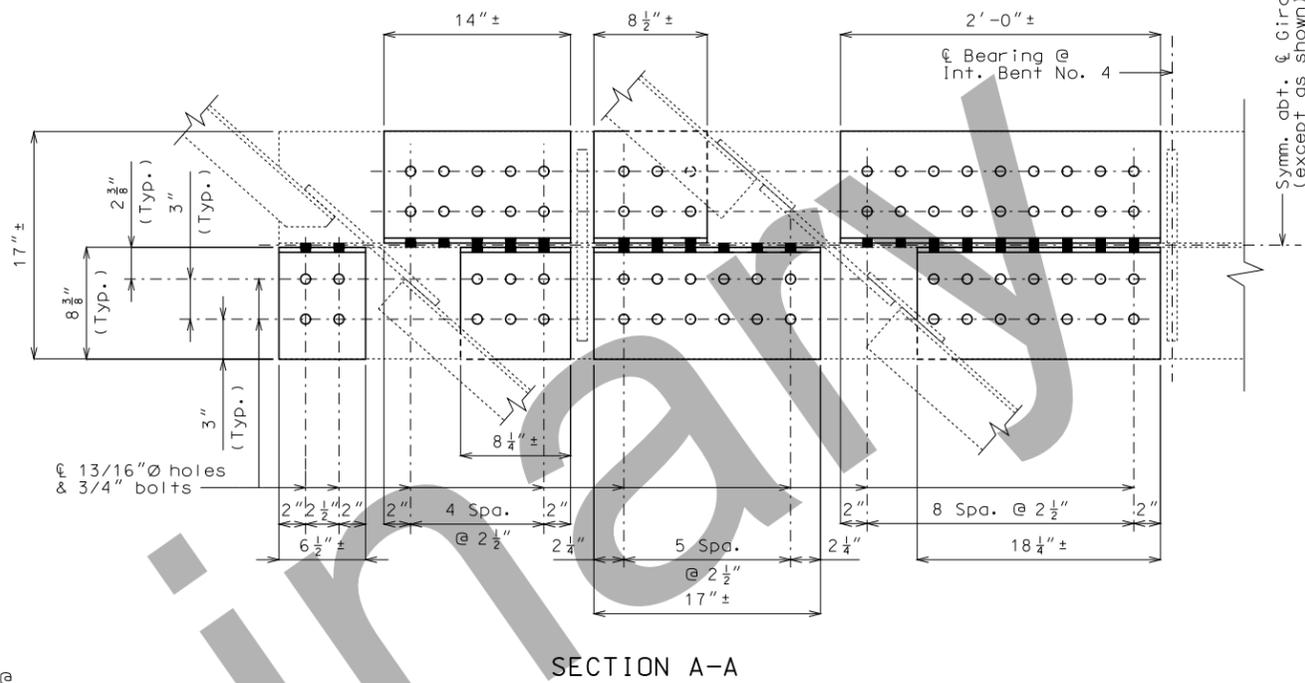
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

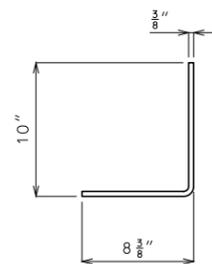
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



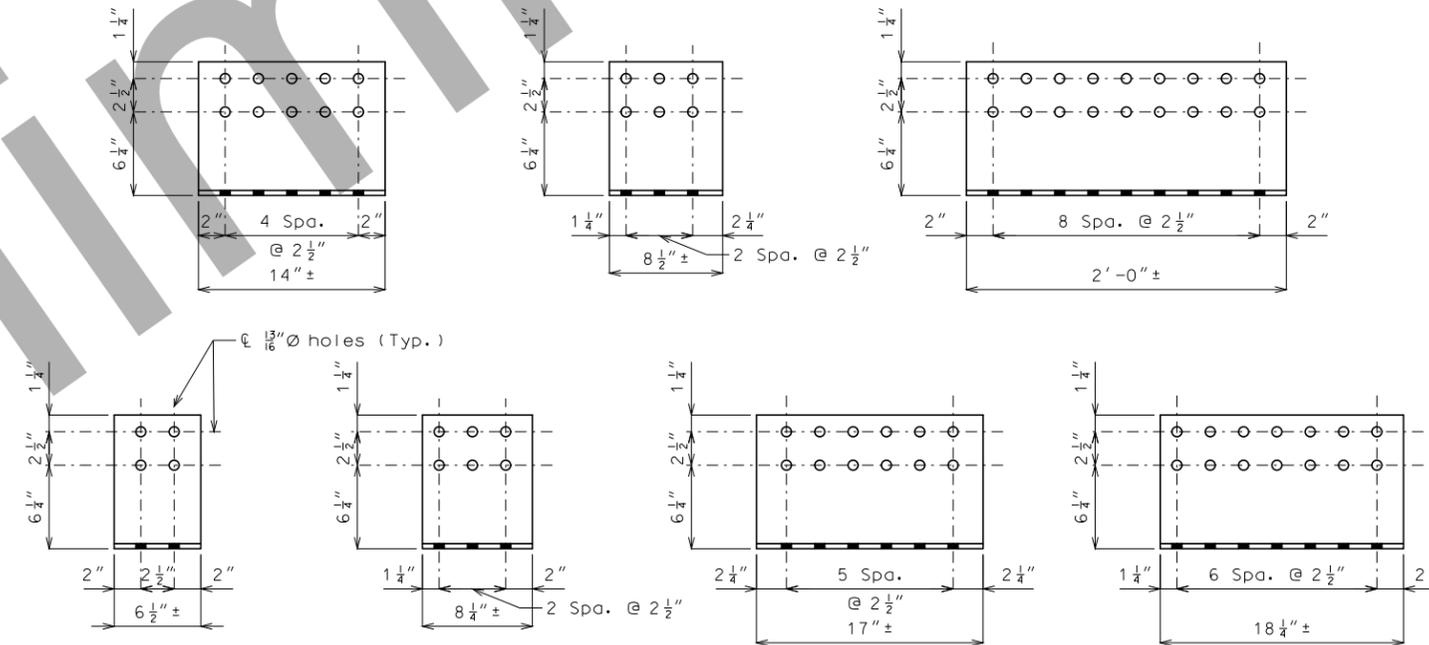
PART ELEVATION SHOWING WEB REPAIR



SECTION A-A



DETAIL OF WEB BENT PLATE
(7 required per girder, as detailed to the right)
(114 bolts required per girder)



Notes:
Fabricated structural steel shall be ASTM A709 Grade 50.
Use 3/4"Ø high strength bolts for 13/16"Ø holes (field drill).
Contact surfaces shall be in accordance with Sec 1081 for surface preparation.
Plate lengths and bolt locations may be adjusted as conditions warrant. The distance from the edge of the plate to the center of a bolt should be no less than 1 1/4" and no more than 3". The center to center spacing of bolts shall be no less than 2 1/2" and no more than 4 1/2".

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

INTERIOR GIRDERS NO. 2 & 3
REPAIRS TO GIRDERS NEAR INTERMEDIATE BENT NO. 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED 1/7/2016	
ROUTE 70	STATE MO
DISTRICT BR	SHEET NO. 5
COUNTY COOPER	
JOB NO. J513132	
CONTRACT ID.	

PROJECT NO.	
BRIDGE NO. A02015	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
1/7/2016

ROUTE 70 STATE MO

DISTRICT BR SHEET NO. 6

COUNTY COOPER

JOB NO. J513132

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A02015

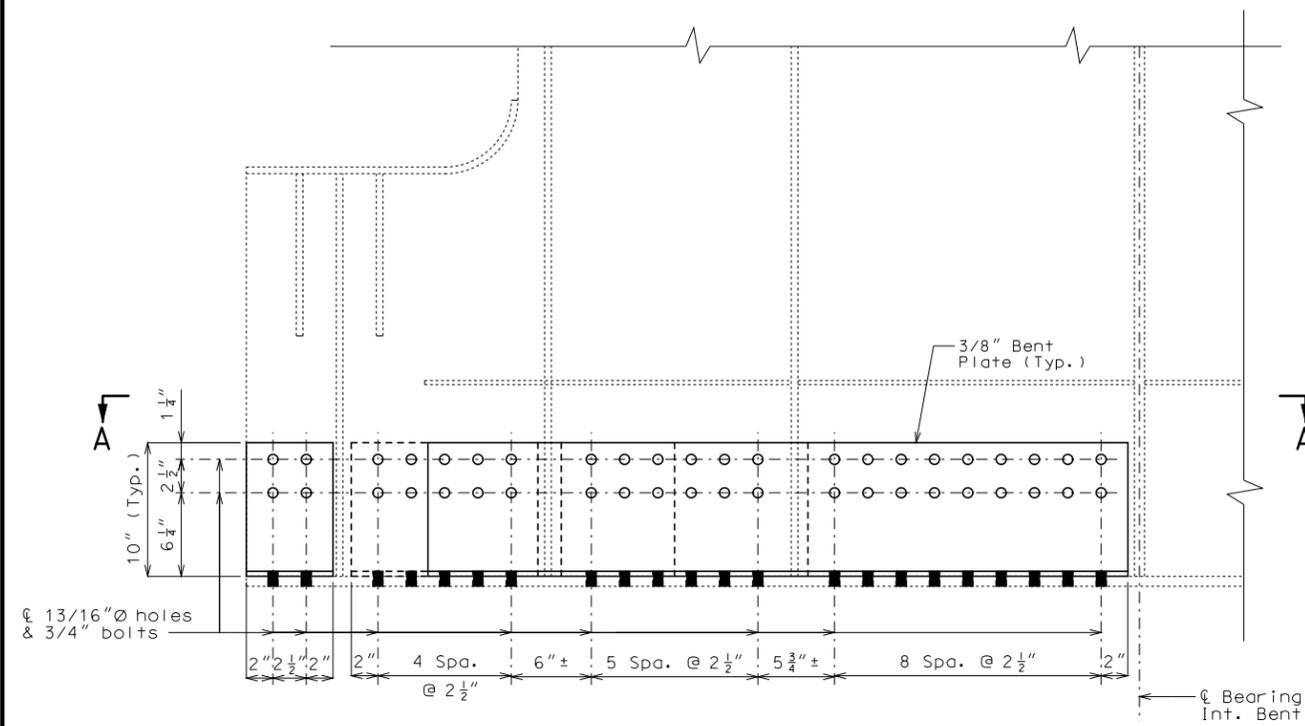
DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

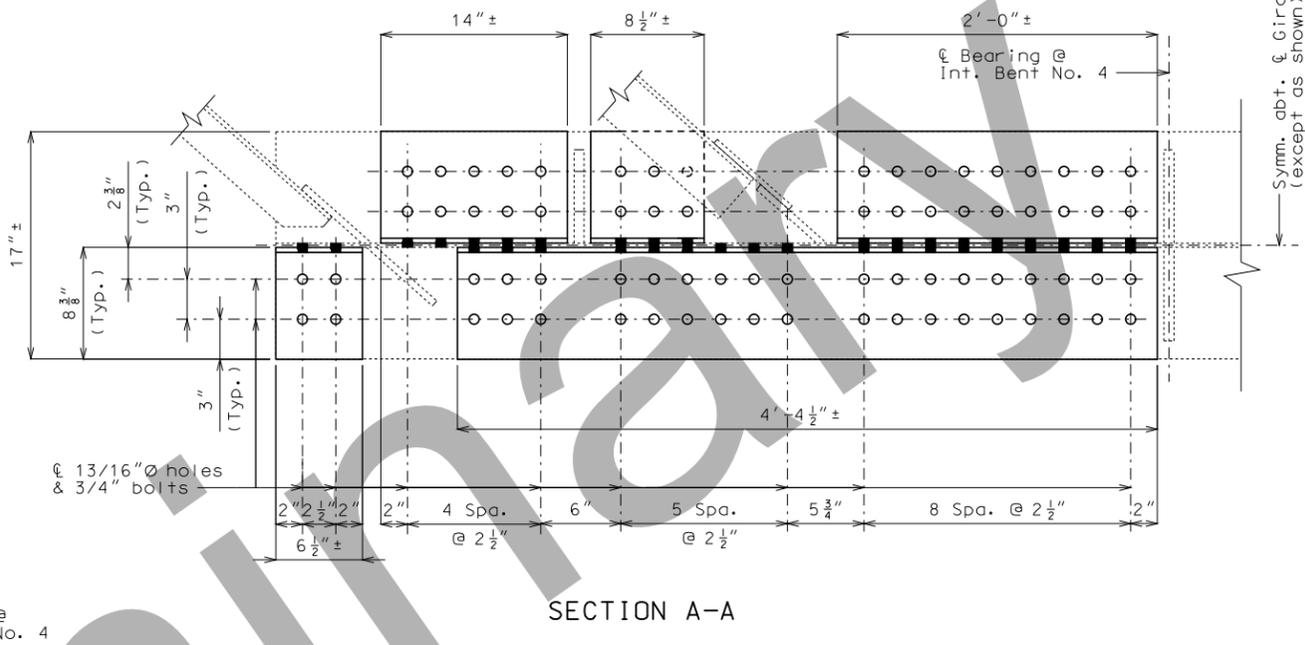
MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

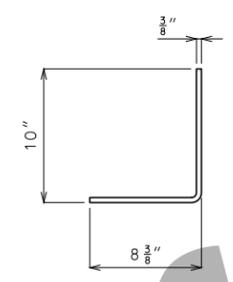
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



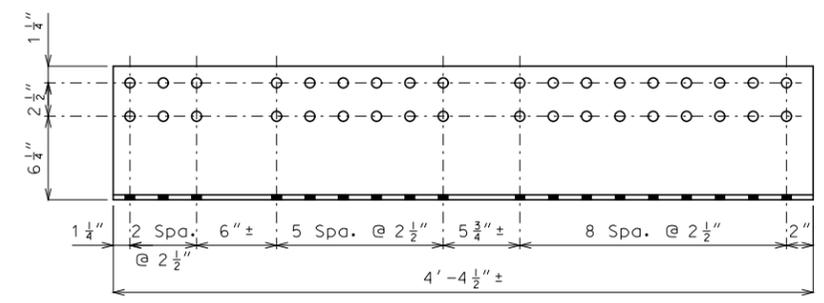
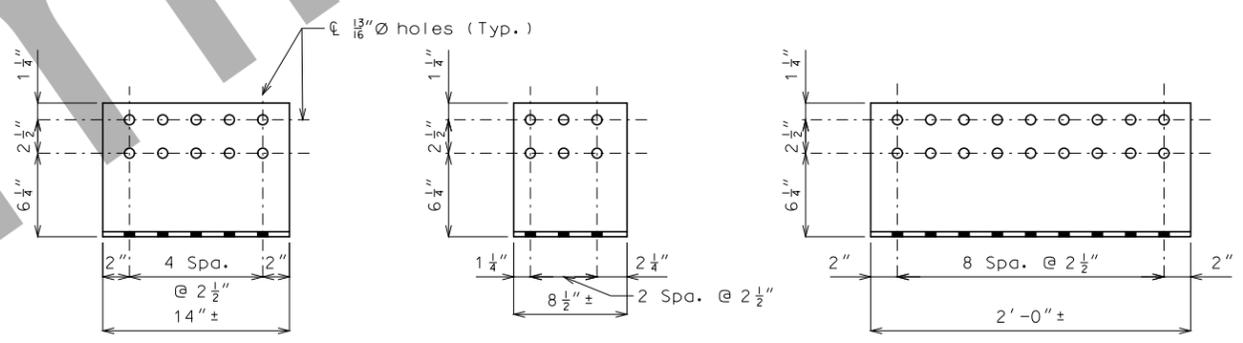
PART ELEVATION SHOWING WEB REPAIR



SECTION A-A



DETAIL OF WEB BENT PLATE
(4 required, as detailed to the right)
(118 bolts required)



Notes:
Fabricated structural steel shall be ASTM A709 Grade 50.
Use 3/4" high strength bolts for 13/16" holes (field drill).
Contact surfaces shall be in accordance with Sec 1081 for surface preparation.
Plate lengths and bolt locations may be adjusted as conditions warrant. The distance from the edge of the plate to the center of a bolt should be no less than 1 1/4" and no more than 3". The center to center spacing of bolts shall be no less than 2 1/2" and no more than 4 1/2", except as shown.

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

EXTERIOR GIRDER NO. 4
REPAIRS TO GIRDERS NEAR INTERMEDIATE BENT NO. 4

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
1/7/2016

ROUTE 70 STATE MO

DISTRICT BR SHEET NO. 7

COUNTY COOPER

JOB NO. J513132

CONTRACT ID.

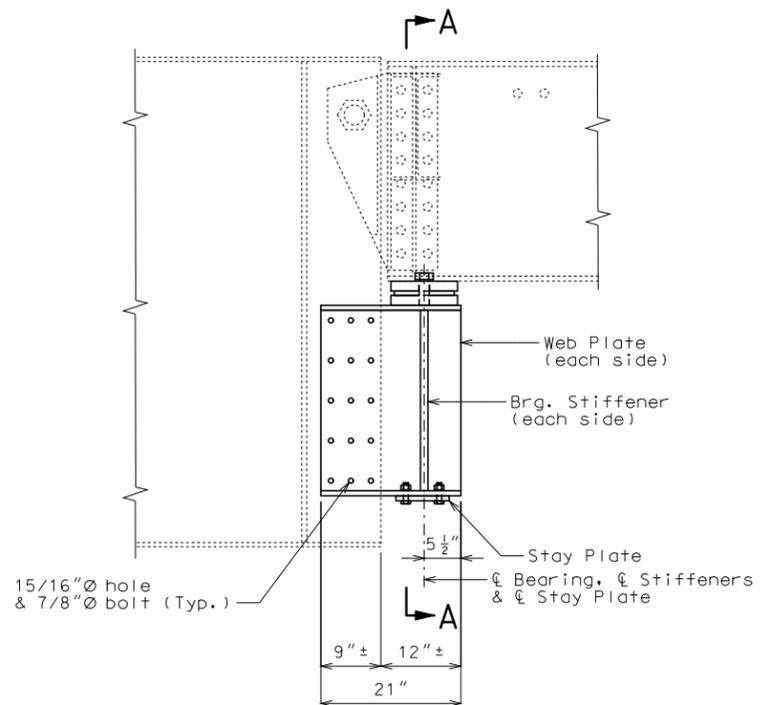
PROJECT NO.

BRIDGE NO. A02015

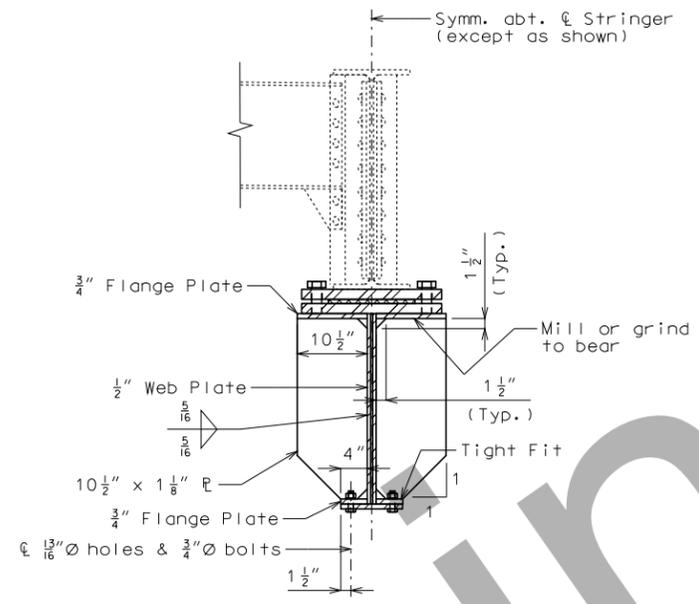
DESCRIPTION

DATE

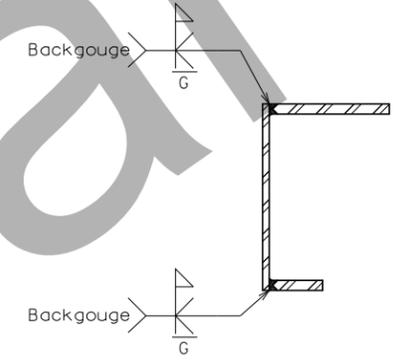
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



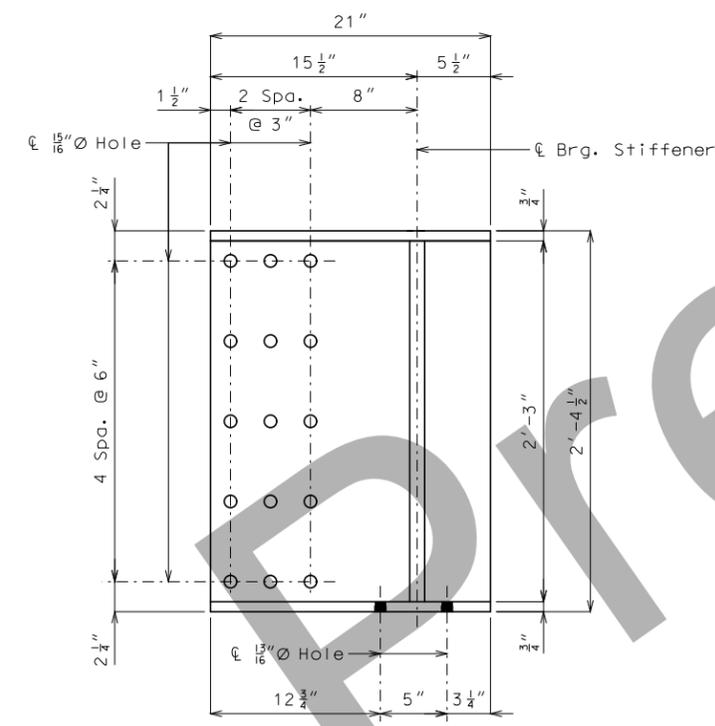
PART ELEVATION SHOWING MODIFICATION



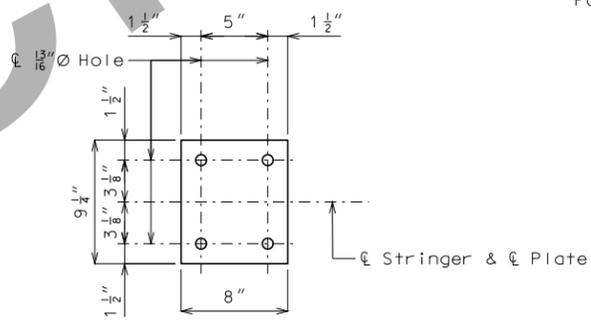
SECTION A-A



TYPICAL WELDING DETAILS



DETAILS OF 1/2" WEB PLATE



DETAILS OF 3/4" STAY PLATE

General Notes:

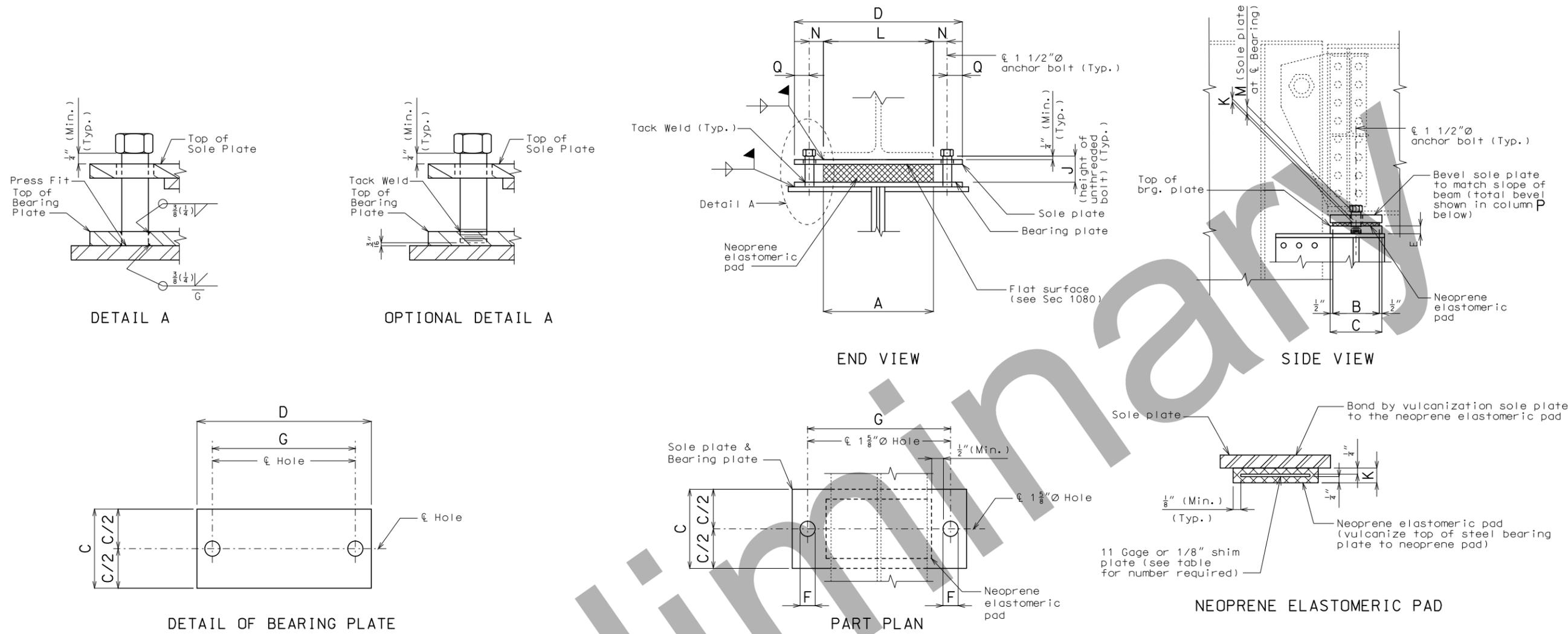
- Fabricated structural steel shall be ASTM A709 Grade 50.
- Field connections shall be made with 7/8" diameter high strength bolts and 15/16" diameter holes, except as noted. 7/8" diameter high strength bolts may be substituted for 3/4" diameter high strength bolts for stay plate connection.
- All flange plates and web plates shall be subject to notch toughness requirements.
- New construction shall be installed parallel to grade.
- Contact surfaces shall be in accordance with Sec 1081 for surface preparation.
- For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 8.

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

GIRDERS NO. 1, 2, & 3
HINGE MODIFICATION NEAR INT. BENT NO. 8

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



FIXED BEARINGS																	
HINGE NEAR BENT NO.	GDR. NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	NUMBER OF SHIM PLATES *	NUMBER REQUIRED
8	1,2,3	13"	9"	10"	21"	1 1/2"	1 5/8"	16 1/2"	2 3/8"	5/8"	11 1/2"	1 1/2"	2 1/2"	0"	2 1/4"	1	3
																TOTAL BEARINGS	3

* The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.

General Notes:
 Anchor bolts shall be 1 1/2"Ø ASTM A325 steel bolts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided.
 All structural steel for the anchor bolts and heavy hexagon nuts shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).
 Neoprene Elastomeric Pads shall be 60 Durometer, and in accordance with Sec 716.
 Structural steel for sole plate shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum).
 The Bearing Plate shall be either tapped to receive anchor bolts or anchor bolts shall be press fit and welded to Bearing Plate.

**FOR INFORMATION ONLY
 NOT FOR CONSTRUCTION**

LAMINATED NEOPRENE BEARING PAD ASSEMBLY FOR HINGE MODIFICATION NEAR INT. BENT NO. 8

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED		1/7/2016	
ROUTE	70	STATE	MO
DISTRICT	BR	SHEET NO.	8
COUNTY			
COOPER			
JOB NO.			
J513132			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			
A02015			

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED
1/7/2016

ROUTE 70 STATE MO

DISTRICT BR SHEET NO. 9

COUNTY COOPER

JOB NO. J513132

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A02015

DESCRIPTION

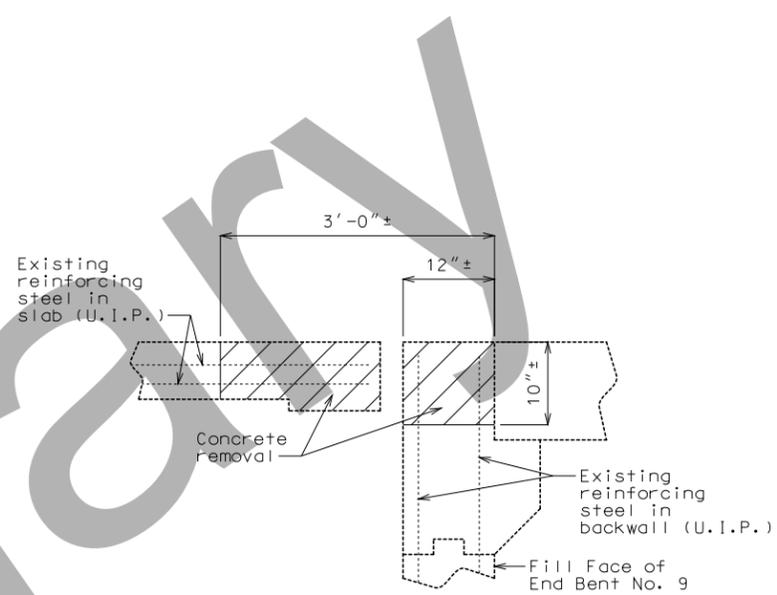
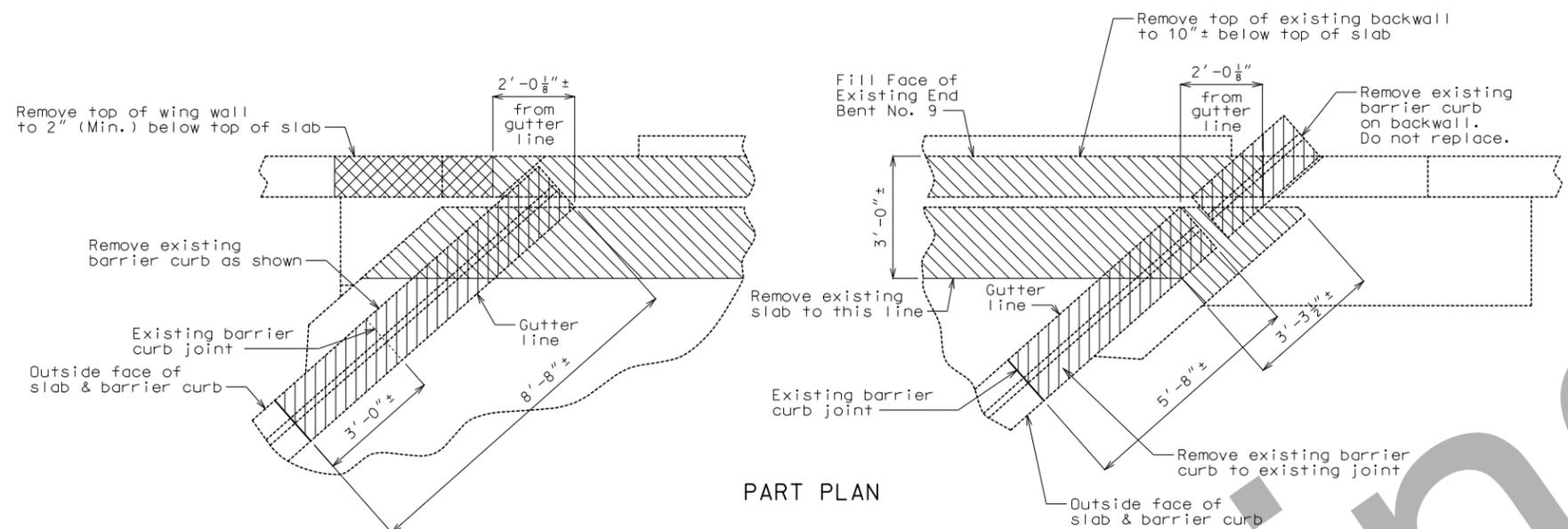
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PART SECTION THRU SLAB AND END BENT NO. 9 SHOWING CONCRETE TO BE REMOVED

Notes:
The cost of backwall, wing wall and slab concrete removal as shown will be considered completely covered by the contract unit price for Removal of Existing Expansion Joints & Adjacent Concrete.

Existing reinforcement not embedded in new concrete is to be cut off one inch below concrete removal surface and the resulting holes shall be filled with an approved qualified special mortar.

Work this sheet with Sheets No. 10, 11 & 12.

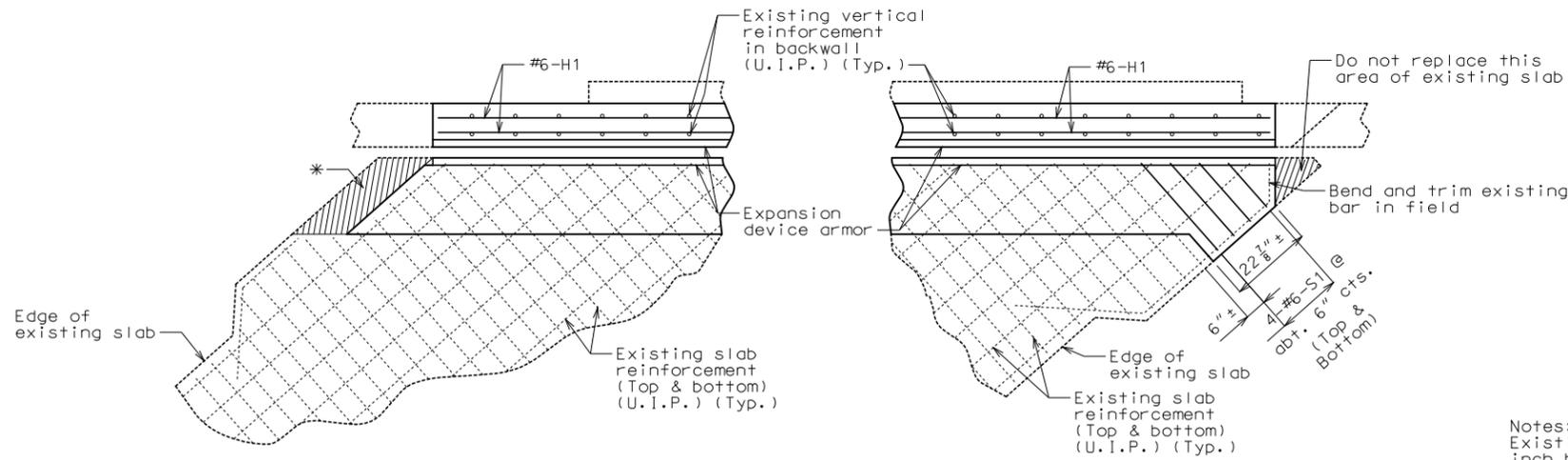
**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

CONCRETE REMOVAL AT END BENT NO. 9 FOR EXPANSION DEVICE REPLACEMENT

Detailed Dec. 2015
Checked Dec. 2015

Note: This drawing is not to scale. Follow dimensions.

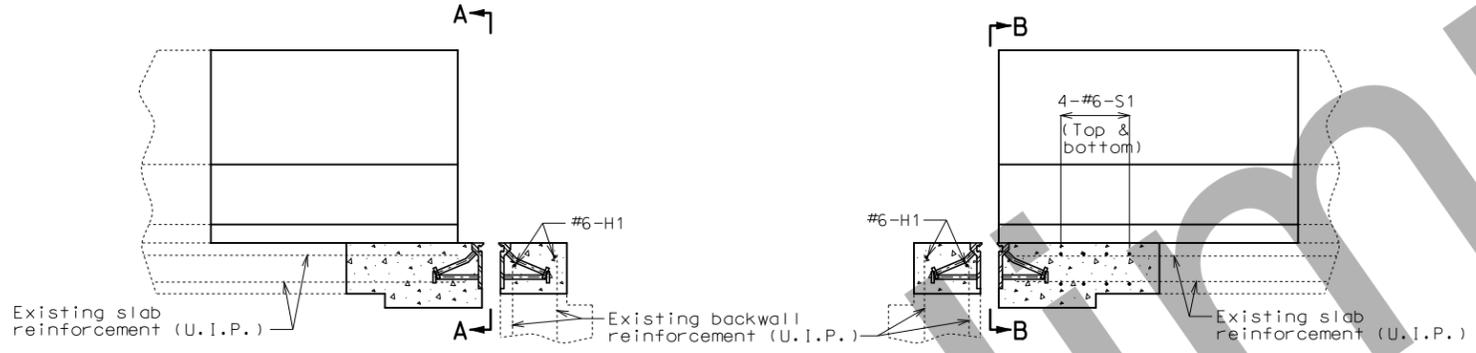
Sheet No. 9 of



PART PLAN AT END BENT NO. 9 SHOWING REINFORCEMENT

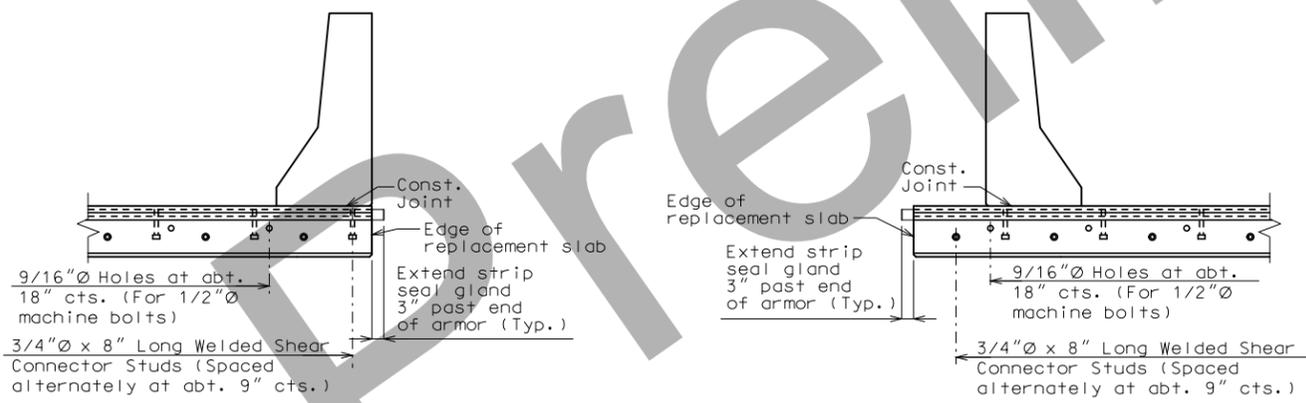
Notes:
Existing reinforcement not embedded in new concrete is to be cut off one inch below concrete removal surface and the resulting holes shall be filled with an approved qualified special mortar.
Work this sheet with Sheets No. 9, 10 & 12.

* This area of existing slab shall not be replaced. Existing transverse slab reinforcement shall be cut off in order to maintain 1 1/2" clearance to new edge of slab.



PART ELEVATION OF LEFT BARRIER CURB
Strip seal gland not shown for clarity.

PART ELEVATION OF RIGHT BARRIER CURB
Strip seal gland not shown for clarity.



PART SECTION A-A

PART SECTION B-B

Note:
Trim edge of strip seal gland on backwall side so that gland may extend 3" past end of armor.

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

EXPANSION DEVICE REPLACEMENT AT END BENT NO. 9

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

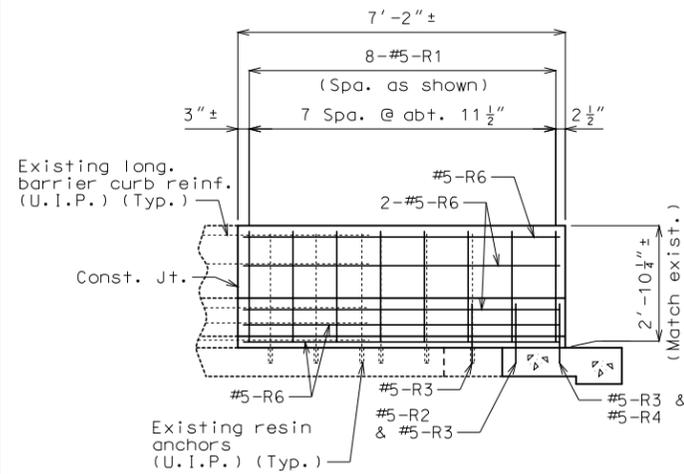
DATE PREPARED 1/7/2016	
ROUTE 70	STATE MO
DISTRICT BR	SHEET NO. 11
COUNTY COOPER	
JOB NO. J513132	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A02015	

DATE	DESCRIPTION

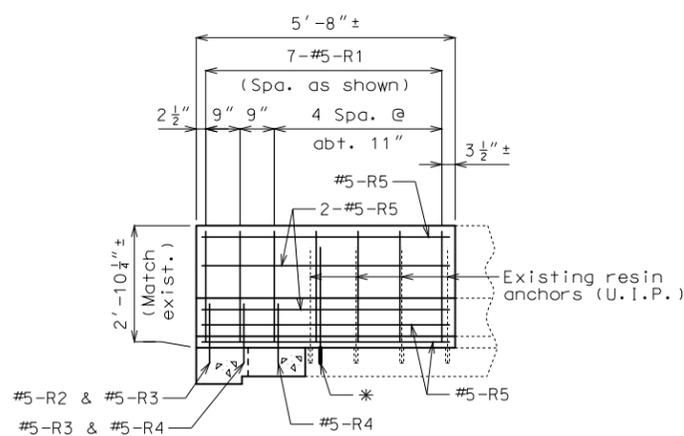
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

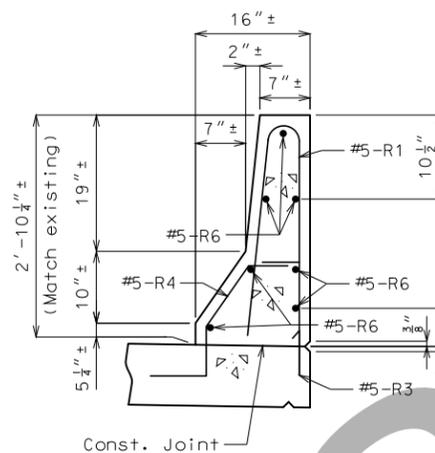
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



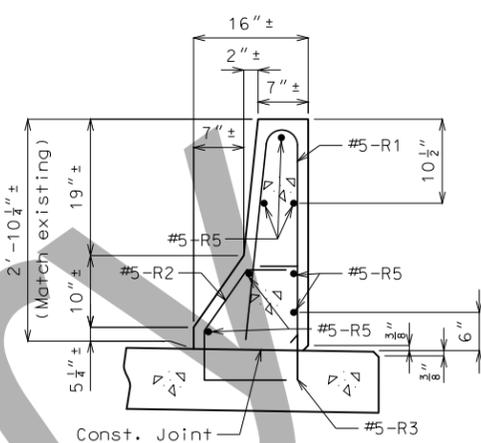
ELEVATION OF LEFT BARRIER CURB



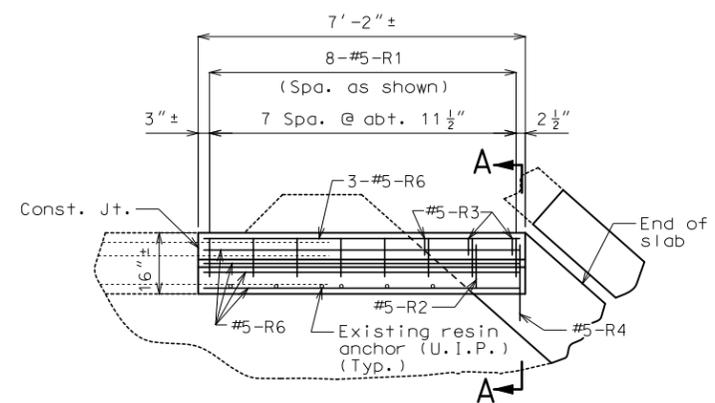
ELEVATION OF RIGHT BARRIER CURB



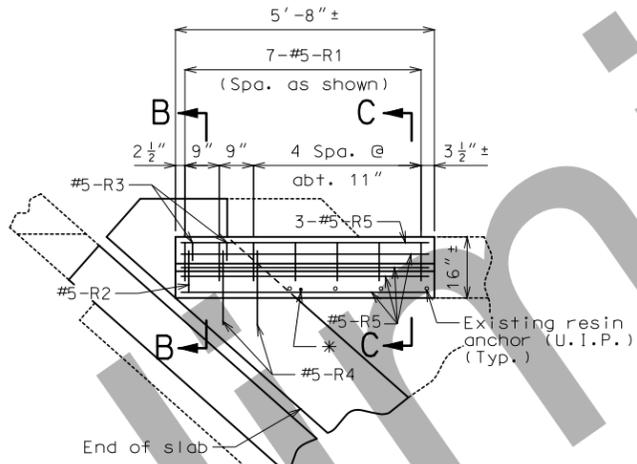
SECTION A-A



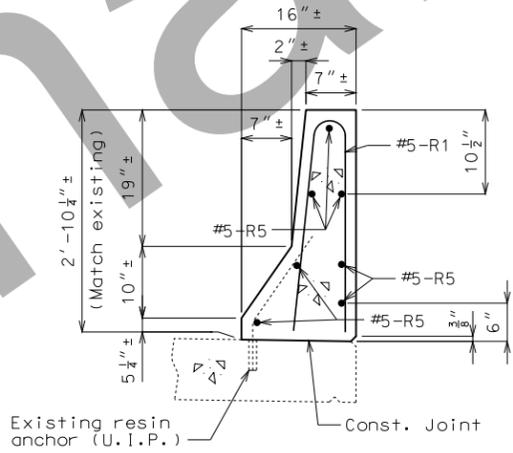
SECTION B-B



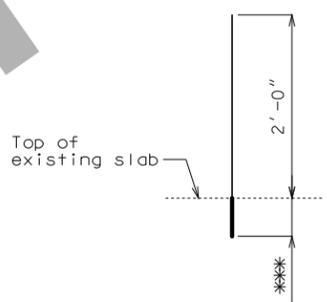
PART PLAN SHOWING LEFT BARRIER CURB



PART PLAN SHOWING RIGHT BARRIER CURB

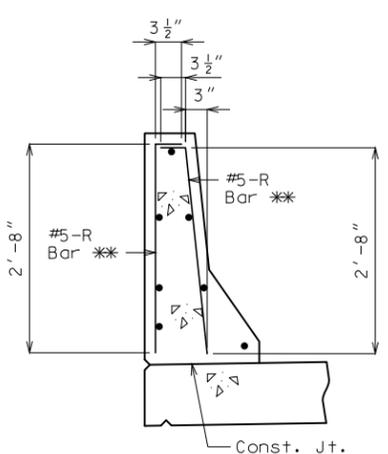


SECTION C-C



RESIN ANCHOR SYSTEM
(If required)
Bend in field.

*** Manufacturer's embedment length (5" minimum)



R-BAR PERMISSIBLE ALTERNATE SHAPE

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

* The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)
R2, R3 & R4 bars not shown for clarity.

Notes:

* Install new resin anchor system nearby in existing concrete if existing resin anchor is unusable.

Top of safety barrier curb shall be built parallel to grade with barrier curb joints normal to grade (match existing).

Payment for all concrete and reinforcement, complete in place, shall be considered completely covered by the contract unit price for Remove and Replace Barrier Curb.

Concrete in the safety barrier curb shall be Class B-1.

The contractor shall use one of the qualified resin anchor systems, if required, in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Remove and Replace Barrier Curb.

The minimum embedment depth in concrete with f'c = 4,000 psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8"Ø threaded rod.

Work this sheet with Sheets No. 9, 10 & 11.

BARRIER CURB REPLACEMENT AT END BENT NO. 9

Detailed Dec. 2015
Checked Dec. 2015

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 12 of

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

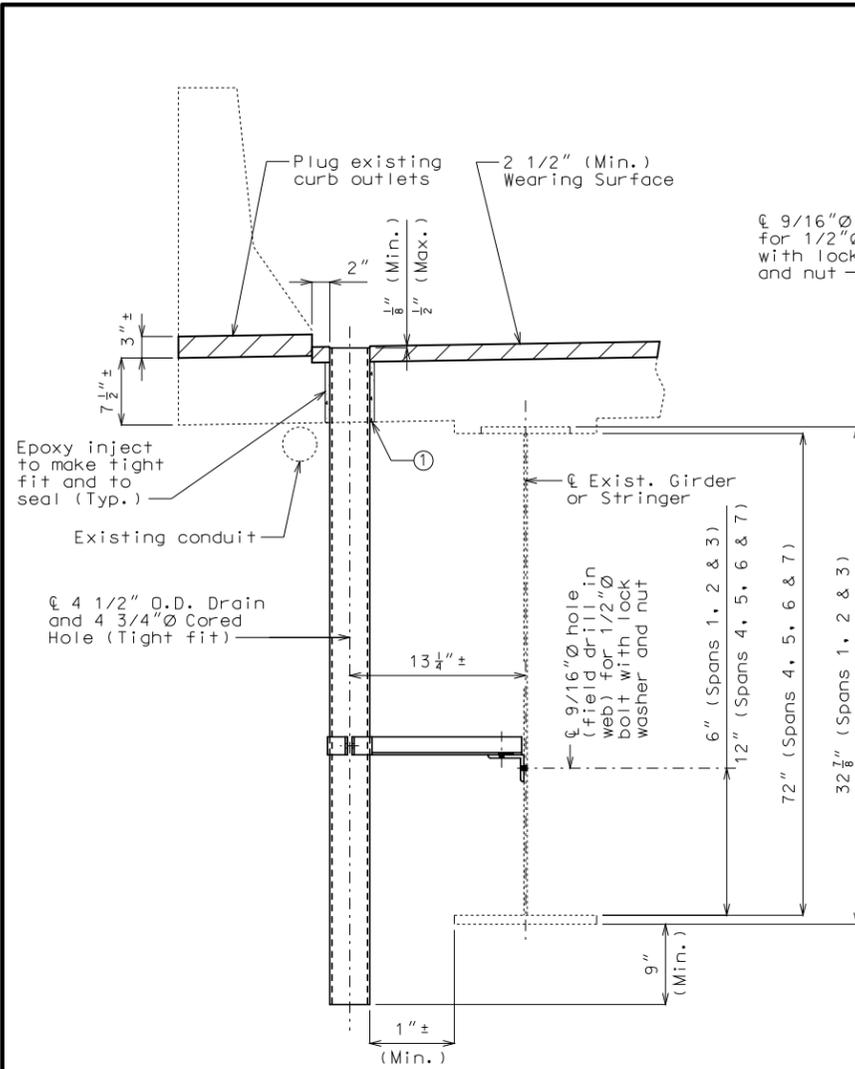
DATE PREPARED 1/7/2016	
ROUTE 70	STATE MO
DISTRICT BR	SHEET NO. 12
COUNTY COOPER	
JOB NO. J513132	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A02015	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

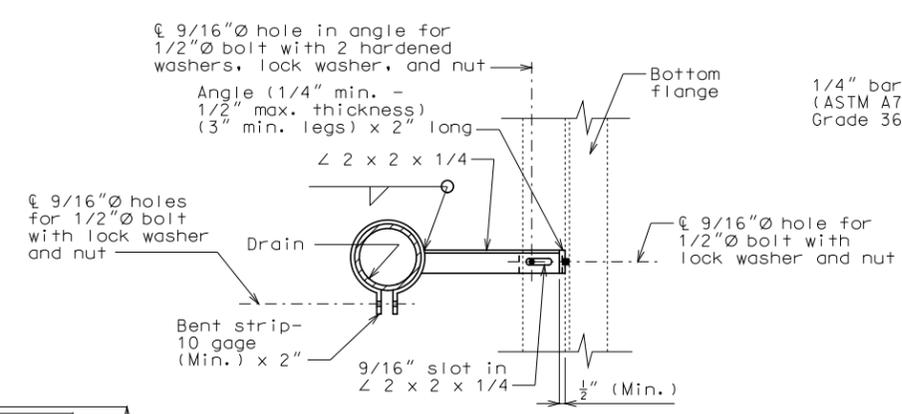
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

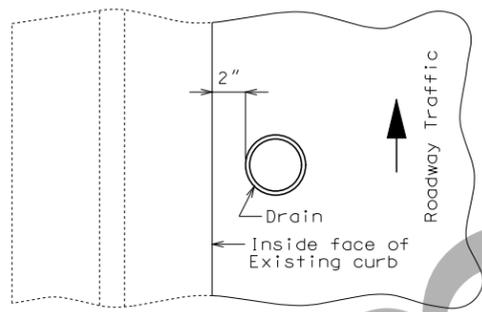


PART SECTION NEAR DRAIN

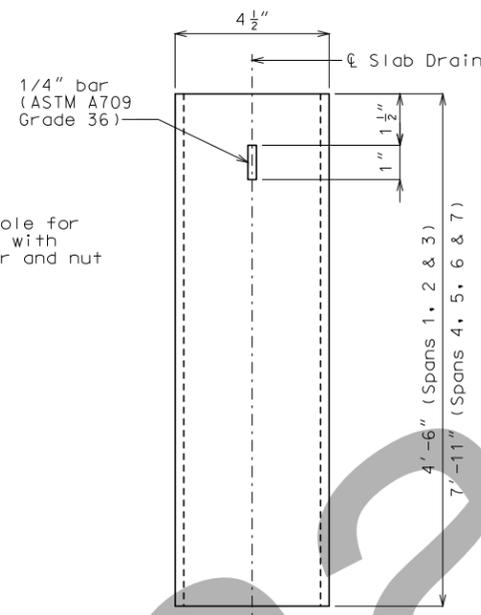
① Use backer rod around drain @ bottom of slab and epoxy inject from the top.



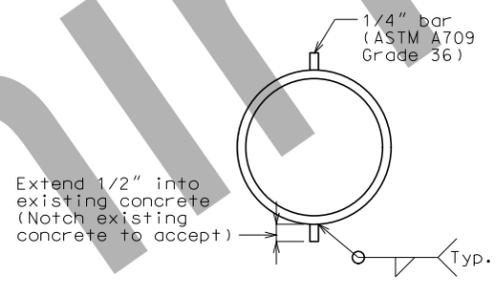
PART SECTION SHOWING BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF DRAIN

General Notes:

Slab drains may be fabricated from 1/4" structural steel pipe ASTM A500 or A501.

(FRP alternate) For optional Fiber Reinforced Polymer drains, see Job Special Provisions.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with ASTM A153.

Shop drawings will not be required for the slab drains and the bracket assembly.

Cost of cored slab drains, complete in place, will be considered completely covered by the contract unit price for Cored Slab Drain per each.

Holes for slab drains shall be cored. Percussion drilling will not be permitted.

Drains shall be inserted through slab such that damage to galvanized coating is minimized.

Slab drain locations may be shifted the minimum extent necessary to avoid slab reinforcement and to allow for field drilling bolt hole in web of existing stringer or girder for bracket assembly attachment.

Care shall be taken to avoid damage to existing conduit when coring holes for slab drains.

For details of plugging existing curb outlets, see Sheet No. 2.

For slab drain locations, see Sheet No. 14.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

DATE PREPARED	
1/7/2016	
ROUTE	STATE
70	MO
DISTRICT	SHEET NO.
BR	13
COUNTY	
COOPER	
JOB NO.	
J513132	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A02015	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

**FOR INFORMATION ONLY
NOT FOR CONSTRUCTION**

CORED SLAB DRAINS

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

