

STATE OF MISSOURI
HIGHWAYS and TRANSPORTATION
COMMISSION

JEFFERSON CITY, MISSOURI

CONSTRUCTING OR IMPROVING
CONTRACT I.D. 161216-F01

THIS JOB SHALL BE CONSTRUCTED UNDER
FEDERAL PROJECT NUMBER(S) : I-55-2 (105),I 55-2(106)

J6I3110,J6I3131 - ROUTE 55 - JEFFERSON COUNTY

BIDDER CHECKLIST
FINAL CHECKLIST BEFORE SUBMITTING BID

1. Submit completed Contractor Questionnaire and/or Contractor Prequalification Questionnaire with attachments not later than seven (7) days prior to the date and hour of the bid opening. See Secs 101-103 of the Missouri Standard Specifications for Highway Construction, and Rule 7 CSR 10-15.010, "Prequalifications to Bid of Certain Contractors". Questionnaire and Contact information are provided on MoDOT's website.
2. All bids shall be submitted electronically using "Bid Express Secure Internet Bidding" at www.bidx.com. Any paper bid submitted will be considered irregular per section 102.8 of the Missouri Standard Specifications for Highway Construction.
3. Please read all items in the bidding document carefully. The EBS files from MoDOT's website may be used for the itemized bid.
4. If submitted in the name of a firm or corporation, the legal name of the firm or corporation should appear in the space designated, and be signed for by one or more persons legally qualified to execute papers in the name of said firm or corporation.
5. The bidder shall submit a Bid Guaranty meeting the requirements of Sec 102 of the Missouri Standard Specifications for Highway Construction. If submitting a project specific or annual bid bond, bidders must use the MoDOT provided bid bond forms. The project specific bond form is included in the request for bid. The project specific and annual bid bond forms are also available on MoDOT's website. Annual bid bonds shall be executed by June 15th of each year.
6. Submit the Subcontractor Disclosure Form in accordance with the bidding documents. For bids of more than \$2,000,000, each bidder shall submit with each bid a disclosure of the subcontracts that have a subcontract value that is equal or greater than twenty percent of the total project bid or subcontracts that are greater than or equal to \$2,000,000. If that information is not available at the time of bid the bidder shall submit the "Subcontractor Disclosure Form" pages with MoDOT on or before 4:00 p.m. of the third business day after the bid opening date.
7. Submit the DBE Identification Submittal in accordance with the bidding documents for Federal Projects Only.
8. Alternate Pavements; to exercise this option, separate pay items, descriptions and quantities are included in the itemized proposal for each of the two alternates. The bidder shall bid only one of the two alternates and leave the contract unit price column blank for any pay item listed for the other alternate.

- 9. When submitting a bid, your bid will still come through with "red" folders. You should make sure that it is not the Schedule of Items folder or the Signature and Identity of Bidder folder. Click on the yellow checkmark (Check Bid) at the top and it will list any errors in the bid. To view itemized folders, click the Tree View. This will show the status of the individual folders.

Below is a list of common mistakes made by bidders leading to non-responsive bids. Please refer to the Standard Specifications for the appropriate procedures for completing and submitting a bid.

- a) Submitting a paper bid for a project
- b) Using a different bid bond form than the one provided
- c) Improper use of the Maximum Monetary Value Award Provision
-only used if bidding more than one project and should be in only one bid proposal
- d) Not obtaining a digital ID in advance of the letting
(obtaining a digital ID may take 5 business days)

All questions concerning the bid document preparation shall be directed to the Central Office - Design Division at (573) 751-2876. Project specific questions shall be directed to the project contact listed in the Job Special Provisions.

TABLE OF CONTENTS

Notice to Contractors

Proposed Work..... item (1)

Compliance With Contract Provisions..... item (2)

Period of Performance..... item (3)

Liquidated Damages..... item (4)

Acceptance of Provision for Price Adjustment for Fuel..... item (5a)

Acceptance of Provision for Asphalt Cement Price Index.... item (5b)

Max. Monetary Value of Awards Accepted this Bid Opening... item (6)

Combination Bids..... item (7)

Bid Guaranty..... item (8)

Certification for Federal Jobs..... item (9a)

Certification for State Jobs..... item (9b)

Antidiscrimination..... item (10)

Preference to Missouri Firms in Awarding of Contracts..... item (11)

Signature and Identity of Bidder..... item (12)

Trainees..... item (13)

Bidder's Certification for DBE Program and Contract Goal.. item (14)

Itemized Bid..... item (15)

Bid Bond*

Subcontractor Disclosure Form*

DBE Identification Submittal (Applies to Federal Projects Only) *

*These forms are also available on MoDOT's Website, www.modot.org under General Information on the Bid Opening Info page of the Contractor Resources site.

NOTICE TO CONTRACTORS

Electronic bids submitted through the Bid Express website for the proposed work will be received by the Missouri Highways and Transportation Commission until 11:00 o'clock a.m. (prevailing local time) on 12-16-16.

Bid bonds will be received at the office of the Secretary to the Commission in the Missouri Department of Transportation Central Office Building, 105 West Capitol Avenue, Jefferson City, Missouri; delivered by US Mail should be mailed to: Missouri Highways and Transportation Commission, Attention: State Design Engineer/Bid Bond, P.O. Box 270, Jefferson City, MO 65102 or delivered by parcel delivery services, (such as UPS, Fed Ex, DHL, etc.) should be shipped to Missouri Highways and Transportation Commission, Attention: State Design Engineer/Bid Bond, 105 West Capitol Avenue, Jefferson City, MO 65102.

(1) PROPOSED WORK: The proposed work, hereinafter called the work, includes:

****(1): Job J6I3110 Route 55 JEFFERSON County. Resurface from Route Z near Pevely to Ste. Genevieve County line, the total length of improvement being 16.086 miles.****(2): Job J6I3131 Route JEFFERSON County. 21 Bridge rehabilitations from Route Z near Pevely to Plattin Creek south of Crystal City, the total length of improvement being 8.105 miles.

Combination bids will be Required on the Jobs listed above.

(2) COMPLIANCE WITH CONTRACT PROVISIONS: The bidder, having examined and being familiar with the local conditions affecting the work, and with the contract, contract documents, including the Missouri Highways and Transportation Commission's "Missouri Standard Specifications for Highway Construction, 2016," and "Missouri Standard Plans for Highway Construction, 2016", their revisions, and the request for bid, including appendices, the special provisions and plans, hereby proposes to furnish all labor, materials, equipment, services, etc., required for the performance and completion of the work. All references are to the Missouri Standard Specifications for Highway Construction, as revised, unless otherwise noted. All questions concerning the bid document preparation shall be directed to the Central Office - Design Division at (573) 751-2876.

(3) PERIOD OF PERFORMANCE: If the bid is accepted, the bidder shall continuously and diligently prosecute the work in such order and manner as will ensure the completion of the work within the time specified in the Job Special Provisions in accordance with Sec 108.

(4) LIQUIDATED DAMAGES: The bidder agrees that, should the bidder fail to complete the work in the time specified or such additional time as may be allowed by the engineer under the contract, the amount of liquidated damages as specified in the Job Special Provisions to be recovered in accordance with Sec 108.

(5a) ACCEPTANCE OF PROVISION FOR PRICE ADJUSTMENT FOR FUEL: Bidders have the option to accept the provision for Price Adjustment for Fuel in accordance with Sec. 109.14. The bidder must select "Yes" for those items of work in which they choose to accept the provision. No price adjustments will be made, due to fuel price changes, for bidders who do not accept this provision. This provision does not apply to Seal Coat.

EXCAVATION PRODUCTION
ASPHALT PAVING PRODUCTION AND HAULING
CONCRETE PAVING PRODUCTION AND HAULING
AGGREGATE BASE HAULING

(5b) ACCEPTANCE FOR PROVISION FOR ASPHALT CEMENT PRICE INDEX, SEAL COAT PRICE INDEX, UNDERSEAL PRICE INDEX, OR POLYMER MODIFIED EMULSION MEMBRANE PRICE INDEX:

Bidders have the option to accept the provision for Asphalt Cement Price Index, Seal Coat Price Index, Underseal Price Index, and/or Polymer Modified Emulsion Membrane Price Index in accordance with the General Provisions. The bidder must mark each box below if they choose to accept the provision. No price adjustments will be made, due to asphalt price changes, for bidders who do not accept this provision.

ASPHALT CEMENT
SEAL COAT
UNDERSEAL
POLYMER MODIFIED EMULSION MEMBRANE

(6) MAXIMUM MONETARY VALUE OF AWARDS ACCEPTED THIS BID OPENING: Bidders have the option to specify the maximum monetary value of awards that they will accept for the total of all bids they have submitted in the bid opening, Sec 102.7.2. If the bidder is submitting only one bid, or if the bidder does not want to specify a maximum monetary value for submitted bids, this section should not be completed. If a submitted bid upon correction exceeds the indicated maximum monetary amount, the bid may be

declared non-responsive. If a bidder's submitted bids show different values for the maximum monetary value, the lowest value will govern.

MAXIMUM MONETARY VALUE OF AWARDS ACCEPTED THIS BID OPENING

(Note: this amount should be entered in only one of the bids for this bid opening)

(7) COMBINATION BIDS: (Applies only if combination bids are specified. See cover and/or notice to contractor(s).) Combination bids will be in accordance with Sec 102.12. By selecting "ALL OR NONE", the bidder desires to combine all projects in accordance with Sec 102.12.2.1.

(8) BID GUARANTY: The bidder shall submit a Bid Guaranty meeting the requirements of Section 102 of the Missouri Standard Specifications for Highway Construction. MoDOT's bid bond and annual bid bond forms are available on MoDOT's website.

(9a) CERTIFICATIONS FOR FEDERAL JOBS: (Applies to Federal Projects only.) By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.1 (regarding affirmative action and equal opportunity), Sec. 102.18.2 (regarding disbarment, eligibility, indictments, convictions, or civil judgments), Sec.102.18.3 (regarding anti-collusion), and Sec.102.18.4 (regarding lobbying activities). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec.108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

(9b) CERTIFICATIONS FOR STATE JOBS: (Applies to State Projects only.) By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.2 (regarding diseligibility, indictments, convictions, or civil judgments), Sec. 102.18.3 (regarding anti-collusion), and Sec. 102.18.5 (regarding Missouri Domestic Products Procurement Act). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

By selecting "No" the bidder REFUSES to make one or more certifications for the above items 9a or 9b. The bidder shall provide a statement of explanation for the refusal in the space below or by fax to the Design Division @ Fax no. 573-522-2281.

(10) ANTIDISCRIMINATION: The Commission hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

(11) PREFERENCE TO MISSOURI FIRMS IN AWARDING OF CONTRACTS: (Applies to State Projects only.) The bidder's attention is directed to Section 34.355 RSMo Supp 2000, et seq, which requires that preference be given in awarding contracts to firms, corporations, or individuals doing business as Missouri firms, corporations, or individuals, or which maintain Missouri offices or places of business, when the quality of performance promised is equal, or better, and the price quoted is the same, or less.

The law also requires that a contractor or bidder domiciled outside the state of Missouri shall be required, in order to be the successful bidder, to submit a bid which is the same percent less than the lowest bid submitted by a responsible contractor or bidder domiciled in Missouri as would be required for the Missouri domiciled contractor or bidder to succeed over the bidding contractor or bidder domiciled outside Missouri in a like contract or bid being let in his state. A contractor or bidder domiciled outside Missouri domiciliary shall also be required to submit an audited financial statement as would

be required of a Missouri domiciled contractor or bidder on a like contract or bid being let in the domiciliary state of that contractor or bidder.

For firms, corporations or individuals domiciled outside the state of Missouri, it is requested they submit the following information:

List the state of domicile

List address of all Missouri offices or places of business

I acknowledge that I have read, understand and completed the above Contract Provisions.

(12) Signature and Identity of Bidder

BY SUBMITTING THIS BID ELECTRONICALLY, I HEREBY ACKNOWLEDGE THAT ALL REQUIREMENTS INCLUDED IN THE HARD COPY REQUEST FOR BID, AND AMENDMENTS ARE A PART OF THIS BID AND CONTRACT.

*** AN ELECTRONIC PROPOSAL SUBMITTED AND SIGNED WITH A DIGITAL ID, UNDER THE PROVISION OF THE MISSOURI DEPARTMENT OF TRANSPORTATION, WILL BE CONSIDERED VALID AND BINDING. ***

THE BIDDER CERTIFIES THAT THE BIDDER AND ITS OFFICIALS, AGENTS, AND EMPLOYEES HAVE NEITHER DIRECTLY NOR INDIRECTLY ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THIS BID, AND THAT THE BIDDER INTENDS TO PERFORM THE WORK WITH ITS OWN BONAFIDE EMPLOYEES AND SUBCONTRACTORS, AND DID NOT BID FOR THE BENEFIT OF ANOTHER CONTRACTOR.

THE BIDDER CERTIFIES THAT THE BIDDER'S COMPANY KNOWINGLY EMPLOYS ONLY INDIVIDUALS WHO ARE AUTHORIZED TO WORK IN THE UNITED STATES IN ACCORDANCE WITH THE APPLICABLE FEDERAL AND STATE LAWS AND ALL PROVISIONS OF MISSOURI EXECUTIVE ORDER NO. 07-13 FOR CONTRACTS WITH THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION, ACTING THROUGH THE MISSOURI DEPARTMENT OF TRANSPORTATION.

THE BIDDER ACKNOWLEDGES THAT THIS IS AN UNSWORN DECLARATION, EXECUTED UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND/OR FALSE DECLARATION UNDER THE LAWS OF MISSOURI, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS. THE FAILURE TO PROVIDE THIS CERTIFICATION IN THIS BID MAY MAKE THIS BID NON-RESPONSIVE, AND CAUSE IT TO BE REJECTED.

Select "No" ONLY if the bidder REFUSES to make this certification. The bidder may provide an explanation for the refusal with this submittal in the space below or by fax to the Design Division @ fax no. 573-522-2281.

USE OF ANOTHER PERSON'S DIGITAL ID IN THIS BIDDING PROCESS VIOLATES THE LAWS OF MISSOURI.

I acknowledge that I have read, understand and completed the above Electronic Bid Submission Certification.

DBE CERTIFICATION

(13) Trainees: (Applies to Federal Projects only) The number of trainee hours provided under this contract will be 2 slots at 1000 hours per slot or 2000 hours.

(14) Bidder's Certification for DBE Program and Contract Goal
(Applies to Federal Projects Only.)

(A) DBE Contract Goal: By submitting this bid, the bidder certifies that the bidder is familiar with the DBE Program Requirements in the General Provisions. The contract goal for the amount of work to be awarded is 15.00% of the total federal project price. The bidder shall also complete the DBE Identification Submittal form in accordance with the General Provisions. This form is available on MoDOT's Website, www.modot.org under General Information on the Bid Opening Info page of the Contractor Resources site.

(B) DBE Participation: The bidder certifies that it will utilize DBE's as follows: % OF TOTAL
FEDERAL CONTRACT

NOTE: Bidder must fill in the above box. If no percentage is specified, the bidder certifies that it agrees to and will comply with the contract goal. If a percentage below the contract goal is specified, then the bidder must submit complete documentation of good faith efforts to met the DBE contract goal, immediately below.

The DBE Identification Submittal form will be submitted via

(C) Certification of Good Faith Efforts to Obtain DBE Participation: By submitting its signed bid, the bidder certifies under penalty of perjury and other provisions of law, that the bidder took each of the following steps to try to obtain sufficient DBE participation to achieve the Commission's proposed DBE Contract Goal:

(15) ITEMIZED BID: The bidder should complete the following section in accordance with Sec 102.7. The bidder proposes to furnish all labor, materials, equipment, services, etc. required for the performance and completion of the work, as follows:

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0001 Roadway Items - J6I3110				
Alt Group				
0010	2022010 REMOVAL OF IMPROVEMENTS	LUMP	LUMP	
0020	2159903 MISC. SHAPING SLOPES, CLASS III	57,716.000 LF		
0030	4030132 ASPHALTIC CONCRETE MIXTURE PG 76-22 (SP125BSM MIX)	65,118.500 TONS		
0040	4071005 TACK COAT	61,260.000 GAL		
0050	4139905 MISC. HIGH FRICTION SURFACE TREATMENT - BAUXITE	2,081.000 SQYD		
0060	6131010 FURNISHING AND PLACING CONCRETE MATERIAL FOR FULL DEPTH PAVEMENT REPAIR	1,495.000 SQYD		

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0070	6131012 SUBGRADE COMPACTION (6 IN. DEPTH) (PAVEMENT REPAIR)	150.000 SQYD				
0080	6131013 TYPE 1 OR 5 AGGREGATE FOR BASE (4 IN. THICK) (PAVEMENT REPAIR)	150.000 SQYD				
0090	6131014 FULL DEPTH PAVEMENT REPAIR SAW CUT (FOR PERIMETER AND INTERNAL SAW CUTS)	5,233.000 LF				
0100	6131015 DOWEL BAR (DRILLING, FURNISHING AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR	1,783.000 EA				
0110	6131017 DOWEL BAR (FURNISHING AND INSTALLATION WITH BASKETS) FOR FULL DEPTH PAVEMENT REPAIR	604.000 EA				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0120	6131018 TIE BAR (DRILLING, FURNISHING AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR (TYPE L JOINTS)	276.000 EA				
0130	6181000 MOBILIZATION	LUMP	LUMP			
0140	6205902A 6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	255,276.000 LF				
0150	6205903A 6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	202,318.000 LF				
0160	6205906A 12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	9,826.000 LF				
0170	6221001 COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	553,163.000 SQYD				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0180	6221003 COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (GREATER THAN 3 IN. THICK)	29,684.000 SQYD				
0190	6261000A BITUMINOUS SHOULDER RUMBLE STRIP	3,197.400 STA				
0200	6274000 CONTRACTOR FURNISHED SURVEYING AND STAKING	LUMP	LUMP			
0210	8061005 ROCK DITCH CHECK	300.000 LF				
0220	8069928 MISC. WATER POLLUTION CONTROL MANAGER	22.000 WK				
	Section 0001 Total					0.00

Section 0002 Guardrail/ Guard Cable Items - J6I3110

Alt Group

0230	6061060 MGS GUARDRAIL	45,186.000 LF				
------	--------------------------	------------------	--	--	--	--

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0240	6061063 MGS GUARDRAIL, 6 FT. POSTS, 3 FT. - 1.5 IN. SPACING	200.000 LF				
0250	6061065 MGS GUARDRAIL, 6 FT. POSTS, 1 FT. - 6.75 IN. SPACING	50.000 LF				
0260	6061069 MGS BRIDGE APPROACH TRANSITION SECTION (MINOR ROUTE)	60.000 EA				
0270	6061074 MGS HEIGHT AND BLOCK TRANSITION	1.000 EA				
0280	6061080 MGS END ANCHOR	42.000 EA				
0290	6063014 TYPE A CRASHWORTHY END TERMINAL (MASH)	67.000 EA				
	Section 0002 Total					0.00

Section 0003 Signing Items - J6I3110

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0300	9031010 CONCRETE FOOTINGS, EMBEDDED	38.000 CUYD				
0310	9031210 STRUCTURAL STEEL POSTS	20,940.000 LB				
0320	9031220 PIPE POSTS	2,600.000 LB				
0330	9035004A SH-FLAT SHEET	220.000 SQFT				
0340	9035011A ST-STRUCTURAL	3,976.000 SQFT				
0350	9035069A SHF-FLAT SHEET FLUORESCENT	428.000 SQFT				
	Section 0003 Total					0.00

Section 0004 ITS Items - J6I3110

Alt Group

0360	9109903 MISC. MODOT ITS IN-GROUND FACILITY RELOCATION	5,000.000 LF				
------	--	-----------------	--	--	--	--

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
Section 0004 Total						0.00
Section 0005 Roadway Items - J6I3131						
Alt Group						
0370	2072000 LINEAR GRADING CLASS 2	4.000 STA				
0380	4010150 TYPE A2 SHOULDER	5,164.000 SQYD				
0390	4011209 BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)	549.100 TONS				
0400	4071005 TACK COAT	520.000 GAL				
0410	6113020 FURNISHING TYPE 2 ROCK BLANKET	1,185.000 CUYD				
0420	6113040 PLACING TYPE 2 ROCK BLANKET	1,185.000 CUYD				
0430	6122019 IMPACT ATTENUATOR (19 SAND BARRELS)	2.000 EA				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0440	6122020 REPLACEMENT SAND BARREL	24.000 EA				
0450	6122030 IMPACT ATTENUATOR (RELOCATION)	24.000 EA				
0460	6161095 RADAR SPEED ADVISORY SYSTEM	4.000 EA				
0470	6162010 WORK ZONE LIGHTING	LUMP	LUMP			
0480	6169901 MISC. TEMPORARY TRAFFIC CONTROL	LUMP	LUMP			
0490	6169902 MISC. CHANGEABLE MESSAGE SIGN NTCIP COMPLIANT CONTRACTOR FURNISHED/RETAINED	7.000 EA				
0500	6173600D TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED / RETAINED	1,567.000 LF				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0510	6175010A RELOCATING TEMPORARY TRAFFIC BARRIER	16,362.000 LF				
0520	6181000 MOBILIZATION	LUMP	LUMP			
0530	6221001 COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)	5,164.000 SQYD				
0540	6240103A PERMANENT EROSION CONTROL GEOTEXTILE	2,440.000 SQYD				
0550	6269903 MISC. ADHESIVE TRANSVERSE RUMBLE STRIP	1,440.000 LF				
0560	6274000 CONTRACTOR FURNISHED SURVEYING AND STAKING	LUMP	LUMP			
0570	8061016 SEDIMENT REMOVAL	5.000 CUYD				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0580	8061019 SILT FENCE	530.000 LF				
0590	8069928 MISC. WATER POLLUTION CONTROL MANAGER	36.000 WK				
	Section 0005 Total					0.00

Section 0006 Signal Items - J6I3131

Alt Group

0600	9029901 MISC. TRAFFIC SIGNAL MAINTENANCE AND PROGRAMMING	LUMP	LUMP			
	Section 0006 Total					0.00

Section 0007 Bridge A07974 Items - J6I3131

Alt Group

0610	2161000 SCARIFICATION OF BRIDGE DECKS	677.000 SQYD				
0620	2161501 REMOVAL OF ASPHALT WEARING SURFACE	6,095.000 SQFT				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0630	5059905 MISC. STEEL FIBER REINFORCED CONCRETE OVERLAY	677.000 SQYD				
0640	7040108 MODIFIED DECK REPAIR	900.000 SQFT				
	Section 0007 Total					0.00

Section 0008 Bridge A07975 Items - J6I3131

Alt Group

0650	2161000 SCARIFICATION OF BRIDGE DECKS	677.000 SQYD				
0660	2161501 REMOVAL OF ASPHALT WEARING SURFACE	6,095.000 SQFT				
0670	5059905 MISC. STEEL FIBER REINFORCED CONCRETE OVERLAY	677.000 SQYD				
0680	7040108 MODIFIED DECK REPAIR	900.000 SQFT				
	Section 0008 Total					0.00

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0009 Bridge A07997 Items - J6I3131				
Alt Group				
0690	2161501 REMOVAL OF ASPHALT WEARING SURFACE	7,183.000 SQFT		
0700	2161502 REMOVAL OF CONCRETE WEARING SURFACE	8,180.000 SQFT		
0710	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	82.000 LF		
0720	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	12.000 LF		
0730	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	1,100.000 SQFT		
0740	5052001 LATEX MODIFIED HIGH EARLY STRENGTH CONCRETE WEARING SURFACE	909.000 SQYD		
0750	7034214 CLASS B-2 CONCRETE	8.200 CUYD		

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0760	7040109 TOTAL SURFACE HYDRO DEMOLITION	909.000 SQYD				
0770	7040113 CLEAN AND EPOXY SEAL	380.000 SQFT				
0780	7049902 MISC. PLUGGING CURB OUTLET	18.000 EA				
0790	7049907 MISC. MONOLITHIC DECK REPAIR	6.300 CUYD	600.00000		3,780.00	
0800	7101000 REINFORCING STEEL (EPOXY COATED)	920.000 LB				
0810	7110200 PROTECTIVE COATING - CONCRETE BENTS AND PIERS (EPOXY)	LUMP	LUMP			
0820	7125200 SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	800.000 SQFT				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0830	7125210 FIELD APPLICATION OF INORGANIC ZINC PRIMER	800.000 SQFT				
0840	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	800.000 SQFT				
0850	7125370A FINISH FIELD COAT (SYSTEM G)	800.000 SQFT				
0860	7129902 MISC. CORED SLAB DRAIN	14.000 EA				
0870	7172001 STRIP SEAL EXPANSION JOINT SYSTEM	82.000 LF				
	Section 0009 Total					3,780.00

Section 0010 Bridge A07998 Items - J6I3131

Alt Group

0880	2161501 REMOVAL OF ASPHALT WEARING SURFACE	7,183.000 SQFT				
0890	2161502 REMOVAL OF CONCRETE WEARING SURFACE	8,180.000 SQFT				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0900	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	82.000 LF				
0910	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	12.000 LF				
0920	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	1,100.000 SQFT				
0930	5052001 LATEX MODIFIED HIGH EARLY STRENGTH CONCRETE WEARING SURFACE	909.000 SQYD				
0940	7034214 CLASS B-2 CONCRETE	8.200 CUYD				
0950	7040109 TOTAL SURFACE HYDRO DEMOLITION	909.000 SQYD				
0960	7040113 CLEAN AND EPOXY SEAL	380.000 SQFT				
0970	7049902 MISC. PLUGGING CURB OUTLET	18.000 EA				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
0980	7049907 MISC. MONOLITHIC DECK REPAIR	6.300 CUYD	600.00000		3,780.00	
0990	7101000 REINFORCING STEEL (EPOXY COATED)	920.000 LB				
1000	7110200 PROTECTIVE COATING - CONCRETE BENTS AND PIERS (EPOXY)	LUMP	LUMP			
1010	7125200 SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	800.000 SQFT				
1020	7125210 FIELD APPLICATION OF INORGANIC ZINC PRIMER	800.000 SQFT				
1030	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	800.000 SQFT				
1040	7125370A FINISH FIELD COAT (SYSTEM G)	800.000 SQFT				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1050	7129902 MISC. CORED SLAB DRAIN	EA 14.000				
1060	7172001 STRIP SEAL EXPANSION JOINT SYSTEM	LF 82.000				
	Section 0010 Total					3,780.00

Section 0011 Bridge A08304 Items - J6I3131

Alt Group

1070	2161000 SCARIFICATION OF BRIDGE DECKS	SQYD 573.000				
1080	2161501 REMOVAL OF ASPHALT WEARING SURFACE	SQFT 5,155.000				
1090	5059905 MISC. STEEL FIBER REINFORCED CONCRETE OVERLAY	SQYD 573.000				
1100	7040108 MODIFIED DECK REPAIR	SQFT 900.000				
	Section 0011 Total					0.00

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0012 Bridge A08305 Items - J6I3131				

Alt Group

1110	2161000 SCARIFICATION OF BRIDGE DECKS	565.000 SQYD		
1120	2161501 REMOVAL OF ASPHALT WEARING SURFACE	5,088.000 SQFT		
1130	5059905 MISC. STEEL FIBER REINFORCED CONCRETE OVERLAY	565.000 SQYD		
1140	7040108 MODIFIED DECK REPAIR	800.000 SQFT		
	Section 0012 Total			0.00

Section 0013 Bridge A09444 Items - J6I3131

Alt Group

1150	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,783.000 SQFT		
1160	4091048 EMULSIFIED ASPHALT, SEAL COAT	240.000 GAL		

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1170	4094011 SEAL COAT AGGREGATE, GRADE B1	606.000 SQYD				
1180	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	606.000 SQYD				
	Section 0013 Total					0.00

Section 0014 Bridge A09445 Items - J6I3131

Alt Group

1190	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,783.000 SQFT				
1200	4091048 EMULSIFIED ASPHALT, SEAL COAT	240.000 GAL				
1210	4094011 SEAL COAT AGGREGATE, GRADE B1	606.000 SQYD				
1220	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	606.000 SQYD				
	Section 0014 Total					0.00

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0015 Bridge A09455 Items - J6I3131				
Alt Group				
1230	2161501 REMOVAL OF ASPHALT WEARING SURFACE	10,524.000 SQFT		
1240	4091048 EMULSIFIED ASPHALT, SEAL COAT	580.000 GAL		
1250	4094011 SEAL COAT AGGREGATE, GRADE B1	1,439.000 SQYD		
1260	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	1,439.000 SQYD		
1270	7040108 MODIFIED DECK REPAIR	250.000 SQFT		
1280	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	250.000 SQFT		
	Section 0015 Total			0.00

Section 0016 Bridge A09456 Items - J6I3131

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1290	2161501 REMOVAL OF ASPHALT WEARING SURFACE	10,524.000 SQFT				
1300	4091048 EMULSIFIED ASPHALT, SEAL COAT	580.000 GAL				
1310	4094011 SEAL COAT AGGREGATE, GRADE B1	1,439.000 SQYD				
1320	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	1,439.000 SQYD				
1330	7040108 MODIFIED DECK REPAIR	250.000 SQFT				
1340	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	500.000 SQFT				
	Section 0016 Total					0.00

Section 0017 Bridge A09466 Items - J6I3131

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Ct	
1350	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,497.000 SQFT					
1360	4091048 EMULSIFIED ASPHALT, SEAL COAT	210.000 GAL					
1370	4094011 SEAL COAT AGGREGATE, GRADE B1	560.000 SQYD					
1380	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	560.000 SQYD					
1390	7040108 MODIFIED DECK REPAIR	100.000 SQFT					
1400	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	100.000 SQFT					
	Section 0017 Total					0.00	

Section 0018 Bridge A09467 Items - J6I3131

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Ct	
1410	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,497.000 SQFT					
1420	4091048 EMULSIFIED ASPHALT, SEAL COAT	210.000 GAL					
1430	4094011 SEAL COAT AGGREGATE, GRADE B1	560.000 SQYD					
1440	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	560.000 SQYD					
1450	7040108 MODIFIED DECK REPAIR	100.000 SQFT					
1460	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	100.000 SQFT					
	Section 0018 Total					0.00	

Section 0019 Bridge A09515 Items - J6I3131

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1470	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,862.000 SQFT				
1480	4091048 EMULSIFIED ASPHALT, SEAL COAT	240.000 GAL				
1490	4094011 SEAL COAT AGGREGATE, GRADE B1	619.000 SQYD				
1500	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	619.000 SQYD				
1510	7040104 REPAIRING CONCRETE DECK (HALF-SOLING)	250.000 SQFT				
1520	7049904 MISC. CONCRETE WEARING SURFACE	250.000 SQFT				
1530	7111001 WATERPROOFING MEMBRANE	170.000 SQYD				
	Section 0019 Total					0.00

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0020 Bridge A09516 Items - J6I3131				
Alt Group				
1540	2161501 REMOVAL OF ASPHALT WEARING SURFACE	3,862.000 SQFT		
1550	4091048 EMULSIFIED ASPHALT, SEAL COAT	240.000 GAL		
1560	4094011 SEAL COAT AGGREGATE, GRADE B1	619.000 SQYD		
1570	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	619.000 SQYD		
1580	7040104 REPAIRING CONCRETE DECK (HALF-SOLING)	250.000 SQFT		
1590	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	250.000 SQFT		
1600	7111001 WATERPROOFING MEMBRANE	170.000 SQYD		

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
	Section 0020 Total					0.00

Section 0021 Bridge A09534 Items - J6I3131

Alt Group

1610	2161501 REMOVAL OF ASPHALT WEARING SURFACE	5,924.000 SQFT				
1620	2163000 PARTIAL REMOVAL OF EXISTING BRIDGE DECKS	250.000 SQFT				
1630	2169903 MISC. REMOVE AND REPLACE END POST	12.000 LF				
1640	4091048 EMULSIFIED ASPHALT, SEAL COAT	280.000 GAL				
1650	4094011 SEAL COAT AGGREGATE, GRADE B1	710.000 SQYD				
1660	4139905 MISC. ULTRATHIN WEARING CONCRETE SURFACE	710.000 SQYD				
1670	7034214 CLASS B-2 CONCRETE	28.400 CUYD				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1680	7040104 REPAIRING CONCRETE DECK (HALF-SOLING)	400.000 SQFT				
1690	7040106 FULL DEPTH REPAIR	150.000 SQFT				
1700	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	400.000 SQFT				
1710	7101000 REINFORCING STEEL (EPOXY COATED)	2,330.000 LB				
	Section 0021 Total					0.00

Section 0022 Bridge A09535 Items - J6I3131

Alt Group

1720	2161501 REMOVAL OF ASPHALT WEARING SURFACE	5,924.000 SQFT				
1730	2163000 PARTIAL REMOVAL OF EXISTING BRIDGE DECKS	250.000 SQFT				
1740	2169903 MISC. REMOVE AND REPLACE END POST	12.000 LF				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01

Letting Date: 12-16-16

Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1750	4091048 EMULSIFIED ASPHALT, SEAL COAT	280.000 GAL				
1760	4094011 SEAL COAT AGGREGATE, GRADE B1	710.000 SQYD				
1770	4139905 MISC. ULTRATHIN BONDED WEARING SURFACE (UBAWS), GRADE A OR B	710.000 SQYD				
1780	7034214 CLASS B-2 CONCRETE	28.400 CUYD				
1790	7040104 REPAIRING CONCRETE DECK (HALF-SOLING)	400.000 SQFT				
1800	7040106 FULL DEPTH REPAIR	120.000 SQFT				
1810	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	400.000 SQFT				
1820	7101000 REINFORCING STEEL (EPOXY COATED)	2,330.000 LB				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
	Section 0022 Total					0.00

Section 0023 Bridge A10354 Items - J6I3131

Alt Group

1830	2161501 REMOVAL OF ASPHALT WEARING SURFACE	11,392.000 SQFT				
1840	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	152.000 LF				
1850	2169902 MISC. REMOVAL OF EXISTING BEARINGS	10.000 EA				
1860	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	28.000 LF				
1870	4091048 EMULSIFIED ASPHALT, SEAL COAT	510.000 GAL				
1880	4094011 SEAL COAT AGGREGATE, GRADE B1	1,266.000 SQYD				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1890	4139905 MISC. ULTRATHIN BONDED ASPHALT WEARING SURFACE (UBAWS), GRADE C	1,266.000 SQYD				
1900	7034214 CLASS B-2 CONCRETE	12.400 CUYD				
1910	7040104 REPAIRING CONCRETE DECK (HALF-SOLING)	250.000 SQFT				
1920	7049904 MISC. CONCRETE WEARING SURFACE REPAIR	250.000 SQFT				
1930	7101000 REINFORCING STEEL (EPOXY COATED)	1,600.000 LB				
1940	7110100 PROTECTIVE COATING - CONCRETE BENTS AND PIERS (URETHANE)	LUMP	LUMP			
1950	7121000 FABRICATED STRUCTURAL CARBON STEEL (MISC)	780.000 LB				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01
Letting Date: 12-16-16
Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Ct	
1960	7125200 SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	1,100.000 SQFT					
1970	7125210 FIELD APPLICATION OF INORGANIC ZINC PRIMER	1,100.000 SQFT					
1980	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	1,100.000 SQFT					
1990	7125370A FINISH FIELD COAT (SYSTEM G)	1,100.000 SQFT					
2000	7162000 LAMINATED NEOPRENE BEARING PAD ASSEMBLY	10.000 EA					
2010	7172001 STRIP SEAL EXPANSION JOINT SYSTEM	152.000 LF					
	Section 0023 Total					0.00	

Section 0024 Bridge A22214 Items - J6I3131

Alt Group

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2020	2161501 REMOVAL OF ASPHALT WEARING SURFACE	5,003.000 SQFT				
2030	2161502 REMOVAL OF CONCRETE WEARING SURFACE	7,312.000 SQFT				
2040	2163000 PARTIAL REMOVAL OF EXISTING BRIDGE DECKS	190.000 SQFT				
2050	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	52.000 LF				
2060	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	15.000 LF				
2070	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	125.000 SQFT				
2080	5052000 LATEX MODIFIED CONCRETE WEARING SURFACE	812.000 SQYD				
2090	7034214 CLASS B-2 CONCRETE	30.200 CUYD				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
2100	7040109 TOTAL SURFACE HYDRO DEMOLITION	812.000 SQYD				
2110	7049907 MISC. MONOLITHIC DECK REPAIR	7.300 CUYD				
2120	7101000 REINFORCING STEEL (EPOXY COATED)	2,070.000 LB				
2130	7110100 PROTECTIVE COATING - CONCRETE BENTS AND PIERS (URETHANE)	LUMP	LUMP			
2140	7123130 REHABILITATE BEARING	5.000 EA				
2150	7125200 SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	7,700.000 SQFT				
2160	7125210 FIELD APPLICATION OF INORGANIC ZINC PRIMER	7,700.000 SQFT				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Ct	
2170	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	2,000.000 SQFT					
2180	7125370A FINISH FIELD COAT (SYSTEM G)	2,000.000 SQFT					
2190	7172001 STRIP SEAL EXPANSION JOINT SYSTEM	52.000 LF					
	Section 0024 Total					0.00	

Section 0025 Bridge A22215 Items - J6I3131

Alt Group

2200	2161501 REMOVAL OF ASPHALT WEARING SURFACE	4,847.000 SQFT				
2210	2161502 REMOVAL OF CONCRETE WEARING SURFACE	7,084.000 SQFT				
2220	2163000 PARTIAL REMOVAL OF EXISTING BRIDGE DECKS	190.000 SQFT				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2230	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	52.000 LF				
2240	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	15.000 LF				
2250	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	175.000 SQFT				
2260	5052000 LATEX MODIFIED CONCRETE WEARING SURFACE	787.000 SQYD				
2270	7034214 CLASS B-2 CONCRETE	30.200 CUYD				
2280	7040109 TOTAL SURFACE HYDRO DEMOLITION	787.000 SQYD				
2290	7049907 MISC. MONOLITHIC DECK REPAIR	7.100 CUYD				
2300	7101000 REINFORCING STEEL (EPOXY COATED)	2,070.000 LB				

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 161216-F01

Letting Date: 12-16-16

Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2310	7110100 PROTECTIVE COATING - CONCRETE BENTS AND PIERS (URETHANE)	LUMP	LUMP			
2320	7123130 REHABILITATE BEARING	EA	5.000			
2330	7125200 SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	SQFT	7,500.000			
2340	7125210 FIELD APPLICATION OF INORGANIC ZINC PRIMER	SQFT	7,500.000			
2350	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	SQFT	2,000.000			
2360	7125370A FINISH FIELD COAT (SYSTEM G)	SQFT	2,000.000			
2370	7172001 STRIP SEAL EXPANSION JOINT SYSTEM	LF	52.000			
	Section 0025 Total					0.00

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price Dollars Cts	Bid Amount Dollars Ct
Section 0026 Bridge A22225 Items - J6I3131				

Alt Group

2380	2161501 REMOVAL OF ASPHALT WEARING SURFACE	6,020.000 SQFT		
2390	2161502 REMOVAL OF CONCRETE WEARING SURFACE	8,799.000 SQFT		
2400	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	125.000 SQFT		
2410	5052000 LATEX MODIFIED CONCRETE WEARING SURFACE	978.000 SQYD		
2420	7040109 TOTAL SURFACE HYDRO DEMOLITION	978.000 SQYD		
2430	7040113 CLEAN AND EPOXY SEAL	1,585.000 SQFT		
2440	7049902 MISC. PLUGGING CURB OUTLETS	72.000 EA		

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2450	7049907 MISC. MONOLITHIC DECK REPAIRS	8.100 CUYD				
2460	7129902 MISC. CORED SLAB DRAIN	40.000 EA				
	Section 0026 Total					0.00

Section 0027 Bridge A22226 Items - J6I3131

Alt Group

2470	2161501 REMOVAL OF ASPHALT WEARING SURFACE	6,020.000 SQFT				
2480	2161502 REMOVAL OF CONCRETE WEARING SURFACE	8,799.000 SQFT				
2490	2163000 PARTIAL REMOVAL OF EXISTING BRIDGE DECKS	122.000 SQFT				
2500	2164500 REMOVAL OF EXISTING EXPANSION JOINTS & ADJACENT CONCRETE	38.000 LF				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01

Letting Date: 12-16-16

Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2510	2169903 MISC. REMOVE AND REPLACE CURB AND BLOCKOUT	8.000 LF				
2520	2169904 MISC. REMOVAL OF EXISTING DECK REPAIRS	150.000 SQFT				
2530	5052000 LATEX MODIFIED CONCRETE WEARING SURFACE	978.000 SQYD				
2540	7034214 CLASS B-2 CONCRETE	39.200 CUYD				
2550	7040109 TOTAL SURFACE HYDRO DEMOLITION	978.000 SQYD				
2560	7040113 CLEAN AND EPOXY SEAL	1,584.000 SQFT				
2570	7049902 MISC. PLUGGING CURB OUTLETS	72.000 EA				
2580	7049907 MISC. MONOLITHIC DECK REPAIR	8.100 CUYD				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 161216-F01
 Letting Date: 12-16-16
 Project(s):

Bidder: . -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
2590	7101000 REINFORCING STEEL (EPOXY COATED)	2,430.000 LB				
2600	7129902 MISC. CORED SLAB DRAIN	40.000 EA				
	Section 0027 Total					0.00
	Bid Total					7,560.00

Contract Id: 161216-F01
Vendor Name:

Vendor Number:.

SUBCONTRACTOR DISCLOSURE

The bidder shall submit with this bid any subcontracts that meet the requirements of Sec 102. List below the name of each subcontractor that will be furnishing labor or labor and materials, the category of work that the subcontractor will be performing (e.g. asphalt, concrete, earthwork, bridges...), and the dollar value of the subcontract. Select "NONE" if there are no subcontractors that need to be disclosed.

If the information is not available at the time of bid the bidder shall submit the "Subcontractor Disclosure Form", located on MoDOT's website, on or before 4:00 p.m. of the third business day after the bid opening date, directly to the Design Division, Missouri Department of Transportation, 105 W. Capitol Avenue, P.O. Box 270, Jefferson City, Missouri 65102-0270. Telefax transmittal to MoDOT will be permitted at fax no. 573-522-2281 or e-mailed to subcontractor.disclosure@modot.mo.gov. The complete signed original documents do not need to be mailed to MoDOT, but the bidder shall have it available if requested by the Design Division or the engineer.

SUBCONTRACTOR NAME	DOLLAR VALUE OF SUBCONTRACT	CATEGORY OF WORK
--------------------	--------------------------------	------------------

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we as principal and and as surety, are held and firmly bound unto the state of Missouri (acting by and through the Missouri Highways and Transportation Commission) in the penal sum of 378.00 Dollars to be paid to the commission to be credited to the state road fund, the principal and surety binding themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this.

THE CONDITION OF THIS OBLIGATION is such that WHEREAS the principal is submitting herewith a bid to the commission on

route(s)
in County(ies)
project(s)

for construction or improvement of state highway as set out in said bid;

NOW THEREFORE, if the commission shall accept the bid of the principal and if the principal shall properly execute and deliver to the commission the contract, contract bond, and evidence of insurance coverage in compliance with the requirements of the bid, the specifications, and the provisions of section 227.100 RSMo, to the satisfaction of the commission, then this obligation shall be void and of no effect, otherwise to remain in full force and effect.

In the event the said principal shall, in the judgment of the commission, fail to comply with any requirement as set forth in the preceding paragraph, then the state of Missouri, acting by and through the commission, shall immediately and forthwith be entitled to recover the full penal sum above set out, together with court costs, attorney's fees, and any other expense of recovery.

The principal and surety hereby certify that the document is the original or a verbatim copy of the bid bond form furnished by the Commission, in accordance with Sec 102.9 of the Missouri Standard Specifications for Highway Construction.

This Bid contains 0 amendment files



JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

(Job Special Provisions shall prevail over General Special Provisions whenever in conflict therewith.)

- A. General
- B. Contract Liquidated Damages
- C. Liquidated Damages Specified
- D. Liquidated Damages for Winter Months
- E. Work Zone Traffic Management Plan
- F. Project Contact for Contractor/Bidder Questions
- G. Emergency Provisions and Incident Management
- H. Utilities
- I. E-Construction
- J. Stormwater Compliance Requirements
- K. Contractor Quality Control
- L. Site Restoration
- M. Shaping Slopes Class III
- N. High Friction Surface Treatment **(For Job No. J6I3110 Only)**
- O. Temporary Traffic Control **(For Job No. J6I3131 Only)**
- P. Dynamic Late Merge System (Zipper Merge)
- Q. NTCIP Compliant Changeable Message Sign (Contractor Furnished and Retained)
- R. Adhesive Transverse Rumble Strips **(For Job No. J6I3131 Only)**
- S. Pavement Markings Layout
- T. Fertilizing, Seeding, and Mulch
- U. Traffic Signal Maintenance and Programming
- V. Disposition of Existing Signing Equipment **(For Job No. J6I3110 Only)**
- W. MoDOT ITS Equipment within Project Limits
- X. MoDOT ITS In-Ground Facility Relocation
- Y. Airport Requirements
- Z. Construction Requirements
- AA. Supplemental Revisions
- BB. MoDOT's Construction Workforce Program
- CC. (DBE) Program Requirements

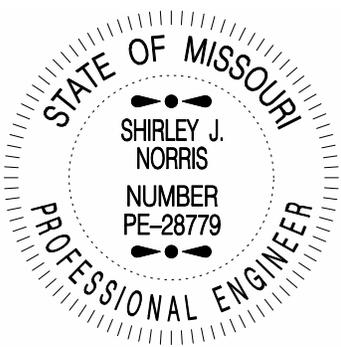
Job No.: J6I3110 & J6I3131

Route: I-55

County: Jefferson

ADDITIONAL INFORMATION

Asbestos and Heavy Metals Testing Report

 <p>SHIRLEY J. NORRIS NUMBER PE-28779</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636</p>
	<p>If a seal is present on this sheet, JSP's have been electronically sealed and dated.</p>
	<p>JOB NUMBER: J6I3110 & J6I3131 JEFFERSON COUNTY, MO DATE PREPARED: 11/02/2016</p>
	<p>ADDENDUM DATE:</p>
<p>Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: A-CC</p>	

JOB
SPECIAL PROVISIONS

A. GENERAL - FEDERAL JSP-09-02B

1.0 Description. The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of work required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations, and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the contractor and the contractor's subcontractors shall pay the higher of these two applicable wage rates. State Wage Rates, Information on the Required Federal Aid Provisions, and the current Federal Wage Rates are available on the Missouri Department of Transportation web page at www.modot.org under "Bidding". Effective Wage Rates will be posted 10 days prior to the applicable bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

1.2 The following documents are available on the Missouri Department of Transportation web page at www.modot.org under "Business"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to October 2016 Missouri Standard Plans
For Highway Construction

These supplemental bidding documents contain all current revisions to the published versions and have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

B. CONTRACT LIQUIDATED DAMAGES

1.0 Description. Liquidated Damages for failure or delay in completing the work on time for this contract shall be in accordance with Sec 108.8. The liquidated damages include separate amounts for road user costs and contract administrative costs incurred by the Commission.

2.0 Period of Performance. Prosecution of work is expected to begin on the date specified below in accordance with Sec 108.2. Regardless of when the work is begun on this contract, all work shall be completed on or before the date specified below. Completion by this date shall be in accordance with the requirements of Sec 108.7.1.

Notice to Proceed: March 6, 2017
 Completion Date: December 31, 2018

2.1 Calendar Days. The count of calendar days will begin on the date the contractor starts any construction operations on the project.

Job Number	Calendar Days	Daily Road User Cost
J6I3110	N/A	\$9800
J6I3131	N/A	\$9800

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **\$2000** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified completion date or calendar days.

4.0 Liquidated Damages for Road User Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged road user costs in accordance with Sec 108.8 in the amount specified in Section 2.1 for each calendar day, or partial day thereof, that the work is not fully completed. These damages are in addition to the contract administrative damages and any other damages as specified elsewhere in this contract.

C. LIQUIDATED DAMAGES SPECIFIED

1.0 Description. This project has multiple milestone dates or times associated with the work. These milestone dates or times are listed below.

2.0 Liquidated Damages for Bridge, Paving, and Final Striping Work. This project is expected to take two construction seasons to complete and will be divided in two main segments. The first segment is from the north project limit to Route A, and the second segment is from Route A to the south project limit. If all bridge work, paving, and final striping of northbound and southbound I-55 is not complete and open to traffic prior to the dates listed below for each segment of I-55, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amounts listed in the table below per day for each full day that all bridge work, paving, and final striping of northbound and southbound I-55 is not complete and open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

Roadway Segment	Completion Date	Daily Liquidated Damages
I-55 (NB & SB) North of Route A	October 15, 2017	\$25,000
I-55 (NB & SB) South of Route A	October 15, 2018	\$55,000

3.0 Liquidated Damages for Late Ramp Closure Times. If all work requiring the I-55 ramps to be closed at the interchanges listed in the table below is not complete and open to traffic prior to the time identified in the work zone traffic management plan JSP, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount listed in the table below per day for each full day that all work requiring the ramps to be closed is not complete and open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

Location	Daily Liquidated Damages
I-55 Ramps at Route Z	\$18,200
I-55 Ramps at McNutt Street	\$21,400
I-55 Ramps at US-67	\$29,200

4.0 The said liquidated damages specified will be assessed regardless of whether it would otherwise be charged as liquidated damages under the Missouri Standard Specification for Highway Construction, as amended elsewhere in this contract.

D. LIQUIDATED DAMAGES FOR WINTER MONTHS JSP-04-17

1.0 Description. Revise Sec 108.8.1.3 (a) and (b) and substitute the following for the project:

- (a) Liquidated damages will be assessed from December 15 to March 15
- (b) Liquidated damages will be assessed for Saturdays, Sundays and Holidays.

E. WORK ZONE TRAFFIC MANAGEMENT PLAN JSP-02-06D

1.0 Description. Work zone traffic management shall be in accordance with applicable portions of Division 100 and Division 600 of the Standard Specifications, and specifically as follows.

1.1 Work Zone Specialist (WZS). The Traffic Management Plan shall name an individual, either employed by the contractor or hired by the contractor, to act as the Work Zone Specialist (WZS) throughout the entirety of the project. Any change in personnel for the WZS shall be submitted in written form to the engineer. This individual will be a trained Work Zone Specialist in accordance with Standard Specifications Section 616.3.3 and will be directly involved with daily traffic management and traffic management planning. It will be the responsibility of the WZS to coordinate daily traffic management with the engineer. The WZS shall maintain daily contact with the engineer either on-site or via telecommunication.

1.2 Maintaining Work Zones and Work Zone Reviews. The WZS shall maintain work zones on a daily basis to ensure safety to the traveling public and the workers; this includes long term work zones that have devices and/or roadway conditions that need to be maintained. If the engineer or a designated MoDOT employee (identified at the preconstruction meeting) notifies

the WZS of any safety or traffic delay concerns in the work zone, the WZS shall promptly inspect and work to provide a solution to correct the situation. The WZS shall have personnel reviewing traffic control devices daily and any temporary lane drop traffic control devices for initial set up and during the operation. Missing, damaged or over-turned traffic control devices shall typically be corrected without the need for direction by the engineer. The WZS is responsible to assure all traffic control devices are maintained in accordance with EPG standards. The WZS is responsible to ensure the work zone is operated within the hours specified by the engineer and will not deviate from the specified hours without prior approval of the engineer. The WZS is responsible to manage work zone delay in accordance with these project provisions. The WZS and engineer shall submit one joint weekly technical review of work zone operations identifying any concerns present and the corrective actions taken. Reviews may be subjected to unannounced inspections by the engineer to corroborate the validity of the ratings. The engineer and WZS will be notified of the results.

1.3 Work Zone Conflict Resolution. Any conflict resolution shall be in accordance with Standard Specifications Section 616.4. Failure to make corrections on time may result in the engineer suspending work. The suspension will be non-excusable and non-compensable regardless if road user costs are being charged for closures.

2.0 Traffic Management Schedule.

2.1 Traffic management schedules shall be submitted to the engineer for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management schedule shall include the proposed traffic control measures, the hours traffic control will be in place, and work hours.

2.2 The contractor shall request permission at least two working days prior to lane closures or shifting traffic onto detours, and 14 calendar days prior to the imposition of height, width or weight restrictions. This is to ensure closures do not conflict with other work within the zone of influence and the work zone information on the MoDOT's website can remain real-time.

2.3 The engineer shall be notified as soon as practical of any postponement due to weather, material or other circumstances.

2.4 In order to ensure minimal traffic interference, the contractor shall schedule lane closures for the absolute minimum amount of time required to complete the work. Lanes shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of **15 minutes** to prevent congestion from escalating beyond this delay threshold. If disruption of the traffic flow occurs and traffic is backed up in queues equal to or greater than the delay time threshold listed above then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable.

The contractor may refer to the Work Zone Analysis Spreadsheet found in the electronic deliverables under the MoDOT Online Plans Room for detailed information on traffic delays.

2.5.1 Traffic Safety.

2.5.1.1 Where traffic queues routinely extend to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

2.5.1.2 When a traffic queue extends to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD WORK AHEAD, or similar, sign on an undivided highway due to non-recurring congestion, the contractor shall deploy a means of providing advance warning of the traffic congestion, as approved by the engineer. The warning location shall be no less than 1000 feet and no more than 0.5 mile in advance of the end of the traffic queue on divided highways and no less than 500 feet and no more than 0.5 mile in advance of the end of the traffic queue on undivided highways.

3.0 Work Hour Restrictions.

3.1 There are six major holiday periods shown below. All lanes shall be scheduled to be open to traffic during these holiday periods, from 12:00 noon on the last working day proceeding the holiday until 9:00 a.m. on the first working day subsequent to the holiday.

Memorial Day
Independence Day
Labor Day
Thanksgiving
Christmas
New Year's Day

3.1.1 The contractor's working hours will be restricted for the Special Events as shown below. All lanes shall be scheduled to be open to traffic during these Special Events.

- Racing Events at Federated Auto Parts Raceway at I-55
- Events and Festivals in Festus, MO
- St. Louis Sporting Events

It shall be the contractor's responsibility to obtain schedules from the entities listed above and plan work accordingly. The above list is not all inclusive and other events may require limited or restricted operations. The engineer will coordinate any additional event restrictions with the contractor as needed.

3.2 The contractor shall not perform any construction operation on the roadway, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The contractor shall be aware that traffic volume data indicates construction operations on the roadbed between the following hours will likely result in traffic queues greater than 15 minutes:

Route I-55 Southbound:

5:00 AM – 7:00 PM Monday through Sunday (All days)

Route I-55 Northbound:

5:00 AM – 7:00 PM Monday through Sunday (All days)

Based on this, the contractors operations will be restricted accordingly unless it can be successfully demonstrated the operations can be performed without a 15 minute queue in traffic. It shall be the responsibility of the engineer to determine if the above work hours may be modified. Working hours for evenings, weekends and holidays will be determined by the engineer.

Lane closures will be permitted for this project as outlined in the tables below:

LOCATION	SOUTHBOUND I-55	
	1 Lane Closed	2 Lanes Closed
Route M to Route Z	Mon - Sun, 7 PM to 5 AM	Mon - Fri, 8 PM to 5 AM; Sat & Sun, 9 PM to 5 AM
Route Z to McNutt St.	Mon - Sun, 8 PM to 5 AM	N/A
McNutt St. to US-67	Mon - Sun, 8 PM to 5 AM	N/A
US-67 to Ste. Genevieve Co. Line	Mon - Sun, 7 PM to 2 PM	N/A

LOCATION	NORTHBOUND I-55	
	1 Lane Closed	2 Lanes Closed
Route M to Route Z	Mon - Sun, 7 PM to 5 AM	Mon - Sun, 7 PM to 5 AM
Route Z to McNutt St.	Mon - Sun, 7 PM to 5 AM	N/A
McNutt St. to US-67	Mon - Sun, 7 PM to 5 AM	N/A
US-67 to Ste. Genevieve Co. Line	Mon - Sun, 6 PM to 5 AM	N/A

3.4 Any work requiring a reduction in the number of through lanes of traffic shall be completed during nighttime hours. Nighttime hours shall be considered to be the hours between 7:00 p.m. to 5:00 a.m. for this project.

3.4.1 For staged construction requiring ramp closures on I-55, the contractor shall not be permitted to close consecutive On- or Off-Ramps unless designated in the contract traffic control plans.

3.5 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$1000 per 15 minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

3.5.1 The said liquidated damages specified will be assessed regardless if it would otherwise be charged as liquidated damages under the Missouri Standard Specification for Highway Construction, as amended elsewhere in this contract.

4.0 Detours and Lane Closures.

4.1 The contractor shall provide changeable message signs (CMS) notifying motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. The CMS shall be capable of communication with the Transportation Management Center (TMC), if applicable, prior to installation on right of way. All messages planned for use in the work zone shall be approved and authorized by the engineer or its designee prior to deployment. Permanent dynamic message signs (DMS) owned and operated by MoDOT may also be used to provide warning and information for the work zone. Permanent DMS shall be operated by the TMC, and any messages planned for use on DMS shall be approved and authorized by the TMC at least 72 hours in advance of the work.

4.2 At least one lane of traffic in each direction shall be maintained at all times except for brief intervals of time required when the movement of the contractor's equipment will seriously hinder the safe movement of traffic. Periods during which the contractor will be allowed to interrupt traffic will be designated by the engineer.

5.0 Basis of Payment. No direct payment will be made to the contractor to recover the cost of equipment, labor, materials or time required to fulfill the above provisions, unless specified elsewhere in the contract document. All authorized changes in the traffic control plan shall be provided for as specified in Standard Specifications Section 616.

F. PROJECT CONTACT FOR CONTRACTOR/BIDDER QUESTIONS

All questions concerning this project during the bidding process shall be forwarded in writing to the project contact listed below.

Shirley Norris, Project Contact
MoDOT, St. Louis District
1590 Woodlake Dr.

Chesterfield, MO 63017

Telephone Number 314-453-5032
Fax Number 314-340-4119
E-mail Shirley.Norris@modot.mo.gov

All questions concerning the bid document preparation can be directed to the Central Office – Design Office at (573) 751-2876.

G. EMERGENCY PROVISIONS AND INCIDENT MANAGEMENT

1.0 The contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from the police or other emergency agencies for incident management. In case of traffic accidents or the need for police to direct or restore traffic flow through the job site, the contractor shall notify police or other emergency agencies immediately as needed. The area engineer’s office shall also be notified when the contractor requests emergency assistance.

2.0 In addition to the 911 emergency telephone number for ambulance, fire or police services, the following agencies may also be notified for accident or emergency situation within the project limits:

Missouri State Highway Patrol 1-800-525-5555 Cellular: *55 <u>Troop C Headquarters</u> 891 Technology Drive Weldon Spring, MO 63141 (636) 300-2800	
Jefferson County Sheriff’s Department	<u>Headquarters</u> 400 First Street Hillsboro, MO 63050 (636) 797-5000
Pevely Police Department	401 Main Street Pevely, MO 63070 (636) 475-4498
Festus Police Department	100 Park Avenue Festus, MO 63028 (636) 937-5184
Dunklin Fire Protection District	1987 Highway Z Pevely, MO 63070 (636) 457-7401
Herculaneum Fire Department	151 Riverview Plaza Drive Herculaneum, MO 63048 (636) 475-3080
Festus Fire Department	212 N. Mill Street Festus, MO 63028 (636) 937-7661

Jefferson R7 Fire Protection District	13000 Highway TT Festus, MO 63028 (636) 937-6878
Joachim-Plattin Ambulance District	1235 N. Truman Blvd. Crystal City, MO 63019 (636) 937-2224

2.1 This list is not all-inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate police agency.

2.2 The contractor shall notify enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 No direct pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

H. UTILITIES

1.0 For informational purposes only, the following is a list of names, addresses, and telephone numbers of the known utility companies in the area of the construction work for this improvement:

<u>Utility Name</u>	<u>Known Required Adjustment</u>	<u>Type</u>
AT&T TRANSMISSION Kevin Wingard SDT (Counsultant for AT&T TRANSMISSION) 1425 Oak Street 3rd floor Kansas City, MO 64106 816-275-0629 Cell: 580-931-7688 Email: kwingard@sdt-1.com	None	Communications
AMEREN MISSOURI Gary Marquart Supervising Engineer Meramec Valley Division T 636.671.6151 Jefferson Email: gmarquart@ameren.com	None	Power

AT&T DISTRIBUTION Glenn Hogenmiller Mgr OSP PLNG & ENGRG DESIGN 122 North Second St Festus, Mo. 63028 636.931.7525 Office 636.232.4385 Cell Email: gh5805@att.com	None	Communications
CHARTER COMMUNICATIONS Daryl Steffen 815 Charter Commons Drive Town and Country, MO 63017 Office: 636.387-6663 Cell: 314.713.6378 Email: Daryl.Steffen@charter.com	None	Communications
CITY OF HERCULANEUM Chris Johnson Public Works Administrator City of Herculaneum 1 Parkwood Court Herculaneum, MO 63048 Telephone: 636.475.4447	None	Sewer/Water
JEFFERSON COUNTY PWSD 7 Joyce Twiggs P.O. Box 160 Mapaville, MO 63065 Telephone: 636.479.5593 Email: Jeffpwsd7@gmail.com	None	Water
JEFFERSON COUNTY PWSD 12 Brad Bryant 12301 Highway TT Festus, MO 63028 Telephone: (636) 937-9697 Email: brad.bryant@pwsd12.com	None	Water
CENTURYLINK Jason Johns 16141 Swingley Ridge Road, Suite 200 Chesterfield, MO 63017 Telephone: 916.296.8520 Email: Jason.Johns@CenturyLink.com	None	Communications

MISSOURI NATURAL GAS Mr. Brad Paul 111 S. Washington Farmington, MO 63340 Office: 573.705.1841 Cell: 573.701.7694 Email: bpaul@lacledegas.com	None	Gas
ENABLE MISSISSIPPI RIVER TRANSMISSION Rick Hardester Northern Division Engineer 5300 Northshore Cove North Little Rock, AR 72118 Office: 501.377.4614 Cell: 501.681.9307 Email: rick.hardester@enablemidstream.com	None	Gas Transmission
MCI Don Torbett Verizon Business Construction Manager, OSP Services 6929 N. Lakewood Avenue Tulsa, OK 74117 Office: 918.590.5922 Cell: 918.269.4698 Email: donald.torbett@verizon.com	None	Communications
CITY OF PEVELY Jesse Wallis Director of Public Works 301 Main Street Pevely, MO 63070 Telephone: 636.475.4452 Email: jwallis@cityofpevely.org	None	Sewer/Water
CITY OF FESTUS Bill Gray City of Festus Public Works Director 711 West Main Festus, Mo 63028 Telephone: (636) 937-6646 x 119 Brent Abrams Public Works Superintendent Email: abramscityoffestus@sbcglobal.net	None	Sewer/Water

<p>CITY OF CRYSTAL CITY Jason Eisenbeis City Administrator 130 Mississippi Avenue Crystal City, MO 63019 Telephone: 636.937.4614</p>	<p>None</p>	<p>Sewer/Water</p>
<p>SELMA VILLAGE SEWER DISTRICT P.O. Box 322 Crystal City, MO 63019 Telephone: 636.232.8362</p>	<p>None</p>	<p>Sewer</p>
<p>SHO-ME TECHNOLOGIES Vern Leighty 301 West Jackson Marshfield, MO 65706 Telephone: 417.839.5422 Email: vleighty@shomepower.com</p>	<p>None</p>	<p>Communications</p>

1.1 The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities.

1.2 The contractor agrees that any effects of the presence of the utilities, their relocation, contractor's coordination of work with the utilities and any delay in utility relocation shall not be compensable as a suspension of work, extra work, a change in the work, as a differing site condition or otherwise including but, without limitation, delay, impact, incidental or consequential damages. The contractor's sole remedy for the effects of the presence of utilities, delay in their relocation or any other effects shall be an excusable delay as provided in [Sec 105.7.6](#). The contractor waives, for itself, its subcontractors and suppliers the compensability of the presence of utilities, delay in their relocation and any cost to the contractor, its subcontractors and suppliers in any claim or action arising out of or in relation to the work under the contract.

1.3 The contractor shall be solely responsible and liable for incidental and consequential damage to any utility facilities or interruption of the service caused by it or its subcontractors operation. The contractor shall hold and save harmless the Commission from damages to any utility facilities interruption of service by it or its subcontractor's operation.

2.0 The contractor shall be aware there are numerous utilities present along the route in this contract. Utility locates were not performed during the design phase of the project; therefore, the extent of conflicts with utilities are unknown.

There may be underground utilities that run parallel or cross the route that are in close proximity to guardrail work locations or other specified work. The contractor shall take necessary precautions and measures to verify locations and depths of utilities by any necessary means to determine exact impacts to their work.

If utility facilities are found and discovered, the engineer will determine whether relocation of the utility is necessary to accommodate construction or if the work can be installed in accordance with Missouri Standard Plans for Highway Construction for the item of work specified.

Basis of Payment. There is no direct pay for complying with this provision.

3.0 AMEREN MISSOURI

The contractor shall take into account the proximity of the overhead lines and any additional requirements made by Ameren Missouri when determining the erection procedures for the work included in the contract. The contractor shall discuss the planned work as it relates to the energized power lines with Ameren Missouri, coordinate with Ameren Missouri for the installation of any insulation covers over the lines and/or any other designated requirements. The contractor shall contact Ameren Missouri at least two weeks in advance of when construction work is scheduled to begin.

3.1 No direct payment will be made to the contractor to recover the cost from Ameren to install and remove covers from Ameren's aerial facilities.

3.2 Overhead lines do cross I-55 outside of the limits of bridges A0944 and A0945. There may be other locations along the route not noted.

I. E-CONSTRUCTION NJSP-15-36

1.0 Description. e-Construction is a paperless construction administration delivery process that includes electronic submission of construction documents, approval of documents with digital signatures, and communication between stakeholders by mobile devices. e-Construction saves both time and money for all stakeholders involved, simplifies document storage, and eliminates waste of paper and other resources. This provision does not apply to the contract or other contract execution documents.

2.0 Document Submittals.

2.1 The contractor shall submit all required documents to MoDOT electronically, except as described in section 2.2 of this provision. Documents to be submitted electronically include, but are not limited to, Change Orders, Request to Subcontract Work (C-220), Project Payrolls, Progress Schedules, Value Engineering proposals, Safety Plans, Quality Plans, Pre-Construction conference submittals, etc. All documents shall be submitted in standard pdf format, except when otherwise directed by the engineer.

2.2 The Affidavit for Compliance with the Prevailing Wage Law and the Contractor's Affidavit Regarding Settlement of Claims (Form C-242) require a notarization and therefore, by law, must be submitted on paper.

2.3 The engineer will submit project documents to the contractor via email or through other secure file sharing sites, except that the Contractor Performance Questionnaire will be submitted by certified mail.

2.4 Documents that require multiple signatures, such as change orders, must include all required signatures on the original electronic document, without scanning.

2.5 Project Payrolls from subcontractors shall be digitally signed by the subcontractor. Payrolls shall be submitted as separate files per contractor per pay period.

3.0 Digital Signature.

3.1 All electronic documents that require signature, such as those listed in section 2.1, must be signed electronically. Scanning an ink-signed document is not considered a valid digital signature.

3.2 All users who are authorized to sign documents for the contractor shall submit their Digital Signature Certificate (Public Key .fdf file) to the Division of Construction prior to signing any documents. This file is used to validate the user's signature on documents. An authorization letter is also required for each person authorized to sign documents. A Digital Signature for Contractors Quick Reference Guide (QRG) is available on MoDOT's Engineering Policy Guide at <http://epg.modot.mo.gov/> (click on QRG in the left hand column).

4.0 Communication. The contractor shall be able to communicate and exchange information with MoDOT staff by email and mobile phone.

5.0 Basis of Payment. No payment will be made for compliance with this provision.

J. STORMWATER COMPLIANCE REQUIREMENTS JSP-15-04A

1.0 Description. The Contractor shall comply with the terms of the United States of America v. Missouri Highways and Transportation Commission Consent Decree (Consent Decree) that are identified as the responsibility of the Contractor or subcontractor, and with the terms of this provision. Viewing of the Consent Decree is available on the MoDOT Land Disturbance webpage under Contractor Resources, or by going to the web address www.modot.org/LD.

1.1 Applicability. The Consent Decree and this provision apply to any project that includes land disturbance of areas totaling greater than one (1) acre on the project site. The project site consists of all areas designated on the plans, including temporary and permanent easements. The Consent Decree and this provision do not apply to Contractor staging, plant, or borrow areas that are not located on MoDOT right of way (Off-site). The Contractor is responsible for obtaining its own separate land disturbance permit for Off-site areas. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

2.0 Stormwater Training for Contractor Employees. The Contractor's on-site project manager, designated Water Pollution Control Manager (WPCM), as defined in Section 3.0, and WPCM delegate, shall complete MoDOT Stormwater Training prior to serving in those roles. If someone other than the Contractor's project manager is given the authority to manage the grading or erosion control operations, the project manager(s) for those operations shall also

complete MoDOT Stormwater Training. MoDOT Stormwater Training is also required for any other person who the Contractor gives authority to take measures to prevent or minimize the consequences of non-compliance with the Stormwater requirements, as defined in Section 3.1(a) of this provision.

2.1 The Commission will provide MoDOT Stormwater Training to the Contractor employees specified in Section 2.0 at a location and time determined by MoDOT. There will be no fee for attending the training; however, the Contractor shall be responsible for all other cost related to the training, such as travel expenses, if necessary, and wages for its employees. The time to complete the training is anticipated to be no more than 6 hours. As long as the Consent Decree is in effect, MoDOT will provide periodic trainings at various locations around the state, as needed, to ensure contractors and bidders have the opportunity to maintain the number of WPCMs they need to comply with this provision.

2.2 Those who require MoDOT Stormwater Training per Section 2.0 shall complete the training prior to beginning any land disturbance work. Thereafter, training shall occur at least once every two (2) years. The training is not project-specific. Any Contractor employee who receives the training will be qualified to perform the WPCM duties on any MoDOT project for a period of two (2) years.

2.3 MoDOT will document the names and dates that contractor employees attend MoDOT Stormwater Training and will retain those records for the period of time specified in the Consent Decree. Duplicate record keeping by the contractor is not required.

3.0 Water Pollution Control Manager (WPCM). Prior to the Pre-Activity meeting for Grading/ Land Disturbance, the Contractor shall designate a Water Pollution Control Manager (WPCM) to fulfill the duties and responsibilities listed in Section 3.1 until final stabilization occurs. The Contractor's on-site project manager may also serve as the WPCM or that role may be assigned to another manager employed by the contractor or a subcontractor. The Contractor shall also maintain a WPCM delegate to temporarily fulfill the WPCM duties in the absence of the primary WPCM (e.g. illness, vacation, other leave).

3.1 Duties of the WPCM:

- (a) Be familiar with Stormwater Requirements including the National Pollutant Discharge Elimination System (NPDES), the current MoDOT State Operating Permit for construction stormwater discharges/ land disturbance activities, the Project-specific Stormwater Pollution Prevention Plan (Project SWPPP), the Corps of Engineers Section 404 Permit, when applicable, the Consent Decree, and this provision. The Project SWPPP includes: a title page with project-specific information, the general SWPPP posted on the MoDOT land disturbance website, the Project Erosion & Sediment Control Plan, all applicable special provisions, and all applicable specifications and standard drawings;
- (b) Complete the stormwater training set forth in Section 2.0;
- (c) Attend the Pre-Activity for Grading/ Land Disturbance Meeting or, if hired after the meeting has occurred, be familiar with the conference decisions;
- (d) Review and sign the Project-specific SWPPP and all updates thereto within time periods set out in the Consent Decree;

- (e) Visit and review the project site for compliance with Stormwater Requirements at least once per week from the start of any grading operations until final stabilization is achieved and permit is closed;
- (f) Be authorized by the Contractor to supervise all work performed by the Contractor and subcontractors that involves compliance with Stormwater Requirements, including the authority to order work be stopped on a Project, implement MoDOT-directed changes in work related to Stormwater Requirements, and order the taking of, measures to cease, correct, prevent, or minimize the consequences of non-compliance with Stormwater Requirements;
- (g) Review and certify electronically each MoDOT inspection report for the Project within three (3) days of receiving each report to ensure it conforms with report requirements in the National Pollution Discharge Elimination System Stormwater (NPDES SW) Permit, Project SWPPP and the Consent Decree and ensure that all Stormwater Deficiencies noted on the report are corrected within the time required;
- (h) Recommend in writing within three (3) days of discovering any changes in site conditions and Best Management Practices (BMPs) that require an update to the Project-specific SWPPP; and
- (i) Be the point of contact relating to Stormwater Requirements and the Consent Decree between the Contractor, Subcontractors and MoDOT.

4.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. At each Project, a Pre-Activity Meeting for Grading/Land Disturbance shall be held prior to the start of any land disturbance and shall include a physical visit and review of the project site. Discussion items at the pre-activity meeting shall include a review of the project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

4.1 Contractor employees who shall attend the Pre-Activity Meeting for Grading/Land Disturbance include the WPCM for the Project and the person(s) designated the authority to manage the grading and erosion control operations.

4.2 Following the pre-activity meeting for Grading/land disturbance, and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

5.0 Compliance with the NPDES SW Permit and Project SWPPP. On all projects, the Contractor shall comply with all applicable Stormwater Requirements which are defined as, but are not limited to:

- (a) Consulting with the engineer on recommended design revisions to the Project SWPPP to accommodate the Contractor's staging plan, implementation, managing, and maintaining BMPs or other control measures to prevent or minimize sediment and other pollutants in

stormwater runoff in accordance with contract specifications or any relevant manufacturer specifications and good engineering practices, including but not limited to the manuals (*Note: two manuals cited in the MoDOT permit are “Developing your stormwater pollution prevention plan: A guide for construction activities” and “Protecting Water Quality: A Field Guide to erosion, sediment and stormwater best management practices for development sites in Missouri”*) and any other applicable standards for sedimentation basins, stabilization, rock dams, brush checks, construction entrances, and other BMPs;

- (b) Installing all BMPs at the locations and relative times specified in the Project SWPPP; and
- (c) Complying with the Missouri Water Quality Standards and with effluent limitations in Section E.1 of the NPDES SW Permit. Measurement of effluent is not required except as specified in E.2.

5.1 Stormwater Deficiency Corrections. Per terms of the Consent Decree, Stormwater Deficiencies identified on the MoDOT Land Disturbance Inspection Report shall be corrected within 7 days of the inspection date to avoid stipulated penalties, except that more time might be granted by the engineer when weather or field conditions prohibit the corrective work. If the Contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the Contractor. Work shall not resume until the engineer approves the corrective work.

6.0 Inspection Protocol. The Contractor and all subcontractors shall review and adhere to MoDOT’s written Stormwater Inspection Protocol, found on the MoDOT Land Disturbance webpage (www.modot.org/LD). The Inspection Protocol is applicable to all Projects under the consent decree. The MoDOT Resident Engineer will serve the role of Stormwater Resident Engineer, or a delegate will be named in their absence.

6.1 Inspection Reports. MoDOT will provide one or more Environmental Construction Inspectors (ECI) to perform the weekly and post run-off inspections and other duties described in paragraph 17 of the Consent Decree. The ECI will enter the inspection reports into a web-based Stormwater Compliance database. The WPCM will have access to this database to view all report information, including any noted deficiencies, and to certify the report as required in Section 3.1 (g.). Automated email reminders of pending reports that need to be certified and for deficiencies that need to be corrected will be sent to the WPCM. The Contractor may designate other employees or subcontractor employees to have viewing access to this database and to receive the email reminders. Completion of MoDOT Stormwater Training is necessary in order to receive the email reminders. The WPCM and other users shall be equipped with an electronic device (desktop computer, laptop, tablet, smartphone, etc.) with a browser and internet access to connect to the database. The contractor shall be responsible for providing the electronic devices.

7.0 Stipulated Penalties. If the Contractor fails to comply fully and timely with the requirements of the Consent Decree, stipulated penalties will be assessed to the Commission. For matters under the Contractor’s responsibility and control the following stipulated penalties will be assessed to the Contractor and MoDOT will withhold payment pursuant to the following:

Violation	Stipulated Penalty Amount
Failure to Designate or Maintain WPCM at each Project in Accordance with Section 3.0.	\$750 for the initial violation (each person not designated) and then \$750 for each fourteen (14) day period that person is not designated.
Failure to complete MoDOT Stormwater Training by an Individual Required to be Trained in Accordance with Section 2.0, such as the WPCM or Project Manager.	\$750 per person for each missed training. This \$750.00 per person violation shall continue to accrue for each fourteen (14) day period that the person fails to timely receive the applicable training
Failure of WPCM to Review and Certify an Inspection Report in Accordance with Inspection Protocol as set forth in Section 6.	\$250 per inspection report not reviewed or signed.
Failure to Comply with Any NPDES SW Permit or SWPPP Requirement.	\$1000 per violation for the first ten (10) days of the violation; \$2500 per violation for days 11-20; \$3500 per violation for days 21 and beyond.
Failure to Correct a Stormwater Deficiency Identified in a MoDOT Inspection Report, or Otherwise Discovered by the WPCM, within the Time Required by the NPDES SW Permit or SWPPP.	\$1000 per deficiency for the first ten (10) days after correction was required; \$2500 per deficiency for days 11-20 after correction was required; \$3500 per deficiency for days 21 and beyond after correction was required.

8.0 Information Collection and Retention. The EPA, its representatives and its agents shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credential, to:

- (a) monitor the progress of activities required under the Consent Decree;
- (b) verify any data or information submitted to the United States in accordance with the terms of the Consent Decree;
- (c) obtain samples and, upon request, splits of any samples taken by MoDOT or its representatives, contractors, or consultants;
- (d) obtain documentary evidence, including photographs and similar data; and
- (e) assess MoDOT's compliance with the Consent Decree.

8.1 Until three (3) years after the termination of the Consent Decree, Contractors and the agents of the Contractors shall preserve all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its Contractors' or agents' possession or control, or that come into the Contractor's or agent's possession or control, and that relate to MoDOT's performance of its obligations under the Consent Decree or to the Contractor's performance of its obligations under the Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures.

9.0 Basis of Payment. Payment for compliance with this provision will be made per week. All cost associated with the weekly on-site project reviews by the WPCM, compliance with this provision and the Consent Decree, including all other duties of the WPCM and delegate, and all

expenses to attend training, will be considered fully covered under 806-99.28, Water Pollution Control Manager. Separate payment will be made for erosion and sediment control devices, and for permanent and temporary seeding and mulching, when payment for those items are provided elsewhere in the contract.

9.1 Method of Measurement. Measurement of the number of full weeks (7 days) will begin on the date of the first MoDOT Inspection Report following initial land disturbance and will continue until the engineer declares final stabilization has been achieved, except that no measurement will be made for any period of time past the contract completion date, or adjusted completion date, when liquidated damages are being assessed for failure of the Contractor to complete the work on time.

K. CONTRACTOR QUALITY CONTROL NJSP-15-42

1.0 The contractor shall perform Quality Control (QC) testing in accordance with the specifications and as specified herein. The contractor shall submit a Quality Control Plan (QC Plan) to the engineer for approval that includes all items listed in Section 2.0, prior to beginning work.

2.0 Quality Control Plan.

- (a) The name and contact information of the person in responsible charge of the QC testing.
- (b) A list of the QC technicians who will perform testing on the project, including the fields in which they are certified to perform testing.
- (c) A proposed independent third party testing firm for dispute resolution, including all contact information.
- (d) A list of Hold Points, when specified by the engineer.
- (e) The MoDOT Standard Inspection and Testing Plan (ITP). This shall be the version that is posted at the time of bid on the MoDOT website (www.modot.org/quality).

3.0 Quality Control Testing and Reporting. Testing shall be performed per the test method and frequency specified in the ITP. All personnel who perform sampling or testing shall be certified in the MoDOT Technician Certification Program for each test that they perform.

3.1 Reporting of Test Results. All QC test reports shall be submitted as soon as practical, but no later than the day following the test. Test data shall be immediately provided to the engineer upon request at any time, including prior to the submission of the test report. No payment will be made for the work performed until acceptable QC test results have been received by the engineer and confirmed by QA test results.

3.1.1 Test results shall be reported on electronic forms provided by MoDOT. Forms and Contractor Reporting Excel2Oracle Reports (CRE2O) can be found on the MoDOT website. All required forms, reports and material certifications shall be uploaded to a Microsoft SharePoint® site provided by MoDOT, and organized in the file structure established by MoDOT.

3.2 Non-Conformance Reporting. A Non-Conformance Report (NCR) shall be submitted by the contractor when the contractor proposes to incorporate material into the work that does not meet the testing requirements or for any work that does not comply with the contract terms or specifications.

3.2.1 Non-Conformance Reporting shall be submitted electronically on the Non-Conformance Report form provided on the MoDOT Website. The NCR shall be uploaded to the MoDOT SharePoint® site and an email notification sent to the engineer.

3.2.2 The contractor shall propose a resolution to the non-conforming material or work. Acceptance of a resolution by the engineer is required before closure of the non-conformance report.

4.0 Work Planning and Scheduling.

4.1 Two-week Schedule. Each week, the contractor shall submit to the engineer a schedule that outlines the planned project activities for the following two-week period. The two-week schedule shall detail all work and traffic control events planned for that period and any Hold Points specified by the engineer.

4.2 Weekly Meeting. When work is active, the contractor shall hold a weekly project meeting with the engineer to review the planned activities for the following week and to resolve any outstanding issues. Attendees shall include the engineer, the contractor superintendent or project manager and any foreman leading major activities. This meeting may be waived when, in the opinion of the engineer, a meeting is not necessary. Attendees may join the meeting in person, by phone or video conference.

4.3 Pre-Activity Meeting. A pre-activity meeting is required in advance of the start of each new activity, except when waived by the engineer. The purpose of this meeting is to review construction details of the new activity. At a minimum, the discussion topics shall include: safety precautions, QC testing, traffic impacts, and any required Hold Points. Attendees shall include the engineer, the contractor superintendent and the foreman who will be leading the new activity. Pre-activity meetings may be held in conjunction with the weekly project meeting.

4.4 Hold Points. Hold Points are events that require approval by the engineer prior to continuation of work. Hold Points occur at definable stages of work when, in the opinion of the engineer, a review of the preceding work is necessary before continuation to the next stage.

4.4.1 A list of typical Hold Point events is available on the MoDOT website. Use of the Hold Point process will only be required for the project-specific list of Hold Points, if any, that the engineer submits to the contractor in advance of the work. The engineer may make changes to the Hold Point list at any time.

4.4.2 Prior to all Hold Point inspections, the contractor shall verify the work has been completed in accordance with the contract and specifications. If the engineer identifies any corrective actions needed during a Hold Point inspection, the corrections shall be completed prior to continuing work. The engineer may require a new Hold Point to be scheduled if the corrections require a follow-up inspection. Re-scheduling of Hold Points require a minimum 24-hour advance notification from the contractor unless otherwise allowed by the engineer.

5.0 Quality Assurance Testing and Inspection. MoDOT will perform quality assurance testing and inspection of the work, except as specified herein. The contractor shall utilize the inspection checklists provided in the ITP as a guide to minimize findings by MoDOT inspection staff. Submittal of completed checklists is not required, except as specified in 5.1.

5.1 Inspection and testing required in the production of concrete for the project shall be the responsibility of the contractor. Submittal of the 501 Concrete Plant Checklist is required.

6.0 Basis of Payment. No direct payment will be made for compliance with this provision.

L. SITE RESTORATION

1.0 Description. Restore to its original condition any disturbed area at sites including, but not limited to items such as, guardrail, pull box, conduit, and pole base installations. Restoration shall be accomplished by placing material equivalent to that of the adjacent undisturbed area. Disturbed unpaved areas shall be fertilized and either seeded and mulched or sodded as directed by the engineer. The engineer will have the final authority in determining the acceptability of the restoration work.

2.0 If the contractor elects and receives approval from the engineer for alternate trench and/or pull box locations, any areas of concrete slope protection, sidewalk, pavement, shoulders, islands and medians – as well as any similar improvements consisting of asphaltic concrete materials – removed in conjunction with their construction shall be replaced with improvements of similar composition and thickness. Removals shall be achieved by means of full depth saw cuts, the resulting subgrade compacted to minimum density requirements and topped with 4 inches of compacted aggregate base course prior to replacement of surface materials. Concrete materials used in replacement, shall be approved by the engineer. A commercial asphalt mix may be used for replacement of asphaltic surfacing upon approval of the engineer.

2.1 Any sidewalks and curb ramps that are disturbed as described in this provision shall be replaced to meet current ADA standards.

2.2 Areas that are used by the contractor for jobsite trailers, equipment and materials storage, or used for project staging areas that are disturbed shall be cleaned up and restored to a condition that is both acceptable to the engineer and, at a minimum, equivalent to the existing site condition.

3.0 Basis of Payment. The cost of restoration of disturbed areas will be incidental to the unit price of the items associated with the disturbance. No direct payment will be made for any materials, equipment, time, or labor, which is performed under this provision.

M. SHAPING SLOPES CLASS III

1.0 Description. Shaping Slopes, Class III shall consist of providing fill material and shaping slopes to construct additional shoulder width for the installation of guardrail and Type A crashworthy end terminals in accordance with the standard plans. Material used shall be **4-inch minus aggregate** or other granular material approved by the engineer. Any excess material shall be disposed of outside the limits of the right of way.

1.1 In lieu of aggregate base, earth material may be used for Shaping Slopes, Class III. When earth material is used, an approved seed mixture shall be applied in accordance with Sec 805, mulch shall be applied in accordance with Sec 802 and erosion and sediment control shall be utilized in accordance with Sec 806. All cost for seeding, mulching, and erosion control shall be incidental to the cost of Shaping Slopes, Class III.

2.0 Construction Requirements. Slope areas to be shaped by the addition of material shall be scarified to allow bonding with the added material. Density shall be obtained by reasonable compactive efforts consisting of no less than three passes with a roller or other methods approved by the engineer. The contractor will not be required to excavate any classified rock excavation under this item.

2.1 Benching of the existing slope may be necessary to provide stability to the additional shoulder width constructed by Shaping Slopes, Class III. All costs for benching shall be included in the cost of Shaping Slopes, Class III.

2.2 Shaping Slopes, Class III will apply only to those sections that have been specifically designated as such on the plans.

3.0 Method of Measurement. Final measurement will not be made except where appreciable errors are found in the contract quantity. Where required, measurement will be made in accordance with Sec 215.3.

4.0 Basis of Payment. The accepted quantity of Shaping Slopes, Class III will be paid for at the contract unit price for the pay item number 215-99.03 SHAPING SLOPES, CLASS III, paid for per LF, and shall be considered full compensation to recover the cost of equipment, labor, materials or time required to fulfill the above provision. No direct payment will be made for any additional material required for shaping slopes.

N. HIGH FRICTION SURFACE TREATMENT (For Job No. J6I3110 Only)

1.0 Description. This work shall consist of furnishing and placing a High Friction Surface Treatment (HFST) on asphalt or concrete pavement.

1.1 The HFST shall be comprised of surface preparation and a minimum of a single layer using a Binder Resin System which holds a surface applied aggregate firmly in place. The Binder Resin System shall include Polymeric or Methl Methacrylate (MMA) Resins.

2.0 Material.

2.1.1 Resin Binder System. Resin Binder Systems shall be recommended by the manufacturer as suitable for use on the intended pavement surface and for the potential range of atmospheric exposure.

2.1.2 The contractor shall furnish and install a Resin Binder System that meets the criteria in (AASHTO PP 79-14 Table 1):

Table 1 - Resin Binder System			
Property	Test Method	Requirements	
		Polymeric Resin	MMA
Ultimate Tensile Strength	AASHTO M-235	2500-5000 psi	1500-5000 psi
Elongation at break point	AASHTO M-235	30-70%	30-70%

Compressive Strength	ASTM C 579	1000 psi min. at 3 hours 5000 psi min. at 7 days	1000 psi min. at 3 hours 2000 psi min. at 7 days
Water Absorption	AASHTO M-235	1% max.	1% max.
Durometer Hardness (Shore D)	ASTM D-2240	60-80	40-75
Viscosity	ASTM D-2556	Class C: 7-30 poises	Class C: 12-20 poises
Gel Time	AASHTO M-235	Class C: 10 minutes min.	Class C: 10 minutes min.
Cure Rate (Dry through time)	ASTM D-1640	3 hrs. max.	3 hrs. max.
Adhesive Strength at 24 hours	ASTM D 4541	250 psi min. or 100% substrate failure	250 psi min. or 100% substrate failure

2.1.3 Independent laboratory reports per formulation shall be provided, documenting that the resin binder meets the requirements of this specification. A sample of the resin binder or components lot/batch shall be supplied upon request.

2.1.4 At the request of the engineer, the manufacturer of the Resin Binder System shall certify that the Resin Binder System meets the requirements of this specification. Such certification shall consist of either a copy of the manufacturer's test report or a statement by the manufacturer, accompanied by a copy of the current test results, that the Resin Binder System has been sampled and tested. Such certification shall indicate the date of testing and shall be signed by the manufacturer.

2.2.1 Aggregate. The contractor shall furnish and install a high friction aggregate that is clean, dry and free from deleterious material. The high friction aggregate shall be Calcined Bauxite for this project.

2.2.2 The calcined bauxite aggregate shall meet the criteria in Table 2:

Property	Test Method	Requirement
Resistance to Degradation	AASHTO T-96	20% max.
Aggregate Grading	AASHTO T-27	No. 4 Percent Passing 100% min. No. 6 Percent Passing 95% min. No. 16 Percent Passing 5% max.
Moisture Content	AASHTO T-255	0.2% max.
Aluminum Oxide	ASTM C-25	87% min.

2.2.3 All aggregates shall be furnished in appropriate packaging that is clearly labeled and protects the aggregate from any contaminants on the jobsite and from exposure to rain or other moisture.

2.2.4 At the request of the engineer, the manufacturer of the aggregate shall certify that the aggregate meets the requirements of this specification. Such certification shall consist of either a copy of the manufacturer's report or a statement by the manufacturer, accompanied by a copy of the current test results, that the aggregate has been sampled and tested. Such certification shall indicate the date of testing and shall be signed by the manufacturer.

2.2.5 Test methods should be in accordance with AASHTO PP 79-14.

3.0 Construction Requirements. A manufacturer's representative of the Resin Binder System shall be present at the jobsite during all construction operations relating to the preparation and placement of the HFST. All construction operations relating to the HFST shall meet the recommendations of the manufacturer's representative. Final approval of all HFST placement operations will be given by the engineer.

3.1 Weather Limitations. Resin Binder system shall not be placed on any wet surface or when the ambient temperature or the temperature of the pavement is above or below the manufacturer's recommendations or when the anticipated weather conditions would prevent the proper application of the surface treatment as directed by the manufacturer's representative. Temperatures shall be obtained in accordance with MoDOT Test Method TM 20.

3.2 Surface Preparations. The surface shall be thoroughly cleaned immediately prior to installation of the HFST. The surface shall be clean, dry and free of all dust, oil, debris and any other material that might interfere with the bond between the resin binder material and the existing surface as recommended by the manufacturer's representative.

3.2.1 The contractor shall pre-treat joints and cracks greater than ¼ inch in width and depth with the mixed Resin Binder System. Once the resin binder in the pre-treated areas has gelled, the installation of the HFST may proceed.

3.2.2 Asphalt Pavement. Clean asphalt pavement surfaces using mechanical sweepers and high pressure air wash with sufficient oil traps. Mechanically sweep all surfaces to remove dirt, loose aggregate, debris, and deleterious material. Vacuum sweep or air wash using a minimum of 180 cfm of clean and dry compressed air, all surfaces to remove all dust, debris, and deleterious material. HFST shall not be applied to newly placed asphalt pavement surfaces that are less than 30 days old.

3.2.3 Concrete Pavement. Clean concrete pavement surfaces by shot blasting and vacuum sweeping. Shot blast all surfaces to remove all curing compounds, loosely bonded mortar, surface carbonation, and deleterious material. The prepared surface shall comply with the International Concrete Repair Institute (ICRI) standard for surface roughness CSP 5. After shot blasting, vacuum sweep or air wash, with a minimum of 180 cfm of clean and dry compressed air, all surfaces to remove all dust, debris, and deleterious material.

3.2.4 All existing edge line pavement markings that are adjacent to the HFST location shall be covered and protected as approved by the engineer prior to performing surface preparation. HFST shall not be placed over existing pavement markings or rumble strips. Lane line pavement markings that conflict with the HFST installation shall be removed by methods approved by the manufacturer's representative. Any existing edge line pavement markings that are damaged during the HFST application process shall be replaced at the contractor's expense.

3.3 HFST shall be allowed to cure for the minimum duration as recommended by the binder component supplier's specifications and during that time the application area shall be closed to all vehicles and contractor's equipment traffic. After placement and cure of the HFST, the contractor shall test the finished surface in accordance with ASTM D7234 to detect unbonded areas.

3.4 Excess and loose aggregate shall be removed from the traveled way and shoulders in such a way that the HFST is not damaged or disturbed. Excess aggregate that can be reused shall be reclaimed by a vacuum sweeper. The recovered aggregate shall be clean, uncontaminated and dry, if it is to be re-used in the HFST application. All reclaimed aggregate must be in conformance with the requirements in Section 2.0. Material.

3.5 Utilities, drainage structures, curbs and any other structures within or adjacent to the treatment location shall be protected against the application of the HFST materials.

3.6 Surface Friction Test. The surface friction of the completed HFST shall meet a minimum requirement of 65 FN40R from the ASTM E274 test. MoDOT will perform this test, at the expense of the Commission, within 7 calendar days after completion of the HFST. In order to allow for adequate scheduling time for the surface friction test, the contractor shall provide an anticipated completion date of the HFST for each segment of roadway being treated in this contract. The contractor shall provide this date(s) to the engineer a minimum of two weeks prior to any anticipated completion date of the HFST.

3.6.1 Any surface that fails to conform to the above friction requirement must be removed and replaced at the contractor's expense within 24 hours after being notified by the engineer.

3.7 Surface Quality Verification. The engineer will check the HFST surface for areas of debonding or excessive loss of aggregate fourteen days after completion of the HFST. Any deficiencies found shall be corrected at the contractor's expense.

4.0 Application Methods. HFST shall be applied in accordance with the manufacturer's recommendations. The HFST can be applied by either mechanical or manual techniques.

4.1 The Resin Binder System shall be blended and mixed in the ratio per the manufacturer's specification (+/- 2% by volume) and shall be continuously applied once blended.

4.1.1 The Resin Binder System shall be applied at a uniform thickness of 50-65 mils (25-32 square feet per gallon). Coverage rate is based upon expected variances in the surface profile of the pavement.

4.1.2 The operation shall proceed in such a manner that will not allow the mixed material to separate, cure, dry, be exposed or otherwise harden in such a way as to impair retention and bonding of the high friction aggregate.

4.1.3 The high friction aggregate shall be immediately applied at a rate of 12-15 pounds per square yard (achieving saturation) in such a manner that there is no disruption to the leveled binder. It is the responsibility of the contractor to ensure full embedment of the high friction aggregate.

4.1.4 Wet spots shall be covered with the high friction aggregate prior to the gelling of the Resin Binder System.

4.1.5 Walking, standing on, or any form of contact or contamination with the wet uncured Resin Binder System without spiked shoes as approved by the engineer, prior to application of the aggregate, will result in that section of Resin Binder System being removed and replaced at the contractor's expense.

4.1.6 Applications on high speed highways such as interstate, interstate ramps, and bridge decks will require additional sweeping three days after the initial installation is completed to remove excess and loose aggregate from the traveled way and shoulders.

5.0 Method of Measurement. Final measurement of the completed HFST will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. When required, measurement of HFST, complete in place, will be made to the nearest square yard. The revisions or correction will be computed and added to or deducted from the contract quantity.

6.0 Basis of Payment. The accepted quantity of HFST, in place, will be paid for at the contract unit price bid for Item Number 413-99.05, "High Friction Surface Treatment-Bauxite", per square yard. The contract price per square yard of HFST shall include full compensation for all labor, materials, tools, equipment, testing and incidental items necessary to complete the described work.

O. **TEMPORARY TRAFFIC CONTROL (FOR JOB NO. J6I3131 ONLY)**

1.0 Description. All work necessary to maintain safe and efficient traffic flow through the work areas shall be provided by the contractor. This will include furnishing, relocating, and removing temporary traffic control devices, truck mounted attenuators and equipment, and the removal and relocation or covering and uncovering of existing signs and other traffic control devices in accordance with the contract documents or as directed by the engineer.

2.0 Work requirements. Work shall be in accordance with Sec 612, 616, 619, 620 and the contract plans.

3.0 Method of Measurement. Traffic control plans and quantities have been provided for the work on this project to provide work zone quantities consistent with the staging in the plans. No additional payment will be made if the contractor chooses to add additional work zones at the same time. The quantities shown provided shall be considered an estimate and may be subject to change based on field conditions and the contractor's staging plan and should be bid accordingly. This work will not be measured for payment, but will be considered a lump sum unit. Any Value Engineering proposals to the temporary traffic control will not be paid for through value engineering but will be covered under Temporary Traffic Control, lump sum.

4.0 Basis of Payment.

4.1 Partial payments will be made as follows:

- (a) The first partial payment will be made when five percent of the original contract amount is earned. This payment will be the lesser of 50 percent of the contract price for the item of temporary traffic control or 5 percent of the original contract price.

- (b) The second partial payment will be made when 50 percent of the original contract amount is earned. This payment will be the lesser of 25 percent of the original contract price for the item of temporary traffic control or 2.5 percent of the original contract price.
- (c) The third partial payment will be made when 75 percent of the original contract amount is earned. This payment will be the lesser of 20 percent of the original contract price for the item of temporary traffic control or 2 percent of the original contract price.
- (d) When the engineer has accepted the contract for maintenance in accordance with Sec 105, the remaining contract price for the item of temporary traffic control will be paid.
- (e) The above partial payment schedule may be adjusted by the engineer if proof of invoices submitted by the contractor demonstrate additional temporary traffic control costs were incurred earlier than the above proposed schedule. The total payment for temporary traffic control will not exceed the bid amount for Temporary Traffic Control, lump sum, unless covered by a cost change order as referenced in the following Section 4.3.

4.1.1 For the purposes of this provision, the term “original contract price” will be construed as the total dollar value of the construction items (excluding temporary traffic control) of the original contract.

4.2 Temporary traffic control will be paid for at the contract lump sum price for Item:

Item No.	Unit	Description
616-99.01	Lump Sum	Temporary Traffic Control

No direct payment will be made for the following:

- (a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.
- (b) Installing, operating, maintaining, cleaning, repairing, removing, or replacing traffic control devices.
- (c) Covering and uncovering existing signs and other traffic control devices.
- (d) Relocating temporary traffic control devices, including permanent traffic control devices temporarily relocated, unless specifically included as a pay item in the contract.
- (e) Providing channelizers, directional indicator barricades, moveable barricades, drums, etc.
- (f) Non-Intrusive Detectors (NIDs) for the “Zipper Merge” operations. This includes furnishing, placing, maintaining, networking, operating, and relocating the devices at each stage of construction for which they are required.
- (g) Worker apparel.

- (h) Flaggers, pilot vehicles, and appurtenances at flagging stations.
- (i) Furnishing, installing, operating, maintaining, and removing construction-related vehicle and equipment lighting including.
- (j) Construction and removal of temporary equipment crossovers, including restoring pre-existing crossovers.
- (k) Removing existing pavement markings, installing temporary pavement markings, and removing and relocating temporary pavement markings as necessary for staging operations. Removal of pavement markings shall not mar the surface of the pavement.

4.3 Any additional work deemed necessary by the engineer that requires temporary traffic control and is not covered by the contract plans will be included in the cost change order for the additional work. However, if the added work is required in a stage where temporary traffic control is already in place, no additional traffic control pay will be allowed in this case.

P. DYNAMIC LATE MERGE SYSTEM (ZIPPER MERGE)

1.0 General. The Work Zone Intelligent Transportation System (WZITS) shall be a portable, real-time, automated, solar powered system that provides dynamic late lane merge guidance along with queue warnings about stopped traffic ahead due to work zones. This system is to provide advance traffic condition information to motorists at key decision points due to construction activity. This system shall be in operation 24 hours per day, seven days per week, during the construction period for which they will be used.

2.0 Description. This item shall consist of submittal and approval of a Work Zone Intelligent Transportation System plan, furnishing, installing, relocating, and operating a portable, automated, solar powered real-time work zone system (“Work Zone Intelligent Transportation System”) meeting the requirements noted herein, and providing a system manager to maintain the system during the duration of the project. The contractor shall assume responsibility for any damaged equipment due to crashes, vandalism, adverse weather, etc. that may occur during the system’s deployment.

2.1 The contractor shall furnish and maintain this system for measuring and delivering real-time messages for the work zone.

2.2 The contractor is responsible for coordinating any work in adjacent roadway construction projects.

2.3 The contractor will be responsible to relocate the devices as directed by the engineer. When the equipment is no longer required for this project, the contractor shall remove it and retain ownership.

3.0 System Requirements

3.1 The Work Zone Intelligent Transportation System shall be installed on I-55 in both the northbound and southbound directions per the plans. It shall consist of the following as a minimum:

- 1 central computer system that can be accessed through a password protected internet connection
- Four (4) portable changeable message signs (CMS)
 - Four (4) CMS in the northbound or southbound lanes of I-55, depending on construction stage.
- Four (4) portable non-intrusive traffic sensors (NID)
 - Four (4) NID in the northbound or southbound lanes of I-55, depending on construction stage.

Current Temporary Traffic Control for this project is set up such that work is being performed in only one direction and one location of I-55 at a time. Should the contractor elect to work in both directions (NB and SB) of I-55 or in multiple locations on I-55 simultaneously, the contractor shall do so only with the prior permission of the engineer. No payment will be made for the additional CMS, NID, or other Temporary Traffic Control devices necessary to facilitate working in multiple locations of I-55.

4.0 Smart Work Zone Plan

4.1 General. The contractor shall submit to the Engineer for approval a written and illustrated WZITS Plan **three (3)** weeks prior to mobilization of any component of the WZITS System. The WZITS Plan shall include the items required in this specification. The Contractor will not be allowed to start any construction activities that will affect traffic on the project until the WZITS Plan is approved by the Engineer.

4.2 Content of the WZITS Plan. The WZITS Plan shall include, as a minimum, the following items:

- A detailed plan showing the proposed locations of all WZITS devices and equipment description including make and model.
- A description of all proposed thresholds and proposed CMS messages to be implemented.
- The name and contact information of the WZITS System Manager.
- A detailed description of the proposed methods of communication between WZITS devices and WZITS Central Computer and between WZITS Central Computer and the Gateway Guide Advanced Traffic Management System (ATMS) software:
 - The Gateway Guide Traffic Management Center utilizes TransCore's TransSuite ATMS software package and at a minimum, the WZITS Central Computer shall provide the average speed for each radar trailer through a web service or XML feed that can be accessed over the internet.
 - At a minimum, the WZITS Central Computer shall update the average speed web service (or XML feed) every 5 minutes for each of the individual radar trailers.
- Proposed corrective method procedures including response times and notification process.

4.3 Approval of Plan. Approval of the WZITS Plan by the Engineer is required prior to the placement of any WZITS devices. Approval is conditional and will be predicated on satisfactory performance during construction. The Engineer reserves the right to require the Contractor to make changes in the WZITS Plan and operations, at no additional cost to the Commission, including removal of personnel, as necessary, to obtain the quality specified. The Contractor shall notify the Engineer in writing a minimum of **seven (7)** calendar days prior to any proposed changes in the WZITS Plan. Proposed changes are subject to approval by the Engineer.

4.4 Dynamic Late Merge (DLM) System: The WZ ITS system should be designed to provide the Dynamic Late Merge technology. The system shall detect a minimum of 2 distinct traffic conditions.

4.4.1 Free Flow:

Definitions of free-flow may vary by project, but typical traffic condition warrants may include:

- A trend of vehicle speeds at two points above an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically greater than 50 mph may be utilized as a guideline.
- A trend of vehicle volume between two points below an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically less than 1000 vehicles/hour may be utilized as a guideline.
- A trend including reduced vehicle speeds together with increased volume. These parameters should be set for optimal results based on on-site monitoring and review as directed by the engineer.

During Free Flow conditions, the DLM System shall display no lane use messages, and therefore allow traffic to resume typical merging operations.

4.4.2 Congestion:

Definitions of congestion may vary by project, but typical traffic condition warrants may include:

- A trend of vehicle speeds at two points below an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically less than 20 to 35 mph may be utilized as a guideline.
- A trend of vehicle volume between two points above an adjustable parameter. This parameter should be set for optimal results based on on-site monitoring and review as directed by the engineer. Typically greater than 1500 to 1700 vehicles/hour may be utilized as a guideline.
- A trend including reduced vehicle speeds together with increased volume. These parameters should be set for optimal results based on on-site monitoring and review as directed by the engineer.

When traffic conditions warrant a change to the late merge strategy, the DLM System shall display lane use messages on the CMS. The messages shall consist of two alternating displays as described below. The CMS shall be located in advance of the lane closure as determined by the engineer based upon estimated queue lengths and project geometry.

Locations for the WZITS device set-ups will vary depending on the current stage of construction. These stages and device locations are noted in the contract plans for the project. The contractor shall be responsible for providing the locations (Mile Marker) of each device used at each stage.

- CMS located at point of merge shall display:
 - **MERGE HERE – TAKE TURNS**
- Intermediate CMS located beyond estimated queue length at the time when DLM System activation will occur
 - **MERGE AHEAD – USE BOTH LANES**
- CMS located beyond estimated maximum queue length
 - **SLOW TRAFFIC AHEAD – USE BOTH LANES or**
 - **STOPPED TRAFFIC AHEAD – USE BOTH LANES**

5.0 Materials.

5.1 Changeable Message Signs. The Work Zone Intelligent Transportation System shall utilize MoDOT approved portable changeable message signs (CMS) in accordance with Missouri Standard Specifications for Highway Construction section 616 Temporary Traffic Control and 1063 Temporary Traffic Control Devices and Standard Plans for Highway Construction 616.10. Each CMS shall be capable of displaying eight characters on each of three rows. Each CMS power supply shall be properly sized to allow continuous operation for up to ten days during periods of darkness and inclement weather.

5.2 Each CMS shall be integrated with a radio/modem, and/or a traffic sensor or other equipment (e.g. controller) mounted on it and shall act as a single “device” for the purpose of communicating with similarly integrated “devices” and displaying real-time traffic condition information. Each device shall be capable of communicating through radios/modems with other device(s) at upstream or downstream locations. MoDOT staff must have the ability to override messages displayed on any CMS in the system. This feature must be password protected and on a website separate from MoDOT’s public website.

5.3 Portable Non-Intrusive Traffic Sensors. The Smart Work Zone System traffic sensors shall be side-fired microwave radar type whose accuracy is not degraded by inclement weather and visibility conditions including precipitation, fog, darkness, excessive dust and road debris. These sensors shall be capable of acquiring traffic data from up to **six (6)** lanes of traffic on a lane-by-lane basis.

5.4 Central Computer. The central computer shall provide the functionality described below:

General

- Provide a Graphical User Interface that is compliant with Windows standards.
- Communication between the central computer and any device shall be independent and *non-reliant* upon communications with any other CMS or sensor.
- Alerts to Contractor and MoDOT staff shall be provided via text or e-mail messaging.
- Alerts shall be sent in the event of device failure or traffic delays over 15 minutes.

Data Processing Software

- The capability to collect and store sensor data.
- The capability to compare traffic data collected from sensors to user-defined thresholds and automatically update one or more CMS’s.

- The capability to estimate travel times and automatically update one or more portable CMS's consistent with user-defined thresholds.
- The capability to display alternate route messages consistent with user-defined thresholds.

Data Management

- Storage of speed, volume, occupancy, CMS message history, and travel times as well as appropriate sensor status for each day.

Website

- The Contractor will be responsible for hosting the website and obtaining domain names. Possible domain names and overall website design must be submitted to the Engineer for approval prior to it being made available.
- The website shall contain an accurate map of the area affected by the work zone, including state highways or routes that may be used as alternates.
- Icons or hyperlinked text should accurately depict the current location of the system components and give real-time information provided by each component. In the event components are moved to a new location, the website must reflect these changes to the system layout.
- Historical data should be password protected and stored on the website for each day the system is in use, with date and time stamps included. The above data shall be available to MoDOT staff at all times for the duration of work zone activity. An electronic copy of all data, including date and duration of system malfunction, shall be provided to MoDOT staff after all work zone activity is completed and the WZITS has been removed.
- The MoDOT staff and the Engineer shall have the capability to override messages, via password protection, from the website.
- Device information shall be provided to MoDOT TMC staff through icons or hyperlinked text representing each device. Detectors should provide real-time speeds at the respective locations and CMS's should provide the current message of each sign.
- The website shall be designed and operated to allow 20 users to access the site at one time.

6.0 System Manager. The contractor shall employ a system manager for the WZITS. The system manager shall be locally available to maintain system components, maintain the website, move portable devices as necessary, and respond to emergency situations. The system manager shall be responsible for coordinating the placement of devices in the project areas. It is the responsibility of the system manager to move system components that interfere with construction operations and relocate the components to another area. The system manager shall supply a local phone number and/or a toll free number to the engineer to contact the system manager or other system representative at any time.

7.0 Operational Test. Once the WZITS is installed, it shall undergo a five-day operational test. The operational test shall include a test of the system in operation during a lane closure to ensure that all WZITS equipment (including the changeable message signs, traffic sensors, central computer, communication devices, and website) is operating in a fully functional manner and in accordance with the Smart Work Zone Plan for a duration of at least five (5) calendar days. The contractor shall provide for complete operations support from the vendor during the operational test, and the contractor shall provide verification that the reported drive time through the work zone accurately reflects actual field conditions. If any equipment malfunctions occur for

a combined period of four (4) hours or more during this operational test on any day, no credit will be given for that day for the operational test period, and the five-day operational test will reset.

7.1 The contractor shall maintain records of equipment stoppages and resumptions during the five-day operational test for submission to the engineer for his approval. In the event that ten percent or more of the time similar malfunctions occur that affect the proper operation of the WZITS, the engineer may declare a system component defective and require replacement of the equipment at no additional cost. When a system component defect is declared, the five-day operational test shall begin again after all defective equipment is replaced and the system is fully operational.

7.2 Report. The contractor shall submit a report to the engineer detailing the daily activity of the system during the operational test. The report shall indicate the date and time of any activity necessary to maintain operation of the WZITS during the operational test period. Each entry shall include the following information:

- Identity of the equipment on which work was performed
- Cause of equipment malfunction (if known)
- A description of the type of work performed
- Time required to repair equipment malfunction

Once the operational test report is received and approved by the engineer, the WZITS will be considered operational and the system will be accepted for use.

8.0 Method of Measurement. Work Zone Intelligent Transportation System (WZITS) shall be measured by one lump sum and shall be divided into the following payment schedule:

- 35 percent will be paid when all of the WZITS equipment is delivered to the jobsite.
- 25 percent will be paid when the engineer approves the Operational Test Report.
- 20 percent will be paid after 30 calendar days of full system operation.
- 20 percent will be paid after traffic is in its final position, the contractor's equipment has been removed from the project, and historical data has been provided to the engineer.

8.1 Deduction for Failed System. A percentage of the lump sum will be deducted should the system malfunction for three (3) or more consecutive calendar days or any total of five (5) calendar days in any one calendar month after the approval of the operational test. This deduction will be based on a ratio of calendar days of unsuccessful operation to total calendar days of operation following the approval of the operational test. This deduction will not reduce the total system payment to less than 60 percent of the lump sum.

9.0 Basis of Payment. Payment for submittal and approval of a Work Zone Intelligent Transportation plan, furnishing, installing, relocating, operating, maintaining, testing, monitoring, providing a website, providing historical data, and removal of the Work Zone Intelligent Transportation System (WZITS), including all items required for proper operation of this installation, except required CMS boards and required static sign assemblies which will be paid for separately, will be completely covered by the contract unit price for Item Number 616-99.01, "Temporary Traffic Control," per lump sum, and "NTCIP Compliant Changeable Message Sign, Contractor Furnished and Retained", per each. No direct payment will be made for any relocation or storage of these devices between the stages of construction for which they are to be used.

Q. NTCIP COMPLIANT CHANGEABLE MESSAGE SIGN (CONTRACTOR FURNISHED AND RETAINED)

1.0 Description. All solar powered changeable message signs, hereinafter referred to as a CMS, shall be in accordance with these specifications.

2.0 Material. Each CMS shall consist of an all LED (light emitting diode) matrix message board, solar/battery power supply and a user-operated interface, as specified, all mounted on a heavy duty, towable trailer.

2.1 Each CMS shall be either Full Matrix or Character Matrix, and have the following minimum characteristics:

- (a) Full Matrix - Each CMS shall be the Full Matrix type with the capability of providing one, two, and three lines of individual changeable characters with minimum heights of 52 (1300), 28 (700), and 18 (450) inches (mm), respectively. Full Matrix signs shall be capable of both static and dynamic graphics, and full display sized messages.
- (b) Character Matrix (Three Line) – Each CMS shall consist of a minimum of three lines containing eight individual changeable characters per line. Each character shall be a minimum of 12 inches wide and 18 inches (450 mm) high.
- (c) Sign firmware shall comply with the current FHWA and DOT (Department of Transportation) NTCIP standards and support all NTCIP mandatory objects.
- (d) The sign controller shall be remotely accessible by the MoDOT St Louis District Transportation Management Center (TMC) through the Commission’s ATMS (Advanced Traffic Management System) software, currently TransSuite provided by TransCore. The contractor will be responsible for ensuring the CMS is added to the ATMS software.
- (e) The CMS shall have a cellular data modem compatible with the district’s current cellular IP (packet data) service provider and be capable of allowing the MoDOT St Louis District TMC ATMS software to have full control of the NTCIP compliant CMS controller remotely.
- (f) The sign shall have a GPS unit that can assist in locating the sign’s position when polled by the TMC. The GPS unit must be remotely accessible by the TMC and be part of or work with the provided communication modem.
- (g) Physical access to the onboard computer shall be protected by a padlock or other locking handle mechanism. Electronic access to the onboard computer shall be protected by a username and password.

2.2 Full matrix CMS and character matrix CMS shall meet the following:

- (a) The overall sign dimensions shall not be less than 72 inches (1800 mm) high x 126 inches (3150 mm) wide.
- (b) The CMS shall be legible up to a distance of 650 feet (200 m) for both day and night operations and shall be visible for ½-mile (800 m) with 18 inch (450 mm) characters.

- (c) When fully raised in the display position, the bottom of the CMS board shall be at least a height of 7 feet (2100 mm) from the ground and shall be able to rotate a complete 360 degrees atop the lift mechanism. A sight tube, used to aim the CMS board to oncoming traffic, shall be installed on the CMS board or mast. The CMS shall have an electrical-hydraulic lifting mechanism that includes a manual lifting and lowering relief mechanism as a backup. It also must be able to be locked into various viewing angles as determined best for the motorists by the CMS operator.
- (d) All LED displays and control circuitry shall be operational from -20 F (6 C) to 120 F (50 C). The LED's shall have a rated life of 100,000 hours. The LED's shall be ITE amber in color on a flat black background.
- (e) The CMS face shall be constructed that if an individual panel or pixel fails the rest of the face shall continue to display the message.
- (f) All costs and coordination needed for testing to verify modem communication, sign NTCIP compliance, remote GPS status polling, ability to control the sign via the St Louis District's ATMS software provided by TransCore shall be the sole responsibility of the Contractor. Full integration into TransCore's ATMS shall be completed at least 5 business days prior to use of the CMS in the project. TransCore contact information will be provided to the contractor by contacting MoDOT's Gateway Guide staff at 314-275-1526 or via email at ggtech@modot.mo.gov with details of the request. No other support shall be provided by MoDOT other than TransCore contact information. Information provided shall include, at a minimum, CMS make and model, IP address, and proposed locations and messages.
- (g) The Contractor shall be responsible for all monthly cellular service fees for the duration of the project.
- (h) The unit shall be able to withstand a 65-mph (105-kmph) maximum road wind speed. The trailer shall be able to support the fully extended CMS board in an 80-mph (130-kmph) wind load.
- (i) Solar charging system shall allow for total autonomy of 24/7/365 continuous operation.
- (j) All exterior surfaces except the sign face shall be cleaned, primed, and finished with two coats of Highway Safety Orange and the sign interior itself shall be cleaned and finished with one coat of corrosion inhibiting primer and two coats of flat black. The sign face shall be covered with a rigid translucent material to prevent damage to the sign face caused by the environment.

3.0 Construction Requirements. Prior to placing a CMS on a project, the engineer shall verify proposed CMS location is void of conflict with another DMS or CMS locations presently established. If a conflict is present, the engineer shall contact the Traffic Management Center (TMC) at 314-275-1526 to mitigate. If no conflict is present, engineer shall provide Traffic Management Center (TMC) with the Job Number, Route, County, specific CMS location, and a CMS identification number that is permanently affixed to the CMS. The engineer and contractor shall verify the message displayed on board is compliant with CMS messaging policies. The contractor shall place the CMS 6 feet [2 meters] off the right edge of shoulder at the location shown on the plans or as directed by the engineer. The CMS shall be placed so that the right side of the unit is advanced approximately 3 degrees ahead with the direction of traffic. CMS

shall not be located in medians. CMS shall be delineated with a minimum of five non-metallic channelizing devices. Installation, including location and placement, shall be approved by the engineer. If needed, the contractor shall relocate the CMS as directed by the engineer.

3.1 When not in use, the CMS shall be stored no closer than 30 feet [10 meters] to the edge of pavement carrying traffic, unless it is in a properly protected area or an off-site storage area or as otherwise directed by the engineer.

4.0 Basis of Payment. All expenses incurred by the contractor in integrating, maintaining, relocating, operating and protecting the changeable message signs as outlined above shall be paid for at the contract unit price for Item 616-99.02 Changeable Message Sign, Contractor Furnished and Retained, per Each.

4.1 Cost for channelizers shall be included in the contract unit price for CMS.

4.2 Cost for cellular phone hookup and monthly usage fee for the duration of the project shall be included in the contract unit price for CMS.

Item No.	Unit	Description
616-99.02	Each	NTCIP Changeable Message Sign, Contractor Furnished and Retained

R. ADHESIVE TRANSVERSE RUMBLE STRIPS

1.0 Description. This work shall consist of the installation of adhesive transverse rumble strips as shown in the plans. This work shall also include removal of the adhesive transverse rumble strips once the bypass is no longer needed.

2.0 Requirements. The contractor shall follow all construction requirements shown in the plans or as specified by the engineer. The contractor shall follow the manufacturer's recommendations for the installation of this product. If the pavement is damaged during the removal of the rumble strip, it will be the contractor's responsibility to replace or repair the damaged pavement.

3.0 Color. Work zone orange color is preferred, if the manufacturer offers this color choice.

4.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary, will be considered completely covered under the contract price for Item Number 626-99.03, ADHESIVE TRANSVERSE RUMBLE STRIPS, per Linear Foot.

S. PAVEMENT MARKINGS LAYOUT

1.0 Description. The striping lane lines on sections of roadway with multiple traffic lanes in one direction shall be placed in a manner in which the start and stop points for all intermittent lane lines match and line up even transversely across all traffic lanes. For all installations of intermittent pavement markings care should be taken to align the skips longitudinally to consistently match the spacing of the existing UIP intermittent lane lines at both the start and end points of the improvement section.

2.0 Construction Requirements.

2.1 The contractor shall submit to the Engineer for review and approval a pavement marking installation plan. This plan will include the contractor’s proposal for installing the intermittent pavement markings to meet the requirements outlined above.

2.2 Final striping will not begin until the contractor has received approval of the pavement marking installation plan.

3.0 Basis of Payment. All costs and expenses incurred by the contractor in fulfilling the requirements of the provision shall be considered incidental to pavement marking cost.

T. FERTILIZING, SEEDING, AND MULCH

1.0 Soil Neutralization. Not applicable

1.1 Commercial Fertilizer. In accordance with Section 801.2.3, the following fertilizers shall be applied at the rate specified. No direct payment will be made for fertilizer.

Nitrogen (N)	40 lbs. per acre
Phosphoric Acid (P2O5)	80 lbs. per acre
Potash (K2O)	40 lbs. per acre

1.2 In accordance with Section 805.3.2, the following seed mixtures shall be applied at the rate specified per acre and shown on the plans:

Seeding Mix A within the first 30 feet (mow area)

Tall fescue	80 lbs
Annual ryegrass	10 lbs
Perennial ryegrass	5 lbs
White clover	5 lbs
Oats	10 lbs
TOTAL	110 lbs / acre

Urban setting – outside the first 30 feet and steeper than 3:1 slopes, interchanges

Little bluestem	6 lbs
Sideoats grama	6 lbs
Canada or Virginia rye	2 lbs
Prairie or tall dropseed	0.5 lbs
Annual ryegrass	10 lbs
Oats	10 lbs
Perennial rye	10 lbs
White clover	5 lbs
Lanceleaf coreopsis	0.25 lbs
Black-eyed Susan	0.25 lbs
TOTAL	50 lbs

1.3 Mulch. Type 3 mulch is to be used for this project.

1.4 Areas disturbed by the contractor outside the normal construction limits shall be reshaped, seeded, and mulched as directed by the engineer. No direct payment will be made for this work.

1.5 Acceptance of Seeded Areas. The performance standard must be met before acceptance of the work. At least two random counts per acre (0.5 ha) in representative areas of the project will be conducted. All seeded areas will provide a minimum of 20 living plants of the specified type per square foot (0.1msq) within 60 continuous days after seeding, excluding seeding dates that fall between September 30 and March 1. Seeding dates that fall between September 30 and March 1 will be counted no earlier than May 1. The plants shall be uniformly spaced.

1.6 Corrective Action. Inadequate stands shall be reworked and reseeded within the time period agreed upon at the contractor's expense.

1.7 Maintenance. On previously accepted seeded areas, the engineer may authorize eroded areas to be repaired in accordance with Sec 104.3. An additional amount of 10 percent seeding and mulching has been added to the contract for maintenance of these areas.

1.8 Cost Basis. All costs incurred will be paid for at the contract unit price for pay item 805-10.00A, "Seeding – Cool Season Mixtures", per acre. No direct pay will be made for any seed and mulch over the 10% added for maintenance, or for additional work or inconvenience to the contractor in complying with this special provision.

U. TRAFFIC SIGNAL MAINTENANCE AND PROGRAMMING

1.0 Description. Traffic signal maintenance and timing for this project shall be in accordance with Section 902 of the Standard Specifications, and specifically as follows.

2.0 Qualified Traffic Engineer

2.1 The contractor shall have an experienced traffic engineer with a Professional Engineer's (PE) license in Missouri as well as a Professional Traffic Operations Engineer (PTOE) certification (hereafter referred to as "contractor's traffic engineer") with the noted experience defined below.

2.2 Experience. Any proposed contractor traffic engineer shall be able to demonstrate personal successful previous experience in the following tasks:

2.2.1 Corridor Management: Time/space diagram manipulation in order to successfully adjust offsets and splits for rapidly changing traffic demands

2.2.2 Controller Programming: Ability to hand program Phase, Time Based Control (TBC) plan schedules, and Coordination levels of existing controllers utilizing National Transportation Communication for ITS Protocols (NTCIP) objects.

2.2.3 Intersection Programming: Implementation of adjusted and/or new timing plans as a result of changing traffic demand

2.2.4 TransCore Advanced Traffic Management System (ATMS) Software: Use and understanding of TransCore's TransSuite ATMS and its Traffic Control System (TCS) signal software module.

2.3 The contractor will be required to submit the name(s) of proposed traffic engineer(s) and the name(s) of other personnel on their proposed staff along with detailed experience in the tasks outlined in Paragraph 2.2 above. The engineer reserves the right to reject any contractor traffic engineer, before the start of work, who does not have sufficient experience or, at any point during the project, who does not satisfy the requirements set forth within this Job Special Provision. A list of potential traffic engineers can be submitted for review to the Project Manager prior to bid.

2.4 VPN Access. The Commission operates the noted signals through ATMS which is capable of remote adjustments to controller programming.

2.4.1 The approved contractor's traffic engineer and any staff assigned to manage the traffic signals during the project is encouraged to apply for VPN (Virtual Private Network) access with the engineer once the project is awarded. If approved, the engineer will assign credentials to one Virtual Personal Computer (VPC) for the contractor's traffic engineering staff along with credentials for each to the ATMS, which will allow for the ability to view and control Closed Circuit Television (CCTV) cameras and the ability to remotely interface with the noted signals on this project. These credentials will also allow the contractor's traffic engineer to access the ATMS at the St. Louis District's Traffic Management Center (TMC).

3.0 Existing Traffic Signals and Communication System

3.1 The contractor shall notify the engineer 3 weeks prior to the date of bridge closure and detour implementation. Note that this period may fall prior to the award date due to the Early Notice to Proceed. The approved contractor's traffic engineer shall meet together with the engineer to discuss their traffic mitigation plan at least 1 week before the date of closure. Traffic mitigation plan should at a minimum include:

- Location of contractor provided traffic spotters for at least the first two days of the closure, or as needed as determined by the engineer based on traffic flow.
- Proposed Timing Plan changes and any models
- Anticipated locations of concern
- A map in electronic format displaying the locations and names of the signals and owning agency as detailed in Paragraph 3.2 below.
- Other traffic mitigation efforts including Dynamic Message Sign (DMS) messages and schedule (to be programmed by the Commission's staff) to notify motorists of the mitigation efforts.

3.2 Periodic ramp closures at the I-55 Interchanges at Route Z, McNutt Street, and US-67 will occur as noted in the staging for this project. Once the ramp(s) have been closed and traffic diverted via the detour route(s) by the contractor, the contractor shall then be solely responsible for the following signals' controller programming until the ramp(s) are completely re-opened to traffic:

- a) Route M at Metropolitan Boulevard
- b) Route M at NB I-55 On & Off Ramps
- c) Route Z at SB I-55 On & Off Ramps
- d) Route Z at NB I-55 On & Off Ramps
- e) Route Z at Main County Road
- f) McNutt Street at SB I-55 On & Off Ramps
- g) McNutt Street at NB I-55 On & Off Ramps
- h) McNutt Street at Herculaneum Crossing
- i) Route A at I-55 Interchange
- j) Route A at Bradley Street
- k) Route A at Collins Drive
- l) Route A at W. Gannon Drive
- m) Route A at S. Mill Street
- n) US-61 at SB I-55 Off Ramp
- o) US-67 at Route CC
- p) US-61/67 at Route M
- q) US-61/67 at Route Z
- r) US-61/67 at McNutt Street
- s) US-61/67 at 6th Street/8th Avenue
- t) US-61/67 at Bailey Road
- u) US-61/67 at Beffa Street
- v) US-61/67 at Route A
- w) US-61/67 at St. Pius Drive
- x) US-61/67 at American Legion Drive

3.3 Note that the locations listed in Paragraph 3.2 are not all inclusive. If during the course of investigation by the contractor's traffic engineer it is determined that traffic patterns would benefit from adjustments of other MoDOT-owned signals, adjustments to those signals may be included in the scope of this work.

3.3.1 The list above notes all of the locations which may require adjustments. Not all of the signals listed above will require adjustments for every stage. The approved contractor's traffic engineer shall be responsible for adjustment of the MoDOT-owned signals that are appropriate for the given stage of construction unless otherwise directed by the engineer.

3.3.2 Maintenance at these locations and locations in Paragraph 3.2 for items other than controller programming issues or incidents caused by controller programming or other construction done by the contractor shall remain with the Commission. Communication from the ATMS to the noted controllers, if not interrupted by work on this project, shall also be maintained by the Commission. The contractor's traffic engineer will not be relieved of responsibility to make and maintain controller changes in the event the communication to any controller cannot be repaired by the Commission.

3.4 The engineer shall provide to the approved contractor's traffic engineer a report on the existing phasing and timing of each traffic signal named in Paragraph 3.2 at the Pre-Construction Meeting. The engineer shall be available to the contractor before any changes are made to a signal or controller to answer any questions about the report. Once the approved contractor's traffic engineer has modified a signal or controller for any reason, the contractor shall be solely responsible for the existing timing plans and all subsequent timing changes.

3.5 The approved contractor's traffic engineer will notify the engineer or representative of the changes no later than 1 working day after changes are programmed if unable to provide advance notice as specified in 902.2.

3.6 The approved contractor's traffic engineer shall be solely responsible for maintaining the coordination at any affected signal to the satisfaction of the engineer or representative until paragraph 5.0 below has been satisfied. Maintenance of coordination may include the synchronization of the affected controller's internal time clocks to the second using an atomic clock, or other means approved by the engineer. If time clock synchronization is used, the contractor shall verify all affected controllers are synchronized at least 1 time per week with a report to the engineer or representative. This report will be in the form of a documentation record as spelled out in the Work Zone Traffic Management Plan.

4.0 Existing Traffic Signal Maintenance and Response.

4.1 The approved contractor's traffic engineer shall respond to any signal timing complaints or malfunction complaints for those locations detailed in Section 3.0 of this provision and as specified in Section 902.21.1. Response time shall be 1 hour for complaints received by the contractor between 6 AM and 6 PM on non-holiday weekdays, and 2 hours for all other times. These timeframes will replace the '24 hour' response time in Section 105.14 for any signal-related incidents, where the entire cost of the work, if performed by MoDOT personnel or a third party, will be computed as described in Sec 108.9 and deducted from the payments due the contractor.

4.1.1 Responding to a signal timing complaint shall be defined as the following: Arrive on site, make observations, and, if appropriate, implement changes; OR utilizing the ATMS to observe and/or implement changes. Immediately following their response, the approved contractor's traffic engineer shall follow-up with the engineer and the originator of the complaint, if different, with their observation and analysis of the complaint and whether any changes were made. The ATMS should only be used if the affected signals can be adequately viewed remotely.

4.2 The contractor must supply the contact name and phone number of the approved contractor's traffic engineer who will be responsible for receiving and responding to signal timing complaints from the engineer. These complaints may be forwarded directly to the contractor by someone other than the engineer (i.e. MoDOT's Customer Service representatives) and will not relieve the contractor from properly responding based on the response times of this Provision. The contractor shall submit to the engineer a weekly report of complaints received and remedies performed throughout the duration of this project.

5.0 Original Signal Controller Programming and Acceptance.

5.1 The contractor will be responsible for restoring the original signal controller programming, and coordination plans for each intersection within 1 hour of the end of the detour and reopening all traffic lanes/ramps. The engineer shall preserve and house the original controller files and provide the contractor with access to those files in order to perform the restoration of the original plans. The contractor will be relieved of signal programming maintenance at a restored intersection once 48 consecutive hours have passed without a programming malfunction. If an agency desires any changes from an original plan, the agency will assume immediate maintenance of the signal in order to implement desired changes.

6.0 Post Project Report

6.1 The contractor shall submit to the engineer a post project report, four to six weeks after the final signal adjustments have been completed. The report shall include at a minimum an observation report, summary of timing changes and locations, summary of complaints, and any other pertinent information regarding the contractor's efforts for managing these signal corridors in one electronic document.

7.0 Construction Requirements. Construction requirements shall conform to Sec 902, 1061, and 1092.

7.1 Covering Signal Heads and Adjusting Signal Indications. Any covering of signal heads and adjustments or changes to signal indications necessary for safe traffic operations at and around the interchanges when traffic is being detoured around the closures shall be the responsibility of the contractor. Any changes to or covering of existing signal heads shall be coordinated with both the engineer and the contractor's traffic engineer prior to making any of these adjustments. The contractor shall also be responsible for uncovering any covered signal heads and restoring any adjusted signal indications that were changed prior to re-opening the roadway(s) to traffic. No direct payment will be made for compliance with this specification.

8.0 Method of Measurement. Method of measurement shall conform to Sec 902.

9.0 Basis of Payment. Payment will be considered full compensation for all contractor services, installation, and labor to complete the described work.

Item No.	Type	Description
902-99.01	Lump Sum	Traffic Signal Maintenance & Programming

V. **DISPOSITION OF EXISTING SIGNING EQUIPMENT (For Job No. J6I3110 Only)**

1.0 Description. The existing sheet and/or extruded aluminum sign panels to be removed by the contractor shall be delivered to the Missouri Department of Transportation's District Sign Shop located on Barrett Station Road in west St. Louis County. The contractor shall assist with the storage of these signs as directed by the engineer.

1.1 Any hardware (brackets, u-bolts, aluminum I-beams, etc) associated with removals involving overhead sign supports shall also be salvaged and delivered to the Sign Shop.

1.2 The contractor shall notify the sign shop at least 24 hours in advance of delivering any signing materials to this maintenance lot. Contact information is below:

James (Dusty) Henson, Signing / Striping Supervisor
Office: (314) 205-7313, Cell: (618) 340-5666

Doug Logsdon, Signing / Striping Assistant Supervisor
Office: (314) 205-7311

1.3 All sign supports, footings and other signing equipment to be removed shall become the property of the contractor and disposed of off the right of way.

1.4 The contractor shall exercise reasonable care in the handling of the signs. Should any sign be damaged due to the contractor's negligence during removal, transportation and/or reinstallation, it shall be replaced in kind at the contractor's expense. The engineer shall have the final determination on whether the said signs should be replaced or repaired.

2.0 Basis of Payment. All costs incurred for complying with this provision shall be considered completely covered by the contract unit price for Item 202-20.10, Removal of Improvements, Lump sum. No direct payment will be made for attaching existing signs onto existing or new posts as indicated in the plans.

W. MoDOT ITS EQUIPMENT WITHIN PROJECT LIMITS

1.0 Description. MoDOT owned fiber optic cable and conduit, critical MoDOT power supplies and power cables, and pull boxes for fiber and power cabling, are present within the limits of this project. Damage or interruption of these items can cause extensive outages to the MoDOT network.

2.0 Construction Requirements. The contractor shall exercise reasonable care while completing work near these facilities, and shall take steps necessary to protect these facilities from damage for all items that are not specifically identified as being removed and/or relocated in the plans. Should any of the existing wiring or conduit be damaged by the contractor, it shall be replaced at the contractor's expense and the system in full operation within **4** hours of when the damage occurred. If it is mutually agreed upon between the Commission and the Contractor that the repairs will require more than **4** hours to complete, a mutually agreed upon time for repairs to be complete will be determined.

2.1 The contractor shall not modify any existing network or electrical connections within equipment cabinets, unless coordinated with MoDOT ITS staff. Existing connections include, but are not limited to, fiber jumpers, CAT5(e) cables, power supplies, and power strips. The connection to specific fiber and copper ports on network equipment shall also not be modified, unless coordinated with MoDOT ITS staff, as the network equipment has been configured specifically for each equipment cabinet. Significant network outages and unnecessary troubleshooting to investigate outages can occur, even with minor changes to existing connections within the cabinet.

3.0 Liquidated Damages. In the event of damage, if the system is not repaired and in full operation within **4** hours of the damage occurring, or within the timeframe agreed upon, the contractor will be charged with a liquidated damage specified in the amount of \$100.00_per hour for each full hour that the system is not fully operational. This damage will be assessed independently of the liquidated damages specified elsewhere in the contract.

3.1 The MoDOT Engineer will also have the option of issuing a work order for MoDOT's on-call ITS Maintenance contractor to make repairs, if it is the Engineer's opinion that the contractor creating the damage will not be able to make repairs in a timely manner. The ITS Maintenance contractor will then bill the contractor causing the damage directly.

4.0 Basis of Payment. No direct payment shall be made for compliance with this provision.

X. MoDOT ITS IN-GROUND FACILITY RELOCATION

1.0 Description. The work consist of relocating existing MoDOT Intelligent Transportation System (ITS) In-Ground Facilities (conduit, cable, and/or pull boxes) that may be in conflict with in-ground installation locations as noted in the plans.

2.0 Materials. The materials used for relocating MoDOT ITS In-Ground Facilities shall be per MoDOT Approved Product List (APL) and meet all MoDOT Specifications. If the material is not in the APL, the contractor shall submit material specification documents to the Engineer and the MoDOT ITS group for review and approval.

3.0 Construction Requirements. The Contractor shall be aware there are numerous utilities present along the route in this contract. Utility locates were not performed during the design phase of the project; therefore, the extent of conflicts with utilities are unknown.

3.1 The contractor shall exercise reasonable care relocating MoDOT ITS In-Ground Facilities. Damage to any MoDOT facilities within the area of work caused by the contractor will be deemed by the Engineer as either “non-emergency” or “emergency” upon notification of the damages. Repair to damages will be performed as follows:

- a) Non-Emergency: Contractor will have 4 hours to propose a repair plan to the Engineer for a complete repair within 3 business days.
- b) Emergency: Upon notification of the damage, Contractor must immediately submit a repair plan to the Engineer which will take no more than 4 hours to respond on-site and complete repairs within 48 hours of notification of damage.
- c) In either case, if the proposed plan is unacceptable for any reason to MoDOT, repairs will be made by MoDOT with all costs billed to the Contractor.

3.2 The ITS In-Ground Facilities located within the project limits are a crucial part of the traffic operation system for this area. It is imperative that the downtime be kept to a minimum when replacing, removing, or modifying any existing ITS In-Ground Facilities.

3.3 Prior to any in-ground work, the Contractor shall request for utility locates by contacting Missouri One Call (1-800 DIG-RITE or mo1call.com) for any in-ground installation locations as per plans. If there are any conflicts with MoDOT ITS In-Ground Facilities, the Contractor shall field-verify those locations with the MoDOT Construction Inspector and shall be responsible for relocation to the satisfaction of the Engineer prior to any in-ground work.

3.4 The Contractor shall coordinate this work with the MoDOT ITS group and have the Engineer’s approval prior to performing this task.

3.5 In the case of a conduit conflict, the Contractor shall trench an area beyond the in-ground work limits, install one or two conduits (must be the same quality as the existing conduit) using Split Duct Method, relocate the existing cables into the new conduit, and seal the conduit joints per manufacturer specifications.

3.6 In the case of a fiber optic cable conflict, the Contractor shall provide the Engineer and the MoDOT ITS group an OTDR fiber testing report both before and after relocation per MoDOT Fiber Specifications.

3.7 Upon completion of this work, the Contractor shall contact the MoDOT ITS group (via email at slits@modot.mo.gov or by calling 314-275-1526) to verify that all existing MoDOT ITS devices are online and request inspection of this work. Acceptance of this work shall be the sole judgment of the Engineer and the MoDOT ITS group’s engineer.

3.8 The contractor shall restore those areas disturbed by this work or installation according to specifications herein.

4.0 Basis of Payment. Measurement and payment for “MoDOT ITS In-Ground Facility Relocation” shall be paid as Linear Feet of conduit use which includes the trenching, conduit installation, conduit coupling, pull boxes, sealing materials, cable relocation, needed fiber testing, restoration of all disturbed area, all labor and miscellaneous hardware to complete this task. Payment will be made as follows:

Item No.	Unit	Description
910-99.03	L.F.	MoDOT ITS In-Ground Facility Relocation

Y. AIRPORT REQUIREMENTS

1.0 Description. The project is located near a public use airport or heliport or is more than 200 feet above existing ground level, which requires adherence to Federal Aviation Regulation Part 77 (FAA Reg Part 77). “Near” to a public use airport or heliport is defined as follows:

- 20,000 feet (4 miles) from an airport with a runway length of at least 3,200 feet
- 10,000 feet (2 miles) from an airport with runway length less than 3,200 feet
- 5,000 feet (1 mile) from a public use heliport

2.0 The maximum height of the improvement and the assumed height of the equipment operating while performing the improvements above the current travelway during the process of evaluating the project for compliance with FAA Reg Part 77 are listed below.

- **30 Foot** maximum equipment operating height for bridge joint work on:
 - Bridge A0799 (Twins NB and SB I-55 over US-67)
 - Bridge A2221 (Twins NB and SB I-55 over UPRR)
 - Bridge A2222 (Twins NB and SB I-55 over Plattin Creek)
- **60 Foot** maximum equipment operating height for sign replacement on sign trusses at US-67 Interchange:
 - Signs 15 and 18 (SB I-55)
 - Signs 42 and 46 (NB I-55)
- **60 Foot** maximum equipment operating height for sign replacement on the following structural signs:
 - Signs 10, 14, 21, and 22 (SB I-55)
 - Signs 34, 40, 41, 49, and 51 (NB I-55)
- **25 Foot** maximum equipment operating height for all other operations.

2.1 If the contractor’s height of equipment or if the improvement itself is beyond the assumed height as indicated in Sec 2.0, the contractor will work with the resident engineer to fill out the Form 7460-1, or revise the original Form 7460-1 based upon the proposed height and resubmit, if necessary, for a determination by FAA on compliance with FAA Reg Part 77. Further information can be found in MoDOT’s Engineering Policy Guide 235.8 Airports. If the Form

7460-1 must be filed, the associated work shall not be performed prior to the FAA determination, which could take up to 45 days.

2.2 If the contractor's height of equipment and the improvement itself is below the assumed height as indicated in Sec 2.0, no further action is necessary to fulfill the requirements set forth in FAA Reg Part 77.

3.0 Basis of Payment. There will be no direct payment for any work associated with this provision. Contract time extension will be given for the time necessary to obtain or revise the FAA permit. Any delays or costs incurred in obtaining the revised permit will be noncompensable.

Z. CONSTRUCTION REQUIREMENTS

1.0 First Order of Work. For this project, the first order of work shall be for the contractor to cold mill and pave the segment of roadway at the south end of Festus and north of the I-55/US-67 Interchange. This paving shall include the two outer ramps at the north end of this interchange (Ramp 1 and Ramp 2).

1.1 High Friction Surface Treatment. Once the paving has been performed on Ramp 2 of the I-55/US-67 Interchange, the asphalt shall be allowed to cure for a minimum of 30 days but no longer than 45 days. After the 30 day cure time has been reached, the High Friction Surface Treatment (HFST) shall be placed in accordance with the HFST Special Provision above.

2.0 Project Staging. After the first order of work, the contractor shall proceed with the remainder of the bridge and paving work in the following manner: The contractor shall begin with bridge work north of Route A in either the southbound I-55 or northbound I-55 direction in a circuit or looping fashion. The contractor shall perform work on two consecutive bridges and once the bridge work is complete, perform the milling and paving in between the two structures. Then the contractor will proceed to the next bridge, complete it and pave in between. Once the work has been completed in one direction of I-55, the contractor is to begin work in the other direction. It shall be the contractor's decision which direction they will begin the work. After the work has been completed on the project north of Route A, the contractor shall proceed with the remainder of the bridge and paving work south of Route A in a similar fashion.

3.0 Bridges at Central Avenue and Third Streets (Br. A0797 and A0830). These structures are in a heavily-travelled section of I-55 and will require a structural deck overlay treatment. Staging for these structures will be to perform work on half of the bridge at a time. The work for these bridges shall be performed in one continuously placed work area in the same lane between the two structures.

3.1 The contractor shall notify the engineer a minimum of three (3) weeks prior to beginning this work to coordinate any necessary lane closures.

3.2 Time Requirements. Work on these structures shall be completed in either June or July, with the exception of the week before or the week after the Independence Day holiday. The contractor shall be permitted to have a continuous closure of one lane of I-55 for a weekend to complete the stage for that lane across both bridges. Upon completion of the first stage, the contractor shall relocate and set the necessary traffic control devices to complete the final stage for the bridges the following weekend. Work hours for these closures are listed below.

- I-55 NB Bridge work hours – continuous single lane closure from 1:00 PM Friday afternoon to 5:00 AM the following Monday morning.
- I-55 SB Bridge work hours – continuous single lane closure from 8:00 PM Friday evening to 12:00 noon the following Monday.

4.0 Coldmilling Requirements. The contractor will only be allowed to coldmill an area in which a minimum of one lift of bituminous material can be constructed in the same day’s operation.

5.0 Additional Guardrail Information.

5.1 Non-Standard Lengths Between Existing Structures. There are locations where the guardrail must tie together continuously between two existing structures. The distance between the two locations may not align exactly with a standard manufacturer’s length of guardrail. If this is the case, the contractor shall be responsible for field-measuring these locations and ordering guardrail that is properly fabricated to fit the location and meet MGS and MASH Standards. Field modifications of standard length guardrail materials will not be permitted.

5.2 Modified Terminal Connection at End Bents. On certain structures, bridge plans include a detail and indicate the need for a Modified Terminal Connection at End Bents. Where this is specified, the contractor shall furnish an MGS and MASH compliant terminal connection as shown. The payment for this item shall be paid for under the pay item 606-10.69, “MGS Bridge Approach Transition Section (Minor Route)”, paid for per each and includes all materials, labor, and equipment to install these devices.

6.0 Temporary Barrier Time Requirements. There is bridge work on this project requiring use of temporary traffic barrier to execute staged construction. With the exception of Bridges A0797 and A0830 on both NB and SB I-55 noted above, the other structures requiring the barrier and the time requirements are listed in the tables below.

SB I-55

Structure	Feature Crossed	Closure Times
Br. A1035	BNSF RR	8 PM Friday – 2 PM Monday
Br. A0953	UP RR	8 PM Friday – 2 PM Monday
Br. A0799	US 67	8 PM Friday - 2 PM Monday
Br. A2221	UP RR	20 Consecutive Calendar Days/stage*
Br. A2222	Plattin Creek	20 Consecutive Calendar Days/stage*

* Work on Br. A2221 & A2222 shall be completed simultaneously due to close proximity and traffic impacts.

NB I-55

Structure	Feature Crossed	Closure Times
Br. A0953	UP RR	5 PM Friday – 5 AM Monday
Br. A0799	US 67	1 PM Friday – 5 AM Monday
Br. A2221	UP RR	20 Consecutive Calendar Days/stage*
Br. A2222	Plattin Creek	20 Consecutive Calendar Days/stage*

* Work on Br. A2221 & A2222 shall be completed simultaneously due to close proximity and traffic impacts.

6.2 Should the contractor fail to complete the work on the above-listed structures and fully restore traffic on I-55 to its normal configuration after the completion of the construction stage, liquidated damages shall be assessed in accordance with JSP E section 3.5.

7.0 Basis of Payment. All compensation shall be considered incidental to the payment for the items that are to be constructed while completing this work. There will be no additional payment made for compliance with these specifications.

AA. SUPPLEMENTAL REVISIONS JSP-09-01U

Insert Sec 109.15, Sec 109.16 and Sec 109.17, subsequent section renumbered accordingly:

109.15 Seal Coat Price Index. Adjustments will be made to the payments due the contractor for Seal Coat placed in accordance with Sec 409 of the Standard Specifications. Adjustments will be calculated in accordance with Asphalt Cement Price Index of the General Provisions, except as defined herein.

109.15.1 Basis of Payment. To determine the adjustment for any material specified in this provision the following formula will be used.

$$A = B \times (0.68 \times 8.58/2000) \times (D - E)$$

Where: A = adjustment for Seal Coat placed during the index period
B = gallons of seal coat placed during the index period
D = average index price at the beginning of the period
E = average index price at the time of bid
0.68 = factor to reduce volume of emulsion to AC only
(use average specific gravity of 1.03 for seal coat)

109.15.2 Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid for the Asphalt Cement Price Index. Acceptance of this provision will apply to both the Asphalt Cement Price Index and Seal Coat Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the Asphalt Cement Price Index or Seal Coat Price Index.

109.16 Asphalt Underseal Price Index. Adjustments will be made to the payments due the contractor for Asphalt underseal placed in accordance with Sec 625 of the Standard Specifications. Adjustments will be calculated in accordance with Asphalt Cement Price Index of the General Provisions, except as defined herein.

109.16.1 Basis of Payment. To determine the adjustment for any material specified in this provision the following formula will be used.

$$A = B \times (8.66/2000) \times (D - E)$$

Where: A = adjustment for asphalt underseal placed during the index period
B = gallons of asphalt underseal placed during the index period
D = average index price at the beginning of the period

E = average index price at the time of bid
 (use average specific gravity of 1.04 for underseal)

109.16.2 Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid for the Seal Coat Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the Seal Coat Price Index.

109.17 Polymer Modified Emulsion Membrane Price Index. Adjustments will be made to the payments due the contractor for Polymer Modified Emulsion Membrane placed in accordance with Sec 413.30. Adjustment will be calculated in accordance with the Supplemental Asphalt Price Adjustment except as defined herein.

109.17.1 Basis of Payment. To determine the adjustment for any material specified in this provision the following formula will be used.

$$A=B \times (0.9/2000) \times (D - E)$$

Where: A = adjustment for membrane placed during the index period
 B = square yards of membrane placed during the index period
 D = average index price at the beginning of the period
 E = average index price at time of bid

109.17.2 Optional. This provision is optional. If the bidder wishes to be bound by the provision, the bidder shall execute the acceptance form in the Bid for Polymer Modified Emulsion Membrane Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election not to participate in the Polymer Modified Emulsion Membrane Price Index.

Delete Sec 403.2.5.2 and substitute the following:

403.2.5.2 Fibers. A fiber additive shall be used as a stabilizer in SMA Mixtures. Fibers shall be uniformly distributed by the end of the plant mixing process. The dosage rate for fibers shall be no less than 0.3 percent by weight of the total mixture for cellulose and no less than 0.4 percent by weight for mineral fibers.

Delete Sec 407 in its entirety and substitute the following:

407.1 Description. This work shall consist of preparing and treating an existing bituminous or concrete surface with bituminous material, in accordance with these specifications.

407.2 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Emulsified Asphalt or PG Liquid Asphalt	1015

407.3 Equipment. The contractor shall provide a system for heating and applying the bituminous material. The system shall be designed, equipped, maintained and operated such that emulsified asphalt or liquid asphalt, at even heat, may be applied uniformly on variable widths of surface up to 15 feet with uniform pressure and an allowable variation from any specified rate of ±0.01 gallon per square yard. The system shall include a calibrated tank and a

thermometer for measuring temperature of tank contents. The system shall be equipped with instrumentation that continuously verifies application rates. The calibration of the system shall be approved by the engineer prior to use, and the contractor shall furnish all equipment, material and assistance if calibration is required.

407.4 Construction Requirements.

407.4.1 Preparation of Surface. The existing surface shall be free of all dust, loose material, grease or other foreign material at the time the tack is applied. Any excess bituminous surface mixture or bituminous joint material will be removed by MoDOT without cost to the contractor before the tack is applied.

407.4.2 Application. Asphalt emulsion or PG liquid asphalt shall be applied uniformly with a pressure distributor at the minimum rates indicated in the following table. No dilution of the emulsified asphalt material shall be allowed. The tack coat material shall be heated at the time of application to a temperature in accordance with Sec 1015. The tack coat shall be properly cured and the tacked surface shall be clean of all dirt before the next course is placed.

Tack Coat Application Rates	
Surface Type	Minimum Application Rate (Gal. per sq. yd.)
New Asphalt Pavement	0.05
Existing Asphalt or Concrete Pavement	0.08

407.4.3 Tack. The tack coat shall be applied in such a manner as to cause the least inconvenience to traffic and to permit one-way traffic without tracking of asphalt emulsion. All exposed tack coat shall be covered with bituminous mixture prior to opening to traffic.

407.5 Method of Measurement. Measurement of asphalt emulsion to the nearest 10 gallons will be made in accordance with Sec 1015.

407.6 Basis of Payment. The accepted quantity of tack coat will be paid for at the contract unit price.

Amend Sec 620.10.3.1.1.1, and 620.10.3.1.1.2 to include the following:

620.10.3.1.1.1 Type 1 Preformed Marking Tape in Lieu of Type 2. Type 1 Preformed Pavement Marking Tape will be allowed in lieu of Type 2 Preformed Marking Tape (Grooved) at no additional cost to the Commission. This work shall be in accordance with Sec 620 and accompanying provisions except as modified herein.

620.10.3.1.1.2 Construction Requirements. Grooving will not be required when Type 1 Preformed Marking Tape is used.

Delete Sec 606.30.4 & 606.30.5 and substitute the following:

606.30.4 Method of Measurement. Measurement for crashworthy end terminals will be made for each unit assembled, installed and complete in place. Grading for crashworthy end terminals will be measured in accordance with [Sec 203](#) when roadway and drainage excavation is included in the contract, otherwise grading will be measured in accordance with Shaping Slopes, Class III or as directed on plans.

606.30.5 Basis of Payment. The accepted quantities of Type A, B C, D and E crashworthy end terminals, complete in place, will be paid for at the contract unit price. Payment will be considered full compensation for complete installation including any backup assemblies or other items necessary for proper installation of the end terminal or crash cushion as required. Grading for end terminals will be paid for at the contract unit price for roadway and drainage excavation if included in the contract; otherwise it will be paid for as Shaping Slopes, Class III. If the contractor elects to use a flared Type A crashworthy end terminal, additional embankment as shown on the plans shall be provided at the contractor's expense.

Insert Sec 620.80 by to including the following:

SECTION 620.80 CONTRAST PAVEMENT MARKINGS

620.80.1 Description. This work shall consist of furnishing and installing black contrasting pavement marking for intermittent markings (skips), dotted lines and solid intersection lane lines on new, and newly ground concrete surfaces. This work shall be in accordance with Sec 620 and accompanying provisions except as modified herein

620.80.2 Material. The black contrast marking shall be compatible with the white pavement marking material specified in the plans.

620.80.3 Construction Requirements.

620.80.3.1 The Contrast markings shall be accomplished by placing the black pavement marking according to manufacturer's recommendations.

620.80.3.2 The white marking shall be centered within the black marking such that there will be a 1.5 inch border of black on both sides of the white marking. Tolerances for the width and length of the black and white markings shall be in accordance with Sec 620.2.4.2.

620.80.4 Basis of Payment. There will be no direct payment for compliance with the requirements of this provision.

Delete Sec 1048.10.1.1 and substitute the following:

1048.10.1.1 Application. Application shall be in accordance with the manufacturer's recommendations.

BB. MoDOT'S CONSTRUCTION WORKFORCE PROGRAM NJSP-15-17A

1.0 Description.

1.1 Projects utilizing federal funds include contract provisions for minority and female workforce utilization in the various trade crafts used to complete construction contracts. These federal contract workforce goals are described in the section labeled "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity". These goals are included in all MoDOT federal aid contracts and are under the authorization and enforcement of the U.S. Department of Labor (US DOL).

1.2 The Federal workforce requirement (Goals – TABLE 1) is authorized in 41 CFR Part 60-4 and Executive Order 11246 which set Equal Employment Opportunity goals with Affirmative Action requirements.

1.3 The required federal aid workforce provisions noted above, coupled with the following additional contract provisions, constitute MoDOT's Construction Workforce Program herein called Program.

1.4 This provision does not require pre-qualification nor is it a condition of award.

1.5 The Program does not eliminate or limit any actions the US DOL may take in relation to this contract's federal provisions.

1.6 The Program goals included in the contract are separate from any Disadvantaged Business Enterprise (DBE) or On-The-Job (OJT) training provision that may be included as contract provisions. DBE and OJT goals may or may not be included in a contract based on the individual size of contracts, type of contract work, anticipated length of contract, available and willing resources or other reasons.

1.7 Contractor, for the purpose of this provision, means the prime contractor and any and all subcontractors.

1.8 It is expected that the contractor recognizes the construction workforce goals for both minority and female workers in the project's county and make efforts to attain those goals, if possible, through the existing workforce makeup of the prime (including subcontractors) that will be on the project and/or through hiring opportunities that may arise for the project. However, it is not the intent of this provision to compel any contractor to displace existing workforce or move workers around to just meet the workforce goals.

1.9 If the contractor's existing Missouri construction workforce meets or exceeds the federal workforce goals established in Table 1, then the OJT goal (Training Provision) if included in the contract, does not be apply.

1.10 Contractor's Workforce Plan. The Contractor shall submit its Workforce Plan a minimum of 1 week before construction starts. One plan shall be submitted for the project that shall include the cumulative planned workforce of the prime and subcontractor(s). The contractor shall prepare the plan, for total minority and female utilization, regardless of the craft. The Engineer will provide the Contractor with comments regarding their Workforce Plan prior to the start of construction. Once work starts, all monthly reporting shall include the craft of each worker reported. If the contractor's plan includes project manager, direct project support roles, project testers or other project professionals, these designations should also be included in addition to the workers designated by craft such as laborer, operator, carpenter, ironworker and others.

1.11 The plan accepted by the engineer before the start of construction will be the effort expected of the prime contractor to maintain during the life of the project.

1.12 If the contractors planned project workforce plan (including OJT hours if included in the contract) is short of the goals included in Table 1, there is opportunity for the contractor to receive a reimbursement of \$10.00 / hour for any new project minority and female hires needed through the remainder of the project. The reimbursement is applicable to work that qualifies for

prevailing wage under the federal Davis-Bacon Act, 40 U.S.C. §§ 3141–3148, in accordance with an approved workforce plan. Any reimbursement must be pre-approved by the Engineer. The reimbursement is provided as a remedy to the contractor and as an aid in the long-term growth of experienced persons in the building of roads and bridges in Missouri. The contractor shall manage the plan through the life of the project as described in the plan or as modified, in coordination with the Engineer. The total amount available per project is not capped.

1.13 The Contractor's workforce plan may include existing construction support and professional services staff.

2.0 Forms and Documentation. The bidder must submit the following documents if awarded the contract:

Cumulative Workforce Utilization Reports. This report is contract specific. One report shall be submitted to the Engineer by the 15th of each month. The report will be used to report the total workforce compliance data for the prime contractor and all subcontractors retained by the contractor on the Commission's construction contract. The reporting shall include the workforce hours per each craft broken down by gender and ethnicity. Construction Support, testing and other professional services hours shall be included as these hours are part of the overall plan. The report will include the previous month's hours worked for the project. For projects less than 60 days in length, only one report with total hours worked by classification is required at substantial completion of construction.

3.0 Methods for Securing Workforce Participation and Good Faith Efforts.

3.1 By submitting a bid, the Bidder agrees, as a material term of the contract, to carry out MoDOT's Construction Workforce Program by making good-faith efforts to utilize minority and female workers on the contractor's job sites to the fullest extent consistent with submitting the lowest bid to MoDOT. The Bidder shall agree that the Program is incorporated into this document and agree to follow the Program. If a bidder is unable to meet the workforce goals at the time of bid, it shall be required to objectively demonstrate to MoDOT that the goals have been met or demonstrate a good faith effort has been made with the level of effort submitted prior to the start of construction.

3.2 The Engineer, through consultation with MoDOT's External Civil Rights (ECR's) Division, may determine that the contractor has demonstrated that good-faith efforts to secure minority and female participation have been made.

3.3 In evaluating good-faith efforts, the ECR's Division will take into consideration the affirmative actions listed in the Federal Provisions (including provisions of Executive Order 11246).

3.4 MoDOT's Program allows the contractor flexibility to implement a project specific workforce and improve the diversity of their existing workforce that can be utilized across various areas of the state to meet future MoDOT Program goals and Federal Provisions.

3.5 If the contractor's approved plan changes during the project and/or the available workforce changes from what is approved at any time, it is the contractor's responsibility to remedy, in coordination with MoDOT's ECR Division, the conditions as outlined and made available through this provision.

4.0 Compliance Determination. (Required with project closeout) All documentation and on-site information will be reviewed by MoDOT's ECR Division in making a determination of whether the contractor made sufficient good faith efforts to meet the compliance with MoDOT's Construction Workforce Program.

5.0 Liquidated Damages. If the contractor elects to not submit a workforce plan prior to work starting or fails to fulfill their workforce plan committed to prior to the start of construction, the contractor will be required to establish a good-faith effort determination, as to why either of these events occurred. MoDOT may sustain damages, the exact extent of which would be difficult or impossible to ascertain, as this impacts the cost of future road and bridge construction. Therefore, in order to liquidate those damages, MoDOT shall be entitled, at its sole discretion, to deduct and withhold the following amounts: **The sum of one thousand five hundred (\$1,500)**

6.0 Administrative Reconsideration. The contractor shall be offered the opportunity for administrative reconsideration upon written request related to findings and/or actions determined by MoDOT's ECR's Division. The Administrative Reconsideration Committee shall be composed of individuals not involved in the original MoDOT determination(s).

7.0 Available Pre-Apprentice Training Programs. The Commission has established a labor force recruiting program intended to assist contractors in identifying, interviewing and hiring qualified job applicants. MoDOT strongly encourages the hiring of individuals from the MoDOT funded pre-apprentice training programs.

8.0 Independent Third-Party Compliance Monitor (Monitor). MoDOT may utilize a monitor that will be responsible for tracking the project's workforce utilization for the information the contractor submits. The contractor and its subcontractors shall allow the monitor access to their reports, be available to answer the monitor's questions and allow the monitor to access to the site and to contractor and subcontractor employees. The monitor shall abide by the contractor's project site protocols.

9.0 Regional Diversity Council (Council). (Applicable to the Kansas City and St. Louis District regions only) The Council shall consist of local community leaders, leadership of local construction trades, MoDOT staff, Industry representation, and a representative(s) from the Federal Highway Administration. The Council will meet quarterly and evaluate the workforce activity per each project according to the following criteria:

- a. Review monthly workforce reports.
- b. Review progress toward the stated project workforce program.
- c. Review findings of Administrative Reconsideration hearings.
- d. Recommend *other* workforce actions to MoDOT.

10.0 Federal Workforce Goals.

Female Participation for Each Trade is 6.9% Statewide for Missouri.

Minority Participation for Each Trade is shown below in Table 1.

TABLE 1:

County	Goal (Percent)	County	Goal (Percent)
Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4
Barry	2.3	Madison	11.4
Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4
Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4
Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4
DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4
Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3

Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4
Lawrence	2.3	Wayne	11.4
Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

This contractor and subcontractor shall abide by the requirements of 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

As used in these specifications:

"Minority" includes;

- (i) Black (all person having origins in any of the Black African racial groups not of Hispanic origin);
- (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
- (iii) Asian and pacific islander (all persons having origins in any of the original peoples of the Far East, southeast Asia, the Indian Subcontinent, or the Pacific Islands; and
- (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

CC. (DBE) PROGRAM REQUIREMENTS NJSP-15-41A

1.0 Description: Insert the following additional program provisions in the Disadvantaged Business Enterprise (DBE) Program Requirements of the General Provisions and Supplemental Specifications to Missouri Standard Specifications for Highway Construction.

13.6 Factors Used to Determine if a DBE Regular Dealer of Liquid Asphalt is Performing a CUF. The DBE must be responsible with respect to materials and supplies used on a contract perform all of the following, pursuant to 49 CFR § 26.55(c)(1) and 7 CSR 10-8.131:

- (a) Negotiating price.
- (b) Determining quality and quantity.
- (c) Ordering the material.
- (d) Paying for the material itself.
- (e) 30% of the work must be performed by the DBE's permanent employees (which does not include owner-operators or leased employees) or those hired by the DBE firm for the project from an independent source other than the prime contractor, such as a union hall. For at least 30% of the work the DBE's owned (not leased) equipment shall be used and the DBE must provide documentation that this owned equipment was used on the project as required by this provision.
- (f) For up to 70% of the remaining work the equipment used by the DBE must be by long term lease (at least one year) with another DBE or non-DBE but not the prime contractor. The DBE must have absolute priority over other businesses or entities to use the long term leased equipment and must display the name and identification number of the DBE.
- (g) The Contractor shall require DBE subcontractors to provide documentation in one of the following formats: bills of lading, hauling tickets, shippers manifest, and/or paid invoices. Regardless of the document format, the document(s) shall include the following information: name of the carrier, full name of the driver, driver ID number(s), truck and tanker ID or VIN number, and reflect the contract number, job number, county and route.

The contract number, job number, county and route can be reported through a consignee number or lift number, as long as the DBE Subcontractor has provided the consignee number, or lift number, along with project specific information which shall include contract number, job number, county and route.

The documentation must be submitted and generated by the DBE Subcontractor and be printed on letterhead or other similar documentation outlining the contact information for the DBE Subcontractor. In addition the documentation shall indicate the quantity and amount invoiced to the prime contractor (Such as an invoice). **“MoDOT's DBE Contractor/Subcontractor Project Trucker and Equipment List”** (Form 1) will be provided by MoDOT and shall be completed and submitted to MoDOT by the DBE Subcontractor or Liquid Asphalt Supplier before Asphalt Operations begin. The DBE Subcontractor shall report all trucks and tankers they currently own and all full time drivers that they employ, including all of the drivers numbers for each terminal the drivers pick up from. In addition the DBE Subcontractor shall include a list of “long term” leased equipment, along with drivers and drivers' numbers to the DBE Subcontractor Project Trucker and Equipment List. The DBE Subcontractor shall attach copies of all current long term lease agreements to the DBE Subcontractor Project Trucker and Equipment List.

- (h) DBE Trucking/Hauling regulations do not apply to regular dealers of liquid asphalt.

13.7 When a DBE Regular Dealer of Liquid Asphalt is Not Eligible for DBE Credit.

(a) "If its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation." 49 CFR § 26.55(c)(2)

(b) If the type of transaction does not allow the DBE subcontractor to perform one of the four required functions, such as a prime contractor deciding the price of a commodity to be supplied by the DBE, that transaction is not eligible for DBE credit.

(c) Work that is performed with trucks that are not owned nor under a lease of at least one year by the DBE will not be eligible for DBE credit.

(d) A lack of documentation verifying that at least one DBE owned (not leased) tractor and tanker/ trailer was used to haul liquid asphalt on the project will result in no DBE credit given on that project.

13.8 This form will be completed by the inspector from the project office during the time of the project. MoDOT will use the *MoDOT DBE Job-Site Review CUF Determination Form* to verify CUF was performed on the project, a copy of which is available on the MoDOT Contractor Resource website.



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

COPY: Nicholas Correnti-SL/de

FROM: Diane Roegge 
Environmental Chemist

DATE: June 1, 2016

SUBJECT: Materials
Asbestos Inspection & Heavy Metal Paint Survey
Job No. J6I3131
Route I-55
Jefferson County

Bridge #
A-0797R2
A-0797R3
A-0799R4
A-0799R5
A-0830R2
A-0830R3
A-0944R2
A-0944R3
A-0945R3
A-0945R4
A-0946R4
A-0946R5
A-0951R3
A-0951R4
A-0953R2
A-0953R3
A-1035R3
A-2221R2
A-2221R3
A-2222R3
A-2222R4

We are providing you with the results of the requested inspection on the above referenced property. The inspection report contains an asbestos and a heavy metals survey, unless otherwise requested. The asbestos inspection included sample collection of suspect asbestos-containing material and National Voluntary Laboratory Accreditation Program (NVLAP) accredited testing

to confirm the presence of asbestos. This asbestos and heavy metal paint report includes four different report forms. Form T746 lists all of the samples taken during the asbestos inspection. Form T747 shows only those samples that tested positive for Category I nonfriable asbestos-containing materials that may remain in the structure during demolition, if kept adequately wet to avoid visible air emissions. Form T748 shows only those samples that tested positive for asbestos and require removal prior to demolition. Form C760 lists all paint samples taken during the heavy metal paint survey and their metal content.

In accordance with the National Emissions Standard for Hazardous Air Pollutants (NESHAP), as well as city and county asbestos abatement regulations - Registration, Notification, and Performance Requirements, regulated asbestos-containing material (RACM) namely, Friable and Category II nonfriable, have a high probability of becoming friable under normal demolition forces. Practices and procedures for removal prior to demolition, disposal, and clearances should be in accordance with referenced regulations. Missouri Department of Transportation policy is to perform asbestos abatements in accordance with NESHAP.

In accordance with Missouri Department of Natural Resources' Technical Bulletin "Managing Construction and Demolition Waste" dated January 31, 2003, a heavy metal paint survey has been performed on the above referenced property. We are providing you with the results of this survey. This survey includes locating painted concrete, block and/or brick surfaces, sampling/testing the painted surface(s) to determine if hazardous heavy metals are present. Non-hazardous painted concrete, blocks, or bricks may be used as clean fill materials, if properly handled. You must contact the Central Office Design Division for proper handling of the reported painted surfaces.

Although our survey included observing and sampling behind walls, above ceilings, beneath floors, etc., it is possible that potentially hidden asbestos-containing materials may exist within the structure. To our knowledge, we have located all suspect asbestos-containing and all painted concrete, block and brick surfaces. If suspect asbestos-containing materials or if painted concrete, block and/or brick surfaces are observed in addition to those reflected in this inspection report, then please advise us immediately so that we may schedule a follow-up inspection.

Should you have any questions regarding these reports, please contact me at (573) 526-4359.

db/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st louis \(sl\)/jxi's/j6i3131/dr1606011.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st%20louis%20(sl)/jxi's/j6i3131/dr1606011.docx)
Attachments



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge A-0799R4

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR549
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	236,009 ppm** (23.6%)
Cadmium (Cd)	267 ppm
Selenium (Se)	LOD
Barium (Ba)	251,134 ppm (25.1%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1969. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis\(sl\)/jxi's/j6i3131/lbp_a0799r4.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a0799r4.docx)



MEMORANDUM
Missouri Department of Transportation
Construction and Materials
Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge A-0799R5

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR548
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	121,067 ppm** (12.1%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	193,431 ppm (19.3%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1967. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st.louis\(sl\)/jxi's/j613131/lbp_a0799r5.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st.louis(sl)/jxi's/j613131/lbp_a0799r5.docx)



MEMORANDUM
Missouri Department of Transportation
Construction and Materials
Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J6I3131
I-55/Jefferson County
Bridge A-0945R3

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR550
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	159,258 ppm** (15.9%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	121,390 ppm (12.1%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1967. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis\(sl\)/jxi's/j6i3131/lbp_a0945r3.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a0945r3.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge A-0945R4

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR551
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	147,177 ppm** (14.7%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	126,707 ppm (12.7%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1967. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis\(sl\)/jxi's/j613131/lbp_a0945r4.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j613131/lbp_a0945r4.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge A-0953R2

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR552
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	157,686 ppm** (15.8%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	196,095 ppm (19.6%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System U paint, applied in 1966. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis \(sl\)/jxi's/j6i3131/lbp_a0953r2.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a0953r2.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: May 23, 2017

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge A-0953R3

On May 23, 2016, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	16MFJR553
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	209,453 ppm** (20.9%)
Cadmium (Cd)	225 ppm
Selenium (Se)	LOD
Barium (Ba)	287,813 ppm (28.8%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1966. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st louis \(sl\)/jxi's/j6i3131/lbp a0953r3.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st%20louis%20(sl)/jxi's/j6i3131/lbp%20a0953r3.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: September 18, 2015

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge# A1035R3

On September 15, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR206
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	314,665 ppm** (31.5%)
Cadmium (Cd)	442 ppm
Selenium (Se)	LOD
Barium (Ba)	195,352 ppm (19.5%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint, applied in 1966. The field check found a System S, applied in 2001. The results verify that a System A paint is present under the System S.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis \(sl\)/jxi's/j6i3131/lbp_a1035r3.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a1035r3.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: September 22, 2015

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge# A2221R2

On September 17, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR238
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	242,888 ppm** (24.3%)
Cadmium (Cd)	351 ppm
Selenium (Se)	LOD
Barium (Ba)	LOD
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 2006. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st louis \(sl\)/jxi's/j6i3131/lbp a2221r2 nb.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st%20louis%20(sl)/jxi's/j6i3131/lbp%20a2221r2%20nb.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: September 22, 2015

SUBJECT: Materials
Job No. J6I3131
I-55/Jefferson County
Bridge# A2221R3

On September 17, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR229
Arsenic (As)	19,684 ppm** (2.0%)
Chromium (Cr)	LOD*
Lead (Pb)	330,153 ppm (33.0%)
Cadmium (Cd)	502 ppm
Selenium (Se)	LOD
Barium (Ba)	LOD
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 2006. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis \(sl\)/jxi's/j6i3131/lbp_a2221r3_sb.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a2221r3_sb.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: ShirleyNorris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: September 22, 2015

SUBJECT: Materials
Job No. J613131
I-55/Jefferson County
Bridge# A2222R3

On September 17, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR236
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	96,390 ppm** (9.6%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	83,489 ppm (8.3%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1997. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis\(sl\)/jxi's/j6i3131/lbp_a2222r3_nb.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a2222r3_nb.docx)



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Shirley Norris-SL/de

CC:

FROM: Frank Reichart 
Environmental Chemist, Lead License #110506-300003364

DATE: September 22, 2015

SUBJECT: Materials
Job No. J6I3131
I-55/Jefferson County
Bridge# A2222R4

On September 17, 2015, a paint screening for regulated heavy metals was performed on the subject bridge. The following results were obtained:

	15MFJR231
Arsenic (As)	LOD*
Chromium (Cr)	LOD
Lead (Pb)	117,287 ppm** (11.7%)
Cadmium (Cd)	LOD
Selenium (Se)	LOD
Barium (Ba)	97,176 ppm (9.7%)
Mercury (Hg)	LOD
Silver (Ag)	LOD

*LOD = below the detection limit of the instrument

**ppm = parts per million

TMS paint data indicated a System A paint was under the System S paint, applied in 1997. The results verify the information found in TMS.

The existing paint system is lead-based paint (LBP). Therefore any painting project will be subject to DHSS notification and regulation.

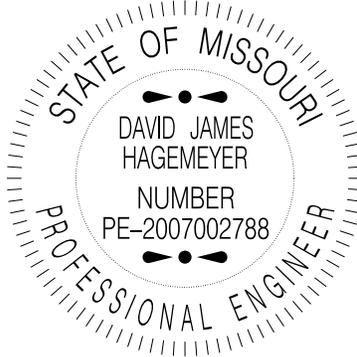
Should any further screenings be required, please contact Todd Bennett, Chemical Laboratory Director, at (573) 751-1045. Should you have any questions regarding the screenings, feel free to call me at (573) 526-4359.

fr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/st_louis\(sl\)/jxi's/j6i3131/lbp_a2222r4_sb.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/st_louis(sl)/jxi's/j6i3131/lbp_a2222r4_sb.docx)

TABLE OF CONTENTS

- A. Construction Requirements
- B. Removal of Existing Bearings
- C. Structural Steel Requirements
- D. Rehabilitate Bearing
- E. Total Surface Hydro Demolition and Monolithic Deck Repair
- F. Surface Sealing Concrete
- G. Clean and Epoxy Seal
- H. Concrete Wearing Surface Repair
- I. Steel Fiber Reinforced Concrete Overlay
- J. Paint Removal Requirements
- K. Waterproofing Membrane
- L. Macrotecture Surface for UBAWS
- M. Protection of BNSF Railway Company Interest
- N. Union Pacific Railroad Requirements

 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636
	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. J6I3131 Jefferson County, MO Date Prepared: 10/12/2016
	(Empty space)

JOB SPECIAL PROVISIONS (BRIDGE)

A. CONSTRUCTION REQUIREMENTS

1.0 Description. This provision contains general construction requirements for this project.

2.0 Construction Requirements. Plans for the existing structure(s) and shop drawings for A1035 are included in the contract in the bridge electronic deliverables zip file for informational purposes only.

2.1 In order to assure the least traffic interference, the work shall be scheduled so that a lane closure is for the absolute minimum amount of time required to complete the work. A lane shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

2.2 Qualified special mortar shall be a qualified rapid set concrete patching material in accordance with [Sec 704](#). A qualified rapid set concrete patching material will not be permitted for repairing concrete deck (half-soling), deck repair with void tube replacement, full depth repair, modified deck repair and substructure repair (formed) unless a note on the bridge plans specifies that a qualified special mortar may be used.

2.3 Provisions shall be made to prevent any debris and materials from falling into the stream, lake or onto the roadway. Any debris and materials that falls below the bridge outside the limits mentioned previously and if determined necessary by the engineer, the debris shall be removed as approved by the engineer at the contractor's expense. Traffic under the bridge shall be maintained in accordance with the contract documents. See the railroad special provisions for additional requirements over railroad right-of-way.

2.4 Any damage sustained to the remaining structure as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

2.5 Provisions shall be made to prevent damage to any existing utilities. Any damage sustained to the utilities as a result of the contractor's operations shall be the responsibility of the contractor. All costs of repair and disruption of service shall be as determined by the utility owners and as approved by the engineer.

2.6 A washer shall be required under head and nut when any reaming is performed for bolt installation.

2.7 SSPC-SP2 and SSPC-SP-3 surface preparation shall be in accordance with the environmental regulations in [Sec 1081](#) and collection of residue shall be in accordance with [Sec 1081](#) for collection of blast residue. SSPC-SP6, SSPC-SP10 and SSPC-SP-11 surface preparation shall be in accordance with the approved blast media and environmental regulations in [Sec 1081](#) and collection of blast residue shall be in accordance with [Sec 1081](#).

3.0 Coating Information.

3.1 Straps Removal. Exposed portions of straps for stay-in-place forms shall be removed prior to surface preparation. Straps need not be removed in areas that are not being painted. Flame cutting will not be permitted. The contractor shall exercise care not to damage the existing structure during removal. Any damage sustained to the remaining structure as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

JOB SPECIAL PROVISIONS (BRIDGE)

3.2 Slab Drains and Stay-In-Place Forms. The stay-in-place forms, the slab drains and slab drain brackets shall not be recoated or overcoated or damaged during the painting operation. Any portion of the slab drain bracket that is blast cleaned shall be recoated with System G. Any damage sustained as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

3.3 Existing Bridge Information. The informational plans may be used by bidders in determining the amount of steel to be cleaned and painted/coated with the full understanding that the State accepts no responsibility for accuracy of the estimated tons of existing steel shown in the table below. The bidder's acceptance and use of the estimate shown below shall be no cause for claim for any final adjustment in the contract unit price for the work involved in repainting. Each bidder is expected to carefully examine the structure(s), investigate the condition of existing paint and to prepare their own estimate of quantities involved before submitting a bid. Surface preparation and applying field coatings to the structural steel will be based on the contract plan quantities. No final measurements will be made.

Bridge No.	Estimated Tons			Existing Paint System	Lead Based
	Coating System		Total		
	System G	Calcium Sulfonate			
A07997	7		7	S over A	Yes
A07998	7		7	S over A	Yes
A10354	10		10	S over A	Yes
A22214	81		81	S over A	Yes
A22215	78		78	S over A	Yes

3.4 Environmental Contact. Environmental Section may be contacted at the below address or phone number. The Missouri Department of Health may be contacted at 573-751-6102.

- (a) MoDOT - Design Division - Environmental Section
 PO Box 270
 105 W Capitol Ave, Jefferson City, MO 65102
 Telephone (573) 526-4778

3.5 Approved Smelter and Hazardous Waste Treatment, Storage and Disposal Facility. The following is the approved smelter and hazardous waste treatment, storage and disposal facility:

Doe Run Company-Resource Recycling Division-Buick Facility
 Highway KK
 Boss, MO 65440
 Telephone 573-626-4813

4.0 Method of Measurement. No measurement will be made.

5.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for other items included in the contract.

JOB SPECIAL PROVISIONS (BRIDGE)

B. REMOVAL OF EXISTING BEARINGS

1.0 Description.

1.1 This work shall consist of but is not limited to raising and supporting existing girders and/or stringers at the locations specified on the plans, removing and disposing of these existing bearings and anchor bolts and performing all other required preparations prior to installing new bearings and anchor bolts as shown on plans.

1.2 The responsibility for the design and construction of falsework required to support the girders and/or stringers during bearing removal and new bearing installation shall rest solely with the contractor. The design shall insure that the falsework shall be capable of supporting all applicable dead loads, stage live loads and any construction loads. The design shall also provide an adequate factor of safety when selecting the temporary support members. The falsework design and working plans including detailed computations shall be signed, sealed and stamped by a registered professional engineer in the State of Missouri in accordance with Authentication of Certain Documents in [Sec 107](#).

1.3 Existing girders and/or stringers shall be subject to minimal construction loading by performing this work with the stage construction live loads shifted from being directly overhead.

1.4 Existing bearing top plates shall be removed and girders and/or stringers surfaces cleaned and coated before placement of new bearings. The removal of the existing bearing top plate and cleaning shall be completed in such a manner as to not cause any damage to the existing bottom flange. Method of removal shall be as approved by the engineer.

2.0 Construction Requirements and Materials.

2.1 Raising and Supporting the Superstructure.

2.1.1 Before commencing operations, the contractor shall submit to the engineer for review the method and sequence of operation proposed to be used in performing this work. With the deck removed, the contractor shall exercise caution when supporting the structural steel and shall raise the girders and/or stringers the minimum extent necessary to perform this work with a maximum of ¼ inch raise. Raising the girders and/or stringers at the location of reset bearings shall be done in a manner to prevent any damage to the adjoining steel and concrete deck. The lifting operation shall be done only when authorized, but such authorization shall not relieve the contractor of responsibility for the safety of the operation or for damage to the structure. Any damage caused by the contractor's operations shall be repaired at the contractor's expense as approved by the engineer.

2.1.2 Temporary timber supports (bearing stiffeners) shall be placed between girder/stringer flanges at each jacking location.

2.1.3 Raising the girders and/or stringers shall be done simultaneously and shall be done to prevent damage to the adjoining steel.

2.1.4 Existing end diaphragms at bent may require loosening or completely removed in order to install new anchor bolts and bearings as authorized by the engineer.

2.1.5 Bolts of existing end diaphragms that have to be loosen or removed shall be replaced with like size galvanized high strength bolts with washer under head and nut.

2.2 Bearing Removal.

JOB SPECIAL PROVISIONS (BRIDGE)

2.2.1 After the structural members are supported, the contractor shall remove the existing bearings.

2.2.2 The contractor shall remove the existing anchor bolts to one inch below the concrete surface or to the extent required for installation of the new anchor bolts as required by the plans and as authorized by the engineer. The resultant hole shall be filled with an approved special mortar in accordance with [Sec 704](#).

2.3 Cleaning and Painting. Faying surfaces where existing end diaphragms will be reconnected and inside of drilled holes and the bottom surface of existing flange which will become faying surfaces of new connections shall be cleaned and painted with one coat of Gray Epoxy-Mastic Primer (non-aluminum).

3.0 Method of Measurement. Final measurement for removing existing bearings and preparation for the installation of the new bearings will be made per each.

4.0 Basis of Payment. Payment for furnishing and placing all temporary falsework, materials, removals, disposal of all falsework, labor, tools, equipment and all incidentals necessary to complete this item will be considered completely covered by the contract unit price for Removal of Existing Bearings.

C. STRUCTURAL STEEL REQUIREMENTS

1.0 Description. This provision contains general structural steel requirements for this project.

2.0 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as shown below. The gray epoxy-mastic primer (non-aluminum) shall be compatible with concrete and produce a dry film thickness of no less than 3 mils (75 µm).

Item	Section
Structural Steel Construction	712
Gray Epoxy-Mastic Primer (non-aluminum)	1045
Structural Steel Fabrication	1080
Coating of Structural Steel	1081

3.0 Construction Requirements.

3.1 Before fabrication of new metalwork, the contractor shall make the necessary measurements in the field to verify dimensions of the existing structure. Any deviation of the dimensions shown on the plans shall be called to the engineer's attention. The contractor shall be responsible for developing all required dimensional adjustments and coordinating the implementation of the dimensional adjustments with all involved fabricators and subcontractors.

3.2 A minimum edge distance shall be maintained for all field drilled holes. The minimum edge distance for bolts shall be as shown in table below measured from the centerline of holes.

Bolt Diameter inch (mm)	Minimum Edge Distance inch (mm)
3/4 (19.0)	1-1/4 (32)
7/8 (22.2)	1-1/2 (38)

JOB SPECIAL PROVISIONS (BRIDGE)

Bolt Diameter	Minimum Edge Distance
inch (mm)	inch (mm)
1 (25.4)	1-3/4 (45)

3.3 The surfaces of existing steel that will become faying surfaces for new connections shall be cleaned according to the manufacturer's recommendation and with a minimum of SSPC-SP-3 surface preparation and coated with one prime coat of Gray Epoxy-Mastic Primer (non-aluminum) in accordance with [Sec 1081](#).

4.0 Method of Measurement. No measurement will be made.

5.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for the structural steel items included in the contract. No payments or adjustments will be made where new members are affected due to any deviation of the dimensions shown on plans or shop drawings.

D. REHABILITATE BEARING

1.0 Description. This work shall consist of raising and supporting the existing stringers as required to reset the bearing assemblies at End Bent No. 4 (Br. No. A22214 and A22215) to a vertical alignment, inspect, clean, lubricate and coat existing bearings prior to being reset, as specified on the plans and as directed by the engineer.

2.0 Construction Requirements.

2.1 Raising and Supporting the Superstructure.

2.1.1 Before commencing operations, the contractor shall submit to the engineer for review the method and sequence of operation proposed to be used in performing this work. The contractor shall exercise caution when supporting the structural steel and shall raise the stringers the minimum extent necessary to perform this work and a maximum of ¼ inch. Raising the stringers at the location of reset bearings shall be done in a manner to prevent any damage to the adjoining steel and concrete deck. The lifting operation shall be done only when authorized, but such authorization shall not relieve the contractor of responsibility for the safety of the operation or for damage to the structure. Any damage caused by the contractor's operations shall be repaired at the contractor's expense as approved by the engineer.

2.1.2 Temporary timber supports (bearing stiffeners) shall be placed between stringer flanges at each jacking location.

2.1.3 Raising the stringers shall be done simultaneously and shall be done to prevent damage to the adjoining steel.

2.2 Bearing Inspection and Repair. After the structural members are supported, each bearing shall be inspected for deterioration. Any or all portions of the deteriorated bearings shall be replaced as determined by the engineer. When required to remove a bearing, removal of the bearing shall cause no damage to the existing anchor bolts in the concrete beam. Prior to removal or disassembly, all bearings shall be match marked for reassembly at ends of each piece by stamping an identification number in the metal with a steel stencil. All existing bearing material determined to be replaced shall be disposed of by the contractor in accordance with [Sec 202](#).

2.3 Cleaning, Lubricating and Coating. Bearings shall be cleaned in accordance with [Sec 1081](#). After cleaning and just prior to resetting the bearings, contact surfaces between the bearing pin and cradle shall be given a heavy coat of graphite and oil. After bearings are reset, the bearings shall receive a final cleaning and a prime coat. The field coat(s) shall be applied when the existing structural steel is coated. Coating of bearings shall be as indicated for coating existing steel as specified in the contract documents.

3.0 Method of Measurement. Measurement for the above described work on existing bearings will be made per each.

4.0 Basis of Payment. When required, payment for furnishing any new bearing material not called for in the contract plans will be in accordance with [Sec 109](#). Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for Rehabilitate Bearing.

E. TOTAL SURFACE HYDRO DEMOLITION AND MONOLITHIC DECK REPAIR

1.0 Description. This provision describes requirements for the hydro demolition process and all other preparatory and repair work associated with the placement of a concrete wearing surface on a bridge deck. Included in this provision are the requirements for scarification of the bridge deck, removal of unsound existing deck repairs, total surface hydro demolition of the deck, preparation of the deck for a concrete wearing surface, and monolithic deck repair.

2.0 Mechanical Scarification of the Bridge Deck.

2.1 Prior to hydro demolition, any existing wearing surface (concrete, asphalt, seal coat, etc.) shall be removed and the original deck shall be scarified 0.5 inch or to the adjusted depth described in Section 2.4. Scarification shall be done by mechanical means such as cold milling.

2.2 Removal of any existing deck surface, including measurement and payment, shall be in accordance with Sec 216.30. Scarification is included in the cost of the removal of the existing wearing surface.

2.3 For decks that do not have an existing wearing surface, the deck shall be scarified with measurement and payment made in accordance with Sec 216.20, Scarification of Bridge Decks.

2.4 Prior to scarification of the existing deck, the contractor shall verify the depth of the top mat of reinforcing steel within the deck. If the depth of the reinforcing steel is less than 0.5 inch, the cold milling depth shall be reduced to avoid damage to the reinforcing steel. Any reinforcing steel damaged by the milling operation shall be repaired or replaced at the contractor's expense.

3.0 Removal of Unsound Existing Deck Repairs.

3.1 Following scarification of the deck and prior to hydro demolition, the engineer will visually inspect and perform a sounding test on all existing deck repairs. Existing deck repairs are defined as any repairs made to the original deck previous to this project. Existing deck repairs that are loose, partially delaminated, or otherwise unsound, will be measured by the engineer and marked for removal. The contractor shall remove the existing deck repairs per Sec

704.4.1.3. Removal shall not include any unsound original bridge deck concrete. Payment for removal of any loosened existing deck repairs will be made per Section 6.2.

3.2 Following removal of unsound existing deck repairs, all debris shall be removed from the deck prior to hydro demolition, at no additional cost.

4.0 Total Surface Hydro Demolition and Deck Repair.

4.1 Description. This work shall consist of the selective removal of all unsound concrete over the entire top surface of the bridge deck, and establishment of a highly rough and bondable surface, with a single pass of hydro demolition equipment. Unsound concrete is defined as existing bridge deck concrete that is deteriorated, spalled or as determined by the engineer to be unacceptable.

4.2 Material. Water used in the hydro demolition shall be in accordance with Sec 1070.

4.3 Environmental Compliance.

4.3.1 Prior to the start of any bridge repair work, the contractor shall submit to the engineer for review an Environmental Compliance Plan (ECP) that ensures compliance with all federal, state, and local environmental laws and regulations. The ECP shall include specific details of the contractor's plan for containment, filtering, and disposal of water, slurry, and other debris, including all best management practices (BMPs) that the contractor plans to utilize to prevent environmental pollution and protect the waters of the state.

4.3.2 All drains, joints, and other locations where discharge water could exit the deck shall be blocked in order to direct runoff to a central collection and filtering location, as designed by the contractor. When runoff is allowed to be dispersed adjacent to the bridge, BMPs shall be utilized to contain and filter the slurry to prevent the discharge of slurry or other contaminants.

4.3.3 No direct payment will be made for compliance with this ECP, including, but not limited to, containment of the water and slurry, installing, maintaining, and removing the BMPs, filtering, and disposal of all waste materials.

4.4 Equipment.

4.4.1 The hydro demolition process shall consist of a water supply system, a high pressure water pumping system, and a demolition type unit. The demolition unit shall be robotic, computerized, and self-propelled, utilizing a high pressure water jet stream that is capable of removing concrete to the desired depths specified with a single pass of the unit, including the selective removal of all unsound concrete. It shall also be capable of cleaning rust and concrete particles from all exposed reinforcing steel. The resulting concrete surface profile shall be one that is highly rough and bondable.

4.4.2 The hydro demolition equipment shall provide shielding to ensure containment of all dislodged concrete within the removal area in order to protect the traveling public and work crew from flying debris on, adjacent to, and below the work site.

4.4.3 Vacuum equipment shall be utilized for clean-up of hydro demolition debris. This equipment shall be equipped with fugitive dust control devices and shall be capable of removing wet debris and standing water in the same pass.

JOB SPECIAL PROVISIONS (BRIDGE)

4.4.4 Calibration. The hydro demolition equipment shall be calibrated on a representative sample of sound deck concrete, as directed by the engineer. The calibration will demonstrate the ability to cut to the desired depth, as indicated on the plans, in a single pass. The minimum allowable water pressure shall be 13,000 psi and the maximum water pressure shall not exceed 20,000 psi. The minimum allowable water usage shall be 55 gallons per minute. The calibration shall accomplish the desired surface roughness, profile, and cutting depth as indicated on the contract plans. The equipment shall then be moved to an area of deteriorated deck, as directed by the engineer, in order to demonstrate the ability to remove all unsound material. The equipment shall selectively remove all unsound concrete, avoid the removal of unnecessary sound concrete, and provide a highly rough and bondable surface.

4.4.4.1 If the equipment does not demonstrate the ability to produce the desired result, as determined by the engineer, the equipment shall be removed from the project and the contractor shall provide other equipment for calibration. No additional contract time or compensation will be allowed for the mobilization of replacement equipment to the work site.

4.4.4.2 After the contractor has calibrated the equipment settings to the satisfaction of the engineer so that the equipment does selectively remove all unsound concrete and provide a highly rough and bondable surface, without removing additional sound concrete, the calibration will be approved by the engineer and the contractor shall record the equipment settings as follows:

Water Pressure Gauge	
Machine Staging Control (Step)	
Nozzle Size	
Nozzle Type	
Nozzle Travel Speed	
Water Usage Rate	

4.5 Hydro Demolition Operation Requirements.

4.5.1 After calibration of the equipment, the contractor shall perform total surface hydro demolition over the entire surface of the bridge deck. The settings shall be maintained throughout the operation, unless the desired results are not being attained, in which case re-calibration shall be performed. Calibration shall be required on each bridge and when different equipment is brought to the site for use. The engineer will periodically verify the calibration settings to ensure the desired results are being attained.

4.5.2 The operator shall minimize the overlap of the individual hydro demolition passes to limit the amount of sound concrete removal.

4.5.3 When the hydro demolition process is taking place above an area of concern, the contractor shall take measures to protect that area from hydro blasting through the deck, falling debris, water runoff, or any other action that the engineer considers a risk to public safety or a risk of property damage. An area of concern shall include vehicular traffic, boat traffic, pedestrian traffic, parking areas, private property, railroad property or any other area of concern as determined by the engineer.

4.5.4 Only those vehicles directly required to perform the hydrodemolition work and clean-up, or corresponding overlay construction equipment, shall be allowed on the bridge deck. Contamination of the deck by construction equipment or any other source shall be prevented.

4.5.5 The contractor shall clean up the slurry and rubble from the hydro demolition operation as soon as possible following the hydro demolition process. This clean-up shall be completed prior to the drying of the slurry on the deck and reinforcing steel. The contractor shall utilize a vacuum collection type-system capable of removing wet debris and water in a single operation. Following the cleaning, the surface shall be free of all debris, loose material, slurry, or cement paste.

4.6 Post-Hydro Demolition Concrete Removals.

4.6.1 After the deck has been cleaned and dried, and is free of frost, the engineer will perform a second sounding test of the entire deck and identify any unsound original deck material that remains, as well as any existing deck repairs that may have been loosened during the process.

4.6.2 The contractor shall remove all identified unsound original deck material, as well as any areas on the deck that were inaccessible to the hydro demolition equipment. This removal work shall be included in the cost of the hydro demolition. Payment for removal of any loosened existing deck repairs will be made per Section 6.2.

4.6.3 All post-hydro demolition removals shall be done with pneumatic hammers no heavier than the nominal 35-pound class and operated no more than a 45 degree angle from the horizontal. Use of mechanical equipment for the purpose of chipping shall be kept to the absolute minimum to avoid creating micro-fractures on the surface of the deck.

4.6.4 Reinforcing Steel Repair. The contractor shall take steps necessary to prevent damage to existing reinforcing steel. All equipment shall be operated in a manner that does not damage the deck, reinforcing steel or superstructure components. Any damage caused by the contractors equipment or negligence shall be repaired at the contractors expense.

4.6.4.1 Reinforcing steel that is exposed by the process shall be cleaned and repaired in accordance with Sec 704, except that where the bond between the existing concrete and reinforcing steel has not been compromised, as determined by the engineer, then removal of concrete around the perimeter of the bar, as specified in Sec 704.4.1.6.3, shall not apply. Partially exposed reinforcing steel that is bonded to the deck concrete is acceptable.

4.6.4.2 Replacement of damaged reinforcing steel may include the removal of additional concrete to adequately anchor reinforcing steel to the appropriate lap splice length in accordance with Sec 706.

4.6.4.3 No direct payment will be made for additional cleaning of reinforcing steel or for removal of loose concrete from the bars. Replacement of reinforcing steel will be made at the fixed unit price in Sec 109.15, except that no payment will be made for replacement of reinforcing steel cut or broken by the contractor.

4.7 Forming for Full Depth Repairs.

4.7.1 Following removal of unsound concrete by hydro demolition and hand chipping, any areas requiring a full depth repair will be identified by the engineer.

4.7.2 If the engineer determines the full depth repair can be made monolithic with the deck overlay, the contractor shall form the bottom of the repair prior to the overlay. No payment will be made for forming the bottom of full depth monolithic repairs, including form removal.

4.7.3 If the engineer determines the full depth repair shall be made prior to the deck overlay, repairs and payment for repairs shall be in accordance with Sec 704. Concrete or qualified repair mortars used for full depth repairs made prior to the deck overlay shall be fully cured prior to the overlay.

4.8 Preparation of Deck for Concrete Wearing Surface.

4.8.1 All areas of the deck, where further removal of concrete was performed with pneumatic hammering after the hydro demolition, shall be thoroughly sand blasted to remove any loose material and micro-cracking. After completion of sand blasting and associated clean-up of debris, the entire deck surface shall be thoroughly cleaned by high pressure water blasting with sufficient pressure to remove all debris and slurry residue. Water blasting shall continue until the run-off water from cleaning flows clear.

4.8.2 After cleaning, the deck surface shall be thoroughly saturated to the point that the surface does not dry out, and any excess water removed with compressed air. Clean polyethylene sheeting shall then be used to cover the deck completely until such time as the overlay is poured. Just prior to placement of the overlay, the deck shall be brought to a saturated surface dry (SSD) condition and maintained in a SSD condition throughout the pour, with no ponding of water.

4.9 Monolithic Deck Repair.

4.9.1 Monolithic deck repair is defined as providing and placing the deck overlay material necessary to fill all depressions in the deck below the bottom of the planned deck overlay thickness. This material is placed monolithic during the deck overlay process.

4.9.2 Shallow and deep areas, including approved full depth repair areas, shall be filled monolithically with the deck overlay. Deep areas shall be filled in advance during the wearing surface pour so that material stiffens enough that it will not roll back under the paving screed. Any standing water on the deck or in the depressed areas shall be removed prior to placement of concrete overlay material. Hand vibrators shall be used in areas where concrete is being placed around reinforcement, deeper areas within the pour, and along curb lines and construction joints.

4.9.3 The volume of material necessary to fill areas removed by the contractor's negligence, including milling too deep during scarification and excessive overlap of hydro demolition passes, will be deducted from the total quantity of monolithic deck repair.

5.0 Method of Measurement.

5.1 Measurement for Removal of Existing Deck Repairs will be made to the nearest square foot. Measurement will include removal of existing deck repairs made both prior to and following hydro demolition.

5.2 Measurement for Total Surface Hydro Demolition will be per square yard of the bridge deck as specified on the plans or shown in the contract. No final measurement will be made for hydro demolition except for authorized changes during construction or where appreciable errors are found in the contract quantity.

JOB SPECIAL PROVISIONS (BRIDGE)

5.3 Measurement for Monolithic Deck Repair will be made to the nearest 0.1 cubic yards. The quantity of monolithic deck repair will be determined by deducting the theoretical volume of material necessary to construct the deck overlay at plan thickness from the total volume of deck overlay material placed on the deck surface. Any volume of material wasted or used to fill depressed areas caused by the contractor's negligence in scarification or concrete removal will not be included in this quantity.

6.0 Basis of Payment

6.1 Payment for removal of an existing wearing surface, when required, and scarification will be as specified in Section 2.0.

6.2 Payment for Removal of Existing Deck Repairs will be made at the contract unit price.

6.3 Payment for Total Surface Hydro Demolition of the bridge deck will be paid for at the contact unit price. Payment includes all work associated with the hydro demolition process including, but not limited to, ECP, equipment calibration, hand chipping curb areas, removal of remaining unsound concrete, clean-up of debris and slurry, forming for full depth monolithic repairs, and preparation of the deck for concrete wearing surface.

6.4 Payment for Monolithic Deck Repair will be made at the fixed unit price for the type of overlay material specified in the plans. Fixed unit prices shall be: \$600 per cubic yard for Calcium Sulfoaluminate Cement Concrete Wearing Surface, \$600 per cubic yard for Latex Modified Concrete and \$850 per cubic yard for Latex Modified High Early Strength Concrete. Payment for Monolithic Deck Repair includes all material, labor and equipment, and any other incidental items necessary to complete the work. Labor and equipment costs for placing the wearing surface concrete monolithically with the deck repair will be considered completely covered by the contract unit price for the concrete wearing surface.

F. SURFACE SEALING CONCRETE

1.0 Description. This provision allows surface sealing concrete to be applied as last order of work.

2.0 Construction Requirements. The surface of the new concrete shall be surface sealed in accordance with [Sec 703.3.8](#) except that lanes may be opened to traffic after the concrete has properly cured in accordance with [Sec 703](#) and the sealant applied as a last order of work. Any lanes open to traffic prior to surface sealing shall have foreign materials removed. Surfaces that are sealed after each stage of construction shall have all vertical construction joints between stages protected from the surface sealant. If asphalt roadway surface is adjacent to the new concrete, the asphalt surface shall be protected from spillage of the sealant. The latex modified concrete wearing surface shall be protected from spillage of the sealant.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for other items included in the contract.

JOB SPECIAL PROVISIONS (BRIDGE)

G. CLEAN AND EPOXY SEAL

1.0 Description. In order to protect the bridge superstructure concrete from deicing chemicals and other contaminants, loose and delaminated concrete shall be removed and an epoxy seal shall be applied to the concrete in the area of curb outlets in accordance with the bridge plans and this job special provision.

2.0 Construction Requirements. All loose and delaminated concrete in the areas as required by this job special provision shall be removed in the cleaning process with hand tools. Hand tools may include chipping chisels, wire brushes, dust brushes, etc. After the loose and delaminated concrete has been removed to the satisfaction of the engineer and the existing curb outlets are plugged, the epoxy sealing preparation and applying the epoxy to these areas shall be in accordance with [Sec 704](#). The areas to be cleaned and epoxy sealed are in the vicinity of the existing curb outlets as shown on the plans.

3.0 Method of Measurement. The area to be cleaned and epoxy sealed will be computed to the nearest square foot. Final measurement will not be made except for authorized changes during construction or if appreciable errors are found in the contract quantity.

4.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be based on the contract plan quantities and will be considered completely covered by the contract unit price for "Clean and Epoxy Seal". Any change in the contract plan quantities, based on approved change orders, will be paid for at the contract unit price.

H. CONCRETE WEARING SURFACE REPAIR

1.0 Description. This work shall consist of repairing designated areas of the bridge decks with an existing concrete wearing surface (low slump, latex modified, or silica fume concrete). All work shall be in accordance with [Sec 704](#) except as herein modified.

2.0 Construction Requirements.

2.1 A boundary perimeter with vertical sides shall be established outside the delaminated and deteriorated concrete wearing surface repair areas by saw cutting full depth of wearing surface. The contractor shall use caution to not saw into the underlying bridge deck. Any remaining wearing surface around the perimeter of the saw cut shall be chipped vertically and all wearing surface material within the perimeter removed. Upon removal of the deteriorated wearing surface, the engineer will sound the underlying bridge deck (if required) to determine areas of deteriorated concrete. The engineer may require removal of additional areas of wearing surface to determine the extent of deteriorated underlying bridge deck.

2.2 Wearing surface repairs shall be performed the same as deck repairs except no exposed reinforcing steel is required. Deck repairs shall be in accordance with [Sec 704](#). Concrete to replace the wearing surface, with or without deck repairs below, shall be the same as that required for deck repairs. Concrete for the wearing surface repairs with deck repairs below shall be placed monolithically up to the top surface of the wearing surface. Finishing and curing the repair area shall be in accordance with [Sec 704](#).

3.0 Method of Measurement. The extent of repair may vary from the estimated quantities but the contract unit price shall prevail regardless of the variation. No duplication of measurement will be made for repairing concrete deck (half-soling), modified deck repair, full depth repair or

JOB SPECIAL PROVISIONS (BRIDGE)

concrete wearing surface repair. Areas of concrete wearing surface repair will be measured to the nearest square foot (0.1 m²). Deck repairs will be measured and paid for in accordance with [Sec 704](#).

4.0 Basis of Payment. Accepted quantities of repairing concrete deck (half-soling), modified deck repair, full depth repair or concrete wearing surface repair will be paid for at the contract unit price for each of the pay items included in the contract.

I. STEEL FIBER REINFORCED CONCRETE OVERLAY

1.0 Description. This work shall consist of constructing a steel fiber reinforced concrete slab overlay with B-2 concrete and steel fiber reinforcement and in accordance with Sec 501, Sec 703 and the Job Special Provisions.

2.0 Materials.

2.1 Steel fibers shall be made from low carbon steel and nominally be between 1.0-1.5 inches (25-38mm) long and meet the physical property requirements prescribed in ASTM A820. Steel fibers shall have a quantity of at least 2,000 fibers per pound and a fiber aspect ratio of 40 to 60. The steel fibers shall not have any hooks or 90° bends. The steel fibers shall be free from rust, oil and other deleterious materials. Steel fibers shall be transported, stored and applied to the concrete mixture in accordance with the manufacturer's recommendations.

2.1.1 The contractor shall provide initial on-site technical assistance from the supplier of the steel fiber reinforcement. Further technical assistance shall be available at the request of the Engineer.

2.2 Mix Design. The steel fiber dosage rate shall be 45 pounds per cubic yard of concrete or a dosage rate recommended by the steel fiber manufacturer that will provide equivalent or better structural performance to the welded wire reinforcement shown in the plans. The contractor shall provide signed and sealed calculations, by a registered engineer in the state of Missouri, which verifies the proposed steel fiber dosage rate.

3.0 Construction Requirements.

3.1 Pumping. Pumping shall generally be in accordance with Sec 703. Unless otherwise approved by the Engineer, the following practices shall be observed:

- (a) Avoid rapid reduction in line size from the pump to the lines.
- (b) Operating pressure inside the line should be kept as low as functionally possible.
- (c) Use 5 inch (minimum) diameter clean, steel lines.

3.2 Placement Plan.

3.2.1 At least six weeks prior to the first placement of the steel fiber reinforced concrete slab overlay on the project, a pre-placement conference shall be held with the Contractor, the steel fiber supplier, the Engineer and other parties involved with the steel fiber reinforced concrete slab overlay on the project. The Contractor shall present the plan for furnishing, placing, sampling and testing of the steel fiber reinforced concrete slab overlay in accordance with the requirements of this Special Provision.

JOB SPECIAL PROVISIONS (BRIDGE)

3.2.2 As part of the pre-placement conference a trial placement of steel fiber reinforced concrete slab overlay shall be made. The trial placement shall use the same delivery and placing equipment as shall be used in the actual work and shall use the mix design as approved by the Engineer. For pumped concrete, simulate as closely as possible the distance and height that the concrete is to be pumped. As a minimum, the trial placement shall be a 10-ft by 10-ft by 4 inch thick slab.

3.2.3 Placement of steel fiber reinforced concrete slab overlay for the project shall not be allowed until the Engineer approves the Contractor's plan, including the results of the trial placements. Mixing, pumping, placing and finishing techniques should ensure uniform fiber distribution throughout the mixture without fiber balling or segregation. After approval, the placement plan shall not be changed unless approved in writing by the Engineer.

3.2.4 The trial slab shall become the property of the Contractor after the placement plan has been approved by the Engineer and shall be removed and disposed of in accordance with Sec 202.

3.2.5 The curing and sealing of the concrete overlay on the existing bridge slab shall be in accordance with Sec 703.3.6.

3.2.6 The curing of the concrete overlay on the bottom slab of the existing box culvert shall be in accordance with Sec 703.3.6. Concrete sealer will not be required.

4.0 Method of Measurement.

4.1 The extent of overlay may vary from the estimated quantities, but the contract unit price shall prevail regardless of the variation. Final measurement will not be made for overlay area, except for authorized changes during construction or where appreciable errors are found in the contract quantity.

4.2 The overlay area will be measured to the nearest square yard based on measurement longitudinally from end of overlay to end of overlay and transversely from edge of overlay to edge of overlay.

5.0 Basis of Payment. Payment for furnishing and installing the above described work, including all testing, the preparation of a placement plan and the trial placement of an overlay section, will be considered completely covered by the contract unit price for steel fiber reinforced concrete overlay as specified in the plans.

J. PAINT REMOVAL REQUIREMENTS

1.0 Paint Removal. If blast media recycling or solvent recycling are used as methods in the paint removal process, the contractor shall be required to secure a Resource Recovery certification from the Missouri Department of Natural Resources prior to starting work. Based on MoDOT's screening results, the paint on bridge numbers A0799 and A1035 exceed the heavy metal regulatory limits for both lead and barium, and bridge number A2221 exceeds the limits for arsenic and lead.

a) For this project location, all paint waste generated from the work will be classified as hazardous waste. All hazardous waste that is generated shall remain stored at the point

JOB SPECIAL PROVISIONS (BRIDGE)

of origin until shipment to an EPA permitted hazardous waste treatment, storage, disposal (TSD) facility. The hazardous waste shall meet the necessary storage requirements, holding times, and shall be shipped using a hazardous waste manifest. If the location is in a flood plain, the contractor shall use a box truck to store hazardous waste onsite.

b) The operations at this site will result in the generation of hazardous waste exceeding 2,200 pounds per month. The site shall be managed as a large quantity generator (LQG) of hazardous waste. Contractor responsibilities as a LQG are outlined in the Missouri Standard Specifications for Highway Construction in sections 1081.4.3.1 – 1081.4.3.3.5 and 107.1. The specific LQG requirements can be referenced in DNR's LQG checklist at the following link: <http://dnr.mo.gov/forms/780-1525-f.pdf> *Note: Management of other waste streams generated on site as a part of site operations is a LQG requirement (i.e., Paint chips, solvent cake, PPE, towels/wipes, batteries, wash water, water from compressors, used oil, resource recovery, tanks and universal waste).*

c) The contractor requirements for management of a LQG site will be discussed at the pre-construction conference.

d) MoDOT will be responsible for registering the site and procuring the EPA ID number. Stowe Johnson, MoDOT Intermediate Environmental Specialist (573-522-5562), will be the point of contact for LQG regulatory compliance.

2.0 Method of Measurement. No measurement will be made.

3.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for Surface Preparation for Recoating Structural Steel.

K. WATERPROOFING MEMBRANE

1.0 Description. This work consists of furnishing and placing an approved waterproofing membrane over a prepared concrete riding surface at the end bents of Br. No. A09515 and A09516.

2.0 Materials.

2.1 Waterproofing Membrane. The waterproofing membrane shall be one of the pre-approved products listed below.

Pave Prep SA by Crafcoc Inc, Phone 800-528-8242
Polyguard 1100 by Polyguard Products, Inc, Phone 214-515-5000
ODOT Type 3 by W.R. Meadows Inc, Phone 800-342-5976

3.0 Construction Requirements.

3.1 Concrete Deck Preparation. The entire deck and the sides of the curbs for a height of 2 inches above the plan thickness of the roadway asphaltic concrete wearing surface shall be free of all foreign material such as dirt, grease, old pavement and primer. All surfaces to receive the

JOB SPECIAL PROVISIONS (BRIDGE)

waterproofing membrane shall be sand blasted or shot blasted. Immediately prior to the application of primer or membrane, all dust and loose material shall be removed. The engineer will approve the deck condition before application of the membrane.

3.2 Waterproofing Membrane Application. The membrane shall be applied to the prepared deck surface as recommended by the manufacturer. Primer, if required, and the membrane shall be placed up the curb faces for a height of 2 inches above the plan thickness of the roadway asphaltic concrete wearing surface.

3.3 Inspection. Upon completion of the membrane and protective covering, the engineer will inspect the membrane system and give approval before application of the roadway asphaltic concrete wearing surface. The contractor shall be responsible for maintaining the condition of the membrane system until covered with roadway asphaltic concrete wearing surface to the thickness required by the contract.

4.0 Method of Measurement. Waterproofing membrane will be measured to the nearest square yard based on measurement longitudinally of 20 feet centered on each end of bridge slab of A09515 and A09516 and transversely from roadway face of curb to roadway face of curb. Material placed on curb faces will not be measured. Final measurement of waterproofing membrane will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

5.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for "Waterproofing Membrane".

L. MACROTEXTURE SURFACE FOR ULTRATHIN BONDED ASPHALT WEARING SURFACE

1.0 Description. This work shall consist of producing a smooth and uniform milled surface in which an Ultrathin Bonded Asphalt Wearing Surface (UBAWS) will be placed.

2.0 Construction Requirements.

2.1 After the existing pavement has been milled and other surface preparations as per Sec. 413.30.5.3 have been completed, the Contractor shall test the milled surface texture in accordance with ASTM E 965.

2.2 The results of ASTM E 965 shall show a texture depth of any test area to have a maximum value of 1/8 inch or 3.0 mm.

2.3 The test areas shall consist of two tests, one in each traveled way lane, per bridge or as directed by the engineer.

2.4 All tests shall be observed by MoDOT personnel. The contractor shall provide all test result documentation to the engineer.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. No additional payment will be made to the contractor as a result of

JOB SPECIAL PROVISIONS (BRIDGE)

this provision. Payment for compliance with this provision is considered included in the contract unit price for 216-15.01 Removal of Asphalt Wearing Surface.

M. PROTECTION OF BNSF RAILWAY COMPANY INTERESTS

To Report an Emergency on the railroad call: (800) 832-5452
BNSF River Subdivision, Jefferson County, DOT# 663 873C (MP 32.43) in Pevely MO., MoDOT
bridge # A10354 (southbound bridge)

1.0 Authority of Railroad Engineer and Commission's Representative.

1.1 The authorized representative of BNSF Railway Company, herein called "Railroad Engineer", shall have final authority in all matters affecting the safe maintenance and operation of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks.

1.2 The authorized representative of the Missouri Highways and Transportation Commission, herein called "Engineer", shall have authority over all other matters as prescribed herein and in the project specifications.

2.0 Contractor's indemnity Obligations to the Railroad.

2.1 The term "contractor" as used in this special provision includes any and all subcontractors. The contractor shall indemnify, defend and hold harmless the Railroad from and against any and all loss, damage, claims, demands, causes of action, costs and expenses of whatsoever nature arising out of injury to or death of persons whomsoever, or out of damage to or destruction of property whatsoever, including, without limitation, damage to fiber optic, communication and other cable lines and systems, where such injury, death, damage or destruction results from any cause arising out of work performed by the contractor pursuant to the agreement between Railroad and the Commission for the project, and shall also release the Railroad from and shall waive any claims for injury or damage to equipment or other property, which may result from the construction, maintenance and operation of railroad tracks, wire lines, fiber optic cable, pipe lines and other facilities on said right of way of the Railroad by the contractor. **THE LIABILITY ASSUMED BY THE CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY, DEATH, CAUSE OF ACTION OR CLAIM WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF THE RAILROAD, THE RAILROAD'S AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROVEN BY ANY CLAIMANT TO HAVE BEEN PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR SOLE OR GROSS NEGLIGENCE OF THE RAILROAD.** The contractor's indemnity shall include loss of profits or revenue arising from damage or destruction to fiber optic, communication and other cable lines and systems.

2.2 In addition to the indemnity obligations contained in the preceding paragraph, the contractor shall indemnify, defend and hold harmless the Railroad from any claims, expenses, costs, actions, demands, losses, fines, penalties, and fees, of whatsoever nature arising from, related to or connected, in whole or in part, with the following:

- (a) The removal of the contractor's agents, servants, employees or invitees from the Railroad's property for safety reasons.

JOB SPECIAL PROVISIONS (BRIDGE)

(b) Contractor's compliance or failure to comply with the provision of applicable law in connection with the performance of contractor's work.

3.0 Notice of Starting Work.

3.1 The contractor shall not commence any work on Railroad's right of way until the contractor has complied with the following conditions:

(a) At least 30 days in advance of the date the contractor proposes to begin work on Railroad's right of way, the contractor shall give the Railroad written notice to the address below with copy to the Engineer who has been designated to be in charge of the work.

Mr. Nicholas Konen
Manager of Public Projects
BNSF
3253 E. Chestnut Expressway
Springfield, Missouri 65802

(b) Obtain written or electronic authorization from the Railroad to begin work on the Railroad's right of way, such authorization to include an outline of specific conditions with which contractor shall comply.

(c) Obtain the insurance coverage required in Section 13.0 of this job special provision. Contractor shall submit written evidence of such coverage to Railroad prior to commencing any work.

(d) Prior to performing any work on Railroad's property, right-of way or in an area that may impact Railroad's operations, the contractor's employees, representatives or agents who are regularly assigned to perform work on the project shall complete the safety orientation training available on the internet at www.contractororientation.com, hereinafter called, "Internet Safety Orientation". If the contractor's employee, representative or agent is not regularly assigned to perform work on the project, hereinafter called "Flexible Worker(s)", the contractor shall ensure that any Flexible Worker receives appropriate safety training prior to performing any work on the Railroad's property, right-of way or in an area that may impact the Railroad's operations. The content of safety training for Flexible Workers shall include the information covered in the Internet Safety Orientation. The approximate cost of the Internet Safety Orientation is \$11 per person, subject to annual escalation.

3.2 The Railroad's written authorization to proceed with the work, with a copy to the Engineer, will include the names, addresses and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

4.0 Interference with Railroad Operations.

4.1 The contractor shall arrange and conduct all work so that there shall be no interference with the Railroad's operations, including train, signal, telephone and telegraphic services; or damage to the Railroad's property; poles, wires and other facilities of tenants, licensees, easement grantees and invitees on the Railroad's right of way. Whenever work may affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad

JOB SPECIAL PROVISIONS (BRIDGE)

Engineer for approval, but such approval shall not relieve the contractor from liability. Any work to be performed by the contractor that requires flagging service or inspection service shall be deferred by the contractor until the flagging service required by the Railroad is available at the job site.

4.2 Whenever work within the Railroad's right of way is of such a nature that impediment to the Railroad's operations is unavoidable, such as use of runaround tracks or necessity for reduced speed, the contractor shall schedule and conduct these operations so that such impediment is reduced to the absolute minimum.

4.3 Should conditions arising from, or in connection with the work require that immediate and unusual provisions be made to protect the Railroad's operations and property, the contractor shall make such provisions. If in the judgment of the Railroad Engineer, or the Engineer if the Railroad Engineer is absent, such provision is insufficient, the Railroad Engineer or Engineer may require or provide such provisions as deem necessary. In any event, such provisions shall be at the contractor's expense and without cost to the Railroad or the Commission.

4.4 The contractor shall be responsible for any damage to the Railroad as a result of work on the project, which shall include but not be limited to interference with the normal movement of trains caused exclusively by the work performed by the contractor. The contractor shall be responsible for damages for the Railroad's train delays that are caused exclusively by the contractor. The Railroad agrees not to perform any act to unnecessarily cause any train delay. The damages for train delays per freight hour will be billed at an average rate per hour as determined from the Railroad's records. These records shall be provided by the Railroad, upon request, to the Commission or the Commission's contractor.

5.0 Track Clearances.

5.1 The minimum track clearances to be maintained by the contractor during construction are shown on the project plans. However, before undertaking any work within Railroad's right of way, or before placing any obstruction over any track, the contractor shall:

- (a) Notify the Railroad Engineer at least 72 hours in advance of the work.
- (b) Receive assurance from the Railroad Engineer that arrangements have been made for flagging service as may be necessary.
- (c) Receive permission from the Railroad Engineer to proceed with the work.
- (d) Ascertain that the Engineer has received copies of notice to the Railroad and of the Railroad's response.

5.2 The contractor shall fully comply with any horizontal and vertical clearance requirements imposed by Missouri state statutes and regulations and Federal statutes and regulations regarding the placement of structures or equipment near or over railroad tracks.

6.0 Construction Procedures.

6.1 General. Construction work on the Railroad's property shall be:

- (a) Subject to the inspection and review of the Railroad.

JOB SPECIAL PROVISIONS (BRIDGE)

- (b) In accordance with the Railroad's written outline of specific conditions.
- (c) In accordance with this special provision.

6.2 Excavation. The subgrade of an operated track shall be maintained with the berm edge at least 12 feet from centerline of track and not more than 26 inches below top of the rail. The contractor will not be required to make existing section meet this specification if substandard, in which case the existing section will be maintained. The contractor shall cease all work and notify the Railroad immediately before continuing excavation in the work area if obstructions are encountered which do not appear on the drawings. If the obstruction is a utility and the owner of the utility can be identified, then the contractor shall also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work shall be performed until the exact location has been determined. There will be no exceptions to these instructions. Additionally, all excavations shall be conducted in compliance with applicable Occupational Safety and Health Act regulations and, regardless of depth, shall be shored where there is any danger to tracks, structures or personnel. Any excavations, holes or trenches on the Railroad's property shall be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas shall be secured and left in a condition that will ensure that Railroad's employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations shall be back filled as soon as possible.

6.3 Excavation for Structure. The contractor shall be required to take special precaution and care in connection with excavating, shoring pits and in driving piles for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which the tracks carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material. The procedure for doing such work, including need of and plans for shoring, shall be approved by the Railroad Engineer before work is performed, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans in accordance with the Missouri Standard Specifications for Highway Construction, hereinafter called "Standard Specifications". The responsibility for the design and construction of the sheeting rests solely with the contractor. The temporary shoring along the railroad tracks shall be designed for the Cooper E80 loading. The design shall insure that the shoring is braced or substantially securely to prevent movement. The contractor shall submit plans for the temporary shoring that shall be signed, sealed, and stamped in accordance with the laws relating to Architects and Professional Engineers, Chapter 327, RSMo. and then submitted for review by the Engineer.

6.4 Demolition of Existing Structures. The contractor shall be required to take special precaution and care in connection with demolition of existing structures. The procedure for doing such work, including need of and plans for temporary falsework, shall first be approved by Railroad Engineer before work is performed, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans.

6.5 Falsework. The contractor shall be required to take special precaution and care to prevent any material from falling on the Railroad's right of way. The procedure for preventing material from falling, including need of and plans for temporary falsework, shall first be approved by the Railroad Engineer, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans.

6.6 Blasting.

6.6.1 The contractor shall obtain advance approval of the Railroad Engineer and the Engineer for use of explosives on or adjacent to the Railroad's property. If permission for use of explosives is granted, the contractor shall be required to comply with the following:

- (a) Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the contractor.
- (b) Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
- (c) No blasting shall be done without the presence of the Railroad Engineer. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed as mentioned in Section 2.2 of this job special provision, the contractor shall be required to arrange for the presence of the Railroad Engineer and such flagging as the Railroad may require.
- (d) The contractor shall have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting, at contractor's expense, any track misalignment or other damage to the Railroad's property resulting from the blasting as directed by the Railroad Engineer. If contractor's actions result in delay of trains, the contractor shall bear the entire cost thereof.

6.6.2 The Railroad Engineer will:

- (a) Determine the approximate location of trains and advise the contractor the approximate amount of time available for the blasting operation and clean-up.
- (b) Have the authority to order discontinuance of blasting if blasting is too hazardous or is not in accordance with this special provision.

6.7 Maintenance of Railroad Facilities. The contractor shall be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from contractor's operations. The contractor shall promptly repair eroded areas within Railroad's right of way and repair any other damage to the Railroad's property, tenants, licensees, easement grantees and invitees. All such maintenance and repair of damages due to the contractor's operations shall be done at the contractor's expense.

6.8 Storage of Materials and Equipment.

6.8.1 The contractor shall not store or stockpile construction materials or equipment closer than 25 feet to the centerline of the nearest railroad track or on the Railroad's property not covered by construction easement, contractor's permit, lease or agreement. Additionally, the contractor shall not store or leave materials or equipment within 250 feet of the edge of any highway/rail at-grade crossings. Further, both sides of a main track shall remain unobstructed for a distance of 10 feet from the exterior edge of the track at all times to allow for stopped train inspection.

6.8.2 Machines or vehicles shall not be left unattended with the engine running. Parked machines or equipment shall be in gear with brakes set and with blade, pan or bucket lowered

JOB SPECIAL PROVISIONS (BRIDGE)

to the ground if so equipped. All grading or construction machinery that is left parked near the track unattended shall be effectively immobilized so that unauthorized persons cannot move such equipment.

6.9 Cleanup. Upon completion of the work, the contractor shall remove from within the limits of the Railroad's right of way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the contractor, and leave said right of way in a neat condition satisfactory to the Railroad Engineer.

6.10 Buried Cable and Other Buried Facilities.

6.10.1 The contractor is placed on notice that fiber optic, communication and other cable lines and systems, collectively the "Lines", owned by various telecommunications companies may be buried on Railroad's property or right of way. The locations of the buried Lines, pipelines or utility facilities have been included on the plans based on information from the telecommunications companies, pipeline operators, or utilities, as the case may be. The contractor shall be responsible for contacting the Railroad Engineer, the Railroad's 24-hour information number (1-800-533-2891), the telecommunications companies, pipeline operators and utilities and notifying them of any work that may damage the buried Lines, pipelines, utility facilities and/or interfere with their service. The contractor shall verify the location of all buried Lines, pipelines and utility facilities shown on the plans or marked in the field in order to establish their exact locations prior to or while doing work on the Railroad's property or right of way. The contractor shall also use all reasonable methods when working on the Railroad's property or right of way to determine if any other buried Lines, pipelines or utility facilities exist on the Railroad's property or right of way.

6.10.2 Failure to mark or identify the buried Lines, pipelines or utility facilities will be sufficient cause for the Railroad Engineer to stop construction at no cost to the Commission or Railroad until these items are completed. The contractor shall be responsible for the rearrangement of any buried facilities, Lines, pipelines or utility facilities determined to interfere with the construction. The contractor shall cooperate fully with any telecommunications companies, pipeline operators and utility facility owners in performing such rearrangements.

7.0 Damages. The Railroad will not assume liability for any damages to the contractor, contractor's work, employees, servants, equipment and materials caused by railroad traffic. Any cost incurred by the Railroad for repairing damages to Railroad's property or to property of the Railroad's tenants, licensees, easement grantees and invitees caused by or resulting from the contractor's operations shall be paid directly to the Railroad by contractor.

8.0 Flagging Services.

8.1 When Required. Under the terms of the agreement between the Commission and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect the Railroad's operations. In general, the requirements of such services will be whenever the contractor's personnel or equipment are, or are likely to be, working on the Railroad's right of way within 25 feet of the centerline of any track, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad structure or the railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging, or reasonable probability of accidental hazard to Railroad's operations or personnel. Normally, the Railroad will assign one flagger to a project; but in some cases, more than one may be necessary, such as yard limits where 3 flaggers may be required. However, if the contractor works within distances that violate instructions given by the Railroad Engineer or

JOB SPECIAL PROVISIONS (BRIDGE)

performs work that has not been scheduled with the Railroad Engineer, flaggers may be required full time until the project has been completed.

8.1.1 Flagging services will not be required for the entire duration of this project. The contractor shall be required to contact the local roadmaster, Dustin Hartz, 72 hours prior to when the bridge girders are to be set as well as when large equipment will be within 25 feet of the nearest rail.

8.2 Scheduling and Notification.

8.2.1 Not later than the time that approval is initially requested to begin work on the Railroad's right of way (30 days), contractor shall furnish to the Railroad and the Commission a schedule for all work required to complete the portion of the project within Railroad's right of way and arrange for a job site meeting between the contractor, the Engineer, and the Railroad Engineer. Flaggers may not be provided until the job site meeting has been conducted and the contractor's work scheduled.

8.2.2 The contractor shall be required to give the Railroad Engineer at least 30 days of advance written notice of intent to begin work within Railroad's right of way in accordance with this special provision. Once begun, if such work is then suspended at any time, or for any reason, the contractor shall be required to give the Railroad Engineer at least 5 working days of advance notice before resuming work on Railroad's right of way. Such notices shall include sufficient details of the proposed work to enable the Railroad Engineer to determine if flagging will be required. If such notice is in writing, the contractor shall furnish the Engineer a copy; if notice is given verbally, the notice shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagger or flaggers are present at the job site. Obtaining a flagger or flaggers may take up to 30 days to obtain initially from the Railroad. When flagging begins, the flagger is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, obtaining a flagger or flaggers may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, 10 working days notice may be necessary before flagging services may be discontinued and responsibility for payment stopped. Notification for flagging should be addressed to:

Mr. Nate Norris
BNSF Railroad
3500 Wellington
St. Louis, MO 63139
314-768-7030 (Office)
636-288-0534 (Cell)

8.2.3 If, after the flagger is assigned to the project site, emergencies arise which require the flagger's presence elsewhere, then the contractor shall delay work on the Railroad's right of way until such time as the flagger is again available. Any additional costs resulting from such delay shall be borne by the contractor and not the Railroad.

8.3 Payment.

8.3.1 The Commission will pay the Railroad directly for the cost of flagging services associated with the project by deducting the amount from the normal contractor payments.

JOB SPECIAL PROVISIONS (BRIDGE)

8.3.2 The Railroad shall submit progress invoice to the Engineer during the time flagging services are required. A final invoice shall be submitted to the Engineer within 180 days of completion of the project. This is defined as the point in time at which the Commission and the Railroad both accept the project and the contractor is relieved of contractual obligation. Should the invoice not be received within this time period, the Railroad will be responsible for obtaining payment directly from the contractor.

8.3.3 Should a dispute between the Railroad, the Commission and the contractor develop concerning the cost of flagging service or should the contractor fail to promptly pay the Railroad for flagging services, the full amount of the Railroad's invoice will be deducted from the contractor's payment request. However, The Commission will send only 95 percent of the amount requested to the Railroad. The Commission will make a corrected payment once a settlement is reached between the Railroad, the Commission and the contractor.

8.3.4 The contractor shall be responsible for arranging needed flagging services as required by the Railroad to accomplish the highway improvement.

8.3.5 The cost of flagging service is approximately \$1,300 per day based on an 8-hour work day and a 40-hour work week. This cost includes the base pay for the flagger, overhead, and per diem charge for travel expenses, meals and lodging. The charge to the contractor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required. Work by a flagger in excess of 8 hours per day or 40 hours per week but not more than 12 hours a day will result in overtime pay at 1 1/2 times the appropriate rate. Work by a flagger in excess of 12 hours per day will result in overtime pay at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 1/2 times the normal rate. Railroad expenses incurred preparing and handling invoices will also be charged to the contractor and/or the Commission. Charges to the contractor and/or the Commission by the Railroad shall be in accordance with applicable provisions of Volume 1, Chapter 4, §3 and Volume 6, Chapter 6, §2, Subsection 1 of the Federal-Aid Highway Program Manual issued by the Federal Highway Administration, including all current amendments. Flagging costs are subject to change. The above estimates of flagging cost are provided for information only and are not binding in any way. Each time a flagger is called, the minimum period for billing will be the 8 hour basic day unless the flagger can be assigned to other Railroad work during the work day.

8.3.6 In addition to the hours of providing flagging at the construction site, the flagger hours will include, but is not limited to, travel time to and from the project, time to complete paperwork for the flagging operations and time for setting warning signs/flags for the train traffic.

8.4 Verification.

8.4.1 Any complaints concerning a flagger shall be resolved in a timely manner. If need for a flagger is questioned, please contact the Railroad Engineer and Mr. Nicholas Konen, Manager of Public Projects at (417) 829 2134. All verbal complaints shall be confirmed in writing by the contractor within 5 working days with copy to the Railroad Engineer and Engineer. All written correspondence shall be addressed to Mr. Konen as shown in Section 2.1 of this job special provision.

8.4.2 The Railroad flagger assigned to the project will be responsible for notifying the Engineer upon arrival at the job site on the first day, or as soon thereafter as possible, that flagging services begin and on the last day that flagger performs such services for each separate period that services are provided. The Engineer will document such notification in the project records.

9.0 Haul Across Railroads.

9.1 Where the plans show or imply that materials of any nature must be hauled across the Railroad's tracks, unless the plans clearly show that the Commission has included arrangements for such haul in the agreement with the Railroad, the contractor shall be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's tracks. The contractor shall be required to bear all costs incidental to such crossings, including flagging, whether services are performed by contractor's own forces or by Railroad's personnel.

9.2 No crossing may be established for use of the contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for the installation, maintenance, necessary watching and flagging thereof and removal, all at the expense of the contractor, is first obtained from the Railroad Engineer.

10.0 Work for the Benefit of the Contractor. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans, and are included in the agreement between the Commission and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Commission and/or the Railroad. Should the contractor desire any changes in addition to the above, then contractor shall make separate arrangements with the Railroad for same to be accomplished at the contractor's expense.

11.0 Cooperation and Delays. The contractor shall arrange a schedule with the Railroad for accomplishing staged construction involving work by the Railroad or tenants, licensees, easement grantees and invitees of the Railroad. In arranging a schedule, the contractor shall ascertain, from the Railroad, the lead time required for assembling crews, materials and make due allowance. No charge of claims of the contractor against the Railroad will be allowed for hindrance or delay on account of railway traffic for any work done by the Railroad, other delay incident to or necessary for safe maintenance of railway traffic, or for any delays due to compliance with this special provision.

12.0 Trainman's Walkways. Along the outer side of each exterior track of multiple operated track and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains shall be maintained extending to a line not less than 12 feet from centerline of track. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railway's protective service is provided shall be removed before the close of each work day. Any excavation near the walkway, the contractor shall install a handrail with a 12 feet minimum clearance from centerline of track.

13.0 Insurance. The amount of work to be performed upon, over or under Railroad's right of way is estimated to be 1 percent of the contractor's total bid for the project.

13.1 In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

- (a) Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of \$5,000,000 each occurrence and an aggregate limit of at least \$10,000,000 but in no event less than

JOB SPECIAL PROVISIONS (BRIDGE)

the amount otherwise carried by the contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations

This policy must also contain the following endorsements, which must be indicated on the certificate of insurance:

- The definition of insured contract must be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railway.
- Additional insured endorsement in favor of and acceptable to Railway.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railway employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

(b) Business Automobile Insurance. This insurance must contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railway.
- Additional insured endorsement in favor of and acceptable to Railway.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

(c) Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

JOB SPECIAL PROVISIONS (BRIDGE)

- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railway.

(d) Railroad Protective Liability insurance naming only the Railway as the Insured with coverage of at least \$5,000,000 per occurrence and \$10,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
- Endorsed to remove any exclusion for punitive damages.
- No other endorsements restricting coverage may be added.
- The original policy must be provided to the Railway prior to performing any work or services under this Agreement

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate in Licensor's Blanket Railroad Protective Liability Insurance Policy available to contractor.

13.2 Other Requirements:

13.2.1 All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

13.2.2 Contractor agrees to waive its right of recovery against Railway for all claims and suits against Railway. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railway for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railway for loss of its owned or leased property or property under contractor's care, custody or control.

13.2.3 Contractor is not allowed to self-insure without the prior written consent of Railway. If granted by Railway, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by contractor in lieu of insurance. Any and all Railway liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by contractor's insurance will be covered as if contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

13.2.4 Prior to commencing the Work, contractor must furnish to Railway an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments and referencing the contract audit/folder number if available. Contractor shall notify Railway in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. Upon request from Railway, a certified duplicate original of any required policy must be furnished. Contractor should send the certificate(s) to the following address:

JOB SPECIAL PROVISIONS (BRIDGE)

Railroad:
BNSF Railway Company
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email: BNSF@certfocus.com
www.certfocus.com

Commission:
Mr. Dave Ahlvers
State Construction and Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102

13.2.5 Any insurance policy must be written by a reputable insurance company acceptable to Railway or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

13.2.6 Contractor represents that this Agreement has been thoroughly reviewed by contractor's insurance agent(s)/broker(s), who have been instructed by contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above. Not more frequently than once every five years, Railway may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

13.2.7 If any portion of the operation is to be subcontracted by contractor, contractor must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming Railway as an additional insured, and requiring that the subcontractor release, defend and indemnify Railway to the same extent and under the same terms and conditions as contractor is required to release, defend and indemnify Railway herein.

13.2.8 Failure to provide evidence as required by this section will entitle, but not require, Railway to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of contractor's obligations hereunder.

13.2.9 The fact that insurance (including, without limitation, self-insurance) is obtained by contractor will not be deemed to release or diminish the liability of contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railway will not be limited by the amount of the required insurance coverage.

13.2.10 For purposes of this section, Railway means "Burlington Northern Santa Fe LLC", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

13.2.11 Railroad will not accept binders as evidence of insurance, the original policy shall be provided. The named insured, description of the work and designation of the job site to be shown on the Policy are as follows:

- (a) Named Insured: BNSF Railway Company
- (b) Description and Designation:
 - Route I-55, Jefferson County, MoDOT bridge rehab (A10354)
 - Job No. J613131
 - BNSF River Subdivision, DOT# 663 873C (MP 32.43)

13.2.12 The contractor must notify BNSF Manager of Public Projects at Nicholas.Konen@bnsf.com when applying for railroad insurance coverage.

JOB SPECIAL PROVISIONS (BRIDGE)

13.3 If any part of the work is sublet, similar insurance and evidence thereof in the same amounts as required of the prime contractor, shall be provided by or in behalf of the subcontractor to cover the subcontractor's operations. Endorsements to the prime contractor's policies specifically naming subcontractors and describing their operations will be acceptable for this purpose.

13.4 All Insurance hereinbefore specified shall be carried until all work required to be performed under the terms of the contract has been satisfactorily completed within the limits of the Railroad's right of way as evidenced by the formal acceptance by the Commission. Insuring Companies may cancel insurance by permission of the Commission and Railroad or on 30 days written notice to the Railroad and Commission.

14.0 Hazardous Materials Compliance and Reporting. Contractor shall be responsible for complying with all applicable federal, state and local governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, as amended; the Oil Pollution Act, as amended; the Hazardous Materials Transportation Act, as amended; and the Comprehensive Environmental Response, Compensation and Liability Act, as amended), and health and safety laws and regulations. In addition to the liability provisions contained elsewhere in this job special provision, the contractor hereby indemnifies, defends and holds harmless the Railroad for, from and against all fines or penalties imposed or assessed by federal, state and local governmental agencies against the Railroad which arise out of contractor's work under this special provision. Notwithstanding the preceding sentence, the contractor will not be liable for pre-existing hazardous materials or hazardous substances discovered on Railroad's property or right of way so long as such hazardous materials or hazardous substances were not caused by (in whole or in part) contractor's work, acts or omissions. If contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railroad's property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this special provision, the contractor shall immediately:

- (a) Notify the Railroad's Resource Operations Center at (800) 832-5452, of such discovery.
- (b) Take safeguards necessary to protect employees, subcontractors, agents and/or third parties.
- (c) Exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release

15.0 Personal Injury Reporting. The Railroad is required to report certain injuries as a part of compliance with Federal Railroad Administration ("FRA") reporting requirements. Any personal injury sustained by any employee of the contractor, subcontractor or contractor's invitees while on the Railroad's property shall be reported immediately, by phone or mail if unable to contact in person, to the Railroad's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form is to be completed and sent by Fax to the Railroad at (817) 352-7595 and to the Railroad's Project Representative no later than the close of shift on the date of the injury.

16.0 Failure to Comply. In the event the contractor violates or fails to comply with any of the requirements of this special provision, the below orders will be applied. Any such orders shall

JOB SPECIAL PROVISIONS (BRIDGE)

remain in effect until the contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

(a) The Railroad Engineer may require that the contractor to vacate the Railroad's property.

(b) The Engineer may withhold all monies due to the contractor until contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

17.0 Payment for Cost of Compliance. No separate payment will be made for any extra cost incurred on account of compliance with this special provision. All such cost shall be included in the contract unit price for other items included in the contract. Railroad will not be responsible for paying the contractor for any work performed under this special provision.

N. UNION PACIFIC RAILROAD REQUIREMENTS

1.0 Introduction.

1.1 These Railroad Requirements set forth terms and conditions agreed between the Union Pacific Railroad Company (Railroad) and the Missouri Highways and Transportation Commission (Commission), under which the Railroad will allow the Commission's contractors to enter in and upon the Railroad's real property, right of way, tracks and other facilities (Railroad's Property) to perform the contractor's work relating to this project.

1.2 To report an emergency on the Railroad, call: (888) 877-7267.

1.3 The project location is Railroad Milepost 27.8 on Railroads Desoto Subdivision designated as USDOT Crossing # 445 878L (MoDOT bridges A09534 & A09535) and Railroad Milepost 7.6 on the Railroads Crystal City Industrial Lead (Desoto Sub) designated as USDOT Crossing # 371 200G (MoDOT bridges A22214 & A22215).

1.4 Definitions of terms set forth in the current edition of the Missouri Standard Specifications for Highway Construction shall be applicable to those terms as used in these Railroad Requirements.

2.0 Authority of Railroad Representative and Engineer.

2.1 The authorized representative of the Railroad, herein called "Railroad Representative", shall have final authority in all matters affecting the safe maintenance and operation of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks.

2.1.1 The Railroad designates the following individual as the Railroad Representative for this project. Except as otherwise provided in these Railroad Requirements, the contractor shall address all notices concerning this project to the Railroad Representative, as follows:

Mr. Jordon Albers,
Manager of Industry and Public Projects
Union Pacific Railroad Company
100 North Broadway
St. Louis, MO 63102
Telephone: (314) 331-0682

E-mail: jralbers@up.com

2.1.2 The Railroad, or the individual identified above, may designate a different individual to act as the Railroad Representative for this project, and may change the address information stated above, by giving written notice of the changes to the contractor and to the Engineer, as provided in these Railroad Requirements.

2.2 The authorized representative of the Commission (Engineer) shall have authority over all other matters as prescribed herein and in the project specifications.

3.0 Contractor's Indemnity Obligations to the Railroad.

3.1 The contractor agrees to indemnify, defend and hold harmless the Railroad from and against any injury or death of persons whomsoever, or from any loss or damage to the Railroad's Property, caused by acts or omissions of the contractor in performing work on this project, whether on, over, under or in the vicinity of the Railroad's Property. In the event the contractor shall fail to restore the Railroad's Property immediately to a condition acceptable to the Railroad when any such loss or damage to the Railroad's Property is called to the contractor's attention by the Railroad, then the Railroad may perform such corrective work at the cost of the contractor. The Railroad shall have the right to bring an action directly against the contractor to recover any loss or damage sustained by the Railroad by reason of the contractor's breach of agreements contained in these Railroad Requirements. In addition to such remedies of the Railroad, the Commission will withhold from final payment due to the contractor the amount reasonably necessary to reimburse the Railroad for such loss or damage or for performing such work. The term "loss or damage" as used herein shall include, but not be limited to, the erosion and silting of, water damage to, and the accidental or intentional placing or dropping of objects on the Railroad's Property.

4.0 Notice of Starting Work.

4.1 The contractor shall not commence any work on the Railroad's right of way until contractor has complied with the following conditions:

4.1.1 At least ten (10) days in advance of the date the contractor proposes to begin work on the Railroad's Property, the contractor has given written notice of the contractor's proposed start date and time to the Railroad Representative, and Railroad's Manager of Track Maintenance (see paragraph 12.2.3 below), with a copy to the Engineer.

4.1.2 The Commission has obtained written approval from the Railroad's Representative for the contractor's insurance coverage as required by Section 17 of these Railroad Requirements, and authorization for the contractor to begin work on the Railroad's Property.

4.1.3 The contractor has determined whether fiber optic cable systems are buried on the Railroad's Property. If fiber optic cable systems are buried on the Railroad's Property, then the contractor has contacted the Railroad at the 24 hour number, 800-336-9193, has contacted the telecommunications company involved, has arranged for a cable locator, and has made arrangements for relocation or other protection of the fiber optic cable system on the Railroad's Property.

4.1.4 The contractor's employees, representatives or agents who are regularly assigned to perform work on the Railroad's Property have been certified as having completed the Internet Safety Orientation available at www.contractororientation.com. This certification shall be

JOB SPECIAL PROVISIONS (BRIDGE)

renewed annually. In addition the contractor shall require that every employee, representative or agent who is not regularly assigned to perform work on the Railroad's Property has received appropriate safety training before performing any work on the Railroad's property. The cost of the Internet Safety Orientation, which is subject to change, is currently \$11 per person per year.

4.2 Right of Entry. At least thirty (30) days in advance of the date the contractor proposes to begin work on the Railroad's Property, the contractor shall enter into a Contractor's Right of Entry Agreement (CROE) with Railroad prior to working on Railroad property. Submit the following information to the Railroad Representative:

- a. MoDOT manager contact information
- b. Contractor contact information
- c. Site location (include address, DOT#)
- d. Site map
- e. Brief description of scope of work
- f. Proposed schedule for work on UP right of way

4.2.1 After reviewing the information, the Railroad Representative will send all of the information to UP Real Estate for processing. UP Real Estate will draft the CROE agreement and send it to the contractor for signature. The signed contract and administrative fee must then be returned to UP Real Estate.

4.2.2 Administrative Fee. Upon the execution and delivery of this CROE agreement, Contractor shall pay the Railroad Five Hundred Dollars (\$545) as reimbursement for clerical, administrative and handling expenses in connection with the processing of this CROE agreement.

5.0 Interference with Railroad's Operations.

5.1 The Railroad's right of way is located within the limits of this project. The contractor shall take care to insure that it will not drop any debris or material on the Railroad's Property.

5.2 The contractor shall arrange and conduct all of the contractor's work so that it causes no interference with the Railroad's operations, including train, signal, telephone, telegraphic services, damage to the Railroad's Property, poles, wires and other facilities of tenants on the Railroad's Property. Whenever the contractor's work may directly affect the operations or safety of trains, the contractor shall submit a written description of the method of doing such work to the Railroad Representative for approval, but such approval shall not relieve the contractor from liability resulting from the contractor's work. Any work to be performed by the contractor that requires flagging service shall be deferred by the contractor until the flagging services are available at the job site.

5.3 Whenever the contractor's work upon the Railroad's Property will unavoidably cause an impediment to the Railroad's operations, such as requiring the use of runaround tracks or reduced train speed, the contractor should schedule and conduct these operations so that this impediment is reduced to the absolute minimum.

5.4 If conditions arising from, or in connection with the work require immediate and unusual provisions to protect the Railroad's operations and property, the contractor shall make such provisions. If in the judgment of the Railroad Representative, or the Engineer if the Railroad Representative is absent, such provision is insufficient, then the Railroad Representative or Engineer may require or provide such provisions as he/she deems necessary. In any event, the

JOB SPECIAL PROVISIONS (BRIDGE)

contractor shall make such provisions at the contractor's expense, and without cost to the Railroad or the Commission.

6.0 Track Clearances.

6.1 During construction, the contractor shall maintain not less than the minimum track clearances as shown on the project plans. However, before undertaking any work within the Railroad's Property and before placing any obstruction over any track, the contractor shall:

6.1.1 Notify the Railroad Representative and the Railroad's Manager of Track Maintenance at least ten (10) days in advance of the proposed work.

6.1.2 Receive assurance from the Railroad's Manager of Track Maintenance that arrangements have been made for flagging service as may be necessary.

6.1.3. Receive permission from the Railroad Representative to proceed with the work, as provided in section 4.0.

6.1.4. Confirm that the Engineer has received copies of the contractor's notice to the Railroad, and of the Railroad's response.

6.1.5 Note that temporary Work Zone traffic control must not circumvent the active warning devices at this location.

6.1.6 Temporary traffic control must comply with MUTCD standards. Any time work is within 25' of the track, the potential to foul the track exists or a pilot car is used traversing the crossing will require a Railroad flagperson to be present. Traffic control must be returned to normal operations through the crossing area before releasing the Railroad's flag person.

7.0 Construction Procedures.

7.1. General. The contractor's work on the Railroad's property shall be:

7.1.1 Subject to the Railroad's inspection and review.

7.1.2 Performed in accordance with these Railroad Requirements.

8.0 Maintenance of Railroad Facilities. Within the project limits, the contractor shall maintain Railroad's Property, including all ditches and drainage structures, free of silt or other obstructions that may result from contractor's operations. The contractor shall promptly repair eroded areas within the Railroad's Property and repair any other damage to the Railroad's Property or the Railroad's tenants. The contractor shall perform all such maintenance and repair of damages due to the contractor's operations at the contractor's expense.

9.0 Storage of Materials and Equipment.

9.1 The contractor shall obtain permission from the Railroad Representative before storing any materials or equipment anywhere on Railroad's Property. The Railroad will not be liable for damage to such material and equipment from any cause, and the Railroad Representative may move such material and equipment or require the contractor to move it, at the contractor's expense.

JOB SPECIAL PROVISIONS (BRIDGE)

9.2 The contractor shall not leave unattended any grading or construction machinery parked upon Railroad's Property, unless it is effectively immobilized so that unauthorized persons cannot move such machinery.

10.0 Cleanup. Upon completion of the work, the contractor shall remove from within the limits of the Railroad's Property all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the contractor's and shall leave Railroad's Property in a neat condition satisfactory to the Railroad Representative.

11.0 Damages. The Railroad shall not assume liability for any damages to the contractor, contractor's work, employees, servants, equipment and materials caused by the Railroad's traffic. However, the preceding sentence shall not exempt the Railroad from liability for any loss, damage or injury proximately caused by the Railroad's intentional misconduct or sole or gross negligence. The contractor shall directly reimburse the Railroad for any cost the Railroad reasonably incurs for repairing damages to the Railroad's Property or to property of the Railroad's tenants, caused by or resulting from the operations of the contractor relating to this project.

12.0 Flagging Services.

12.1 When Flagging is Required. The Railroad has sole authority to determine the need for flagging to protect the Railroad's operations. Whenever the Railroad requires flagging services with reference to any of the contractor's work on this project, the contractor shall not perform any such work until all required flaggers are present at the job site.

12.1.1 In general, the Railroad may require flagging services whenever the contractor's personnel or equipment are, or are likely to be, working on the Railroad's Property, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad structure or the railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging, to prevent unreasonable risks of accidental hazard to the Railroad's operations or personnel.

12.1.2 Normally, the Railroad will assign one flagger to a project; but in some cases, more than one may be necessary, such as yard limits where the Railroad may assign up to three flaggers. However, if the contractor works within distances that violate instructions given by the Railroad Representative, or performs work upon or adjacent to Railroad's Property that has not been scheduled with the Railroad Representative, the Railroad may require flagging services full time until the project is completed.

12.2 Scheduling and Notification of Flagging Services.

12.2.1 The contractor shall arrange with the Railroad all flagging services required by the Railroad to accomplish the contractor's work on this project.

12.2.2 Before the contractor begins work on the Railroad's Property, the contractor shall furnish to the Railroad Representative and the Engineer a schedule for all work required to complete the contractor's portion of the project within the Railroad's Property, and shall arrange for a job site meeting between the contractor, the Engineer, and the Railroad Representative. Until the contractor has provided its work schedule and met on-site with the Railroad Representative and the Engineer, the Railroad may withhold all flagging services from the contractor's proposed job site.

JOB SPECIAL PROVISIONS (BRIDGE)

12.2.3 Before the contractor first begins any work upon or adjacent to the Railroad's Property, the contractor shall give not less than thirty (30) days advance notice to the Railroad, and to the Engineer, of its intent to begin such work. The contractor shall address all notices relating to flagging as instructed in the fully executed CROE agreement.

Brandon Loeffler - Manager of Track Maintenance
916 W. Main Street
Bismark, MO 63624
402-501-1363(Office)
402-672-2526(Cell)

12.2.4 The Railroad usually assigns one flagger to work at the job site on a continuous basis until the contractor no longer needs flagging services. The contractor shall not call for flagging services on a spot basis. The Railroad's assigned flagger shall notify the Engineer when flagging services have begun and ended. The flagger shall give these notices immediately upon arrival at the job site on the first day, and before departing from the job site on the last day of each separate period when the Railroad provides flagging services, or as soon as possible thereafter. The Engineer shall document these notifications in the project records.

12.2.5 After the contractor has begun work that requires flagging services, the contractor shall give not less than ten (10) day's advance written notice to the Railroad before discontinuing flagging services and terminating the obligation to pay for flagging services. The contractor shall simultaneously provide a copy of this notice to the Engineer. If the contractor's work on or adjacent to the Railroad's Property is suspended at any time, or for any reason, then before the contractor resumes any work on or adjacent to the Railroad's Property, the contractor shall give advance, written notice to the Railroad and to the Engineer of its intent to resume such work. This notice shall provide sufficient details of the contractor's proposed work to enable the Railroad Representative to determine whether flagging services will be required before the contractor resumes its work on or adjacent to the Railroad's Property. The contractor shall give this required notice at least three (3) working days' before it intends to resume such work; however, The Railroad may take up to thirty (30) days after the contractor has given this notice before resuming flagging services at the job site. The requirements of this paragraph 12.2.5 shall not apply if the suspension and resumption of the contractor's work were previously scheduled with the Railroad pursuant to paragraph 12.2.2 of these Railroad Requirements, or the suspension was caused by an emergency as provided in paragraph 12.2.6 of these Railroad Requirements.

12.2.6 If, after the Railroad has assigned a flagger to the project site in accordance with section 12.0, any emergency requires the flagger's presence elsewhere, then the contractor shall suspend work on the Railroad's Property until the flagger is again available. Any additional costs to the contractor resulting from such delay shall be borne by the contractor and not by the Railroad.

12.3 Payment for Flagging Services.

12.3.1 The Commission will pay the Railroad directly for the cost of flagging services associated with this project by deducting the amount from the Commission's payments to the contractor.

12.3.2 The estimated cost of flagging services is approximately \$1300 per day, based on an 8-hour work day and a 40-hour work week. The Railroad shall charge not more than its actual cost of providing these flagging services, which includes the base pay for the flagger or flaggers

JOB SPECIAL PROVISIONS (BRIDGE)

who actually performed the required flagging services, the Railroad's reasonable overhead costs, and the reasonable costs actually incurred for the flagger's travel expenses, meals and lodging if required. The Railroad may charge a maximum of one hour of travel time each way per day per flagger, for travel to and from the job site. A flagger's work in excess of 8 hours per day or 40 hours per week, but not more than 12 hours per day, will result in overtime pay at 1.5 times that employee's regular hourly rate. A flagger's work in excess of 12 hours per day will result in overtime pay at 2.0 times that employee's regular hourly rate. If a flagger performs required flagging services on a holiday, then the overtime pay rate shall be 2.5 times that employee's regular hourly rate. The Commission also shall reimburse the Railroad for its actual expenses reasonably incurred in preparing and handling invoices to the Commission for the cost of these flagging services. The Railroad's charges to the Commission shall comply with applicable provisions of the current Federal Aid Policy Guide issued by the Federal Highway Administration.

12.3.3 The Railroad shall submit progress invoices to the Engineer during the time the Railroad requires flagging services. The Railroad shall submit its final invoice for flagging services to the Engineer within one hundred eighty (180) days after the contractor has notified the Railroad and the Commission that all its work over the Railroad's Property is complete, in accordance with section 18.0 below. If the Commission does not receive the Railroad's final flagging invoice within this time period, then the Railroad shall obtain payment directly from the contractor.

12.3.4 If a dispute arises between the Railroad, the Commission and the contractor concerning the amount charged for flagging service, then the Commission may deduct the full amount of the Railroad's invoice from the contractor's payment until the dispute is resolved.

12.4 Flagging Complaints. The contractor and the Railroad shall attempt to resolve any complaints concerning flagging services in a timely manner. If the contractor disputes the need for a flagger, the contractor shall notify the Railroad Representative and the Engineer. The contractor shall confirm any verbal complaints in writing within five (5) working days, by sending a copy to the Railroad Representative and to the Engineer.

13.0 Haul Across Railroads.

13.1 Where the plans show or imply that the contractor must haul materials of any nature across a Railroad, unless the plans clearly show that the Commission has included arrangements for such haul in the agreement with the Railroad, the contractor shall make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad. The Railroad need not construct a haul road for the contractor unless no other alternate means is available to the contractor. The contractor shall bear all costs incidental to such crossings, including flagging, whether services are performed by contractor's own forces or by the Railroad's personnel. The contractor shall execute the Railroad's standard Road Crossing Agreement covering terms and conditions for the temporary crossing.

13.2 Neither the contractor nor the Railroad shall construct any crossing for use by the contractor for transporting materials or equipment across the tracks of the Railroad until the Railroad Representative specifically authorizes the installation, maintenance, necessary watching and flagging thereof and removal, which shall be done at the contractor's expense.

14.0 Work for the Benefit of the Contractors. The project plans show all temporary or permanent changes in wire lines or other facilities that are necessary to complete the project, or these changes will be covered by appropriate plan revisions approved by the Commission and

JOB SPECIAL PROVISIONS (BRIDGE)

the Railroad. If the contractor desires any further changes, the contractor shall make separate arrangements with the Railroad for those changes, at the contractor's expense.

15.0 Cooperation and Delays. The contractor shall arrange a schedule with the Railroad for accomplishing staged construction involving work by the Railroad or tenants of the Railroad. In arranging a schedule, the contractor shall request information from the Railroad, and the Railroad shall promptly provide information, concerning the minimum lead time required for assembling crews and materials. The contractor shall schedule adequate time for those activities. The contractor shall not make any claim against the Railroad for hindrance or delay on account of railway traffic for:

15.1 Any work the Railroad performs.

15.2 Other delay incident to or necessary for the safe maintenance of railway traffic.

15.3 Any delays due to compliance with these Railroad Requirements.

16.0 Trainman's Walkways. The contractor shall maintain along the outer side of each exterior track of multiple operated tracks, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 12 feet from the centerline of the track. Before the close of each work day, the contractor shall remove all temporary impediments to walkways and track drainage encroachments or obstructions that were allowed during work hours when flagging services were available. Whenever the contractor excavates or maintains any excavation near the walkway, the contractor shall install a handrail with 12 feet minimum clearance from the centerline of the track.

17.0 Insurance.

17.1 General Insurance Provisions. The contractor shall, at its sole cost and expense, procure and continuously maintain in force during this project, the insurance coverage required under this section 17 until the contractor has completed all project work on the Railroad's Property, has removed all equipment and materials from the Railroad's Property, and has cleaned and restored the Railroad's Property to the satisfaction of the Engineer and the Railroad Representative. The amount of work to be performed upon, over or under the Railroad's Property is estimated to be 1 percent (1%) of the contractor's total bid for the project.

17.2 Commercial General Liability Insurance. The contractor shall maintain commercial general liability ("CGL") insurance with a limit of not less than \$5,000,000 for each occurrence and an aggregate limit of not less than \$10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage). The policy must contain the following endorsement, which must be stated on the certificate of insurance: "Contractual Liability Railroad's" ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.

17.3 Business Automobile Coverage Insurance. The contractor shall maintain business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less than \$5,000,000 for each accident. The policy must contain the following endorsements, which must be stated on the certificate of insurance: "Coverage For Certain Operations In Connection With Railroad's" ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the

JOB SPECIAL PROVISIONS (BRIDGE)

Designated Job Site; and Motor Carrier Act Endorsement - Hazardous Materials Clean Up (MCS-90) if required by law.

17.4 Alternate Liability Insurance Limits. Instead of the minimum limits of insurance coverage described above in subsections 17.2 and 17.3, Railroad will accept CGL insurance limits of at least \$2,000,000 for each occurrence or claim and an aggregate limit of at least \$2,000,000, and will accept Business Automobile Insurance containing a combined single limit of at least \$2,000,000 per occurrence or claim, if the contractor will secure Railroad Protective Liability Insurance coverage with a combined single limit of \$5,000,000 per occurrence and an aggregate limit of \$10,000,000. The contractor's election to maintain these alternate liability insurance limits shall not affect the applicability of any other terms and conditions set forth in these Railroad Requirements.

17.5 Workers' Compensation and Employers' Liability Insurance. The contractor shall maintain workers' compensation insurance coverage, with not less than the minimum statutory liability required under the workers' compensation laws of the State of Missouri. The contractor shall maintain Employers' Liability (Part B) insurance coverage with limits of at least \$500,000 for each accident, a \$500,000 disease policy limit, and \$500,000 for each employee. If the contractor is self-insured, then the contractor shall provide evidence of state approval and excess workers' compensation coverage, which must include coverage for liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable. The policy must contain the following endorsement, which must be stated on the certificate of insurance: "Alternate Employer Endorsement" ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing the Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

17.6 Railroad Protective Liability Insurance. The contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of the Railroad as named insured, with a limit of not less than \$2,000,000 per occurrence and an aggregate limit of \$6,000,000. Before commencing any work on the Railroad's Property, the contractor shall submit the original insurance policy to the Railroad, or may submit a binder stating that the required Railroad Protective Liability policy is in place until the contractor delivers the original policy to the Railroad. The contractor shall cause the Railroad Protective Liability Insurance policy to include a description of the named insured, the work, and the job site, as follows:

17.6.1 Named Insured: Union Pacific Railroad Company.

17.6.2 Description and Designation:

Rehab of 4 MoDOT bridges (A09534 & A09535 and A22214 & A22215)
Route I-55 in Jefferson County
Job No. J613131

Railroad Milepost 27.8 on Railroads Desoto Subdivision designated as USDOT Crossing # 445 878L (MoDOT bridges A09534 & A09535) and Railroad Milepost 7.6 on the Railroads Crystal City Industrial Lead (Desoto Sub) designated as USDOT Crossing # 371 200G (MoDOT bridges A22214 & A22215)

17.7 Umbrella or Excess Insurance. If the contractor utilizes umbrella or excess insurance policies, these policies must "follow form" and afford no less coverage than the primary policy.

17.8 Pollution Liability Insurance. The contractor shall maintain pollution liability insurance coverage, which must be written on ISO form Pollution Liability Coverage Form Designated

JOB SPECIAL PROVISIONS (BRIDGE)

Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000. If the scope of work as defined in this Project includes the disposal of any hazardous or non-hazardous materials from the job site, the contractor must furnish to the Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

17.9 Other Insurance Requirements.

17.9.1. Each policy required above (except workers' compensation and employers' liability) must include the Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to the Railroad as an additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26 and CA 20 48, provide coverage for the Railroad's negligence whether sole or partial, active or passive.

17.9.2 Where allowable by law, the punitive damage exclusion shall be deleted, and the deletion shall be indicated on the certificate of insurance.

17.9.3 The contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against the Railroad and its agents, officers, directors and employees, except that these waivers shall not apply to punitive damages, nor to any loss, damage or injury proximately caused by the Railroad's intentional misconduct or sole or gross negligence. The certificate of insurance shall acknowledge these waivers.

17.9.4 Prior to commencing any work on the Railroad's Property, the contractor shall furnish the Railroad with one or more certificates of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth in this Section 17.

17.9.5 The contractor shall only obtain insurance policies written by a reputable insurance company acceptable to the Railroad, or which currently has a Best's Insurance Guide Rating of A- and Class VII or better, and which is authorized to do business in the State of Missouri.

17.9.6 The fact that insurance is obtained by the contractor or by the Railroad on behalf of the contractor will not be deemed to release or diminish the liability of the contractor, including, without limitation, liability under the indemnity provisions contained in Section 1.4 of these Railroad Requirements. Damages recoverable by the Railroad from the contractor or any third party will not be limited by the amount of the required insurance coverage, except to the extent of any payments the Railroad has received pursuant to that insurance coverage.

17.10 Evidence of Insurance. The contractor shall provide evidence of insurance as required above to the addresses shown below, for review by the Commission and transmittal to the Railroad.

Railroad
Ms. Kathy Nesser
Manager, Real Estate
Union Pacific Railroad Company
1400 Douglas St., MS 1690
Omaha, NE 68179

Commission
Mr. Dave Ahlvers
State Construction and Materials Engineer
Missouri Department of Transportation
P.O. Box 270
Jefferson City, MO 65102

17.11 Except as otherwise specifically provided in these Railroad Requirements, the Railroad will not accept binders as evidence of insurance, and the contractor shall provide the Railroad with the original insurance policy.

17.12 Insurance Required of Subcontractors. If any part of the work is sublet, the contractor shall maintain and provide evidence of similar insurance, in the same amounts as required of the prime contractor, to cover the subcontractor's operations. The Railroad will accept endorsements to the prime contractor's policies specifically naming subcontractors and describing the subcontractor's operations, for this purpose.

17.13 Cancellation of Insurance. The contractor and its insurers shall not cancel any of the required insurance coverage, except by permission of the Commission and the Railroad, or after thirty (30) days' written notice to the Commission and the Railroad at the addresses shown in subsection 17.10.

18.0 Completion of Work on Railroad's Property. The contractor shall notify Engineer and Railroad's Representative when the contractor has completed its work on Railroad's Property.

19.0 Failure to Comply. If the contractor violates or fails to comply with any of the requirements of these Railroad Requirements, then the Railroad Engineer may require that the contractor vacate the Railroad's property and the Engineer may withhold all monies due to the contractor until the contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

20.0 Payment for Cost of Compliance. The contractor is not entitled to any separate payment for any extra cost it may incur on account of compliance with these Railroad Requirements. The contractor shall include all such costs in the contract unit price for items properly authorized in the contract.