FRANKLIN COUNTY MISSOURI

SCHOENEBERG ROAD BRIDGE REHABILITATION

CONSTRUCTION PLANS

GRAPHIC / SYMBOL LEGEND (USED IN PLANS)

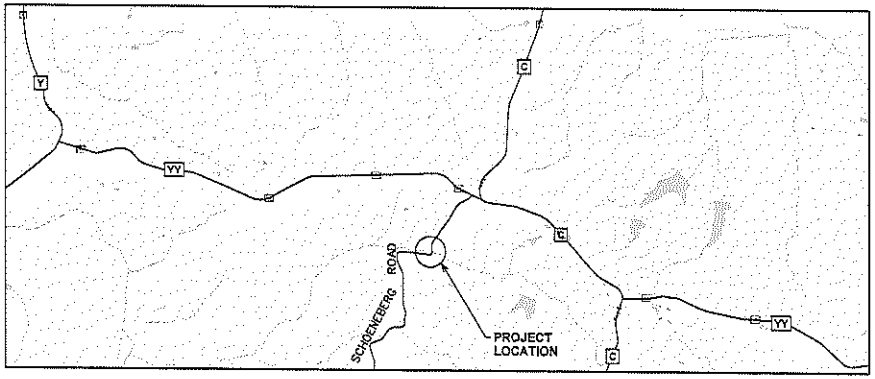
DESCRIPTION	EXISTING	NEW
RIGHT-OF-WAY		
PROPERTY LINE		
PERMANENT DRAINAGE EASEMENT		PDE
TEMPORARY CONSTRUCTION EASEMENT		TCE
UTILITY POLE (TYPE SPECIFIED)		
UNDERGROUND CONDUIT OR CABLE (TYPE SPECIFIED) T-TELEPHONE P-POWER TV-TELEVISION	T	
OVERHEAD UTILITY LINE (TYPE SPECIFIED) T-TELEPHONE OH-POWER W-WATER	OH	
LIGHT STANDARD		
TRAFFIC PULL BOX		
GAS LINE	G	
GAS VALVE		
WATER LINE	W	
WATER SERVICE VALVE		
WATER METER		
FIRE HYDRANT		
SANITARY SEWER	S	12" PVC
STORM SEWER		
SEWER MANHOLE		
GRATED INLET		
CURB INLET: AREA INLET		
CURB INLET (MULTIPLE UNIT)		
IDENT. OF NEW OR MOD. SANITARY STRUCTURE		
IDENT. OF NEW OR MOD. STORM STRUCTURE		
PIPE WITH HEADWALLS		
DRAINAGE V-DITCH (SODDED)		
DRAINAGE FLAT BOTTOM DITCH (SODDED)		
DRAINAGE V-DITCH (PAVED)		
DRAINAGE FLAT BOTTOM DITCH (PAVED)		
CONSTRUCTION LIMITS		
CONCRETE PAVEMENT		
ASPHALTIC CONCRETE PAVEMENT		
PAVEMENT REMOVAL		
TREE OR SHRUB		
HEDGE		
FENCE		
SIGN		
MAILBOX		
MAILBOX (SB)		
TO BE REMOVED	(TBR)	
TO BE ABANDONED	(TBA)	
USE IN PLACE	(UIP)	
TO BE REMOVED AND REPLACED	(TBR&R)	
ADJUST TO GRADE	(ATG)	
TO BE REMOVED AND REPLACED BY OTHERS	(TBR&RBO)	
TO BE ABANDONED AND FILLED	(TBA&F)	
ADJUST TO GRADE BY OTHERS	(ATGBO)	
CUT CROSS	CROSS	
*FOUND CROSS	OCR	
*FOUND IRON PIPE	OIP	
*FOUND IRON ROD	OIR	
*FOUND STONE	OST	
SET P.K. NAIL	PK	
SET IRON PIPE	SIP	
DO NOT DISTURB	(DND)	
MANHOLE	MH	
REFERENCE POINT	△	

UTILITY CONTACTS

FIDELITY COMMUNICATIONS
ROGER HALMICK
113 CIRCLE DRIVE
NEW HAVEN, MISSOURI 63068
OFFICE: (573) 488-1082

SPECIAL NOTE TO CONTRACTOR(S):

EXISTING UNDERGROUND AND ABOVE-GRADE FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED ON THESE CONTRACT DOCUMENTS BASED ON THE INFORMATION AND SURVEYS AVAILABLE AT THE TIME OF DRAWING PREPARATION. THE LOCATIONS OF THESE FEATURES MUST, THEREFORE, BE CONSIDERED APPROXIMATE ONLY. IN ADDITION, THERE MAY BE OTHER FACILITIES, STRUCTURES, AND UTILITIES WHICH DID NOT EXIST OR THE EXISTENCE OF WHICH WAS NOT KNOWN AT THE TIME OF DRAWING PREPARATION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR(S) TO HAVE ALL EXISTING FACILITIES, STRUCTURES, AND UTILITIES LOCATED IN THE FIELD PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY AND TO PROTECT ALL SUCH FEATURES (EXCEPT THOSE SPECIFICALLY NOTED FOR REMOVAL OR DEMOLITION) DURING CONSTRUCTION.



VICINITY MAP
NOT TO SCALE

SECTION 34, TOWNSHIP 44 NORTH, RANGE 3 WEST

PREPARED AUGUST 21, 2019

INDEX OF SHEETS

LENGTH OF PROJECT:

BEGINNING STATION	11+40.49
ENDING STATION	11+88.83
APPARENT LENGTH	48.34 FEET
EQUATIONS AND EXCEPTIONS	
BRIDGE EXCEPTIONS	24.15 FEET
TOTAL CORRECTIONS	
NET LENGTH OF PROJECT	24.19 FEET

STATE OF MISSOURI — DAVID RIECKMANN — NUMBER PE-2010020966 — PROFESSIONAL ENGINEER

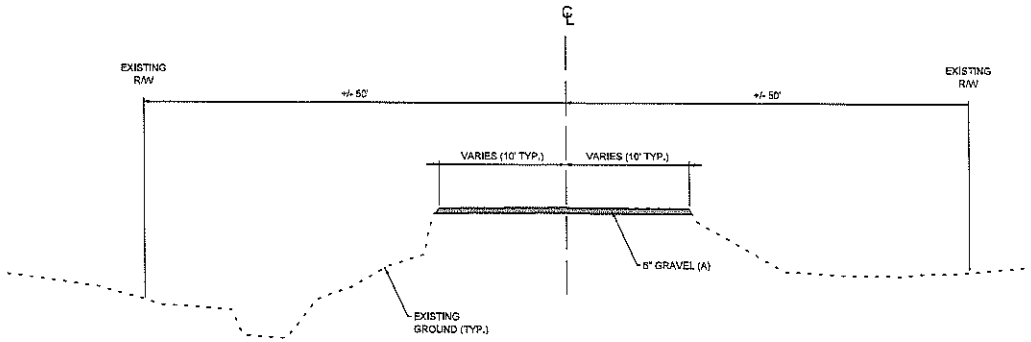
DATE PREPARED: 08/21/19
ROUTE: - | STATE: MO
DISTRICT: - | SHEET NO.: 1
COUNTY: FRANKLIN
JOB NO.: -
CONTRACT ID.: -
PROJECT NO.: 1815510
BRIDGE NO.: -

DESCRIPTION	DATE

FRANKLIN COUNTY COMMISSION

HORNER SHIFRIN
THE POWER HOUSE AT UNION STATION
401 S. 18th St., Ste. 400
St. Louis, MO 63103-2296
314-684-2233 FAX: 314-436-8543
www.HornerShifrin.com
Certificate of Authority: 000159
Expiration Date: December 31, 2019

COVER SHEET
SCHOENEBERG ROAD
BRIDGE REHABILITATION
FRANKLIN COUNTY, MISSOURI



SCHOENEBERG ROAD

STA. 11+40.49 TO STA. 11+47.78

STA. 11+71.93 TO STA. 11+88.83

BRIDGE STA. 11+47.78 TO STA. 11+71.93

NOTES:
1. CONTRACTOR TO NOTIFY AND COORDINATE WITH UTILITY COMPANIES TWO WEEKS PRIOR TO COMMENCEMENT OF PROJECT.
2. CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAYS FOR PROPERTY OWNERS AT ALL TIMES.
3. CONTRACTOR SHALL PROVIDE EROSION CONTROL PLAN TO FRANKLIN COUNTY 10 DAYS PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL.

STATE OF MISSOURI
DAVID RIECKMANN
NUMBER PE-2011020948
PROFESSIONAL ENGINEER

DATE PREPARED: 08/21/19
ROUTE: · STATE: MO
DISTRICT: · SHEET NO.: 2
COUNTY: FRANKLIN
JOB NO.: ·
CONTRACT ID.: ·
PROJECT NO.: 1815S10
BRIDGE NO.: ·

DATE	DESCRIPTION
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·	·
·	·
·	·
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·	·

FRANKLIN COUNTY, MISSOURI
COMMISSION

HORNER SHIFRIN
THE POYDRAS HOUSE AT UNION STATION
1001 E. ST. LOUIS, SUITE 400
ST. LOUIS, MO 63103-2298
314-531-4321 FAX: 314-531-4966
Certificate of Authority: 000159
Expiration Date: December 31, 2019

TYPICAL SECTIONS & NOTES
SCHOENEBERG ROAD
BRIDGE REHABILITATION
FRANKLIN COUNTY, MISSOURI

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
	ROADWAY ITEMS:		
2019901	CLEARING AND GRUBBING	LS	1
2022010	REMOVAL OF IMPROVEMENTS	LS	1
2031000	CLASS A EXCAVATION	CY	10
3101003	GRAVEL (A) (6" THICK)	SY	60
6161047	TYPE III OBJECT MARKER	EA	6
6181000	MOBILIZATION	LS	1
6274000	CONTRACTOR FURNISHED SURVEYING AND STAKING	LS	1
8052000A	SEEDING - WARM SEASON MIXTURES	AC	0.2
8061019	SILT FENCE	LF	200
	BRIDGE ITEMS:		
216-99.01	REMOVAL OF EXISTING SUPERSTRUCTURE	LS	1
703-42.08	CLASS B-2 CONCRETE (SUPERSTRUCTURE SOLID SLAB)	CY	20
703-99.03	KNEE WALL BARRIER CURB	LF	41
704-99.01	SUBSTRUCTURE REPAIRS	LS	1
707-10.00	CONDUIT SYSTEM ON STRUCTURE	LS	1
710-10.00	REINFORCING STEEL (EPOXY COATED)	LB	3010

STATE OF MISSOURI
DAVID RIECKMAN
NUMBER PE-2011020298
PROFESSIONAL ENGINEER

DATE PREPARED: 08/21/19
ROUTE: - STATE: MO
DISTRICT: - SHEET NO.: 2A
COUNTY: FRANKLIN
JOB NO.: -
CONTRACT ID.: -
PROJECT NO.: 1815510
BRIDGE NO.: -

DATE	DESCRIPTION
-	-
-	-
-	-
-	-
-	-
-	-
-	-

FRANKLIN COUNTY, MISSOURI

HORNER SHIFRIN
THE POWER HOUSE AT UNION STATION
400 S. 18TH ST., SUITE 400
ST. LOUIS, MO 63103-2296
314-531-4321 FAX: 314-531-0966
Certificate of Authority: 000159
Expiration Date: December 31, 2019

SUMMARY OF QUANTITIES

SCHOENEBERG ROAD
BRIDGE REHABILITATION
FRANKLIN COUNTY, MISSOURI

GRAVEL (A)				
			6"	
PLAN	SIDE	LOCATION	GRAVEL	REMARKS
SHEET			(A)	
			SY	
3	BOTH	SCHOENEBERG ROAD	53.8	MAINLINE
		TOTAL	53.8	
		USE	60	

MOBILIZATION
LUMP SUM = 1

CLEARING AND GRUBBING
LUMP SUM = 1

SEEDING - WARM SEASON MIXTURES
AREA = 0.2 ACRES

TEMPORARY EROSION CONTROL			
PLAN	LOCATION	SILT	REMARKS
SHEET		FENCE	
		(LF)	
4	SCHOENEBERG ROAD	200	
	TOTALS	200	
	USE	200	

CONTRACTOR FURNISHED SURVEYING AND STAKING
LUMP SUM = 1

REMOVAL OF IMPROVEMENTS
LUMP SUM = 1

TYPE III OBJECT MARKERS					
PLAN	LOCATION	OM1-3	OM3-1L	OM3-1R	REMARKS
SHEET		(18" X 18")	(12" X 36")	(12" X 36")	
		(EA)	(EA)	(EA)	
4	SCHOENEBERG ROAD	1	3	2	
	TOTALS	1	3	2	
	USE	1	3	2	

EARTHWORK		
LOCATION	CLASS "A" EXCAVATION	REMARKS
	(CY)	
SCHOENEBERG ROAD	10	
TOTAL	10	
USE	10	

STATE OF MISSOURI
DAVID RIECHMAN
NUMBER
PROFESSIONAL ENGINEER

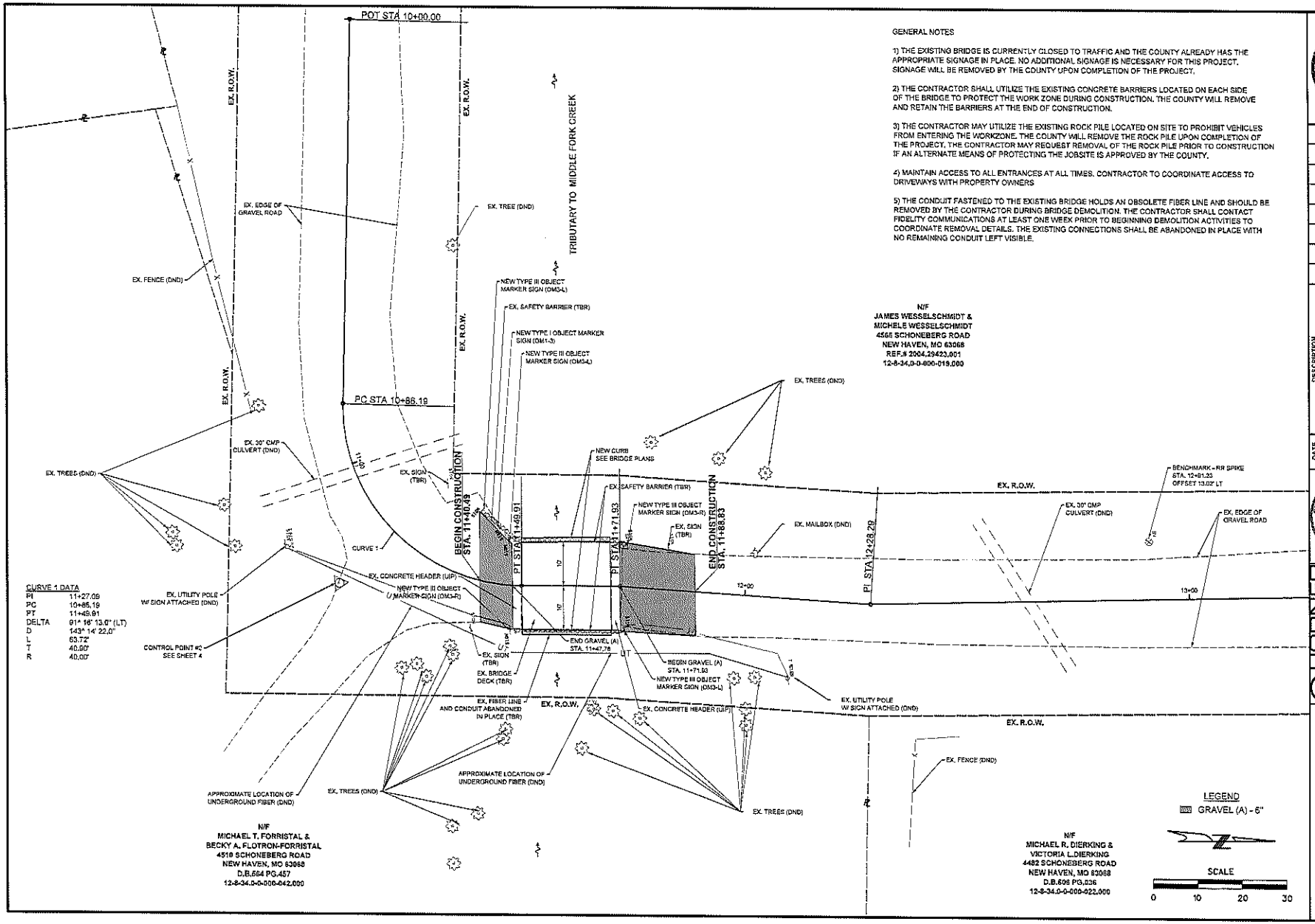
DATE PREPARED
08/21/19
ROUTE
STATE
MO
DISTRICT
SHEET NO.
2B
COUNTY
FRANKLIN
JOB NO.
CONTRACT ID.
PROJECT NO.
1815510
BRIDGE NO.

DATE	DESCRIPTION

FRANKLIN COUNTY PUBLIC WORKS COMMISSION

HORNER SHIFRIN
THE POWER HOUSE AT UNION STATION
401 S. 18th St., Ste. 400
ST. LOUIS, MO 63103-2256
314-531-4321 FAX 314-531-6999
Certificate of Authority: 000159
Expiration Date: December 31, 2019

SCHEDULE OF QUANTITIES
SCHOENEBERG ROAD
BRIDGE REHABILITATION
FRANKLIN COUNTY, MISSOURI



CURVE 1 DATA

PI	11+27.09
PC	10+86.19
PT	11+49.91
DELTA	91° 16' 13.0" (LT)
D	143° 14' 22.0"
T	63.72'
L	40.00'
R	40.00'

GENERAL NOTES

1) THE EXISTING BRIDGE IS CURRENTLY CLOSED TO TRAFFIC AND THE COUNTY ALREADY HAS THE APPROPRIATE SIGNAGE IN PLACE. NO ADDITIONAL SIGNAGE IS NECESSARY FOR THIS PROJECT. SIGNAGE WILL BE REMOVED BY THE COUNTY UPON COMPLETION OF THE PROJECT.

2) THE CONTRACTOR SHALL UTILIZE THE EXISTING CONCRETE BARRIERS LOCATED ON EACH SIDE OF THE BRIDGE TO PROTECT THE WORK ZONE DURING CONSTRUCTION. THE COUNTY WILL REMOVE AND RETAIN THE BARRIERS AT THE END OF CONSTRUCTION.

3) THE CONTRACTOR MAY UTILIZE THE EXISTING ROCK PILE LOCATED ON SITE TO PROHIBIT VEHICLES FROM ENTERING THE WORKZONE. THE COUNTY WILL REMOVE THE ROCK PILE UPON COMPLETION OF THE PROJECT. THE CONTRACTOR MAY REQUEST REMOVAL OF THE ROCK PILE PRIOR TO CONSTRUCTION IF AN ALTERNATE MEANS OF PROTECTING THE JOBSITE IS APPROVED BY THE COUNTY.

4) MAINTAIN ACCESS TO ALL ENTRANCES AT ALL TIMES. CONTRACTOR TO COORDINATE ACCESS TO DRIVEWAYS WITH PROPERTY OWNERS

5) THE CONDUIT FASTENED TO THE EXISTING BRIDGE HOLDS AN OBSOLETE FIBER LINE AND SHOULD BE REMOVED BY THE CONTRACTOR DURING BRIDGE DEMOLITION. THE CONTRACTOR SHALL CONTACT FIDELITY COMMUNICATIONS AT LEAST ONE WEEK PRIOR TO BEGINNING DEMOLITION ACTIVITIES TO COORDINATE REMOVAL DETAILS. THE EXISTING CONNECTIONS SHALL BE ABANDONED IN PLACE WITH NO REMAINING CONDUIT LEFT VISIBLE.

N/F
JAMES WESSELSCHMIDT &
MICHELE WESSELSCHMIDT
4565 SCHONEBERG ROAD
NEW HAVEN, MO 63068
REF.# 2004,29423,001
12-8-34.0-0-000-019.000

N/F
MICHAEL T. FORRISTAL &
BECKY A. FLOTRON-FORRISTAL
4519 SCHONEBERG ROAD
NEW HAVEN, MO 63068
D.B.564 PG.457
12-8-34.0-0-000-042.000

N/F
MICHAEL R. DIERKING &
VICTORIA L.DIERKING
4482 SCHONEBERG ROAD
NEW HAVEN, MO 63068
D.B.606 PG.536
12-8-34.0-0-000-022.000

LEGEND
GRAVEL (A) - 6"

SCALE
0 10 20 30

STATE OF MISSOURI
DAVID RIECKMANN
NUMBER PE-2011020446
PROFESSIONAL ENGINEER

DATE PREPARED
08/21/19

ROUTE	STATE
-	MO
DISTRICT	SHEET NO.
-	3

COUNTY
FRANKLIN

JOB NO.
-

CONTRACT ID.
-

PROJECT NO.
1815510

BRIDGE NO.
-

DATE	DESCRIPTION
-	-

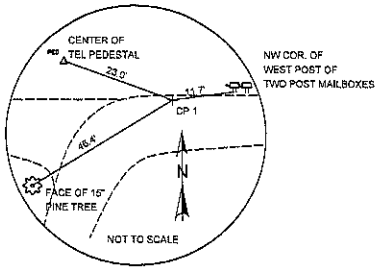
FRANKLIN COUNTY MISSOURI
COMMISSION

HORNER SHIFRIN
THE POWER HOUSE AT UNION STATION
401 S. 18th St., Ste. 400
ST. LOUIS, MO 63103-2296
314-531-4321 FAX: 314-531-4566
Certificate of Authority: 000159
Expiration Date: December 31, 2019

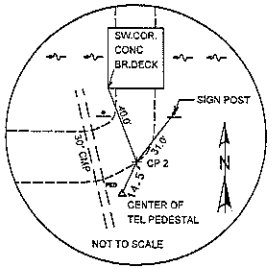
PLAN SHEET

SCHONEBERG ROAD BRIDGE REHABILITATION

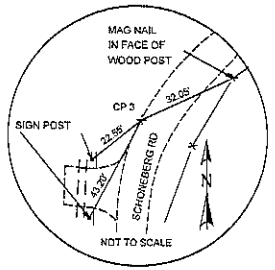
FRANKLIN COUNTY, MISSOURI



CONTROL POINT 1
N 975497.500
E 604070.274
EL 726.03
IRON PIN W/CAP SET



CONTROL POINT 2
N 975390.721
E 605040.130
EL 716.45
IRON PIN W/CAP SET
STA. 11+16.84



CONTROL POINT 3
N 975776.818
E 605075.678
EL 717.38
IRON PIN W/CAP SET

MISSOURI COORDINATE SYSTEM AND ELEVATION: NAD83 MISSOURI STATE PLANE, EAST ZONE, U.S. FOOT, NGVD

COORDINATE POINTS					
SHEET NO.	STATION	LOCATION	NORTHING (FEET)	EASTING (FEET)	DESCRIPTION
3	10+00.00	SCHOENEBERG ROAD	975405.22	604914.19	POT
3	10+86.19	SCHOENEBERG ROAD	975395.36	604999.82	PC
3	11+40.49	SCHOENEBERG ROAD	975422.21	605042.26	BEGIN PROJECT
3	11+49.91	SCHOENEBERG ROAD	975431.41	605044.22	PT
3	11+71.93	SCHOENEBERG ROAD	975453.33	605046.25	PI
3	11+86.83	SCHOENEBERG ROAD	975470.02	605048.91	END PROJECT
3	12+28.29	SCHOENEBERG ROAD	975508.99	605055.11	PI

STATE OF MISSOURI
DAVID RIEDEMANN
NUMBER PE-2007020998
PROFESSIONAL ENGINEER

DATE PREPARED
08/21/19

ROUTE	STATE
-	MO
DISTRICT	SHEET NO.
-	4

COUNTY
FRANKLIN

JOB NO.
-

CONTRACT ID.
-

PROJECT NO.
1815810

BRIDGE NO.
-

DATE	DESCRIPTION
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

FRANKLIN COUNTY, MISSOURI
COMMISSIONED COUNTY

HORNER SHIFRIN
THE POWER HOUSE AT UNION STATION
401 S. 18th St., Ste. 400
ST. LOUIS, MO 63103-2296
314-531-0321 FAX 314-531-0969
www.hornershifrin.com
Certificate of Authority: 000159
Expiration Date: December 31, 2019

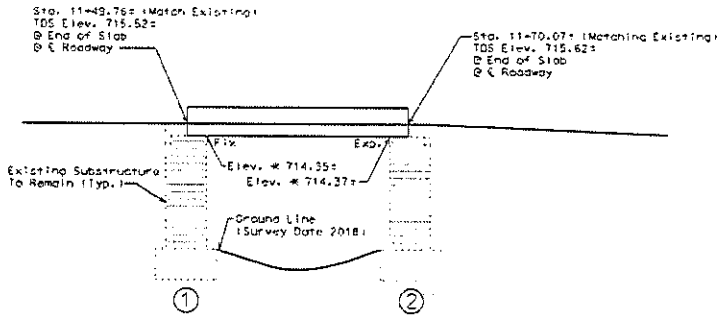
REFERENCE & COORDINATE POINTS

SCHOENEBERG ROAD BRIDGE REHABILITATION

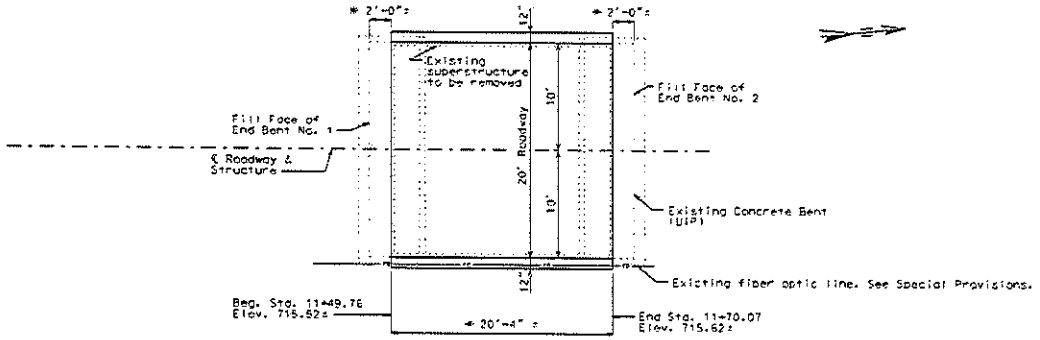
FRANKLIN COUNTY, MISSOURI

FRANKLIN COUNTY

UIP EXISTING SUBSTRUCTURE AND REPLACE EXISTING SUPERSTRUCTURE WITH (20') CAST-IN-PLACE SOLID CONCRETE SLAB



GENERAL ELEVATION



PLAN

Notes:

UIP = Use In Place

All stationing is along ℄ Roadway.

Plan dimensions are horizontal.

* Dimensions and elevations shown are based on survey data and field measurements and shall be field verified prior to ordering new materials. See Special Provisions.

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

For General Notes, Estimated Quantities & Location Sketch, see Sheet No. 2 of 7.

SITE BENCHMARK:

RAILROAD SPIKE SET IN SOUTH FACE OF 20" WALNUT 119' NORTH OF NORTH BRIDGE ABUTMENT & 12.5' WEST FROM CENTER OF ROCK ROAD
ELEV. 714.07

Designed: JDS
Detailed: JDS
Checked: CBW

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

Sheet No. 1 of 7

DATE PREPARED: 8/21/2019
DISTRICT: 8
COUNTY: FRANKLIN
JOB NO: 1815510
CONTRACT ID:
FEDERAL PROJECT NO:

DATE	DESCRIPTION

HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD BRIDGE
REHABILITATION

GENERAL PLAN AND ELEVATION

Estimated Quantities

Item		Substr.	Superstr.	Total
Removal of Existing Superstructure	lump sum	-	*	1
Class B-2 Concrete (Superstructure Solid Slab)	cu. yard	-	20.0	20.0
Knee Wall Barrier Curb	linear foot	-	41	41
Substructure Repairs	lump sum	1	-	1
Conduit System on Structure	lump sum	*	-	1
Reinforcing Steel (Epoxy Coated)	pound	-	3,010	3,010

GENERAL NOTES:

Design Specifications:
2012 AASHTO LRFD Bridge Design Specifications (6th Edition) and 2013 Interim Revisions

Design Loading:
Vehicular: ML=93
35#/Sq. Ft. Future Wearing Surface

Superstructure: Simply-supported

Design Unit Stresses:

Class B-2 Concrete (Superstructure) f'c = 4,000 psi

Class B-1 Concrete (for Knee-Wall Barrier Curb) f'c = 4,000 psi

Reinforcing Steel (Grade 60) fy = 60,000 psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1½", unless otherwise shown.

All reinforcing steel is to be epoxy coated.

Miscellaneous:

Existing plans are not available.

Contractor shall field verify all dimensions in field before ordering new material. The cost for this work is incidental to other items. See Special Provisions.

Construction Specifications:
The 2019 Edition and Supplemental revisions of the Missouri Department of Transportation's "Missouri Standard Specifications for Highway Construction" and the Job Special Provisions shall govern.

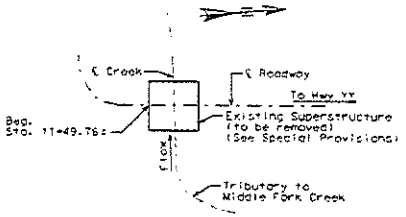
Resin Anchors:
The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1029.

Cost of furnishing and installing the resin anchor systems, complete in place, will be considered completely covered by the contract unit price for Class B-2 Concrete (Superstructure Solid Slab).

Screed:
Bridge deck surface may be finished with a vibrator screed.

Joint Fillers:
All joint filler shall be in accordance with Sec 705T for preformed sponge rubber expansion and partition joint filler, except as noted.

Traffic Control:
The Road will be closed to all traffic during demolition and construction. See Roadway Plans and Special Provisions.



LOCATION SKETCH

Designed: JDS
Detailed: JDS
Checked: CBW

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

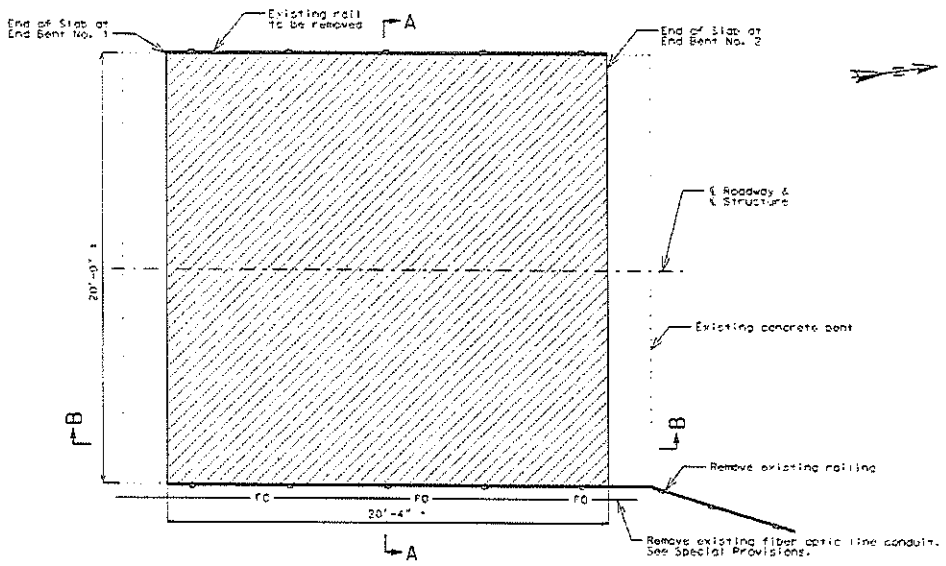
Sheet No. 2 of 7

8/21/2019
MO
82
FRANKLIN
1815510

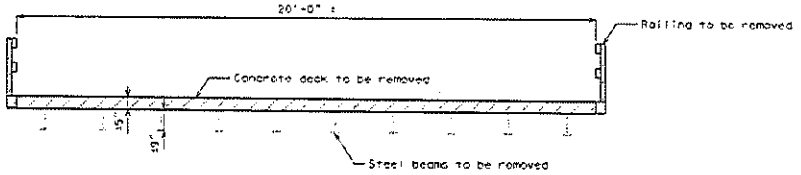
HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION

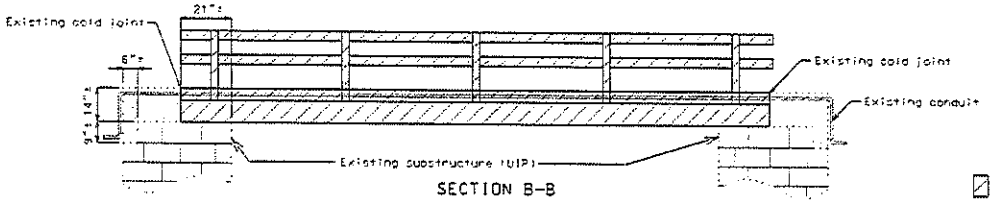
GENERAL NOTES



PLAN OF DEMOLITION



SECTION A–A



SECTION B–B

Notes:

Any existing anchor bolts shall be removed or cut flush with existing beam seat to be used-in-place.

Payment for all removal shown will be completely covered by the contract unit price for Removal of Existing Superstructure.

Denotes concrete, steel, and barrier rail removal

Designed: JDS
Detailed: JDS
Checked: CBW

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

Sheet No. 3 of 7

8/21/2019

MO

B3

FRANKLIN

1615516

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION

DEMOLITION PLAN

Notes:

A smooth, level surface shall be provided at End Bent No. 2 at the top of beam cap where joint filler will be installed. See End Bent No. 2 detail.

Mortar mix to be used must be appropriate for the stone present in the existing substructure. See Special Provisions.

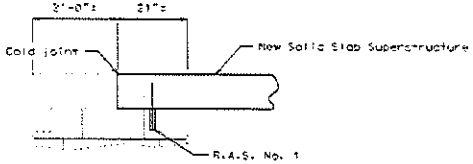
Mortar repairs are to be completed only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.

Rake out and repoint all loose joints. Remove mortar from joints to full depth of stones or until solid mortar encountered. Cure mortar by maintaining a thoroughly damp condition for at least 72 consecutive hours after new mortar is placed or as recommended by manufacturer.

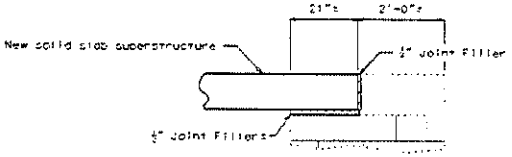
Approximate quantity of substructure mortar repairs:

392 square feet

(For informational purposes only)

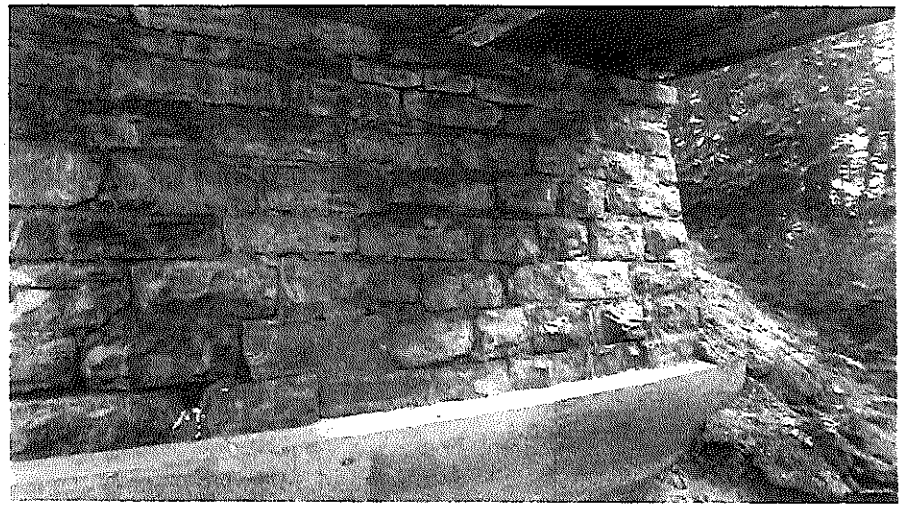


END BENT NO. 1 DETAIL



END BENT NO. 2 DETAIL

END BENT NO. 1



END BENT NO. 2

Designed: JDS
Detailed: JDS
Checked: DSW

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

Sheet No. 4 of 7

8/21/19

8/21/2019

MO

B4

FRANKLIN

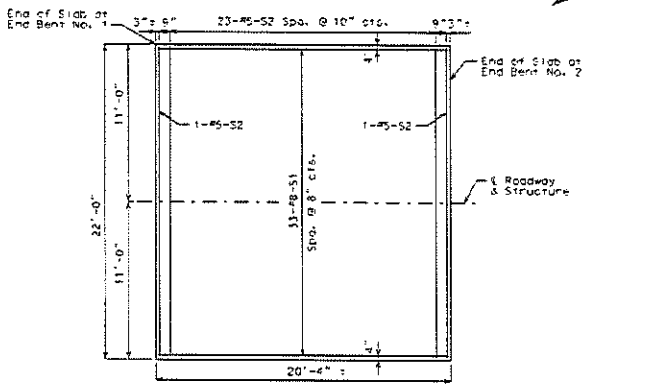
1815510

DATE | DESCRIPTION

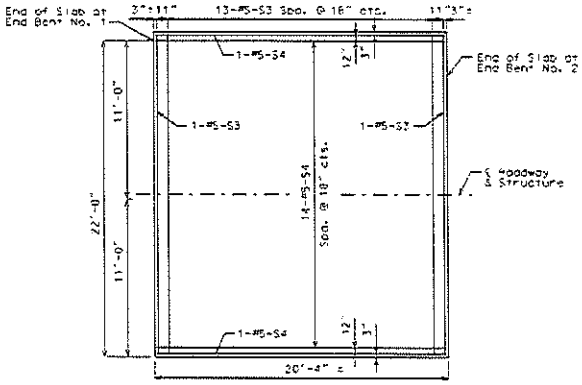
HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION

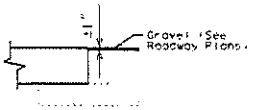
END BENT REPAIRS



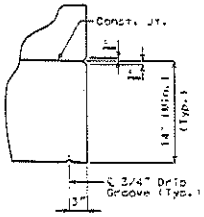
PLAN OF SLAB
SHOWING BOTTOM REINFORCEMENT



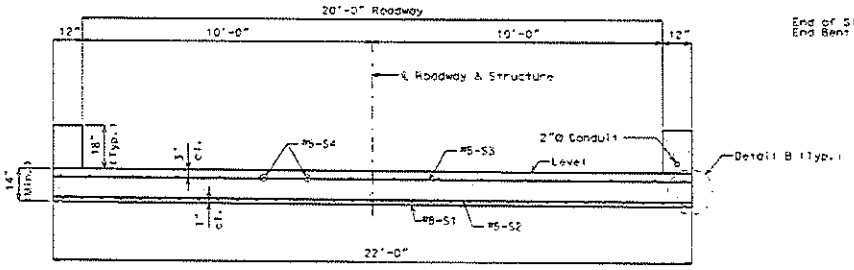
PLAN OF SLAB
SHOWING TOP REINFORCEMENT



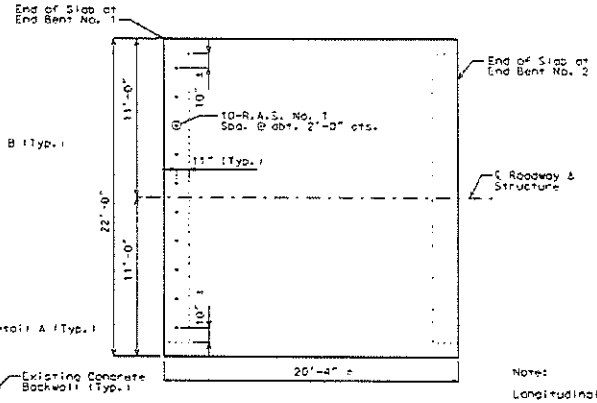
DETAIL A



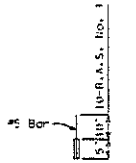
DETAIL B



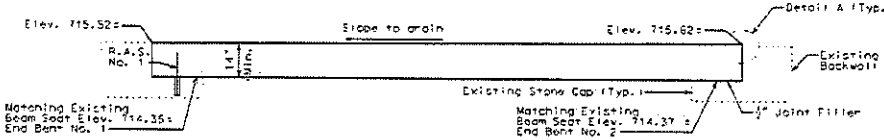
TYPICAL SECTION THRU SLAB



PLAN OF SLAB
SHOWING RESIN ANCHOR SYSTEM



RESIN ANCHOR
SYSTEM DETAIL



SLAB LONGITUDINAL SECTION
(Reinforcing steel not shown for clarity)

Note:

Longitudinal dimensions are horizontal.

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 roadway slab at a rate of not less than 25 cubic yards per hour.

See Sheet No. B6 for Knee Wall Barrier Curb details.

R.A.S. = Resin Anchor System

Designed: JDS
Detailed: JDS
Checked: CBN

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

Sheet No. 5 of 7

8/21/19

DATE PREPARED
8/21/2019

STATE: MO
DISTRICT: SHEET NO. B5

COUNTY
FRANKLIN

JOB NO.
181551G

CONTRACT ID

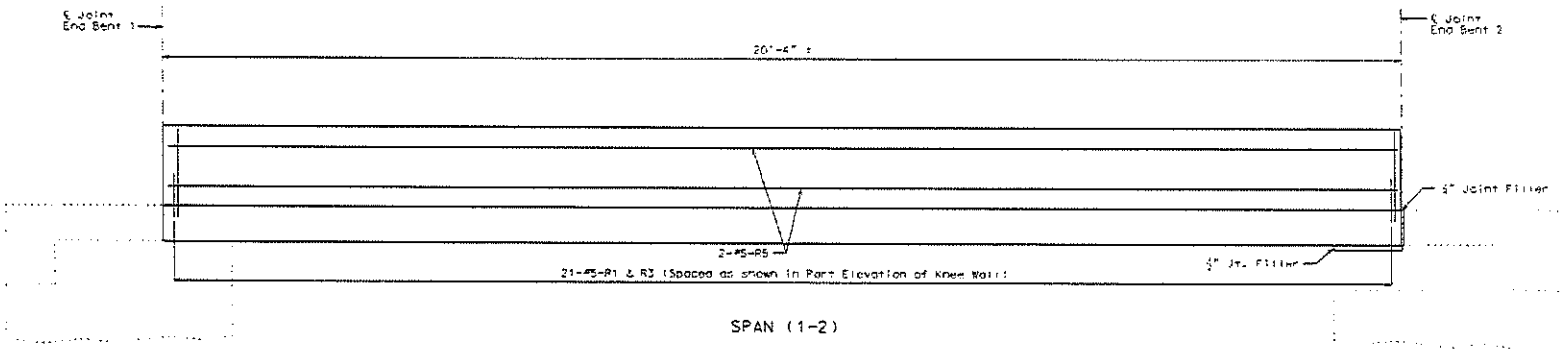
FEDERAL PROJECT NO.

DATE	DESCRIPTION

HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION

SLAB DETAILS

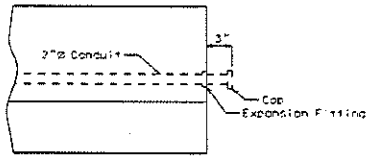


SPAN (1-2)

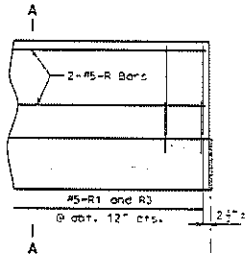
ELEVATION OF KNEE WALL

(Left kneewall shown, right kneewall similar)

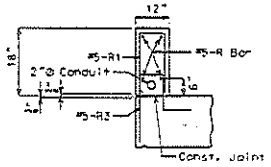
Longitudinal dimensions are horizontal.



TYPICAL DETAIL OF
CONDUIT SYSTEM ON STRUCTURE AT END BENTS



PART ELEVATION OF KNEE WALL



SECTION A-A

The cross-sectional area above the slab = 1.5 sq. ft.

General Notes

Top of Knee Wall shall be built parallel to grade.

All exposed edges of knee wall shall have either a 1/2" radius or a 3/8" bevel, unless otherwise noted.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for Knee Wall Barrier Curb per linear foot.

Concrete in the Knee Wall Barrier Curb shall be Class B-1.

Measurement of Knee Wall Barrier Curb is to the nearest linear foot, measured along the outside top of slab from end of slab to end of slab.

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

Shift reinforcing steel in field where necessary to clear conduit.

Conduit shall be rigid nonmetallic schedule 40 heavy wall polyvinyl chloride (PVC) with 3" minimum cover in concrete. Each section of conduit shall bear the Underwriters Laboratories (UL) label.

Install conduit in east (right side) barrier only.

Payment for furnishing and installing Conduit System, complete in place, will be considered completely covered by the contract lump sum price for Conduit System on Structure.

Drainage shall be provided at low points or other critical locations of all conduits in accordance with Sec 707. All conduits shall be sloped to drain where possible.

Designed: JDC
Detailed: JDS
Checked: CBW

KNEE WALL BARRIER CURB

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

9/21/19

8/21/2019

STATE: MO
DISTRICT: SHEET NO: B6
COUNTY: FRANKLIN
JOB NO: 1315510
CONTRACT ID:
FEDERAL PROJECT NO:

DATE | DESCRIPTION

HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION

DETAILS OF KNEE WALL
BARRIER CURB

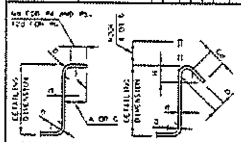
Effective Aug. 2008 Superseded Feb. 2006

BILL OF REINFORCING STEEL

NO. REQ'D.	SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.
			SLAB																									
33	6	S1	SLAB	E	20					20	1.000													20	1	20	1	1770
25	5	S2	SLAB	E	20					21	9.000													21	9	21	9	567
15	5	S3	SLAB	E	20					21	9.000													21	9	21	9	340
16	5	S4	SLAB	E	20					20	1.000													20	1	20	1	335
			FACE WALL																									
			BARRIER																									
			CURB																									
42	5	K1	KNEE WALL	E	10	S						1	3.000	0	9.000									3	3	3	0	131
42	5	K3	KNEE WALL	E	29	S				1	7.000	0	9.000	1	0.000	1	0.000							4	4	4	0	175
6	5	K5	KNEE WALL	E	20					20	1.000													20	1	20	1	168

BILL OF REINFORCING STEEL

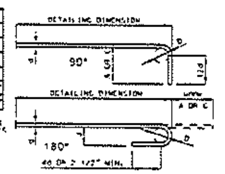
NO. REQ'D.	SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	NOMINAL LENGTH FT.	NOMINAL LENGTH IN.	ACTUAL LENGTH FT.	ACTUAL LENGTH IN.	WEIGHT LBS.



90° STIRRUP 135° STIRRUP

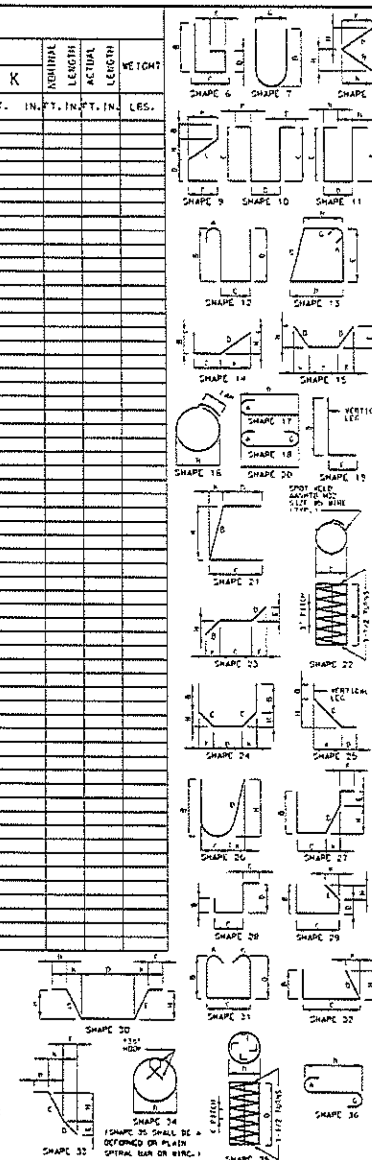
STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK: HOOK A OR B	135° HOOK: HOOK A OR B	135° HOOK: APPROX. H
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"

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



END HOOK DIMENSIONS				
BAR SIZE	D (IN.)	ALL GRADES: 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	2'-0"
#14	18 1/4"	2'-3"	21 3/4"	2'-7"

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) fy = 60,000 PSI.

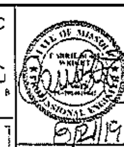


BENDING DIAGRAMS

Designed: JDS
Detailed: JDS
Checked: CBW

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

Sheet No. 7 of 7



DATE PREPARED 8/21/2019
STATE MO
DISTRICT BT
COUNTY FRANKLIN
JOB NO. 1815510

HORNER SHIFRIN

FRANKLIN COUNTY
SCHOENEBERG ROAD
BRIDGE
REHABILITATION
BILL OF
REINFORCING STEEL