

SEC/SUR 15	TWP 35N	RGE 14W
------------	---------	---------



STATE OF MISSOURI

WILLIAM J. DUNN

NUMBER
PE-2006019647

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED 2/24/2010	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 1

COUNTY
LACLEDE
JOB NO.
J8I2167
CONTRACT ID.

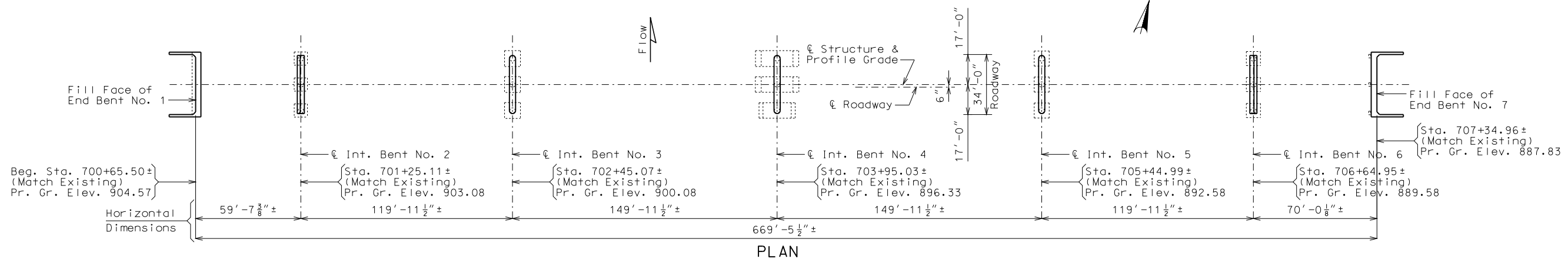
PROJECT NO.

BRIDGE NO.
L06983

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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



STD. 706.35

Sheet No. 1 of 35

GENERAL NOTES:

Design Specifications (New Construction):
2007 – AASHTO LRFD 4th Edition and 2008 Interims
Load and Resistance Factor Design
Seismic Design Category A

Design Loading:
H20-S16-44 (1953-Existing), HL-93 (New Construction)
15#/Sq. Ft. Future Wearing Surface
Earth 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.

Design Unit Stresses:
Class B-1 Concrete (Safety Barrier Curb) f’c = 4,000 psi
Class B-2 Concrete (Substructure and Superstructure, except Safety Barrier Curb) f’c = 4,000 psi
Reinforcing Steel (Grade 60) fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50W) fy = 50,000 psi

Neoprene Pads:
Bearings shall be 60 durometer neoprene pads.

Laminated Neoprene Bearing Pads (Tapered) shall be in accordance with Sec 716.

Fabricated Steel Connections:
Field connections shall be made with 3/4” diameter high strength bolts and 13/16” diameter holes, except as noted.

High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106 and Field Section (FS-712) from Materials Manual.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2”, unless otherwise shown.

Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Concrete Protective Coatings:

Temporary coating for concrete bents and piers (weathering steel) shall be applied on all concrete surfaces above the ground line or low water elevation on all abutments and intermediate bents in accordance with Sec 711.

Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711.

Sacrificial graffiti protective coating shall be applied on all exposed concrete within bottom 8’ of intermediate bent columns in accordance with Sec 711.

Structural Steel Protective Coating:
Protective Coating: System H in accordance with Sec 1081.

Portions of the structural steel embedded in or in contact with concrete, including but not limited to the top flange of girders, shall be coated with not less than 2.0 mils of the prime coat for System H.

Prime Coat: The prime coat shall be applied in the fabrication shop. The cost of the prime coat will be considered completely covered by the contract unit price for the Fabricated Structural Steel.

The surfaces of all structural steel located under expansion joints shall be coated with complete System H within a distance of 1 1/2 times the girder depth, but not less than 10 feet, from the centerline of all deck joints. Within this limit, items to be coated shall include all surfaces of beam, girders, diaphragms, stiffeners, bearings and miscellaneous structural steel items.

Field Coats: The color of the field coats shall be Brown (Federal Standard #30045). The cost of the intermediate and finish field coats will be considered completely covered by the contract unit price for the Fabricated Structural Steel. At the option of the contractor, the intermediate and finish field coats may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

Estimated Quantities		
Item		Total
Class 1 Excavation	cu. yard	35
Partial Removal of Substructure Concrete	lump sum	1
Removal of Existing Superstructure	lump sum	1
Bridge Approach Slab (Bridge)	sq. yard	194
Slab on Steel	sq. yard	2722
Class B-2 Concrete	cu. yard	95.4
* Safety Barrier Curb	linear foot	1398
Substructure Repair (Unformed)	sq. foot	100
Reinforcing Steel (Epoxy Coated)	pound	5560
Protective Coating – Concrete Bents and Piers (Epoxy)	lump sum	1
Sacrificial Graffiti Protection System	lump sum	1
Temporary Coating – Concrete Bents and Piers (Weathering Steel)	lump sum	1
Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W	pound	707,200
Slab Drain	each	22
Vertical Drain at End Bents	each	2
Laminated Neoprene Bearing Pad (Tapered)	each	8
Laminated Neoprene Bearing Pad Assembly	each	12
Type N PTFE Bearing	each	16
Strip Seal Expansion Joint System	linear foot	68

* Safety barrier curb shall be cast-in-place option or slip-form option.

All concrete between the upper and lower construction joints in the end bents is included in the Estimated Quantities for Slab on Steel.

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.

Removing and disposing of existing structural steel, bearings, rails, slab, expansion devices and any other items necessary to reconstruct the bridge superstructure as shown on the plans or as directed by the engineer will be considered completely covered by the contract lump sum price for “Removal of Existing Superstructure”.

Miscellaneous:

“Sec” refers to the sections in the standard and supplemental specifications unless specified otherwise.

Structure to be closed to traffic during construction.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new materials.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

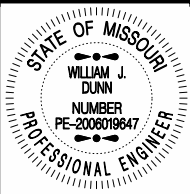
Estimated Quantities for Slab on Steel		
Item		Total
Class B-2 Concrete	cu. yard	703.9
Reinforcing Steel (Epoxy Coated)	pound	197,710

The table of Estimated Quantities for Slab on Steel represents the quantities used by the State in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard with the horizontal dimensions as shown on the plan of slab. Payment for stay-in-place forms, conventional forms, all concrete and coated and uncoated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Method of forming the slab shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

Slab shall be cast-in-place with conventional forming or stay-in-place corrugated metal forms. Precast prestressed panels will not be permitted.

For Details of Stay-in-Place Forms, see Sheet No. 27.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 2/24/2010	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 2
COUNTY LACLEDE	
JOB NO. J812167	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L06983	

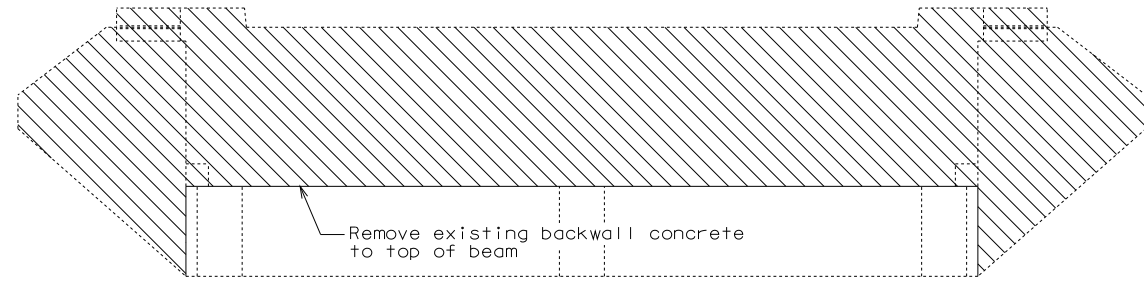
DESCRIPTION	DATE					

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

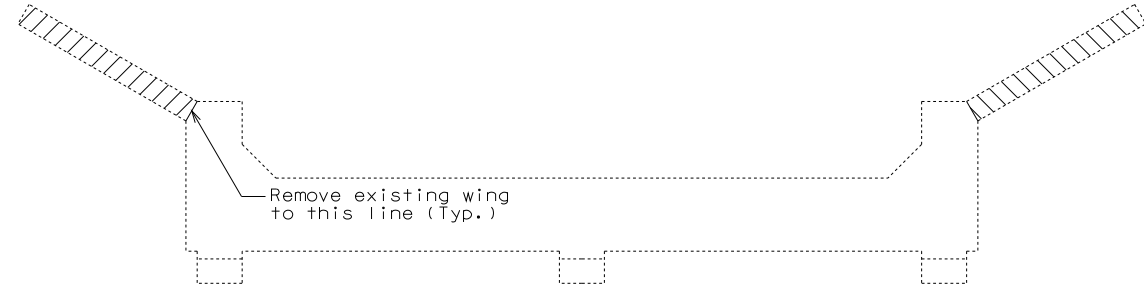


105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

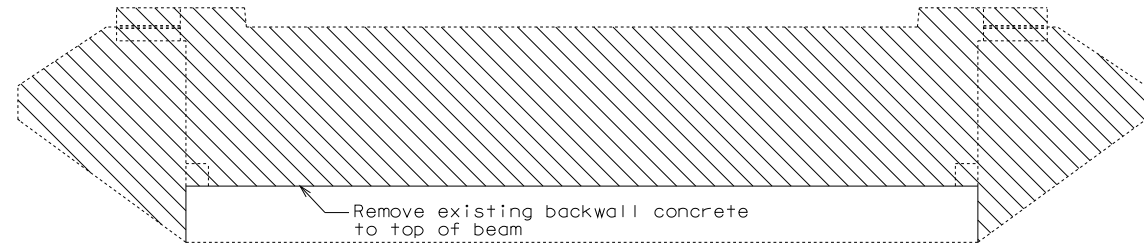


ELEVATION

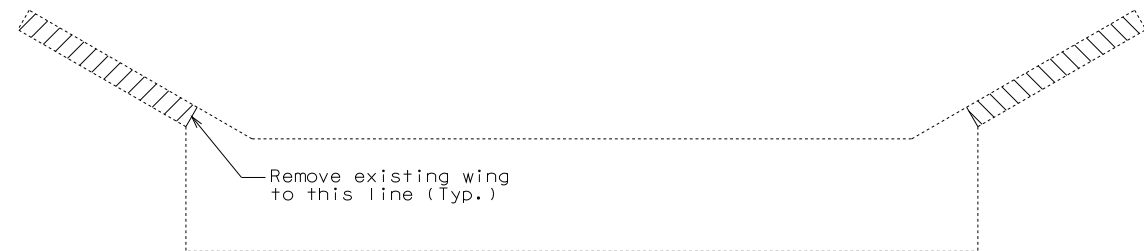


PLAN OF BEAM

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT END BENT NO. 7

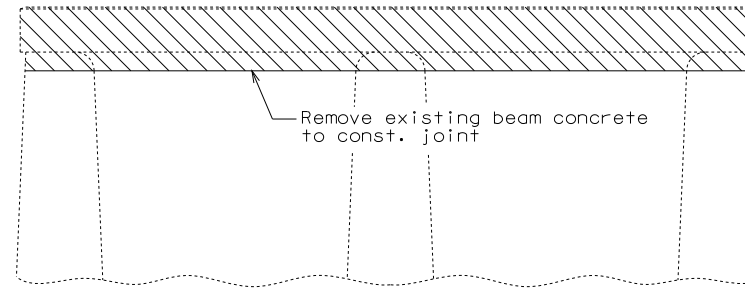


ELEVATION

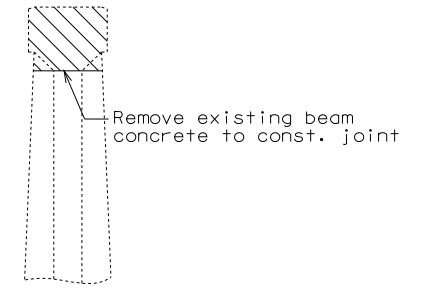


PLAN OF BEAM

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT END BENT NO. 1

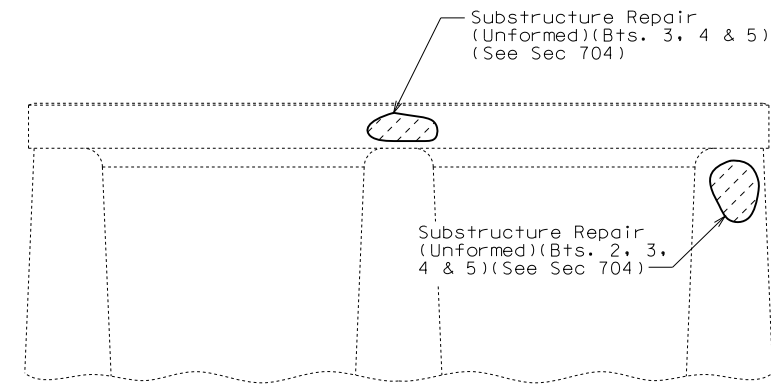


PART ELEVATION



PART SECTION

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT INTERMEDIATE BENTS NO. 2 & 6



DETAILS OF SUBSTRUCTURE REPAIR (UNFORMED) AT INTERMEDIATE BENTS NO. 2, 3, 4 & 5



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
3

COUNTY
LACLEDE

JOB NO.
J812167

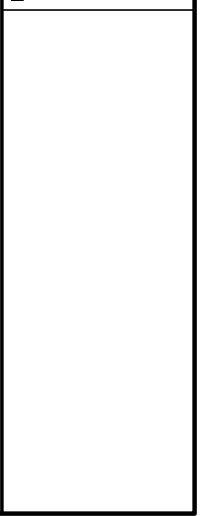
CONTRACT ID.

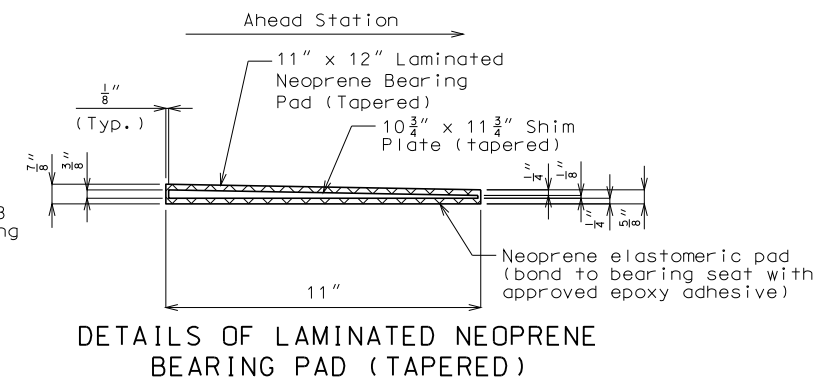
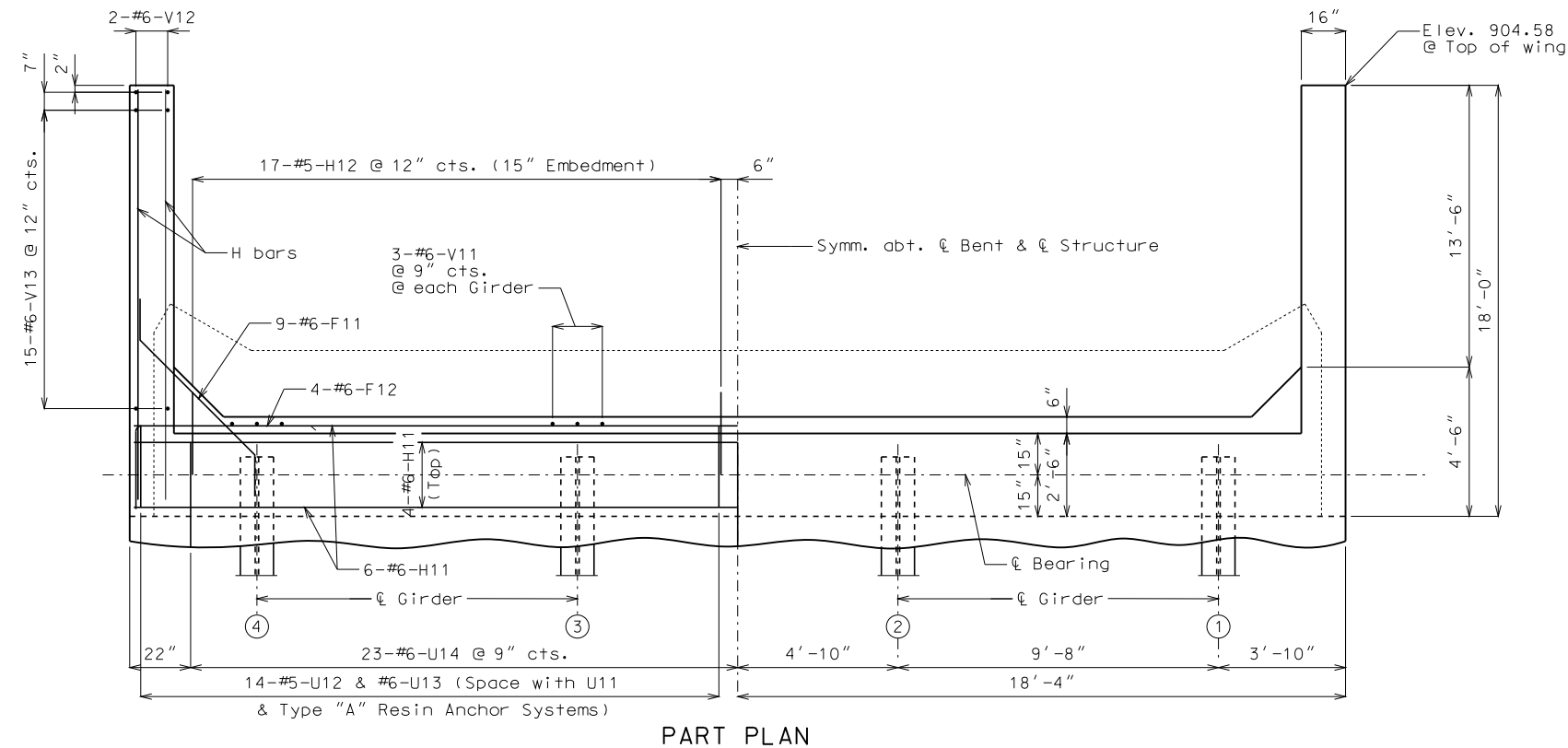
PROJECT NO.

BRIDGE NO.
L06983

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



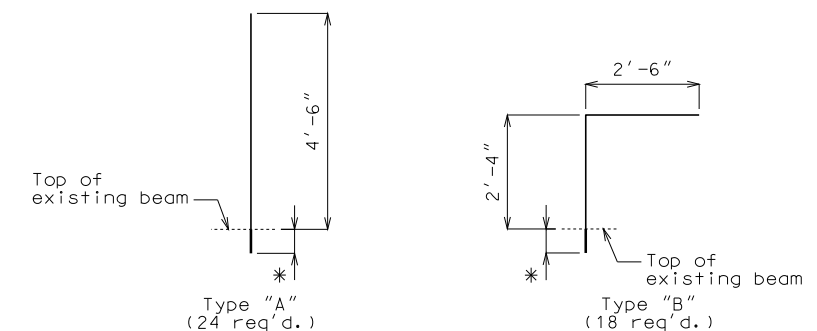
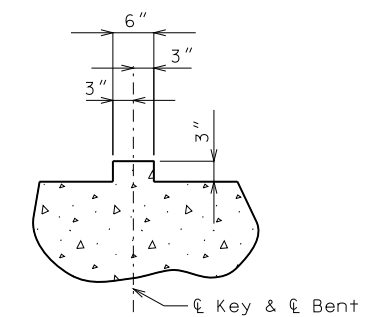


Note:
For Section Near End Bent and Elevation of Wing, see Sheet
No. 5.

Bend F11 bars in field to clear girders.

All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.



Notes:

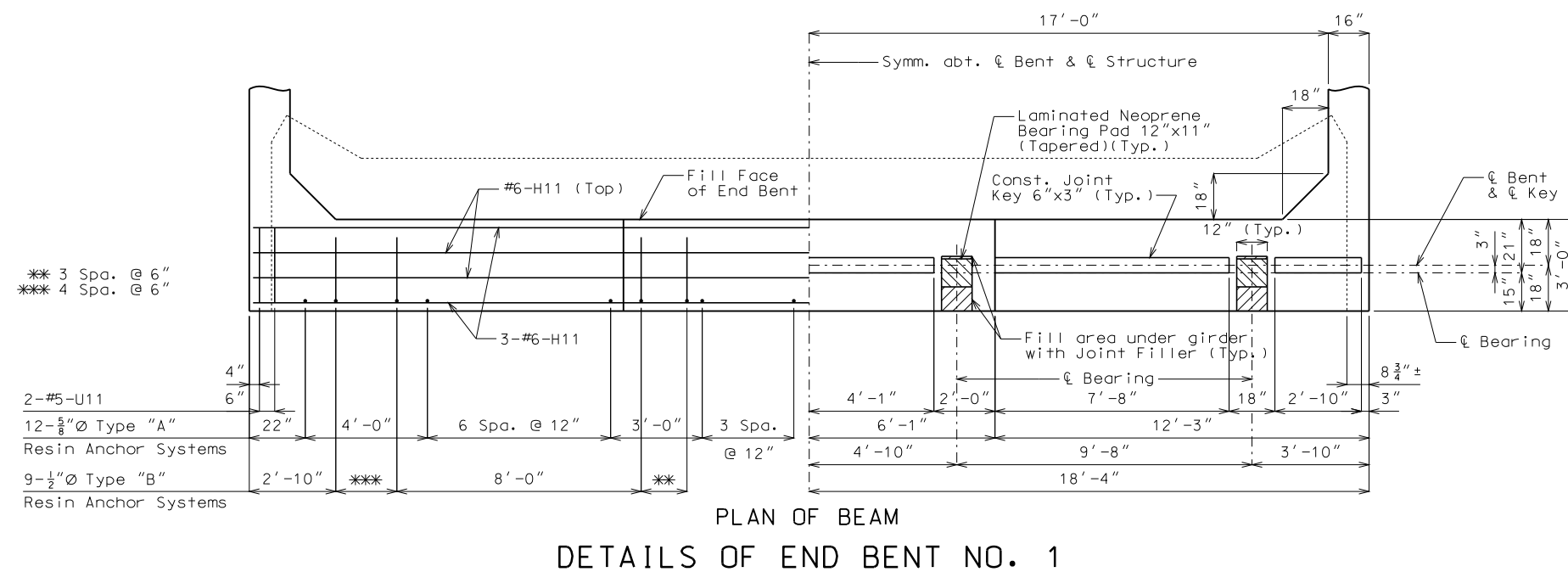
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

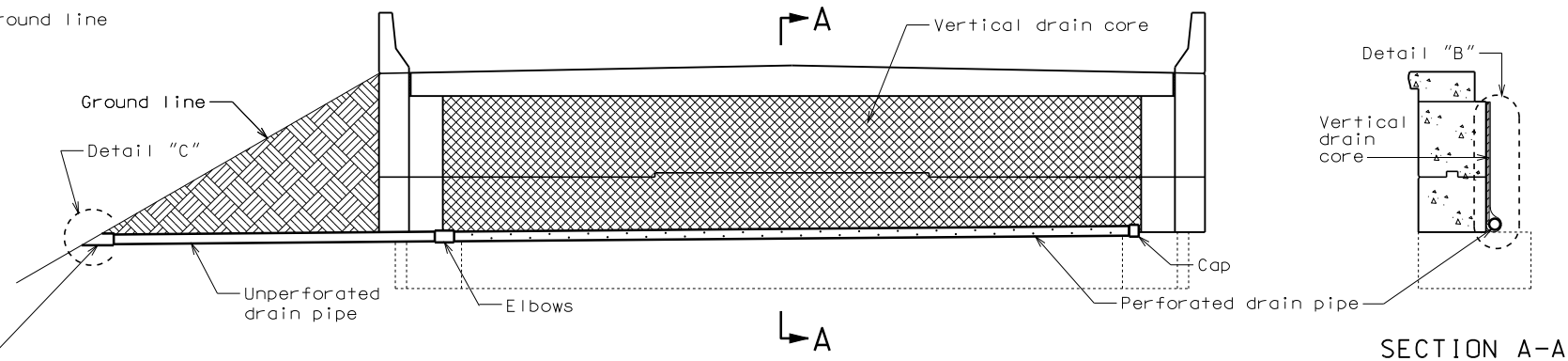
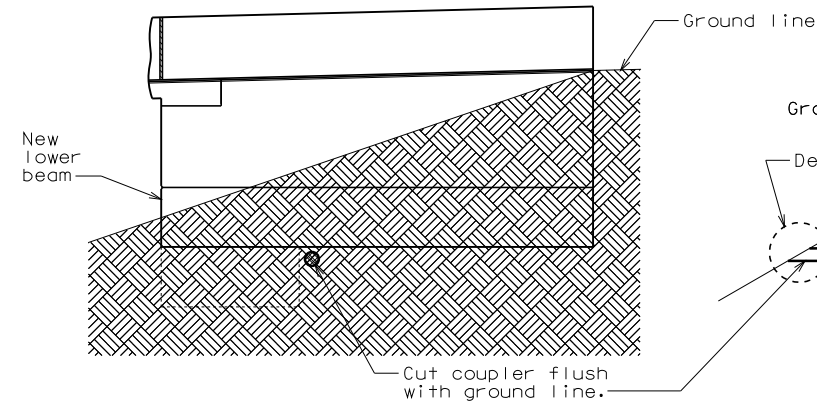
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

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

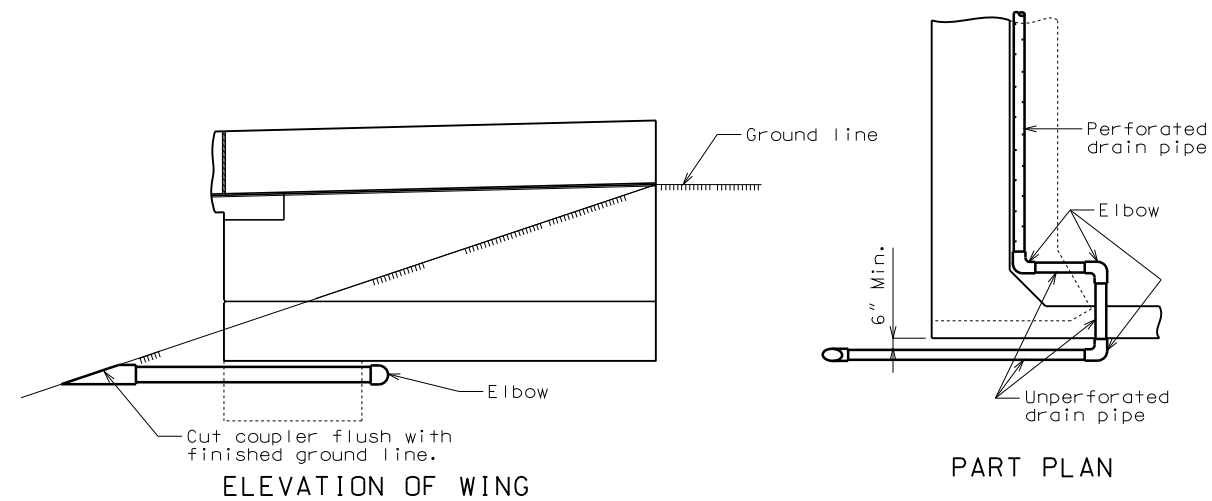
An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the $\frac{5}{16}$ " $\emptyset$ threaded rod for Type "A" Resin Anchor Systems.

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the $\frac{1}{2}"$ Ø threaded rod for Type "B" Resin Anchor Systems.



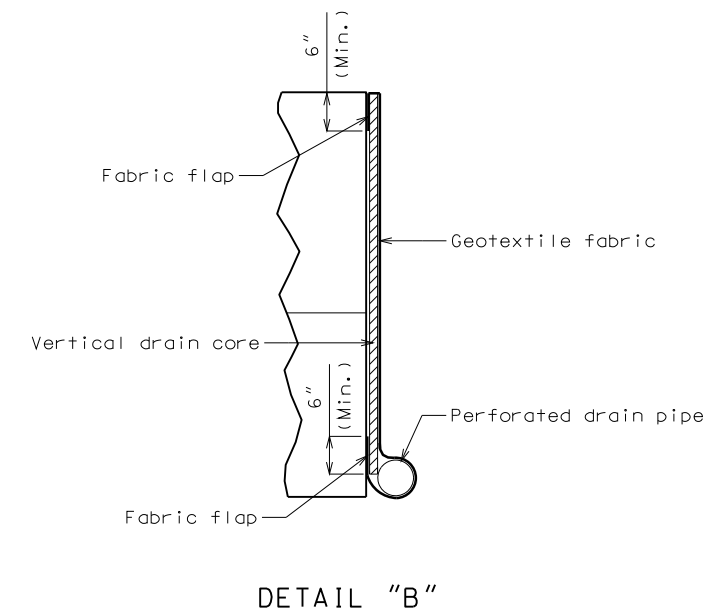
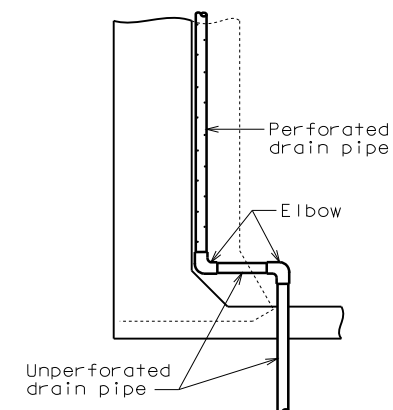
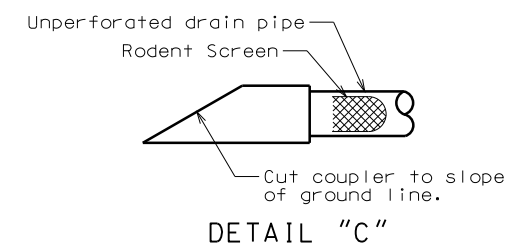


ELEVATION AT END BENT



OPTIONAL BENT DRAIN (*)

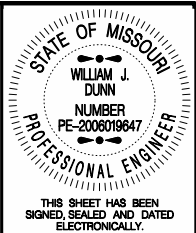
(*) Only if rock is encountered at outside of wing.



Note:
Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1 1/2 ". (See elevation at end bent.)

Perforated pipe shall be placed at fill face side at the bottom of new lower beam and plain pipe shall be used where the vertical drain ends to the exit at ground line.



DATE PREPARED
2/24/2010

ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 6

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

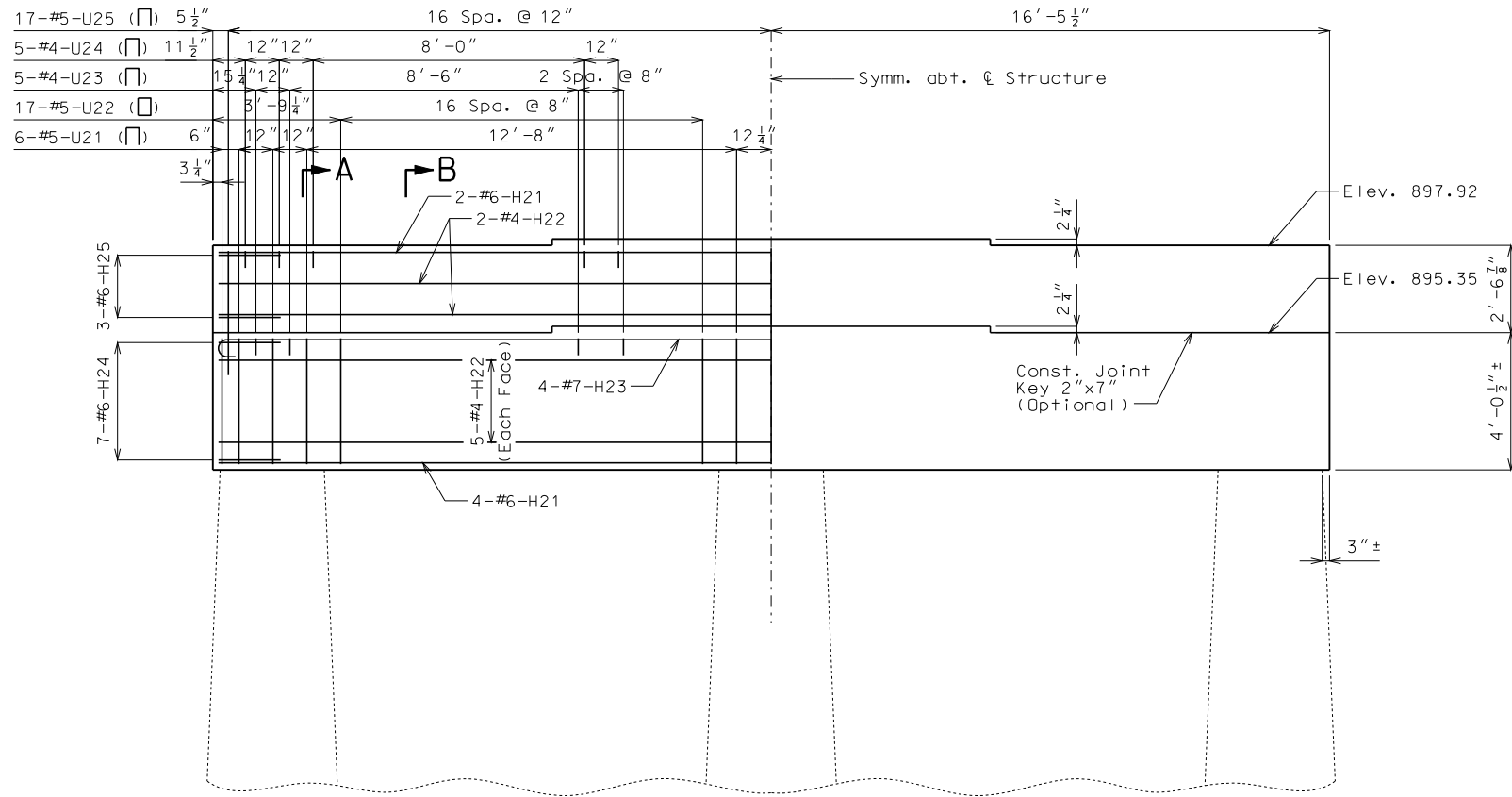
BRIDGE NO.
L06983

[illegible]

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.

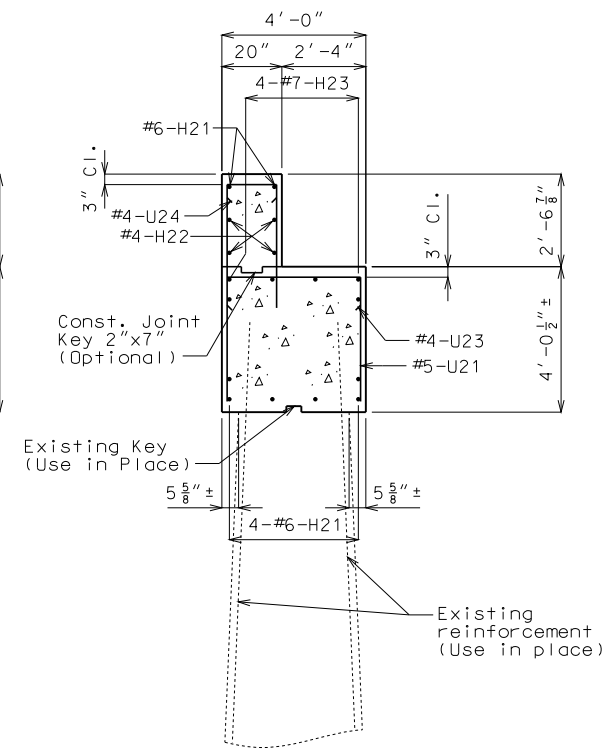


→ A → B

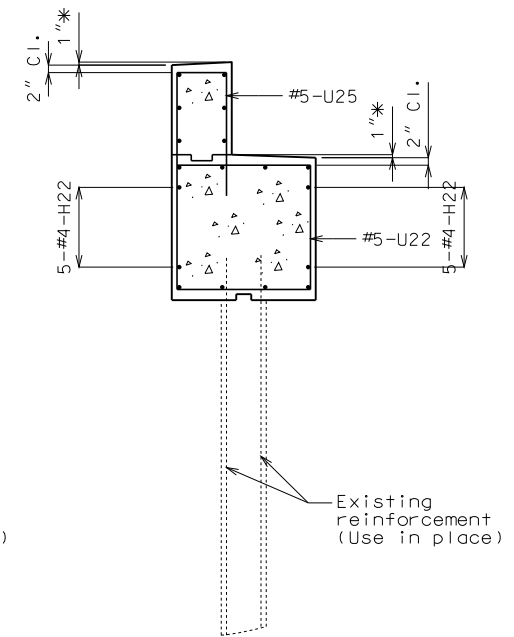
PART ELEVATION

Note:
Const. joint keys and beam slope not shown for clarity.

* Slope top of beam between bearings.

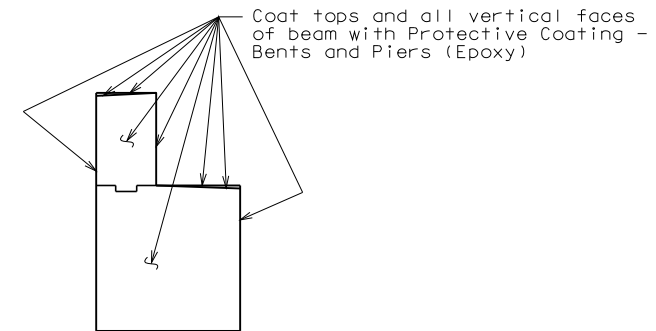


SECTION A-A



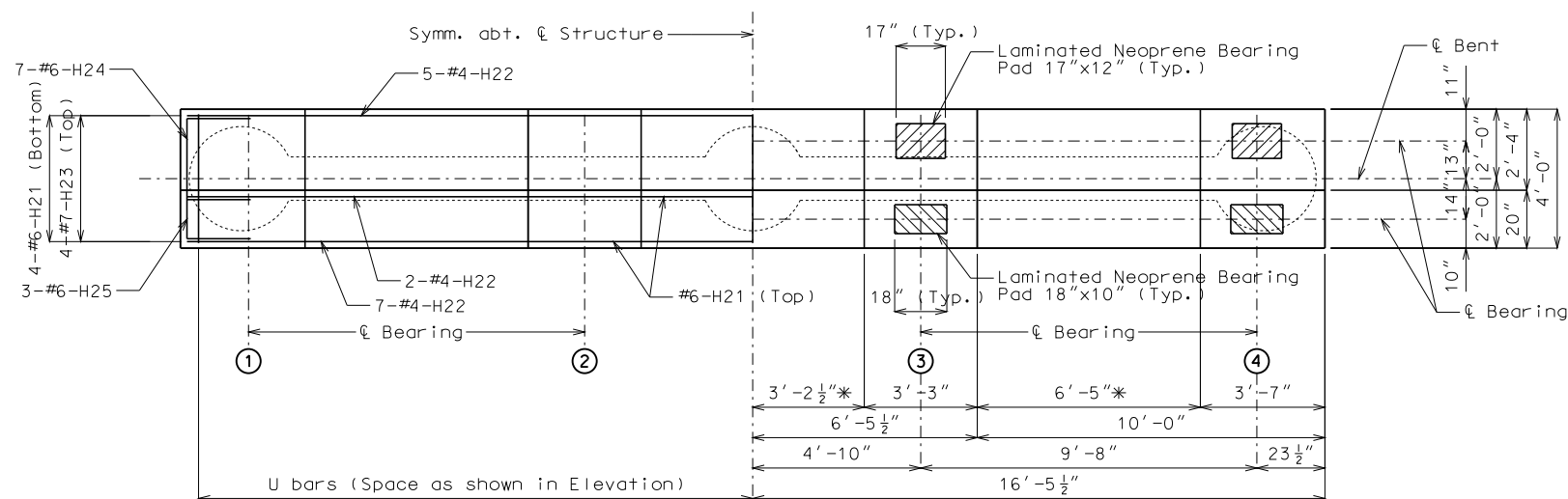
SECTION B-B

Note:
Sections A-A and B-B same except as shown.



DETAIL SHOWING PROTECTIVE COATING

Note:
For Part Plan of Anchor Rods, see Sheet No. 20.
For Details of Type "N" PTFE Bearings, see Sheet No. 16.
For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 15.
All new concrete in Int. Bent No. 2 shall be Class B-2.
All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least 1/2".

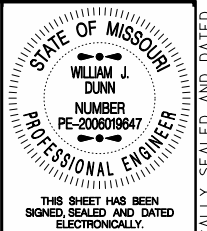


PLAN OF BEAM
DETAILS OF INTERMEDIATE BENT NO. 2

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

Sheet No. 7 of 35

Detailed Jan. 2010
Checked Jan. 2010

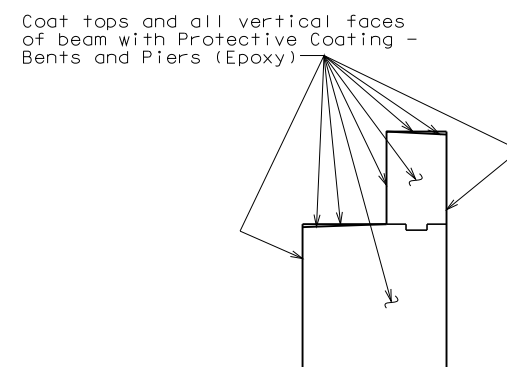
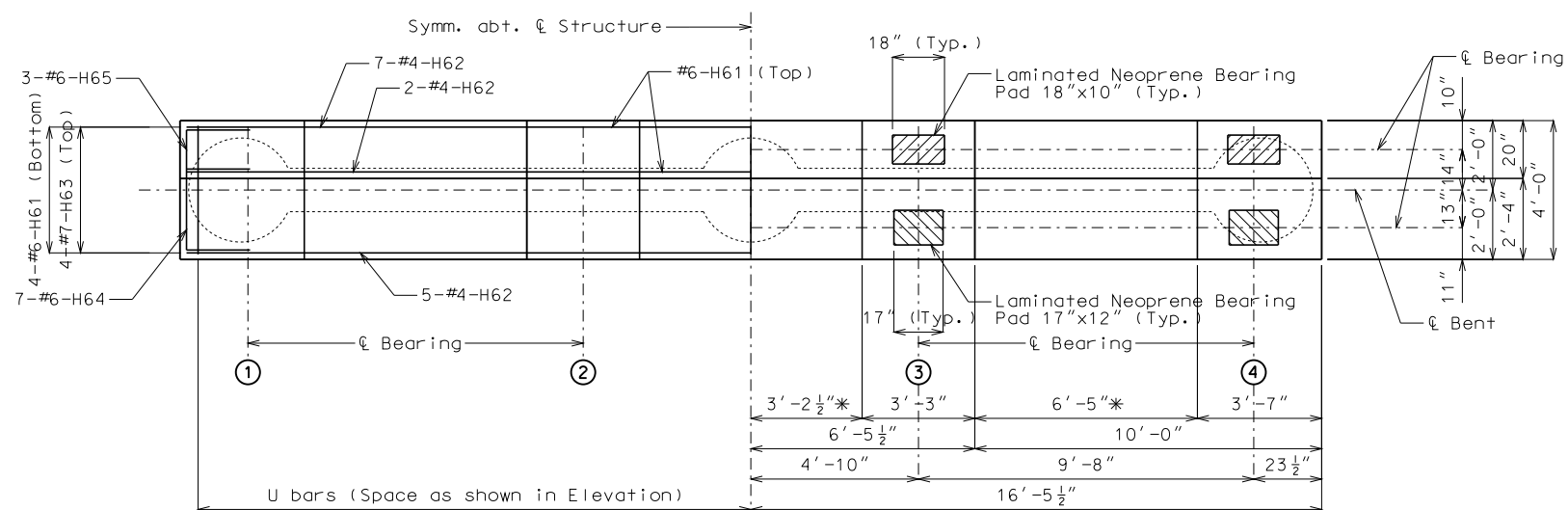
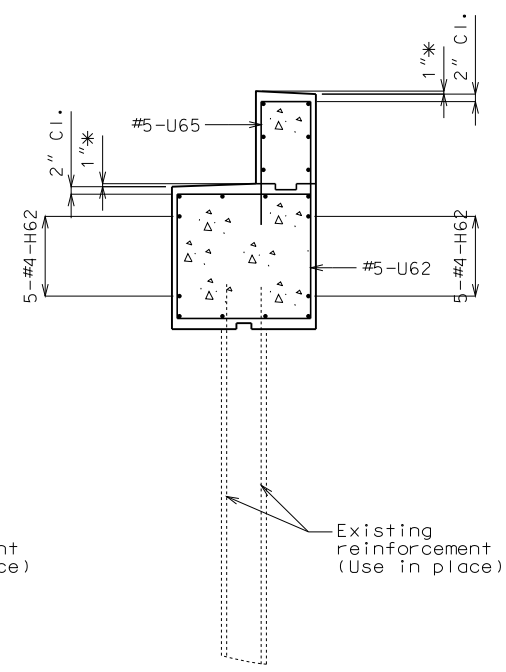
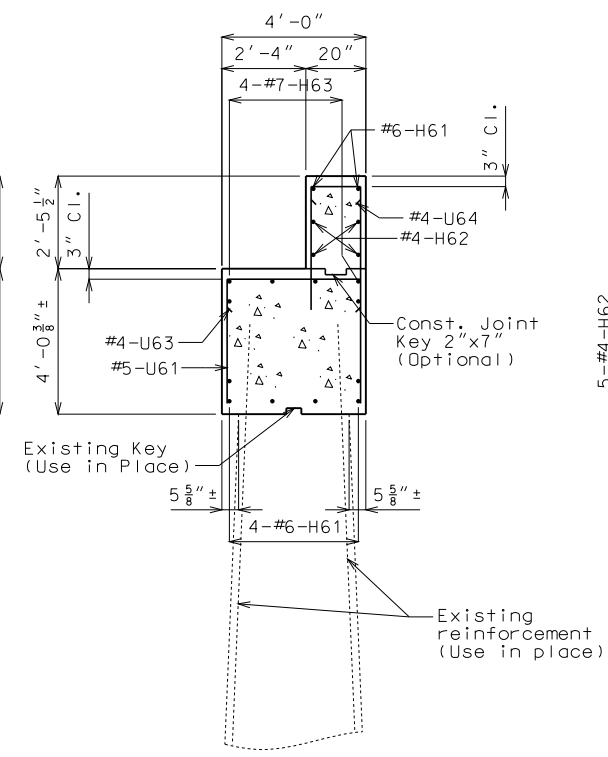
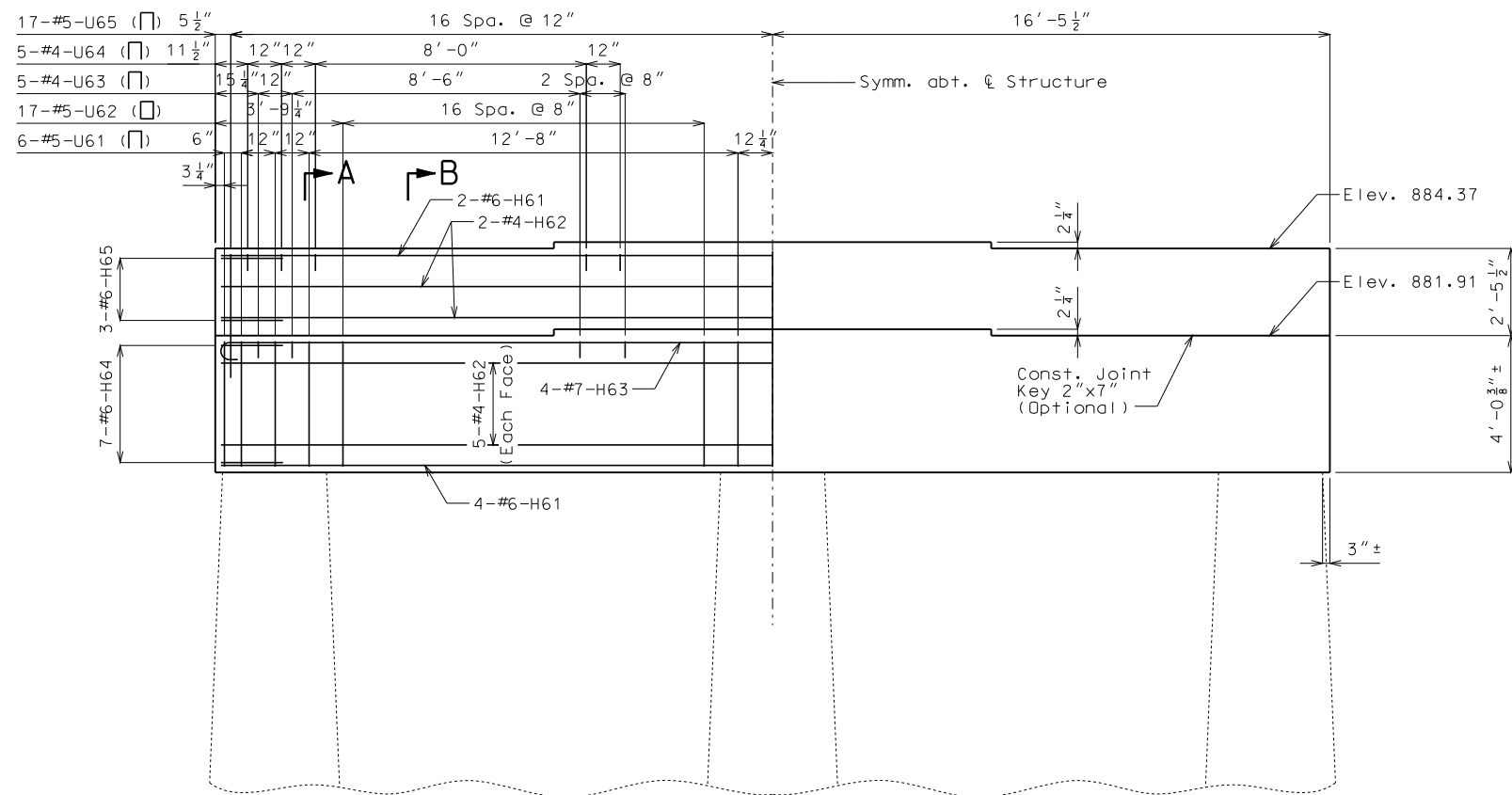


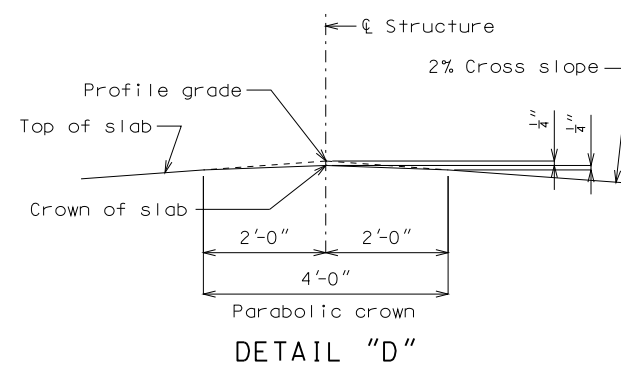
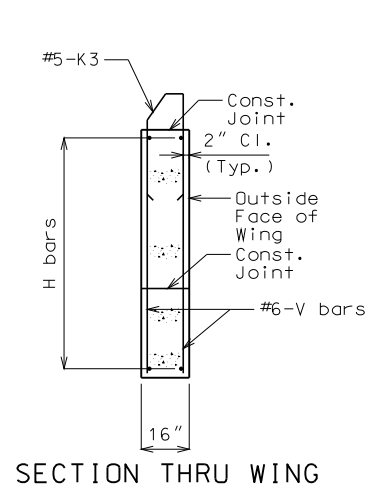
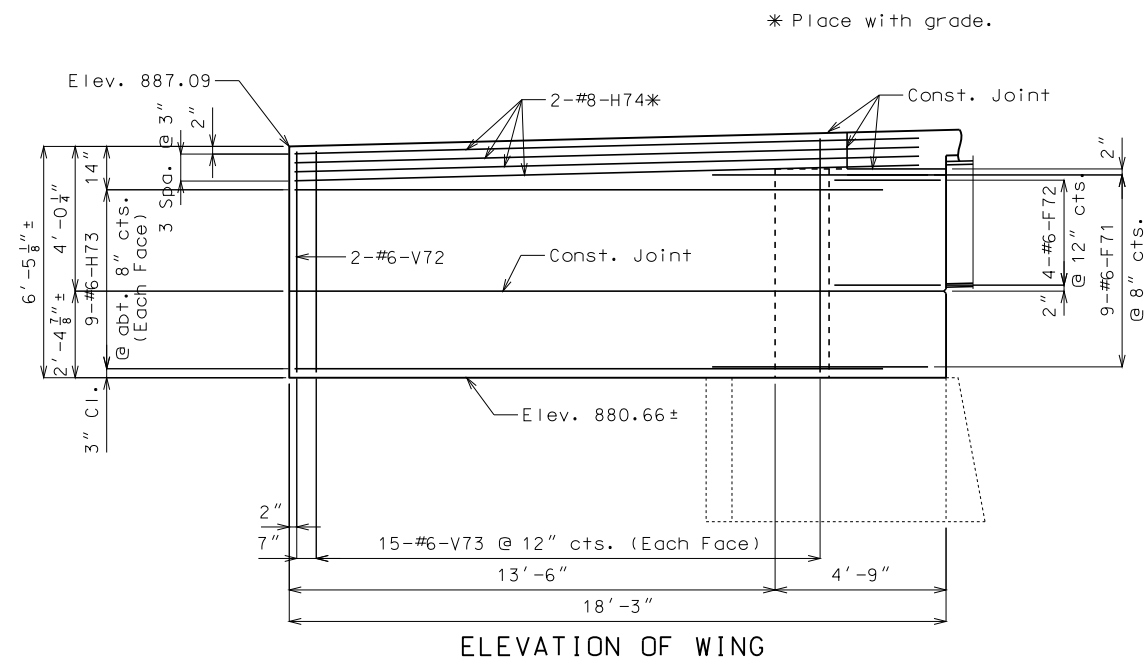
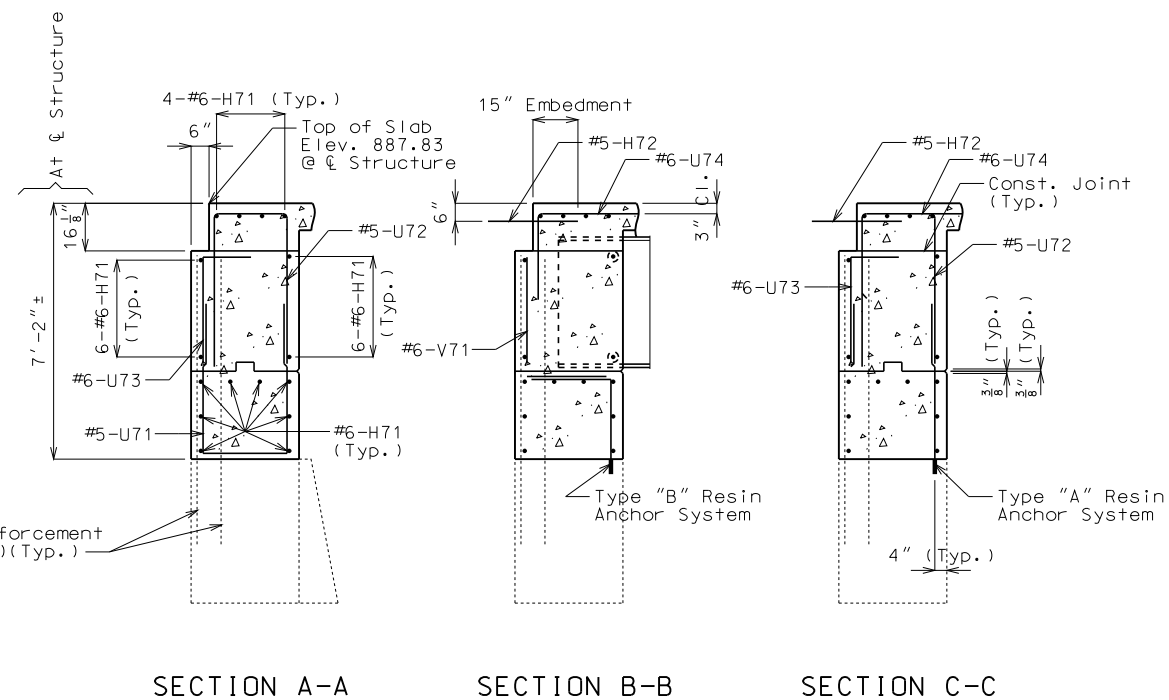
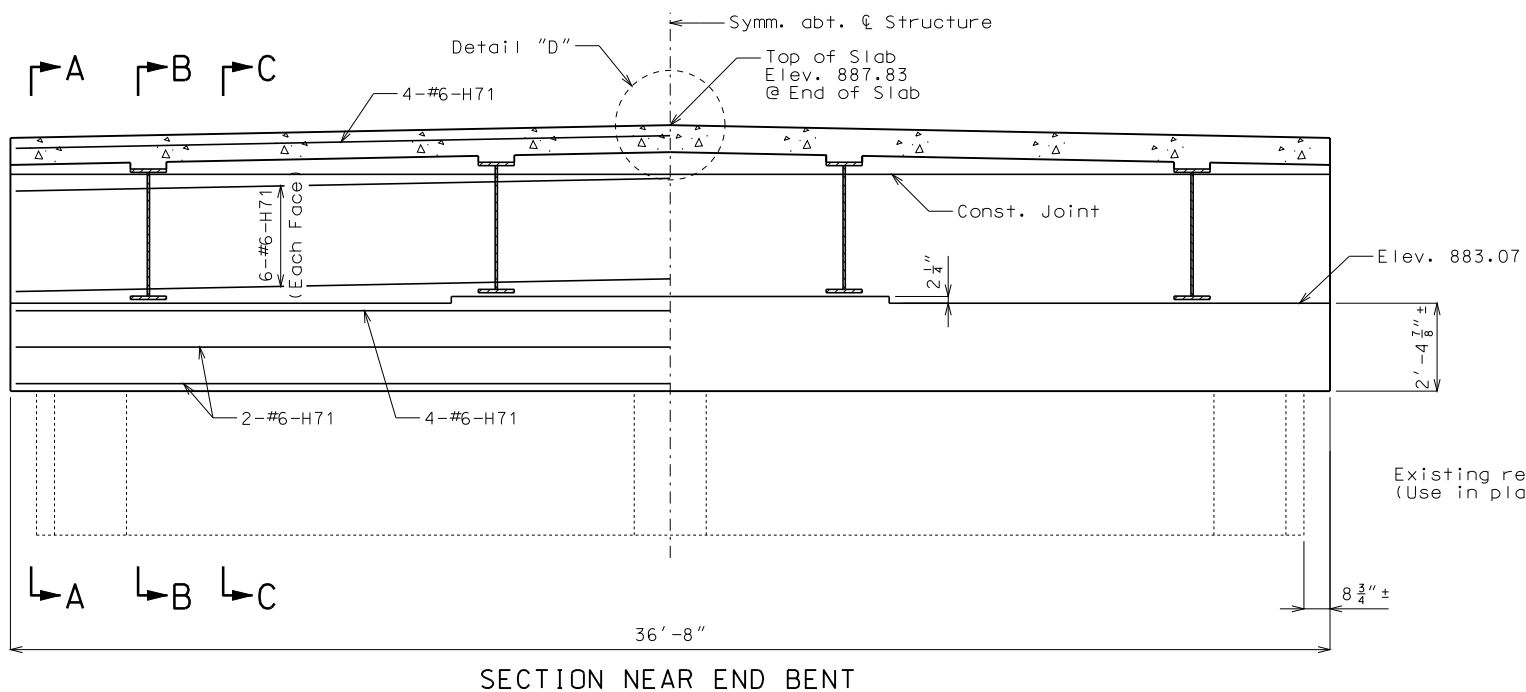
THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.
DATE PREPARED
2/24/2010
ROUTE
I-44
STATE
MO
DISTRICT
BR
SHEET NO.
7
COUNTY
LACLEDE
JOB NO.
J812167
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
L06983

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
105 WEST CAPITAL
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.



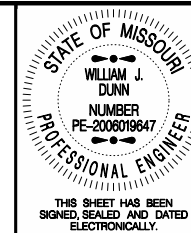


Note:
For reinforcement of the Safety Barrier Curb, see Sheet No. 31.

All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

Concrete diaphragm at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

DETAILS OF END BENT NO. 7



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
13

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

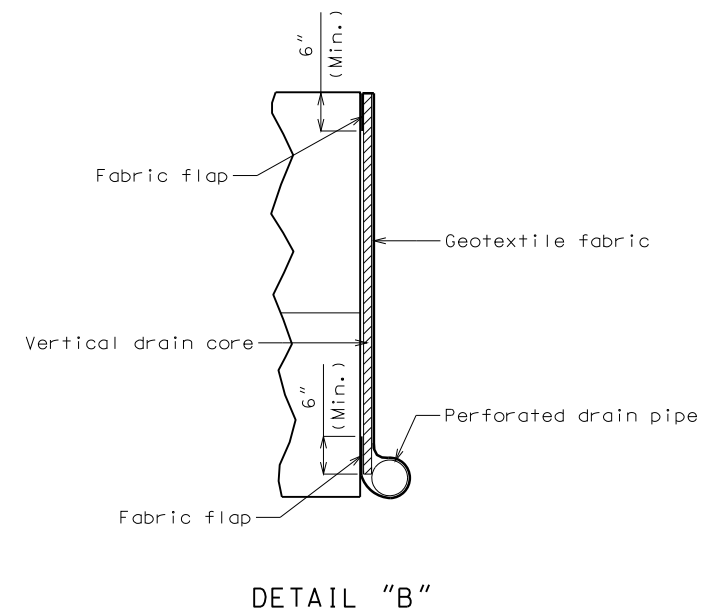
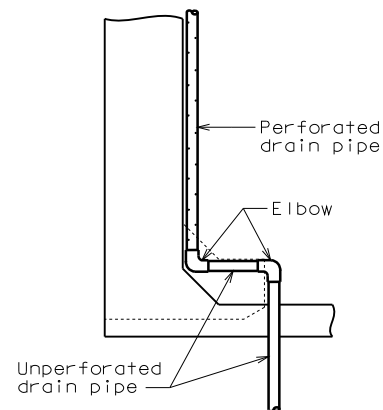
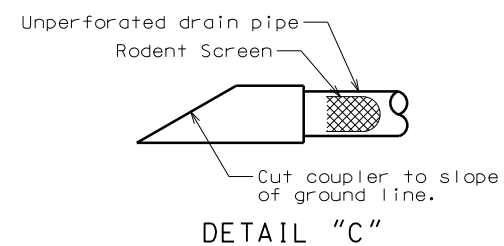
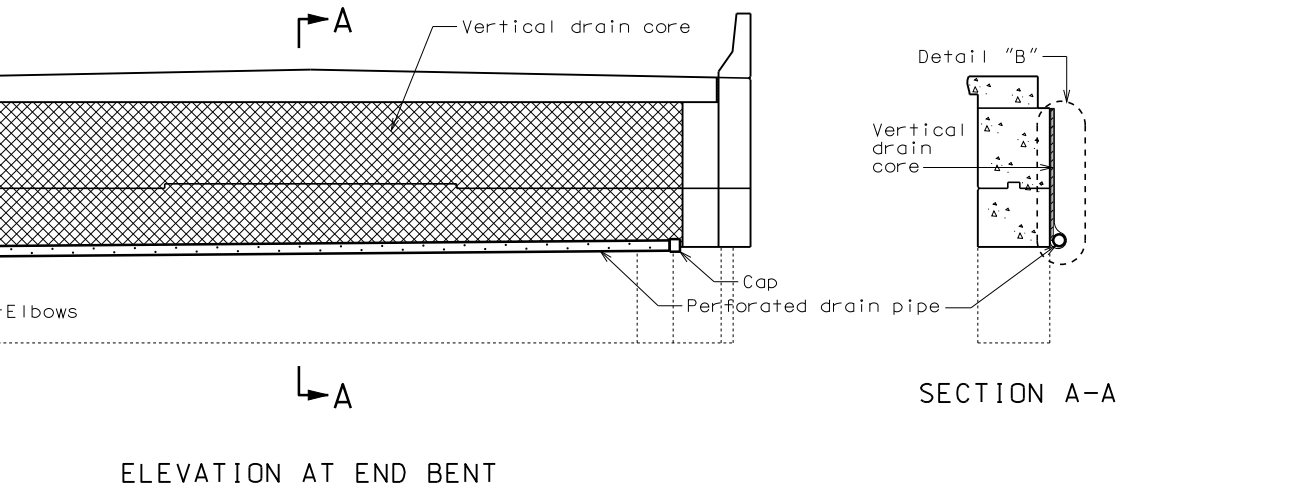
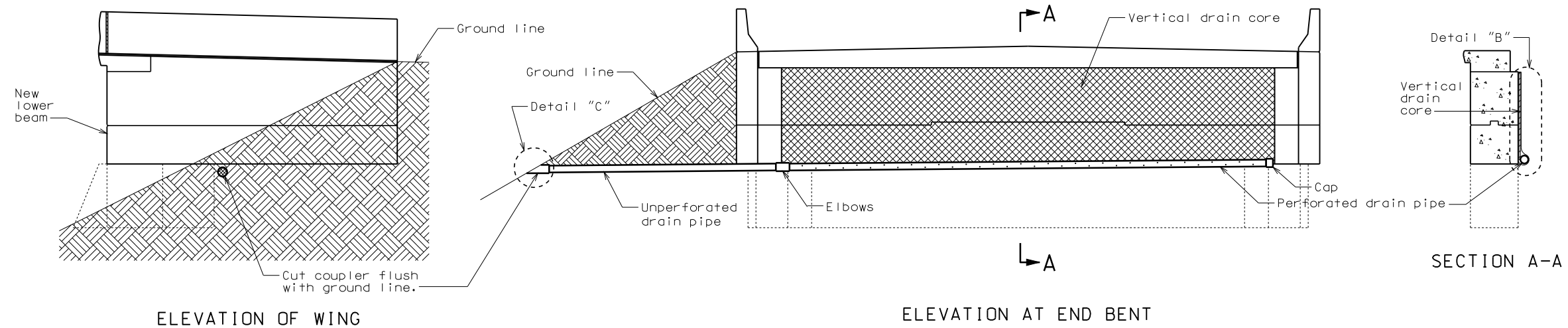
DESCRIPTION

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.

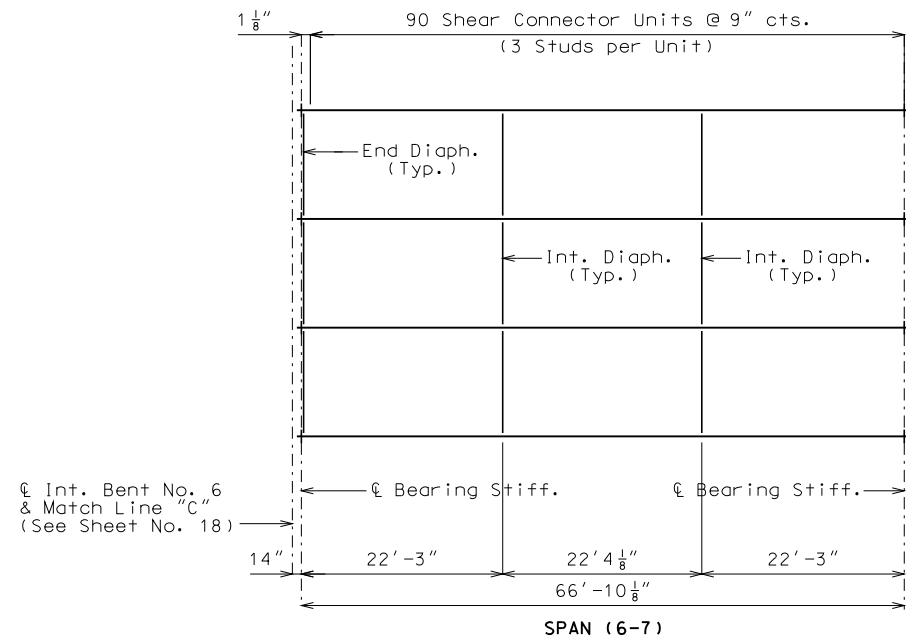
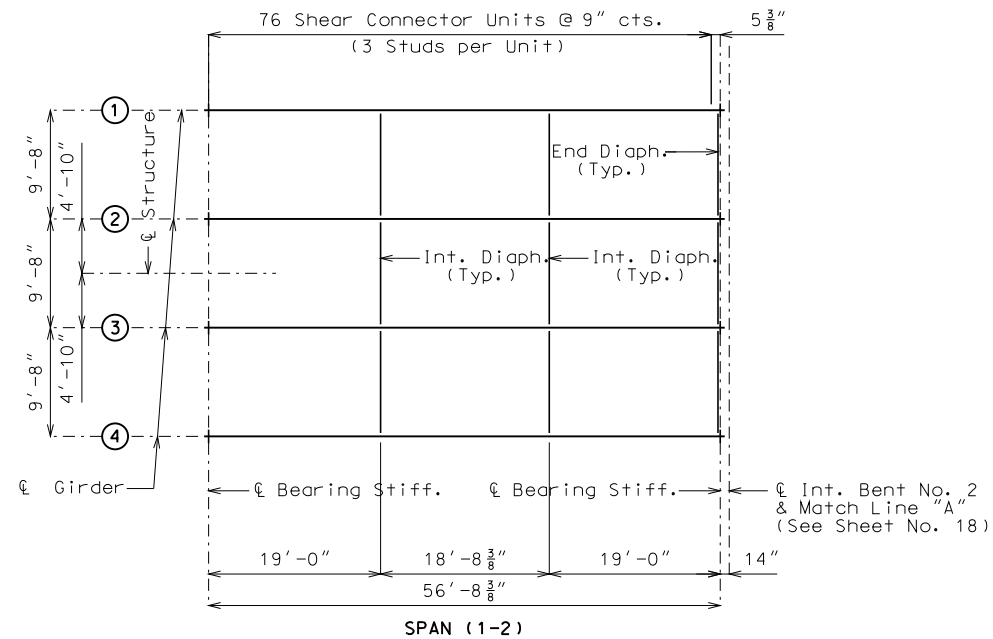


Note:
Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1 1/2". (See elevation at end bent.)

Perforated pipe shall be placed at fill face side at the bottom of new lower beam and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENT NO. 7

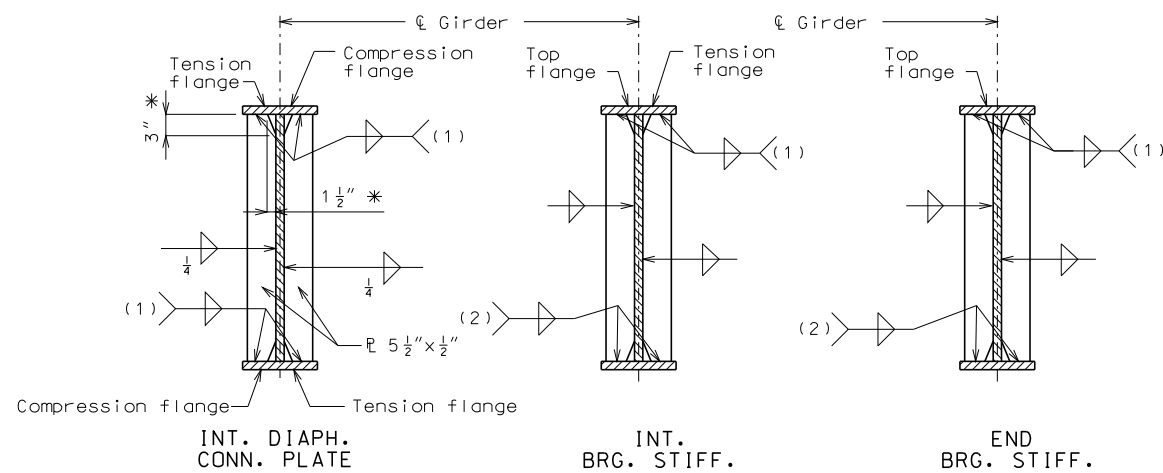


PART PLAN OF STRUCTURAL STEEL

Notes:
Fabricated structural steel shall be
ASTM A709 Grade 50W, except as noted.

Longitudinal dimensions are horizontal
from ℓ Brg. to ℓ Brg. See Part
Longitudinal Sections on Sheet No. 20.

For Details of Diaphragms, see Sheet No. 24.

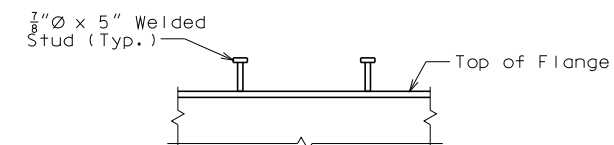


- (1) Tight fit
(2) Grind or mill to bear.
* Typical for all int. diaph. conn. pl. and brg. stiff.

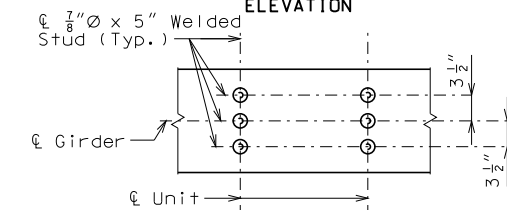
WELDING DETAILS

DETAIL OF BEVEL FOR STIFFENER PLATES

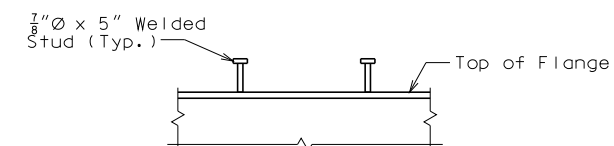
** Bevel stiffener plate when
dimension exceeds $\frac{1}{2}$ ".



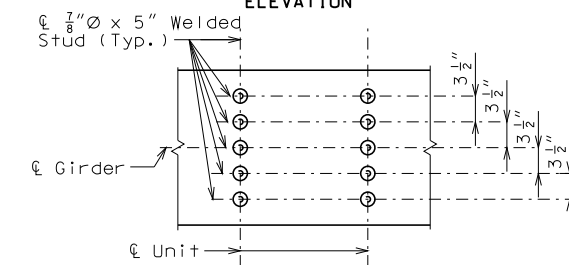
ELEVATION



PLAN OF SHEAR CONNECTORS (3 PER UNIT)



ELEVATION

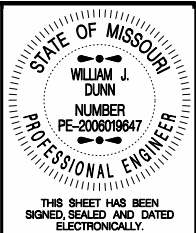


PLAN OF SHEAR CONNECTORS (5 PER UNIT)

DETAILS OF SHEAR CONNECTORS

Weight of 6800 pound of shear connectors is included in the
weight of Fabricated Structural Low Alloy Steel (Plate Girder)
A709, Grade 50W.

Shear connectors shall be in accordance with Sec 712, 1037
and 1080.



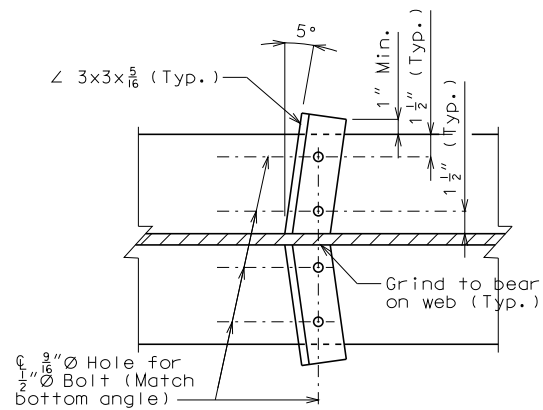
DATE PREPARED 2/24/2010	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 17
COUNTY LACLEDE	
JOB NO. J812167	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L06983	

DESCRIPTION	DATE

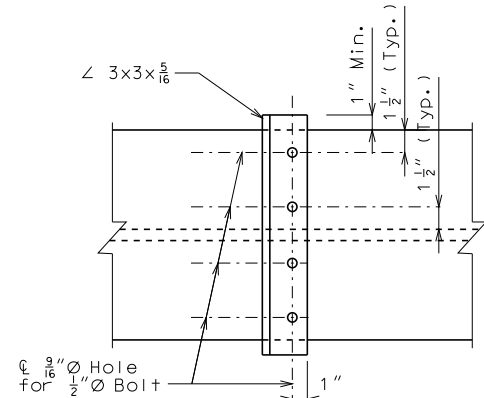
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

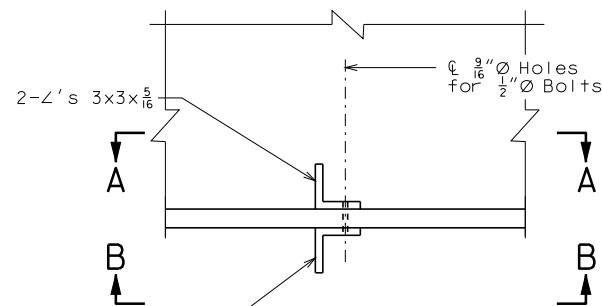
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



SECTION A-A

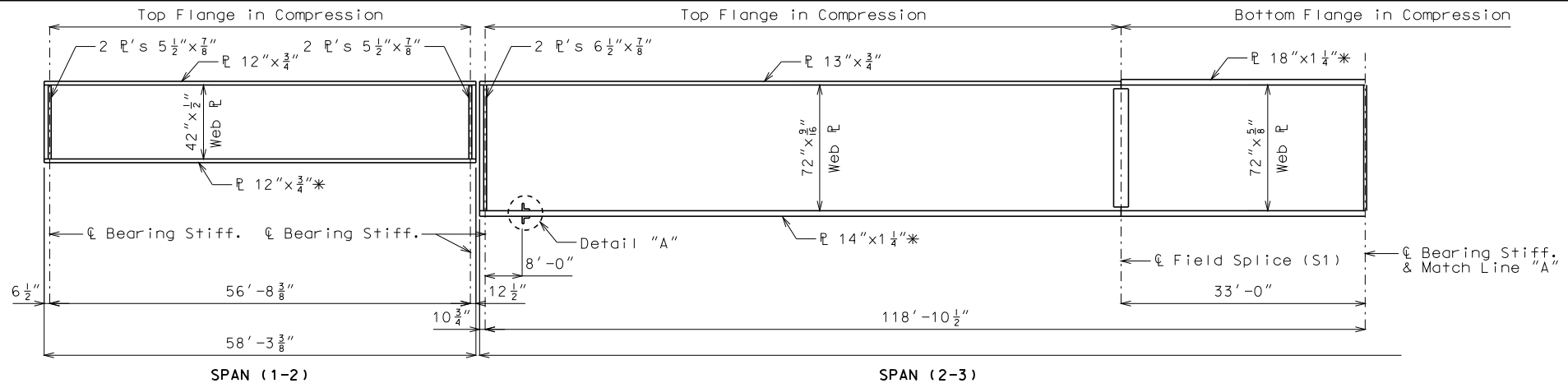


SECTION B-B

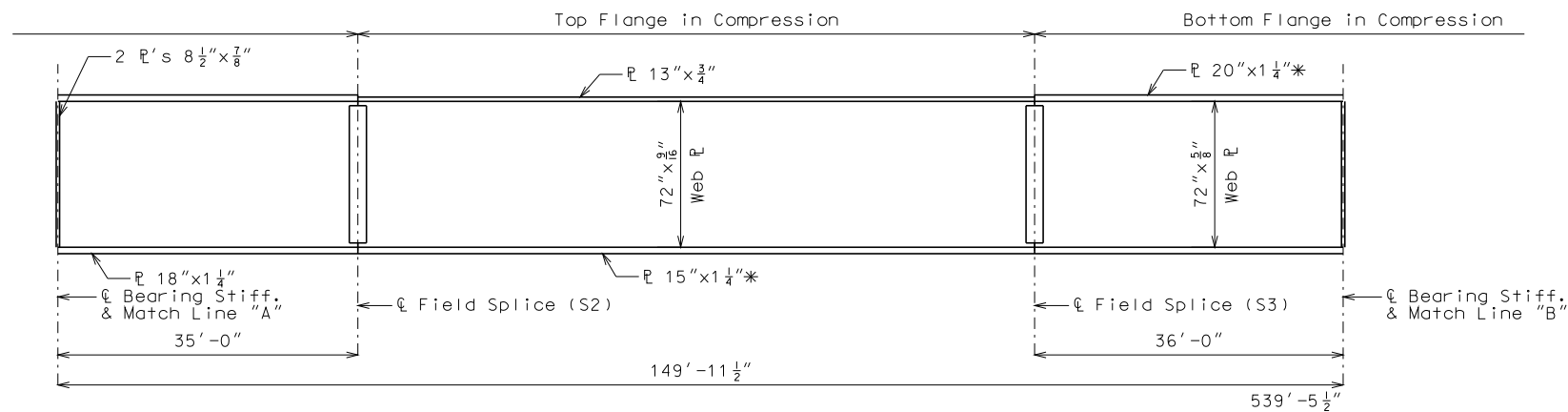


DETAIL "A"

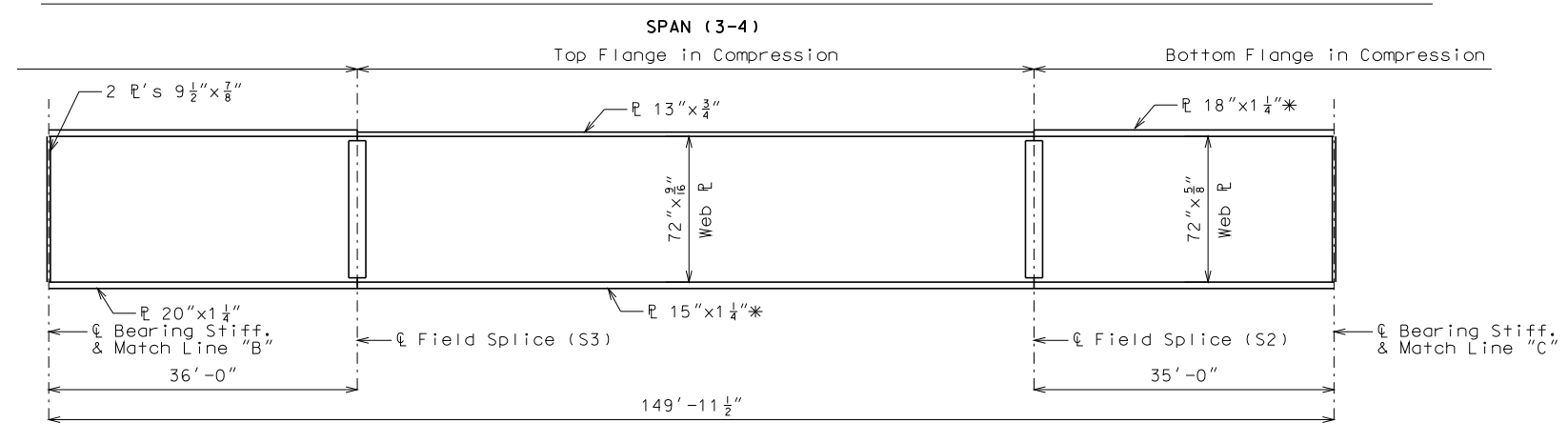
Notes:
 Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 21.
 * Indicates flange subject to notch toughness requirements.
 All web plates shall be subject to notch toughness requirements.
 Fabricated structural steel shall be ASTM A709 Grade 50W, except as noted.
 Longitudinal dimensions are horizontal from ℓ Brg. to ℓ Brg. See Part Longitudinal Sections on Sheet No. 20.
 For Plan of Structural Steel, see Sheets No. 17 & 18.
 For Details of Bolted Field Splices, see Sheet No. 23.
 For location of slab drain attachment holes, see slab drain details sheet.



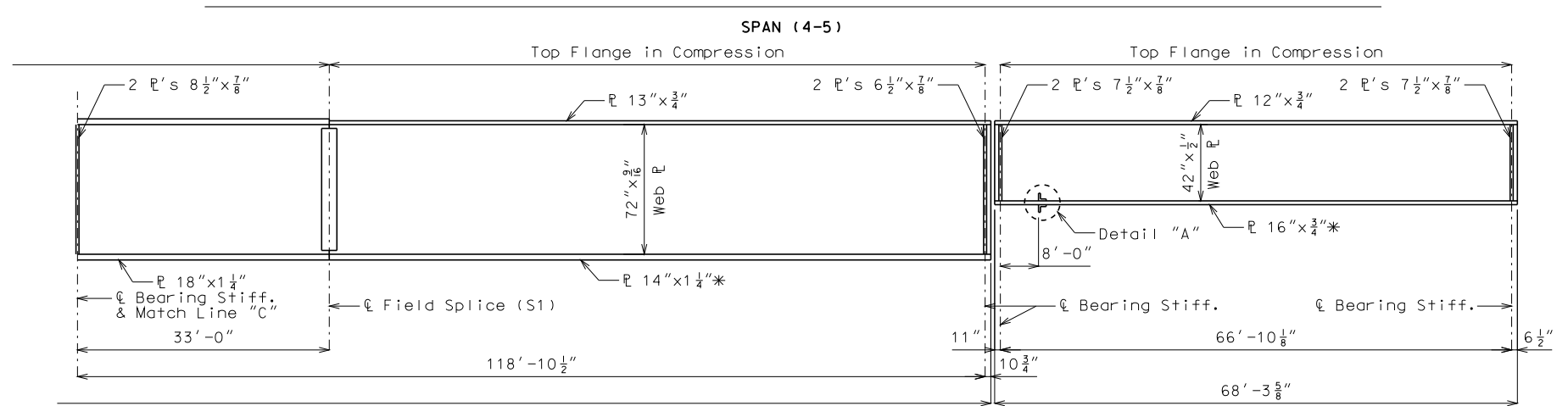
SPAN (1-2)



SPAN (2-3)



SPAN (3-4)



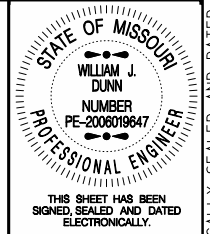
SPAN (4-5)



SPAN (5-6)

ELEVATION OF GIRDER

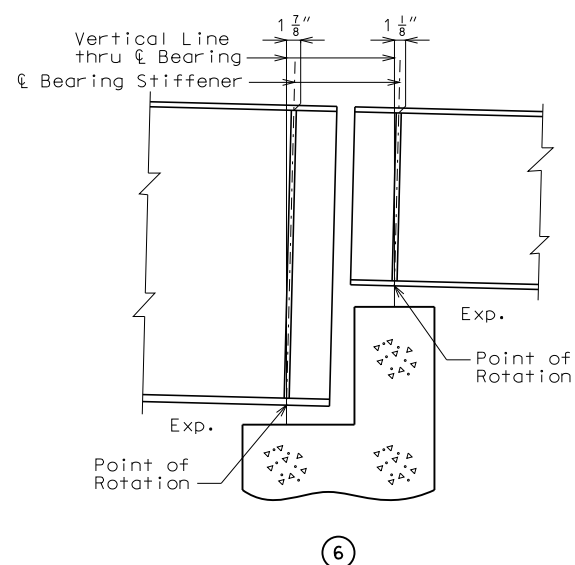
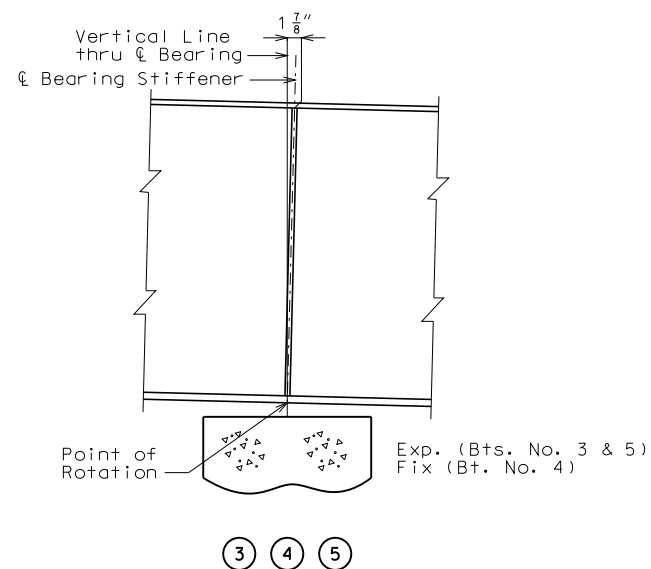
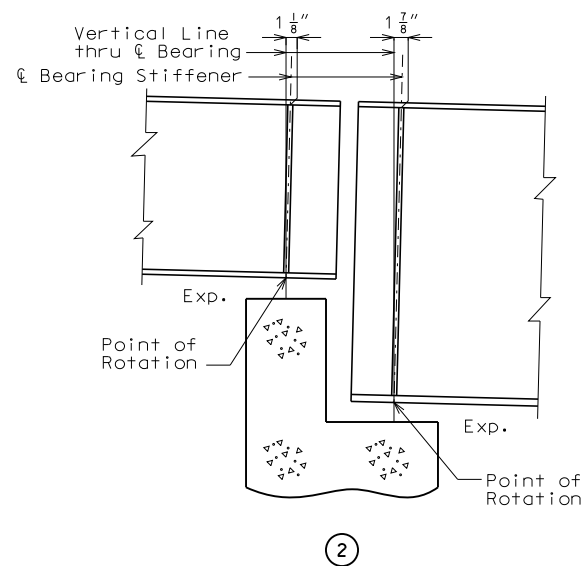
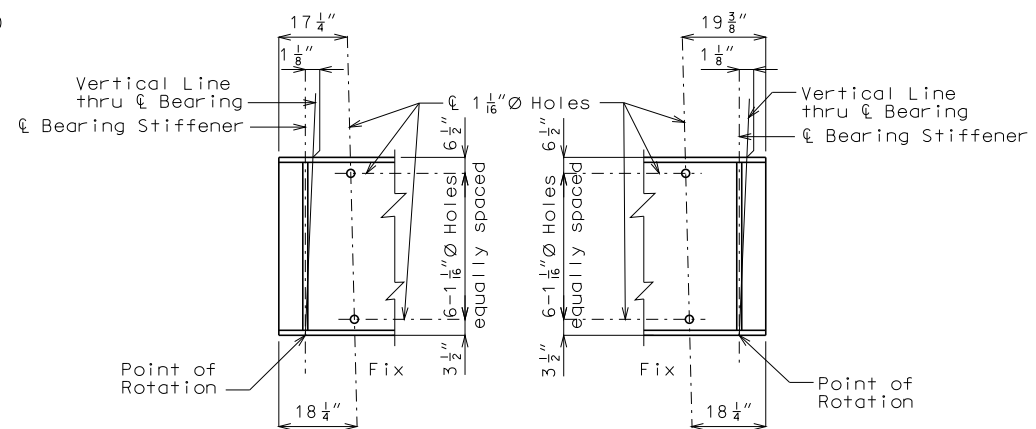
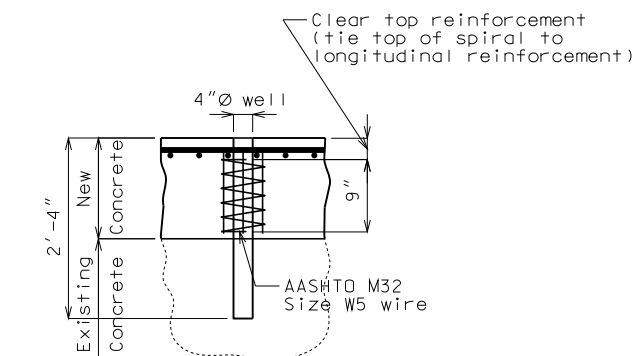
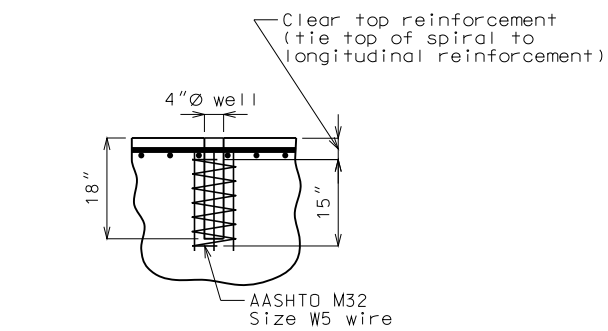
SPAN (6-7)



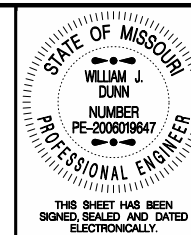
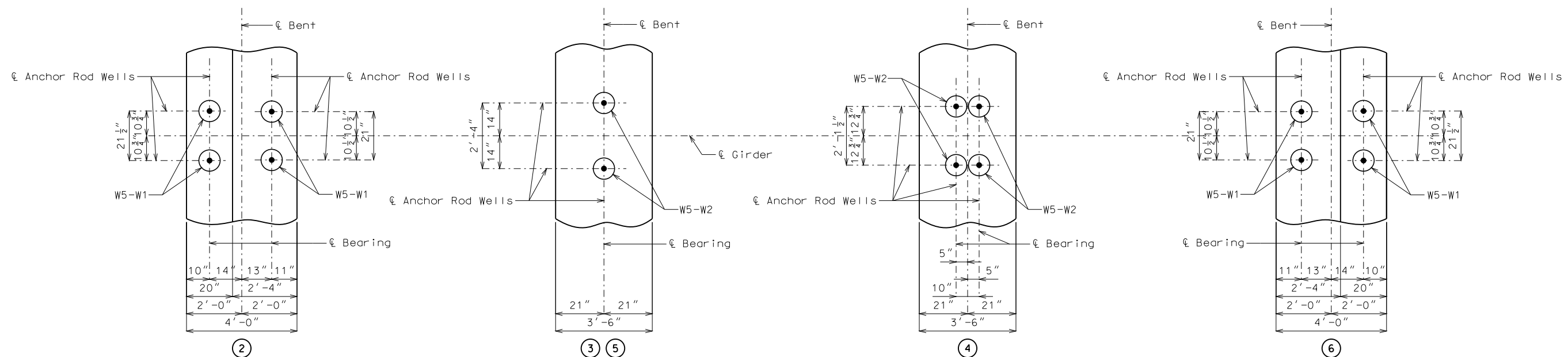
DATE PREPARED 2/25/2010	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 19
COUNTY LACLEDE	
JOB NO. J812167	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L06983	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	105 WEST CAPITAL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)
---	--



PART LONGITUDINAL SECTION



DATE PREPARED
2/24/2010

ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 20

COUNTY

LACLEDE

JOB NO.

J8I2167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

106983

[illegible]

**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

 **MoDOT**

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

[illegible]

	Span (1-2) $(56'-8\frac{3}{4}" \in \text{Brg.} - \in \text{Brg.})$				
	$\in \text{Brg.}$	.25	.50	.75	$\in \text{Brg.}$
Girder No. 1	903.53	903.22	902.89	902.51	902.11
Girder No. 2	903.72	903.42	903.09	902.71	902.30
Girder No. 3	903.72	903.42	903.09	902.71	902.30
Girder No. 4	903.53	903.22	902.89	902.51	902.11

Theoretical Bottom of Slab Elevations at CL of Girder (Prior to Forming for Slab) **											
	Span (2-3) (118'-10 $\frac{1}{2}$ " @ Brg. - @ Brg.)										
	@ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	@ Brg.
Girder No. 1	902.05	901.80	901.53	901.26	900.97	900.66	900.35	900.03	899.71	899.39	899.08
Girder No. 2	902.25	902.00	901.74	901.46	901.18	900.87	900.56	900.23	899.90	899.58	899.28
Girder No. 3	902.25	902.00	901.74	901.46	901.18	900.87	900.56	900.23	899.90	899.58	899.28
Girder No. 4	902.05	901.80	901.53	901.26	900.97	900.66	900.35	900.03	899.71	899.39	899.08
	Span (3-4) (149'-11 $\frac{1}{2}$ " @ Brg. - @ Brg.)										
	@ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	@ Brg.
Girder No. 1	899.08	898.72	898.37	898.03	897.68	897.31	896.93	896.53	896.12	895.72	895.33
Girder No. 2	899.28	898.92	898.57	898.24	897.89	897.52	897.14	896.74	896.32	895.92	895.53
Girder No. 3	899.28	898.92	898.57	898.24	897.89	897.52	897.14	896.74	896.32	895.92	895.53
Girder No. 4	899.08	898.72	898.37	898.03	897.68	897.31	896.93	896.53	896.12	895.72	895.33
	Span (4-5) (149'-11 $\frac{1}{2}$ " @ Brg. - @ Brg.)										
	@ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	@ Brg.
Girder No. 1	895.33	894.97	894.62	894.28	893.93	893.57	893.18	892.78	892.38	891.97	891.58
Girder No. 2	895.53	895.17	894.82	894.49	894.14	893.78	893.39	892.99	892.58	892.17	891.78
Girder No. 3	895.53	895.17	894.82	894.49	894.14	893.78	893.39	892.99	892.58	892.17	891.78
Girder No. 4	895.33	894.97	894.62	894.28	893.93	893.57	893.18	892.78	892.38	891.97	891.58
	Span (5-6) (118'-10 $\frac{1}{2}$ " @ Brg. - @ Brg.)										
	@ Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	@ Brg.
Girder No. 1	891.58	891.30	891.02	890.75	890.47	890.19	889.90	889.60	889.28	888.95	888.61
Girder No. 2	891.78	891.49	891.22	890.95	890.68	890.40	890.11	889.80	889.48	889.15	888.81
Girder No. 3	891.78	891.49	891.22	890.95	890.68	890.40	890.11	889.80	889.48	889.15	888.81
Girder No. 4	891.58	891.30	891.02	890.75	890.47	890.19	889.90	889.60	889.28	888.95	888.61

	Span (6-7) (66'-10 $\frac{1}{2}$ " @ Brg. - @ Brg.)				
	@ Brg.	.25	.50	.75	@ Brg.
Girder No. 1	888.56	888.22	887.83	887.38	886.89
Girder No. 2	888.75	888.42	888.05	887.59	887.08
Girder No. 3	888.75	888.42	888.05	887.59	887.08
Girder No. 4	888.56	888.22	887.83	887.38	886.89

Theoretical Bottom of Slab
Elevation at ℓ of Girder
(Prior to Forming for Slab)

Deflections due to
weight of slab
and barrier curb

Finished bottom of
slab elevations

ℓ Bearing

Finish each side of joint with 1/4" radius edging tool

1"

3/4"

1/4"

1/4"

3/4"

2 3/4"

2 1/4"

Key to extend full width of slab

Const. Joint

Diagram illustrating the layout of a continuous girder with seven spans and six piers. The spans are numbered 1 to 7 from right to left. The piers are numbered 1 to 5 from right to left. The diagram shows the layout of the girder, including the spans, piers, and the location of the steel extrusions. The spans are labeled SPAN (2-3), SPAN (3-4), SPAN (4-5), and SPAN (5-6). The piers are labeled PIER (1-2), PIER (2-3), PIER (3-4), PIER (4-5), and PIER (5-6). The diagram also shows the location of the steel extrusions, which are located on the exposed face of the steel extrusion. The diagram includes dimensions for the spans and piers, and labels for the various components.

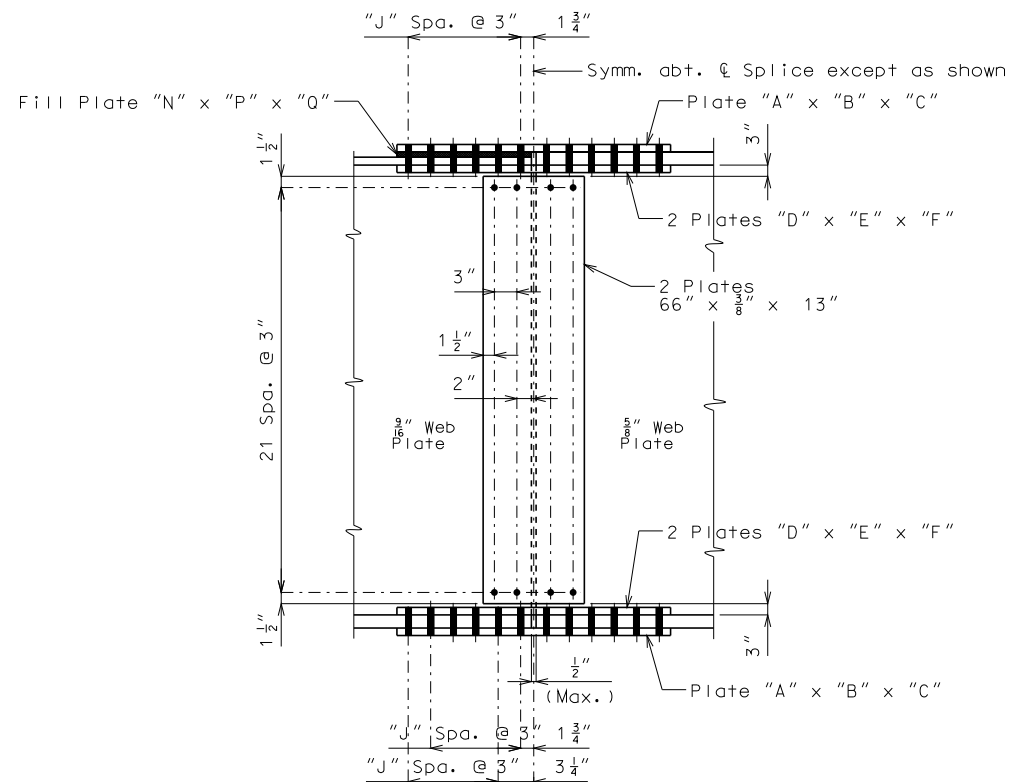
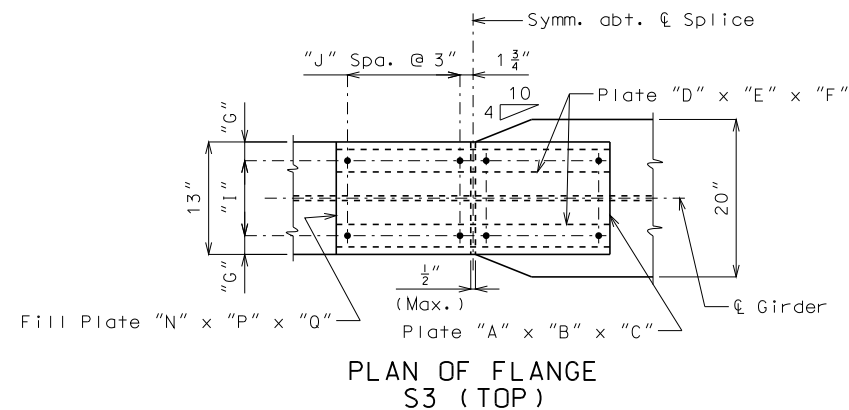
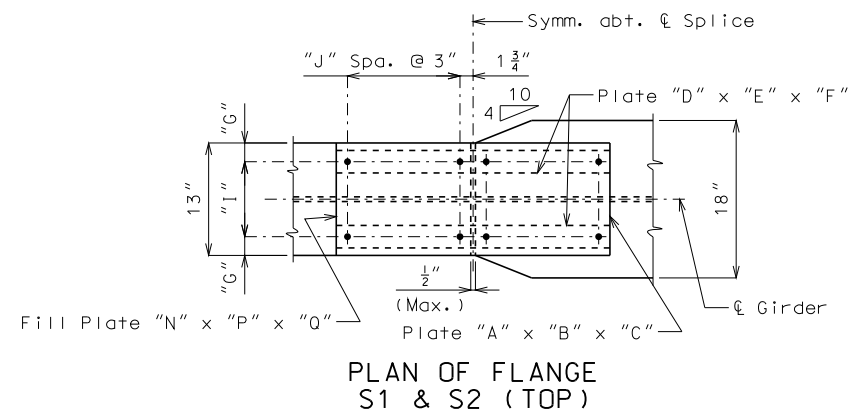
	Sequence of Pours							Min. rate of pour cu. yds./hr.	
	Direction							With retarder	No retarder
Basic sequence	1	2	3	4	5	6	7	25	25
	Either direction								
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.									
Alternate pours "A"	1	7 + 2		6 + 3		5 + 4		43	72
	End to 7	1 to 6		2 to 5		3 to end			
Alternate pours "B"	1 + 7 + 2		6 + 3			5 + 4		43	72
	End to 6		2 to 5			3 to end			
Alternate pours "C"	1 + 7 + 2			6 + 3 + 5 + 4				43	72
	End to 6			2 to end					
Alternate pours "D"	1 + 7 + 2 + 6 + 3 + 5 + 4							43	72
	End to end								

The contractor shall pour upgrade and satisfactorily finish the roadway slab for Spans (1-2) & (6-7) at a rate of not less than 25 cubic yards per hour.

Sheet No. 22 of 35

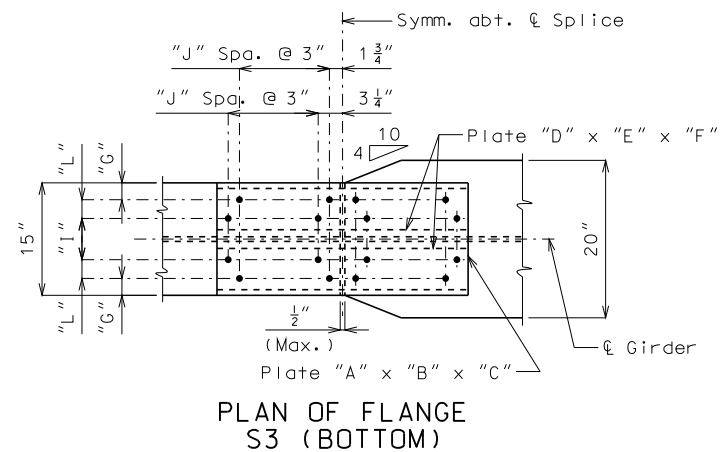
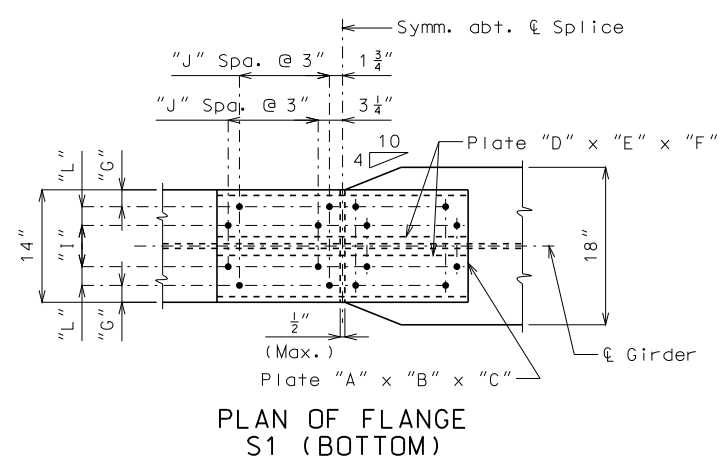
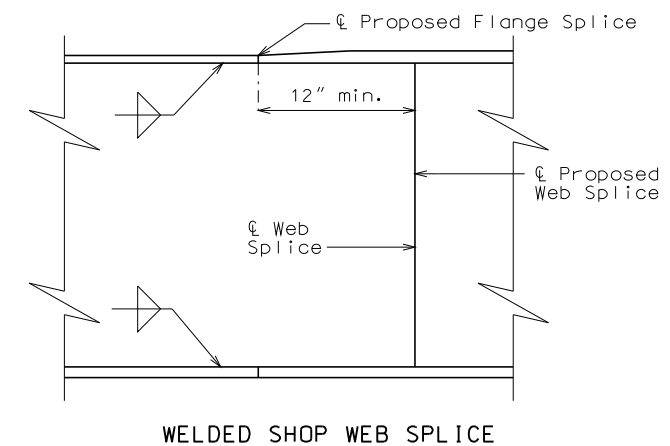
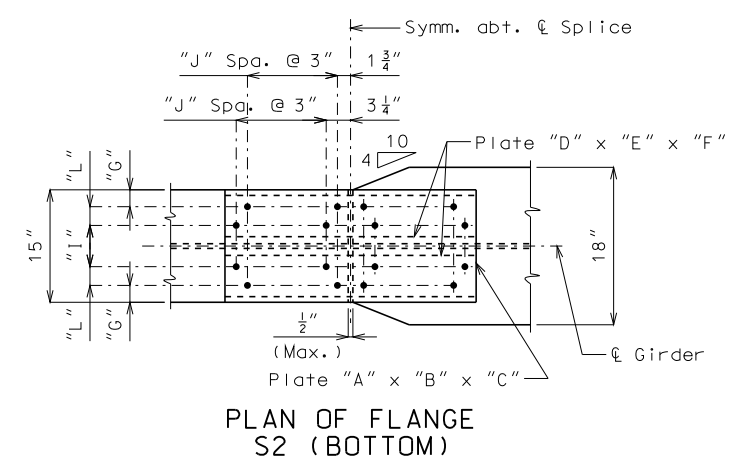


IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

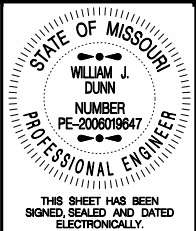
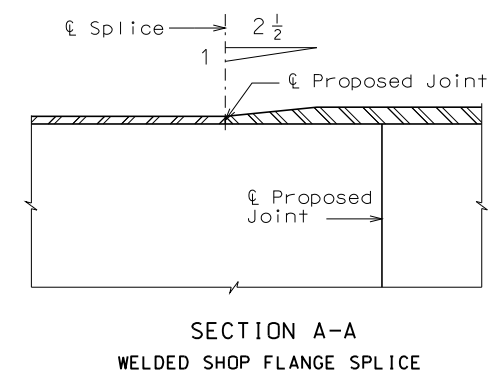
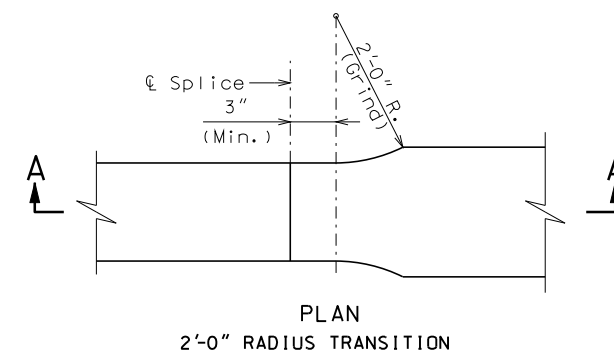


Note:
Use 7/8"Ø high strength bolts with 15/16"Ø holes.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

[illegible]

Note:
Welded shop web and flange splices may be permitted when detailed on the shop drawings and approved by the engineer. No additional payment will be made for optional welded shop web and flange splices.



DATE PREPARED
2/24/2010

ROUTE	STATE
I - 44	MO

DISTRICT BR	SHEET NO. 23
----------------	-----------------

COUNTY
LACLEDE

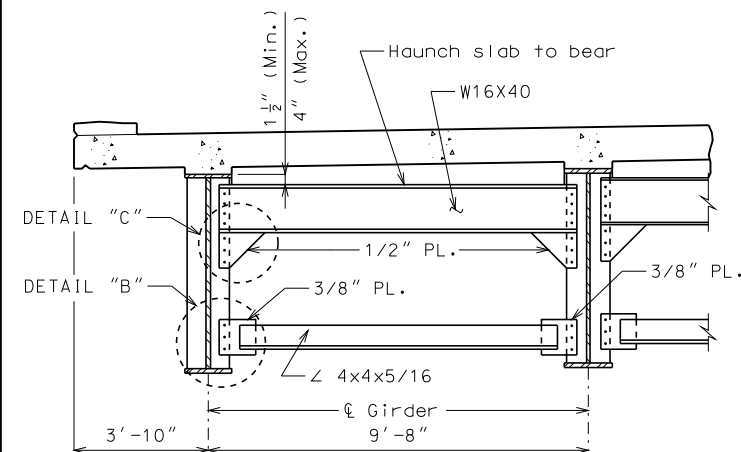
JOB NO.
J812167

CONTRACT ID.

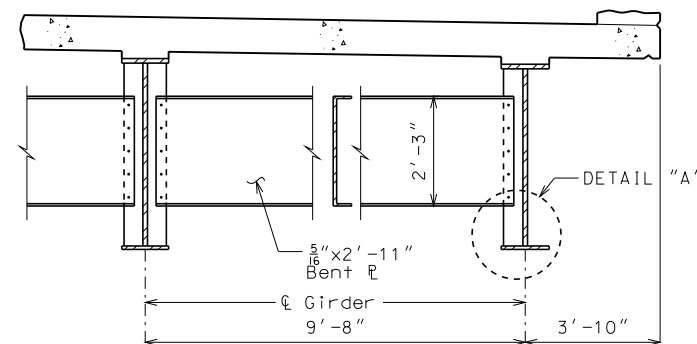
PROJECT NO.

BRIDGE NO.
L06983[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

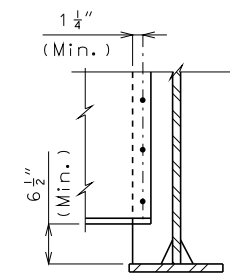
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



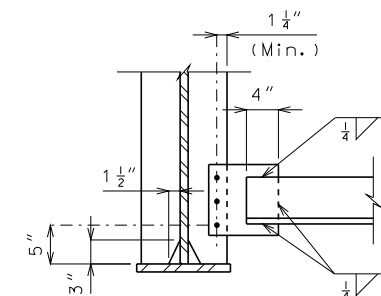
TYPICAL PART SECTION SHOWING
END DIAPHRAGMS



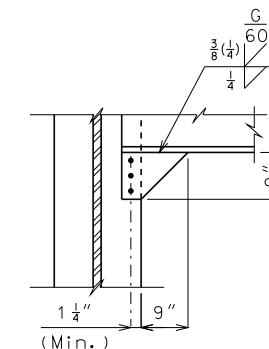
TYPICAL PART SECTION SHOWING
INTERMEDIATE DIAPHRAGMS



DETAIL "A"



DETAIL "B"

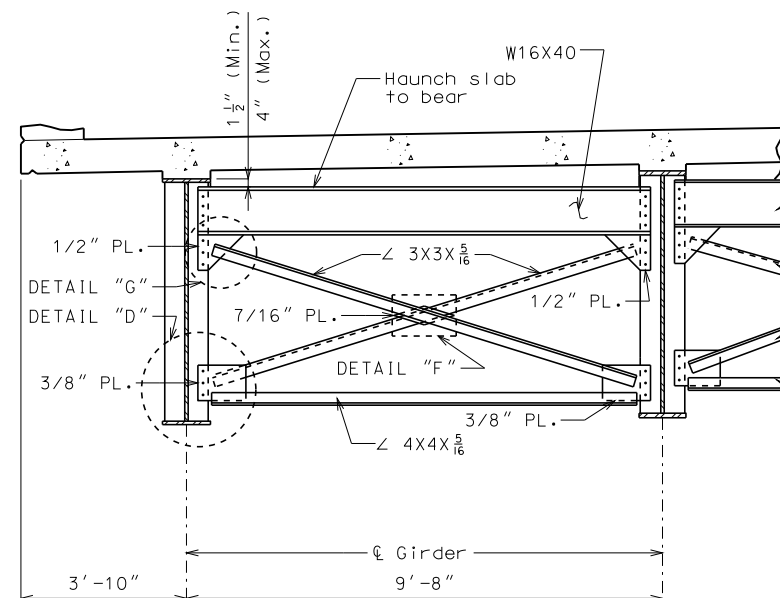


DETAIL "C"

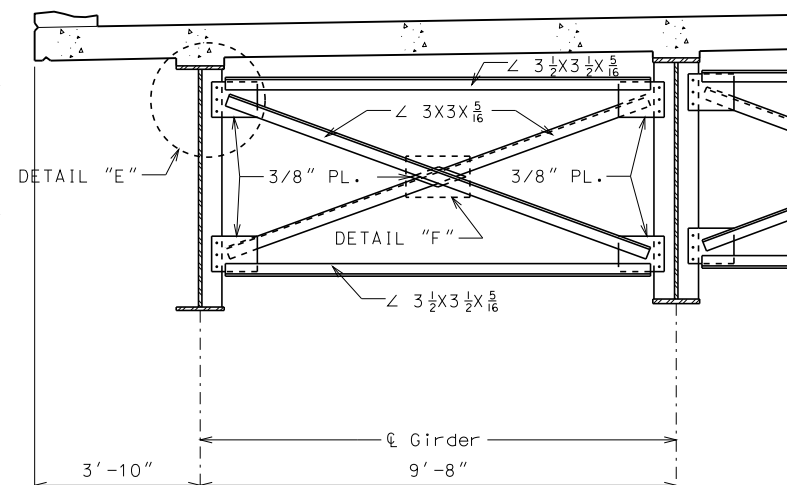
DETAILS OF END DIAPHRAGMS AND INTERMEDIATE DIAPHRAGMS FOR SPANS (1-2) & (6-7)

Note:
Fabricated structural steel shall be ASTM A709 Grade 50W, except
as noted.

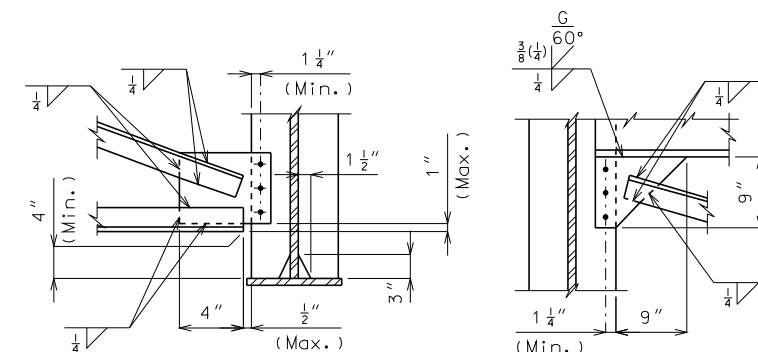
At the contractor's option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used. Holes in the girder diaphragm connection plate or transverse web stiffener shall be standard size.



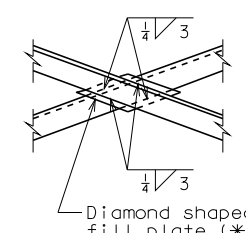
TYPICAL PART SECTION SHOWING
END DIAPHRAGMS



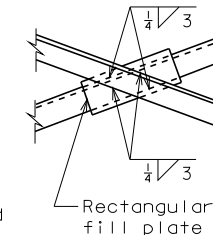
TYPICAL PART SECTION SHOWING
CROSS FRAMES AND
INTERMEDIATE DIAPHRAGMS



DETAIL "D"
(DETAIL "E" similar)



DETAIL "F"



OPTIONAL
DETAIL "F"

(*) At the contractor's option, rectangular fill plates may be used in lieu of diamond fill plates as shown in Optional Detail "F".

DETAILS OF END DIAPHRAGMS, INTERMEDIATE DIAPHRAGMS AND CROSS FRAMES FOR SPANS (2-3), (3-4), (4-5) & (5-6)

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE	STATE
I-44	MO

DISTRICT	SHEET NO.
BR	24

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

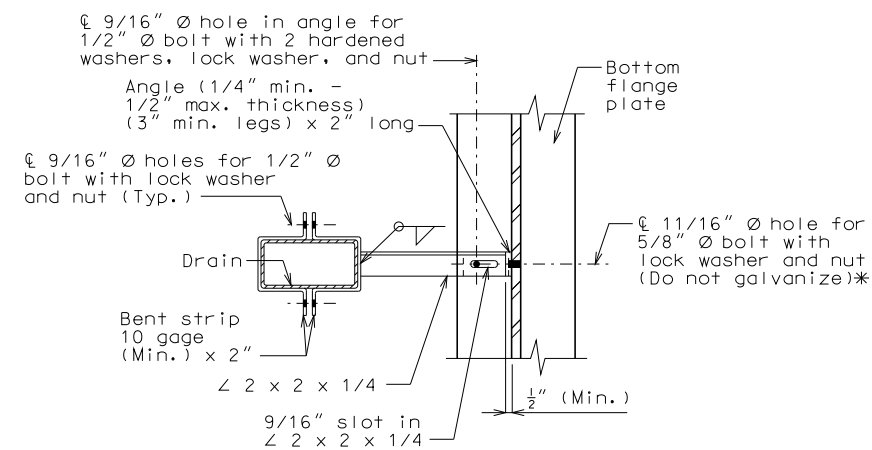
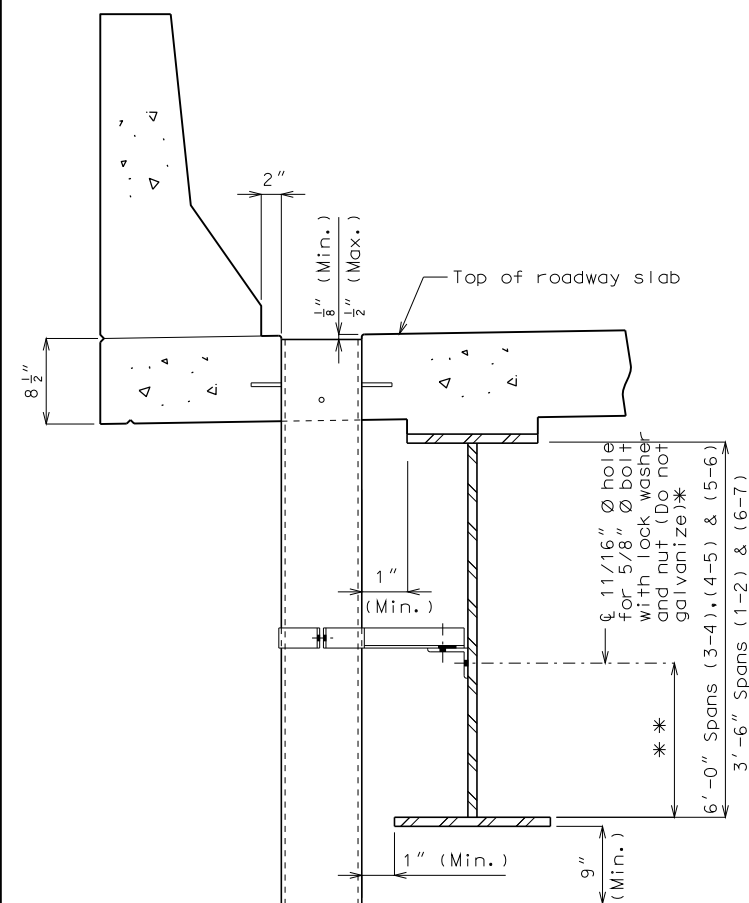
Table 1

PROJECT NO.

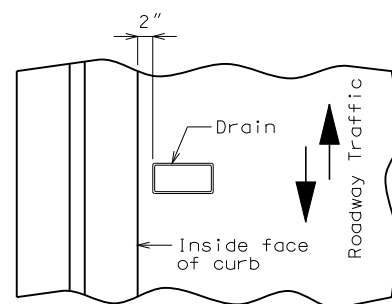
[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

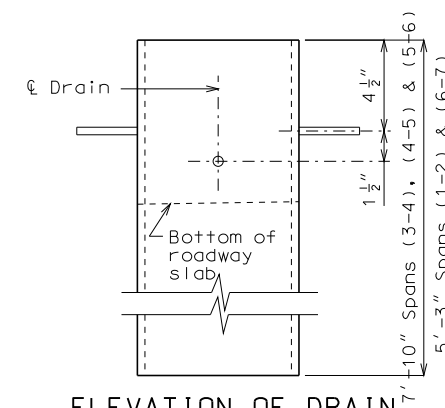
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



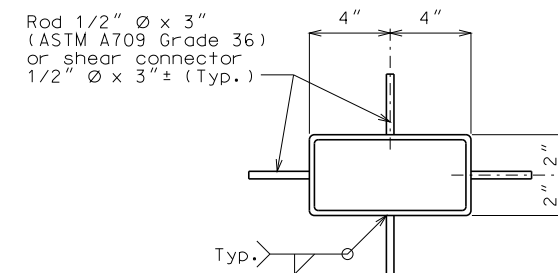
PART SECTION SHOWING
BRACKET ASSEMBLY



PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF DRAIN

Notes:

Slab drains may be fabricated of either 1/4" welded sheets of ASTM A709 Grade 36 steel or from 1/4" structural steel tubing ASTM A500 or A501.

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

Outside dimensions of drains are 8" x 4".

Locate drains in slab by dimensions shown in Part Section Near Drain.

Shift reinforcing steel in field where necessary to clear drains.

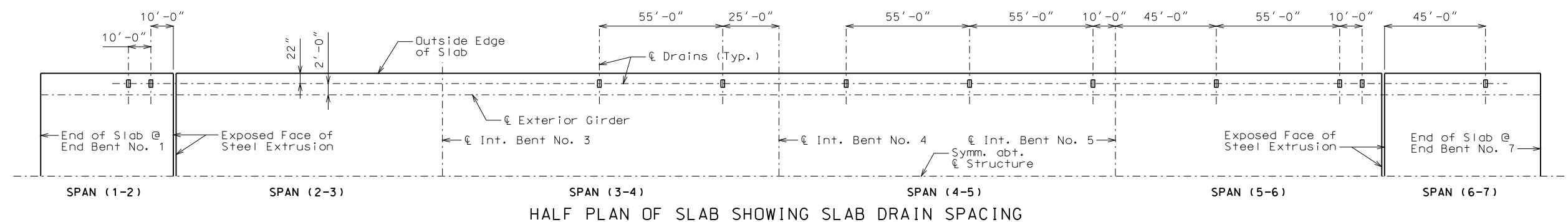
The drains and bracket assembly shall be galvanized in accordance with ASTM A123.

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

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

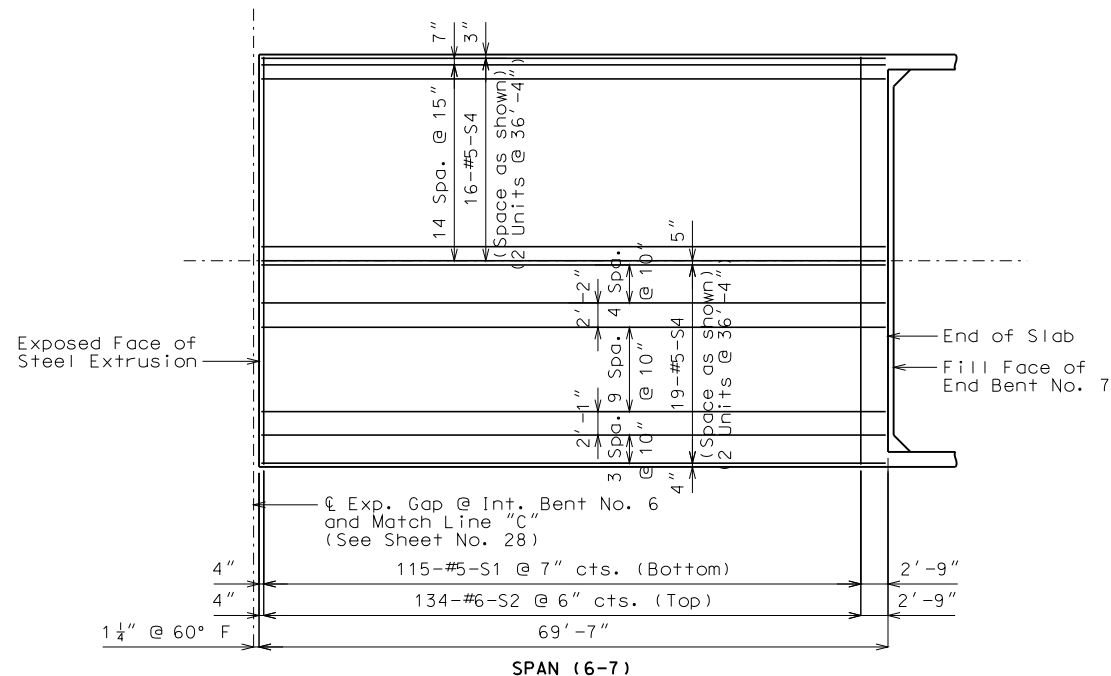
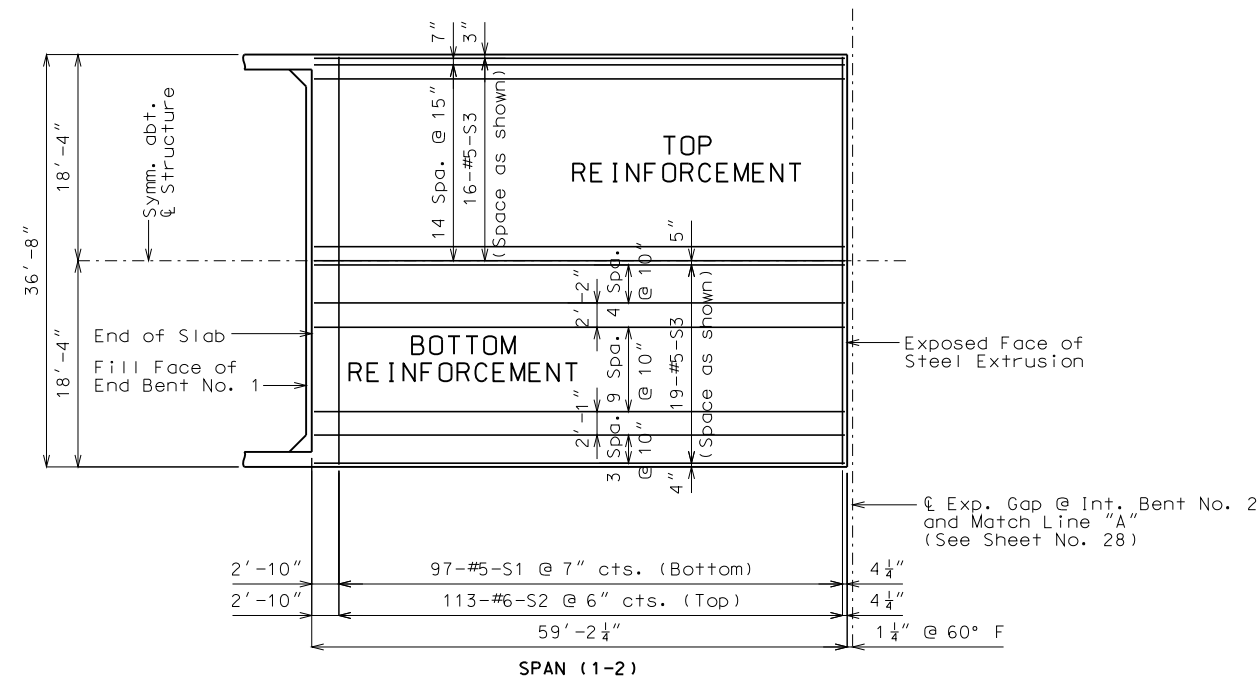
The bolt hole for the bracket assembly attachment shall be located on the plate girder shop drawings.

* See Sec 1080.4



Note: Longitudinal dimensions are horizontal.

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



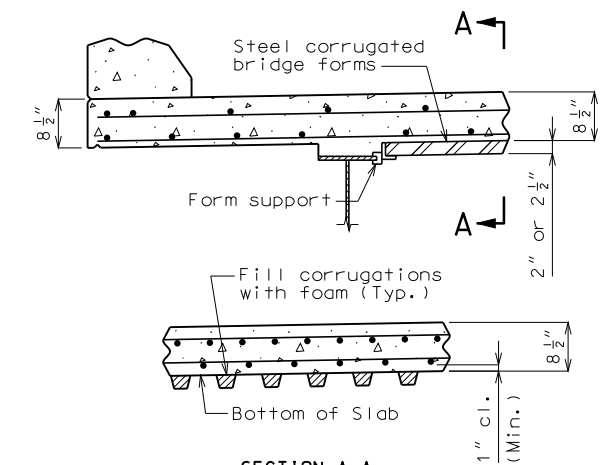
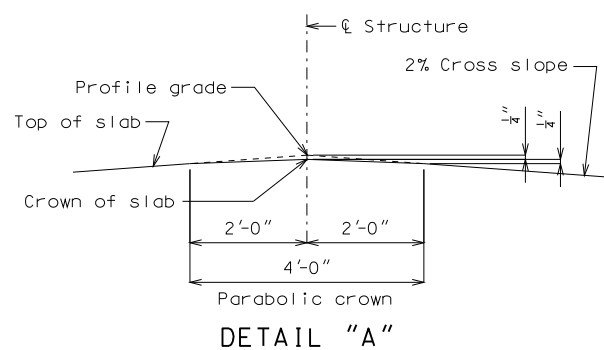
PART PLAN OF SLAB SHOWING REINFORCEMENT

Note:
Longitudinal dimensions are horizontal.

For details and reinforcement of safety barrier curb not shown, see Sheets No. 29, 30 & 32.

For Theoretical Bottom of Slab Elevations and Slab Pouring Sequence, see Sheet No. 22.

For Dead Load Deflection Diagram, Camber Diagram and Theoretical Slab Haunch, see Sheet No. 21.



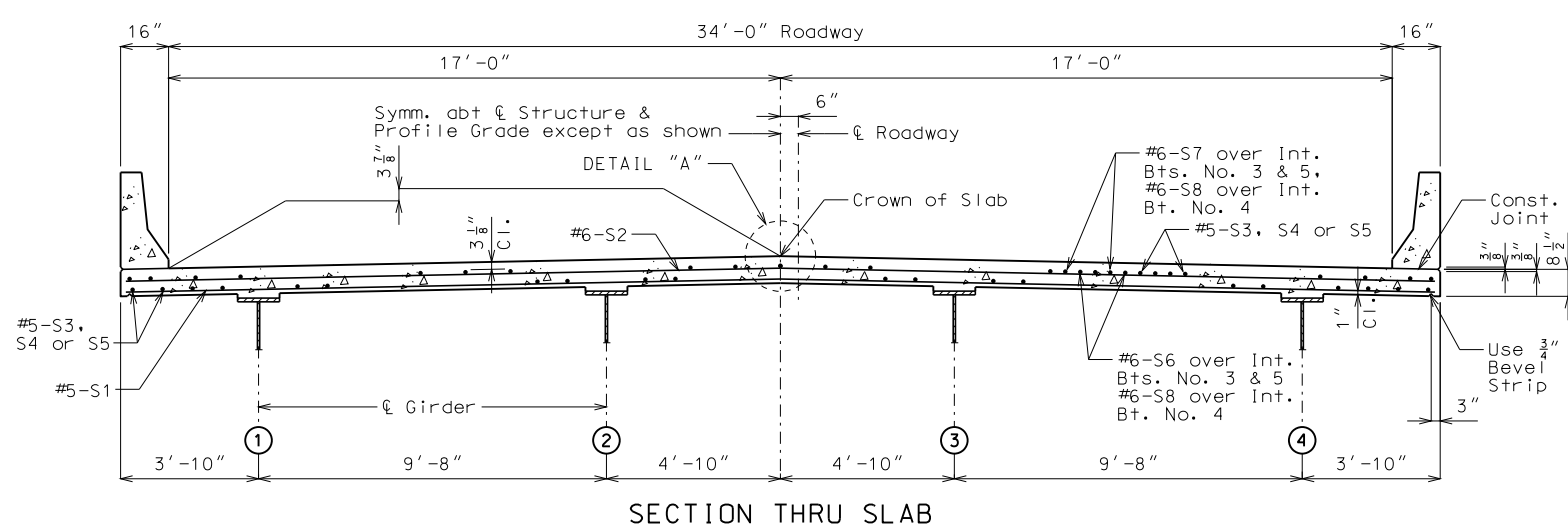
OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Permanent steel bridge deck forms, supports, closure elements and accessories shall be in accordance with grade requirement and coating designation G165 or ASTM A653. Complete shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.



SECTION THRU SLAB

Detailed Dec. 2009
Checked Jan. 2010

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

Sheet No. 27 of 35

STATE OF MISSOURI
WILLIAM J. DUNN
NUMBER PE-2008019847
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

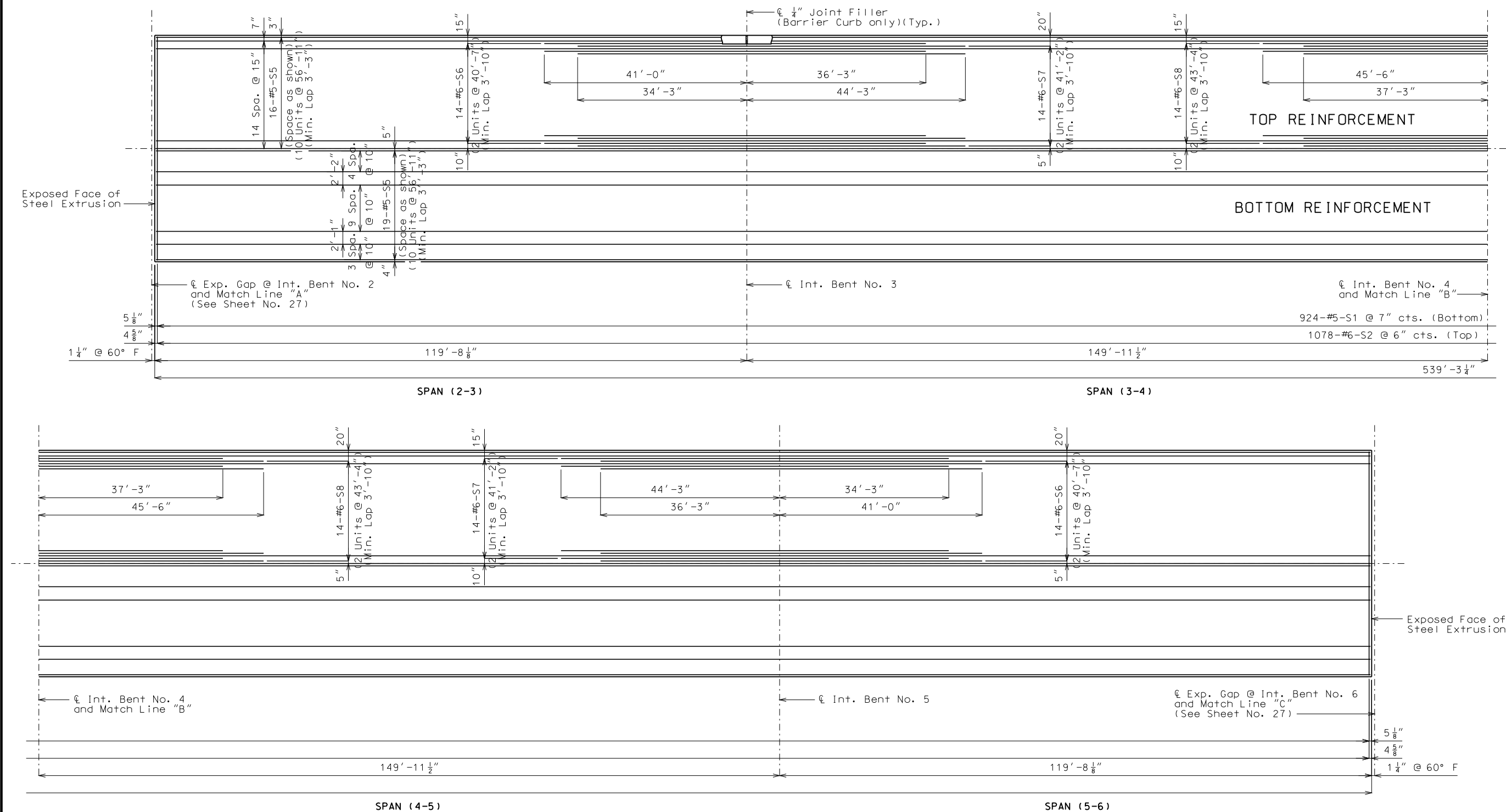
DATE PREPARED 2/24/2010	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 27
COUNTY LACLEDE	
JOB NO. J812167	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L06983	

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 PLAN OF SLAB SHOWING REINFORCEMENT

Note:
Longitudinal dimensions are horizontal.

For details and reinforcement of safety barrier curb not shown,
see Sheets No. 29, 30 & 32.

For Theoretical Bottom of Slab Elevations and Slab Pouring
Sequence, see Sheet No. 22.

For Dead Load Deflection Diagram, Camber Diagram and
Theoretical Slab Haunch, see Sheet No. 21.

Detailed Dec. 2009
Checked Jan. 2010

STATE OF MISSOURI
WILLIAM J. DUNN
NUMBER
PE-2008019847
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
28

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

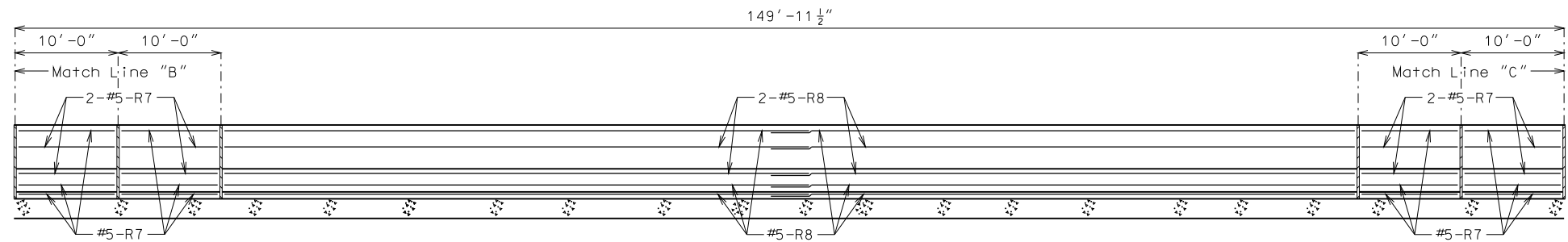
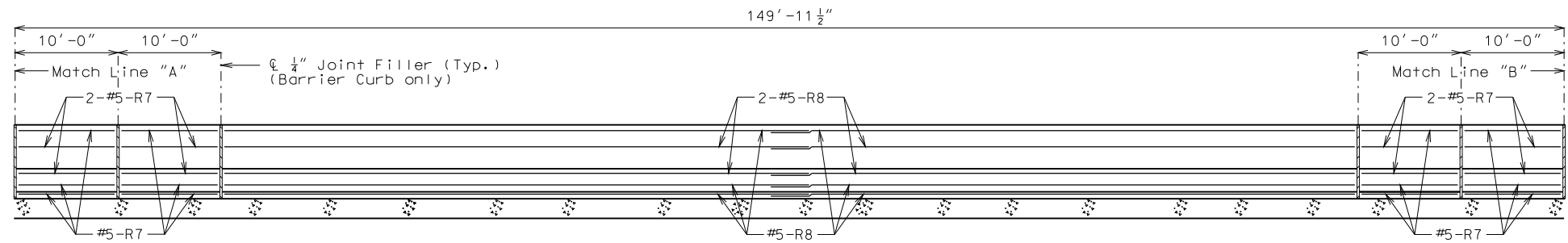
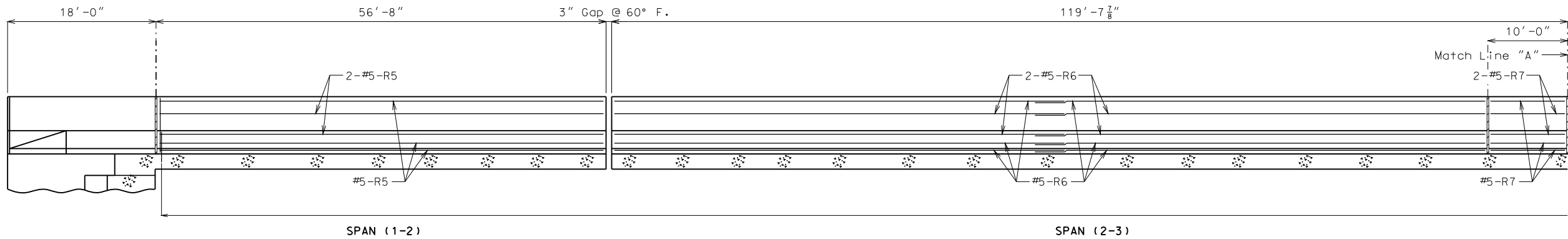
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

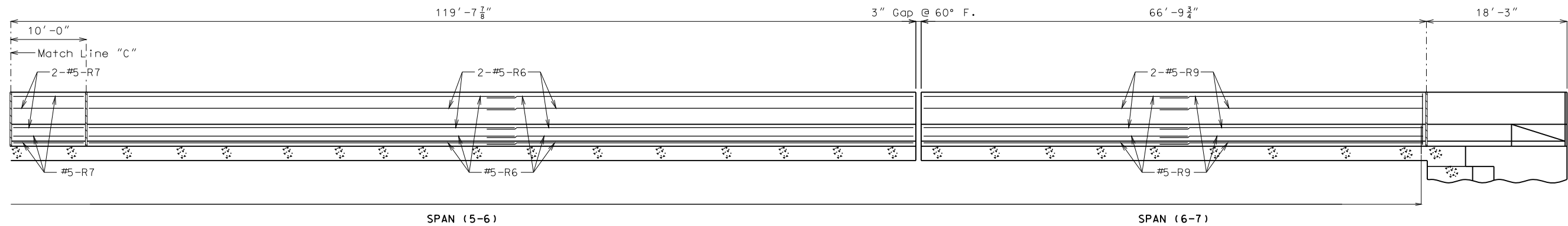
MoDOT

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.



680-#5-R1, R3 & R4 (Spaced as shown in Part Section Near Left Barrier Curb)

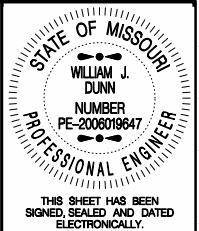


SECTION NEAR LEFT SAFETY BARRIER CURB

Note:
Longitudinal dimensions are horizontal.

For Part Section Near Left Barrier Curb and Details of
Movement Gauge, see Sheet No. 30.

Right Safety Barrier Curb similar.



DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
29

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

MoDOT

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

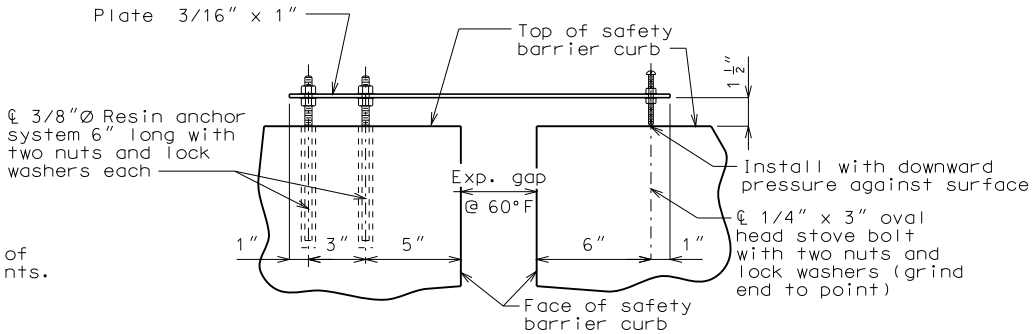
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Notes:

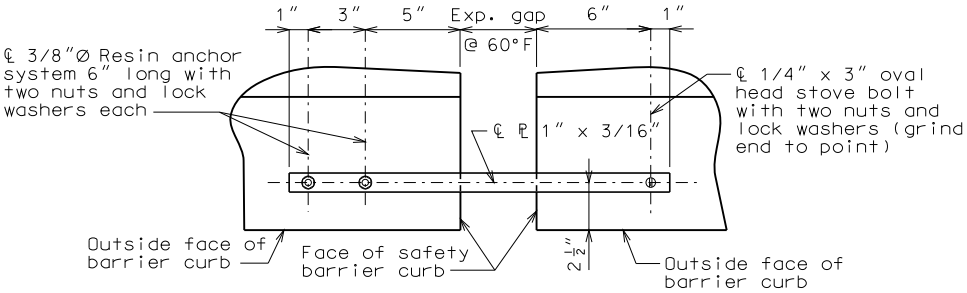
A movement gauge shall be provided on one side of bridge at all safety barrier curb expansion joints.

All steel shall be galvanized.

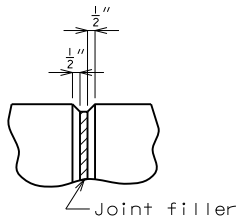
Cost of movement gauge, complete-in-place, will be considered completely covered by the contract unit price for Safety Barrier Curb.



PART ELEVATION OF BARRIER CURB
SHOWING MOVEMENT GAUGE



PART PLAN OF BARRIER CURB
SHOWING MOVEMENT GAUGE



FILLED JOINT
DETAIL

Notes:

Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

All exposed edges of safety barrier curb shall have either a 1/2 inch radius or a 3/8 inch bevel, unless otherwise noted.

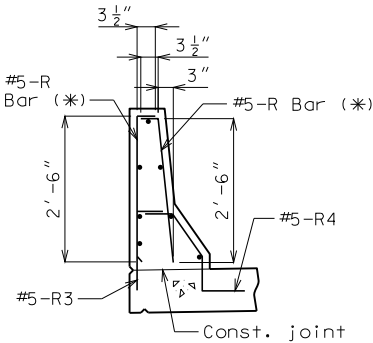
Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

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

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

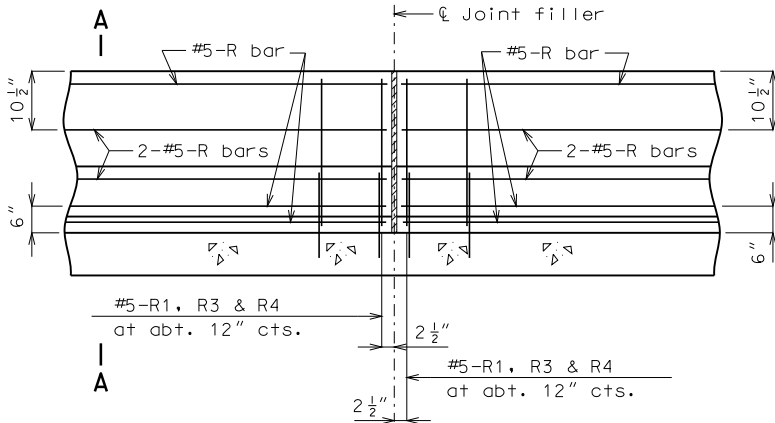
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb". Delineators shall have retroreflective sheeting on both sides.

The curb shall be cured by application of Type 1-D Liquid Membrane-Forming Curing Compound in accordance with Sec 1055 and sealed in accordance with Sec 703. The contractor shall remove all curing compound in accordance with the manufacturer's recommendations before the concrete sealer is applied.

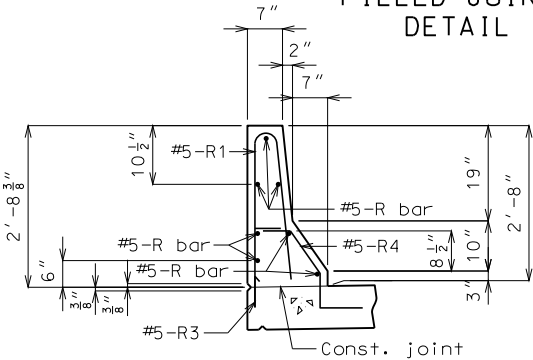


R-BAR PERMISSIBLE ALTERNATE SHAPE

(*) 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.)



PART SECTION NEAR LEFT SAFETY BARRIER CURB
(CAST-IN-PLACE CONVENTIONAL FORMING OPTION)



PART SECTION A-A

Notes:

Use a minimum lap of 2'-11 inch for #5 horizontal safety barrier curb bars.

The cross-sectional area above the slab = 2.28 sq. ft.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
30

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

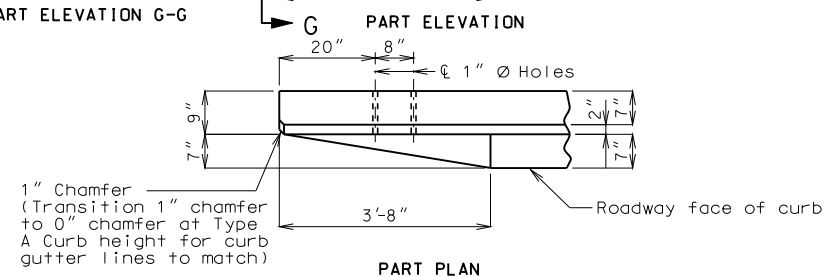
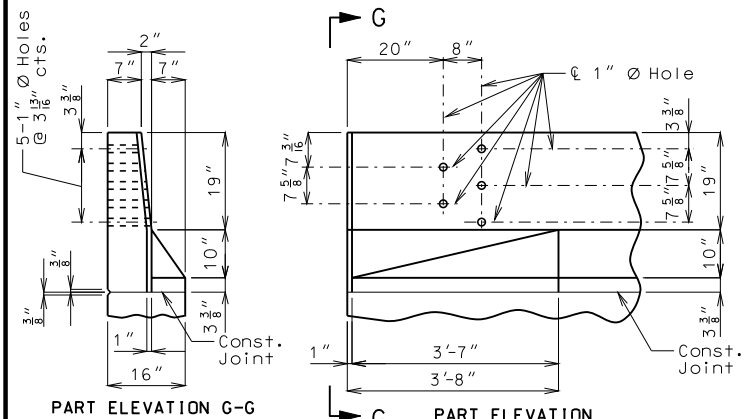
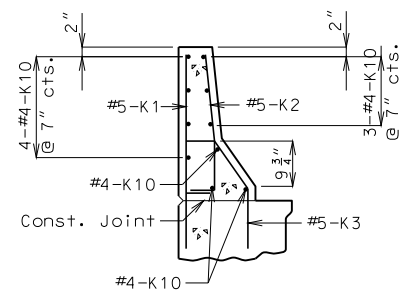
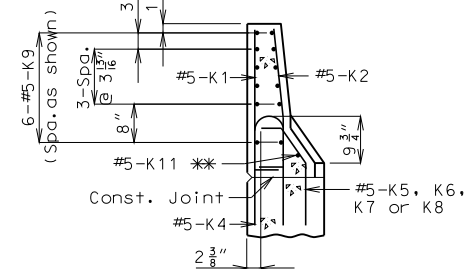
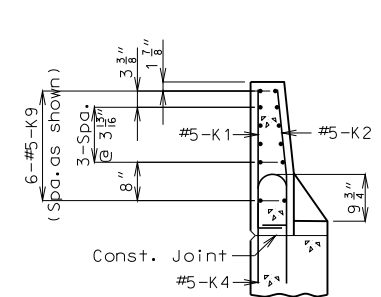
DESCRIPTION

DATE

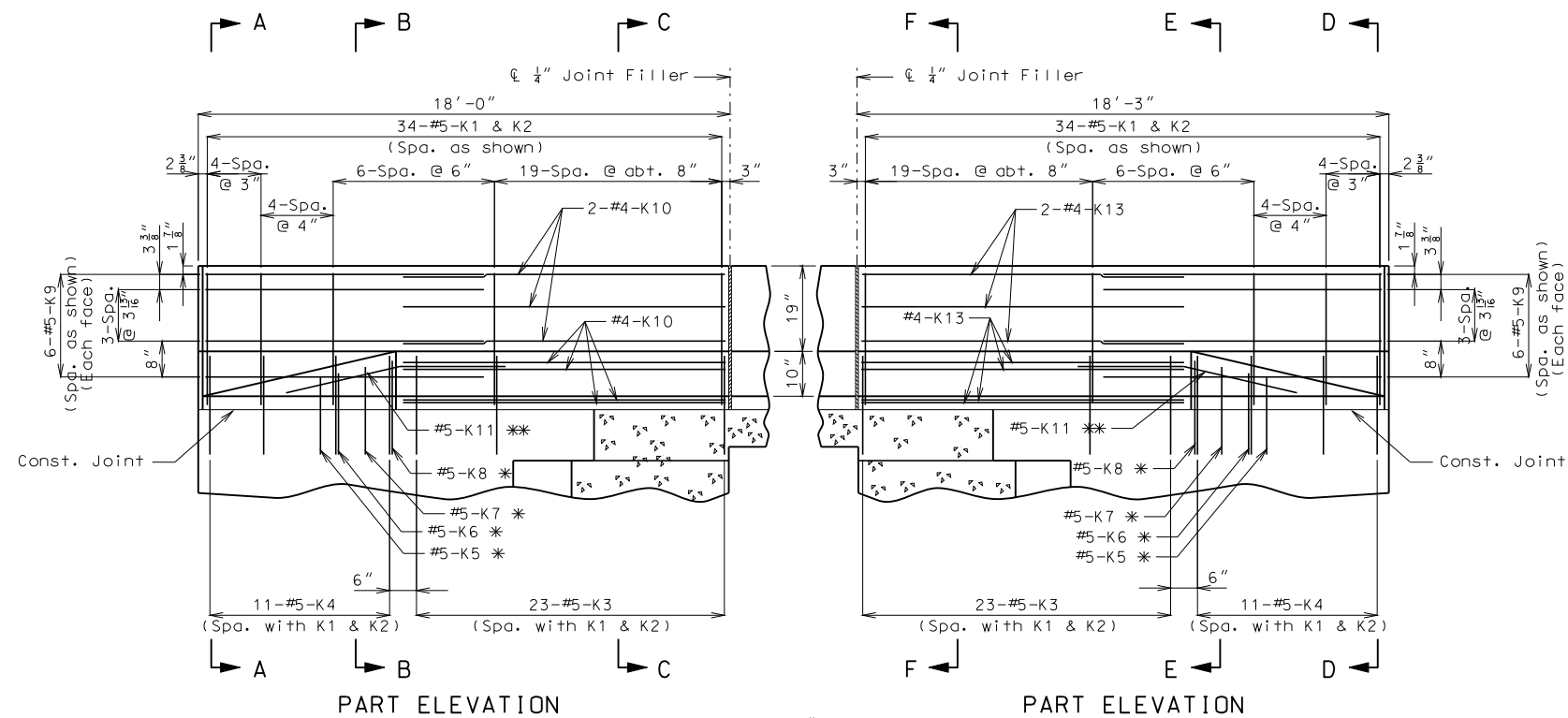
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITAL
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.

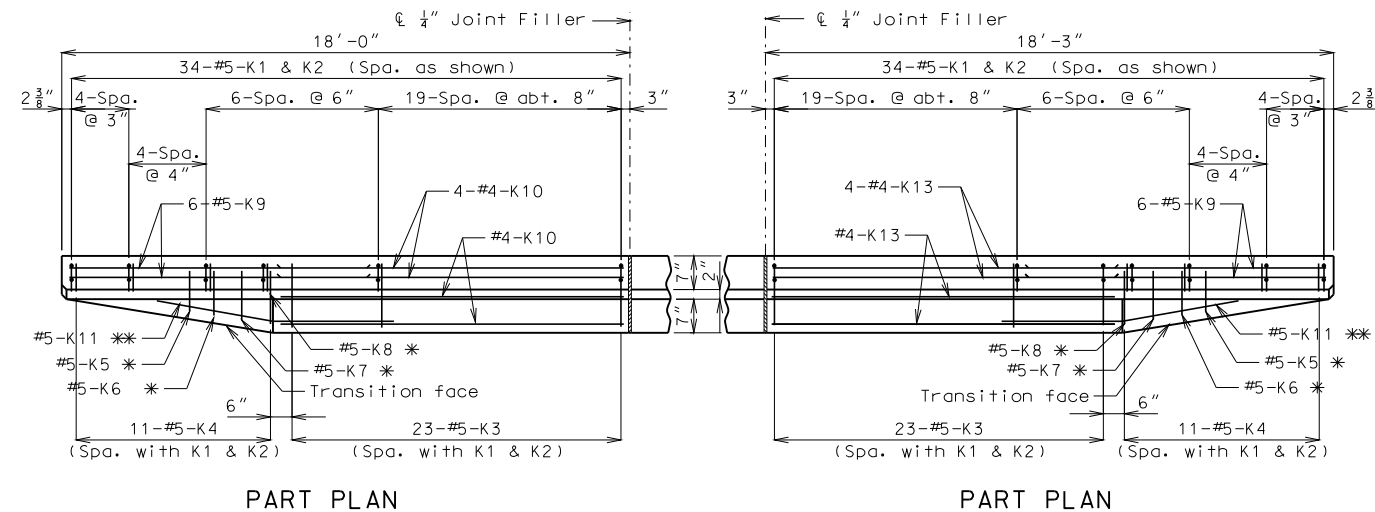


DETAILS OF GUARD RAIL ATTACHMENT

Detailed Dec. 2009
Checked Jan. 2010

* Spaced with #5-K4 bars.

** Fit bar to follow transition face of curb.



NOTES: Use a minimum lap of 2'-0" between K9 and K10 or K13 bars.

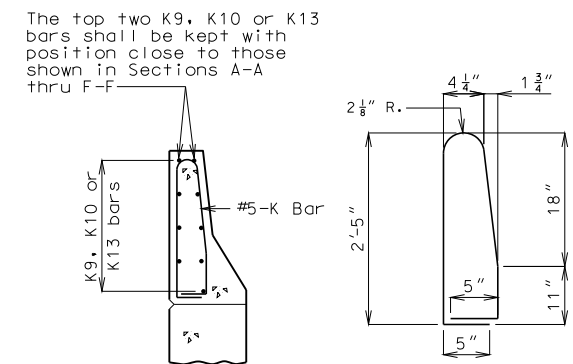
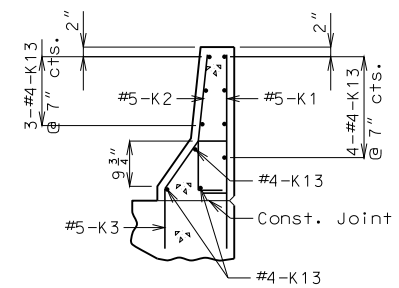
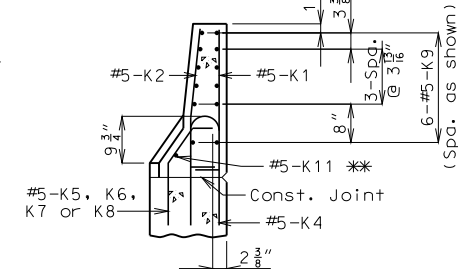
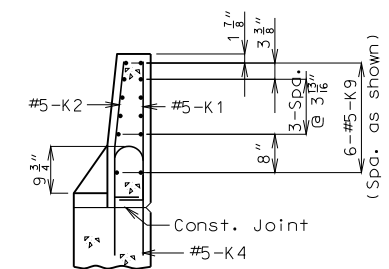
Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb". Delineators shall have retroreflective sheeting on both sides.

DETAILS OF SAFETY BARRIER CURB AT END BENTS

(Left barrier curb shown; right barrier curb similar)

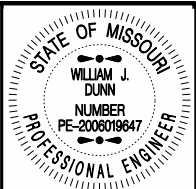
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 31 of 35



(K3 or K4 thru K8 bars not shown for clarity)

(***) The K1 and K2 bar combination may be furnished as one bar as shown, at the contractor's option.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE I -44	STATE MO
----------------	-------------

DISTRICT BR	SHEET NO. 31
COUNTY	

COUNTY	
LACLEDE	
JOB NO.	

J8I2167
CONTRACT ID.

PROJECT NO.

BRIDGE NO.	106087
------------	--------

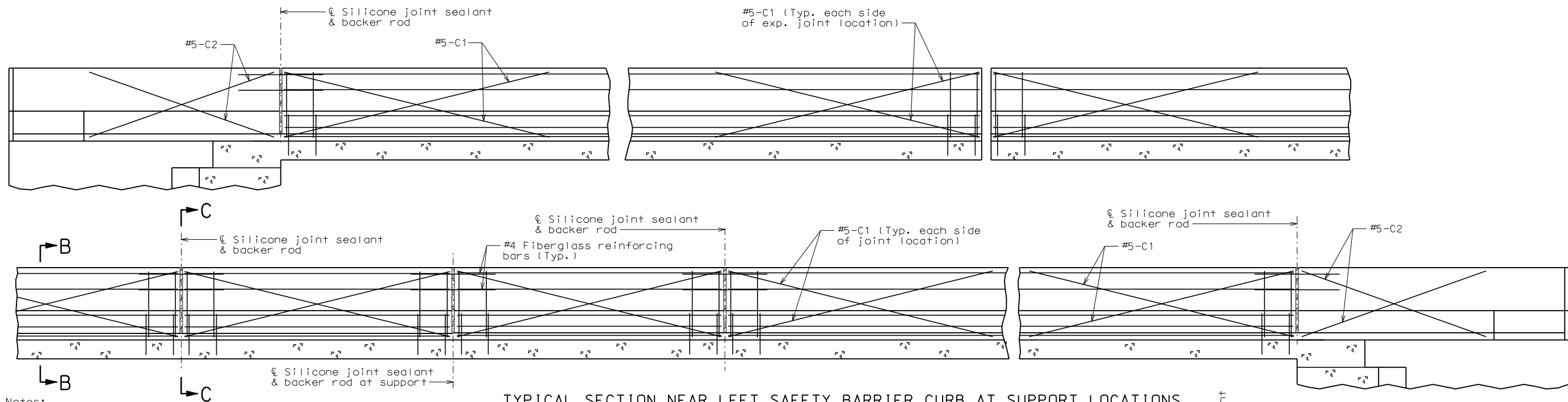
L06985						

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

--



Notes:

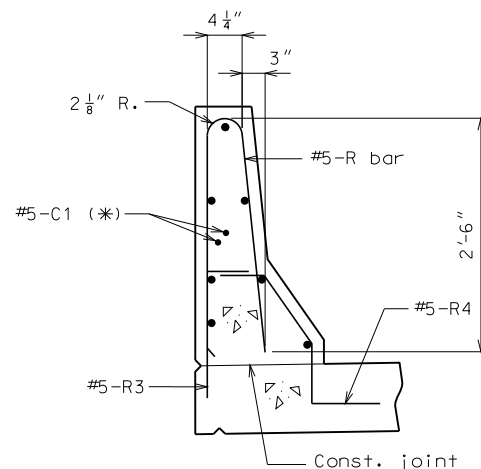
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

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

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

The curb shall be cured by application of Type 1-D Liquid Membrane-Forming Curing Compound in accordance with Sec 1055 and sealed in accordance with Sec 703. The contractor shall remove all curing compound in accordance with the manufacturer's recommendations before the concrete sealer is applied.



Notes: PART SECTION B-B
(*) Each side of joint location.

TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS
(OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

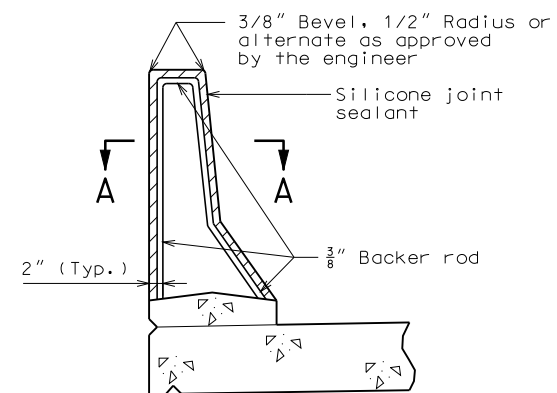
Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

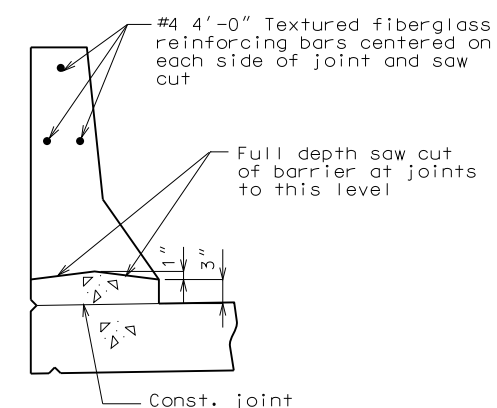
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb". Delineators shall have retroreflective sheeting on both sides.



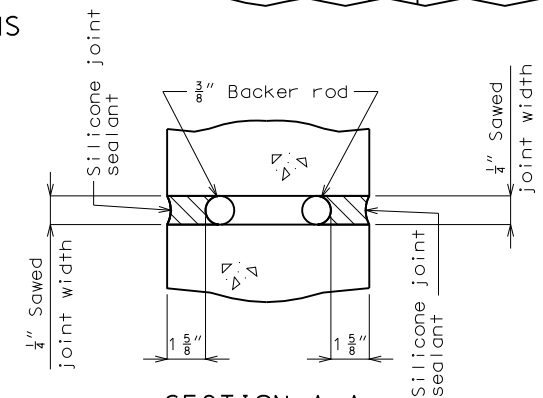
SECTION THRU JOINT



PART SECTION C-C

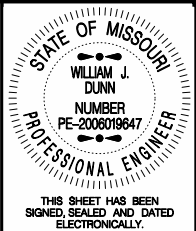
OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)



Note:

Cost of silicone joint sealant and backer rod, complete-in-place, will be considered completely covered by the contract unit price for Safety Barrier Curb.



DATE PREPARED
2/24/2010

ROUTE	STATE
I -44	MO

DISTRICT	SHEET NO.
BR	32

COUNTY
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1

LACLEDE

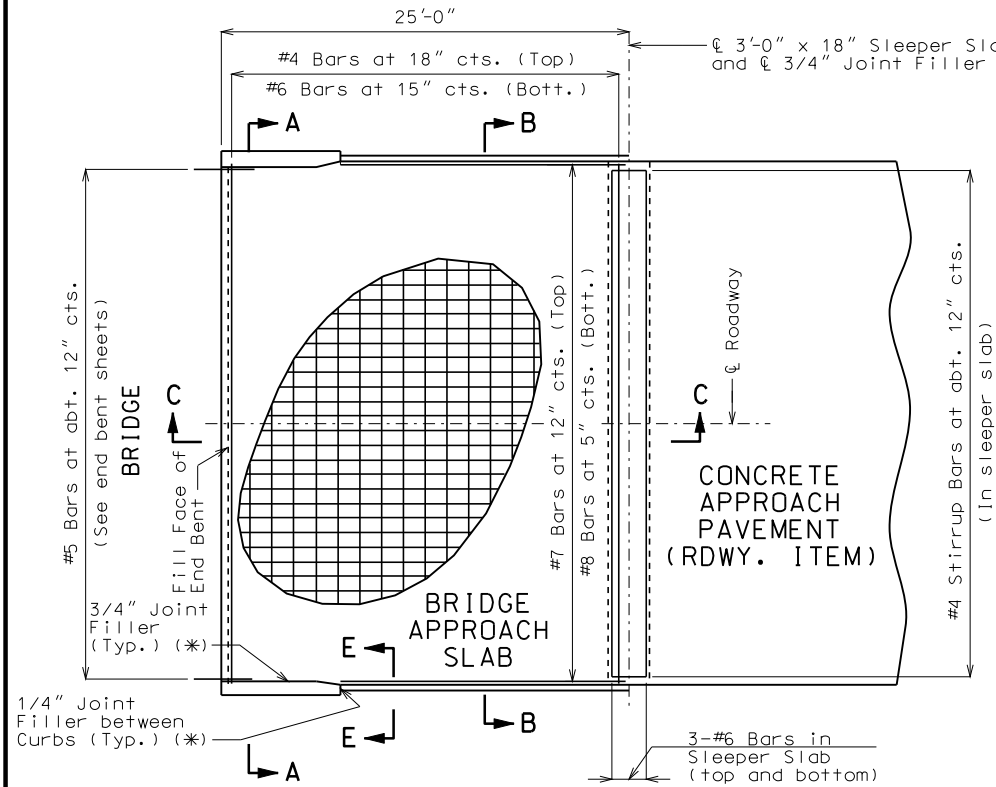
JOB NO.
1812167

PROJECT NO.

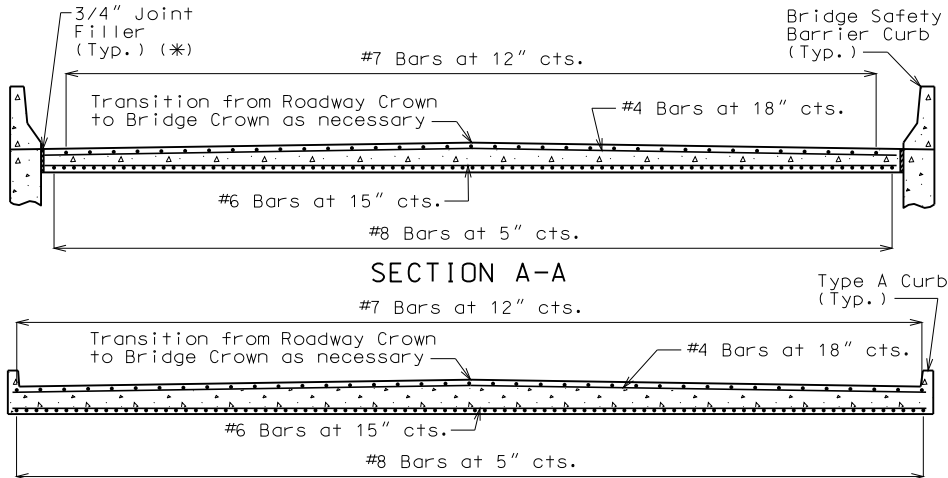
BRIDGE NO.
L06983[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

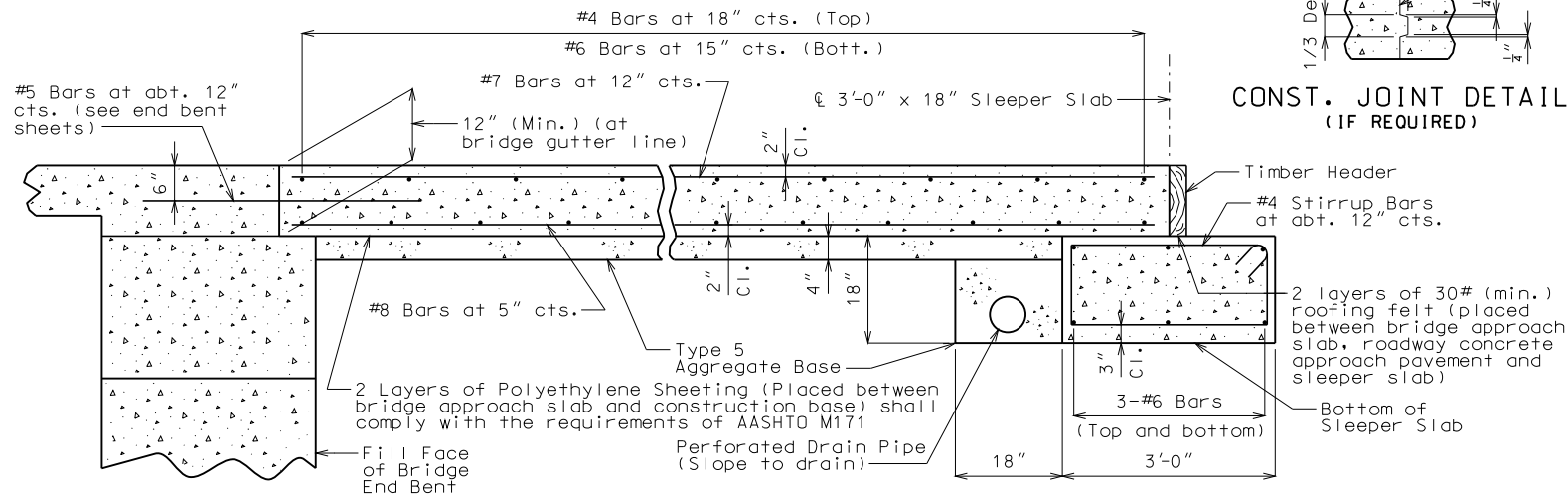
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



PART PLAN SHOWING REINFORCEMENT



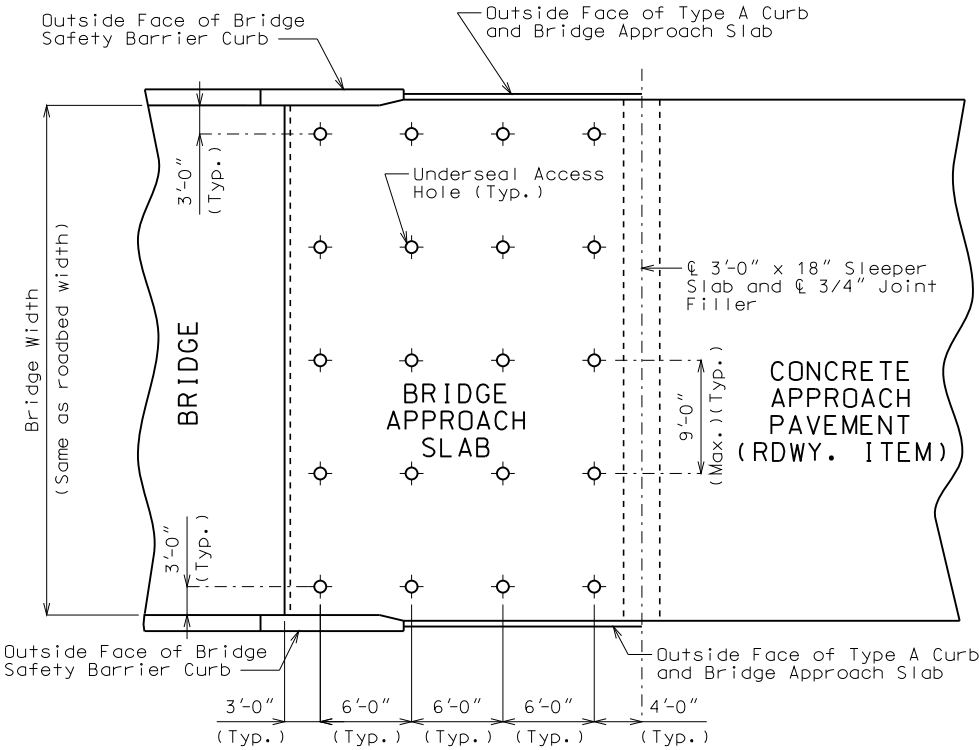
Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



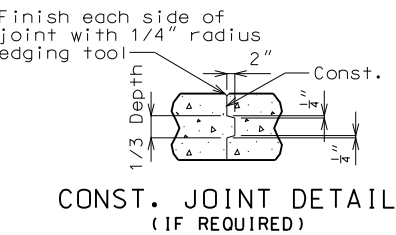
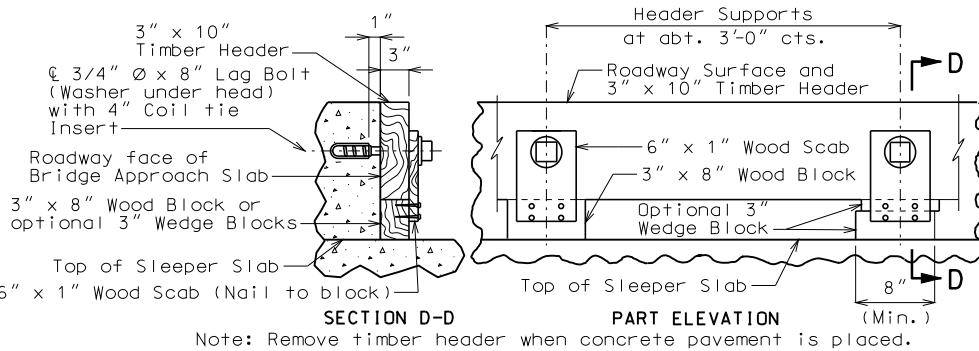
SECTION C-C

BRIDGE APPROACH SLAB

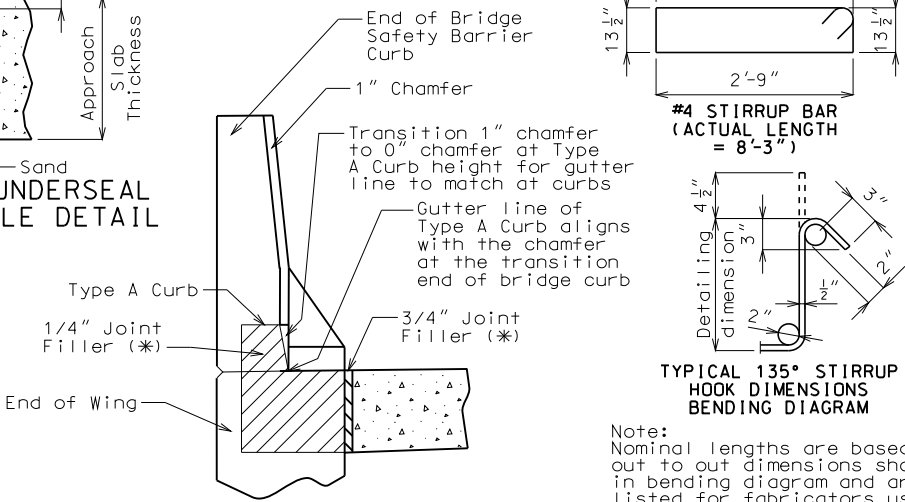
Note: This drawing is not to scale. Follow dimensions.



PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



TYPICAL UNDERSEAL ACCESS HOLE DETAIL



GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f'c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with Fy = 60,000 psi.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

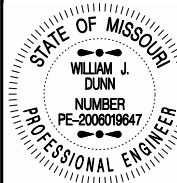
For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
2/24/2010

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
33

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

DATE

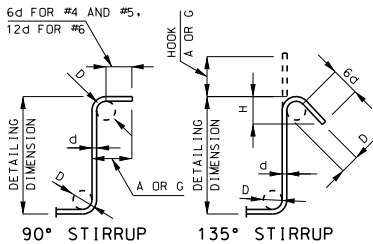
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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.

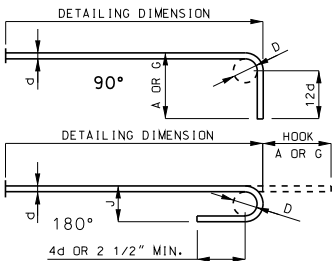
BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS																NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B		C		D		E		F		H		K						
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.			
			SUBSTR																									
			INT BT NO 2																									
6	6	H21	BEAM	E	20		X			32	8.000								32	8	32	8			294			
16	4	H22	BEAM	E	20		X			32	8.000								32	8	32	8			349			
6	7	H23	BEAM	E	18		X			32	8.000								34	4	34	4			421			
14	6	H24	BEAM	E	10	S	X				22.000	3	7.750						7	4	7	0			147			
6	6	H25	BEAM	E	10	S	X				22.000	15	7.50						5	0	4	8			42			
11	5	U21	BEAM	E	10	S	X				3	8.000	3	9.000					11	1	10	11			125			
34	5	U22	BEAM	E	13	S	X			3	9.000	3	7.500	3	9.000	3	7.500		15	8	15	4			544			
10	4	U23	BEAM	E	10	S	X				6.000	3	9.000						4	9	4	7			31			
10	4	U24	BEAM	E	10	S	X				6.000	17	7.000						2	5	2	3			15			
33	5	U25	BEAM	E	10	S	X				3	7.000	17	7.000					8	7	8	5			290			
16	W5	W1	A R WELLS	E	22		X			15	9.125								23	0	23	0			61			
			INT BT NO 3																									
4	6	H31	BEAM	E	20		X			29	5.000								29	5	29	5			177			
2	6	H32	BEAM	E	20		X			32	0.000								32	0	32	0			96			
4	6	H33	BEAM	E	7		X			3	7.000	2	8.750						8	8	8	8			52			
8	W5	W2	A R WELLS	E	22		X			9	8.125								15	1	15	1			20			
			INT BT NO 4																									
4	6	H41	BEAM	E	20		X			29	5.000								29	5	29	5			177			
3	6	H42	BEAM	E	20		X			32	0.000								32	0	32	0			144			
4	6	H43	BEAM	E	7		X			3	7.000	2	8.750						8	8	8	8			52			
16	W5	W2	A R WELLS	E	22		X			9	8.125								15	1	15	1			40			
			INT BT NO 5																									
4	6	H51	BEAM	E	20		X			29	5.000								29	5	29	5			177			
2	6	H52	BEAM	E	20		X			32	0.000								32	0	32	0			96			
4	6	H53	BEAM	E	7		X			3	7.000	2	8.750						8	8	8	8			52			
8	W5	W2	A R WELLS	E	22		X			9	8.125								15	1	15	1			20			
			INT BT NO 6																									
6	6	H61	BEAM	E	20		X			32	8.000								32	8	32	8			294			
14	4	H62	BEAM	E	20		X			32	8.000								32	8	32	8			305			
4	7	H63	BEAM	E	18		X			32	8.000								34	4	34	4			281			
14	6	H64	BEAM	E	10	S	X				22.000	3	7.750						7	4	7	0			147			
6	6	H65	BEAM	E	10	S	X				22.000	15	7.50						5	0	4	8			42			
11	5	U61	BEAM	E	10	S	X				3	7.875	3	9.000					11	1	10	10			124			
34	5	U62	BEAM	E	13	S	X			3	9.000	3	7.375	3	9.000	3	7.375		15	8	15	4			544			
10	4	U63	BEAM	E	10	S	X				6.000	3	9.000						4	9	4	7			31			
10	4	U64	BEAM	E	10	S	X				6.000	17	7.000						2	5	2	3			15			
33	5	U65	BEAM	E	10	S	X				3	7.000	17	7.000					8	7	8	5			290			



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



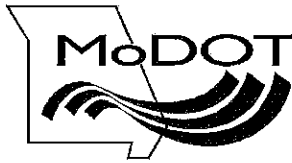
END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	90° HOOKS J	A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

TWO ADDITIONAL #4-H22, #6-S2, #7-H23 & #8-H14 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 180 DEGREE STANDARD HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET. S = STIRRUP. X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES. V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE. NO. EA. = NUMBER OF BARS OF EACH LENGTH. NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH) ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH. PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS. FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF SPIRALS DO NOT INCLUDE SPLICES OR SPACERS. REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.

BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
										B		C		D		E		F		H					K	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.
16	W5	W1	A R WELLS	E	22		X			15	0.00	9	1.25							23	0	23	0	61		
			SUPERSTR																							
			END BT NO 1																							
18	6	F11	WING BRACE	E	23					14	0.00	5	3.125	14	0.00	9	0.875	9	0.875	9	0.875	7	7	7	6	203
8	6	F12	DIAPHRAGM	E	19	S				5	4	0.00	2	8.250							8	0	7	10	94	
24	6	H11	BEAM & DIAPH	E	20					36	5	0.00									36	5	36	5	1313	
34	5	H12	DIAPHRAGM	E	20					2	6	0.00									2	6	2	6	89	
40	6	H13	WING	E	20					16	6	0.00									16	6	16	6	991	
18	8	H14	WING	E	20					17	6	0.00									17	6	17	6	841	
4	5	U11	BEAM	E	10	S					4	5	0.00	2	4	0.00					11	2	11	0	46	
28	5	U12	DIAPHRAGM	E	10	S					4	3	0.00	2	0	500					10	7	10	4	302	
28	6	U13	DIAPHRAGM	E	19	S				3	0	0.00	2	7	0.00						5	7	5	5	228	
45	6	U14	DIAPHRAGM	E	19	S				3	4	0.00	4	8	0.00						8	0	7	10	529	
12	6	V11	DIAPHRAGM	E	20					3	0	0.00									3	0	3	0	54	
4	6	V12	WING	E	20					7	1	0.00									7	1	7	1	43	
60	6	V13	WING	E	20		V	4		6	9	0.00									6	9	6	9		
			INCREMENT =							7	1	0.00									7	1	7	1	623	
			0.250 INCH																							
			END BT NO 7																							
18	6	F71	WING BRACE	E	23					14	0.00	5	7.375	14	0.00	9	0.875	9	0.875	9	0.875	7	11	7	11	214
8	6	F72	DIAPHRAGM	E	19	S				5	4	0.00	2	11.250							8	3	8	1	97	
24	6	H71	BEAM & DIAPH	E	20					36	5	0.00									36	5	36	5	1313	
34	5	H72	DIAPHRAGM	E	20					2	6	0.00									2	6	2	6	89	
36	6	H73	WING	E	20					16	6	0.00									16	6	16	6	892	
16	8	H74	WING	E	20					17	6	0.00									17	6	17	6	748	
4	5	U71	BEAM	E	10	S					4	2	0.00	2	7	0.00					10	11	10	9	45	
28	5	U72	DIAPHRAGM	E	10	S					4	3	0.00	2	3	500					10	10	10	7	309	
28	6	U73	DIAPHRAGM	E	19	S				3	0	0.00	2	10	0.00						5	10	5	8	238	
45	6	U74	DIAPHRAGM	E	19	S				3	4	0.00	4	11	0.00						8	3	8	1	546	
12	6	V71	DIAPHRAGM	E	20					3	0	0.00									3	0	3	0	54	
4	6	V72	WING	E	20					6	2	0.00									6	2	6	2	37	
60	6	V73	WING	E	20		V	4		6	2	0.00									6	2	6	2		
			INCREMENT =							6	6	0.00									6	6	6	6	571	
			0.250 INCH																							
			SLAB																							
1136	5	S1	SLAB	E	20					36	5	0.00									36	5	36	5	43148	
1327	6	S2	SLAB	E	20					36	5	0.00									36	5	36	5	72584	
69	5	S3	SLAB	E	20					58	11	0.00									58	11	58	11	4240	
138	5	S4	SLAB	E	20					36	4	0.00									36	4	36	4	5230	
690	5	S5	SLAB	E	20					56	11	0.00									56	11	56	11	40961	
112	6	S6	SLAB	E	20					40	7	0.00									40	7	40	7	6827	
112	6	S7	SLAB	E	20					41	2	0.00									41	2	41	2	6925	
112	6	S8	SLAB	E	20					43	4	0.00									43	4	43	4	7290	



MEMORANDUM

Missouri Department of Transportation
Bridge Division
Central Office

TO: Vicky Woods
Rolla Project Office

CC/ATT: Tom Stehn - d9
Kirk Juranas - d8
Dave Ahlvers - cm
John Gahagan - br
Chad Daniel - br
Bill Dunn - br
Kent Nelson - br (2)

FROM: Bill Dunn *WJD*
Structural Preliminary and Review Engineer

DATE: 3/28/11

SUBJECT: Change Order
Bridge No. L06983
Rte. I-44
Job No. J8I2167, Laclede County
October 2010 Letting

Please find attached six sets of half-sized prints showing revisions to **all bridge sheets except** 17, 18, 20 - 23, 25, 26, 28, and 30 of the above referenced structure.

This change order is being processed to accommodate the change in construction method proposed by the contractor for this bridge. The contractor has proposed to build the new superstructure on a temporary substructure next to the existing bridge. When this work is done, the contractor will move traffic off of the existing bridge to do the demo work and prepare the existing substructure for the new superstructure. Then the contractor will move the superstructure over and do the necessary tie in work to get the bridge open. This change will allow us to minimize the amount of time we have head to head traffic on I-44. We are going to rehab the existing end bents instead of replacing them. This will help save closure time and some money. We are eliminating the step caps on all bents to allow the new superstructure to be slid into place. We are adding a spacer plate to the interior girders between the bearing and the girder to account for not have and step in the beam cap. The cross frames at the bents will be heavier than standard to accommodate the additional stresses due to the bridge move.

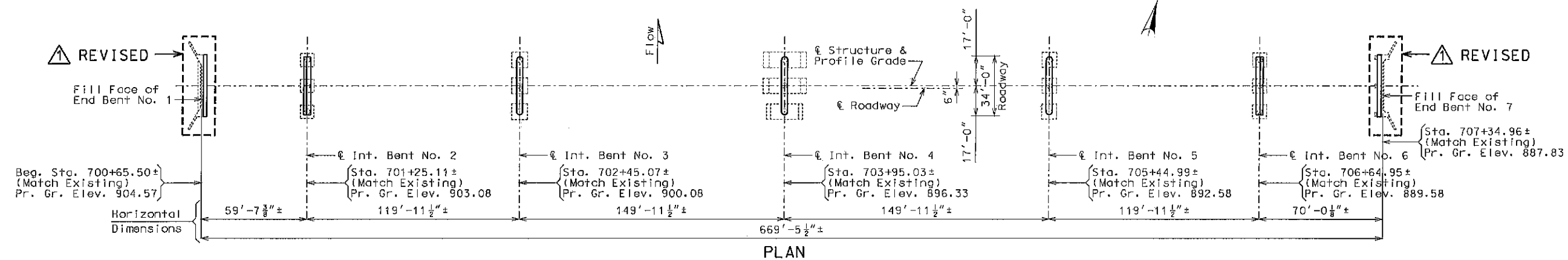
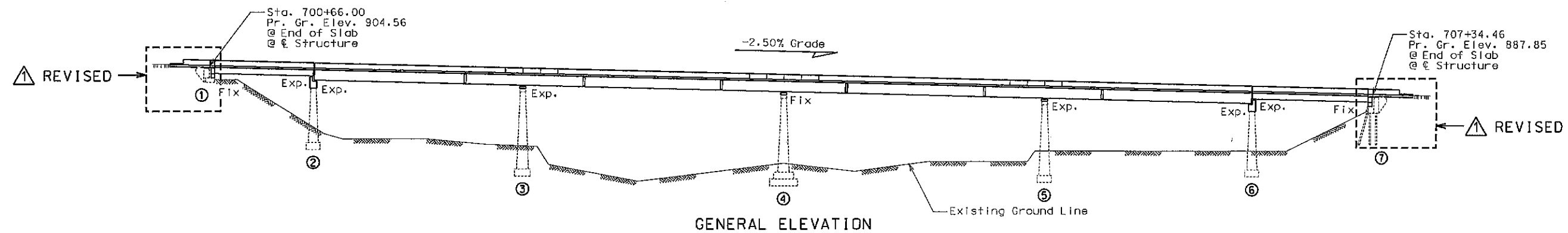
WJD
Attachments

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
(57')(120'-150'-150'-120')(67') COMPOSITE PLATE GIRDER SPANS,
U.I.P. EXISTING SUBSTRUCTURE

SEC/SUR 15 TWP 35N RGE 14W



DATE PREPARED
3/28/2011
ROUTE 1-44 STATE MO
DISTRICT BR SHEET NO. 1
COUNTY LACLEDE
JOB NO. J812167
CONTRACT ID.
PROJECT NO.
BRIDGE NO. L06983



Note: For General Notes, Estimated Quantities and Estimated Quantities for Slab on Steel, see Sheet No. 2.

B.M. ELEV. 904.57 IRON PIN IN NW WINGWALL EBL
BRIDGE OVER GASCONADE RIVER

REPAIRS TO WESTBOUND
BRIDGE OVER GASCONADE RIVER

STATE ROAD FROM RTE. N TO THE PULASKI COUNTY LINE

ABOUT 2.0 MILES EAST OF RTE. N

STA. 700+65.50 ± (MATCH EXISTING)

STD. 609.00

STD. 617.10

STD. 706.35

Designed Dec. 2009
Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 1 of 35

Revised 3/17/2011

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



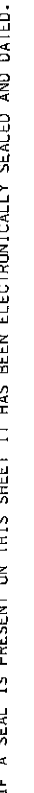
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

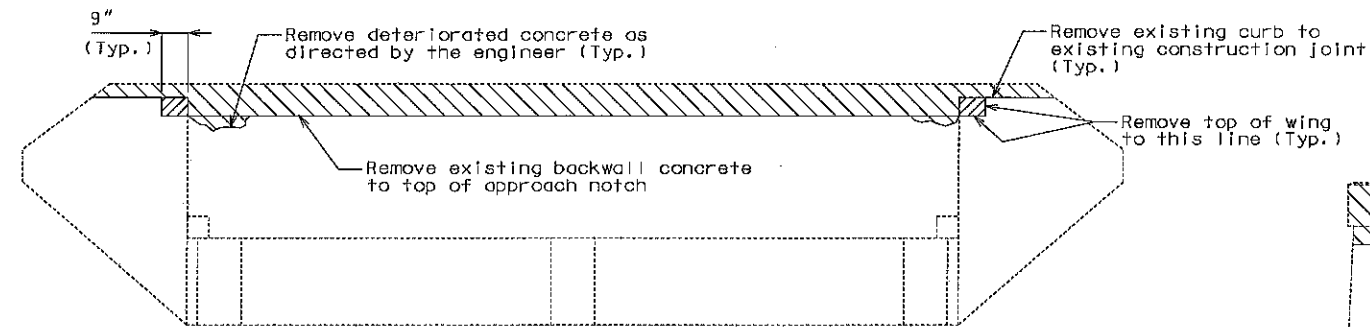
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Field Coats: The color of the field coats shall be Brown (Federal Standard #30045). The cost of the intermediate and finish field coats will be considered completely covered by the contract unit price for the Fabricated Structural Steel. If the action of the contractor for the intermediate or finish field coats may be applied at the shop, the contractor shall exercise extreme care during all phases of loading, hauling, handling, erection and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

op. The area exposed by the removal of concrete and not covered with new concrete shall be coated with an approved qualified special mortar in accordance with Sec 704.

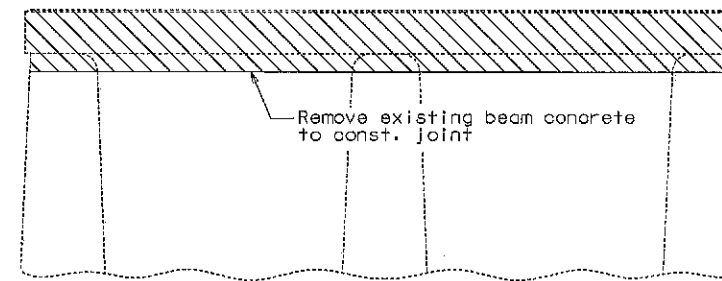
For Details of Stay-in-Place Forms, see Sheet No. 27.



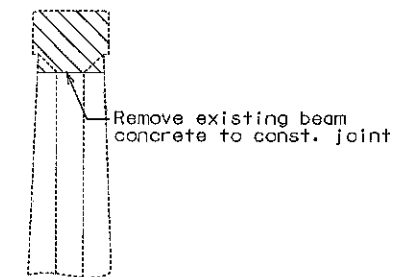


ELEVATION

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT END BENT NO. 7

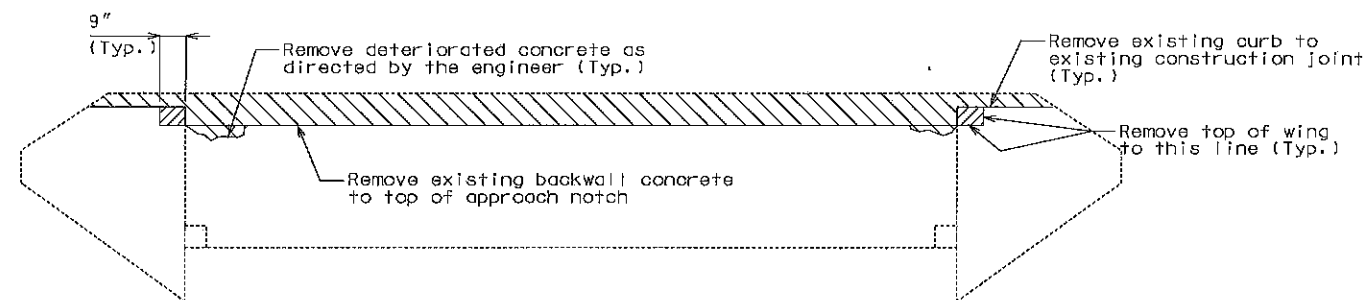


PART ELEVATION



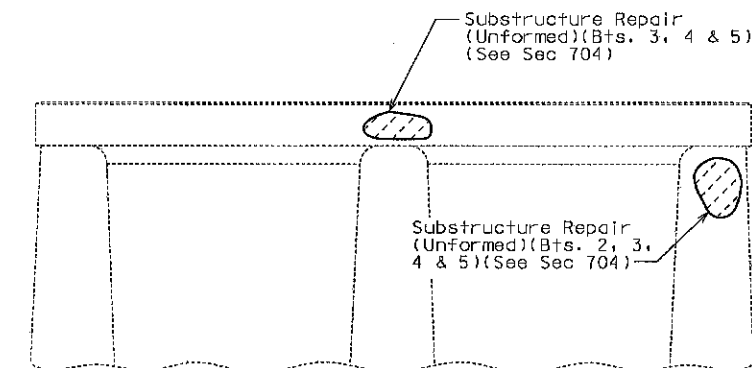
PART SECTION

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT INTERMEDIATE BENTS NO. 2 & 6

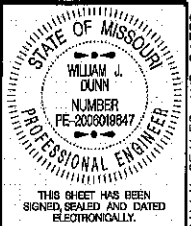


ELEVATION

DETAILS OF REMOVAL OF SUBSTRUCTURE CONCRETE AT END BENT NO. 1



DETAILS OF SUBSTRUCTURE REPAIR (UNFORMED) AT INTERMEDIATE BENTS NO. 2, 3, 4 & 5



DATE PREPARED
3/28/2011

ROUTE 1-44 STATE MO

DISTRICT BR SHEET NO. 3A

COUNTY LACLEDE

JOB NO. J812167

CONTRACT ID.

PROJECT NO.

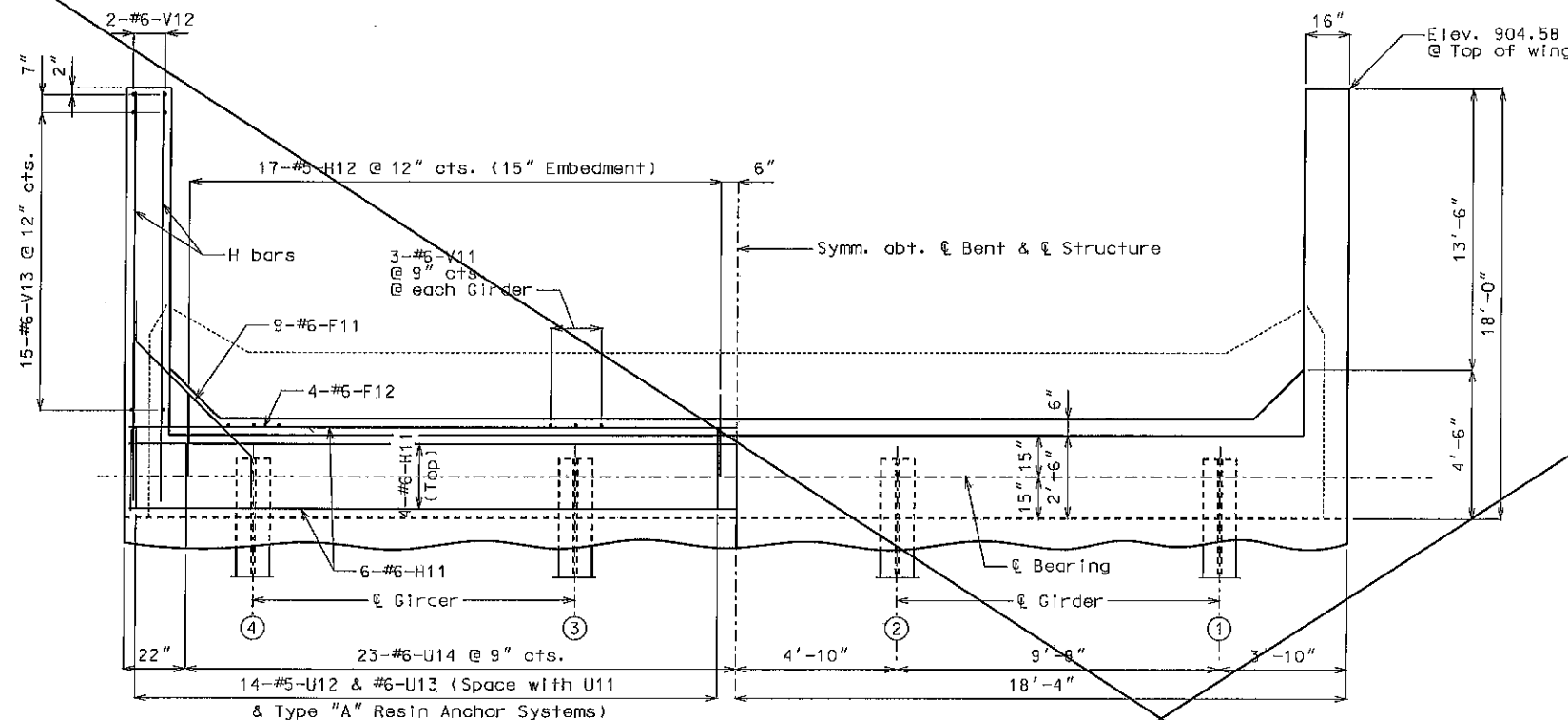
BRIDGE NO. L06983

DATE	DESCRIPTION

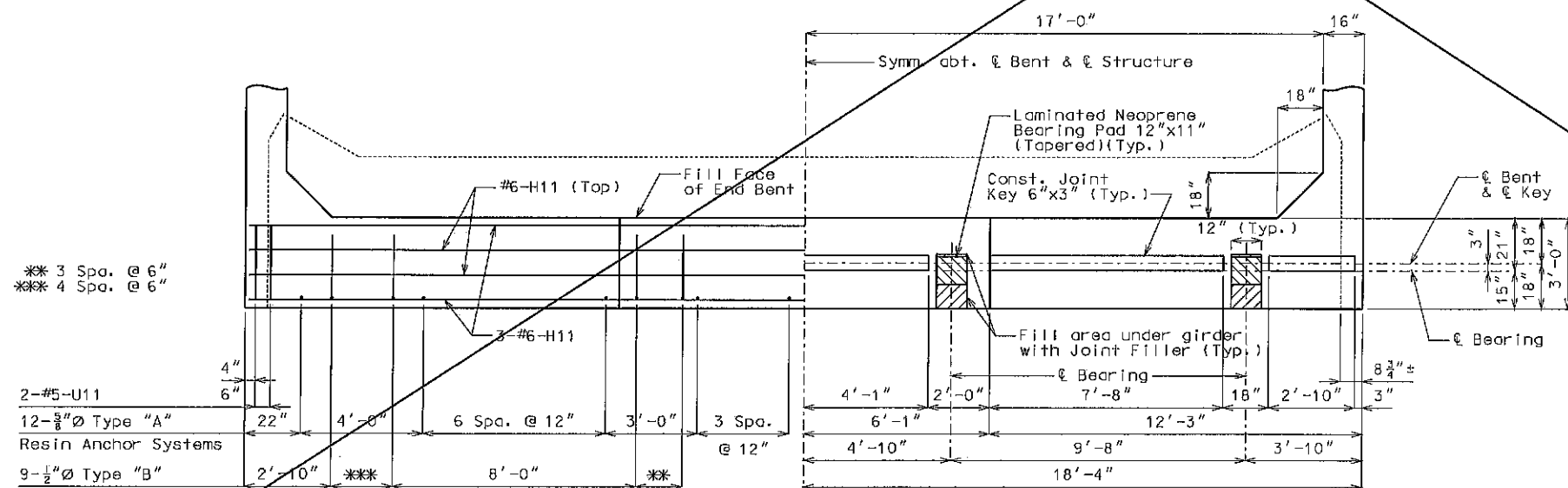
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

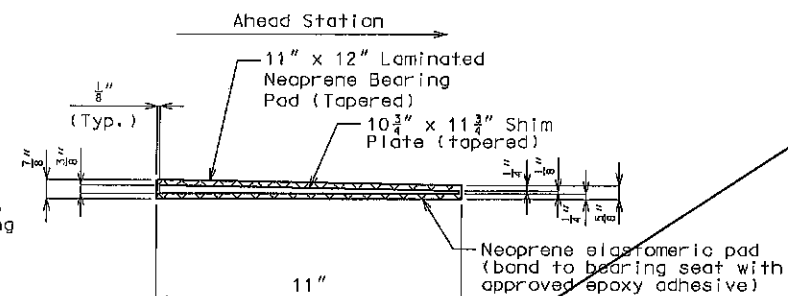
MODOT



PART PLAN



PLAN OF BEAM
DETAILS OF END BENT NO. 1



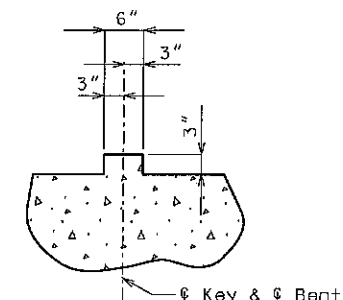
DETAILS OF LAMINATED NEOPRENE BEARING PAD (TAPERED)

Note:
For Section Near End Bent and Elevation of Wing, see Sheet No. 5.

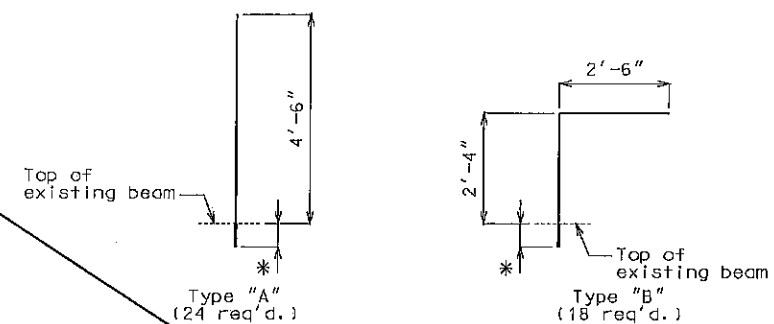
Bend F11 bars in field to clear girders.

All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.



TYPICAL SECTION THRU KEY



DETAILS OF RESIN ANCHOR SYSTEMS

* Manufacturer's recommended embedment length (5" min.)

Notes:

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with $f'_c = 4,000$ psi for the resin anchor system 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 3/8" threaded rod for Type "A" Resin Anchor Systems.

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the 1/2" threaded rod for Type "B" Resin Anchor Systems.



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
3/28/2011

ROUTE
1-44

DISTRICT
BR

STATE
MO

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

DATE

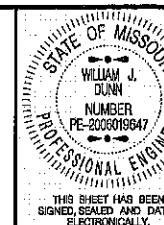
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITAL

JEFFERSON CITY, MO 65102

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

MODOT



DATE PREPARED
3/28/2011

ROUTE
I-44

STATE
MO

DISTRICT
BR

SHEET NO.
5A

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

DATE

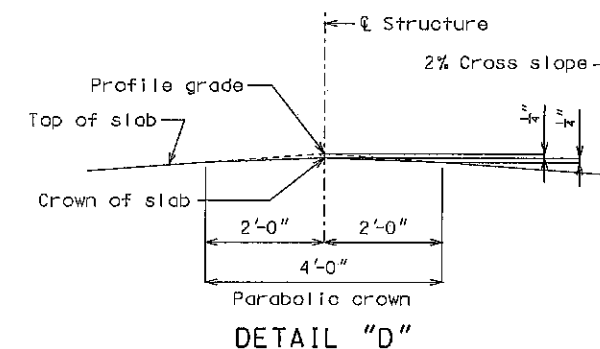
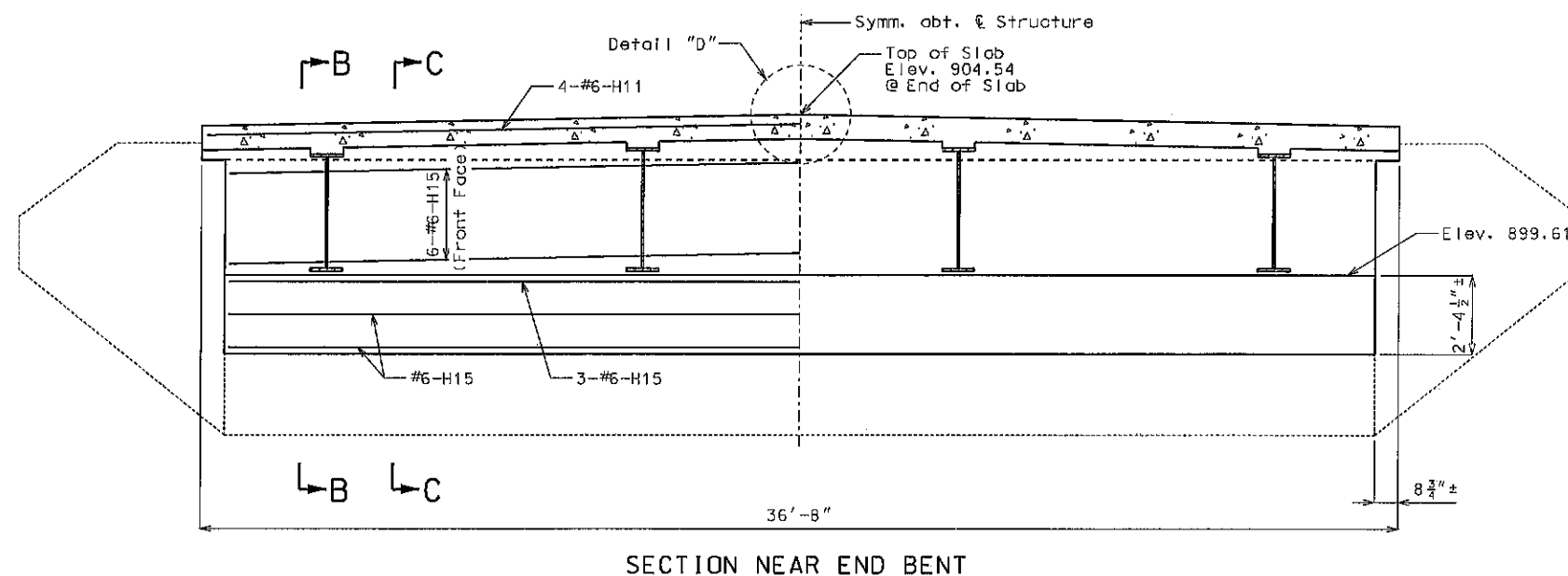
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITAL

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.

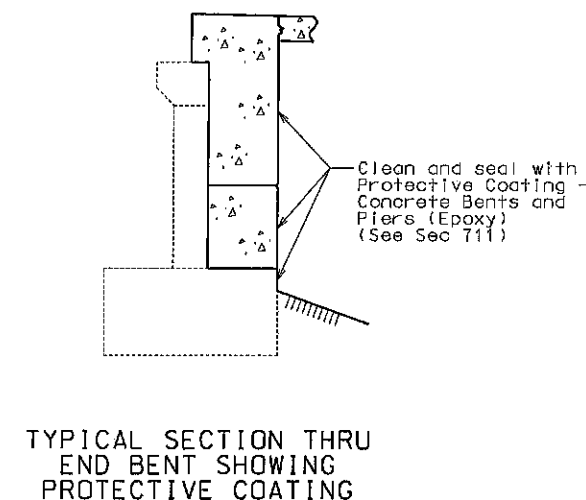
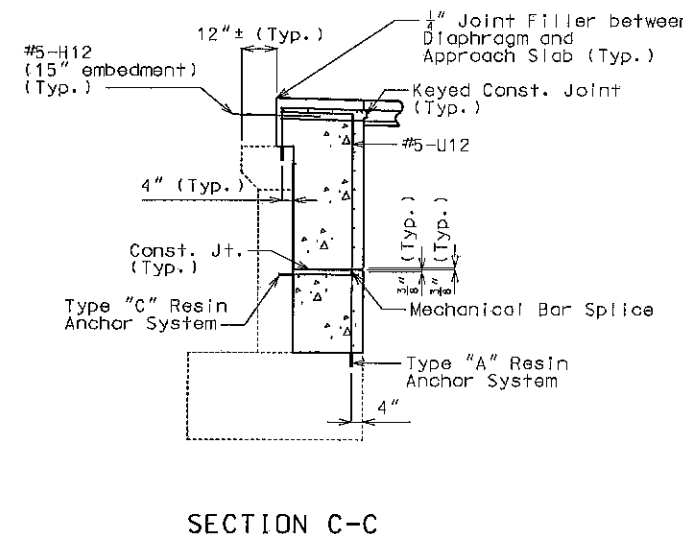
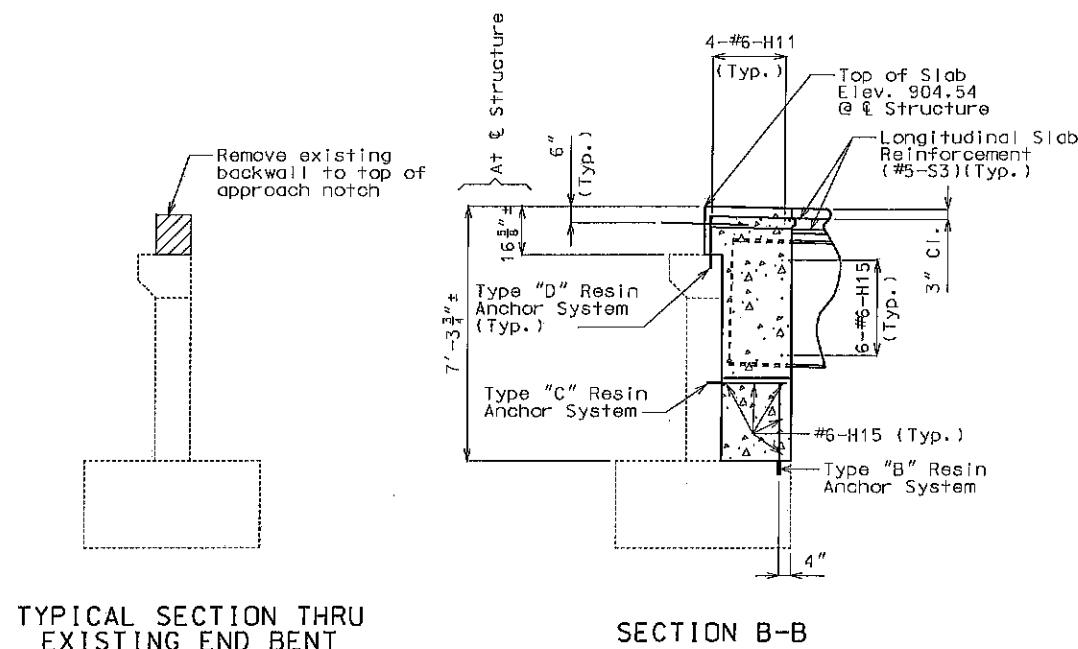


Note:
For reinforcement of the Safety Barrier Curb, see Sheet No. 31.

All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

For Slab Construction Joint Detail, see Sheet No. 22.

The contractor shall use a mechanical bar splice for Type "A" Resin Anchor Systems and U12 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.

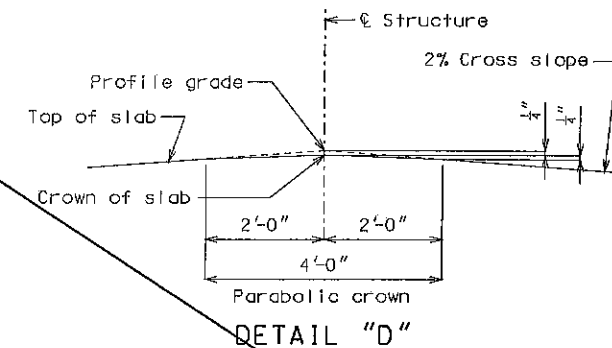
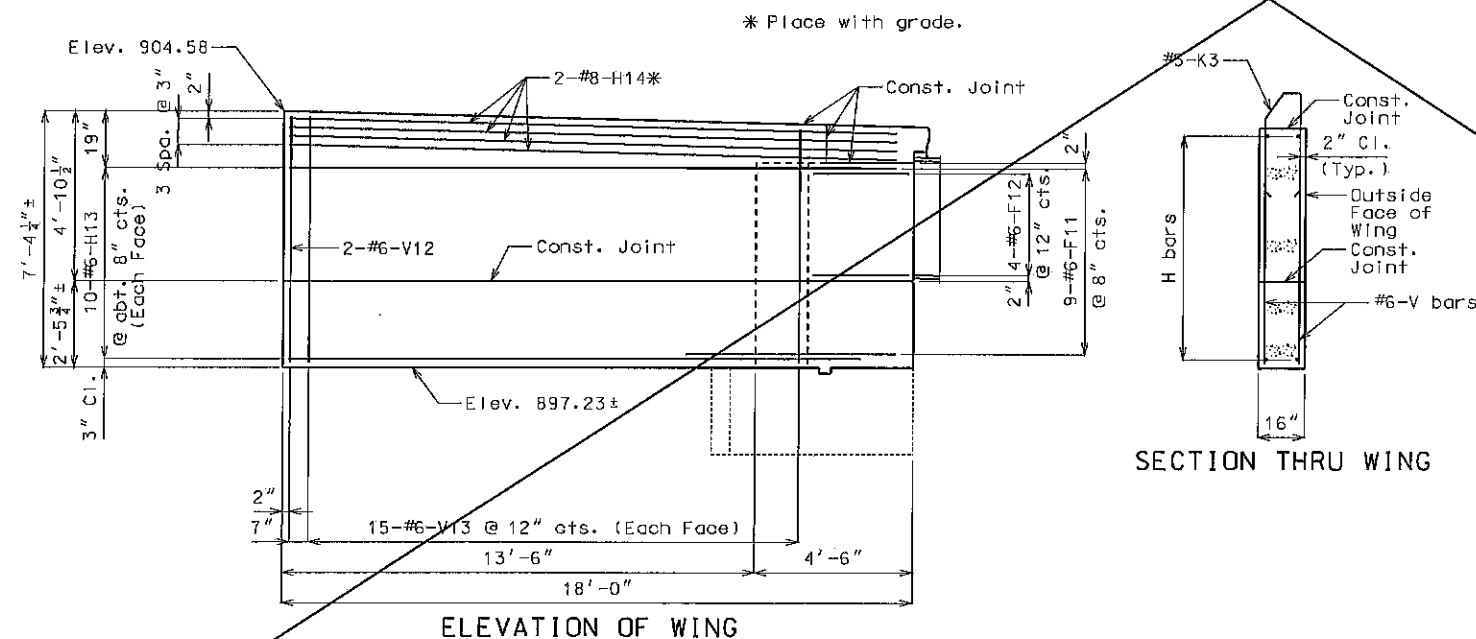
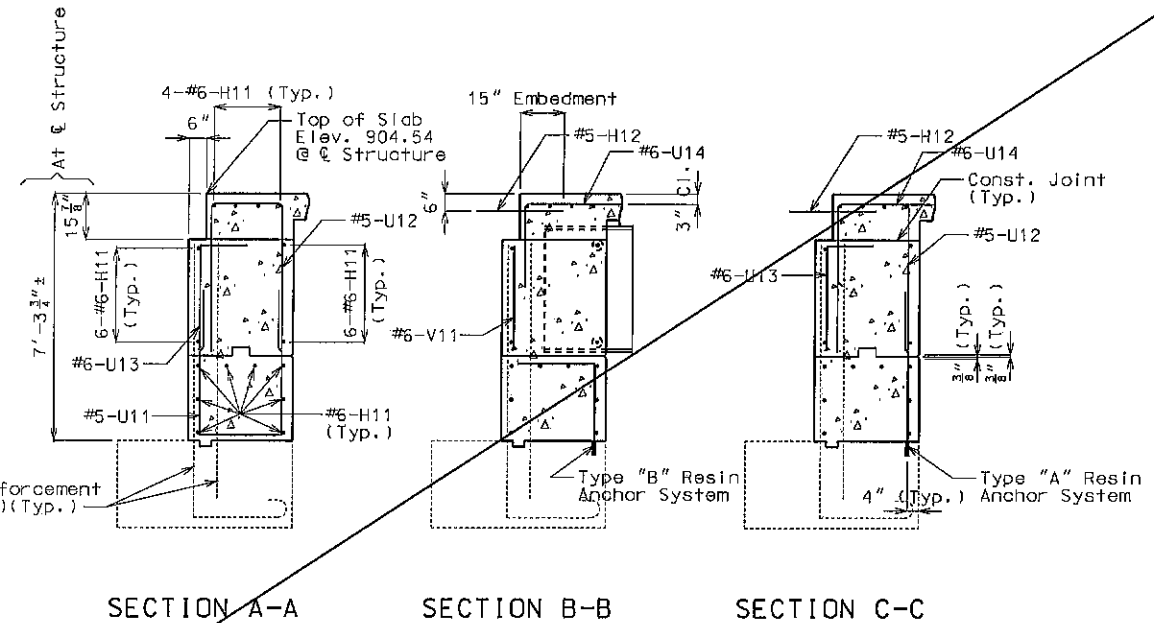
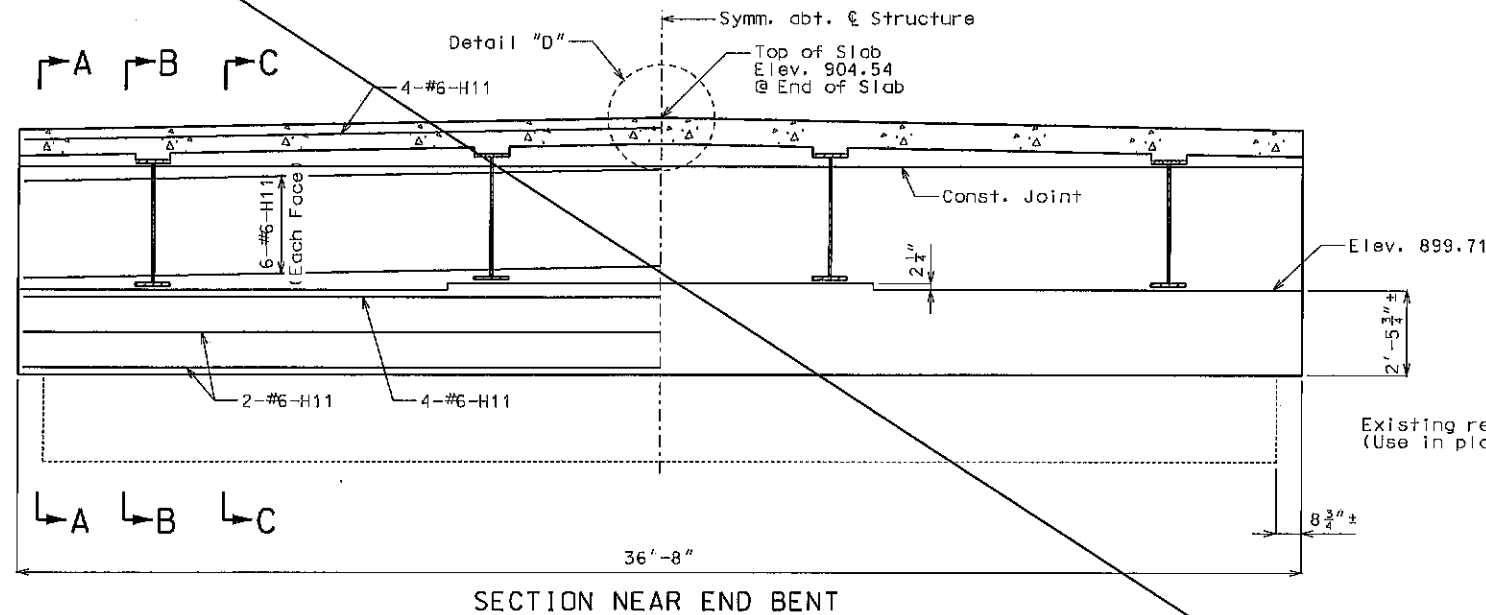


DETAILS OF END BENT NO. 1

Detailed Jan. 2010
Checked Jan. 2010

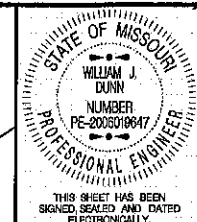
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 5A of 35 Added this sheet 3/17/2011



Note:
For reinforcement of the Safety Barrier Curb, see Sheet No. 31.
All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.
Concrete diaphragm at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.

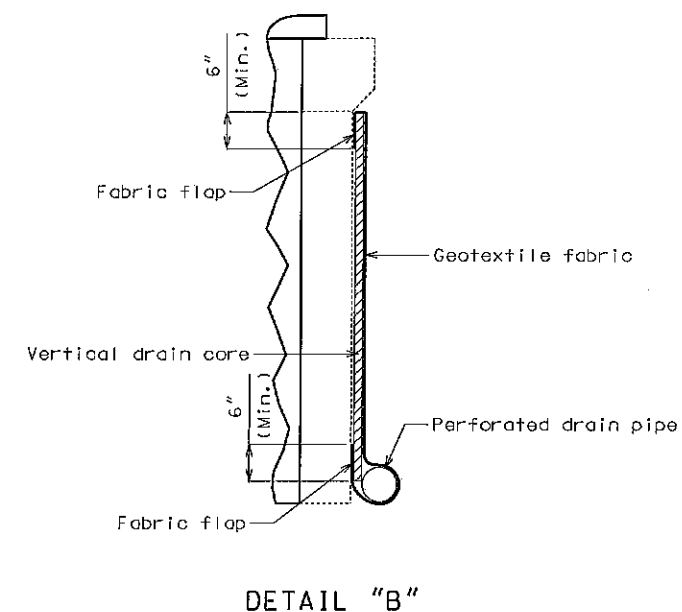
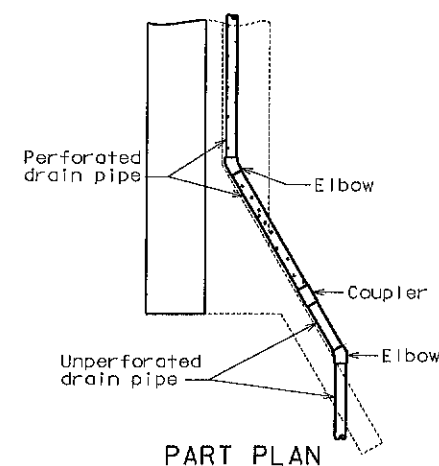
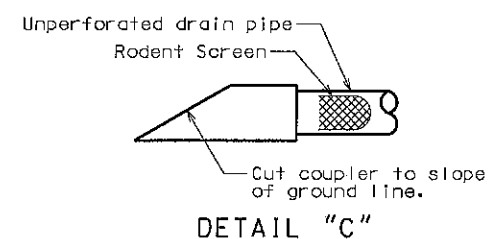
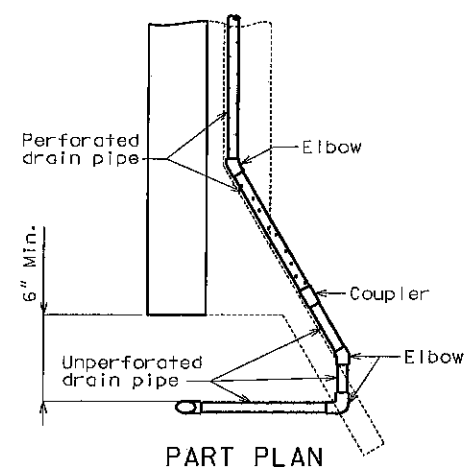
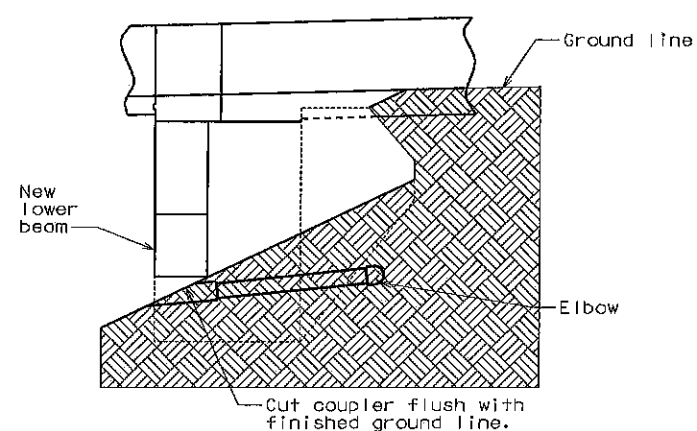
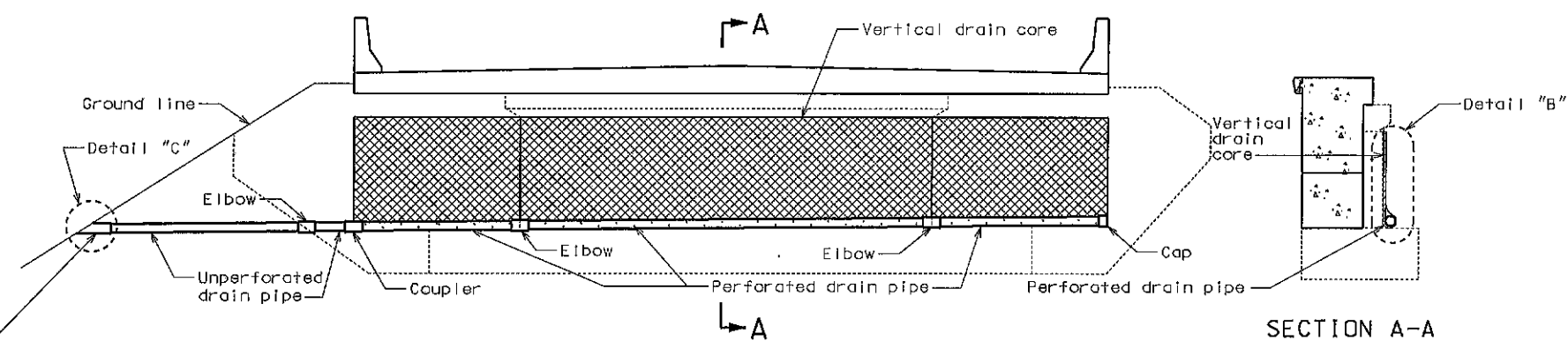
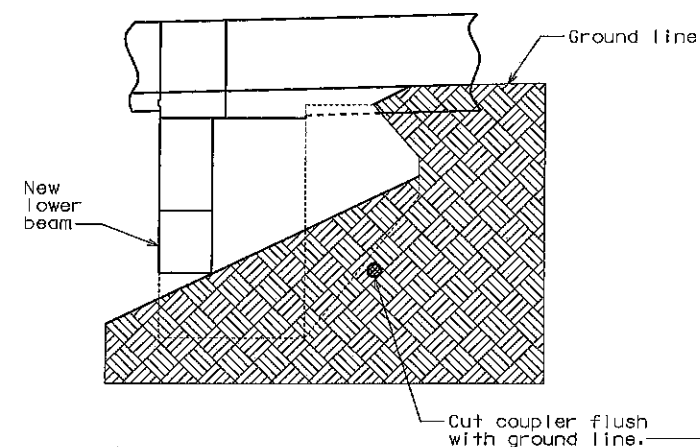
DETAILS OF END BENT NO. 1



DATE PREPARED
3/28/2011
ROUTE I-44 STATE MO
DISTRICT BR SHEET NO. 5
COUNTY LACLEDE
JOB NO. J812167
CONTRACT ID.
PROJECT NO.
BRIDGE NO. L06983

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITAL
JEFFERSON CITY, MO 65102
1-888-ASK-MDOT (1-888-275-6636)



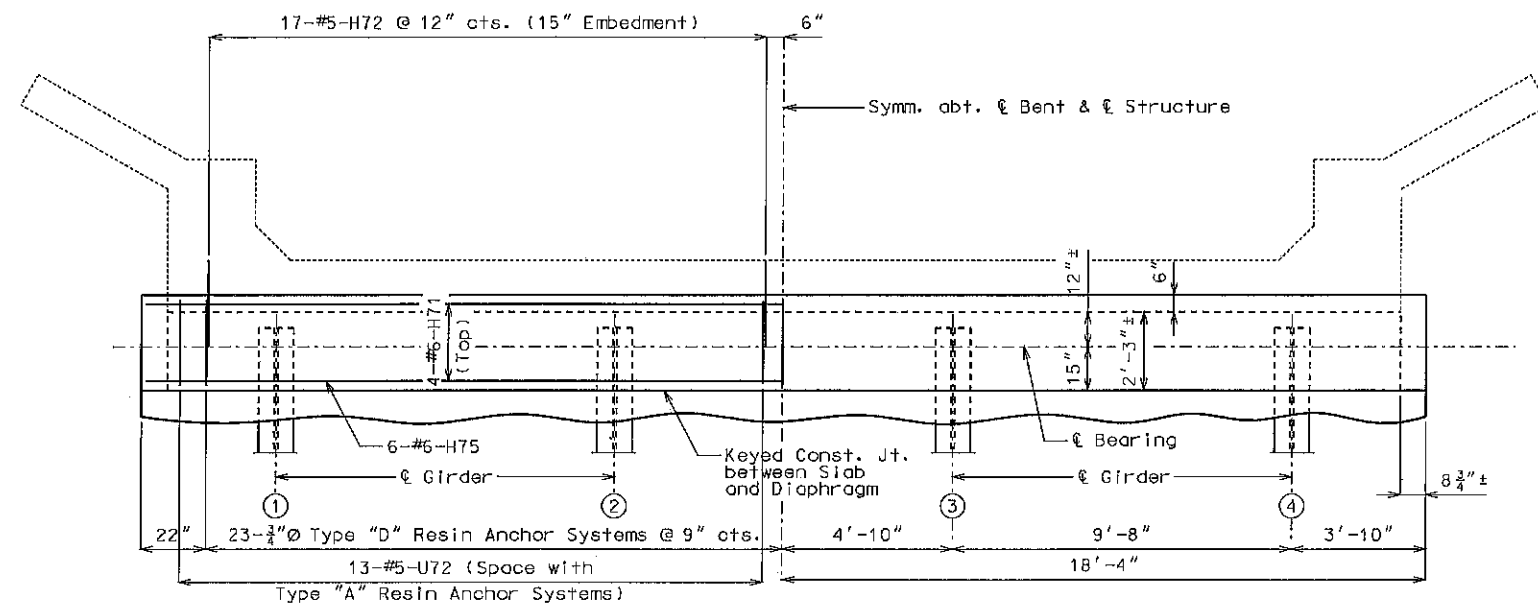
Note:
Drain pipe may be either 6" diameter corrugated metallic-coated steel pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1 1/2 ". (See elevation at end bent.)

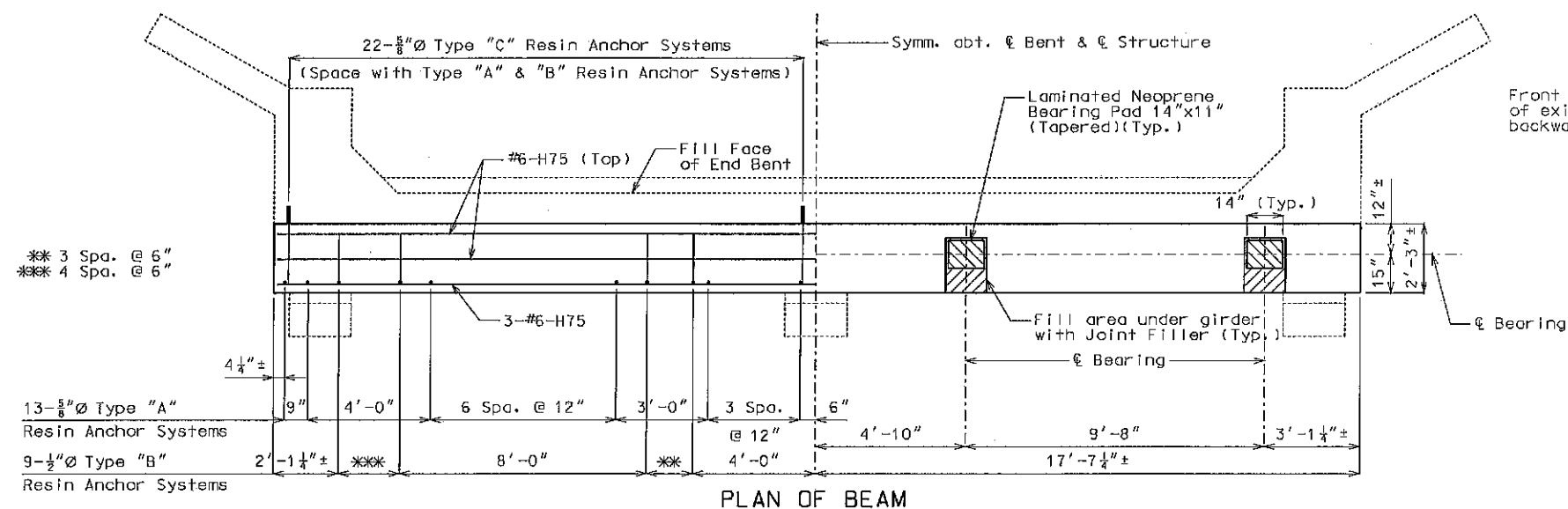
Perforated pipe shall be placed at fill face side at the bottom of new lower beam and plain pipe shall be used where the vertical drain ends to the exit at ground line.

VERTICAL DRAIN AT END BENT NO. 1

[illegible]

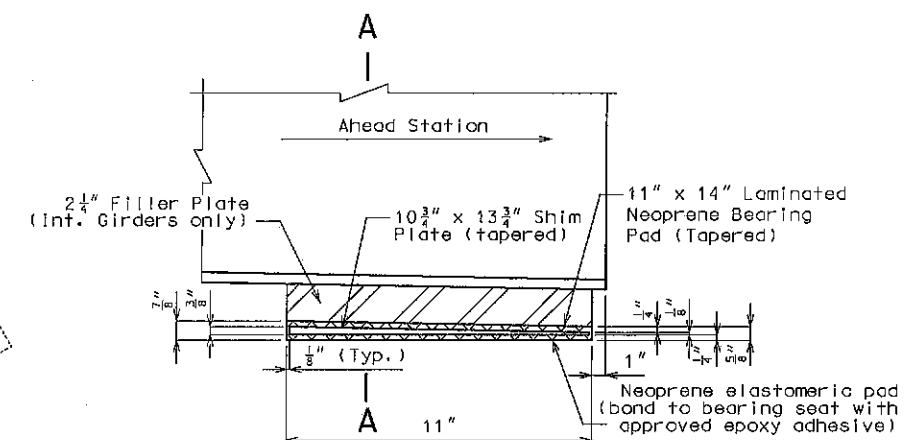


PART PLAN

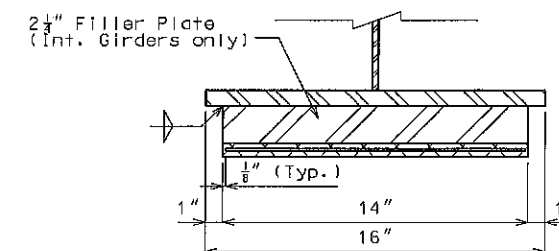


PLAN OF BEAM

DETAILS OF END BENT NO. 7



DETAILS OF LAMINATED NEOPRENE BEARING PAD (TAPERED)

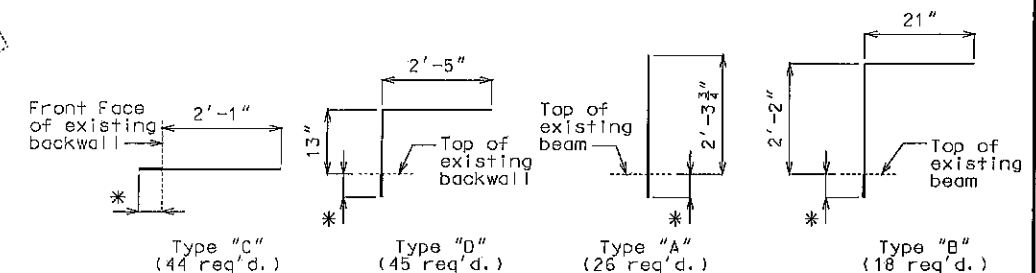


SECTION A-A

Note:
For Section Near End Bent, see Sheet No. 13.

All concrete in the end bent above top of existing beam and below top of slab shall be Class 8-2.

For Slab Construction Joint Detail, see Sheet No. 22.



DETAILS OF RESIN ANCHOR SYSTEMS

* Manufacturer's recommended embedment length (5" min.)

Notes:

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

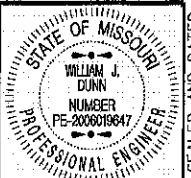
Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 $\frac{5}{8}$ " threaded rod for Type "A" & "C" Resin Anchor Systems.

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the $\frac{1}{2}$ " threaded rod for Type "B" Resin Anchor Systems.

An epoxy coated #6 Grade 60 reinforcing bar shall be substituted for the $\frac{3}{4}$ " threaded rod for Type "D" Resin Anchor Systems.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
3/28/2011

ROUTE
1-44

DISTRICT
BR

STATE
MO

SHEET NO.
12A

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

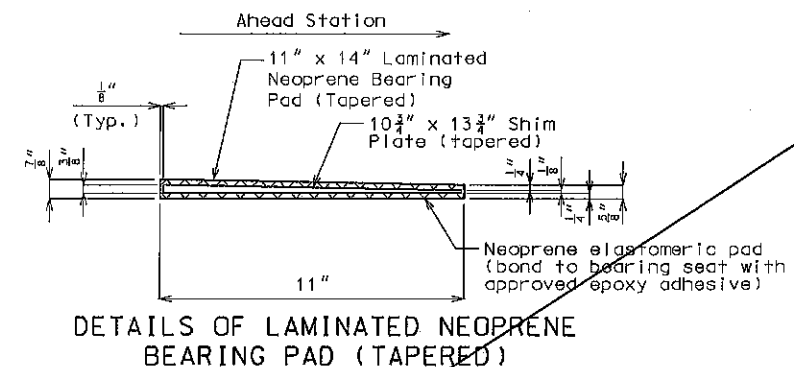
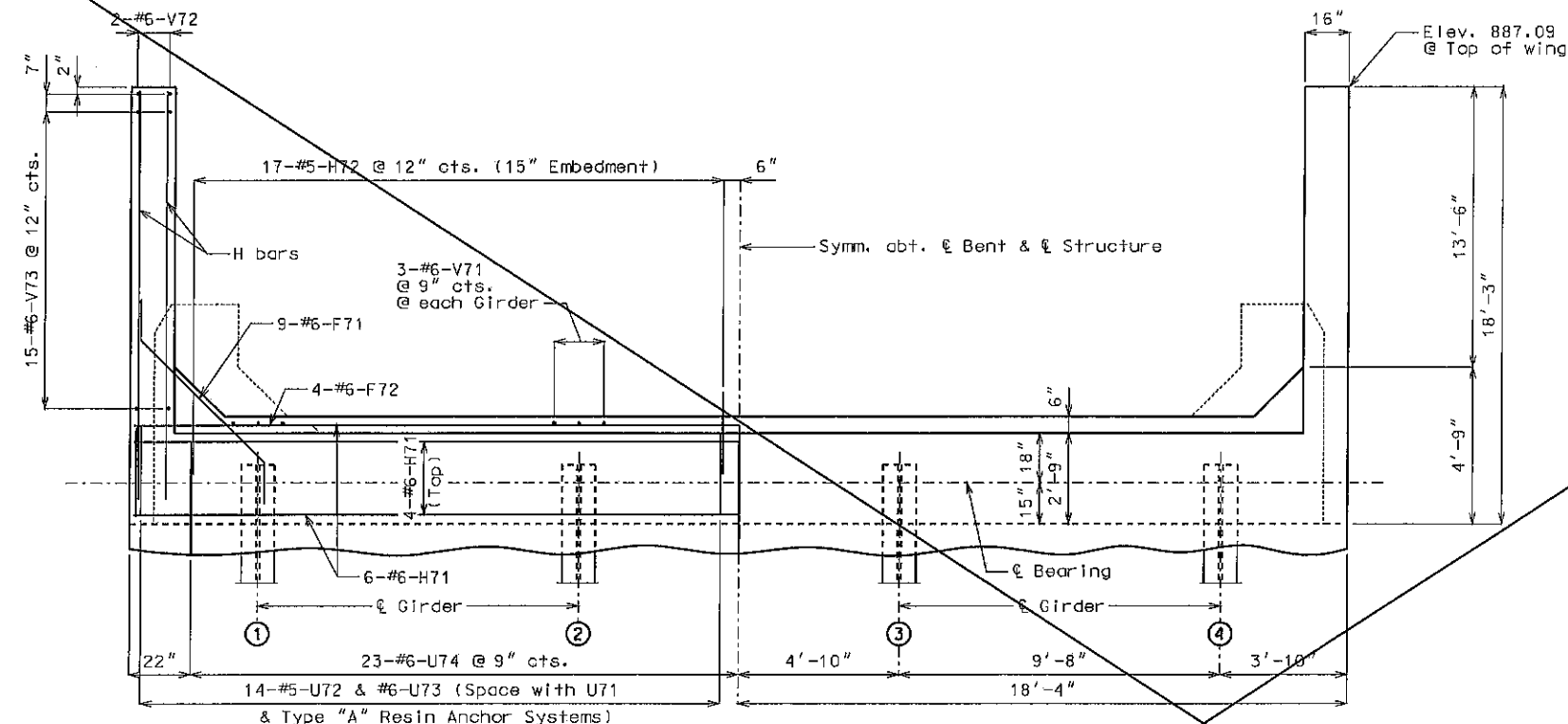
DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITAL
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.

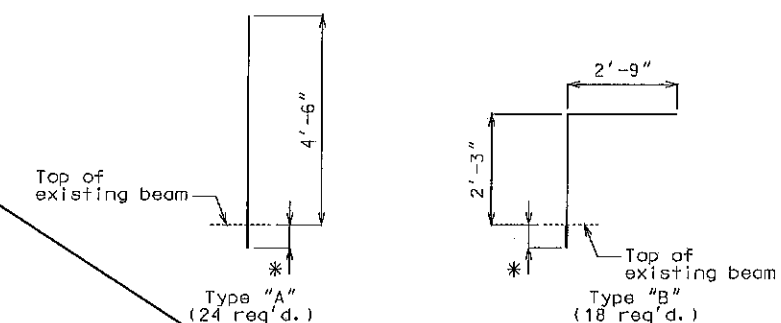
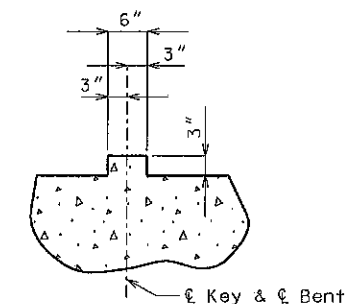


Note:
For Section Near End Bent and Elevation of Wing, see Sheet
No. 13.

Bend F71 bars in field to clear girders.

All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

~~Concrete diaphragms at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.~~



Notes:

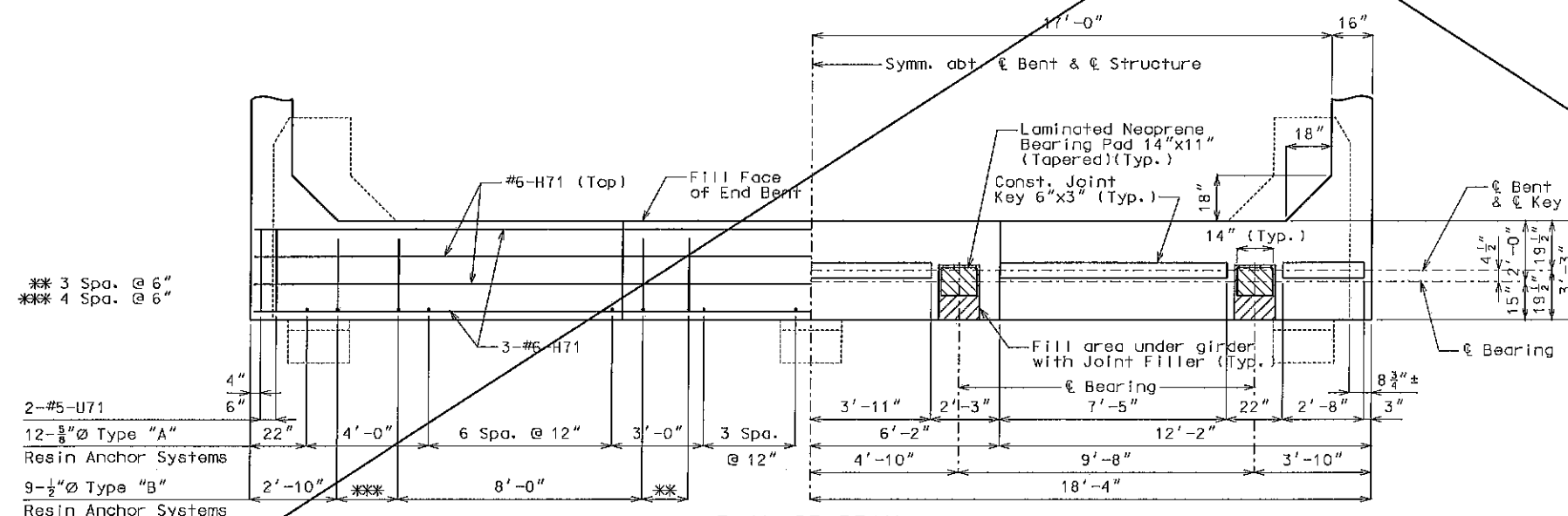
~~The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.~~

~~Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Slab on Steel.~~

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

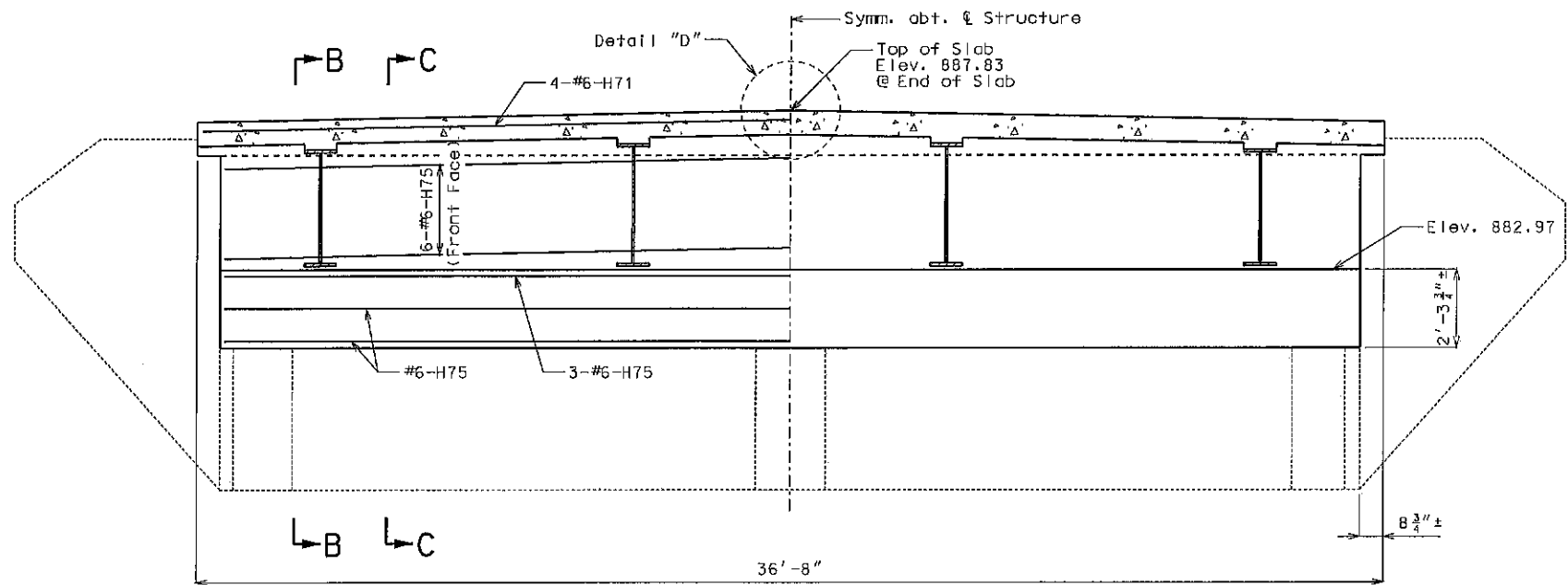
An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the $\frac{5}{8}$ " $\varnothing$ threaded rod for Type "A" Resin Anchor Systems.

An epoxy coated #4 Grade 60 reinforcing bar shall be substituted for the $\frac{1}{2}$ " $\varnothing$ threaded rod for Type "B" Resin Anchor Systems.

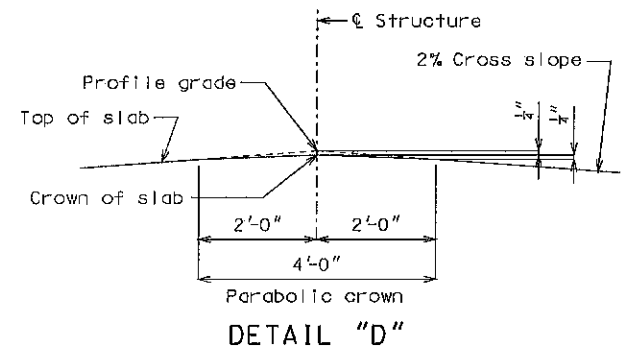


PLAN OF BEAM
DETAILS OF END BENT NO. 7

[illegible]

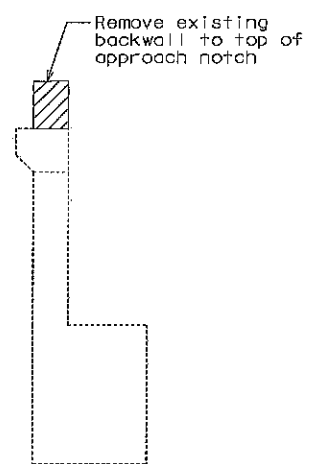


SECTION NEAR END BENT

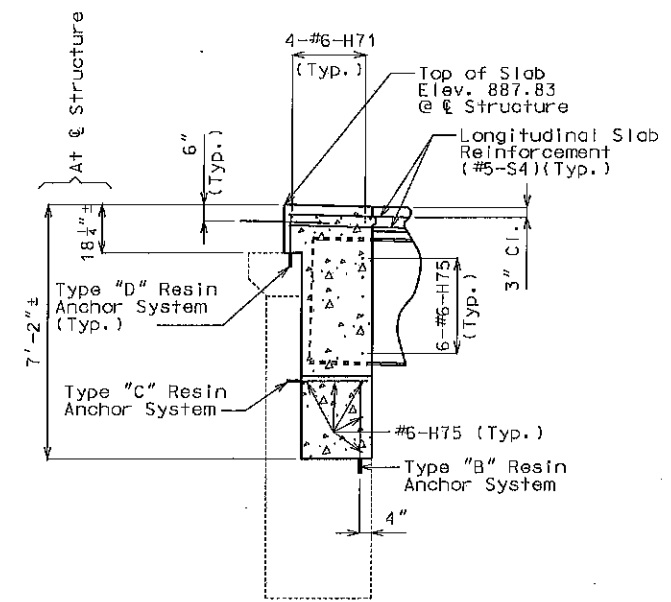


Note:
For reinforcement of the Safety Barrier Curb, see Sheet No. 31.
All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.
For Slab Construction Joint Detail, see Sheet No. 22.

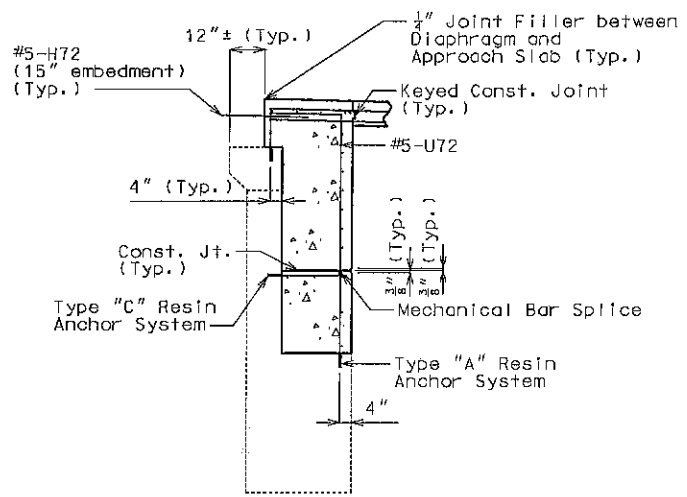
The contractor shall use a mechanical bar splice for Type "A" Resin Anchor Systems and U72 bars at the specified location. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on the end of the bars being located flush to the face of the construction joint. No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.



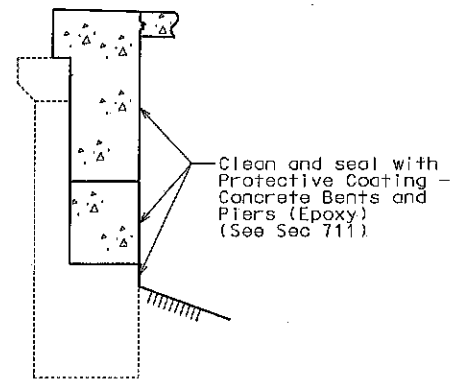
TYPICAL SECTION THRU EXISTING END BENT



SECTION B-B

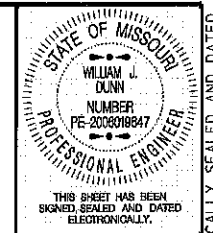


SECTION C-C



TYPICAL SECTION THRU END BENT SHOWING PROTECTIVE COATING

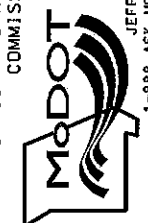
DETAILS OF END BENT NO. 7

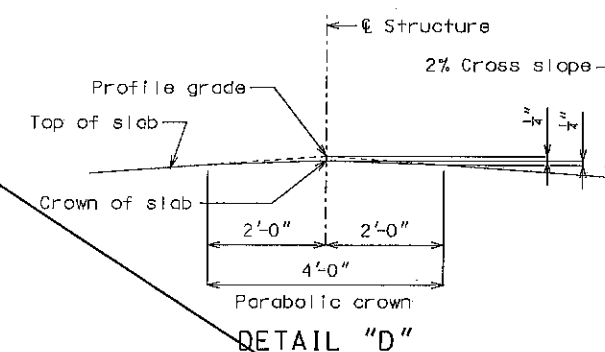
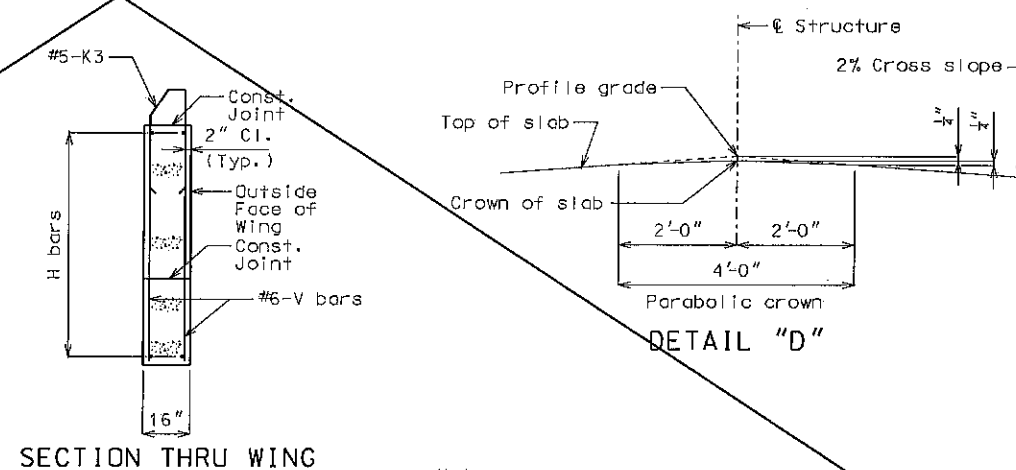
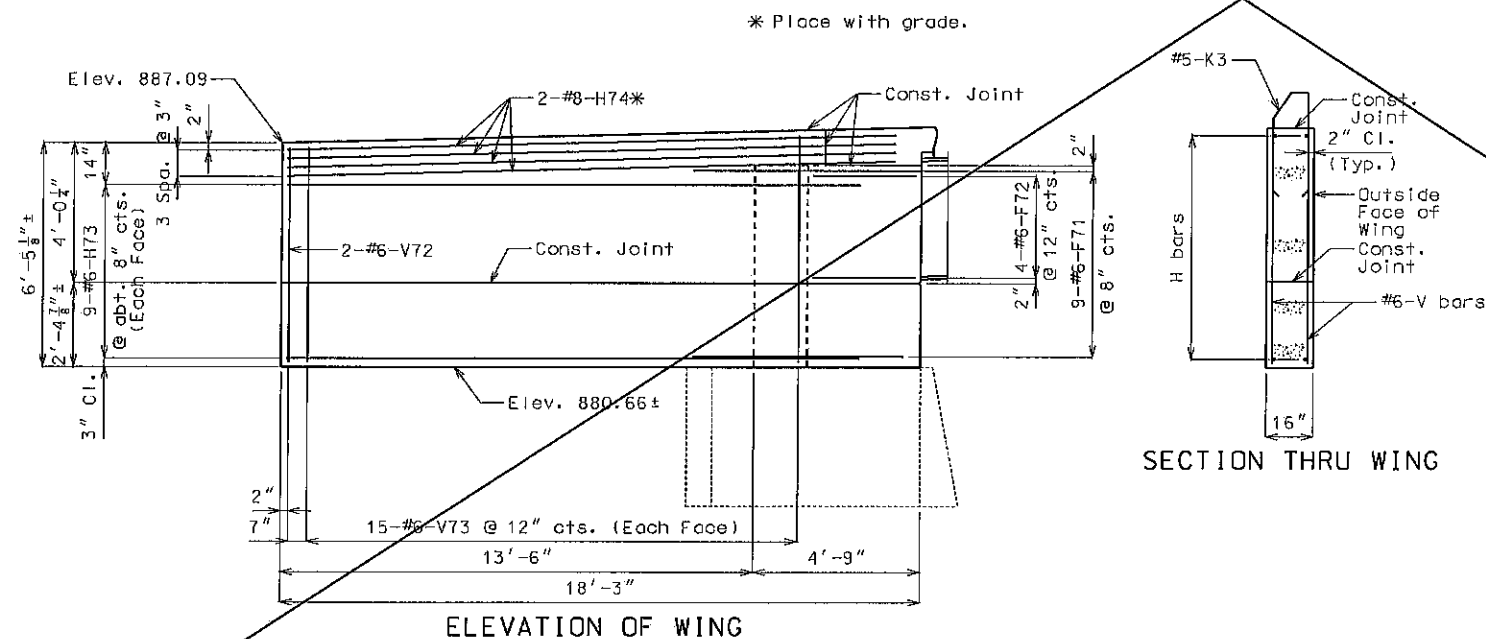
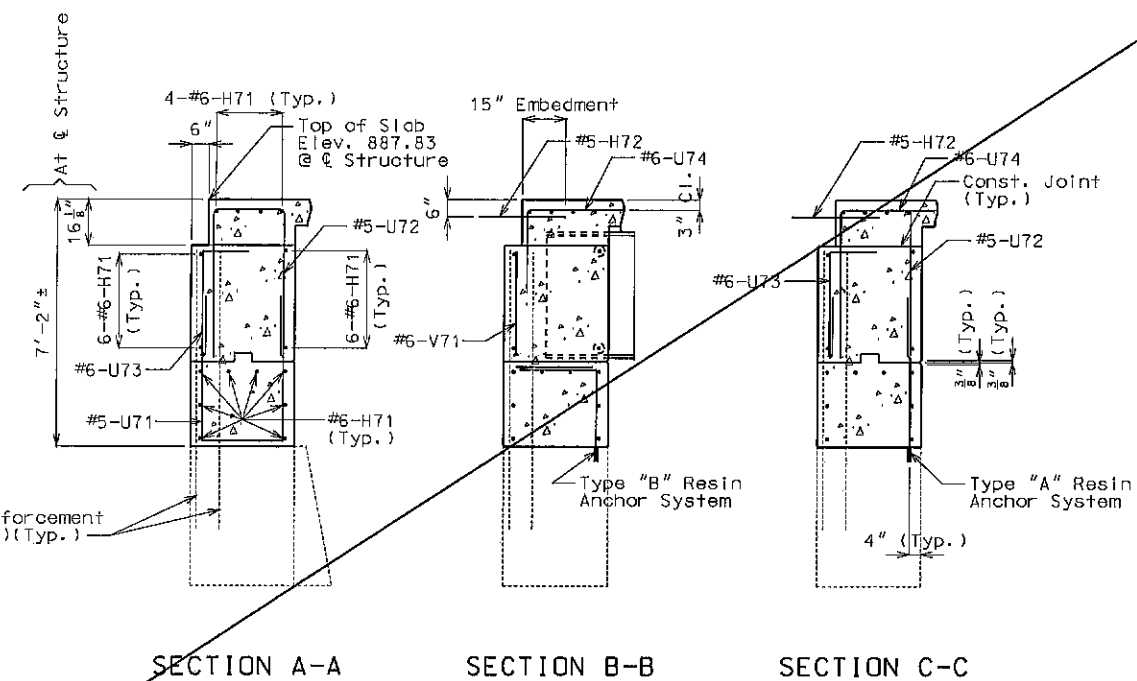
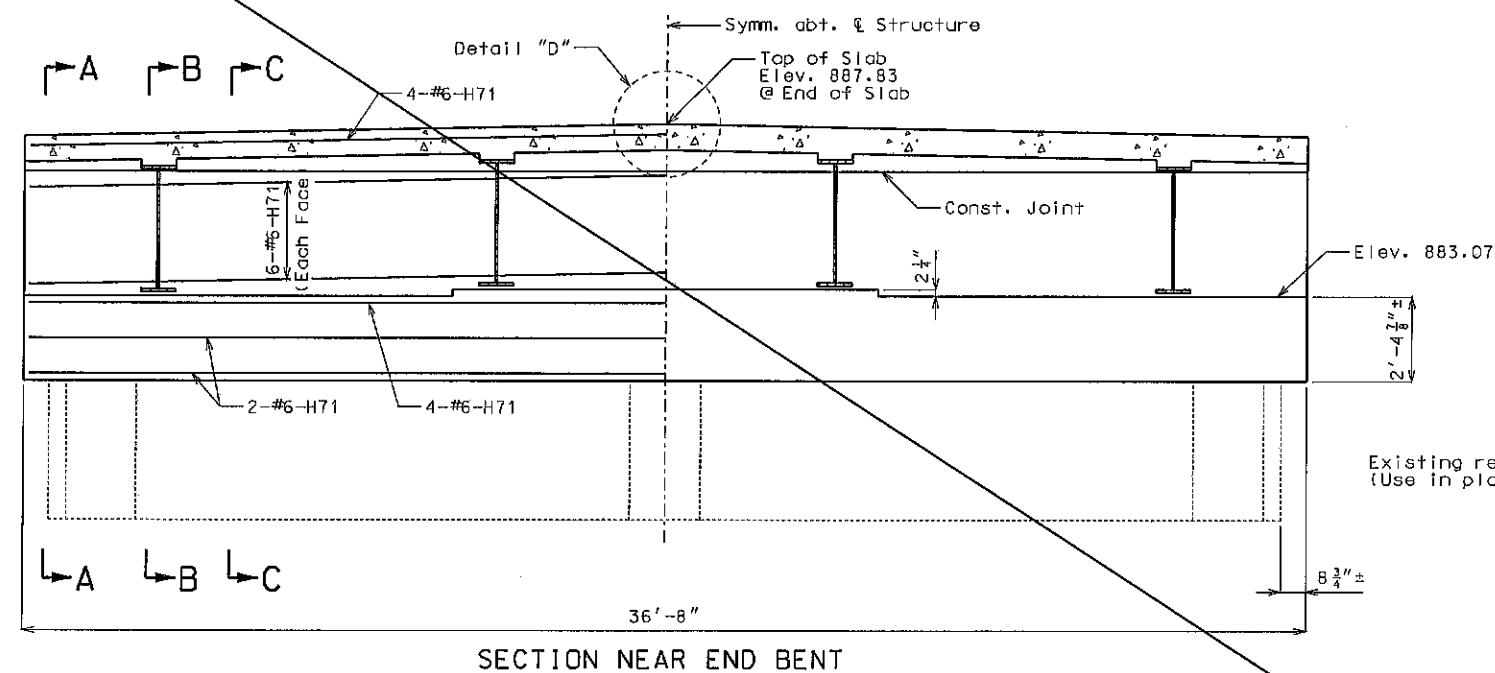


DATE PREPARED	3/28/2011
ROUTE	I-44
STATE	MO
DISTRICT	BR
SHEET NO.	13A
COUNTY	LACLEDE
JOB NO.	J812167
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	L06983

DESCRIPTION	DATE

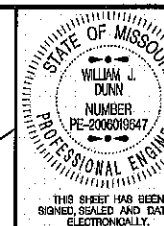
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITAL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)





Note:
For reinforcement of the Safety Barrier Curb, see Sheet No. 31.
All concrete in the end bent above top of existing beam and below top of slab shall be Class B-2.

Concrete diaphragm at the integral end bents shall be poured a minimum of 12 hours before the slab is poured.



DATE PREPARED

ROUTE	STATE
1-11	110

I-44	MC
------	----

DISTRICT	SHEET
22	15

BR	13
----	----

COUNTY

LACLEDE

JOB NO.
1010107

J812167

CONTRACT ID.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

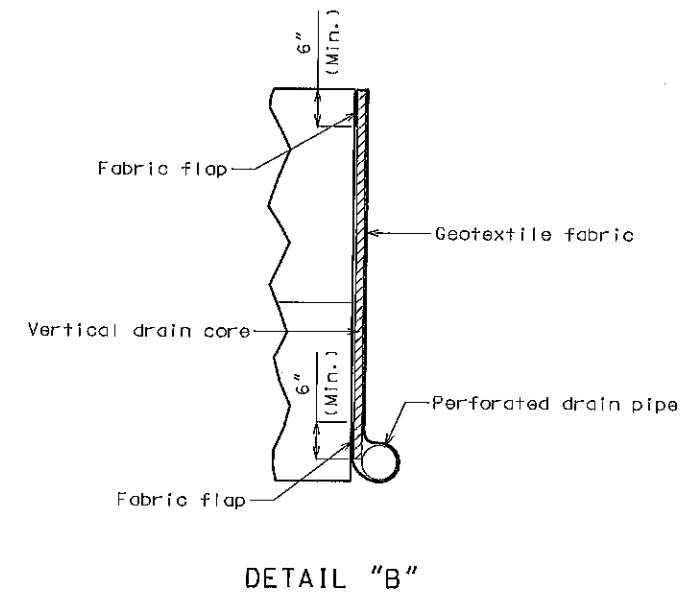
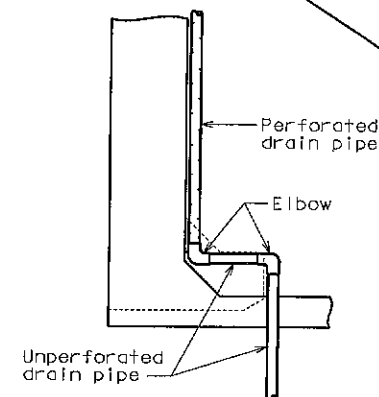
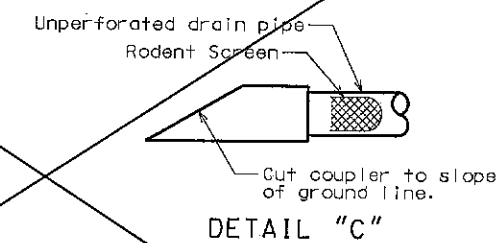
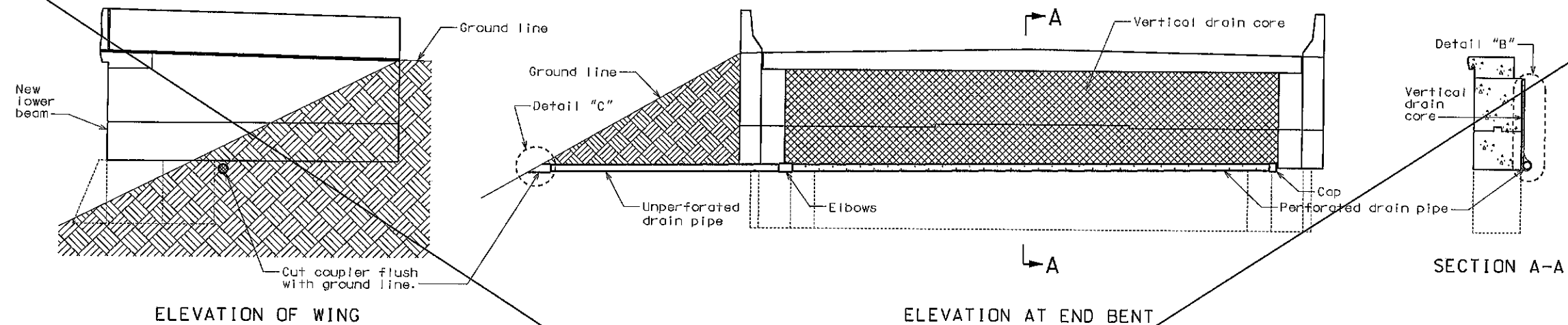
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-WOODOT (1-888-275-6636)

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

~~Detailed Jan. 2010~~
~~Checked Jan. 2010~~

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

Sheet No. 13 of 35  Delete this sheet 3/17/2011

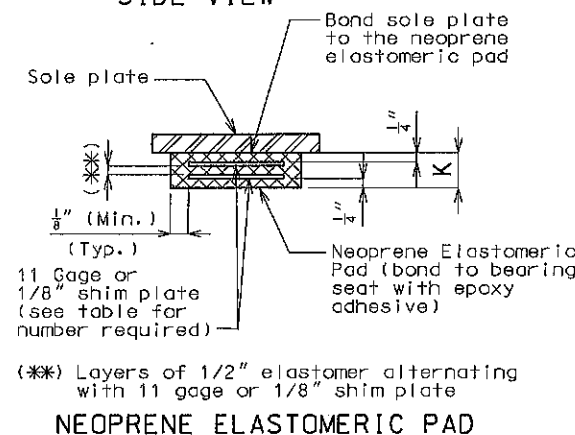
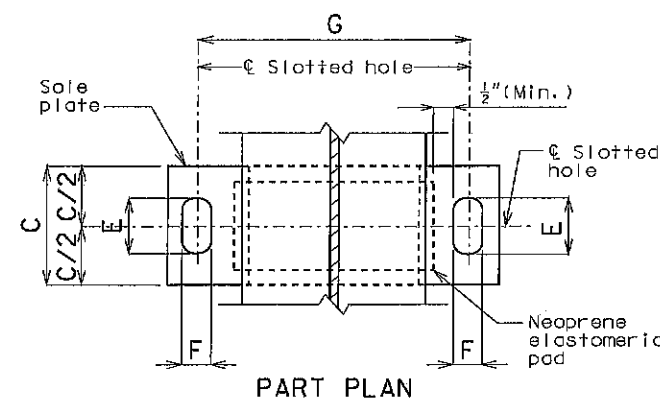
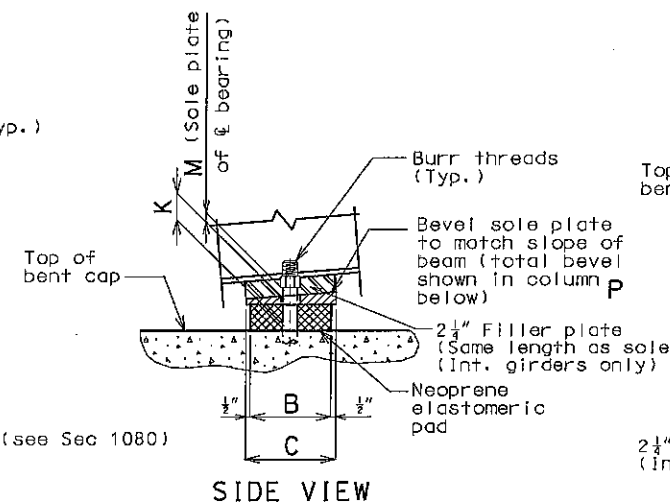
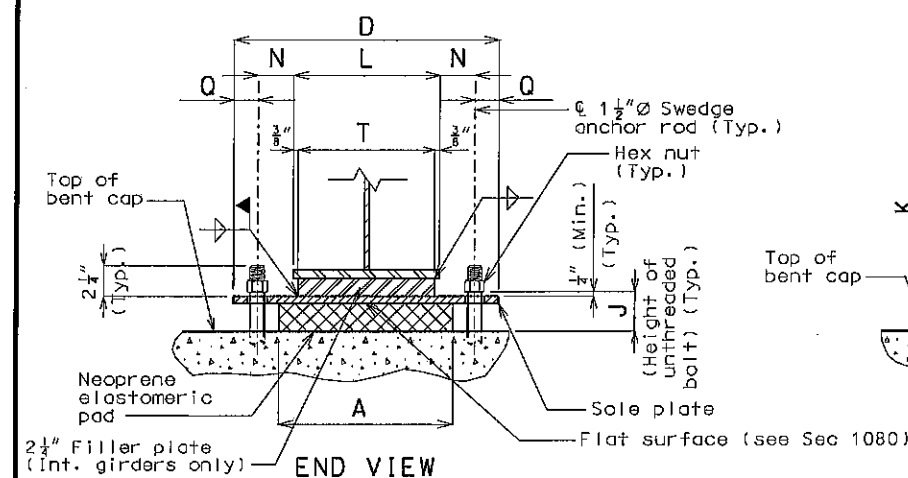


~~Note:
Drain pipe may be either 6" diameter corrugated
metallic-coated steel pipe underdrain, 4" diameter
corrugated polyvinyl chloride (PVC) drain pipe, or
4" diameter corrugated polyethylene (PE) drain pipe.~~

~~Place drain pipe at fill face of end bent and slope to lowest grade of ground line, also missing the lower beam of end bent by 1 1/2". (See elevation at end bent.)~~

~~Perforated pipe shall be placed at fill face side at the bottom of new lower beam and plain pipe shall be used where the vertical drain ends to the exit at ground line.~~

[illegible]



EXPANSION BEARINGS																		
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	T	NUMBER OF SHIM PLATES(*)	NUMBER REQUIRED
2 Span (1-2)	18"	10"	11"	26"	4"	1 $\frac{5}{8}$ "	21 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	12"	1 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	1"	2 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	11 $\frac{1}{4}$ "	6	4
6 Span (6-7)	18"	10"	11"	26"	4"	1 $\frac{5}{8}$ "	21 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	16"	1 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	1"	2 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	15 $\frac{1}{4}$ "	6	4
(*) The required shim plate shall be placed between layers of skeleton and glued together to form																	TOTAL BEARINGS	8

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

GENERAL NOTES FOR EXPANSION BEARINGS:

Anchor rods shall be $1\frac{1}{2}$ " $\varnothing$ ASTM F1554 Grade 55 swedged rods and shall extend 15" into the concrete with AASHTO M291 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

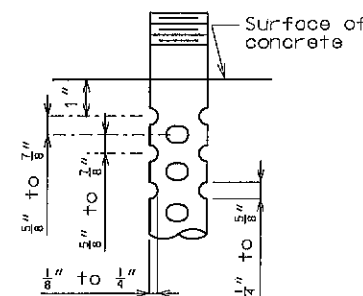
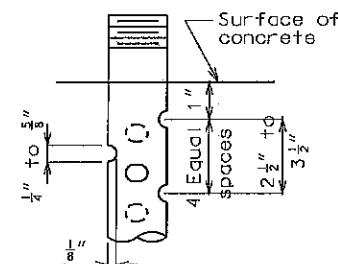
Anchor rod shall be at the C of slotted hole at 60°F. Bearing position shall be adjusted **R** for each 10° fall or rise in temperature at installation.

All structural steel for the anchor rods 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.

Structural steel for sole plate and filler plate shall be ASTM A709 Grade 50W. The anchor bolts and welds shall have corrosion resistance and weathering characteristics compatible with the base material.

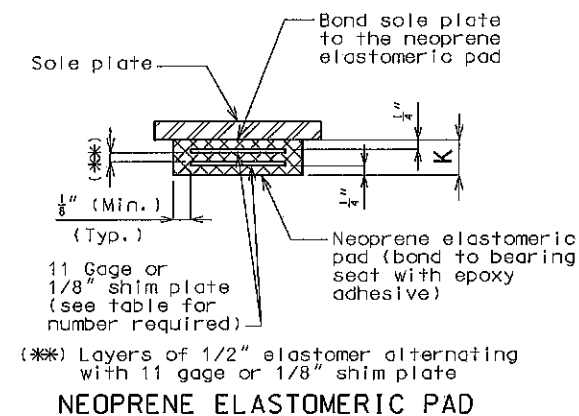
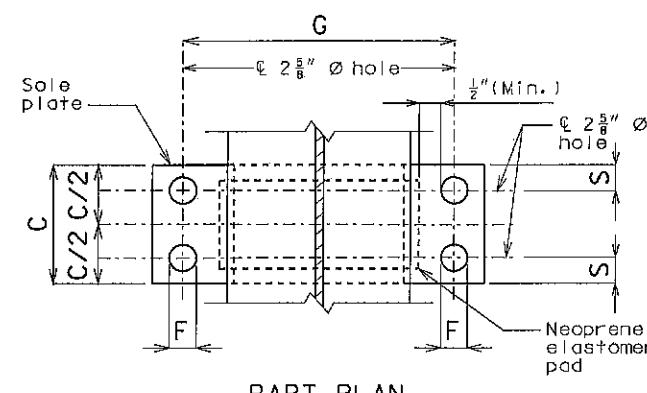
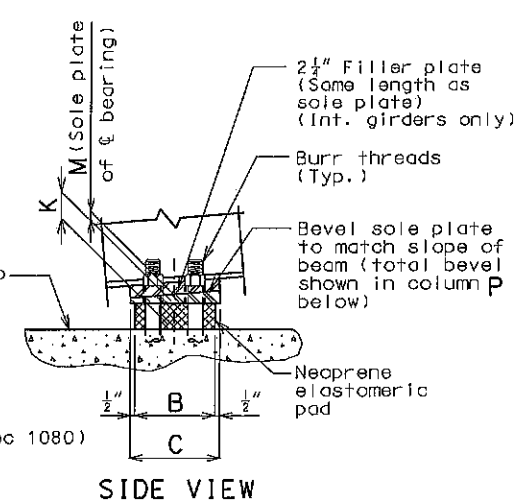
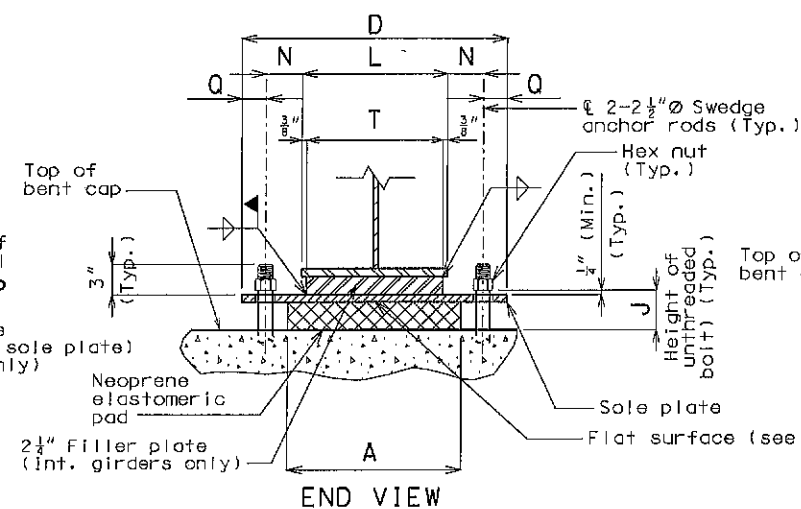
Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.



DETAIL OF 3/4"Ø THRU
2 1/2"Ø ANCHOR RODS

OPTIONAL DETAIL OF 1 3/8"Ø
THRU 2 1/2"Ø ANCHOR RODS

SWEDGE ANCHOR ROD DETAILS



FIXED BEARINGS																	NUMBER OF	NUMBER
BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	Q	S	T	SHIM PLATES(*)	REQUIRE	
4	21"	19"	20"	33"	2 3/8"	25 1/2"	7 5/8"	5 3/8"	20"	1 1/2"	2 3/4"	1 1/2"	3 1/2"	5"	19 1/4"	9	4	

(*) The required shim plate shall be placed between layers of stator and gasketed together to form

TOTAL BEARINGS	4

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

GENERAL NOTES FOR FIXED BEARINGS:

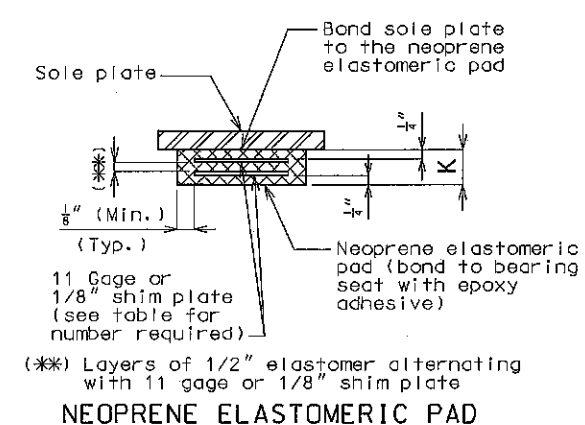
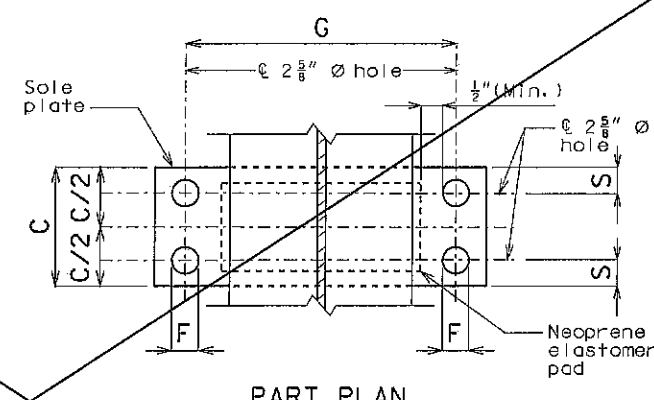
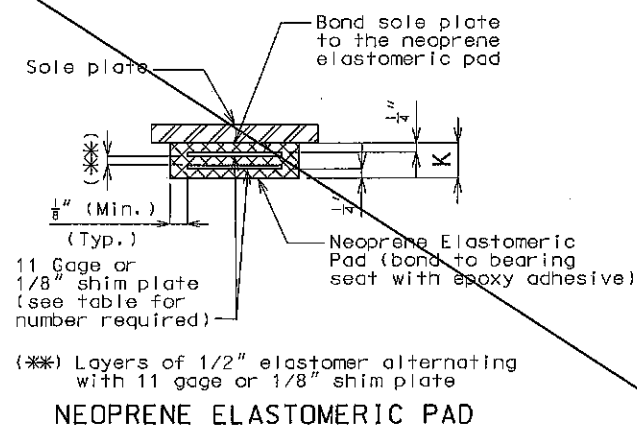
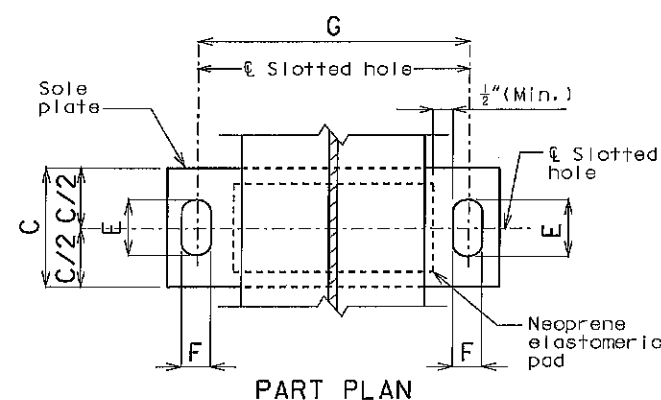
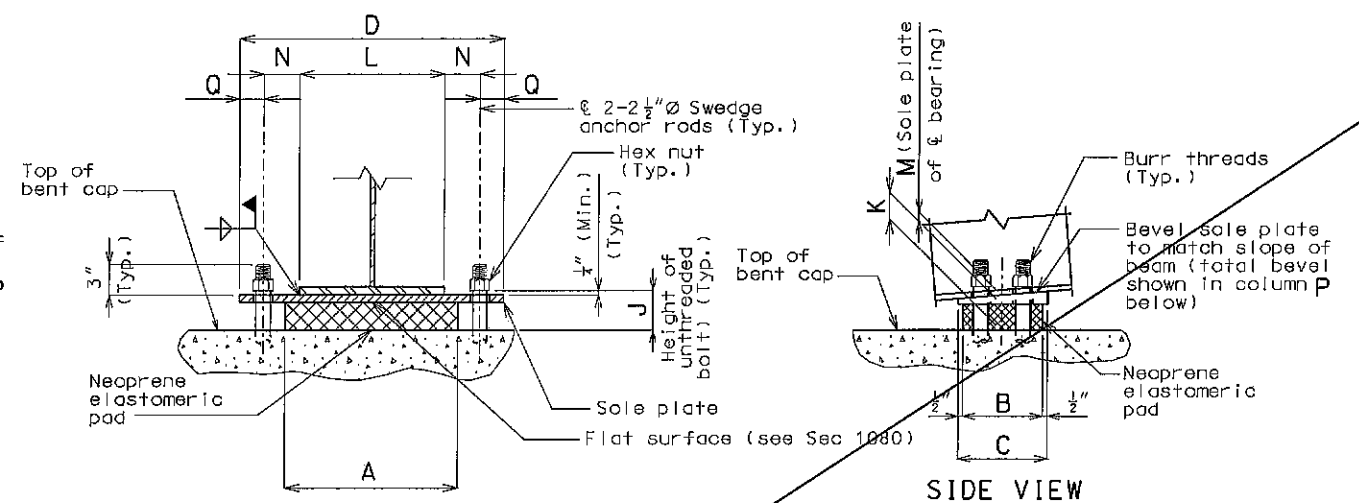
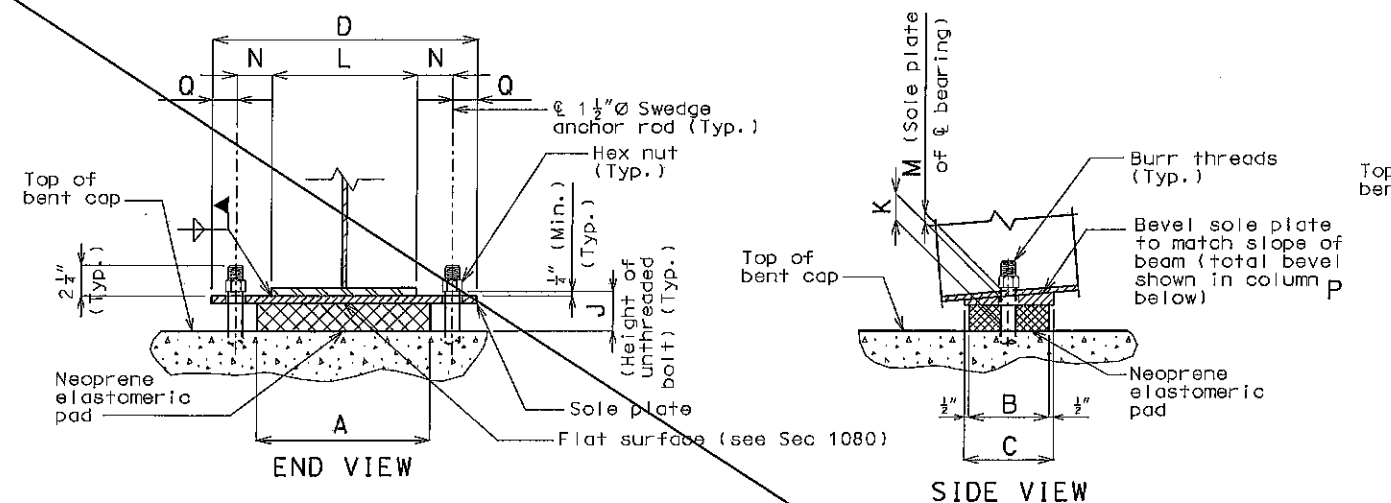
Anchor rods shall be 2 1/2" Ø ASTM F1554 Grade 55 swedged rods and shall extend 25" into the concrete with AASHTO M291 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

All structural steel for the anchor rods 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.

Structural steel for sole plate and filler plate shall be ASTM A709 Grade 50W. The anchor bolts and welds shall have corrosion resistance and weathering characteristics compatible with the base material.

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.



EXPANSION BEARINGS																	
BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	Q	R	NUMBER OF SHIM PLATES(%)	NUMBER REQUIRED
2 Span (1-2)	18"	10"	11"	26"	4"	1 $\frac{5}{8}$ "	21 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	12"	1 $\frac{1}{2}$ "	4 $\frac{3}{4}$ "	1 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	6	4
6 Span (6-7)	18"	10"	11"	26"	4"	1 $\frac{5}{8}$ "	21 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	16"	1 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	1 $\frac{1}{4}$ "	2 $\frac{1}{4}$ "	1 $\frac{1}{16}$ "	6	4
(*): The required shim plate shall be placed between layers of beam and welded together to form																TOTAL BEARINGS	8

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

FIXED BEARINGS															NUMBER OF SHIM PLATES(*)	NUMBER REQUIRE
BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	Q	S		
4	21"	19"	20"	33"	2 5/8"	25 1/2"	7 5/8"	5 5/8"	20"	1 1/2"	2 3/4"	1/2"	3 3/4"	5"	9	4

(*) The required shim plate shall be placed between the two layers of bearing. The required shim plate shall be placed between the two layers of bearing. The required shim plate shall be placed between the two layers of bearing.

TOTAL BEARINGS															4
----------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---

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

GENERAL NOTES FOR EXPANSION BEARINGS:

Anchor rods shall be $1\frac{1}{2}" \varnothing$ ASTM F1554 Grade 55 swedged rods and shall extend 15" into the concrete with AASHTO M291 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

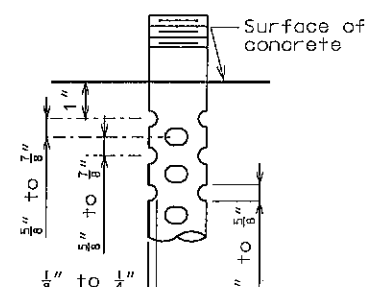
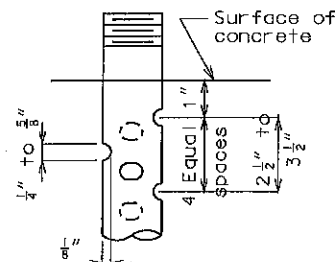
Anchor rod shall be at the C of slotted hole at 60°F . Bearing position shall be adjusted R for each 10° fall or rise in temperature at installation.

~~All structural steel for the anchor rods 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.

Structural steel for sole plate shall be ASTM A709 Grade 50W. The anchor bolts and welds shall have corrosion resistance and weathering characteristics compatible with the base material.

~~Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.~~



DETAIL OF 3/4"Ø THRU 2 1/2"Ø ANCHOR RODS OPTIONAL DETAIL OF 1 3/8"Ø THRU 2 1/2"Ø ANCHOR RODS

SWEDGE ANCHOR ROD DETAILS

GENERAL NOTES FOR FIXED BEARINGS:

Anchor rods shall be 2 1/2" Ø ASTM F1554 Grade 55 swaged rods and shall extend 25" into the concrete with AASHTO M231 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

~~All structural steel for the anchor rods 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.

Structural steel for sole plate shall be ASTM A709 Grade 50W. The anchor bolts and welds shall have corrosion resistance and weathering characteristics compatible with the base material.

Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

DETAILS OF LAMINATED NEOPRENE BEARING PAD ASSEMBLY

~~Detailed Dec. 2009~~
~~Checked Jan. 2010~~

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

Sheet No. 15 of 35  Delete this sheet 3/17/2011



DATE PREPARED

ROUTE	STATE
-------	-------

DISTRICT	SHEET NO.
----------	-----------

COUNTY

JOB NO.

CONTRACT ID.

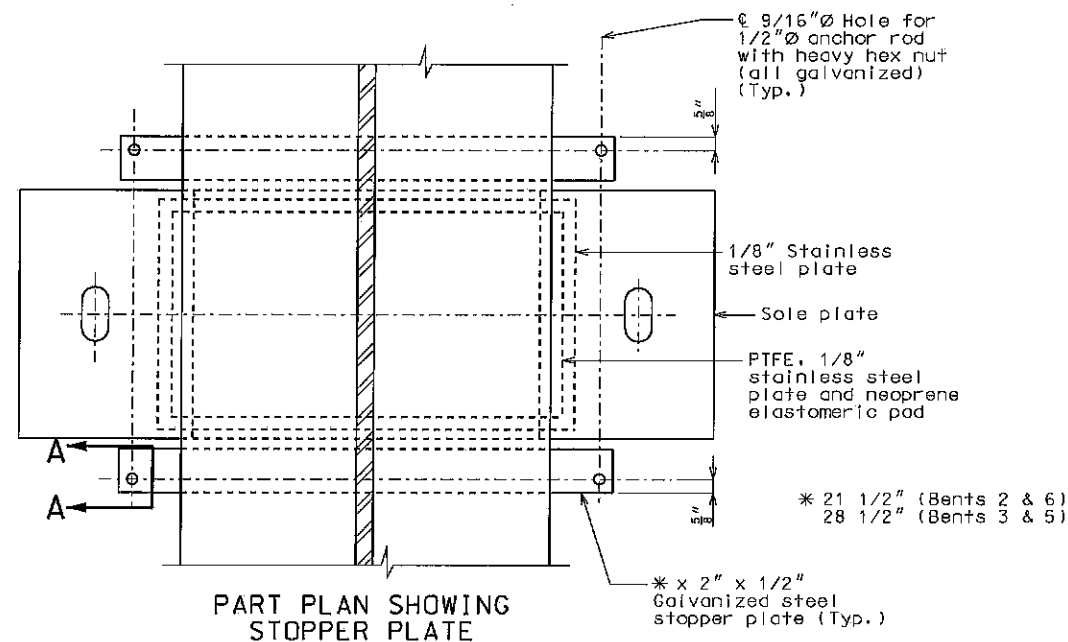
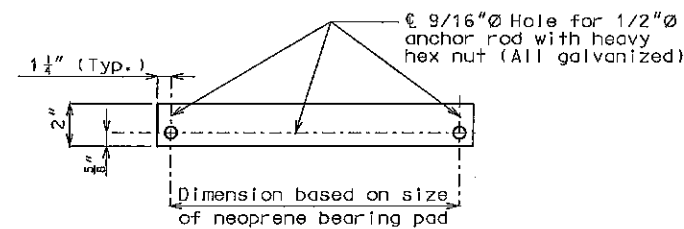
PROJECT NO.

BRIDGE NO.

[illegible]

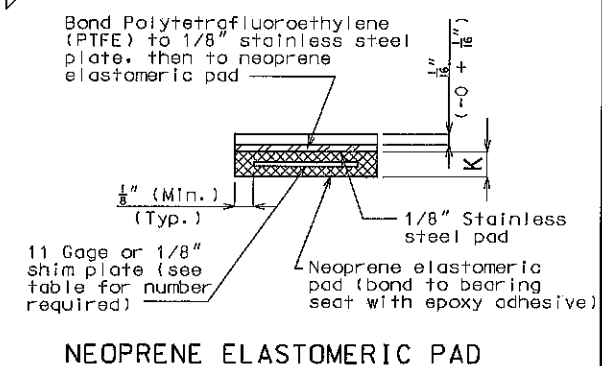
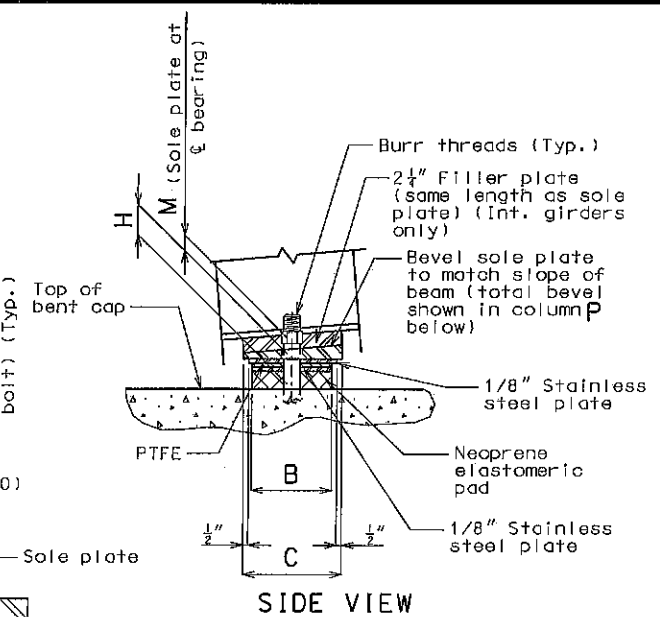
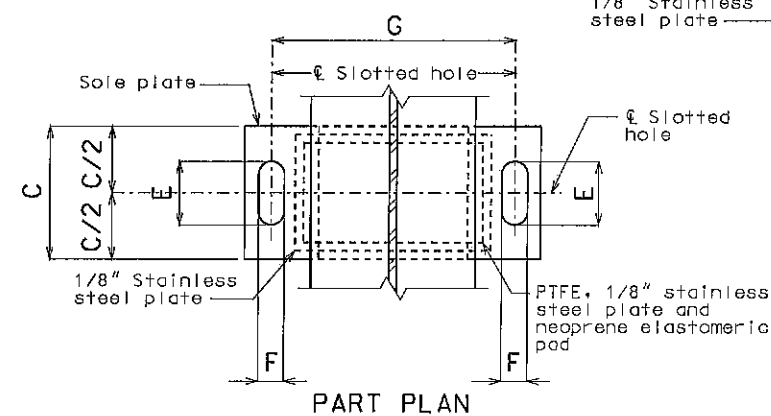
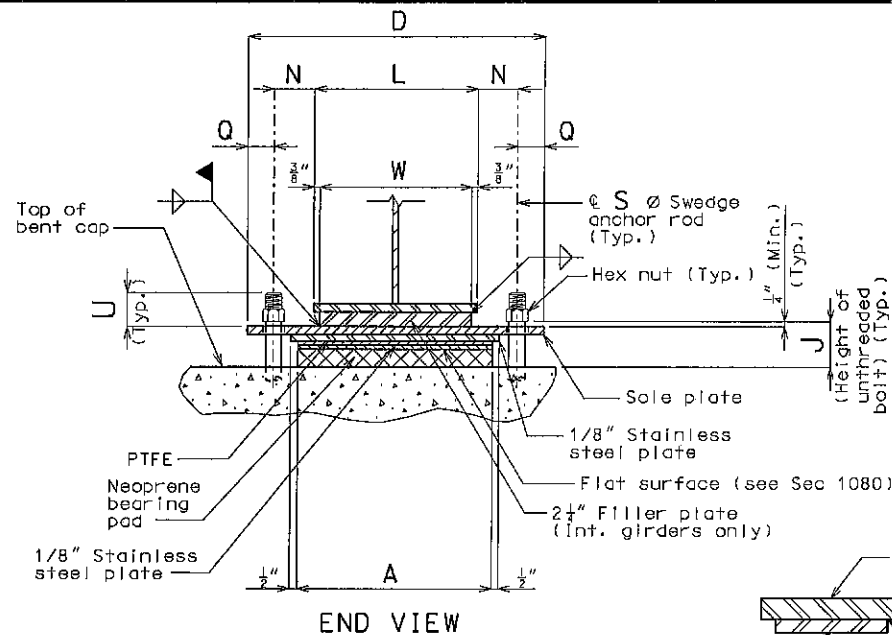
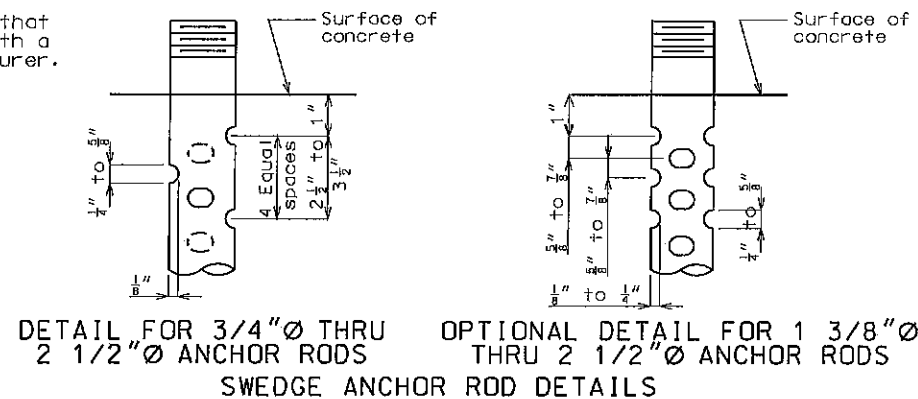
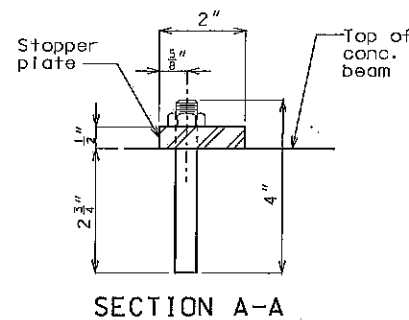
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.





Stopper plates shall be provided to prevent loss of support due to creeping of PTFE bearings. Payment for fabricating and installing the stopper plates will be considered completely covered by the contract unit price for Type N PTFE Bearing.

The bottom face of the 1/8" stainless steel plate that is welded to the sole plate shall be lubricated with a lubricant that is approved by the bearing manufacturer.



PTFE SLIDING BEARINGS																						NUMBER OF SHIM PLATES(*)	NUMBER REQUIRED
BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	W			
2 Span (2-3)	17"	12"	19½"	26"	7¾"	1⅝"	21"	3⅜"	5⅞"	3"	14"	1½"	3½"	½"	2½"	¼"	1½"	15"	2¼"	13¼"	4	8	
6 Span (5-6)	24"	16"	21½"	36"	6½"	2⅝"	28"	5¼"	7"	4⅞"	18"	1½"	5"	½"	4"	⅛"	2½"	25"	3"	17¼"	7	8	
3 & 5																							
(*) The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.																					TOTAL BEARINGS	16	

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

GENERAL NOTES:

Anchor rods shall be S $\emptyset$ ASTM F1554 Grade 55 swedged rods and shall extend T into the concrete with AASHTO M291 (ASTM A563) Grade A Hex or Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor rod shall be at the C of slotted hole at 60°F. Bearing position shall be adjusted R for each 10° fall or rise in temperature at installation.

All structural steel for the anchor rods 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.

Structural steel for sole plate and filler plate shall be ASTM A709 Grade 50W. The anchor bolts and welds shall have corrosion resistance and weathering characteristics compatible with the base material.

Type N PTFE Bearings shall be in accordance with Sec 716.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
3/28/2011

ROUTE	STATE
1-44	MD

DISTRICT	SHEET NO.
BR	16A

COUNTY
LACLEDE

JOB NO.
J812167

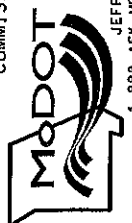
CONTRACT ID.

PROJECT NO.

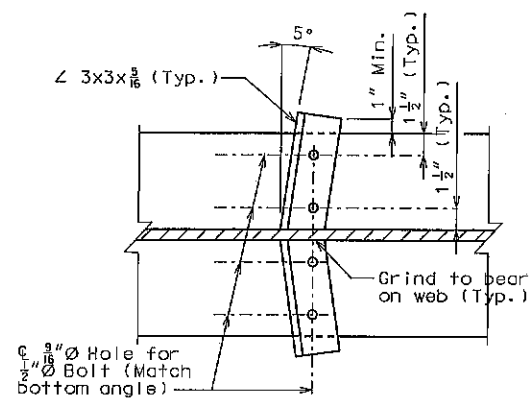
BRIDGE NO.
L06983

--	--	--	--	--	--	--	--

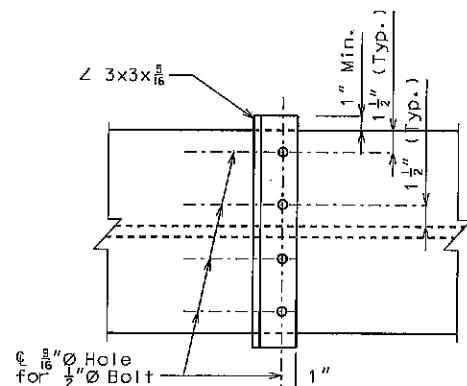
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

[illegible]

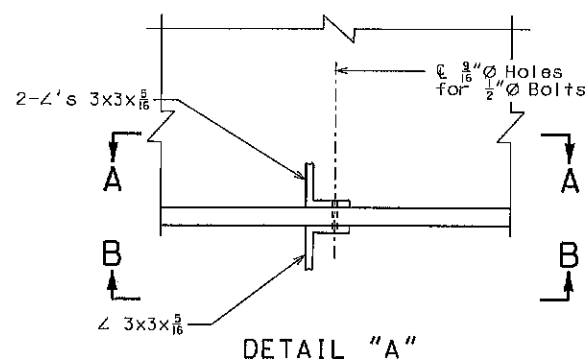
JEFFERSON CITY, MO 65102
--888-ASK-MODOT (1-888-275-6636)



SECTION A-A



SECTION B-B



Notes:
Plate girders shall be fabricated to be in accordance with the camber diagram shown on Sheet No. 21.

* Indicates flange plates subject to notch toughness requirements.

All web plates shall be subject to notch toughness requirements.

Fabricated structural steel shall be ASTM A709 Grade 50W, except as noted.

Longitudinal dimensions are horizontal from C Brg. to C Brg. See Part Longitudinal Sections on Sheet No. 20.

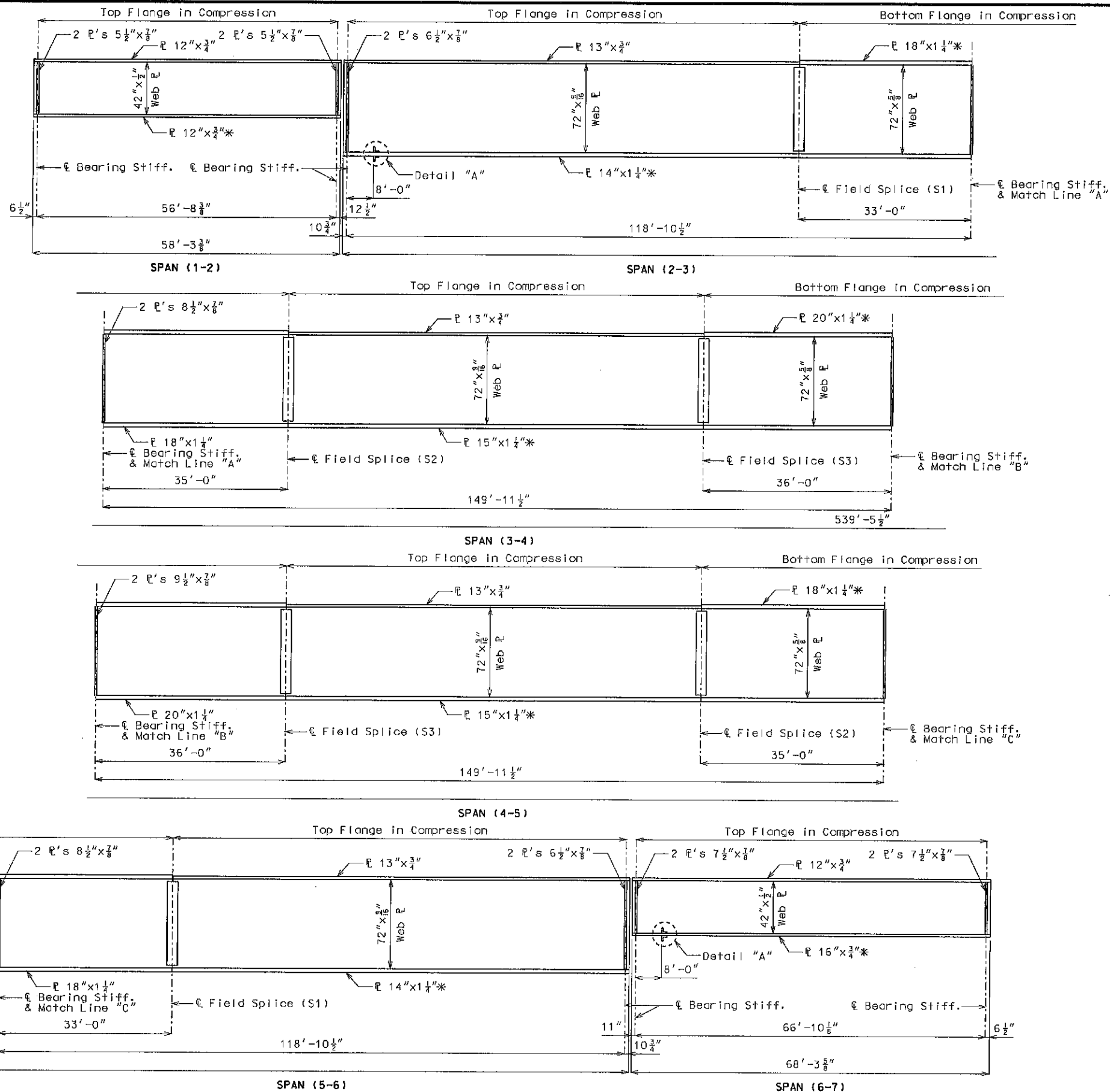
For Plan of Structural Steel, see Sheets No. 17 & 18.

For Details of Bolted Field Splices, see Sheet No. 23.

For location of slab drain attachment holes, see slab drain details sheet.

For Details of Filler Plates for Interior Girders, see Sheets No. 4, 12, 15, & 16.

ADDED

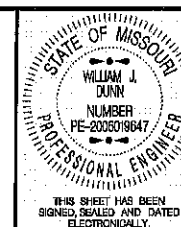


ELEVATION OF GIRDER

Detailed Dec. 2009
Checked Jan. 2010

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

Sheet No. 19 of 35 Revised 3/17/2011



DATE PREPARED
3/28/2011

ROUTE
1-44

DISTRICT
BR

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

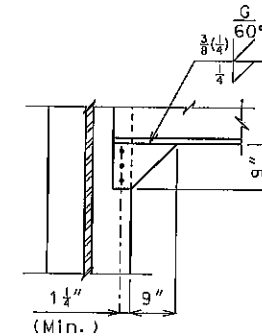
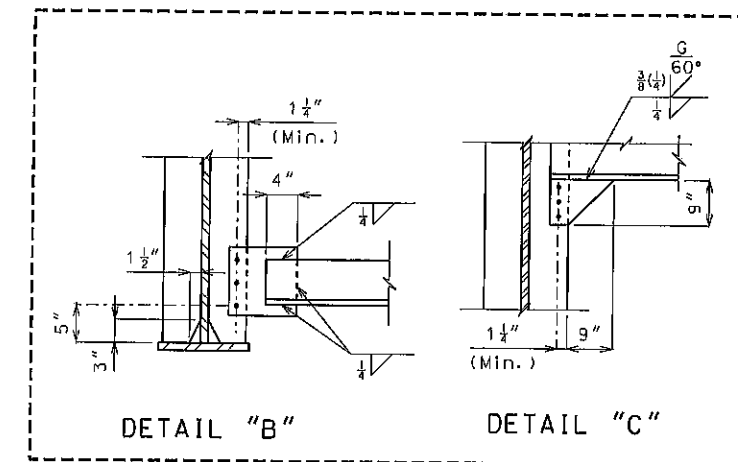
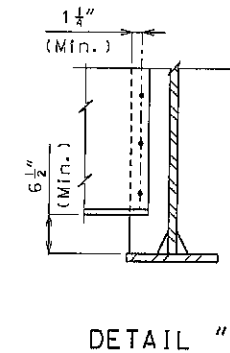
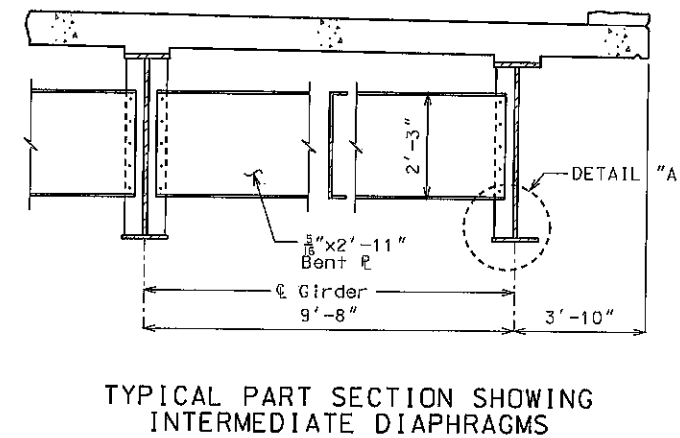
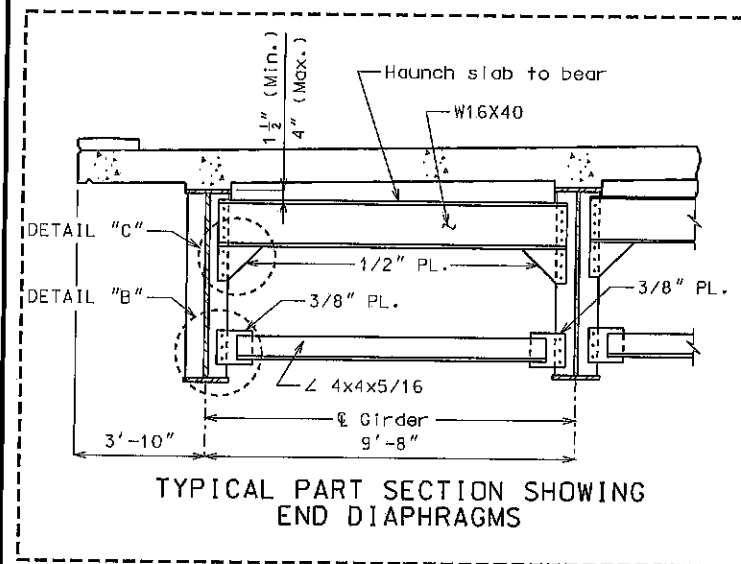
DESCRIPTION

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.



DETAILS OF END DIAPHRAGMS AND INTERMEDIATE DIAPHRAGMS FOR SPANS (1-2) & (6-7)

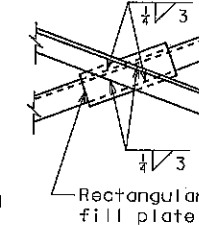
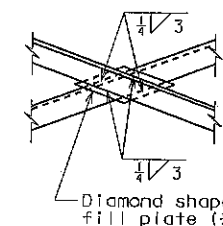
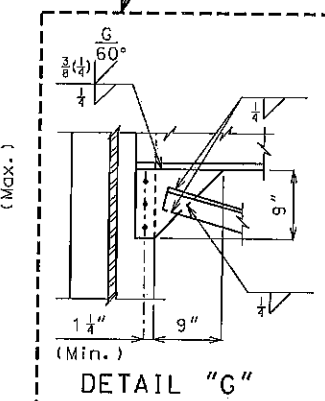
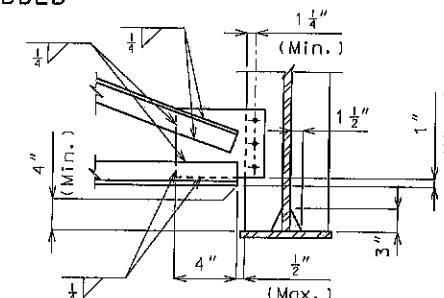
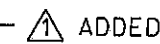
 REVISED *

—  REVISED *

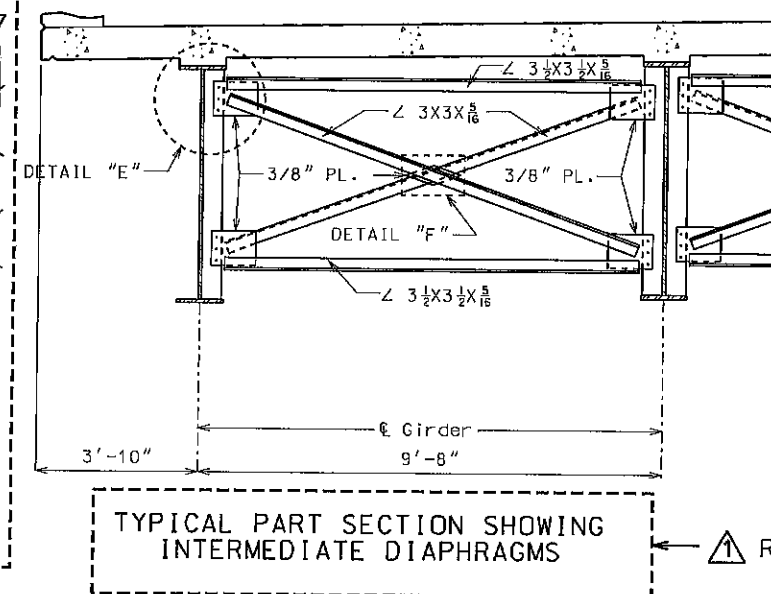
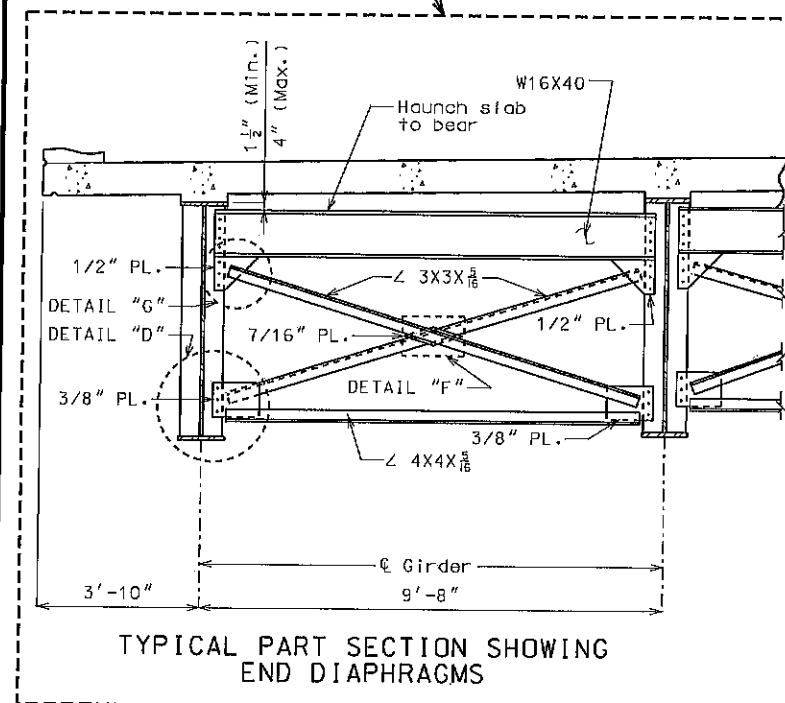
Note:
Fabricated structural steel shall be ASTM A709 Grade 50W, except
as noted.

At the contractor's option, holes in the diaphragm plate of non slab bearing diaphragms may be made 3/16" larger than the nominal diameter of the bolt. A hardened washer shall be used under the bolt head and nut when this option is used. Holes in the girder diaphragm connection plate or transverse web stiffener shall be standard size.

* See Shop Drawings for revised details of End Diaphragms and Cross Frames.

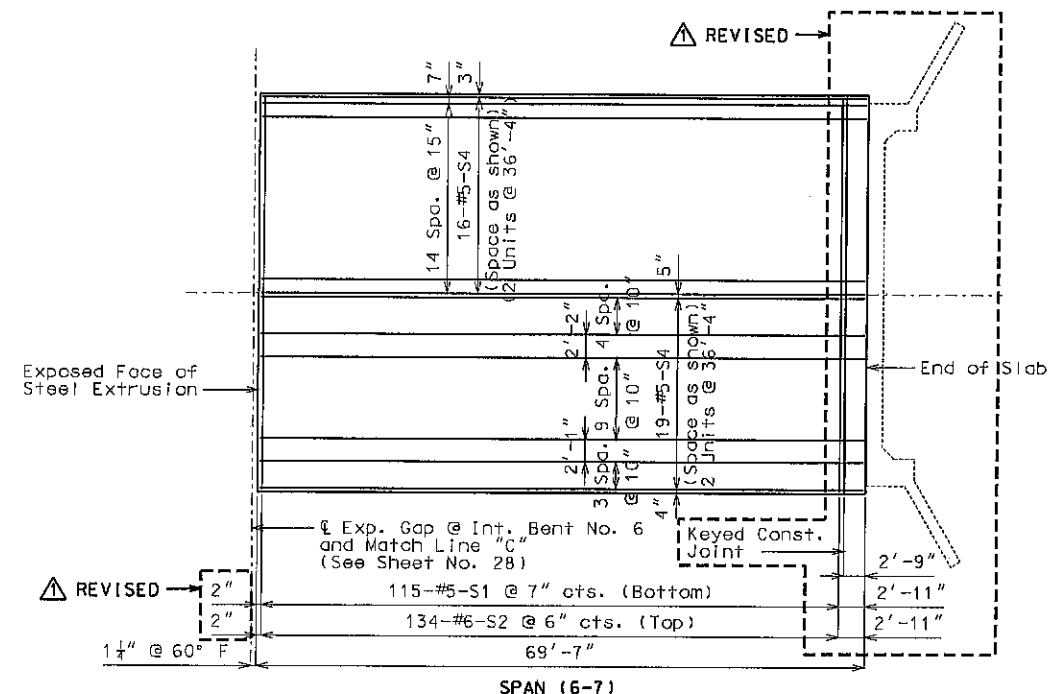
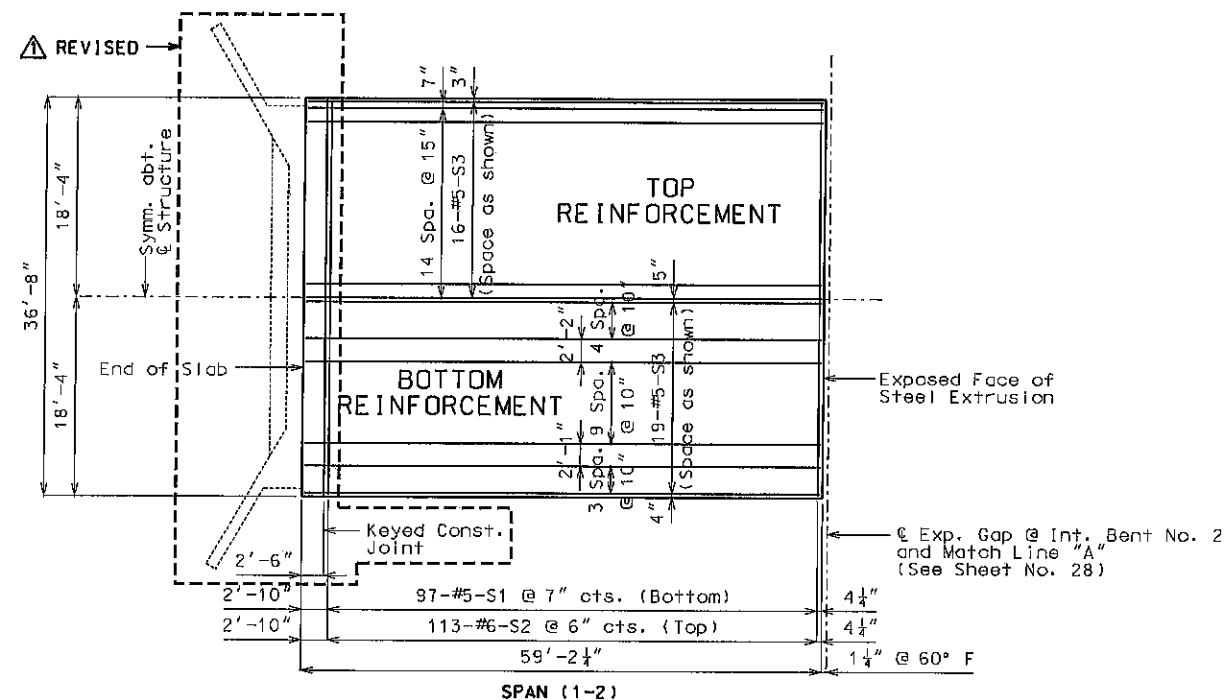


(*) At the contractor's option, rectangular fill plates may be used in lieu of diamond fill plates as shown in Optional Detail "F".

- 1 REVISED *

DETAILS OF END DIAPHRAGMS, INTERMEDIATE DIAPHRAGMS AND CROSS FRAMES FOR SPANS (2-3), (3-4), (4-5) & (5-6)

[illegible]



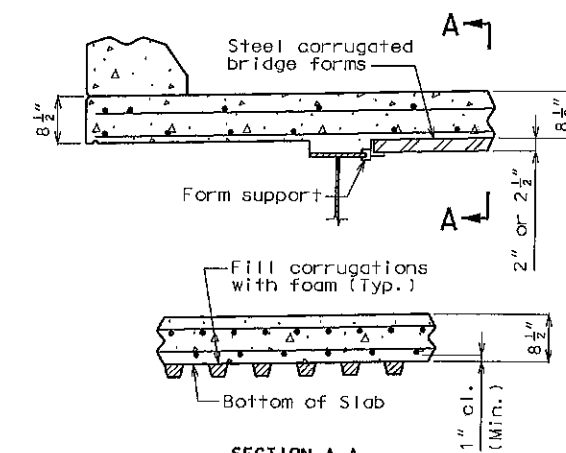
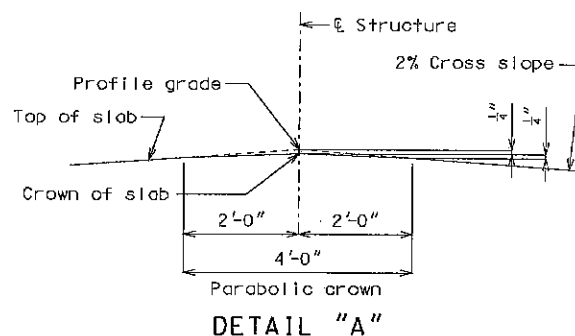
PART PLAN OF SLAB SHOWING REINFORCEMENT

Note:
Longitudinal dimensions are horizontal.

For details and reinforcement of safety barrier curb not shown,
see Sheets No. 29, 30 & 32.

For Theoretical Bottom of Slab Elevations, Slab Pouring Sequence, and Slab Construction Joint Detail, see Sheet No. 22.

For Dead Load Deflection Diagram, Camber Diagram and Theoretical Slab Haunch, see Sheet No. 21.



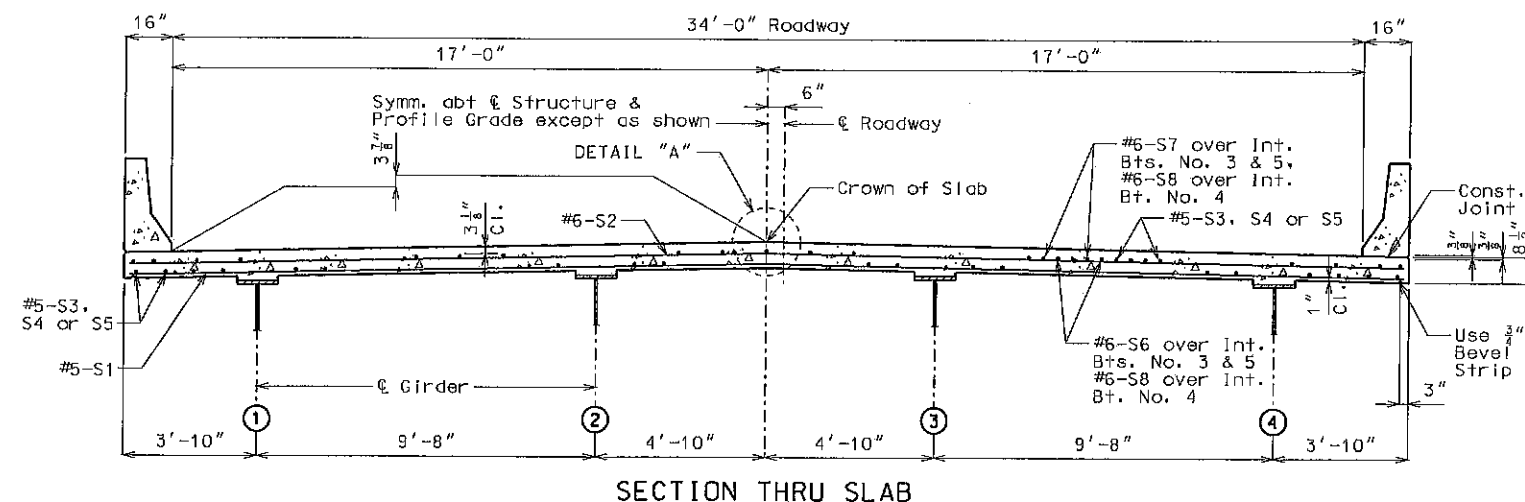
OPTIONAL STAY-IN-PLACE FORM DETAILS

Notes:
Permanent steel bridge deck forms, supports, closure
elements and accessories shall be in accordance with grade
requirement and coating designation G165 or ASTM A653.
Complete shop drawings of the permanent steel deck forms
shall be required in accordance with Sec 1080.

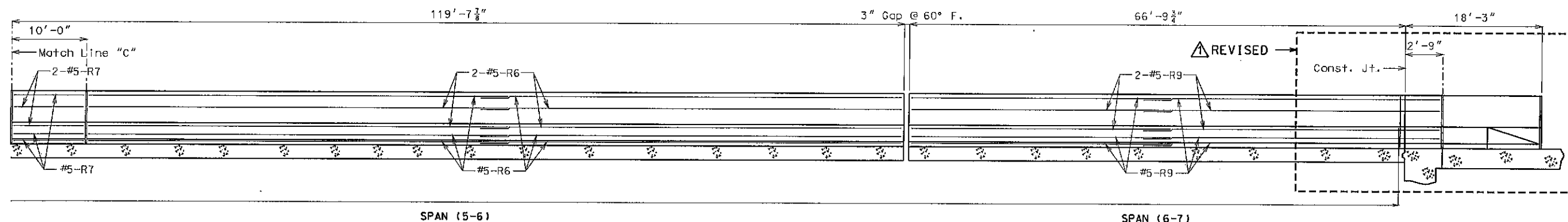
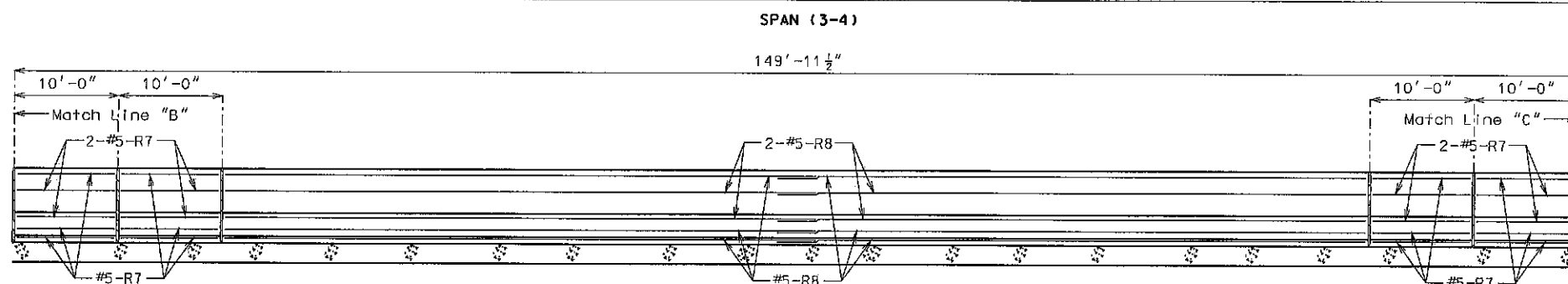
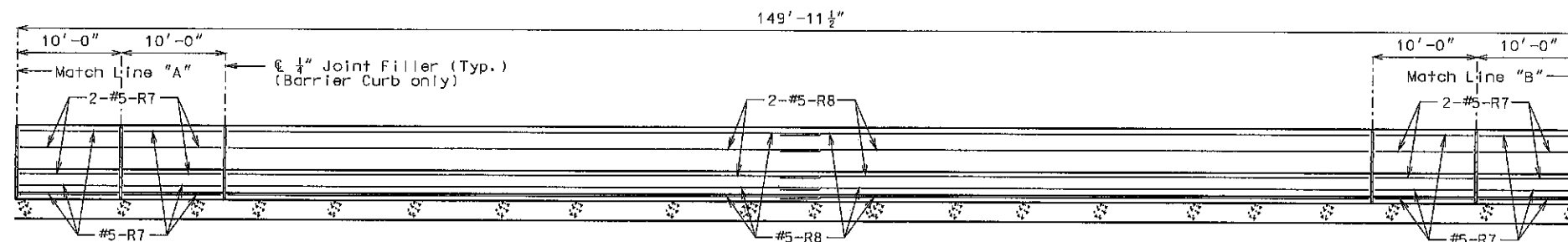
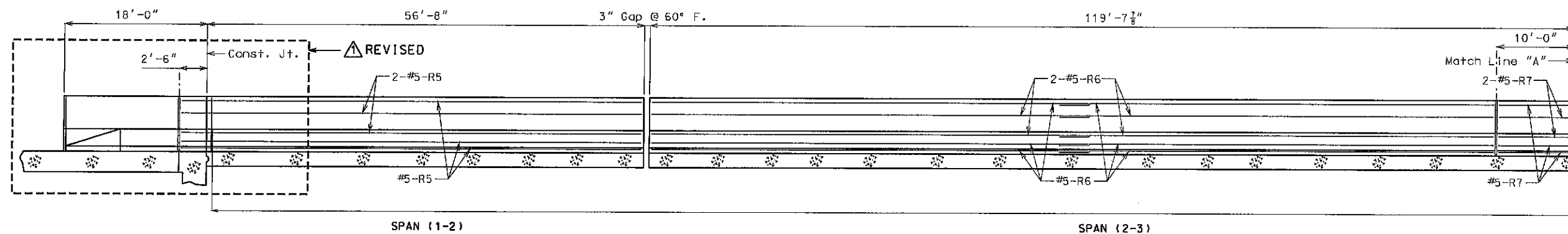
Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girders, stringers or floorbeams flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each support. Form supports shall be placed in direct contact with the flange. Welding on or drilling holes in the flanges of the girders, stringers or floorbeams will not be permitted. All steel fabrication and construction shall be in accordance with Sec's 1080 and 712. MoDOT certified field welders will not be required for welding of the form supports.

The contractor shall provide temporary bracing as necessary to prevent girders from rotating during slab pour. The cost for temporary bracing shall be considered completely covered by the contract unit price for Slab on Steel.



SECTION THRU SLAB



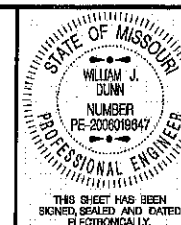
SECTION NEAR LEFT SAFETY BARRIER CURB

Note:
Longitudinal dimensions are horizontal.
For Part Section Near Left Barrier Curb and Details of
Movement Gauge, see Sheet No. 30.
Right Safety Barrier Curb similar.

Detailed Dec. 2009
Checked Jan. 2010

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

Sheet No. 29 of 35 Revised 3/17/2011



DATE PREPARED
3/28/2011
ROUTE
1-44
STATE
MO
DISTRICT
BR
SHEET NO.
29

COUNTY
LACLEDE
JOB NO.
J812167
CONTRACT ID.

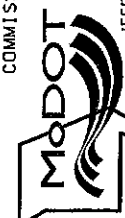
PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

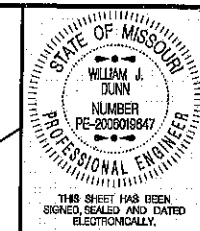
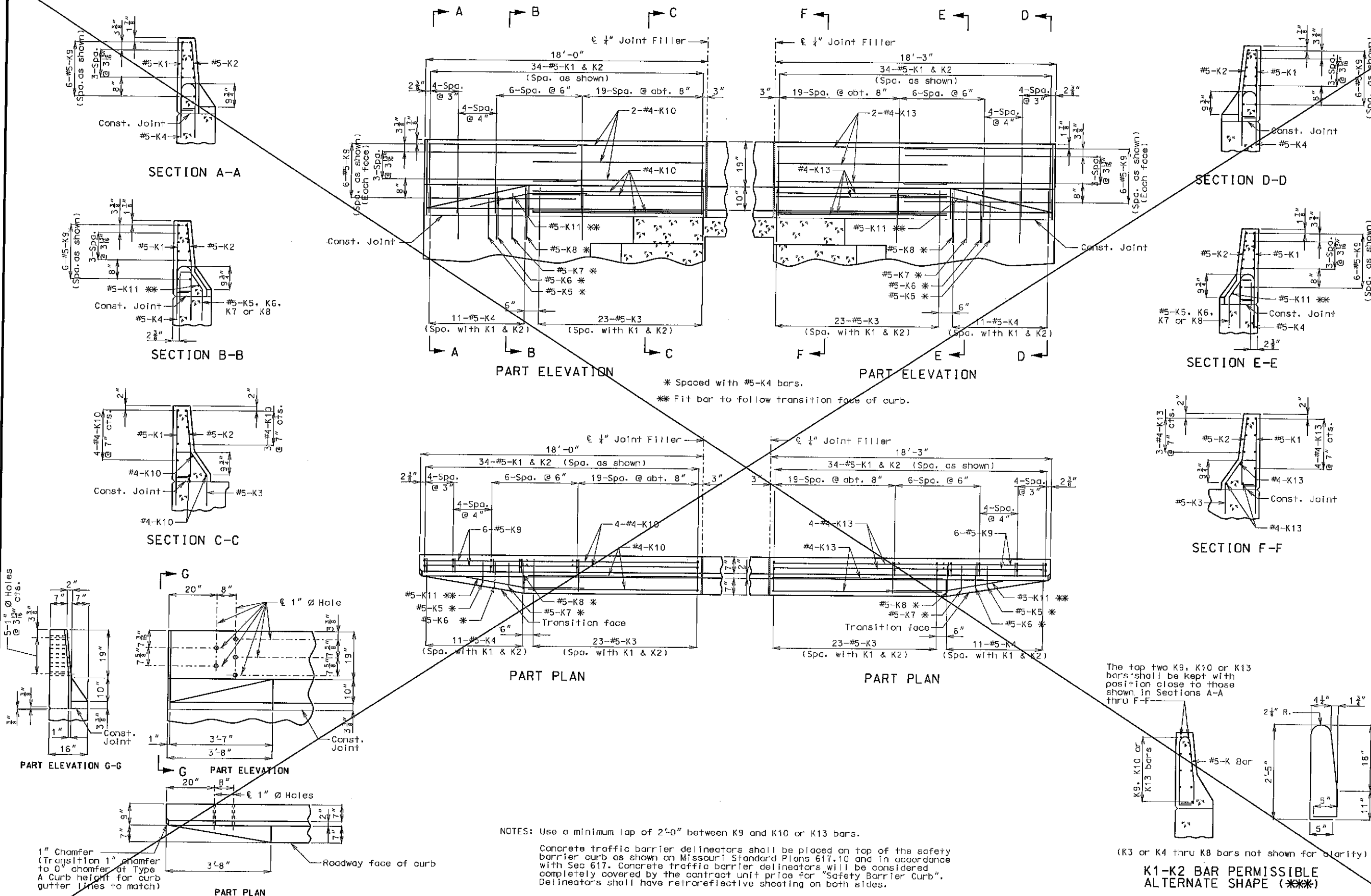
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



105 WEST CAPITAL
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.



DATE PREPARED
3/28/2011

ROUTE
1-44

STATE
MO

DISTRICT
BR

SHEET NO.
31

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

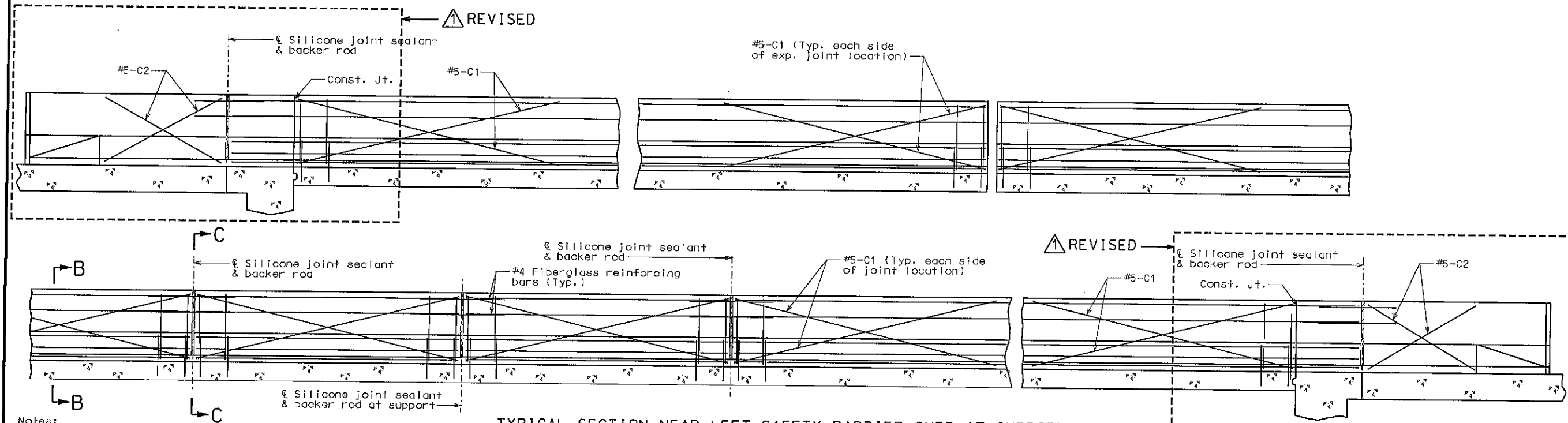
PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



Notes:

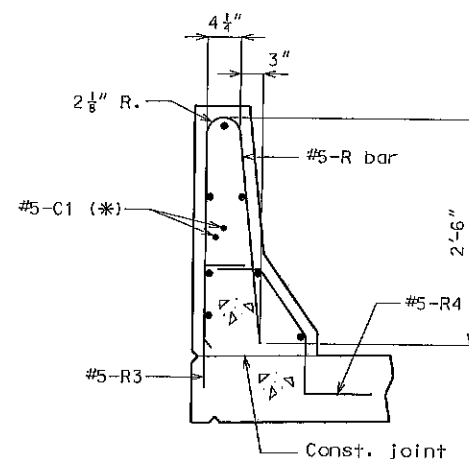
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete-in-place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

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

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

The curb shall be cured by application of Type 1-D Liquid Membrane-Forming Curing Compound in accordance with Sec 1055 and sealed in accordance with Sec 703. The contractor shall remove all curing compound in accordance with the manufacturer's recommendations before the concrete sealer is applied.



Notes: PART SECTION B-B
(*) Each side of joint location.

TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS
(OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

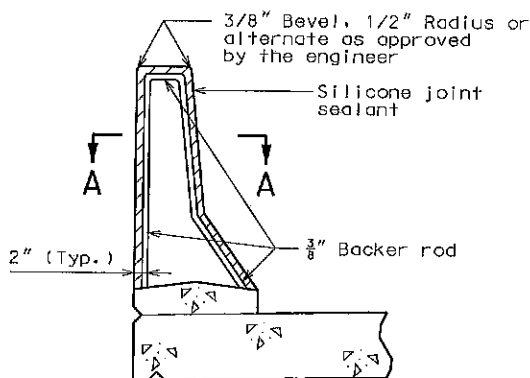
Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

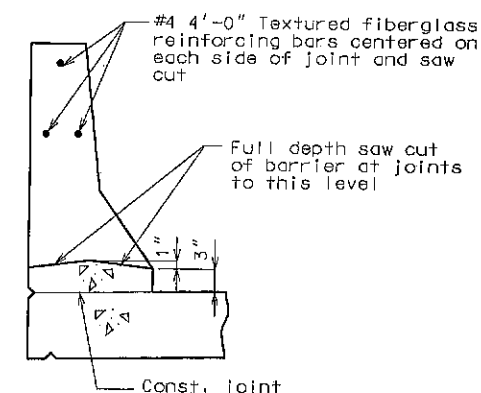
C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb". Delineators shall have retroreflective sheeting on both sides.



SECTION THRU JOINT



PART SECTION C-C

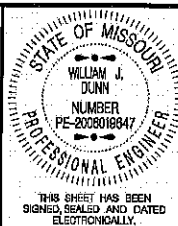
OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)

Detailed Dec. 2009
Checked Jan. 2010

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

Sheet No. 32 of 35  Revised 3/17/2011



DATE PREPARED
3/28/2011

ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 32

COUNTY
LACLEDE
JOB NO.
J812167
CONTRACT ID.

PROJECT NO.

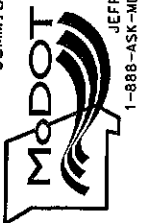
BRIDGE NO.
L06983

DESCRIPTION	DATE	AMOUNT	CHECK NO.	BANK	MEMO
...	...	...	...	...	...

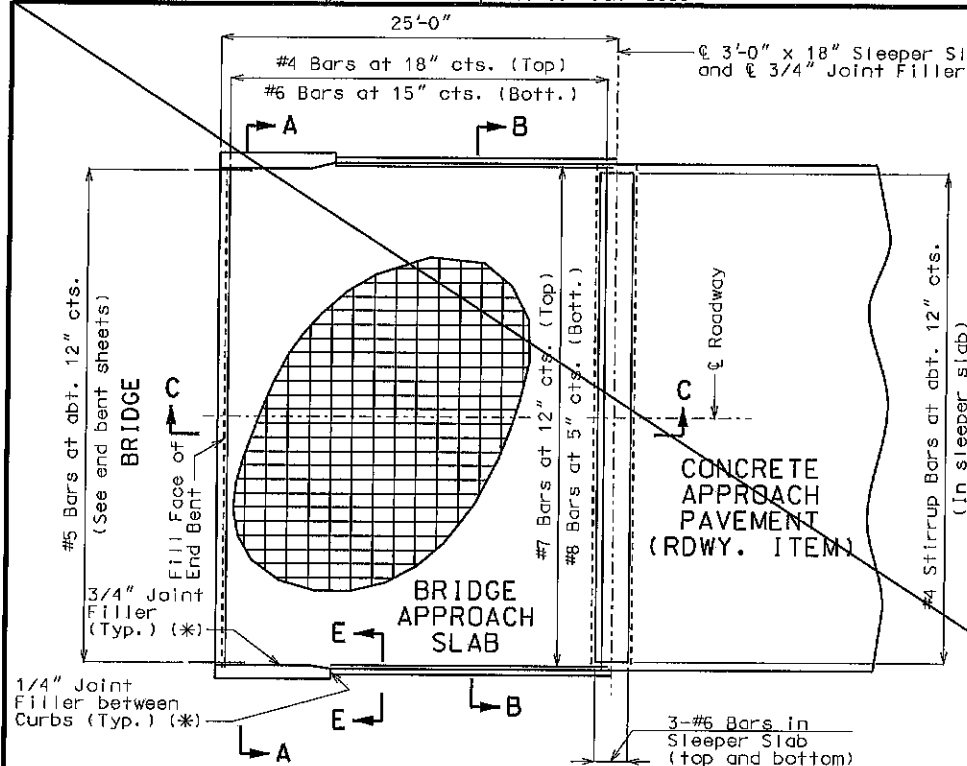
DATE _____

WAYS AND TRANSPORTATION
COMMISSION

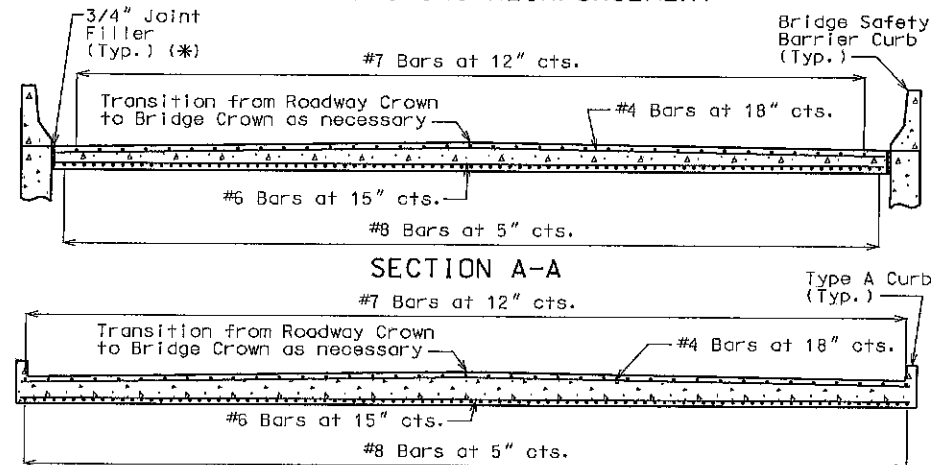
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MDOT (1-888-275-6636)



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

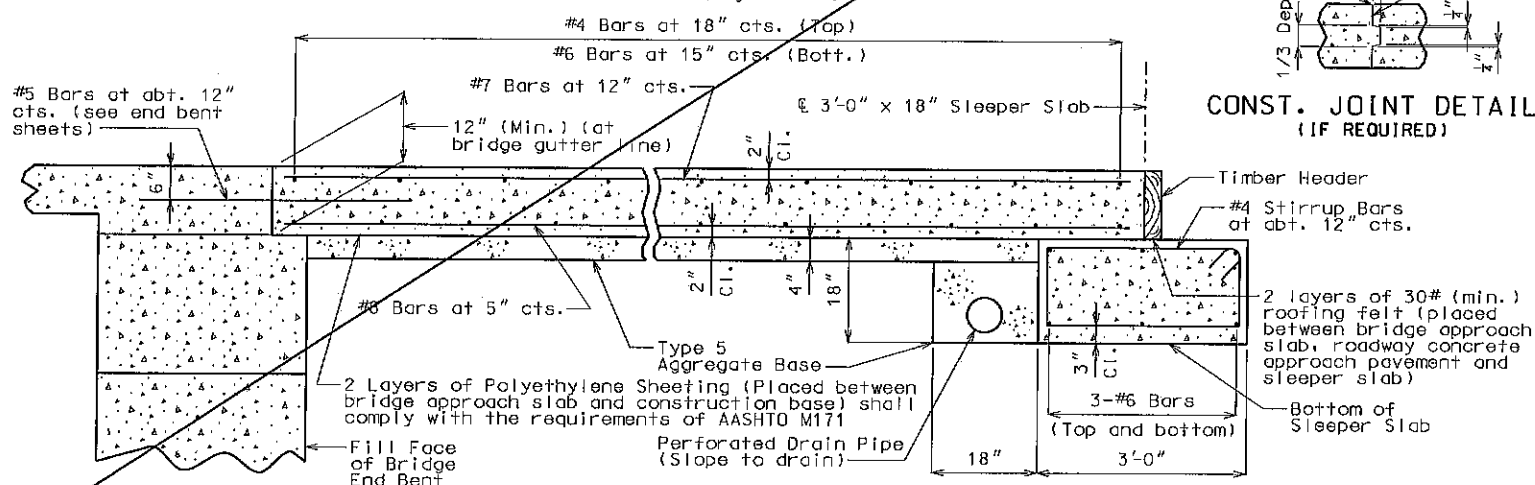


PART PLAN SHOWING REINFORCEMENT

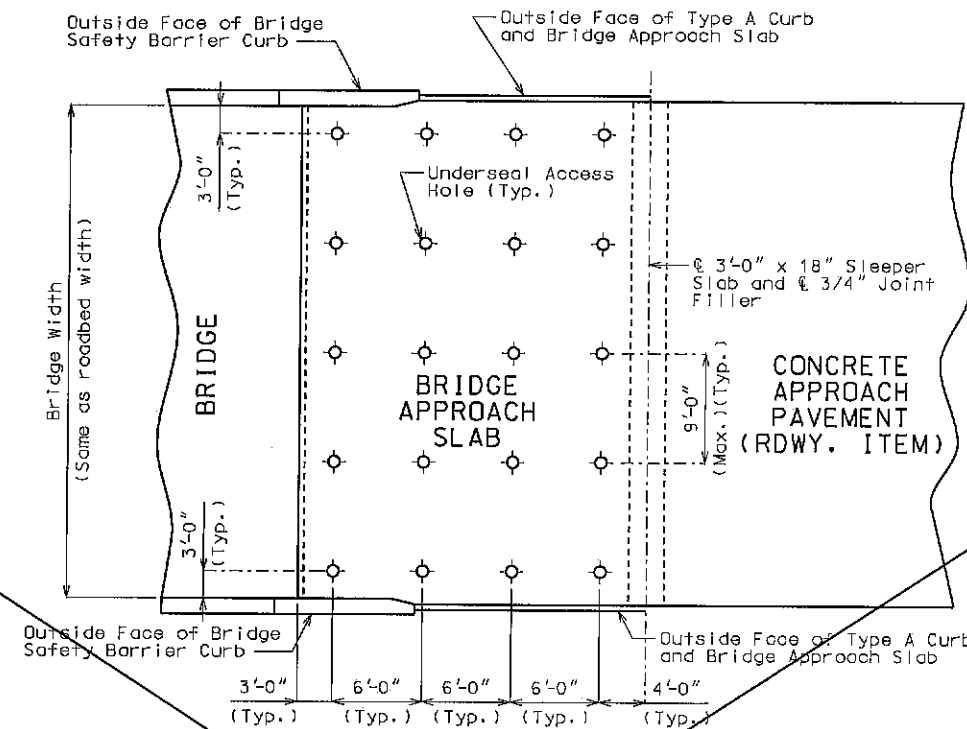


SECTION B-B

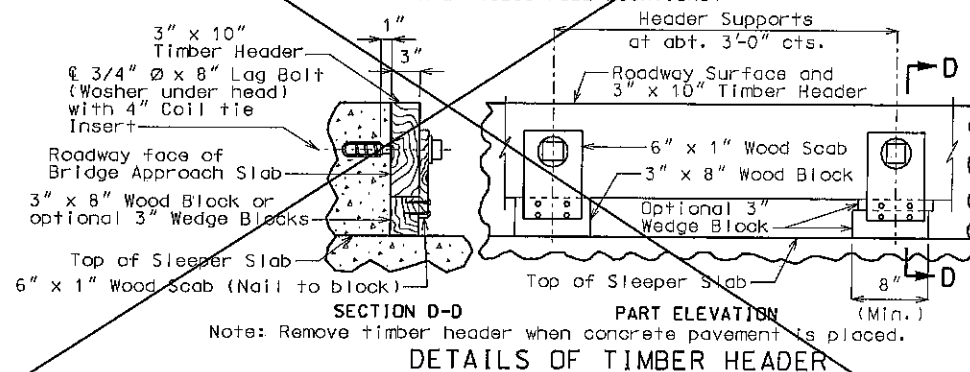
Note: With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.



SECTION C-C



PART PLAN (SHOWING TYPICAL UNDERSEAL ACCESS HOLE LOCATIONS)



PART ELEVATION

CONST. JOINT DETAIL (IF REQUIRED)

TYPICAL UNDERSEAL ACCESS HOLE DETAIL

GENERAL NOTES:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 (f/c = 4,000 psi).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler, except as noted.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with $F_y = 60,000$ psi.

Minimum clearance to reinforcing steel shall be $1\frac{1}{2}$ ", unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by lap splicing the #4 & #6 bars 18" and 2'-2", respectively.

Mechanical bar splices shall be in accordance with Sec 706.

(*) Seal joint between vertical face of approach slab and wing with "Silicone Joint Sealant for Saw Cut and Formed Joints" in accordance with Sec 717.

Hooks and bends shall be in accordance with the CRSI Manual of Standard Practice for Detailing Reinforced Concrete Structures, Stirrup and Tie Dimensions.

The contractor shall pour and satisfactorily finish the bridge or semi-deep slab before pouring the bridge approach slabs.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge or semi-deep slab.

Payment for furnishing all materials, labor and excavation necessary to construct the approach slab, including the timber header, sleeper slab, underdrain, Type 5 aggregate base, joint filler and all other appurtenances and incidental work as shown on this sheet, complete in place, will be considered completely covered by the contract unit price for Bridge Approach Slab (Bridge) per square yard.

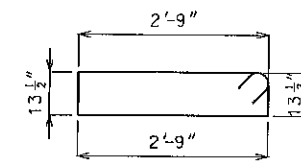
For Concrete Approach Pavement details, see roadway plans.

See Missouri Standard Plans Drawing 609.00 for details of Type A Curb.

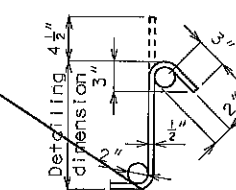
At the contractor's option, Grade 40 reinforcement may be substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment. No additional payment will be made for this substitution.

When Grade 40 reinforcement is substituted for the Grade 60 #5 dowel bars connecting the bridge approach slab to the bridge abutment, the reinforcement may be bent up to 90 degrees with a 2" minimum radius near the abutment to allow compaction of the backfill material near the abutment. Damage to epoxy coating shall be repaired in accordance with Sec 710.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

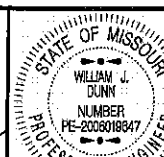


#4 STIRRUP BAR (ACTUAL LENGTH = 8'-3")



TYPICAL 135° STIRRUP HOOK BENDING DIMENSIONS

Note: Nominal lengths are based on out to out dimensions shown in bending diagram and are listed for fabricators use (nearest inch).



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
3/28/2011

ROUTE
1-44

DISTRICT
BR

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DESCRIPTION

DATE

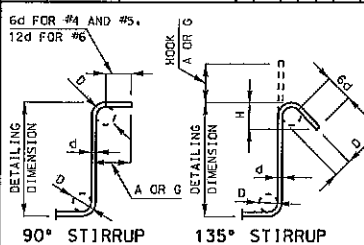
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITAL
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.

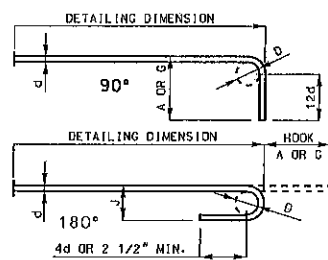
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
									B	C	D	E	F	H	K						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
		SUBSTR																			
		INT BT NO 2																			
6	6 H21	BEAM	E 20	X					32	8.000									32	8	294
16	4 H22	BEAM	E 20	X					32	8.000									32	8	349
6	7 H23	BEAM	E 18	X					32	8.000									34	4	421
14	6 H24	BEAM	E 10	S X						22.000	3	7.750							7	4	147
6	6 H25	BEAM	E 10	S X						22.000	15.750								5	0	42
11	5 U21	BEAM	E 10	S X						3	8.000	3	9.000						11	1	125
34	5 U22	BEAM	E 13	S X					3	9.000	3	7.500	3	9.000	3	7.500			15	8	544
10	4 U23	BEAM	E 10	S X						6.000	3	9.000							4	9	31
10	4 U24	BEAM	E 10	S X						6.000	17.000								2	5	15
33	5 U25	BEAM	E 10	S X						3	7.000	17.000							8	7	290
16	W5 W1	A R WELLS	E 22	X					15.000	9.125									23	0	61
		INT BT NO 3																			
4	6 H31	BEAM	E 20	X					29	5.000									29	5	177
2	6 H32	BEAM	E 20	X					32	0.000									32	0	96
4	6 H33	BEAM	E 7	X					3	7.000	2	8.750							8	8	52
8	W5 W2	A R WELLS	E 22	X					9.000	8.125									15	1	20
		INT BT NO 4																			
4	6 H41	BEAM	E 20	X					29	5.000									29	5	177
3	6 H42	BEAM	E 20	X					32	0.000									32	0	144
4	6 H43	BEAM	E 7	X					3	7.000	2	8.750							8	8	52
16	W5 W2	A R WELLS	E 22	X					9.000	8.125									15	1	40
		INT BT NO 5																			
4	6 H51	BEAM	E 20	X					29	5.000									29	5	177
2	6 H52	BEAM	E 20	X					32	0.000									32	0	96
4	6 H53	BEAM	E 7	X					3	7.000	2	8.750							8	8	52
8	W5 W2	A R WELLS	E 22	X					9.000	8.125									15	1	20
		INT BT NO 6																			
6	6 H61	BEAM	E 20	X					32	8.000									32	8	294
14	4 H62	BEAM	E 20	X					32	8.000									32	8	305
4	7 H63	BEAM	E 18	X					32	8.000									34	4	281
14	6 H64	BEAM	E 10	S X						22.000	3	7.750							7	4	147
6	6 H65	BEAM	E 10	S X						22.000	15.750								5	0	42
11	5 U61	BEAM	E 10	S X						3	7.875	3	9.000						11	1	124
34	5 U62	BEAM	E 13	S X					3	9.000	3	7.375	3	9.000	3	7.375			15	8	544
10	4 U63	BEAM	E 10	S X						6.000	3	9.000							4	9	31
10	4 U64	BEAM	E 10	S X						6.000	17.000								2	5	15
33	5 U65	BEAM	E 10	S X						3	7.000	17.000							8	7	290



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOK A OR G	90° HOOK A OR G	
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	1 1/2"	13"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

TWO ADDITIONAL #4-H22, #5-R7, #6-S2 & #7-H23 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPACERS OR SPACERS.
REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.

Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 34A of 35

Added this sheet 3/17/2011

BILL OF REINFORCING STEEL

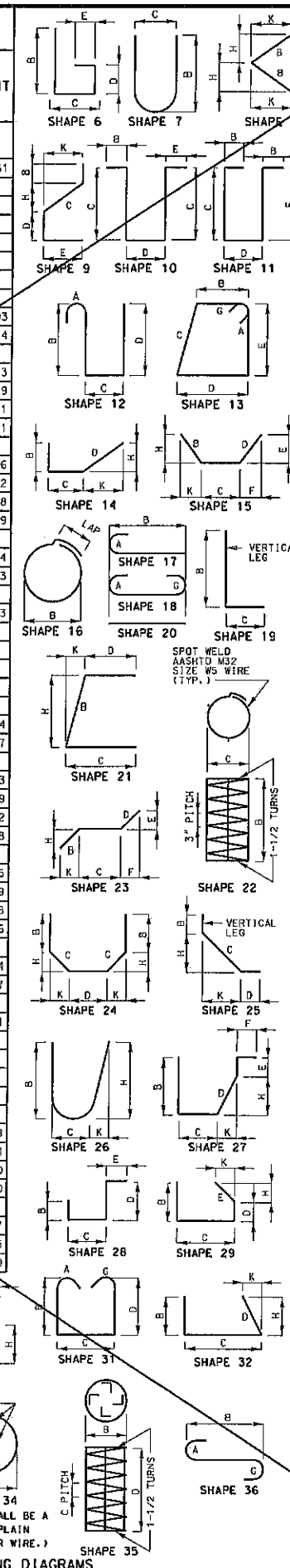
NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
									B		C		D		E		F		H					K	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
16	W5 W1	A R WELLS	E 22		X				15.000	9.125									23	0	23	0	61		
		SUPERSTR																							
		END BT NO 1																							
4	6 H11	DIAPHRAGM	E 20						36	5.000									36	5	36	5	219		
34	5 H12	DIAPHRAGM	E 20						2	6.000									2	6	2	6	89		
11	6 H15	BEAM & DIAPH	E 20						34	11.000									34	11	34	11	577		
26	5 U12	DIAPHRAGM	E 19	S					4	3.000	2	0.500							6	4	6	2	167		
		END BT NO 7																							
4	6 H71	DIAPHRAGM	E 20						36	5.000									36	5	36	5	219		
34	5 H72	DIAPHRAGM	E 20						2	6.000									2	6	2	6	89		
11	6 H75	BEAM & DIAPH	E 20						34	11.000									34	11	34	11	577		
26	5 U72	DIAPHRAGM	E 19	S					4	3.000	2	3.500							6	7	6	5	174		
		SLAB																							
1136	5 S1	SLAB	E 20						36	5.000									36	5	36	5	43148		
1327	6 S2	SLAB	E 20						36	5.000									36	5	36	5	72584		
69	5 S3	SLAB	E 20						58	11.000									58	11	58	11	4240		
138	5 S4	SLAB	E 20						36	4.000									36	4	36	4	5230		
690	5 S5	SLAB	E 20						58	11.000									58	11	58	11	40961		
112	6 S6	SLAB	E 20						40	7.000									40	7	40	7	6827		
112	6 S7	SLAB	E 20						41	2.000									41	2	41	2	6925		
112	6 S8	SLAB	E 20						43	4.000									43	4	43	4	7290		
		BARRIER CURB																							
136	5 K1	BARRIER CURB	E 19	S					2	5.000	5.125								2	10	2	9	390		
136	5 K2	BARRIER CURB	E 14	S					5.125	11.125	18.000				2.000	17.875	2	10	2	9	390				
92	5 K3	BARRIER CURB	E 27	S					18.625	5.125	12.000	8.750	12.000	9.875	6.875	4	9	4	5	424					
44	5 K4	BARRIER CURB	E 10	S					12.000	18.625	6.000					4	7	4	4	199					
4	5 K5	BARRIER CURB	E 27	S						4.375	6.750	8.750	12.000	5.500	4.000	2	8	2	6	10					
4	5 K6	BARRIER CURB	E 27	S						4.375	7.875	8.750	12.000	6.500	4.500	2	9	2	7	11					
4	5 K7	BARRIER CURB	E 27	S						4.375	9.625	8.750	12.000	7.875	5.500	2	11	2	9	11					
4	5 K8	BARRIER CURB	E 27	S						4.375	11.250	8.750	12.000	9.250	6.500	3	0	2	10	12					
48	5 K9	BARRIER CURB	E 20						5	7.000						5	7	5	7	280					
20	4 K10	BARRIER CURB	E 20						11	8.000						11	8	11	8	156					
4	5 K11	BARRIER CURB	E 8						2	2.125				2	2.000	2.375	4	4	4	4	18				
20	4 K13	BARRIER CURB	E 20						11	8.000						11	8	11	8	156					
1360	5 R1	BARRIER CURB	E 25						2	6.000	4.250	2	6.125		2	6.000	3.000	5	2	5	2	7329			
1360	5 R3	BARRIER CURB	E 19	S					17.000	6.000						0	23	0	22	2601					
1360	5 R4	BARRIER CURB	E 27	S						6.000		11.250	7.000	12.000	9.250	6.375	3	0	2	10	4019				
14	5 R5	BARRIER CURB	E 20						58	11.000						58	11	58	11	860					
56	5 R6	BARRIER CURB	E 20						56	2.000						56	2	56	2	3281					
142	5 R7	BARRIER CURB	E 20						9	9.000						9	9	9	9	1444					
56	5 R8	BARRIER CURB	E 20						56	4.000						56	4	56	4	3290					
28	5 R9	BARRIER CURB	E 20						36	2.000						36	2	36	2	1056					

BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B	C	D	E	F	H	K						
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
			SUBSTR																			
			INT BT NO 2																			
6	6	H21	BEAM	E	20	X				32	8.000									32	8	294
16	4	H22	BEAM	E	20	X				32	8.000									32	8	349
6	7	H23	BEAM	E	18	X				32	8.000									34	4	421
14	6	H24	BEAM	E	10	S	X				22.000	3	7.750							7	4	147
6	6	H25	BEAM	E	10	S	X				22.000	16	7.750							5	0	42
11	5	U21	BEAM	E	10	S	X				3	8.000	3	9.000						11	1	125
34	5	U22	BEAM	E	13	S	X			3	9.000	3	7.500	3	9.000	3	7.500			15	8	544
10	4	U23	BEAM	E	10	S	X				6.000	3	9.000							4	9	31
10	4	U24	BEAM	E	10	S	X				6.000	17	0.000							2	5	15
33	5	U25	BEAM	E	10	S	X				3	7.000	17	0.000						8	7	290
16	W5	W1	A R WELLS	E	22	X				15.000	9.125									23	0	61
			INT BT NO 3																			
4	6	H31	BEAM	E	20	X				29	5.000									29	5	177
2	6	H32	BEAM	E	20	X				32	0.000									32	0	96
4	6	H33	BEAM	E	7	X				3	7.000	2	8.750							8	8	52
8	W5	W2	A R WELLS	E	22	X				9.000	8.125									15	1	20
			INT BT NO 4																			
4	6	H41	BEAM	E	20	X				29	5.000									29	5	177
3	6	H42	BEAM	E	20	X				32	0.000									32	0	144
4	6	H43	BEAM	E	7	X				3	7.000	2	8.750							8	8	52
16	W5	W2	A R WELLS	E	22	X				9.000	8.125									15	1	40
			INT BT NO 5																			
4	6	H51	BEAM	E	20	X				29	5.000									29	5	177
2	6	H52	BEAM	E	20	X				32	0.000									32	0	96
4	6	H53	BEAM	E	7	X				3	7.000	2	8.750							8	8	52
8	W5	W2	A R WELLS	E	22	X				9.000	8.125									15	1	20
			INT BT NO 6																			
6	6	H61	BEAM	E	20	X				32	8.000									32	8	294
14	4	H62	BEAM	E	20	X				32	8.000									32	8	305
4	7	H63	BEAM	E	18	X				32	8.000									34	4	281
14	6	H64	BEAM	E	10	S	X				22.000	3	7.750							7	4	147
6	6	H65	BEAM	E	10	S	X				22.000	15	7.750							5	0	42
11	5	U61	BEAM	E	10	S	X				3	7.875	3	9.000						11	1	124
34	5	U62	BEAM	E	13	S	X			3	9.000	3	7.375	3	9.000	3	7.375			15	8	544
10	4	U63	BEAM	E	10	S	X				6.000	3	9.000							4	9	31
10	4	U64	BEAM	E	10	S	X				6.000	17	0.000							2	5	15
33	5	U65	BEAM	E	10	S	X				3	7.000	17	0.000						8	7	290

BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS										NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										B	C	D	E	F	H	K						
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.
16	W5	W1	A R WELLS	E	22	X				15.000	9.125									23	0	61
			SUPERSTR																			
			END BT NO 1																			
18	6	F11	WING BRACE	E	23					14.000	5	3.125	14.000	9.875	9.875	9.875	9.875	7	7	7	6	203
8	6	F12	DIAPHRAGM	E	19	S				5	4.000	2	8.250							8	0	94
24	6	H11	BEAM & DIAPH	E	20					36	5.000									36	5	1313
34	5	H12	DIAPHRAGM	E	20					2	6.000									2	6	89
40	6	H13	WING	E	20					16	6.000									16	6	991
18	8	H14	WING	E	20					17	6.000									17	6	841
4	5	U11	BEAM	E	10	S				4	5.000	2	4.000							11	2	46
28	5	U12	DIAPHRAGM	E	10	S				4	3.000	2	0.500							10	7	302
28	6	U13	DIAPHRAGM	E	19	S				3	0.000	2	7.000							5	7	228
45	6	U14	DIAPHRAGM	E	19	S				3	4.000	4	8.000							8	0	529
12	6	V11	DIAPHRAGM	E	20					3	0.000									3	0	54
4	6	V12	WING	E	20					7	1.000									7	1	43
60	6	V13	WING	E	20	V	4			6	9.000									6	9	623
			INCREMENT =							7	1.000									7	1	623
			0.250 INCH																			
			END BT NO 7																			
18	6	F71	WING BRACE	E	23					14.000	5	7.375	14.000	9.875	9.875	9.875	9.875	7	11	7	11	214
8	6	F72	DIAPHRAGM	E	19	S				5	4.000	2	11.250							8	3	97
24	6	H71	BEAM & DIAPH	E	20					36	5.000									36	5	1313
34	5	H72	DIAPHRAGM	E	20					2	6.000									2	6	89
36	6	H73	WING	E	20					16	6.000									16	6	892
16	8	H74	WING	E	20					17	6.000									17	6	748
4	5	U71	BEAM	E	10	S				4	2.000	2	7.000							10	11	45
28	5	U72	DIAPHRAGM	E	10	S				4	3.000	2	3.500							10	10	309
28	6	U73	DIAPHRAGM	E	19	S				3	0.000	2	0.000							5	10	238
45	6	U74	DIAPHRAGM	E	19	S				3	4.000	4	11.000							8	3	546
12	6	V71	DIAPHRAGM	E	20					3	0.000									3	0	54
4	6	V72	WING	E	20					6	2.000									6	2	37
60	6	V73	WING	E	20	V	4			6	2.000									6	2	62
			INCREMENT =							6	6.000									6	6	571
			0.250 INCH																			
			SLAB																			
1136	5	S1	SLAB	E	20					36	5.000									36	5	43148
1327	6	S2	SLAB	E	20					36	5.000									36	5	72584
69	5	S3	SLAB	E	20					58	11.000									58	11	4240
138	5	S4	SLAB	E	20					36	4.000									36	4	5230
690	5	S5	SLAB	E	20					56	11.000									56	11	40961
112	6	S6	SLAB	E	20					40	7.000									40	7	6827
112	6	S7	SLAB	E	20					41	2.000									41	2	6925
112	6	S8	SLAB	E	20					43	4.000									43	4	7290

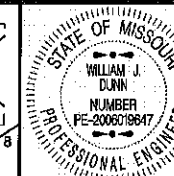
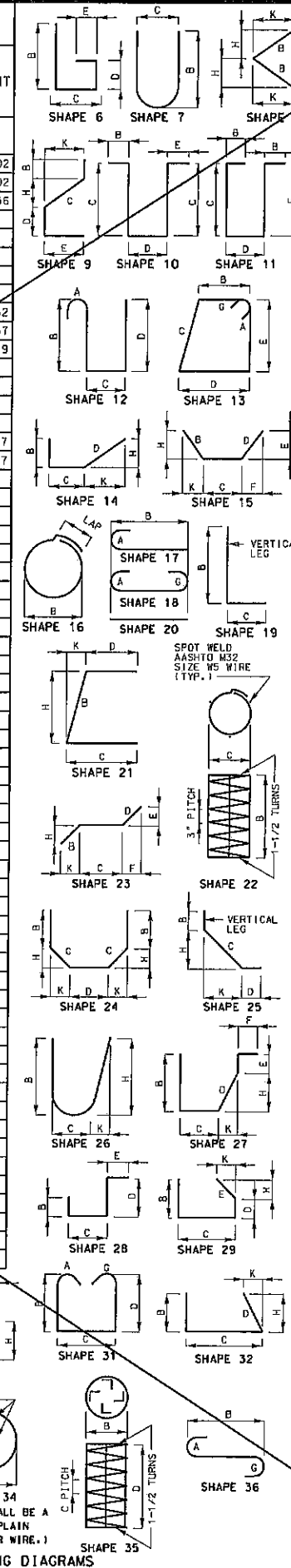


BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
									B		C		D		E		F		H					K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	LBS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		BARRIER CURB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
									B		C		D		E		F		H					K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	FT.	IN.	LBS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
7			E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2011

ROUTE I-44 STATE MO

DISTRICT BR SHEET NO. 35

COUNTY LACLEDE

JOB NO. J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L06983

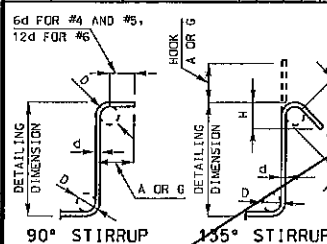
DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

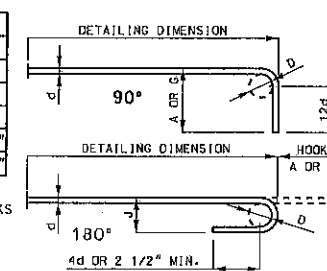
105 WEST CAPITAL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

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



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. L
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS A OR G	90° HOOKS A OR G	
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET. E = EPOXY COATED REINFORCEMENT. S = STIRRUP. X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES. V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE. NO. EA. = NUMBER OF BARS OF EACH LENGTH. NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH) ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH. PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS. FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 35 of 35 Delete this sheet 3/17/2011

BENDING DIAGRAMS



MEMORANDUM

Missouri Department of Transportation
Bridge Division
Central Office

TO: Vicky Woods
Rolla Project Office

CC/ATT: Kirk Juranas - d8
Dave Ahlvers - cm
John Gahagan - br
Chad Daniel - br
Bill Dunn - br
Kent Nelson - br (2)

FROM: Bill Dunn
Structural Preliminary and Review Engineer

DATE: 5/9/11

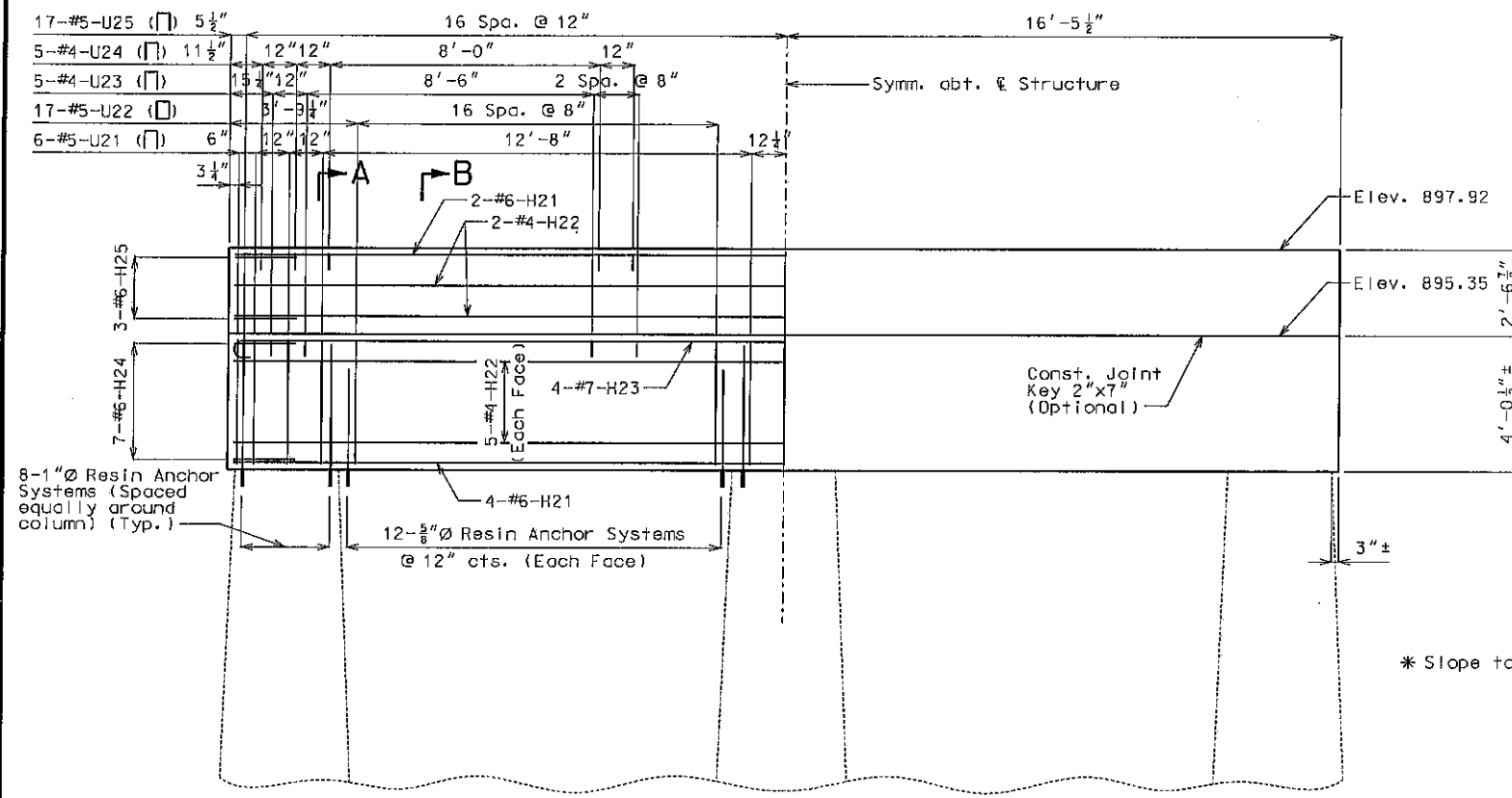
SUBJECT: Change Order
Bridge No. L06983
Rte. I-44
Job No. J8I2167, Laclede County
October 2010 Letting

Please find attached six sets of half-sized prints showing revisions to Bridge Sheets No. 2, 7 thru 11, 34 and 35 of the above referenced structure.

This change order allows the contractor to use resin anchors at Bents 2 and 6 in lieu of cleaning the existing steel. Also covered are changes to Bents 3 thru 5 where we have allowed the cap to be squared off and extended slightly to accommodate the bridge superstructure move better.

This change was requested by the contractor to save time and better accommodate the upcoming superstructure move.

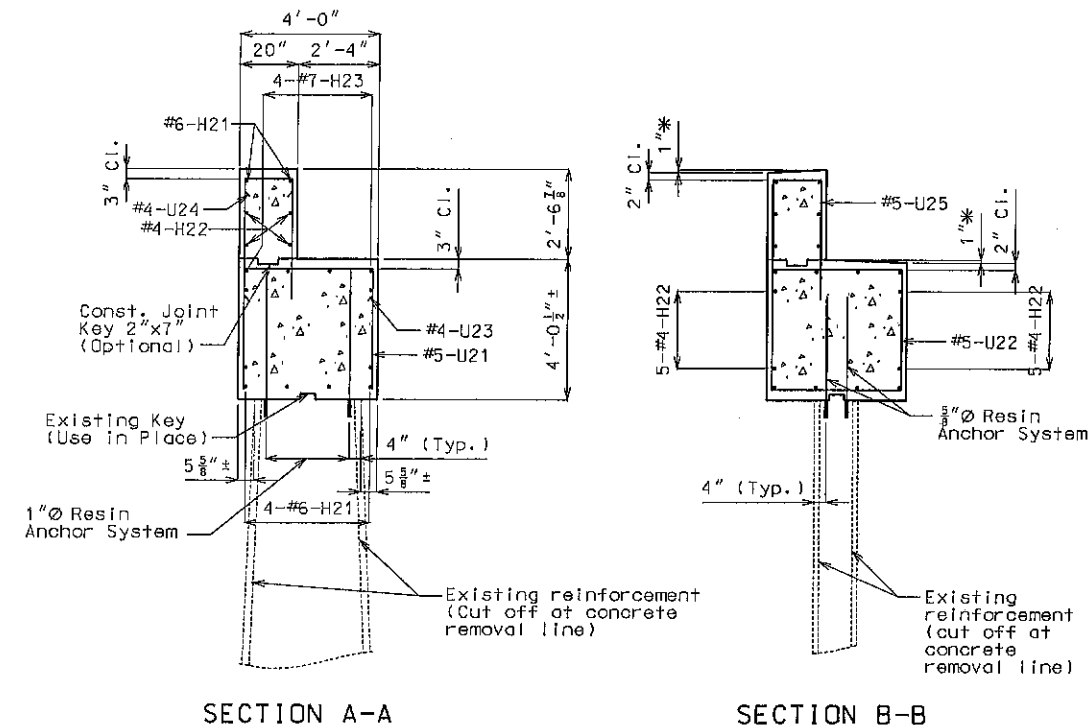
wjd
Attachments



A B

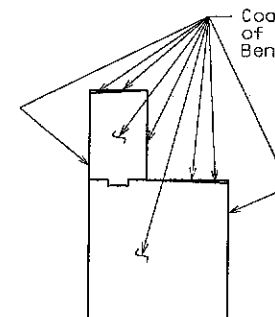
PART ELEVATION

Note:
Const. joint keys and beam slope not shown for clarity.



* Slope top of beam between bearings.

Note:
Sections A-A and B-B same except as shown.



DETAIL SHOWING PROTECTIVE COATING

Notes:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 15.

All new concrete in Int. Bent No. 2 shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".

Resin Anchor Notes:

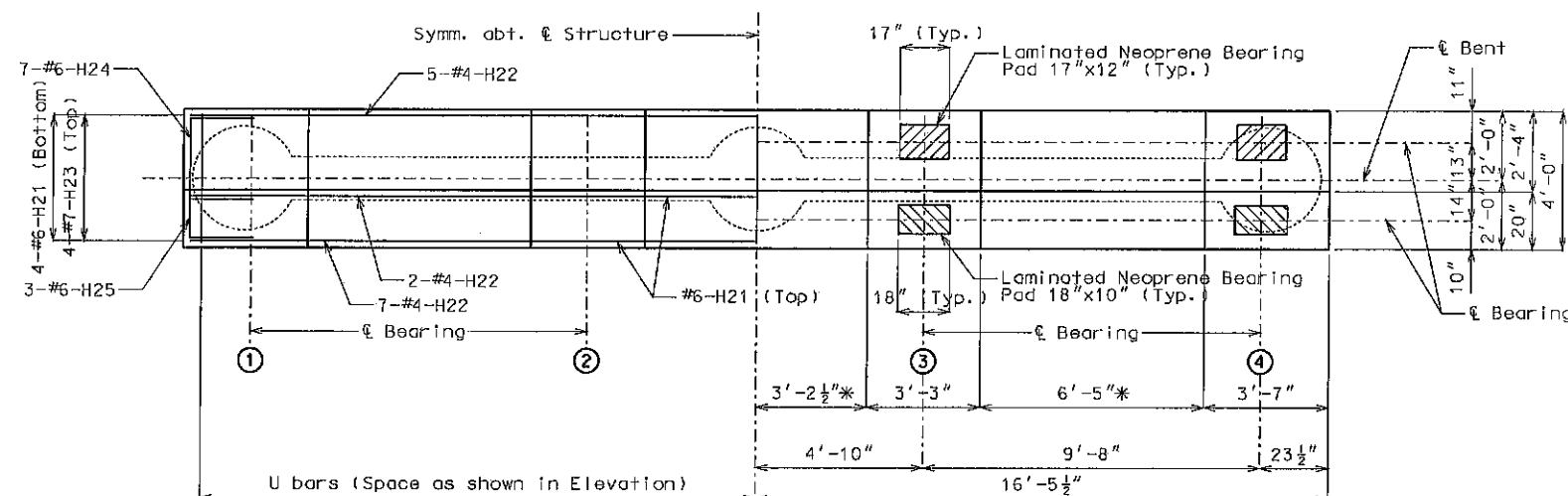
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 2'-6" long plus embedment length shall be substituted for the $\frac{5}{8}$ " threaded rod for Resin Anchor Systems.

An epoxy coated #8 Grade 60 reinforcing bar 3'-9" long plus embedment length shall be substituted for the 1" threaded rod for Resin Anchor Systems.



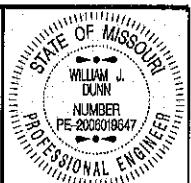
PLAN OF BEAM DETAILS OF INTERMEDIATE BENT NO. 2

Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 7A of 35

Added this sheet 5/10/2011



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
5/10/2011

ROUTE 1-44 STATE MO

DISTRICT BR SHEET NO. 7A

COUNTY LACLEDE

JOB NO. J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L06983

DESCRIPTION

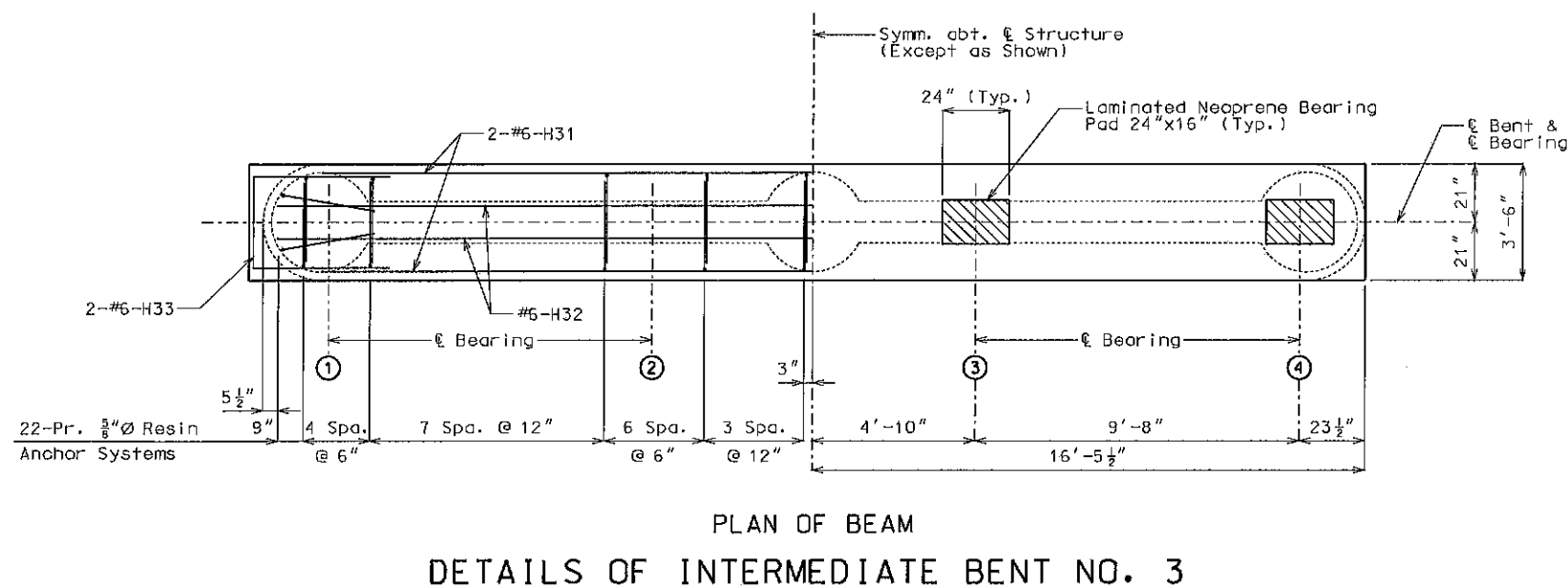
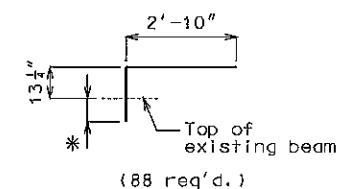
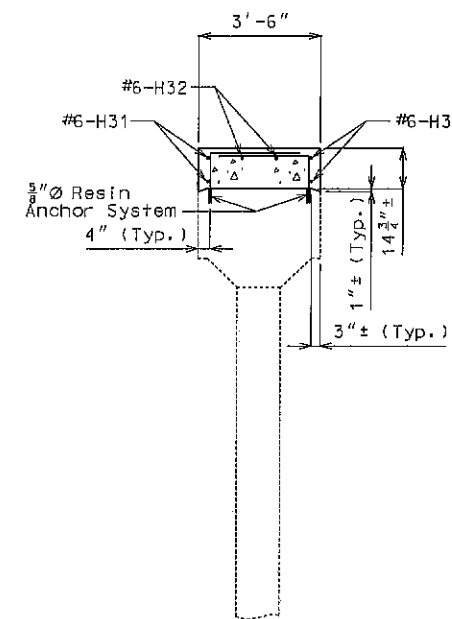
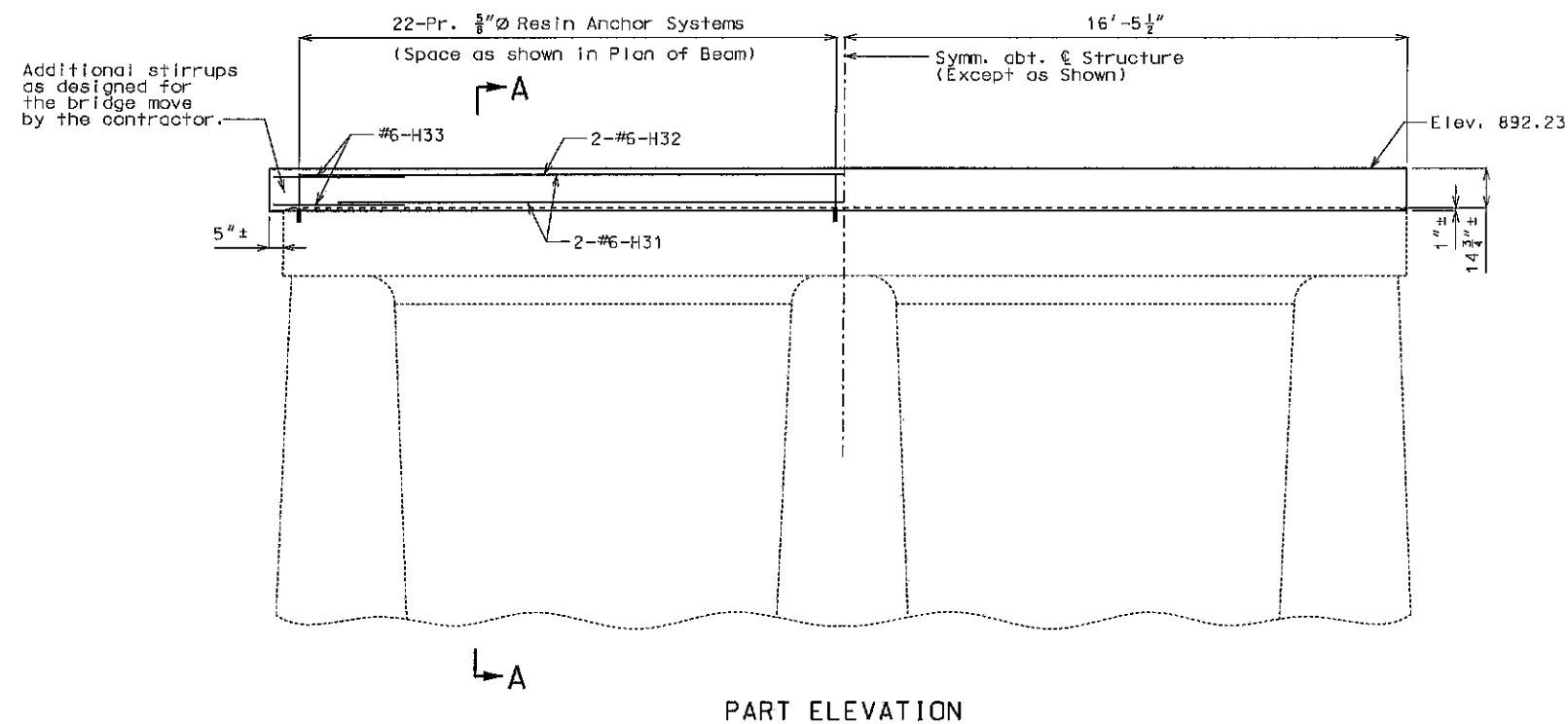
DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

MODOT

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



Notes:

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 for Resin Anchor Systems.

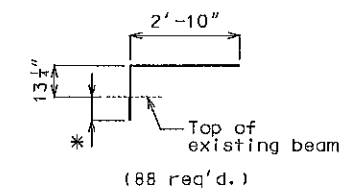
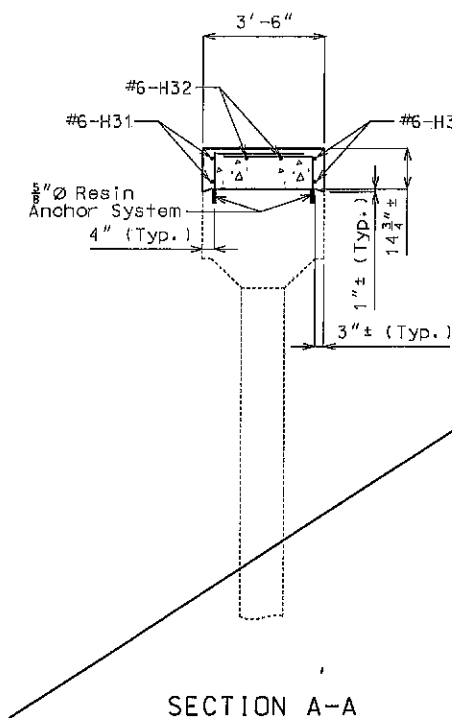
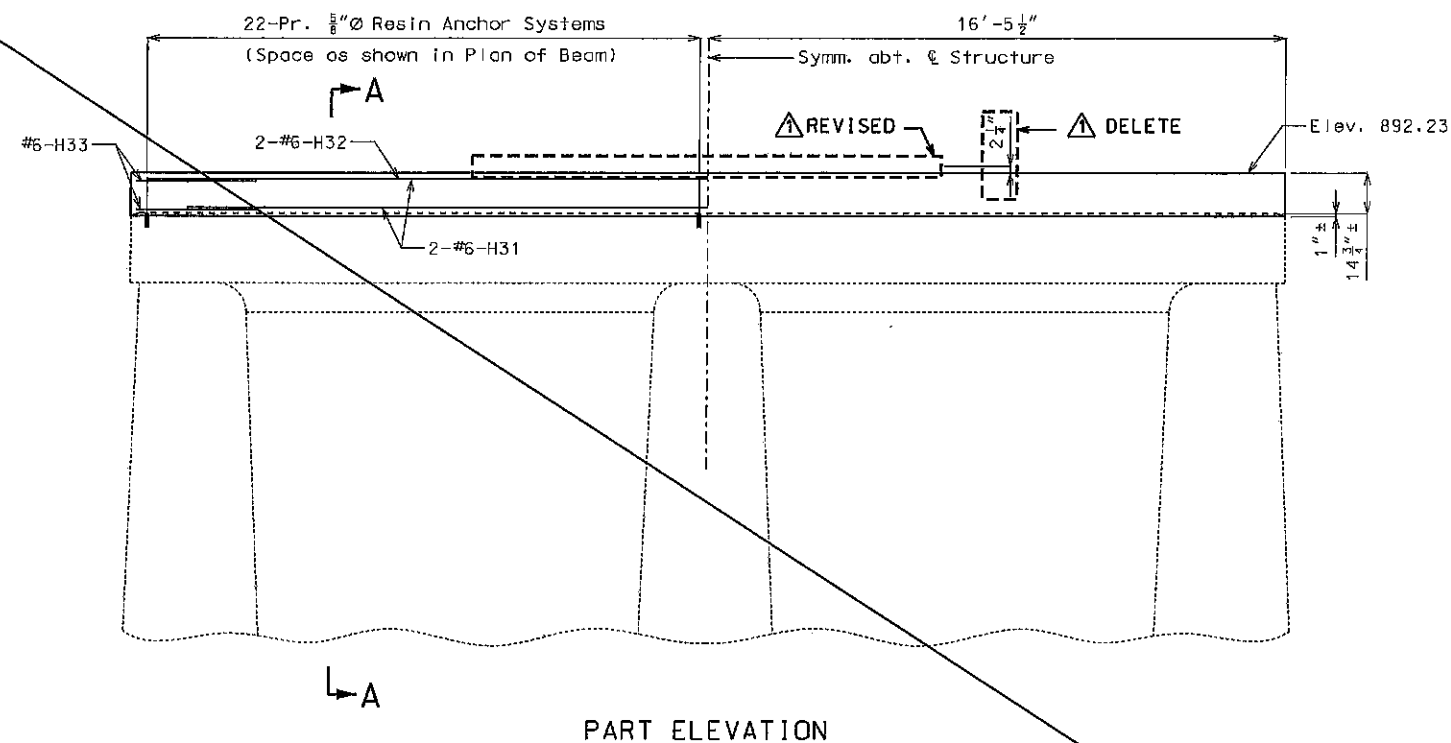
Note:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

All concrete above top of existing beam shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".



DETAILS OF RESIN ANCHOR SYSTEMS

* Manufacturer's recommended
embedment length (5" min.)

Notes:

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 $\frac{1}{2}$ " $\emptyset$ threaded rod for Resin Anchor Systems.~~

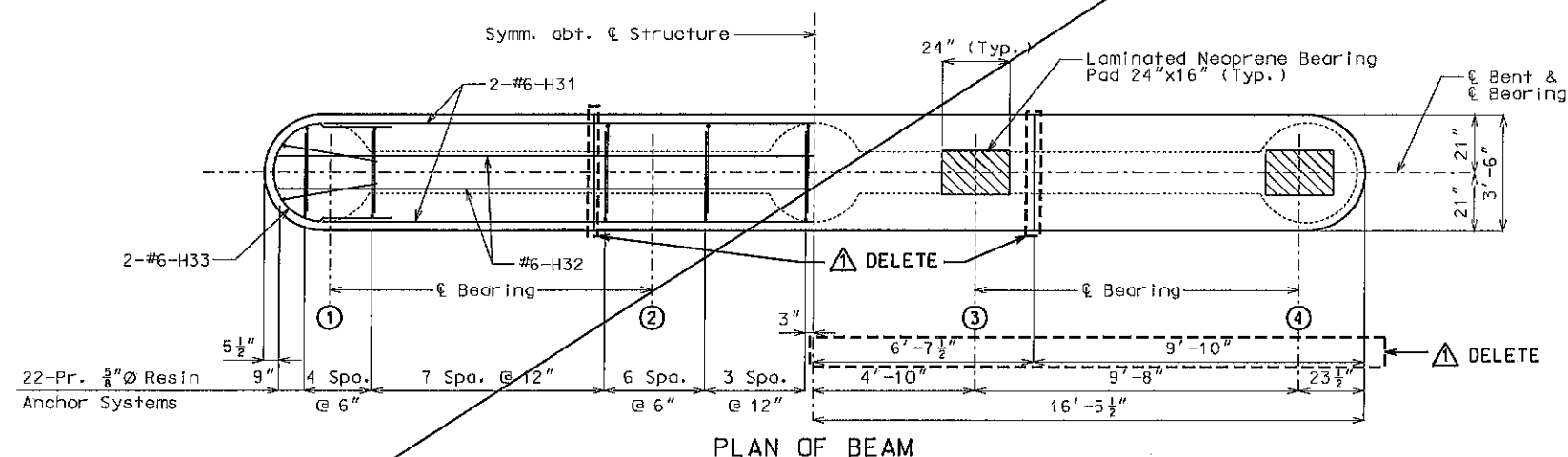
Note:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

All concrete above top of existing beam shall be Class B-2.

~~All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".~~



DETAILS OF INTERMEDIATE BENT NO. 3

~~A~~ Delete this sheet 5/10/2011

Revised 3/17/2011

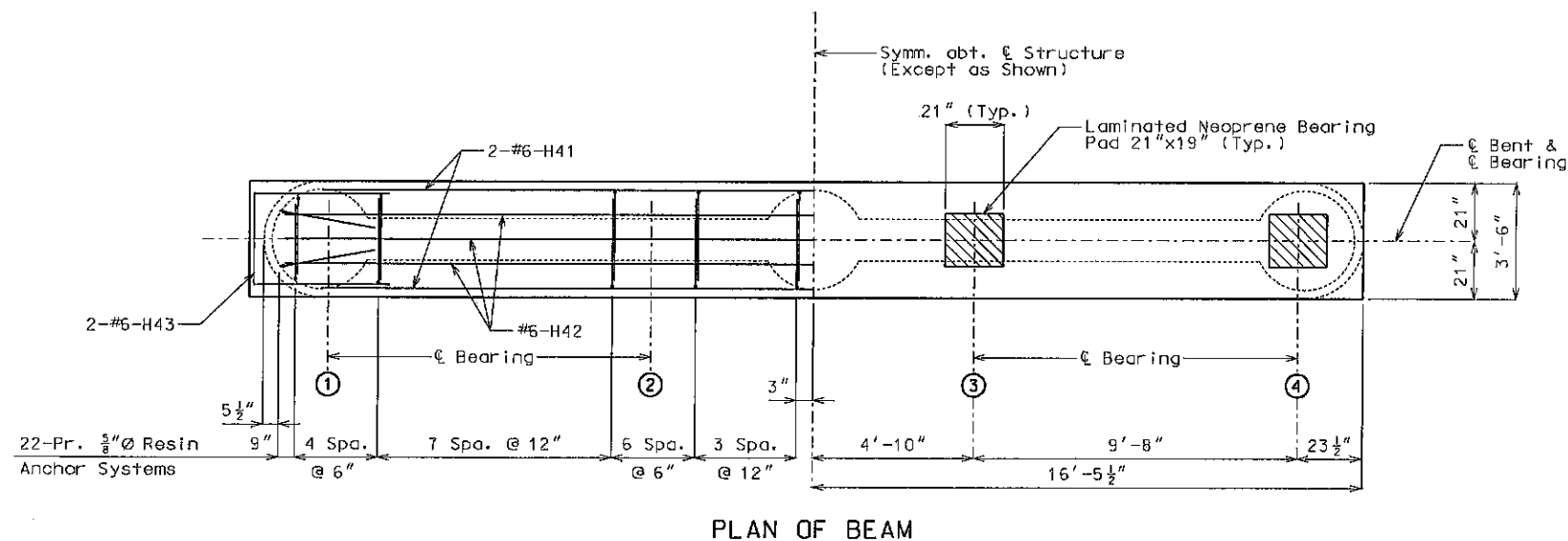
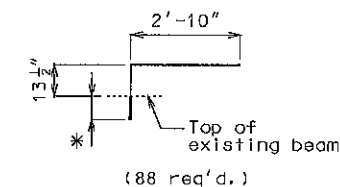
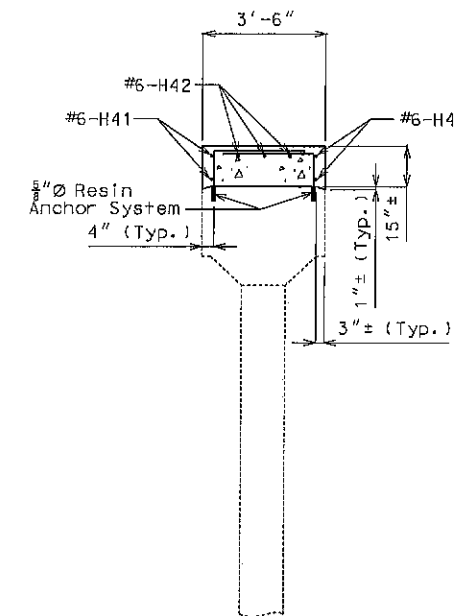
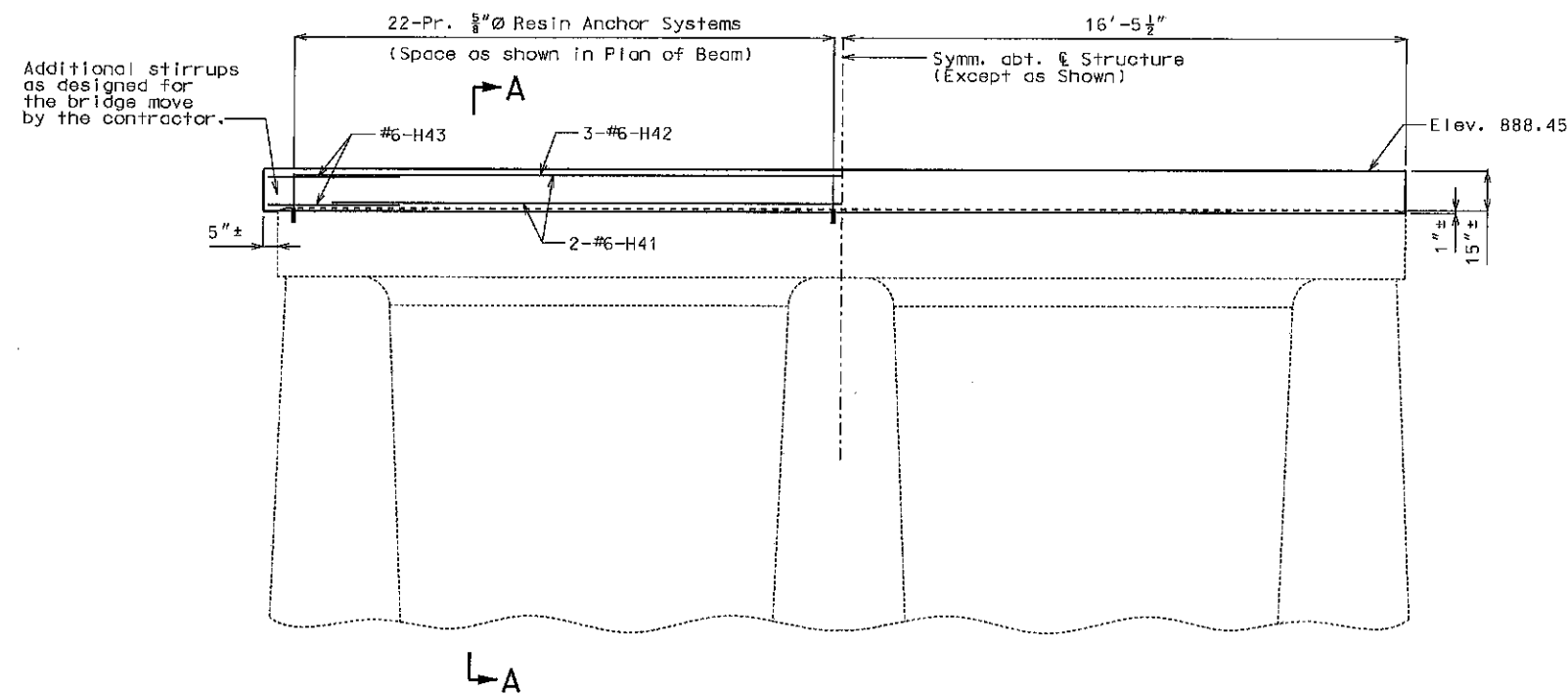
~~Detailed Jan. 2010~~
~~Checked Jan. 2010~~

~~Checked Jan. 2010~~

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

Sheet No. 8 of 35

[illegible]



DETAILS OF INTERMEDIATE BENT NO. 4

Notes:

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 $\frac{5}{8}$ " $\emptyset$ threaded rod for Resin Anchor Systems.

Note:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 15.

All concrete above top of existing beam shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".

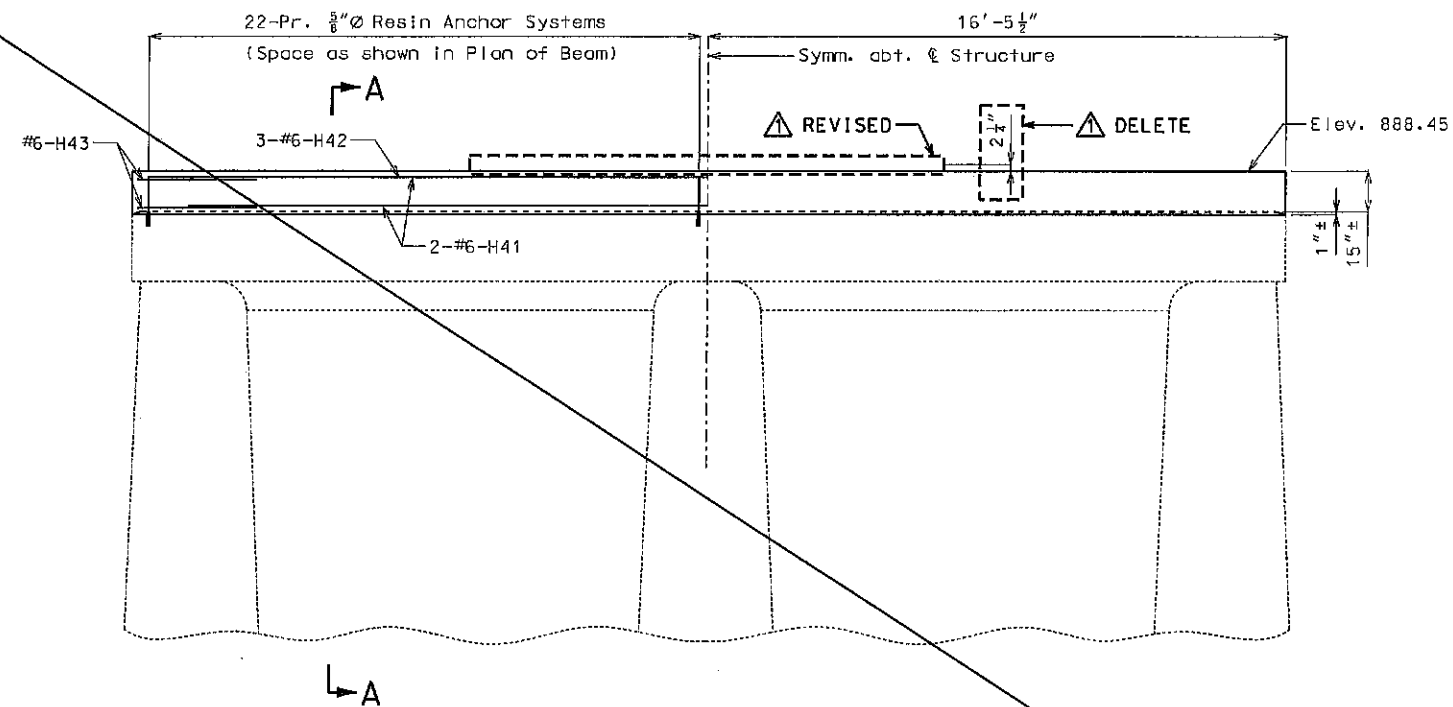


DATE PREPARED 5/10/2011	
ROUTE I-44	STATE MO
DISTRICT BR	SHEET NO. 9A
COUNTY LACLEDE	
JOB NO. J812167	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L06983	

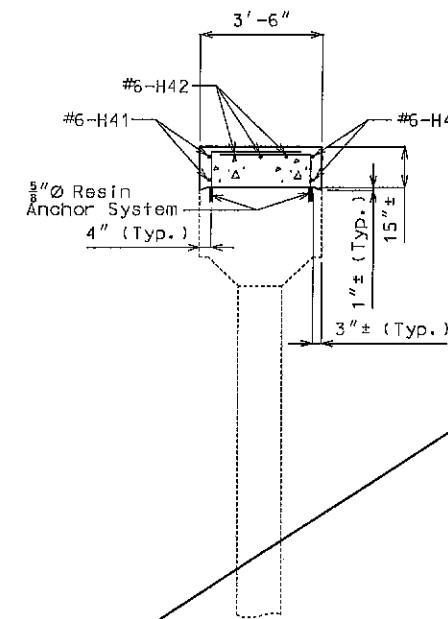
[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

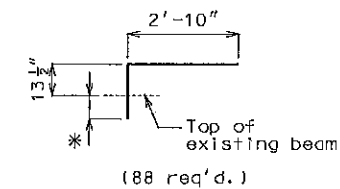
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED:



PART ELEVATION



SECTION A-A



DETAILS OF RESIN ANCHOR SYSTEMS

* Manufacturer's recommended embedment length (5" min.)

Notes:

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'_c = 4,000$ psi for the resin anchor system 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" threaded rod for Resin Anchor Systems.

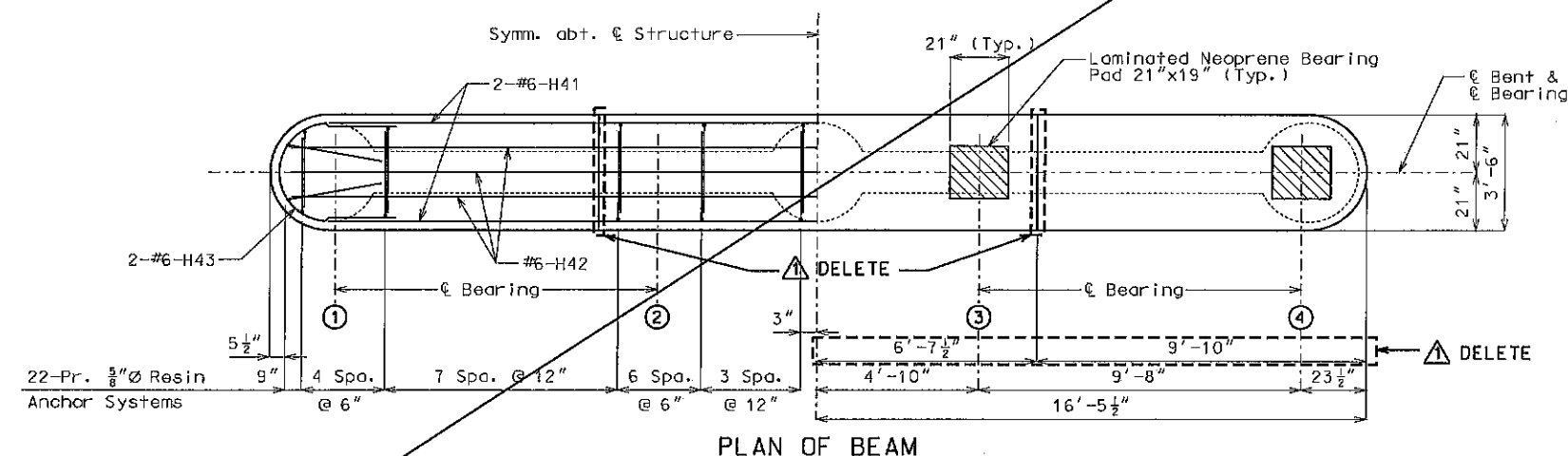
Note:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 15.

All concrete above top of existing beam shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least 1/2".



PLAN OF BEAM

DETAILS OF INTERMEDIATE BENT NO. 4

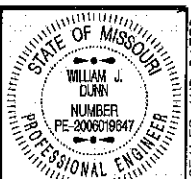
Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 9 of 35

Delete this sheet 5/10/2011

Revised 3/17/2011



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
5/10/2011

ROUTE
1-44

DISTRICT
BR

COUNTY
LACLEDE

JOB NO.
J812167

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
L06983

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

DATE

DESCRIPTION

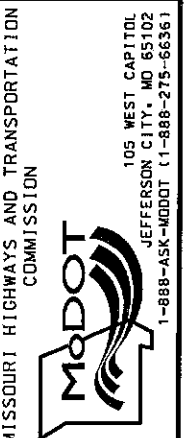
DATE

DESCRIPTION

DATE

DESCRIPTION

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



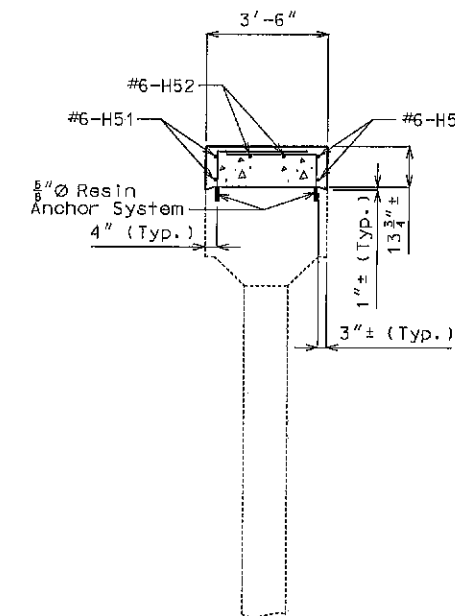


Diagram showing the elevation of the beam. The beam has a total length of 12' (12 feet) and a 2'-10" (2 feet 10 inches) overhang. The beam is supported by a wall. The top of the existing beam is indicated by a dashed line. The beam is labeled (88 req'd.)

* Manufacturer's recommended
embedment length (5" min.)

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 $\frac{5}{8}" \varnothing$ threaded rod for Resin Anchor Systems.

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

All concrete above top of existing beam shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".

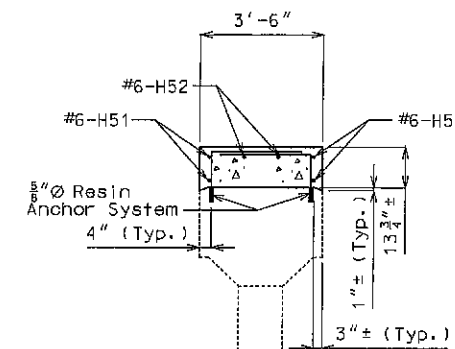


MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

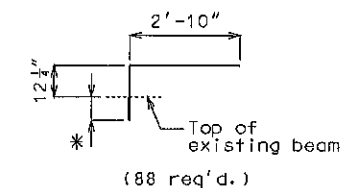
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

Sheet No. 10A of 35  Added this sheet 5/10/2011

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



SECTION A-A



* Manufacturer's recommended
embedment length (5" min.)

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

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

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

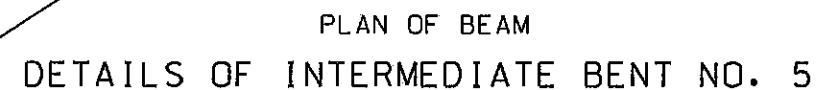
An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the $\frac{5}{8}$ " $\emptyset$ threaded rod for Resin Anchor Systems.

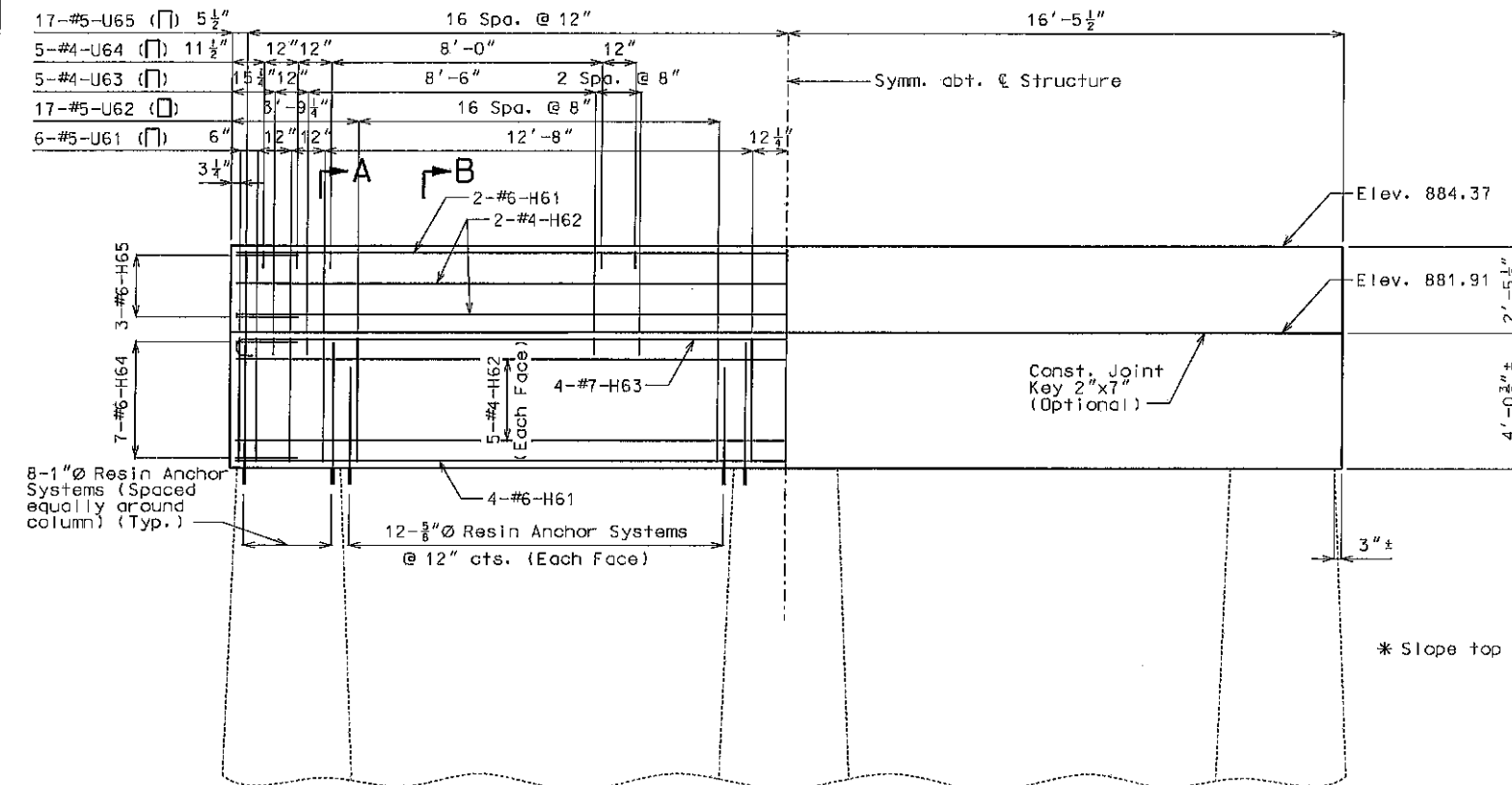
For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

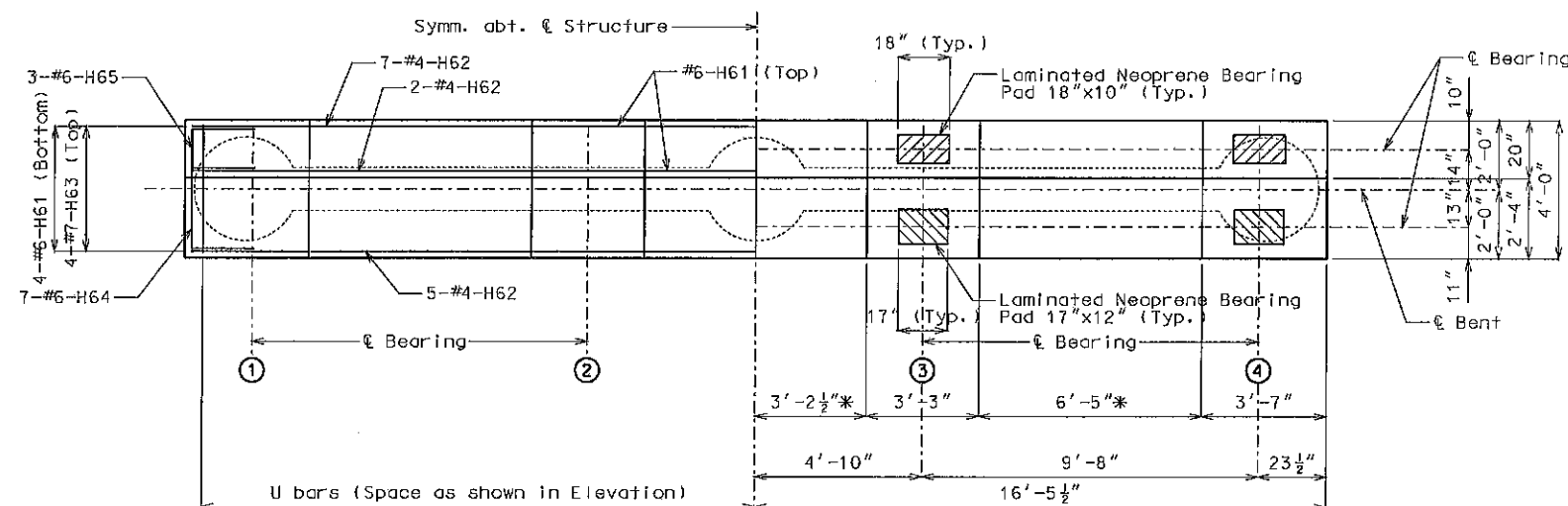
All concrete above top of existing beam shall be Class B-2.

~~All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".~~

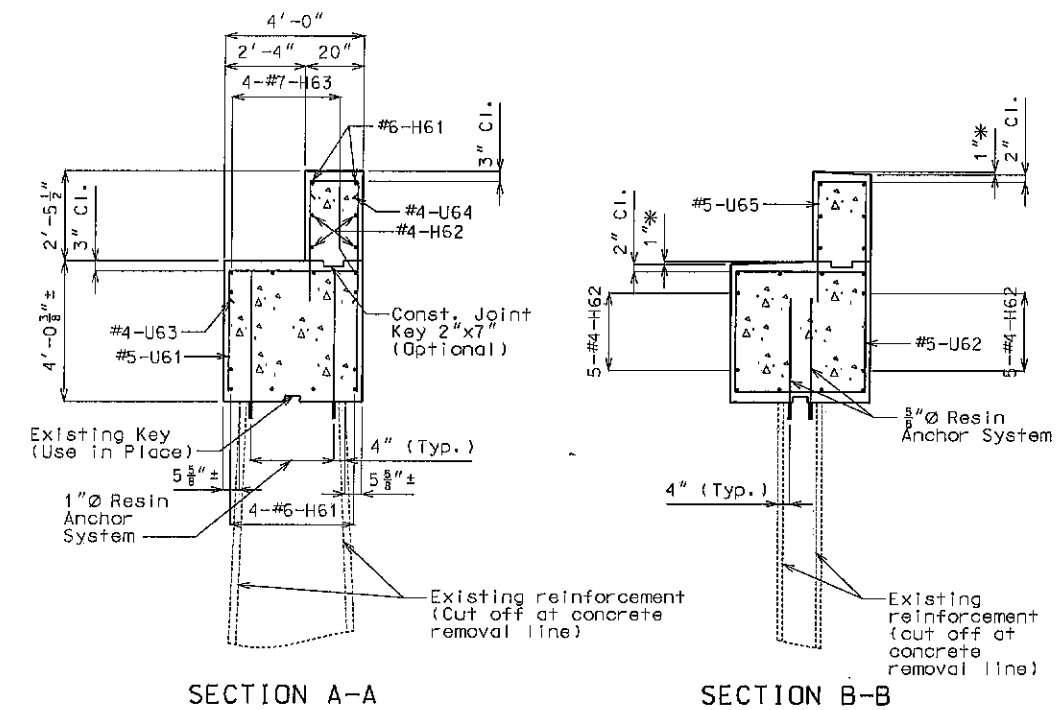
[illegible]



Note:
Const. joint keys and beam slope not shown for clarity.



PLAN OF BEAM
DETAILS OF INTERMEDIATE BENT NO. 6

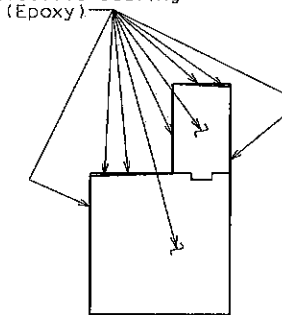


SECTION B-B

* Slope top of beam between bearings.

Note:
Sections A-A and B-B same except as shown.

Coat tops and all vertical faces
of beam with Protective Coating -
Bents and Piers (Epoxy)



DETAIL SHOWING PROTECTIVE COATING

Notes:

For Part Plan of Anchor Rods, see Sheet No. 20.

For Details of Type "N" PTFE Bearings, see Sheet No. 16.

For Details of Laminated Neoprene Bearing Pad Assembly, see Sheet No. 15.

All new concrete in Int. Bent No. 6 shall be Class B-2.

All reinforcing bars in the tops of substructure beams or caps shall be spaced to clear anchor rod wells for bearings by at least $\frac{1}{2}$ ".

Resin Anchor Notes:

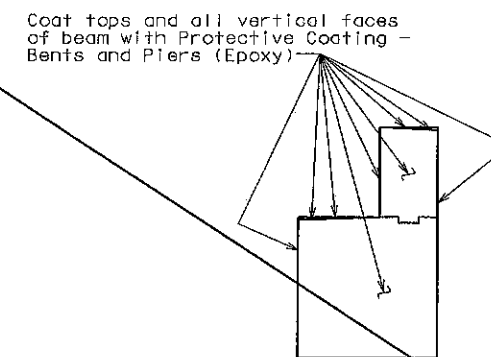
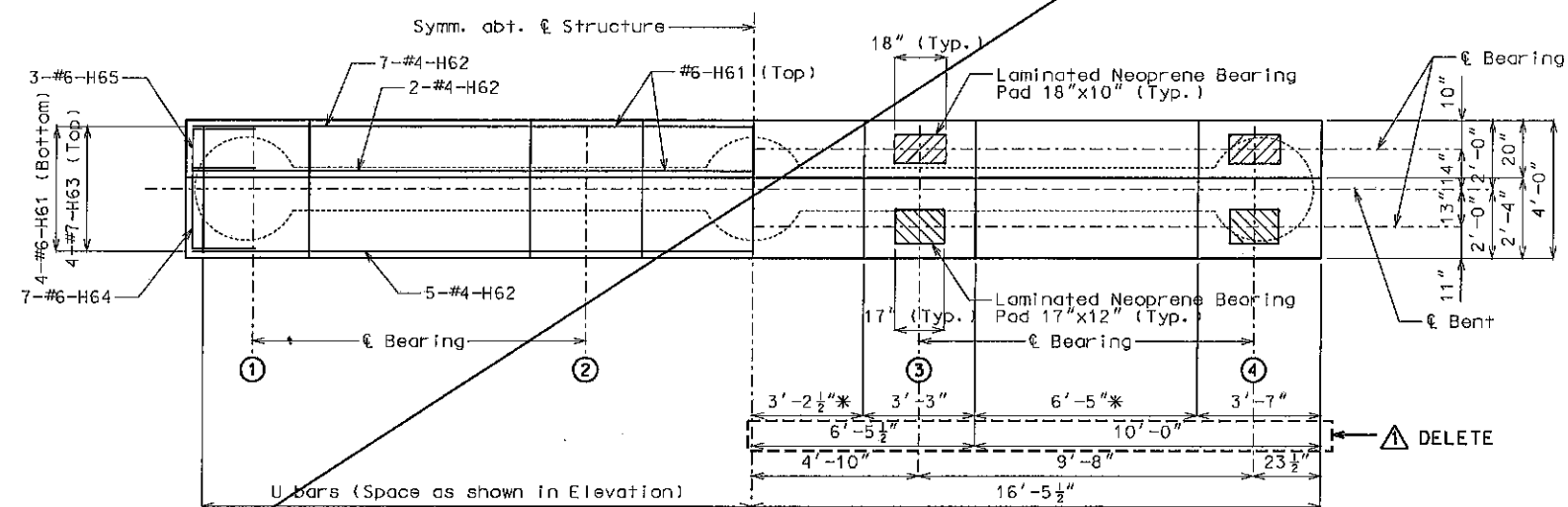
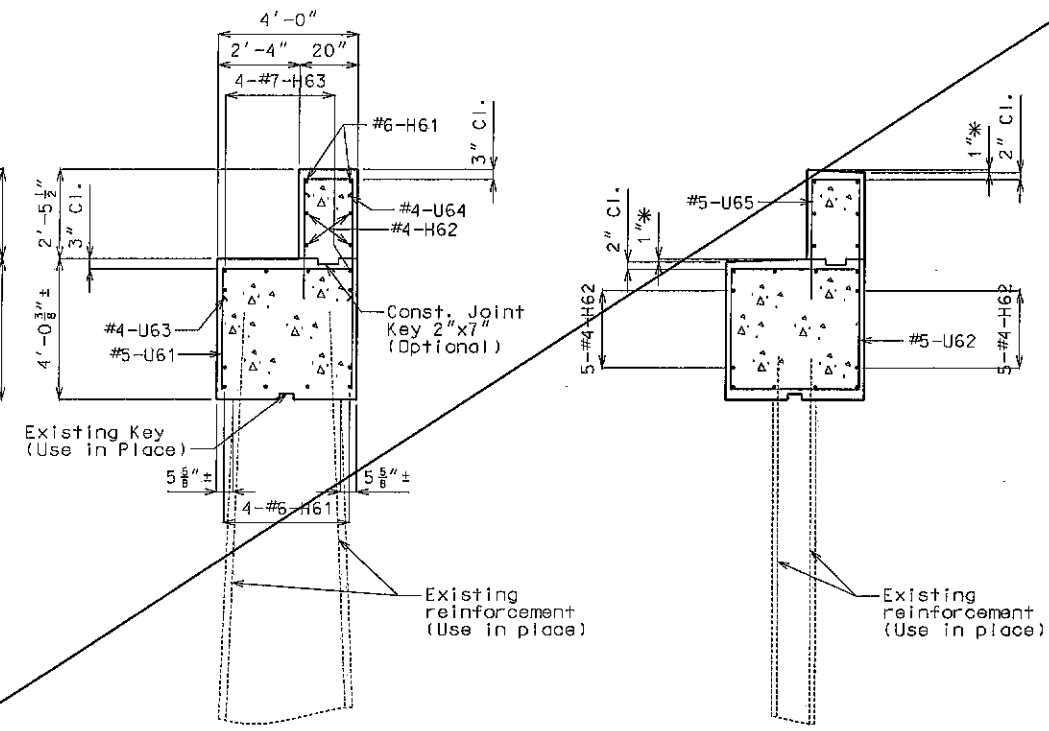
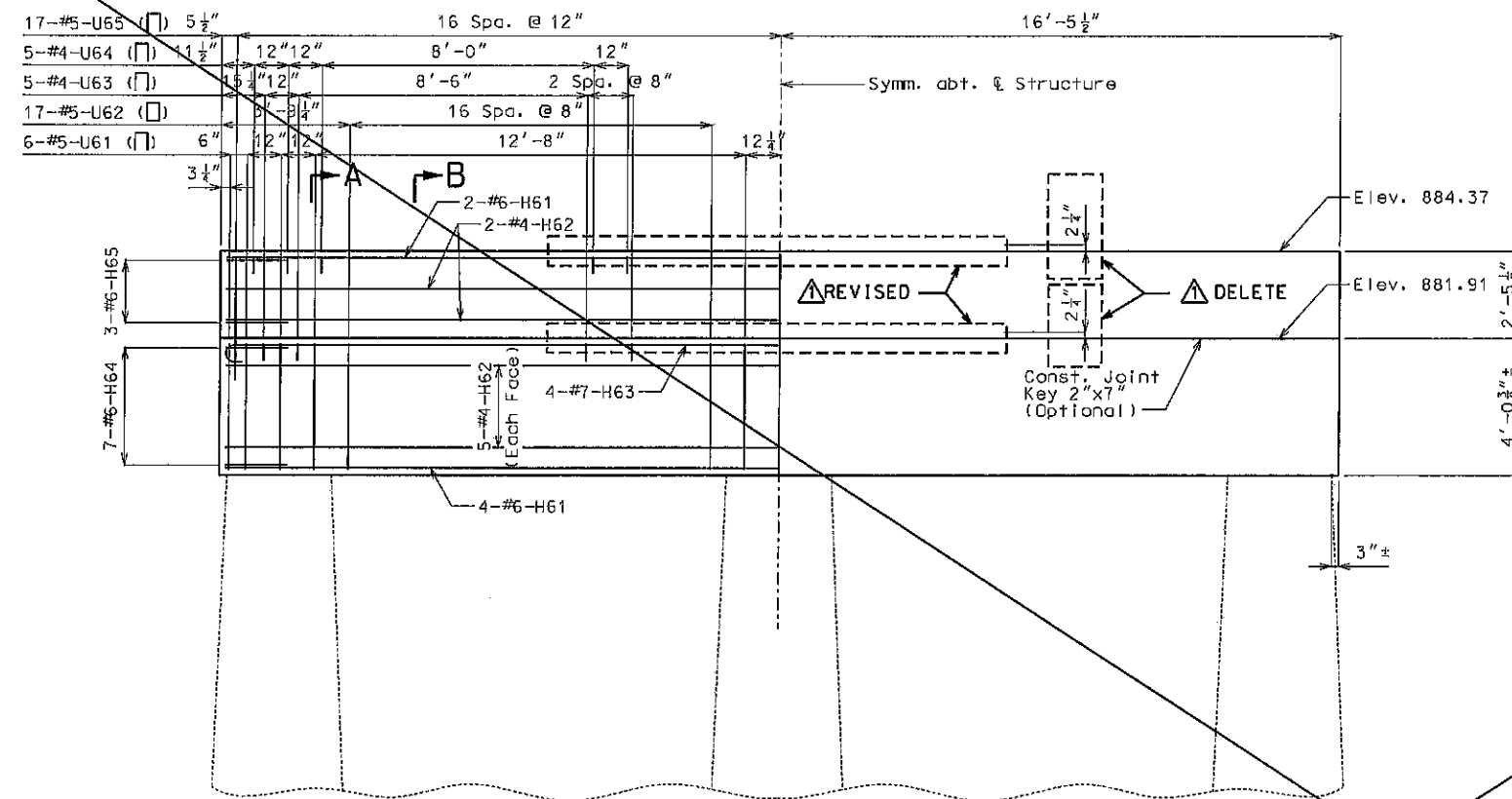
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for Class B-2 Concrete.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor system 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 2'-6" long plus embedment length shall be substituted for the $\frac{3}{8}$ " $\varnothing$ threaded rod for Resin Anchor Systems.

An epoxy coated #8 Grade 60 reinforcing bar 3'-9" long plus embedment length shall be substituted for the 1"Ø threaded rod for Resin Anchor Systems.

[illegible]

BILL OF REINFORCING STEEL

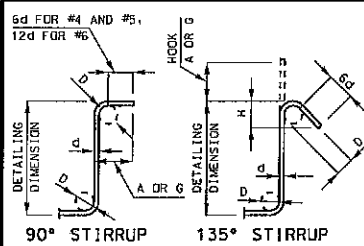
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
										B	C	D	E	F	H	K	FT.	IN.	FT.	IN.	FT.				IN.	FT.	IN.	FT.	IN.	LBS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			SUBSTR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT		
										B		C		D		E		F		H					K	
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.
16	W5	W1	A R WELLS	E	22	X				15.000	9.125									23	0	23	0	61		
			SUPERSTR																							
			END BT NO 1																							
4	6	H11	DIAPHRAGM	E	20					36	5.000									36	5	36	5	219		
34	5	H12	DIAPHRAGM	E	20					2	6.000									2	6	2	6	89		
11	6	H15	BEAM & DIAPH	E	20					34	11.000									34	11	34	11	577		
26	5	U12	DIAPHRAGM	E	19	S				4	3.000	2	0.500							4	6	2		167		
			END BT NO 7																							
4	6	H71	DIAPHRAGM	E	20					36	5.000									36	5	36	5	219		
34	5	H72	DIAPHRAGM	E	20					2	6.000									2	6	2	6	89		
11	6	H75	BEAM & DIAPH	E	20					34	11.000									34	11	34	11	577		
26	5	U72	DIAPHRAGM	E	19	S				4	3.000	2	3.500							6	7	6	5	174		
			SLAB																							
136	5	S1	SLAB	E	20					36	5.000									36	5	36	5	43148		
132	6	S2	SLAB	E	20					36	5.000									36	5	36	5	72584		
69	5	S3	SLAB	E	20					58	11.000									58	11	58	11	4240		
138	5	S4	SLAB	E	20					36	4.000									36	4	36	4	5230		
690	5	S5	SLAB	E	20					56	11.000									56	11	56	11	40961		
112	6	S6	SLAB	E	20					40	7.000									40	7	40	7	6827		
112	6	S7	SLAB	E	20					41	2.000									41	2	41	2	6925		
112	6	S8	SLAB	E	20					43	4.000									43	4	43	4	7290		
			BARRIER CURB																							
136	5	K1	BARRIER CURB	E	19	S				2	5.000	5.125								2	10	2	9	390		
136	5	K2	BARRIER CURB	E	14	S				5.125	11.125	18.000				2.000	17.875	2	10	2	9		390			
99	5	K3	BARRIER CURB	E	27	S				18.625	5.125	12.000	8.750	12.000	9.875	6.875	4	9	4	5		424				
44	5	K4	BARRIER CURB	E	10	S				12.000	18.625	6.000					4	7	4	4		199				
4	5	K5	BARRIER CURB	E	27	S				4.375	6.750	8.750	12.000	5.500	4.000	2	8	2	6		10					
4	5	K6	BARRIER CURB	E	27	S				4.375	7.875	8.750	12.000	6.500	4.500	2	9	2	7		11					
4	5	K7	BARRIER CURB	E	27	S				4.375	9.625	8.750	12.000	7.875	5.500	2	11	2	9		11					
4	5	K8	BARRIER CURB	E	27	S				4.375	11.250	8.750	12.000	9.250	6.500	3	0	2	10		12					
48	5	K9	BARRIER CURB	E	20					5	7.000						5	7	5	7		280				
20	4	K10	BARRIER CURB	E	20					11	8.000						11	8	11	8		156				
4	5	K11	BARRIER CURB	E	8					2	2.125				2	2.000	2.375	4	4	4	4		18			
20	4	K13	BARRIER CURB	E	20					11	8.000						11	8	11	8		156				
1360	5	R1	BARRIER CURB	E	26					2	6.000	4.250	2	6.125		2	6.000	3.000	5	2	5	2	7329			
1360	5	R3	BARRIER CURB	E	19	S				17.000	6.000						0	23	0	22		2601				
1360	5	R4	BARRIER CURB	E	27	S				6.000		11.250	7.000	12.000	9.250	6.375	3	0	2	10		4019				
14	5	R5	BARRIER CURB	E	20					58	11.000						58	11	58	11		860				
56	5	R6	BARRIER CURB	E	20					56	2.000						56	2	56	2		3281				
142	5	R7	BARRIER CURB	E	20					9	9.000						9	9	9	9		1444				
56	5	R8	BARRIER CURB	E	20					56	4.000						56	4	56	4		3290				
28	5	R9	BARRIER CURB	E	20					36	2.000						36	2	36	2		1056				

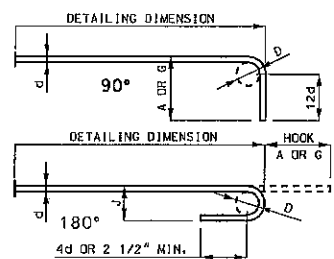
BILL OF REINFORCING STEEL

NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS														NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
										B		C		D		E		F		H		K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.				FT.	IN.	LBS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			SUBSTR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								</



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS	90° HOOKS	
#3	2 1/4"	5"	4"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	24"
#14	18 1/4"	27"	21 3/4"	27"

TWO ADDITIONAL #4-H22, #5-R7, #6-S2, #7-H23 ARE INCLUDED IN THE BAR BILL FOR TESTING.

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. CA = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) F_y = 60,000 PSI.

Detailed Jan. 2010
Checked Jan. 2010

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

Sheet No. 34B of 35



Added this sheet 5/10/2011

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT				
									B		C		D		E					F		H	
									FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.
16	W5 W1	A R WELLS	E 22	X					15	0.000	9	1.25						23	0	23	0	61	
		SUPERSTR																					
		END BT NO 1																					
4	6 H11	DIAPHRAGM	E 20						36	5.000								36	5	36	5	219	
34	5 H12	DIAPHRAGM	E 20						2	6.000								2	6	2	6	89	
11	6 H15	BEAM & DIAPH	E 20						34	11.000								34	11	34	11	577	
26	5 U12	DIAPHRAGM	E 19	S					4	3.000	2	0.500						6	4	6	2	167	
		END BT NO 7																					
4	6 H71	DIAPHRAGM	E 20						36	5.000								36	5	36	5	219	
34	5 H72	DIAPHRAGM	E 20						2	6.000								2	6	2	6	89	
11	6 H75	BEAM & DIAPH	E 20						34	11.000								34	11	34	11	577	
26	5 U72	DIAPHRAGM	E 19	S					4	3.000	2	3.500						6	7	6	5	174	
		SLAB																					
1136	5 S1	SLAB	E 20						36	5.000								36	5	36	5	43148	
1327	6 S2	SLAB	E 20						36	5.000								36	5	36	5	72584	
69	5 S3	SLAB	E 20						58	11.000								58	11	58	11	4240	
138	5 S4	SLAB	E 20						36	4.000								36	4	36	4	5230	
690	5 S5	SLAB	E 20						56	11.000								56	11	56	11	40961	
112	6 S6	SLAB	E 20						40	7.000								40	7	40	7	6827	
112	6 S7	SLAB	E 20						41	2.000								41	2	41	2	6925	
112	6 S8	SLAB	E 20						43	4.000								43	4	43	4	7290	
		BARRIER CURB																					
136	5 K1	BARRIER CURB	E 19	S					2	5.000	5	1.25						2	10	2	9	390	
136	5 K2	BARRIER CURB	E 14	S					5	1.25	11	1.25	18.000		2.000	17.875	2	10	2	9	390		
92	5 K3	BARRIER CURB	E 27	S					18.625	5	1.25	12.000	8.750	12.000	9.875	6.875	4	9	4	5	424		
44	5 K4	BARRIER CURB	E 10	S					12.000	18.625	6.000						4	7	4	4	199		
4	5 K5	BARRIER CURB	E 27	S					4.375	6.750	8.750	12.000	5.500	4.000	2	8	2	6	10				
4	5 K6	BARRIER CURB	E 27	S					4.375	7.875	8.750	12.000	6.500	4.500	2	9	2	7	11				
4	5 K7	BARRIER CURB	E 27	S					4.375	9.625	8.750	12.000	7.875	5.500	2	11	2	9	11				
4	5 K8	BARRIER CURB	E 27	S					4.375	11.250	8.750	12.000	9.250	6.500	3	0	2	10	12				
48	5 K9	BARRIER CURB	E 20						5	7.000							5	7	5	7	280		
20	4 K10	BARRIER CURB	E 20						11	8.000							11	8	11	8	156		
4	5 K11	BARRIER CURB	E 8						2	2.125				2	2.000	2.375	4	4	4	4	18		
20	4 K13	BARRIER CURB	E 20						11	8.000							11	8	11	8	156		
1360	5 R1	BARRIER CURB	E 26						2	6.000	4	2.50	2	6.125		2	6.000	3.000	5	2	5	2	7329
1360	5 R3	BARRIER CURB	E 19	S					17.000	6.000							0	23	0	22	2601		
1360	5 R4	BARRIER CURB	E 27	S						6.000	11.250	7.000	12.000	9.250	6.375	3	0	2	10	4019			
14	5 R5	BARRIER CURB	E 20						58	11.000							58	11	58	11	860		
56	5 R6	BARRIER CURB	E 20						56	2.000							56	2	56	2	3281		
142	5 R7	BARRIER CURB	E 20						9	9.000							9	9	9	9	1444		
56	5 R8	BARRIER CURB	E 20						56	4.000							56	4	56	4	3290		
28	5 R9	BARRIER CURB	E 20						36	2.000							36	2	36	2	1056		

