

A.A.D.T. - 2024 = 342
A.A.D.T. - 2054 = 398
PEAK HOUR = 10.8%
T = 11.15%
V = 55 M.P.H.
DISTRIBUTION N/S = 50.9%/49.1%

NO NEW R/W REQUIRED

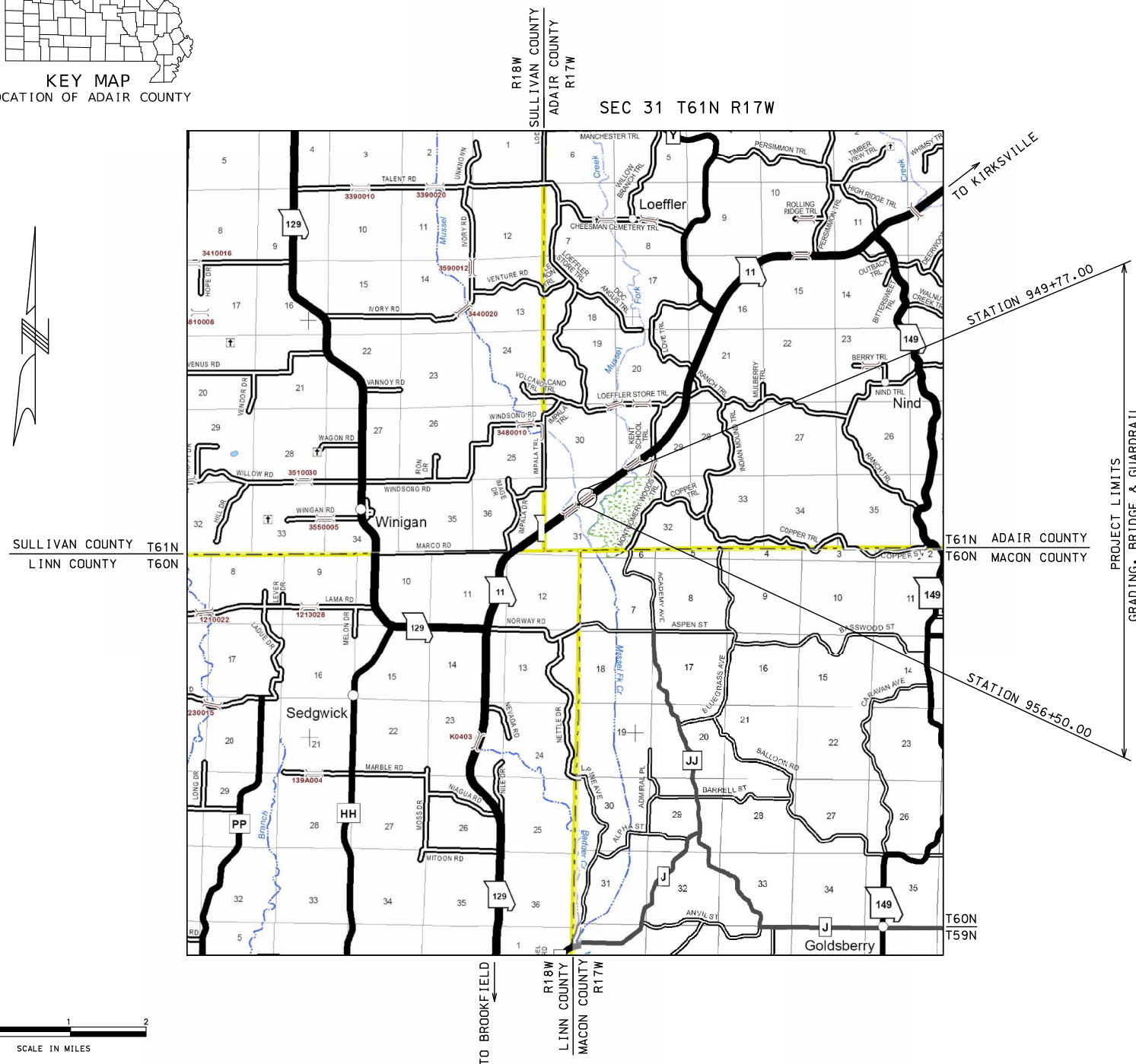
BUILDINGS AND STRUCTURES		
GUARD RAIL		
GUARD CABLE		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	— FO —	— FO —
OVERHEAD CABLE TV	— OTV —	— OTV —
UNDERGROUND CABLE TV	— UTV —	— UTV —
OVERHEAD TELEPHONE	— OT —	— OT —
UNDERGROUND TELEPHONE	— UT —	— UT —
OVERHEAD POWER	— OE —	— OE —
UNDERGROUND POWER	— UE —	— UE —
SANITARY SEWER	— S —	— S —
STORM SEWER	— SS —	— SS —
GAS	— G —	— G —
WATER	— W —	— W —
MANHOLE		
FIRE HYDRANT		
WATER VALVE		
WATER METER		
DROP INLET		
DITCH BLOCK		
GROUND MOUNTED SIGN		
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL		
FENCE		
CHAIN LINK	— V —	
WOVEN WIRE	— X —	
GATE POST		
BENCHMARK		

NOTE: DASHED OR OPEN SYMBOLS INDICATE
EXISTING FEATURES

KEY MAP
LOCATION OF ADAIR COUNTY



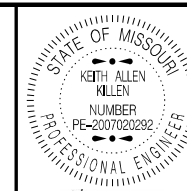
THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE COMMISSION SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION. IT IS, THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE, LOCATION AND STATUS OF ANY FACILITY. SUCH VERIFICATION INCLUDES DIRECT CONTACT WITH THE LISTED UTILITIES.



DESCRIPTION	SHEET NUMBER
TITLE SHEET -----	1
TYPICAL SECTIONS (TS) (1 SHEET)--	2
QUANTITIES (QU) (2 SHEETS)-----	3
PLAN-PROFILE (PP)-----	4
COORDINATE POINTS (CP)-----	5
SPECIAL SHEETS (SS)-----	6
TRAFFIC CONTROL SHEETS (TC)-----	7-8
EROSION CONTROL SHEETS (EC)-----	9
BRIDGE DRAWINGS (B)	
A9334-----	1-27
CROSS SECTIONS (XS)-----	1-9

BEGINNING OF PROJECT	STA.	949+77.00	
END OF PROJECT	STA.	956+50.00	
APPARENT LENGTH		673.00	FEET
EQUATIONS AND EXCEPTIONS:		0.00	FEET

TOTAL CORRECTIONS	0.00	FEET
NET LENGTH OF PROJECT	673.00	FEET
STATE LENGTH	0.127	MILES
FOR INFORMATION ONLY		
ESTIMATED DISTURBED ACRES	0.60	ACRES



10/25/2023 8:38:39 AM
KEITH ALLEN KILLEN - CI

MO-PE-2007020292
DATE PREPARED
10/25/202

ROUTE	STA
11	M

DISTRICT	SHEET
NE	1

COUNTY
ADAIR

JOB NO.
J2S3256

CONTRACT ID.

PROJECT NO. _____

BRIDGE NO.

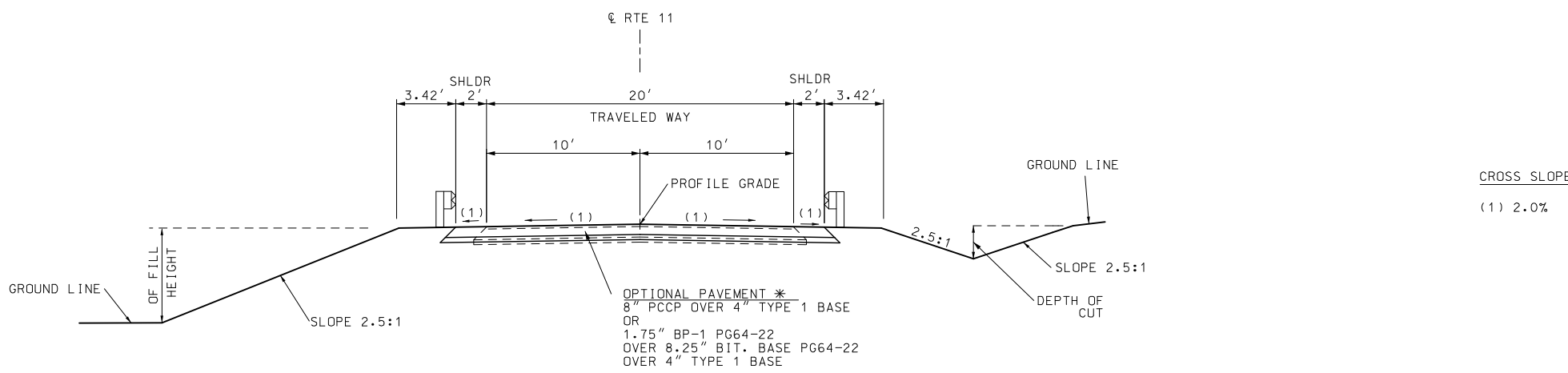
DESCRIPTION

DATE _____

WAYS AND TRANSPORTATION

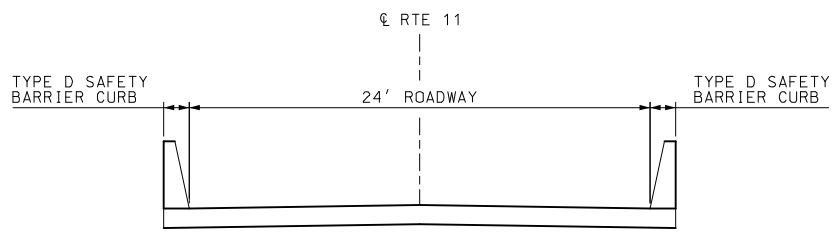


TITLE SHEET
SHEET 1 OF 1



TYPICAL SECTION RTE. 11
STA. 949+77.00 TO STA. 952+91.00
STA. 954+14.62 TO STA. 956+50.00

* PAVEMENT LIMITS STA. 949+77.00 TO STA. 952+71.00
STA. 954+34.62 TO STA. 956+50.00
20' BRIDGE APPROACH SLAB EACH END OF BRIDGE (BRIDGE ITEM)



PROPOSED TYPICAL SECTION BRIDGE A9334
STA. 952+91.00 TO STA. 954+14.62

STATE OF MISSOURI
KEITH ALLEN MILLER
NUMBER
PE-2007020292
PROFESSIONAL ENGINEER
Keith Miller
09/21/2023 12:55:14 PM
KEITH ALLEN MILLER - CIVIL
MO-PE-2007020292

DATE PREPARED
9/20/2023

ROUTE 11	STATE MO
DISTRICT NE	SHEET NO. 2

COUNTY
ADAIR

JOB NO.
J2S3256

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

REMOVAL OF IMPROVEMENTS						
SHEET #	LOC.	OFFSET FT.	STA.	STA.	TOTAL	REMARKS
4	CL RTE 11	11' LT/RT	952+17.00	952+60.00	3 SIGNS	OBJECT MARKERS AT BRIDGE END
4	CL RTE 11	11' LT/RT	954+55.00	954+95.00	3 SIGNS	OBJECT MARKERS AT BRIDGE END
4	CL RTE 11	10' LT-10' RT	949+77.00	-	20 LF	SAW CUT
4	CL RTE 11	0-10' LT/RT	949+77.00	952+91.00	698 SY	PAVEMENT REMOVAL
4	CL RTE 11	0-10' LT/RT	954+14.62	956+50.00	523 SY	PAVEMENT REMOVAL
4	CL RTE 11	10' LT-10' RT	956+50.00	-	20 LF	SAW CUT
TOTAL					1	LUMP SUM

EARTHWORK							
SHEET	BEGIN STATION	END STATION	ROUTE	CL. A EXC. (CY)	COMP. EMB. (CY)	EMB IN PLACE (CY)	REMARKS
4	949+77.00	952+91.00	11	209.0	190.0	802.5	
4	954+14.62	956+50.00	11	180.0	164.0	598.3	
			TOTAL	389.0	354.0	1400.8	
			USE	389.0	354.0	1401.0	

SUBGRADE COMPACTION (6 INCH DEPTH)					
SHEET	BEGIN STATION	END STATION	ROUTE	LENGTH 100 FT.	REMARKS
4	949+77.00	952+91.00	11	3.1	
4	954+14.62	956+50.00	11	2.4	
			TOTAL	5.5	
			USE	6.0	

MOBILIZATION	
ITEM	QUANTITY (LS)
MOBILIZATION	1
TOTAL	1 LUMP SUM

OPTIONAL PAVEMENT						
SHEET	BEGIN STATION	END STATION	ROUTE	WIDTH (FT)	OPTIONAL PVMT (SY)	4" TYPE 1 AGG BASE (SY)
4	950+27.00	952+71.00	11	24.00	650.7	651
4	954+34.62	956+00.00	11	24.00	441.0	441
4	949+77.00	950+27.00	11	22.00	122.2	122
4	956+00.00	956+50.00	11	22.00	122.2	122
			TOTAL		1336	1336

MGS GUARDRAIL						
SHEET	ROADWAY	LT/RT	MGS GUARDRAIL	MGS BRIDGE APPROACH	TYPE A CRASHWORTHY	REMARKS
			L.F	TRANSITION SECTION (EA)	END TERMINAL (MASH) (EA)	
4,6	11	LEFT	37.5	1	1	SE CORNER
4,6	11	RIGHT	87.5	1	1	NE CORNER
4,6	11	LEFT	87.5	1	1	SW CORNER
4,6	11	RIGHT	37.5	1	1	NW CORNER
		TOTAL	250	4	4	
			250	4	4	

TYPE 2 ROCK BLANKET					
SHEET	STATION	STATION	FURNISH TYPE 2 ROCK BLANKET (CY)	PLACING TYPE 2 ROCK BLANKET (CY)	PERM. EROSION CNTRL. GEOTEXTILE (SY)
4	952+57.58	953+26.00	308.32	308.32	462.48
4	953+88.72	954+41.41	211.09	211.09	316.64
		TOTAL	519.4	519.4	779.1
		USE	519.0	519.0	779.0

MISC. SEEDING AND MULCHING					
SHEET	STA.	STA.	LOCATION	QUANTITY APPROX. ACRES	REMARKS
4	949+77.00	952+74.00	LT	0.17	
4	949+77.00	952+58.00	RT	0.16	
4	954+38.00	956+50.00	LT	0.08	
4	954+41.00	956+50.00	RT	0.09	
			TOTAL	1	LUMP SUM

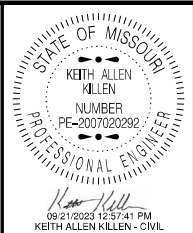
NOTE: ACREAGE INCLUDES AREA 5' OUTSIDE OF SLOPE LINE

CONTRACTOR FURNISHED SURVEYING AND STAKING	
ITEM	QUANTITY (LS)
CONTRACTOR FURNISHED SURVEYING AND STAKING	1
TOTAL	1 LUMP SUM

WATERBORNE MARKING PAINT WITH TYPE P BEADS				
STATION	STATION	4" YELLOW L.F.	4" WHITE L.F.	REMARKS
949+77.00	956+50.00	168	-	INTERMITTENT CENTERLINE
949+77.00	956+50.00	-	1346	LEFT AND RIGHT EDGELINES
	TOTAL	168	1346	

TEMPORARY EROSION CONTROL					
SHEET	* SEDIMENT REMOVAL (CY)	SILT FENCE (LF)	ROCK DITCH CHECK (LF)	TYPE C BERM (LF)	REMARKS
9	15	1175	48	330	
TOTAL	15	1175	48	330	

* ESTIMATED AT 1 CY PER DITCH CHECK AND 1 CY PER 100' OF SILT FENCE



DATE PREPARED
9/20/2023

ROUTE 11	STATE MO
DISTRICT NE	SHEET NO. 3

COUNTY
ADAIR

JOB NO.
J2S3256

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE								

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



BRIDGE

950

REMOVE EXISTING
BRIDGE K304

559

EXISTING PERMANENT
EASEMENT

— TYPE 2 ROCK
BLANKET OVER
PERM EROSION
CONTROL GEOTEXTILE

SECTION LINE

EXISTING R/W 45'

NW¹/₄ NE¹/₄ SEC. 31
T61N R17W

-EXISTING PERMANENT
EASEMENT

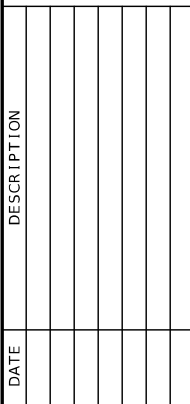
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

SCALE



0 50 100 150

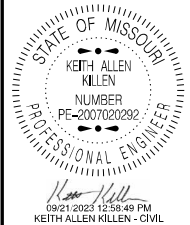
BM#4 CHISELED □ ON TOP C SOUTH HDWL R.C.P.
UNDER RTE 11 STA. 936+00.90 OFFSET 16.89' LT
ELEV. 864.59
BM#5 CHISELED □ TOP C SOUTH END OF EAST BRIDGE PEIR
CAP BRIDGE K304 STA. 953+06.57 OFFSET 14.56 LT
ELEV. 857.42

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

PLAN PROFILE SHEET
SHEET 1 OF 1



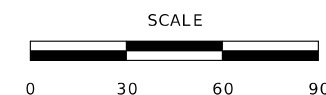
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



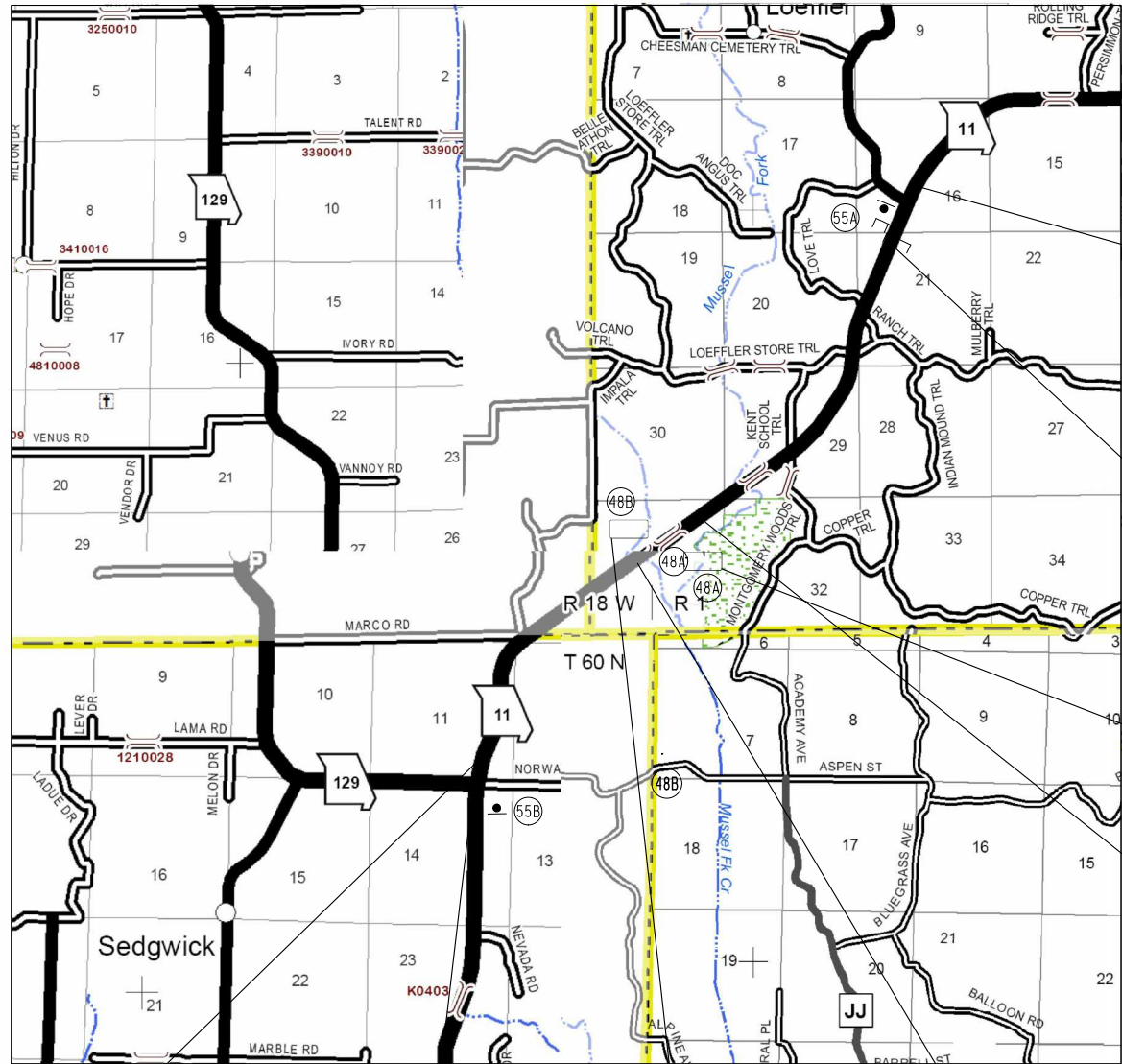
DATE PREPARED 9/20/2023	
ROUTE 11	STATE MO
DISTRICT NE	SHEET NO. 4

COUNTY	ADAIR
JOB NO.	J2S3256
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

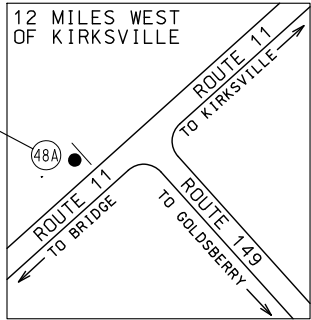


SPECIAL SHEET
GUARDRAIL DETAILS/
STRIPING DETAILS
SHEET 1 OF 1



11 **CLOSED AHEAD 6 MILES**

(48A)
POST-CLOSURE
(RELOCATED SIGN
NO DIRECT PAY)



New Bridge
Fall 2024
M&DOT

Completed as Promised

EXACT LOCATION AS
DETERMINED BY ENGINEER

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- TYPE III MOVEABLE BARRICADE
- CLOSED AHEAD SIGN
(SEE SIGNING SHEET)

ROAD CLOSED
3 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a
(55A)

ROAD CLOSED
2 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a
(55B)

ROAD CLOSED

R11-2
(29)

11 **CLOSED ON**
MONTH DATE

SPECIAL WITH CLOSURE PLAQUES

(48A)

11 **CLOSED ON**
MONTH DATE

SPECIAL WITH CLOSURE PLAQUES

(48B)

PRE-CLOSURE SIGNS
WITH PLAQUES

11 **CLOSED AHEAD 6 MILES**

SPECIAL
(48A)

POST-CLOSURE SIGNS
PLAQUES REMOVED

11 **CLOSED AHEAD 7 MILES**

SPECIAL
(48B)

NOTES:

INSTALL PRE-CLOSURE SIGNS WITH PLAQUES
A MINIMUM OF 2 WEEKS PRIOR TO CLOSURE.

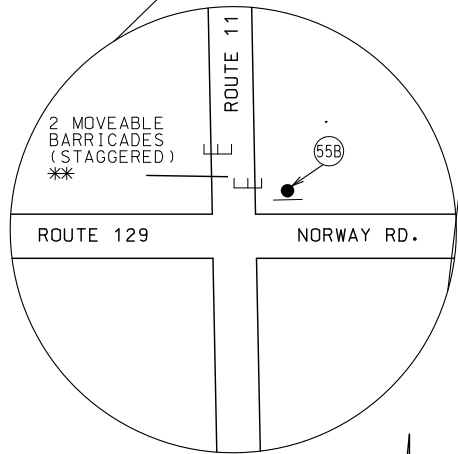
WHEN BRIDGE CLOSURE OCCURS - REMOVE
SPECIAL SIGN PLAQUES AND RELOCATE
NOTED SIGNS.

SEE TRAFFIC CONTROL SHEET 2 OF 2
FOR SPECIAL SIGN AND PLAQUE DETAILS
ALL SIGNS SHALL BE SPACED AT
500 FEET UNLESS OTHERWISE NOTED.

* LOCATE SIGNS 100' FROM INTERSECTION
UNLESS OTHERWISE INSTRUCTED BY THE
ENGINEER.

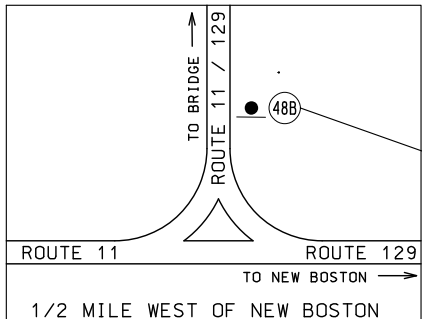
* A SOFT CLOSURE CONSISTS OF 2 MOVABLE
BARRICADES STAGGERED 100' APART, ONE
BARRICADE IN EACH LANE.

USE IN PLACE ALL SIGNS WHICH
DO NOT CONFLICT WITH THIS PLAN.
COVER OR REMOVE CONFLICTING SIGNS.



11 **CLOSED ON**
MONTH DAY

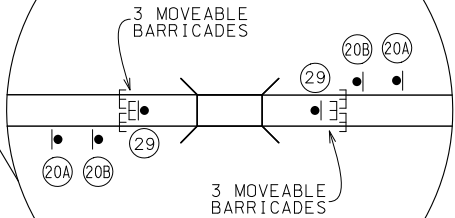
PRE-CLOSURE SIGNAGE AT BRIDGE
(TO BE RELOCATED)



11 **CLOSED AHEAD 7 MILES**

(48B)
POST-CLOSURE
(RELOCATED SIGN
NO DIRECT PAY)

PRE-CLOSURE SIGNAGE AT BRIDGE
(TO BE RELOCATED)

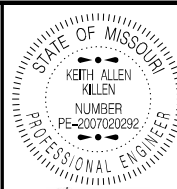


ROAD CLOSED AHEAD

W020-3
(20A)

ROAD CLOSED 500 FT

W020-3a
(20B)



DATE PREPARED
9/20/2023

ROUTE
11

STATE
MO

DISTRICT
NE

SHEET NO.
7

COUNTY
ADAIR

JOB NO.
J253256

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

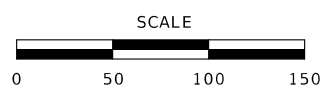
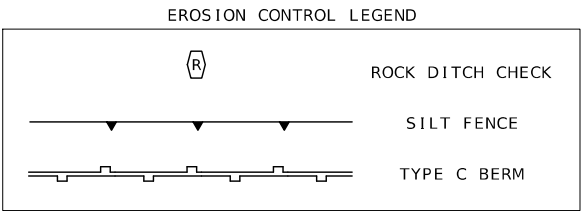
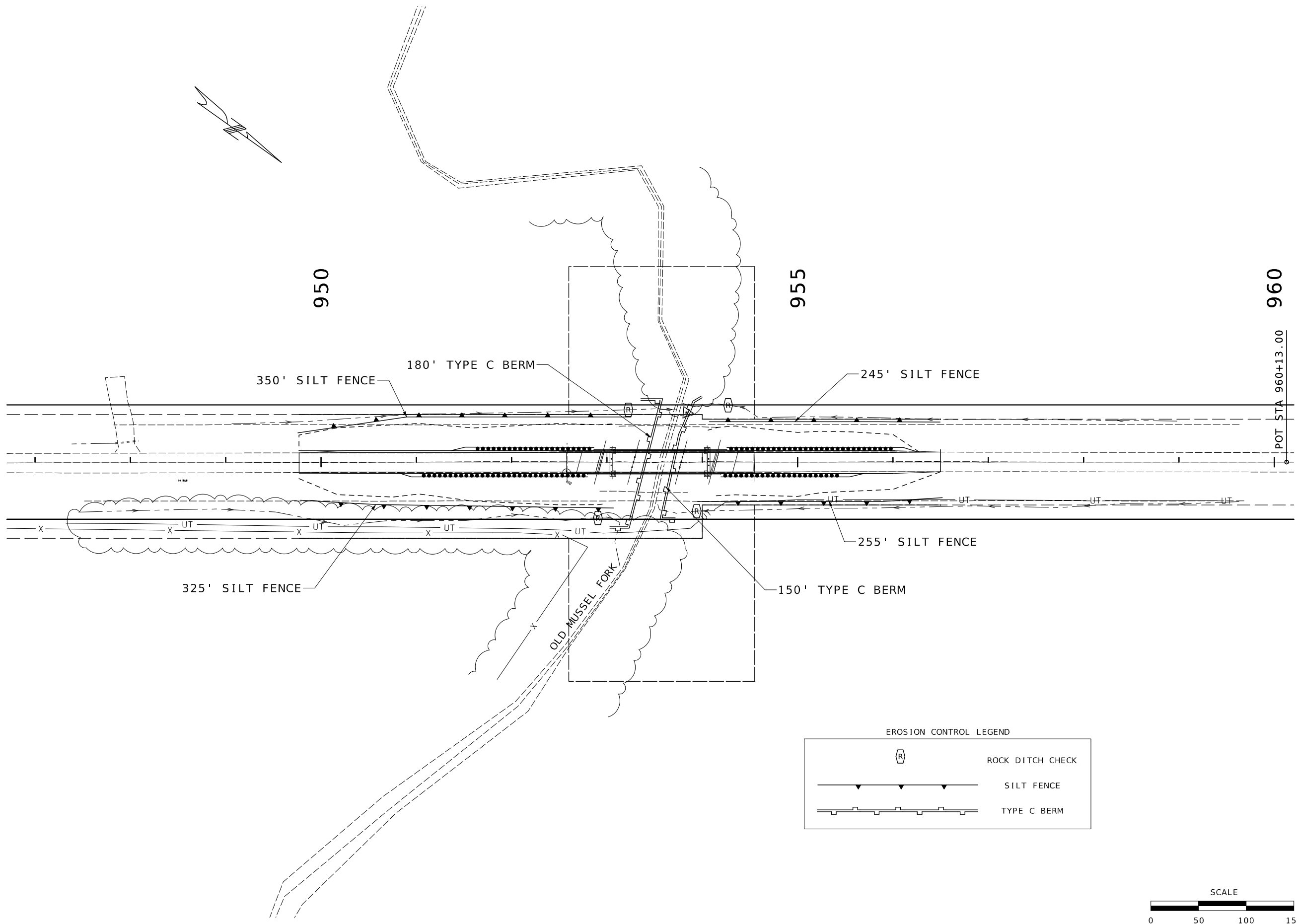
105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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

TRAFFIC CONTROL SHEET

SHEET 1 OF 2



DATE PREPARED
9/20/2023

ROUTE	STATE
11	MO
DISTRICT	SHEET NO.
NE	9

COUNTY
ADAIR

JOB NO.
J2S3256

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

EROSION CONTROL PLAN
SHEET 1 OF 1

Estimated Quantities				
Item		Substr.	Superstr.	Total
Removal of Bridges (K0304)	lump sum			1
Bridge Approach Slab (Minor)	sq. yard		109	109
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	839		839
Dynamic Pile Testing	each	4		4
Dynamic Pile Restrike Testing	each	4		4
Pile Point Reinforcement	each	18		18
Class B Concrete (Substructure)	cu. yard	46.8		46.8
Slab on Concrete I-Girder	sq. yard		363	363
Type D Barrier	linear foot		279	279
Type 2 (32 in.), Prestressed Concrete I-Girder	linear foot		479	479
Reinforcing Steel (Bridges)	pound	3680		3680
Slab Drain	each		22	22
Vertical Drain at End Bents	each			2
Plain Neoprene Bearing Pad	each		8	8
Laminated Neoprene Bearing Pad	each		16	16

All concrete above the construction joint in the end bents is included with the Estimated Quantities for Slab on Concrete I-Girder.

All reinforcement in the end bents and all reinforcement in cast-in-place pile at end bents is included in the Estimated Quantities for Slab on Concrete I-Girder.

All reinforcement in the intermediate bent concrete diaphragms except reinforcement embedded in the beam cap is included in the Estimated Quantities for Slab on Concrete I-Girder.

All concrete above the intermediate beam cap is included in the Estimated Quantities for Slab on Concrete I-Girder.

All reinforcement in cast-in-place pile at intermediate bents is included in the substructure quantities.

Estimated Quantities for Slab on Concrete I-Girder		
Item		Total
Class B-2 Concrete	cu. yard	110
Reinforcing Steel (Epoxy Coated)	pound	26,260

The table of Estimated Quantities for Slab on Concrete I-Girder 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 longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for prestressed panels, conventional forms, all concrete and epoxy coated 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.

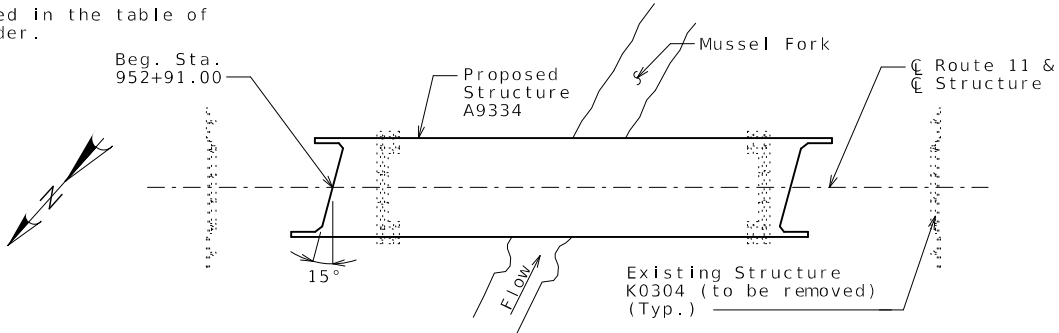
Method of forming the slab shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish type I, II or III.

The Estimated Quantities for Slab on Concrete I-Girder are based on skewed precast prestressed end panels.

Class B-2 Concrete quantity is based on minimum top flange thickness and minimum joint material thickness.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete I-Girder.

Hydrologic Data
Drainage Area = 58 mi ²
Design Flood Frequency = 50 years
Design Flood Discharge = 8,600 cfs
Design Flood (D.F.) Elevation = 854.5
Base Flood (100-year)
Base Flood Elevation = 854.9
Base Flood Discharge = 10,000 cfs
Estimated Backwater = 0.24 ft
Average Velocity thru Opening = 2.0 ft/s
Freeboard (50-year)
Freeboard = 2.7 ft
Roadway Overtopping
Overtopping Flood Discharge = N/A cfs
Overtopping Flood Frequency = >500 years
500-Year Flood Elevation = 855.9



LOCATION SKETCH

GENERAL NOTES AND QUANTITIES

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

Foundation Data					
Type	Design Data	Bent Number			
		1	2	3	4
Load Bearing Pile	Pile Type and Size	CECIP 16"	CECIP 16"	CECIP 16"	CECIP 16"
	Number	4	5	5	4
	Approximate Length Per Each	ft 43	50	49	43
	Pile Point Reinforcement	ea ALL	ALL	ALL	ALL
	Min. Galvanized Penetration (Elev.)	ft FULL LENGTH	FULL LENGTH	FULL LENGTH	FULL LENGTH
	Est. Max. Scour Depth 100-yr (Elev.)	ft 846.4	846.5	847.0	850.7
	Minimum Tip Penetration (Elev.)	ft 814	807	808	814
	Criteria for Min. Tip Penetration	Other Reason	Ultimate Capacity	Ultimate Capacity	Ultimate Capacity
	Pile Driving Verification Method	DT	DT	DT	DT
	Resistance Factor	0.65	0.65	0.65	0.65
	Minimum Nominal Axial Compressive Resistance	kip 207	242	243	208

CECIP = Closed Ended Cast-In-Place Concrete Pile

DT = Dynamic Testing

Load Bearing Pile:

$$\text{Minimum Nominal Axial Compression Resistance} = \frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$$

Estimated Maximum Scour Depth (Elevation) shown is for verifying Minimum Nominal Axial Compressive Resistance using dynamic testing only where pile resistance contribution above this elevation shall not be considered.

All piles shall be galvanized down to the minimum galvanized penetration (elevation).

Pile point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.

The contractor shall make every effort to achieve the minimum galvanized penetration (elevation) shown on the plans for all piles. Deviations in penetration less than 5 feet of the minimum will be considered acceptable provided the contractor makes the necessary corrections to ensure the minimum penetration is achieved on subsequent piles.

General Notes:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)

2011 AASHTO Guide Specifications for LRFD Seismic Bridge Design (2nd Ed.) and 2014 Interim Revisions (Seismic Details)

Seismic Design Category = A

Design Loading:

Vehicular = HL-93

Future Wearing Surface = 35 lb/sf

Earth = 120 lb/cf

Equivalent Fluid Pressure = 45 lb/cf (Min.)

Superstructure: Simply-Supported, Non-Composite for dead load.

Continuous Composite for live load.

Design Unit Stresses:

Class B Concrete (Substructure)

f'c = 3,000 psi

Class B-1 Concrete (Barrier)

f'c = 4,000 psi

Class B-2 Concrete (Superstructure, except Prestressed Girders and Barrier)

f'c = 4,000 psi

Reinforcing Steel (Grade 60)

fy = 60,000 psi

For steel pipe pile stresses, see Sheet No. 3.

For precast prestressed panel stresses, see Sheet No. 16.

For precast prestressed girder stresses, see Sheets No. 13 & 14.

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

Joint Filler:

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

Reinforcing Steel:

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

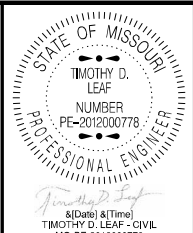
Traffic Handling:

Structure to be closed during construction. Traffic to be maintained on other routes during construction. See roadway plans for traffic control.

Miscellaneous:

MoDOT Construction personnel will indicate the type of joint filler option used under the precast panels for this structure:

- ☐ Constant Joint Filler
☐ Variable Joint Filler



DATE PREPARED	
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ROUTE	STATE
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COUNTY	
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CONTRACT ID.	

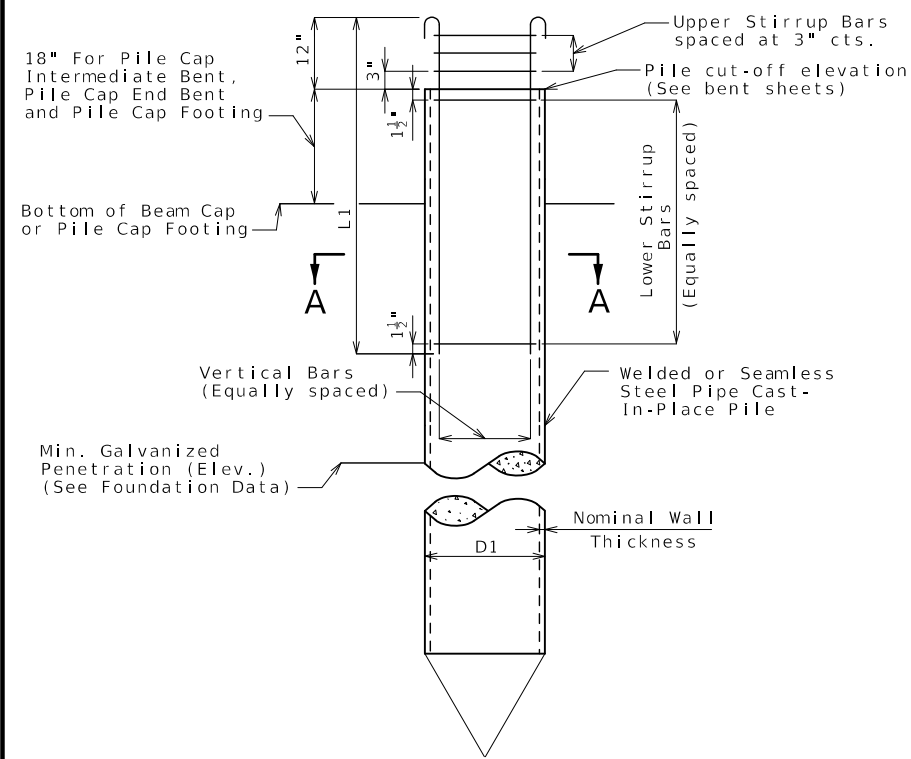
PROJECT NO.	
BRIDGE NO.	
A9334	

DESCRIPTION	DATE					

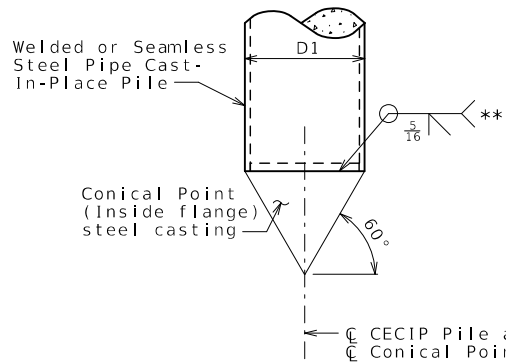
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

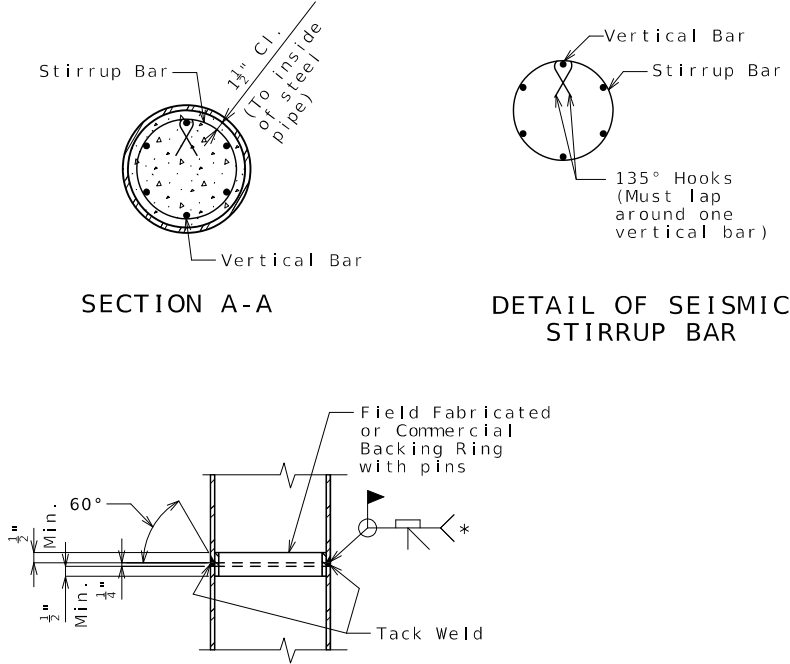


GALVANIZED CLOSED ENDED CAST-IN-PLACE (CECIP) CONCRETE PILE



MANUFACTURED CONICAL PILE POINT
(Omit closure plate)

** If the conical pile point is not pre-beveled, place a 3/8" bevel at 40 degrees on the pipe.



STEEL PIPE PILE SPLICE

* Galvanizing material shall be omitted or removed one inch clear of weld locations in accordance with Sec 702.

Galvanized Closed Ended Cast-In-Place (CECIP) Concrete Pile Data				
Bent Number	1	2	3	4
D1, CECIP Pile (O.D.)	16"	16"	16"	16"
Min. Nominal Wall Thickness	1/2"	1/2"	1/2"	1/2"
Pile Point Reinforcement	Conical	Conical	Conical	Conical
Vertical Bars	6-#6-V104	6-#6-V200	6-#6-V300	6-#6-V404
L1, Length of Vertical Bars	5'-3"	5'-3"	5'-3"	5'-3"
Upper Stirrup Bars	3-#4-P100	3-#4-P200	3-#4-P300	3-#4-P400
Lower Stirrup Bars	5-#4-P100	5-#4-P200	5-#4-P300	5-#4-P400

Notes:

Welded or seamless steel shell (pipe) shall be ASTM A252 Grade 3 (fy = 45,000 psi).

Concrete for cast-in-place pile shall be Class B-1.

Steel for closure plate shall be ASTM A709 Grade 50.

Steel casting for conical pile point reinforcement shall be ASTM A27 Grade 65-35.

The minimum wall thickness of any spot or local area of any type shall not be more than 12.5% under the specified nominal wall thickness.

The contractor shall determine the pile wall thickness required to avoid damage from all driving activities, but wall thickness shall not be less than the minimum specified. No additional payment will be made for furnishing a thicker pile wall than specified on the plans.

Closure plate shall not project beyond the outside diameter of the pipe pile. Satisfactory weldments may be made by beveling tip end of pipe or by use of inside backing rings. In either case, proper gaps shall be used to obtain weld penetration full thickness of pipe. Payment for furnishing and installing closure plate will be considered completely covered by the contract unit price for Galvanized Cast-In-Place Concrete Piles.

Splices of pipe for cast-in-place concrete pile shall be made watertight and to the full strength of the pipe above and below the splice to permit hard driving without damage. Pipe damaged during driving shall be replaced without cost to the state. Pipe sections used for splicing shall be at least 5 feet in length.

At the contractor's option, the hooks of vertical bars embedded in the beam cap may be oriented inward or outward.

Closure plate need not be galvanized.

Reinforcing steel for cast-in-place piles is included in the Bill of Reinforcing Steel.

Work this sheet with Sheets No. 4, 8, 9 & 10.

For Foundation Data table, see Sheet No. 2.



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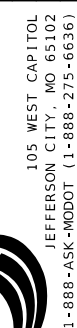
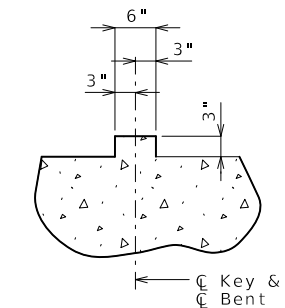
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JOB NO.
J2S3256
CONTRACT ID.

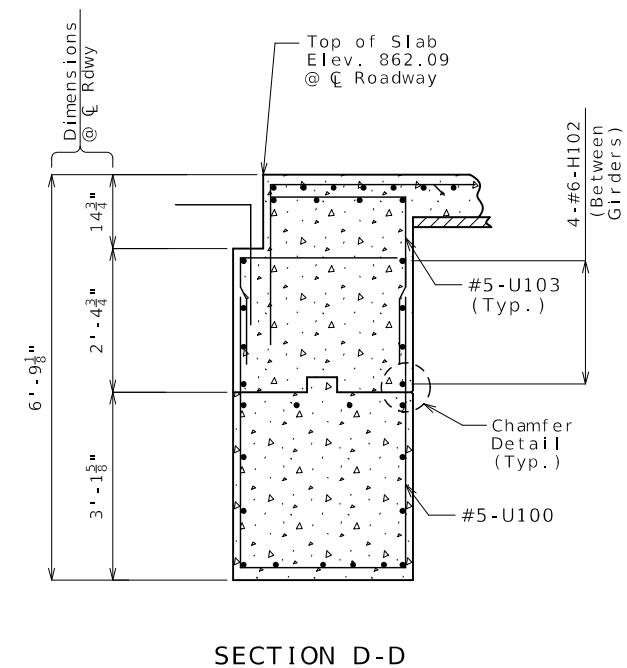
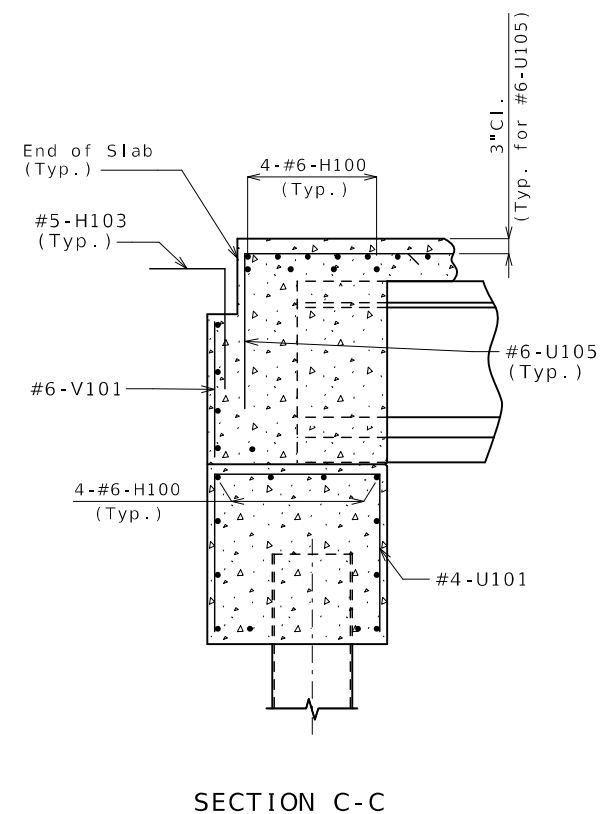
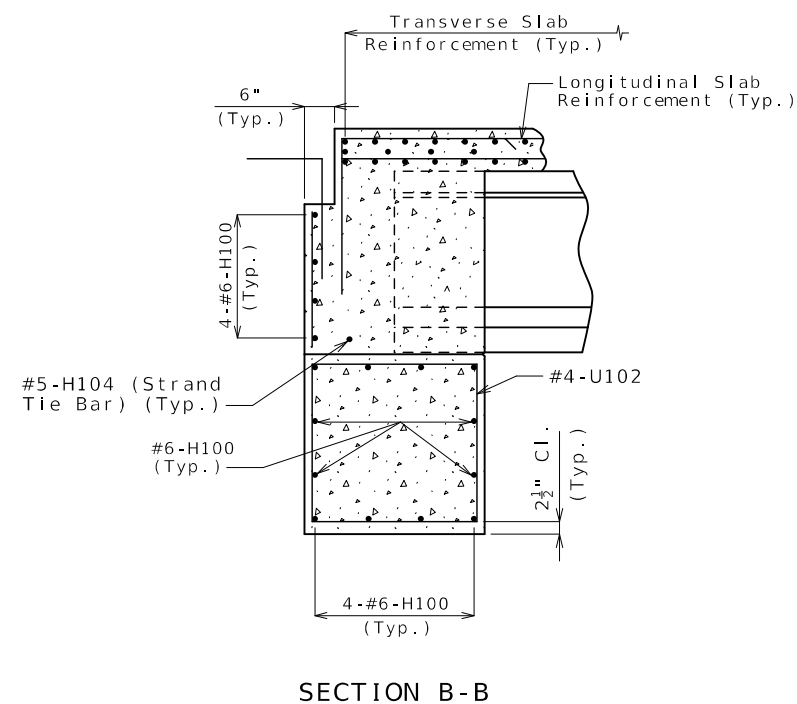
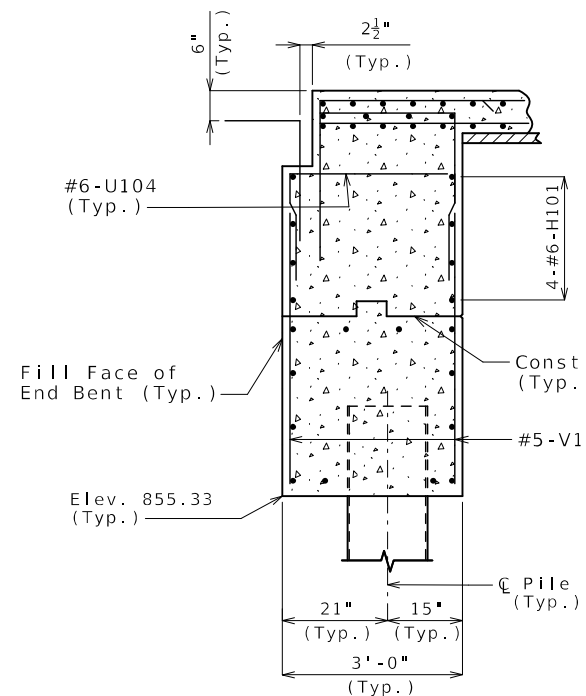
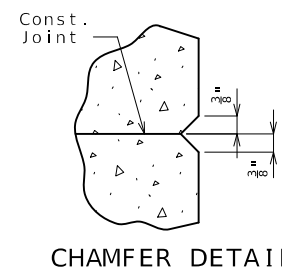
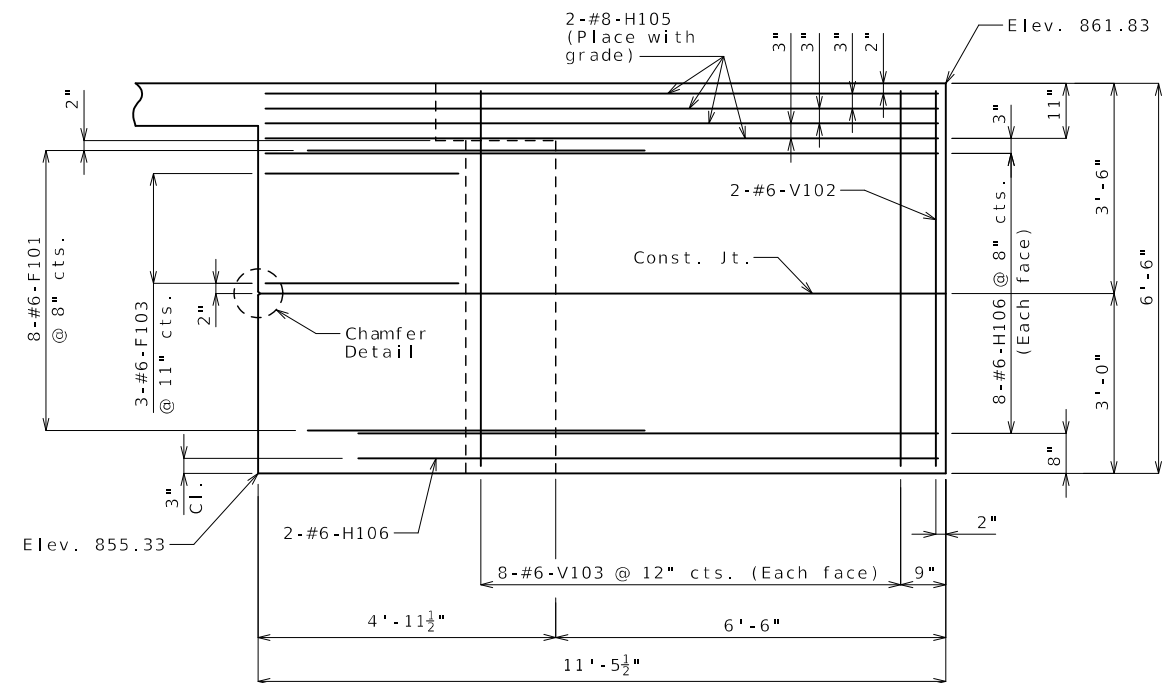
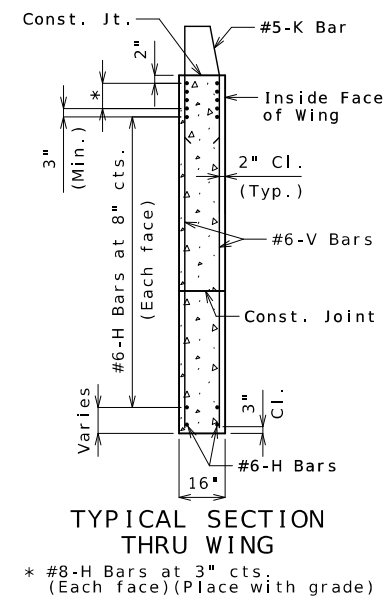
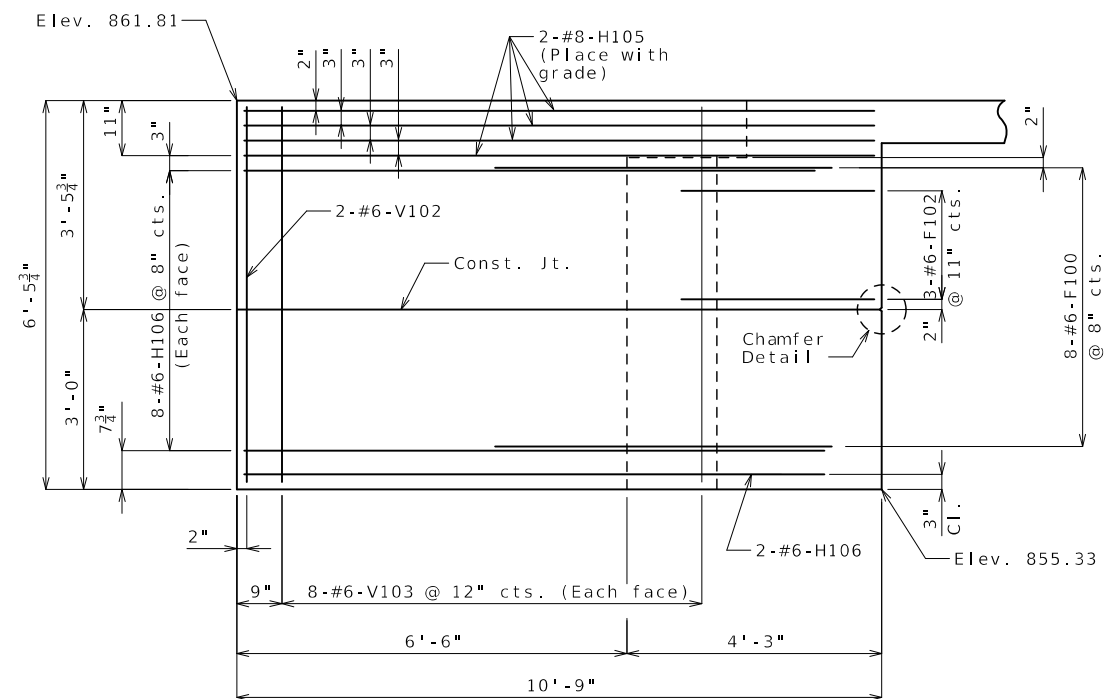
PROJECT NO.
BRIDGE NO.
A9334

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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Notes:

Work this sheet with Sheets No. 4 & 5.

For reinforcement of the barrier,
see Sheet No. 22.



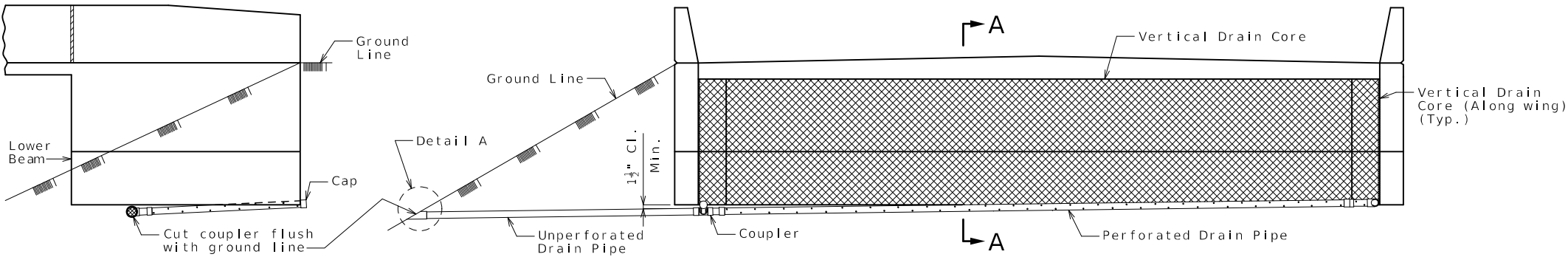

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 TIMOTHY D. LEAF - CIVIL
 MO-PE-2012000778
 DATE PREPARED

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DISTRICT BR	SHEET NO. 6

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JOB NO.
J2S3256
CONTRACT ID.
PROJECT NO.

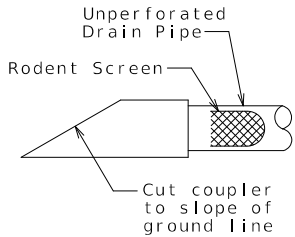
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COMMISSION

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

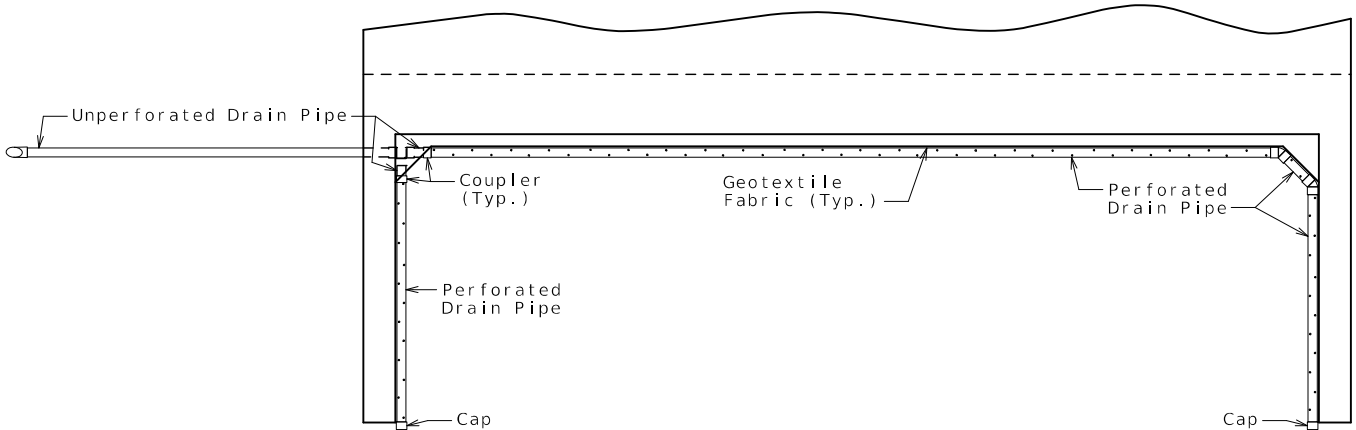


ELEVATION OF WING

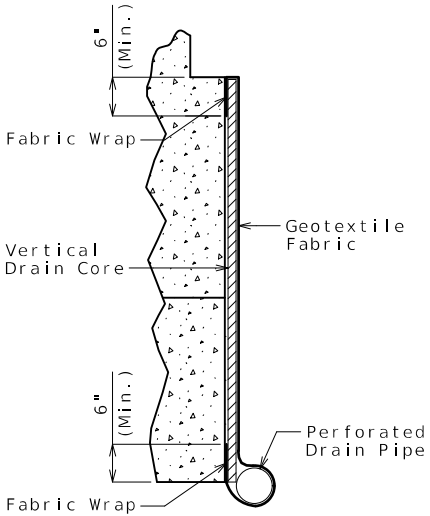
ELEVATION OF END BENT



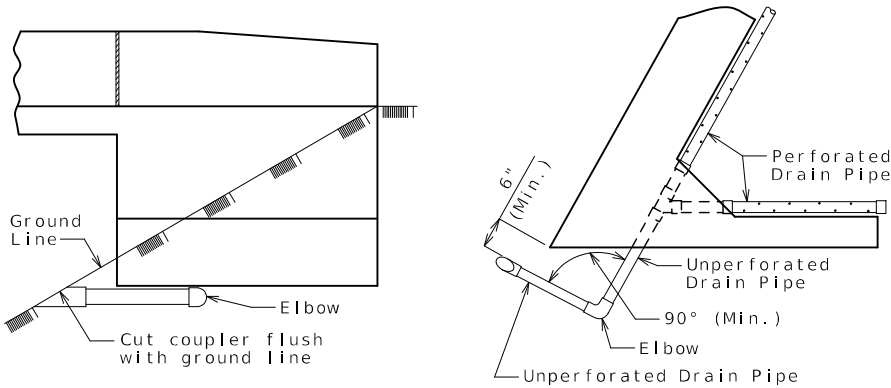
DETAIL A



PLAN OF END BENT



PART SECTION A-A
(Section thru wing similar)



ELEVATION OF WING

PART PLAN

OPTIONAL TURNED DRAIN

(Use only when straight drain is not practical.)

VERTICAL DRAIN AT END BENTS

(Squared end bent shown, skewed end bent similar)

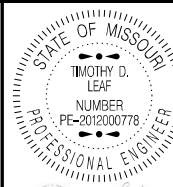
General Notes:

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.



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CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9334

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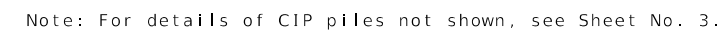
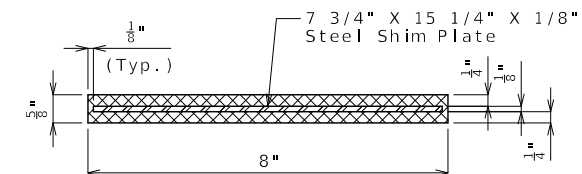
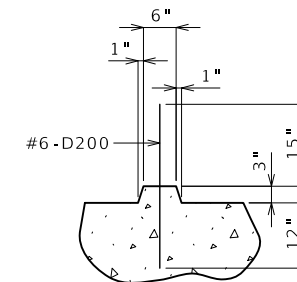
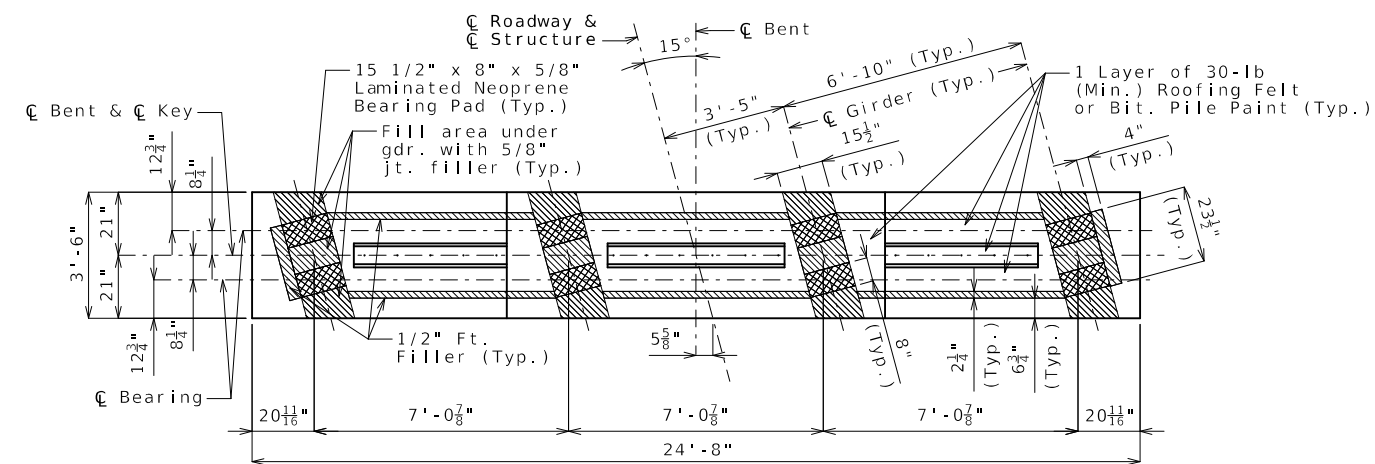
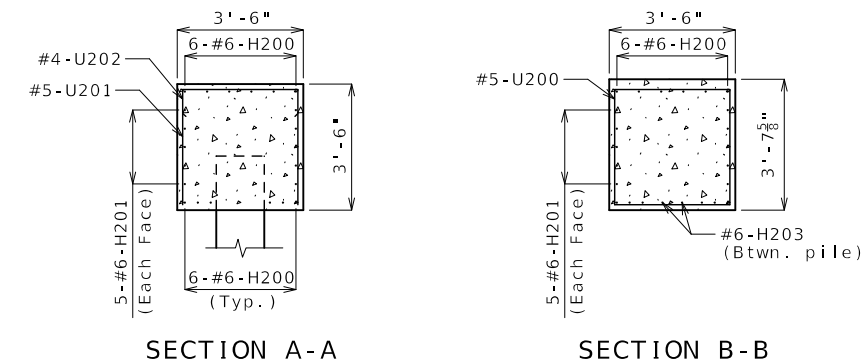
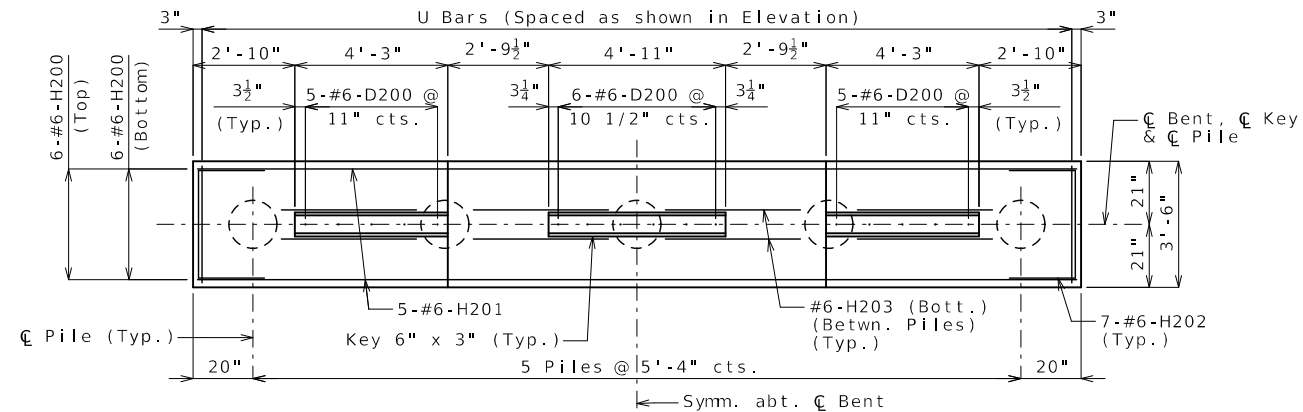
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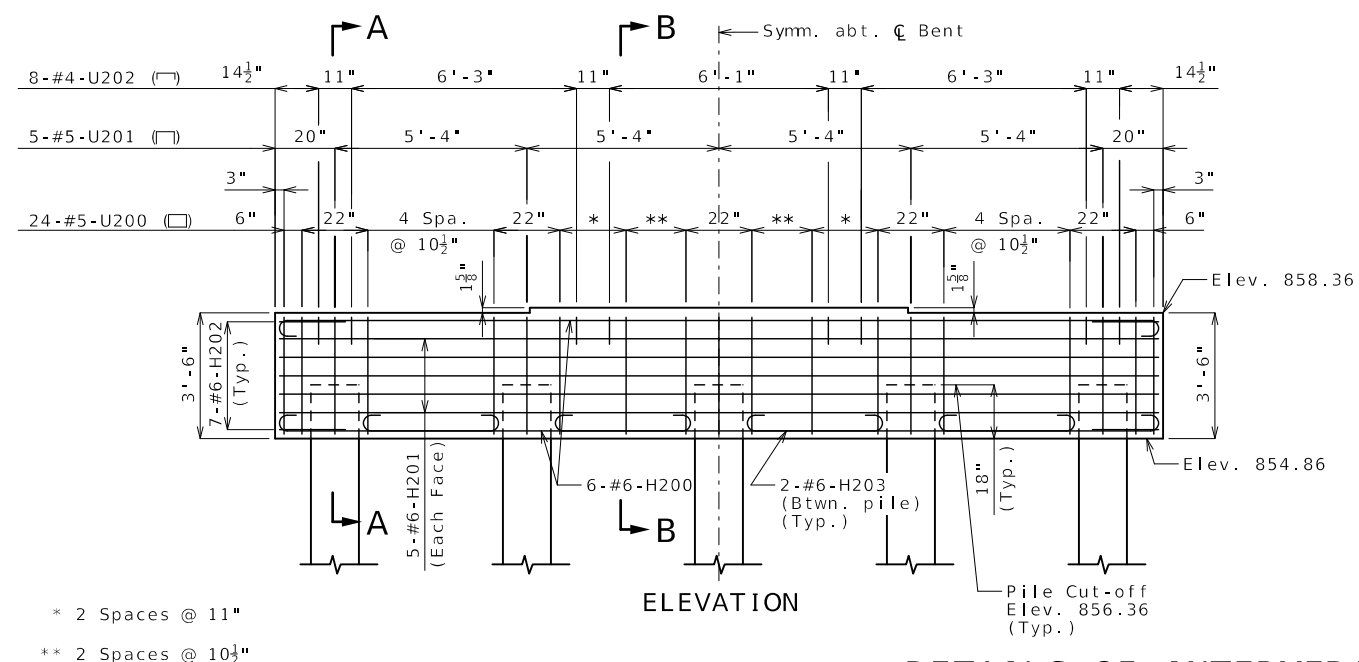
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Substructure Quantity Table for Bent No. 2		
Item		Quantity
Galvanized Cast-In-Place Concrete Piles (16 in.)	linear foot	250
Dynamic Pile Testing	each	1
Dynamic Pile Restrike Testing	each	1
Pile Point Reinforcement	each	5
Class B Concrete (Substructure)	cu. yard	11.4
Reinforcing Steel (Bridges)	pound	1790

These quantities are included in the Estimated Quantities table on Sheet No. 2.




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COUNTY
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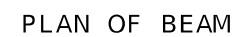
JOB NO.
J2S3256

CONTRACT ID.

BRIDGE NO.

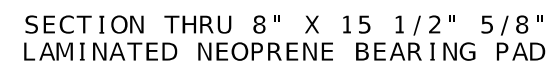
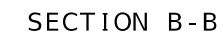
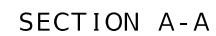
BRIDGE NO.
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** 2 Spaces @ 10¹"

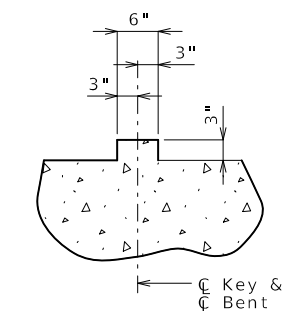
Note: This drawing is not to scale. Follow dimensions.



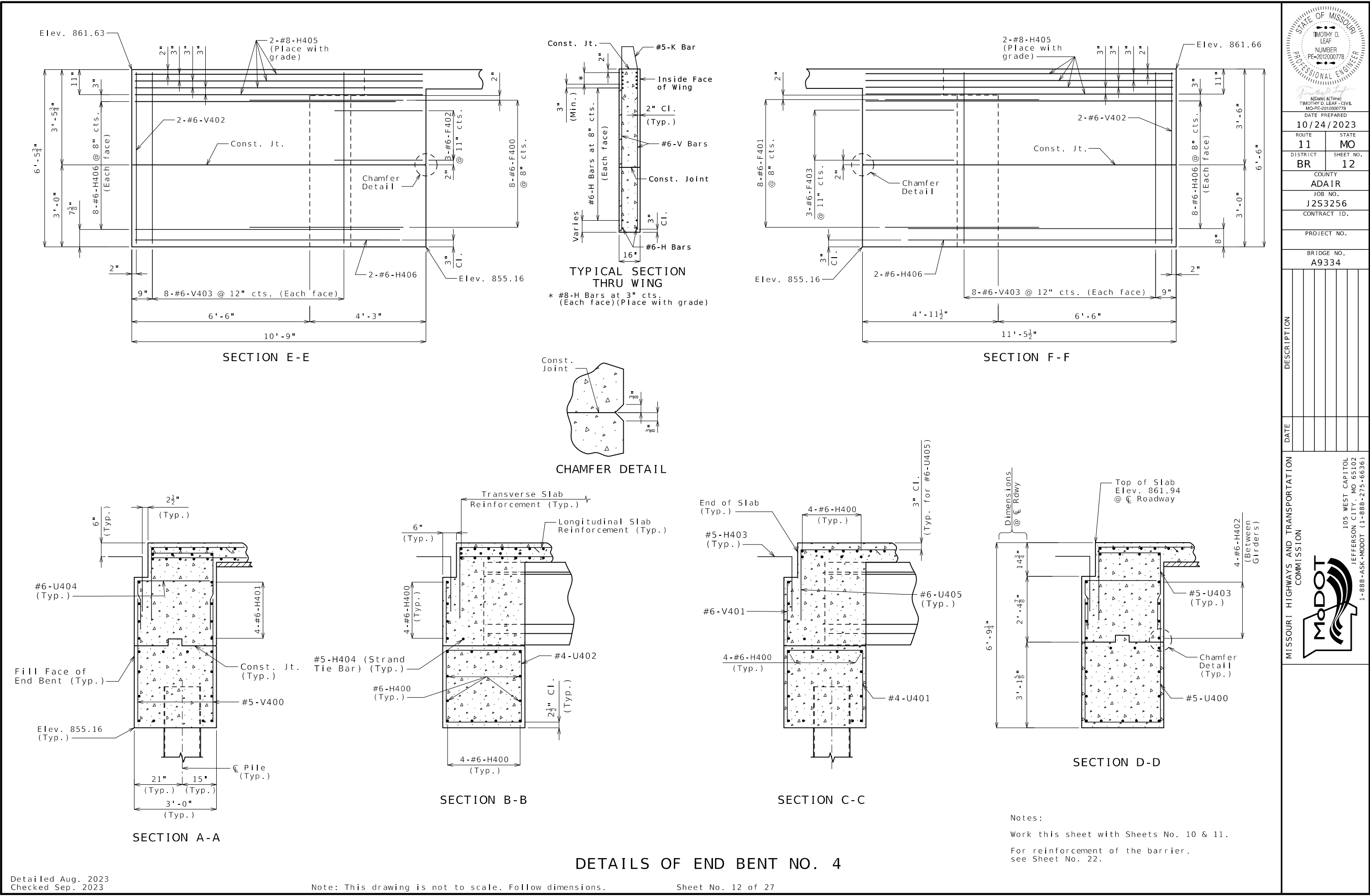
Substructure Quantity Table for Bent No. 3

These quantities are included in the Estimated Quantities table on Sheet No. 2.





105 WEST CAPITOL
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Detailed Aug. 2023
Checked Sep. 2023

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

Sheet No. 12 of 27

DETAILS OF END BENT NO. 4

Notes:
Work this sheet with Sheets No. 10 & 11.
For reinforcement of the barrier,
see Sheet No. 22.

STATE OF MISSOURI

TIMOTHY D. LEAF

NUMBER 2012000778

PROFESSIONAL ENGINEER

DATE PREPARED

10/24/2023

ROUTE 11

STATE MO

DISTRICT BR

SHEET NO. 12

COUNTY ADAIR

JOB NO. J253256

CONTRACT ID.

PROJECT NO.

BRIDGE NO. A9334

DESCRIPTION

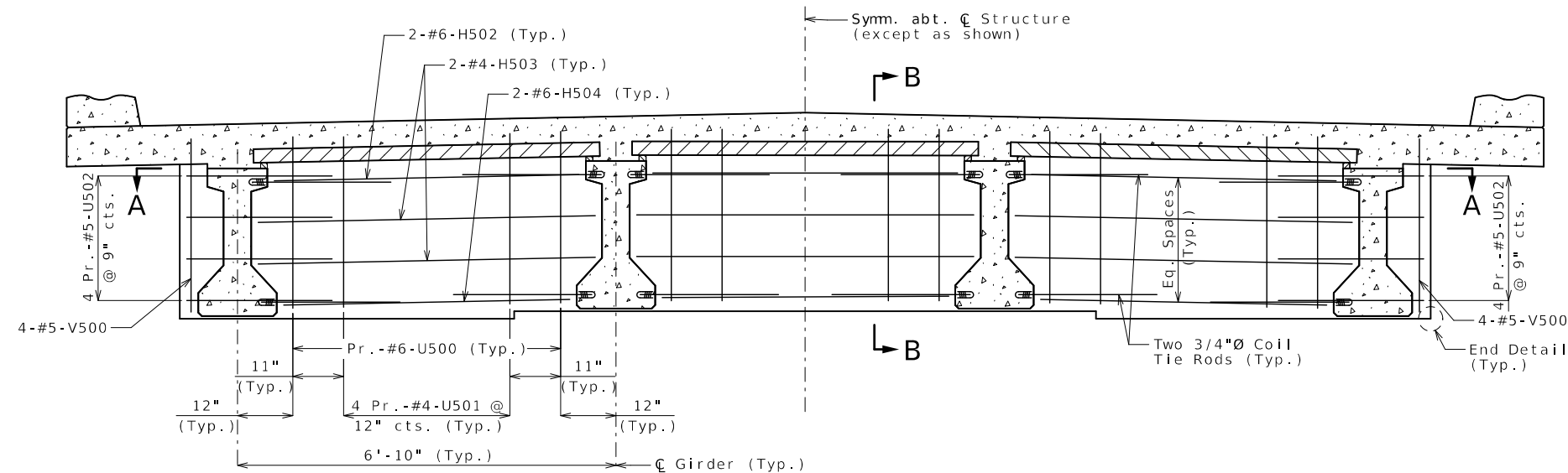
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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

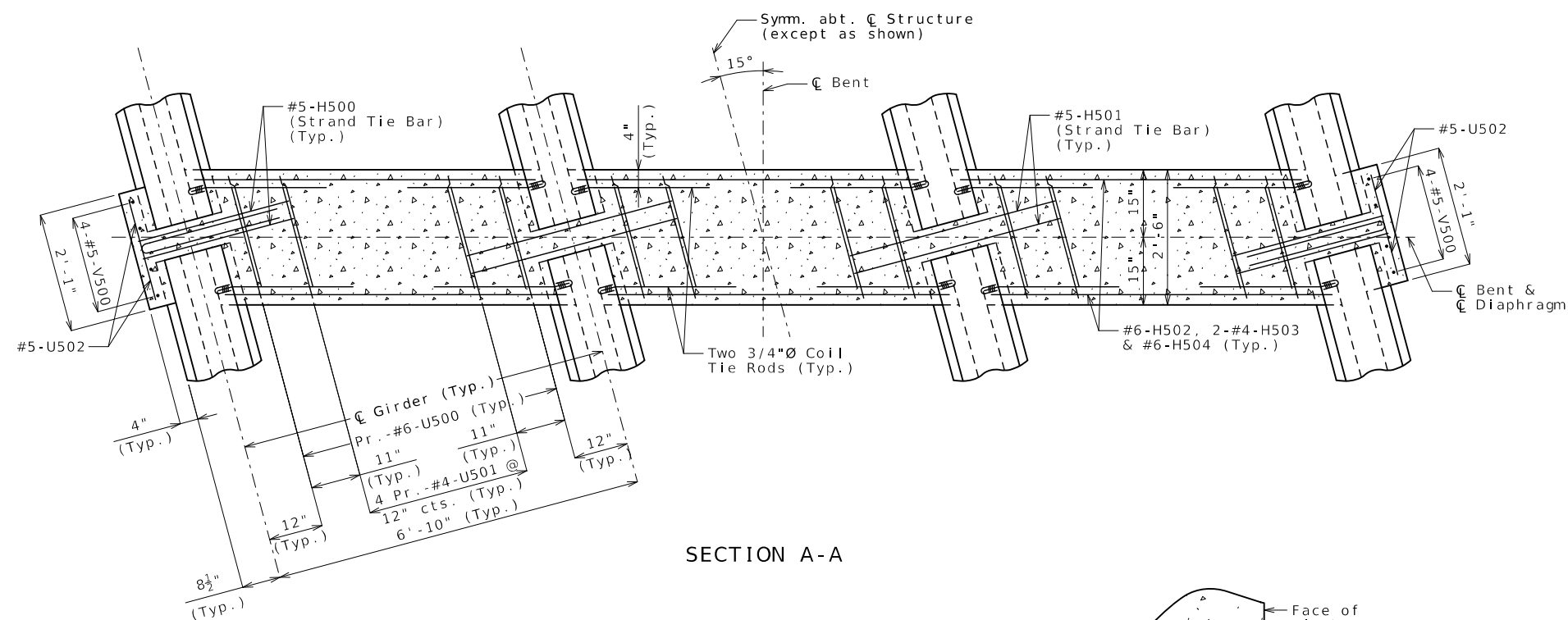
105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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



SECTION NEAR INTERMEDIATE BENT
Normal to C Structure



SECTION A-A

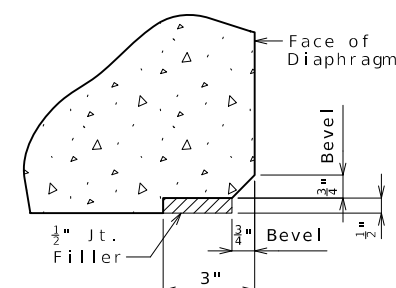
Notes:

For location of Strand Tie Bars, see Sheets No. 13 & 14.

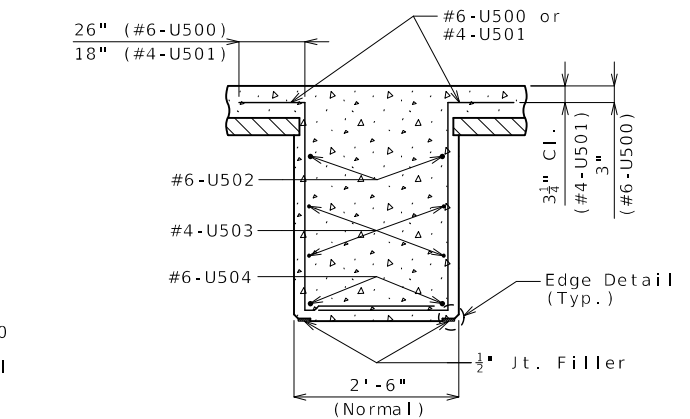
For location and details of Coil Tie Rods, see Sheets No. 13 & 14.

Diaphragms at intermediate bents shall be built vertical.

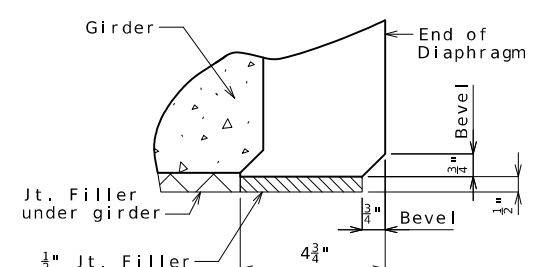
All U-bars in diaphragms are to be placed parallel to centerline Roadway.



EDGE DETAIL



SECTION B-B



END DETAIL

CONCRETE DIAPHRAGMS AT INTERMEDIATE BENTS NO. 2 & 3

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

Sheet No. 15 of 27

Detailed Sep. 2023
Checked Sep. 2023



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ROUTE 11 STATE MO

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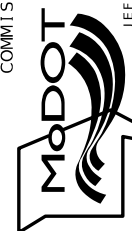
PROJECT NO.

BRIDGE NO. A9334

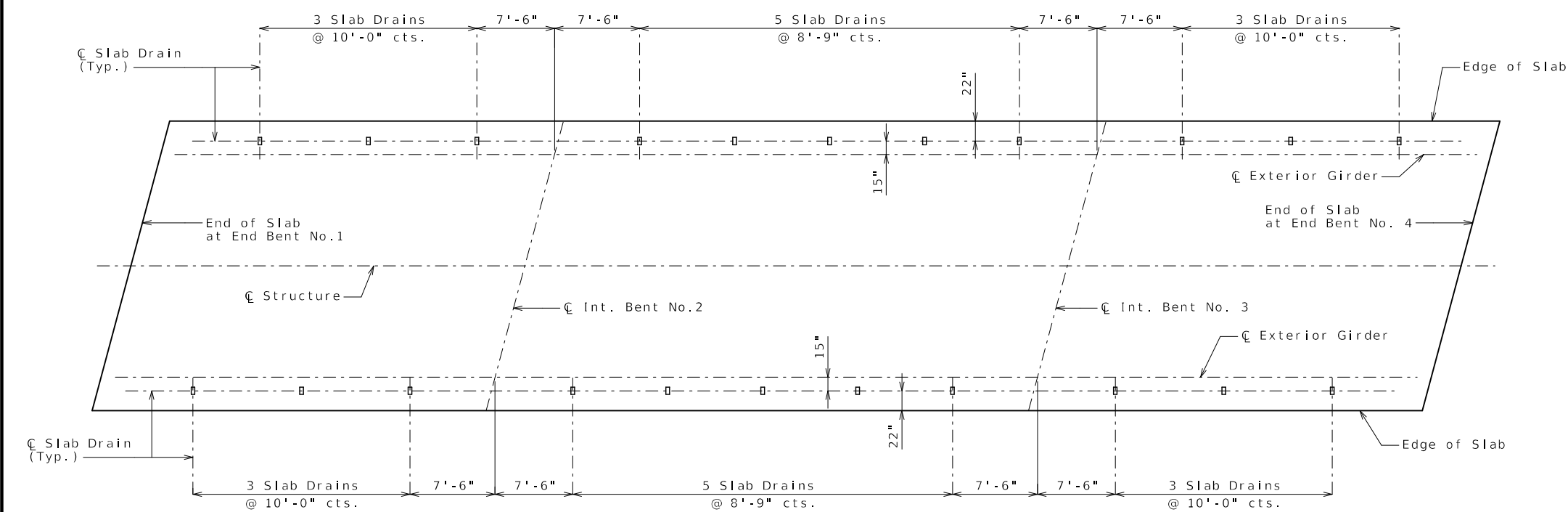
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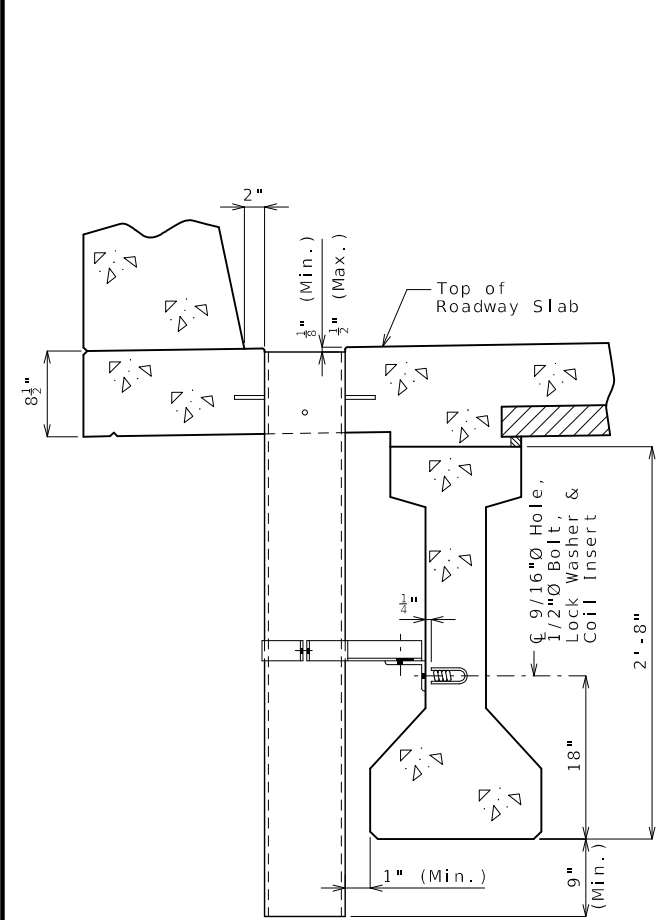
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



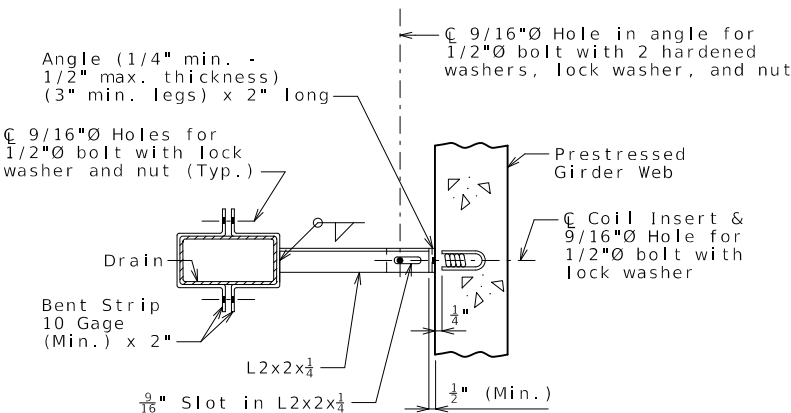
105 WEST CAPITOL
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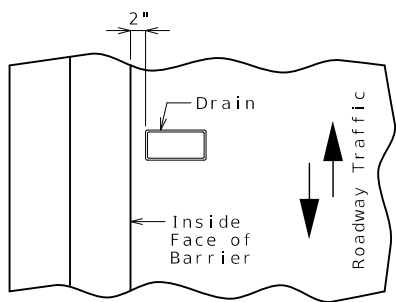
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



PART SECTION NEAR DRAIN

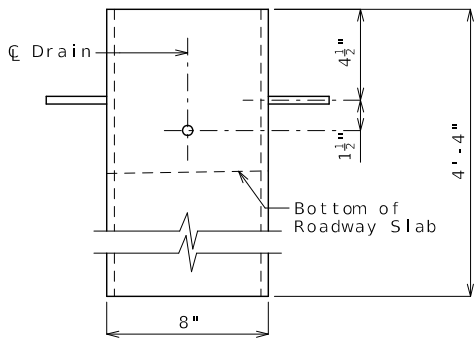


PART SECTION SHOWING BRACKET ASSEMBLY

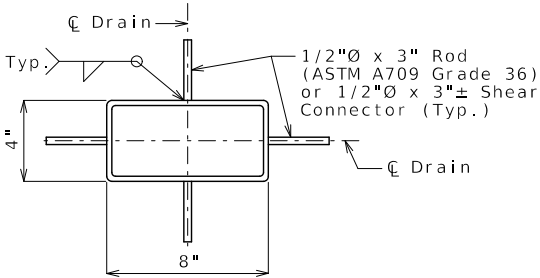


PART PLAN OF SLAB AT DRAIN

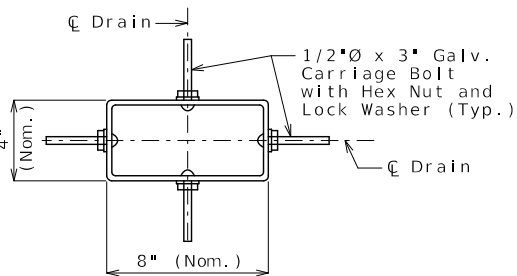
SLAB DRAINS



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

Contractor shall have the option to construct either steel or FRP slab drains. All drains shall be of same type.

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

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

Reinforcing steel shall be shifted to clear drains.

The coil inserts 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 AASHTO M 232 (ASTM A153), Class C.

All 1/2"Ø bolts shall be ASTM A307.

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

The coil insert required for the bracket assembly attachment shall be located on the prestressed girder shop drawings.

Coil inserts shall have a concrete pull-out strength (ultimate load) of at least 2,500 pounds in 5,000 psi concrete.

The bolt required to attach the slab drain bracket assembly to the prestressed girder web shall be supplied by the prestressed girder fabricator.

Notes for Steel Drain:

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.

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

Drains shall be machine filament-wound thermosetting resin tubing meeting the requirements of ASTM D2996 with the following exceptions:

Shape of drains shall be rectangular with outside nominal dimensions of 8" x 4".

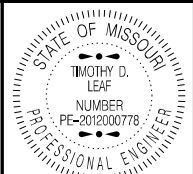
Minimum reinforced wall thickness shall be 1/4 inch.

The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

The color of the slab drain shall be gray (Federal Standard 26373). The color shall be uniform throughout the resin and any coating used.

The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours of testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

At the contractor's option, drains may be field cut. The method of cutting FRP slab drain shall be as recommended by the manufacturer to ensure a smooth, chip free cut.



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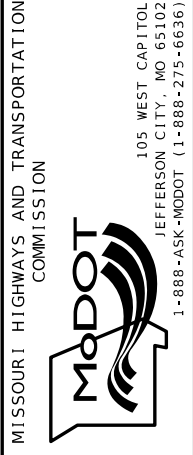
JOB NO.
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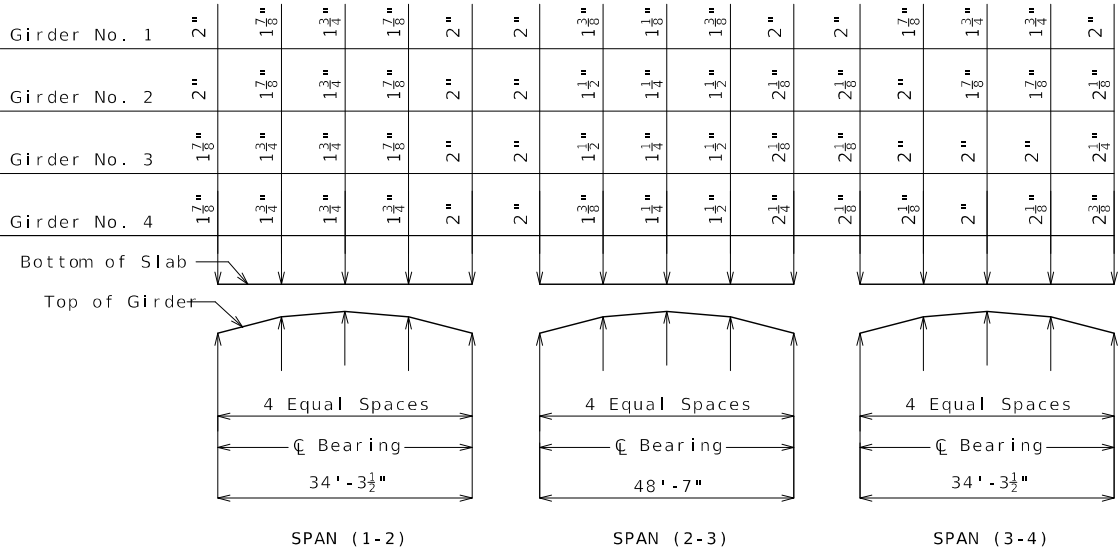
CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A9334

DESCRIPTION	DATE

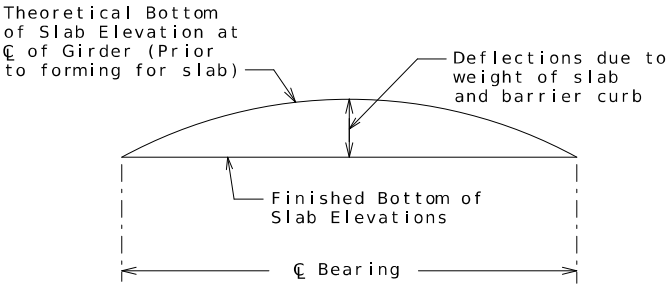




THEORETICAL SLAB HAUNCHING DIAGRAM (ESTIMATED AT 90 DAYS)

If girder camber is different from that shown in the camber diagram, in order to maintain minimum slab thickness, an adjustment of the slab haunches, an increase in slab thickness or a raise in grade uniformly throughout the structure shall be necessary. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

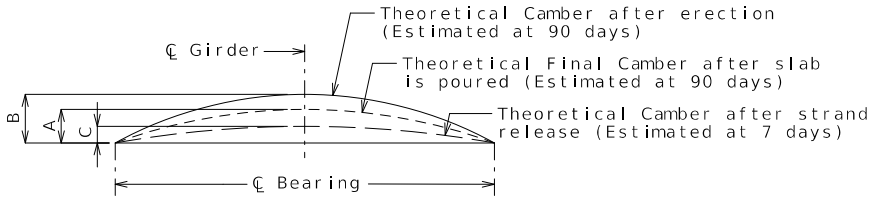
Concrete in the slab haunches is included in the Estimated Quantities for Slab on Concrete Girder.



TYPICAL SLAB ELEVATIONS DIAGRAM

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)															
Girder Number	Span (1-2) (34'-3 ¹ / ₂ " ℄ Brg. - ℄ Brg.)					Span (2-3) (48'-7" ℄ Brg. - ℄ Brg.)					Span (3-4) (34'-3 ¹ / ₂ " ℄ Brg. - ℄ Brg.)				
	℄ Brg.	.25	.50	.75	℄ Brg.	℄ Brg.	.25	.50	.75	℄ Brg.	℄ Brg.	.25	.50	.75	℄ Brg.
1	861.21	861.23	861.25	861.25	861.25	861.25	861.27	861.27	861.24	861.18	861.17	861.15	861.12	861.08	861.03
2	861.34	861.37	861.38	861.39	861.38	861.38	861.41	861.42	861.38	861.32	861.31	861.30	861.27	861.23	861.18
3	861.34	861.36	861.38	861.39	861.38	861.38	861.41	861.42	861.38	861.32	861.32	861.30	861.28	861.24	861.19
4	861.20	861.22	861.24	861.25	861.24	861.25	861.28	861.28	861.25	861.19	861.19	861.17	861.14	861.11	861.06

Elevations are based on a constant slab thickness of 8 1/2" and include allowance for theoretical dead load deflections due to weight of slab (including precast panel) and barrier.

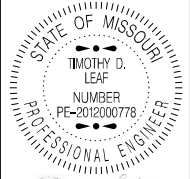


Girder	Span (1-2)			Span (2-3)			Span (3-4)		
	A	B	C	A	B	C	A	B	C
Exterior	3 ³ / ₈ "	1 ¹ / ₂ "	1 ¹ / ₄ "	1 ¹ / ₈ "	1 ⁵ / ₈ "	1"	3 ³ / ₈ "	1 ¹ / ₂ "	1 ¹ / ₄ "
Interior	3 ³ / ₈ "			1 ¹ / ₈ "			3 ³ / ₈ "		

GIRDER CAMBER DIAGRAM

Conversion Factors for Girder Camber (Estimated at 90 days):

0.25 pt. = 0.7125 x 0.5 pt.



DATE PREPARED
10/24/2023

ROUTE
11

STATE
MO

DISTRICT
BR

SHEET NO.
18

COUNTY
ADAIR

JOB NO.
J2S3256

CONTRACT ID.

PROJECT NO.

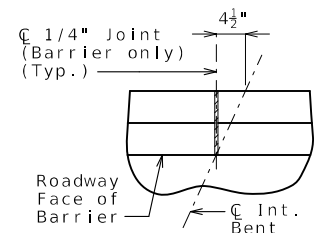
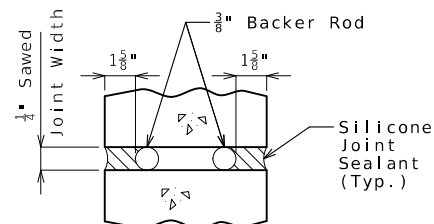
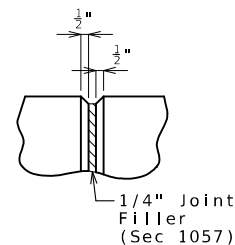
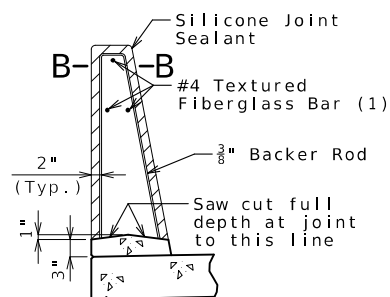
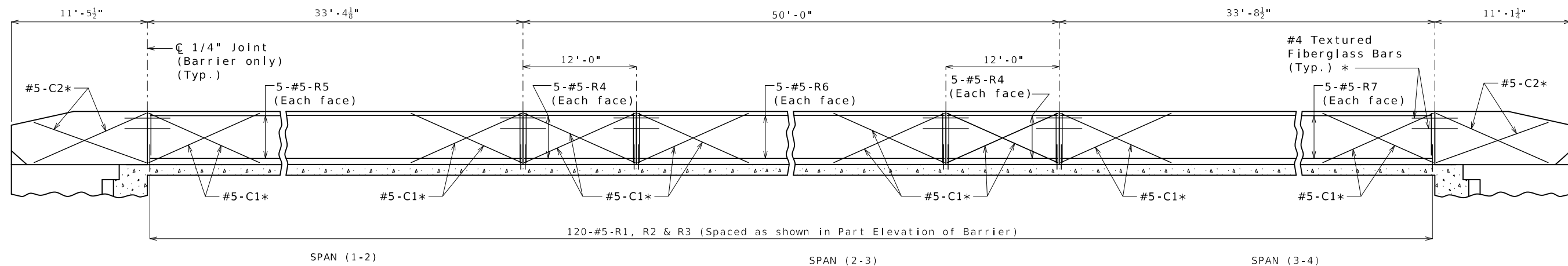
BRIDGE NO.
A9334

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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



General Notes:

* Slip-formed option only.

Conventional forming or slip forming may be used. Saw cut joints may be used with conventional forming.

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

All exposed edges of barrier 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 Type D Barrier per linear foot.

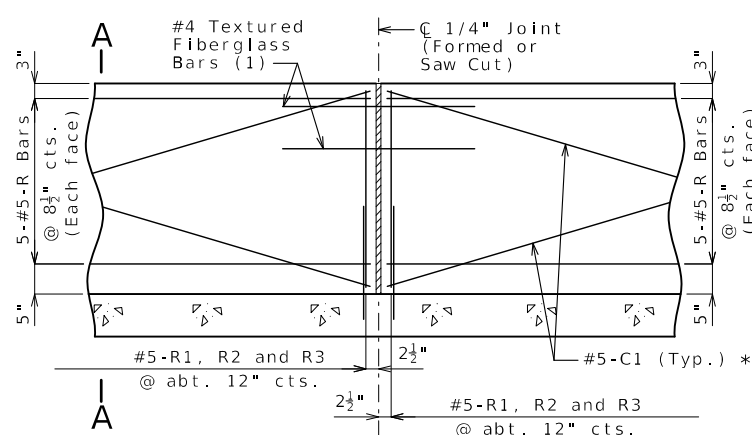
Concrete in barrier shall be Class B-1.

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

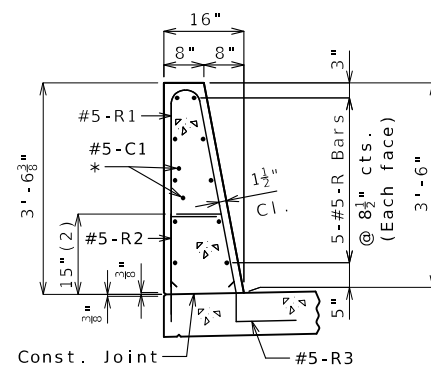
Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type D Barrier.

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.



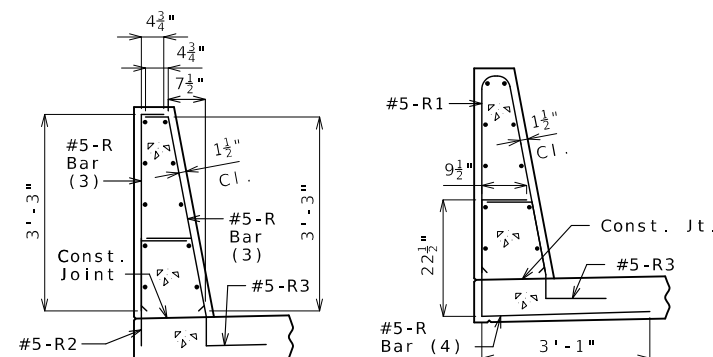
(1) Four feet long, centered on joint,
slip-formed option only



Use a minimum lap of 3'-1" for
#5 horizontal barrier bars.

The cross-sectional area above the slab is 3.52 square feet.

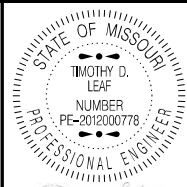
(2) To top of bar



(3) 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.)

(4) The R2 bar and #5 bottom transverse slab bar in cantilever (prestressed panels only) combination may be furnished as one bar as shown, at the contractor's option.

TYPE D BARRIER




 &[Date] &[Time]
 TIMOTHY D. LEAF - CIVIL
 MO-PE-2012000778

DATE PREPARED
10/24/2023

10/24/2023	
ROUTE	STATE

11	MO
----	----

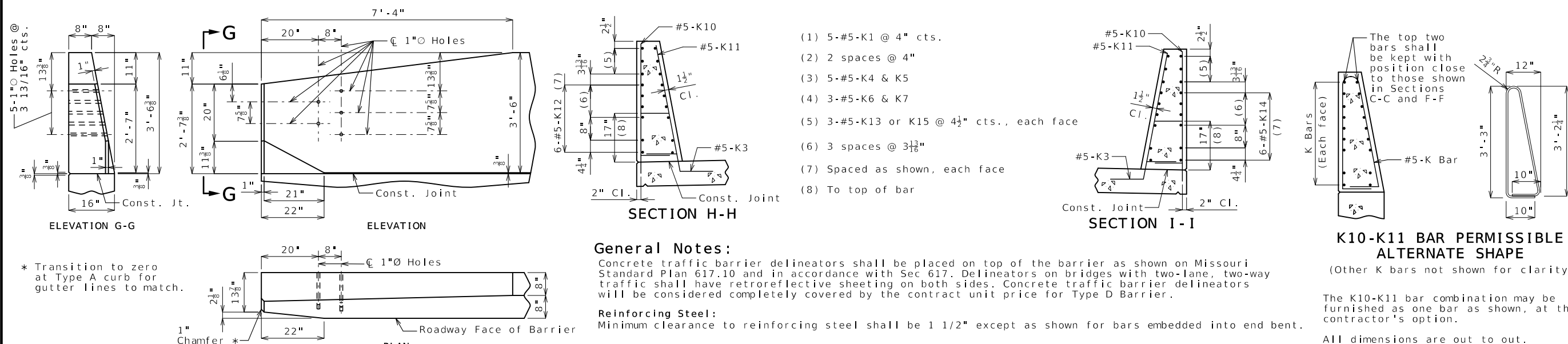
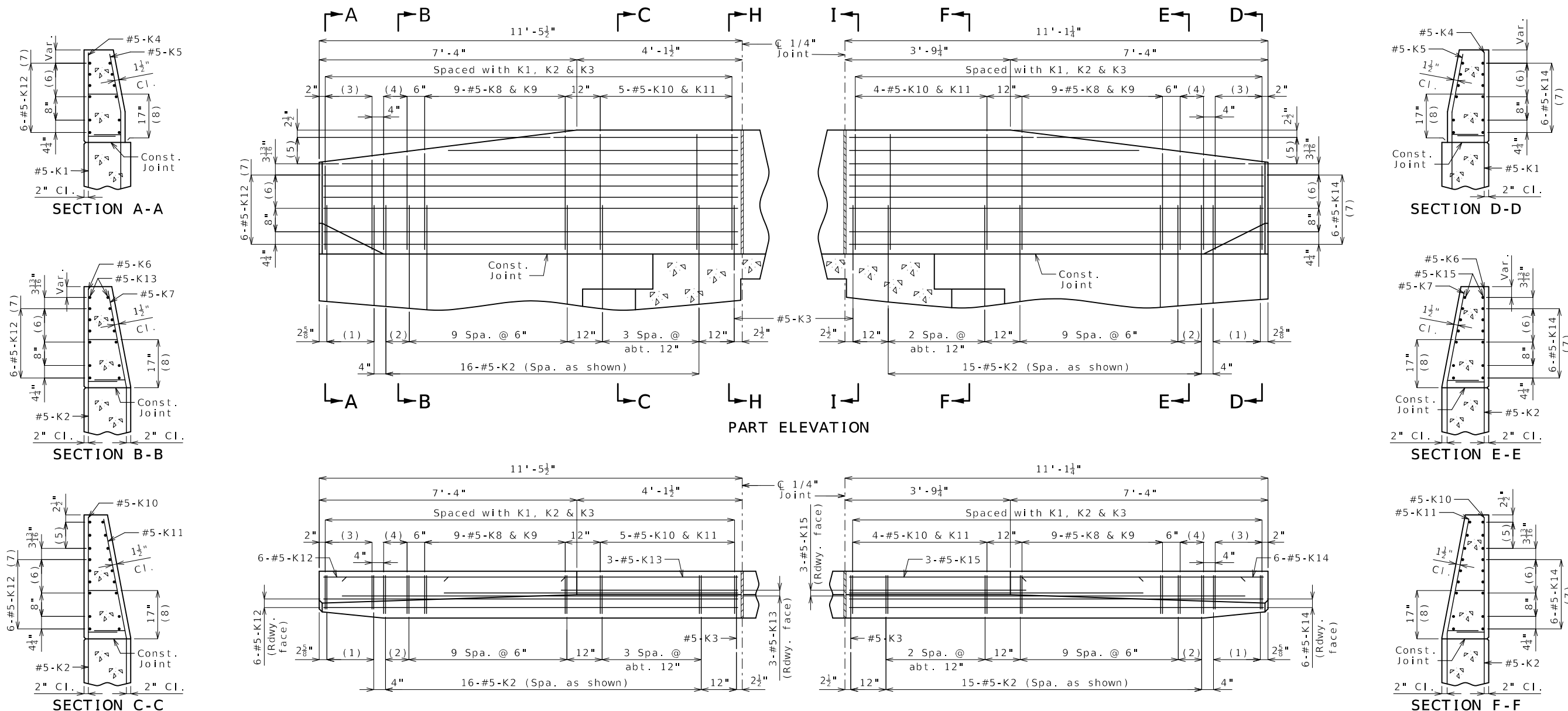
DISTRICT	SHEET NO.
DD	21

BR	21
COUNTY	

ADAIR

JOB NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION



General Notes:
Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for Type D Barrier.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2" except as shown for bars embedded into end bent.

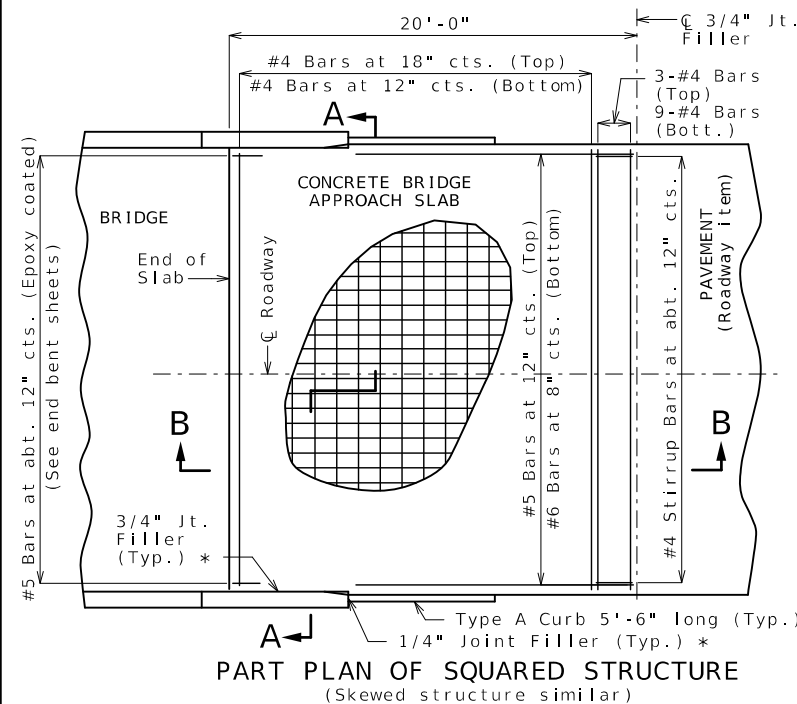
TYPE D BARRIER AT END BENTS

(Left barrier shown, right barrier similar)

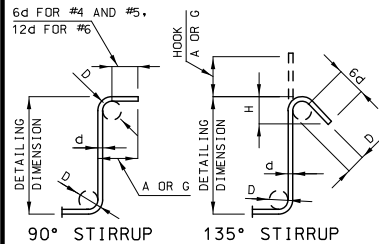
(Left barrier shown, right barrier similar)

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

[illegible]

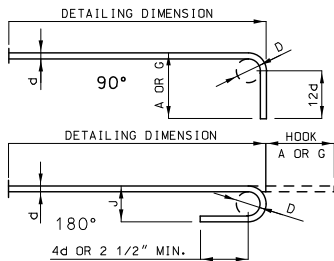


BILL OF REINFORCING STEEL																							
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT			
										B	C	D	E	F	H	K							
		FT.								IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.
			SUBSTRUCTURE																				
			INT. BENT 2																				
16		6 D200	BEAM KEY		20	X				2	6.000							2	6	2	6	60	
12		6 H200	BEAM		18	X				24	5.000							25	9	25	9	464	
10		6 H201	BEAM		20	X				24	5.000							24	5	24	5	367	
14		6 H202	BEAM		10	S	X					12.000	3	3.000				5	3	4	11	103	
8		6 H203	BEAM		18	X				3	6.000							4	10	4	10	58	
40		4 P200	CIP PILE		34	S	X			12.250								4	1	4	1	109	
24		5 U200	BEAM		13	S	X			3	3.000	3	3.000	3	3.000	3	3.000	13	11	13	7	340	
5		5 U201	BEAM		10	S	X				3	3.000	3	3.000				9	9	9	7	50	
8		4 U202	BEAM		10	S	X				6.000	3	3.000					4	3	4	1	22	
30		6 V200	CIP PILE		17	X				5	3.000							5	11	5	11	267	
			INT. BENT 3																				
16		6 D300	BEAM KEY		20	X				2	6.000							2	6	2	6	60	
12		6 H300	BEAM		18	X				24	5.000							25	9	25	9	464	
10		6 H301	BEAM		20	X				24	5.000							24	5	24	5	367	
14		6 H302	BEAM		10	S	X					12.000	3	3.000				5	3	4	11	103	
8		6 H303	BEAM		18	X				3	6.000							4	10	4	10	58	
40		4 P300	CIP PILE		34	S	X			12.250								4	1	4	1	109	
24		5 U300	BEAM		13	S	X			3	3.000	3	3.000	3	3.000	3	3.000	13	11	13	7	340	
5		5 U301	BEAM		10	S	X				3	3.000	3	3.000				9	9	9	7	50	
8		4 U302	BEAM		10	S	X				6.000	3	3.000					4	3	4	1	22	
30		6 V300	CIP PILE		17	X				5	3.000							5	11	5	11	267	
			SUPER-STRUCTURE																				
			END BENT 1																				
8		6 F100	WING BRACE	E	15	S				2	2.000	5	7.375	14.000	8.500	11.125	15.875	20.625	8	11	8	11	107
8		6 F101	WING BRACE	E	15	S					18.000	4	6.875	14.000	8.500	11.125	15.875	8.500	7	3	7	2	86
3		6 F102	DIAPHRAGM	E	21	S				2	8.125	5	1.125			2	7.000	8.250	7	9	7	6	34
3		6 F103	DIAPHRAGM	E	21	S				2	8.125	4	6.125			2	7.000	8.250	7	2	6	11	31
20		6 H100	BEAM	E	20					27	4.000							27	4	27	4	821	
8		6 H101	BEAM	E	20					2	2.000							2	2	2	2	26	
6		6 H102	DIAPHRAGM	E	20					5	5.000							5	5	5	5	49	
24		5 H103	APPROACH TIE	E	19	S				15.000	2	0.000						3	3	3	2	79	
4		5 H104	STRAND TIE	E	20					3	11.000							3	11	3	11	16	
16		8 H105	WING	E	19					10	6.000	14.000						11	8	11	6	491	
36		6 H106	WING	E	19					9	8.000	14.000						10	10	10	8	577	
6		6 H107	DIAPHRAGM	E	20					6	3.000							6	3	6	3	56	
32		4 P100	CIP PILE	E	34	S				12.250								4	1	4	1	87	



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"

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 SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

Detailed Sep. 2023
Checked Sep. 2023

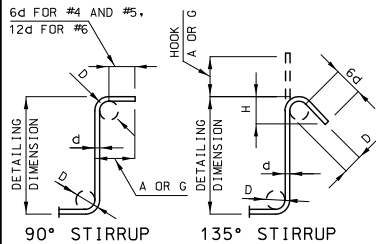
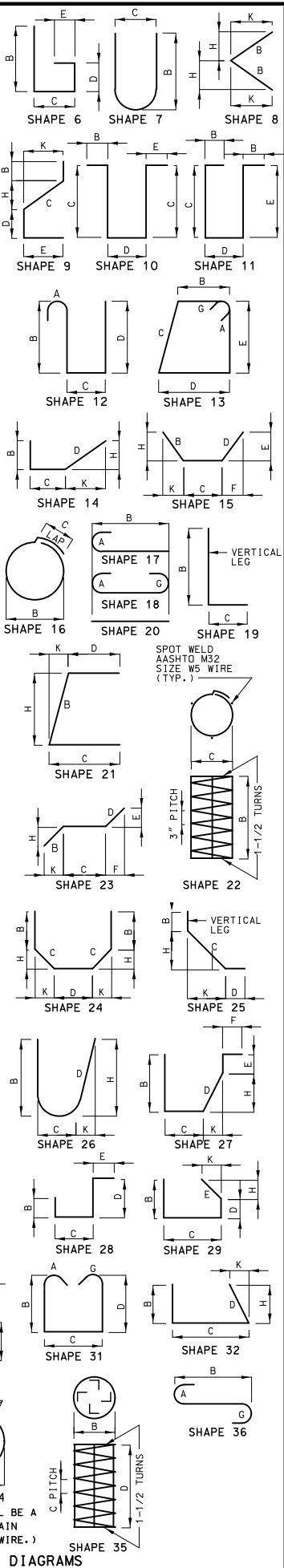
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 24 of 27

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.
	18	5	U100	DIAPHRM/BEAM	E	10	S					5	2.000	2	10.000						13	2	13	0	244
	4	4	U101	BEAM	E	10	S					2	8.000	2	10.000						8	2	8	0	21
	8	4	U102	BEAM	E	13	S				2	10.000	2	8.000	2	10.000	2	8.000			11	9	11	6	61
	24	5	U103	DIAPHRAGM	E	10	S					3	2.000	2	4.000						8	8	8	6	213
	24	6	U104	DIAPHRAGM	E	19					2	1.750	2	10.000							5	0	4	10	174
	34	6	U105	DIAPHRAGM	E	19					3	1.625	4	5.000							7	7	7	5	379
	12	5	V100	DIAPHGM/BEAM	E	20					5	2.000									5	2	5	2	65
	12	6	V101	DIAPHRAGM	E	20					2	1.000									2	1	2	1	38
	4	6	V102	WING	E	20					6	3.000									6	3	6	3	38
	32	6	V103	WING	E	20					6	3.000									6	3	6	3	300
	24	6	V104	CIP PILE	E	17					5	3.000									5	11	5	11	213
				END BENT 4																					
	20	6	F400	WING BRACE	E	15	S				2	2.000	5	7.375	14.000	8.500	11.125	15.875	20.625		8	11	8	11	268
	8	6	F401	WING BRACE	E	15	S				18.000	4	6.875	14.000	8.500	11.125	15.875	8.500		7	3	7	2	86	
	3	6	F402	DIAPHRAGM	E	21	S				2	8.125	5	1.125			2	7.000	8.250		7	9	7	6	34
	3	6	F403	DIAPHRAGM	E	21	S				2	8.125	4	6.125			2	7.000	8.250		7	2	6	11	31
	20	6	H400	BEAM	E	20					27	4.000									27	4	27	4	821
	8	6	H401	BEAM	E	20					2	2.000									2	2	2	2	26
	6	6	H402	DIAPHRAGM	E	20					5	5.000									5	5	5	5	49
	24	5	H403	APPROACH TIE	E	19	S				15.000	2	0.000								3	3	3	2	79
	4	5	H404	STRAND TIE	E	20					3	11.000									3	11	3	11	16
	16	8	H405	WING	E	19					10	6.000	14.000								11	8	11	6	491
	36	6	H406	WING	E	19					9	8.000	14.000								10	10	10	8	577
	6	6	H407	WING	E	20					6	3.000									6	3	6	3	56
	32	4	P400	CIP PILE	E	34	S				12.250										4	1	4	1	87
	18	5	U400	DIAPHRM/BEAM	E	10	S					5	2.000	2	10.000						13	2	13	0	244
	4	4	U401	BEAM	E	10	S					2	8.000	2	10.000						8	2	8	0	21
	8	4	U402	BEAM	E	13	S				2	10.000	2	8.000	2	10.000	2	8.000			11	9	11	6	61
	24	5	U403	DIAPHRAGM	E	10	S					3	2.000	2	4.000						8	8	8	6	213
	24	6	U404	DIAPHRAGM	E	19					2	1.750	2	10.000							5	0	4	10	174
	34	6	U405	DIAPHRAGM	E	19					3	1.625	4	5.000							7	7	7	5	379
	12	5	V400	DIAPHGM/BEAM	E	20					5	2.000									5	2	5	2	65
	12	6	V401	DIAPHRAGM	E	20					2	1.000									2	1	2	1	38
	4	6	V402	WING	E	20					6	3.000									6	3	6	3	38
	32	6	V403	WING	E	20					6	3.000									6	3	6	3	300
	24	6	V404	CIP PILE	E	17					5	3.000									5	11	5	11	213
				DIAPHRAGM																					
				BENTS 2 & 3																					
	8	5	H500	STRAND TIE	E	20					2	11.000									2	11	2	11	24
	8	5	H501	STRAND TIE	E	20					3	11.000									3	11	3	11	33
	12	6	H502	DIAPHRAGM	E	20					5	11.000									5	11	5	11	107
	24	4	H503	DIAPHRAGM	E	20					6	3.000									6	3	6	3	100
	12	6	H504	DIAPHRAGM	E	20					5	4.000									5	4	5	4	96
	24	6	U500	DIAPHRAGM	E	28	S					2	3.375	3	1.000	2	4.000				7	8	7	5	267
	48	4	U501	DIAPHRAGM	E	28	S					2	1.500	3	1.000	18.000					6	9	6	7	211
	32	5	U502	DIAPHRAGM	E	19	S				2	7.500	12.875								3	8	3	7	121

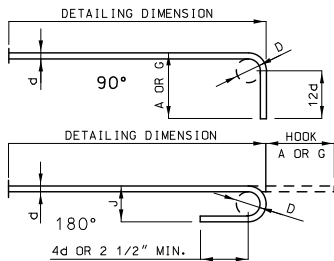
BILL OF REINFORCING STEEL																								
NO.	REQ'D.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS								NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT				
										B	C	D	E	F	H	K								
										FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.
	16	5	V500	DIAPHRAGM	E	20					3	1.000							3	1	3	1	51	
			SLAB																					
	87	5	S1	SLAB	E	20					42	10.000							42	10	42	10	3887	
	40	5	S2	SLAB	E	20					30	9.000							30	9	30	9	1283	
	40	5	S3	SLAB	E	20					24	6.000							24	6	24	6	1022	
	231	6	S4	SLAB	E	20					26	5.000							26	5	26	5	9166	
	26	6	S5	SLAB	E	20		V	2	25	0.000								25	0	25	0		
			INCREMENT =								2	7.000							2	7	2	7	539	
			22.375 INCH																					
	244	5	S6	SLAB	E	20					3	1.000							3	1	3	1	785	
			BARRIER																					
	20	5	K1	BARRIER	E	27	S				3	8.000	9.250	5.375	3	2.750	5.375	5.250	1.000	8	7	8	3	172
	62	5	K2	BARRIER	E	27	S				3	8.000	9.250	14.500	2	5.750	14.500	14.250	2.750	9	4	9	1	587
	4	5	K3	BARRIER	E	27	S				22.500	9.250	14.500	7.750	12.000	14.250	2.750	5	6	5	3	22		
	20	5	K4	BARRIER	E	19	S		V	4	2	4.250	10.000						3	2	3	1		
			INCREMENT =								2	6.250	10.000						3	4	3	3	66	
			0.500 INCH																					
	20	5	K5	BARRIER	E	14	S		V	4	8.250	9.500	18.500			4.000	18.000	3	0	2	11			
			INCREMENT =								8.250	9.500	20.500			4.500	20.000	3	2	3	1	63		
			0.500 INCH																					
	12	5	K6	BARRIER	E	19	S		V	4	2	6.750	10.000						3	5	3	4		
			INCREMENT =								2	7.750	10.000						3	6	3	5	42	
			0.500 INCH																					
	12	5	K7	BARRIER	E	21	S		V	4	2	6.625	10.000			2	6.000	6.250	3	5	3	3		
			INCREMENT =								2	7.625	10.000			2	7.000	6.500	3	6	3	4	41	
			0.500 INCH																					
	36	5	K8	BARRIER	E	19	S		V	4	2	8.500	10.000						3	7	3	5		
			INCREMENT =								3	2.500	10.000						4	1	3	11	138	
			0.750 INCH																					
	36	5	K9	BARRIER	E	21	S		V	4	2	8.500	10.000			2	7.750	6.750	3	7	3	5		
			INCREMENT =								3	2.500	10.000			3	1.750	7.750	4	1	3	11	138	
			0.750 INCH																					
	18	5	K10	BARRIER	E	19	S				3	3.000	10.000						4	1	4	0	75	
	18	5	K11	BARRIER	E	21	S				3	3.000	10.000			3	2.250	7.750	4	1	3	11	74	
	24	5	K12	BARRIER	E	20					11	2.000							11	2	11	2	280	
	12	5	K13	BARRIER	E	20		V	2	10	5.500								10	6	10	6		
			INCREMENT =								4	5.000							4	5	4	5	93	
			14.625 INCH																					
	24	5	K14	BARRIER	E	20					10	2.000							10	2	10	2	254	
	12	5	K15	BARRIER	E	20		V	2	10	1.000								10	1	10	1		
			INCREMENT =								4	1.000							4	1	4	1	89	
			14.375 INCH																					
	240	5	R1	BARRIER	E	26					3	3.000	5.500	3	3.625		3	3.000	6.750	6	9	6	9	1690
	240	5	R2	BARRIER	E	19	S				20.500	9.500							2	6	2	5	605	
	240	5	R3	BARRIER	E	27	S				9.500	15.250	5.000	12.000	15.000	3.000	3	6	3	4	834			
	40	5	R4	BARRIER	E	20					11	9.000							11	9	11	9	490	
	20	5	R5	BARRIER	E	20					33	5.000							33	5	33	5	697	
	20	5	R6	BARRIER	E	20					25	9.000							25	9	25	9	537	
	20	5	R7	BARRIER	E	20					33	1.000							33	1	33	1	690	
			SLIP FORM																					

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.
32	5	C1	SLIP FORM	E	20					12	0.000									12	0	12	0	401		
8	5	C2	SLIP FORM	E	20					8	9.000									8	9	8	9	73		
			TOTALS																							

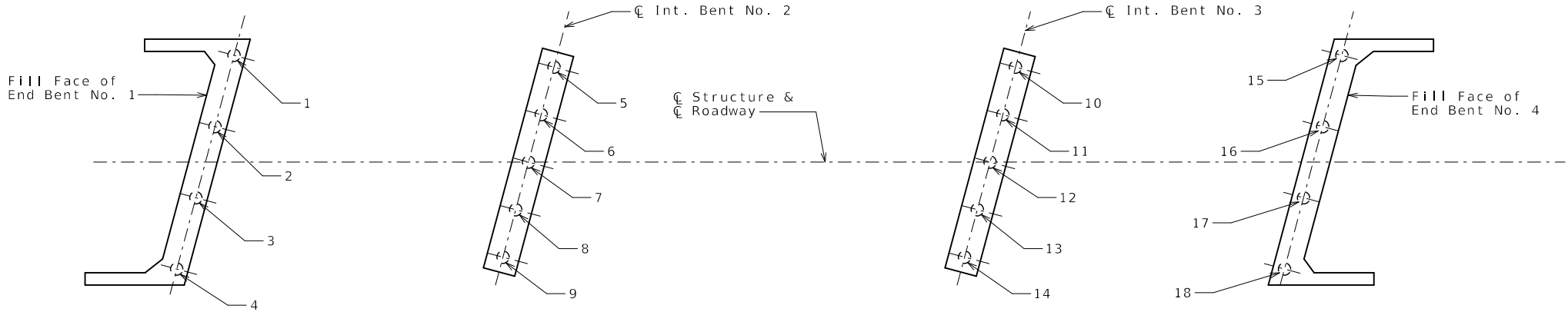


STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

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 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"	



PART PLAN SHOWING PILE NUMBERING FOR RECORDING AS-BUILT PILE DATA

As-Built Pile Data					
Pile No.	Length in Place (ft)	PDA Nom. Axial Compressive Resistance (kips)	PDA End of Drive Blow Count (blows/in.)	Actual End of Drive Blow Count (blows/in.)	Remarks
					End Bent No. 1
1					
2					
3					
4					
					Int. Bent No. 2
5					
6					
7					
8					
9					
					Int. Bent No. 3
10					
11					
12					
13					
14					
					End Bent No. 4
15					
16					
17					
18					

Note:
Indicate in remarks column:
A. Pile type and grade
B. Batter
C. Driven to practical refusal
D. PDA test pile
E. Minimum tip elevation controlled
(Use when actual blow count is less than PDA blow count due to minimum tip elevation requirement. A plus sign (+) shall be placed after the PDA nominal axial compressive resistance value indicating actual value is higher than PDA value.)

This sheet to be completed by MoDOT construction personnel.

STATE OF MISSOURI

TIMOTHY D. LEAF

NUMBER

PE-2012000778

PROFESSIONAL ENGINEER

DATE PREPARED

10/24/2023

ROUTE

11

STATE

MO

DISTRICT

BR

SHEET NO.

26

COUNTY

ADAIR

JOB NO.

J2S3256

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

A9334

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

