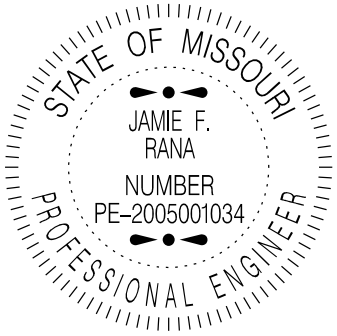
Job No.: J6S3626
Route: D
County: St. Louis

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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



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: J6S3626
ST. LOUIS COUNTY, MO
DATE PREPARED: 12/30/24

ADDENDUM DATE:

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

Job No.: J6S3626
Route: D
County: St. Louis

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02K

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 "Doing Business with MoDOT", "Contractor Resources". 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 "Doing Business with MoDOT"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to July 2024 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- 13-01D

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.

1.1 Subproject Identification. Portions of the Contract are hereby identified as subprojects with the following assignment of Bridge Number, Route, or other location of work. This identification is done for the purpose of setting time limits for completion of each subproject and to allow partial acceptance of the work for maintenance as subprojects are completed.

Subproject	Description
Bridge A9477	Route D (EB) Bridge Replacement over Route US 67
Bridge A9478	Route D (WB) Bridge Replacement over Route US 67

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 on all projects 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: May 5, 2024
Contract Completion Date: November 6, 2026

2.1 Calendar Days and Completion Dates. Completion of the project is required as specified herein. The count of calendar days will begin on the date the contractor starts any construction operations on the project.

Subproject	Calendar Days	Completion Date	Daily Road User Cost
Bridge A9477	N/A	January 10, 2026	$5,400
Bridge A9478	N/A	November 6, 2026	$5,400

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract 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 **$2,000** 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 specified contract 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 contract 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-02-06N

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 Deficiencies. 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 **10 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.

2.5.1 Traffic Safety.

2.5.1.1 Recurring Congestion. 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 Non-Recurring Congestion. When traffic queues 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 infrequently, 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.

2.6 Transportation Management Plan. The contractor Work Zone Specialist (WZS) shall review the Transportation Management Plan (TMP), found as an electronic deliverable on MoDOT's Online Plans Room and discuss the TMP with the engineer during the preconstruction conference. Throughout the construction project, the WZS is responsible for updating any changes or modifications to the TMP and getting those changes approved by the engineer a minimum of two weeks in advance of implementation. The WZS shall participate in the post construction conference and provide recommendations on how future TMPs can be improved.

2.7 Traffic Management Center (TMC) Coordination. The Work Zone Specialist (WZS) or their designee shall contact by phone the MoDOT Traffic Management Center (Gateway Guide TMC at #314-275-1513) within five minutes of a lane or ramp closure beginning and within five minutes of a lane or ramp closure being removed. The WZS shall make this phone call 24 hours a day, 365 days of the year since the MoDOT Traffic Management Centers are always staffed.

3.0 Work Hour Restrictions.

3.1 Except for emergency work, as determined by the engineer, and long term lane closures required by project phasing, all lanes shall be scheduled to be open to traffic during the five major holiday periods shown below, 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 otherwise approved by the engineer.

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

3.1.1 Independence Day. The lane restrictions specified in Section 3.1 shall also apply to Independence Day, except that the restricted periods shall be as follows:

When Independence Day falls on:	The Holiday is Observed on:	Halt Lane Closures beginning at:	Allow Lane Closures to resume at:
Sunday	Monday	Noon on Friday	6:00 a.m. on Tuesday
Monday	Monday	Noon on Friday	6:00 a.m. on Tuesday
Tuesday	Tuesday	Noon on Monday	6:00 a.m. on Wednesday
Wednesday	Wednesday	Noon on Tuesday	6:00 a.m. on Thursday
Thursday	Thursday	Noon on Wednesday	6:00 a.m. on Friday
Friday	Friday	Noon on Thursday	6:00 a.m. on Monday
Saturday	Friday	Noon on Thursday	6:00 a.m. on Monday

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 work the following hours as noted below. It shall be the responsibility of the engineer to determine if the work hours below may be modified. Working hours for evenings, weekends and holidays will be determined by the engineer.

Route D/Route US 67 Interchange Loop Ramps:
All 4 Ramps Closed for the duration of the project at all hours of the day.

Route D/Route US 67 Interchange Slip Ramps:
All 4 Non-Loop or Slip Ramps open throughout the project at all hours of the day.

Route D during Bridge Reconstruction:
All through lanes in both directions open during reconstruction of the Bridge over Route US 67 including the reconstruction and resurfacing of the loop ramps at the interchange.

Route D Crossover Setup Operations and Flowable Fill Work east of Ball Drive along EB Rte D:
1 Through Lane in each direction open for milling of existing bridge median and for removal/installation of temporary pavement. Other operations, as determined and approved by the Engineer, may also use this closure window.
9:00 a.m. – 3:00 p.m.
8:00 p.m. – 5:00 a.m.

Route US 67 during Bridge Reconstruction:
1 Through Lane in each direction open at all times during reconstruction of the Bridge over Route 67 including the reconstruction and resurfacing of the loop ramps at the interchange.

Setting New Girders for the New Bridge over Route US 67:
Contractor allowed 2 Nights for <u>each</u> new Bridge – 1 Night over SB US 67 and 1 Night over NB US 67 to set new girders. As specified above, only 1 lane in each direction of Route US 67 will be open during construction. This 1 lane may be completed closed during the following times to set girders:

Complete closures allowed for 15 minutes at a time between 10:00 p.m. – 4:00 a.m.

Route US 67 Resurfacing:
8:00 p.m. - 5:00 a.m. Monday through Friday, 1 Through Lane open in each direction

Route D Resurfacing:
8:00 p.m. - 5:00 a.m. Monday through Friday, 1 Through Lane open in each direction

Crack Filling on Route D Bridges A6604 and A6605 (west of Route US 67):
8:00 p.m. - 5:00 a.m. Monday through Friday, 1 Through Lane open in each direction

Bridge Demolition (2 Extended Weekend Closures Allowed):
8:00 p.m. Friday – 5:00 a.m. following Monday morning

All lanes of Route US 67 shall be closed during bridge demolition activities – see plans for temporary bypass details; use of temporary signals and lighting and detour plans.

All lanes of Route D shall be closed during bridge demolition activities – see plans for use of temporary signals and lighting and detour plans.

Traffic Switch for Crossover Operations on Route D (2 Extended Weekend Closures Allowed):

8:00 p.m. Friday – 8:00 a.m. Saturday morning

All lanes of Route D shall be closed during the traffic switch for crossover operations prior to demolition activities.

Installation of New Overhead Sign Truss over Route D east of Route US 67:

All lanes of Route D and all Loop Ramps to/from Route US 67 Closed
1 full closure allowed 1 time on project, 12:00 a.m. – 5:00 a.m.

Kratky Road (Pavement Widening):

NB Kratky Road (turns from Rte. D) open at all during construction.
SB Kratky Road (turns to Rte. D) closed for 1 Extended Weekend Closure from 8:00 p.m. Friday to Monday 5:00 a.m.

Millpark Drive (Pavement Widening):

SB Millpark Drive (turns to WB Rte. D) open at all during construction.
NB Millpark Drive (turns from WB Rte. D) closed for 1 Extended Weekend Closure from 8:00 p.m. Friday to Monday 5:00 a.m.

3.4 Any work requiring that the temporary bypasses, constructed prior to and for the staged bridge demolition, be closed due to setup of the crossovers on Route D (Page Avenue) shall be completed during nighttime hours, as approved by the Engineer. Nighttime hours for this work shall be considered to be 12:00 a.m. to 4:00 a.m. for this project.

3.5 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$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.

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

4.0 Detours and Lane Closures.

4.1 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. If a CMS with Communication Interface is required, then the CMS shall be capable of communication 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 JSP-90-11A

1.0 The contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from law enforcement or other emergency agencies for incident management. In case of traffic accidents or the need for law enforcement to direct or restore traffic flow through the job site, the contractor shall notify law enforcement 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 law enforcement services, the following agencies may also be notified for accident or emergency situation within the project limits.

Missouri Highway Patrol: 636-300-2800		
City of Maryland Heights	St. Louis County	
Fire: 314-298-4400	Police: 314-889-2341	
Police: 314-298-8700		
West Overland Fire Protection District: 314-428-6069		
Creve Coeur Fire Protection District: 314-432-5570		

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 law enforcement agency.

2.2 The contractor shall notify law 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 law 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 JSP-96-05

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

Jamie Rana, Project Manager
St. Louis District
1590 Woodlake Drive
Chesterfield, MO 63017

Telephone Number: 314-624-5035
Email: Jamie.Rana@modot.mo.gov

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

F. Utilities JSP-93-26F

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**
Ameren Electric Zak Kaller Phone: (636) 793-1487 Email: ZKaller@ameren.com	Yes	Power connection for new lighting power supply to be placed in Northwest Quad 2.0
AT&T-D Wade Weakley Phone: (636) 448-9607 Email: ww8571@att.com	None	Communications
Charter George Bugg Phone: (314) 780-2921 Email: george.bugg@charter.com	None	Communications

Lumen Rich Obremski Phone: (314) 378-9931 Email: Richard.Obremski@Lumen.com	Yes	Communications Relocate fiber communication line for construction of east bridge piers 3.0
MAWC Dave Pruitt Phone: (314) 996-2214 Email: Dave.Pruitt@amwater.com	None	Water
MCI / Verizon Jeremy Phillips Cell: 636.399.1023 Email: jeremy.phillips@verizon.com	None	Communications
Metropolitan St. Louis Sewer District Andy Day Phone: (314) 768-2799 Email: aday@stmsd.com	None	Sewer
Spire Nick Eggert Phone: 314-330-5720 Email: Nicholas.Eggert@spireenergy.com	None	Gas
Windstream Kelly Wingfield Phone: 515-559-4031 Email: Kelly.Wingfield@windstream.com	Yes	Communications Relocate fiber communication line for construction of east bridge piers 4.0

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 Power Service Connection: An electric power connection will be required for the interchange lighting improvements shown in the plans; the contractor shall contact the MoDOT Area Utility Coordinator, Michael Robinson at (314) 648-4079, at least 2 weeks in advance of the planned work to arrange to have Ameren connect the power to the new lighting power supply in the Northwest quadrant of Page and Lindbergh.

3.0 Lumen: Lumen has a fiber optic cable conduit that is in conflict with the proposed construction of bridge intermediate bent four (eastside of Northbound Lindbergh). Lumen anticipates the existing fiber optic cable conduit system will be abandoned in place, and a new fiber optic cable conduit system will be placed outside the construction limits of the new bridge intermediate bents prior to Notice to proceed.

4.0 Windstream: Windstream also has a fiber optic cable conduit that is in conflict with the construction of the proposed bridge intermediate bent four (eastside of Northbound Lindbergh). Lumen anticipates the fiber optic cable conduit will be abandoned in place, and a new cable will be placed outside the construction limits of the new bridge intermediate bents prior to Notice to proceed.

5.0 If utility facilities are discovered the contractor shall contact the MoDOT Area Utility Coordinator, Michael Robinson at (314) 648-4079. The engineer will determine whether relocation of the utility is necessary to accommodate construction or if the work can be installed in accordance with Missouri Standard Plans for Highway Construction for the item of work specified.

G. Order of Work

1.0 Description. The contractor shall follow the order of work as noted below.

1.1 The contractor shall relocate the existing ITS fiber along Route US 67 prior to beginning any other work on the project. The existing fiber shall be relocated as to not impact construction operations and to ensure it will not be disturbed again on this project. In addition, the contractor shall remove the existing CCTV camera pole and cabinet; store both the pole and cabinet temporarily; and relocate them to the new foundation during the project. The contractor shall provide temporary CCTV cameras for MoDOT to visualize the interchange during construction.

1.2 Prior to demolishing the Route D (Page Avenue) Bridge A0650, the contractor shall install the temporary pavement needed for bypass and crossover operations and shall partially remove the median island on the existing bridge deck and overlay with asphalt to allow for a smooth surface and an additional lane on the existing bridge during construction of Stage 1. The new EB Rte. D Bridge (A9477) shall be constructed first. The contractor shall demolish the EB portion of the bridge while placing 2 lanes of traffic in each direction of Route D on the existing WB portion of the bridge. All loop ramps at the interchange will be closed during all stages of work on this project. Installation of the temporary signals as noted in the plans shall also be installed prior to demolition of the existing bridge. The contractor shall not demolish the entire structure but shall stage the demolition and reconstruction of the bridge.

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

H. Modified Airport Requirements

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

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

2.0 The maximum height of the improvement and the equipment operating while performing the improvements was assumed to be **200** feet above the current travelway during the process of evaluating the project for compliance with FAA Reg Part 77.

2.1 If the contractor's height of equipment or if the improvement itself is beyond the assumed height as indicated in Sec 2.0, the contractor will work with the Resident Engineer to fill out the Form 7460-1, or revise the original Form 7460-1 based upon the proposed height and resubmit, if necessary, for a determination by FAA on compliance with FAA Reg Part 77. Further information can be found in MoDOT's Engineering Policy Guide 235.8 Airports. If the Form 7460-1 must be filed, the associated work shall not be performed prior to the FAA determination, which could take up to 45 days.

3.0 The contractor will be required to notify both the manager of the St. Louis Lambert International Airport (STL) and the manager of the St. Louis Tower 3 business days prior to the temporary crane being erected and then again when it is removed from the site. The following are the contact numbers the contractor will be required to call. The contractor shall notify the Engineer after contact is made as described above.

Manager of St. Louis Lambert International Airport (STL) 314-426-8000

Manager of St. Louis Tower 314-890-4701

4.0 The following list below is the Aeronautical Study Numbers that will need to be used to notify persons within Section 3.0 of this special provision. If the temporary crane is still needed after the current permit end date of 01/18/2026, then the contractor shall notify MoDOT 2 weeks in advance so that MoDOT can submit for the permit to be extended.

Aeronautical Study No. 2024-ACE-3511-OE

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

I. Coordination with Metro Transit

1.0 Description. The contractor shall contact Metro Transit prior to closing any ramps at the Route D/US 67 interchange as Bus Routes #49 & #94 use this interchange. It is requested that the coordination begin prior to the project Preconstruction Conference to ensure minimal disruption in service on Metro's system.

2.0 Construction Requirements. All Metro Transit stops within the project limits shall remain open and operational throughout the duration of the project. In locations where the contractor's

operations will involve work in proximity to a transit stop location, the contractor shall notify Metro Transit through the contacts listed below, not later than 72 hours prior to beginning work at that location. The contractor shall also take care to minimize exposure of transit users to construction hazards in proximity to all transit stops that are in service during work operations.

2.1 Project Contacts. The contractor shall notify the following contacts at Metro Transit coordinate scheduling throughout the project with them or their designated representative(s).

Mr. Roderick Thomas, Senior Planner
Office: (314) 923-3000
Email: rhthomas@metrostlouis.org

Ms. Natalie Siebert, Senior Planner Transit Operations
Office: (314) 982-1400 x1816
Cell: (314) 497-4916
Email: nmsiebert@MetroStLouis.org

Mr. Lance Peterson, Director of Service Planning
Office: (314) 982-1520
Cell: (314) 220-6756
Email: llpeterson@MetroStLouis.org

3.0 Basis of Payment. No direct payment will be made for any labor, equipment, materials, and time required to comply with this provision.

J. Liquidated Damages for Winter Months JSP-04-17A

Delete Sec 108.8.1.3 (a)

Liquidated damages for failure to complete the work on time shall not be waived from December 15 to March 15, both dates inclusive.

K. Liquidated Damages Specified – Demolition of Existing Bridges

1.0 Description. As specified in JSP C – Work Zone Traffic Management, the contractor will be allowed to close Route D (Page Avenue) over Route US 67 (Lindbergh Boulevard) for an extended weekend beginning on a Friday at 8:00 p.m. and lasting until the following Monday at 5:00 a.m. to demolish and remove ½ of existing bridge. Prior to demolishing ½ of the bridge, the contractor shall install temporary bypasses with temporary signals and lighting to allow access around the interchange during the extended weekend closure. In addition, the contractor shall have the temporary crossover between eastbound and westbound Route D near completion in order to satisfy requirements of this provision and as described within Section 1.1 below.

If all work noted above is not complete and Route D, Route US 67 and the interchange ramps (excluding the loop ramps) open to traffic within the extended weekend closure window allowed **for each** of the two stages, 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 **$2,500 per every 15 minutes** for **each full 15 minutes past 5:00 a.m**. that the work described above is not complete and all lanes on Route D, Route US 67 and the interchange ramps (excluding the loop ramps) are open to traffic in excess of the limitation as specified elsewhere in this special provision. Multiple liquidated damages may be charged as each stage has an extended weekend closure window to demolish half of the bridge. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

1.1 The contractor will be allowed to close the temporary bypass as specified in JSP C – Work Zone Traffic Management, Section 3.4, during the hours of 12:00 a.m. until 4:00 a.m. in order to finalize the crossover connection allowing 2 lanes open in each direction on Route D (Page Avenue) with approval from the Engineer.

1.2 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.

L. Liquidated Damages Specified – Traffic Switch for Crossover Operations on Route D

1.0 Description. As specified in JSP C – Work Zone Traffic Management, the contractor will be allowed to close Route D (Page Avenue) at the Route US 67 (Lindbergh Boulevard) interchange for an extended period of time beginning on a Friday at 8:00 p.m. and lasting until Saturday morning at 8:00 a.m. to install and switch traffic over to the crossover prior to bridge demolition. Prior to installing and switching traffic over to the crossover prior to bridge demolition, the contractor shall install temporary bypasses with temporary signals and lighting to allow access around the interchange during the extended weekend closure for each bridge demolition.

If all work noted above is not complete and Route D, along with Route US 67 and the interchange ramps (excluding the loop ramps), open to traffic within the extended weekend closure window allowed **for each** of the two stages, 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 **$2,500 per every 15 minutes** for **each full 15 minutes past 8:00 a.m**. that the work described above is not complete and all lanes on Route D, along with Route US 67 and the interchange ramps (excluding the loop ramps), are open to traffic in excess of the limitation as specified elsewhere in this special provision. Multiple liquidated damages may be charged as each stage has a weekend closure window to switch traffic over to the crossover. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

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.

M. Liquidated Damages Specified – Closures at Millpark Drive and Kratky Road

1.0 Description. As specified in JSP C – Work Zone Traffic Management, the contractor will be allowed to close ½ of the entrance at both Millpark Drive and Kratky Road.

The contractor shall keep the following open at all times:

NB Kratky Road (turns from Rte. D)

SB Millpark Drive (turns to WB Rte. D)

The contractor shall close the following at all times over 1 extended weekend for each side street:

SB Kratky Road (turns to Rte. D) closed for 1 Extended Weekend Closure from 8:00 p.m. Friday to Monday 5:00 a.m.

NB Millpark Drive (turns from WB Rte. D) closed for 1 Extended Weekend Closure from 8:00 p.m. Friday to Monday 5:00 a.m.

If all widening work at Kratky Road and Millpark Drive noted above is not complete and the side street open to traffic within the extended weekend closure window allowed **for each** of the two side streets, 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 **$1,000 per every 15 minutes** for **each full 15 minutes past 5:00 a.m**. that the work described above is not complete and all lanes on either Millpark Drive or Kratky Road are open to traffic in excess of the limitation as specified elsewhere in this special provision. Multiple liquidated damages may be charged as each side street has its own extended weekend closure window to widen the road. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

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.

N. Coordination with Other Projects

1.0 Description. The contractor shall coordinate traffic management between this project and the following MoDOT projects:

JSL0186: Route D ADA Upgrades from west of Linpage Place to I-170 (Beginning in Spring 2026)

1.1 The project noted above is not an all-inclusive summary. The contractor shall be aware that there may be other projects including, but not limited to, utility, St. Louis County, private, MoDOT maintenance, permit, or other projects that may impact project construction or traffic control in the vicinity of this project. It shall be the responsibility of the contractor to determine what, if any projects other than the ones listed above may impact this project and work to coordinate construction and traffic management efforts between this project and any other project involved.

2.0 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.

O. Slurry and Residue Produced During Surface Treatment of PCCP and Bridge Decks JSP-06-05

1.1 Description. This work covers the requirements for controlling residue or slurry produced by milling, grinding, planing, grooving or other methods of surface treatments on new or existing PCCP and bridge decks in addition to Section 622.

2.0 Construction Requirements. The following shall be considered the minimum requirements for performing this work within the project limits.

2.1 The contractor shall submit to the Engineer for approval in writing prior to the pre-construction meeting, the best management practices (BMP's) to be used to protect the environment, including the method of disposal of the residue whether on right of way or off-site.

2.2 Prior to starting work, slurry, or residue "no discharge zones" will be identified by the Engineer with respect to the contractor's approved BMP and residue disposal plan.

2.3 Operations may be suspended by the Engineer during periods of rainfall or during freezing temperatures.

2.4 When slurry is dispersed on the right of way, BMP's shall be installed to keep slurry residue from entering drainage structures, from entering any waterways and from leaving the right of way.

3.0 Basis of Payment. No direct payment for slurry or residue control requirements for BMP's will be made. Compliance with this specification along with the cost of all materials, labor, and equipment necessary for the surface treatment work shall be included in and completely covered by the unit price bid for each of the items of work for surface treatment included in contract.

P. Contractor Quality Control NJSP-15-42

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

2.0 Quality Control Plan.

(a) The name and contact information of the person in responsible charge of the QC testing.
(b) A list of the QC technicians who will perform testing on the project, including the fields in which they are certified to perform testing.
(c) A proposed independent third party testing firm for dispute resolution, including all contact information.
(d) A list of Hold Points, when specified by the engineer.

(e) The MoDOT Standard Inspection and Testing Plan (ITP). This shall be the version that is posted at the time of bid on the MoDOT website (www.modot.org/quality).

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

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

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

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

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

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

4.0 Work Planning and Scheduling.

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

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

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

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

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

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

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

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

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

Q. Asphalt Coldmilling / Paving Requirement

1.0 Description. Asphalt coldmilling / paving requirement for the project.

2.0 Construction Requirements. Asphalt coldmilled pavement areas shall be filled with the corresponding asphaltic concrete mixture during the same work shift.

2.1 The contractor shall provide a material transfer vehicle during asphalt paving operations to ensure a consistent temperature of the asphalt throughout paving and to prevent segration of the mix in order to produce an uniform final product.

3.0 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.

R. Low-Tracking or Non-Tracking Tack Coat

1.0 Description. This work requires application of tack in accordance with Sec 407 and prevention of tack loss from the surface as specified herein. Tack loss prevention shall be accomplished with successful usage of a MoDOT-approved non-tracking tack, or other acceptable non-tracking means, as approved by the engineer.

2.0 MoDOT-Approved Non-Tracking Tack. A list of MoDOT-approved non-tracking tack products is available at MoDOT.org under the Materials Qualified List. Upon request from the contractor, the MoDOT Division of Construction & Materials will consider allowance of other non-tracking products. To be approved, the contractor must successfully demonstrate that the proposed product meets the non-tracking requirements specified in section 3.0. The location of a contractor demonstration will only be allowed in areas approved by the engineer. The engineer will make final determination of product acceptance based on observation of the results of the contractor's demonstration.

2.1 Products on the Qualified List have demonstrated successful non-tracking performance on previous projects; however, the Commission does not endorse nor guarantee success of any of the listed products. Success is dependent on the contractor choosing a product that can achieve the desired results while also taking into consideration all factors, including, but not limited to, cure time, weather conditions, surface prep, surface type, material properties, and adherence to manufacturer's instructions. The contractor is responsible for monitoring adherence of the tack to the pavement surface and shall cease operations when tack first begins to show signs of not meeting the requirements of Section 3.0. Corrective action shall be made prior to resuming tacking operations.

3.0 Non-Tracking Requirements. Non-tracking tack shall remain adhered to the pavement surface when exposed to any wheeled or tracked vehicles. The tack shall not track off the surface within 30 minutes of being applied, and shall not stick to the tires, tracks or other parts of paving equipment or vehicles such that the underlying surface becomes visible or void of tack prior to the placement of the hot mix asphalt. The tack shall not track onto any adjacent lanes, pavement markings, driveways, sideroads, etc.

3.1 The contractor shall be responsible for cleaning all tracked tack from adjacent lanes, driveways, sideroads, etc., and shall replace all pavement markings that become coated with tracked tack. This cleaning and replacement requirement applies to both approved and proposed non-tracking products.

4.0 Basis of Payment. Measurement and payment shall be in accordance with Sec 407. The accepted quantity of non-tracking tack coat will be paid for per gallon at the contract unit price for 407-10.07 Tack Coat – Non-Tracking, per gallon. No additional payment will be made for the cost to demonstrate proposed products, for cleaning surfaces due to tracking of tack, or for replacement of pavement marking damaged by tracked tack.

S. Optional Pavements JSP 06-06H (Modified)

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 grading shown on the plans was modeled based on the pavement/rock base thicknesses shown below. The contractor shall use the optional pavement design shown in the typicals for exact depths of pavement/base to be constructed. For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for optional pavements.

- Route D - Mainline
  - 9.5 inches of pavement
  - 6 inches of rock base
- Route D – Full Depth Shoulders
  - 9.5 inches of pavement
  - 6 inches of rock base
- Route D – A2 Shoulders
  - 1.75” inches of pavement
  - 13.75” of rock base
- Loop Ramps - Mainline
  - 9.5 inches of pavement
  - 6 inches of rock base
- Loop Ramps - Shoulders
  - 1.75” of pavement
  - 13.75” of rock base

- Millpark Drive
  - 8 inches of pavement
  - 4 inches of rock base
- Kratky Road
  - 8 inches of pavement
  - 4 inches of rock base

- Bypass – Mainline
  - 7.5 inches of pavement
  - 6 inches of rock base
- Bypass – Shoulders
  - 2 inches of pavement
  - 11.5 inches of rock base

2.3.1 The grading shown on the plans for the temporary bypasses used during bridge demolition activities was designed for the asphalt pavement option. For this project with grading in the contract, there will be no adjustment of the earthwork quantities when removing the asphalt temporary bypasses. If the contractor chooses to use the concrete pavement option, earthwork required for removal will be paid in lieu of this temporary pavement listed within the removal of improvements.

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

2.5 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 at the contract unit bid price for the following pay items:

Item No.	Unit	Description
401-99.05	S.Y.	Optional Pavement – Route D & Loop Ramps
401-99.05	S.Y.	Optional Pavement – Millpark Dr. & Kratky Road
401-99.05	S.Y.	Temporary Optional Pavement

4.1 For projects with previously graded roadbeds, any additional quantities required to bring the roadway subgrade to the proper elevation will be considered completely covered by the pay item for Subgrading and Shouldering.

4.2 Price Adjustment for Fuel. If the contractor accepts the option for fuel adjustment in the bid proposal, a fuel adjustment will be applied in accordance with Sec 109.14 for the type of pavement constructed.

T. Traffic Management Coordination with Other Projects

1.0 Description. The contractor shall coordinate traffic management between the following projects within the same project limits:

MoDOT Job Number J6S3280 – ADA/Resurfacing on US 67 (Currently in Construction)

MoDOT Job Number J6S3557 – ADA/Resurfacing on US 67 from I-70 to RR Bridge south of Route D (To Begin in 2026)

MoDOT Job JSL0186 – ADA on Route D from east of US 67 (To Begin in 2026)

1.1 This list of projects is not all inclusive. The contractor shall be aware that there may be other projects including, but not limited to, utility, St. Louis County, City, private, MoDOT maintenance, permit, or other projects that may impact project construction or traffic control in the vicinity of this project. It shall be the responsibility of the contractor to determine what, if any projects other than the ones listed above may impact this project and work to coordinate construction and traffic management efforts between this project and any other project involved.

2.0 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.

U. Lump Sum Temporary Traffic Control JSP-22-01A

1.0 Delete Sec 616.11 and insert the following:

616.11 Method of Measurement. Measurement for relocation of post-mounted signs will be made to the nearest square foot of sign area only for the signs designated for payment on the plans. All other sign relocations shall be incidental. Measurement for construction signs will be made to the nearest square foot of sign area. Measurement will be made per each for each of the temporary traffic control items provided in the contract.

616.11.1 Lump Sum Temporary Traffic Control. No measurement will be made for temporary traffic control items grouped and designated to be paid per lump sum. The list of lump sum items provided in the plans or contract is considered an approximation and may be subject to change based on field conditions. This is not a complete list and may exclude quantities for duplicate work zone packages used in simultaneous operations. The contractor shall provide all traffic control devices required to execute the provided traffic control plans for each applicable operation, stage, or phase. No measurement will be made for any additional signs or devices needed except for changes in the traffic control plan directed by the engineer.

2.0 Delete Sec 616.12 and insert the following:

616.12 Basis of Payment. All temporary traffic control devices authorized for installation by the engineer will be paid for at the contract unit price for each of the pay items included in the contract. Whether the devices are paid individually, or per lump sum, no direct payment will be made for the following:

(a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.

(b) Installing, operating, maintaining, cleaning, repairing, removing, or replacing traffic control devices.

(c) Covering and uncovering existing signs and other traffic control devices.

(d) Relocating temporary traffic control devices, including permanent traffic control devices temporarily relocated, unless specifically included as a pay item in the contract.

(e) Worker apparel.

(f) Flaggers, AFADs, PFDs, pilot vehicles, and appurtenances at flagging stations.

(g) Furnishing, installing, operating, maintaining, and removing construction-related vehicle and equipment lighting.

(h) Construction and removal of temporary equipment crossovers, including restoring pre-existing crossovers.

(i) Provide and maintaining work zone lighting and work area lighting.

616.12.1 Lump Sum Temporary Traffic Control. Traffic control items grouped together in the contract or plans for lump sum payment shall be paid incrementally per Sec 616.12.1.1. Alternately, upon request from the contractor, the engineer will consider a modified payment schedule that more accurately reflects completion of traffic control work. No payment will be made for any additional signs or devices needed except for changes in the traffic control plan directed by the engineer. Additional items directed by the engineer will be paid for in accordance with Sec 109.4. No adjustment to the price will be made for overruns or underruns of other work or for added work that is completed within existing work zones.

616.12.1.1 Partial payments. For purposes of determining partial payments, the original contract amount will be the total dollar value of all original contract line items less the price for Lump Sum Temporary Traffic Control (LSTTC). If the contract includes multiple projects, this determination will be made for each project. Partial payments will be made as follows:

(a) The first payment will be made when five percent of the original contract amount is earned. The payment will be 50 percent of the price for LSTTC, or five percent of the original contract amount, whichever is less.

(b) The second payment will be made when 50 percent of the original contract amount is earned. The payment will be 25 percent of the price for LSTTC, or 2.5 percent of the original contract amount, whichever is less.

(c) The third payment will be made when 75 percent of the original contract amount is earned. The payment will be 20 percent of the price for LSTTC, or two percent of the original contract amount, whichever is less.

(d) Payment for the remaining balance due for LSTTC will be made when the contract has been accepted for maintenance or earlier as approved by the engineer.

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

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

V. Temporary Long-Term Rumble Strips JSP-13-04C

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

2.0 Material.

2.1 The long-term rumble strips shall be 10 feet to 12 feet in length, fabricated from a polymer material, and be orange in color.

2.2 The long-term rumble strips shall have a minimum width of 4 inches, but no greater than 6 inches. The long-term rumble strips shall have a minimum thickness of 0.25 inch, but no greater than 0.50 inch.

2.3 The long-term rumble strips shall have a pre-applied adhesive backing for securing to the asphalt or concrete roadway surface.

3.0 Construction. Long-term rumble strips layout and spacing shall be in accordance with the plans or as approved by the engineer. The long-term rumble strips shall be installed and removed in accordance with manufacturer's recommendation. The contractor shall monitor and repair, and maintain if necessary the long-term rumble strips until removed.

3.1 Each set shall consist of five individual strips spaced ten to twelve feet on center.

3.2 The long-term rumble strips removal process shall not damage the roadway surface. If any damage occurs to the pavement during the removal of long-term rumble strips, the contractor shall replace or repair the damaged pavement at no cost to the Commission.

4.0 Method of Measurement. Measurement of long-term rumble strips will be per each complete set of five strips.

5.0 Basis of Payment. The accepted quantity of Temporary Long-Term Rumble Strips sets will be paid for at the contract unit price for 616-20.02, Temporary Long-Term Rumble Strips, per each set. The long-term rumble strips unit bid price shall include the cost of all labor, equipment and materials to install, maintain, and remove the rumble strips.

W. Pavement Marking Layout

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

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

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

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

X. Modified Pavement Marking Removal

1.0 Description. The first sentence of Sec 620.50.3.2 shall be removed and replaced with the following:

> Where required, measurement for the removal of pavement markings will be made to the nearest linear foot per 4-inches of width. No additional pay factor, based

upon 4-inches of width, shall be included for removals unless the striping width is greater than 6-inches. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

2.0 Pavement Marking Removal shall be in accordance with Section 620.50 and specifically as follows with the exception in Section 1.0 above.

3.0 Construction Requirements. Removal of all pavement marking within the project limits shall be as shown on the plans or as approved by the engineer. Pavement marking shall be completely removed to the satisfaction of the engineer with minimal damage to the pavement. The contractor shall use an approved **water blasting method** to remove the pavement marking on concrete surfaces. No more than five percent of the existing marking shall remain. The pavement surface shall not be left scarred with an image that might mislead traffic. Any excess damage or scarring of the pavement shall be repaired at the contractor's expense. It shall be the contractor's responsibility to determine what type of material needs to be removed.

4.0 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. The revision or correction will be computed and added to or deducted from the contract quantity.

5.0 Basis of Payment. The accepted quantity of pavement marking removal including all labor, equipment, and material necessary to remove the existing marking will be paid for at the contract unit price for the following pay item:

Item 620-70.01 Pavement Marking Removal LF

Y. Combination Pad Mounted 240/480 Volt Power Supply and Lighting Control Station

1.0 Description. This work shall consist of furnishing and installing a 240/480 volt combination base mounted power supply and lighting controller as indicated in the plans. The control stations shall be a multi-circuit type. Available lighting controllers are listed in the lighting section of the MoDOT approved products list under Meter Service Pedestal. Combination base mounted power supply and controllers shall be installed in accordance with the plans and by direction of the engineer. Circuit breakers shall conform to Sec 1091 and be of the ratings shown in the plans.

1.1 Cold sequence metering is required with 480 volt power supplies.

2.0 Basis of Payment. Payment for furnishing and installing combination base mounted power supply and lighting controller shall include all excavation, materials, equipment, tools, labor, and work incidental thereto, and shall be considered to be completely covered by the contract unit price per each as indicated in the plans. No direct pay will be made for cable, rigid steel conduit, and installation thereof necessary for connection of the combination base mounted power supply and controller to the power source.

Item No.	Type	Description
901-99.02	Each	480V Combination Power Supply and Lighting Controller

Z. Top Mount Luminaire

1.0 Description. This work shall consist of furnishing and installing LED Top Mounted Luminaires as indicated in the plans.

2.0 Construction Requirements. Luminaires shall be vertical top mount type (pole top mount) with a slip-fitter that accommodates a standard 2" top mount. Available types are listed on the MoDOT approved products list and must meet all MoDOT Specifications along with additional requirements noted in the additional sections below. The contractor shall coordinate the pole top mount size with the luminaire mount to ensure compatibility. All luminaires for this project shall allow for a tilt angle to be adjusted in the field dependent upon the placement of the pole. All necessary mounting brackets and hardware shall be included in the payment for the luminaire.

2.1 LED luminaires shall not be equipped with a Photo Control Receptacle.

2.2 LED Luminaires shall have a terminal block for easy installation of a two wire Line/neutral circuit (no wire nuts for termination of field/luminaire circuit).

2.3 LED luminaires shall have an easy access point for future repairs to the driver.

2.4 LED luminaires shall have pole adaptors which are capable of feeding wires through without disassembling the knuckle.

3.0 Basis of Payment. Payment for furnishing and installing top mounted luminaries shall include all materials, equipment, tools, labor, and work incidental thereto, and shall be considered completely covered by the contract unit price for:

Item Number	Item Name	Units
901-99.02	170W Top Mounted LED-B Luminaire	Each

AA. Top Mount Light Pole

1.0 Description. This work shall consist of furnishing and installing top mount poles as indicated in the plans.

2.0 Construction Requirements. Top mount poles shall conform to the Type AT lighting poles and shall be fabricated with a circumferentially welded top mount and top plate to accept top mounted luminaries. The top mount shall extend 4" above the top of the pole and meet AASHTO loading requirements for the luminaires provided. The top mount shall be made of the same material as the pole shaft, be constructed as a one-piece pole and top mount unit by the manufacturer and have an outside diameter that accepts the appropriate luminaire slip-fitter. Pole and top mount shall conform to all MoDOT specifications and material requirements. Bridge mounted poles shall be constructed to match the existing bolt pattern.

3.0 Basis of Payment. Payment for furnishing and installing top mount poles shall include all excavation, materials, equipment, tools, labor, and work incidental thereto, and shall be considered completely covered by the contract unit price for:

Item Number	Item Name	Units

901-99.02	45 Ft. Top Mount Light Pole	Each

BB. Bridge Lighting – Wall Pack Lighting

1.0 Description. This work shall consist of furnishing and installing a wall pack lighting connected to the bent cap of the new bridge as shown in the plans. The bracket and its LED light shall be between 70 watts and 110 watts. See Bridge plans for the exact locations and additional details. The LED lights shall light an area directly below the mount. The lights shall work with a 480V power system.

2.0 Material Requirements. The LED light and its conduit and wiring shall conform to all specifications in Sec. 901.

3.0 Construction Requirements. All construction requirements shall conform to Sec. 901.

4.0 Basis of Payment. Payment for furnishing and installing a LED light and its bracket shall include all materials, equipment, tools, labor, and work incidental thereto, and shall be considered to be completely covered by the contract unit price for the following pay item:

Item Number	Item Name	Units
901-99.02	Wall Pack LED Luminaire	Each

CC. Temporary Traffic Signals

1.0 Description. This work shall consist of maintaining the operation of the temporary bypasses during bridge demolition activities at each intersection identified in the plans. This includes any necessary temporary traffic signal devices and lighting, staging traffic signal construction/equipment, any necessary temporary signage, and any other equipment/devices and work to keep the operation of the temporary signalized intersections during construction.

2.0 Construction Requirements. Work shall be in accordance with Sec 902 and the manufacturer's recommendations regarding any installed temporary signals.

2.1 The contractor may use portable traffic signal units with lights to comply with this provision.

3.0 Basis of Payment. Payment for temporary traffic signals, regardless the number of temporary signal poles or portable units used at a given intersection, shall be considered completely covered by the contract unit price for Item Number 902-94.01, "Temporary Traffic Signals and Lighting," per lump sum as indicated in the plans. This pay item pertains to each temporary signalized intersection within the project limits. There will be no additional payment for any temporary removals and relocations that may be necessary.

DD. Traffic Signal Maintenance and Programming

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

2.0 Contractor Maintenance Responsibilities.

2.1 Traffic Signal Maintenance. Once any part of an existing traffic signal within the limits of this project has otherwise been modified and/or adjusted by the contractor or the contractor begins work at an intersection with traffic signals already in operation, then the contractor shall be solely responsible for that traffic signal's maintenance. All traffic signal maintenance shall be the responsibility of the contractor as specified in 902.2.and 902.3, until the Commission accepts the traffic signal for maintenance or as directed by the Engineer. Traffic signals to be accepted for maintenance by the contractor are listed in the below schedule:

Commission Traffic Signals to be Maintained by the Contractor:

Temporary Signals at the Rte. D (Page Avenue) & US 67 (Lindbergh Boulevard) Interchange – on both sides of the Bridge

2.2 Traffic Signal Controller Programming. If the contractor modifies and/or adjusts an existing traffic signal controller's programming or makes any roadway changes to reduce the traffic capacity through a signalized intersection within the limits of a project or utilizes a project defined detour that utilizes the traffic signals within the below schedule, the contractor shall be solely responsible for those traffic signal controller programs. All controller programming shall be the responsibility of the contractor as specified in 902.2 or until final acceptance of the project or until released from the responsibility by the Engineer. Traffic signal controller programs to be administered by the contractor are listed in the below schedule:

MoDOT Traffic Signal Controller Programs to be Administered by the Contractor:

Existing Signals at Route US 67 (Lindbergh Boulevard) & Schuetz Road/Baur Boulevard (south of project limits)

Existing Signals at Route 340 (Olive Boulevard) & Route US 67 (Lindbergh Boulevard) Interchange – on both sides of the Bridge (south of project limits)

Existing Signals at Route D (Page Avenue) & Ball Drive intersection (west of project limits)

Existing Signals at Route D (Page Avenue) & Linpage Place (east of project limits)

2.3 Contractor's Traffic Engineer. If traffic signals are listed in the schedule outlined in section 2.2, the contractor shall have an experienced traffic Engineer with a Professional Engineer's (PE) license in Missouri as well as a Professional Traffic Operations Engineer (PTOE) certification (hereafter referred to as "contractor's traffic Engineer") with the noted experience outlined to section 3.0. MoDOT shall approve the traffic Engineer prior to them being hired.

2.4 Traffic Signal Complaints The contractor shall respond to malfunction complaints or traffic signal timing complaints for those locations detailed in section 2.1 and/or section 2.2 of this provision and as specified in Section 902.21.1. Response time shall be 1 hour for complaints received by the contractor between 6 AM and 6 PM on non-holiday weekdays, and 2 hours for

all other times. For cases due to travel times or other extenuating circumstances additional time may be acceptable within reason but must be approved by a Commission Traffic Operations Engineers. These timeframes will replace the '24 hour' response time in Section 105.14 for any traffic signal-related incidents, where the entire cost of the work, if performed by MoDOT personnel or a third party, will be computed as described in Section 108.9 and deducted from the payments due the contractor.

2.5 Traffic Signal Contacts. The contractor must supply to the Engineer and to the Commission's Transportation Management Center (TMC) a contact name and phone number who will be responsible for receiving traffic signal timing complaints for the Engineer. These complaints may be forwarded directly to the contractor by someone other than the Engineer's representative and will not relieve the contractor from properly responding based on the response times of this provision. The contractor shall respond to the Engineer and its representative within 12 hours of the complaint and its remedy. The contractor shall submit to the Engineer's representative a weekly report of complaints received and remedies performed throughout the duration of the project.

2.6 Existing Traffic Signal Controller Programming. The contractor shall request an electronic report from the Engineer on the existing phasing and timing of each traffic signal, which may be the contractor's responsibility to program. The contractor shall give the Engineer 2 weeks' notice to supply the electronic report. The Engineer's representative shall be available to the contractor before any changes are made to a traffic signal or controller to answer any questions about the report. In lieu of the report, the contractor's traffic Engineer may obtain this information from the appropriate agency's central traffic signal control system.

2.7 Traffic Mitigation Plan. The contractor shall notify the Engineer 2 weeks prior to the date of any work impacting the Commission's traffic signals as described in Section 2.1 and/or 2.2. The contractor shall meet with the Engineer's representatives to discuss their traffic mitigation plan at least 1 week before the date of the first impacts and as needed between construction stages. The traffic mitigation plan should at a minimum include:

(a) Proposed Timing Plan changes and any models
(b) Anticipated locations of concern
(c) A map in electronic format displaying the locations and names of the traffic signals and owning agency as detailed in sections 2.1 and/or section 2.2.
3. Other traffic mitigation efforts

2.8 Notification of Changes to Traffic Signal System. The contractor shall notify the Engineer or representative of the changes no later than 1 working day after changes are programmed if unable to provide advance notice as specified in 902.2.

3.0 Contractor's Traffic Engineer Qualifications.

3.1 Credentials. The contractor shall have an experienced traffic Engineer with a Professional Engineer's (PE) license in Missouri as well as a Professional Traffic Operations Engineer (PTOE) certification.

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

3.2.1 Response. The contractor's traffic Engineer shall have the ability to be on site within 1 hour of being requested.

3.2.2 Corridor Management. Time/space diagram manipulation to successfully adjust offsets and splits for rapidly changing traffic demands.

3.2.3 Controller Programming. Ability to program by hand and by software NTCIP-compatible controllers.

3.2.4 Intersection Programming. Implementation of adjusted and/or new timing plans because of changing traffic demand.

3.2.5 Traffic Signal Software. Use and understanding of all traffic signal controllers and central traffic signal control systems utilized by the Commission.

3.3 Proposed Traffic Engineers. The contractor shall submit the names(s) of proposed traffic engineer(s) and the name(s) of all other personnel on their proposed staff along with detailed experience in all tasks outlined in Paragraph 3.2 above. The Engineer reserves the right to reject any contractor traffic engineer, before the start of work, who does not have sufficient experience or, at any point during the project, which does not satisfy the requirements set forth within this Job Special Provision. A list of potential traffic engineers shall be submitted for review to the Project Manager and the Commission's Traffic Engineers prior to beginning work.

4.0 Contractor's Traffic Engineer Responsibilities.

4.1 VPN Access. The approved contractor's traffic Engineer and any staff assigned to manage the traffic signals during the project are encouraged to apply for VPN (Virtual Private Network) access with the Engineer once the project is awarded. If approved, the Engineer will assign a unique IP address to the contractor's traffic Engineer, which will allow for remote access to the Commission's central traffic signal control systems as appropriate and the ability to interface with the noted traffic signals on this project.

4.2 Traffic Signal Timing Complaints. The contractor's traffic Engineer shall respond to any traffic signal timing complaints regarding signals outlined in section 2.2 of this provision.

4.3 Traffic Signal Coordination. The contractor's traffic Engineer shall be solely responsible for maintaining the coordination at any affected traffic signal to the satisfaction of the Commission's Traffic Operations Engineers or representative until completion of work as set forth in section 2.2 of this provision. Maintenance of coordination may include the synchronization of the affected controller's internal time clocks to the second using an atomic clock, or other means approved by the Commissions Traffic Operations Engineers. If time clock synchronization is used, the contractor shall verify all affected controllers are synchronized at least 1 time per week with a report to the Engineer or representative. This report will be in the form of a documentation record as spelled out in the Work Zone Traffic Management Plan.

4.4 Traffic Signal Controller Programming. The contractor's traffic Engineer shall be responsible for implementing traffic signal controller programming at each intersection listed in section 2.2 for any of the following scenarios:

4. Intersection Impact
5. Construction Stage Traffic Switch
6. Response to Customer Concern
7. New Intersection Turn-On (along with any subsequent revisions)
8. Final completion of improvements
9. As otherwise directed by the Engineer or the Commission's Traffic Operations Engineers

Proposed timing plans should be submitted to the Commission's Traffic Operations Engineers for review prior to field implementation.

4.5 Central Traffic Signal Control System Setup. If a traffic signal cabinet is reconfigured, the contractor's traffic Engineer shall archive the existing controller programming in the Commission's central traffic signal control system. If the signal controller type is changed, the contractor's traffic Engineer shall archive the existing controller programming and convert any new controllers to the proper controller interface type in the Commission's central traffic signal control system. If only signal timing adjustments are made, all database versions shall be clearly labeled and saved separately from the default version, and the final timing program shall be uploaded into the Commission's central traffic signal control system and set as the default database. In addition, the contractor's traffic Engineer shall update any intersection diagrams (i.e., XPL) whose intersection controls were modified during construction.

4.6 Controller Program Test Period. The intersection program shall operate properly with no faults or malfunctions for a period of 15 consecutive days as a condition of being accepted for maintenance by the Commission. Any programming faults shall be corrected by the contractor's traffic Engineer per the response protocols of this provision and the 15 days will start over.

4.7 Cabinet Photos. The contractor's traffic Engineer shall obtain cabinet photos of any new or modified traffic signal cabinet affected by the project. The photos shall be captured of the following perspectives and delivered in the .jpg format electronically and via thumb drive to the Commission's Traffic Operations Engineers.

(a) Power Meter 1 – Away from power meter with meter centered

(a) Power Meter 2 – Close up with power meter number

(b) Cabinet 1 – Away with cabinet centered and door closed

(c) Cabinet 2 – Close up of entire cabinet with door opened

(d) Cabinet 3 – Close up of center cabinet interior

(e) Cabinet 4 – Close up of left cabinet interior

(a) Cabinet 5 – Close up of right cabinet interior

(b) Cabinet 6 – Close up of back panel

(c) Cabinet 7 – Close up of switch

(d) Cabinet 8 - Close up of wall interconnect center

4.8 RRFB/PHB Timing. The contractor's traffic Engineer shall calculate the duration of flash time for any new or modified RRFB's (rectangular rapid flashing beacons) affected by the project. The contactor's traffic engineer shall be responsible for calculating phase intervals and programming traffic signal controllers for new/modified PHB's (pedestrian hybrid beacons) affected by the project.

4.9 Detection. The contractor's traffic Engineer shall assist the contractor in setting up detection as per plan and/or SL District Traffic Signal Detection System JSP. The contractor's traffic Engineer shall verify that all detectors work properly and that each detector input into the traffic signal controller is programmed regarding its intended use. The contractor's traffic Engineer is responsible for optimizing the detector operation by utilizing various detector settings in the traffic signal controller.

4.10 Signal Performance Measures. The contractor's traffic Engineer shall setup traffic signal controllers on the Commission's advanced traffic signal performance measures module unless directed otherwise by the Commission's Traffic Operations Engineers. This includes any work on the Commission's advanced traffic signal performance measures module, traffic signal controller(s), and video detection processor(s). The contractor's traffic Engineer shall provide proof of each traffic signal setup in the module to the Commission's Traffic Operations Engineers. The contractor's traffic Engineer shall setup any traffic signal detectors as system detectors in the Commission's central traffic signal control system.

4.11 Preemption Controller Programming. If preemption is to be provided at a traffic signal, the contractor's traffic Engineer shall program the preemption settings in the traffic signal controller per MoDOT EPG guidelines and at the direction of the Commission's Traffic Operations Engineers. The contractor's traffic Engineer shall test the preempt settings at the traffic signal cabinet to verify proper operation.

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

6.0 Deliverables. All deliverables mentioned in this provision shall be submitted to the Engineer in a timely manner to the satisfaction of the Engineer prior to receiving full compensation for this work. All deliverables must be submitted to the Engineer via USB.

- Experience submittal
- Preliminary Traffic Mitigation Plan
- Notification of Detour Implementation
- Time Base Reports, As Needed
- Complaint Resolutions
- Audible pedestrian signal voice message files

- Traffic Signal Database versions (in PDF format)
- Traffic signal photos
- Notification of Restoration to Normal Operations
- Post Project Report

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

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

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

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

EE. St. Louis County Maintained Signals

1.0 Description. Traffic signal maintenance and programming for this project shall be in accordance with the Standard Specifications of St. Louis County, and specifically as follows.

2.0 Contractor Maintenance Responsibilities.

2.1 Traffic Mitigation Plan. The contractor shall notify St. Louis County 2 weeks prior to the date of any work impacting St. Louis County's traffic signals as described in Section 2.2. The contractor shall meet with the St. Louis County's representatives to discuss their traffic mitigation plan at least 1 week before the date of the first impacts and as needed between construction stages. The traffic mitigation plan should at a minimum include:

(d) Proposed Timing Plan changes and any models
(e) Anticipated locations of concern
(f) A map in electronic format displaying the locations and names of the traffic signals and owning agency as detailed in sections 2.2.
10. Other traffic mitigation efforts

2.1.1 St. Louis County Contacts. The contractor shall contact the following people as noted in Section 2.1 above including:

Adam Spector, P.E. St. Louis County North/West Area Engineer

ASpector@stlouiscountymo.gov

Scott Halter, P.E. St. Louis County Traffic Operations Manager, Operations Division

SHalter@stlouiscountymo.gov

Gregory Marshall, P.E. St. Louis County Project Manager

GMarshall@stlouiscountymo.gov

Jonathan Dennison St. Louis County Technician

JDennison@stlouiscountymo.gov

2.2 Traffic Signal Controller Programming. St. Louis County personnel will review the proposed timing plan and make any timing changes deemed necessary based upon review of traffic using existing PTZ cameras or from suggestions from MoDOT's contractor. If the contractor is asked to modify and/or adjust an existing traffic signal controller's programming or makes any roadway changes to reduce the traffic capacity through a signalized intersection within the limits of a project or utilizes a project defined detour that utilizes the traffic signals within the below schedule, the contractor will be given local access in the field to monitor the controller units, however, unrestricted access to the St. Louis County cabinet to make timing changes will not be granted unless approved by St. Louis County. If St. Louis County is unavailable to make timing changes, typically after normal business hours or on weekends, MoDOT's contractor will be given additional points of contact. Traffic signal controller programs to be administered by the contractor are listed in the below schedule:

St. Louis CountyTraffic Signal Controller Programs to be Administered by the Contractor:

Existing Signals at Midland Boulevard/Dorsett Road & US 67 (Lindbergh Boulevard) Interchange – on both sides of the Bridge

2.3 Contractor's Traffic Engineer. If traffic signals are listed in the schedule outlined in section 2.2, the contractor shall have an experienced traffic Engineer with a Professional Engineer's (PE) license in Missouri as well as a Professional Traffic Operations Engineer (PTOE) certification (hereafter referred to as "contractor's traffic Engineer") with the noted experience outlined to section 3.0.

2.4 Traffic Signal Complaints The contractor shall notify St. Louis County regarding malfunction complaints or traffic signal timing complaints for those locations detailed in section 2.2.

2.5 Traffic Signal Contacts. The contractor must supply to the Engineer and to St. Louis County a contact name and phone number who will be responsible for receiving traffic signal timing complaints for the Engineer. These complaints may be forwarded directly to the contractor by someone other than the Engineer's representative and will not relieve the contractor from properly responding based on the response times of this provision. The

contractor shall respond to the Engineer and its representative within 12 hours of the complaint and its remedy. The contractor shall submit to the Engineer's representative a weekly report of complaints received and remedies performed throughout the duration of the project.

3.0 Contractor's Traffic Engineer Qualifications.

3.1 Credentials. The contractor shall have an experienced traffic Engineer with a Professional Engineer's (PE) license in Missouri as well as a Professional Traffic Operations Engineer (PTOE) certification.

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

3.2.1 Response. The contractor's traffic Engineer shall have the ability to be on site within 1 hour of being requested.

3.2.2 Corridor Management. Time/space diagram manipulation to successfully adjust offsets and splits for rapidly changing traffic demands.

3.2.3 Intersection Programming. Implementation of adjusted and/or new timing plans because of changing traffic demand.

3.2.5 Traffic Signal Software. Use and understanding of all traffic signal controllers and central traffic signal control systems utilized by St. Louis County.

3.3 Proposed Traffic Engineers. The contractor shall submit the names(s) of proposed traffic engineer(s) and the name(s) of all other personnel on their proposed staff along with detailed experience in all tasks outlined in Paragraph 3.2 above. The Engineer reserves the right to reject any contractor traffic engineer, before the start of work, who does not have sufficient experience or, at any point during the project, which does not satisfy the requirements set forth within this Job Special Provision. A list of potential traffic engineers shall be submitted for review to St. Louis County prior to beginning work.

4.0 Construction Requirements. Construction requirements shall conform to St. Louis County specifications.

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

Item No.	Type	Description
902-99.01	Lump Sum	Adjusting St. Louis County Maintained Signals

FF. Removal and Delivery of Existing Signs JSP-12-01C

1.0 Description. All Commission-owned signs removed from the project shall be disassembled, stored, transported, and disposed of as specified herein. Sign supports, structures and hardware removed from the project shall become the property of the contractor.

2.0 Disassembly and Delivery.

2.1 All Commission-owned signs, (excluding abandoned billboard signs), designated for removal in the plans, or any other signs designated by the Engineer, shall be removed from the sign supports and structures, disassembled, stored, transported, and delivered by the contractor to the recycling center for destruction.

2.2 The contractor shall coordinate and make arrangements with the recycling center for delivery of the signs. Sign panels shall be disassembled and/or cut into sizes as required by the recycling center.

2.3 The contractor shall provide the Engineer with a "Sign Delivery Certification" attesting to completion of delivery of all existing sign material from the project to the recycler. In addition, the contractor shall provide to the Engineer a final "Sign Certification of Destruction" from the recycler that documents the total pounds of scrap sign material received from the project and attests that all such material will not be re-purposed and will be destroyed in a recycling process. The contractor can locate the required certification statements from the Missouri Department of Transportation website:

https://www.modot.org/forms-contractor-use

2.4 Funds received from the disposal of the signs from the recycling center shall be retained by the Contractor.

3.0 Basis of Payment. All costs associated with removing, disassembling and/or cutting, storing, transporting, and disposing of signs shall be considered as completely covered by the contract unit price for Item No. 202-20.10, "Removal of Improvements", per lump sum.

GG. Remove and Relocate Existing Ground Mount Sign

1.0 Description. This item provides for relocating and mounting existing signs, including any existing backing bars, of various sizes to new posts at locations shown on the plans. The Contractor shall be responsible for all existing signs, including any existing backing bars, to be relocated. During construction, if any sign, including any backing bars, to be relocated is lost, stolen, or damaged in any way, the Contractor shall be responsible for all costs.

2.0 Construction Requirements. The contractor shall install new sign support posts at the locations shown and then relocate and mount existing signs, including any existing backing bars, to the new posts. All work shall be in accordance with the construction requirements of Section 903.

3.0 Method of Measurement. Measurement will be made per each for relocating and mounting existing signs, including any existing backing bars, to new posts. Measurement for any concrete footings, structural steel posts, pipe posts, perforated square steel tubes and anchor sleeves, and breakaway assemblies will be made in accordance with Section 903.

4.0 Basis of Payment. All costs incurred for relocating and mounting existing signs, including existing backing bars, to new posts at the locations shown, complete in place, will be paid for at the contract unit price for bid item 903-99.02, Remove and Relocate Existing Ground Mount Sign,

per each. Payment for all other labor, equipment, material, and incidental items will be considered completely covered by the bid items included in the contract.

HH. Overhead Signs

1.0 Description. This work shall consist of temporarily covering 'Exit Only' panels on existing sign trusses and any additional signs listed in the contract along with installing 'Closed' sign plaques on the existing signs as well. Uncovering of the signs and the removing of the 'Closed' plaques shall be included within the cost of this pay item. The contractor shall uncover signs and remove 'Closed' plaques once the traffic control stage is completed for each roadway/bridge which has signs to be covered and plaques to be installed.

2.0 Basis of Payment. The accepted quantity of covering/uncovering existing signs and installing/removing 'Closed' plaques on existing signs will be paid at the contract unit price for the pay item included in the contract. All labor, equipment and material cost required to fulfill this requirement shall be included in the unit price for the following pay item:

Item No.	Type	Description
903-99.02	Each	Cover Existing Overhead Signs

II. Low Clearance Signs

1.0 Description. Provided within the plans, are updated low clearance signs. Existing low clearance signs are to be removed and replaced as they denoted the low clearance for Rte. US 67 under the existing Rte. D bridge. The new low clearance signs are for the railroad bridge over Rte. US 67 south of the Rte. D interchange. The existing low clearance signs shall be used in place until the final installation of the new signs.

1.1 Locations of New Low Clearance Signs could be the following, however, locations may be eliminated after verification with the Engineer.

SB Rte. US 67 north of ramp to WB Rte. D
WB Rte. D east of loop ramp to SB Rte. US 67
EB Rte. D west of ramp to SB Rte. US 67

2.0 Basis of Payment. The accepted quantity of new low clearance signs will be paid at the contract unit price for the pay item included in the contract. All labor, equipment and material cost required to fulfill this requirement shall be included in the unit price for the signing pay item included in the contract.

JJ. Measurement of Bridge Clearances

1.0 Description. The contractor shall measure the vertical clearance over all lanes of traffic on all existing or new bridges impacted by this project or as noted within this provision. Impacted bridges shall include bridges rehabbed or reconstructed over state routes, county roads, city streets and railroads. Impacted bridges also include those with vertical clearances potentially modified through resurfacing activities. The contractor shall fill out the Bridge Clearance Report

and give the report to the Engineer for processing. The Bridge Clearance Report is available within EPG 760.4.

1.1 If the new or rehabbed bridge is over a railroad, the contractor shall refer to those provisions provided within this contract regarding coordination with the railroads prior to performing the survey measurement.

2.0 Construction Requirements. Per EPG 760.4.3, the contractor shall provide the following:

A. All measurements shall be taken on the roadway surfaces only and not on the shoulders. Every lane of travel shall be checked and the measurement shall be from the high point within that lane to the lowest point of the structure as determined in the field. Temporary Traffic Control shall be used to take these measurements. LiDAR may be used to take measurements but is not required.

B. On a bridge over multiple routes, including ramps, the vertical clearance measurement for each route in each direction of travel shall be required.

C. Measurement shall be made from the bottom of the lowest obstruction (beam, concrete, light fixture, rivet/bolt head, through truss member, etc.) The clearance shall be measured and rounded down to the nearest inch and reported to the Engineer.

D. The vertical clearance measurements shall be taken and provided to the Engineer within two weeks after all major construction activities have been completed which could impact the measurements. The major construction activities would include any rehab or reconstruction work or pavement improvements including coldmilling and resurfacing under structures.

3.0 Structures Measured within Job J6S3626. The following measurements will be needed for this project:

Bridge A9477 (EB Route D) over all 3 Lanes of SB US 67 & over all 3 Lanes of NB US 67

Bridge A9478 (WB Route D) over all 3 Lanes of SB US 67 & over all 3 Lanes of NB US 67

4.0 Basis of Payment. The vertical clearance measurements filled out within the Bridge Clearance Report for each structure will be paid at the contract unit price for the pay item included in the contract. All labor, equipment and material cost required to fulfill this requirement shall be included in the unit price for the following pay item:

Item No.	Type	Description
627-40.00	Lump Sum	Contractor Furnished Surveying & Staking

KK. Sign Mounting Bracket for Barrier Wall

1.0 Description. This work shall consist of fabricating and installing sign mounting brackets for signs mounted to the Type ‘C’ Permanent Concrete Traffic Barrier. This work shall be in

accordance with applicable portions of Section 617, 903 and Division 1000 of the Standard Specifications and specifically as follows.

2.0 Construction Requirements. The mounting bracket plate, flanges and anchor sleeve shall be fabricated from 3/8" steel and then galvanized after fabrication. The mounting bracket shall be installed to the top of the Type 'C' Permanent Concrete Traffic Barrier by anchor bolts per the manufacturer's recommendations and as approved by the engineer. The signs shall be mounted to either PSST or pipe posts as shown in the signing plans and then installed into the anchor sleeve portion of the sign mounting bracket. See special sheets for bracket details.

3.0 Basis of Payment. All expenses incurred by the contractor for fabricating and installing the sign mounting brackets shall be considered completely covered by the contract unit price for the following bid item:

Item No.	Description	Type
903-99.02	Sign Mounting Bracket for Barrier Wall	Each

LL. Adopt-A-Highway Signs

1.0 Description. The contractor shall remove Adopt-a-Highway signs as indicated in the plans and shall transport them to the following locations.

Sponsor: 'In Loving Memory of Matt Amelung 'Tune Your Guitar' Normandy Maintenance Facility

The addresses of the facilities are:

Missouri Department of Transportation
Normandy Maintenance Facility
1005 Bermuda Avenue
Normandy, MO 63121

1.1 The contractor shall notify the Maintenance Supervisor at least 48 hours in advance of delivering the signs to the maintenance facility listed above. The contractor shall exercise care when removing and transporting the signs to the maintenance facility. The contractor shall make arrangements for delivery during normal business hours. Contact information is below:

Amir Ghaidi, Maintenance Superintendent
Office: (314) 954-6879, Cell: (314) 624-5348

2.0 Basis of Payment. All costs associated with removing and transporting of the bench shall be considered as completely covered by the contract unit price for Item No. 202-20.10, "Removal of Improvements", per lump sum.

MM. New Sign Truss

1.0 Description. The contractor shall be made aware that the new sign truss over all lanes of Route D at Station 106+70 has a span length based upon the pavement widening that is to be left in place after staged construction. All elevations shown on the sign truss cross section are based upon this widening, thus, any change could impact quantities and the elevation of the

spread footing based upon the standard plans. All changes shall be approved by the Engineer. No additional pay shall be made to comply with this provision.

NN. Disposal of Existing MoDOT Assets

- Existing assets shall be removed and delivered to a designated MoDOT facility as described herein. Existing assets, including signal cabinet assemblies and ITS facilities as noted in the plans shall be removed by the contractor, tagged with the time and date of removal and intersection name, and transported to the Missouri Department of Transportation's maintenance lot located at 2309a Barrett Station Road, Ballwin, Missouri 63021 within 48 hours. The contractor shall notify the following MoDOT signal shop Supervisors 24 hours prior to each delivery:

Ron Mize, Cell 314-565-6727, Office 314-205-7320

Dennis Hixson, Cell 314-565-6726, Office 314-205-7319.

All other existing signal and lighting equipment to be removed as shown on plans or as directed by Engineer shall be removed and disposed of by the contractor.

2.0 The contractor shall exercise reasonable care in the handling of existing assets and the signal cabinet assemblies during removal and transportation. Should any of the equipment be damaged by the contractor's negligence, it shall be replaced at the contractor's expense. All other equipment removed from the intersections shall become the property of the contractor and be removed from MoDOT right-of-way.

3.0 The contractor shall restore those areas disturbed by the equipment removal or installation according to specifications herein. This work will be considered included in the unit contract price for Removal of Improvements.

OO. ITS Pull Box

1.0 Description. Furnish and install ITS Pull Boxes with concrete pads as shown on the plans.

2.0 Materials.

2.1 Pull Box. ITS pull boxes shall meet the requirements in Section 1062 of the Missouri Standard Specifications for Highway Construction.

2.2 Ground Rod. Ground rods shall be listed according to UL requirements as detailed in the standard UL 467, Grounding and Bonding Equipment, and meet the requirements of NEC 250. Use electrodes that are solid copper or copper-bonded steel.

2.3 Concrete Pad. The contractor shall install a non-reinforced concrete pad around the ITS pull box as shown in the plans. The concrete used shall be a Class ‘B’ concrete as described within Sec 501 of the Standard Specifications.

3.0 Construction. Install ITS pull boxes as shown in the plans. Provide a concrete pad around the pull boxes as shown in the plans. Install a ground rod in the Class 5 pull boxes nearest ITS or signal cabinets.

3.1 Installing a new pull box or concrete sonotube over the existing ITS pull box is NOT allowed. If the plan sheet is showing a fiber splicing inside an under-ground fiber splice enclosure and due to profile changes, stacking up another pull box or concrete sonotube over an existing ITS pull box is needed, the contractor shall suspend such a work and notify MoDOT ITS group via an email to ITS@modot.mo.gov immediately for an alternative fiber splicing option recommended by the ITS group.

4.0 Basis of Payment. Measurement and payment for ITS Pull Boxes with a concrete pad includes excavation, materials, construction, backfill and all miscellaneous hardware required for a fully operational system. Payment will be made as follows:

Item No.	Type	Description
910-99.02	Each	ITS Pull Box with Concrete Pad, Preformed Class 5

PP. ITS Conduit

1.0 Description.

1.1 Furnish and install conduits as shown on the plans and as described within this section. The plans depict conduit routing in schematic form only. Determine final routing based on actual field conditions at each site, including utility locator service markings, to assure no conflicts with existing utilities.

2.0 Materials.

2.1 Use PVC conduit meeting the requirements of Sec 1060.

2.2 Use HDPE conduit meeting the requirements of Sec 1060. Use orange conduit for communication cable and black for power cable.

2.3 Pull ropes or tapes shall be polypropylene with a minimum tensile strength of 600 pounds.

3.0 Construction Requirements.

3.1 General. The contractor shall comply with Sec 902.16, except as noted in this special provision.

3.1.2 Pull ropes shall be furnished and installed in all empty conduit cells.

3.1.3 HDPE duct shall not be spliced. All runs shall be continuous.

3.1.4 Use an impact mole to install conduit under existing sidewalk unless otherwise indicated or unless the crossing is part of a longer bore or unless otherwise indicated in the plans. The portion installed using a mole will be paid for at the same price per foot as trenched conduit.

3.1.5 Trenching and pushing conduit installation shall be with the following minimm depth:

Conduit under paved areas including roadway, shoulders, paved medians and sidewalks for pushed method shall be 42 inches below the top of the paved areas.

Conduit under non-paved areas for trench method shall be 30 inches of cover.

3.2 Directional Drilling.

3.2.1 Preliminary Site Work. Determine atll utility locations near the path of the proposed bore, including depth. Use this information to avoid damage to utilities and/or facilities within the work area. Provide this information, including the sources, to the engineer a minimum of five working days prior to boring. Do not bore until the engineer approves that submittal. Prior to boring, expose all utilities for which it is customary and safe to do so.

3.2.2 Boring. The diameter of the drilled hole shall conform to the outside diameter of the conduit as closely as practical. Pressure grout as directed by the engineer, to fill any voids, which develop during the installation operation. Remove and replace any conduit damaged in directional drilling operations at no expense to the project.

3.2.3 Drilling Fluid ("Slurry"). The use of water and other fluids in connection with the drilling operation will be permitted only to the extent necessary to lubricate cuttings. Jetting will not be permitted, and the use of water alone as a drilling fluid will not be permitted. Use a drilling fluid consisting of at least 10% high grade, processed Bentonite to consolidate excavated material, seal the walls of the hole, and furnish lubrication for subsequent removal of material and immediate installation of the pipe.

Provide a means of collecting and containing drilling fluid that returns to the surface, such as slurry pit, or a method approved by the engineer. Provide measures to prevent drilling fluids from entering storm sewer systems. Prevent drilling fluid from accumulating on or flowing onto sidewalks, other pedestrian walkways, driveways, or streets. Immediately remove any slurry that is inadvertently deposited on pedestrian walkways. Transport waste drilling slurry from the site and dispose of it. Do not allow slurry to enter wetlands. Protect wetlands using appropriate soil erosion control measures approved by the engineer. This requirement also applies to slurry resulting from vacuum excavation to locate underground utilities.

3.2.4 Drilling Control. Use a digital walkover locating system to track the drill head during the bore. At minimum, the locating system shall be capable of determining the pitch, roll, heading, depth, and horizontal position of the drill head at any point along the bore. During each drilling operation, locate the drill head every 10 feet along the bore and prior to crossing any underground utility or structure. Upon completion of the drilling operation and conduit installation, furnish the engineer with an as-built profile drawing and plan drawing for the drilled conduit showing the horizontal and vertical locations of the installed conduit.

3.3 Intercept Existing Conduit with Proposed Pull Box.

3.3.1 Determine whether the conduit is occupied. If so, disconnect the cables at one end of the cables and pull them back so that they are not damaged when the conduit is cut. Alternatively, they can be removed entirely and replaced with new, identical cables. Notify the engineer if any of the cables appear to be in poor condition.

3.3.2 Excavate a pit big enough for the pull box and drain material, with at least an additional foot on each side with conduit.

3.3.3 Install the drain material. From the top of the drain material, measure the vertical distance to the bottom the conduit at the points corresponding to the walls of the box.

3.3.4 If the conduit is PVC or metal, cut it in two places such that the distance between the cuts is longer than the box. Be sure the ends are cut squarely. If the conduit is HDPE, cut it in the center of the pit. Ensure that the pit is long enough that the conduit can be bent out of the way when the box is installed, and can be bent enough to insert the conduit through the wall of the box.

3.3.5 Make a hole in the wall of the box at each point that the conduit will enter. Use the distances measured earlier to determine how far from the box's bottom to make the holes.

3.3.6 Set the pull box in the pit with the holes aligned with the conduits.

3.3.7 Pass the conduits through the wall of the box so that they end about one inch inside the wall. For PVC conduit, extend the existing conduit using a short length of new PVC conduit that includes a socket end. For metal conduit, thread the existing conduit, apply a threaded coupling, and add a short length of new conduit. For HDPE, bend the existing conduit to pass through the box wall, then cut it to length inside the box.

3.3.8 Use non-shrink grout to completely fill the space between the conduit and box wall.

3.3.9 Backfill the pit and restore the area as with any pull box installation.

3.3.10 Reinstall, reconnect, and test the cables that were pulled back at the beginning of the procedure. Alternatively, replace them in kind and test them.

3.4 Install Conduit into Existing Pull Box.

3.4.1 Carefully expose the outside of the existing pull box without disturbing any existing conduits or cabling.

3.4.2 Make the appropriate sized hole for the entering conduit at a location within the pull box that will not disturb the existing cabling and that will not hinder the installation of new cabling within the installed conduit.

3.4.3 Install the conduit.

3.4.4 Fill any void area between the drilled hole and the conduit with an engineer-approved filling material to protect against conduit movement and the entry of fill material.

3.4.5 Backfill shall be carefully tamped in place. All disturbed areas shall be restored.

4.0 Basis of Payment.

4.1 All surface-mounted junction boxes, fittings, liquid-tight flexible conduits, hangers, supports, resin anchor systems, and all hardware are incidental to the cost of conduit.

4.2 Conduit may be installed by directional boring at locations shown as trenched on the plans. Such conduit will be paid for as if it had been installed by trenching.

4.3 Payment for Intercept Conduit with Pull Box includes only that work that would not be incurred in a normal pull box installation. The cost of the box and its installation will be paid for separately.

4.4 Measurement and payment for work covered by this specification includes equipment, tools, materials, necessary to install conduit. It includes excavation and site restoration. Payment will be made as follows:

Item No.	Type	Description
910-99.03	Linear Foot	Conduit, HDPE, Drill, 2”
910-99.03	Linear Foot	Conduit, PVC, Trench, 2”
910-99.02	Each	Intercept Conduit with Pull Box

QQ. MoDOT Buried Cable Drivable Delineator

1.0 Description. The contractor shall install a MoDOT ‘Buried Cable’ delineator post next to each ITS pull box within the project limits as indicated on the plans.

2.0 Materials. See detail in the plans. The post shall be supplied in orange color and incorporate a premium UV inhibitor package to resist harmful effects to the sun. The post shall withstand multiple directional impacts and provide a long lasting and extremely durable product requiring little field maintenance. The post shall have a minimum 0.20” wall thickness and shall stand up straight in all weather conditions and self-right to straight upon impact. Top of post shall be permanently sealed and partially flattened and transition to round to afford 360 degree visibility. The post materials shall include an anchor, a non-mechanical flexible joint, and a round delineator post.

The post assembly should allow for easy change-out of any one part if necessary.

3.0 Construction Requirements. Construction requirements shall conform to the delineator post manufacturer’s recommendations and engineer’s approval. If the plans show the post near a pull box, put it next to the box as an aid to finding the box. Do not drive it through the conduit.

4.0 Basis for Payment. Payment for the ‘Buried Cable’ delineator post shall be considered full compensation for all contractor-provided equipment items, labor, and material to complete the described work. Payment will be made as follows:

Item No.	Type	Description
910-99.02	Each	MoDOT Buried Cable Drivable Delineator

RR. Fiber Optic Cable

1.0 Description. This work shall consist of installing, splicing, and terminating fiber optic cables. The fiber optic cable may be new or existing cable relocated as shown on the plans. Fiber optic cable relocation requires existing cable to be removed from an existing conduit system and installed in either a new or existing conduit system per plans. Relocated cable must be carefully

removed from the existing conduit system without being damaged. No direct pay shall be paid for relocating the existing fiber optic cable into new ITS or signal cabinet unless the Relocate Fiber Optic Cable pay item is included the plans. If the existing fiber cable is removed, that length shall be paid separately per plans.

2.0 Materials. Some of the below noted materials may not be applicable on this project. See the plans and below quantities for applicable materials.

2.1 Cable. Fiber optic cable shall be of loose tube construction. Provide certification by an independent testing laboratory that the cable meets all requirements of Rural Utilities Service Bulletin 1753F-601a *Minimum Performance Specification for Fiber Optic Cables* (https://www.rd.usda.gov/files/UTP_Bulletins_1753F-601a.pdf). The cable shall be gel free, all dielectric, and have 12 fibers per tube. The cable sheath shall have length markings in feet, and shall indicate that the unit of measure is feet. The cable shall have single mode fibers whose attenuation does not exceed 0.35 dB/km and 0.25 dB/km for 1310 nm and 1550 nm signals, respectively. The optical fibers used in the cable shall meet or exceed the International Telecommunication Union ITU-T G.652.D requirements.

2.2 Splice Tray. Splice trays shall be 11.7” long, 3.9” wide, and 0.2” tall. They shall be aluminum with clear plastic covers, designed for outdoor use. Each shall accommodate 24 fusion splices. The trays shall have a black powder coat finish. The trays shall have both perforations for cable ties and crimpable metal tabs for buffer tube strain relief.

2.3 Connector. Connectors shall be the LC type with ceramic ferrules, unless a different connector is required to mate with the equipment or an existing panel. They shall be suitable for use in traffic cabinets and shall be designed for single mode fibers.

2.4 Pigtail. Pigtails shall be factory-made, buffered, and strengthened with aramid yarn to reduce the possibility that accidental mishandling will damage the fiber or connection. Pigtails shall be yellow. Each must contain one fiber. Length shall suffice to provide two feet of slack after installation.

2.5 Jumper. Jumpers shall meet the requirements for pigtails, but shall have a connector on each end. Length shall suffice to provide approximately five feet of slack after installation.

2.6 Interconnect Center. An interconnect center is a splice enclosure that has a patch panel built into one of its walls. Within the interconnect center, fibers in cables are spliced to pigtails and the pigtails are plugged into the patch panel from the inside. This allows jumper cables (not part of the interconnect center) to plug into the patch panel from the outside, connecting the fibers to equipment in the cabinet or to other fibers on the patch panel. Within an interconnect center, some fibers may be spliced to the corresponding fiber in a mating cable, rather than to a pigtail. Still other fibers may be coiled, un-terminated.

The enclosure shall be made of powder-coated metal. It shall have provisions for cable strain relief and for connector labeling. The enclosure’s patch panel shall have at least 24 positions. Provide enough splice trays for all splices made in the interconnect center. Provide patch panel modules that are compatible with the connectors specified in section 2.3 of this provision.

2.6.1 Wall-Mounted Interconnect Center. The enclosure shall be designed for wall or panel mounting and occupy no more than 350 square inches of wall space. It shall have a gasketed,

hinged door. It shall hold at least six splice trays. These enclosures are typically used in signal cabinets.

2.6.2 Rack-Mounted Interconnect Center. The enclosure shall have brackets and all other hardware required for rack mounting in an EIA standard 19-in. equipment rack. It shall take up no more than three rack units (1¾ inch each) in the cabinet. It shall have front and rear doors. It shall hold at least four splice trays. These enclosures are typically used in ITS device cabinets.

2.7 Rack-Mounted Splice Enclosure. The enclosure shall have brackets and all other hardware required for rack mounting in an EIA standard 19-in. equipment rack. However, alternate forms of mounting will be permitted if more practical at a particular location. The enclosure shall take up no more than five rack units (1¾ inch each) in the cabinet. It shall be made of powder-coated aluminum. These enclosures are typically used in network node cabinets.

2.7.1 The enclosure shall have provisions for cable strain-relief. It shall have hinged front and rear doors.

2.7.2 The enclosure shall include splice trays as specified in section 2.2 of this provision. The contractor shall provide enough splice trays for all the splices made in the enclosure. The enclosure shall include a splice tray holder with capacity for 22 trays. It shall be mounted on a sliding shelf inside the enclosure so that individual trays can be removed from the enclosure without disturbing the other trays or removing the enclosure itself from the cabinet.

2.8 Rack-Mounted Patch Panel Enclosure. The enclosure shall have brackets and all other hardware required for rack mounting in an EIA standard 19-in. equipment rack. However, alternate forms of mounting will be permitted if more practical at a particular location. The enclosure shall take up no more than five rack units (1¾ inch each) in the cabinet. It shall be made of powder-coated aluminum. Provide patch panel modules that are compatible with the connectors specified in section 2.3 of this provision, as needed. These enclosures are typically used in network node cabinets.

2.9 Underground Splice Closure. Closures for underground fiber splices include all materials necessary to make, organize, and protect the splices.

2.9.1 The closure shall supply environmental protection of cable and splices from water and dirt. It shall be designed for splicing fiber-optic cables underground in pull boxes and to be submersed in water.

2.9.2 Provide certification by an independent testing laboratory that the closure meets all requirements of Telcordia GR-771 for environmentally sealed closures for buried installation.

2.9.2 The closure shall be re-enterable without any special tools.

2.9.3 The closure shall be able to accommodate at least four fiber optic cables.

2.9.4 The closure shall accommodate 144 single mode fiber splices.

2.9.5 It shall be possible to remove any splice tray without disturbing the others.

2.9.6 Splice trays in the closure need not be of the type specified in 2.2, above.

2.9.7 Designed for butt splicing.

2.9.8 No encapsulated materials shall be allowed.

2.10 Tracer Wire. A jacketed #14 AWG XHHW-2 standard blue tracer wire (also known as the locator wire) shall be provided in the conduit within the project limits unless it exists.

3.0 Construction Requirements.

3.1 Pre-Installation Cable Inspection and Testing. Prior to installation, confirm that the cable is in good condition and complies with the specifications. The contractor shall perform fiber testing (see below requirements) of new fiber on the reel and existing fiber before it is removed. Notify the SLITS Group about any fiber anomalies and submit fiber testing reports to the SLITS Group for review and approval. Any defects found after installation will be deemed the fault of the contractor.

3.2 Cable Installation.

3.2.1 The ITS and network devices located within the project limits are a crucial part of the traffic operation system for this area. It is imperative that the network downtime be kept to a minimum when adding, removing, or modifying any existing ITS and network devices. This may require the contractor to perform work that will affect existing network devices during nighttime and/or weekend hours, at the discretion of the Engineer. Allowable timeframes for this work will be subject to the need for ITS devices in the area to be used to manage other traffic impacting work zones.

2.2.2 In case of fiber optic cable replacement, all new fiber cable must be installed, spliced, terminated and go online before removing the old cable.

3.2.3 Remove existing cable to be relocated and install cable such that the optical and mechanical characteristics of the fiber are not degraded. Do not violate the minimum bend radius or the maximum tension, both during and after installation.

3.2.4 Before any cable installation is performed, provide the engineer with four copies or an electronic copy, as required by the engineer, of the cable manufacturer's recommended maximum pulling tensions for each cable size. These pulling tensions shall be specified for pulling from the cable's outer jacket. Also, provide a list of the minimum allowable cable bending radius and the cable manufacturer's approved pulling lubricants. Only those lubricants approved by the cable manufacturer will be permitted.

3.2.5 If the cable is pulled by mechanical means, use a clutch device to ensure the allowable pulling tension is not exceeded. Also, attach a strain gauge to the pulling line at the cable exit location, and at a sufficient distance from the take-up device, such that the strain gauge can be read throughout the entire cable pulling operation.

3.2.6 Do not leave the let-off reel unattended during a pull, in order to minimize the chance of applying excess force, center pull, or back feeding.

3.2.7 Use an approved lubricant, in the amount recommended by the cable manufacturer, to facilitate pulling the cable. After the cable has been installed, wipe the exposed cable in a pull

box, junction box, or cabinet clean of cable lubricant with a cloth before leaving the pull box, junction box, or cabinet.

3.2.8 When installing new fiber optic cable store 30 feet of slack fiber in every intermediate pull box, unless otherwise noted on plans. Additional slack storage, as indicated on the plans, is required in designated pull boxes. At cabinet locations, where cable runs from the pull box directly to an equipment cabinet, store 60 feet of slack fiber optic cable in the pull box, unless otherwise noted on plans. Additionally, treat the cable returning from the cabinet to the pull box as a separate cable, and store 60 feet of slack for these links, unless otherwise noted on plans. Store slack cable neatly on the walls of the pull box using racking hardware acceptable to the engineer. If the length of fiber optic cable being relocated does not allow for fully meeting these slack requirements, maximize fiber slack at cabinets before providing slack in pull boxes.

3.2.9 While pulling and until splicing seal the fiber optic cable ends to prevent the escape of filling compound and the entry of water.

3.3 Splicing. Splice all optical fibers, including spares, to provide continuous runs. Splices shall be allowed only in equipment cabinets except where shown on the plans.

3.3.1 Make all splices using a fusion splicer that automatically positions the fibers using the Light Injection and Detection (LID) system or the High-resolution Direct Core Mounting (HDCM) system. Provide all equipment and consumable supplies.

3.3.2 Secure each spliced fiber in a protective groove. Completely re-coat bare fibers with a protective room temperature vulcanizing (RTV) coating, gel or similar substance, prior to insertion in the groove, so as to protect the fiber from scoring, dirt, or microbending.

3.3.3 Prior to splicing to a fiber installed by others, measure and record the optical loss over that fiber. See section 4.0 of this provision.

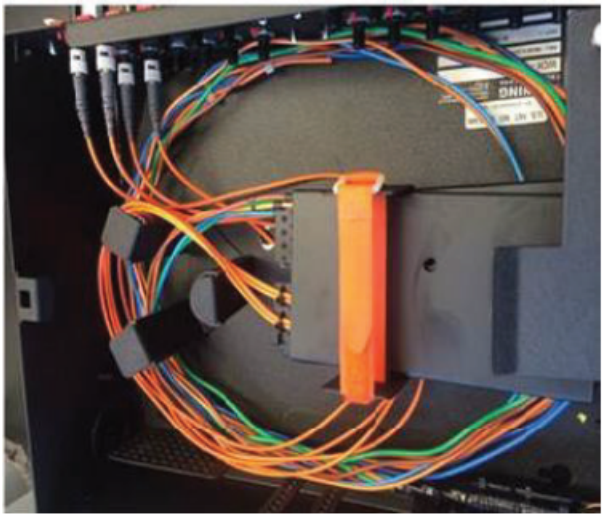
3.3.4 Use a different splice tray for each buffer tube color. If an enclosure contains multiple buffer tubes of the same color, but none of the fibers in one of the tubes are spliced to fibers in other tubes of the same color, use a separate splice tray for that tube.

3.4 Termination. Terminate fibers by splicing them to factory-made pigtails. Cap all connectors that are not connected to a mating connector.

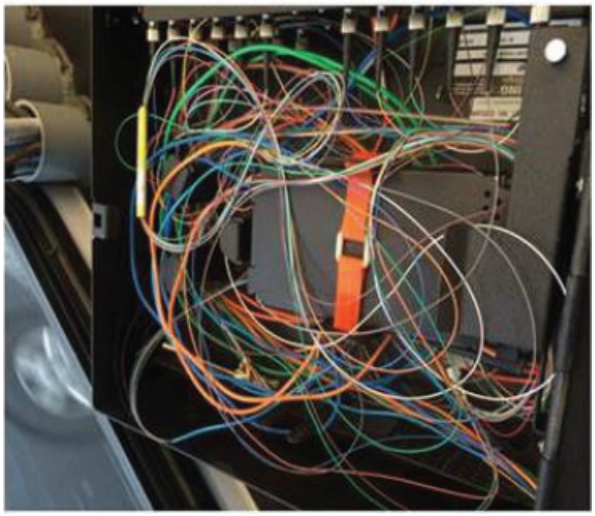
3.5 Tracer Wire. The contractor shall install a jacketed #14 AWG XHHW-2 standard blue tracer wire (also known as the locator wire) in conduit with new or replaced fiber optic cable(s). In the pull box nearest to the ITS or signal cabinet connect the tracer wire to a ground rod with a ground rod clamp and provide five feet of slack, as shown on the ITS pull box detail. In other fiber pull boxes provide five feet of slack, but a ground rod shall not be installed. Secure the tracer wire slack in individual coils to the inside wall of each pull box. If the tracer wire already exists, the contractor shall ensure it is connected to the ground rod properly in the pull box nearest to the ITS or signal cabinet and demonstrate a locate signal will transmit along the tracer wire. When fiber optic cable is relocated, existing tracer wire may be reused.

3.6 Fiber Management. Fiber in splice trays along with pigtails and buffer tubes in the interconnect center or splice closures shall be neatly looped and restrained following telecom industry standard fiber and cable management practice and enclosure manufacturer's

recommendations. Shown below are examples of acceptable and unacceptable fiber and cable management. Work will not be accepted unless good fiber management practices are followed.



Acceptable



Unacceptable

3.7 Required Fiber Splicing, Installation and Testing Experience. Submit resumes, certificates and references detailing fiber installation, splicing and testing for on-site personnel to the engineer for approval. Subcontractors used on the project are considered part of the contractor's team and are also required to submit resumes, certificates and references. Submit to the engineer references including client project manager, phone number and project experience. Demonstrate successful completion of fiber optic cable installation and splice training courses by providing certificates of completion. Failure to comply may result in a declaration of noncompliance.

In addition, ensure a number of the contractor's team approved by the engineer that has at least two years of experience in the installation, splicing and testing of the fiber optic cable is on site at all times during the fiber optic cable installation and fiber optic splicing work until successful completion of the work. Receive approval from the engineer for any substitution of this individual. The engineer may stop the work activity on this project as a result of the absence of these on-site personnel from the project and may continue to charge time to the contractor and will not grant a time extension.

3.8 Existing Fiber Replacement. When plans show new fiber being installed to replace existing fiber, the existing fiber should remain in service until the new fiber is installed and is ready for splicing to minimize network downtime.

3.9 Fiber Relocation. The fiber optic cable is a crucial part of the traffic operation system. It is imperative that the downtime be kept to a minimum when relocating fiber optic cable. When existing fiber is disconnected for relocation, the relocation and fiber splicing of the relocated fiber shall progress continuously to minimized downtime.

3.10 If grading will result in an existing fiber pull box not being flush with the final grading, the pull box elevation should be adjusted to match the final ground surface. If the existing pull box is in a condition that can be adjusted without damage, it can be reused. If a pull box is raised, a split

duck system shall be used to protect the cable into the adjusted pull box and the void below the box shall be backfilled and the stone drain installed. If the pull box is lowered, the stone drain shall be provided as shown on the pull box detail. Installing a new pull box or concrete sonotube over the existing ITS pull box is NOT allowed. A concrete pad shall also be installed around the adjusted box. If site conditions do not allow these construction requirements to be met, the contractor shall suspend such a work and notify MoDOT ITS group via an email to SLITS@modot.mo.gov and carbon copy MoDOT construction inspector immediately for approval of any alternative fiber adjustment option.

4.0 Acceptance Testing.

4.1 General. Test the fiber after installation, including all splicing and termination, is complete. Note, however, that this test procedure involves measuring the loss of fiber installed by others before splicing to it. For each fiber optic link, including spare fibers, determine whether the optical loss is within the limits permitted by these specifications. A link is a continuous segment of fiber between one connector (or unterminated end) and another connector (or unterminated end). When testing links that do not have connectors on both ends, use a mechanical splice to attach a pigtail to the unterminated fiber for the duration of the test.

4.2 Test Procedure. For each fiber link, follow this procedure:

(a) If the link includes fiber installed by others, use an optical loss test set to measure and record the optical loss over that portion of the link before it is spliced to new fiber.

(b) Calculate the maximum allowable loss for the completed link, both at 1310 nm and at 1550 nm. Use the following formula:

Maximum link loss = Measured loss over portion installed by others
+ (Fiber length in km) x (0.35 for 1310 nm and 0.25 for 1550 nm)
+ (Number of fusion splices) x (0.05)
+ (Number of mechanical splices [for temp. connection]) x (0.3)
+ (Number of connections) x (0.5)

Provide this calculation to the engineer along with the test results.

(c) Calibrate an optical loss test set and provide evidence satisfactory to the engineer that the set produces accurate results at both wavelengths. This can be a demonstration that the set correctly measures the loss of a test fiber whose loss is known.

(d) Use the test set to measure the loss of the link under test. Record the result at both 1310 nm and 1550 nm. Arrange for the engineer or his representative to witness these tests.

(e) If the measured loss exceeds the calculated maximum, use an optical time domain reflectometer and other test equipment to troubleshoot the link. Take whatever corrective action is required, including cable replacement, to achieve a loss less than the calculated maximum.

4.3 Test Result Documentation. Prepare a report showing all of the links tested in this project. For the portions installed in this project, show the equipment cabinets, splices, and pigtails. On each line representing a link, show the maximum allowable loss and the actual loss. The actual loss shall be the one measured after all corrective actions have been taken. Submit an electronic

copy of the report to the engineer, along with the calculations for the maximum allowable loss. Submit the report including calculations in an electronic format acceptable to the engineer.

5.0 Documentation. Provide the engineer mark-ups of the plans, neat and legible, illustrating as-built versions of the splice and connection diagrams that are contained in the plans.

6.0 Certifications. New fiber optic cable shall be factory certified to meet the requirements in this specification. In addition, the manufacturer shall certify that the fiber optic cable has a life expectancy of 20 years.

7.0 Basis of Payment. Measurement and payment for items covered by this specification include the new or relocated fiber optic cable, acceptance testing, in addition to all materials, labor and equipment necessary for a fully operational system. Payment will be made as follows:

Item No.	Type	Description
910-99.02	Each	Fiber Optic Pigtail, SM, Furnish and Install
910-99.02	Each	Fiber Optic Jumper, SM, Furnish and Install
910-99.02	Each	Rack-Mounted Interconnect Center, Furnish and Install
910-99.02	Each	SM Fiber Optic Fusion Splice
910-99.02	Each	Underground Splice Enclosure
910-99.03	Linear Foot	Fiber Optic Cable, 24 Strand Single Mode

SS. Fiber Optic Cable Construction Staging

1.0 Description. The contractor shall install a new 24 SM-Single Mode fiber optic cable and a 2" conduit and splice it to the existing fiber cable inside the ITS pull boxes on Route 67 at Route D interchange and remove the existing fiber cable as shown on the plans **before roadway and bridge construction begins and maintain it during the entire construction stages**.

2.0 Construction Requirements. The contractor shall coordinate this work with MoDOT ITS group in advance via an email to SLITS@modot.mo.gov. The contract shall keep the MoDOT ITS network online during the entire construction stages except for a short period during fiber splicing and exchanging onto the new finer cable. The contractor shall construct the new fiber optic cable and conduit before disconnecting the existing network and make required fiber splicing as shown on the plans in one day to keep the network outages on Route 67 to a minimum.

3.0 Basis of Payment. No direct payment shall be made for compliance with this provision. All fiber optic cable related works shall be paid under separate pay items.

TT. Temporary Camera (Contractor Furnished and Retained)

1.0 Description. The existing CCTV camera in the construction area must be temporarily removed and relocated. To continue to provide similar surveillance coverage, a temporary CCTV camera shall be provided. The temporary camera may be mounted on a trailer, attached to an

existing structure or places on a temporary wood pole. The temporary camera can be solar powered or have a temporary electric utility connection. The communication with the MoDOT St. Louis District ATMS shall use a wireless radio connection.

2.0 Material. The temporary camera shall consist of a pan-tilt-zoom camera, power supply and communications interface, as specified. The camera shall be mounted on a heavy-duty towable trailer, existing structure or a wood pole.

2.1 Camera. The temporary camera shall have the following minimum characteristics:

PART 1 Shall be capable of full Pan-Tilt-Zoom (PTZ) operation. The camera shall be capable of panning 360 degrees, at least 20x optical zoom, at least 4CIF (704 × 576) color video with a user-selectable frame rate (5, 10, 15, 20, 25, 30 frames per second).

PART 2 Camera must encode video with h.264 codec and be capable of providing two, simultaneously configurable video streams consumable via RTSP.

PART 3 The proposed camera must be compatible with the MoDOT St. Louis District ATMS software, TransSuite.

PART 4 A dome style CCTV camera shall be selected from the list below. These are the only CCTV cameras that are tested and fully functional with the version of TransSuite that the St. Louis District is currently operating:

CCTV Manufacturer	Model
CostarHD (formerly known as Cohu)	4220HD RISE Dome
Axis	Q6315-LE Dome
Bosch	Autodome inteox 7000i

2.2 Portable Camera Trailer. The solar powered camera trailer, hereinafter referred to as a portable camera, shall be in accordance with these specifications.

5. All system components including the camera, communication devices, solar panels, batteries, and charge controller shall be trailer mounted. The equipment cabinet(s) shall be locked.

6. The trailer shall be capable of supporting the system on any typical roadway shoulder including concrete, asphalt, granular or turf. When deployed, the trailer shall present a level appearance.

7. The trailer shall be capable of supporting the camera at a variable height of 18 to 30 feet above the ground elevation.

8. All portable camera components and circuitry shall be operational from -20 F (-29 C) to 120 F (50 C).
9. The unit shall be able to withstand a 65-mph (105-kmph) maximum road wind speed. The trailer shall be able to support the fully extended camera in an 80-mph (130-kmph) wind load.

10. Solar charging system shall allow for total autonomy of 24/7/365 continuous operation.

11. All exterior surfaces shall be primed and finished with two coats of Highway Safety Orange.

12. The portable camera shall be contractor furnished and retained.

2.3 Existing Structure. The temporary camera attachment to an existing structure shall be in accordance with these specifications.

a. The bracket used for mounting the camera shall be provided.

b. The temporary camera and associated cabinet shall be attached to the existing structure without drilling holes into the existing structure.

c. The camera and cabinet mountings shall be able to withstand an 80-mph (130-kmph) wind load.

2.4 Temporary Pole. The temporary camera attachment to a wood pole shall be in accordance with these specifications.

1. The bracket used for mounting the camera shall be provided.

2. The temporary pole shall be long enough to allow for the camera to mounted at least 30 feet above the ground elevation.

3. The pole, camera and cabinet shall be able to withstand an 80-mph (130-kmph) wind load.

4. The wood pole shall be contractor furnished and retained.

2.5 Communications. The communications interface to the St. Louis District communication network shall use point-to-point wireless Ethernet bridge radios. One radio and antenna shall be installed at an existing ITS network device (traffic signal, camera or DMS) site where line-of-sight can be provided to the radio and antenna installed at the temporary camera location.

3.0 Construction Requirements. Prior to placing the temporary camera for the project, the contractor shall verify proposed location is void of conflict with traffic movements and construction activities. Provide Traffic Management Center (TMC) with the Job Number, Route, County and temporary camera location. Placement of the temporary camera shall be compatible with the temporary traffic control plan, provide surveillance coverage of traffic movement through the work zone and provide the require line-of-sight for the wireless network connection. Installation, including location and placement, shall be approved by the engineer.

3.1 The portable camera shall be delineated with a minimum of five non-metallic channelizing devices.

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

3.3 All costs and coordination needed for testing to verify the wireless communication link can transmitted video to the St. Louis District TMC and be controlled by the St. Louis District TMC ATMS is included in this bid item.

3.4 Full integration into the TransSuite ATMS shall be completed at least 5 business days prior to decommissioning the existing camera being temporarily decommissioned. Contact information will be provided to the contractor by contacting MoDOT's St. Louis District ITS staff at 314-275-1526 or via email at SLITS@modot.mo.gov with details of the request. No other support shall be provided by MoDOT other than contact information. Information provided shall include, at a minimum, camera make and model, IP address, and proposed location.

3.5 The temporary camera shall remain operational until the relocated permanent camera is installed, tested and operational.

4.0 Basis of Payment. All expenses incurred by the contractor in integrating, maintaining, relocating, operating, and protecting the temporary camera as outlined above shall be paid for at the contract unit price for Item 910-99.01 Temporary Camera Contractor Furnished and Retained, per Lump Sum.

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

Item No.	Type	Description
910-99.01	Lump Sum	Temporary Camera (Contractor Furnished and Retained)

UU. Existing CCTV Camera Assembly Relocation

1.0 Description. The contractor shall relocate the existing CCTV Camera Assembly on NWQ of Route D and Route 67 onto new foundation as shown on the plans.

- **Description.** The contractor shall relocate the existing CCTV Camera Assembly on NWQ of Route D and Route 67 onto new foundation as shown on the plans.

- **Construction Requirements.** The contractor shall:

  - The contractor shall notify MoDOT ITS group via an email at SLITS@modot.mo.gov in advance of removing this CCTV camera assembly.

  - Prior to removing the existing CCTV camera assembly on NWQ of Route D and 67, the contractor shall:
    - Furnish a temporary CCTV unit as noted in the plans and Job Special Provision. This temporary CCTV unit with a PTZ control shall be configured into MoDOT current ATMS (Advanced Transportation Management System) for 24/7 live video for traffic monitoring. This temporary CCTV camera unit cost shall be paid under a sperate pay item.
    - Match the existing CCTV concrete foundation bolt-patterns. The existing CCTV pole then shall be installed on the new foundation at later stage of the construction.

  - The contractor also shall relocate existing fiber optic cable on Route 67 as shown on the plans prior to removing this CCTV assembly. They also shall provide a

branch fiber optic cable to the relocated CCTV pole mounted cabinet at a later date.

- The contractor shall remove and store this CCTV assembly (pole, cabinet, network switch and all existing devices) at a safe location and install it on a new concrete foundation as shown on the plans at a later date. If any of the existing CCTV assembly get damaged during removal, storage or installation, it shall be Submit their temporary CCTV camera specifications and plans to MoDOT ITS group via an email SLITS@modot.mo.gov prior to removing the existing camera unit and assembly on NWQ of Route D and 67 for their review and approval.

- This temporary camera can be a portable-solar assembly on a trailer or mounted to an existing MoDOT facility. The contractor is responsible for required power and network for communication with MoDOT ITS network and ATMS-Advanced Transportation Management System). This includes any required coordination and configuration into the current ATMS vendor, currently the TransSuite for 24/7 live CCTV monitoring.
- The contractor shall then install the existing CCTV pole onto new concrete foundation and re-attach the camera and cabinet with all network communications and verify with MoDOT ITS group when it goes online. The contractor shall furnish and install new Cat-5 cable between the camera unit and the cabinet as well as new stainless steel straps and screws.

- The camera unit orientation shall provide a good view of both Route 67 and Route D approaching traffic and entire interchange ramps. If necessary, please coordinate the camera orientation with the ITS group.

- New CCTV camera power supply and power cables shall be paid separately.

3.0 Basis of Payment. Measurement and payment for existing CCTV camera assembly (pole, camera unit, ITS pole-mounted cabinet and network communication gears) relocation onto new foundation (new foundation is paid separately) includes new Cat-5 cable and straps, testing, grounding and all miscellaneous hardware required for a safe and fully operational camera assembly. Payment will be made as follow:

Item No.	Type	Description
910-99.001	Each	Existing CCTV Camera Assembly Relocation

VV. Coordination with ITS Staff and Utility Locates

1.0 Description. Any work that will impact the existing communications network must be coordinated with the Commission's St. Louis District ITS staff. This includes but not limited to removal and replacement of any existing communications equipment, adding new devices and changes to power sources or disconnects. Minor modifications to the existing communications network can have significant impacts on the system and operation of other ITS and traffic signal systems.

1.1 MoDOT is a member of MO-One-Call System. Prior to any excavation or work within MoDOT Right-Of-way, the contractor must contact MO-One Call at 1-800-DIG-RITE and request for Utility Locates within noted project limits. If the scope of work contains modification, addition and/or expansion of existing underground MoDOT ITS, lighting, or signal facilities, the contractor must notify the MoDOT Utilities Locate staff prior to any work, in order for MoDOT to update MoDOT utility location records with Missouri One Call.

2.0 Contact. The contractor shall notify the ITS group via an email to **SLITS@modot.mo.gov** at least 2 days before any work that may impact the existing network communications. The contractor shall include the Job#, location and brief scope of work in the email's subject line. The engineer shall be notified prior to making contact with ITS staff. For MoDOT Utility location updates, the contractor must contact MoDOT TMC at 314-275-1500 and ask for Utility Locate Section at least seven calendar days before performing any work.

3.0 The ITS and network devices located within the project limits are a crucial part of the traffic operation system for this area. It is imperative that the downtime be kept to a minimum when adding, removing, or modifying any existing ITS and network devices. This may require the contractor to perform work that will affect existing network devices during nighttime and/or weekend hours, at the discretion of the Engineer. Allowable timeframes for this work will be subject to the need for ITS devices in the area to be used to manage other traffic impacting workzones.

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

WW. ITS Asset Management Tool

1.0 Description. For all locations where any MoDOT and other agency's ITS (Intelligent Transportation System) components are modified or added, the contractor shall be responsible for populating and updating Commission's ITS and Signal Network Asset Management Tool (currently NexusWorx) to reflect the final condition of the entire ITS system within the project limits as shown on the plans. Updating shall be performed by the Commission approved staff (currently the Byers Engineering; Doug Stanford at Doug.Stanford@BYERS.COM)

2.0 Construction Requirements.

2.1 The Contractor shall provide the final construction as-built plans and any relevant notes to the Commission approved contractor (currently the Byers Engineering) via an email and carbon copy the SL Construction staff and ITS group at SLITS@modot.mo.gov for input into the ITS Asset Management Tool. The relevant notes for each modified or new location shall aid in the understanding of the device configuration and location details. At a minimum, this will include providing the required latitude and longitude coordinates of each pull box, DMS, CCTV, node cabinet, conduit, cable, and fiber, along with any serial numbers and/or identification information for any new, relocated or otherwise changed by this project. The Contractor shall locate the conduit every 100 feet using a GPS locating device that is accurate to the nearest foot. The Contractor shall provide a GIS based map of the conduit route and a complete listing of all of map coordinates in an electronic format. Population of the ITS Asset Management Tool will be required for all new, relocated and modified devices improved under this contract.

2.2 Other agency's ITS assets such as conduit, fiber cable, Cat-E cable, cabinet, pull box, etc. within MoDOT Right-Of-Way shall be highlighted including in a polygon in the ITS Asset Management Tool so it can be clearly identified for future references.

2.3 The contractor shall furnish to Commission approved staff a copy of the final plans relevant to all of the ITS components in Visio and/or Microstation formats, if relevant.

2.4 The contractor shall be provided one licensed read-only access login by Commission before work begins.

2.5 A PDF and Visio format of all relevant fiber splicing drawings shall be provided to the Commission approved contractor for posting into the ITS Asset Management Tool's perspective ITS and Signal cabinets.

3.0 Acceptance.

3.1 All entries and updates shall be completely entered and available for use within 30 days from substantial completion of construction of the project.

3.2 Commission staff shall verify population of the ITS Asset Management Tool within 10 working days, including accuracy and completeness of details for each component prior to acceptance and payment.

4.0 Measurement and Payment. Measurement and Payment for items covered by this specification include the population and correction of inaccuracies, in addition to all materials and equipment necessary complete the updates to the ITS Asset Management Tool which shall be coordinated and paid to the Commission approved staff (currently the Byers Engineering).

Item No.	Type	Description
910-99.01	Lump Sum	ITS Asset Management Tool

XX. MoDOT ITS Equipment within the Project Limits

1.0 Description. MoDOT owned fiber optic cable and conduit, critical MoDOT power supplies and power cables, and pull boxes for fiber and power cabling and other above and underground ITS (Intelligent Transportation System) facilities are present within the limits of this project. Damage or interruption of these items can cause extensive outages to the MoDOT network.

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

2.1 The contactor shall not modify any existing network or electrical connections within equipment cabinets, unless coordinated with MoDOT ITS staff. Existing connections include, but are not limited to, fiber jumpers, CAT5(e) cables, power supplies, and power strips. The connection to

specific fiber and copper ports on network equipment shall also not be modified, unless coordinated with MoDOT ITS staff, as the network equipment has been configured specifically for each equipment cabinet. Significant network outages and unnecessary troubleshooting to investigate outages can occur, even with minor changes to existing connections within the cabinet.

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

3.1 The MoDOT Engineer will also have the option of issuing a work order for MoDOT's on-call ITS Maintenance contractor to make repairs, if it is the Engineer's opinion that the contractor creating the damage will not be able to make repairs in a timely manner. Contractor's reimbursement for MoDOT expense for this option shall be in addition to the liquidated damages.

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

YY. CCTV Pole and Pole Mounted Cabinet Relocation

1.0 Description. The contractor shall remove the existing 50 foot tall CCTV pole, camera assembly and attached cabinet and miscellaneous equipment and reinstall it on a new foundation as indicated in the plans.

2.0 Requirements. The contractor shall inspect the existing CCTV pole, verify all pole and baseplate dimensions and inform the engineer of any deficiencies that could hinder removing and installing the existing pole on a new foundation. The contractor shall replace all nuts which secure the CCTV pole to the new anchor bolts. The existing CCTV device and cabinet shall be removed from this pole if needed for the relocation and reattached to the pole upon relocation to the new foundation.

2.1 The contractor shall relocate this pole over the weekend and have it operational before the following Monday morning at 5 am.

2.2 Any damage sustained to the CCTV pole, camera assembly and cabinet as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

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

3.0 Basis of Payment. All labor, time, equipment and material required to complete the described work will be paid for at the contract unit price for Item No. 910-99.01, "RELOCATE 50 FT. CCTV POLE AND POLE MOUNTED CABINET", per lump sum.

ZZ. Bridge Layout and MoDOT Survey Check

1.0 Description. The contractor shall carefully review the layout of the new bridge alignments shown on Plan Sheet 17 for the Route D (Page Avenue) Bridges over Route US 67 (Lindbergh Boulevard) as there are small differences between old and new alignments.

2.0 MoDOT Survey Check and Notification. Prior to laying out new bridge abutments, the contractor shall contact the following MoDOT surveyor 2 weeks prior so that a time can be scheduled for MoDOT Survey to check the layout of the new bridge. No direct payment shall be made to the contractor to comply with this provision.

John Wurm, PLS
MoDOT Land Survey Supervisor
Email: John.Wurm@modot.mo.gov

Andy Markiewicz
District Land Surveyor Manager
Email: Andrew.Markiewicz@modot.mo.gov
Note: Copy in Andy when sending email to John

AAA. Crash Cushion Installation

1.0 Description. As shown within the plans, the contractor shall install a permanent crash cushion for the Type 'C' median barrier. The east end of the crash cushion shall end at Station 106+25. The contractor shall adjust the quantity of Type 'C' median barrier to ensure the crash cushion extends no further than Station 106+25.

2.0 The contractor shall also install a narrow temporary Work Zone Crash Cushion at the ends of barrier where impact attenuators (sand barrel arrays) are too wide for traffic during crossover operations. The Work Zone Crash Cushion width shall not encroach on the lanes either from oncoming or opposing traffic. The contractor may use impact attenuators (sand barrel arrays) where there is enough room for them to be installed. The contractor shall ensure that if water is used to fill the Work Zone Crash Cushion, that it does not freeze during the winter. The contractor shall provide to the Engineer their plan prior to November of each year where cushions filled with water are used.

2.1 Locations of Work Zone Crash Cushions.

A. At end of existing Type 'C' median barrier removed prior to crossover operations west of bridge.
B. At end of New Type 'C' median barrier prior to installation of Type 'E' Crashworthy End Terminal (MASH) east of bridge.

3.0 Measurement and Payment. Measurement and payment for providing and installing crash cushions as shown in the plans and described above and per the manufacturer's specifications shall include all items including equipment, labor, and material to complete the installation. Payment will be made as follows:

Item No.	Type	Description
606-30.22	Each	Type E Crashworthy End Terminal (MASH)
612-20.40	Each	Work Zone Crash Cushion

BBB. Site Resoration

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

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

2.1 Unless quantities and pay items for removal and subsequent replacement of improvements are contained in the plans for a specific location of removal work, no direct payment will be made for full depth saw cutting and the removal and subsequent replacement of asphalt or concrete slope protection, sidewalk, pavement, shoulders, islands, medians, sod and the required dowel and tie bars removed and replaced by the contractor as a result of his election to vary the location of conduit runs and pull boxes. This work will be considered as included in the various unit bid prices for conduit and pull boxes established in the contract, and no additional payment will be made.

2.2 Sidewalks and sidewalk ramps that are disturbed as described in this provision shall be replaced to meet current ADA standards.

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

3.0 Basis of Payment. The cost of restoration of disturbed areas will be incidental to the unit price of guardrail, pole base, conduit, and/or pull box. No direct payment will be made for any materials or labor, which is performed under this provision.

CCC. Replace Inlet Top

1.0 Description. The contractor shall replace the inlet tops, MSD or MoDOT style, labeled in the plan sheets with tops that match the existing inlet size. The top shall be replaced with either a manhole cover, Type ‘S’ inlet top, Type ‘T’ inlet top or as indicated in the plans. The contractor will have the option to either tie the new top into the existing inlet with steel reinforcing rebar or shall instead build a larger structure that surrounds the existing inlet. All details of the area inlet top are shown within the special plan sheets.

2.0 Basis of Payment. Payment for the removal and replacement of the area inlet top as shown in the plans shall be considered full compensation for all contractor-provided equipment, hardware, labor, removal and material including new concrete, reinforcement, grate and bearing plate, and manhole frame and cover to complete the described work. Payment will be made as follows:

Item No.	Type	Description
731-99.02	Each	Replace Inlet Top Type 'T'

DDD. Shaping Slopes Class III (Modified Material Requirements) NJSP-20-03B

Delete Sec 215.1.3 and 215.1.3.1 and substitute the following:

215.1.3 Shaping Slopes, Class III, shall consist of providing rock fill material and shaping slopes to construct additional shoulder width for the installation of guardrail and Type A crashworthy end terminals in accordance with Missouri Standard Plans for Highway Construction. The rock fill material used shall meet the requirements specified in Sec 215.1.3.1. The shoulder surface shall be finished smooth such that it is traversable and without significant voids or depressions.

215.1.3.1 Material Requirements. Rock fill material used for Shaping Slopes, Class III, shall consist of a durable crushed stone, shot rock or broken concrete, with a predominant size of 3 inches and a maximum size of 6 inches. Acceptance by the engineer will be made by visual inspection.

215.4 Basis of Payment. The accepted quantity will be paid at the contract unit bid price for 215-99.10 Misc. Shaping Slopes Class III – Modified Material Requirement, per 100F.

EEE. Protection of Missouri Eastern Railroad Facilities and Traffic

To report an emergency on the Missouri Eastern Railroad call: (833) 261-7790
The project location is at the following location in St. Louis County:
Route D and MO-67 over US DOT 596234Y MP 13.83, US DOT 596325F MP 14.14; Southeast of Maryland Heights on the St. Louis Subdivision.

1.0 Authority of Railroad Engineer and State Engineer.

1.1 The authorized representative of the Missouri Eastern Railroad, herein called "Railroad Engineer," shall have final authority in all matters affecting the safe maintenance and operation of railroad traffic.

1.2 The authorized representative of the Missouri Highways and Transportation Commission, herein called "Engineer", shall have authority over all other matters as prescribed herein and in the project specifications.

1.3 The right of way of the Missouri Eastern Railroad, herein called "Railroad," is located within the limits of this project and care shall be taken to insure that no debris or material is dropped on the Railroad's property.

2.0 Right of Entry. The contractor shall not commence any work upon, over nor under the Railroad's right of way until contractor has obtained a Right of Entry Permit and complied with the following conditions:

2.1 At least 5 working days in advance of the date the contractor proposes to begin work upon, over or under the Railroad's right of way, the contractor shall notify the Railroad Engineer (listed below) by e-mail or written notice to the address below with a copy to the Engineer.

Corey Carmichall
President
1027 South Main Street Suite 403
Joplin, MO 64801
CCarmichall@jag-transport.com
(949) 357-7113

2.2 Contractor shall obtain an Executed Right of Entry Permit by mail or e-mail from the Railroad Engineer to begin work upon, over or under the Railroad's right of way, such authorization will include an outline of specific conditions with which the contractor shall comply.

3.0 Insurance. The amount of work to be performed upon, over or under Railroad's right of way is estimated to be one percent of the contractor's total bid for the project. Contractor shall secure railroad protective liability insurance naming only the Railroad as the insured with a combined single limit of $2,000,000 per occurrence with a $6,000,000 aggregate, and this insurance shall conform to all the requirements as specified by Sec 107.13.4 of the Missouri Standard Specifications for Highway Construction.

4.0 Job Briefing. Contactor will contact the Railroad Engineer, **Corey Carmichall**, by phone (contact number above) at least 3 working days before beginning work upon, over or under the Railroad's right of way to make arrangements for a job briefing.

4.1 Railroad Engineer will arrange a meeting with the contractor's representative and a Railroad Employee each day work is scheduled to be performed upon, over or under the Railroad's right of way. A job briefing shall be held, usually at the job site and usually in the morning, to discuss the contractor's work to be performed that day and to discuss the relevant railroad operations. The meeting shall be held before any work is done within 25 feet of the centerline of any track. If any train movements are scheduled for that day, the train moves will be made under the direct supervision of the Railroad Engineer or a Railroad Representative after the contractor has cleared the work site. Flagging services typically provided by the Railroad may not be required depending on the Railroad's schedule of operations.

5.0 Reimbursement of Flagging Costs. The Commission may reimburse the Railroad directly for the cost of flagging services associated with the highway project if flagging services are provided. Flagging costs will be deducted from the contractor's payments from the Commission. If the contractor pays the flagger directly, the contractor must notify the MoDOT Engineer of such payments for flagging.

6.0 Payment for Cost of Compliance. No separate payment will be made for any extra cost incurred on account of compliance with this special provision. All such cost shall be included in contract unit price for other items included in the contract.

7.0 No Payment by Railroad pursuant to this JSP. Railroad will not be responsible for paying the contractor for any work performed under this special provision.

8.0 The Contractor must adhere to all other policies, procedures and insurance coverage not specifically mentioned in these special provisions. These can be found in the Contractor Occupancy/Access Agreement included below.

Job No.: J6S3626
Route: D
County: St. Louis

CONTRACTOR OCCUPANCY/ACCESS AGREEMENT

This Agreement (hereinafter "Agreement") made this **<Day>th day** of **<Month> <Year>** by and between **Missouri Eastern Railroad, LLC,** its successors, assigns or affiliated companies (hereinafter "Railroad"), whose address is 1027 South Main Street Suite 403, Joplin, MO 64801 and **<Contractor>** (hereinafter referred to as "Company"), whose address is <Contractor Address>.

WITNESSETH:

1. Upon payment of a **one-time fee of Two Thousand U.S. Dollars ($2,000)** and compliance with the provisions herein contained, Railroad hereby permits Company to enter the property of Railroad, at **Mile Post 14.14,** Southeast of **Maryland Heights, St. Louis County Route D,** and **Mile Post 13.83,** Southeast of **Maryland Heights, St. Louis County MO-67,** for purpose of installation, maintenance, renewal or removal (hereinafter referred to as "Work"), of the **Bridge Sealing on both bridges over the crossing and installation of the sinage in the MER ROW,** (hereinafter "Structure"). Said permit is granted for a period not to extend beyond **sixty (60) days from the date of execution of this Agreement by** Railroad. Provided, however, this permit may be canceled by Railroad at any time Company is deemed by Railroad not to be in compliance with any of the terms herein.

2. The term "Contractor" shall be used to identify the party that will perform the Work as described in Section 1, whether or not Contractor is signatory to **MER-<ContractNumber>A**. If Contractor is other than **<Contractor>,** Contractor warrants to Railroad that Contractor (hereinafter termed "Third Party"), has entered into a "Contract" with **<Contractor>** covering the Work to be performed in connection with Structure at said locations.

3. As additional consideration, Company agrees to reimburse Railroad for all cost and expense incurred by Railroad in connection with the Work. Such costs and expenses shall include, but are not limited to, furnishing of inspectors, watchmen and flagmen as Railroad deems necessary to protect its property, tracks, engines, trains and cars and the operation thereof, the installation and removal of any necessary falsework beneath the tracks of Railroad and the restoration of Railroad property. No vehicular crossing over Railroad's tracks shall be installed or used by Company without prior written permission of Railroad.

4. Company shall give Railroad at least five (5) days' notice in advance of any work done upon or adjacent to Railroad property under this Agreement. Company shall notify Railroad **President** by calling (949) 357-7113 , in advance of the start of the Work, give the General Manager notification of the date said Work is completed, and also the date the Contractor's work is accepted by Third Party. Upon completion of the Work, Company shall promptly

remove from Railroad property all tools, equipment and materials placed thereon by Company and Company's agents. Company shall restore Railroad property to the same state and condition as when Company entered thereon and shall leave said property in a clean and presentable condition. Company, after completion of construction or termination of work, at its sole cost, hereby agrees to restore in a good and workman like manner all property disturbed by Company use or construction or maintenance activities from the date of execution of this document. Said restoration shall include, but not be limited to, any and all harm, damage or injury done to Railroad property and/or to any other public or private property by acts or occurrences subject to Federal, State or local environmental enforcement or regulatory jurisdiction, and shall include necessary and appropriate testing and cleanup.

13. Company's work shall be performed in accordance with plans and specifications approved by Railroad and in such manner and at such times as shall not endanger or interfere with the safe operation of the tracks and other facilities of Railroad at said location. No materials, tools or equipment shall be stored within ten (10) feet of the centerline of any track. The regulations of Railroad and the instructions of its representatives shall be complied with relating to the proper manner of protecting the tracks, pipelines, wire lines, signals and all other property at said location, the traffic moving on such tracks and the removal of tools, equipment and materials. Provided, no bailment shall be created by the storage of any materials, tools or equipment on Railroad property.

14. Before said Work, Company shall, at its sole cost and expense, obtain all necessary authority from any public authorities having jurisdiction in the premises, and shall thereafter observe and comply with the requirements of such public authority or authorities and all applicable laws and regulations. Company shall secure written approval by Railroad of plans and/or specifications submitted to Railroad prior to the commencement of any Work.
15. The Structure shall be installed at the sole risk, cost and expense of Company, in accordance with American Railway Engineering Association Specifications or other Industry Standard Specifications as may apply or be appropriate for the use intended. Said specifications are incorporated herein and made a part hereof by reference. Approval of plans or completed work by Railroad's designated representative shall not, in itself, be considered acknowledgment that said project is in conformity with said standards.

16. COMPANY AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS RAILROAD, ITS OFFICERS, AGENTS, AND EMPLOYEES FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, LOSSES, DAMAGES, CAUSES OF ACTION, SUITS, AND LIABILITIES OF EVERY KIND (INCLUDING REASONABLE ATTORNEYS' FEES, COURT COSTS, AND OTHER EXPENSES RELATED THERETO) FOR INJURY TO OR DEATH OF A PERSON OR FOR LOSS OF OR DAMAGE TO ANY PROPERTY, ARISING OUT OF OR IN CONNECTION WITH ANY WORK DONE, ACTION TAKEN OR PERMITTED BY COMPANY, ITS SUBCONTRACTORS, AGENTS OR EMPLOYEES UNDER THIS CONTRACT.

LICENSEE HEREBY ASSUMES, AND SHALL AT ALL TIMES HEREAFTER RELEASE, INDEMNIFY, DEFEND AND SAVE RAILROAD HARMLESS FROM AND AGAINST ANY AND ALL LIABILITY, LOSS, CLAIM, SUIT, DAMAGE, CHARGE OR EXPENSE WHICH RAILROAD MAY SUFFER, SUSTAIN, INCUR OR IN ANY WAY BE SUBJECTED TO, ON ACCOUNT OF DEATH OF OR INJURY TO ANY PERSON (INCLUDING OFFICERS, AGENTS, EMPLOYEES OR INVITEES OF RAILROAD), AND FOR DAMAGE TO OR LOSS OF OR DESTRUCTION OF ANY PROPERTY WHATSOEVER, ARISING OUT OF, RESULTING FROM, OR IN ANY WAY CONNECTED WITH THE PRESENCE, EXISTENCE, OPERATIONS, OR USE, OF WIRELINE, EXCEPT TO THE EXTENT PROVEN TO HAVE BEEN CAUSED BY THE FAULT, OR NEGLIGENCE OF RAILROAD. HOWEVER, DURING ANY PERIOD OF ACTUAL CONSTRUCTION, REPAIR, MAINTENANCE, REPLACEMENT OR REMOVAL OF WIRELINE, WHEREIN AGENTS OR PERSONNEL OF LICENSEE ARE ON THE RAILROAD RIGHT-OF-WAY, LICENSEE'S LIABILITY HEREUNDER SHALL BE ABSOLUTE, IRRESPECTIVE OF ANY FAULT OR NEGLIGENCE OF RAILROAD.

17. Should Railroad bring suit to compel performance of or to recover for breach of any covenant or condition contained herein, Company shall pay to Railroad reasonable attorneys' fees in addition to the amount of judgment and costs.

18. Prior to the performance of any work upon or adjacent to Railroad's property under this Agreement:

    (a) Company shall furnish Railroad, at Company expense, a certified copy of a public liability and property damage liability insurance policy issued in the name of Company covering the contractual liability assumed by Company under Section 8 hereof. The form, substance and limits of said insurance policy shall be subject to the approval of Railroad and shall be in compliance with the provisions contained in the insert marked Exhibit "A", hereto attached and made a part hereof.

    (b) Company shall furnish Railroad, at Company expense, a certificate of Workers Compensation coverage, including Federal Employee Liability Act coverage if applicable, for its workers and subcontractors in accordance with the requirements of the State or States in which said work is to be performed.

    (c) Company shall furnish a policy of Railroad Protective coverage in the amount of Two million and no/100 dollars ($2,000,000.00) per occurrence, Six million and no/100 dollars ($6,000,000.00) aggregate with named insured as outlined in COMPANY OCCUPANCY/ACCESS AGREEMENT, Exhibit "A". WARNING: ONLY A POLICY OF RAILROAD PROTECTIVE INSURANCE WHICH SPECIFICALLY NAMES **Missouri Eastern Railroad, LLC** AS THE INSURED PARTIES IS ACCEPTABLE AND A COPY OF SAID POLICY MUST BE RECEIVED PRIOR TO THIS PERMIT BEING APPROVED ON BEHALF OF RAILROAD.

    Company shall keep said insurance in full force and effect until all work to be performed upon or adjacent to Railroad property under said contract is completed to the satisfaction of and accepted by Third Party and thereafter until Company has fulfilled the provisions of this agreement with respect to the removal of tools, equipment and materials from Railroad property. Said policy shall name Railroad as additional insured.

19. The permission herein given shall not be assigned by Company without the prior written

consent of Railroad, except in the case of subcontractors who shall be deemed agents of Company, subject to the terms of this Agreement. Railroad Requirements for Company working on Railroad Right-of-Way are attached as Company OCCUPANCY/ACCESS AGREEMENT, Exhibit "B" and made a part hereof. Failure to comply with all of said requirements shall be grounds for cancellation of this Agreement at the sole option of Railroad.

20. CONSTRUCTION PROVISIONS: In relation to Railroad's track and Railroad operations:

d. Company warrants it will place no bore pit closer than 25 feet from the end of the ties of the nearest track, as measured at right angles from said track; that all of the lines to be installed under Railroad's track shall be a minimum of five feet six inches below the base of the rail; that carrier pipe(s) and/or wire lines shall be encased in Steel Casing Pipe in accordance with the attached Company OCCUPANCY/ACCESS AGREEMENT, Exhibit "D" casing criteria attached hereto; and that casing shall extend a minimum of 25 feet from the center line of the outside track on each side of said crossing, measured at a right angle to said track.

e. Company shall be solely liable for location and protection of any subgrade railroad signal wires or other railroad facilities, which may be impacted by Company Work. If same shall be damaged by said Work, Contractor shall, at its own expense, immediately cause said damage to be corrected. Contractor shall be solely liable to Railroad for any and all costs resulting for any interruption of train service resulting from Company Work.

f. Said provisions shall prevail over any lesser provision or standard set out for occupancy of adjoining or underlying lands.

THIS AGREEMENT IS hereby declared to be binding upon the parties hereto.

IN WITNESS WHEREOF, the undersigned have hereunto set their hand and seals this _____ day of _____ **20___**.

Railroad

Missouri Eastern Railroad, LLC

By: **Anthony Cox**
Senior Vp

Signed: _____

Company

<Contractor>

Job No.: J6S3626
Route: D
County: St. Louis

By: _____

Its: _____

Signed: _____

EXHIBIT A

The coverage afforded hereunder shall include the liability assumed by the named insured under the following indemnification provisions contained in an agreement in writing between the named insured and **Missouri Eastern Railroad, LLC**, covering work to be performed upon or adjacent to its property.

Company AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS Railroad, ITS OFFICERS, AGENTS, AND EMPLOYEES FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, LOSSES, DAMAGES, CAUSES OF ACTION, SUITS, AND LIABILITIES OF EVERY KIND (INCLUDING REASONABLE ATTORNEYS' FEES, COURT COSTS, AND OTHER EXPENSES RELATED THERETO) FOR INJURY TO OR DEATH OF A PERSON OR FOR LOSS OF OR DAMAGE TO ANY PROPERTY, ARISING OUT OF OR IN CONNECTION WITH ANY Work DONE, ACTION TAKEN OR PERMITTED BY Company, ITS SUBCONTRACTORS, AGENTS OR EMPLOYEES UNDER THIS CONTRACT.

IT IS THE EXPRESS INTENTION OF THE PARTIES HERETO, BOTH Company AND Railroad, THAT THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH INDEMNIFIES Railroad FOR ITS OWN NEGLIGENCE, WHETHER THAT NEGLIGENCE IS ACTIVE OR PASSIVE, OR IS THE SOLE OR A CONCURRING CAUSE OF THE INJURY, DEATH OR DAMAGE; PROVIDED THAT SAID INDEMNITY SHALL NOT PROTECT Railroad FROM LIABILITY FOR DEATH, INJURY OR DAMAGE ARISING SOLELY OUT OF THE CRIMINAL ACTIONS OF Railroad, ITS OFFICERS, AGENTS AND EMPLOYEES. IT IS STIPULATED BY THE PARTIES THAT Railroad OWES NO DUTY TO Company, ITS CLIENT, OR THEIR DIRECTORS, OFFICERS, EMPLOYEES AGENTS OR INVITEES TO PROVIDE A REASONABLY SAFE WORK PLACE AND THAT ALL PARTIES ENTERING ONTO Railroad PROPERTY DO SO AT THEIR SOLE RISK. ”

The policy or policies shall provide coverage in amount of not less than Two Million Dollars ($2,000,000) combined single limit for all damages arising out of bodily injury to or death of persons and for loss of or damage to property.

The policy or policies, where applicable and available, shall contain Insurance Services Office Standard Endorsement CG 2417.

No cancellation of this policy or modification of the coverage afforded under this endorsement shall be effective until ten (10) days’ notice thereof has been given to: Missouri Eastern Railroad, LLC, C/O IMGRail, 1629 Race Track Rd. Suite 206, St. John’s, FL 32259, E-mail contact@imgonline.net

The policy as required in section 10(a) of the Agreement shall name Railroad as an additional insured.

The policy as required in section 10(b) shall name Railroad and affiliates as listed below as additional insured with respect to F.E.L.A. coverage, and/or if applicable under the laws of the State in which the work is performed.

The policy as required in section 10(c) shall name **Missouri Eastern Railroad, LLC** as insured.

Railroad requires each Insurance Carrier providing coverage must be an Admitted Company in the State for which this Agreement is written and has an A.M. Best rating of “A” or better and a financial class rating of 10 or better.

EXHIBIT B

Requirements for Contractors working on Railroad Right-of-Way:

A. In order to protect Railroad’s investment in its right-of-way and for the safety of persons coming onto Railroad property, Railroad has established certain requirements. The following constitute minimum requirements for all persons coming on or near Railroad right-of-way. Company is encouraged to develop their own safety rules that meet or exceed the following requirements. Company will not be allowed to occupy or work on Railroad right-of-way prior to signing and dating this Agreement and returning it to the Railroad contact person noted herein.

B. All permits and agreements must be in effect, required payments made and insurance certificates received and approved prior to Company entering Railroad right-of-way. Insurance

must remain in effect during the entire project.

C. Any dewatering utilizing drains or ditches on Railroad property must be approved by Railroad.

D. Company must have approved “Construction Plans” prior to commencing work on a project. No changes will be made to “Construction Plans” without approval by all parties involved. Approved revised plans will be furnished to all parties prior to implementation of changes.

E. Company will incur all costs for track work, including flagging, etc., made necessary due to the Work.

F. Pursuant to Federal Regulation, flagging protection is always required when equipment crosses or is working within 25 feet of center of any live track. When deemed necessary by Railroad, a flagman may be required at all times while working on Railroad right-of-way.

G. Crossing of any Railroad tracks must be done at approved locations and must be over full depth timbers, rubber, etc. Any equipment with steel wheels, lugs or tracks must not cross steel rails without aid of rubber tires or other approved protection.

H. If temporary construction crossings are necessary, they must be covered by a Private Roadway and Crossing Agreement and must be barricaded when not in use. A Private Roadway and Crossing Agreement is prepared by Railroad under the same general terms as this Agreement.

I. Company must furnish details on how Company will perform work that may affect existing drainage and/or possible fouling of track ballast as well as removal of overhead bridges/structures. (Structures and bridge spans over tracks must be removed intact).

J. Absolutely no piling of construction materials or any other material, including dirt, sand, etc., within 15 feet of center on any secondary track (25 feet of Main Line and siding tracks) or on property of Railroad not covered by an existing Construction Easement, permit, lease or agreement. A 10' clear area on both sides of a main track must remain unobstructed at all times to allow for stopped train inspection.

K. **(a)** All bore pits must be a minimum of 25 feet from the nearest outside rail of any track, measured at a 90 degree angle to said track and all under track bores shall be no less than six feet below the bottom of the ties.

(b) No construction will be allowed within 15 feet of center of any track unless authorized by Railroad and as shown on plans approved by Railroad. This includes any excavation, slope encroachment and driving of sheet piles.

L. No vehicles or machines shall remain unattended within 15 feet of a secondary track or within 25 feet of a Main Line track.

M. Should Company in any way interfere with Railroad operations or damage property during construction operations over Railroad’s tracks and right-of-way, Company, upon demand by Railroad to Company and/or Client, shall immediately stop work on Railroad’s right-of-way for a period of not less than 48 hours to allow Railroad to investigate. Any necessary repairs shall be made by Railroad at Company’s sole cost and expense. No work will proceed until authorized by Railroad.

N. Company's safety rules, including rules regarding personal Safety Equipment, must not conflict with Railroad safety policies or rules.

O. Articles included in any agreement with Railroad, which complement this document or exceed its contents, include Company OCCUPANCY/ACCESS AGREEMENT, Exhibit "C".

Company's Acknowledgement: Work Site Location

Company_____ Address:_____

By: _____ Town: _____

Title: _____ State:_____

Date: _____ Project No. _____

Railroad Contact Person:

Missouri Eastern Railroad

Corey Carmichall **President**
Name Title

1027 South Main Street Suite 403 **Joplin, MO 64801**
Address City, State, Zip

(949) 357-7113 **(801) 393-7733**
Telephone Number Fax Number

CCarmichall@jag-transport.com
Email

EXHIBIT "C"

Statement of Conditions when Flagmen, Protective Services and Devices or other appropriate personnel will be furnished by Railroad at sole expense of Company:

A. Railroad flagmen will be required for, but not limited to, the following conditions:

1. When, in the sole opinion of Railroad, protection is necessary to safeguard Railroad's trains, engines, facilities and property.

2. When work is performed, in any way, over, under, or in close proximity to tracks or any Railroad facilities.

3. When work in any way interferes with the operation of trains at usual speeds or threatens, damages, or endangers track or Railroad facilities.

4. When any hazard is presented Railroad communications, signal, electrical, or other facilities due to persons, material, equipment, or blasting in the vicinity.

5. When and where material is being hauled across tracks. Provided, however, special clearance must be obtained from Railroad before moving heavy or cumbersome objects and equipment which might result in making the track impassable for any period of time.

B. Protective Services and Devices, Other Specialized Personnel shall be provided when, in the sole opinion of Railroad, such are necessary in addition to flagging.

COST OF FLAGGING AND OTHER PROTECTIVE SERVICES AND DEVICES

A. Flagging

1. Shall be billed a minimum of **actual cost (please verify rates with the Railroad office)** per day plus any expenses incurred for each flagman required, for each day, or for any portion thereof, for up to eight hours in one shift Monday through Friday, excepting holidays recognized by Railroad in its personnel policy manual.

2. Time worked in excess of eight hours in one shift Monday through Friday, or worked in any amount on Saturday, Sunday and on holidays recognized by Railroad in its personnel policy manual, shall be billed at the rate of **actual cost (please verify rates with the Railroad office)** per eight-hour day, per flagman required, for each day or portion thereof worked.

B. Communications Linemen, Signalmen, Protective Services and Devices

All services required shall be billed at Railroad's contracted rate with service provider plus a 20 percent Railroad administrative fee.

EXHIBIT "D"
MINIMUM WALL THICKNESS FOR CASING PIPES UNDER Railroad TRACKS

1. **STEEL CASING** PIPE (A.R.E.A SPEC 1964)

NOMINAL DIAMETER (Inches)	NOMINAL WALL THICKNESS (Inches)	
	PROTECTED	NOT PROTECTED*
Under 14	0.188	0.188
14 and 16	0. 219	0.281 (9/32)
18	0.250	0.312
20	0.281	0.344
22	0.312	0.375
24	0.344	0.406
26	0.375	0.438
28 and 30	0.406	0.469
32	0.438	0.500
34 and 36	0.469	0.531
38, 40 and 42	0.500	0.562

Steel Pipe to have minimum yield strength of 35,000 psi.

* When casing is installed without benefit of a protective coating and said casing is not cathode protected, the wall thickness shall be increased to the nearest standard size which is a minimum of 0.063 inches greater than the thickness shown for protected pipe except for diameters under 12.75 inch.

2. CONCRETE PIPE

All diameters of concrete pipe under main tracks shall be specified, as A.S.T.M. C-76 (Latest Revision) Table V. Concrete pipe under siding and yard tracks may be Table IV. (Either Wall "B" or "C" is acceptable.

3. CORRUGATED METAL PIPE

Table shows permissible minimum and maximum height of cover for both riveted and helical pipe.

NOMINAL DIAMETER

(Inches)	16 GAGE	14 GAGE	12 GAGE
12	4-53 (ft)	4-80 (ft)	
15	4-42	4-64	
18	4-34	4-53	
21	4-28	4-45	4-79 (ft)
24	5-23	4-40	4-70
30		4-31	4-56
36		5-23	4-46
42		4-49	4-78

FFF. Truck Mounted Attenuator (TMA) for Stationary Activities JSP-23-04

1.0 Description. Provide and maintain Truck Mounted Attenuators (TMA) in accordance with Sec 612 and as specified herein.

2.0 Construction Requirements. Truck Mounted Attenuators (TMA) shall be used for the work activities indicated in the plans or specified herein.

2.1 Bridge Demolition – The contractor shall close all through lanes of Route D and Route US 67 during bridge demolition operations, as specified in JSP – Work Zone Traffic Management, and shall use TMAs to block access over/under the Route D Bridge over Route US 67 and detour traffic to the ramps and temporary bypasses within the interchange limits of Route D and Route US 67. The general placement of TMAs shall be the following:

1.0 Closure of WB Route D (2 Through Lanes Closed – 2 TMAs needed)
2.0 Closure of EB Route D (2 Through Lanes Closed – 2 TMAs needed)
3.0 Closure of SB Route US 67 (2 Through Lanes Closed – 2 TMAs needed)
4.0 Closure of NB Route US 67 (2 Through Lanes Closed – 2 TMAS needed)

3.0 Method of Measurement. No measurement will be made for Truck Mounted Attenuators (TMA).

4.0 Basis of Payment. Delete Sec 612.5.1 and substitute with the following:

612.5.1 No payment will be made for truck mounted attenuators (TMAs) used in mobile operations or for any TMAs designated as optional.

612.5.1.1 Payment for TMAs required for stationary work activities will be paid for at the contract unit bid price for Item 612-30.01, Truck Mounted Attenuator (TMA), per lump sum. The lump sum payment includes all work activities that require a TMA, regardless of the number of deployments, relocations, or length of time utilized. No payment will be made for repair or replacement of damaged TMAs.

GGG. Miscellaneous Construction Requirements

1.0 Concrete Traffic Barrier. Where new barrier meets existing, there will be a difference in barrier shape. The contractor shall transition the new barrier shape into the existing barrier shape over 10 feet. This 10-ft transition shall be completely paid for as new Type 'C' barrier within this transition section.

1.1 Where wide median barrier is used on the project near the bridge, either on Route D tying into Type 'D' barrier on the bridges, or on Route US 67 around the columns of the new center bridge abutment, the barrier shall be paid for as Type 'C' barrier.

2.0 Temporary Shoring. The contractor is being made aware that temporary shoring might be necessary on this project. No shop drawings will be necessary for temporary shoring but the contractor shall provide a plan to the Engineer describing how the contractor intends to shore an area. This plan shall be approved by the Engineer before proceeding with installing temporary shoring. A pay item has been included within the plans in case the contractor needs temporary shoring to construction the project.

HHH. Winter Months Requirements JSP-15-07A

1.0 Description. This project contains work which spans the winter months.

2.0 Work to be Completed. When the contractor ceases operations for the winter months, any paving operation performed by the contractor shall not result in a lane height differential between adjacent lanes.

3.0 Maintenance of Pavement Marking. Prior to ceasing operations for winter months, a permanent or temporary stripe shall be provided on any completed length to the point that the original stripe was obliterated or obscured by the contractors' operation. Temporary striped areas shall be re-striped with the remaining route upon performance of the final striping.

4.0 Winter Related Maintenance Activities. The contractor shall have the project in a condition as not to interfere with the plowing of snow. The contractor shall also provide a taper at the end of his paving that will not be damaged by the plowing of snow.

5.0 Basis of Payment. There will be no direct pay for compliance with this provision.

III. Supplemental Revisions JSP-18-01EE

- Compliance with 2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment.

The Missouri Highways and Transportation Commission shall not enter into a contract (or extend or renew a contract) using federal funds to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as substantial or as critical technology as part of any system where the video surveillance and telecommunications equipment was produced by Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

- Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes land disturbance on the project site and the total area of land disturbance, both on the project site, and all Off-site support areas, is one (1) acre or more. Regardless of the area of Off-site disturbance, if no land disturbance occurs on the project site, these provisions do not apply. 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. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

1.1 Definitions. The project site is defined as all areas designated on the plans, including temporary and permanent easements. The project site is equivalent to the “permitted site”, as defined in MoDOT’s State Operating Permit. An Off-site area is defined as any location off the project site the contractor utilizes for a dedicated project support function, such as, but not limited to, staging area, plant site, borrow area, or waste area.

1.2 Reporting of Off-Site Land Disturbance. If the project includes any planned land disturbance on the project site, prior to the start of work, the contractor shall submit a written report to the engineer that discloses all Off-site support areas where land disturbance is planned, the total acreage of anticipated land disturbance on those sites, and the land disturbance permit number(s). Upon request by the engineer, the contractor shall submit a copy of its land disturbance permit(s) for Off-site locations. Based on the total acreage of land disturbance, both on and Off-site, the engineer shall determine if these Stormwater Compliance Requirements shall apply. The Contractor shall immediately report any changes to the planned area of Off-site land disturbance. The Contractor is responsible for obtaining its own separate land disturbance permit for Off-site areas.

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 as soon as possible, but no later than stated in Section 5.0.

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.

- ***Delete Sec 106.9 in its entirety and substitute the following:***

106.9 Buy America Requirements.
Buy America Requirements are waived if the total amount of Federal financial assistance applied to the project, through awards or subawards, is below $500,000.

106.9.1 Buy America Requirements for Iron and Steel.
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, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. Under a general waiver from FHWA 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.

106.9.1.1 Buy America Requirements for Iron and Steel for Manufactured items.
A manufactured item will be considered iron and steel if it is "predominantly" iron or steel. Predominantly iron or steel means that the cost of iron or steel content of a product is more than 50 percent of the total cost of all its components.

106.9.2 Any sources other than the USA as defined will be considered foreign. The required domestic manufacturing process shall include formation of ingots and any subsequent process. Coatings shall include any surface finish that protects or adds value to the product.

106.9.3 "Minimal use" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent (0.1 percent) of the total contract cost or $2,500.00, whichever is greater. If foreign steel, iron, or coating processes are used, invoices

to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

106.9.4 Buy America requirements include a step certification for all fabrication processes of all steel or iron materials that are accepted per Sec 1000. The AASHTO Product Evaluation and Audit Solutions compliance program verifies that all steel and iron products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and is an acceptable standard per 23 CFR 635.410(d). AASHTO Product Evaluation and Audit Solutions compliant suppliers will not be required to submit step certification documentation with the shipment for some selected steel and iron materials. The AASHTO Product Evaluation and Audit Solutions compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

106.9.4.1 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.

106.9.4.2 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.

106.9.4.3 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.

106.9.5 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron

products are awarded in the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

106.9.6 Buy America Requirements for Construction Materials other than iron and steel materials. Construction materials means articles, materials, or supplies that consist of only one of the items listed. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material. Upon request by the engineer, the contractor shall submit a domestic certification for all construction materials listed that are incorporated into the project.

(a) Non-ferrous metals
(b) Plastic and Polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables)
(c) Glass (including optic glass)
(d) Fiber optic cable (including drop cable)
(e) Optical fiber
(f) Lumber
(g) Engineered wood
(h) Drywall

106.9.6.1 Minimal Use allowance for Construction Materials other than iron or steel.
"The total value of the non-compliant products is no more than the lesser of $1,000,000 or 5% of total applicable costs for the project." The contractor shall submit to the engineer any non-domestic materials and their total material cost to the engineer. The contractor and the engineer will both track these totals to assure that the minimal usage allowance is not exceeded.

106.9.7 Buy America Requirements for Manufactured Products.
Manufactured products means:

(a) Articles, materials, or supplies that have been:
    (i) Processed into a specific form and shape; or
    (ii) Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.
(b) If an item is classified as an iron or steel product, a construction material, or a section 70917(c) material under § 184.4(e) and the definitions set forth in this section, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product under § 184.4(e) and paragraph (1) of this definition may include components that are construction materials, iron or steel products, or section 70917(c) materials.

106.9.7.1 Manufactured products are exempt from Buy America requirements. To qualify as a manufactured product, items that consist of two or more of the listed construction materials that have been combined together through a manufacturing process, and items that include at least one of the listed materials combined with a material that is not listed through a manufacturing process, should be treated as manufactured products, rather than as construction materials.

106.9.7.2 Manufactured items are covered under a general waiver to exclude them from Buy America Requirements. To qualify for the exemption the components must comprise of 55% of the value of materials in the item. The final assembly must also be performed domestically.

- Pavement Marking Paint Requirements for Standard Waterborne and Temporary

1.0 Description. High Build acrylic waterborne pavement marking paint shall be used in lieu of standard acrylic waterborne pavement marking paint for all Standard Waterborne Pavement Marking Paint items and all Temporary Pavement Marking Paint items. Paint thickness, bead type, bead application rate, retroreflectivity requirements, and all other specifications shall remain as stated in the Missouri Standard Specifications for Highway Construction, except as otherwise amended in the contract documents.

2.0 Material Requirements. Material requirements for Sec 620.20.2.5 Standard Waterborne Paint, and Sec 620.10.2 Temporary Pavement Marking Paint shall be per Sec 1048.20.1.2 High Build Acrylic Waterborne Pavement Marking Paint.

- ***Delete paragraph 15.0 of the General Provision Disadvantaged Business Enterprise (DBE) Program Requirements and substitute the following*:**

15.0 Data Collection from Bidders for DBE and Non-DBE Subcontractors, Suppliers, Manufacturers and/or Brokering used and not used in bids during the reporting period. MoDOT is a recipient of federal funds and is required by 49 CFR 26.11, to provide data about its DBE program. The information shall consist of all subcontractor quoting received for actual use and of consideration by the prime bidder. MoDOT will be requesting this information from bidding prime contractors and will provide prime bidders a form to submit the data by the last day of each month for the current letting. The information shall only include the names of both DBE and non-DBE companies that the prime bidders received quotes. MoDOT will then contact the DBEs and non-DBE subcontractors and request additional information from DBE and non-DBE subcontractors including current year of gross receipts and number of years in business. The information provided by the prime bidders shall not include any bid quote pricing regardless if it was used or not. This information will aid MoDOT in the determination of the availability of DBEs and will be used in subsequent availability studies.

- Third-Party Test Waiver for Concrete Aggregate

1.0 Description. Third party tests may be allowed for determining the durability factor for concrete pavement and concrete masonry aggregate.

2.0 Material. All aggregate for concrete shall be in accordance with Sec 1005.

2.1 MoDOT personnel shall be present at the time of sampling at the quarry. The aggregate sample shall be placed in an approved tamper-evident container (provided by the quarry) for shipment to the third-party testing facility.

2.2 AASHTO T 161 Method B Resistance of Concrete to Rapid Freezing and Thawing, shall be used to determine the aggregate durability factor. All concrete beams for testing shall be 3-inch wide by 4-inch deep by 16-inch long or 3.5-inch wide by 4.5-inch deep by 16-inch long. All beams for testing shall receive a 35-day wet cure fully immersed in saturated lime water prior to initiating the testing process.

2.3 Concrete test beams shall be made using a MoDOT approved concrete pavement mix design.

3.0 Testing Facility Requirements. All third-party test facilities shall meet the requirements outlined in this provision.

3.1 The testing facility shall be AASHTO accredited.

3.1.1 For tests ran after January 1, 2025, accreditation documentation shall be on file with the Construction and Materials Division prior to any tests being performed.

3.1.2 Construction and Materials Division may consider tests completed prior to January 1, 2025, to be acceptable if all sections of this provision are met, with the exception of 3.1.1. Accreditation documentation shall be provided with the test results for tests completed prior to January 1, 2025. No tests completed prior to September 1, 2024, will be accepted.

3.2 The testing facility shall provide their testing process, list of equipment, equipment calibration documentation, and testing certifications or qualifications of technicians performing the AASHTO T 161 Procedure B tests. The testing facility shall provide details on their freezing and thawing apparatus including the time and temperature profile of their freeze-thaw chamber. The profile shall include the temperature set points throughout the entirety of the freeze-thaw cycle. The profile shall show the cycle time at which the apparatus drains/fills with water and the cycle time at which the apparatus begins cooling the specimens.

3.3 Results, no more than five years old, from the third-party test facility shall compare within ±2.0 percent of an independent test from another AASHTO accredited test facility or with MoDOT test records, in order to be approved for use (e.g. test facility results in a durability factor of 79, MoDOT's recent durability test factor is 81; this compared within +2 percent). The independent testing facility shall be in accordance with this provision. The comparison test can be from a different sample of the same ledge combination.

3.4 When there is a dispute between the third party durability test results and MoDOT durability test results, the MoDOT durability test result shall govern.

3.5 Test results shall be submitted to MoDOT's Construction and Materials division electronically for final approval. Test results shall include raw data for all measurements of relative modulus of elasticity and percent length change for each individual concrete specimen. Raw data shall include initial measurements made at zero cycles and every subsequent measurement of concrete specimens. Raw data shall include the cycle count and date each measurement was taken. Test results shall also include properties of the concrete mixture as required by AASHTO T 161. This shall include the gradation of the coarse aggregate sample. If AASHTO T 152 is used to measure fresh air content, then the aggregate correction factor for the mix determined in accordance with AASHTO T 152 shall also be included.

4.0 Method of Measurement. There is no method of measurement for this provision. The testing requirements and number of specimens shall be in accordance with AASHTO T 161 Procedure B.

5.0 Basis of Payment. No direct payment will be made to the contractor or quarry to recover the cost of aggregate samples, sample shipments, testing equipment, labor to prepare samples or test samples, or developing the durability report.

JJJ. DBE Prompt Payment Reporting JSP-24-05B

1.0 Description.

1.1 This provision will only apply to contracts that have a Disadvantaged Business Enterprise (DBE) goal greater than 0% and have at least one DBE subcontractor.

1.2 MoDOT monitors the payments made by prime contractors and subcontractors to DBEs for compliance with DBE payment monitoring rules as outlined in 49 CFR 26.37. To facilitate this monitoring, MoDOT requires prime contractors to report their remitted payments to DBEs and subcontractors to report their remitted payments to lower-tier DBEs.

1.3 Tracking of DBE payments are made through the Signet™ application (Signet). Signet is a third-party service, supported by the vendor, for usage by the prime contractor and all subcontractors. Signet is only a reporting tool; it does not process financial transactions. MoDOT does not provide direct technical support for Signet. Information about Signet may be found at https://signet-help.zendesk.com/hc/en-us.

1.4 Upon completion of the first pay estimate on the contract, Signet will automatically send an email to the prime contractor prompting registration. The prime will be required to pay a one-time, fixed fee of $1,000 for this contract directly to the Signet vendor. Use of Signet to track DBE payments will be available for the life of the contract, regardless of the contract value, contract duration, number of subcontractors, or payments reported. No additional fee will be charged to subcontractors that are required to report payments or DBEs that are required to verify payments through Signet. The contractor may also, at no additional cost, report payments through Signet to subcontractors that are not DBEs.

1.5 After each estimate, when contractor reporting of payments is complete, the subcontractor will receive an email notifying them of the payment and requesting verification of the reported payment. A subcontractor that has not completed registration with Signet will be prompted to do so at this time.

1.6 Users will be set up automatically based on information in MoDOT's vendor list. Additional users under each contractor may be added once registration has been completed within Signet. The current vendor list can be found at https://www.modot.org/bid-opening-info.

1.7 For purposes of this requirement, payer is defined as the prime contractor or subcontractor that reports a payment in Signet to a vendor that is either a subcontractor, trucker, manufacturer, regular dealer, or broker. Payee is defined as the vendor that receives notification of payment through Signet from the prime contractor or a higher-tier subcontractor. Payment is defined as issuing an Electronic Funds Transfer (EFT) or mailing a check to a payee.

2.0 Requirements. Payers must report remitted payment to DBEs within Signet, for work performed by the DBE subcontractor, DBE trucking, materials supplied from a DBE manufacturer, dealer, or broker, as well as a return of retainage (and/or other amounts withheld), within 15 calendar days.

2.1 Prime contractors must report remitted payments to DBEs within 15 calendar days of each payment it receives from MoDOT. Prime contractors must also report payments to non-DBE subcontractors if that subcontractor is making payment to a lower tier DBE subcontractor, trucker, manufacturer, regular dealer, or broker.

2.2 The payer must report the following information within Signet:

- The name of the payee.
- The dollar amount of the payment to the payee.
- The date the payment was made.
- Any retainage or other amount withheld (if any) and the reason for the withholding (if other than retainage).
- The DBE function performed for this payment (e.g., contracting, trucking, or supplying as a manufacturer, dealer, or broker).
- Other information required by Signet.

The payer must report its return of retainage (and/or other amounts withheld) in separate, standalone payment entries (i.e., without being comingled with a payment for work performed or materials supplied).

2.3 In the event that no work has been completed by a DBE during the estimate period, such that no payment is due to a DBE subcontractor, trucker, manufacturer, regular dealer, or broker, then the prime contractor will mark payment complete within Signet, and no other payments are required to be reported.

2.4 Each subcontractor making a payment to a lower-tier DBE must report remitted payments within Signet, as detailed in Section 2.2, within 15 days of receipt of each payment from the prime contractor.

2.5 DBE payees must verify in Signet each payment reported by a payer within 15 calendar days of the payment being reported by the payer. This verification includes whether the payment was received, and if so, whether it was as expected.

3.0 Basis of Payment. A fixed cost of $1,000 will be paid on this contract for the required software to report payments to DBEs through Signet. Regardless of the number of projects in a contract, a single payment will be made under item 108-10.00, SIGNET DBE REPORTING, per lump sum. The engineer reserves the right to underrun this item for any reason. Any additional costs for registration, software, usage, time, labor, or other costs will be considered incidental and no direct payment will be made.

KKK. 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:

- Review monthly workforce reports.
- Review progress toward the stated project workforce program.

c. Review findings of Administrative Reconsideration hearings.
d. Recommend *other* workforce actions to MoDOT.

10.0 Federal Workforce Goals.

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

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

TABLE 1:

County	Goal (Percent)	County	Goal (Percent)
Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4

Barry	2.3	Madison	11.4
Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4
Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4
Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4
DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4

Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3
Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4
Lawrence	2.3	Wayne	11.4
Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

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

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

As used in these specifications:

"Minority" includes;

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