ADDENDUM # 1

Ralls County Bridge Replacement
BRO-B087(24)
Bridge #2570014 1
12/14/2023

You may reach the office of Hutchison Engineering, Inc. at (573) 240-9577 or via email at kharris@hutchisoneng.com to order plans and specifications.

Please utilize the attached revised plans for bidding purposes.

Please utilize the attached revised bidding form for bidding purposes.

Please omit JSP-M. Seeding, Fertilizing & Mulching and add the following JSP-M. Temporary and Permanent Fencing

M. TEMPORARY AND PERMANENT FENCING

1.0 Description. Should the contractor remove the existing fence and water gap prior to installation of new fence and water gap, temporary fencing/containment measures shall be installed to adequately contain any and all livestock.

2.0 Basis of Payment Installation and removal of temporary fencing/containment measures shall be considered incidental to the project. No direct payment will be made.

Please acknowledge receipt of Addendum #1 in your bid.

BIDDING FORM
(work to be completed by contractor only)

RALLS COUNTY BRIDGE REPLACEMENT
FEDERAL PROJECT BRO-B087(24)
BRIDGE NO.2570014 1
40' SINGLE SPAN PRECAST SLAB BRIDGE
OREGON DRIVE

ROADWAY

ITEM NO.	ITEM	UNITS	QTY	UNIT PRICE	AMOUNT
201-99.01	CLEARING AND GRUBBING	L.S.	1		
203-50.00	UNCLASSIFIED EXCAVATION	C.Y.	150		
203-55.00	EMBANKMENT IN PLACE	C.Y.	165		
203-60.00	COMPACTING EMBANKMENT	C.Y.	135		
304-05.04	TYPE 5 AGGREGATE FOR BASE (4" THICK SURFACE)	S.Y.	650		
607-99.01	WATER GAP	EACH	1		
607-99.03	BARBED WIRE FENCE	L.F.	230		
611-30.20	FURNISHING TYPE 2 ROCK BLANKET	C.Y.	210		
611-30.40	PLACING TYPE 2 ROCK BLANKET	C.Y.	210		
616-10.05	CONSTRUCTION SIGNS	S.F.	45		
616-10.30	TYPE III TEMPORARY BARRICADES	EACH	2		
618-10.00	MOBILIZATION	L.S.	1		
624-1.04A	SEPARATION GEOTEXTILE	S.Y.	315		
627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	L.S.	1		
725-03.12A	21 IN. PIPE GROUP B	L.F.	25		
805-20.00A	SEEDING - WARM SEASON MIXTURES	ACRE	0.5		
806-10.05	TYPE 2 ROCK DITCH CHECK	EACH	2		
806-10.19	SILT FENCE	L.F.	360		
				SUBTOTAL (ROADWAY):	

BRIDGE

ITEM NO.	ITEM	UNITS	QTY	UNIT PRICE	AMOUNT
206-10.00	CLASS 1 EXCAVATION	C.Y.	200		
206-10.03	CLASS 1 EXCAVATION IN ROCK	C.Y.	165		
216-05.00	REMOVAL OF STRUCTURE	L.S.	1		
606-10.10	BRIDGE RAIL (THRIE BEAM)	L.F.	150		
606-99.02	BRIDGE RAIL END SHOE	EACH	4		
702-10.10	STRUCTURAL STEEL PILES (10 INCH)	L.F.	228		
702-60.00	PRE-BORE FOR PILING (IN ROCK)	L.F.	120		
703-40.01	CLASS B-1 CONCRETE (4000 psi)	C.Y.	95		
703-42.14	CLASS B-2 CONCRETE (4000 psi)	C.Y.	5		
705-99.02	PRECAST CONCRETE SLAB 40' x 2'-10")	EACH	9		
706-10.60	REINFORCING STEEL (Gr. 60)	LB.	7,470		
716-10.00	PLAIN NEOPRENE BEARING PADS	EACH	2		
				SUBTOTAL (BRIDGE):	
				TOTAL:	

(PLEASE PRINT OR TYPE BID AMOUNT)

Contractor:

Representative:

(please print or type name and title along with signature of the individual that completed this bid)

Phone:

Address:

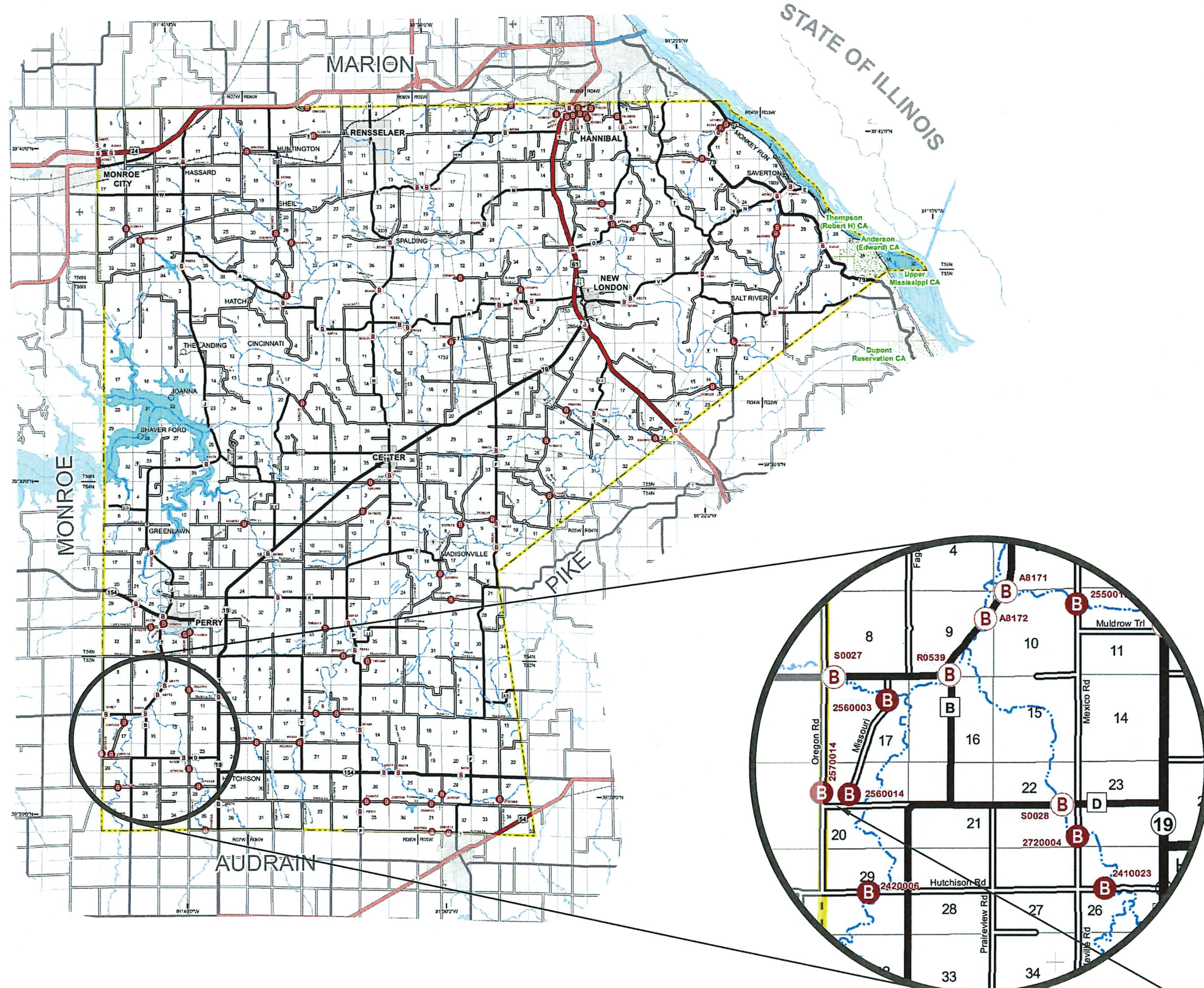
Fax:

OFF SYSTEM BRIDGE REPLACEMENT PROGRAM
PLANS FOR PROPOSED
BRIDGE NUMBER 2570014 1

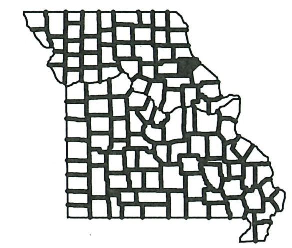
RALLS COUNTY, MISSOURI

FEDERAL PROJECT BRO-R087(24)

TOWNSHIP 53 NORTH, RANGE 7 WEST, SECTION 20



PROJECT LOCATION



KEY MAP
SHOWING LOCATION OF COUNTY

DESIGN DESIGNATION

A.A.D.T. - 2021 = 20
A.A.D.T. - 2041 = 25
T = 10%
V = 30 M.P.H.

FUNCTIONAL CLASSIFICATION - RURAL LOCAL

NORMAL RIGHT OF WAY

CONVENTIONAL SYMBOLS
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
LOCATION SURVEY MARKER		
UTILITIES		
TELEPHONE	—T—T—T—	
OVERHEAD POWER	—E(OH)—E(OH)—	
SANITARY SEWER	—SAN—SAN—	
GAS	—G—G—G—	
WATER	—W—W—W—	
FENCE		
BENCHMARK		

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES.

INDEX OF SHEETS

RALLS COUNTY COMMISSION

SUBMITTED:

07-24-2023

PRESIDING COMMISSIONER DATE

LENGTH OF PROJECT

BEGINNING OF PROJECT	STA. 1+35
END OF PROJECT	STA. 4+30
APPARENT LENGTH	295 FEET
EQUATIONS AND EXCEPTIONS:	
TOTAL CORRECTIONS	0.0 FEET
NET LENGTH OF PROJECT	295 FEET
STATE LENGTH	0.056 MILES
ESTIMATED DISTURBED ACRES	

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
7-24-23

DATE PREPARED	7/24/2023
ROUTE	257
STATE	MO
DISTRICT	NE
SHEET NO.	1
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
BRIDGE NO.	2570014 1

DESCRIPTION

DATE

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

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

GENERAL NOTES

DESIGN DATA

DESIGN GUIDELINES: " 2012 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 17th EDITION "

"2001 AASHTO GUIDELINES FOR GEOMETRIC DESIGN OF VERY LOW VOLUME LOCAL ROADS"

THE CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS AS STATED IN THE "MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION," 2023 AND CURRENT SUPPLEMENTAL SPECIFICATION REVISIONS.

THESE SPECIFICATIONS SHALL BE SUPERSEDED BY THE GENERAL PROVISIONS, SUPERSEDED BY THE GENERAL SPECIAL PROVISIONS, SUPERSEDED BY THE JOB SPECIAL PROVISIONS. LOCATED IN THE BID DOCUMENT PACKAGE.

DESIGN LOADING: HS20
FUTURE WEARING SURFACE --- 25 PSF
EARTH --- 120 #/CU. FT.
EQUIVALENT FLUID PRESSURE --- 45 POUNDS/CU. FT.

SUPERSTRUCTURE: SIMPLY SUPPORTED

DESIGN UNIT STRESSES

Class A1 Concrete	f'c = 5,000 psi
Class B2 Concrete	f'c = 4,000 psi
Class B1 Concrete	f'c = 4,000 psi
Class B Concrete	f'c = 3,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi
Steel Pile	fb = 9,000 psi
Structural Carbon Steel	fy = 36,000 psi
Structural Steel Girders	fy = 50,000 psi

EMBANKMENT

THE GRADING CONTRACTOR SHALL COMPLETE THE EMBANKMENT AT THE ABUTMENTS TO THE FINAL ROADWAY SECTION AND UP TO THE ELEVATION OF THE BOTTOM OF THE CONCRETE BEAM WITHIN THE LIMITS OF THE STRUCTURE FOR NOT LESS THAN 25 FEET IN THE BACK OF FILL FACE OF THE END BENTS PRIOR TO DRIVING ABUTMENT PILING.

ROADWAY

ALL JOINTS WHERE NEW CONSTRUCTION MATCHES EXISTING SHALL BE CUT TO NEAT LINES.

CONTRACTOR SHALL PROOF ROLL SUBGRADE PRIOR TO SURFACING WORK. WHEN SUB-GRADE MODIFICATION IS USED, PROOF ROLL PRIOR TO DOING SUBGRADE MODIFICA-TION AND ALSO PRIOR TO SURFACING. ALL SOFT OR SPONGY AREAS IDENTIFIED SHALL BE STABILIZED. PROOF ROLLING TO BE WITH FULLY LOADED TANDEM AXLE DUMP TRUCK. (27 TON MINIMUM)

BACKFILL COMPACTION

BACKFILL COMPACTION SHALL BE REQUIRED AT ABUTMENTS.

TREES

ALL TREES WITHIN PROPOSED R/W ARE TO BE GRUBBED EXCEPT WHERE DIRECTED BY THE ENGINEER. EXCEPTIONALLY GOOD TREES SHALL BE SPARED BY ADJUSTING THE BACK SLOPES LINES DURING CONSTRUCTION. TREES OUTSIDE THE CONSTRUCTION LIMITS SHALL NOT BE GRUBBED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

FENCES

FENCES SHALL BE MOVED OR ADJUSTED PRIOR TO CONSTRUCTION AS NECESSARY BY THE CONTRACTOR TO FIT THE NEW CONSTRUCTION.

TEMPORARY FENCING SHALL BE PROVIDED AS SHOWN ON THE PLANS. COST FOR FURNISHING, INSTALLING AND MAINTAINING SHALL BE CONSIDERED INCIDENTAL TO FENCE CONSTRUCTION.

PILING

ALL PILING SHALL BE DRIVEN TO PENETRATE OR BEAR UPON THE ROCK FORMATION. DRIVING SHALL STOP WHEN IN THE OPINION OF THE ENGINEER, ADDITIONAL DRIVING MAY INJURE THE PILING.
CONTRACTOR SHALL INSTALL CAST STEEL DRIVING POINTS ON ALL PILES. CAST STEEL MATERIALS SHALL BE ASTM A27 65/35 OR BETTER.
COSTS OF PROVIDING AND INSTALLING PILE TIP REINFORCEMENT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF INSTALLING STRUCTURAL STEEL PILES.
ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL AS PER MO. DOT SPECIFICATIONS
AT ANY LOCATION WHERE PROBLEMS ARE EXPERIENCED, PILE DAMAGE IS SUSPECTED, OR APPARENT REFUSAL OCCURS SIGNIFICANTLY ABOVE THE DESIGN PILE TIP ELEVATION, THE ENGINEER SHALL BE NOTIFIED FOR FURTHER EVALUATION.
H-PILE SHALL BE PRE-BORED MINIMUM 10 FEET BELOW BOTTOM OF ABUTMENT WALL AND MINIMUM 5 FEET INTO SUITABLE LIMESTONE AS DETERMINED BY THE ENGINEER.

CONCRETE

ALL CONCRETE ABOVE LOWER JOINT IN END BENTS IS INCLUDED WITH SUPERSTRUCTURE QUANTITIES. ALL REINFORCING IN THE END BENTS INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

SUPERSTRUCTURE CONCRETE SHALL BE BID AS CLASS B2, SUBSTRUCTURE CONCRETE AND BRIDGE RAILING SHALL BE BID AS CLASS B1.

BEVEL ALL EXPOSED EDGES OF ALL CONCRETE WITH A 3/4" TRIANGULAR MOLDING EXCEPT AS OTHERWISE NOTED ON THE PLANS. USE DOUBLE 3/4" BEVELS AT CERTAIN CONSTRUCTION JOINTS AS NOTED ON THE PLANS. CONSTRUCTION JOINTS ARE OPTIONAL WITH THE CONTRACTOR, BUT IF USED, SHALL BE MADE ONLY AT LOCATIONS SHOWN, OR AT LOCATIONS APPROVED BY ENGINEER.

ALL JOINT FILLER SHALL MEET THE REQUIREMENT OF STD. SPEC. 1057.7.4.

REINFORCING

ALL DIMENSIONS RELATIVE TO REINFORCING STEEL PLACEMENT ARE TO THE CENTER-LINE OF BARS UNLESS OTHERWISE NOTED. BAR BENDING AND DIMENSIONS SHALL BE AS SHOWN AND NOTED ON THE BENDING DIAGRAMS. ALL REINFORCING STEEL, EXCEPT THE SPIRAL BARS, SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. SPIRAL BARS MAY MEET THE REQUIREMENTS OF EITHER ASTM A615 (GR. 40 OF 60) OR A82, AND ARE INCLUDED IN THE WEIGHT OF GRADE 60 REINFORCING STEEL.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2" UNLESS OTHERWISE SHOWN. ALL SPLICES IN CONCRETE, LAP BARS 36 DIAMETERS.

BEARING PADS

BEARINGS SHALL BE 60 DUROMETER ELASTOMERIC NEOPRENE PADS. COST OF FURNISHING PLAIN BEARINGS SHALL BE USED ON END BENTS ONLY.

FABRICATING AND INSTALLING NEOPRENE BEARING PADS COMPLETE IN PLACE, SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR NEOPRENE BEARING PADS PER EACH.

BROKEN CONCRETE

THE BROKEN CONCRETE FROM THE EXISTING BRIDGE MAY BE WASTED ON SITES PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. IF THE BROKEN CONCRETE IS ALLOWED BY THE ENGINEER IN THE PROTECTION OF THE EMBANKMENT, BERMS, AND/OR CREEK BANK, PROTRUDING REINFORCING IN THE BROKEN CONCRETE SHALL BE CUT OFF AND REMOVED. THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE BID ITEM "REMOVAL OF EXISTING STRUCTURES"

PERMANENT SIGNING & MARKING

PERMANENT SIGNING SHALL BE PERFORMED BY THE CONTRACTOR. ALL ROADSIDE SIGNS, GUIDEPOSTS, AND MARKERS SHALL REMAIN THE PROPERTY OF THE COUNTY AND THOSE REMOVED WITHIN THE PROJECT AREA SHALL BE STACKED ON SITE FOR PICKUP BY COUNTY FORCES.

SEEDING

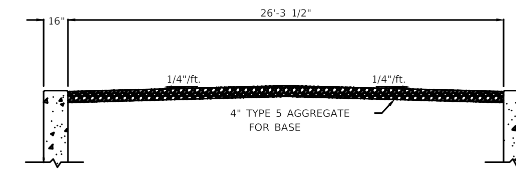
ALL DISTURBED AREAS WITHIN THE LIMITS OF CONSTRUCTION EXCEPT STEEP ROCKY SLOPES AND SURFACED AREAS SHALL BE SEEDED ACCORDING TO THE SPECIFICATIONS.

UTILITIES

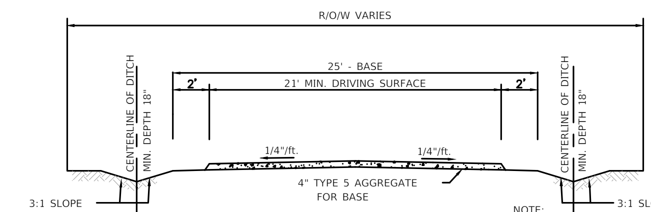
PUBLIC AND PRIVATE UTILITY FACILITIES SHALL BE MOVED OR ADJUSTED PRIOR TO CONSTRUCTION AS NECESSARY BY THE OWNERS TO FIT THE CONSTRUCTION UNLESS NOTED ON THE PLANS OR IN THE PROPOSAL.

THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

MISSOURI ONE CALL SYSTEM, INC.

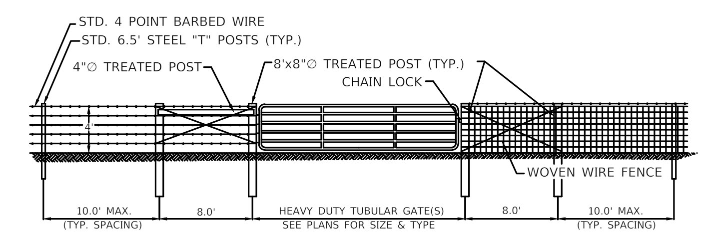


TYPICAL SECTION
(BETWEEN WINGS)

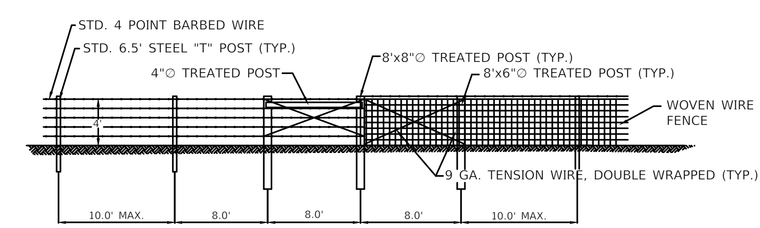


TYPICAL SECTION

NOTE:
DIMENSION FROM EDGE OF SHOULDER TO CL DITCH VARY IN DISTANCE. TYPICAL BOTH SIDES.
SIDE SLOPES 3:1



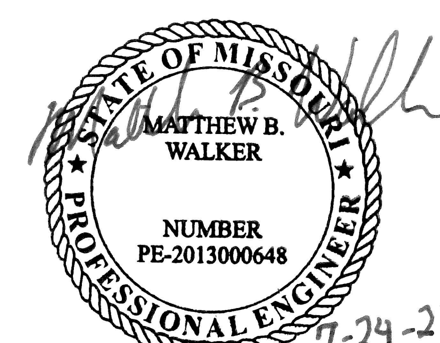
TYPICAL FENCE GATE AND BRACING
(FOR BARBED WIRE & WOVEN WIRE FENCING)



TYPICAL CORNER AND BRACING
(FOR BARBED WIRE & WOVEN WIRE FENCING)

* CONTRACTOR SHALL MATCH EXISTING FENCE TYPE (i.e. 5 STRAND BARBED WIRE OR WOVEN WIRE FENCE)

NOTES:
1. FENCING SHOWN IN THIS DETAIL IS THE MINIMUM REQUIRED BY THE ENGINEER. ACTUAL REPLACEMENT FENCE SHALL BE EQUAL TO OR BETTER THAN THE EXISTING.
2. TIES TO EXISTING FENCE REQUIRE THE SAME LAYOUT AS FENCE CORNERS (i.e. CORNER POSTS WITH BRACING AND TENSION WIRE.)
3. CORNER AND BRACING POST SHALL BE BURIED A MINIMUM OF 4 FEET.



DATE PREPARED	7/24/2023
ROUTE 257	STATE MO
DISTRICT NE	SHEET NO. 2
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
BRIDGE NO.	2570014 1

DATE	DESCRIPTION
12/13/23	TYPICAL SECTION REVISED

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

SUMMARY OF QUANTITIES

ORDER OF BRIDGE QUANTITIES												
ITEM / LOCATION	HP 10x42 Lin. Ft.	CONCRETE CLASS B1 Cu. Yds.	CONCRETE CLASS B2 Cu. Yds.	REINFORCING STEEL GRADE 60 lbs.	CLASS 1 EXCAVATION (FOR STRUCTURE) Cu. Yds.	PRE-BORE FOR PILING (IN ROCK) Lin. Ft.	2'-10" x 18" PRE-CAST BEAMS (40') EACH	3/4"T PLAIN BEARING PAD each	BRIDGE RAIL lin. ft.	BRIDGE RAIL END SHOE each	CLASS 1 EXCAVATION (IN ROCK) Cu. Yds.
Substr. Total	228'	95	---	7,470	200	120	---	---	---	---	165
Superstr. Total	---	---	5	---	---	---	9	2	150'	4	---
Total	228'	95	5	7,470	200	120	9	2	150'	4	165

* NOTE: ONLY STEEL PILE HP 10 x 42 SHALL BE USED ON THIS PROJECT.
H-PILE SHALL BE PRE-BORED MINIMUM 10 FEET BELOW BOTTOM OF ABUTMENT WALL
AND MINIMUM OF 5 FEET INTO SUITABLE LIMESTONE AS DETERMINED BY THE ENGINEER.

STEEL PILE DATA HP 10x42

BENT NO.	1			2
NUMBER	6			6
APPROXIMATE LENGTH FT.	19'			19'
DESIGN BEARING TONS	55			55
HAMMER ENERGY REQUIRED FT. LBS.	15,000			15,000
ESTIMATED TIP ELEVATION	687.2			687.2
CUT OFF ELEVATION	706.2			706.2
PRE-BORE	N/A			N/A

CONTRACTOR SHALL INSTALL CAST STEEL DRIVING POINTS ON ALL PILES. CAST STEEL MATERIALS SHALL BE ASTM A27 65/35 OR BETTER. COSTS OF PROVIDING AND INSTALLING PILE TIP REINFORCEMENT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF INSTALLING STRUCTURAL STEEL PILES.

HYDROLOGIC DATA

DRAINAGE AREA = 2.53 SQ. MI.
DESIGN FREQUENCY = 100 YEAR
DESIGN DISCHARGE = 1,519 CFS
MAXIMUM BACKWATER FOR DESIGN FREQUENCY = 0.29 FT.
DESIGN HIGH WATER ELEV. AT THE STRUCTURE = 708.26 FT.
TOP OF DECK ELEV. = 709.50

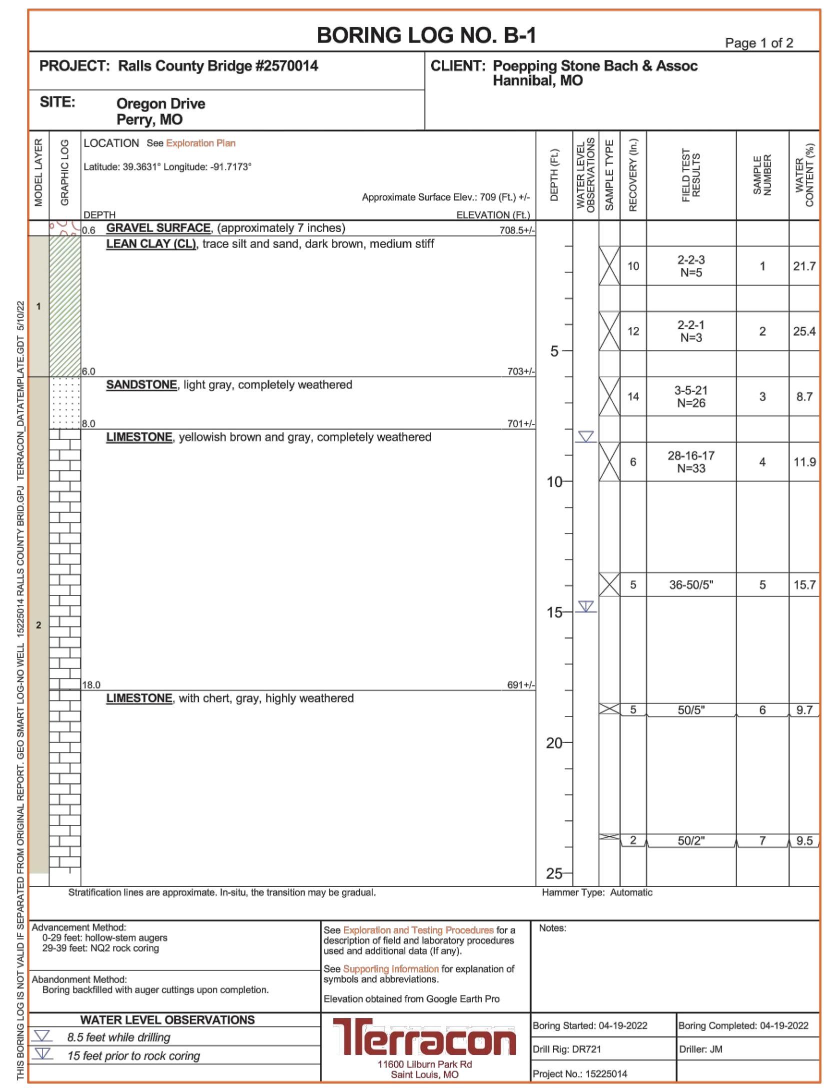
BASIC FLOOD DATA

APPROACH ROADWAY OVERTOPPING FREQUENCY = 50 YR.

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
REMOVAL OF STRUCTURE	1	L.S.
CLEARING AND GRUBBING	1	L.S.
UNCLASSIFIED EXCAVATION	150	C.Y.
EMBANKMENT IN PLACE	165	C.Y.
COMPACTING EMBANKMENT	135	C.Y.
TYPE 5 AGGREGATE FOR BASE (4 IN. THICK SURFACE)	650	S.Y.
FURNISHING TYPE 2 ROCK BLANKET	210	C.Y.
PLACING TYPE 2 ROCK BLANKET	210	C.Y.
CONSTRUCTION SIGNS	45	S.F.
TYPE III TEMPORARY BARRICADES	2	EA.
MOBILIZATION	1	L.S.
SEPARATION GEOTEXTILE FABRIC	315	S.Y.
CONTRACTOR FURNISHED SURVEYING & STAKING	1	L.S.
SEEDING, FERTILIZING AND MULCHING	0.50	A.C.
BARBED WIRE FENCE	230	L.F.
WATER GAP	1	EA.
21" DIAMETER C.M.P.	25	L.F.
SILT FENCE	360	L.F.
TYPE 2 ROCK DITCH CHECK	2	EA.

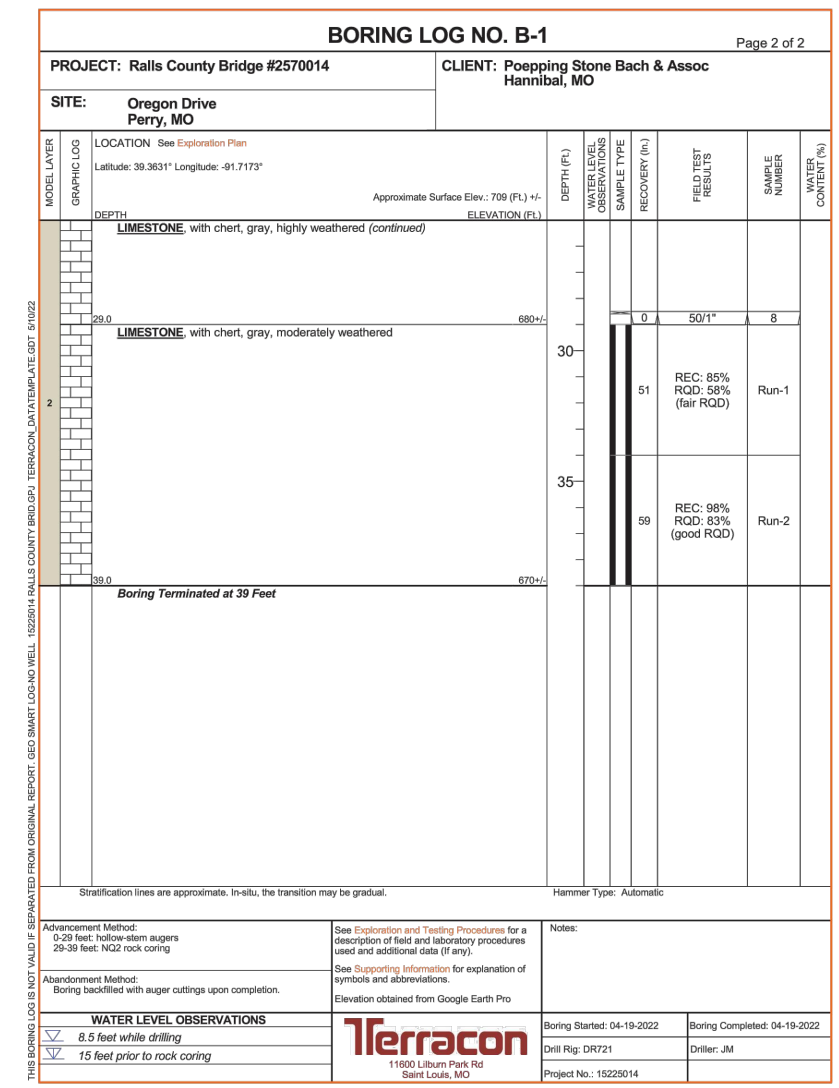
BORING DATA


BORING LOG NO. B-1 — Page 1 of 2
PROJECT: Ralls County Bridge #2570014
CLIENT: Poepping Stone Bach & Assoc, Hannibal, MO
SITE: Oregon Drive, Perry, MO
LOCATION See Exploration Plan
Latitude: 39.3631° Longitude: -91.7173°
Approximate Surface Elev.: 709 (Ft.) +/-

DEPTH	DESCRIPTION	ELEVATION (Ft.)
0.6	GRAVEL SURFACE, (approximately 7 inches)	708.5+/-
6.0	LEAN CLAY (CL), trace silt and sand, dark brown, medium stiff	703+/-
8.0	SANDSTONE, light gray, completely weathered	701+/-
18.0	LIMESTONE, yellowish brown and gray, completely weathered	691+/-
	LIMESTONE, with chert, gray, highly weathered	

RECOVERY (In.)	FIELD TEST RESULTS	SAMPLE NUMBER	WATER CONTENT (%)
10	2-2-3 N=5	1	21.7
12	2-2-1 N=3	2	25.4
14	3-5-21 N=26	3	8.7
6	28-16-17 N=33	4	11.9
5	36-50/5"	5	15.7
5	50/5"	6	9.7
2	50/2"	7	9.5

Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic
Advancement Method: 0-29 feet: hollow-stem augers; 29-39 feet: NQ2 rock coring
Abandonment Method: Boring backfilled with auger cuttings upon completion.
See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation obtained from Google Earth Pro
Notes:
WATER LEVEL OBSERVATIONS: 8.5 feet while drilling; 15 feet prior to rock coring
Terracon, 11600 Lilburn Park Rd, Saint Louis, MO
Boring Started: 04-19-2022 | Boring Completed: 04-19-2022 | Drill Rig: DR721 | Driller: JM | Project No.: 15225014
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 15225014 RALLS COUNTY BRID.GPJ TERRACON_DATATEMPLATE.GDT 5/10/22


BORING LOG NO. B-1 — Page 2 of 2
PROJECT: Ralls County Bridge #2570014
CLIENT: Poepping Stone Bach & Assoc, Hannibal, MO
SITE: Oregon Drive, Perry, MO
LOCATION See Exploration Plan
Latitude: 39.3631° Longitude: -91.7173°
Approximate Surface Elev.: 709 (Ft.) +/-

DEPTH	DESCRIPTION	ELEVATION (Ft.)
29.0	LIMESTONE, with chert, gray, highly weathered (continued)	680+/-
39.0	LIMESTONE, with chert, gray, moderately weathered	670+/-
	Boring Terminated at 39 Feet	

RECOVERY (In.)	FIELD TEST RESULTS	SAMPLE NUMBER
0	50/1"	8
51	REC: 85% RQD: 58% (fair RQD)	Run-1
59	REC: 98% RQD: 83% (good RQD)	Run-2

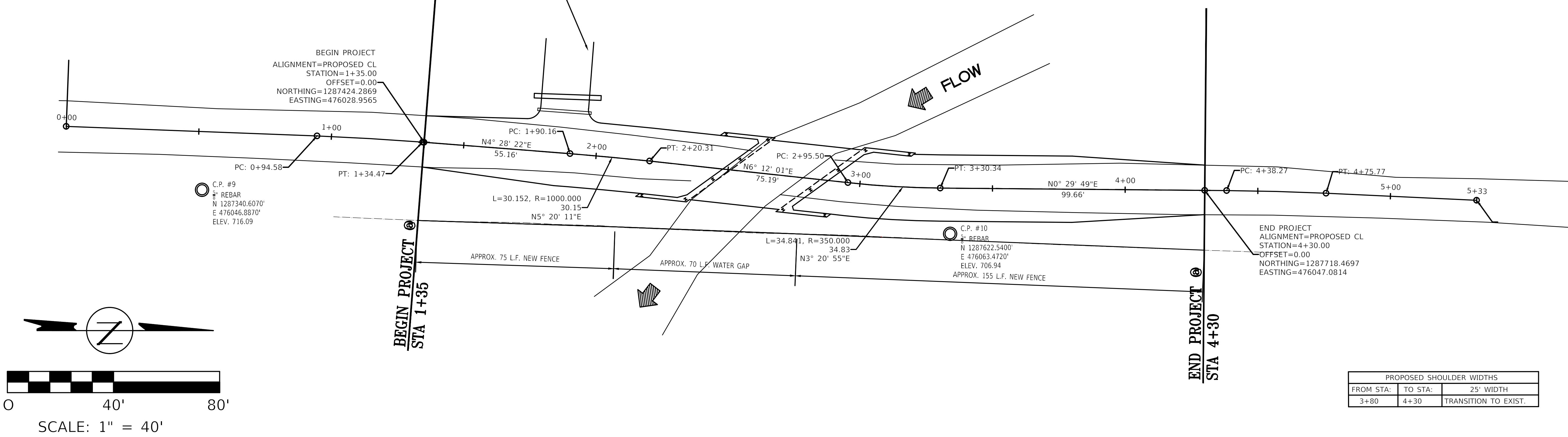
Stratification lines are approximate. In-situ, the transition may be gradual. Hammer Type: Automatic
Advancement Method: 0-29 feet: hollow-stem augers; 29-39 feet: NQ2 rock coring
Abandonment Method: Boring backfilled with auger cuttings upon completion.
See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation obtained from Google Earth Pro
Notes:
WATER LEVEL OBSERVATIONS: 8.5 feet while drilling; 15 feet prior to rock coring
Terracon, 11600 Lilburn Park Rd, Saint Louis, MO
Boring Started: 04-19-2022 | Boring Completed: 04-19-2022 | Drill Rig: DR721 | Driller: JM | Project No.: 15225014
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 15225014 RALLS COUNTY BRID.GPJ TERRACON_DATATEMPLATE.GDT 5/10/22

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
7-24-23

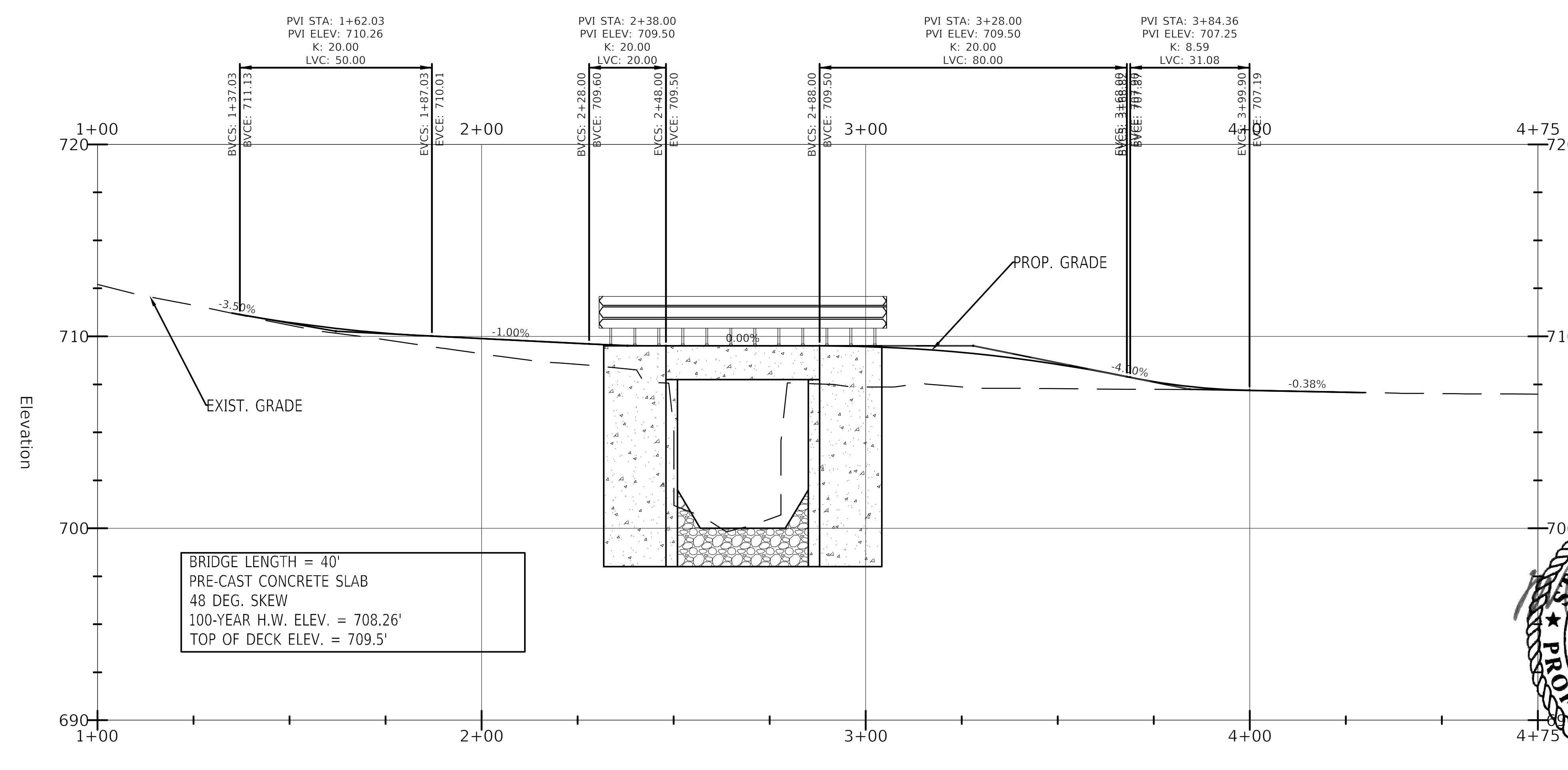
DATE PREPARED 7/24/2023
ROUTE 257 STATE MO
DISTRICT NE SHEET NO. 2
COUNTY RALLS
JOB NO. 5169
CONTRACT ID.
PROJECT NO. BRO-R087(24)
BRIDGE NO. 2570014 1
DATE 12/13/23 MISC. DESCRIPTION
Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

PROPOSED SHOULDER WIDTHS		
FROM STA:	TO STA:	EXIST. WIDTH
1+35	1+85	TRANSITION TO 25'

CONTROL POINTS				
POINT NO.	ELEVATION	DESCRIPTION	NORTHING	EASTING
#9	716.09	5/8" REBAR	1287340.6070	476046.8870
#10	706.94	5/8" REBAR	1287622.5400	476063.4720
#11	707.14	5/8" REBAR	1287972.0170	476075.7490
#12	714.26	5/8" REBAR	1288200.1470	476036.9350



PROPOSED SHOULDER WIDTHS		
FROM STA:	TO STA:	25' WIDTH
3+80	4+30	TRANSITION TO EXIST.



BRIDGE LENGTH = 40'
PRE-CAST CONCRETE SLAB
48 DEG. SKEW
100-YEAR H.W. ELEV. = 708.26'
TOP OF DECK ELEV. = 709.5'

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
7-24-23

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

DATE PREPARED	7/24/2023
ROUTE	257
STATE	MO
DISTRICT	NE
SHEET NO.	
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
BRIDGE NO.	2570014 1

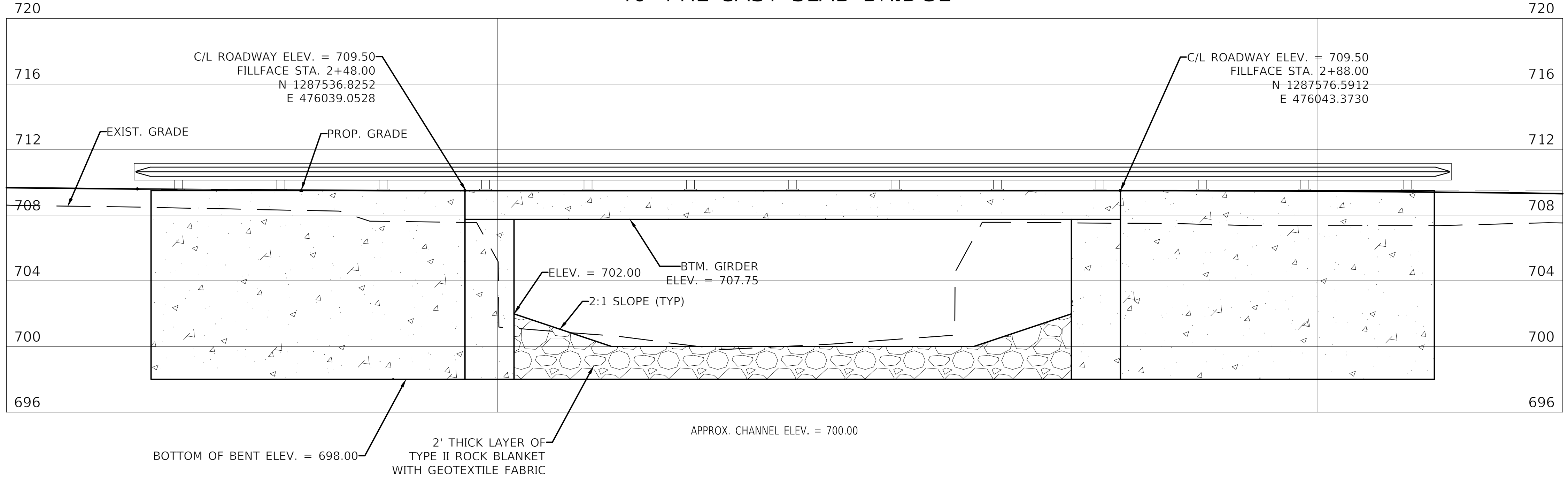
DESCRIPTION

DATE

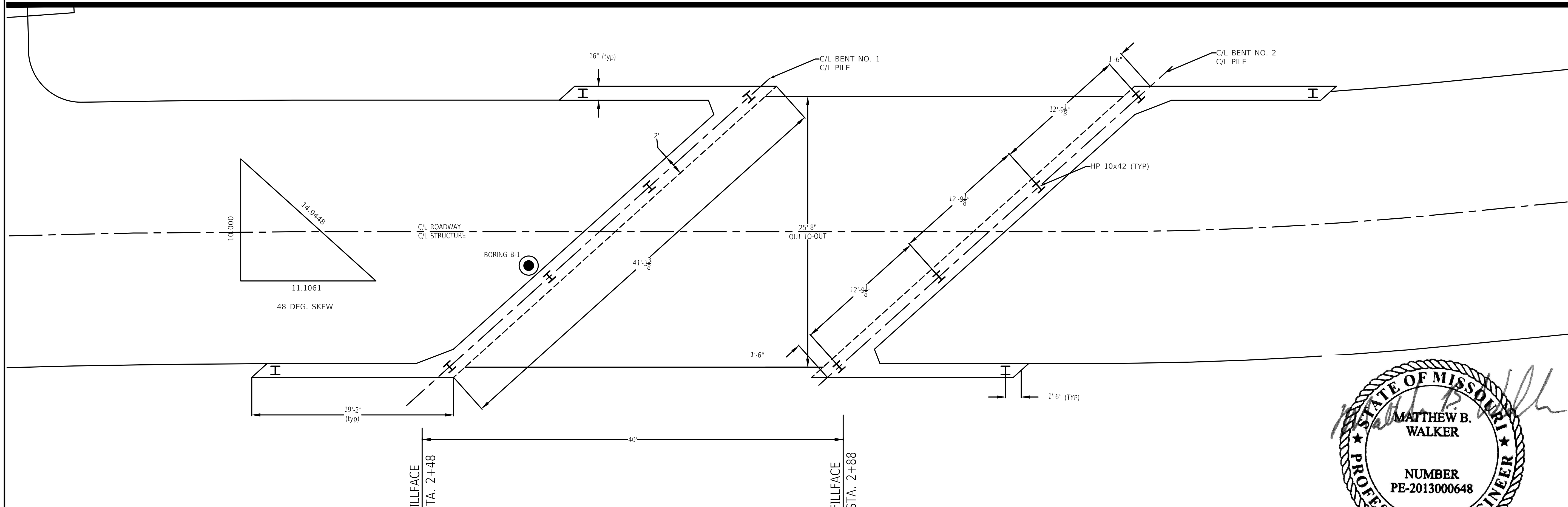
Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

PLAN & PROFILE

40' PRE-CAST SLAB BRIDGE



GENERAL ELEVATION



PLAN VIEW

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
7-24-23

DATE PREPARED	7/24/2023
ROUTE 257	STATE MO
DISTRICT NE	SHEET NO.
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
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DATE	DESCRIPTION
12/13/23	MISC.

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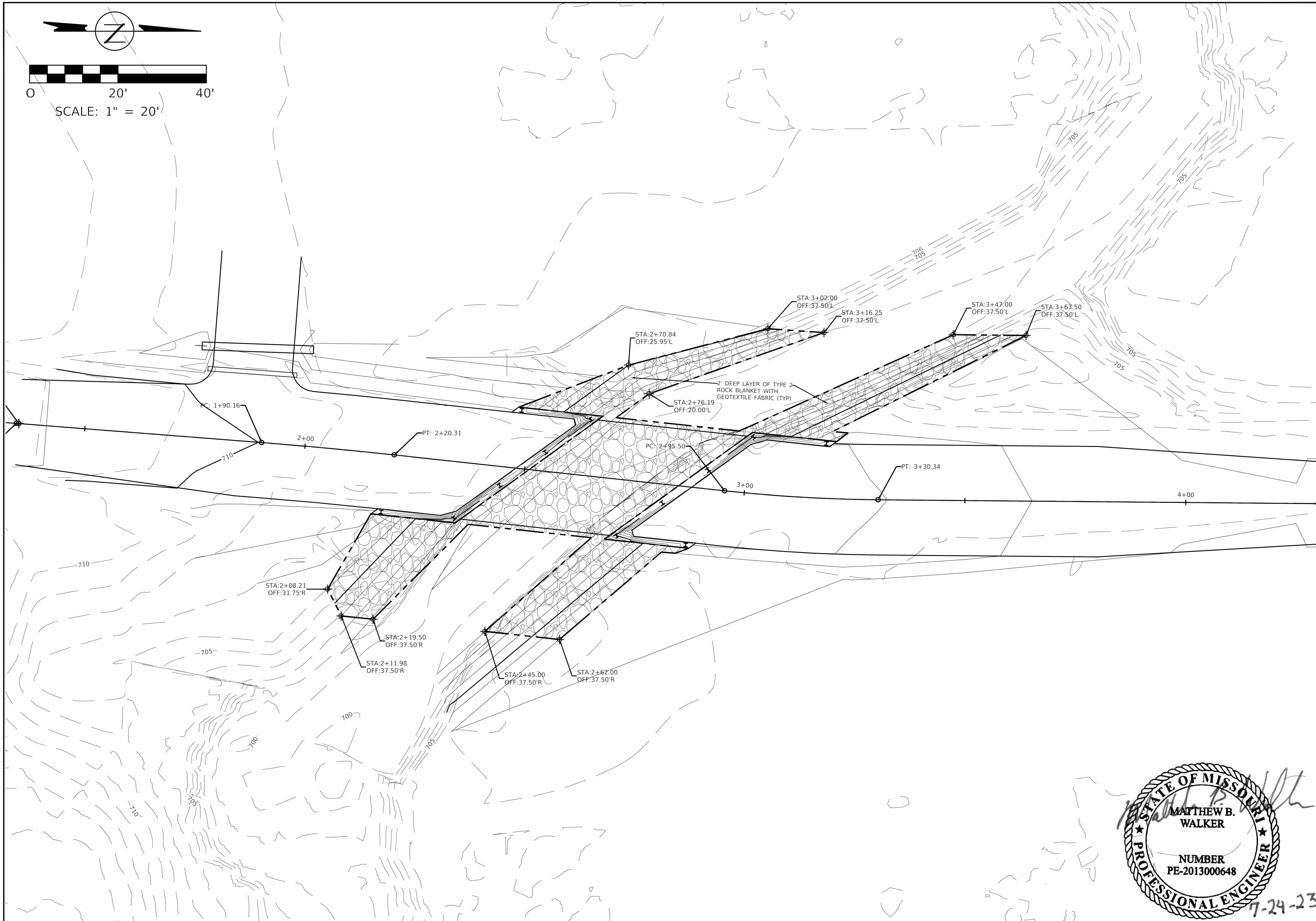
ONE TO ONE
SHEET 5 OF 15



DATE PREPARED
7/24/2023

ROUTE	STATE
257	MO
DISTRICT	SHEET NO.
NE	

COUNTY
RALLS

JOB NO.
5169

CONTRACT ID.

PROJECT NO.
BRO-R087(24)

BRIDGE NO.
2570014 1

DATE	DESCRIPTION
12/13/23	MISC.

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GRADING PLAN
SHEET 6 OF 15

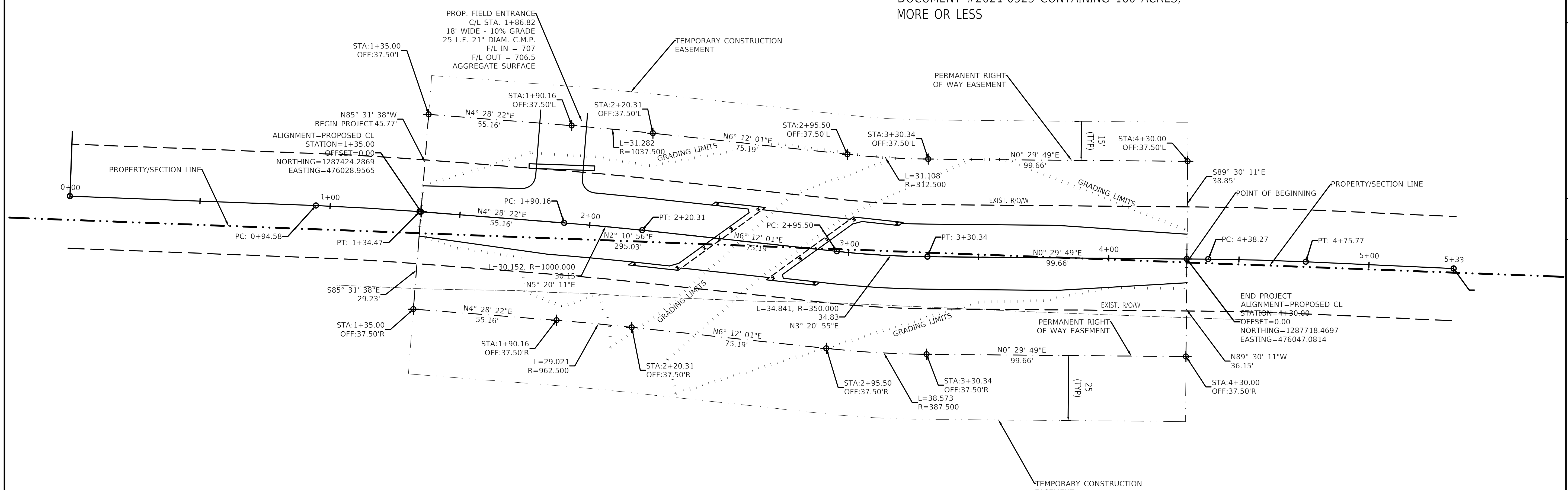
PARCEL NO.	OWNER	NEW R.O.W EASMT. REQ'D (AC.)	TEMP. CONST. EASMT. REQ'D (AC.)	EXISTING R.O.W EASMT. REQ'D (AC.)	REMAINDER OF LAND HOLDINGS (AC.)
1	TIMOTHY R. WYSS AND MARY KAY CROCKER-WYSS TRUSTEES OF THE TIMOTHY AND MARY KAY WYSS TRUST UNDER TRUST AGREEMENT DATED JUNE 16, 2020	0.118	0.101	0.149	159.73

POINT OF BEGINNING

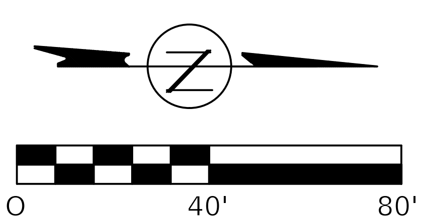
COMMENCING AT A $\frac{5}{8}$" IRON PIN MARKING THE NORTHWEST CORNER OF SECTION 20, TOWNSHIP 53 NORTH, RANGE 7 WEST; THENCE SOUTH 02 DEGREES 10 MINUTES 56 SECONDS WEST A DISTANCE OF 1,670.23 FEET TO THE POINT OF BEGINNING.

NORTHWEST CORNER OF SECTION 20, TOWNSHIP 53 NORTH,
RANGE 7 WEST
CERTIFIED LAND CORNER RESTORATION/REESTABLISHMENT
DOCUMENT NUMBER: 600-107696

1 TIMOTHY R. WYSS AND MARY KAY CROCKER-WYSS
TRUSTEES OF THE TIMOTHY AND MARY KAY WYSS
TRUST UNDER TRUST AGREEMENT DATED JUNE 16, 2020
NORTHEAST $\frac{1}{4}$ OF
SEC. 19, T53N, R7W
DOCUMENT #2021-0523 CONTAINING 160 ACRES,
MORE OR LESS



2 JAY AND BETH ASBURY
WEST $\frac{1}{2}$ OF NORTHWEST $\frac{1}{4}$
SEC. 20, T53N, R7W
DOCUMENT #2003-30574 CONTAINING 120 ACRES,
MORE OR LESS



SCALE: 1" = 40'

PARCEL NO.	OWNER	NEW R.O.W EASMT. REQ'D (AC.)	TEMP. CONST. EASMT. REQ'D (AC.)	EXISTING R.O.W EASMT. REQ'D (AC.)	REMAINDER OF LAND HOLDINGS (AC.)
2	JAY ASBURY AND BETH ASBURY	0.119	0.171	0.121	119.76

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
7-24-23

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DATE PREPARED 7/24/2023
ROUTE 257 STATE MO
DISTRICT NE SHEET NO.
COUNTY RALLS
JOB NO. 5169
CONTRACT ID.
PROJECT NO. BRO-R087(24)
BRIDGE NO. 2570014 1
DESCRIPTION
DATE

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
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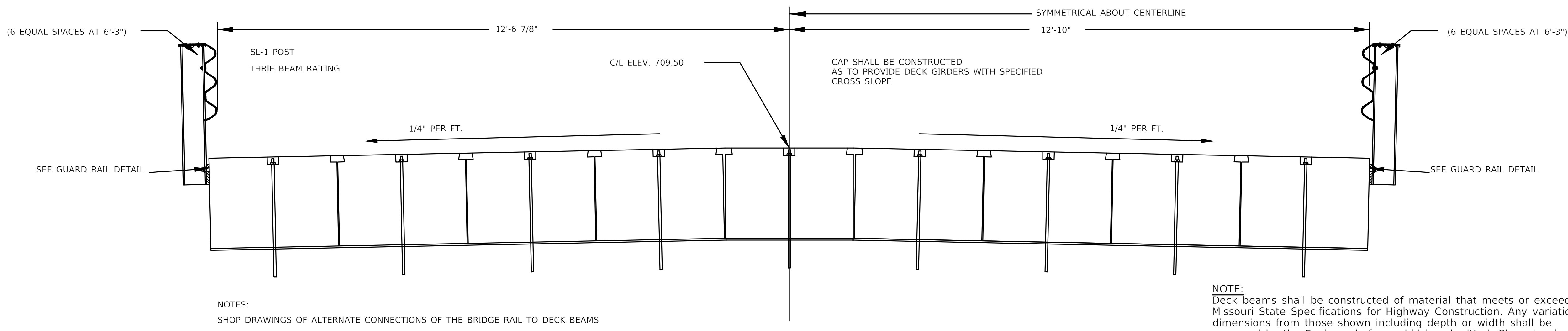
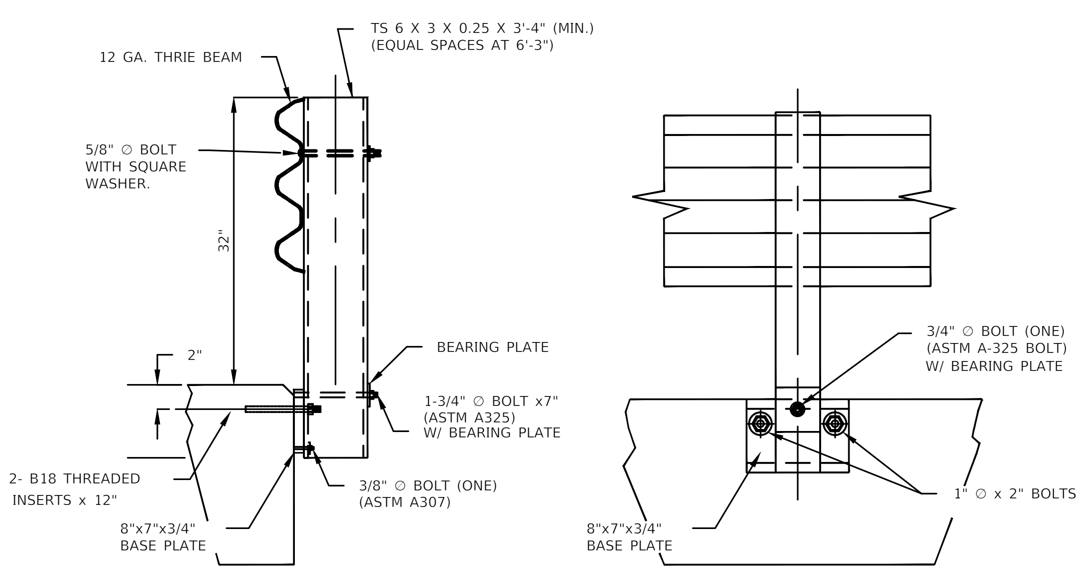


NOTES:
SHOP DRAWINGS OF ALTERNATE CONNECTIONS OF THE BRIDGE RAIL TO DECK BEAMS
SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION OF BEAMS.
BOLTED CONNECTIONS PREFERRED.

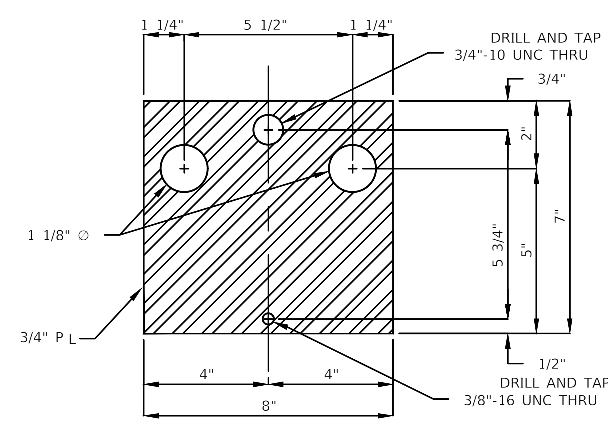
CONTRACTOR WILL HAVE TO SUBMIT WELDING CERTIFICATIONS
BEFORE A WELDED CONNECTION WILL BE APPROVED.

SECTION THRU STRUCTURE
(SL-1 RAIL)

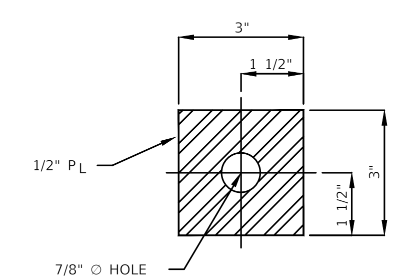
NOTE:
Deck beams shall be constructed of material that meets or exceeds Missouri State Specifications for Highway Construction. Any variation in dimensions from those shown including depth or width shall be approved by the Engineer before a bid is submitted. Shop drawings of any beam will have to be approved by the Engineer before the beams are accepted and shall include loading rating calculation signed and sealed by a Licensed Engineer in the State of Missouri. All beams must be capable of caring a HS20 live load, a 25lb/sq.ft. future wearing surface and all other impact and dead loads as per the latest addition of "AASHTO Standard Specifications for Highway Bridges". The load rating calculations should be in accordance with the "Missouri Department of Transportation Bridge Inspection and Rating Manual" and provide a minimum HS20 inventory rating of 36 tons.



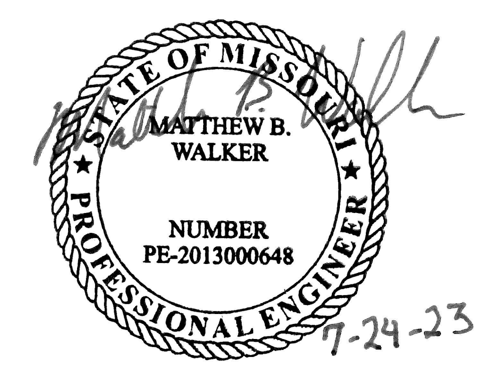
BRIDGE POST DETAILS



BASE PLATE



BEARING PLATE



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

DATE PREPARED 7/24/2023	
ROUTE 257	STATE MO
DISTRICT NE	SHEET NO.
COUNTY RALLS	
JOB NO. 5169	
CONTRACT ID.	
PROJECT NO. BRO-R087(24)	
BRIDGE NO. 2570014 1	

DESCRIPTION

DATE

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
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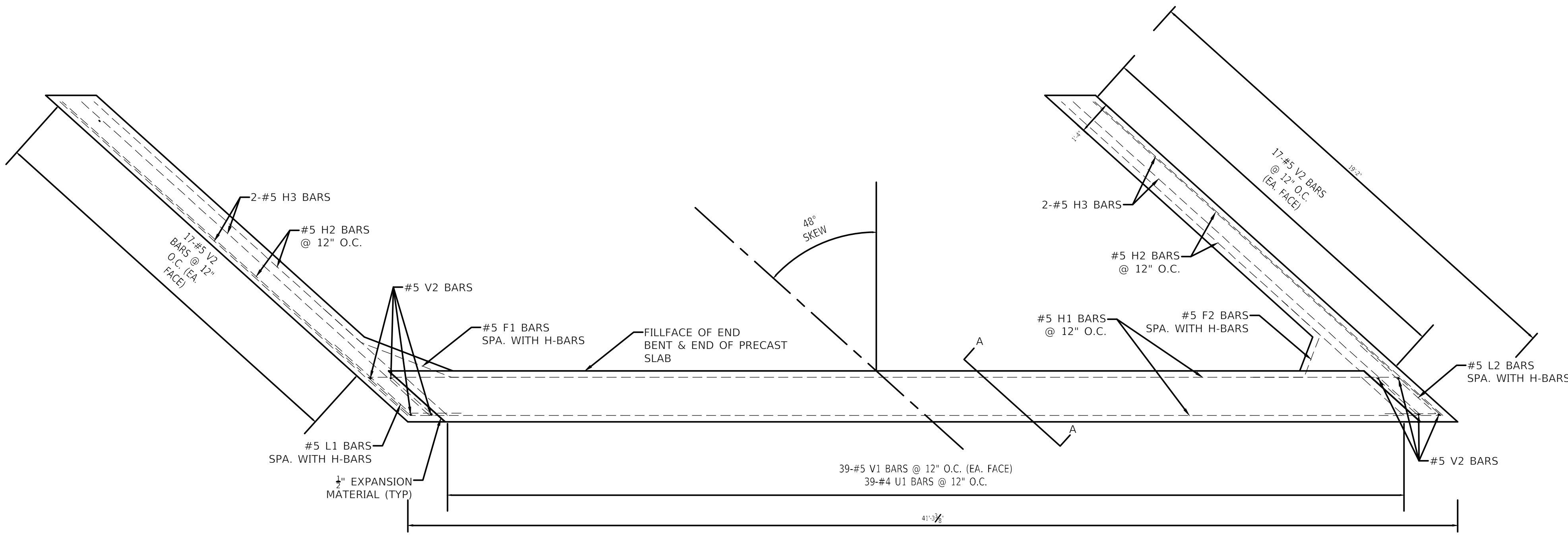
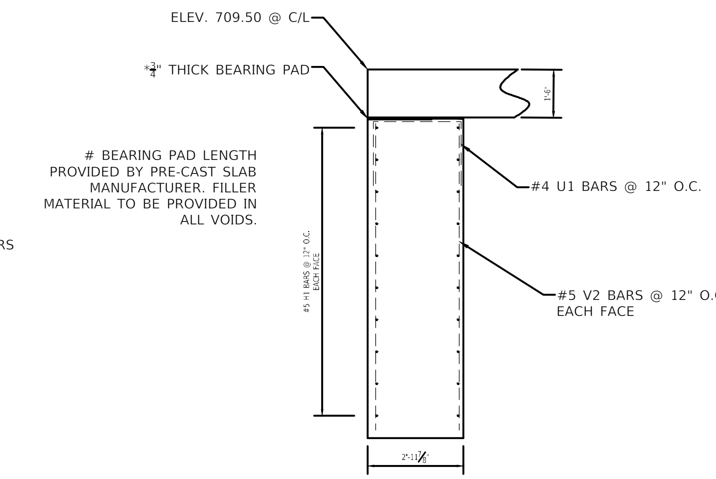


PLAN VIEW @ END BENT

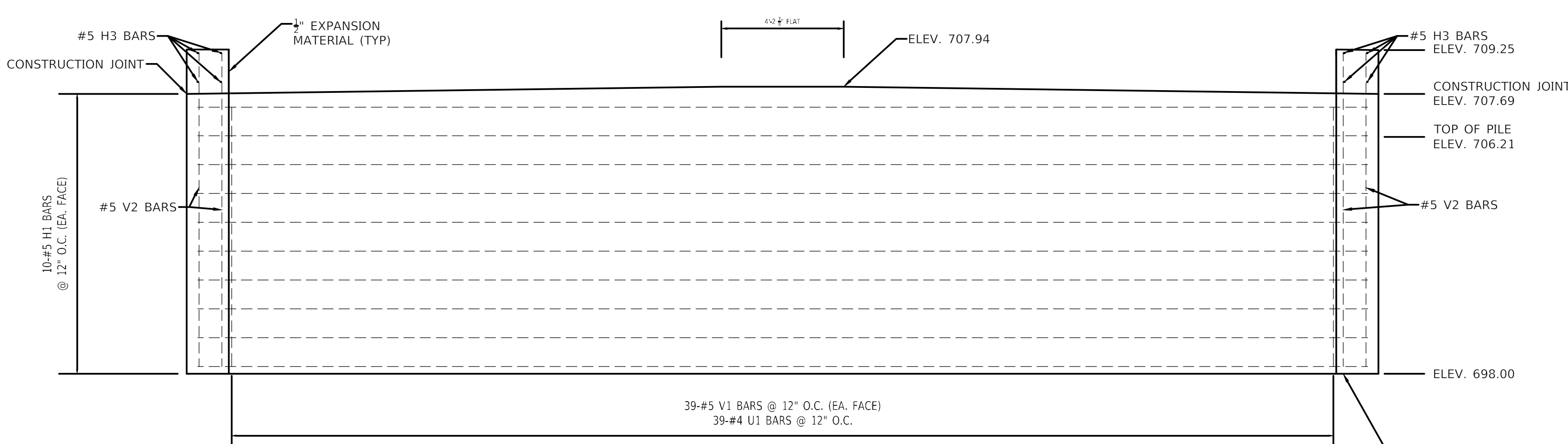
(NOT TO SCALE)

NOTE:
ALL U-BARS IN END BENT TO BE PLACED PARALLEL TO C/L ROADWAY.
H-PILE NOT SHOWN FOR CLARITY. SEE SHEET 5 OF 16 FOR PILING LOCATIONS.
H-PILE SHALL BE PRE-BORED TO MINIMUM 10 FEET BELOW BENT WALL
AND MINIMUM 5 FEET INTO SUITABLE LIMESTONE AS DETERMINED BY ENGINEER.



SECTION A-A THRU END BENT

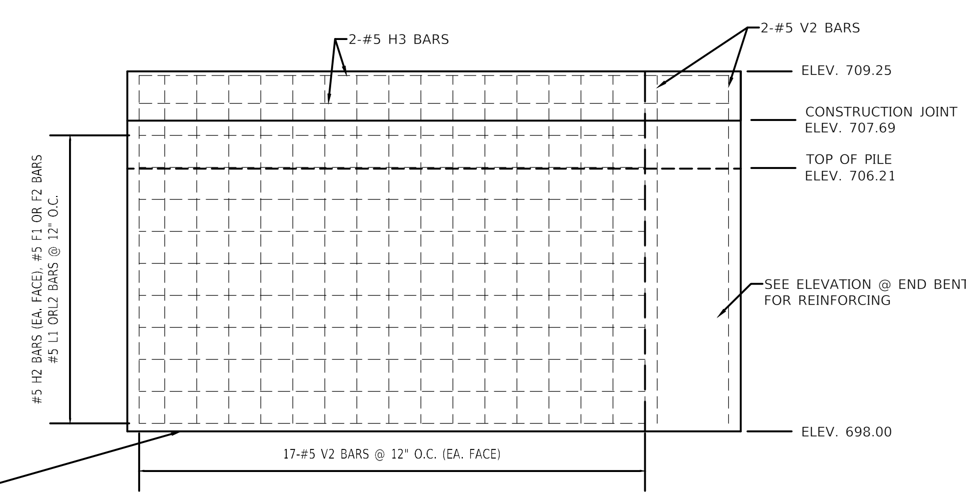
(NOT TO SCALE)



ELEVATION VIEW @ END BENT

(NOT TO SCALE)

NOTE:
PRECAST SLABS NOT SHOWN FOR CLARITY.



TYPICAL WING ELEVATION

(NOT TO SCALE)

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER
Matthew B. Walker
7-24-23

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DATE PREPARED	7/24/2023
ROUTE 257	STATE MO
DISTRICT NE	SHEET NO. 2
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
BRIDGE NO.	2570014 1

DATE	DESCRIPTION
12/13/23	MISC.

Hutchison Engineering, Inc.
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Hannibal, MO 63401
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Jacksonville - Quad Cities - Peoria - Shorewood
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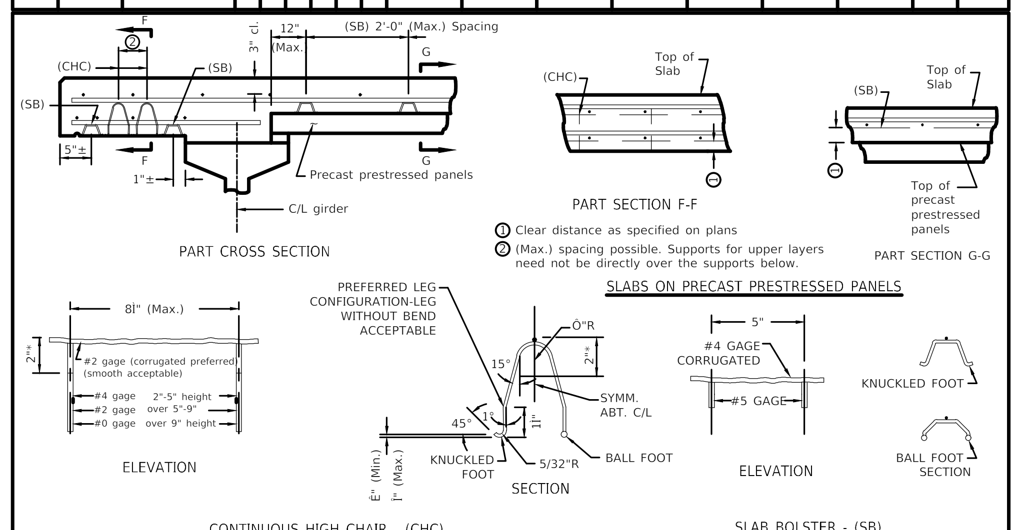
DETAILS
SHEET 9 OF 15

COMPLETE 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.	LENGTH FT.	LENGTH IN.	WEIGHT LBS.
40	5	H1	END BENT		20					41	0.375													41	0	1,712
80	5	H2	WING		20					15	9.625													15	10	1,319
16	5	H3	WING		20					18	8.000													18	8	312
78	4	U1	END BENT		10							2	0.000	2	8.875									6	9	351
156	5	V1	END BENT		20					9	4.000													9	4	1,519
152	5	V2	WING		20					10	10.500													10	11	1,724
20	5	L1	END BENT		15					4	0.000	2	0.000							2	8.125	2	11.625	6	0	125
20	5	L2	END BENT		23							2	0.000	4	0.000	2	8.125	2	11.625					6	0	125
20	5	F1	END BENT		15					2	0.000	3	9.875	2	0.000		8.625	1	10.325		8.625	1	10.325	7	10	163
20	5	F2	END BENT		15					2	0.000	1	9.375	2	0.000	1	10.325		8.625	1	10.325		8.625	5	9	120

COMPLETE 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.	LENGTH FT.	LENGTH IN.	WEIGHT LBS.



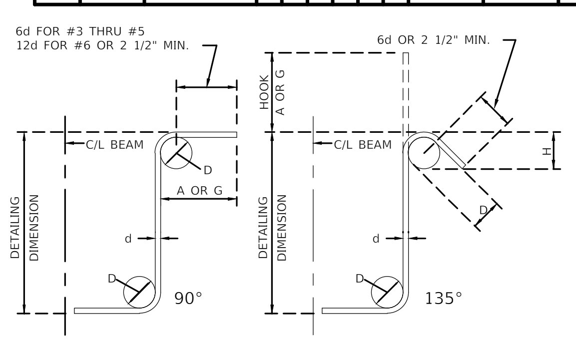
CONTINUOUS HIGH CHAIR - (CHC)

SLAB BOLSTER - (SB)

GENERAL NOTES:

ALL GAGES GIVEN ARE AMERICAN STEEL AND WIRE GAGES
ALL CONTACT POINTS TO BE SECURELY WELDED.
USE A BALL OR KNUCKLED FOOT ON ALL BAR SUPPORTS BEARING ON FORMS. WHERE BAR SUPPORTS ARE USED ON EARTH OR AGGREGATE SUBGRADES SUITABLE PLATES OR CONTINUOUS BARS SHALL BE PROVIDED TO PREVENT DISPLACEMENT OF THE SUPPORT FOOT.
ALL DIMENSIONS TO REINFORCING STEEL ARE TO C/L BAR EXCEPT WHERE CLEAR DISTANCE FROM FACE OF CONCRETE IS INDICATED.
HEIGHT OF BAR SUPPORTS TO BE THAT REQUIRED TO SUPPORT BARS IN EXACT POSITIONS SHOWN ON PLANS. WHEN BARS OF DIFFERENT SIZES ARE USED IN THE SAME MEMBERS, THE SELECTION OF BAR SUPPORTS SHALL BE BASED ON THE LARGER SIZE.
SUPPORTS FOR UPPER LAYERS NEED NOT BE DIRECTLY OVER THE SUPPORTS BELOW.
* PORTIONS TO BE EPOXY OR PLASTIC COATED WHEN USED TO SUPPORT COATED REINFORCEMENT.

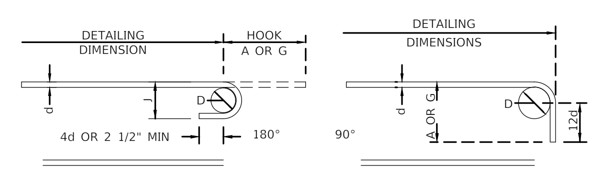
BAR SUPPORTS FOR CONCRETE REINFORCEMENT



END HOOK DIMENSIONS

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

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

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

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 1/4"	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 1/4"	19"
#10	10 1/4"	17"	12 3/4"	22"

BENDING DIAGRAMS

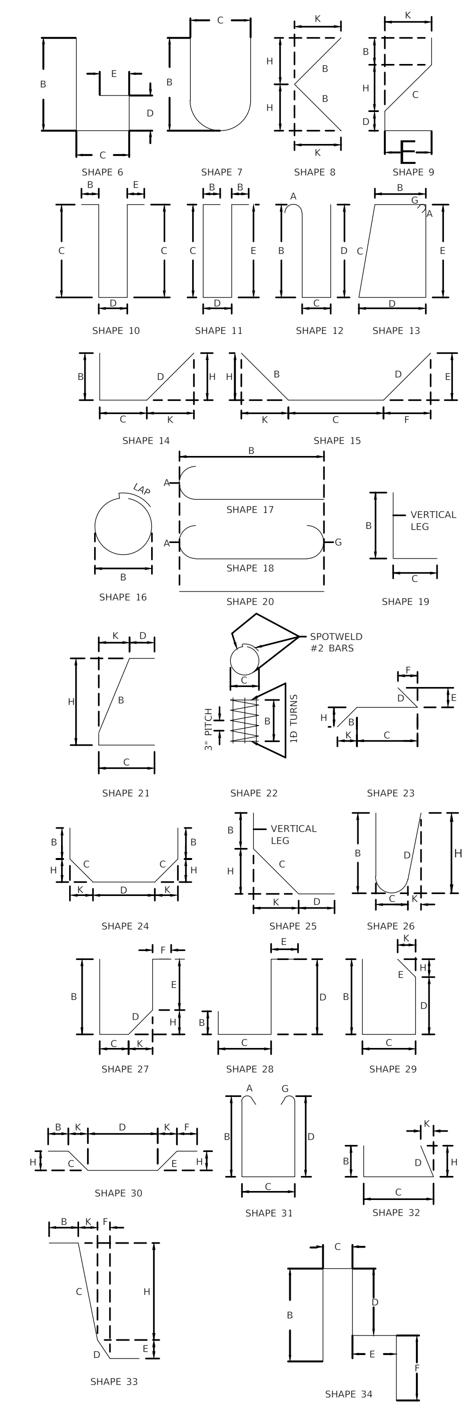
NOTES:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS

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.

SUPERSTRUCTURE	N/A
SUBSTRUCTURE	7,470 LBS.
TOTAL	7,470 LBS.



BENDING DIAGRAM

STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER

7-24-23

DATE PREPARED	7/24/2023
ROUTE	257
STATE	MO
DISTRICT	NE
SHEET NO.	2
COUNTY	RALLS
JOB NO.	5169
CONTRACT ID.	
PROJECT NO.	BRO-R087(24)
BRIDGE NO.	2570014 1

DATE	DESCRIPTION
12/13/23	MISC.

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
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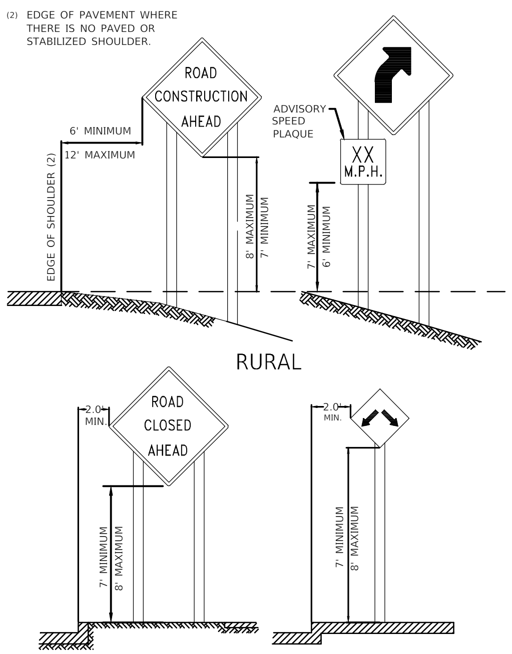
BILL OF REINFORCING



RURAL

URBAN

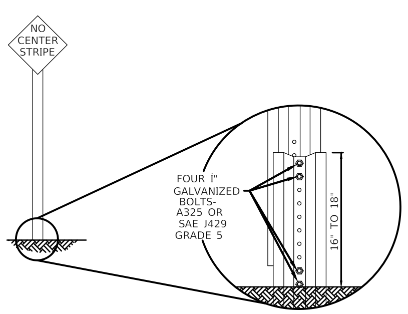
TWO POSTS SHALL BE USED WHEN THE SIGN IS GREATER THAN THAN TEN SQUARE FEET IN AREA BOTH RURAL AND URBAN.

SUPPORT POSTS SHALL NOT EXTEND ABOVE THE SIGN UNLESS DISTANCE PLAQUE OR WARNING LIGHT IS SPECIFIED. LIGHT WEIGHT STEEL POSTS PERMITTED.

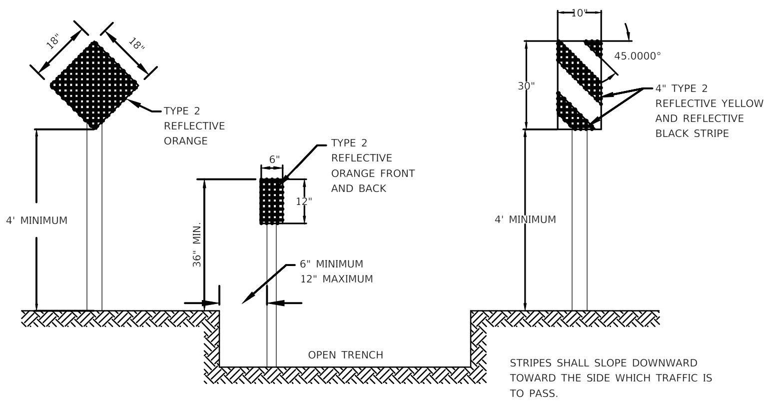
BRACING OF POSTS IS DISCOURAGED, HOWEVER, ANY BRACE PLACED PARALLEL TO THE ROAD SHALL BE SLOPED DOWN TOWARD APPROACHING TRAFFIC. ANY ANCHOR POST USED IN BRACING SHALL NOT EXTEND MORE THAN 4 INCHES ABOVE THE GROUND LINE.

IF A ONE-PIECE POST IS NOT USED ONLY ONE SPLICE WILL BE ALLOWED ON STEEL POSTS AS SHOWN IN SPLICE DETAIL. ALL POSTS AND SIGNS SHALL BE INSTALLED AND MAINTAINED IN A PLUMB POSITION.

HEIGHT AND LATERAL LOCATIONS
NON-PORTABLE SIGN MOUNTING



SPLICE DETAIL



STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE WHICH TRAFFIC IS TO PASS.

TYPE I — TYPE II — TYPE III

NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF OBJECT MARKERS.
ALL REFLECTORIZED SURFACES SHALL BE TYPE 2 SHEETING.

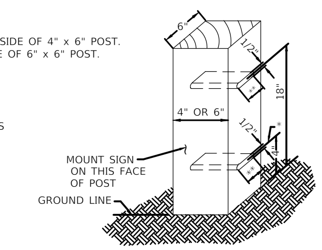
OBJECT MARKERS

* 1 1/2" x 1/2" SLOT ON 6" SIDE OF 4" x 6" POST.
2" X 1/2" SLOT ON 6" SIDE OF 6" x 6" POST.

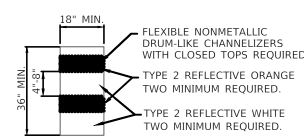
** 1 1/2" FOR 4" x 6" POST
2" FOR 6" x 6" POST

SLOT ACROSS NEUTRAL AXIS FORMED BY SUCCESSIVE DRILLING WITH 1/2" BIT.

SLOTS NOT REQUIRED WITH 4" x 4" POST.



WOOD SIGN POST SLOT DETAIL

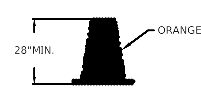


STRIPES SHALL BE ALTERNATING HORIZONTAL REFLECTIVE ORANGE, (TWO MINIMUM) AND REFLECTIVE WHITE (TWO MINIMUM) TYPE 2 REFLECTIVE SHEETING. NON-REFLECTORIZED ORANGE SPACES BETWEEN STRIPES SHALL BE NO GREATER THAN TWO INCHES.

THE CONTRACTOR HAS THE OPTION TO USE FLEXIBLE OR REBOUNDABLE REFLECTIVE SHEETING WITH THE SAME MINIMUM REQUIREMENTS AS TYPE 2 REFLECTIVE SHEETING.

NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF CHANNELIZERS.

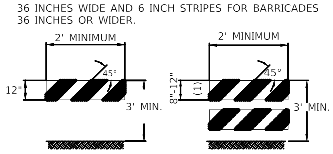
CHANNELIZER



NO DIRECT PAYMENT WILL BE MADE FOR CONES OR RELOCATING CONES WHEN SHOWN ON THE PLANS. FOR USE DURING DAYLIGHT HOURS ONLY.

CONE

REFLECTIVE ORANGE AND REFLECTIVE WHITE STRIPES ON BOTH SIDES. 4 INCH STRIPES FOR BARRICADES LESS THAN 36 INCHES WIDE AND 6 INCH STRIPES FOR BARRICADES 36 INCHES OR WIDER.



(1) 8 INCH MINIMUM - 12 INCH MAXIMUM. FOR WOODEN BARRICADES NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.

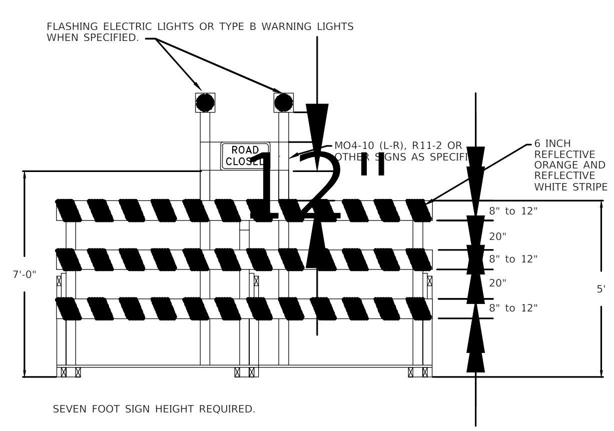
TYPE I — TYPE II

ROAD CLOSED
TO THRU TRAFFIC
AHEAD

R11-4
60" x30"

ROAD
CLOSED

R11-2
48"x30"



SEVEN FOOT SIGN HEIGHT REQUIRED.

MOVABLE BARRICADE

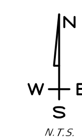
ALL REFLECTORIZED SURFACES SHALL BE TYPE 1 SHEETING UNLESS OTHERWISE INDICATED.

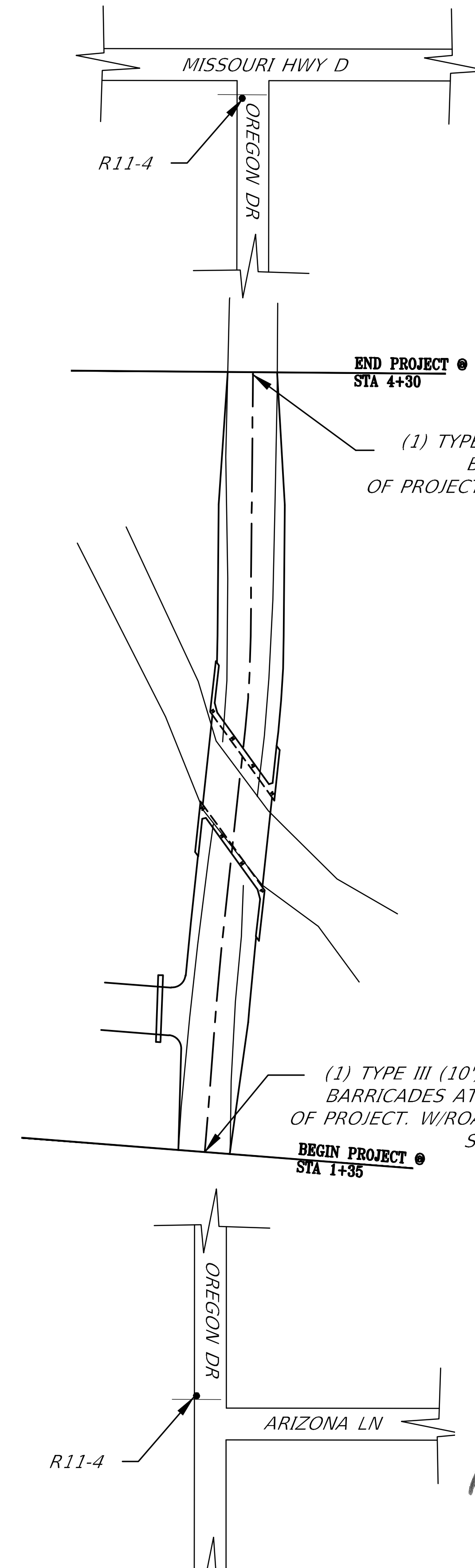
NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF BARRICADES.

NO PAYMENT WILL BE MADE FOR RELOCATING SIGNS ON MOVALBLE BARRICADES WHICH ARE TO BE RELOCATED UNLESS THE SIGN LEGEND IS TO BE CHANGED.

STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE WHICH TRAFFIC IS TO PASS.

BARRICADES





STATE OF MISSOURI
MATTHEW B. WALKER
NUMBER PE-2013000648
PROFESSIONAL ENGINEER

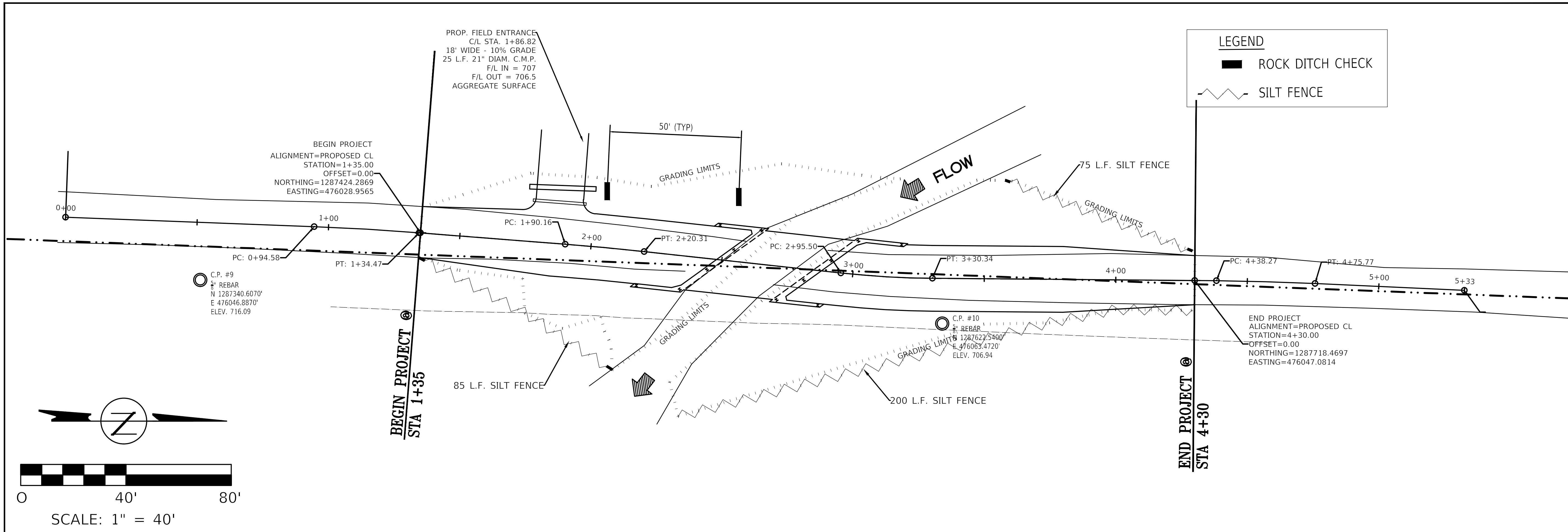
7-24-23

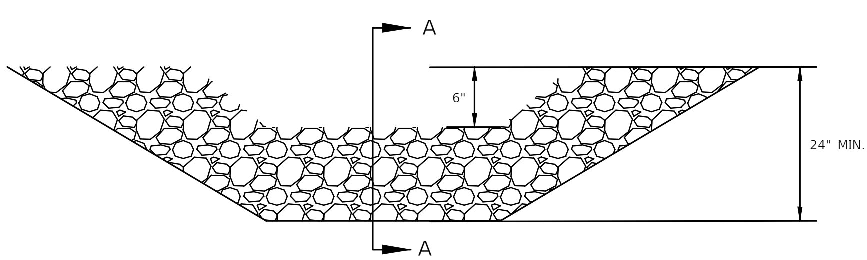
DATE PREPARED 7/24/2023	
ROUTE 257	STATE MO
DISTRICT NE	SHEET NO.
COUNTY RALLS	
JOB NO. 5169	
CONTRACT ID.	
PROJECT NO. BRO-R087(24)	
BRIDGE NO. 2570014 1	
DESCRIPTION	
DATE	

Hutchison Engineering, Inc.
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577
Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

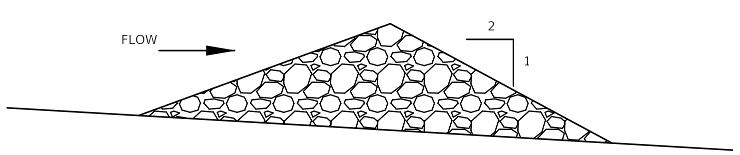
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

TRAFFIC CONTROL
SHEET 11 OF 15





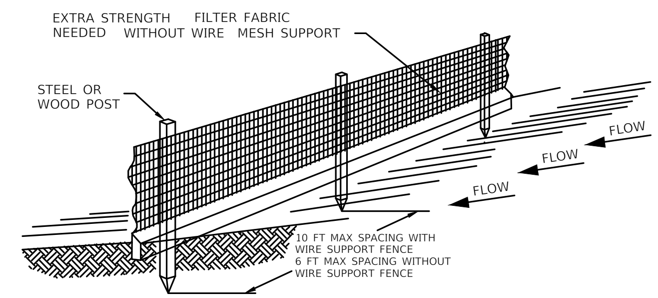
END VIEW

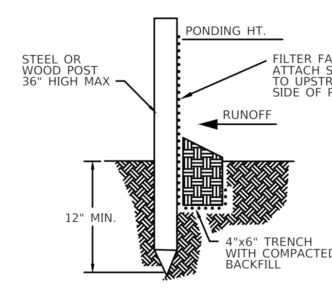


SECTION A - A

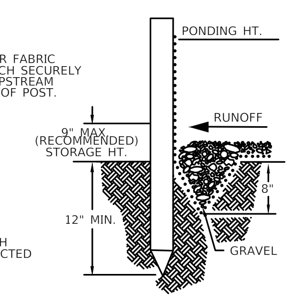
TYPE II ROCK DITCH CHECK

EROSION CONTROL SHALL BE PROVIDED AS SHOWN ON THE PLANS.
COST FOR FURNISHING, INSTALLING AND MAINTAINING SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.





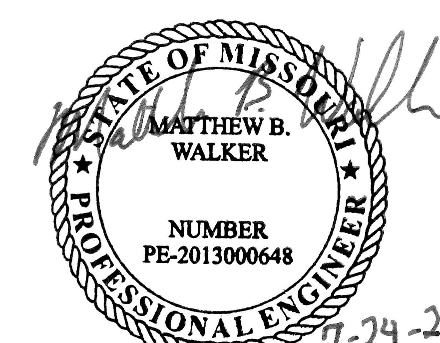
STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE



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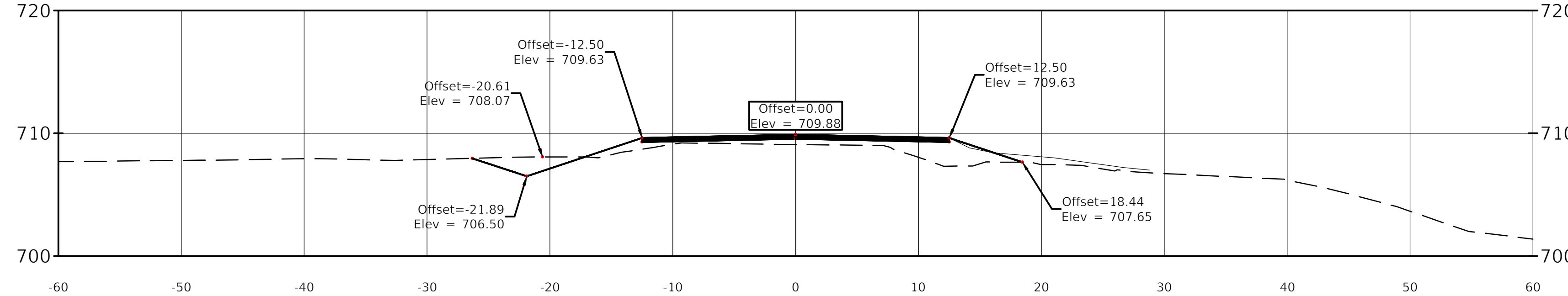
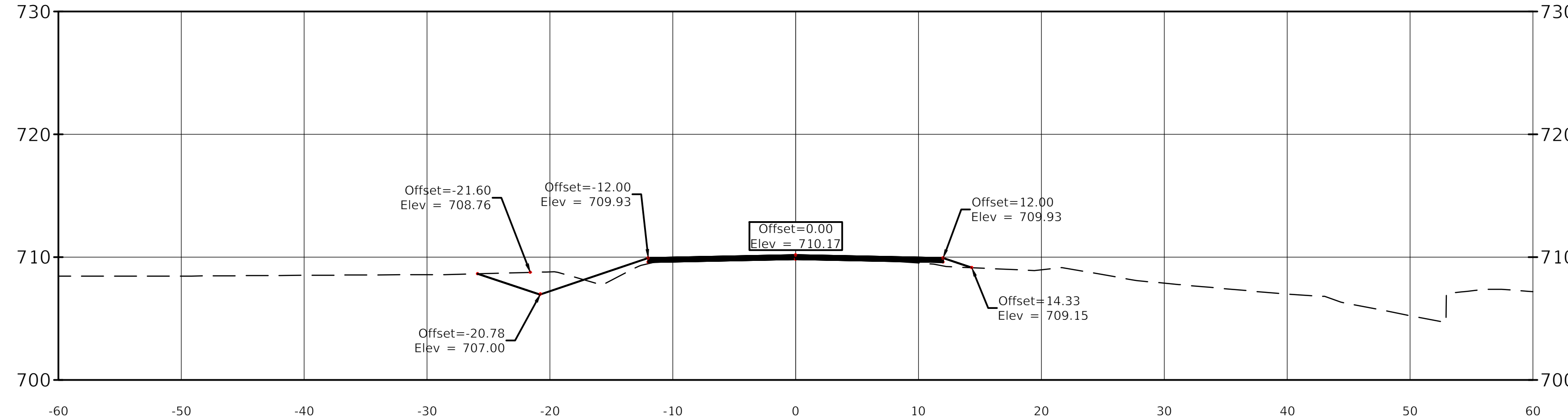
EROSION CONTROL
SHEET 12 OF 15

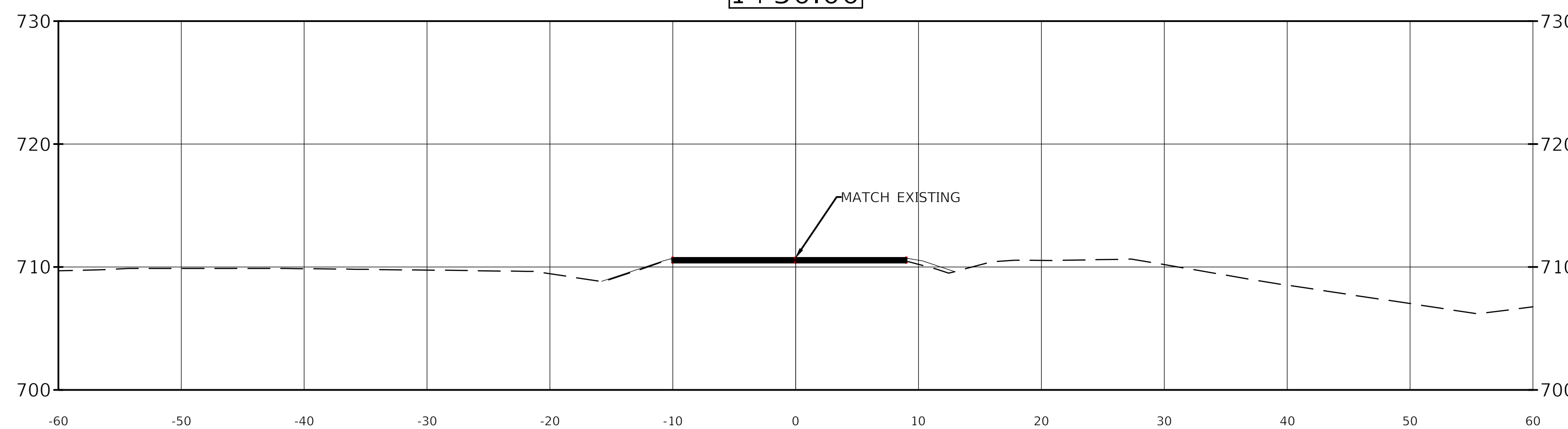
2+00.00



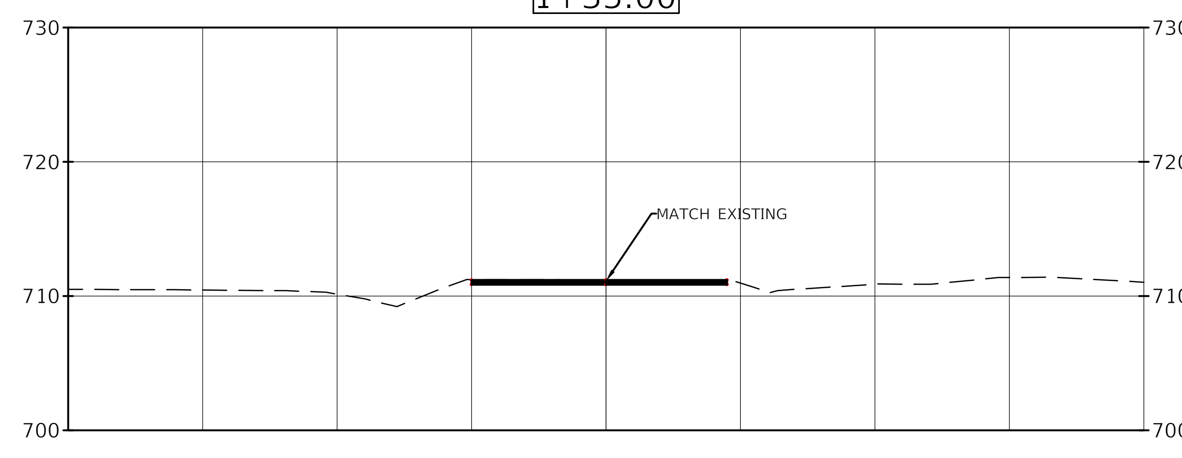
1+75.00



1+50.00



1+35.00



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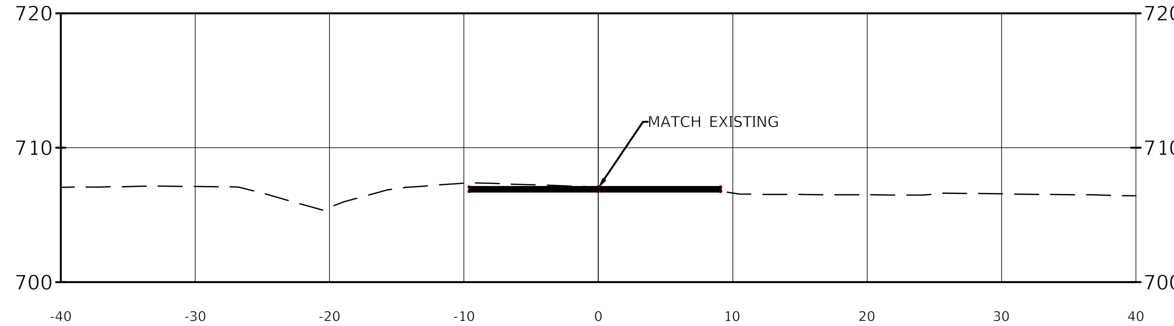
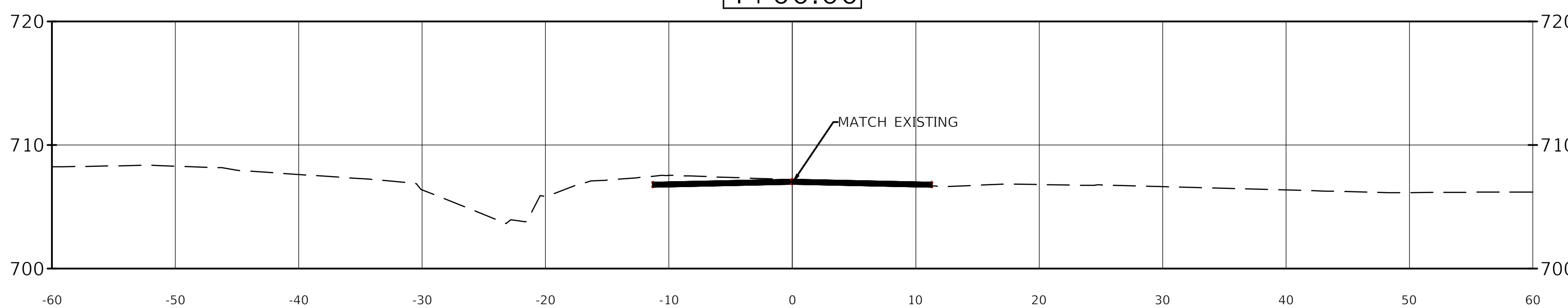
CROSS SECTIONS
SHEET 13 OF 15

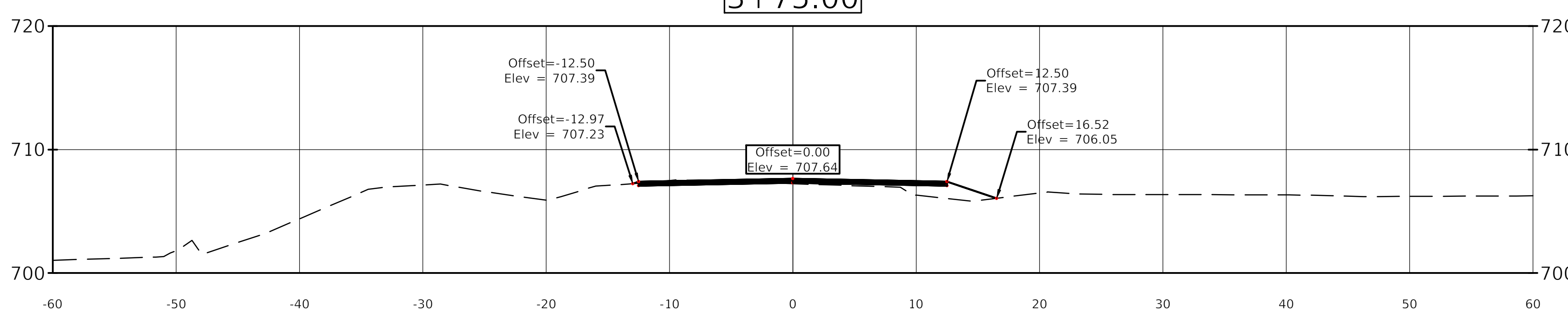
4+30.00



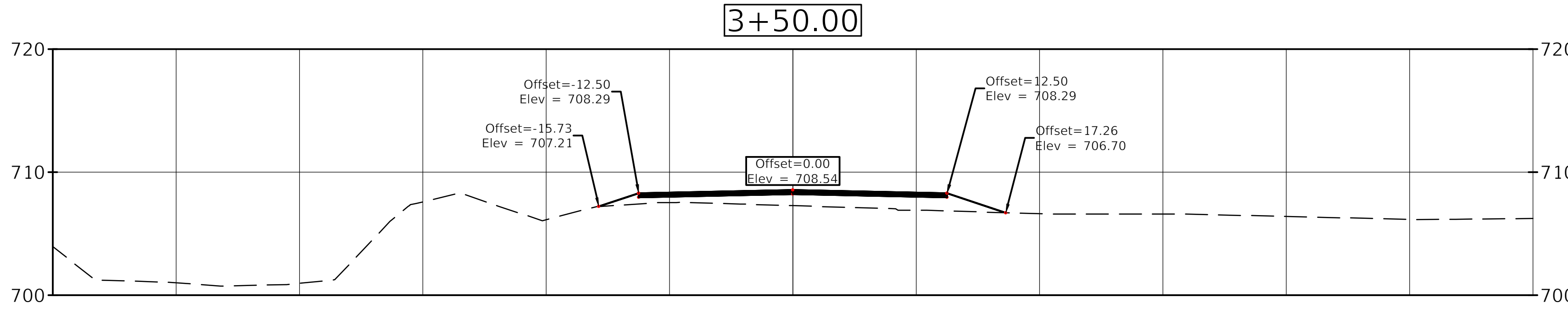
4+00.00

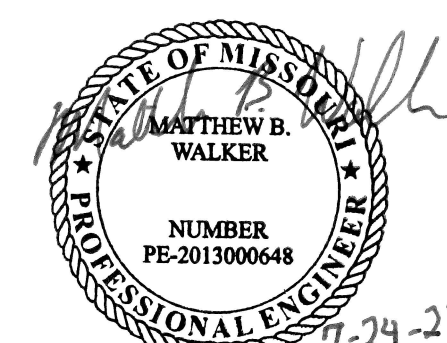


3+75.00



3+50.00





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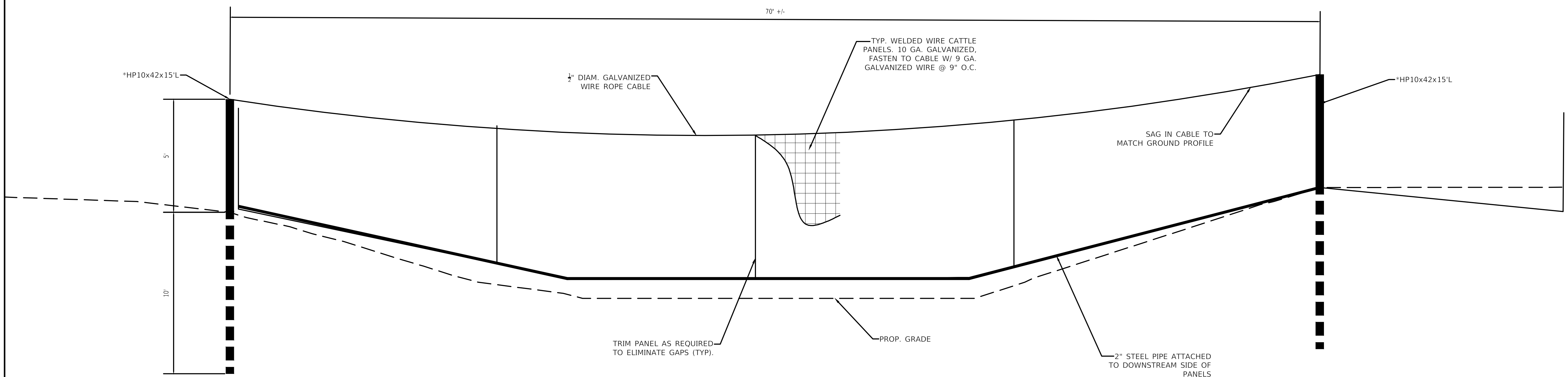

WATER GAP ELEVATION
N.T.S.

* CONNECT CABLE TO PILES LOOPED THROUGH HOLE IN WEB WITH FOUR GALVANIZED WIRE ROPE CLAMPS (TYP).

STATE OF MISSOURI
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NUMBER PE-2013000648
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7-24-23

DATE PREPARED	7/24/2023
ROUTE	257
STATE	MO
DISTRICT	NE
SHEET NO.	2
COUNTY	RALLS
JOB NO.	5169
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PROJECT NO.	BRO-R087(24)
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