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REMOVAL OF IMPROVEMENTS

PLAN SHEET	BEGIN STATION	END STATION	SIDE	DESCRIPTION	AMOUNT EA	AMOUNT LF	AMOUNT SY	REMARKS
4	166+35.05		LT	PIPE		28		24" DRAINAGE PIPE
4	167+06.57	167+48.15	BOTH	PAVEMENT REMOVAL			94	INCLUDING VERTICAL SAW CUT
4	168+53.23	168+91.92	BOTH	PAVEMENT REMOVAL			85	INCLUDING VERTICAL SAW CUT
9	160+26.12		RT	SIGN	1			WEIGHT LIMIT
9	167+03.21		LT	SIGN	1			OBJECT MARKER
9	167+21.70		LT	SIGN	1			OBJECT MARKER
9	167+41.55		LT	SIGN	1			OBJECT MARKER
9	167+12.42		RT	SIGN	1			OBJECT MARKER
9	167+33.67		RT	SIGN	1			OBJECT MARKER
9	167+53.69		RT	SIGN	1			OBJECT MARKER
9	168+49.34		LT	SIGN	1			OBJECT MARKER
9	168+67.66		LT	SIGN	1			OBJECT MARKER
9	168+87.77		LT	SIGN	1			OBJECT MARKER
9	168+59.58		RT	SIGN	1			OBJECT MARKER
9	168+79.14		RT	SIGN	1			OBJECT MARKER
9	168+98.70		RT	SIGN	1			OBJECT MARKER
9	178+00 +-		LT	SIGN	1			WEIGHT LIMIT
				TOTAL	1 LUMP SUM			

POROUS BACKFILL

STATION	POROUS BACKFILL GRADE 3, 4, OR 5	REMARKS
	CY	
167+25.73	27	BRIDGE END
168+75.31	27	BRIDGE END
TOTAL	53	540

EARTHWORK

LOCATION	CLASS A EXCAVATION	COMPACTING EMBANKMENT	FURNISHING ROCK FILL	PLACING ROCK FILL
	CY	CY	CY	CY
SOUTH	453	217		
NORTH	609	715	540	540
SUBTOTAL	1062	932	540	540
TOTAL*	1062	392	540	540

*SUBTRACTING ROCK FILL QUANTITY FROM COMPACTING EMBANKMENT
REMOVAL OF EXISTING PAVEMENT IS INCLUDED IN CLASS A EXCAVATION
SHRINKAGE FACTOR = 1.00

DRAINAGE STRUCTURES

PLAN SHEET	BEGIN STA.	END STA.	SIDE	PIPE GROUP B 24" LF	FLARED END SECTION GROUP B 24" EA	CLASS 3 EXCAVATION FOR PIPES CY
4	166+20.00	166+54.87	LT	24	2	20.2
		TOTAL		24	2	20

167+90.31 R 1
167+10.73 R 1

PAVEMENT

PLAN SHEET	BEGIN STATION	END STATION	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	BITUMINOUS BASE COURSE PG64-22	COLDMILLING BIT. PAVEMENT (3 IN. OR LESS)	TYPE A2 SHOULDER	TYPE 5 AGGREGATE FOR BASE (6 IN. THICK)	TACK COAT	GRAVEL (A) OR CRUSHED STONE (B)	SUBGRADE COMPACTION
			SY	SY	SY	SY	SY	GALLON	TONS	100F
4	164+94.13	167+06.57	472		472.0	93.3	93.3	51.9		2
4	167+06.57	167+25.04	43	43.1		8.6	51.7	2.6		
4	168+75.40	168+91.92	36	36.4		7.3	43.8	2.2		
4	168+91.92	169+89.37	213		213.1	45.4	45.4	23.6		1
4	166+35.05 LT								8.1	
4	169+46.60 RT								6.5	
4	169+80.71 LT								20.4	
		SUBTOTAL	764.6	79.5	685.1	154.7	234.2	80.2	35.0	3
			1.75" DEPTH	8.25" DEPTH						
			X 1.948 TONS/CY	X 1.943 TONS/SY						
			TONS	TONS	SY	SY	SY	GALLON	TONS	100F
		TOTAL	72.4	35.4	685	154.7	234	80	35	3

UNDILUTED TACK COAT APPLICATION RATES PER EPG TABLE 407.1.4 USED: 0.05 FOR NEW ASPHALT SURFACES, 0.10 FOR COLDMILLED ASPHALT SURFACES

GUARDRAIL

PLAN SHEET	BEGIN STATION	END STATION	SIDE	MGS GUARDRAIL LF	MGS BRIDGE APPR. TRANSITION SECTION (REGULAR/NO CURB) EA	TYPE A CRASHWORTHY END TERMINAL (MASH) EA	TYPE C CRASHWORTHY END TERMINAL (MASH) EA
4	165+64.94	167+40.69	RT	87.5	1	1	
4	166+69.99	166+91.99	LT				1
4	168+97.85	169+17.85	LT				1
4	169+09.05	169+29.05	RT				1
			TOTAL	88	1	1	3

NOTE: GUARDRAIL LENGTHS DO NOT INCLUDE LENGTHS FOR END, TERMINAL, ANCHOR OR TRANSITION SECTIONS OR BULLNOSE

QUANTITY SHEET
SHEET 1 OF 3

R 1 REVISED 03-28-2024

STATE OF MISSOURI
ALISON N. GRAVES
NUMBER PE-2011015778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2024
ROUTE Y | STATE MO
DISTRICT SE | SHEET NO. 3
COUNTY CAPE GIRARDEAU
JOB NO. J9S3589
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9223

DATE	DESCRIPTION
032824	STATIONS REVISED

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

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

5220 Oakland Avenue
St. Louis, MO 63110
314.863.5570
CIVIL DESIGN INC.
Missouri State Certificate of Authority #2002006864

GENERAL NOTES

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
Seismic Design Category C
Design earthquake response spectral acceleration coefficient at 1.0 second period, S_{a1}= 0.416g
Acceleration Coefficient (effective peak ground acceleration coefficient), A_s= 0.469g

Design Loading:

Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth = 120 lb/cf
Equivalent Fluid Pressure = 45 lb/cf (Min.)
Superstructure: Non-Composite for dead load. Composite for live load.

Design Unit Stresses:

Class B Concrete except CIP Pile (Substructure).....	f'c = 3,000 psi
Class B-2 Concrete (Superstructure, except Prestressed Girders and Barrier).....	f'c = 4,000 psi
Class B-1 Concrete (Barrier and CIP Pile)...	f'c = 4,000 psi
Reinforcing Steel (Grade 60).....	fy = 60,000 psi
Welded or Seamless steel shell (pipe) for CIP pile (ASTM A252 Grade 3).....	fy = 45,000 psi

For prestressed girder stresses, see Sheets No. 11 & 12.

For precast prestressed panel stresses, see Sheets No. 13.

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 1½", 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

Foundation Data

Type	Design Data		Bent Number 1	Bent Number 2
Load Bearing Pile	Pile Type and Size		CECIP 16"	CECIP 16"
	Number	ea	5	5
	Approximate Length Per Each	ft	56	66
	Pile Point Reinforcement	ea	5	5
	Min. Galvanized Penetration (Elev.)	ft	424.0	424.0
	Minimum Tip Penetration (Elev.)	ft	390.0	380.0
	Pile Driving Verification Method		(1)	(1)
	Resistance Factor		0.65	0.65
	Minimum Nominal Axial Compressive Resistance	kip	453	453

CECIP = Closed Ended Cast-In-Place concrete pile

(1) Dynamic Testing

Load Bearing Piles:
Minimum Nominal Axial Compressive Resistance = $\frac{\text{Maximum Factored Loads}}{\text{Resistance Factor}}$

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.

The first pile at each substructure location shall be driven to 65% of design final pile capacity and restrike testing shall be completed at 60 minutes and at 24 hours or later after end of initial driving. The initial restrike (at 60 minutes) shall achieve a pile capacity increase of at least 5% to confirm that set-up will occur as anticipated. Once set-up is confirmed, restrike tests should be performed 24 hours or later, after the end of initial driving, as needed to confirm that the design final pile capacity is achieved. If the initial restrike test (at 60 minutes) does not confirm pile set-up, then pile driving shall resume and continue until the design final pile capacity is achieved. If a waiting period between end of initial drive and final restrike of greater than 24 hours is acceptable or local experience is available, then the pile capacity at the end of initial driving could potentially be further reduced. Contractor shall provide the results of the PDA/CAPWAP testing done at the site to the MoDOT Geotechnical Section for review.

Prebore for piles at Bents No. 1 and 4 to elevations 439.29 and 439.10, respectively.

R 1 34.710

Estimated Quantities for Slab on Concrete NU-Girder

Item		Total
Class B-2 Concrete	cu. yard	92.7
Reinforcing Steel (Epoxy Coated)	pound	13640

The table of Estimated Quantities for Slab on Concrete NU-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, stay-in-place corrugated steel forms, 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 NU-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.

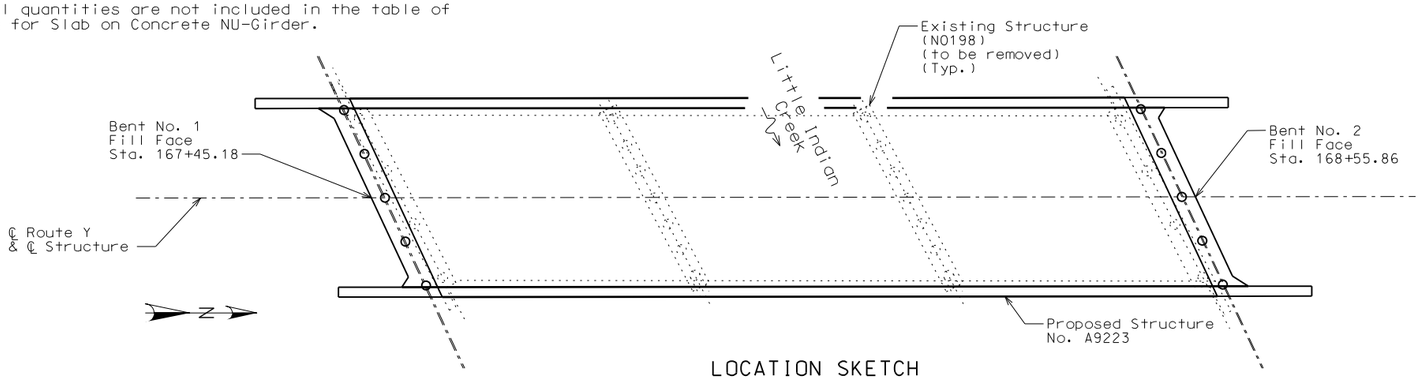
The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Concrete NU-Girder.

Estimated Quantities

Item		Substr.	Superstr.	Total
Class 1 Excavation	cu. yard	163		163
Removal of Bridges (N0198)	lump sum			1
Bridge Approach Slab (Minor)	sq. yard		110	110
Galvanized Cast-in-Place Concrete Piles (16 in.)	linear foot	610		610
Dynamic Pile Testing	each	2		2
Dynamic Pile Restrike Testing	each	2		2
Pre-Bore for Piling	linear foot	50		50
Pile Point Reinforcement	each	10		10
Class B Concrete (Substructure)	cu. yard	27.8		27.8
Type D Barrier	linear foot		262	262
Slab on Concrete NU-Girder	sq. yard		325	325
NU-43, Prestressed Concrete NU-Girder	linear foot		432	432
~~Reinforcing Steel (Bridges)~~	~~pound~~	~~20330~~		~~20330~~
Vertical Drains at End Bents R 1 DELETED	each	2		2
Plain Neoprene Bearing Pad	each		8	8

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

All reinforcement in the end bents is included in the Estimated Quantities for Slab on Concrete NU-Girder.



LOCATION SKETCH

R 1 REVISED 03-27-2024

ROUTE Y OVER LITTLE INDIAN CREEK
GENERAL NOTES & FOUNDATION DATA

STATE OF MISSOURI
JASON SCHRECKENBERG
NUMBER PE-2010011049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN DIGITALLY SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2024
ROUTE Y | STATE MO
DISTRICT BR | SHEET NO. 2
COUNTY CAPE GIRARDEAU
JOB NO. J9S3589
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9223

DATE	DESCRIPTION
032724	REVISED REINFORCING QUANTITY

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

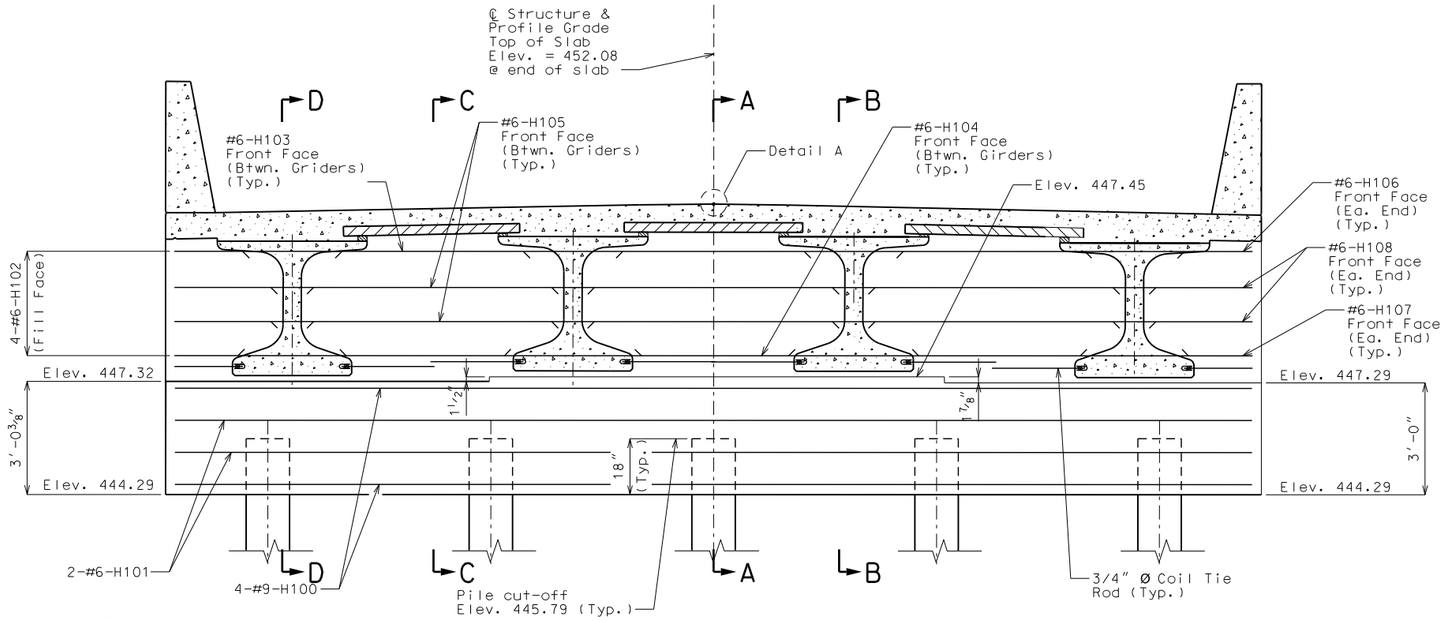
3220 Oakland Avenue
St. Louis, MO 63110
314.863.5570
CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006804

REV.

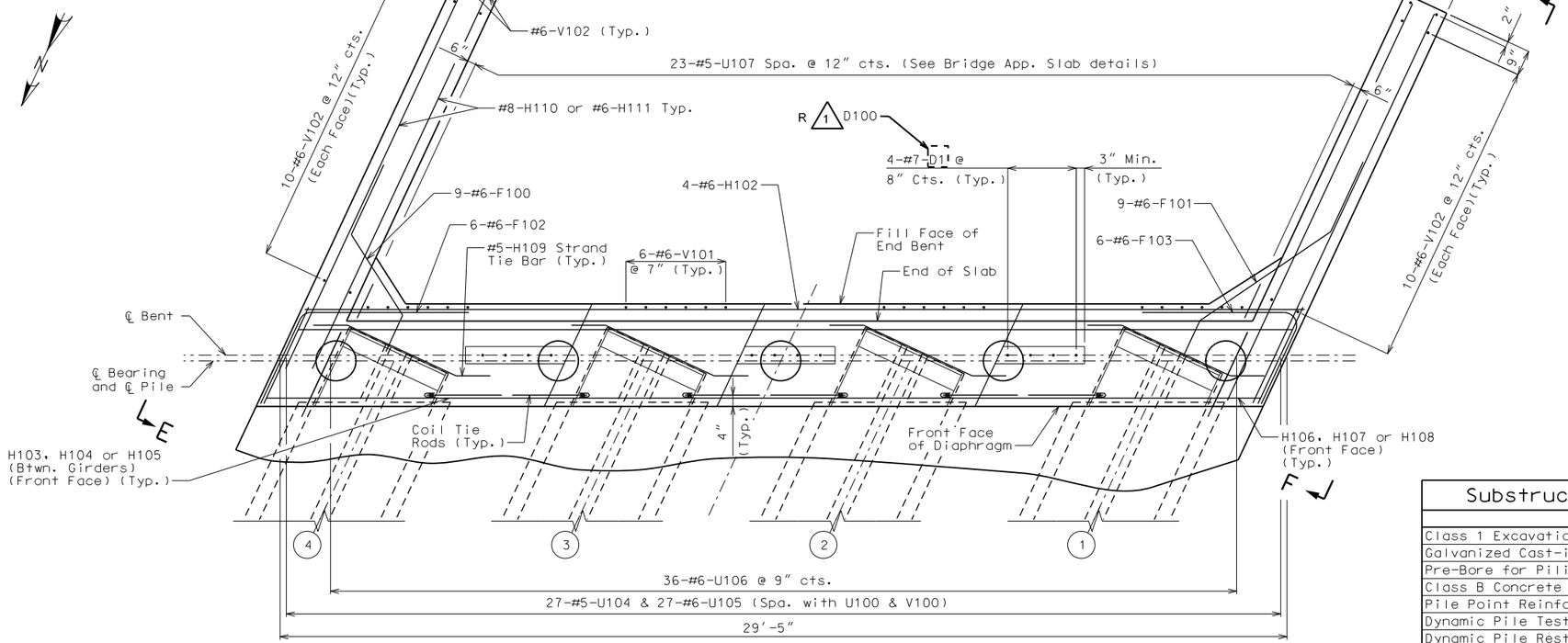
Detailed Jan. 2024
Checked Jan. 2024

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

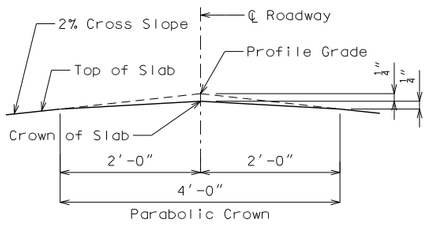
P:\5XXX\50XX-51XX\5155 - MoDOT SE Bridge Bundles\24-Structures\CAD\ORD\B_A9223_002_J9S3589_GeneralNotes Index Foundation Data.dgn 4:14:58 PM 3/28/2024



SECTION NEAR END BENT



PART PLAN SHOWING REINFORCEMENT



DETAIL

NOTES:

Work this sheet with Sheets No. 4 and 6.

All concrete in the End Bent above top of beam and below top of slab shall be Class B-2.

For details of Vertical Drain, see Sheet No. 7.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" clearance to fill face of end bent.

Reinforcing steel shall be shifted to clear piles. U-bars shall clear piles by at least 1 1/2".

Substructure Quantity Table-End Bent No. 1		
Item		Quantity
Class 1 Excavation	cu. yard	80
Galvanized Cast-in-Place Concrete Piles (16 in.)	linear foot	280
Pre-Bore for Piling	linear foot	25
Class B Concrete (Substucture)	cu. yard	13.6
Pile Point Reinforcement	each	5
Dynamic Pile Testing	each	1
Dynamic Pile Restrike Testing	each	1
Vertical Drains at End Bents	each	1

R 1 REVISED 03-27-2024

ROUTE Y OVER LITTLE INDIAN CREEK
END BENT 1 DETAILS 02

Detailed Jan. 2024
Checked Jan. 2024

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

STATE OF MISSOURI
JASON SCHRECKENBERG
NUMBER PE-2010011049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SEALED, SIGNED AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2024
ROUTE Y | STATE MO
DISTRICT BR | SHEET NO. 5
COUNTY CAPE GIRARDEAU
JOB NO. J9S3589
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9223

DATE	DESCRIPTION
032724	REVISED D BAR CALLOUT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
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1-888-ASK-MODOT (1-888-275-6636)

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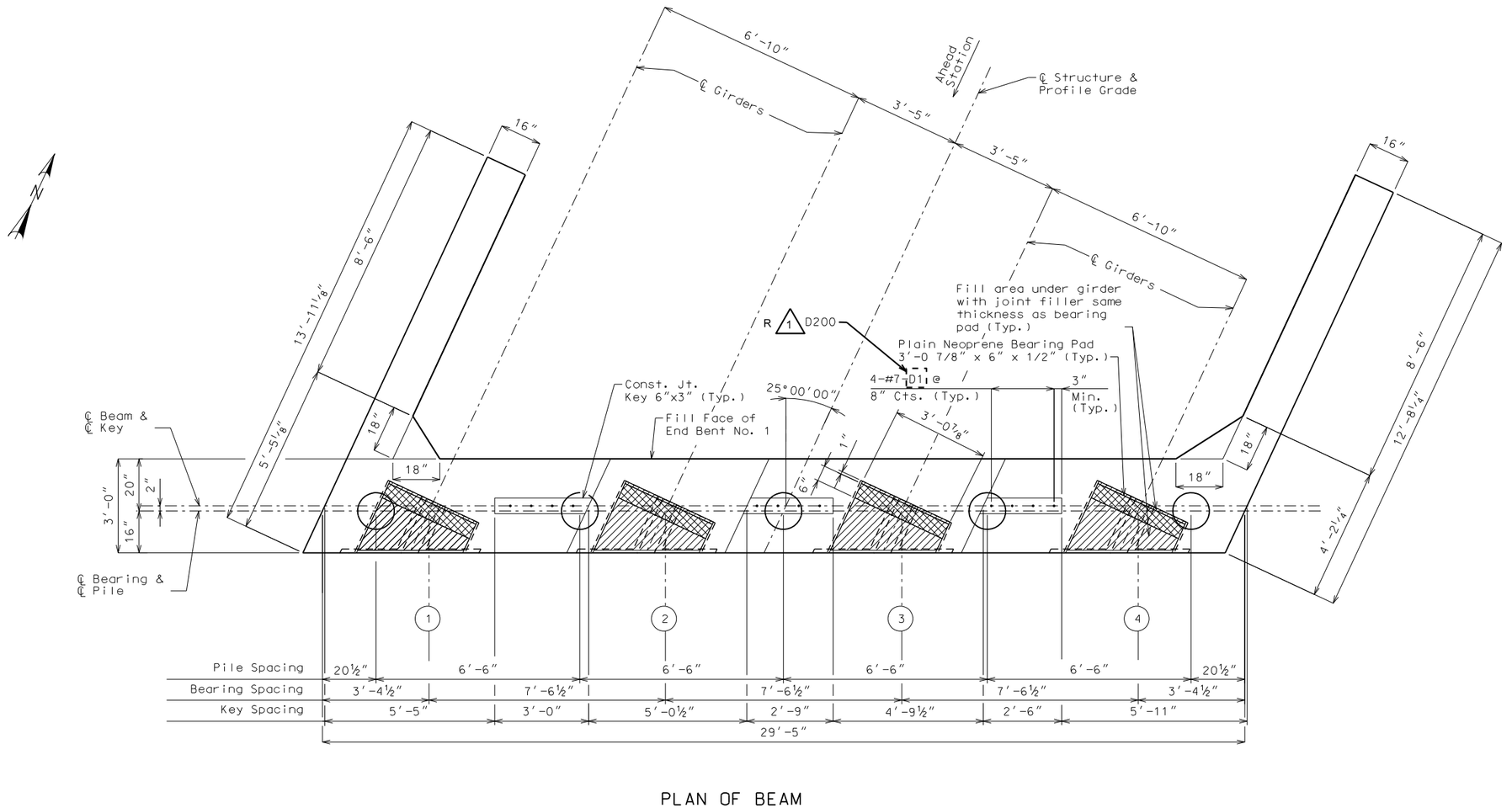
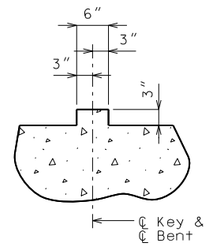
CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2002006804

REV.



PLAN OF BEAM



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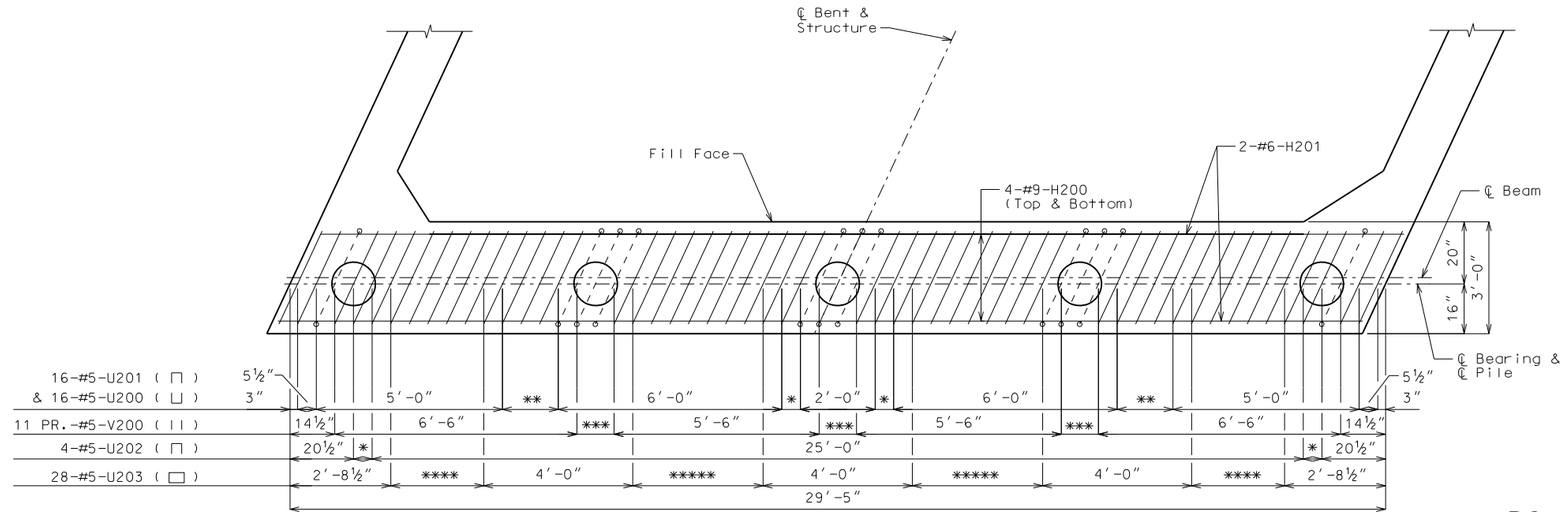


PLAN OF BEAM SHOWING REINFORCEMENT

* 1 Spa. @ 6"
** 3 Spa. @ 6"
*** 2 Spa. @ 6"
**** 5 Spa. @ 6"
***** 7 Spa. @ 6"

NOTES:

Work this sheet with Sheets No. 9 & 10.

All concrete in the End Bent above top of beam and below top of slab shall be Class B-2.

For details of Vertical Drain, see Sheet No. 7.

Strands at end of girders shall be field bent or, if necessary, cut in field to maintain 1 1/2" clearance to fill face of end bent.

Reinforcing steel shall be shifted to clear piles. U-bars shall clear piles by at least 1 1/2".

R 1 REVISED 03-27-2024

ROUTE Y OVER LITTLE INDIAN CREEK
END BENT 2 DETAILS 01

Detailed Jan. 2024
Checked Jan. 2024

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

STATE OF MISSOURI
JASON SCHRECKENBERG
NUMBER PE-2010011049
PROFESSIONAL ENGINEER
THIS SHEET HAVE BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2024
ROUTE Y | STATE MO
DISTRICT BR | SHEET NO. 8
COUNTY CAPE GIRARDEAU
JOB NO. J9S3589
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9223

DATE	DESCRIPTION
032724	REVISED D BAR CALOUT

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

5220 Oakland Avenue
St. Louis, MO 63110
314.863.3570

CDI CIVIL DESIGN, INC.
Missouri State Certificate of Authority #2000006804

REV.

BILL OF REINFORCING STEEL

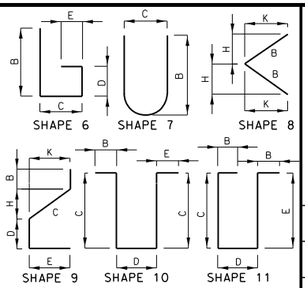
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			END BENT 1																									
12	7	D100	CAP	E	20					2	6.000													2	6	2	6	61
10	6	F100	WINGWALL	E	23					2	3.000	3	0.500	14.000		11.750		7.500		22.750		14.500		6	6	6	4	95
10	6	F101	WINGWALL	E	23						14.000	4	9.750	2	3.000	14.500		22.750		7.500		11.750		8	3	8	2	123
4	6	F102	DIAPHRAGM	E	14							6	0.000	2	11.000					2	7.750	14.625		8	11	8	10	53
4	6	F103	DIAPHRAGM	E	21					2	11.000	6	0.000							2	7.750	14.625		8	11	8	7	52
8	9	H100	CAP	E	20					29	1.000													29	1	29	1	791
4	6	H101	CAP	E	20					29	1.000													29	1	29	1	175
8	6	H102	DIAPHRAGM	E	20					29	1.000													29	1	29	1	349
3	6	H103	DIAPHRAGM	E	20					6	2.000													6	2	6	2	28
3	6	H104	DIAPHRAGM	E	20					3	10.000													3	10	3	10	17
6	6	H105	DIAPHRAGM	E	20					6	6.000													6	6	6	6	59
2	6	H106	DIAPHRAGM	E	20					2	8.000													2	8	2	8	8
2	6	H107	DIAPHRAGM	E	20						18.000													1	6	1	6	5
4	6	H108	DIAPHRAGM	E	20					2	10.000													2	10	2	10	17
4	5	H109	DIAPHRAGM	E	23						12.000	3	6.000	12.000		5.125		10.875		5.125		10.875		5	6	5	6	23
16	8	H110	WINGWALL	E	19					11	8.000		16.000											13	0	12	11	552
40	6	H111	WINGWALL	E	19					11	8.000		12.000											12	8	12	7	756
40	4	P100	CIP PILES	E	34	S				1	0.000													4	0	4	0	107
16	5	U100	CAP	E	10							5	10.500	2	11.000									14	8	14	5	241
16	5	U101	CAP	E	10							2	7.500	2	11.000									8	2	7	11	132
4	5	U102	CAP	E	10							2	7.500	2	11.000									8	2	7	11	33
28	5	U103	CAP	E	13	S				2	11.000	2	7.500	2	11.000	2	7.500							12	0	11	8	341
27	5	U104	DIAPHRAGM	E	10							4	0.000	2	4.500									10	5	10	1	284
27	6	U105	DIAPHRAGM	E	19					2	11.000	2	11.000											5	10	5	8	230
36	6	U106	SLAB	E	19					3	5.000	5	0.000											8	5	8	3	446
23	5	U107	DIAPHRAGM	E	19					2	0.000		15.000											3	3	3	1	74
22	6	V100	CAP	E	20					5	0.000													5	0	5	0	165
24	6	V101	DIAPHRAGM	E	20					2	11.000													2	11	2	11	105
44	6	V102	WINGWALL	E	20					7	1.000													7	1	7	1	468
30	6	V103	CIP PILES	E	17					5	3.000													5	11	5	11	267
			END BENT 2																									
12	7	D200	CAP	E	20					2	6.000													2	6	2	6	61
10	6	F200	WINGWALL	E	23					2	3.000	3	0.500	14.000		11.750		7.500		22.750		14.500		6	6	6	4	95
10	6	F201	WINGWALL	E	23						14.000	4	9.750	2	3.000	14.500		22.750		7.500		11.750		8	3	8	2	123
4	6	F202	DIAPHRAGM	E	14							6	0.000	2	11.000					2	7.750	14.625		8	11	8	10	53
4	6	F203	DIAPHRAGM	E	21					2	11.000	6	0.000							2	7.750	14.625		8	11	8	7	52
8	9	H200	CAP	E	20					29	1.000													29	1	29	1	791
4	6	H201	CAP	E	20					29	1.000													29	1	29	1	175
8	6	H202	DIAPHRAGM	E	20					29	1.000													29	1	29	1	349
3	6	H203	DIAPHRAGM	E	20					6	2.000													6	2	6	2	28
3	6	H204	DIAPHRAGM	E	20					3	10.000													3	10	3	10	17
6	6	H205	DIAPHRAGM	E	20					6	6.000													6	6	6	6	59
2	6	H206	DIAPHRAGM	E	20					2	8.000													2	8	2	8	8
2	6	H207	DIAPHRAGM	E	20						18.000													1	6	1	6	5
4	6	H208	DIAPHRAGM	E	20					2	10.000													2	10	2	10	17
4	5	H209	DIAPHRAGM	E	23						12.000	3	6.000	12.000		5.125		10.875		5.125		10.875		5	6	5	6	23
16	8	H210	WINGWALL	E	19					11	8.000		16.000											13	0	12	11	552
40	6	H211	WINGWALL	E	19					11	8.000		12.000											12	8	12	7	756
40	4	P200	CIP PILES	E	34	S				1	0.000													4	0	4	0	107
16	5	U200	CAP	E	10							5	10.500	2	11.000									14	8	14	5	241
16	5	U201	CAP	E	10	S						2	7.500	2	11.000	2								8	2	7	11	132
4	5	U202	CAP	E	10							2	7.500	2	11.000									8	2	7	11	33
28	5	U203	CAP	E	13					2	11.000	2	7.500	2	11.000		7.500							12	0	11	8	341
27	5	U204	DIAPHRAGM	E	10							4	0.000	2	4.500									10	5	10	1	284
27	6	U205	DIAPHRAGM	E	19					2	11.000	2	11.000											5	10	5	8	230
36	6	U206	SLAB	E	19					3	5.000	5	0.000											8	5	8	3	446
23	5	U207	DIAPHRAGM	E	19					2	0.000		15.000											3	3	3	1	74

R 1 ADDED

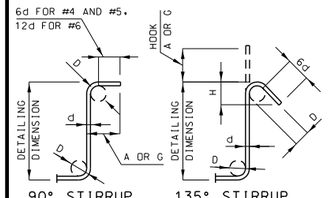
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
22	6	V200	CAP	E	20					5	0.000													5	0	5	0	165
24	6	V201	DIAPHRAGM	E	20					2	11.000													2	11	2	11	105
44	6	V202	WINGWALL	E	20					7	1.000													7	1	7	1	468
30	6	V103	CIP PILES	E	17					5	3.000													5	11	5	11	267
			SLAB																									
195	6	S1	SLAB	E	20					26	4.000													26	4	26	4	7713
46	6	S2	SLAB	E	20			V	2	2	1.500													2	2	2	2	
			INCR=12.875IN							25	8.000													25	8	25	8	960
69	5	S3	SLAB	E	20					39	0.000													39	0	39	0	2807
30	5	S4	SLAB	E	20					39	0.000													39	0	39	0	1220
206	5	S5	SLAB	E	20					4	4.000													4	4	4	4	931
			BARRIER MID																									
210	5	R1	BARRIER	E	26					3	3.000	5	500	3	3.625					3	3.000	6.750		10	3	6	9	1478
210	6	R2	BARRIER	E	19					20	500	9	500											2	6	2	4	736
210	6	R3	BARRIER	E	27							9	500	15	375	5	000	12	000	15	000	3	000	3	6	3	3	1025
60	6	R4	BARRIER	E	20					36	9.000													36	9	36	9	3312
8	5	C1	BARRIER	E	20					12	0.000													12	0	12	0	100
4	6	C2	TRANSITION	E	20					9	9.000													9	9	9	9	59
4	6	C3	TRANSITION	E	20					10	6.000													10	6	10	6	63
			BARRIER TRANSITION																									
16	5	K1	TRANSITION	E	27					3	8.000	9	250	5	250	3	2.875			5	125	1	000	8	1	7	11	165
70	5	K2	TRANSITION	E	27					3	8.000	9	250	14	625	2	5.750			14	250	2	750	8	2	7	11	578
4	5	K3	TRANSITION	E	27						22.125	9	250	14	500	8	000	12	000	14	125	2	750	5	6	5	2	22
16	5	K4	TRANSITION	E	19			V	4	2	4.250	10	000											3	4	3	3	68
			INCR=0.50IN							2	6.250	10	000															
16	5	K5	TRANSITION	E	14			V	4		8.375	9	625	18	500					4	000	18	000	3	2	3	1	64
			INCR=0.50IN								8.375	9	625	20	500					4	500	20	000					
12	5	K6	TRANSITION	E	19			V	3	2	6.750	10	000											3	6	3	4	42
			INCR=0.375IN							2	7.750	10	000															
12	5	K7	TRANSITION	E	21			V	3	2	6.875	10	000							2	6.125	6	250	3	6	3	4	42
			INCR=0.375IN							2	7.875	10	000							2	7.125	6	500					
36	5	K8	TRANSITION	E	19			V	9	2	8.500	10	000											4	0	3	11	147
			INCR=0.625IN							3	2.500	10	000															
36	5	K9	TRANSITION	E	21			V	9	2	8.625	10	000							2	7.875	6	750	4	1	3	11	147
			INCR=0.625IN							3	2.750	10	000							3	1.875	7	750					
26	5	K10	TRANSITION	E	19					3	3.000	10	000											4	1	3	11	106
26	5	K11	TRANSITION	E	21					3	3.250	10	000							3	2.375	7	875	4	1	3	11	106
24	5	K12	TRANSITION	E	20					13	7.000													13	7	13	7	170
12	5	K13	TRANSITION	E	20			V	3	6	5.000													6	5	6	5	118
			INCR=36.00IN							12	5.000																	
24	5	K14	TRANSITION	E	20					12	4.000													12	4	12	4	309
12	5	K15	TRANSITION	E	20			V	3	5	2.000													5	2	5	2	102
			INCR=36.00IN							11	2.000																	

R 1 ADDED

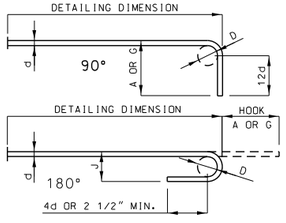


BENDING DIAGRAMS



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	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				
BAR SIZE	D (IN.)	ALL GRADES		
		180° HOOKS		90° HOOKS
		A OR G	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.

R 1 REVISED 03-27-2024

Detailed Jan. 2024
Checked Jan. 2024

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

Sheet No. 20 of 24

STATE OF MISSOURI
JASON SCHRECKENBERG
NUMBER PE-2010011049
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 3/28/2024
ROUTE Y
STATE MO
DISTRICT BR
SHEET NO. 20
COUNTY CAPE GIRARDEAU
JOB NO. J9S3589
CONTRACT ID.
PROJECT NO.
BRIDGE NO. A9223

DATE	DESCRIPTION
032724	ADDED BARS FOR CIP PILES

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

CDI CIVIL DESIGN, INC.
3220 Oakland Avenue
St. Louis, MO 63110
314.863.3570
Missouri State Certificate of Authority #2020006804

REV.