

Source: Public Works

To: City Council

From: City Manager and Staff

Council Meeting Date: Apr 21, 2014

Re: Ridgemont Road Bridge Mitigation Project

EXECUTIVE SUMMARY:

Staff has prepared for Council consideration a report concerning mitigation of the Ridgemont Road bridge over the County House Branch project. The project is estimated to cost \$35,780, and was approved through the Administrative Public Improvement process since the project is estimated to cost less than \$50,000. An Interested Parties (IP) meeting was held March 25, 2014.

Agenda Item No: REP 37-14

DISCUSSION:

During their routine bridge inspection, MoDOT determined that the Ridgemont Road bridge over County House Branch has structural deficiencies, and the load rating was reduced from 17 tons to 5 tons. Some of the steel beams and girders are rusted through, and are exhibiting section loss. The bridge requires repairs to mitigate the structural deficiencies, and bring the load rating up to 24 tons. Proposed mitigation includes supporting the existing steel girders with new reinforced concrete corbels attached to the existing concrete abutments, and strengthening the girders with stiffening plates. In addition, new guardrail will be installed on the north side of the bridge.

The City of Columbia is responsible for the maintenance of this bridge, and retained Shafer, Kline & Warren, Inc. (SKW) to perform engineering design services and prepare contract documents, and an opinion of construction cost, for mitigation of the bridge. These services have been completed and the project is estimated to cost \$35,780.

This work will require full closure of Ridgemont Road for 2 to 3 weeks. Traffic east of the bridge will be diverted to Forum Boulevard via Highridge Drive and Mills Drive; and traffic west of the bridge will be diverted to Stadium Boulevard via College Park Drive. Closure of the road is not planned until after the Scott Boulevard Phase 2 closures are re-opened.

An IP meeting was held on March 25, 2014, in conjunction with the Keene Street Improvements project. One (1) person was in attendance for this project, and no comments were received.

FISCAL IMPACT:

The estimated construction cost for this project is \$35,780, and will be funded from Annual Streets.

VISION IMPACT:

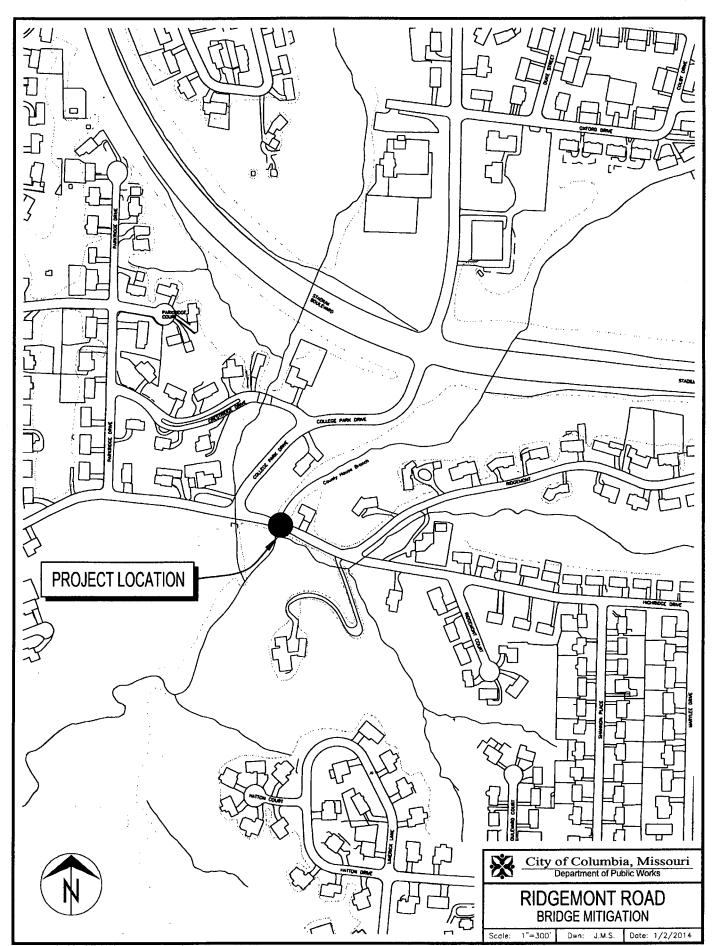
http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php

A network of safe roadways in and around the City will provide sustainable, efficient mobility to vehicular travel and other modes in a complimentary manner.

SUGGESTED COUNCIL ACTIONS:

For information only.

		FISCAL and \	VISION NOTE	S:					
City Fiscal Enter all tha		Program Imp	act	Mandates					
City's current net FY cost	\$13,400.00	New Program/ Agency?	No	Federal or State Mo					
Amount of funds already appropriated	\$114,000.00	Duplicates/Expands an existing program?	No	Vision Implementation	n impact				
Amount of budget amendment needed	\$0.00	Fiscal Impact on any local political subdivision?	local political No Refer to We						
Estimated 2 yea	ar net costs:	Resources Rec	ıvired	Vision Impact?	Yes				
One Time	\$49,180.00	Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	13				
Operating/ Ongoing	\$0.00	Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	13.3				
		Requires add'l capital equipment?	No	Fiscal year implementation Task #					



ENGINEER'S ESTIMATE WORK PERFORMED BY CONTRACTOR

LINE	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
ROAD	WAY ITEI	MS				
1	606.10	Type A End Section	EACH	2	\$600.00	\$1,200.00
2	613	Pavement Repair	L.S.	1 -	\$6,500.00	\$6,500.00
3	618	Mobilization	L.S.	1 _	\$5,000.00	\$5,000.00
				SUBTOTA	AL ROADWAY:	\$12,700.00
SIGNI	NG ITEMS	3				
4	616	Type III Moveable Barricades	EACH	10	\$300.00	\$3,000.00
5	616	Construction Signs	EACH	11	\$200.00	\$2,200.00
				SUBTO	TAL SIGNING:	\$5,200.00
BRIDG	GE ITEMS					
6	216.10	Removal of Existing Guardrail, Curb & Flume Sections	L.S.	1 _	\$1,500.00	\$1,500.00
7	703	Class B-2 Concrete - Curb & Gutter & Flume	C.Y.	1.6	\$800.00	\$1,280.00
8	703	Class B-2 Concrete - Corbels	C.Y.	3.6	\$1,000.00	\$3,600.00
9	706	Reinforcing Steel (Grade 60)	LBS	800	\$1.50	\$1,200.00
10	713	City Approved Rail	L.F.	56	\$50.00	\$2,800.00

ENGINEER'S ESTIMATE WORK PERFORMED BY CONTRACTOR

LINE	ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
11	712	Fabricated Structural Steel	L.S.	1 .	\$7,500.00	\$7,500.00
				SUBTO	OTAL BRIDGE:	\$17,880.00
			CONTRACTO	R TOTAL CO	NSTRUCTION:	\$35,780.00



KEY MAP SHOWING LOCATION OF COUNTY

DESIGN DESIGNATION A.D.T.-2013=420 A.D.T.-2033<735

FUNCTIONAL CLASS=URBAN LOCAL ROAD

	INDEX OF SHEETS
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND QUANTITIES
3	GENERAL PLAN AND ELEVATION
4	END BENT 1 & 2 ELEVATION & SECTIONS
5	BILL OF REINFORCING STEEL
6	GUARDRAIL DETAILS
7	TRAFFIC CONTROL

UTILITY CONTACTS

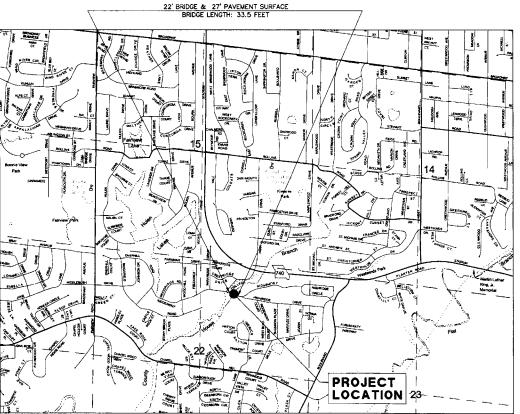
CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATING PROCEDURES AS REQUIRED FOR PROJECT.



RIDGEMONT ROAD BRIDGE MITIGATION CITY OF COLUMBIA, MISSOURI

BRIDGE NO. 0930011

ON RIDGEMONT ROAD OVER COUNTY HOUSE BRANCH



SECTION 22 T48N R13W

LOCATION MAP

NOT TO SCALE



STRACK
NUMBER
PE-20915

A STRACK
NUMBER
PE-20915

A STRACK
PE-20915

GARY D. STRACK
PE-20915

RIDGEMONT ROAD BRIDGE NO. 093001 CITY OF COLUMBIA, MISSOUR

WARREN,

SHEET NO. 1 OF 7

THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER \$83, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT-OF-WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION PROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE.

		ESTIMATED QUANTITIES		
LINE	ITEM	ITEM DESCRIPTION	UNITS	TOTAL
		ROADWAY ITEMS		
1	606.10	TYPE A END SECTION	EACH	2
2	613	PAVEMENT REPAIR	LUMP SUM	1 *
3	618	MOBILIZATION	LUMP SUM	1
		SIGNING ITEMS		
4	616	TYPE III MOVEABLE BARRICADES	EACH	10
5	616	CONSTRUCTION SIGNS	EACH	11
		BRIDGE ITEMS		
6	216.10	REMOVAL OF EXISTING GUARDRAIL & CURB & FLUME SECTION	LUMP SUM	1
7	703	CLASS B2 CONCRETE - CURB & GUTTER & FLUME	CUBIC YARDS	1.6
8	703	CLASS B2 CONCRETE - CORBELS	CUBIC YARDS	3.6
9	706	REINFORCING STEEL (GRADE 60)	POUNDS	800
10	713	CITY APPROVED RAIL	LINEAR FEET	56
11	712	FABRICATED STRUCTURAL STEEL	LUMP SUM	1

- NOTES:

 1. QUANTITIES SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE CITY OF COLUMBIA AND ARE USED SOLELY FOR THE PURPOSE OF COMPARING BIDS AND AWARDING THE CONTRACT, AND MAY OR MAY NOT REPRESENT THE ACTUAL QUANTITIES ON THE JOB.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT FORM 106, TO MISSOURI DEPARTMENT OF NATURAL RESOURCES, HISTORIC PRESERVATION PROGRAM FOR ANY BORROW AREAS TO BE USED ON THIS PROJECT.
- 3. CONTRACTOR TO REPAIR ANY DAMAGED AREAS, SUCH AS RESIDENTIAL YARDS & LANDSCAPING TO PRE-CONSTRUCTION CONDITIONS.
- 4. FABRICATED STRUCTURAL STEEL INCLUDES BEARING PLATES, STIFFENERS, ANCHOR BOLTS, WASHERS & GIRDER
- 5. REINFORCING STEEL EMBEDMENT ADHESIVE SHALL BE SIMPSON "SET" OR EQUIVALENT.
- *6. PAVEMENT REPAIR BID ITEM SHALL INCLUDE ABUTMENT WATERPROOFING SHOWN IN TYPICAL ABUTMENT SECTION, PAVEMENT USED SHALL BE A CITY APPROVED PAVEMENT.
- 7. SOUND TEST AND REMOVE ALL SPALLED CONCRETE WITHIN NEW CORBEL JOINT TO EXISTING ABUTMENT.
- 8. TEMPORARY SHORING METHODS SHALL BE INCIDENTAL TO CONSTRUCTION.

GENERAL NOTES:

DESIGN SPECIFICATION: 2002-AASHTO 17TH EDITION LOAD FACTOR DESIGN SEISMIC PERFORMANCE CATEGORY A ACCELERATION COEFFICIENT = 0.1

> FOR MATERIALS AND CONSTRUCTION PROCEDURES THE CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS AS STATED IN MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", 2011, AS AMENDED

DESIGN LOADING:

H\$20~44 35 PSF FUTURE WEARING SURFACE SOIL WT 120 LBS / CU. FT. EQUIVALENT FLUID PRESSURE 45 LBS/ CU. FT. SUPERSTRUCTURE: SIMPLY~SUPPORTED, NON-COMPOSITE FOR DEAD LOAD AND FOR LIVE LOAD.

DESIGN UNIT STRESSES:

CLASS B2 CONCRETE for = 4000 PSI REINFORCING STEEL (GRADE 60) Fy = 60000 PSI

BEARING PLAIES SHALL BE GRADE A36 STRUCTURAL STEEL.

REINFORCING STEEL:

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 11/2", UNLESS OTHERWISE SHOWN.

EXISTING/FRESH CONCRETE INTERFACE:

EXISTING CONCRETE SHALL BE COATED WITH A BONDING AGENT WHERE IT IS IN CONTACT WITH FRESH CONCRETE. SUBMIT MANUFACTURER'S CUT SHFFTS TO THE ENGINEER FOR

STRUCTURAL STEEL:

THE CONTRACTOR SHALL UTILIZE A FABRICATOR THAT MEETS THE APPROPRIATE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CERTIFICATION AS STATED IN SECTION 1080.3.1.6
OF THE 2011 "MISSOURI STANDARD SPECIFICATIONS FOR HICHWAY CONSTRUCTION".

ALL WELDING OPERATIONS RELATED TO STRUCTURAL STFF1, INCLUDING MATERIAL AND PERSONNEL, SHALL MEET THE AMERICAN WELDING SOCIETY (AWS) SPECIFICATIONS.

STRENGTH DESIGN METHOD (LOAD FACTOR DESIGN) FOR SUPERSTRUCTURE EXCEPT BEARINGS WHICH HAVE BEEN DESIGNED FOR SERVICE LOADS.

ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH ASTM F1554. THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.

GEOTECHNICAL INVESTIGATION:

GEOTECHNICAL REPORT HAS NOT BEEN PERFORMED FOR THIS SITE.

HYDRAULIC ANALYSIS:

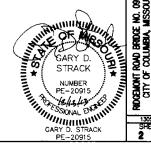
A HYDRAULIC ANALYSIS HAS NOT BEEN PERFORMED FOR THIS SITE.

STAR MACRO-DECK COATING OR EQUIVALENT:

I MACRO-DECK COATING OR EQUIVALENT:
SUBBUT MAINFACTURER'S CUT SHEETS TO ENGINEER FOR APPROVAL EXISTING STEEL GROER
ENDS SHALL BE COATED WITH A RUST RETARDANT/CORROSIVE PROTECTANT A MINIMUM OF 3'
FROM END OR GROERS. THE ENDS SHALL BE SANDILASTED TO REMOVE ALL DETERORATED
STEEL APPLICATION AREA MUST BE FREE OF DUST. GREASE, GRIME, MALD, MILDEW AND
DEBRIS, ONCE CLEAN APPLY MACRO-DECK OR POLIVIALENT COATING TO EXPOSED AND
SANDBLASTED GROER ENDS. APPLICATION NUST BE MADE WITH AN AMBIENT TEMPERATURE
OF 50' AND RISING, DO NOT APPLY DUBRIS RRINY OR FOROY MEATHER, MAY BE APPLIED BY
BRUSH, SPRAY OR ROLLER, ALLOW 30 MINITES TO DRY, THICKHESS OF APPLICATION WILL
VARY DRYING TIME. PAYMENT FOR APPLICATION SHALL BE INCLUDED IN FABRICATED
STRUCTURAL STEEL BID HTM.

ABBREVIATIONS:

BRG = BEARING
CLR = CLEAR
CONSI = CONSTRUCTION
DIA = DIAMETER
EB = END BENT EF = EACH FACE ELEV = ELEVATION EQ = EQUAL FF = FAR FACE INT = INTERSECTION MAX = MAXIMUM
MIN = MINIMUM
NF = NEAR FACE
SPA = SPACES SYMM = SYMMETRICAL TYP = TYPICAL



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KLINE SHAFER,

QUANTITIES

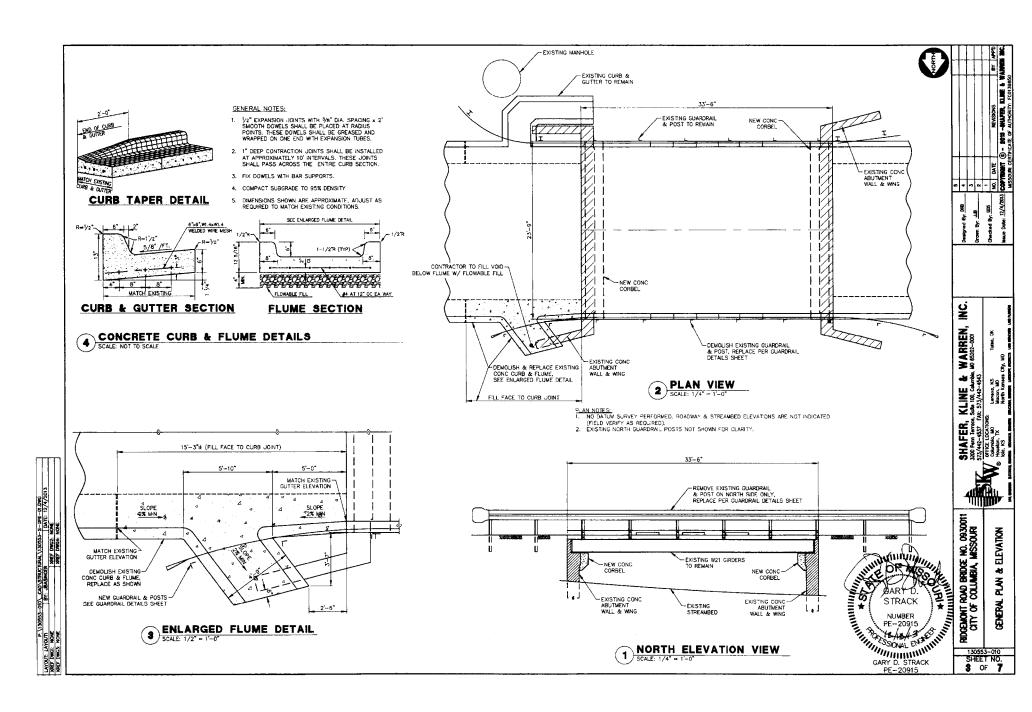
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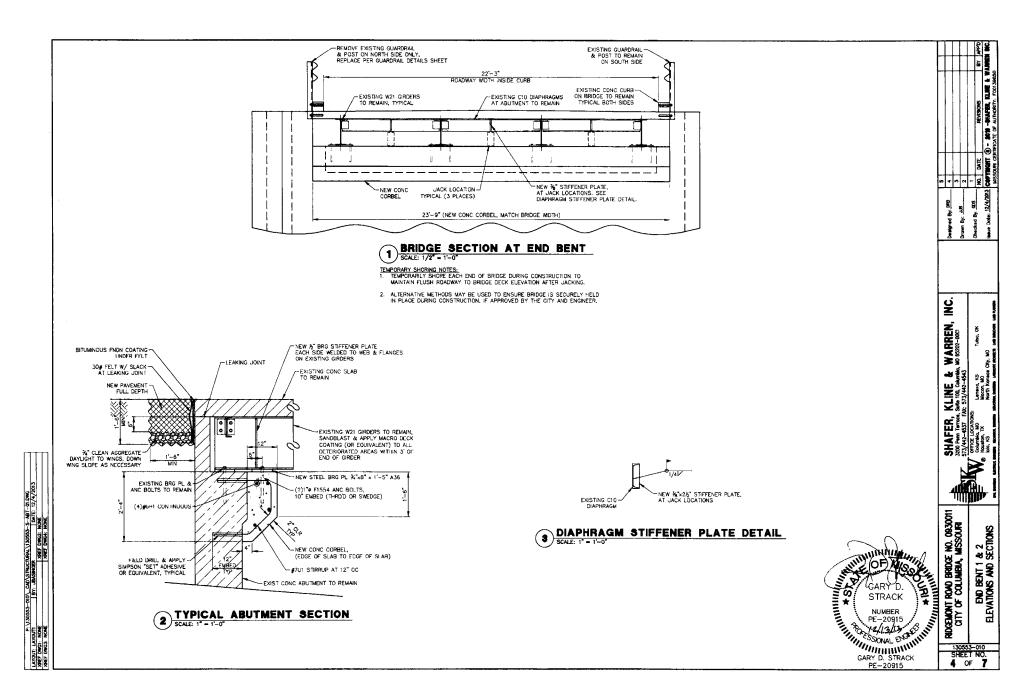
GENERAL

ROAD BRIDGE NO. 0930011 COLUMBIA, MISSOUR REDGEMONT R

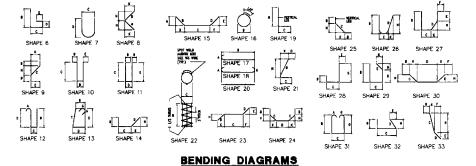
SHEET NO. 2 OF 7

XREF DWG2:





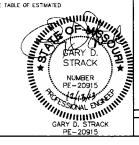
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Š	SIZE	MARK	LOCATION	EPOX	SHAPE	STIRRUP	SG		õ	INCR.	Ft.	ln.	Ft.	ln.	Ft.	ln.	Ft.	In.	Ft.:	ln.	Ft.	ln.	Ft.	. In.	Ft. In.	Ft. In.	Lbs
			END BENT 1	Г				Г													1			-			
4	6	H:	CORBEL		20						23	6.000	Τ-			-									23'-ñ"	23'-6"	14
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			END BENT 2	<u> </u>		-											-										\vdash
4	6	H1	CORREL	Γ	20						23	6.000						Ī							23'-6"	23-6	14
25	7	Ų1	CORBEL		27	Γ	Γ	Τ			1	9.500	1	2.438	1	0.063	1	2.938			0	8.563	0	6.563	5'-1"	5'~1"	26



| Pr. | 15055 - 010 | CAVOTT | APPOINT | APPOI

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS
LENGTH OF SERIES BARS REPRESENTS THE AVERAGE LENGTH OF BARS IN THE SERIES TO THE NEAREST INCH. LENGTHS A

REINFORCING WEIGHT SHOWN ON THIS SHEET IS ACTUAL WEIGHT, WEIGHT SHOWN IN THE TABLE OF ESTIMATED QUANTITIES IS ROUNDED TO THE NEAREST 10 LBS.

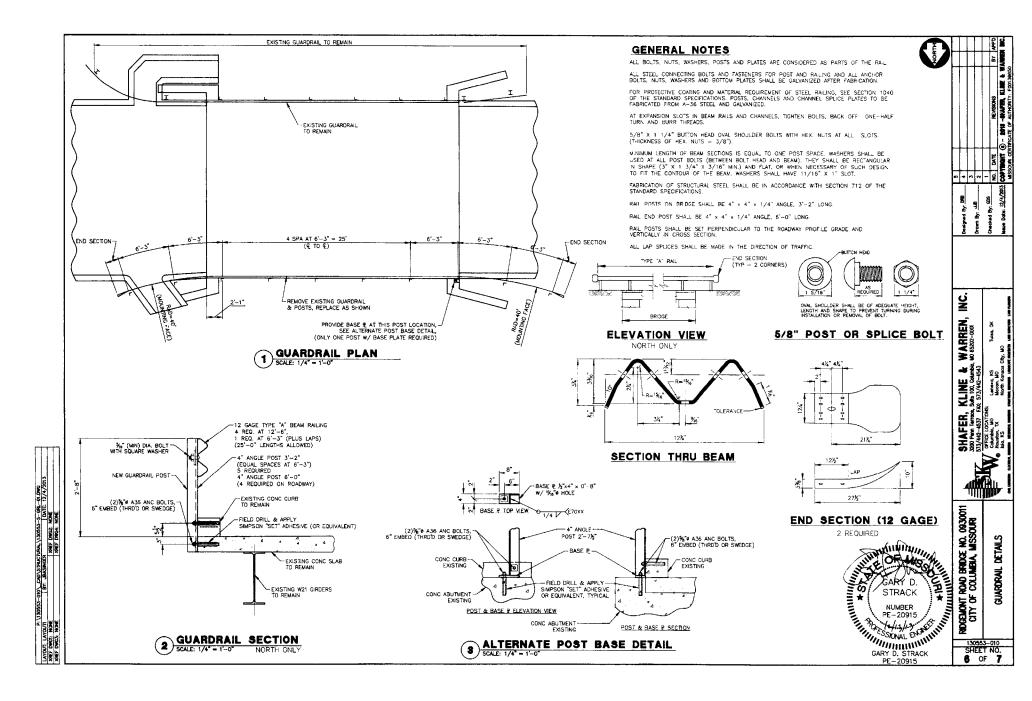


Š SHAFER, KLINE & WARREN, IN 3500 Penn Innexes, Sale 100, Columbia, no 62322—0001
533/444—4357 Pice 533/442—4453

GENERAL COLONIONE, IND. IND. COLUMBIA IN COLUMBIA

RIDGEMONT ROAD BRADGE NO. 0930011 CITY OF COLLAMBIA, MISSOURI OF REINFORCING STEEL 젊

130553--010 SHEET NO. **5** OF **7**



LOCATION MAP NOT TO SCALE

GENERAL NOTES:

PORTABLE MOUNTINGS SHALL CONFORM TO CRASH TEST REQUIREMENTS OF NOHRP 350 OR BE OTHERWISE APPROVED BY THE ENGINEER.

NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF PORTABLE MOUNTED SIGNS.

LONGITUDINAL SPACINGS OF SIGNS SHOWN IN THE PLANS ARE MINIMUM AND MAY BE ADJUSTED TO MEET EXISTING CONDITIONS.

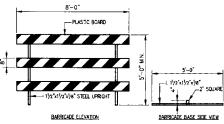
SIGNS FOR NIGHTTIME OPERATION MAY ALSO BE POST MOUNTED.

SIGNS SHALL NOT BE MOUNTED IN OR ON CHANNELIZERS.

REGULATORY AND GUIDE SIGNS SHALL BE MOUNTED 7' ABOVE THE EDGE OF THE TRAVELED WAY TO THE BOTTOM OF THE SIGN.

DAYTIME SIGNS ON TEMPORARY SUPPORTS SHALL BE WITHIN 30" OF A VERTICAL POSITION.

NIGHTTIME SIGNS SHALL BE VERTICAL ±5".



1 TYPE III BARRICADE



2 TYPE III BARRICADE WITH R11-2 (BRIDGE OUT)



3 TYPE III BARRICADE WITH R11-4 (ROAD CLOSED TO THRU TRAFFIC)



4 W20-1



5 W20-3

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WARREN, WO 65202-0001

-8 KLINE 34 100, Cour. 35 573/42-4 12/4/2013

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BRIDGE NO. 0930011 UMBIA, MISSOURI CONTROL GARY D.

STRACK

NUMBER
PE-20915

1441345

GARY D. STRACK
PE-20915

PE-20915 RIDGEMONT ROAD B TRAFFIC (

7 OF

PE-20915

ROAD AHEAD NOT LESS THAN 2'-0 FOUR 5/16 GALVANIZED BOLTS ~ URBAN SPLICE DETAIL

TWO POSTS SHALL BE USED FOR THE W20 SERIES SIGNS.

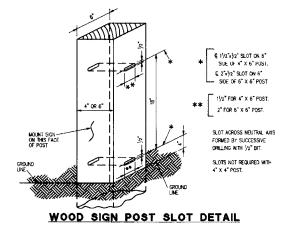
SUPPORT POSTS SHALL NOT EXTEND ABOVE THE SIGN UNLESS DISTANCE PLAQUE OR WARNING LIGHT IS SPECIFIED. LIGHT WEIGHT STEEL POSTS PERMITTED.

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:

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



CITY OF COL	UMBIA, MO PUBLIC WORKS								
PROPERTY OV	VNER CONTA	CT LOG	NOTIFIED OF 3/25/14	ATTNDED	SPOKE WITH ON PHONE	Marra			
Project: Ridgemont Road Bridge Mitigat	ion	By:R. Kaufmann	I.P.	3/25/14 I.P. MEETING	OR LEFT MESSAGE	NOTES			
PARCEL NO./ADDRESS	OWNER NAME	OWNER ADDRESS	MEETING						
Assessor #: 1651600010760001 Parcel Address: 1907 Ridgemont	RUDOLPH MARY	1907 RIDGEMONT COLUBMIA, MO 65203	Yes	No		Phone number unlisted			
Assessor #: 1651600010770001 Parcel Address: 1901 Ridgemont	ENGLEY FRANK III	1901 RIDGEMONT COLUMBIA, MO 65203- 1951	Yes	No		Phone number unlisted			
Assessor #: 1651600040150001 Parcel Address: 2000 College Park Dr	GIBB LAWRENCE E & PAMELA M	2000 COLLEGE PARK DR COLUMBIA, MO 65203- 1802	Yes	No	4/7/2014 - Spoke with on phone	Spoke with Lawrence Gibb, he asked a few questions as he was not able to make it to the IP meeting. He was satisfied and agreed we should do what we need to do in order to repair the bridge.			
Assessor #: 1651600100300001 Parcel Address: 00000 Chapel Hill Rd	COLUMBIA LUTHERAN ASSOCIATION OF SCHOOLS	2201 W ROLLINS COLUMBIA, MO 65203	Yes	No		Spoke with a receptionist at Good Shepherd Lutheran School, and told her about the upcoming Public Hearing. She will pass the info to the principal & the board.			
Assessor #: 1651600050010001 Parcel Address: 1916 Ridgemont	COOK MICHAEL L & JUANAMARIA C	1916 RIDGEMONT COLUMBIA, MO 65203- 1952	Yes	No	4/7/2014 - Left Voicemail				

ADMINISTRATIVE PUBLIC IMPROVEMENT PROJECT

Project name a	and brief description: Ridgemont Road Bridge Mitigation, C00568
Department:	Public Works
Estimated cost	t:\$35,780.00
Funding source	e: <u>Annual Streets C40158</u>
Project meets	the following criterion (check one):
r	Construction, upgrade or relocation of electric distribution lines less than sixty- nine (69) KV that is estimated to cost less than one million dollars \$1,000,000.00).
	Vater and electric production facility expansion projects estimated to cost less han five hundred thousand dollars (\$500,000.00).
	Sanitary sewer projects estimated to cost less than one hundred fifty thousand follars (\$150,000.00).
	Storm water utility public improvement projects estimated to cost less than one nundred fifty thousand dollars (\$150,000.00).
X	Any project estimated to cost less than fifty thousand dollars (\$50,000.00).
No tax bills will	I be issued for the project.
Project does n	ot require exercise of power of eminent domain.
IP meeting hel	d on <u>March 25, 2014</u>
Attendance: 1	Person
Result:N	lo comments received
Other contacts	::
	tings are not required for ordinary maintenance of public improvements or for where there are no obvious interested parties.
Submitted by:	Department Head Approved: My Manager City Manager