STATE OF MISSOURI
HIGHWAYS and TRANSPORTATION COMMISSION

JEFFERSON CITY, MISSOURI

CONSTRUCTING OR IMPROVING
Contract I.D. 181019-C01

THIS JOB SHALL BE CONSTRUCTED UNDER
FEDERAL PROJECT NUMBER(S): I-70-2(114)

Job J3I3047 Route 70 LAFAYETTE 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 EBSX 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.

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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)

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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.

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*These forms are also available on MoDOT's Website, www.modot.org under 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 10/19/2018.

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 J3I3047 Route 70 LAFAYETTE County. Resurface
from Johnson Dr. to Route 13, the total length of
improvement being 10.45 miles.

If more than one Job Number is listed for this call, then 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, 2018," and "Missouri Standard Plans for Highway Construction, 2018", 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.

(5) 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:

Line Number	Item Number	Quantity	Unit	Unit Price	Extension Price
Section 0001 Roadway Items - J3I3047					
0010	2022010	1	LS		
REMOVAL OF IMPROVEMENTS					
0020	2072000	136.600	STA		
LINEAR GRADING CLASS 2					
0030	2153000	28.000	100F		
SHAPING SLOPES, CLASS III					
0040	3030600	14444.000	SQYD		
FURNISHING ROCK BASE MATERIAL					
0050	3030610A	14444.000	SQYD		
PLACING ROCK BASE					
0060	3040133	29735.000	SQYD		
TYPE 1 AGGREGATE FOR BASE (3 IN. THICK)					
0070	3040506	3305.000	SQYD		
TYPE 5 AGGREGATE FOR BASE (6 IN. THICK)					
0080	3049905	3942.400	SQYD		
MISC. TYPE 1 OR TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)					
0090	4010150	3040.900	SQYD		
TYPE A2 SHOULDER					
0100	4011211	8029.800	TONS		
BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-2)					
0110	4030009	31180.200	TONS		
ASPHALTIC CONCRETE MIXTURE PG 76-22 (SP095BSM MIX)					
0120	4079912	47683.000	GAL		
MISC. TACK COAT-LOW TRACKING OR NON-TRACKING					
0130	5029905	11403.300	SQYD		
MISC. OPTIONAL PAVEMENT MAINLINE					
0140	5029905	3305.200	SQYD		
MISC. OPTIONAL PAVEMENT RAMP					
0150	5029905	3942.400	SQYD		
MISC. OPTIONAL PAVEMENT TEMPORARY SHOULDER					
0160	5029905	3942.400	SQYD		
MISC. REMOVAL OPTIONAL PAVEMENT TEMPORARY SHOULDER					
0170	6083003	17.600	SQYD		
3 IN. CONCRETE MEDIAN STRIP					
0180	6122019	2.000	EA		
IMPACT ATTENUATOR 70 MPH (SAND BARRELS)					
0190	6122030	9.000	EA		
IMPACT ATTENUATOR (RELOCATION)					
0200	6123000A	2.000	EA		
TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)					
0210	6131010	808.000	SQYD		
FURNISHING AND PLACING CONCRETE MATERIAL FOR FULL DEPTH PAVEMENT REPAIR					
0220	6131012	81.000	SQYD		
SUBGRADE COMPACTION (6 IN. DEPTH) (PAVEMENT REPAIR)					
0230	6131013	81.000	SQYD		
TYPE 1 OR 5 AGGREGATE FOR BASE (4 IN. THICK) (PAVEMENT REPAIR)					
0240	6131014	3012.000	LF		

	FULL DEPTH PAVEMENT REPAIR SAW CUT (FOR PERIMETER AND INTERNAL SAW CUTS)		
0250	6131015	1020.000	EA
	DOWEL BAR (DRILLING, FURNISHING AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR		
0260	6131017	20.000	EA
	DOWEL BAR (FURNISHING AND INSTALLATION WITH BASKETS) FOR FULL DEPTH PAVEMENT REPAIR		
0270	6131018	20.000	EA
	TIE BAR (DRILLING, FURNISHING AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR (TYPE L JOINTS)		
0280	6161005	1008.000	SQFT
	CONSTRUCTION SIGNS		
0290	6161008	4.000	EA
	ADVANCED WARNING RAIL SYSTEM		
0300	6161009	4.000	EA
	FLAG ASSEMBLY		
0310	6161024	240.000	EA
	CHANNELIZER (TRIM LINE) WITH LIGHT		
0320	6161033	28.000	EA
	DIRECTIONAL INDICATOR BARRICADE		
0330	6161040	2.000	EA
	FLASHING ARROW PANEL		
0340	6161055	28.000	EA
	SEQUENTIAL FLASHING WARNING LIGHT		
0350	6161070	28.000	EA
	TUBULAR MARKER		
0360	6161098A	8.000	EA
	CHANGEABLE MESSAGE SIGN WITHOUT COMMUNICATION INTERFACE, CONTRACTOR FURNISHED, CONTRACTOR RETAINED		
0370	6169901	1	LS
	MISC. DYNAMIC LATE MERGE SYSTEM (ZIPPER MERGE) AT MO 13 RAMP C		
0380	6169901	1	LS
	MISC. DYNAMIC LATE MERGE SYSTEM (ZIPPER MERGE) AT RTE H		
0390	6169901	1	LS
	MISC. DYNAMIC LATE MERGE SYSTEM (ZIPPER MERGE) AT RTE M/O		
0400	6169902	8.000	EA
	MISC. TEMPORARY SHORT-TERM RUMBLE STRIPS COMMISSION FURNISHED/RETAINED		
0410	6173600D	2363.000	LF
	TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED / RETAINED		
0420	6174000A	2.000	EA
	TEMPORARY TRAFFIC BARRIER HEIGHT TRANSITION		
0430	6175010A	10475.000	LF
	RELOCATING TEMPORARY TRAFFIC BARRIER		
0440	6175020A	2.000	EA
	RELOCATING TEMPORARY TRAFFIC BARRIER HEIGHT TRANSITION		
0450	6181000	1	LS
	MOBILIZATION		
0460	6200003	332.000	LF
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 4 IN., WHITE		
0470	6200006	1002.000	LF
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 4 IN YELLOW		
0480	6200009	859.000	LF
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 6 IN. WHITE		
0490	6200015	418.000	LF
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 24 IN. WHITE		

0500	6200018	34.000	LF
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 24 IN. YELLOW		
0510	6200021	5.000	EA
	PREFORMED THERMOPLASTIC PAVEMENT MARKING, LEFT/RIGHT ARROW		
0520	6205301B	28417.000	LF
	TEMPORARY REMOVABLE MARKING TAPE 4 IN., WHITE		
0530	6205303B	21270.000	LF
	TEMPORARY REMOVABLE MARKING TAPE 4 IN., YELLOW		
0540	6205902A	141721.000	LF
	6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS		
0550	6205903A	118305.000	LF
	6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS		
0560	6205906A	6582.000	LF
	12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS		
0570	6207001	49687.000	LF
	PAVEMENT MARKING REMOVAL		
0580	6221001	476829.000	SQYD
	COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)		
0590	6224010	17667.000	SQYD
	MODIFIED COLDMILLING (DEPTH TRANSITIONS)		
0600	6261000A	2142.700	STA
	BITUMINOUS SHOULDER RUMBLE STRIP		
0610	6269909	68.400	STA
	MISC. OPTIONAL PAVEMENT SHOULDER RUMBLE STRIP		
0620	8051000A	3.100	ACRE
	SEEDING - COOL SEASON MIXTURES		
0630	8061006	12.000	LF
	ALTERNATE DITCH CHECK		
0640	8061016	98.000	CUYD
	SEDIMENT REMOVAL		
0650	8061019	8620.000	LF
	SILT FENCE		

Section 0001 Total

Section 0002
Guardrail/Guard Cable Items - J3I3047

0670	6061010	263.000	LF
	GUARDRAIL TYPE A		
0680	6061060	1913.000	LF
	MGS GUARDRAIL		
0690	6061061	31013.000	LF
	MGS GUARDRAIL, 8 FT. POSTS, 6 FT. - 3 IN. SPACING		
0700	6061065	150.000	LF
	MGS GUARDRAIL, 6 FT. POSTS, 1 FT. - 6.75 IN. SPACING		
0710	6061069	6.000	EA
	MGS BRIDGE APPROACH TRANSITION SECTION (REGULAR/NO CURB)		
0720	6061078	500.000	LF
	MGS EMBEDDED ANCHOR SECTION (WITH RUBRAIL)		
0730	6061080	36.000	EA
	MGS END ANCHOR		

0740	6062100	4.000	EA
	BRIDGE ANCHOR SECTION (CURB TYPE)		
0750	6062303	4.000	EA
	ASYMMETRICAL TRANSITION SECTION, 6.5 FT. POSTS		
0760	6063014	35.000	EA
	TYPE A CRASHWORTHY END TERMINAL (MASH)		
0770	6063016	2.000	EA
	TYPE B CRASHWORTHY END TERMINAL		
0780	6066610	2.000	EA
	END ANCHOR		
0790	6069901	1	LS
	MISC. REMOVE AND REINSTALL GUARD CABLE		

Section 0002 Total

Section 0003
Signing Items - J3I3047

0800	9031010	0.900	CUYD
	CONCRETE FOOTINGS, EMBEDDED		
0810	9031220	460.000	LB
	PIPE POSTS		
0820	9035004A	41.000	SQFT
	SH-FLAT SHEET		

Section 0003 Total

Item Total $0.00

DBE CERTIFICATION

(6) Trainees: (Applies to Federal Projects only) The number of trainee hours provided under this contract will be 0 slots at 1000 hours per slot or 0 hours.

(7) Bidder's Certificaton 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 11.00 % 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 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 blank. 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 meet 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:

CONTRACT PROVISIONS

(8a) 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

(8b) ACCEPTANCE FOR PROVISION FOR ASPHALT CEMENT PRICE INDEX, SEAL COAT PRICE INDEX, ASPHALT 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, Asphalt Underseal Price Index, and/or Polymer Modified Emulsion Membrane Price Index (when used in conjunction with an Ultrathin Bonded Asphalt Wearing Surface treatment) 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

ASPHALT UNDERSEAL

POLYMER MODIFIED EMULSION MEMBRANE (UBAWS)

(9) 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)

(10) 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.

(11a) 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.

(11b) 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.

Does the bidder make certification for the above items listed in 11(a) or 11 (b)? **Yes** ◯ **No** ◯

By selecting "No" the bidder REFUSES to make one or more certifications for the above items 11a or 11b. 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.

(12) ANTIDISCRIMINATION: The Commission hereby notifies all bidders that it will affirmatively ensure 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.

(13) 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 domiciliary state. A contractor or bidder domiciled outside Missouri 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.

SUBCONTRACTOR DISCLOSURE

(14) 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, 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 emailed 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: $

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: $

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: $

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

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CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: $

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: $

CATEGORY OF WORK:

Submitted:

SIGNATURE AND IDENTITY OF BIDDER

(15) 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 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.

◯ **Yes** ◯ **No**

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, understood and completed the above Electronic Bid Submission Certification.

BID BOND

(16) 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 forms are available on MoDOT's website.

Annual bid bonds shall be submitted to MoDOT by June 15th of each year. If utilizing a paper annual or project specific bid bond as a Bid Guaranty

for this project the bidder shall mark the box below.

**Pay by: ☐ Paper Annual or Project Specific Bid Bond.

If submitting a cashier's/certified check, the Bid Bond folder will not turn green.

ELECTRONIC BID BOND

The bidder shall complete the following bond verification process if utilizing an electronic project bid bond or electronic annual bid bond as a Bid Guaranty for this project.

**Bond ID: Verify Clear

**Surety Registry Agency:

**Bond Pct:

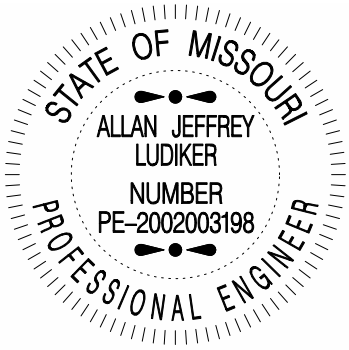
Surety State:

FIELDS WITH THE ** INDICATOR ARE REQUIRED FIELDS IF SUBMITTING YOUR BID VIA BID EXPRESS

Job No.: J3I3047
Route: I-70
County: Lafayette

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 W. CAPITOL AVE.
JEFFERSON CITY, MO 65102
Phone 1-888-275-6636

If a seal is present on this sheet, JSP's have been electronically sealed and dated.

JOB NUMBER: J3I3047
LAFAYETTE COUNTY, MO
DATE PREPARED: 07/09/18

ADDENDUM DATE:
R001 September 20, 2018

Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All

Job No.: J3I3047
Route: I-70
County: Lafayette

JOB
SPECIAL PROVISION

A. GENERAL - FEDERAL JSP-09-02D

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 July 2018 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 JSP-13-01B

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: January 7, 2019
Completion Date: November 1, 2019

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
J3I3047	248	$7,600

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 **$1,500** 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. WORK ZONE TRAFFIC MANAGEMENT JSP-02-06F

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 Maintaining Work Zones and Work Zone Reviews. The Work Zone Specialist (WZS) shall maintain work zones in accordance with Sec 616.3.3 and as further stated herein. The WZS shall coordinate and implement any changes approved by the engineer. The WZS shall ensure all traffic control devices are maintained in accordance with Sec 616, 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. When requested by the engineer, the WZS shall submit a weekly report that includes a review of work zone operations for the week. The report shall identify any problems encountered and corrective actions taken. Work zones are subject to unannounced inspections by the engineer and other departmental staff to corroborate the validity of the WZS's review and may require immediate corrective measures and/or additional work zone monitoring.

1.2 Work Zone Conflict Resolution. Any conflict resolution shall be in accordance with Sec 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 traffic management schedule shall conform to the limitations specified in Sec 616 regarding lane closures, traffic shifts, road closures and other width, height and weight restrictions.

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. When a Work Zone Analysis Spreadsheet is provided, the contractor will find it in the electronic deliverables on MoDOT's Online Plans Room. The contractor may refer to the Work Zone Analysis Spreadsheet 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 unless approved by the Engineer.

Memorial Day
Independence Day and July 5
Labor Day
Thanksgiving
Christmas
New Year's Day

3.2 The contractor shall not perform any construction operation on the roadway 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. 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 below work hours may be modified. Working hours for evenings, weekends and holidays will be determined by the engineer.

No work, other than behind the concrete barrier for the full depth pavement replacements at Routes O/M, H and Route 13, shall take place during the following hours:

Route I-70 Eastbound:
2:00 p.m. - 7:00 p.m. Monday through Thursday
6:00 a.m. - 9:00 p.m. Friday
10:00 a.m. - 1:00 p.m. Saturday

Route I-70 Westbound:
6:00 a.m. - 9:00 a.m. Monday through Thursday
6:00 a.m. - 9:00 p.m. Friday
10:00 a.m. - 1:00 p.m. Saturday

3.4 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 **$1,000 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.

3.4.1 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 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify 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. When permanent dynamic message signs (DMS) owned and operated by MoDOT are located near the project, they 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 Sec 616.

D. LIQUIDATED DAMAGES SPECIFIED

1 REVISED

1.0 Description. If grading, base, pavement replacement, guardrail, and pavement marking work in each direction of travel per location at Routes H and O/M, and the Route 13 westbound exit ramp is not complete and all lanes of I-70 open to traffic within **21** calendar days from the closure date per direction of travel per location, 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 of **$7,600** per day for each full day that grading, base, pavement replacement, guardrail, and pavement marking work at Routes H, and O/M, and the Route 13 westbound exit ramp is not complete and all lanes of I-70 traffic 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.

1 REVISED

1.1 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.

E. PROJECT CONTACT FOR CONTRACTOR/BIDDER QUESTIONS JSP-96-05

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

Allan Ludiker, Project Contact
Kansas City District
600 N.E. Colbern Road
Lee's Summit, MO 64086
Telephone Number: 816-607-2267
Email: Allan.Ludiker@modot.mo.gov

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

F. EMERGENCY PROVISIONS AND INCIDENT MANAGEMENT JSP-90-11

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.

1.0 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.

TMC/KC Scout: (816) 347-2250
HIGHWAY PATROL: (660) 584-5577 (Higginsville, MO)
LAFAYETTE COUNTY SHERIFF: (660) 259-3622 (Lexington, MO)
CITY OF HIGGINSVILLE
FIRE: (660) 584-6767
POLICE: (660) 584-2104
EMERGENCY: 911

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.

G. 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:

Utility Name	**Known Required Adjustment**	**Type**
CenturyLink Jason Johns 11111 Dorsett Road Maryland Heights, MO 63043 Phone: (636) 887-4947 (office) Phone: (916) 296-8520 (cell) Email: jason.johns@centurylink.com	None	Communications

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.

H. SUPPLEMENTAL REVISIONS JSP-18-01D

Delete Sec 106.9 and substitute the following:

106.9 Buy America Requirement On all federal-aid projects, the contractor's attention is directed to Title 23 CFR 635.410 Buy America Requirements. Where steel or iron products are to be permanently incorporated into the contract work, steel and iron material shall be manufactured in the USA except for "minor usage" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. The use of pig iron and processed, pelletized and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

Delete Sec 106.9.3 and substitute the following:

106.9.3 Buy America requirements include a step certification for all fabrication processes of all steel or iron materials that are accepted per Sec 1000.

106.9.3.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America

Requirements. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies the following. That all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.3.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form (link to certificate form) from the fabricator must show all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The Engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the Engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.3.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read “I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage”. The certification shall be signed by an authorized representative of the prime contractor.

***Delete Sec 106.9.4 and Renumber subsequent sections accordingly*:**

Delete Sec 616.5.1 and substitute the following:

616.5.1 Amber or Amber and White Warning Lights. All on-road construction-related vehicles and equipment shall operate with amber or amber and white warning lights having 360 degrees of total coverage and as follows:

(1) For daytime operations, SAE Class 1 or 2 lights shall be used.

(2) For dusk to dawn operations, SAE Class 2 lights shall be used, or SAE Class 1 lights with dimming capabilities to minimize glare experienced by travelers.

616.5.1.1 Red or Red and Blue Warning Lights. The contractor may elect to use red or red and blue warning lights in accordance with Missouri law and the following requirements:

(1) Use of red or red and blue lights shall be limited to use on a total of two vehicles per work zone and/or project.

(2) Use of red or red and blue warning lights shall be limited to areas in advance of tapers or lane shifts and at the active work location.

(3) Lights shall be SAE Class 2 or SAE Class 1 with dimming capabilities to minimize glare experienced by travelers.

The awarded contract will serve as a permit by the Commission, granting the prime contractor and approved sub-contractors to utilize red or red and blue lights as required by Missouri law.

1 REVISED I. Stormwater Compliance Requirements JSP-15-04B

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes areas of land disturbance that will total one (1) acre or greater on the project site at any point in time. When a WPCM is required, all sections within this provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein.

1.1 Applicability. The project site consists of all areas designated on the plans, including temporary and permanent easements. This provision does 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 Water Pollution Control Manager (WPCM). The Contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The Contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

(a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT's statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project's Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;

(b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;

(c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;

(d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the Engineer;

(e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer's weekly inspections;

(f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and ensure that all Stormwater Deficiencies noted on the report are corrected within 7 days of the stormwater inspection or any extended period of time granted by the Engineer.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity Meeting for Grading/Land Disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity Meeting except work necessary to install perimeter controls and entrances. 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.

3.1 Hold Point. 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.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).

5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period 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.

5.1 Liquidated Damages. If the Contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of $2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

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

J. FERTILIZING, SEEDING AND MULCH

In accordance with Section 805, the following seed mixtures shall be applied at the rate specified in pounds of pure live seed per acre:

Seeding Type & Location	Seeding Mixture	Pounds of Live Seed Per Acre
Cool Season Mixture	Tall Fescue	80
	Annual Ryegrass	10
	Perennial Ryegrass	5
	White Clover	5
	Oats	10
	Total	110 lbs/acre

In accordance with Section 801, the following fertilizers shall be applied at the rate specified.

Nitrogen (N) (Lbs/Ac)	Phosphorus (P_2O_5) (Lbs/Ac)	Potash (K_2O) (Lbs/Ac)	Effective Neutralizing Material (Lbs/Ac)
80	80	80	00

In accordance with Section 801.6 and 802.5, no direct payment will be made for fertilizing and mulching seeded areas.

4.0 Mulch. In accordance with Section 802, Mulch shall be applied to all seeded areas. Vegetative mulch shall be secured from movement by embedment for all flat bottom ditches and mulch overspray for all other areas.

5.0 Basis of Payment. The accepted quantity of seeding will be paid for by the contract unit per acre and for Item No. 805-10.00A “Seeding – Cool Season Mixtures”, per acre. No direct payment will be made for mulching or fertilizing.

K. CONTRACTOR QUALITY CONTROL AND DAILY REPORTING

1.0 The contractor shall perform Quality Control (QC) testing and reporting 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.

3.3 Contractor Daily Work Reporting. The contractor shall submit to the engineer a Contractor Daily Work Report (CDWR) for each calendar day that work is performed. The CDWR shall include all information listed in 3.3.2.

3.3.1 The CDWR information may be provided on the MoDOT-provided form or an approved contractor form. Each CDWR shall be digitally signed by the contractor and uploaded to the MoDOT SharePoint® site no later than two (2) business days following the end of each week.

3.3.2 CDWR information:

(a) Date and Contract Identification Number
(b) Weather conditions, rainfall amounts, high/low ambient temperatures
(c) List of subcontractors who performed work
(d) Description of all work performed, including general location (ex. Sta, offset, log mile, etc.), and any testing performed.
(e) Date range of days when no work was performed since the previous DWR
(f) Pertinent traffic control information (changes, delays, accidents, etc.)
(g) Statement: “All items installed meet or exceed contract requirements.”

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. Discussion topics should include: safety precautions, QC testing, traffic impacts, and any required Hold Points.

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. 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.

Job No.: J3I3047
Route: I-70
County: Lafayette

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).

M. OPTIONAL PAVEMENTS JSP 06-06G

1.0 Description. This work shall consist of a pavement composed of either Portland cement concrete or asphaltic concrete constructed on a prepared subgrade. This work shall be performed in accordance with the standard specifications and as shown on the plans or established by the engineer.

2.0 The quantities shown reflect the total square yards of pavement surface designated for each pavement type as computed and shown on the plans.

2.1 No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, or for tack applied between lifts of asphalt.

2.2 No additional payment will be made for aggregate base quantities outside the limits of the final surface area as computed and shown on the plans. When A2 shoulders are specified, payment for aggregate base will be as shown on the plans.

2.3 The contractor shall comply with Sections 401 through 403 for the asphalt option and Sections 501 and 502 for the concrete option.

2.4 Pavement options composed of Portland cement concrete shall have contrast pavement marking for intermittent markings (skips), dotted lines, and solid intersection lane lines. The pavement markings shall be in accordance with Section 620. No additional payment will be made for the contrast pavement markings.

3.0 Method of Measurement. The quantities of concrete pavement will be measured in accordance with Section 502.14. The quantities of asphaltic concrete pavement will be measured in accordance with Section 403.22.

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid prices for the folloing Items:

502-99.05, Optional Pavement Mainline, per square yard
502-99.05, Optional Pavement Ramp, per square yard
502-99.05, Optional Pavement Temporary Shoulder, per square yard

N. LOW-TRACKING OR NON-TRACKING TACK COAT NJSP-15-15E

1.0 Description. This work shall consist of preparing and treating an existing bituminous or concrete surface with a low-tracking or non-tracking tack coat material prior to an asphalt overlay in accordance with Section 407, except as revised by this specification.

2.0 Low-Tracking or Non-Tracking Requirements. Products accepted for use as low-tracking or non-tracking tack shall not stick to the tires, tracks or other parts of paving equipment or vehicles such that the surface to be overlaid becomes visible or void of tack prior to the placement of the asphaltic concrete pavement mixture. The tack material shall exhibit a low-tracking or non-tracking characteristic within 30 minutes of being applied to the roadway. Products accepted for use shall exhibit a laboratory “no-pick-up" time of 60 minutes or less per TM-87. The product shall bond the two pavements. Products accepted for use shall exhibit a laboratory bond strength greater than or equivalent to a standard SS-1h tack material. The test method used may be any AASHTO TM method or other approved research test methods.

2.1 Optional Application. In lieu of applying a Low-Tracking or Non-Tracking Tack, a Polymer Modified Emulsion Tack may be placed immediately ahead of the asphalt pavement as defined below in section 4.0 Optional Polymer Modified Emulsion Tack.

3.0 Equipment and Construction Requirements. All equipment and construction requirements shall be in accordance with Section 407; except as revised as follows:

3.1 Storage and Handling. All guidelines and instructions about storage and handling of the non-tracking tack product shall be followed in accordance with the product manufacturer. A copy of this in formation shall be provided to the engineer. The information shall include the application and maximum allowable temperatures for the product and the particle charge.

3.2 Distributor. The distributor shall have the full circulating and heating capabilities in the tank. If the particle charge of the low-tracking or non-tracking tack is different from the particle charge of the emulsion that was previously used then the tank shall be thoroughly cleaned prior to use, since some products are not compatible.

3.3 Curing. The low-tracking or non-tracking tack shall be allowed to cure prior to any construction traffic driving on the surface. A minimum of 15 minutes of cure time shall be allowed prior to driving on the tacked surface, unless less cure time is successfully demonstrated and approved by the engineer.

3.4 Supplier Information. The low-tracking or non-tracking tack materials are a different type of product compared to the conventional tack used in Missouri. *There may be multiple products that can meet the low-tracking or non-tracking tack requirements. All products that achieve equivalent field performance will be allowed.*

3.5 Material Requirements. All material shall be in accordance with Section 1015 of the Standard Specifications and specifically as follows:

Emulsion Properties for Low-Tracking or Non-Tracking Tack Coat			
Tests	Method	Min	Max
Viscosity, Saybolt Furol @ 25°C (77°F), s	AASHTO T 59	10	100
Storage Stability Test, 24 hr, percent	AASHTO T 59	--	1.0
Sieve Test, percent	AASHTO T 59	--	0.30
Residue by Distillation, percent	AASHTO T 59	57	
Oil Distillate by Distillation, percent	AASHTO T 59	--	1
Test on Residue from Distillation			
Penetration 25°C, 100 g, 5 s	AASHTO T 49	--	90
Solubility in Trichloroethylene, %	AASHTO T 44	97.5	--

OR

The following requirements are not intended to govern emulsified products.

PG Graded Products for Low-Tracking or Non-Tracking Tack Coat			
Tests	Method	Min	Max
Rotational Viscosity (Pa-sec) @ 302° F	AASHTO T 316 302°F	100	300
Penetration 25°C, 100 g, 5 s	AASHTO T 49	--	90
In addition to the table above, when using PG Graded Binders as tack, a certification shall be supplied to the engineer which includes test results demonstrating that the PG binder component meets the minimum requirements of a PG 58 or greater on the high end and a -22 or lower on the low end in accordance with AASHTO M320. The PG binder component shall account for at least 97% of the total product composition by volume. If using 100% PG binders, then the products shall be in accordance with Section 1015.10.			

All products that meet a laboratory "no-pick-up" time of 60 min or less and a field "no-pick-up" time of 30 min or less shall be accepted per TM-87.

4.0 Optional Polymer Modified Emulsion Tack.

4.1 Description. In lieu of using a low-tracking or non-tracking tack coat material, a Polymer Modified Emulsion Tack may be placed prior to a bituminous overlay of hot asphaltic concrete pavement. The Polymer Modified Emulsion Tack shall be spray applied immediately prior to the application of the hot asphaltic concrete pavement so as to produce a homogeneous surface in accordance with Secs 401, 402, or 403. This option will not be required solely if low tracking tack products fail to perform in the field.

4.2 Materials. The Polymer Modified Emulsion Tack shall be in accordance with Sec 1015.20.5.1.1 or Sec 1015.20.6.2.

4.3 Construction Requirements. The asphaltic concrete pavement shall be placed in accordance with Secs 401, 402, or 403, except as modified herein.

4.4 Equipment. No wheel, track or other part of the paving machine or any hauling equipment shall come in contact with the Polymer Modified Emulsion Tack before the asphaltic concrete pavement mixture is applied.

4.5 Application of Polymer Modified Emulsion Tack.

4.5.1 The Polymer Modified Emulsion tack shall be sprayed at a temperature of 120 - 180° F. The sprayer shall accurately and continuously monitor the application rate and provide a uniform coverage across the entire width to be overlaid. The application rate of the asphalt emulsion tack shall be applied at the same rate as the low-tracking or non- tracking tack coat material in accordance with Sec 407. and . The Engineer may make adjustments to the application rate based upon the existing pavement surface conditions and the recommendations of the Polymer Modified Emulsion Tack supplier.

4.5.2 Water may be added to SS-1hp and CSS-1hp by the emulsion manufacturer and shipped to the jobsite. No dilution shall be allowed in the field. When water is added to SS-1HP or CSS-1HP, the resulting mixture shall contain no more than 20 percent of added water. The contractor shall notify the engineer of the use of a diluted emulsion. The exact quantity of added water shall be indicated on the manufacturer's bill of lading, manifest or truck ticket. The application rate of the resulting mixture shall be adjusted such that the original emulsion will be spread at the specified rate. No water shall be added to the CPEM-1 or PEM-1.

5.0 Method of Measurement. Measurement of asphalt emulsion to the nearest gallon shall be made as specified in Sec 1015. The measurement of asphalt emulsion shall be based upon undiluted material.

6.0 Basis of Payment. The accepted quantity of low-tracking or non-tracking tack coat or polymer modified emulsion tack will be paid for at the contract unit price 407-99.12, Misc. Tack Coat – Low-tracking or Non-tracking.

O. TRUCK WEIGH SCALE SYSTEMS

1.0 PrePass.

1.1 The contractor is hereby notified that a PrePass weigh-in-motion truck scale system is located adjacent to and embedded within the roadway surface on the east-bound and west-bound driving lanes of I-70 near mile-markers 41.4 (eastbound lanes) and 44.2 (westbound lanes). The contractor is prohibited from staging construction activities on or storing equipment in the near proximity of the scale system instrumentation.

1.2 The contractor assumes all liability and agrees to hold harmless the MHTC for all costs arising from any damages sustained to PrePass infrastructure caused by the contractor. The contractor further agrees to reimburse PrePass for all costs encumbered for any repairs, replacement, or recalibration of components damaged due to the contractor's negligence.

2.0 Drivewyze.

2.1 The contractor is hereby notified that a Drivewyze weigh-in-motion truck scale system is located adjacent to and embedded within the roadway surface on the eastbound and westbound driving lanes of I-70 near mile marker 41.4 (eastbound) and 44.4 (westbound). The contractor shall notify Intelligent Imaging Systems of the pre-construction conference date, location and time. The contractor shall provide Intelligent Imaging Systems with a work schedule no later than one month prior to work in the area. The contractor shall coordinate with Intelligent Imaging Systems to provide a minimum advanced notice of two weeks prior to disturbing the existing roadway surface at this site to allow for the removal of the scaled system instrumentation by Intelligent Imaging Systms prior to the work beginning. Following the completion of the roadway coldmilling and resurfacing at this site, the contractor will notify Intelligent Imaging Systems and allow them to reinstall the instrumentation under the contractor's lane closure.

Jory Krogsgaard
Intelligent Imaging Systems
Email: jkrogsgaard@intelligentimagingsystems.com
Phone: 1.877.393.3939 ext 237

2.2 The contractor assumes all liability and agrees to hold harmless the MHTC for all costs arising from damages sustained to Intelligent Imaging Systems infrastructure caused by the contractor. The contractor further agrees to reimburse Intelligent Imaging Systems for all costs encumbered for any repairs, replacement, or recalibration of components damaged due to the contractor's negligence.

P. TEMPORARY SHORT-TERM RUMBLE STRIPS

1.0 Description. The work shall include transporting, installing, maintaining, removing, and relocating short-term rumble strips, as shown in the plans, or as designated by the engineer.

2.0 Material.

2.1 The temporary short-term rumble strips will be furnished and retained by the Commission.

2.2 The temporary short-term rumble strips are comprised of interlocking combinable segments approximately six feet each in length, 12 inches wide, 2 inches thick, and made of polymer or rubber material. They are stored and transported on a palate.

3.0 Construction Requirements.

3.1 The temporary short-term rumble strips will be available for pick-up and return by the contractor at the MoDOT Kansas City District Maintenance lot located at 17321 S. Peculiar Dr, Belton, MO. George Duncan, MoDOT Maintenance Supervisor shall be provided a minimum of two weeks advance notice prior to pick-up and return of the rumble strips by the contractor. The contractor agrees to replace the temporary short-term rumble strips should they be damaged by the contractor due to the contractor's negligence.

3.2 It is anticipated that temporary short-term rumble strips will be utilized on I-70 in both directions in advance of the pavement replacement work at Routes H and O/M.

3.3 Each array of temporary of short-term rumble strips shall consist of three combined individual strips spanning a full single lane, spaced in accordance with the plans or as directed by the engineer. The Contractor shall verify placement with the Engineer prior to installation. The short-term rumble strips shall be installed and removed in accordance with manufacturer's recommendation or as directed by the Engineer.

3.4 The contractor shall monitor, maintain alignment to assure that the rumble stips are perpendicular to the lane and that the correct spacing between rumble strips is maintained, and repair if needed during construction.

4.0 Method of Measurement. Measurement of short-term rumble strips will be per each array (of three strips).

5.0 Basis of Payment. The accepted quantity of Temporary Short-Term Rumble Strips array will be paid for at the contract unit price for 616-99.02, Temporary Short-Term Rumble Strips Commission Furnished/Retained, per each array. The short-term rumble strips unit bid price shall include the cost of all labor, equipment and materials to install, maintain, remove and relocate the rumble strips during the construction of the project.

Q. DYNAMIC LATE MERGE SYSTEM (ZIPPER MERGE) JSP-16-07

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.

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-70 in both the eastbound and westbound 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
- Eight (8) portable changeable message signs (CMS)
    - Four (4) CMS in the northbound/eastbound lanes of I-70
    - Four (4) CMS in the southbound/westbound lanes of I-70
- Eight (8) portable non-intrusive traffic sensors
    - Four (4) traffic sensors in the northbound/eastbound lanes of I-70
    - Four (4) traffic sensors in the southbound/westbound lanes of I-70

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 KCScout Advanced Traffic Management System (ATMS) software:

    - The KCScout 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 design 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.

Approximate locations are as follows:

Route O/M	Eastbound Mile Marker	Westbound Mile Marker
Arrow Panel	**40.3**	**41.7**
Radar #1	**40.0**	**42.0**
CMS #1	**40.0**	**42.0**
Radar #2	**39.0**	**43.0**
CMS #2	**39.0**	**43.0**
Radar #3	**38.0**	**44.0**
CMS #3	**38.0**	**44.0**
Radar #4	**37.0**	**45.0**
CMS #4	**37.0**	**45.0**

Route H	Eastbound Mile Marker	Westbound Mile Marker
Arrow Panel	**44.6**	**45.8**
Radar #1	**44.3**	**46.1**
CMS #1	**44.3**	**46.1**
Radar #2	**43.3**	**47.1**
CMS #2	**43.3**	**47.1**
Radar #3	**42.3**	**48.1**
CMS #3	**42.3**	**48.1**
Radar #4	**41.3**	**49.1**
CMS #4	**41.3**	**49.1**

Route 13	Eastbound Mile Marker	Westbound Mile Marker
Arrow Panel	**N/A**	**49.9**
Radar #1	**N/A**	**50.2**
CMS #1	**N/A**	**50.2**
Radar #2	**N/A**	**51.2**
CMS #2	**N/A**	**51.2**
Radar #3	**N/A**	**52.2**
CMS #3	**N/A**	**52.2**
Radar #4	**N/A**	**53.2**
CMS #4	**N/A**	**53.2**

- 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, "Work Zone Intelligent Transportation System," per lump sum per location.

R. OPTIONAL PAVEMENT SHOULDER RUMBLE STRIP

1.0 Description. This work shall consist of constructing 12" edgeline rumble strips as shown on the standard plans or as directed by the engineer.

2.0 Construction Requirements.

2.1 The rumble strips shall be milled into bituminous or concrete pavements to produce a neat and uniform finish. Milled material shall be handled in accordance with Sec 622. Any damage to the pavement or pavement marking resulting from the contractor's operations shall be repaired or replaced to the satisfaction of the engineer by the contractor at the contractor's expense.

2.2 Pavement marking shall be in accordance with Sec 620. Prior to the installation of pavement markings the rumbles shall be clean and dry.

3.0 Method of Measurement. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. Edgeline rumble strips will be measured by the 1/10 station (5 m). The revision or correction will be added to or deducted from the contract quantity.

4.0 Basis of Payment. The accepted quantity of edgeline rumble strips will be paid at the contract unit price for Item Number 626-99.09, Optional Pavement Shoulder Rumble Strip, per 1/10 station (5 m). Payment for all labor, equipment, and material necessary to complete this work, including loading; hauling; stockpiling and disposal of milled material; and other incidental items will be paid for at the contract unit price.

S. REMOVE AND REINSTALL GUARD CABLE

1.0 Description. This work shall consist of all labor, equipment, and materials to protect, repair, or replace 3-strand high tension guard cable systems during the bridge median pier protection removal and replacement. All work shall begin and be completed while the inside lanes are closed. The entire cable sytem must be reinstalled in place and functional before the roadway is opened to traffic. The contractor shall notify the Engineer of their intended method to protect and reinstall the cable before work can begin. All work shall comply with Secs 202 and 606 except as herein modified.

2.0 Materials.

2.1 All the guard cable materials shall be new if the cable or any part of the guard cable system is damaged during construction unless otherwise approved by the engineer or otherwise allowed by these specifications. Replacement materials and components for proprietary systems shall conform to the manufacturers latest approved design. All replacement components shall be from the original equipment manufacturer unless approved by the engineer. The contractor shall provide manufacturer certification that the replacement components furnished, when properly installed by the contractor, will reestablish or exceed the original capabilities of the system.

2.2 All materials intended for use in this contract shall be stored in a dedicated location on the contractor's property and shall be inspected and approved by the engineer prior to use.

2.3 Line Posts. Line posts, if required, shall be provided in accordance with the manufacture's shop drawings and shall be placed plumb. Spacing of the posts shall not exceed 20 feet.

2.4 Anchor Assemblies. An anchor assembly, as specified in the manufacturer's shop drawings, shall be constructed at each end of a cable barrier run. The anchor assembly shall function in accordance with the requirements of NCRHP 350, Test Level 3, and be approved by the Federal Highway Administration. Anchors shall be constructed on firm, stable, undisturbed soil to the minimum dimension shown on the shop drawings. Anchor bolts and anchor post slip bases shall be firmly held in position at the top by templates during concrete replacement. Backfill shall be thoroughly compacted with mechanical tampers with care taken to prevent damage to the finished concrete. Backfill shall be brought up level with the finished grade line.

2.5 Cable. The galvanized wire rope shall be ¾" pre-stretched 3 x 7 construction as approved by the Federal Highway Administration during the system's acceptance testing. Threaded terminals (wedge or swaged type) shall be furnished. Swaged terminals may be shop- or field-swaged. Threaded terminals shall be right hand (RH) or left hand (LH) threaded M 24 x 3 pitch to ANSI B 1.13 M. The body of the threaded terminal shall provide a minimum of 5.9" of wire rope penetration depth. Threaded terminals shall be galvanized after threading to ASTM A 151. Turnbuckle or rigging screws shall be of the size and shape shown in the manufacturer's shop drawings. Rigging screws shall be of a solid or closed body type with two inspection holes to determine threaded rope terminal penetration. Rigging screws shall be galvanized to ASTM A 153 after threading.

2.6 Delineators. Delineator spacing and reflector colors shall be in accordance with Sec 606.10. No direct payment will be made for delineators.

3.0 Construction Requirements.

3.1 Disassembly of Individual Major Components. For guard cable to be disassembled, the contractor shall remove the described existing component, material, hardware, or other appurtenance, in whole or in part, to protect it.

3.1.1 The contractor shall furnish and reinstall the described major replacement component and any incidental items necessary to provide a fully functional system if it is damaged during bridge demolition or removal.

3.1.2 Unless otherwise directed or approved by the engineer, the contractor shall reuse any undamaged major components salvaged from the damaged guard cable system or appurtenances in order to provide a fully functional system. Minor components, such as nuts and bolts, may only be reused after inspection and approval by the engineer. Reused nuts and bolts shall only be used with salvaged major components. All new major components shall use new nuts, bolts, and other miscellaneous minor components.

3.2 Replacing and Splicing Cable. Existing cable (wire rope), if any, that has sustained damage that does not allow reuse will be designated for replacement. The existing damaged cable shall be cut and new replacement cable spliced at the locations designated by the engineer. Individual cables shall be spliced by use of an approved device as shown on the manufacturer's plans and shall be installed where no interference with the functions of any other part of the installation occurs. Splices shall develop the full breaking strength of the cable.

3.3 Reattaching Cables to Posts. Cables which are pulled loose from existing undamaged posts shall be reattached to any undamaged posts using new hooks and any other required hardware. Cables shall also be attached to any new replacement posts using new hooks and spacers.

3.4 Retensioning Cables. After replacement of all necessary components, all three cables shall be inspected at both ends of the cable run and any required adjustments to end fittings performed. The cable height above ground shall be in accordance with the manufacturer's shop drawings. The cables may require reattachment to the anchor posts to properly complete the system. All cables shall be retensioned per the temperature table shown on the manufacturer's plans. A tension log form shall be completed showing: the time, date, location, ambient temperature and final tension reading, signed by the person performing the tensioning, and furnished to the engineer upon completion of the work. This form shall also include the system manufacturer's recommended tension chart.

3.5 Additional Work. Any additional work or cost to provide a fully functional system will be at the contractor's expense.

4.0 Basis of Payment. Removal and reinstallation of cable, posts, and anchor assemblies will be made under Item No. 606-99.01, "Remove and Reinstall Guard Cable", per lump sum. No direct payment will be made for splicing new cable on existing cable, if necessary.

T. GUARDRAIL GRADING REQUIREMENTS JSP-17-02B

1.0 Description. Guardrail installation and grading shall be in accordance with Missouri Standard Specifications for Highway Construction, Missouri Standard Plans for Highway Construction, and as described herein.

2.0 Construction Requirements. When guardrail and/or end treatment removal and replacement requires grading of the shoulder and/or slopes, Section 606.3.1(b), (c), and 606.3.1.1 of the Missouri Standard Specifications shall be waived and the following shall apply:

a) Along roadways and shoulders, remove no more guardrail than can be reconstructed within seven (7) calendar days, including weekends and holidays. The seven day counting period shall start when the first piece of safety hardware is removed.

b) The active work zone area that encompasses the guardrail and/or end treatment reconstruction, shall not exceed one (1) mile in length. The contractor shall be required to provide and maintain approved channelizing devices adjacent to the reconstruction area.

c) Only one-side of the roadway shall be worked on at the same time. Divided facilities shall be limited to work on one-side of each direction at the same time.

d) When the removal of any existing safety hardware device exposes non-breakaway obstacles, the reconstruction of the safety hardware device protecting the obstacle shall be replaced within 48 hours of removal or an approved temporary crashworthy device shall be provided, installed and maintained at the contractor's expense until the non-breakaway obstacle is permanently protected. The 48 hour counting period shall start when the first piece of safety hardware is removed.

e) Areas where guardrail and/or end treatments have been removed, but not yet replaced, shall be delineated in accordance with plans or as directed by the Engineer.

3.0 Non-Compliance. Non-compliance with this provision shall result in the immediate suspension of work in accordance with Sec 105.1.2. No work, including but not limited to additional guardrail removal and grading, shall be allowed to proceed except for work necessary to restore guardrail installation.

4.0 Basis of Payment. No direct payment will be made for compliance with this provision. Guardrail items, grading, and temporary traffic control devices will be paid for as provided in the contract.

U. TYPE 1 OR TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)

1.0 Description. This work shall consist of providing and preparing base using either Type 1 or Type 5 aggregate, 4 inches thick, for the temporary optional shoulder pavement. If agreed upon with the engineer to leave the temporary shoulder in place the pavement rock base shall be used instead of this aggregate as shown on the plans at no additional cost and this pay item shall be underrun. All work shall be performed in accordance with the standard specifications and as shown on the plans or established by the engineer.

2.0 The quantities shown reflect the total square yards of pavement surface designated for each pavement type as computed and shown on the plans.

2.1 No additional payment will be made for base quantities to construct the required slope along the edge of the shoulder pavement.

2.2 No additional payment will be made for aggregate base quantities outside the limits of the final surface area as computed and shown on the plans

2.3 The contractor shall comply with Section 304 of the standard specifications.

3.0 Method of Measurement. The quantities of aggregate base will be measured in accordance with Section 304.5 of the standard specifications.

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid prices for Item 304-99.05, Type 1 or Type 5 Aggregate for Base (4 in. Thick), per square yard.