

ADDENDUM # 1

Monroe County Bridge Replacement

BRO-R069(004)

Bridge #3310004 1

9/25/2026

The time of letting has been changed from Monday, October 5th, 2026 at 10:00 a.m. to **Thursday, October 8th, 2026 at 10:00 a.m.**

For bidding purposes, please utilize the attached Bid Form and Plans.

Note the acceptance of either Grade 50W or Grade 50 Galvanized Structural Steel.

Please acknowledge receipt of Addendum #1 in your bid.

BIDDING FORM

(work to be completed by contractor only)

MONROE COUNTY BRIDGE REPLACEMENT
FEDERAL PROJECT BRO-R069(004)
BRIDGE NO. 3310004 1 OVER TOWN BRANCH
44' - 0" SINGLE SPAN STEEL I-GIRDER BRIDGE
WEST HICKORY STREET; CITY OF PARIS, MISSOURI

ROADWAY

ITEM NO.	ITEM	UNITS	QTY	UNIT PRICE	AMOUNT
201-99.01	CLEARING AND GRUBBING	L.S.	1		
202-20.10	REMOVAL OF IMPROVEMENTS	L.S.	1		
310-50.03	GRAVEL (A) CRUSHED STONE (B) (4" THICK SURFACE)	S.Y.	60		
502-11.08	CONCRETE PAVEMENT (8 IN NON-REINFORCED	S.Y.	76		
604-05.06	TYPE 5 AGGREGATE FOR BASE (6 IN. THICK)	S.Y.	76		
609-60.30A	FURNISHING TYPE 3 ROCK DITCH LINER	C.Y.	90		
609-60.43	PLACING TYPE 3 ROCK DITCH LINER	C.Y.	90		
616-10.05	CONSTRUCTION SIGNS	S.F.	20		
616-10.30	TYPE III TEMPORARY BARRICADES	EACH	6		
618-10.00	MOBILIZATION	L.S.	1		
624-01.03A	PERMANENT EROSION CONTROL GEOTEXTILE	S.Y.	230		
627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	L.S.	1		
805-10.00A	SEEDING - COOL SEASON MIXTURES	S.F.	600		
806-10.19	SILT FENCE	L.F.	119		
				SUBTOTAL (ROADWAY):	

BRIDGE

ITEM NO.	ITEM	UNITS	QTY	UNIT PRICE	AMOUNT
206-10.00	CLASS 1 EXCAVATION	C.Y.	160		
206-10.03	CLASS 1 EXCAVATION IN ROCK	C.Y.	35		
216-05.00	REMOVAL OF BRIDGES	L.S.	1		
503-10.11A	BRIDGE APPROACH SLAB (MINOR)	S.Y.	110		
606-99.03	BRIDGE GUARDRAIL (KANSAS CORRAL)	L.F.	133.0		
702-12.10	GALVANIZED STRUCTURAL STEEL PILES (10 INCH)	L.F.	151		
702-60.00	PRE-BORE FOR PILING	L.F.	15		
702-70.00	PILE POINT REINFORCEMENT	EACH	12		
702-99.03	PRE-BORE FOR PILING IN ROCK	L.F.	120		
703-40.03	CLASS B-1 CONCRETE (SUBSTRUCTURE)	C.Y.	36		
703-42.12	SLAB ON STEEL	S.Y.	130		
712-99.02	W24X84 STEEL GIRDER - GRADE 50W OR GRADE 50 GALVANIZED	EACH	4		
716-10.00	PLAIN NEOPRENE BEARING PADS	EACH	8		
				SUBTOTAL (BRIDGE):	
				TOTAL:	

(PLEASE PRINT OR TYPE BID AMOUNT)

Contractor: _____

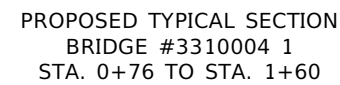
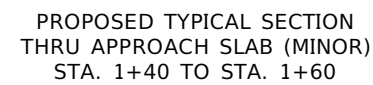
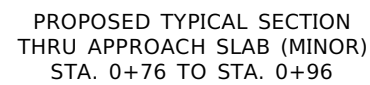
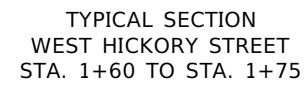
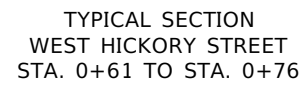
Representative: _____

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

Phone: _____

Address: _____

Fax: _____



- WEST HICKORY STREET TO BE CLOSED DURING CONSTRUCTION.

 **Hutchison**
Engineering, Inc.

36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577

Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

MOBILIZATION
QUANTITY = 1 LUMP SUM

CONTRACTOR FURNISHED SURVEYING AND STAKING
QUANTITY = 1 LUMP SUM

SEEDING - COOL SEASON MIXTURE		
TOTAL	600	S.F.
USE	600	S.F.

CLEARING AND GRUBBING
QUANTITY = 1 LUMP SUM

TYPE 2 ROCK BLANKET / DITCH LINER				
PLAN SHEET	FURNISHING TYPE 3 ROCK DITCH LINER C.Y.	PLACING TYPE 3 ROCK DITCH LINER C.Y.	PERMANENT EROSION CONTROL GEOTEXTILE S.Y.	REMARKS
4	90	90	230	SLOPE PROTECTION AROUND EAST & WEST END BENT
TOTAL	90	90	230	

REMOVAL OF IMPROVEMENTS						
PLAN SHEET	BEGIN STATION	END STATION	LOCATION	QUANTITY	UNITS	DESCRIPTIONS
4	0+61	1+75	HICKORY ST.	1	L.S.	REMOVE EXSTING PAVEMENT
4	0+91		HICKORY ST.	1	L.S.	REMOVE EXIST. SIGN & POST WEIGHT LIMIT - 8 TONS
4	1+50		HICKORY ST.	1	L.S.	REMOVE EXIST. SIGN & POST WEIGHT LIMIT - 8 TONS

PAVEMENT / SURFACE AGGREGATE							
PLAN SHEET	BEGIN STATION	END STATION	LOCATION	GRAVEL (A) CRUSHED STONE (B) 4" THICK	CONCRETE PAVEMENT (8 IN NON- REIN.)	TYPE 5 AGGREGATE FOR BASE 6" THICK	REMARKS
				S.Y.			
4	0+61	0+76	HICKORY ST.		36	36	ROADWAY SURFACE
4	1+60	1+75	HICKORY ST.		40	40	ROADWAY SURFACE
4	7+66.47	7+90.8	RT	60			PRIVATE LOT SURFACE
				TOTAL	76	76	
				USE	76	76	

TEMPORARY EROSION CONTROL			
SHEET	SILT FENCE L.F.	ROCK DITCH CHECK L.F.	REMARKS
7	119		ADJUST FOR FIELD CONDITIONS
TOTAL	119		
USE	119		



Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648

DATE PREPARED
6/22/2026

ROUTE
HICKORY ST.

STATE
MO

DISTRICT
NE

SHEET NO.
3

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

DATE	DESCRIPTION					

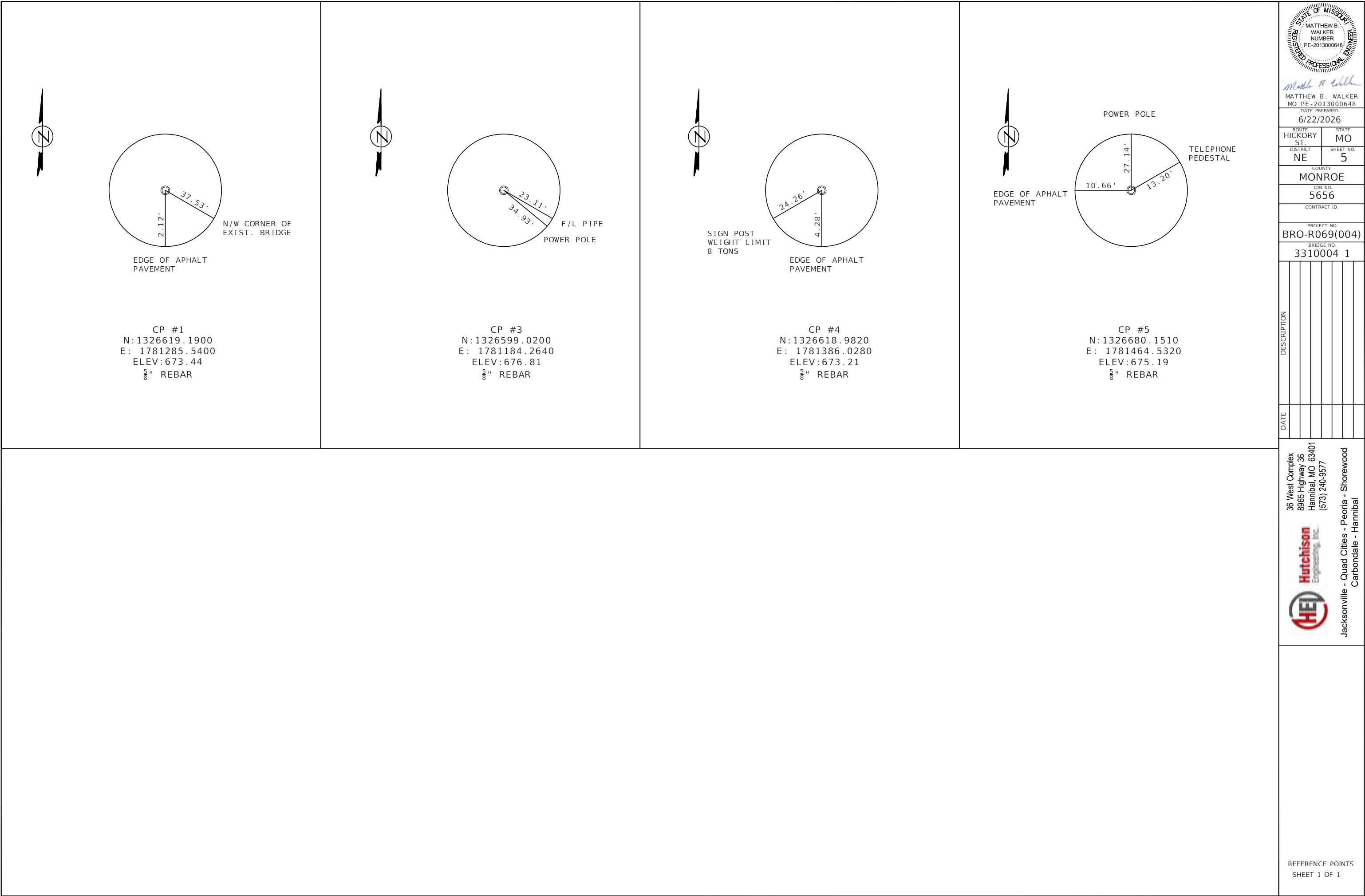
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577

Hutchison
Engineering, Inc.

HEI

Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

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



Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648

DATE PREPARED
6/22/2026

ROUTE HICKORY ST.	STATE MO
DISTRICT NE	SHEET NO. 5

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

DATE	DESCRIPTION

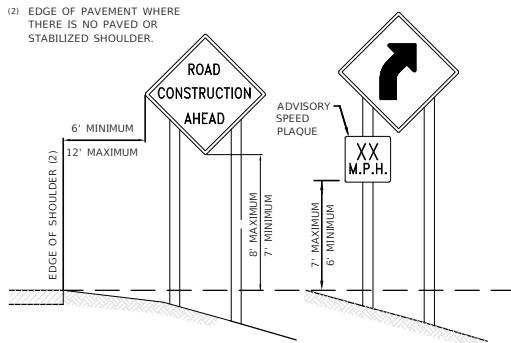
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8965 Highway 36
Hannibal, MO 63401
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Hutchison
Engineering, Inc.

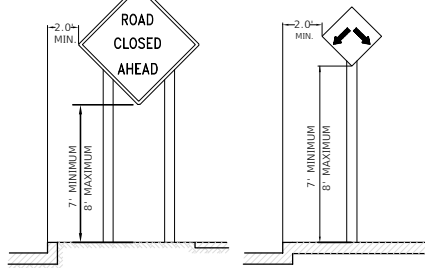
H&E

Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

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RURAL



URBAN

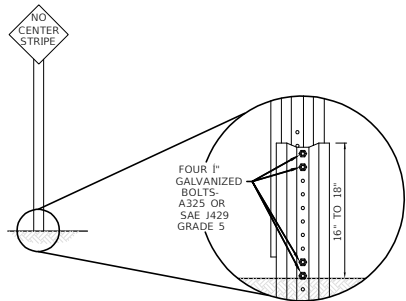
TWO POSTS SHALL BE USED WHEN THE SIGN IS GREATER THAN TEN TEN SQUARE FEET IN AREA BOTH RURAL AND URBAN.

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.

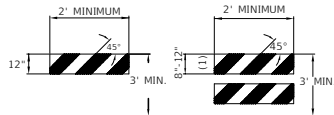
IF A ONE-PIECE POST IS NOT USED ONLY ONE SPLICE WILL BE ALLOWED ON STEEL POSTS AS SHOWN IN SPLICE DETAIL. ALL POSTS AND SIGNS SHALL BE INSTALLED AND MAINTAINED IN A PLUMB POSITION.

HEIGHT AND LATERAL LOCATIONS
NON-PORTABLE SIGN MOUNTING



SPLICE DETAIL

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.

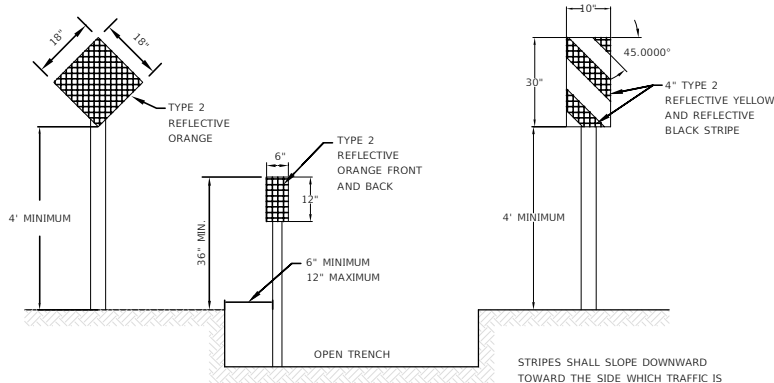
TYPE I TYPE II

ROAD CLOSED
TO THRU TRAFFIC
AHEAD

R11-4
60" x30"

ROAD
CLOSED

R11-2
48"x30"



TYPE I

TYPE II

TYPE III

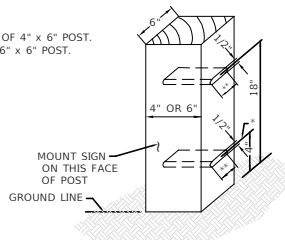
NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF OBJECT MARKERS.
ALL REFLECTORIZED SURFACES SHALL BE TYPE 2 SHEETING.

OBJECT MARKERS

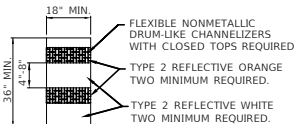
- 1 1/2" x 1/2" SLOT ON 6" SIDE OF 4" x 6" POST.
- 2" x 1/2" SLOT ON 6" SIDE OF 6" x 6" POST.
- 1 1/2" FOR 4" x 6" POST
- 2" FOR 6" x 6" POST

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.

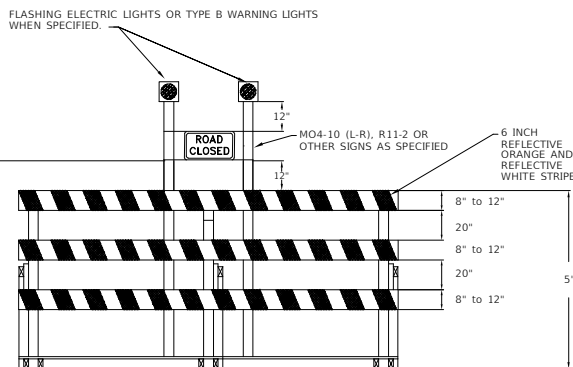
NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF CHANNELIZERS.

CHANNELIZER



CONE

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



SEVEN FOOT SIGN HEIGHT REQUIRED.

MOVABLE BARRICADE

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

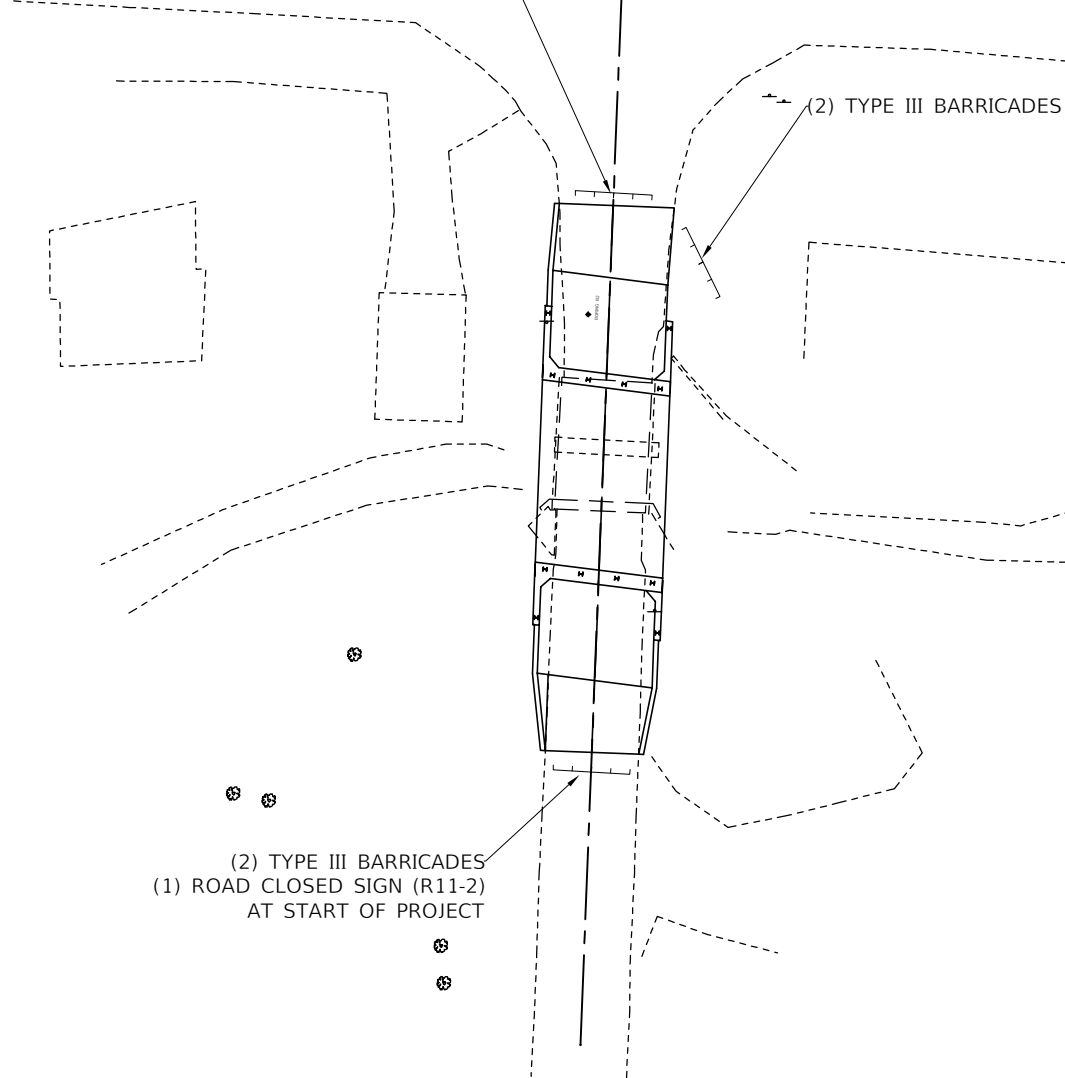
NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF BARRICADES.

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

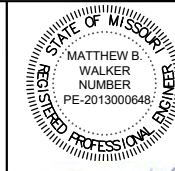
STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE WHICH TRAFFIC IS TO PASS.

BARRICADES

(2) TYPE III BARRICADES
(1) ROAD CLOSED SIGN (R11-2)
AT END OF PROJECT



(2) TYPE III BARRICADES
(1) ROAD CLOSED SIGN (R11-2)
AT START OF PROJECT



MATTHEW B. WALKER
MO PE - 2013000648

DATE PREPARED
6/22/2026

ROUTE HICKORY ST.
DISTRICT NE

STATE MO
SHEET NO. 6

COUNTY MONROE

JOB NO. 5656

CONTRACT ID.

PROJECT NO. BRO-R069(004)

BRIDGE NO. 3310004 1

DATE

DESCRIPTION

DATE

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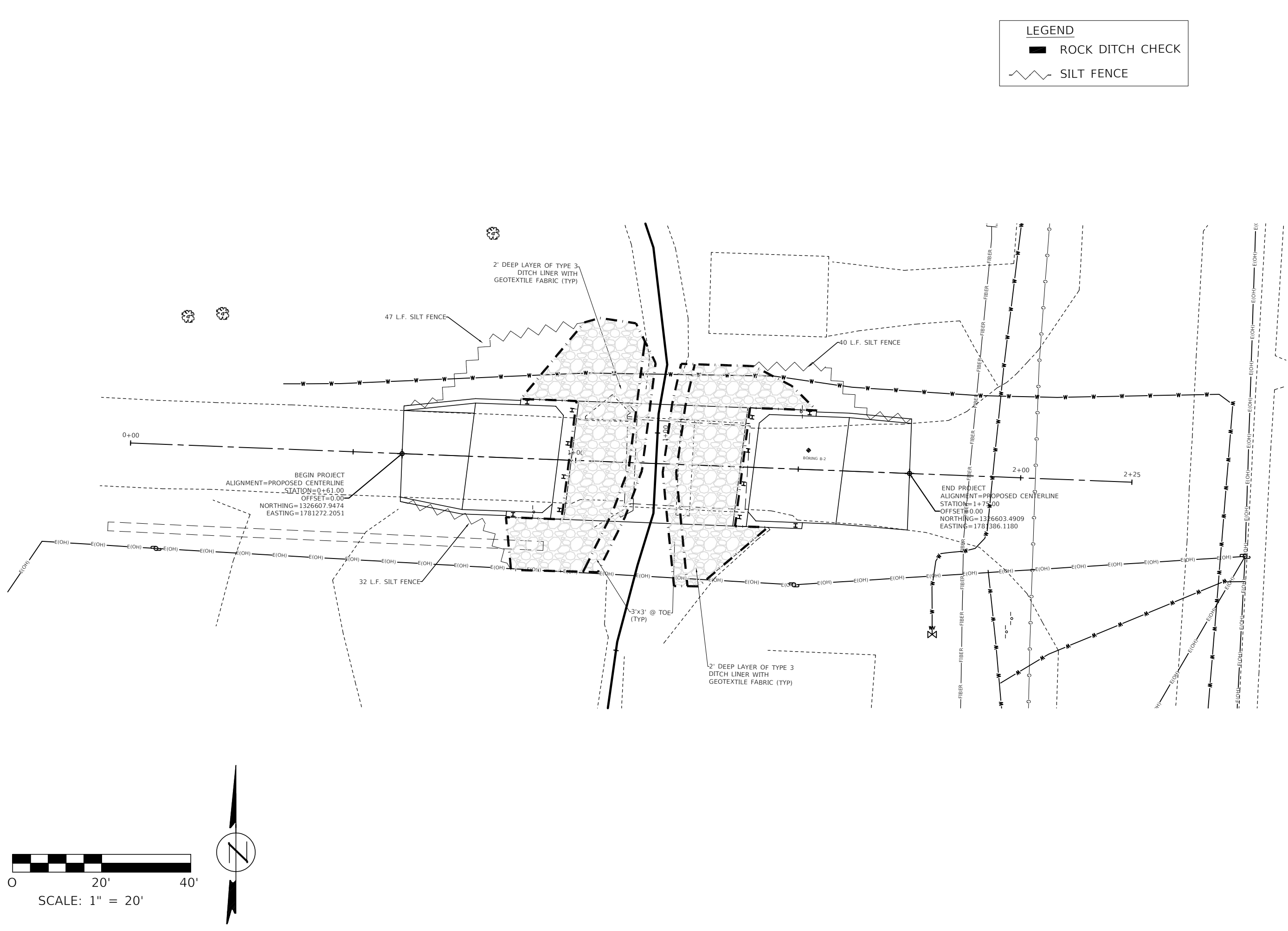
DATE

DATE

DATE

DATE

DATE



LEGEND

■ ROCK DITCH CHECK

~ SILT FENCE



Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648

DATE PREPARED
6/22/2026

ROUTE HICKORY ST.	STATE MO
DISTRICT NE	SHEET NO. 7

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

DATE	DESCRIPTION

36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577



Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

Estimated Quantities				
ITEM		Substr.	Superstr.	Total
Class 1 Excavation	c.y.	160		160
Class 1 Excavation in Rock	c.y.	35		35
Removal of Bridge	lump sum			1
Bridge Approach Slab (Minor)	s.y.	110		110
Galvanized Structural Steel Piles (10-inch)	l.f.	151		151
Pile Point Reinforcement	each	12		12
Class B-1 Concrete (substructure)	c.y.	36		36
Slab on Steel Beam	s.y.		130	130
Bridge Guardrail (Kansas Corral)	l.f.		133	133
Pre-bore for Piling	l.f.	15		15
Pre-bore for Piling in Rock	l.f.	120		120
W24x84 Steel Girder - Grade 50W or Grade 50 Galvanized	each		4	4
Plain Neoprene Bearing Pad	each		8	8

All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Steel Beam.

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

General Notes:

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

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," 2026 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:
Vehicular = HS20
Future Wearing Surface = 25 psf
Earth = 120 lb/cf
Equivalent Fluid Pressure = 45 lb/cf

Superstructure: Simply supported, non-composite for dead load.
Simply supported, composite for live load.

Design Unit Stresses:
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
Structural Steel H-pile fy = 50,000 psi
Structural Steel Girders (Gr. 50W) fy = 50,000 psi

Neoprene Pads:
Neoprene bearing pads shall be 60 durometer and shall be in accordance with Section 716.

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

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 ½", unless otherwise shown.

Foundation Data			
Type	Design Data	Bent Number	
Load Bearing Pile		1	2
	Pile Type and Size	HP 10x42	HP 10x42
	Number	6	6
	Approximate Length Per Each	12.6	12.6
	Pile Point Reinforcement	ALL	ALL
	Min. Galvanized Penetration (Elev.)	FULL LENGTH	FULL LENGTH
	Est. Max. Scour Depth 100 (Elev.)	—	—
	Pile Driving Verification Method	*Other	*Other
	Resistance Factor	N/A	N/A
	Design Bearing	tons 55	55

* See General Special Provisions in the Bid Proposal

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

Pre-bore all H-pile to elevation 655.4 or a minimum 8 feet into sound limestone (see boring data) in accordance with Section 702.

H-Piles are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Section 702.

Traffic Handling:
Structure to be closed during construction. See roadway plans for traffic control details.

Estimated Quantities for Slab on Steel Beam		
Item		Total
Class B-2 Concrete	c.y.	45
Reinforcing Steel (bridges)	pound	12,906
Prestressed Deck Panel	s.f.	830

The table of Estimated Quantities for Slab on Steel Beam represents the quantities used in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard longitudinally from end of slab to end of slab and transversely from out to out of bridge slab (or with the horizontal dimensions as shown on the plan of slab). Payment for prestressed panels, conventional forms, all concrete and reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

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

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

The Estimated Quantities for Slab on Steel Beam are based on skewed precast prestressed end panels.

Hydrologic Data	
Drainage Area =	0.62 sq. mi.
Design Flood Frequency =	25 years
Design Flood Discharge =	587 cfs
Design Flood (D.F.) Elevation =	668.9 feet
Base Flood (100-year)	
Base Flood Elevation =	669.49 feet
Base Flood Discharge =	847 cfs
Estimated Backwater =	0 feet
Average Velocity thru Opening =	6.92 ft/s
Freeboard (50-year)	
Freeboard =	1.2 feet
Roadway Overtopping	
Overtopping Flood Discharge =	> 1180 cfs
Overtopping Flood Frequency =	> 500 years
Overtopping Flood Elevation =	> 670.3 feet

STATE OF MISSOURI

MATTHEW B. WALKER

NUMBER

PE-2013000648

REGISTERED PROFESSIONAL ENGINEER

Matthew B. Walker

MATTHEW B. WALKER

MO PE-2013000648

DATE PREPARED

6/22/2026

ROUTE

HICKORY ST.

DISTRICT

NE

STATE

MO

SHEET NO.

2

COUNTY

MONROE

JOB NO.

5656

CONTRACT ID.

PROJECT NO.

BRO-R069(004)

BRIDGE NO.

3310004 1

DESCRIPTION

DATE

9/25/26

PREBORE, PILING, RAIL QTY

36 West Complex

8965 Highway 36

Hannibal, MO 63401

(573) 240-9577

Hutchison

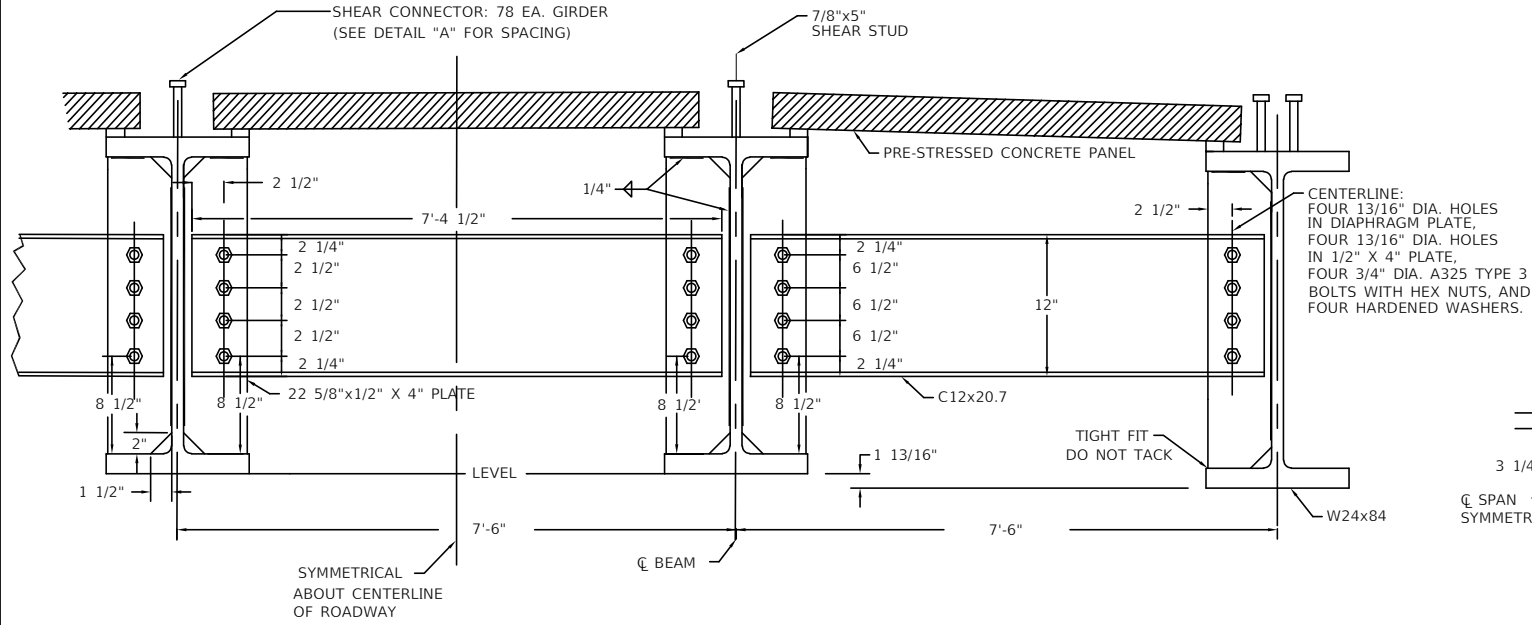
Engineering, Inc.

HEI

Jacksonville - Quad Cities - Peoria - Shorewood

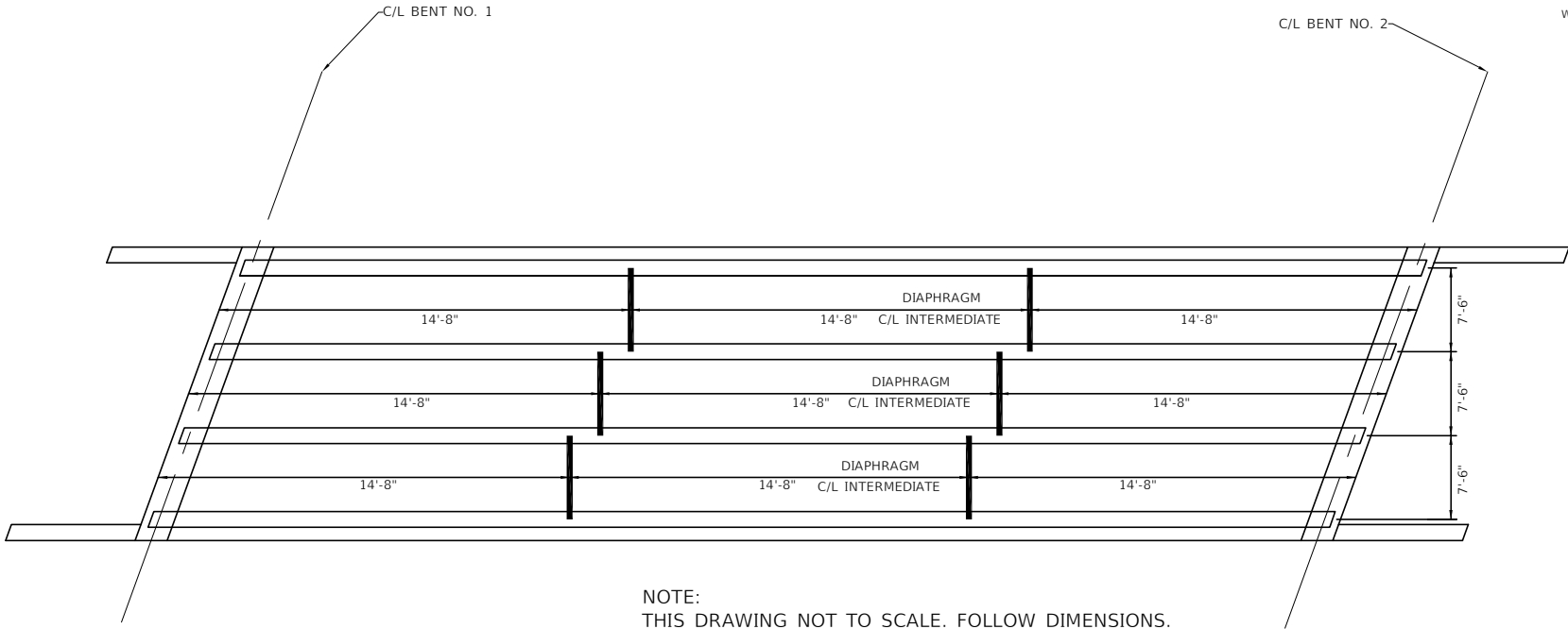
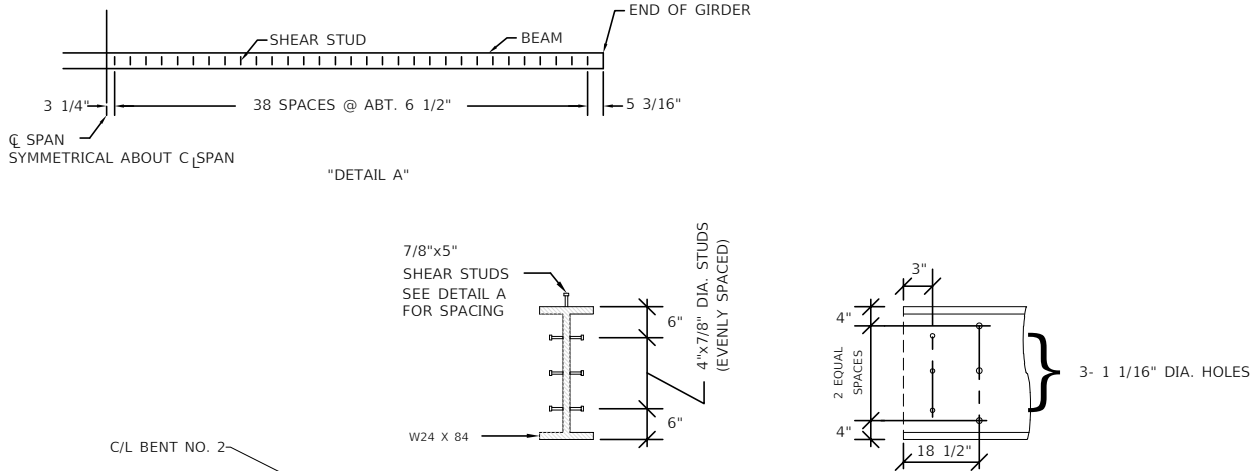
Carbondale - Hannibal

GENERAL NOTES & QUANTITIES



NOTES:

ALL STRUCTURAL STEEL SHALL BE NEW, ASTM A709, GRADE 50W or GRADE 50 GALVANIZED, SOLE PLATES SHALL BE A709 GRADE 36W OR GRADE 50W. CERTIFIED MILL TEST REPORTS FOR PHYSICAL AND CHEMICAL PROPERTIES SHALL BE PROVIDED. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE ENGINEERS APPROVAL OF THE SHOP DRAWINGS WILL COVER ONLY THE GENERAL DESIGN FEATURES, AND IN NO CASE SHALL THIS APPROVAL BE CONSIDERED TO COVER ERRORS OR OMISSIONS IN THE SHOP DRAWINGS. THE FABRICATOR SHALL BE CURRENTLY CERTIFIED FOR SIMPLE STEEL BRIDGE STRUCTURES (Sbr) BY THE AMERICAN INSTITUTE FOR STEEL CONSTRUCTION (AISC). ALL WELDING OPERATIONS, INCLUDING MATERIAL AND PERSONNEL, SHALL MEET THE AMERICAN WELDING SOCIETY (AWS) SPECIFICATIONS. NATURAL BEAM CAMBER WILL BE USED TO ADVANTAGE. INSPECTIONS WILL BE REQUIRED OF THE RAW MATERIALS PRIOR TO FABRICATION, AND UPON DELIVERY TO THE PROJECT SITE. MONROE COUNTY WILL REQUIRE THE FABRICATOR TO FURNISH A CERTIFICATION OF CONTRACT COMPLIANCE. FINAL ACCEPTANCE WILL BE BASED ON THE ABOVE REQUIREMENTS BEING MET. THE CERTIFIED METALLURGICAL TEST REPORTS, ANY TESTS THE ENGINEER MAY PERFORM AND ALL VISUAL INSPECTIONS.



NOTE:
THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

PART PLAN OF BRIDGE SHOWING GIRDER AND INTERMEDIATE DIAPHRAGM LAYOUT

INTERMEDIATE DIAPHRAGMS

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

Matthew B. Walker

MATTHEW B. WALKER
MO PE-2013000648

DATE PREPARED
6/22/2026

ROUTE
HICKORY ST.
DISTRICT
NE

STATE
MO
SHEET NO.
4

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

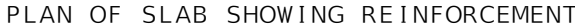
DATE	DESCRIPTION
9/25/26	STEEL GRADE 50W OR GALVANIZED

36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577

Hutchison
Engineering, Inc.

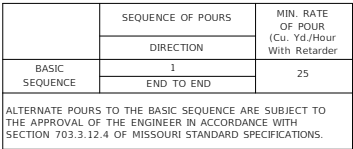
HEI

Jacksonville - Quad Cities - Peoria - Shorewood
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(SL-1 RAIL)

NOTES:
CURB-CRASH TESTED FOR AASHTO SERVICE LEVEL 1
AND WILL PROVIDE AN EQUIVALENT TL-2 RATING IN
ACCORDANCE WITH THE CRITERIA OF NCHRP REPORT 350

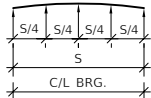


NOTE: THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN.

THE DIAPHRAGM AT INTERMEDIATE BENTS AND INTEGRAL END BENTS SHALL BE
POURED A MINIMUM OF 30 MINUTES AND A MAXIMUM OF 2 HOURS BEFORE THE SLAB
IS POURED.

SLAB POURING SEQUENCE

GIRDER NUMBER 1	1 1/2"	1 1/4"	1"	1 1/4"	1 1/2"
GIRDER NUMBER 2	1 1/2"	1 1/4"	1"	1 1/4"	1 1/2"
GIRDER NUMBER 3	1 1/2"	1 1/4"	1"	1 1/4"	1 1/2"
GIRDER NUMBER 4	1 1/2"	1 1/4"	1"	1 1/4"	1 1/2"



THEORETICAL SLAB HAUNCHING DIAGRAM



NOTE: CAMBER AT 1/4 POINT OF GIRDER IS EQUAL TO 0.7125 CAMBER AT CENTERLINE OF GIRDER.

Note: For details of slab forms, see "Details of Prestress Panels" sheet.

For details and reinforcement of thrie beam rail not shown, see "Thrie Beam Rail " sheet.

Note: If girder camber is different from that shown in the Camber Diagram, it shall be necessary to adjust the slab haunches, increase the slab thickness or to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.

GIRDER CAMBER DIMENSIONS		
GIRDER TYPE	STEEL GIRDERS	
	A	B
W24x84	1 1/2"	1/2"

SLAB DETAILS



Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648

DATE PREPARED
6/22/2026

ROUTE HICKORY ST.	STATE MO
DISTRICT NE	SHEET NO. 5

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004

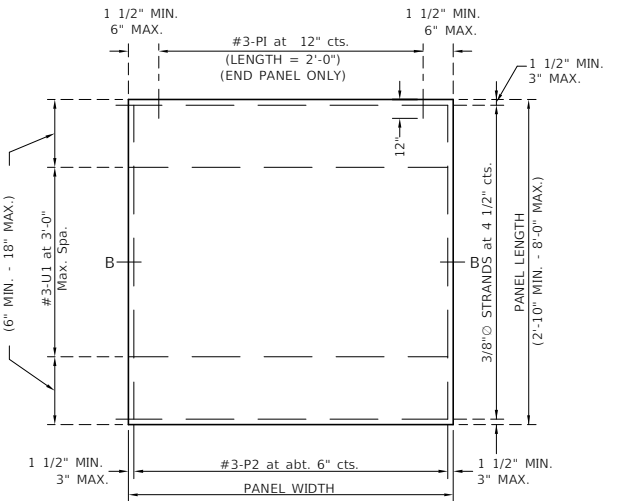
BRIDGE NO.
3310004 1

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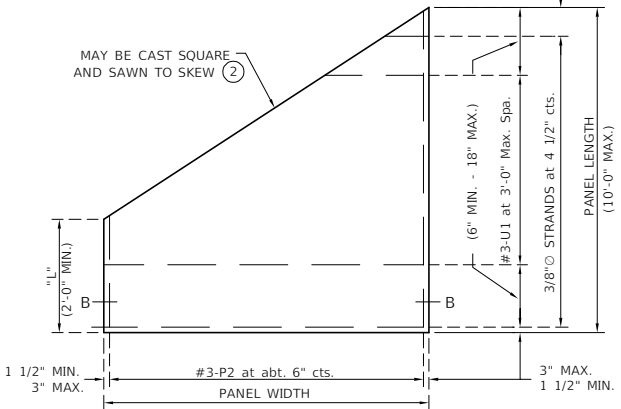
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577



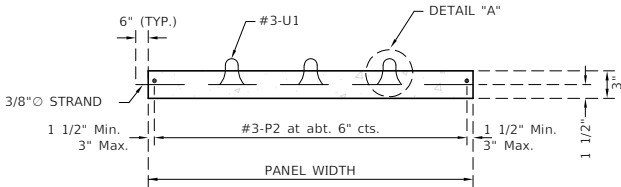
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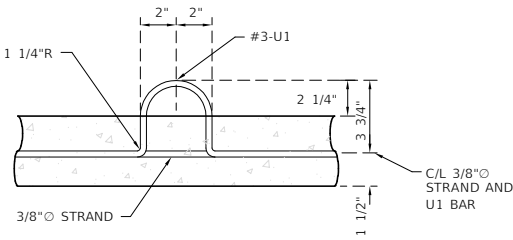
PLAN OF PRECAST PRESTRESSED PANEL



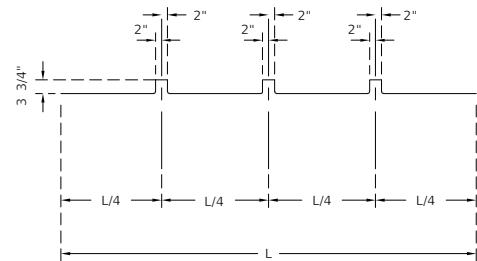
PLAN OF PRECAST PRESTRESSED PANEL



SECTION B-B

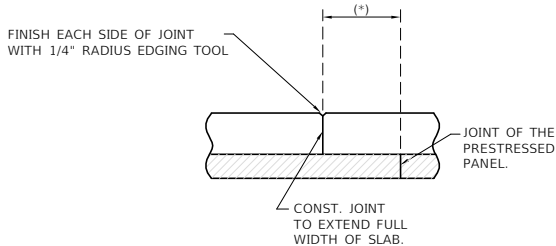


DETAIL A-A



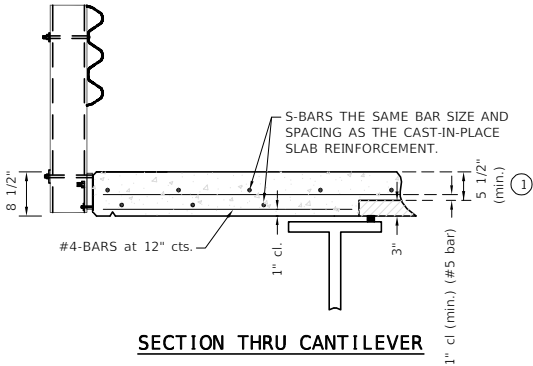
BENDING DIAGRAM FOR U1 BARS

#3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.



PERMISSIBLE CONST. JOINT

(*) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN. FROM THE JOINTS OF THE PRESTRESSED PANELS.



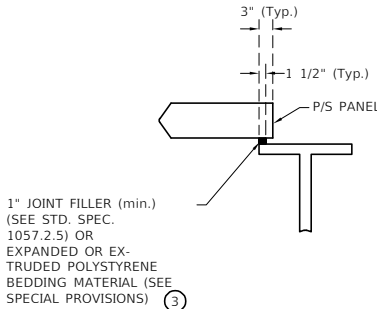
SECTION THRU CANTILEVER

NOTE:
SUPPORT FROM DIAPHRAGM FORMS REQUIRED UNDER OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI. COMPRESSIVE STRENGTH.

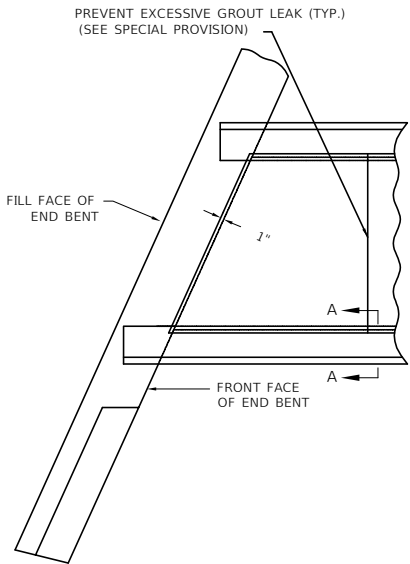
SLAB EXTERIOR GIRDER HAUNCH TO BE THE SAME AS SHOWN ON THEROETICAL SLAB HAUNCHING DIAGRAM.

SLAB THICKNESS OVER PRESTRESSED PANELS VARIES DUE TO GIRDER CAMBER.

- IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR NECESSARY GRADE ADJUSTMENT.
- ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT FABRICATORS OPTION.
- ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1 1/2 INCH THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.



1" JOINT FILLER (min.) (SEE STD. SPEC. 1057.2.5) OR EXPANDED OR EX-TRUDED POLYSTYRENE BEDDING MATERIAL (SEE SPECIAL PROVISIONS)



PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

NOTE:
USE SLAB HAUNCHING DIAGRAM ON SLAB DETAILS SHEET FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:
CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH $f'_c = 6,000$ PSI, $f_{ci} = 3,500$ PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANEL (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7) LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203 EXCEPT THAT NOMINAL DIAMETER OF STRAND = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 14.9 KIPS/STRAND

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 1/2 INCH. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

AT THE CONTRACTORS OPTION THE VARIATION IN SLAB THICKNESS OVER PRESTRESSED PANELS MAY BE ELIMINATED OR REDUCED BY INCREASING AND VARYING THE GIRDER TOP FLANGE THICKNESS. DIMENSIONS SHALL BE SHOWN ON THE SHOP DRAWINGS.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2 INCH UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. STIRRUP AND TIE DIMENSIONS.

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

THE PRESTRESSED PANEL QUANTITIES ARE INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES, PAYMENT TO NEAREST FULL SQ. YD.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL U1 LOOPS MAY BE BENT OVER AS NECESSARY TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES.

THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8" ϕ STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
- 3-P2 BARS AT 16 INCHES
- WELDED WIRE FABRIC OR WELDED DEFORMED BAR MAT AT 24 INCHES
- TIE THE #3-U1 BARS TO THE #3-P2 BARS, TO THE WELDED WIRE FABRIC OR THE WELDED DEFORMED BAR MATS AT ABOUT 36 INCH CENTERS.



Matthew B. Walker
MATTHEW B. WALKER
MO PE - 2013000648

DATE PREPARED
6/22/2026

ROUTE
HICKORY ST.
DISTRICT
NE

STATE
MO
SHEET NO.
6

COUNTY
MONROE

JOB NO.
5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

DESCRIPTION

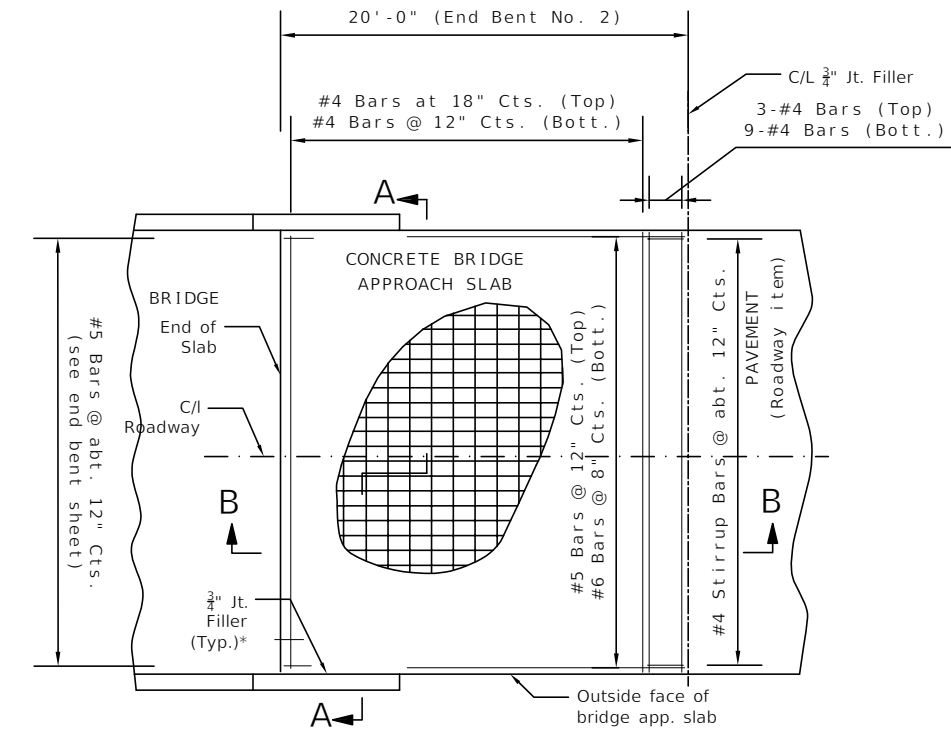
DATE

36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577

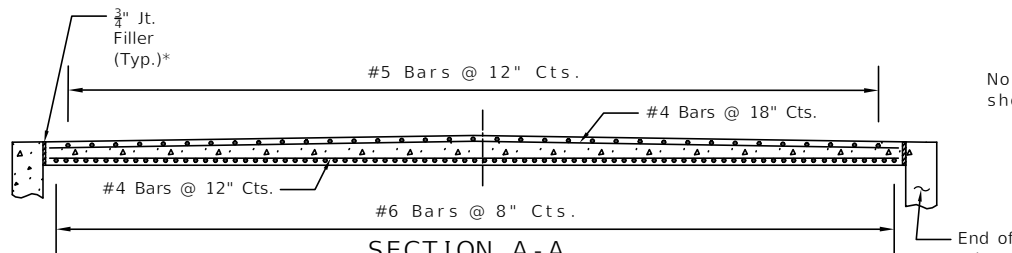
Hutchison
Engineering, Inc.

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Carbondale - Hannibal

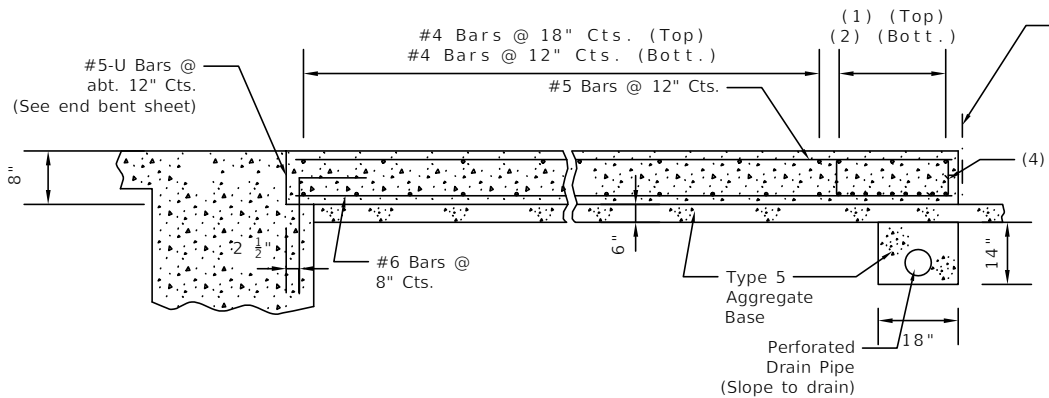


PART PLAN OF SQUARED STRUCTURE
(Skewed structure similar)

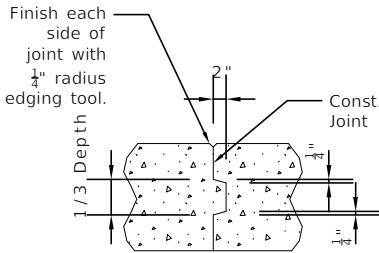


With the approval of the engineer, the contractor may crown the bottom of the approach slab to match the crown of the roadway surface.

Note: Bridge and guardrail not shown.



SECTION B-B



CONSTRUCTION
JOINT DETAIL

Notes:

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

The reinforcing steel in the bridge approach slab shall be Grade 60 with $f_y = 60,000$ psi.

The reinforcing steel in the bridge approach slab shall be epoxy coated.

Longitudinal construction joints in bridge approach slab shall be aligned with longitudinal construction joints in bridge slab.

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

The reinforcing steel in the bridge approach slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 26 inches for #4 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710.

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

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

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

* Seal joint between vertical face of approach slab and wing with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

APPROACH SLAB (MINOR)

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

Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648
DATE PREPARED
6/22/2026

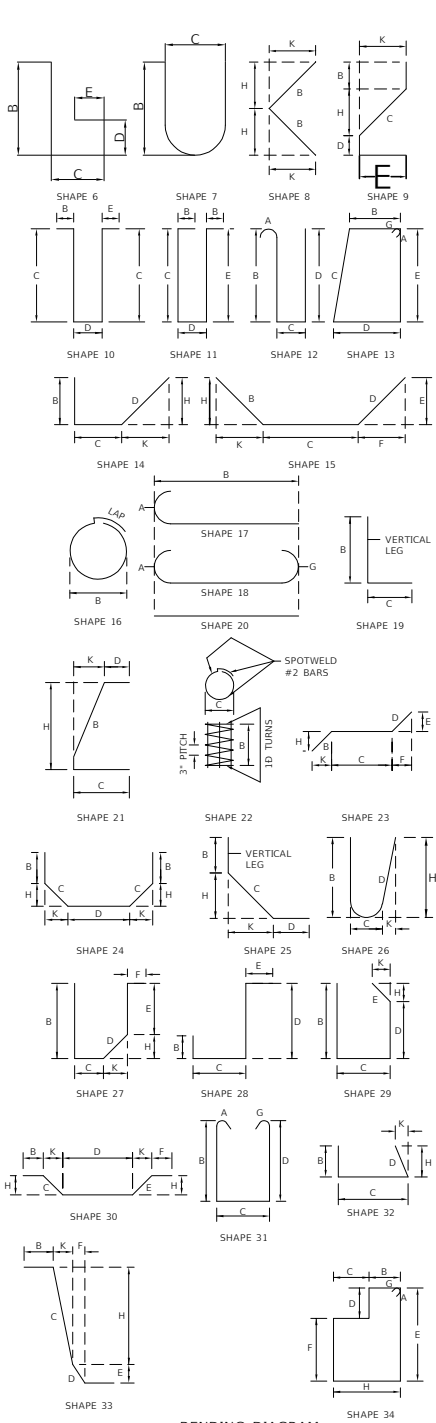
ROUTE
HICKORY ST.
DISTRICT
NE
COUNTY
MONROE
JOB NO.
5656
CONTRACT ID.
PROJECT NO.
BRO-R069(004)
BRIDGE NO.
3310004 1

DESCRIPTION
DATE

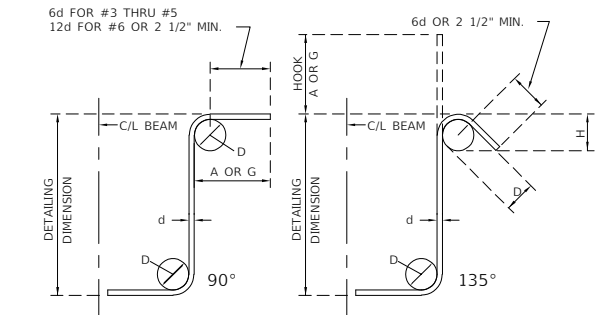
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577

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HEI

Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

[illegible]

SUPERSTRUCTURE	12,906 LBS.
SUBSTRUCTURE	----- LBS.
<u>TOTAL</u>	12,906 LBS

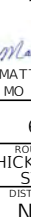
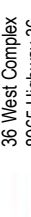


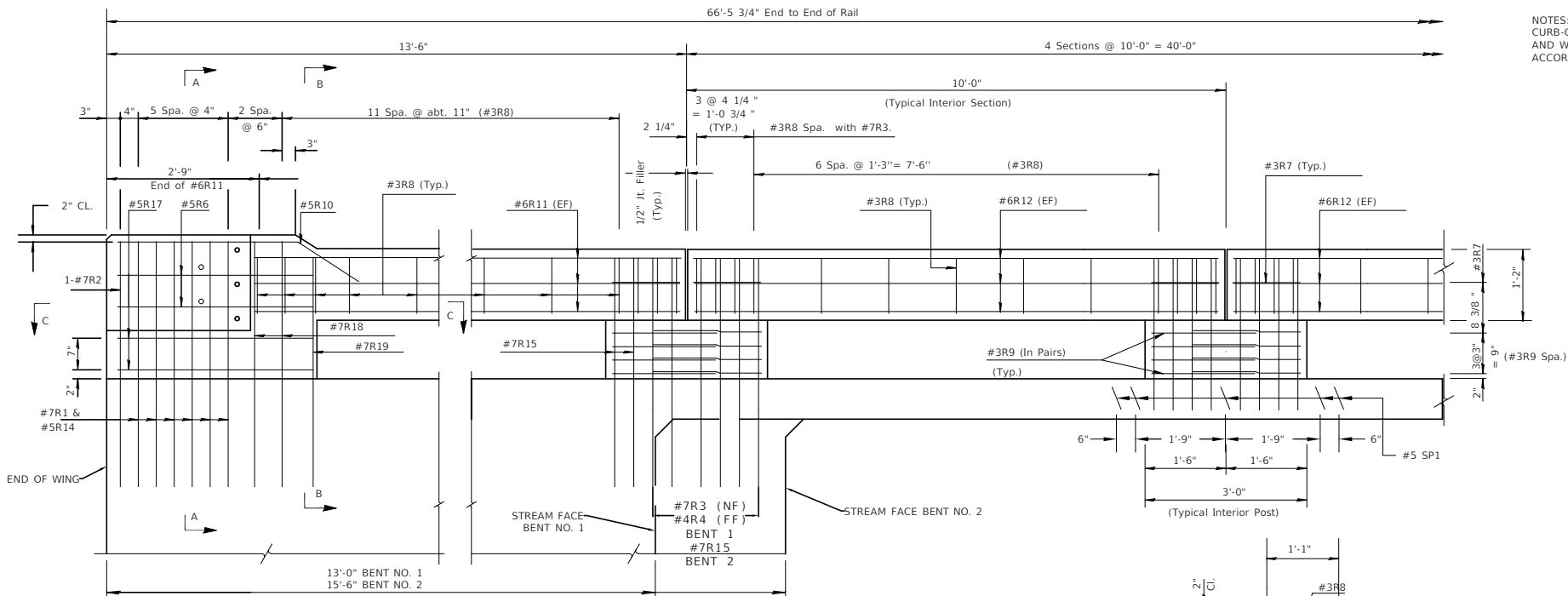
END HOOK DIMENSIONS					
GRADES 40-50-60 KSI					
BAR SIZE	D (IN.)	90° HOOKS		135° HOOKS	
		HOOKE A OR G	HOOKE A OR G	APPROX. H	
#3	1 1/2"	4"	4"	2 1/2"	
#4	2"	4 1/2"	4 1/2"	3"	
#5	2 1/2"	6"	5 1/2"	3 3/4"	
#6	4 1/2"	8"	7"	4 1/2"	

Diagram illustrating the detailing dimension and hook requirements for a lap joint. The lap length is specified as $4d$ OR $2\frac{1}{2}'$ MIN. The hook is labeled A OR G, and the bend is 180° .

END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES		90° HOOKS
				ALL GRADES
		A OR G	J	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"

BILL OF REINFORCING STEEL

				MATTHEW B. WALKER MO PE-2013000648	
DATE PREPARED		6/22/2026			
ROUTE HICKORY ST		STATE MO			
DISTRICT NE		SHEET NO. 8			
COUNTY MONROE					
JOB NO. 5656					
CONTRACT ID.					
PROJECT NO. BRO-R069(004)					
BRIDGE NO. 3310004 1					
DESCRIPTION					
DATE					
 36 West Complex 8965 Highway 36 Hannibal, MO 63401 (573) 240-9577					
Jacksonville - Quad Cities - Peoria - Shorewood Carbondale - Hannibal					



NOTES:
CURB-CRASH TESTED FOR AASHTO SERVICE LEVEL 1
AND WILL PROVIDE AN EQUIVALENT TL-2 RATING IN
ACCORDANCE WITH THE CRITERIA OF NCHRP REPORT 350.

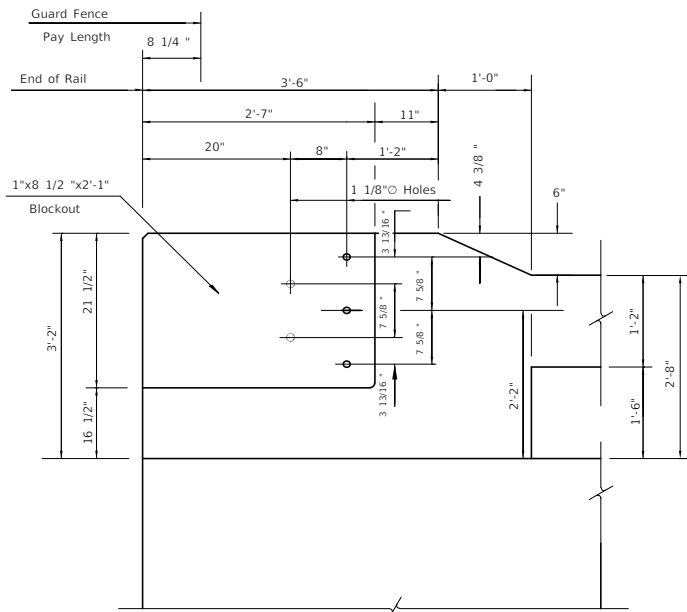
NOTES:
ALL CORNERS SHALL HAVE 3/4\"/>

ALL CONCRETE AND REINFORCING STEEL FOR
THE OPEN CONCRETE BRIDGE RAIL SHALL
BE INCLUDED IN THE UNIT BID PRICE FOR
"BRIDGE RAIL"

ALL JOINT FILLER MATERIAL USED IN OPEN
CONCRETE BRIDGE RAILING SHALL BE GRAY
RUBBER AND SHALL MEET THE REQUIREMENTS
OF SECTION 1057.2.4 OF THE STANDARD SPECIFICATIONS.

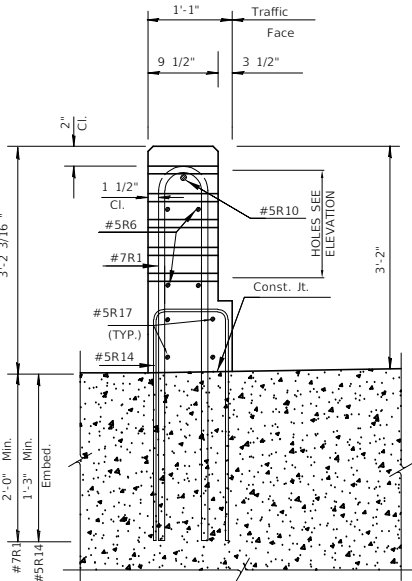
MATERIALS:
CONCRETE (CLASS B-1) $F'_c=4,000$ PSI
REINFORCING STEEL (GRADE 60) $F_y=60,000$ PSI
NOTE: ALL REINFORCING STEEL TO BE EPOXY COATED.

BILL OF REINFORCING STEEL		
NO.	SIZE & MARK	ACTUAL LENGTH
24	7 R1	10'-1"
4	7 R2	6'-0"
60	7 R3	7'-0"
60	4 R4	4'-3"
8	5 R6	7'-1"
20	3 R7	4'-6"
168	3 R8	3'-6"
80	3 R9	4'-6"
4	5 R10	4'-0"
24	6 R11	12'-6"
48	6 R12	9'-8"
30	5 SP1	5'-2"
24	5R14	6'-10"
20	7R15	9'-3"
8	5R17	7'-6"
8	7R18	10'-4"
4	7R19	9'-4"

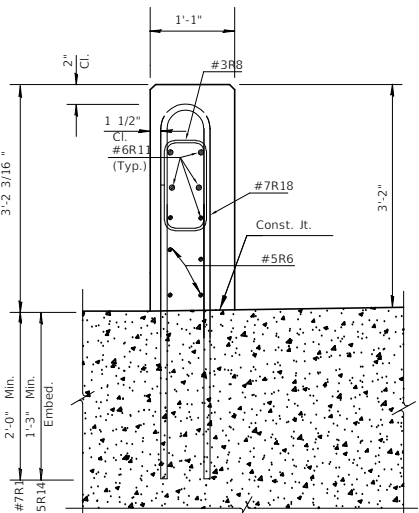


ELEVATION
(Dimensions at traffic face of rail.)

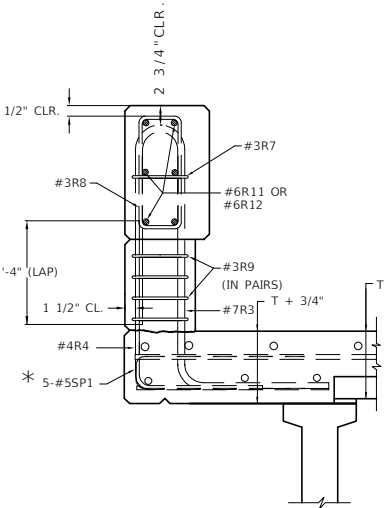
PARTIAL ELEVATION
(Along Traffic Face)



SECTION A-A



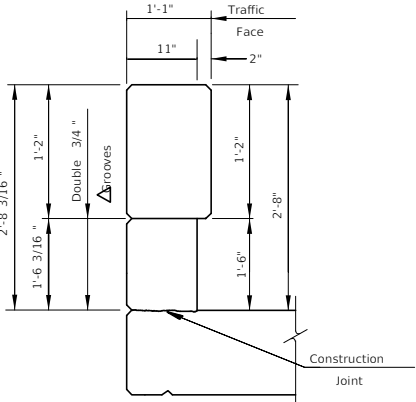
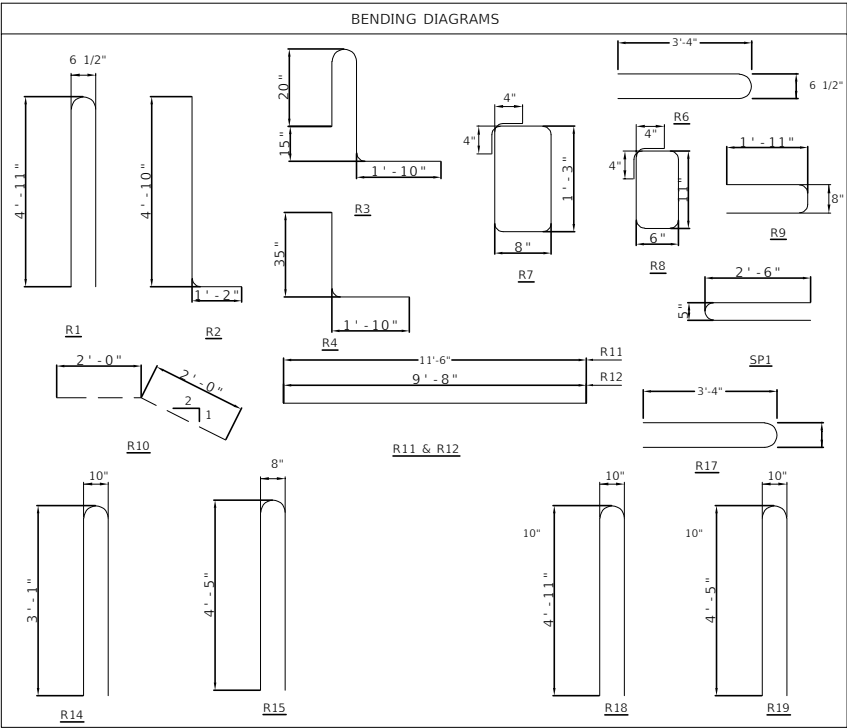
SECTION B-B



SECTION THRU POSTS

* PLACE ON A CANT TO FIT
BETWEEN LONGITUDINAL REINFORCING.

NOTE: DEPTH OF THE CANTILEVERED SLAB
SHALL BE INCREASED BY 3/4" TO MAINTAIN
COVER ON POST BARS.
T = SLAB THICKNESS



TYPICAL INTERIOR POST

KANSAS CORRAL BRIDGE RAIL

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

Matthew B. Walker
MATTHEW B. WALKER
MO PE-2013000648
DATE PREPARED
6/22/2026

ROUTE
HICKORY ST.

DISTRICT
NE

STATE
MO

SHEET NO.
9

COUNTY
MONROE

5656

CONTRACT ID.

PROJECT NO.
BRO-R069(004)

BRIDGE NO.
3310004 1

DESCRIPTION

DATE

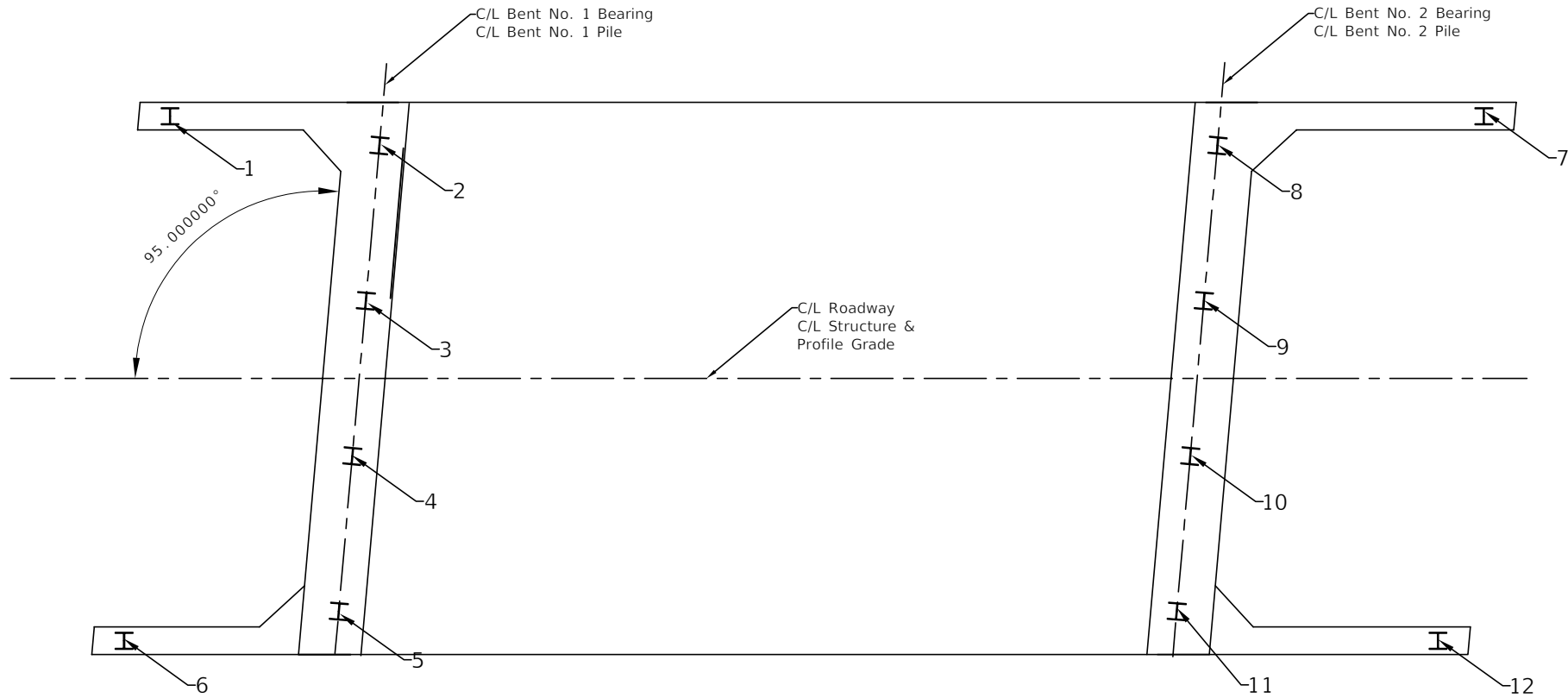
36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577


Hutchison
Engineering, Inc.

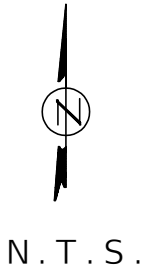

Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

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

Sheet No. 9 of 11



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



As-Built Pile Data			
Pile No.	Length in Place (ft)	Computed Nominal Axial Compressive Resistance (kips)	Remarks
			End Bent No.1
1			
2			
3			
4			
5			
6			
			End Bent No.2
7			
8			
9			
10			
11			
12			

Note:
Indicate in remarks column:
A. Pile type and grade
B. Batter
C. Driven to practical refusal

This sheet to be completed by Hutchison Engineering, Inc. construction personnel.

AS-BUILT PILE DATA

STATE OF MISSOURI

MATTHEW B. WALKER

REGISTERED PROFESSIONAL ENGINEER

NUMBER

PE-2013000648

Matthew B. Walker

MATTHEW B. WALKER

MO PE-2013000648

DATE PREPARED

6/22/2026

ROUTE

HICKORY ST.

DISTRICT

NE

STATE

MO

SHEET NO.

10

COUNTY

MONROE

JOB NO.

5656

CONTRACT ID.

PROJECT NO.

BRO-R069(004)

BRIDGE NO.

3310004 1

DESCRIPTION

DATE

36 West Complex
8965 Highway 36
Hannibal, MO 63401
(573) 240-9577


Hutchison Engineering, Inc.



Jacksonville - Quad Cities - Peoria - Shorewood
Carbondale - Hannibal

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

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

Sheet No. 10 of 11

Boring Log No. B-2

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 39.4756° Longitude: -92.0007° PROJECT ELEV. = 673.24 Approximate Elevation: 100 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Sample Number	Water Content (%)
1		0.2' ASPHALT , Approximately 2"	99.8						
		0.8' CONCRETE , Approximately 8"	99.2						
		1.2' AGGREGATE BASE COURSE , Approximately 4"	98.8						
		FILL - SANDY LEAN CLAY , trace gravel, dark gray		X		8	8-4-5 N=9	1	13.5
2		FILL - FAT CLAY , trace sand, brownish gray	3.0						
		HIGHLY WEATHERED LIMESTONE , gray	6.0						
		LIMESTONE , gray, moderately to slightly weathered	7.5						
3		Boring Terminated at 17.5 Feet	17.5						

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 Reference: Elevations were measured in the field using a surveyor's level and grade rod.	Water Level Observations  6 feet during drilling	Drill Rig CME 750
		Hammer Type Automatic Driller Midwest Drilling
Notes	Advancement Method 0 to 7.5 feet: Hollow-Stem Augers 7.5 to 17.5 feet: NQ Core Barrel	Logged by Midwest Drilling Boring Started 05-28-2025
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Boring Completed 05-28-2025