

**STATE OF MISSOURI  
HIGHWAYS and TRANSPORTATION COMMISSION**

JEFFERSON CITY, MISSOURI

**CONSTRUCTING OR IMPROVING**  
**Contract I.D.** 181019-A01

THIS JOB SHALL BE CONSTRUCTED UNDER  
FEDERAL PROJECT NUMBER(S): I 35-2(96)

J113017 - ROUTE I-35 - HARRISON 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](http://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.

\*\*\*\*\*

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

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

\*\*\*\*\*

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

**TABLE OF CONTENTS**

## Notice to Contractors

Proposed Work.....	item (1)
Compliance With Contract Provisions.....	item (2)
Period of Performance.....	item (3)
Liquidated Damages.....	item (4)
Itemized Bid.....	item (5)
Trainees.....	item (6)
DBE Certification*.....	item (7)
Acceptance of Provision for Price Adjustment for Fuel.....	item (8a)
Acceptance of Provision for Asphalt Cement Price Index....	item (8b)
Max. Monetary Value of Awards Accepted this Bid Opening...	item (9)
Combination Bids.....	item (10)
Certification for Federal Jobs.....	item (11a)
Certification for State Jobs.....	item (11b)
Antidiscrimination.....	item (12)
Preference to Missouri Firms in Awarding of Contracts.....	item (13)
Subcontractor Disclosure Form*.....	item (14)
Signature and Identity of Bidder.....	item (15)
Bid Guaranty*.....	item (16)

\*These forms are also available on MoDOT's Website, [www.modot.org](http://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 J1I3017 Route I-35 HARRISON County.  
Resurfacing from Route N in Eagleville to Route 136 in  
Bethany, the total length of improvement being 13.944  
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 - J1I3017					
0010	2022010	1	LS		
	REMOVAL OF IMPROVEMENTS				
0020	2153000	79.000	100F		
	SHAPING SLOPES, CLASS III				
0030	3049910	1532.000	TONS		
	MISC. PERMANENT AGGREGATE EDGE TREATMENT				
0040	3105002	687.000	TONS		
	GRAVEL (A) OR CRUSHED STONE (B)				
0050	4011209	14814.100	TONS		
	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)				
0060	4019901	1	LS		
	MISC. INFRARED SCANNING				
0070	4019901	1	LS		
	MISC. INTELLIGENT COMPATION				
0080	4030103	39106.500	TONS		
	ASPHALTIC CONCRETE MIXTURE PG 70-22 (SP125C MIX)				
0090	4071005	56061.000	GAL		
	TACK COAT				
0100	4134000	2592.000	GAL		
	BITUMINOUS FOG SEAL				
0110	6123000A	2.000	EA		
	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)				
0120	6131010	904.000	SQYD		
	FURNISHING AND PLACING CONCRETE MATERIAL FOR FULL DEPTH PAVEMENT REPAIR				
0130	6131012	90.000	SQYD		
	SUBGRADE COMPACTION (6 IN. DEPTH) (PAVEMENT REPAIR)				
0140	6131013	90.000	SQYD		
	TYPE 1 OR 5 AGGREGATE FOR BASE (4 IN. THICK) (PAVEMENT REPAIR)				
0150	6131014	3948.000	LF		
	FULL DEPTH PAVEMENT REPAIR SAW CUT (FOR PERIMETER AND INTERNAL SAW CUTS)				
0160	6131015	2240.000	EA		
	DOWEL BAR (DRILLING, FURNISHING AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR				
0170	6133020	3202.400	TONS		
	FURNISHING AND PLACING BITUMINOUS MATERIAL FOR CLASS C PARTIAL DEPTH PAVEMENT REPAIR				
0180	6133021	23244.600	SQYD		
	REMOVAL FOR CLASS C PARTIAL DEPTH PAVEMENT REPAIR				
0190	6161005	3471.000	SQFT		
	CONSTRUCTION SIGNS				
0200	6161008	8.000	EA		
	ADVANCED WARNING RAIL SYSTEM				
0210	6161009	8.000	EA		
	FLAG ASSEMBLY				
0220	6161025	118.000	EA		
	CHANNELIZER (TRIM LINE)				
0230	6161040	3.000	EA		
	FLASHING ARROW PANEL				
0240	6161099	2.000	EA		

CHANGEABLE MESSAGE SIGN WITH COMMUNICATION INTERFACE, CONTRACTOR FURNISHED, CONTRACTOR RETAINED			
0250	6181000	1	LS
MOBILIZATION			
0260	6205902A	198236.000	LF
6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS			
0270	6205903A	158247.000	LF
6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS			
0280	6205906A	4634.000	LF
12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS			
0290	6207001	720.000	LF
PAVEMENT MARKING REMOVAL			
0300	6221001	518329.000	SQYD
COLDMILLING BITUMINOUS PAVEMENT FOR REMOVAL OF SURFACING (3 IN. THICK OR LESS)			
0310	6224010	19661.000	SQYD
MODIFIED COLDMILLING (DEPTH TRANSITIONS)			
0320	6261000A	2333.300	STA
BITUMINOUS SHOULDER RUMBLE STRIP			

Section 0001 Total

Section 0002

Guardrail/Guard Cable Items - J1I3017

0330	6061060	6225.000	LF
MGS GUARDRAIL			
0340	6061068	10.000	EA
MGS BRIDGE APPROACH TRANSITION SECTION (EXTENDED CURB)			
0350	6061080	13.000	EA
MGS END ANCHOR			
0360	6063014	23.000	EA
TYPE A CRASHWORTHY END TERMINAL (MASH)			

Section 0002 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 7.00 % 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](http://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 MODIFID 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](mailto: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:

DOLLAR VALUE: \$

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: \$

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: \$

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: \$

CATEGORY OF WORK:

SUBCONTRACTOR NAME:

DOLLAR VALUE: \$

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:

\*\*Surety Registry Agency:

\*\*Bond Pct:

Surety State:


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

Job No.: J113017  
Route: I-35  
County: Harrison

**JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)**

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

A.	General - Federal JSP-09-02D	1
B.	Contract Liquidated Damages	1
C.	Work Zone Traffic Management	2
D.	Emergency Provisions and Incident Management	5
E.	Project Contact for Contractor/Bidder Questions	5
F.	Utilities	6
G.	Supplemental Revisions JSP-18-01D	8
H.	Infrared Scanning	10
I.	Intelligent Compaction	11
J.	Permanent Aggregate Edge Treatment NJSP-15-40	16
K.	Guardrail Grading Requirements JSP-17-02B	16
L.	Contractor Quality Control NJSP-15-42	17

 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 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: J113017 HARRISON COUNTY, MO DATE PREPARED: 09-10-2018
	ADDENDUM DATE:

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



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](http://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](http://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

**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
J113017	183	\$3,200

**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

**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 preceding the holiday until 6:00 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, (*including the hauling of material within the project limits*), during restricted periods, holiday periods or other special events specified in the contract documents.

**3.3** The contractor shall 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 **\$250 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.

**3.3.1** 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. Emergency Provisions and Incident Management**

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

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

Missouri Highway Patrol (816) 387-2345	
City of Eagleville	City of Bethany
Fire: (660) 867-5506 (N. Harrison Fire Protection)	Fire: (660) 425-7912
Police: 660-425-3199 (Harrison Co. Sheriff)	

**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.

**E. Project Contact for Contractor/Bidder Questions**

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

Job No.: J113017  
Route: I-35  
County: Harrison

Richard W. Orr, Project Contact  
Northwest District  
3602 North Belt Highway  
St. Joseph, MO 64506

Telephone Number: 816-387-2483  
Email: [Richard.Orr@modot.mo.gov](mailto:Richard.Orr@modot.mo.gov)

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

F. Utilities

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

<u>Utility Name</u>	<u>Known Required Adjustment</u>	<u>Type</u>
Village of Eagleville 10028 10 <sup>th</sup> Street Eagleville, MO 64442 (660) 867-5707	None	City Utilities
GRM Networks 1001 Kentucky Street Princeton, MO 64673 (660) 425-2225	None	Communications
Harrison County PWSD #1 P.O. Box 105 Eagleville, MO 64442 (660) 868-1027	None	Water
CenturyLink 625 Cherry Street Columbia, MO 65201 (720) 888-7568	None	Communications
Verizon 1095 Avenue of the Americas New York, NY 10013 (800) 289-3427	None	Communications
Kansas City Power & Light 1824 East 1 <sup>st</sup> Street Maryville, MO 64468 (816) 471-5275	None	Electric

Magellan Midstream Partners One Williams Center Tulsa, OK 74172 (918) 574-7098	None	Gas
Harrison County PWSD #2 22209 East US Highway 136 Bethany, MO 64424 (660) 425-7414	None	Water
Grundy Electric Cooperative 4100 Oklahoma Avenue Trenton, MO 64683 (660) 654-3345	None	Electric
Summit Natural Gas of Missouri 101 South Davis Suite A Hamilton, MO 64644 (660) 663-9135	None	Gas
City of Bethany Gas 206 North 16th Street Bethany, MO 64424 (660) 425-2116	None	Gas
City of Bethany Electric 206 North 16th Street Bethany, MO 64424 (660) 425-2116	None	Electric
City of Bethany Water & Sewer 206 North 16th Street Bethany, MO 64424 (660) 425-2116	None	Water & Sewer
Mediacom 115 North Industrial Park Road Excelsior Springs, MO 64024 (816) 797-0809	None	Communications
CenturyLink Fiber Jason Johns 625 Cherry Street Columbia, MO 65201 (636) 887-4947	<b>See Sec. 2.0</b>	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.

**2.0** Once the fiber optic cable of CenturyLink Fiber has been located, it will be necessary for the contractor to inform CenturyLink Fiber of all work within two feet of the fiber optic cable and shall contact CenturyLink Fiber, requesting a representative, Mr. Jason Johns, to be on site. All work within 2 feet of the fiber optic cable shall be done with approval of the Engineer, after consultation with the on-site CenturyLink Fiber representative. The contractor shall exercise caution around all fiber optic cable of CenturyLink Fiber throughout the life of the project.

**2.1** The engineer may adjust the placement of guardrail, guard cable, anchor assemblies, pipe extensions, etc. in the field, after utility facilities have been located, to eliminate as many fiber optic cable conflicts as possible.

G. 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.

## H. Infrared Scanning

**1.0 Description.** This work shall consist of collecting the paving location, surface temperature and paver stops with a Contractor supplied, Contractor retained Paver-Mounted Thermal Profile System (PMTPS) for each lift of mainline asphalt pavement. The PMTPS shall be used to continually monitor the surface temperature of the mat immediately behind the paver screed during paving operations in order to determine the temperature differential for each subplot. Data from the PMTPS shall be automatically uploaded and processed through a wireless data connection. This work shall be completed in accordance with the general principles set forth in AASHTO PP 80-17 "Standard Practice for Continuous Thermal Profile of Asphalt Mixture Construction", and specifically as stated in the following sections.

**2.0 PMTPS Equipment.** The PMTPS shall consist of a temperature scanner, wheel speed/distance sensor, GPS antenna, control panel and necessary cabling. The PMTPS shall measure the surface temperature over the complete paving width. The current position shall be recorded via the GPS antenna. The control panel shall feature the keys and screen displays necessary to control the system as well as the software for data recording and visualization during the paving process. The system shall provide a real-time map of the temperature readings, as well as the total number of sublots in each category. The system shall store the data locally on a memory stick and also upload the data directly to cloud-based software which shall be supplied by the contractor for use on this project. Logon information shall be provided to the engineer for direct access. In addition the equipment shall meet the following requirements;

<u>Parameter</u>	<u>Requirement</u>
Longitudinal and Lateral Surface	≤ 12.0 inch intervals at all paving speeds
Temperature Readings	Tolerance: ±1 inch
Surface Temperature Readings	Range: 32 to 480F
	Accuracy: ± 6F
Location (x and y)	Accuracy: ± 4 feet
<u>Ground Distance Sensor</u>	<u>Accuracy: ± 1/1000 feet</u>

**3.0 Verification.** The system shall have a documented verification before beginning construction and a minimum of once per week for Travel Distance and Temperature.

**4.0 PMTPS Training.** The IR Technician and individuals performing daily setup of the equipment shall be properly trained. If trained personnel are unavailable IR scanning and mainline paving shall not be performed. If the Veta software is used for analysis, the IR Technician shall have completed a qualifying Veta training within the last 2 years.

**5.0 Thermal Profile Sublots.** For each run, the thermal profiles shall be divided into sublots that are 150 ft. in length and of the width placed. Sublots shall not extend over multiple days, different lifts or directions.

**6.0 Temperature Differentials.** Exclude the following surface temperature readings from each subplot: (1) Surface temperature readings less than 180°F; and (2) Surface temperature readings within 2 ft. prior to and 8 ft. after paver stops that are greater than 1 minute in length. The temperature differential is the difference between the surface temperature readings at the 98.5 and 1 percentile in each 150 ft. subplot. The thermal segregation categories are based on the temperature differential as shown in the table below.

Temperature Differential (TD)	Thermal Segregation Category
TD ≤25.0 F	Low
25.0 F < TD ≤ 50.0 F	Moderate
TD > 50.0 F	Severe

**7.0 Data Management.** All of the header inputs shall be correctly entered by the contractor at the start of each run. The MOBA IR Segment Report “Tex 244F” or Veta Thermal Segregation Report shall be generated and electronically submitted to the engineer for each day before the start of the next day’s production, along with the Veta or Pave Project data file. Each file shall be labeled with the corresponding production date, direction, starting and ending log mile, and lane according to the MoDOT IC-PMTPS Protocol.

**8.0 Incentive/Disincentive.** The Engineer will compile the daily Thermal Segregation Reports and calculate the incentive/disincentive according to the following thermal segregation categories:

Thermal Segregation Category	Adjustment per 150 ft. Sublot
Low	\$7 Incentive
Moderate	No Pay Adjustment
Severe	\$7 Disincentive

**9.0 Basis of Payment.** Payment for compliance with this provision will be made at the contract unit price for Item No. 401-99.01, Infrared Scanning, lump sum. No additional compensation will be provided to the contractor for any direct or indirect cost, including scheduling delays, associated with the installation of the noted equipment, training or the affiliated data processing.

#### I. Intelligent Compaction

**1.0 Description.** This work shall consist of collecting location, temperature, speed and resistance measurements from properly instrumented rollers within the mainline paving limits and then submitting the Intelligent Compaction (IC) Data in the defined format. This provision shall apply for each lift of mainline pavement. This work shall be completed in accordance with the general principles set forth in AASHTO PP81-14, and specifically as stated in the following sections.

**2.0 IC Asphalt Rollers.** All asphalt rollers with the exception of the finish roller shall be properly instrumented. These instrumented rollers will be referred to as IC Rollers. Steel wheel rollers shall be self-propelled double-drum vibratory rollers equipped with accelerometers mounted to acquire signals from the vibratory response in the drum measuring the interactions between the rollers and compacted materials in order to evaluate the applied compaction effort known as the Intelligent Compaction Measurement Value (IC-MV). Rubber tire rollers will not be required to collect resistance measurements. IC Rollers shall be equipped with non-contact temperature sensors for measuring pavement surface temperatures as well as a Global Positioning System (GPS) to map the roller position history. A Roller Approval Form generally consistent with PP81 Appendix X4 “Department Approval of Instrumented Rollers for Use” shall be completed and submitted to the engineer prior to use of a roller for measurement of passes demonstrating that the roller meets the requirements of this provision.

**3.0 Equipment Accuracy.** IC Roller accuracy shall be in accordance with the following.

Operating Parameter	Accuracy
Global Positioning System	$\pm 50$ mm ( $\pm 2$ in.) in the X and Y Direction
Rolling Speed	$\pm 0.5$ kph ( $\pm 0.3$ mph)
Frequency	$\pm 2$ Hz
Amplitude	$\pm 0.2$ mm ( $\pm 0.008$ in.)
Temperature	$\pm 1.5^{\circ}\text{C}$ ( $\pm 2.7^{\circ}\text{F}$ )

**4.0 Onboard Unit.** The IC Rollers shall include an integrated on-board documentation system that is capable of displaying real-time color-coded maps of IC measurement values including the stiffness response values, roller location, number of roller passes, pavement surface temperatures and line work (alignment file) if applicable. The unit shall display the current value for roller speeds, vibration frequencies and vibration amplitude of the roller drums. The operator shall have the ability to label or select each Layer ID. The display unit shall be capable of transferring the data by means of a USB port to a removable media device.

**5.0 Software Requirements.** The manufacturer's Intelligent Compaction software, or cloud computing, shall map and export gridded all-pass data and resemble PP81 section 4.5.1.6 as much as possible. Additionally, the manufacturer's Intelligent Compaction software and cloud computing if used shall support the following features:

- (a) Filtering by: Instrumented Roller, Date and Time Stamp, Layer ID
- (b) Calculation of gridded all-pass data using filtered data (e.g., gridded data for a given roller, for a given day of production and location; gridded data within the entire project limits)
- (c) Cloud Storage and computing is recommended but not required

**6.0 Global Positioning System (GPS).** Radio and receiver units shall be mounted on each IC roller to monitor the drum locations and track the number of passes of the rollers. The GPS system shall also meet the following requirements:

- (a) Set all GPS devices to the Universal Transverse Mercator (UTM) coordinate system No.15 except for portions of the SE District which are No. 16, regardless of whether GPS or Grid data are originally recorded. If UTM coordinates are not available, use the State Plane coordinate system. The records shall be in feet. If an alternate coordinate system is established for the construction of the project, it may be used for the IC.
- (b) Provide a GPS system that can be a ground-based base station or Virtual Reference Station (VRS) to achieve Real Time Kinematic Global Positioning Systems (RTK-GPS) accuracy.
- (c) Provide GPS receivers on IC Rollers and a hand-held GPS rover that have the same VRS subscription.
- (d) Provide the recorded GPS data, whether from the IC Rollers or hand-held GPS rovers, in the following formats:

- (i) The time stamp shall be in military format (HHMMSS.SS) in either UTC or local time zone. Accuracy of 0.01 second is necessary to differentiate sequence of Intelligent Compaction data points during post processing.
- (ii) Provide GPS latitudes and longitudes in DDMM.MMMMMMMM or decimal degrees (DD.DDDDDDDD).
- (iii) Provide grid coordinates in feet to the nearest 0.1 foot.

**7.0 Rover.** The contractor shall provide one fully equipped survey grade hand-held GPS rover with RTK for the duration of the contract. The rover may remain in the possession of the contractor but shall be available to the engineer as needed.

**7.1 Rover Specifications.** The Rover shall read GPS signals L1 C/A, L1/L2 P-Code, and L2C and Glonass signals L1/L2 CA, L1/L2 P-Code. It shall achieve Horizontal accuracies of 10mm + 1 ppm RMS and Vertical accuracies of 15 mm + 1 ppm RMS in RTK surveys. It shall support Network RTK using NTRIP and have an internal modem with cellular service provided. Single Baseline RTK shall also be supported with an internal UHF Radio. Training shall be provided to ensure that MoDOT personnel shall have enough knowledge of software and hardware to run GPS rover.

**8.0 Control Points.** The contractor shall establish control points on the project prior to submitting the IC Quality Control Plan. A control point shall be placed at minimum of every 3,000 feet, or as otherwise approved by the Engineer. A report shall be furnished to the Engineer detailing the location of each control point prior to paving of the corresponding segment. These control points shall have a minimum accuracy of 0.02 Feet.

**9.0 Data Management.** All submitted files shall be adequately labeled prior to submission.

**9.1 Unfiltered Raw Data.** Shall be downloaded twice per day and forwarded to the Engineer before the start of the next day's production.

**9.2 Formatted Raw Data.** Formatted Raw Data shall be submitted to the Engineer before the start of the next day's production. The formatted raw data shall be compatible with VETA 4.0 or later. The data shall include all pass count information, core locations, and daily production boundaries. The verification data shall be submitted as well in a separate file. Each file shall be labeled with the corresponding production date, direction, starting and ending log mile, and lane if applicable (e.g. 160623, NB, 283.21-281.82, PL).

**9.3 Veta 4 File.** The file shall include the day's production and be submitted to the engineer within 36 hours after completion of the day's paving. The fully functioning Veta 4 file shall contain all the cumulative IC data, core locations and paving boundaries. IC Data shall include at a minimum roller location, temperature, amplitude, frequency and speed.

**9.4 Report.** A report shall be furnished to the engineer by the contractor two days prior to the 1st and 15th of each month which includes the results and category for each segment. A cumulative Veta 4 file shall also be included which reflects the information provided in the report.

**10.0 Daily Verification.** The temperature and GPS on each IC Roller shall be verified and recorded at the start and end of each day. IC Roller verification shall include verifying a point established by the rover for both X and Y position. The rover shall be verified for both X and Y position with a control point at the start and end of each day. A record, of each verification, shall be submitted to the engineer electronically as soon as possible but no later than the start of the next day's production.

**11.0 IC Segments.** Each IC Segment shall consist of one day's production.

**12.0 Technical Support.** Technical Support from the IC roller manufacturer shall include on-site technical assistance during the first day of paving and availability on an as-needed basis for the duration of the project at no cost to the Commission. The manufacturer's representative shall provide assistance with setup, verification, data management, operation, and analysis.

**13.0 Training.** IC Personnel shall be trained in accordance with PP81 Section 5 and shall possess the appropriate certification. The certifications shall be generally consistent with PP81 appendix X1 for Data Managers and PP81 Appendix X2 for operators. One training will be provided by the Engineer. The required certifications will be issued upon the successful completion of the training. The IC technician and other IC quality control staff are required to attend. The length of the training will be 4-8 hours. Equipment operators, involved with the IC, who have not attended the provided training shall obtain training and submit the required certifications to the Engineer prior to working on the project. Quality Control Technicians need to bring 64-bit Windows Laptops to the training with the Veta software (version 4.0 or later) pre-installed. 8 GB of RAM is also recommended for optimal performance. Veta can be downloaded from the Intelligent Compaction website at the following web address:

[www.IntelligentCompaction.com](http://www.IntelligentCompaction.com)

**14.0 IC Quality Control Plan.** A pre-activity meeting shall be required prior to mainline paving. The IC Quality Control Plan shall be submitted to the Engineer at least 2 weeks prior to the mainline paving pre-activity meeting. The plan at minimum shall include the following:

- (a) Completed Personnel Certifications if previously trained
- (b) Roller Approval Forms
- (c) Detailed daily verification procedure for checking the RTK-GPS of both the IC roller(s) and rover(s).
- (d) Procedure for the construction of the trial section and establishment of the optimum compaction pass count and target IC-MV value
- (e) Procedure for downloading IC data from the roller(s)
- (f) A list of employees attending the provided training, along with the procedure for training operators or other individuals who may not be attending the training
- (g) Detailed daily verification procedure for checking the temperature sensor on IC Roller
- (h) The name of the designated IC Quality Control Technician
- (i) Procedure for submitting data
- (j) Contact information for technical support staff
- (k) A list of the control points with either UTM or State Plane Coordinates established by the contactor

**15.0 Coring.** Cores shall be taken as typically required by the Missouri Standard Specification for acceptance of the pavement. The GPS coordinates of each core shall be collected with an accuracy of +/- 2 inches and submitted to the Engineer by the start of the next day's production.

**16.0 Daily Production Boundaries.** The paving limits of the freshly placed mat shall be collected with the GPS Rover. The edge of the new paved mainline surface shall be collected at least every 100 feet for curves and every 200 feet for tangent sections. These points shall be used to define the boundaries of each segment.

**17.0 Software Access.** The contractor shall supply the Engineer with the manufacturer's Intelligent Compaction Computer Software 14 days prior to beginning work and until ninety days after completion of all work. If Cloud Storage or Cloud Computing is used, the Engineer shall be supplied one user ID with full access for the same time period specified.

**18.0 Trial Section.** Mainline paving shall begin with the construction of a trial section for each mix type. The trial section shall be constructed and compacted with the same equipment, progression and methods which will be used during production. The roller speed and frequency used on the trial section shall be maintained during the construction of the project. The trial section shall be constructed with sufficient passes to determine the optimum density. The trial section shall be 1000 feet in length, with the last 400 feet being utilized for testing, the width of one lane and may be constructed as part of the project. Within the 400 feet long testing portion, one Evaluation Location shall be identified for each 100 feet. Each Evaluation Location shall be positioned away from the center of the lane due to potential overlap of roller passes during compaction. After each of the passes, the contractor shall collect a density measurement with a nuclear gauge at each Evaluation Location. The passes shall be continued until either the pavement density begins to decrease or the density measurement from on two consecutive passes are within 0.3%. Following completion of the trial section, a compaction curve shall be constructed from the pass vs. density information. From this curve the optimum number of passes and optimum IC-MV shall be determined from either the peak density versus pass value or from the 0.3% increase pass versus density values. Cores shall be collected at each Evaluation Location after completion of the recorded passes. The density of each core shall be determined by the contractor and used to correlate with the final density collected from the nuclear gauge. The Engineer shall be notified at least 48 hours prior to construction of the trial section. The trial section will not be considered for IC incentive or disincentive payment.

**19.0 Segment Classification.** Passing Segments shall have a minimum of 90% coverage at or above the optimum number of passes. Segments with between 90% and 70% coverage will be called moderate segments. Any segment with less than 70% coverage at the optimum number of passes shall be a Deficient Segment. This includes areas where data is lost. If 70% of the target IC-MV is not obtained, the segment shall be flagged accordingly in the Veta 4 file. All qualifying passes shall have been completed on material which is at or above the minimum temperature specified in Section 403.15.

**20.0 Basis of Payment.** Payment for compliance with this provision will be made at the contract unit price for Item No. 401-99.01, Intelligent Compaction, lump sum. In addition, an incentive payment of \$50 per 1000 feet will be made on all Passing Segments and a disincentive deduct of \$50 per 1000 feet will be made on all Deficient Segments. No additional payment will be made for the equipment, software, training, survey, analysis, trial section, trial section cores or any other incidentals necessary to complete the work.

Incentive or Disincentive Payment = ((Length of Days Run) / 1000) x \$50

J. Permanent Aggregate Edge Treatment NJSP-15-40

**1.0 Description.** This work shall consist of furnishing and installing a permanent aggregate edge treatment along the edge of shoulder or pavement as shown on the plans or as directed by the engineer.

**2.0 Construction Requirements.** Aggregate shall be simultaneously deposited and spread on the sub-grade and shall not be deposited on the pavement or shoulder and bladed into place. Aggregate material shall be shaped according to the typical section and compacted until there is no visible evidence of further consolidation.

**3.0 Material Requirements.** Material used for the aggregate edge treatment shall be Type 1 Aggregate in accordance with Sec 1007 or an allowable substitute approved by the engineer.

**4.0 Measurement by Weight.** Measurement of the aggregate edge treatment material shall be per ton and in accordance with Sec 310.5.3.

**5.0 Basis of Payment.** The accepted quantities of aggregate edge treatment will be paid for at the contract unit price for 304-99.10, Permanent Aggregate Edge Treatment, per ton and will be full compensation for all labor, equipment and material to complete the described work.

K. 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.

L. Contractor Quality Control NJSP-15-42

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

**2.0 Quality Control Plan.**

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

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

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

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

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

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

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

#### **4.0 Work Planning and Scheduling.**

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

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

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

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

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

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

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

Job No.: J113017

Route: I-35

County: Harrison

**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.