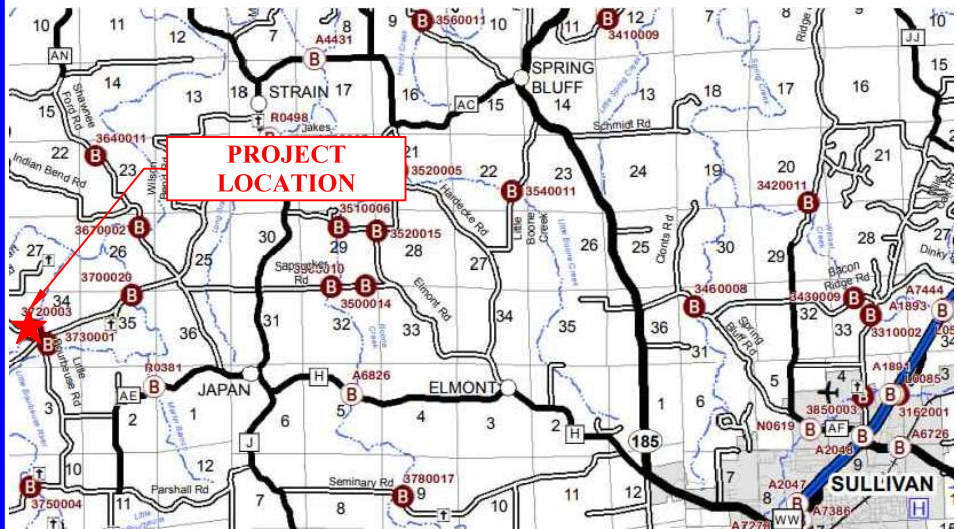


OWNER	MoDOT
FRANKLIN COUNTY	
REPRESENTATIVE: JIM GRUTSCH	REPRESENTATIVE: JOHN BRENDEL
ADDRESS: 400 E LOCUST UNION, MISSOURI 63084	ADDRESS: 1590 WOODLAKE DRIVE CHESTERFIELD, MISSOURI 63017-5712
PHONE: (636) 583-6361	PHONE: (314) 453-1831
ELECTRIC	TELEPHONE, FIBER OPTIC
CRAWFORD ELECTRIC COOP INC.	FIDELITY COMMUNICATIONS
REPRESENTATIVE: KURTIS REED	REPRESENTATIVE: BRAD CONNELL
ADDRESS: 10301 NORTH SERVICE RD. W. BOURBON, MISSOURI 65441	ADDRESS: 64 N. CLARK STREET SULLIVAN, MISSOURI 63080
PHONE: (573) 732-4415	PHONE: (573) 205-4030
CONSULTANT	
COCHRAN	
REPRESENTATIVE: B. BRADFORD DUNAGAN, P.E.	REPRESENTATIVE: _____
ADDRESS: 737 RUDDER ROAD FENTON, MISSOURI 63026	ADDRESS: _____
PHONE: (314) 842-4033	PHONE: _____
REPRESENTATIVE: _____	REPRESENTATIVE: _____
ADDRESS: _____	ADDRESS: _____
PHONE: _____	PHONE: _____

QUADRANGLE YEAR: ARGO/1948
TOWNSHIP: 41N RANGE: 4W SECTION: 34
ADDRESS: 7130 LOCKHART RD., CUBA, MO 65453
LATITUDE: 38.2487 LONGITUDE: -91.3593

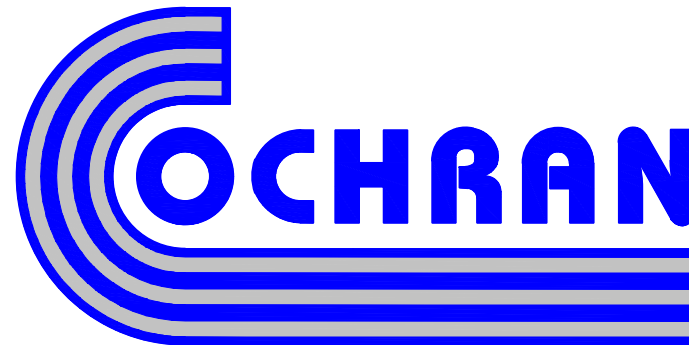
START OF PROJECT: STA. 14+37.23
END OF PROJECT: STA. 17+30.00
PROJECT LENGTH: 292.77 FEET



BRIDGE NO. 37200031
over LOGAN BRANCH



400 E. LOCUST
UNION, MO 63084
TELEPHONE (636) 583-6361



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TELEPHONE (314) 842-4033
FAX (314) 842-5957
www.cochraneng.com

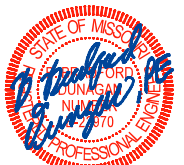
[illegible]

FUNCTIONAL CLASSIFICATION: LOCAL ROAD
CURRENT POSTED SPEED: 30 MPH
DESIGN SPEED: 30 MPH
CURRENT AADT: 100 (2019)
DESIGN AADT: 150 (2039)

ALL OSHA RULES & REGULATIONS ESTABLISHED FOR THE TYPE OF CONSTRUCTION REQUIRED BY THESE PLANS SHALL BE STRICTLY FOLLOWED (IE. TRENCHING, BLASTING, ETC.)

TWO WORKING DAYS PRIOR TO THE START OF ANY EXCAVATION ON THIS SITE, CONTRACTOR SHALL CALL 1-800-DIG-RITE FOR UTILITY LOCATION INFORMATION.

WHERE THE TERM "STANDARD SPECIFICATIONS" IS USED, SUCH REFERENCE SHALL MEAN THE 2024 EDITION OF THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS OTHERWISE PROVIDED IN THE PROJECT MANUAL. IN CASE OF CONFLICT IN THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS STATED IN THE PROJECT MANUAL, THE REQUIREMENTS IN THE PROJECT MANUAL SHALL PREVAIL.



1/10/24
B. BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN
THIS SHEET HAS BEEN SIGNED,
SEALED AND DATED ELECTRONICALLY

THE PROFESSIONAL'S SEAL AFFIXED TO THIS SHEET APPLIES ONLY TO ITEMS
ON THIS SHEET. ALL DRAWINGS OR OTHER DOCUMENTS NOT EXHIBITING
THIS SEAL SHALL NOT BE CONSIDERED PREPARED BY THIS PROFESSIONAL.

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

FRANKLIN COUNTY

ACCEPTED BY

JIM GRUTSON
HIGHWAY ADMINISTRATOR

QUANTITIES

Bid No.	Spec. No.	Description	From STA	To STA	Unit	Quantity
ROADWAY ITEMS						
1	2013000	Clearing and Grubbing	14+37.23	17+30.00	AC	0.2
2	2022010	Removal of Improvements	14+37.23	17+30.00	LS	1
3	2035000	Unclassified Excavation	14+37.23	17+30.00	CY	100
4	2035500	Embankment in Place	14+37.23	17+30.00	CY	400
5	3040504	Type 5 Aggregate For Base (4")(Roadway)	14+37.23	17+30.00	SY	510
6	4011209	Bituminous Pavement Mix PG64-22 (BP-1)(2" Surface Course)	14+37.23	17+30.00	TON	60
7	4013000	Bituminous Pavement Mix PG64-22 (Base)(Two 3 Inch Lifts)	14+37.23	17+30.00	TON	170
8	6062304	Asymetrical Transition Section, 7.5 Ft. Posts	15+08.95	15+63.01	EA	4
9	6063037	Type A Crashworthy End Terminal (37.5')	14+52.69	15+08.95	EA	2
10	6063015	Type A Crashworthy End Terminal (50')	15+63.01	16+31.76	EA	2
11	6072004	Fencing - 4-Strand Barbed Wire	14+37.23	17+30.00	LF	481
12	6181000	Mobilization	14+37.23	17+30.00	LS	1
13	8061019	Silt Fence	14+98.85	15+73.35	LF	210
SIGNING/STRIPING/SIGNAL ITEMS						
14	6161005	Construction Signs	14+37.23	17+30.00	SF	224
15	6161031	Type III Moveable Barricade with Lights	14+37.23	17+30.00	EA	8
16	6206000/1C	4 In. White and Yellow Standard Waterborne Pavement Marking, Type P Beads	14+37.23	17+30.00	LF	1,088
LANDSCAPING/STREETSCAPING ITMES						
17	8051000A	Seeding - Cool Season Mixtures	14+37.23	17+30.00	AC	0.3
BRIDGE ITEMS						
18	2061000	Class 1 Excavation	15+14.16	15+57.79	CY	430
19	2160500	Removal of Bridges	15+14.16	15+57.79	EA	1
20	5031010	Bridge Approach Slabs	14+94.16	15+77.79	SY	124.4
21	6113021	Furnishing Type 2 Rock Blanket	15+14.16	15+57.79	TON	210
22	6113041	Placing Type 2 Rock Blanket	15+14.16	15+57.79	TON	210
23	6240103A	Permanent Erosion Control Geotextile - Class 1	15+14.16	15+57.79	SY	220
24	7021010	Structural Steel Piles (10")	15+14.16	15+57.79	LF	360
25	7027000	Pile Point Reinforcement	15+14.16	15+57.79	EA	12
26	7032003	Class B Concrete (Substructure)	15+14.16	15+57.79	CY	79.1
27	7101000	Reinforcing Steel (Epoxy Coated)	15+14.16	15+57.79	LB	13,140
28	7135000	SL-1 Bridge Rail	15+08.95	15+63.01	LF	100
STEEL BEAM OPTION: 5 - W18X86# STEEL BEAMS						
29	7034212	Slab on Steel	15+14.16	15+57.79	SY	139.0
30	7121113	Fab. Str. Low Al. Steel (I-Beam) A709, Grade 50W	15+14.16	15+57.79	LB	21,770
PS CONCRETE BEAM OPTION: 5 - 17" PRESTRESSED CONC. BOX BEAMS						
31	7034222	Slab on Concrete Beam	15+14.16	15+57.79	SY	139.0
32	7056065	17 IN., Prestressed Concrete Spread Box Beam	15+14.16	15+57.79	LF	213
33	7161002	Neoprene Bearing Pads	15+14.16	15+57.79	EA	10

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FENTON, MISSOURI 65026

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General Consulting
ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007006937
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI

1/10/24

B. BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SO ENGINEERING LLC,
DBA COCHRAN

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ON THIS SHEET. ALL DRAWINGS OR
OTHER DOCUMENTS NOT EXHIBITING
THIS SEAL SHALL NOT BE CONSIDERED
PREPARED BY THIS PROFESSIONAL.

LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

QUANTITIES

DATE:	REVISION:				
DWN. BY:	APPD. BY:				
A.J.M.	B.B.D.				
DATE:					
JAN. 2024					
SCALE:					
NOT TO SCALE					
PROJ. NO:					
SC21-1222					
DWG. NO:					
Q-1					

Drawing name: J:\ac21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\TOPO.dwg Tab: TS-1 Plotted on: Jul 09, 2024 - 10:22am Plotted by: MSPolding

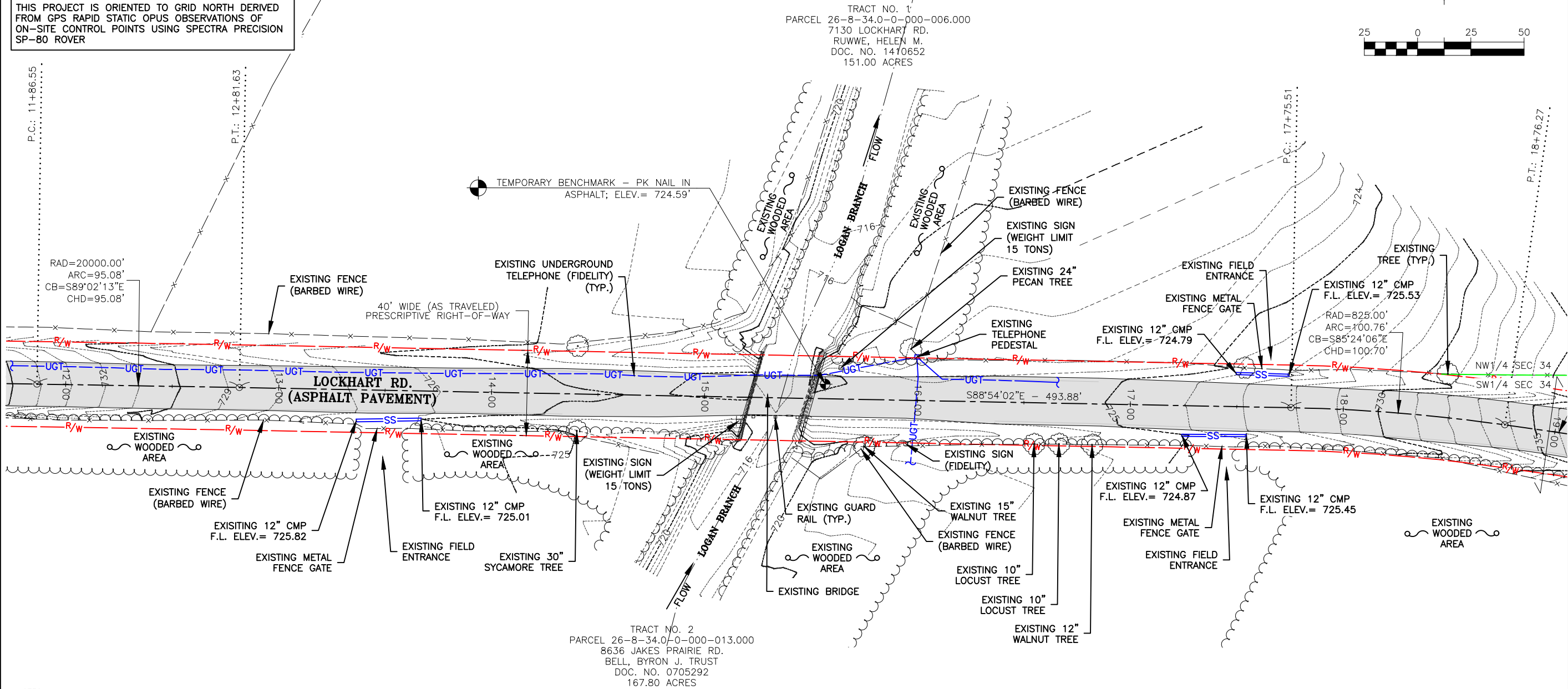
THIS SITE LIES WITHIN SEC 34, T41N, R4W

LAND TIE: FOUND 1/2" IRON ROD IN STONE PILE IN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 41 NORTH, RANGE 4 WEST OF THE 5TH PRINCIPAL MERIDIAN ON THE SOUTH RIGHT-OF-WAY OF JAKES PRAIRIE ROAD AT THE NORTHWEST CORNER OF A TRACT OF LAND DESCRIBED IN DOC. NO. 2005-16644 OF THE FRANKLIN COUNTY RECORDS (S11°44'07"W - 1,869.84' OF CL OF ROAD AT STA. 10+00.00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS RAPID STATIC OPUS OBSERVATIONS OF ON-SITE CONTROL POINTS USING SPECTRA PRECISION SP-80 ROVER

TOPOGRAPHIC SURVEY

(THIS DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY)



NOTES:

- UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
- TEMPORARY BENCHMARK IS A PK NAIL IN THE ASPHALT ON THE EAST SIDE OF LOCKHART DR. AT APPROXIMATELY STA. 15+50 AS SHOWN ABOVE, ELEV.= 724.59. SITE BENCHMARK DERIVED FROM GPS RAPID STATIC OPUS OBSERVATIONS OF ON-SITE CONTROL POINTS USING SPECTRA PRECISION SP-80 ROVER, VERTICAL DATUM (NAVD 88).
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
- TOPOGRAPHIC INFORMATION AS SHOWN HEREON PER FIELD WORK PERFORMED BY Z.B.H. OF COCHRAN, DATED MARCH, 2021.
- THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS RAPID STATIC OPUS OBSERVATIONS OF ON-SITE CONTROL POINTS USING SPECTRA PRECISION SP-80 ROVER.
- THIS SITE LIES WITHIN SPECIAL FLOOD HAZARD AREA "ZONE A". (SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, NO BASE ELEVATIONS DETERMINED) PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29071C0390D, EFFECTIVE DATE OCTOBER 18, 2011.
- THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

LEGEND

PROPERTY LINE		EXISTING UTILITY POLE		EXISTING SIGN	
RIGHT-OF-WAY		EXISTING STORM SEWER		EXISTING FENCE	
CENTERLINE OF ROAD		EXISTING UNDERGROUND TELEPHONE		EXISTING AERIAL ELECTRIC	
EXISTING STRIPING		EXISTING TELEPHONE PEDESTAL		EXISTING BUSH	
EXISTING MAJOR CONTOUR		EXISTING CONCRETE PAVEMENT		EXISTING TREE	
EXISTING MINOR CONTOUR		EXISTING GRAVEL		EXISTING UTILITY (TERMINUS UNKNOWN)	
EXISTING BUILDING		EXISTING ASPHALT PAVEMENT		EXISTING GUY WIRE	

TOPOGRAPHIC SURVEY

DATE: _____

REVISION: _____

DWN. BY: Z.B.H.

APP'D. BY: T.J.V.

DATE: JAN. 2024

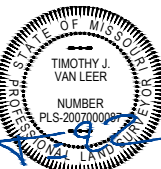
SCALE: 1" = 50'

PROJ. NO: SC21-1222

DWG. NO: _____

TS-1

LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI



TIMOTHY J. VAN LEER
NO. PLS-2007000087
STATE OF MISSOURI
PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING, LLC, DBA COCHRAN

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

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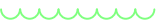










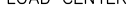















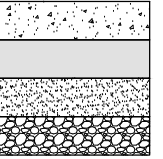
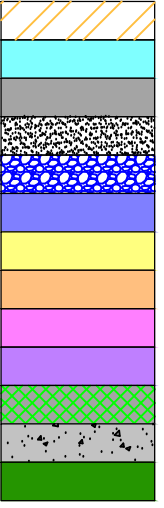


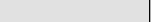



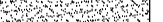












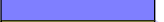




































































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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

Drawing name: I:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\LEGEND.dwg Tab: LG-1 Plotted on: Jan 12, 2024 - 9:58am Plotted by: amueller

LEGEND AND GENERAL NOTES

LEGEND, GENERAL NOTES AND ABBREVIATIONS SHALL APPLY TO ALL SHEETS UNLESS OTHERWISE NOTED ON INDIVIDUAL SHEET

LEGEND

EXISTING		NEW		EXISTING		NEW	
	INDEX CONTOUR		500		TREE		TREE
	INTERMEDIATE CONTOUR		498		TREELINE		TREELINE
	RIGHT-OF-WAY		R/W		LIGHT		LIGHT
	LOT LINE		R/W		COBRAHEAD LIGHT		COBRAHEAD LIGHT
	PERMANENT EASEMENT		PE		LOAD CENTER		LOAD CENTER
	AERIAL ELECTRIC		AE		HAND HOLE		HAND HOLE
	UTILITY POLE		○		MAILBOX		MAILBOX
	GUY WIRE		→		SIGN		SIGN
	UNDERGROUND ELECTRIC		UGE		CORING LOCATION		CORING LOCATION
	UNDERGROUND CABLE TV		CATV		COMPACTED SHOULDER		COMPACTED SHOULDER
	UNDERGROUND TELEPHONE		UGT		CONCRETE PAVEMENT		CONCRETE PAVEMENT
	UNDERGROUND FIBER OPTIC		FO		ASPHALT PAVEMENT		ASPHALT PAVEMENT
	SANITARY SEWER LINE		SAN		GRAVEL SURFACE		GRAVEL SURFACE
	SANITARY FORCEMAIN		FM		ROCK BLANKET/DITCH LINER		ROCK BLANKET/DITCH LINER
	SANITARY SEWER MANHOLE		●		CONCRETE APPROACH		CONCRETE APPROACH
	STORM SEWER LINE		SS		CONCRETE SIDEWALK		CONCRETE SIDEWALK
	STORM SEWER MANHOLE		●		CURB RAMP		CURB RAMP
	CURB/AREA INLET		■		ASPHALT DRIVEWAY		ASPHALT DRIVEWAY
	GRATED INLET		■		AGGREGATE DRIVEWAY		AGGREGATE DRIVEWAY
	GRATED INLET W/ SIDE INTAKE		■		PAVEMENT MILLING		PAVEMENT MILLING
	FLARED END SECTION		A		APPROACH SLAB		APPROACH SLAB
	SWALE		→		BRIDGE		BRIDGE
	GAS LINE		G		RETAINING WALL		RETAINING WALL
	GAS VALVE		⊙		CONCRETE VERTICAL CURB		CONCRETE VERTICAL CURB
	GAS METER		M		CONCRETE CURB AND GUTTER		CONCRETE CURB AND GUTTER
	WATER LINE		W		CONSTRUCTION LIMITS		CONSTRUCTION LIMITS
	FIRE HYDRANT		⊙		SILT FENCE		SILT FENCE
	WATER VALVE		⊗		INLET CHECK		INLET CHECK
	WATER METER		M		DITCH CHECK		DITCH CHECK
	GUARDRAIL		□		PROJECT BASELINE		PROJECT BASELINE
	FENCE		×		TEMPORARY CONSTRUCTION EASEMENT		T.C.E.

ABBREVIATIONS

AI – AREA INLET	MIN – MINIMUM	∅ – DIAMETER
ARC – ARC LENGTH	NO – NUMBER	CL – CENTERLINE
ATG – ADJUST TO GRADE	O/S – OFFSET	(1) – KEYED NOTE
BF – BOTTOM OF FOOTING	OC – ON CENTER	
BOP – BEGINNING OF PAVEMENT	PC – POINT OF CURVATURE	
BW – BOTTOM OF WALL	PCC – POINT OF COMPOUND CURVATURE	
CB – CHORD BEARING	PE – PERMANENT EASEMENT	
CHD – CHORD LENGTH	PI – POINT OF INTERSECTION	
CI – CURB INLET	PRC – POINT OF REVERSE CURVATURE	
CMP – CORRUGATED METAL PIPE	PT – POINT OF TANGENCY	
DCI – DOUBLE CURB INLET	R/W – RIGHT-OF-WAY	
DGI – DOUBLE GRATED INLET	RAD – RADIUS	
ELEV – ELEVATION	RCP – RE-INFORCED CONCRETE PIPE	
EOP – END OF PAVEMENT	RT – RIGHT	
FES – FLARED END SECTION	SSD – STOPPING SIGHT DISTANCE	
FL – FLOW LINE	STA – STATION	
GI – GRATED INLET	TBR – TO BE REMOVED	
GIS – GRATED INLET WITH SIDE INTAKE	TBR&R – TO BE REMOVED AND REPLACED	
HDPE – HIGH-DENSITY POLYETHYLENE	TCE – TEMPORARY CONSTRUCTION EASEMENT	
JB – JUNCTION BOX	TW – TOP OF WALL	
LF – LINEAR FEET	TYP – TYPICAL	
LT – LEFT	VPC – VERTICAL POINT OF CURVATURE	
MAX – MAXIMUM	VPI – VERTICAL POINT OF INTERSECTION	
MH – MANHOLE	VPT – VERTICAL POINT OF TANGENCY	

GENERAL NOTES

TOPOGRAPHIC SURVEY NOTES:

NOTES:

- UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
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- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
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- THIS TOPOGRAPHIC SURVEY DOES NOT CONSTITUTE A PROPERTY BOUNDARY SURVEY.

DESIGN NOTES:

- CONTRACTOR SHALL RELOCATE ALL EXISTING SIGNS, PLANTERS, MAILBOXES, AND PRIVATE LIGHTS AS NECESSARY FOR THE CONSTRUCTION OF THE IMPROVEMENTS. NEW LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL ADJUST TO GRADE ALL UTILITIES NECESSARY TO BRING THE UTILITY TO THE GRADE OF THE NEW CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF ALL POTENTIAL UTILITY CONFLICTS PRIOR TO ORDERING STORM SEWER PIPE AND STRUCTURES.
- ALL AREAS OF CLEARING, GRUBBING AND STRIPPING NOT SHOWN IN PLANS, CONTRACTOR SHALL CONDUCT CLEARING, GRUBBING AND STRIPPING AS NECESSARY UNLESS OTHERWISE NOTED IN PLANS.

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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER – 2007006937
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STATE OF MISSOURI

BRADFORD DUNAGAN
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STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

1/10/24

THIS SHEET HAS BEEN SIGNED,
SEALED AND DATED ELECTRONICALLY

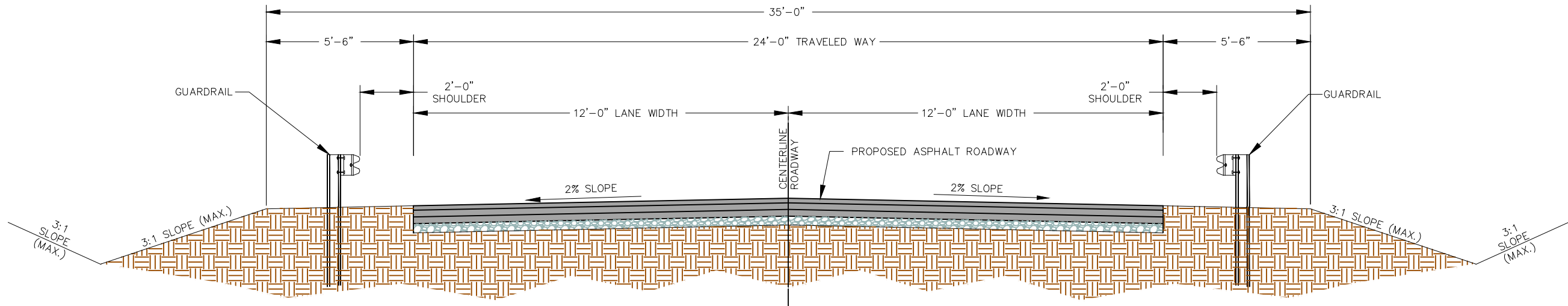
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NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

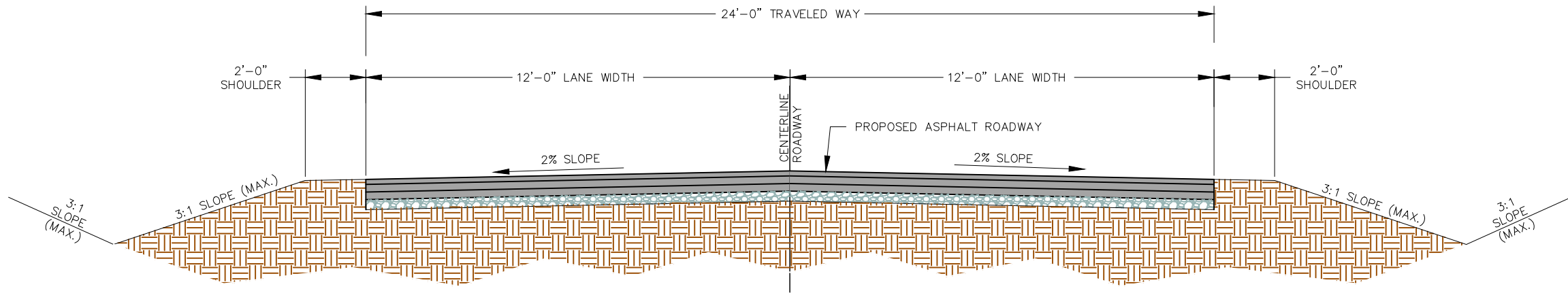
LEGEND AND GENERAL NOTES	
DATE:	REVISION:
DWN. BY: A.J.M.	APPD. BY: B.B.D.
DATE: JAN. 2024	
SCALE: NO. TO SCALE	
PROJ. NO: SC21-1222	
DWG. NO: LG-1	

Drawing name: I:\sec21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\TYPICAL ROADWAY SECTIONS.dwg Tab: TYS-1 Plotted on: Jan 12, 2024 - 9:58am Plotted by: amueller

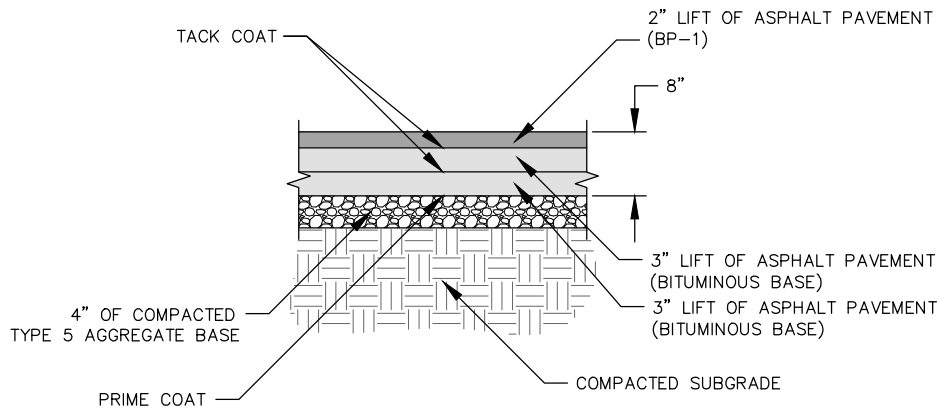
TYPICAL ROADWAY SECTIONS



TYPICAL ROADWAY CROSS SECTION WITH GUARDRAIL



TYPICAL ROADWAY CROSS SECTION



PROPOSED PAVEMENT SECTION

NO SCALE

NOTE: THIS DRAWING IS NOT TO SCALE. PLEASE FOLLOW DIMENSIONS.

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
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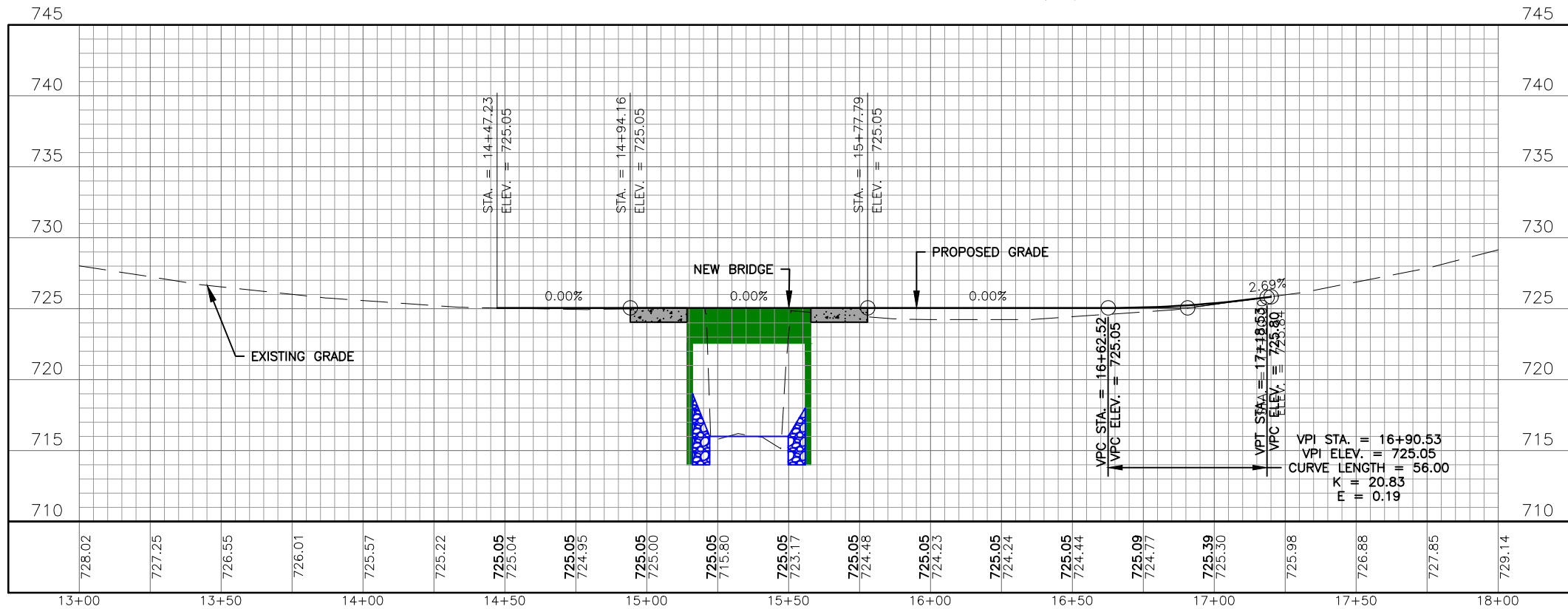
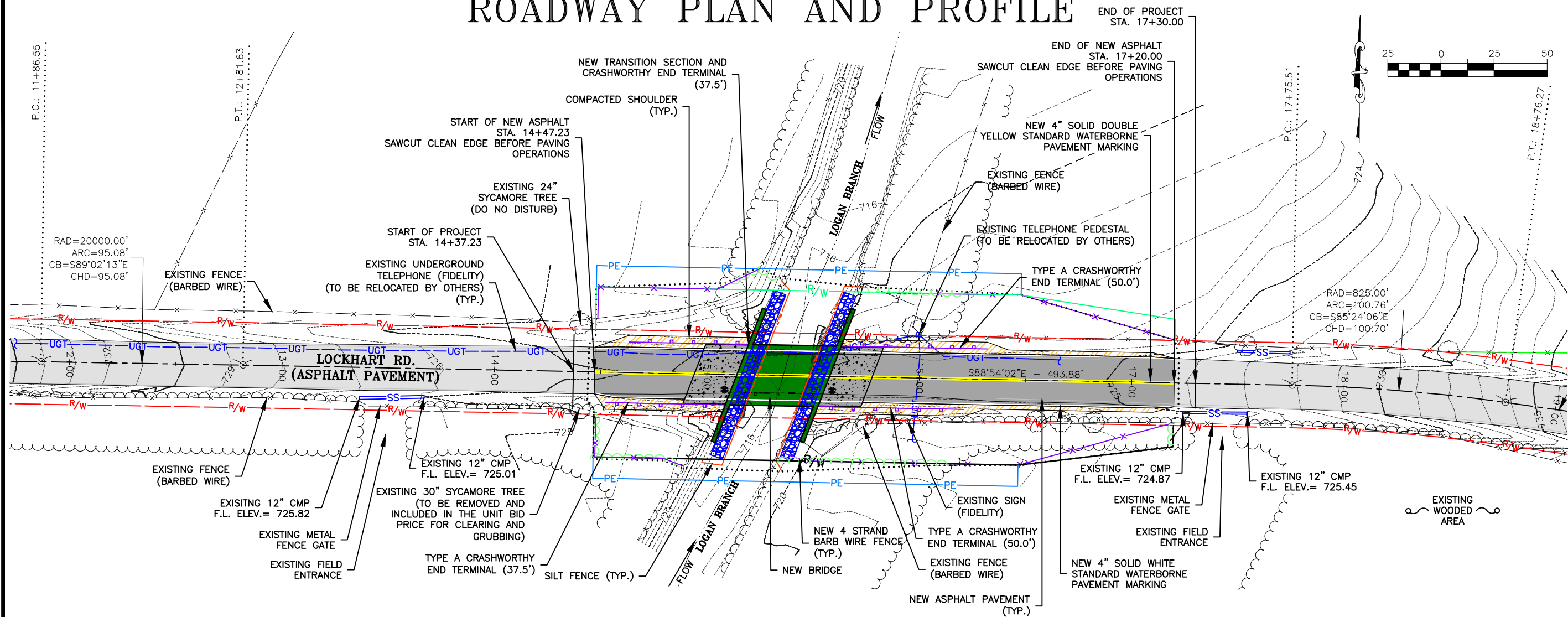
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FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

TYPICAL ROADWAY SECTIONS	
DATE:	REVISION:
DWN. BY: A.J.M.	APPD. BY: B.B.D.
DATE: JAN. 2024	
SCALE: NOT TO SCALE	
PROJ. NO: SC21-1222	
DWG. NO:	
TXS-1	

Drawing name: U:\sec21-1222 lockhart road bridge # 37200031 - Franklin county, mo\AUTOCAD DRAWINGS\ROADWAY PLAN AND PROFILE.dwg Tab: RD-1 Plotted on: Jul 09, 2024 - 10:24am Plotted by: MSPolding

ROADWAY PLAN AND PROFILE



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LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

DATE	REVISION
JAN. 2024	

SCALE:
1" = 50'

PROJ. NO:
SC21-1222

DWG. NO:
RD-1

THIS SITE LIES WITHIN SEC 34, T41N, R4W

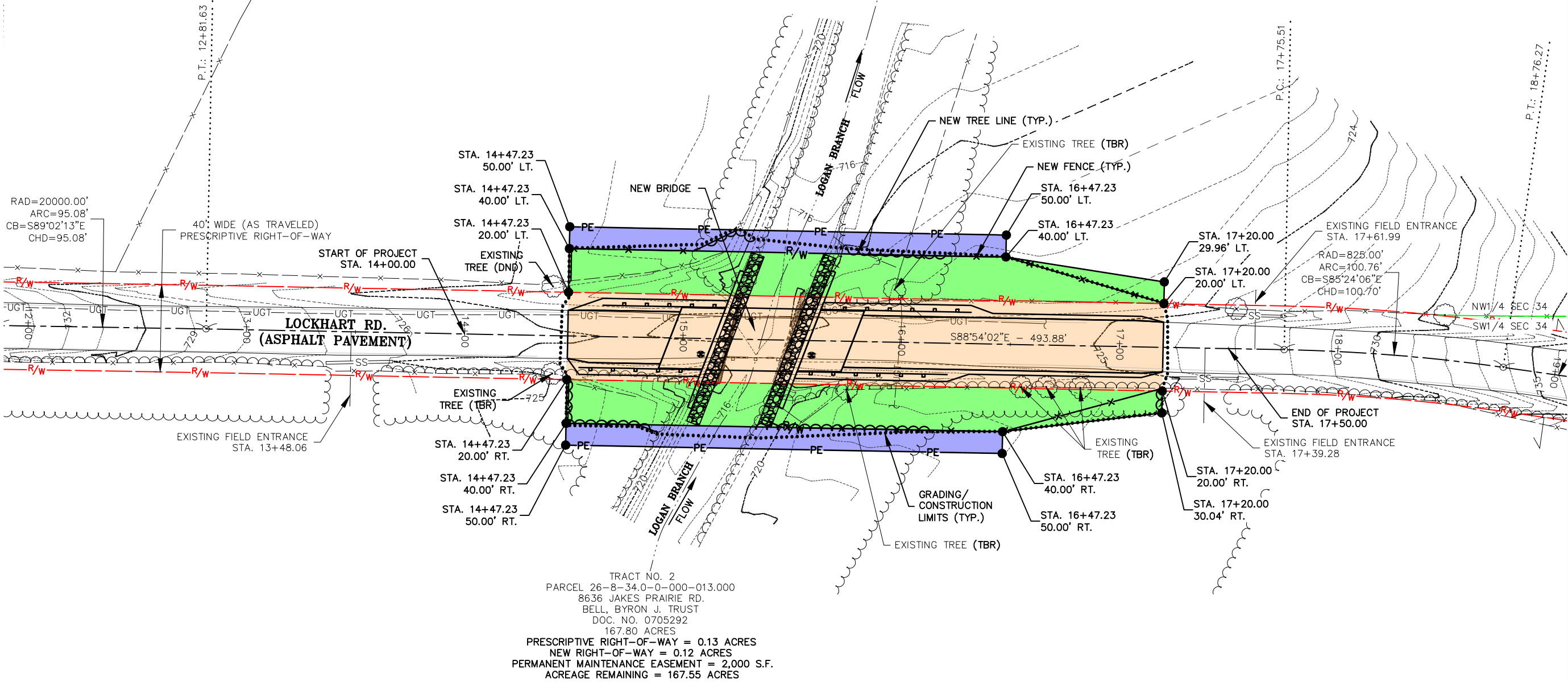
LAND TIE: FOUND 1/2" IRON ROD IN STONE PILE IN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 41 NORTH, RANGE 4 WEST OF THE 5TH PRINCIPAL MERIDIAN ON THE SOUTH RIGHT-OF-WAY OF JAKES PRAIRIE ROAD AT THE NORTHWEST CORNER OF A TRACT OF LAND DESCRIBED IN DOC. NO. 2005-16644 OF THE FRANKLIN COUNTY RECORDS (S11°44'07"W - 1,869.84' OF CL OF ROAD AT STA. 10+00.00)

THIS PROJECT IS ORIENTED TO GRID NORTH DERIVED FROM GPS RAPID STATIC OPUS OBSERVATIONS OF ON-SITE CONTROL POINTS USING SPECTRA PRECISION SP-80 ROVER

RIGHT-OF-WAY PLAN

TRACT NO. 1
PARCEL 26-8-34.0-0-000-006.000
7130 LOCKHART RD.
RUWWE, HELEN M.
DOC. NO. 1410652
151.00 ACRES

PRESCRIPTIVE RIGHT-OF-WAY = 0.13 ACRES
NEW RIGHT-OF-WAY = 0.12 ACRES
PERMANENT MAINTENANCE EASEMENT = 2,000 S.F.
REMAINING = 150.75 ACRES



TRACT NO. 2
PARCEL 26-8-34.0-0-000-013.000
8636 JAKES PRAIRIE RD.
BELL, BYRON J. TRUST
DOC. NO. 0705292
167.80 ACRES
PRESCRIPTIVE RIGHT-OF-WAY = 0.13 ACRES
NEW RIGHT-OF-WAY = 0.12 ACRES
PERMANENT MAINTENANCE EASEMENT = 2,000 S.F.
ACREAGE REMAINING = 167.55 ACRES

LEGEND

PROPERTY LINE		EXISTING ASPHALT PAVEMENT		NEW TREE LINE	
EXISTING RIGHT-OF-WAY		EXISTING FENCE		NEW GUARDRAIL	
CENTERLINE OF ROAD		NEW FENCE		PERMANENT MAINTENANCE EASEMENT	
EXISTING MAJOR CONTOUR		NEW ROCK BLANKET		NEW RIGHT-OF-WAY	
EXISTING MINOR CONTOUR		GRADING/CONSTRUCTION LIMITS		PRESCRIPTIVE RIGHT-OF-WAY	
EXISTING UNDERGROUND TELEPHONE		NEW ASPHALT PAVEMENT		TO BE REMOVED	
EXISTING SIGN		NEW TREE LINE		DO NOT DISTURB	
EXISTING TREE LINE					

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ENGINEERING CERTIFICATE OF AUTHORITY NUMBER: 200709429
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER: 200709429

STATE OF MISSOURI
TIMOTHY J. VAN LEER
NUMBER: PLS-2007000087
1/10/22
TIMOTHY J. VAN LEER
NO. PLS-2007000087
STATE OF MISSOURI
PROFESSIONAL LAND SURVEYOR
FOR SC ENGINEERING, LLC,
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FRANKLIN COUNTY, MISSOURI

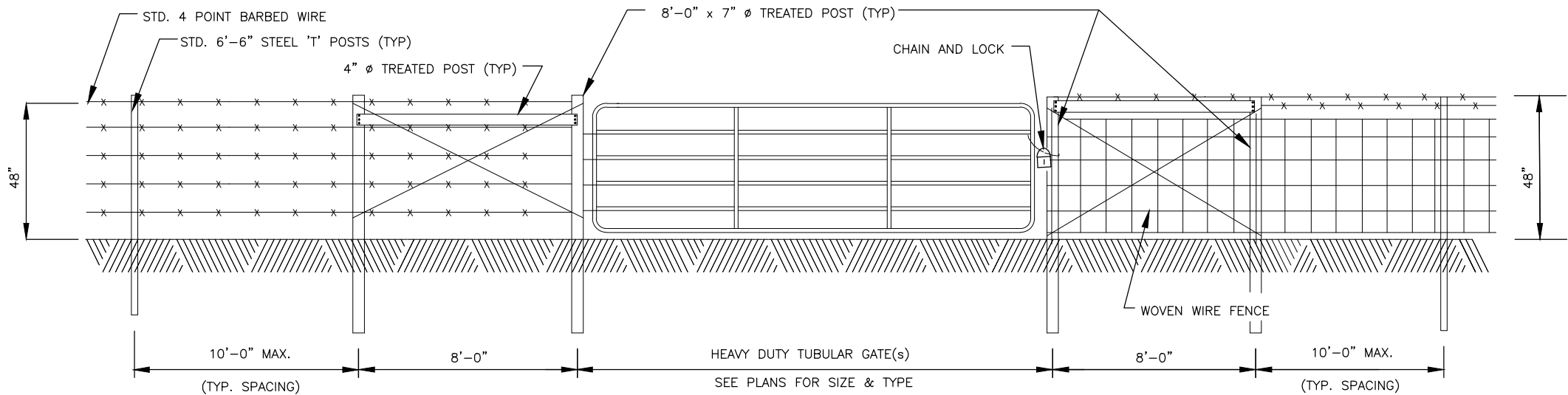
RIGHT-OF-WAY PLAN

DATE:	REVISION:
DWN. BY: J.W.B.	APP'D. BY: T.J.V.
DATE: JAN. 2024	
SCALE: 1" = 50'	
PROJ. NO: SC21-1222	
DWG. NO:	

RW-1

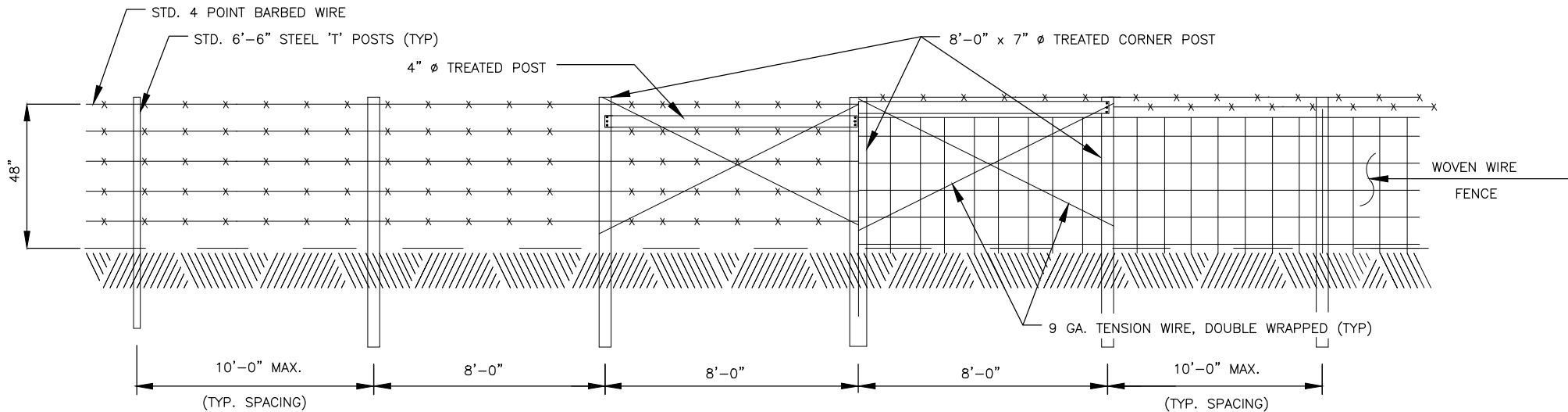
Drawing name: U:\SC21-1222 Lockhart Road Bridge # 37200031 - Franklin County, MO\AUTOCAD DRAWINGS\FENCING.dwg Tab: F-1 FENCING Plotted on: Mar 27, 2024 - 8:49am Plotted by: amueller

FENCING



TYPICAL FENCE GATE AND BRACING

(FOR BARBED WIRE & WOVEN WIRE FENCING)



TYPICAL CORNER AND BRACING

(FOR BARBED WIRE & WOVEN WIRE)

NOTES:

- FENCING SHOWN IN THIS DETAIL IS THE MINIMUM REQUIRED BY THE ENGINEER. ACTUAL REPLACEMENT FENCE SHALL BE EQUAL TO OR BETTER THAN THE EXISTING.
- TIES TO EXISTING FENCE REQUIRE THE SAME LAYOUT AS FENCE CORNERS (i.e. CORNER POSTS WITH BRACING AND TENSION WIRE).
- INSTALL BREAKAWAY WATER GAP IF SPECIFIED ON THE SITE PLAN.
- TEMPORARY FENCING TO BE INSTALLED TO MAINTAIN CONTINUITY OF FENCING DURING CONSTRUCTION (INCIDENTAL TO CONSTRUCTION).

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

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5/27/22

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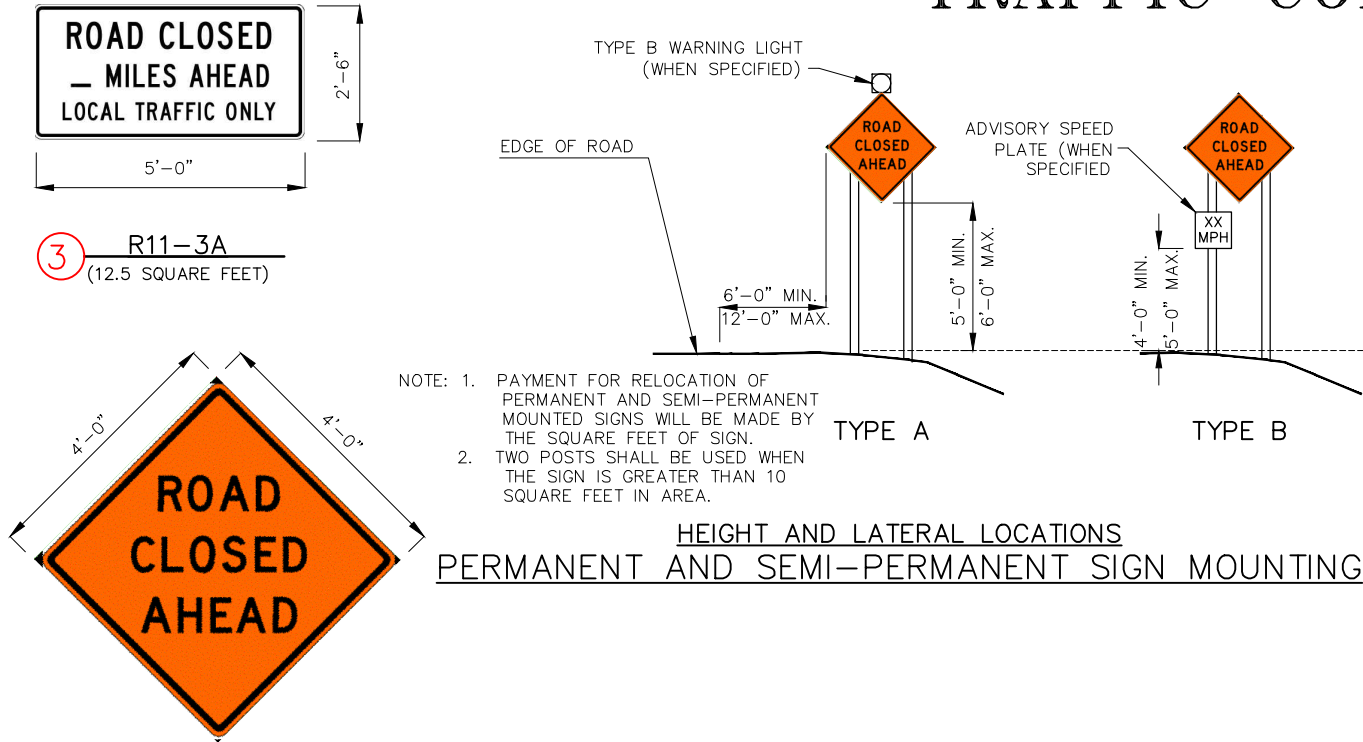
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NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

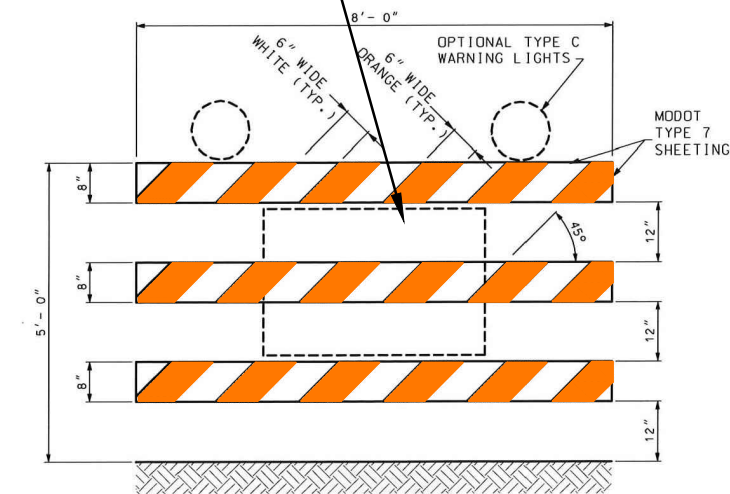
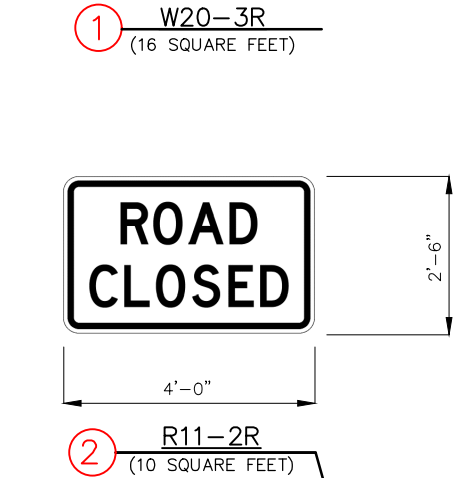
FENCING DETAIL	DATE:	REVISION:							
	DWN. BY:	APPD. BY:							
	A.J.M.	B.B.D.							
	DATE:	MAR. 2024							
	SCALE:	NOT TO SCALE							
	PROJ. NO:	SC21-1222							
	DWG. NO:	F-1							

Drawing name: I:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\TRAFFIC CONTROL PLAN.dwg Tab: TC-1 Plotted on: Jun 12, 2024 - 9:59am Plotted by: emueller

TRAFFIC CONTROL PLAN



HEIGHT AND LATERAL LOCATIONS
PERMANENT AND SEMI-PERMANENT SIGN MOUNTING



TYPE III MOVABLE BARRICADE

ONE TYPE III MOVABLE BARRICADE WILL BE REQUIRED TO COMPLETELY CLOSE EACH 8' OF PAVEMENT. PAVED SHOULDERS SHALL BE INCLUDED IN THE AREA TO BE CLOSED.

SIGNS SHALL BE LIGHT WEIGHT (ROLL-UP OR PLASTIC) AND OBSCURE NO MORE THAN 50 PERCENT OF THE TOP 2 RAILS OR 33 PERCENT OF ALL THREE RAILS. SEE SIGN MOUNTING REQUIREMENTS IN TABLE A ON SHEET 1.

TYPE C WARNING LIGHTS SHALL BE LIGHT WEIGHT (3.3 LBS. OR LESS) OR HAVE BATTERY PACK MOUNTED NO HIGHER THAN 18-INCH AND SHALL NOT COVER ANY PORTION OF THE BARRICADED FACE.

IF SIGNS OR LIGHTS CANNOT MEET THE ABOVE REQUIREMENTS, THEY SHALL BE MOUNTED ON SEPARATE CRASHWORTHY DEVICES, LOCATED 7 TO 10 FEET BEHIND THE BARRICADE.

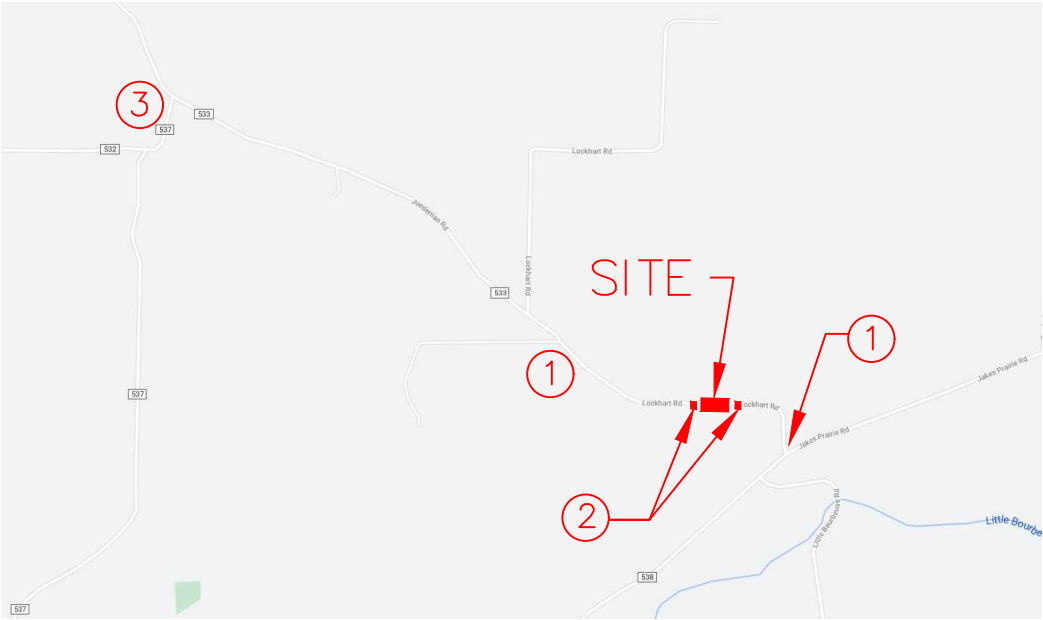
WHERE A BARRICADE ARRAY EXTENDS ACROSS A ROADWAY, THE STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN OR PASS.

WHERE BOTH RIGHT AND LEFT VEHICULAR MOVEMENTS ARE PROVIDED, THE STRIPES SHALL SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE ARRAY.

WHERE NO VEHICULAR MOVEMENTS ARE PROVIDED, THE STRIPES SHALL SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE ARRAY.

TYPE III MOVABLE BARRICADES SHALL BE ENTIRELY FREE STANDING AND PORTABLE. MARKING SHALL ONLY BE APPLIED TO THE FRONT OF EACH RAIL OR MAY BE APPLIED TO BOTH THE FRONT AND THE BACK OF EACH RAIL PROVIDED THE MARKING ON THE BACK DOES NOT CONFLICT WITH INTENDED OPPOSING TRAFFIC MOVEMENT. WHERE MARKING IS NOT PROVIDED ON THE BACKSIDE, STRIPS OF 3" WIDE MODOT TYPE 7 ORANGE SHEETING MAY BE APPLIED TO THE ENDS OF EACH RAIL TO HELP DELINEATE THE DEVICE.

NOTE: ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).



TRAFFIC CONTROL LAYOUT
NO SCALE

TRAFFIC CONTROL SCHEDULE		
PLAN DESIGNATION	SIGN	COMMENTS
①	W20-3R	1,000' FROM INTERSECTION OR PROJECT SITE
②	R11-2R	FOUR TYPE III MOVABLE BARRICADES WITH OPTIONAL TYPE C WARNING LIGHTS, AT EACH LOCATION
③	R11-3A	ROAD CLOSED 1.33 MILES AHEAD LOCAL TRAFFIC ONLY

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STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

1/10/24
B. BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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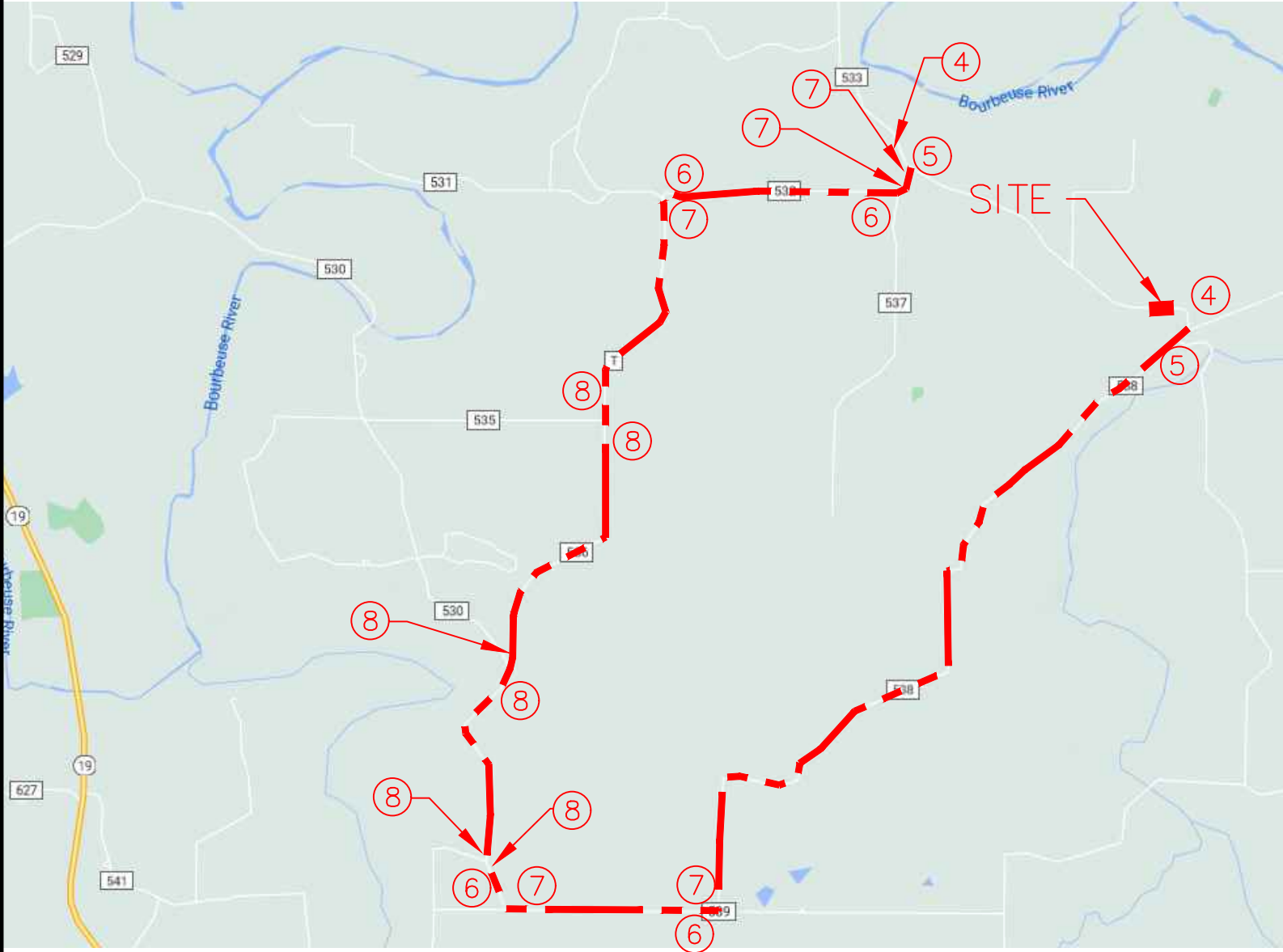
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FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

DATE: REVISION:
DATE: DATE:
DWN. BY: APPD. BY:
A.J.M. B.B.D.
DATE: JAN. 2024
SCALE: NO TO SCALE
PROJ. NO: SC21-1222
DWG. NO: TC-1

Drawing name: I:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\TRAFFIC CONTROL PLAN.dwg Tab: TC-2 Plotted on: Jan 12, 2024 - 9:59am Plotted by: amueller

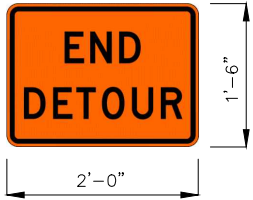
TRAFFIC CONTROL PLAN



DETOUR PLAN LAYOUT
NO SCALE

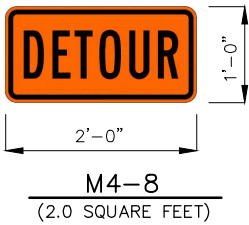


④ W20-2
(9.0 SQUARE FEET)

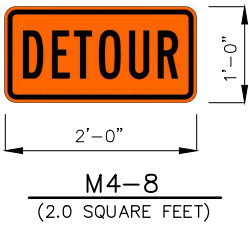


⑤ M4-8a
(3.0 SQUARE FEET)

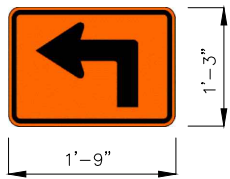
TRAFFIC CONTROL QUANTITIES			
PLAN DESIGNATION	QUANTITY	SQ. FT. (EACH)	SQ. FT. (TOTAL)
①	2	16	32.00
②	8	10	80.00
③	1	12.5	18.00
④	2	12.5	25.0
⑤	2	3.0	6.00
⑥	4	4.19	16.76
⑦	5	4.19	20.95
⑧	6	5.0	30



M4-8
(2.0 SQUARE FEET)

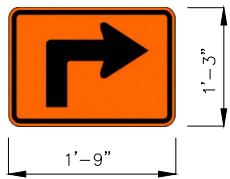


M4-8
(2.0 SQUARE FEET)



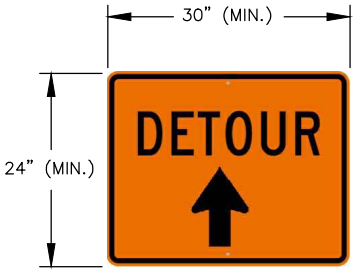
M5-1L
(2.19 SQUARE FEET)

⑥



M5-1L
(2.19 SQUARE FEET)

⑦



M4-9L
(5.0 SQUARE FEET)

⑧

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1/10/24
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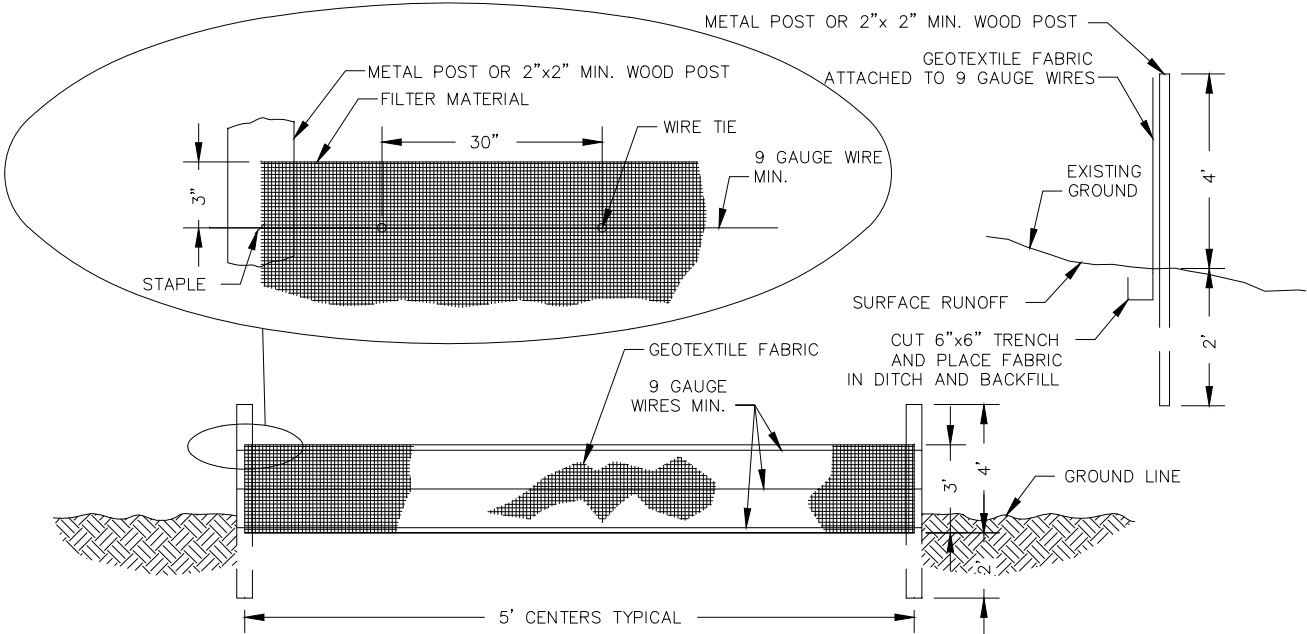
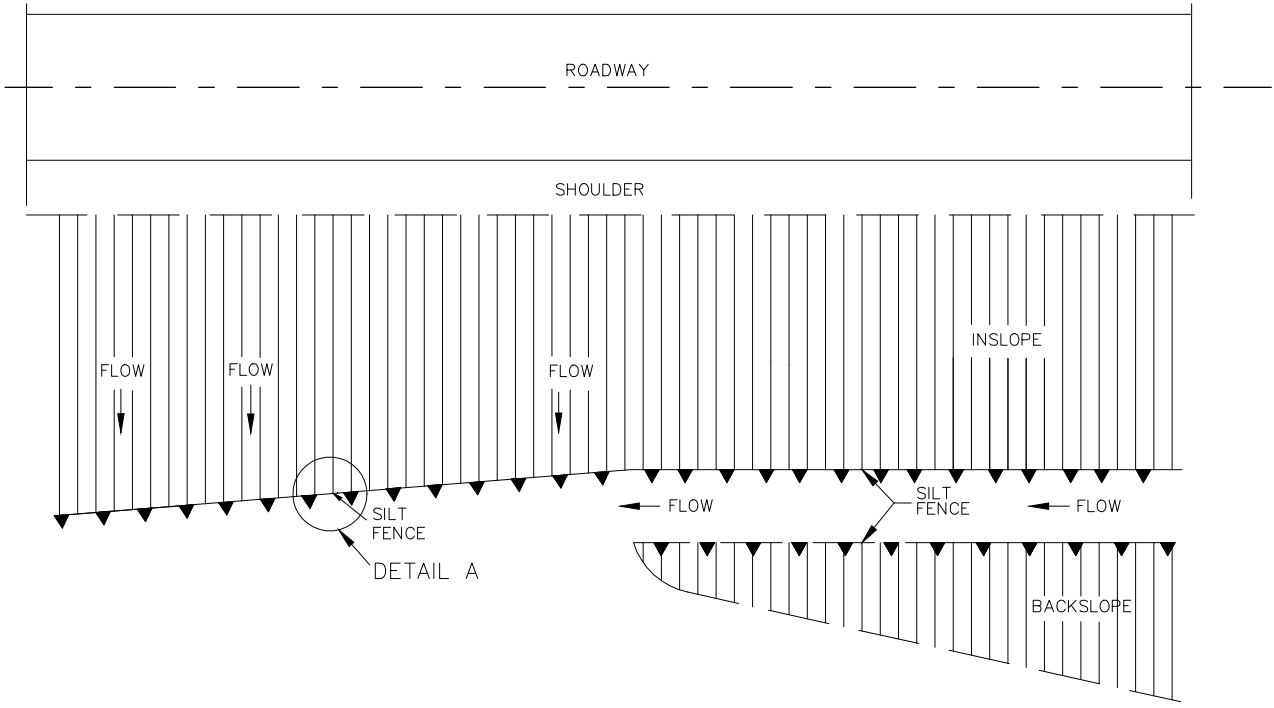
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NO. 37200031 REPLACEMENT
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FRANKLIN COUNTY, MISSOURI

TRAFFIC CONTROL		DATE	REVISION
DWN. BY:	APPD. BY:		
A.J.M.	B.B.D.		
DATE:			
JAN. 2024			
SCALE:			
NOT TO SCALE			
PROJ. NO:			
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TC-2			

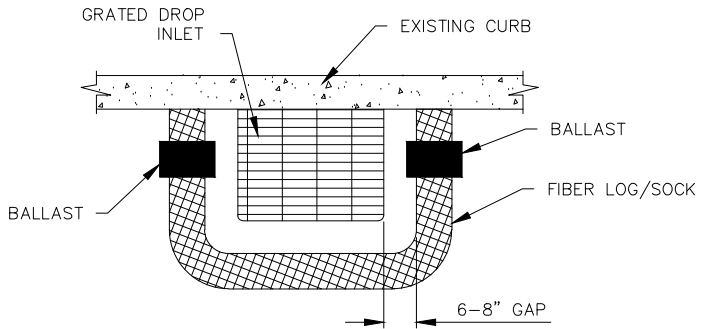
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EROSION CONTROL

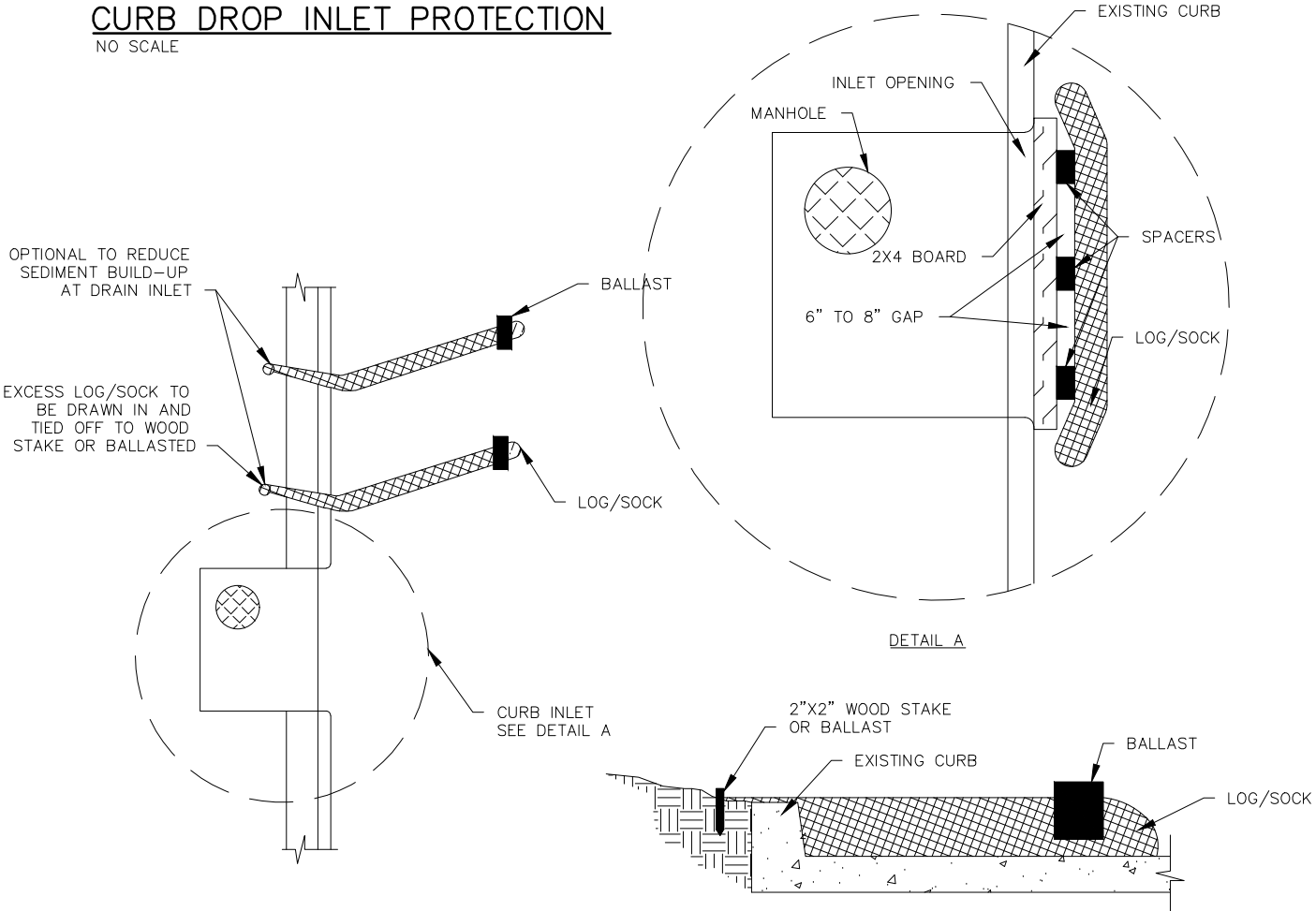


DETAIL A
SILTATION CONTROL DETAILS
NO SCALE

- GENERAL NOTES:
1. SILTATION CONTROL DEVICES TO REMAIN IN PLACE UNTIL ADEQUATE VEGETATIVE GROWTH ENSURES NO FURTHER EROSION OF THE SOIL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE SILT FENCE.
 2. SILT FENCES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENTATION WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 OF THE HEIGHT OF THE SILT FENCE.
 3. ATTACHMENT OF THE GEOTEXTILE FABRIC TO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
 4. SILTATION CONTROL SHALL BE INSTALLED AS NEEDED OR AS DIRECTED BY THE ENGINEER TO ENSURE THAT NO SILT LEAVES THE CONSTRUCTION AREA.
 5. USE SILT FENCE FOR ALL SLOPES OVER 3 FEET IN HEIGHT.
 6. FOR FABRIC SILT FENCE:
MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2' WITH A POST AT EACH END.
SECURE FABRIC TO POSTS.
 7. SILT FENCE SHALL NOT BE USED ACROSS DRAINAGE DITCHES AND DRAINS. DITCH CHECK SHALL BE USED AS SHOWN ON SHEET EC-2 OR AS DIRECTED BY ENGINEER.
 8. CONTRACTOR SHALL USE INLET CHECK EROSION CONTROL DEVICES TO PREVENT ANY SILT OR DEBRIS FROM ENTERING ANY NEW OR EXISTING CURB INLETS DURING CONSTRUCTION.



CURB DROP INLET PROTECTION
NO SCALE



CURB INLET PROTECTION
NO SCALE

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			A.J.M.	B.B.D.
	DATE:			
	JAN. 2024			
	SCALE:			
	NOT TO SCALE			
	PROJ. NO:			
	SC21-1222			
	DWG. NO:			
	EC-1			

BRIDGE NOTES

HYDRAULIC DATA	
DRAINAGE AREA	2.86 SQUARE MILES
BASIN SLOPE	60.48 ft/mi
CHANNEL SLOPE IN THE VICINITY OF THE STRUCTURE	0.0068 ft/ft
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	2,510 CFS
DESIGN HIGH WATER ELEVATION AT THE STRUCTURE	726.45 FEET
MAXIMUM BACKWATER FOR DESIGN FREQUENCY	2.40 FEET
LOW ELEVATION OF STRUCTURE	722.55 FEET
100-YEAR DISCHARGE	2,510 CFS
APPROACH ROADWAY OVERTOPPING FREQUENCY	>100 YEAR

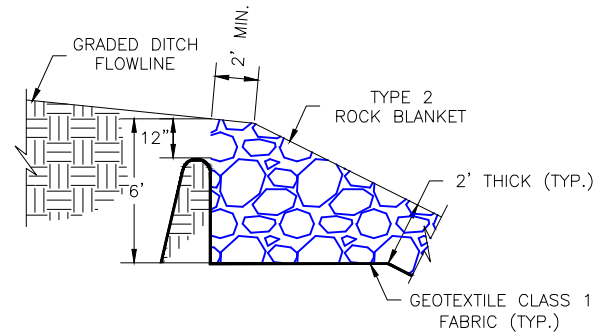
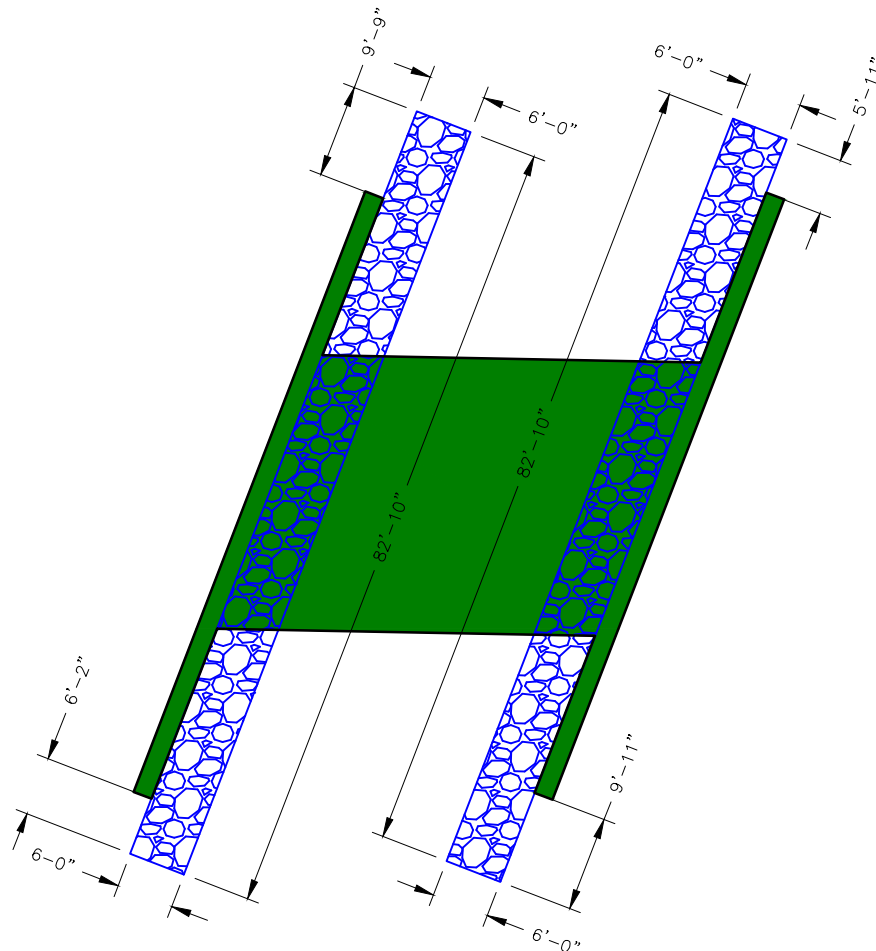
NOTE:

A PORTION OF THIS PROJECT AREA LIES WITHIN ZONE "A" OF THE FLOOD HAZARD AREA SUBJECT TO THE 1% ANNUAL CHANCE FLOOD AS SHOWN ON THE FEMA MAP FOR FRANKLIN COUNTY, MISSOURI AND INCORPORATED AREAS, MAP NUMBER 29071C0550D.

ESTIMATED QUANTITIES FOR SLAB ON STEEL OR CONCRETE BEAM	
ITEM	TOTAL
CLASS B2 CONCRETE (SUPERSTRUCTURE), CY	43.4
REINFORCING STEEL, LBS	14,840

NOTES:
SLAB CONCRETE SHALL BE CLASS B2. ALL SUPERSTRUCTURE CONCRETE
AND REINFORCING STEEL SHALL BE PAID FOR UNDER THE LINE ITEM
"SLAB ON CONCRETE BEAM" OR "SLAB ON STEEL".

STAY IN PLACE FORMS OR PREFABRICATED CONCRETE PANELS WILL NOT BE ALLOWED.



TYPICAL SECTION AT INTERSECTION OF GRADED DITCH
AND TYPE 2 ROCK BLANKET

PROPOSED STRUCTURE

SINGLE SPAN (41'-6")
PRESTRESSED CONCRETE BOX GIRDER OPTION
STEEL GIRDER OPTION
CURB-TO-CURB WIDTH = 28'-0"
OUT-TO-OUT WIDTH = 28'-8"
SKEW = 20.00° LA
GRADE = 0.00%

PROPOSED ROADWAY

TRAVELED WAY WIDTH = 24'-0"
ROADWAY WIDTH = 28'-0"
SHOULDER WIDTH = 2'-0"
NORMAL CROWN = 2.00%

GENERAL NOTES:

DESIGN SPECIFICATIONS:
2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HIGHWAY BRIDGES,
9TH EDITION.
2002 AASHTO LFD (17TH ED.) STANDARD SPECIFICATIONS (SEISMIC DETAILS)
SEISMIC PERFORMANCE CATEGORY 'A'

CONSTRUCTION SPECIFICATIONS:
MATERIALS AND CONSTRUCTION PROCEDURES SHALL CONFORM TO THE
MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 2022 AND
CURRENT SUPPLEMENTAL SPECIFICATIONS AND REVISIONS, UNLESS MODIFIED
BY THE PROJECT SPECIFICATIONS.

DESIGN LOADING:
HL-93 LOADING
FUTURE WEARING SURFACE 35 LBS./SQUARE FOOT
EARTH 120 LBS./CUBIC FOOT
EQUIVALENT FLUID PRESSURE= 60 LBS./CUBIC FT.

SUPERSTRUCTURE:
SIMPLY SUPPORTED AND NON-COMPOSITE FOR DEAD LOAD 1.
SIMPLY SUPPORTED AND COMPOSITE FOR DEAD LOAD 2 AND LIVE LOAD.

DESIGN UNIT STRESSES:	
CLASS B CONCRETE (SUBSTRUCTURE)	$f'c = 3,000$ p.s.i.
CLASS B-2 CONCRETE (SUPERSTRUCTURE)	$f'c = 4,000$ p.s.i.
REINFORCING STEEL (GRADE 60)	$f_y = 60,000$ p.s.i.
STRUCTURAL CARBON STEEL (ASTM A709 GRADE 36)	$f_y = 36,000$ p.s.i.
STEEL PILE (ASTM A709 GRADE 50)	$f_y = 50,000$ p.s.i.

ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 1057.7.4.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE SHOWN.

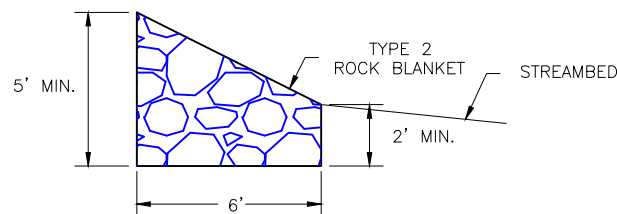
ALL BAR CHAIR SUPPORTS AND WIRE USED FOR TIEING THE REINFORCING STEEL SHALL BE EPOXY COATED OR PLASTIC COATED.

BEARINGS SHALL BE 60 DUROMETER NEOPRENE PADS.

BACKFILL SHALL NOT BE PLACED HIGHER ON ONE SIDE OF THE WALL THAN THE OTHER UNTIL AFTER THE SLAB HAS BEEN POURED.

THE PROJECT SHALL BE OPEN FOR INSPECTIONS OF THE WORK BY REPRESENTATIVES OF MODOT AND FHWA. THE CONTRACTOR SHALL GRANT ACCESS TO ALL PORTIONS OF THE WORK.

THE BRIDGE DECK SHALL BE FORMED WITH REMOVABLE FORMS.
STAY-IN-PLACE FORM WORK WILL NOT BE ALLOWED.

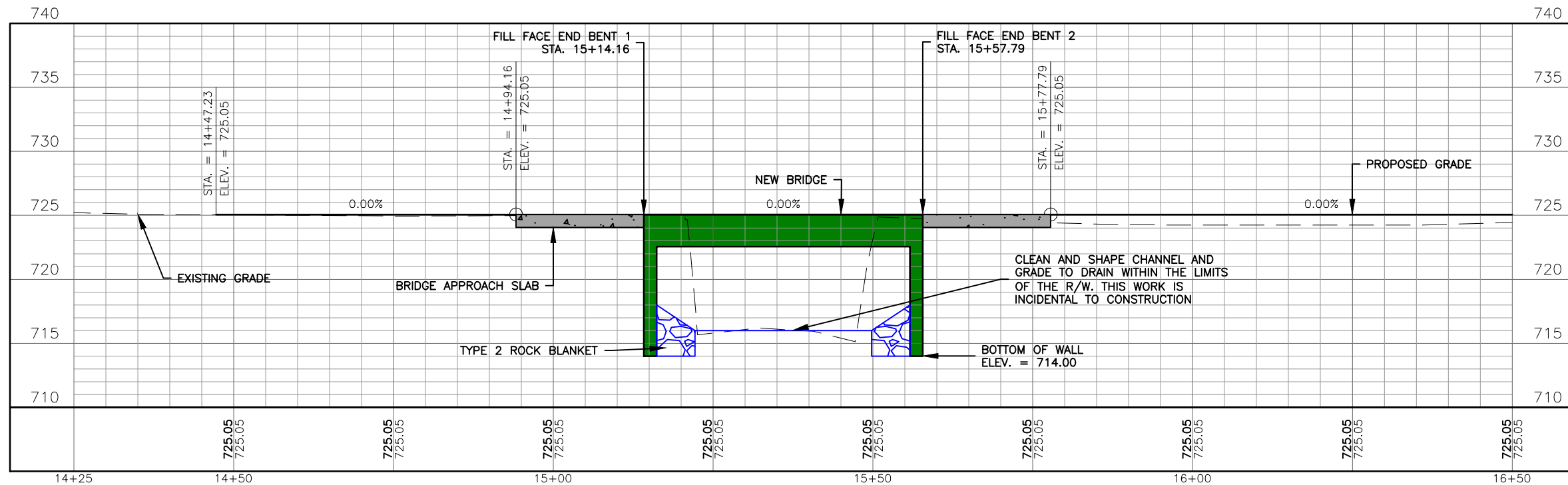
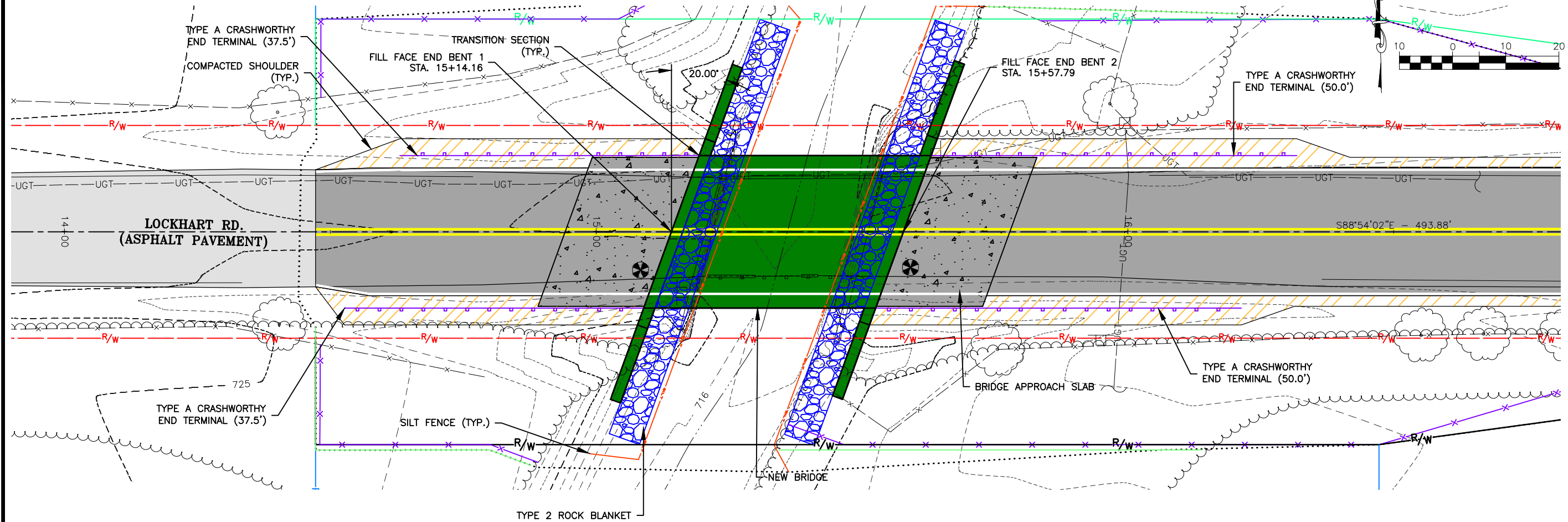


TYPICAL SECTION THROUGH LOWER END
OF TYPE 2 ROCK BLANKET

NOTE: THIS DRAWING IS NOT TO SCALE. PLEASE FOLLOW DIMENSIONS.

Drawing name: U:\sec21-1222 lockhart road bridge # 37200031 - Franklin county, mo\AUTOCAD DRAWINGS\BRIDGE PLAN AND PROFILE.dwg Tab: B-2 Plotted on: Apr 02, 2024 - 10:42am Plotted by: omuller

BRIDGE PLAN AND PROFILE



NOTE: ALL BACKFILL BEHIND END BENTS TO BE INCIDENTAL TO "CLASS 1 EXCAVATION".

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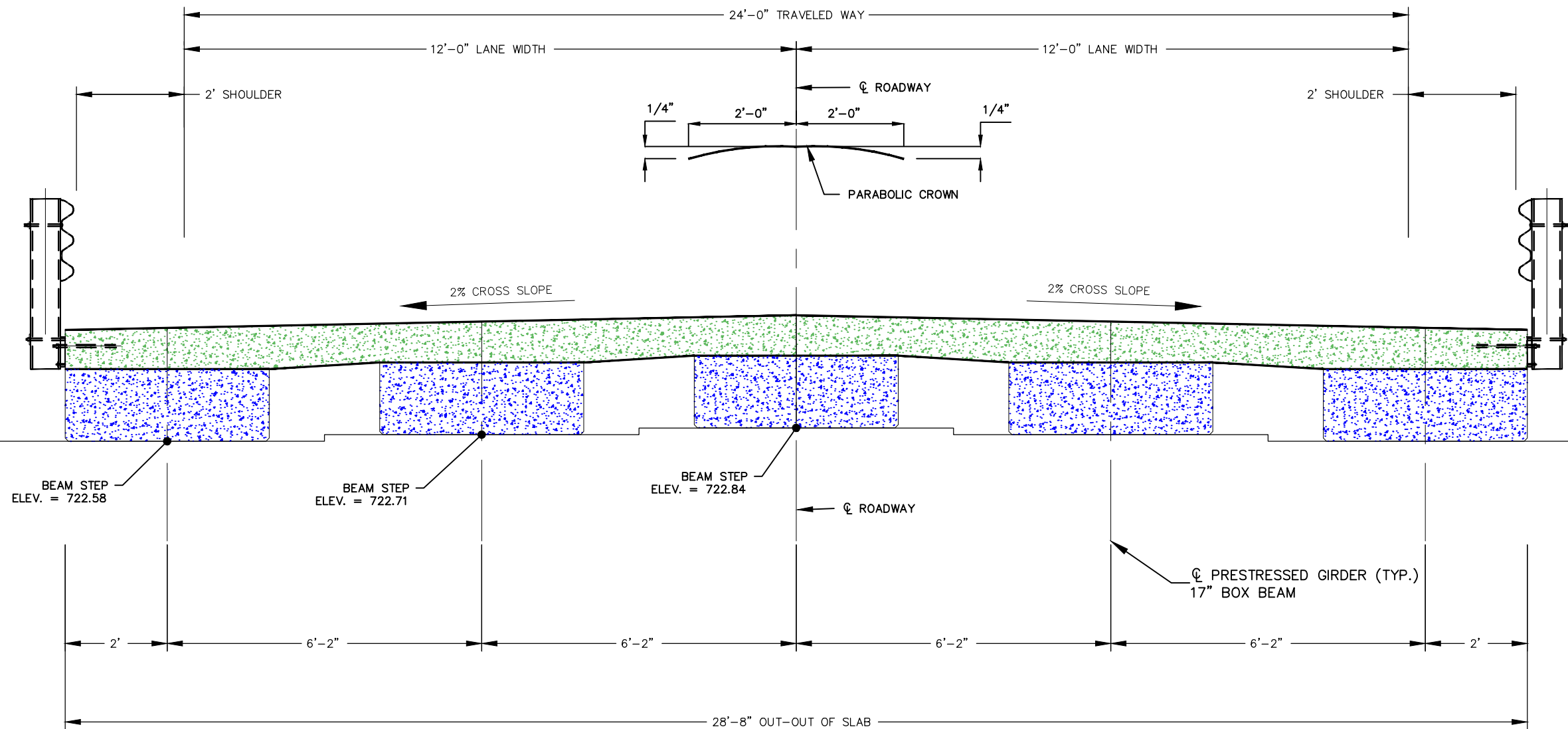
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FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

BRIDGE PLAN AND PROFILE
DATE: 1/10/24
REVISED: 1/10/24
DWN BY: A.J.M.
DATE: JAN. 2024
SCALE: 1" = 20'
PROJ. NO: SC21-1222
DWG. NO: B-2

TYPICAL BRIDGE SECTION WITH
PRESTRESSED CONCRETE GIRDER OPTION



TYPICAL BRIDGE CROSS SECTION

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NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

TYPICAL BRIDGE SECTION	DATE:	DATE:	DATE:	DATE:	DATE:
	REVISION:	REVISION:	REVISION:	REVISION:	REVISION:
	DWN. BY:	APPD. BY:	DWN. BY:	APPD. BY:	DWN. BY:
	A.J.M.	B.B.D.	A.J.M.	B.B.D.	A.J.M.
	DATE:	DATE:	DATE:	DATE:	DATE:
SCALE: NOT TO SCALE					
PROJ. NO: SC21-1222					
DWG. NO: B-3					

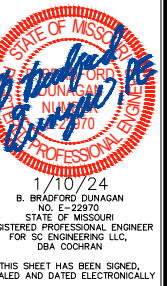
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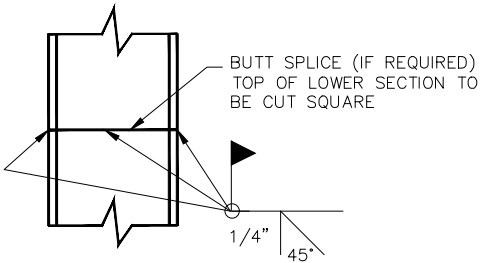


LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

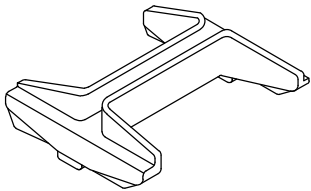
RETENTION:							
DATE:							
DWN. BY:	A. J. M.			APPD. BY: B. B. D.			
DATE:	JAN. 2024						
SCALE:	NOT TO SCALE						
PROJ. NO:	SC21-1222						
DWG. NO:	B-4						

Drawing name: J:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\END_BENT_DETAILS.dwg Tab: EB Details Plotted on: Jan 12, 2024 - 10:00am Plotted by: amuelier

PILING DETAILS



DETAIL OF STEEL PILE SPLICE



NOTES:

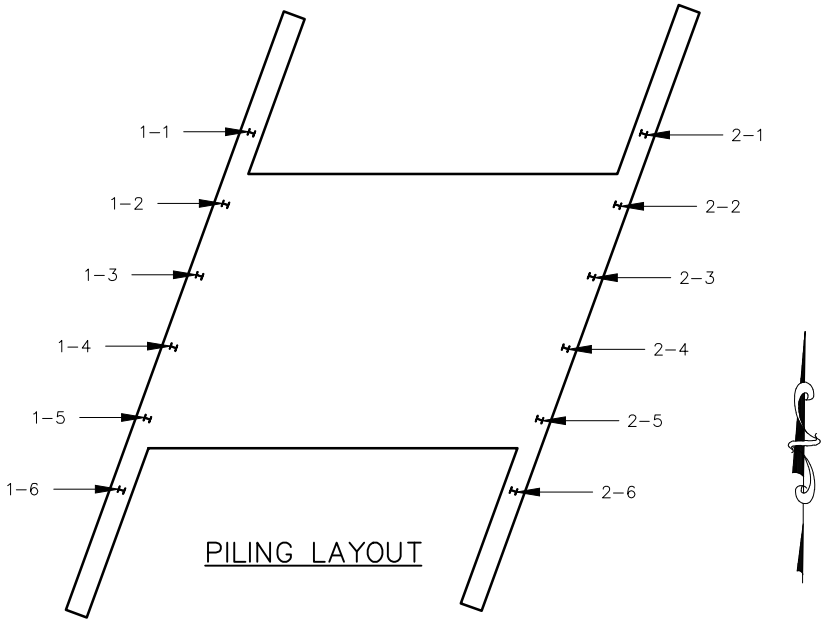
- 1. IF PILE POINT REINFORCEMENT IS SPECIFIED IN THE "PILE AND FOOTING DATA" TABLE ON THIS SHEET, THE CONTRACTOR SHALL USE PREFABRICATED "PILE POINT REINFORCEMENT".
- 2. PAYMENT FOR THE PILE POINT REINFORCEMENT SHALL BE AT THE CONTRACT UNIT PRICE, PER EACH.
- 3. POINTS ON THE "PILE POINT REINFORCEMENT" SHALL BE MADE IN ONE PIECE OF ASTM A27 65/35 CAST STEEL.
- 4. POINTS ON THE "PILE POINT REINFORCEMENT" SHALL HAVE CONTINUOUS BACK-UP ON THE ENTIRE INNER EDGES OF THE "H" FOR THE PURPOSE OF BACKING UP WELDS ALONG THE OUTSIDE OF THE FLANGES, AND ENCASING THE WEB OF THE PILE TO ASSURE ALIGNMENT AND PREVENT SEPARATIONS.

PILE POINT REINFORCEMENT

PILE AND FOOTING DATA			
BEARING PILE	BENT NO.	1	2
	PILE TYPE AND SIZE	HP10 X 42	HP10 X 42
	NUMBER	6	6
	APPROXIMATE LENGTH FT.	30	30
	DESIGN BEARING* KIPS	350	350
	PILE DRIVING VERIFICATION METHOD	DF	DF
	HAMMER ENERGY REQUIRED FT.-LBS.	23000	23000
	PILE POINT REINFORCEMENT REQUIRED	YES	YES
	PREBORE FOR PILING ELEVATION	NO	NO

*MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE WHERE DF=FWHA-MODIFIED GATES DYNAMIC FORMULA

AS—BUILT PILE TABLE											
BENT NO. 1 PILE	PILE NUMBER	LENGTH IN PLACE (FEET)	HAMMER ENERGY (FT—LBS)	INCHES PER 10 BLOWS	COMPUTED BEARING (TONS)	BENT NO. 2 PILE	PILE NUMBER	LENGTH IN PLACE (FEET)	HAMMER ENERGY (FT—LBS)	INCHES PER 10 BLOWS	COMPUTED BEARING (TONS)
	1—1						2—1				
	1—2						2—2				
	1—3						2—3				
	1—4						2—4				
	1—5						2—5				
	1—6						2—6				



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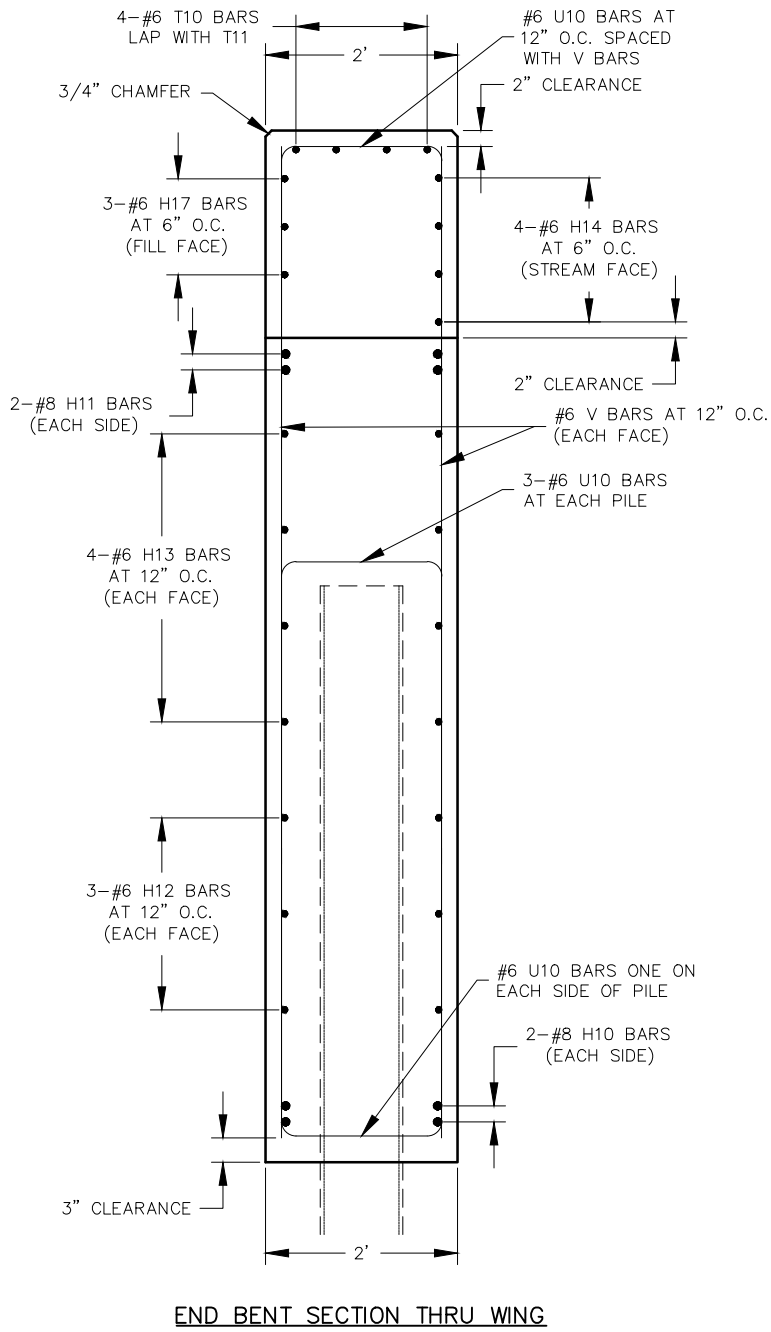
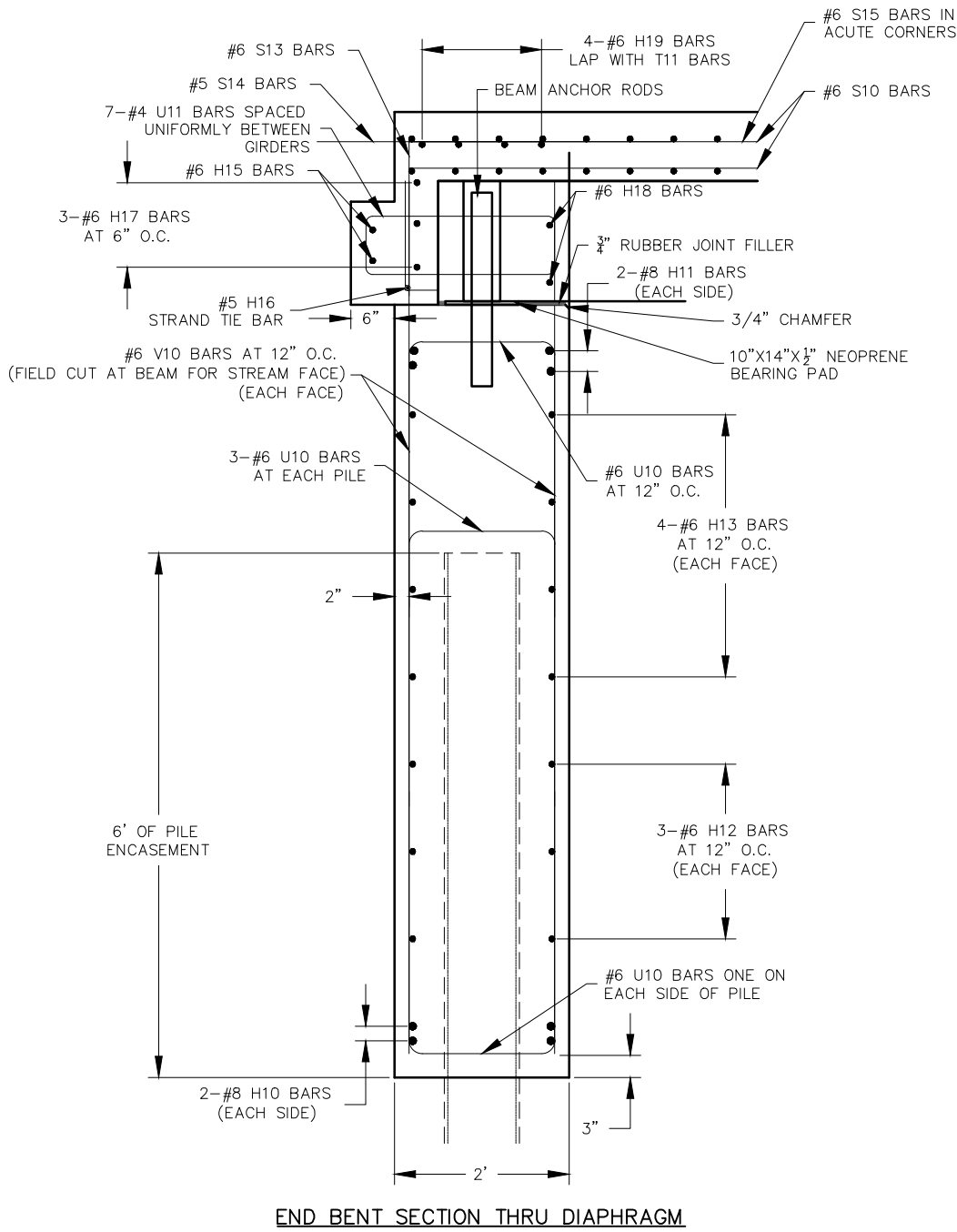
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FRANKLIN COUNTY, MISSOURI

PILINGS DETAILS

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DATE: JAN. 2024			
SCALE: NOT TO SCALE			
PROJ. NO: SC21-1222			
DWG. NO: B-5			

Drawing name: J:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\END BENTS.dwg Tab: B-6 Plotted on: Jan 12, 2024 - 10:00am Plotted by: amuller

END BENT SECTIONS



END BENT SECTIONS

DATE:	DATE:	DATE:
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B-6		

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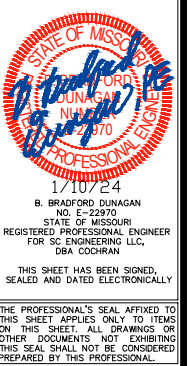
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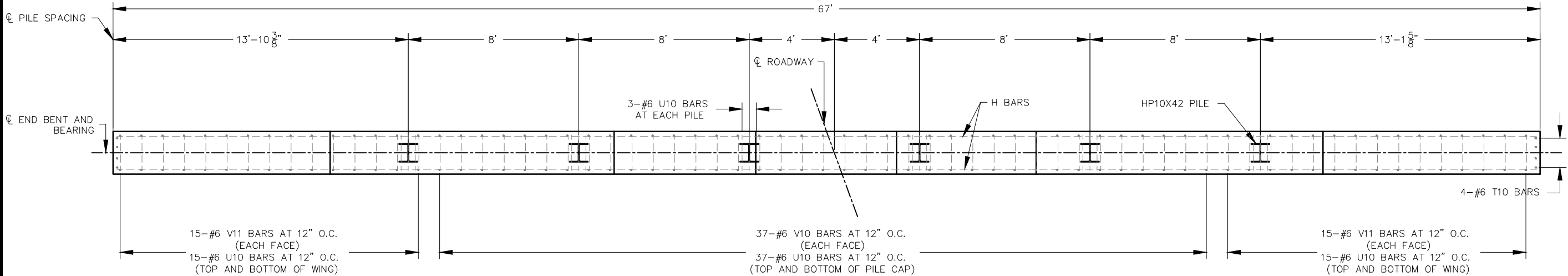


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END BENT PLAN



END BENT PLAN AT CONSTRUCTION JOINT

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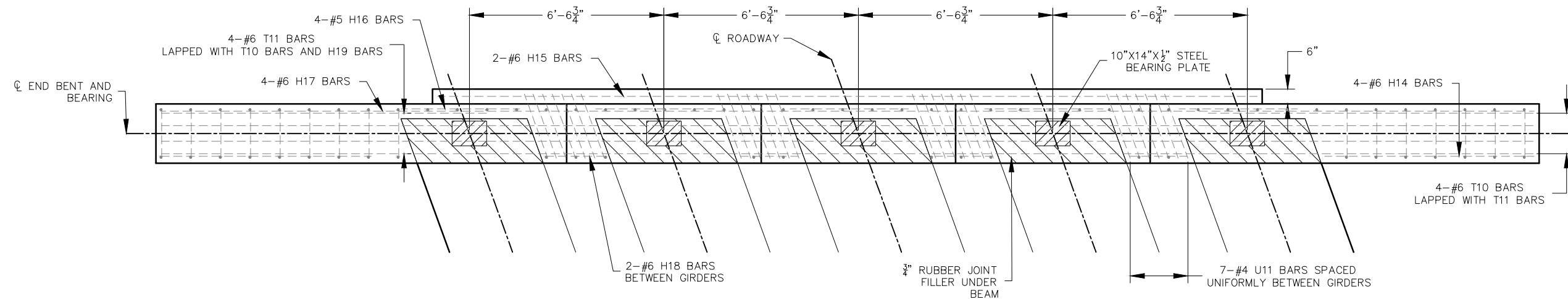
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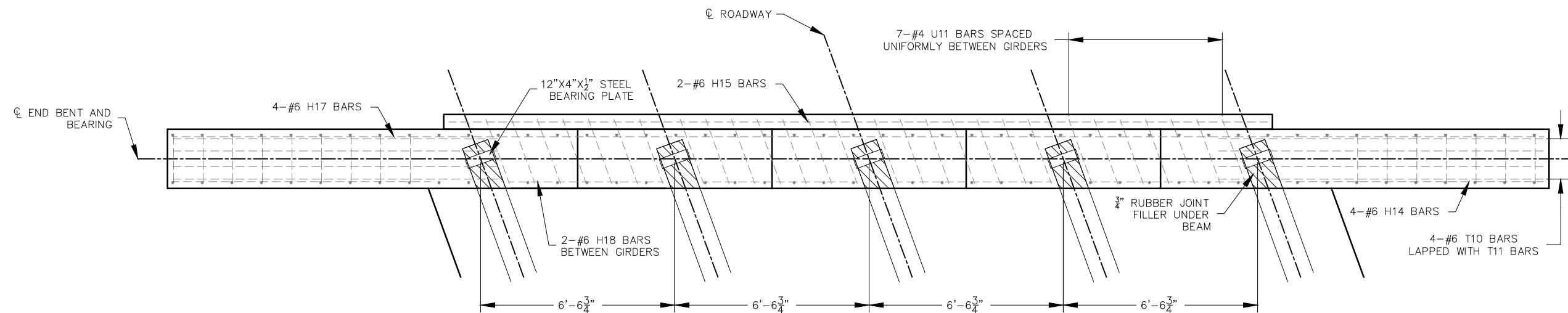
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	A.J.M.	B.B.D.			
	DATE:				
	JAN. 2024				
	SCALE:	NOT TO SCALE			
	PROJ. NO:	SC21-1222			
	DWG. NO:	B-8			

END BENT PLAN



END BENT PLAN AT DIAPHRAGM – CONCRETE BEAMS



END BENT PLAN AT DIAPHRAGM – STEEL BEAMS

NOTE: V10 BARS THAT FALL BENEATH THE GIRDERS SHALL BE FIELD CUT AND EPOXY COATED. H18 BARS SHALL BE CUT (AND EPOXY COATED) TO FIT BETWEEN GIRDERS.



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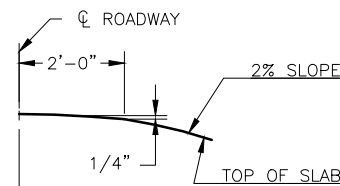
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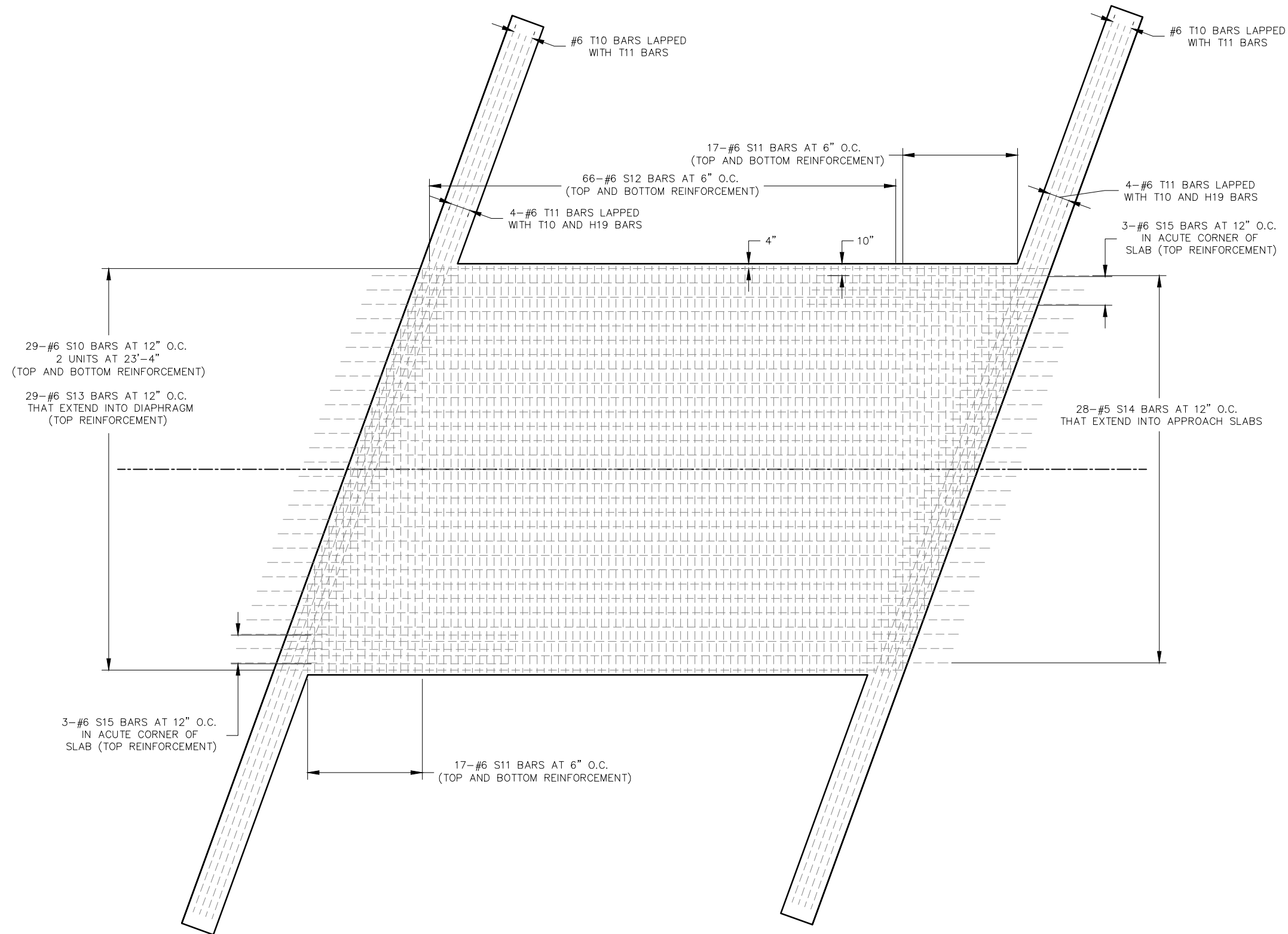


DETAIL "A"

- | | | | | | |
|--------------------|-----------|--------------|--|-----------|--|
| SLAB REINFORCEMENT | REV: | | | | |
| | DATE: | | | | |
| | DWN. BY: | A.J.M. | | APPD. BY: | |
| | | | | B.B.D. | |
| | DATE: | JAN. 2024 | | | |
| | SCALE: | NOT TO SCALE | | | |
| | PROJ. NO: | SC21-1222 | | | |
| | DWG. NO: | <i>B-10</i> | | | |

B-10

SLAB REINFORCEMENT



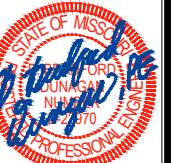
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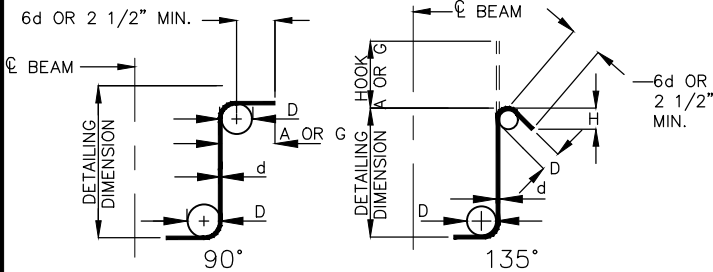
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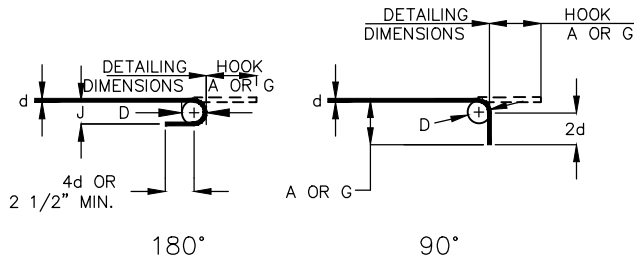
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	REF/IRON:								
	DWN. BY:	A.J.M.	APPD. BY:	B.B.D.					
	DATE:	JAN. 2024							
	SCALE:	NOT TO SCALE							
	PROJ. NO:	SC21-1222							
	DWG. NO:	B-11							

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STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#3	1 1/2"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	8"	7"	4 1/2"

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



SIZE OF 180° HOOKS (GRADE 40 KSI)

D=5d FOR #3 THROUGH #11
D=10d FOR #14 AND #18

SIZE OF 90° HOOKS (ALL GRADES) AND 180° HOOKS (GRADE 60 KSI)

D=6d FOR #3 THROUGH #8
D=8d FOR #9, #10 AND #11
D=10d FOR #14 AND #18

END HOOK DIMENSIONS					
BAR SIZE	180° HOOKS				90° HOOKS
	GRADE 40		GRADE 60		ALL GRADES
	A OR G	J	A OR G	J	A OR G
#3	5"	2 3/4"	5"	3"	6"
#4	6"	3 1/2"	6"	4"	8"
#5	7"	4 1/2"	7"	5"	10"
#6	8"	5 1/4"	8"	6"	12"
#7	9"	6 1/4"	10"	7"	14"
#8	10"	7"	11"	8"	16"
#9	12"	8"	15"	11 1/4"	19"
#10	13"	9"	17"	12 3/4"	22"
#11	14"	10"	19"	14 1/4"	2'-0"
#14	2'-2"	20 1/2"	2'-2"	20 1/2"	2'-7"
#18	2'-11"	2'-3"	2'-11"	2'-3"	3'-5"

NOTE:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREES 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 LOCATED IN THE SUBSTRUCTURE

V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE
NO. EACH = NUMBER OF BARS OF EACH LENGTH.

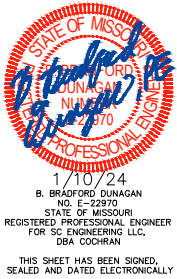
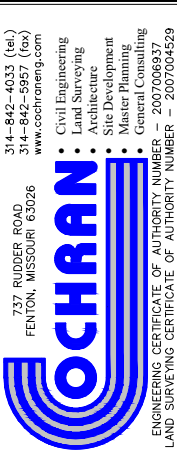
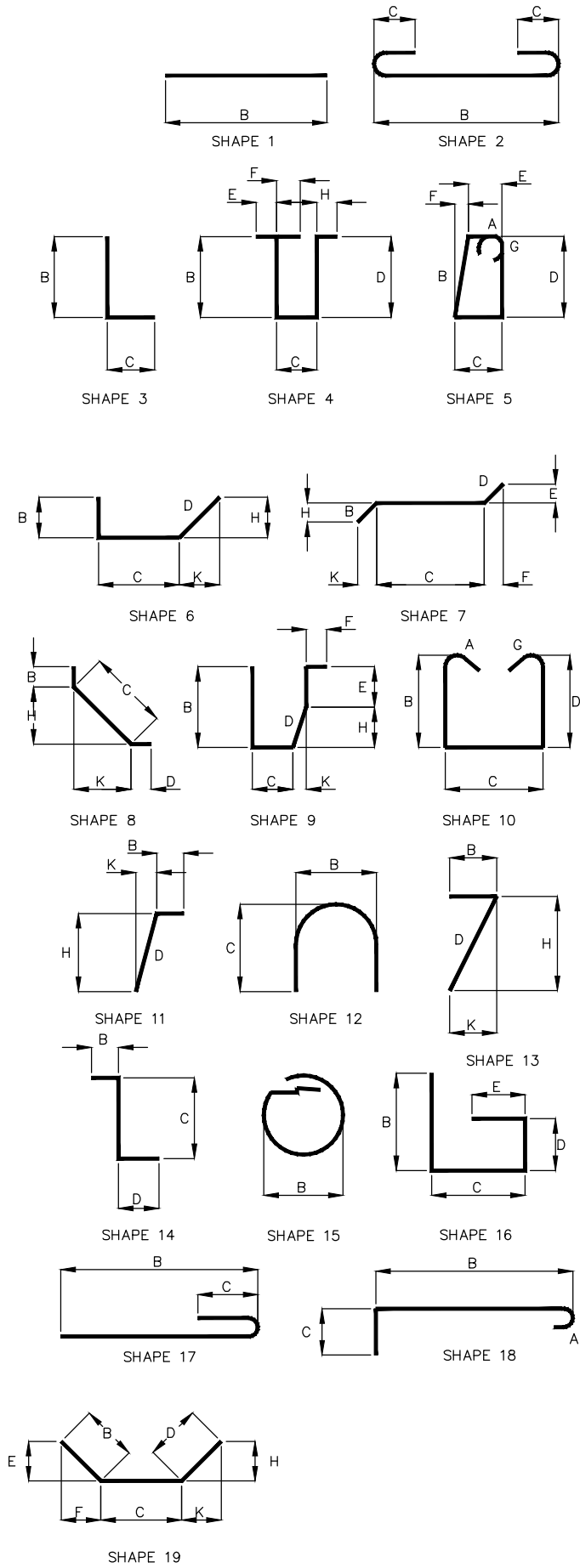
DIMENSIONS SHOWN ARE OUT TO OUT DIMENSIONS. LENGTH SHOWN IS MEASURED ALONG CENTERLINE OF BAR.

LENGTHS AND QUANTITIES OF BARS SHOWN IN TABLE ARE FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL QUANTITIES AND DIMENSIONS PRIOR TO FABRICATING STEEL.

FOR SHAPES 2 AND 17, USE STANDARD HOOK IF NO "C" DIMENSION IS GIVEN.

BILL OF REINFORCING

BILL OF REINFORCING																			
									Substructure Steel (LBS.)									13,134	
(E)	NO. REQUIRED	SIZE	MARK	LOCATION	SHAPE	STIRRUP	SUBSTRUCTURE	VARIABLES	NO EACH	B	C	D	E	F	H	K	LENGTH	TOTAL WEIGHT	
END BENT #1																			
E	8	8	H10	BEAM/WING	1		X			35.33							35.33	755	
E	8	8	H11	BEAM/WING	1		X			25.66							25.66	548	
E	12	6	H12	BEAM/WING	1		X			34.83							34.83	628	
E	16	6	H13	BEAM/WING	1		X	V	4	33.30							33.30	720	
E		6	H13	inc. = 2.22'	1		X	V	4	26.64							26.64		
E	74	6	V10	BEAM/DIAPHRAGM	1		X			10.33							10.33	1,148	
E	60	6	V11	BEAM/WING	1		X	V	4	10.08							10.08	624	
E		6	V11	inc. = 0.45'	1		X	V	4	3.77							3.77		
E	166	6	U10	BEAM/WING	4		X			3.00	1.67	3.00					7.67	1,912	
E	8	6	T10	WNG	11		X			3.00		16.25			14.88	6.66	19.25	231	
END BENT #2 SIMILAR																			
																		6,567	
DIAPHRAGM - END BENT #1																			
E	8	6	H14	WNG	1			V	2	7.14							7.14	209	
E		6	H14	inc. = 1.11'	1			V	2	3.82							3.82		
E	2	6	H15	BAS NOTCH	1					27.67							27.67	83	
E	5	5	H16	DIAPHRAGM	1					4.00							4.00	21	
E	6	6	H17	DIAPHRAGM	1					24.67							24.67	222	
E	8	6	H18	DIAPHRAGM	1					5.25							5.25	63	
E	4	6	H19	DIAPHRAGM	1					30.50							30.50	183	
E	8	6	T11	DIAPHRAGM/WING	11					3.17		6.25			2.57	5.70	9.42	113	
E	28	4	U11	DIAPHRAGM	5	X				2.30	0.67	2.30	0.67				6.68	125	
DIAPHRAGM - END BENT #2 SIMI																			
																		1,020	
SLAB																			
E	116	6	S10	SLAB	1					23.33							23.33	4,065	
E	68	6	S11	SLAB	1			V	4	28.31							28.31	1,769	
E		6	S11	inc. = 1.37	1			V	4	6.33							6.33		
E	132	6	S12	SLAB	1					28.33							28.33	5,617	
E	58	6	S13	SLAB/DIAPHRAGM	3					8.00	1.75						9.75	849	
E	56	5	S14	APPROACH/SLAB	1					6.00							6.00	350	
E	6	6	S15	SLAB	1					16.00							16.00	144	



LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

BILL OF REINFORCING STEEL		REVISION	
DATE:		DATE:	
DWN. BY:	A.J.M.	APPD. BY:	B.B.D.
DATE:	JAN. 2024	DATE:	
SCALE:	NOT TO SCALE	DATE:	
PROJ. NO:	SC21-1222	DATE:	
DWG. NO:		DATE:	
B-12			

Drawing name: j:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\BRIDGE APPROACH SLABS.dwg
 Tab: B-13
 Plotted on: Jan 12, 2024 - 10:00am
 Plotted by: amuelier



BILL OF REINFORCING STEEL							
NO.	SIZE & MARK	VARIES	NO.	ACTUAL LENGTH	TOTAL WEIGHT	BENDING DIAGRAM	
E	56	#7 D1		19'-8"			
E	112	#8 D2		19'-8"			
E	120	#4 D4		29'-5"			
E	16	#6 D5		29'-5"			
E	56	#4 D6		7'-11"			

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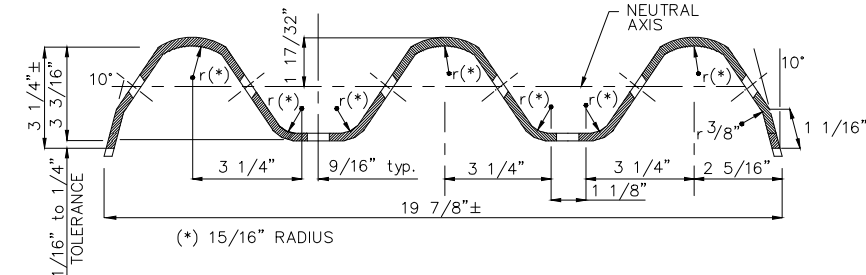
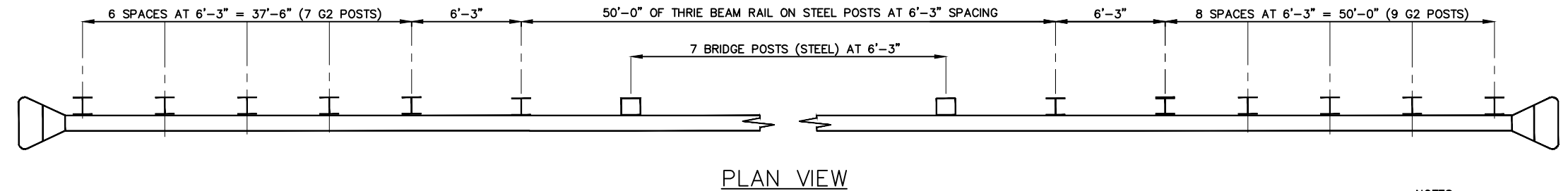
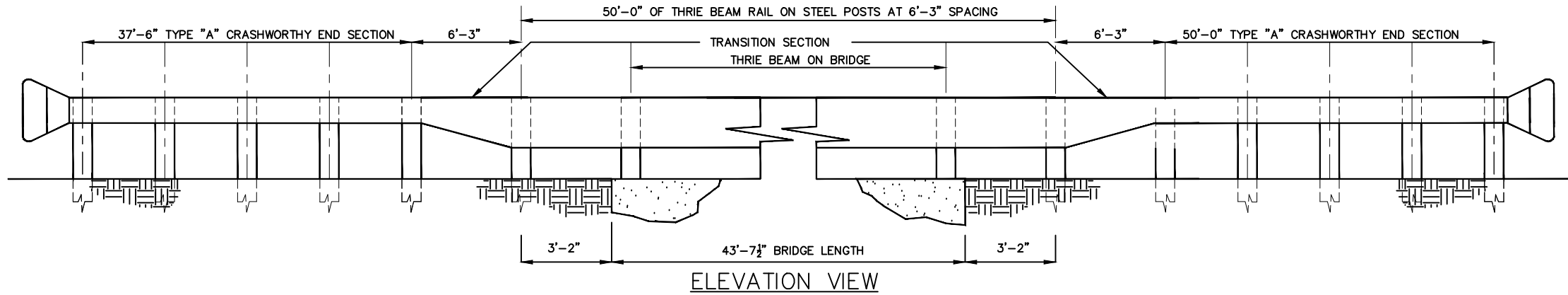
LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

BRIDGE APPROACH SLAB	DATE:	REVISION:							
	DWN. BY:	APPD. BY:							
	A. J. M.	B. B. D.							
	DATE:								
	JAN. 2024								
	SCALE:								
	NOT TO SCALE								
	PROJ. NO:								
	SC21-1222								
	DWG. NO:								
	B-13								

Drawing name: I:\sec21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\SL-1 BRIDGE RAIL.dwg Tab: B-14 Plotted on: Jun 12, 2024 - 10:00am Plotted by: amueller

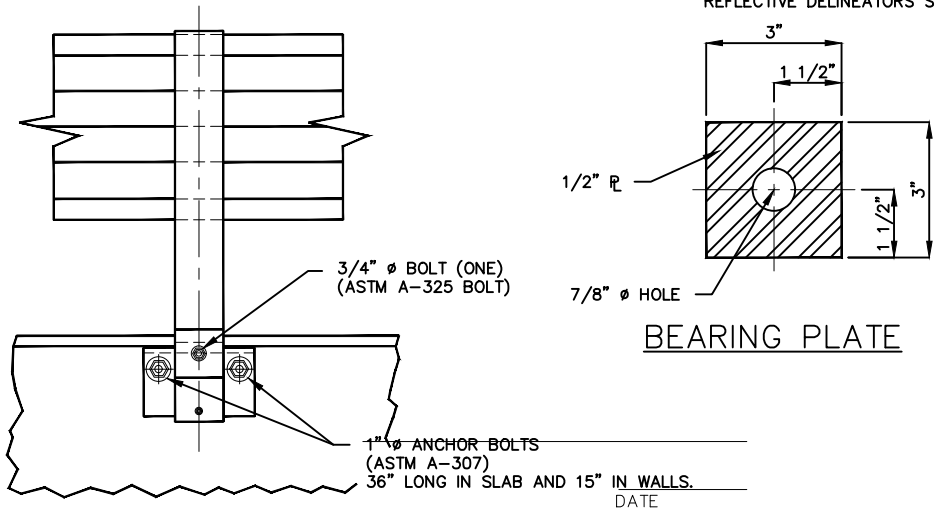
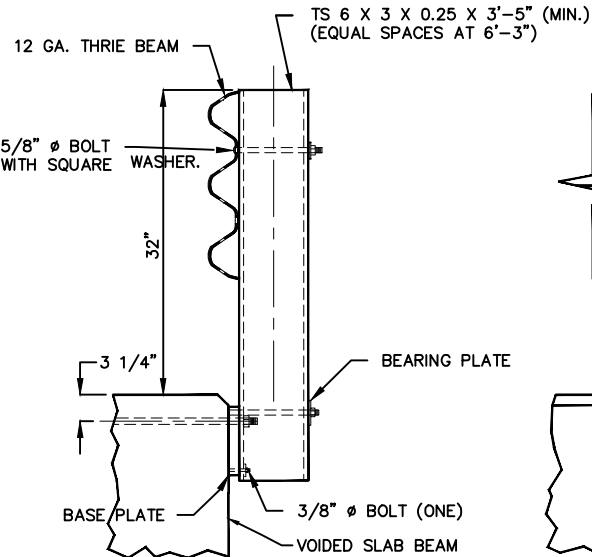
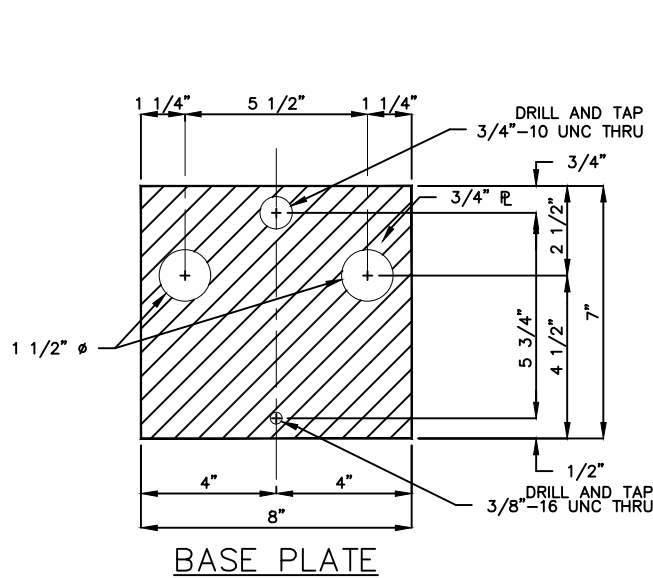
WEST END

EAST END



SECTION THRU THRIE BEAM RAIL

(*) VERIFY BY RAIL TRANSITION SUPPLIER.



NOTES:

THE THRIE BEAM RAIL, END SHOE AND THE TRANSITION SECTION FOR THE BRIDGE ANCHOR SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 2.

FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 1040 OF THE MISSOURI STANDARD SPECIFICATIONS.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1 3/4" X 3/16" MIN.) AND FLAT, OR WHEN NECESSARY, OF SUCH DESIGN AS TO FIT THE CONTOUR OF THE BEAM. WASHERS SHALL HAVE A 11/16" X 1" SLOTTED HOLE.

USE 5/8" BUTTON HEAD, OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS. (THICKNESS OF HEX NUTS = 3/8")

ALL LAP SPLICES SHALL BE MADE IN THE DIRECTION OF TRAFFIC.

DECK ANCHORAGE OF THE POST ASSEMBLY SHALL BE PROVIDED BY TWO 1" DIA. ANCHOR BOLTS, 36" LONG OR EQUIVALENT DESIGN ACCORDING TO THE LATEST AASHTO BRIDGE SPECIFICATION.

G2 POSTS AND POSTS IN EMBANKMENT SHALL BE W6 X 9.

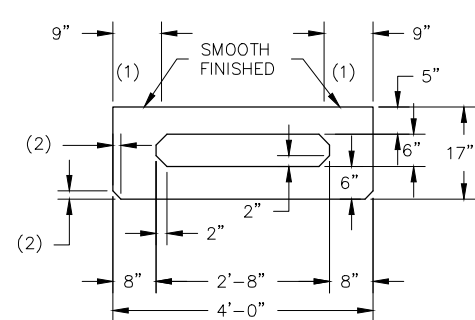
THRIE BEAM RAIL SHALL BE PROVIDED IN 12'-6" MINIMUM SECTION LENGTHS.

SHOP DRAWINGS SHALL BE SUBMITTED FOR BRIDGE RAIL AND END TERMINALS PRIOR TO FABRICATION.

REFLECTIVE DELINEATORS SHALL BE PLACED ON RAIL AT 50' MAXIMUM SPACING.

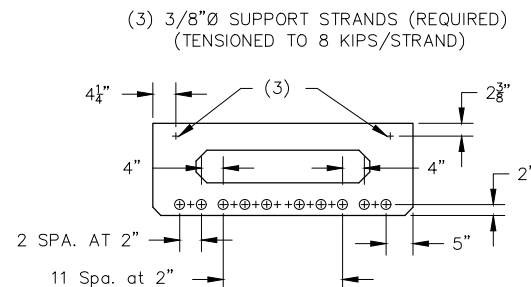
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

Bradford Dunagan No. E-22970
Registered Professional Engineer
State of Missouri for Cochran



(1) FABRICATOR SHALL APPLY A BOND BREAKER TO THIS REGION EXCLUDING WHERE JOINT FILLER WILL BE APPLIED

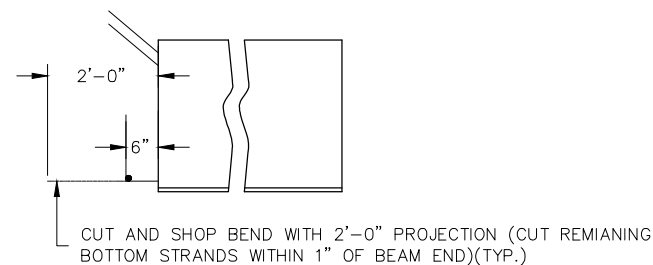
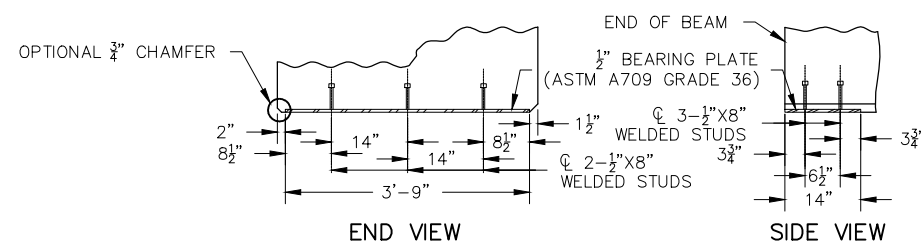
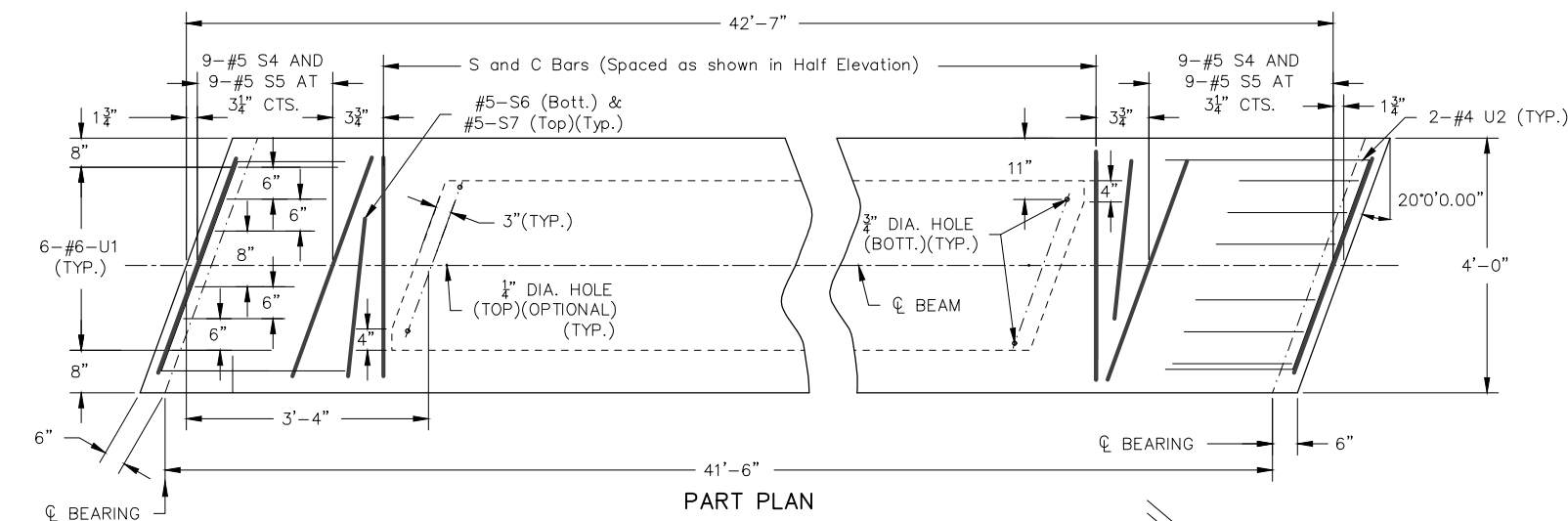
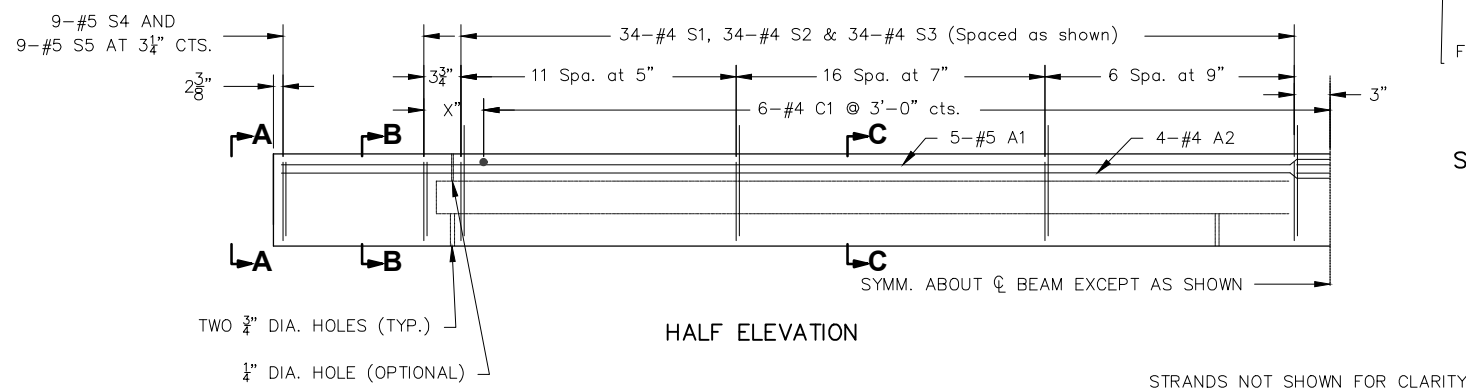
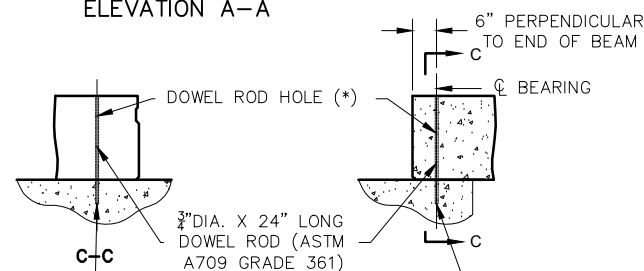
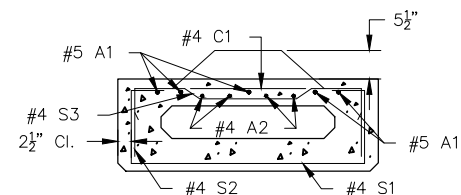
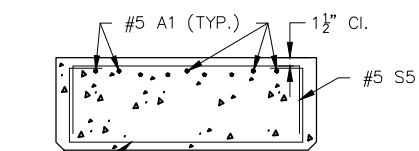
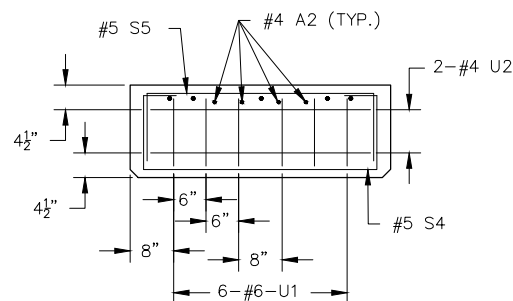
(2) 1 $\frac{1}{2}$ " (TYP.) (3" OPTIONAL)



ALL STRANDS ARE FULLY BONDED UNLESS OTHERWISE NOTED.

+ INDICATES PRESTRESSING STRAND.

○ INDICATES CUT AND SHOP BEND WITH 2'-0" PROJECTION.



BILL OF REINFORCING STEEL – EACH BEAM				BENDING DIAGRAM	
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE		
10	5 A1	42'-6"	20		
8	4 A2	42'-6"	20		
11	4 C1	3'-7"	20		
68	4 S1	6'-4"	10		
68	4 S2	6'-2"	51		
68	4 S3	4'-6"	50		
18	5 S4	6'-8"	10		
18	5 S5	5'-10"	10		
2	5 S6	5'-8"	10		
2	5 S7	4'-10"	10		
12	6 U1	4'-3"	10		
4	4 U2	9'-0"	10		

NOTES:
ALL DIMENSION ARE OUT TO OUT. USE SYMMETRY FOR DIMENSIONS NOT SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP, AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1", UNLESS OTHERWISE SHOWN.

ALL REINFORCEMENTS SHALL BE GRADE 60.

ALL BARS SHALL BE EPOXY COATED.

CAMBER AT ERECTION: $\frac{7}{8}$ "

CAMBER AFTER SLAB IS POURED: $\frac{3}{8}$ "

GENERAL NOTES:
CONCRETE FOR PRESTRESSED BEAMS SHALL BE CLASS A-1 WITH $f'_c = 8,000$ PSI

USE 18 STRANDS, 0.6" DIA. GRADE 270, WITH AN INITIAL PRESTRESS FORCE OF 43.94 KIPS. 1 STRAND = 790 KIPS

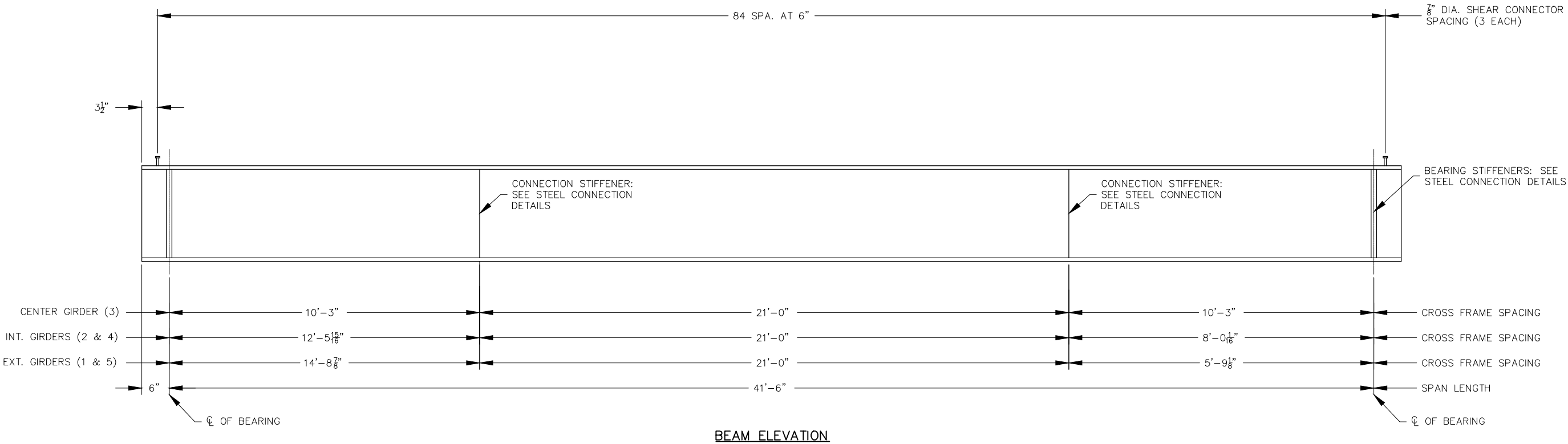
PRETENSIONED MEMBER SHALL BE IN ACCORDANCE WITH SEC 1029.

FABRICATOR SHALL BE RESPONSIBLE FOR LOCATION AND DESIGN OF LIFTING DEVICES.

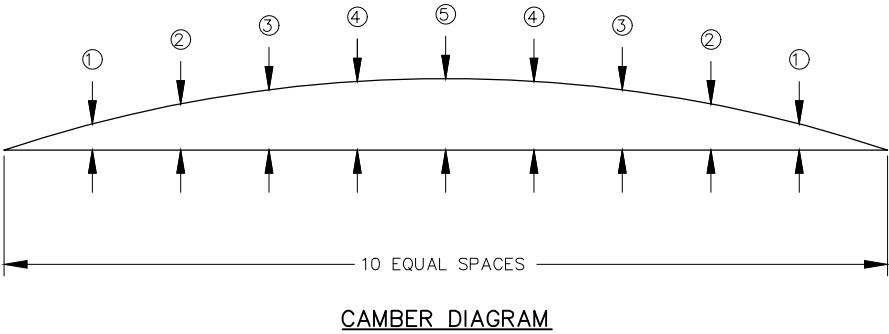
EXTERIOR AND INTERIOR BEAMS ARE THE SAME EXCEPT: COIL TIES, APPLICATION OF BOND BREAKER, COIL INSERTS FOR SLAB DRAINS.

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STEEL BEAM DETAILS



STEEL D.L. CAMBER - IN.					TOTAL D.L. CAMBER - IN.				
①	②	③	④	⑤	①	②	③	④	⑤
0.04"	0.08"	0.11"	0.13"	0.14"	0.59"	1.11"	1.52"	1.79"	1.88"



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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI

1/10/24
B. BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

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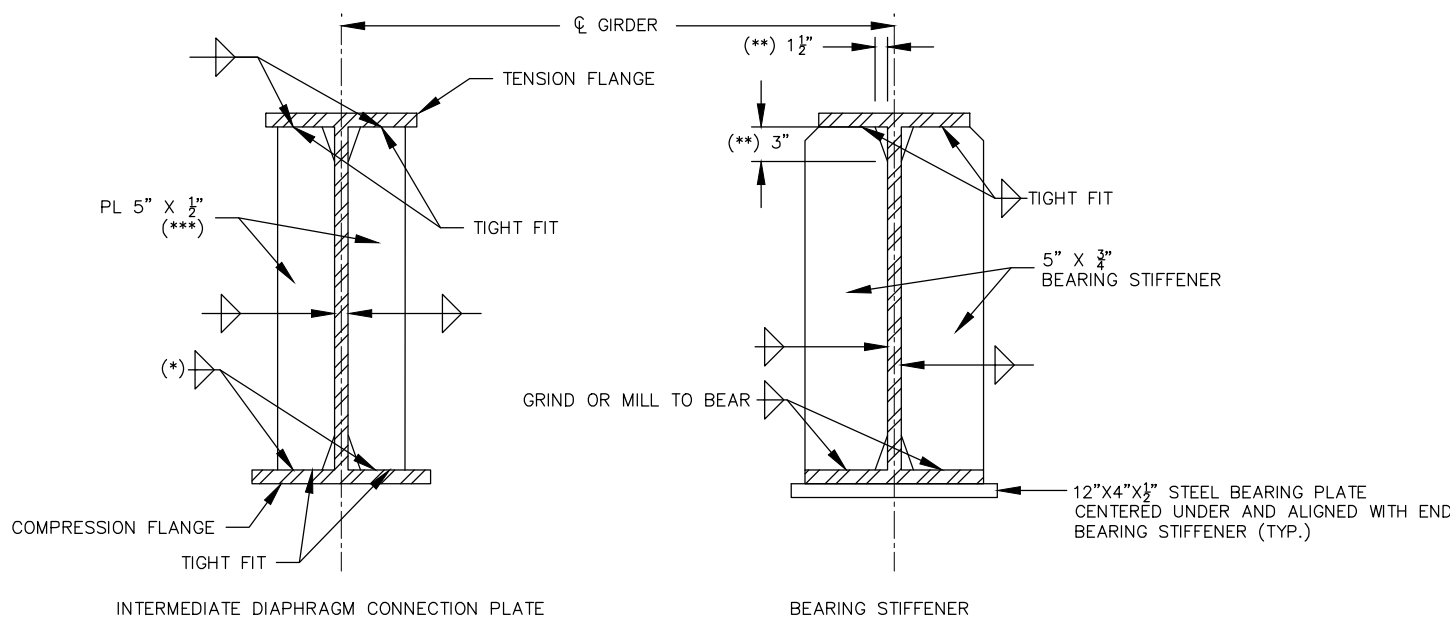
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LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

STEEL BEAM DETAILS

REVISION:									
DATE:									
DWN. BY:	A.J.M.	APP'D. BY:	B.B.D.						
DATE:	JAN. 2024								
SCALE:	NOT TO SCALE								
PROJ. NO:	SC21-1222								
DWG. NO:	B-16								

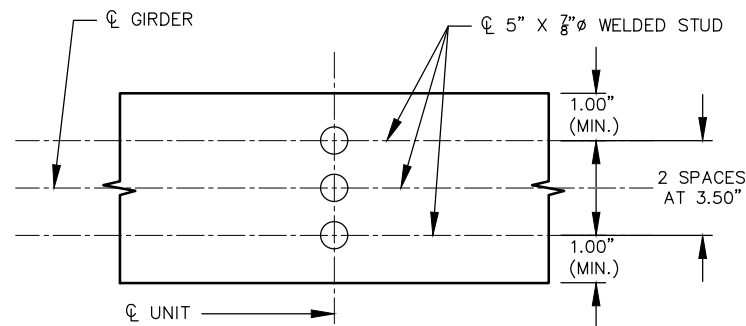
STEEL CONNECTION DETAILS



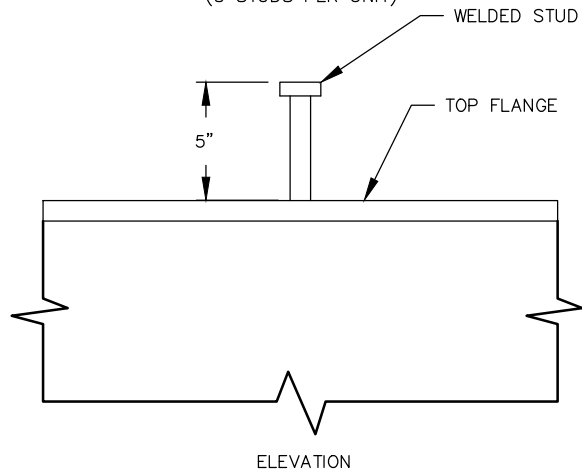
INTERMEDIATE DIAPHRAGM CONNECTION PLATE

BEARING STIFFENER

NOTE: (*): WELD TO TENSION FLANGE AS LOCATED ON ELEVATION OF GIRDER.
(**): 1 1/2" X 3" TYPICAL FOR INTERMEDIATE DIAPHRAGM CONNECTION PLATE AND BEARING STIFFENER.
(***): EXTERIOR GIRDERS REQUIRE ONLY ONE PLATE ON THE INTERIOR SIDE OF GIRDER.

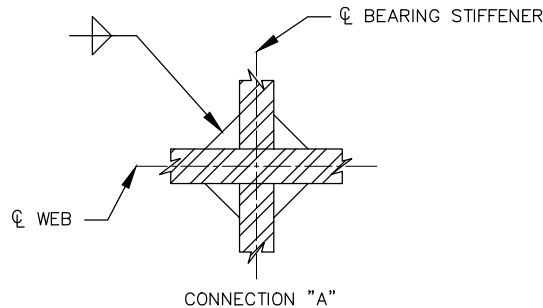
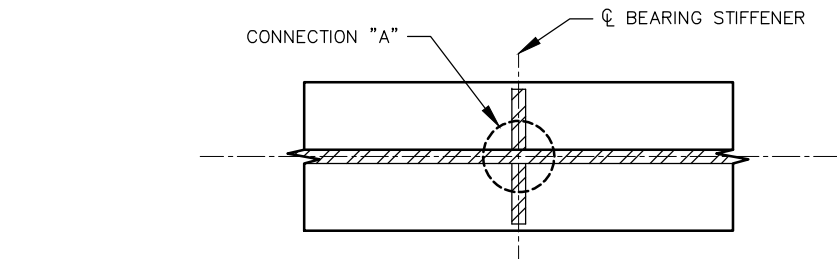


PLAN OF STUD CONNECTION
(3 STUDS PER UNIT)



DETAILS OF SHEAR CONNECTORS

NOTE: WEIGHT OF 1200 LBS. OF SHEAR CONNECTORS IS INCLUDED IN THE WEIGHT OF FABRICATED STRUCTURAL CARBON STEEL.
SHEAR CONNECTORS SHALL BE A-709 GRADE 50 STEEL.



CONNECTION "A"

WELDING DETAILS

NOTE: (**): WHEN DIMENSIONS EXCEEDS 1/2", BEVEL STIFFENER PLATE AT 1:1.

DETAILS THROUGH BEVEL PLATE FOR BEARING STIFFENER

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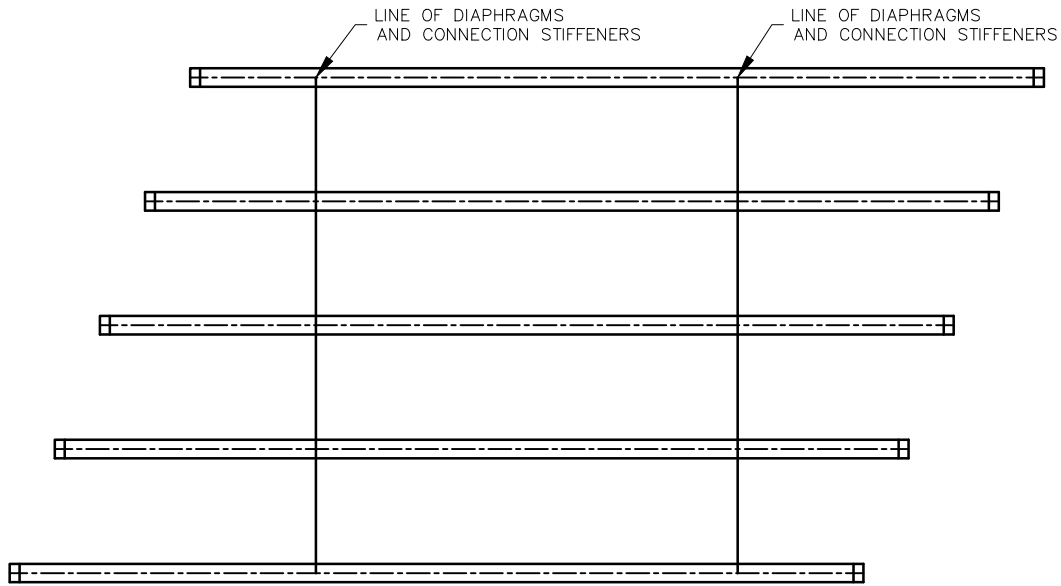
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LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

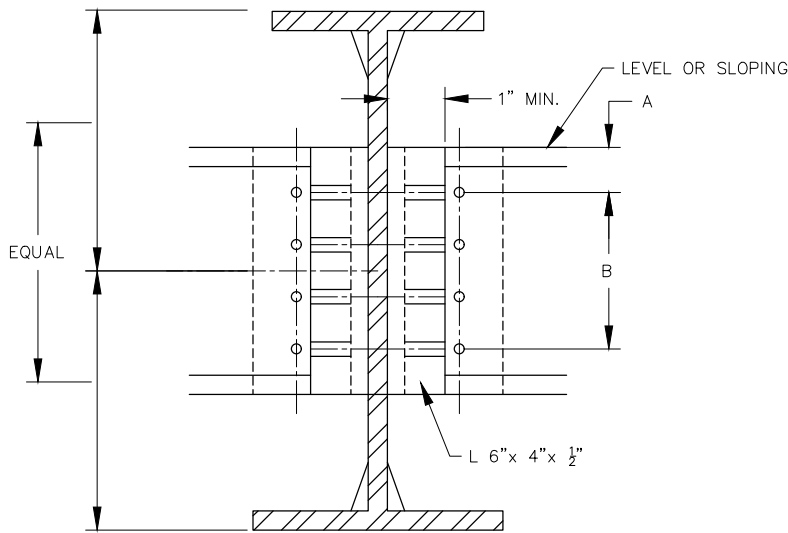
STEEL CONNECTION DETAILS	
DATE:	REVISION:
DWN. BY:	APPD. BY:
A.J.M.	B.B.D.
DATE:	JAN. 2024
SCALE:	NOT TO SCALE
PROJ. NO:	SC21-1222
DWG. NO:	B-17

Drawing name: J:\ac21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\STEEL GIRDERS.dwg Tab: B-18 Plotted on: Jan 12, 2024 - 10:01am Plotted by: amuelier

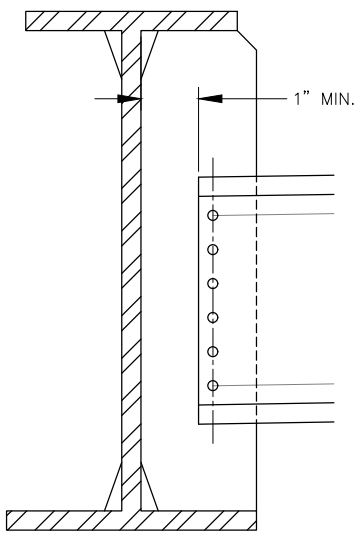
STEEL DIAPHRAGM DETAILS



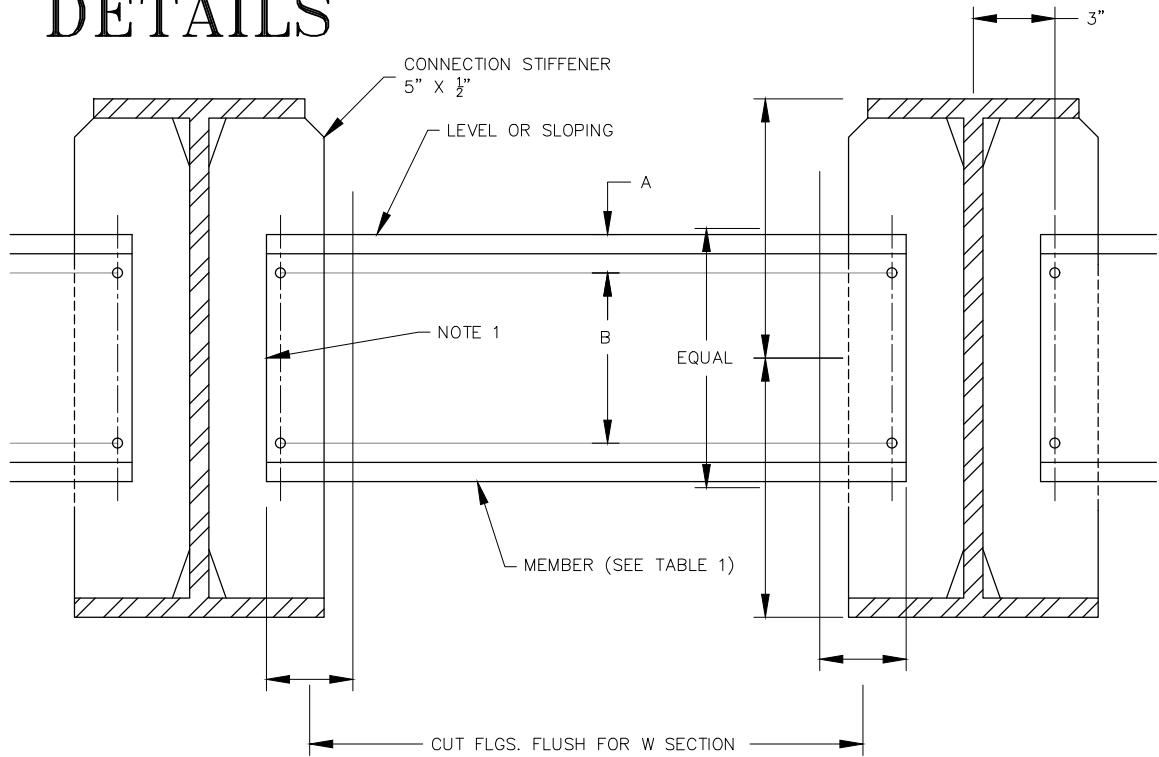
DIAPHRAGM LAYOUT



INTERMEDIATE DIAPHRAGM ALTERNATE DETAIL



OPTIONAL BENT PLATE DIAPHRAGM



INTERMEDIATE DIAPHRAGM

NOTES:

1. SLOPE DIAPHRAGM AND KEEP HOLES VERTICAL IN STIFFENER AT CONSTANT DIMENSIONS(TO KEEP ALL STIFFENERS THE SAME) AND CUT ENDS OF DIAPHRAGM SQUARE.
2. MINIMUM RADIUS AS PER AASHTO/NSBA FABRICATION S2.1 TABLE 4.3.2-1. PER SECTION 4.3.2, IF THE BEND IS PARALLEL TO DIRECTION OF ROLLING, MULTIPLY THE MINIMUM RADII BY 1.5.
3. ALL HOLES TO BE $\frac{15}{16}$ " DIA. FOR $\frac{7}{8}$ " DIA. HS BOLTS, ASTM A325 TYPE 3 W/ F436-3 WASHERS (RCT).
4. THREADS EXCLUDED FROM SHEAR PLANE.
5. BOTTOM FLANGES SHALL BE BRACED ACROSS ENTIRE WIDTH OF BRIDGE (OUTSIDE GIRDER - OUTSIDE GIRDER) AT EACH OVERHANG BRACKET DURING CONSTRUCTION
6. THE TOP AND BOTTOM FLANGE OF THE C15 CHANNEL MAY BE COPED AT THE BOLTED CONNECTIONS TO CLEAR THE FLANGES OF THE W-BEAM, IF NECESSARY.

TABLE 1			
DIAPHRAGM SIZE	DIMENSIONS		
	A	B	C
C15x33.9	3"	3 AT 3"	15"

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737 RUDDER ROAD
FENTON, MISSOURI 63026

ENGINEERING CERTIFICATE OF AUTHORITY NUMBER - 2007004529
LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

STATE OF MISSOURI
BRADFORD DUNAGAN
NO. E-22970
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
FOR SC ENGINEERING LLC,
DBA COCHRAN

1/10/24

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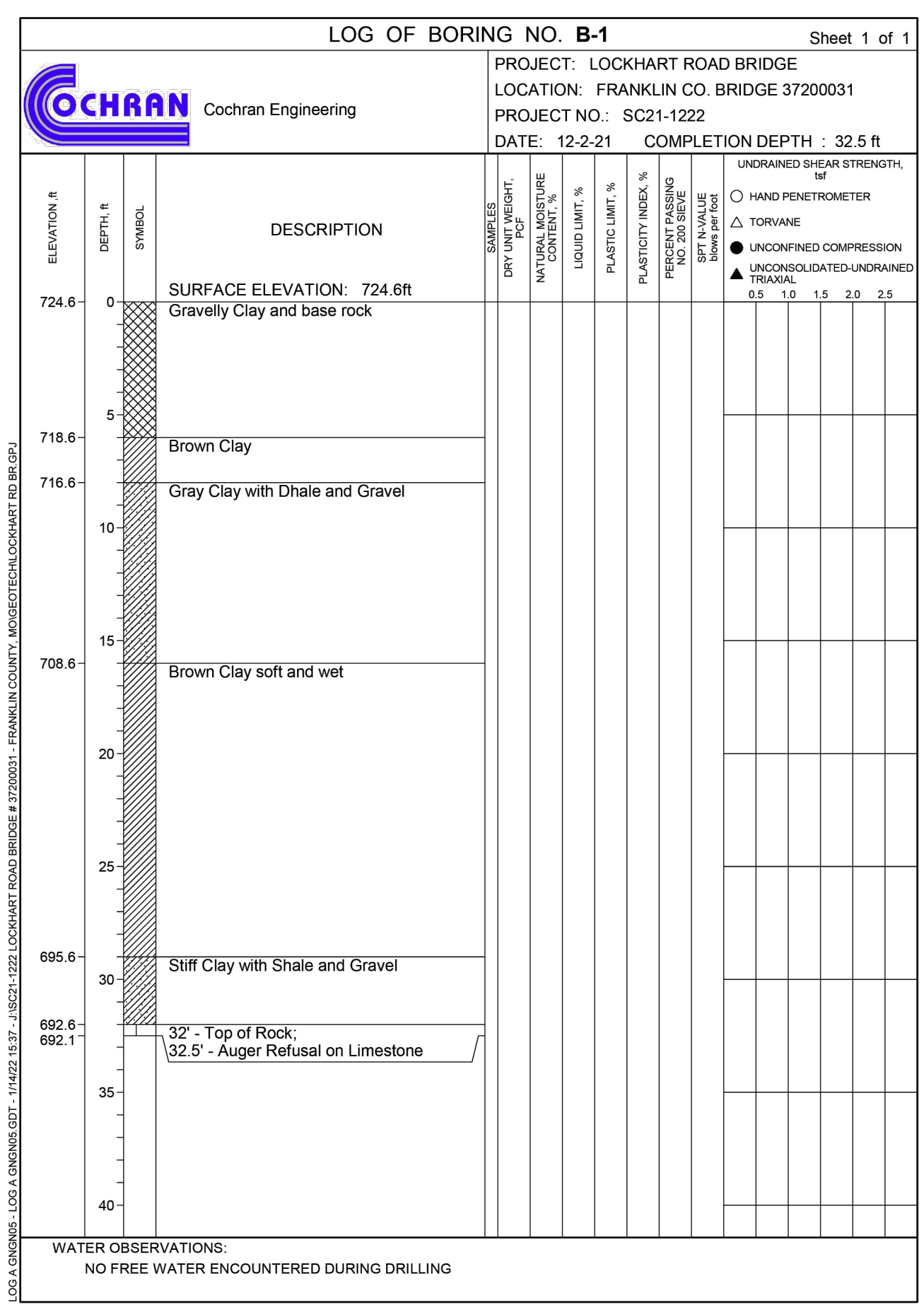
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LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

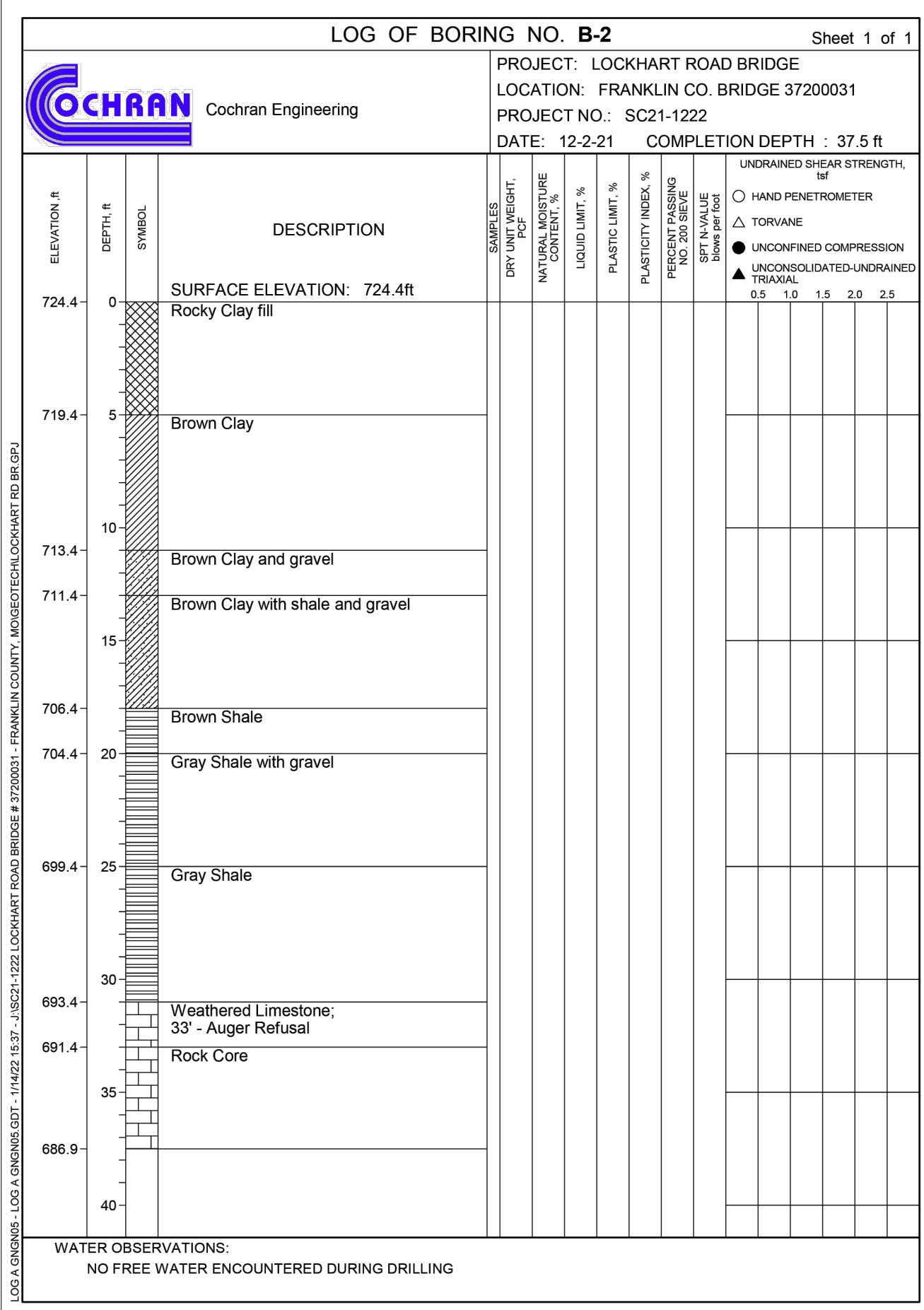
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DATE:	REVISION:
DWN. BY: A.J.M.	APP'D. BY: B.B.D.
DATE: JAN. 2024	
SCALE: NOT TO SCALE	
PROJ. NO: SC21-1222	
DWG. NO: B-18	

BORING LOGS

Drawing name: J:\SC21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\BORING LOGS.dwg Tab: BL-1 Plotted on: Jan 12, 2024 - 10:01am Plotted by: emueler




LOG A GNGN05 - LOG A GNGN05.GDT - 1/14/22 15:37 - J:\SC21-1222 LOCKHART ROAD BRIDGE # 37200031 - FRANKLIN COUNTY, MO\GEOTECH\LOCKHART RD BR.GPJ



LOG A GNGN05 - LOG A GNGN05.GDT - 1/14/22 15:37 - J:\SC21-1222 LOCKHART ROAD BRIDGE # 37200031 - FRANKLIN COUNTY, MO\GEOTECH\LOCKHART RD BR.GPJ

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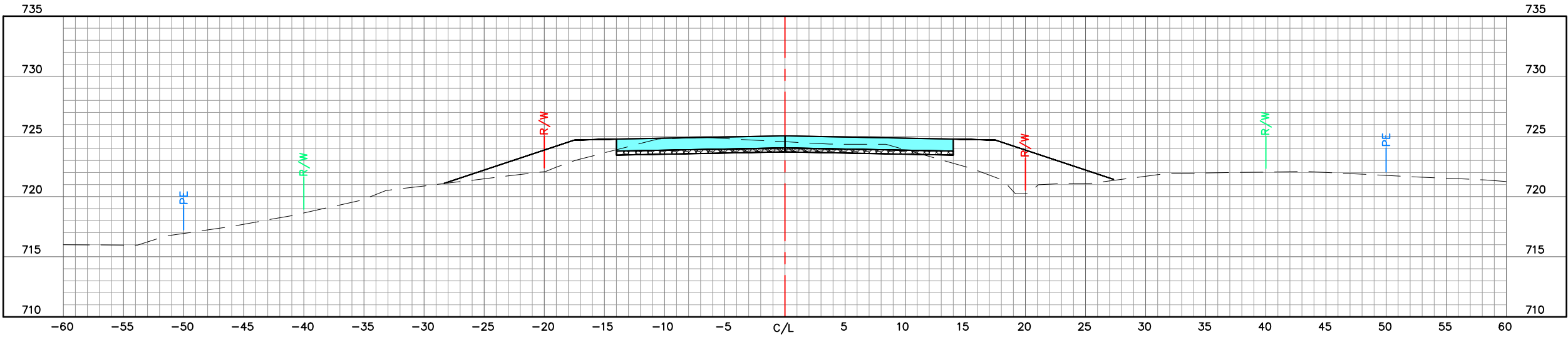
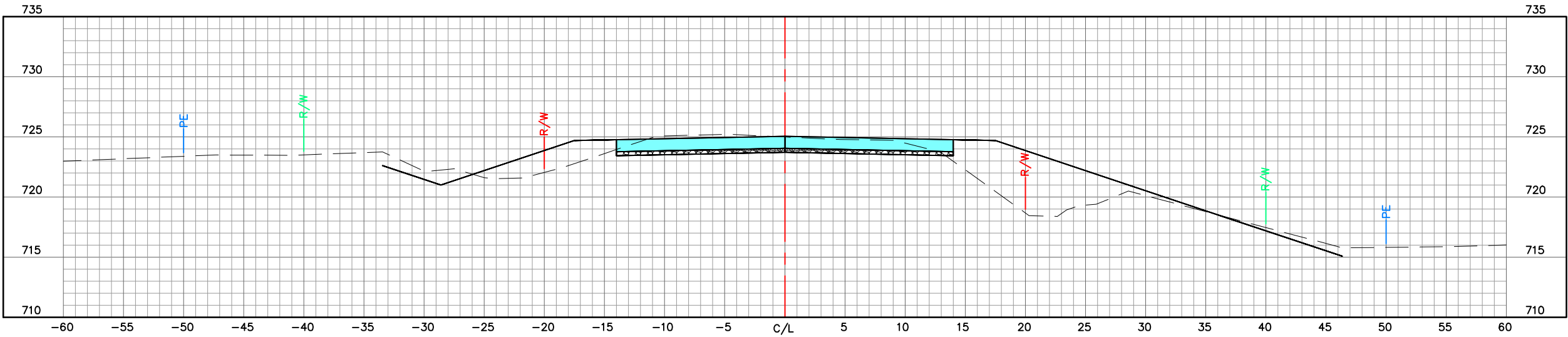
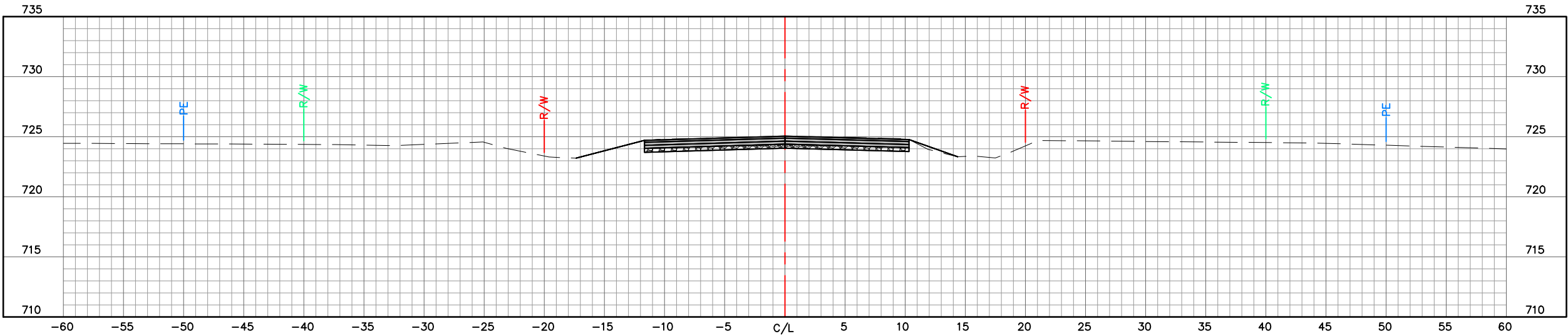
LOCKHART RD. BRIDGE
NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

BORING LOGS

DATE:
REVISED:
DWN. BY: A.J.M. APP'D. BY: B.B.D.
DATE: JAN. 2024
SCALE: NOT TO SCALE
PROJ. NO: SC21-1222
DWG. NO: BL-1

Drawing name: J:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\CROSS SECTIONS.dwg Tab: XS-1 Plotted on: Jan 12, 2024 - 10:01am Plotted by: amueller

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STATE OF MISSOURI

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STATE OF MISSOURI
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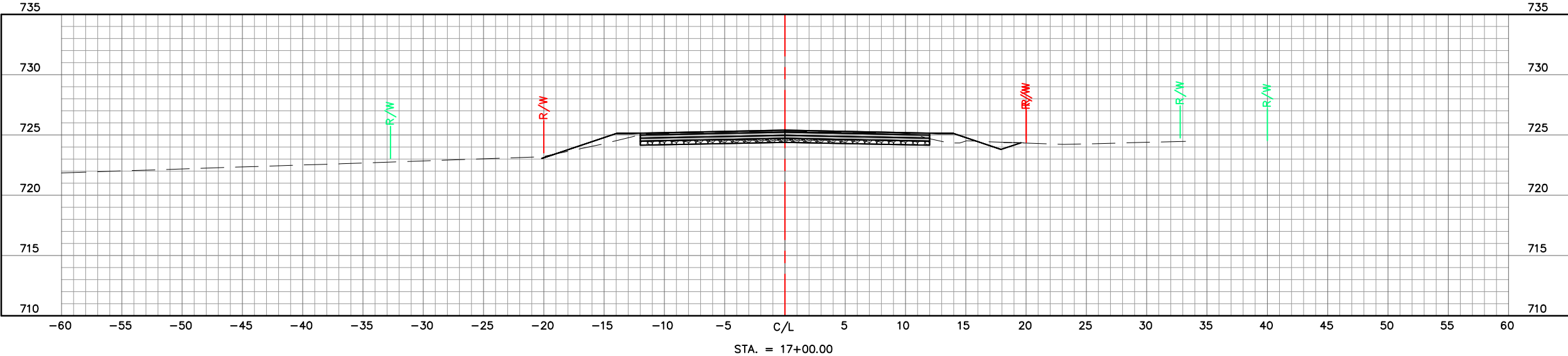
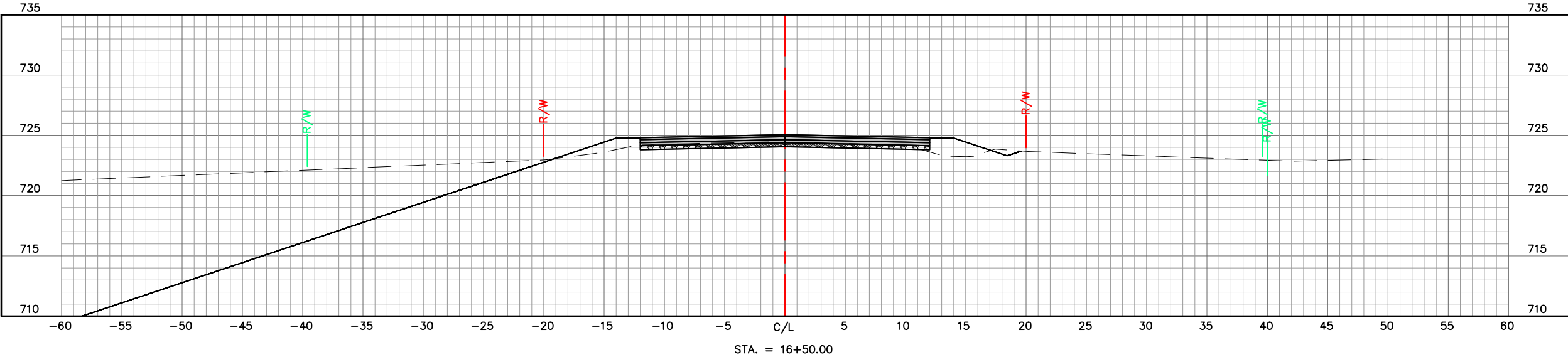
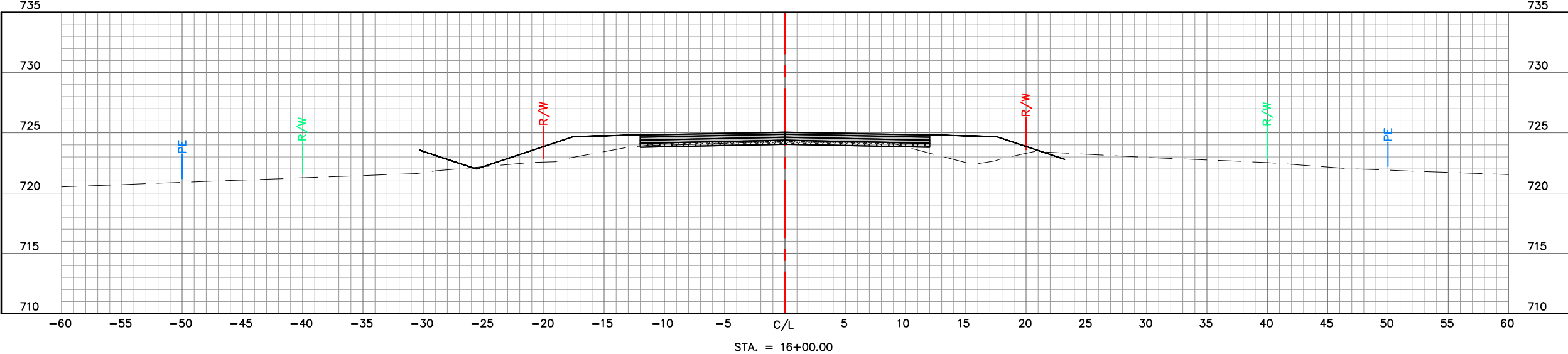
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FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

CROSS SECTIONS		DATE	REVISION
DWN. BY:	J.M.B.	DATE:	
APPD. BY:	B.B.D.		
SCALE:	1" = 10'		
PROJ. NO:	SC21-1222		
DWG. NO:	XS-1		

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER: 2007040529



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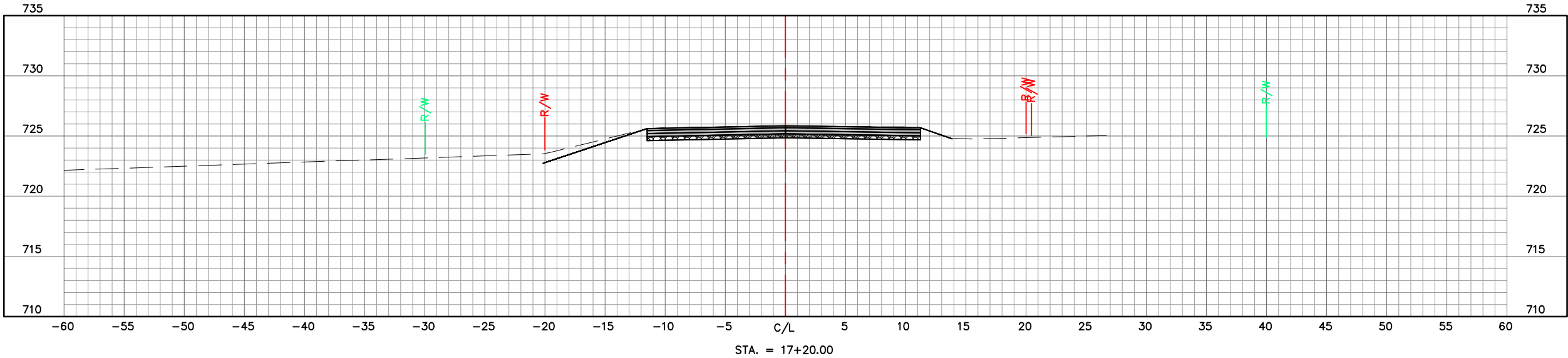
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NO. 37200031 REPLACEMENT
FEDERAL PROJECT NO. BRO-B036(33)
FRANKLIN COUNTY, MISSOURI

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Drawing name: J:\sc21-1222 lockhart road bridge # 37200031 - franklin county, mo\AUTOCAD DRAWINGS\CROSS SECTIONS.dwg Tab: XS-3 Plotted on: Jan 12, 2024 - 10:01am Plotted by: amueller

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LAND SURVEYING CERTIFICATE OF AUTHORITY NUMBER - 2007004529

1/10/24
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FRANKLIN COUNTY, MISSOURI

CROSS SECTIONS

DWN. BY: J.M.B.	DATE: JAN. 2024	APPD. BY: B.B.D.	REVISION:
SCALE: 1" = 10'			
PROJ. NO: SC21-1222			
DWG. NO:			

XS-3