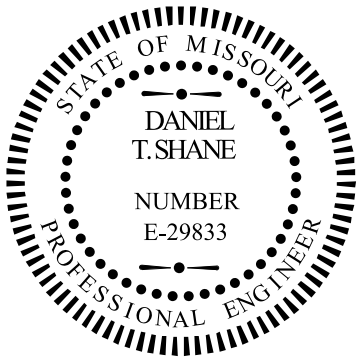
Job No.: J2P3043
Route: 47
County: Lincoln

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

Job No.: J2P3043
Route: 47
County: Lincoln



THIS SHEET HAS BEEN SIGNED, SEALED, AND DATED ELECTRONICALLY.

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

HR Green, Inc.
16020 Swingley Ridge Road, Ste. 205
Chesterfield, MO 63017
Certificate of Authority: 2002006608
Consultant Phone: (636) 812.4211

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

JOB NUMBER: J2P3043
LINCOLN COUNTY, MO
DATE PREPARED: 3/28/2024

ADDENDUM DATE:

Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: A – II, RR

Job No.: J2P3043
Route: 47
County: Lincoln

04/10/2024 10:23:59 AM
Margaret Ann Bruns - Civil
MO PE-2010000798

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

EFK Moen
13523 Barrett Parkway, Suite 250
St. Louis, MO 63021
Certificate of Authority: 001578
Consultant Phone: 314-394-3100

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

JOB NUMBER: J2P3043
LINCOLN COUNTY, MO
DATE PREPARED: 3/6/2024

ADDENDUM DATE:

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

Job No.: J2P3043
Route: 47
County: Lincoln

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02J

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 2023 Missouri Standard Plans
For Highway Construction

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

B. Contract Liquidated Damages

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

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

Notice to Proceed Date: June 20, 2024
Contract Completion Date: October 31, 2025

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

Job Number	Calendar Days	Daily Road User Cost
J2P3043	N/A	$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 **$2000** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified 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

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 for managing 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 **15 minutes** to prevent congestion from escalating beyond this delay threshold. If disruption of the traffic flow occurs and traffic is backed up in queues equal to or greater than the delay time threshold listed above, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable. When a Work Zone Analysis Spreadsheet is provided, the contractor will find it in the electronic deliverables on MoDOT's Online Plans Room. The contractor may refer to the Work Zone Analysis Spreadsheet for detailed information on traffic delays.

2.5.1 Traffic Safety.

2.5.1.1 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.

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, roadbed, or active lanes, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The contractor shall be aware that traffic volume data indicates construction operations on the roadbed between the following hours will likely result in traffic queues greater than 15 minutes. Based on this, the contractor's operations will be restricted accordingly unless it can be successfully demonstrated the operations can be performed without a 15 minute queue in traffic. It shall be the responsibility of the engineer to determine if the above work hours may be modified. Working hours for evenings, weekends and holidays will be determined by the engineer. The contractor may not work during the following listed hours:

Route 47 Northbound/Southbound
6:00 a.m. – 8:00 a.m. Daytime Hours Monday through Friday
4:00 p.m. – 7:00 p.m. Daytime Hours Monday through Friday

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

computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$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.

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

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. 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 Short term duration closures to set bridge girders will be allowed. At least one lane of traffic in each direction on Route 61 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. **To set the girders for the new bridge, the contractor will be allowed to close the Route 61 northbound or southbound lanes for up to 20 minutes between Midnight and 4:00 a.m.** Any other periods during which the contractor will be allowed to halt traffic will be designated by the engineer.

4.3 Route 47 and Route 61 will be temporarily closed due to bridge demolition. Duration of demolition and detour shall be between Friday 10:00 p.m. to Sunday 10:00 p.m. The Contractor shall provide two weeks' notice to MoDOT with formal written approval. Detours routes shall be identified per plans.

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

D. Emergency Provisions and Incident Management

1.0 The contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from 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 (Troop C) 636-300-2800		
City of Troy	Lincoln County	
	Fire: 636-528-8567	
Police: 636-528-4712	Sherrif: 636-528-8546	

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

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

Chris Knapp, Project Contact
Northeast District
PO Box 1067
Hannibal, MO 63401

Telephone Number: 573-248-2586
Email: christopher.knapp@modot.mo.gov

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

F. Supplemental Revisions JSP-18-01AB

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.

Anti-Discrimination Against Israel Certification

By signing this contract, the Company certifies it is not currently engaged in and shall not, for the duration of the contract, engage in a boycott of goods or services from the State of Israel, companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel, or persons or entities doing business in the State of Israel as defined by Section 34.600 RSMo. This certification shall not apply to contracts with a total potential value of less than One Hundred Thousand Dollars ($100,000) or to contractors with fewer than ten (10) employees.

Ground Tire Rubber (GTR) Dry Process Modification of Bituminous Pavement Material

1.0 Description. This work shall consist of the dry process of adding ground tire rubber (GTR) to modify bituminous material to be used in highway construction. Existing GTR requirements in Section 1015 pertain to the wet process method of GTR modification that blends GTR with the asphalt binder (terminal blending or blending at HMA plant). The following requirements shall govern for dry process GTR modification. The dry process method adds GTR as a fine aggregate or mineral filler during mix production. All GTR modified asphalt mixtures shall be in accordance with Secs 401, 402, or 403 as specified in the contract; except as revised by this specification.

2.0 Materials. The contractor shall furnish a manufacturer's certification to the engineer for each shipment of GTR furnished stating the name of the manufacturer, the chemical composition, workability additives, and certifying that the GTR supplied is in accordance with this specification.

2.1 Product Approval. The GTR product shall contain a Trans-Polyoctenamer (TOR) added at 4.5 % of the weight of the crumb rubber or an engineered crumb rubber (ECR) workability additive that has proven performance in Missouri. Other GTR additives shall be demonstrated and proven prior to use such as a five-year field performance history in other states or performance on a federal or state-sanctioned accelerated loading facility.

2.2 General. GTR shall be produced from processing automobile or truck tires by ambient or cryogenic grinding methods. Heavy equipment tires, uncured or de-vulcanized rubber will not be permitted. GTR shall also meet the following material requirements:

Table 1 – GTR Material Properties		
Property	**Test Method**	**Criteria**
Specific Gravity	ASTM D1817	1.02 to 1.20
Metal Contaminates	ASTM D5603	≤ 0.01%
Fiber Content	ASTM D5603	≤ 0.5%
Moisture Content	ASTM D1509	≤ 1.0%*
Mineral Filler	AASHTO M17	≤ 4.0%

*Moisture content of the GTR shall not cause foaming when combined with asphalt binder and aggregate during mix production

2.3 Gradation. The GTR material prior to TOR or ECR workability additives shall meet the following gradation and shall be tested in accordance with ASTM D5603 and ASTM D5644.

Table 2 – GTR Gradation	
Sieve	**Percent Passing by Weight**
No. 20	100
No. 30	98-100
No. 40	50-70
No. 100	5-15

3.0 Delivery, Storage, and Handling. The GTR shall be supplied in moisture-proof packaging or other appropriate bulk containers. GTR shall be stored in a dry location protected from rain before use. Each bag or container shall be properly labeled with the manufacturer's designation for the GTR and specific type, mesh size, weight and manufacturer's batch or Lot designation.

4.0 Feeder System. Dry Process GTR shall be controlled with a feeder system using a proportioning device that is accurate to within ± 3 percent of the amount required. The system shall automatically adjust the feed rate to always maintain the material within this tolerance and shall have a convenient and accurate means of calibration. The system shall provide in-process monitoring, consisting of either a digital display of output or a printout of feed rate, in pounds per minute, to verify feed rate. The supply system shall report the feed in 1-pound increments using load cells that will enable the user to monitor the depletion of the GTR. Monitoring the system volumetrically will not be allowed. The feeder shall interlock with the aggregate weight system and asphalt binder pump to maintain correct mixture proportions at all production rates.

Flow indicators or sensing devices for the system shall be interlocked with the plant controls to interrupt mixture production if GTR introduction rate is not within ± 3 percent. This interlock will immediately notify the operator if GTR introduction rate exceeds introduction tolerances. All plant production will cease if the introduction rate is not brought back within tolerance after 30 seconds. When the interlock system interrupts production and the plant has to be restarted, upon restarting operations; the modifier system shall run until a uniform feed can be observed on the output display. All mix produced prior to obtaining a uniform feed shall be rejected.

4.1 Batch Plants. GTR shall be added to aggregate in the weigh hopper. Mixing times shall be increased per GTR manufacturer recommendations.

4.2 Drum Plants. The feeder system shall add GTR to aggregate and liquid binder during mixing and provide sufficient mixing time to produce a uniform mixture. The feeder system shall ensure GTR does not become entrained in the exhaust system of the drier or plant and is not exposed to the drier flame at any point after introduction.

5.0 Testing During Mixture Production. Testing of asphalt mixes containing GTR shall not begin until at least 30 minutes after production or per additive supplier's recommendation.

6.0 Construction Requirements. Mixes containing GTR shall have a target mixing temperature of 325 F or as directed by the GTR additive supplier. The additive supplier's recommendations shall be followed to allow for GTR binder absorption/reaction. This may include holding mix in the silo to allow time for binder to absorb into the GTR. Rolling operations may need to be modified.

7.0 Mix Design Test Method Modification. A formal mixing procedure from the additive supplier shall be provided to the contractor and engineer that details the proper sample preparation, including blending GTR with the binder or other additives. Samples shall be prepared and fabricated in accordance with this procedure by the engineer and contractor throughout the duration of the project.

8.0 Mix design Volumetrics. Mix design volumetric equations shall be modified as follows:

8.1 Additional virgin binder added to offset GTR absorption of binder shall be counted as part of the mix virgin binder

8.2 GTR shall be included as part of the aggregate when calculating VMA of the mix.

8.2.1 GTR SPG shall be 1.15

8.3 Mix G_{sb} used to determine VMA shall be calculated as follows:

$$G_{sb\ (JMF)} = \frac{(100 - P_{bmv})}{\left(\frac{P_s}{G_{sb}} + \frac{P_{GTR}}{G_{GTR}}\right)}$$

$$where:$$

$G_{sb\ (JMF)} = bulk\ specific\ gravity\ of\ the\ combined\ aggregate\ including\ GTR$
$P_{bmv} = percent\ virgin\ binder\ by\ total\ mixture\ weight$
$P_s = percent\ aggregate\ by\ total\ mixture\ weight\ (not\ including\ GTR)$
$P_{GTR} = percent\ GTR\ by\ total\ mixture\ weight$
$G_{sb} = bulk\ specific\ gravity\ of\ the\ combined\ aggregate\ (not\ including\ GTR)$
$G_{GTR} = GTR\ specific\ gravity$

8.4 G_{se} shall be calculated as follows:

$$G_{se} = \frac{(100 - P_b - P_{GTR})}{\left(\frac{100}{G_{mm}} - \frac{P_b}{G_b} - \frac{P_{GTR}}{G_{GTR}}\right)}$$

8.5 P_{be} shall be calculated as follows:

$$P_{be} = P_b - \frac{P_{ba}}{100} * (P_s + P_{GTR})$$

9.0 Minimum GTR Amount. The minimum dosage rate for GTR shall be 5 % by weight of total binder for an acceptable one bump grade or 10 % by weight of total binder for an acceptable two bump grade as detailed in the following table. Varying percentage blends of GTR and approved additives may be used as approved by the engineer with proven performance and meeting the specified requirements of the contract grade.

Contract Binder Grade	Percent Effective Virgin Binder Replacement Limits	Required Virgin Binder Grade	Minimum GTR Dosage Rate
PG 76-22	0 - 20	PG 70-22	5 %
		PG 64-22	10 %
PG 70-22	0 - 30	PG 64-22	5 %
		PG 58-28	10 %
PG 64-22	0 – 40*	PG 58-28	5 %
		PG 52-34	10 %
PG 58-28	0 – 40*	PG 52-34	5 %
		PG 46-34	10 %

* Reclaimed Asphalt Shingles (RAS) may be used when the contract grade is PG 64-22 or PG 58-28. RAS replacement shall follow the 2 x RAS criteria when calculating percent effective binder replacement in accordance Sec 401.

Delete Sec 403.19.2 and substitute the following:

403.19.2 Lots. The lot size shall be designated in the contractor's QC Plan. Each lot shall contain no less than four sublots and the maximum sublot size shall be 1,000 tons. The maximum lot size shall be 4,000 tons for determination of pay factors. Sublots from incomplete lots shall be combined with the previous complete lot for determination of pay factors. When no previous lot exists, the mixture shall be treated in accordance with Sec 403.23.7.4.1. A new lot shall begin when the asphalt content of a mixture is adjusted in accordance with Sec 403.11.

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.

Delete Sec 109.14.1 thru Sec 109.14.8 and substitute the following:

109.14.1 Monthly Fuel Index. Each month, the Monthly Fuel Index will be established as the average retail price per gallon for Ultra Low Sulfur Diesel for the Midwest (PADD 2) area as posted on the first Monday of the month by the U.S. Energy Information Administration (EIA). Should the posted price not be available for any reason, the MoDOT State Construction and Materials Engineer will use reasonable methods, at their sole discretion, to establish the Monthly Fuel Index on an interim basis until the EIA resumes its publication.

109.14.2 Fuel Adjustment Calculation.

B = Base Fuel Index = Monthly Fuel Index in the month in which the project was let
C = Current Index = Monthly Fuel Index in the month in which the work was performed
U = Units of work performed within the current pay estimate period (applicable pay units)
F = Total Fuel Usage Factor (gal./applicable pay units)

Fuel Adjustment (Dollars) = (C – B) x U x F

109.14.3 Each pay estimate period, a fuel adjustment payment or deduction will be applied for the quantity of work performed that period on each qualifying pay item. For calculation of the fuel adjustment, work performed on the first day of a month will generally be included with the second estimate in the previous month to keep fuel adjustments in sync with MoDOT's normal payment estimate period schedule. The Commission reserves the right to include work performed on the first day of the month with the current month to accommodate financial accounting termini, such as the beginning of the state and federal fiscal years (July 1 and October 1).

109.14.4 If the bidder wishes to be bound by these specifications, the bidder shall execute the acceptance form in the proposal. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the price adjustment for fuel.

Disposal of Blast Media and Paint Residue

1.0 Description. Whereas Sec 1081.10 requires delivery of Blast Media and Paint Residue (BMPR) produced from bridge coating activities to The Doe Run Company for recycling, and considering the amount of BMPR produced on all active MoDOT projects statewide at any given point in time may exceed the recycling capacity of Doe Run, this provision allows for an alternate method of disposal of BMPR. The contractor, at its discretion, can choose this disposal option or the Doe Run recycle option, when both are available. When Doe Run is not currently capable or agreeable to accept the BMPR, this alternate disposal option shall be considered mandatory, and at no additional cost to the Commission.

2.0 Disposal in Landfill. In lieu of delivery to Doe Run for recycling, BMPR material shall be disposed in the appropriate type of approved landfill, as determined by Toxicity Characteristic Leaching Procedure (TCLP) testing. The material must be TCLP tested to determine if it contains a level of hazardous waste such that requires disposal in a hazardous waste landfill. A sampling plan for testing shall be submitted to MoDOT for review and concurrence. Sampling shall be performed by the contractor. MoDOT will witness the sampling to ensure it is conducted per the plan submitted.

2.1 The contractor shall submit the collected samples to a qualified third-party testing facility to perform TCLP testing. If the sample indicates that the BMPR material qualifies as hazardous waste, then the materials represented by that sample shall be delivered to a licensed hazardous waste landfill for disposal. The contractor shall be responsible for hiring a licensed hazardous waste transporter to transport the hazardous waste to the landfill. The contractor shall comply with all applicable laws and regulations for storage and shipping of the hazardous waste material. If the testing indicates that the BMPR material qualifies as a special waste, it shall be taken to a certified landfill for disposal. The contractor shall be responsible for the transportation of the special waste material to the certified landfill. The requirement to ship the BMPR material by barrels will be waived. Any alternate containers utilized shall comply with all applicable laws and regulations for shipping this type of special waste material. Copies of all shipping manifests, landfill disposal agreements, and any other legally required documentation shall be provided to the engineer.

3.0 Basis of Payment. No payment will be made for any costs associated with this landfill disposal option, including, but not limited to, sampling, testing, delivery, temporary storage, or disposal fees.

G. 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.

H. Tree Clearing Restriction JSP-07-05B

1.0 Description. The project is within the known breeding range of the federally endangered Indiana and Northern Long-eared bats. To avoid possible impacts to roosting Indiana and Northern Long-eared bats, tree clearing will only be allowed between November 1 and March 31.

2.0 Basis of Payment. No direct pay shall be provided for any labor, equipment, time, or materials necessary to complete this work. The contractor shall have no claim, or basis for any claim or suit whatsoever, resulting from compliance with this provision.

I. 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.

4.1.1 Contractor shall submit a completed two-week schedule no later than noon of the last workday prior to the start of the proposed schedule. Failure to submit a two-week schedule may result in suspension of work for that period. Re-scheduling of work will require a minimum 24-hour advance notification from the contractor unless otherwise allowed 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 requires 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 and 5.2.

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.

5.2 Inspection and testing required for grading and removals shall be the responsibility of the contractor. Submittal of the 200 Grading and Removals Checklists are required.

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

J. Damage to Existing Pavement, Side Roads, and Entrances

1.0 Description. This work shall consist of repairing any damage to existing pavement, shoulders, side roads and entrances caused by contractor operations. This shall include, but is not limited to, damage caused by the traffic during contractor operations within the project limits including the work zone signing.

2.0 Construction Requirements. Any cracking gouging, or other damage to the existing pavement, shoulders, side roads, or entrances from general construction shall be repaired within twenty-four (24) hours of the time of damage at the contractor's expense. Repair of the damaged pavement, shoulders, side roads, or entrances shall be as determined by the engineer.

3.0 Method of Measurement. No measurement of damaged pavement or shoulder areas or damaged side roads or entrances as described above shall be made.

4.0 Basis of Payment. No payment will be made for repairs to existing pavement, shoulders, side roads or entrances damaged by contractor expenses.

K. Jointing for Concrete Pavement

1.0 Description. This provision shall pertain to locations where the concrete alternate is selected for use as either a shoulder or mainline pavement.

2.0 Construction Requirements. The contractor shall provide a proposed jointing layout to the engineer at least five (5) days prior to the scheduled concrete pour for review. Approval of the jointing layout must be given prior to the start of concrete placement of pavement or could be subject to rejection if layout is not acceptable to the engineer.

3.0 Basis of Payment. No payment will be made for compliance to this specification.

L. ADA Compliance and Final Acceptance of Constructed Facilities JSP-10-01C

1.0 Description. The contractor shall comply with all laws pertaining to the Americans with Disabilities Act (ADA) during construction of pedestrian facilities on public rights of way for this project. An ADA Checklist is provided herein to be utilized by the contractor for verifying compliance with the ADA law. The contractor is expected to familiarize himself with the plans involving pedestrian facilities and the ADA Post Construction Checklist prior to performing the work.

2.0 ADA Checklist. The contractor can locate the ADA Checklist form on the Missouri Department of Transportation website:

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

2.1 The ADA Checklist is not to be considered all-inclusive, nor does it supersede any other contract requirements. The ADA checklist is a required guide for the contractor to use during the

construction of the pedestrian facilities and a basis for the commission's acceptance of work. Prior to work being performed, the contractor shall bring to the engineer's attention any planned work that is in conflict with the design or with the requirement shown in the checklist. This notification shall be made in writing. Situations may arise where the checklist may not fully address all requirements needed to construct a facility to the full requirements of current ADA law. In those situations, the contractor shall propose a solution to the engineer that is compliant with current ADA law using the following hierarchy of resources: 2010 ADA Standards for Accessible Design, Draft Public Rights of Way Accessibility Guidelines (PROWAG) dated November 23, 2005, MoDOT's Engineering Policy Guidelines (EPG), or a solution approved by the U.S. Access Board.

2.2 It is encouraged that the contractor monitor the completed sections of the newly constructed pedestrian facilities in attempts to minimize negative impacts that his equipment, subcontractors or general public may have on the work. Completed facilities must comply with the requirements of ADA and the ADA Checklist or have documented reasons for the non-compliant items to remain.

3.0 Coordination of Construction.

3.1 Prior to construction and/or closure on an existing pedestrian path of travel, the contractor shall submit a schedule of work to be constructed, which includes location of work performed, the duration of time the contractor expects to impact the facility and an accessible signed pedestrian detour compliant with MUTCD Section 6D that will be used during each stage of construction. This plan shall be submitted to the engineer for review and approval at or prior to the pre-construction conference. Accessible signed detours shall be in place prior to any work being performed that has the effect of closing an existing pedestrian travel way.

3.2 When consultant survey is included in the contract, the contractor shall use their survey crews to verify that the intended design can be constructed to the full requirements as established in the 2010 ADA Standards. When 2010 ADA Standards do not give sufficient information to construct the contract work, the contractor shall refer to the PROWAG.

3.3 When consultant survey is not included in the contract, the contractor shall coordinate with the engineer, prior to construction, to determine if additional survey will be required to confirm the designs constructability.

4.0 Final Acceptance of Work. The contractor shall provide the completed ADA Checklist to the engineer at the semi-final inspection. ADA improvements require final inspection and compliance with the ADA requirements and the ADA Checklist. Each item listed in the checklist must receive either a "YES" or an "N/A" score. Any item receiving a "NO" will be deemed non-compliant and shall be corrected at the contractor's expense unless deemed otherwise by the engineer. Documentation must be provided about the location of any non-compliant items that are allowed to remain at the end of the construction project. Specific details of the non-compliant items, the ADA requirement that the work was not able to comply with, and the specific reasons that justify the exception are to be included with the completed ADA Checklist provided to the engineer.

4.1 Slope and grade measurements shall be made using a properly calibrated, 2 foot long, electronic digital level approved by the engineer.

5.0 Basis of Payment. The contractor will receive full pay of the contract unit cost for all sidewalk, ramp, curb ramp, median, island, approach work, cross walk striping, APS buttons, pedestrian heads, detectible warning systems and temporary traffic control measures that are completed during the current estimate period as approved by the engineer. Based upon completion of the ADA Checklist, the contractor shall complete any necessary adjustments to items deemed non-compliant as directed by the engineer.

5.1 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 documents.

M. 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.

N. Utilities

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

Utility Name	Known Required Adjustment	Type
Ameren Missouri Electric 200 N Callahan Rd Wentzville, MO 63385 Nick Eckelkamp Phone: (314) 267-7948 - cell Email: neckelkamp@ameren.com Matt Holtmeyer Phone: (573) 418-3465 Email: mholtmeyer@ameren.com Tara Riney Phone: (314) 206-1079 Phone: (314) 412-7291 - cell Email: triney@ameren.com Leah Dittmer Phone: (573) 577-8501 - cell Email: ldittmer@ameren.com	Yes Section 2.1	Power
Ameren Missouri Gas 167 Highway H Troy, MO 63379 Nathan Tannehill Phone: (314) 818-4683 – cell Email: ntannehill@ameren.com Vince Kaimann Phone: (314) 206-1048 Phone: (636) 485-4223 - cell Email: vkaimann@ameren.com Zach Evans Phone: (636) 232-7920 – cell Email: zevans@ameren.com	Yes Section 2.2	Gas

Brightspeed **(formerly Lumen – Local, CenturyLink)** 1151 CenturyLink Drive Wentzville, MO 63385 Tim Howe Phone: (765) 273-0705 Email: Tim.Howe@brightspeed.com Daniel Donaldson Phone: (636) 295-0630 Email: Daniel.Donaldson@brightspeed.com	Yes Section 2.3	Communications
Central Electric Power Cooperative Randall Kempker 2106 Jefferson St. Jefferson City, MO 65109 Phone: (573) 761-2864 Phone: (573) 680-9473 – cell Email: rkempker@cepc.net	Yes Section 2.4	Power Communications
Charter Communications - Spectrum 101 Northwest Plaza St Ann, MO 63074 James Hake Phone: (314) 873-9646 Email: james.hake@charter.com Judi Kern Phone: (314) 713-0974 Email: judi.kern@charter.com	Yes Section 2.5	Communications
City of Troy 336 Excalibur Blvd. Troy, MO 63379 Jeff Burkemper Public Works Superintendent Phone: (636) 528-4646 Email: jeff@cityoftroymissouri.com Bryan Mudd Water Superintendent Phone: (636) 383-6267 Email: bmudd@cityoftroymissouri.com	Yes Section 2.6	Water Sanitary Sewer

Cuivre River Electric Cooperative Stan Winkle 1112 E. Cherry St. Troy, MO 63379 Phone: (636) 695-4841 Email: stanw@cuivre.com	Yes Section 2.7	Power
Gateway Fiber LLC Ryan Colley PO Box 210 Jonesburg, MO 63351 Phone: (314) 323-9494 Email: ryan.colley@gatewayfiber.com ***Consultant to Gateway Fiber LLC:*** ***UtiliSource*** Tom Turley 313 North Gladstone Ave Jonesburg, MO 63351 Phone: (314) 605-5447 Email: tomt@utili-source.com	Yes Section 2.8	Communications
Lumen - National **(formerly Level 3 Now CenturyLink)** Richard Obremski 11111 Dorsett Road Maryland Heights, MO 63043 Phone: (314) 378-9931 Email: richard.obremski@lumen.com	Yes Section 2.9	Communications
MNA-Bluebird 10024 Office Center Ave., Suite 201 St. Louis, MO 63128 Justin Rector Phone: (636) 795-5787 Email: justin.rector@bluebirdnetwork.com Jamie Scott Phone: (314) 270-8738 Email: James.Scott@bluebirdnetwork.com ***Consultant to MNA-Bluebird:*** ***UtiliSource*** Tom Turley 313 North Gladstone Ave Jonesburg, MO 63351 Phone: (314) 605-5447 Email: tomt@utili-source.com	Yes Section 2.10	Communications

Mercy Hospital Lincoln Donnie Tharp 1000 E. Cherry Street Troy, MO 63379 Phone: (636) 528-3349	None	Communications
MoDOT Northeast District Michael Laks 1711 Hwy. 61 South Hannibal, MO 63401 Phone: (573) 501-0088 Email: michael.laks@modot.mo.gov	Yes Section 2.11	Power Signals Streetlights Communications
Socket Telecom Todd Pulis 2703 Clark Lane Columbia, MO 65202 Phone: (573) 818-4778 Email: tpulis@socket.net	None Section 2.12	Communications
TransCanada Keystone Pipeline 18428 West Creek Drive Tinley Park, IL 60477 Benjamin Acheampong Integrity Engineer Phone: (708) 342-4717 Phone: (708) 476-4600 - Cell Email:benjamin_acheampong@tcenergy.com John Whitaker Operations Representative Phone: (816) 341-0584 Email: john_whitaker@tcenergy.com	None Section 2.13	Crude Oil Pipeline

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 Project Specific Provisions:

2.1 Ameren Missouri Electric - has distribution electric line, sub-transmission electric line and street lighting facilities located throughout the project limits.

2.1.1 Route 47 – Ameren has 34kV sub-transmission lines along the north side of Route 47 from approximately station 636+00 to the east project limits, with lines also crossing Route 47 station 654+00. A pole (3464813) and guy anchors at station 639+18, 97' LT require adjustment to outside the Frenchman Bluff Road limits to station 638+78, 97' LT or onto Ameren easement, with adjustment anticipated prior to the contractor notice to proceed date. A guy anchor at approximate station 646+89, 55' LT requires adjustment in coordination with grading work. Ameren has a three-phase overhead distribution line crossing Route 47 at a skew at station 642+25, no adjustment anticipated. Ameren has a single-phase overhead distribution line running parallel to Route 47 on the south side from station 622+75 to 624+50 and 634+67 to 640+10, no adjustments anticipated.

2.1.2 Route 61 East Outer Road – Ameren has 34kV sub-transmission lines crossing Route 61 to the Central Electric Power Cooperative steel transmission pole at approximate station 111+49, 48.5' LT. Line continues south along the east right of way line of the outer road to Route 47. Wooden poles (2) will be replaced with composite poles (2) at station 112+85, 41' LT and 114+26, 41' LT. Guy anchors at station 112+85, 23' LT and 114+26, 25' LT will be removed with the pole replacements from wooden to composite poles. Coordination will be required for adjustment of attached overhead communication facilities. Ameren also has abandoned distribution lines and poles from station 104+82, 19' LT to 111+76, 39' LT, anticipated to be removed prior to the notice to proceed.

2.1.3 Frenchman Bluff Road – Existing 12kV buried electric distribution line is located from Route 47 to a ground mount transformer at station 936+50. Line continues to the north to the hotel on Parcel 5. This line and transformer are anticipated to be removed prior to the notice to proceed date. New buried electric line is planned to be installed from the north project limits along the north utility corridor of Bluffview Drive to approximate station 0+58, 22' LT. At this location, the line will continue north to the hotel on Parcel 5.

2.1.4 Street Lighting - Existing street lighting poles and wiring will be removed in coordination with the work at the following locations along Route 47: Station 627+79, 24' RT; 631+61, 24' LT; 633+53, 23' RT; 635+50, 22' LT; 657+42, 24' LT. Contractors shall contact the Ameren Construction Hotline (866-992-6619) three weeks prior to removals being needed at these locations.

2.1.5 Power Services – Contractors shall contact the Ameren Construction Hotline (866-992-6619) 30 days prior to needing the required service at these locations.

Existing services for signals on Route 47 for 61 Ramps to be removed on both east and west sides – in coordination with work.

New Traffic Signals Service (120/240 V meter) for 47/61 Ramps DDI to be provided in the SE quadrant of interchange – in coordination with work at Route 47 Station 634+67, 90' RT.

New Street Lighting Service (240/480 V meter) for 47/61 Ramps DDI to be provided in the SE quadrant of interchange – in coordination with work at Route 47 Station 634+67, 90' RT.

New Traffic Signals Service (120/240 V meter) for 47/Frenchman Bluff to be provided in the SW quadrant of intersection – in coordination with work at Route 47 Station 637+33, 92' RT.

Temporary Service (120/240 V meter) for 47/61 Ramps DDI to be provided in the SE quadrant of interchange – in coordination with work at Route 47 Station 634+67, 90' RT.

Temporary Service (120/240 V meter) for S Lincoln Dr / Old Cap intersection to be provided in the SW quadrant of interchange – in coordination with work.

Contractors shall contact Nick Eckelkamp, with Ameren Missouri Electric, with any questions concerning Ameren facilities to ensure contractor operations will not affect their facilities.

2.2 Ameren Missouri Gas - has gas main, transmission main, and service line facilities located throughout the project limits.

Route 47 – an existing 2-inch PE gas main runs along both the north and south side of Route 47 at various locations. The existing 2-inch PE gas main crosses Route 47 at approximate station 638+85. This line will be relocated to the west and is proposed to cross Route 47 at approximate station 637+62, and then turn to go east crossing the proposed Frenchman Bluff Road and tie-in with the existing main at approximate station 640+00, 98' LT. The existing 2-inch PE main across the proposed Frenchman Bluff Road will be abandoned in place. An existing 1-inch service line will be adjusted along Frenchman Bluff Road from approximate station 937+90, 42' LT to 937+12, 32' LT, with the remaining existing service line used in place, which continues north along the east side of Frenchman Bluff Road, crossing Bluffview Drive, to service the hotel located on Parcel 5, adjacent to station 934+50. Adjustment of facilities is anticipated to be completed prior to the contractor notice to proceed date. Removal of any abandoned facilities will be considered incidental to Removal of Improvements and shall be coordinated with Ameren staff.

US 61 East Outer Road – an existing 2-inch gas main follows along the east utility corridor from County Road 658 to the south. An existing 6-inch transmission main crosses private property from County Road 658 to station 112+25, 40' LT, line continues north to station 109+72, 35' LT, where it turns west and crosses the proposed outer road and US 61. Although additional fill material is to be placed along the slopes over the line, relocation of these facilities is not anticipated. Box culvert extension work is also planned near and over the line, relocation of the gas main is not anticipated and will remain as protect in place during construction. Contractors shall use caution when working near this line.

Contractors shall contact Nathan Tannehill, with Ameren Missouri Gas, prior to any grading, removals, or box culvert operations to ensure contractor operations will not affect their facilities.

2.3 Brightspeed (formerly Lumen-Local and CenturyLink) – has buried fiber and copper communication facilities located throughout the project limits. Relocation of a 48-count fiber and 50 pair copper line is anticipated crossing Route 47 and Driveway 1 at approximate station 637+00. Relocation of a 50 pair copper line is anticipated across the proposed Frenchman Bluff Road station 938+06. Relocation of a 48-count fiber, 50 pair copper and 18 pair copper line is anticipated across the proposed Frenchman Bluff Road station 931+50. A 100 pair copper and 200 pair copper cross the proposed US 61 East Outer Road at station 113+00 and County Road 658 at station 20+55. Although additional fill material and pavement work is to be placed at these crossing locations, relocation of these facilities is not anticipated. Contractors shall contact Tim Howe or Daniel Donaldson, OSP Engineers with Brightspeed, prior to any grading operations or removal of abandoned facilities to ensure contractor operations will not affect their facilities.

2.4 Central Electric Power Cooperative (CEPC) - has electric transmission and communication facilities within the project limits. A 161 kV electric transmission line crosses Route 61 and proposed Route 61 East Outer Road diagonally, supported by a steel pole structure located at approximate station 111+49, 48.5' LT. This pole is not anticipated to be relocated and will be

protected in place. An overhead fiber communication line is attached to this pole and continues south on Ameren poles through the project limits along the east outer road and across Route 47 to the Cuivre River Electric Cooperative office, located at 1112 E Cherry St. This line requires adjustment in coordination with Ameren's pole relocation and removal work at Route 47 / Frenchman Bluff Road and Route 61 East Outer Road. CEPC will coordinate with Ameren to adjust the line and realign the overhead crossing of Route 47 to eliminate any conflicts. This work is anticipated to be completed in coordination with Ameren and completed prior to the contract notice to proceed. Contractors shall contact Randy Kempker, with CEPC, prior to any grading operations near the steel transmission pole to ensure contractor operations will not affect their facilities.

2.5 Charter Communications-Spectrum - has buried and overhead fiber facilities located along the north utility corridor of Route 47 and east side of Frenchman Bluff Road. Buried fiber is in conflict crossing the proposed Frenchman Bluff Road tie-ins. Relocation is planned from an existing hand hole on Frenchman Bluff Road north of Sarah Ann Blvd and continuing to the south. Proposed fiber will follow the north utility corridor of proposed Frenchman Bluff Road from station 931+15, 22' LT to station 938+00, 40' LT, then following along the existing Route 47 north utility corridor to an existing hand hole. Adjustment of facilities is anticipated to be completed prior to the contractor notice to proceed. A guy wire anchor on Route 47 at Station 646+89, 55' LT is anticipated to be adjusted in coordination with contractor grading and rock blanket installation. Contractors shall contact Jim Hake, with Charter-Spectrum, prior to any grading or removal operations to ensure contractor operations will not affect their facilities.

2.6 City of Troy - has water and sanitary sewer facilities located throughout the project limits.

2.6.1 Water - Relocation and casing of an existing 8-inch waterline is required across Driveway 1 along the south side of Route 47 and from approximate station 638+00 to 640+00. The existing 8-inch waterline crossing proposed Frenchman Bluff Road will be relocated to follow along the east side of Frenchman Bluff Road to approximate station 935+00, where an existing service line to the hotel on Parcel 5 will tie-in and fire hydrant will relocate to. Remaining facilities west of Frenchman Bluff Road will be abandoned. Removal of any abandoned facilities will be considered incidental to Removal of Improvements and shall be coordinated with city staff. The existing 8-inch line from Frenchman Bluff Road to the east is on private easement and not anticipated to be adjusted. The existing 8-inch line crossing Route 47 at approximate station 641+55 is not anticipated to be adjusted. Contractors shall contact Jeff Burkemper or Bryan Mudd, with City of Troy, prior to any grading operations or removal of abandoned facilities to ensure contractor operations will not affect their facilities.

2.6.2 Sanitary Sewer – an existing 8-inch sewer main runs east to west crossing Ramp 3 and Ramp 4 to an existing manhole on private easement. From this manhole an existing 18-inch sewer main runs south to north crossing Route 47 at approximate station 627+00. Although grading and pavement work is planned near and over the lines, relocation of these facilities is not anticipated due to the depths of the existing lines. An abandoned 6-inch PVC line is located crossing proposed Frenchman Bluff Road at approximate station 931+50. Removal of this line is incidental to Removal of Improvements. Contractors shall contact Jeff Burkemper or Bryan Mudd, with City of Troy, prior to any grading operations or removal of abandoned facilities to ensure contractor operations will not affect their facilities.

2.7 Cuivre River Electric Cooperative (CREC) - has distribution electric line facilities located throughout the project limits.

CREC has three-phase distribution lines and guys on Ameren poles along the east side of the Route 61 East Outer Road from County Road 658 to Sarah Ann Blvd. At the pole near the Frenchman Bluff Road tie-in, approximate station 931+00, there are 6 guy anchors that will be removed. Overhead span wire guying will be added from the Ameren pole to a new stub guy pole and meter pole on the south side of proposed Frenchman Bluff Road. Work is anticipated to be completed prior to the notice to proceed, with the possibility that some coordination with the work may be required.

CREC has three-phase distribution lines and guys on Ameren poles along the north side of Route 47 from approximately station 645+00 to the east project limits, with lines also crossing Route 47 at Bluffview Drive/E Cherry St. A guy anchor requires adjustment in coordination with grading work at approximate station 646+89, 55' LT.

CREC has electric facilities to provide power service to temporary signals in the SW quadrant (Pole 53031) of Route 47 and Cherry St. Contractors shall coordinate power supply requests and notify CREC 30 days prior to required service.

Contractors shall contact Stan Winkle, with CREC, one week prior to any utility coordination work or adjustment to CREC facilities.

2.8 Gateway Fiber - has buried fiber facilities located along Sarah Ann Blvd from Bluffview Drive to Frenchman Bluff Road. These facilities do not have an active service on them and are to be abandoned in place. Contractor will be allowed to remove as necessary to construct Frenchman Bluff Road in this section. Contractors shall contact Gateway Fiber, prior to any grading or removal operations to ensure facilities are allowed to be removed. Gateway Fiber also has a buried fiber line crossing Route 47 at approximate station 658+50, from just west of Bluffview Drive to just east of E. Cherry St. Although drainage structure work is planned near this line, relocation of these facilities is not anticipated. This line shall be protected in place and contractor shall notify Gateway Fiber prior to work to ensure operations will not affect their facilities. Minor adjustment of the line to allow for the drainage structures, if necessary, can be made with available slack.

2.9 Lumen - has a 72-count fiber communication line and facilities located along the west utility corridor of Route 61 from the south project limits to just north of Ramp 2, where the fiber crosses under SB Route 61 and continues north in the median to the north project limits. Lumen anticipates relocating and installing a new line in the west utility corridor of Route 61 from the median handhole just north of the interchange to the median handhole just south of E Cherry St. Work is anticipated to be complete prior to the contractor notice to proceed date. Existing fiber is also buried in the median where pavement removal and linear grading are planned on Route 61 at N Lincoln Dr/Dugan Ln. Adjustment of existing line and pull box located north of the crossover is not anticipated and will be protected in place. Contractors shall use caution with median crossover removals on Route 61 at Dugan Ln/N Lincoln Drive. Contractors shall contact Rich Obremski, with Lumen, prior to any grading operations near the line to ensure contractor operations will not affect their facilities.

2.10 MNA-Bluebird - has buried fiber line in innerduct located in the north utility corridor of Route 47 from the east project limits to the existing Frenchman Bluff Road. Line continues north along the east utility corridor of the existing Frenchman Bluff Road to the north project limits. Although ditch and roadway grading work is planned near and over this line, relocation of these facilities is not anticipated due to the existing depths provided by the utility. Minor adjustment of the line to allow for the work, if necessary, can be made with available slack. Bluebird also has buried fiber

facilities crossing Route 47 on the west side of Turnbull Trail. Line continues across Turnbull Trail to the east in the north utility corridor to Ramp 2 where it turns and goes north in the Route 61 utility corridor. This line is anticipated to be relocated closer to the existing north RW line to avoid rock fill and drainage work from approximate Route 47 station 624+00 to 626+00. Work is anticipated to be completed prior to the contractor notice to proceed. Contractors shall contact Justin Rector, Engineer with Bluebird, prior to any grading operations to ensure contractor operations will not affect their facilities.

2.11 MoDOT Northeast District - has electric, communication, signals, and lighting facilities throughout the project limits. Removal, replacement, temporary signals/lighting, and new facilities have been incorporated into the contract plans. Contractors shall contact the Ameren Construction Hotline (866-992-6619) three weeks prior to removals being needed at these locations to disconnect power service to signal/lighting controllers. Contractor questions on signals and lighting may be directed to Mike Laks, MoDOT Traffic Electrician or Jonathan Bruner, MoDOT Traffic Operations Engineer, (660) 385-8237.

2.12 Socket Telecom - has fiber communication facilities located along south side of E. Cherry St. continuing to the east project limits of the widening. Relocation of these facilities is not anticipated. Contractors shall contact Todd Pulis, Engineer with Socket, prior to any grading operations to ensure contractor operations will not affect their facilities.

2.13 TransCanada Keystone Pipeline (TC Energy) – has a 30-inch diameter crude oil pipeline within the work area, crossing Route 61 and the proposed Route 61 East Outer Road at approximate Outer Road station 110+02, 58’ RT to 110+81, 85’ LT. Box culvert extension work, and grading work is planned near the line. Although additional fill material is to be placed along the slopes over the line, relocation of these facilities is not anticipated. Contractors shall contact John Whitaker, Operations Representative with TC Energy (816) 341-0584, at least 72 hours in advance of any work near the line or grading operations along the outer road to ensure contractor operations will not affect their facilities.

O. Liquidated Damages Specified – Stage 1 and 2

1.0 Description. If **Stage 1 and Stage 2**, as shown on the plans, are not substantially complete and open to traffic prior to **December 15, 2024**, 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.

2.0 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 **$10,000 per day for each full day that Stage 1 and Stage 2 are not substantially complete and open to traffic, with traffic moved to the new bridge**, in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

2.1 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.

P. Liquidated Damages / Liquidated Savings Specified – Stage 4

1.0 Description. If all work through **Stage 4**, as shown on the plans, is not substantially complete and open to traffic prior to **October 1, 2025**, 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. **Stage 4 work shall be described as all major construction items, including all previous stage work (Stage 1, Stage 2 and Stage 3), including bridge, grading, paving, retaining wall, drainage, signals, lighting, permanent signage, and medians associated with MoDOT Project J2P3043.**

2.0 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 **$10,000 per day for each full day that Stage 4 is not substantially complete and open to traffic** in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

2.1 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.

3.0 Liquidated Savings Specified for Early Completion. The contractor may receive an incentive payment from the Commission, in addition to all other sums earned under the contract, if the contractor completes Stage 4. To qualify for this incentive payment, Stage 4 must be completed and fully open to traffic. An incentive payment of $10,000 will be paid per day for each full day that the work described above is completed prior to October 1, 2025. The maximum amount paid **as liquidated savings will not exceed 21 days/$210,000.**

3.1 In the event of an excusable delay, including differing site conditions, an extension of the contract completion time will not extend the time specified for determining any liquidated savings or incentive , except that, in its discretion, the Commission may extend the time specified should the delay be directly caused by the Commission. Further, in the event of an excusable delay, if the contractor completes the work providing for liquidated savings or incentive on or before the milestone or other date, that shall not constitute a basis to claim acceleration costs in addition to the liquidated savings or incentive that may be earned.

3.2 The incentive payment described above is made, not as a bonus or gift, but as stipulated compensation in full for reduced risks, delay and inconvenience experienced by the traveling public, and for other reduced costs to the Commission and public resulting from early completion.

Q. Liquidated Damages / Liquidated Savings Specified – Bridge Demolition (2 Occurrences)

1.0 Description. Route 47 and Route 61 will be temporarily closed due to bridge demolition. Duration of demolition and detour shall be between Friday 10:00 p.m. to Sunday 10:00 p.m. If the **Stage 2 demolition (north side of existing bridge), and the Stage 3 demolition (south side of existing bridge)**, as shown on the plans, are not substantially complete and open to traffic prior to **10:00 p.m. of the Sunday following the demolition closure**, 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.

2.0 These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$7,000 per hour for each full hour that the bridge removals are not substantially complete and open to traffic** in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess closure time.

2.1 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.

3.0 Liquidated Savings Specified for Early Completion. The contractor may receive an incentive payment from the Commission, in addition to all other sums earned under the contract, if the contractor completes the **Stage 2 demolition (north side of existing bridge), and the Stage 3 demolition (south side of existing bridge)**, as shown on the plans. To qualify for this incentive payment, **Stage 2 demolition (north side of existing bridge), and the Stage 3 demolition (south side of existing bridge)**, must be completed and open to traffic. An incentive payment of **$7,000 will be paid hour for each full hour that the work described above is completed prior to 10:00 p.m. of the Sunday following the demolition closure**. The maximum amount paid as **liquidated savings will not exceed 5 hours/$35,000 per bridge closure occurrence**.

3.1 In the event of an excusable delay, including differing site conditions, an extension of the contract completion time will not extend the time specified for determining any liquidated savings or incentive , except that, in its discretion, the Commission may extend the time specified should the delay be directly caused by the Commission. Further, in the event of an excusable delay, if the contractor completes the work providing for liquidated savings or incentive on or before the milestone or other date, that shall not constitute a basis to claim acceleration costs in addition to the liquidated savings or incentive that may be earned.

3.2 The incentive payment described above is made, not as a bonus or gift, but as stipulated compensation in full for reduced risks, delay and inconvenience experienced by the traveling public, and for other reduced costs to the Commission and public resulting from early completion.

R. Alternates for Pavements

1.0 Description. This work shall consist of a pavement composed of either portland cement concrete or asphaltic concrete, constructed on a prepared subgrade in accordance with the standard specifications and in conformity with the lines, grades, thickness and typical cross sections shown on the plans or established by the engineer.

1.1 Separate pay items, descriptions and quantities are included in the itemized proposal for each of the alternates. The bidder shall only bid one of the alternates and leave the contract unit price column blank for any pay item listed for any other alternate. If the bidder leaves any value in the unit price column for another alternate other than the one they are bidding, the bid will be rejected.

2.0 Mainline Pavements

2.0.1 A sum of **$251,400** will be added by the Commission to the total bid using an asphalt alternate for ***Alternate A*** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.0.2 A sum of **$106,900** will be added by the Commission to the total bid using an asphalt alternate for ***Alternate E*** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.1 A2 Shoulders

2.1.1 A sum of **$20,100** will be added by the Commission to the total bid using an asphalt A2 Shoulder alternate for the ***Alternate C*** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

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

2.3 The grading shown on the plans was designed for the ***concrete*** pavement alternate.

2.4 Pavement alternates composed of Portland cement concrete shall have contrast pavements for intermittent markings (skips), dotted lines, and solid intersection lane lines. The pavement markings shall comply with Sec 620. No additional payment will be for the contrast pavement markings.

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

4.0 Basis of Payment. The accepted quantity of the chosen alternate and other associated items will be paid for at the unit price for each of the appropriate pay items included in the contract.

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 For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for alternate pavements.

S. Restrictions For Migratory Birds

1.0 Description. Swallows or other bird species protected by the Migratory Bird Treaty Act may be nesting under the bridge or bridges that will be repaired under this contract.

2.0 Restrictions. To comply with the Migratory Bird Treaty Act, nests of protected species cannot be disturbed when active (eggs or young are present). Generally, nests are active between April 1 and July 31, but active nests can be present outside of these dates.

3.0 Avoidance Measures. The contractor shall not disturb active nests or destroy adults, eggs or young birds. In an effort to comply with the Migratory Bird Treaty Act, the contractor operations will be limited to the options established in the following sections.

3.1 Inactive or Partially Constructed Nests. If nests are present and MoDOT determines that the nests are inactive or partially constructed, the contractor may remove the nests provided that the colony's inactive or partially constructed nests are completely removed by March 15 and the contractor maintains a nest free condition until the bridge work is complete. Dry removal methods shall be used when practicable. If dry removal is not practicable, hydro cleaning may be used if approved by the Engineer and only if water is free of blasting grit, chemicals, or detergents, and applied using pressure less than 5,000 PSI. Clean water such as that from municipal water treatment plants or wells shall be used. Use of source water from Waters of the State (i.e., streams or lakes), is allowable, if the appropriate methods to prevent the possible spread of invasive aquatic species are implemented.

3.2 Water and Equipment Used for Hydro cleaning. Aquatic invasives such as zebra mussels and some algae species have infested several bodies of water in the United States and can be transported by vessels (barges, boats, tugs, tankers, etc.) and equipment (tanks, tubing, pumps, etc.) that have been used in areas that contain these invasive species. If equipment is not properly inspected and treated to prevent the spread of invasives, these species can be introduced into areas not currently known to have a population. These invasive species are detrimental to existing ecosystems and can outcompete native species. To assist in preventing the introduction and spread of aquatic invasive species through MoDOT projects in Missouri streams and lakes, the following precautions shall be followed.

3.2.1 Use of Water from Streams, Lakes, or Ponds. Contractors shall not use water for nest removal from streams, lakes, or ponds, unless they have implemented appropriate methods to prevent the possible spread of invasive aquatic species. Water sources from municipal water treatment plants or wells may be used without following these measures provided the equipment to be used has not previously contained waters from streams, lakes, or ponds. If the equipment has previously contained waters from other streams or lakes, the following measures must be implemented prior to use.

3.2.1.1 Equipment Washing. Prior to the use or re-use of equipment following any use with water from streams, lakes or ponds, all equipment shall be washed and rinsed thoroughly with hard spray (power wash) and hot (minimum 120^{o} F) water, for at least one minute.

3.2.1.2 Equipment Treating or Drying. Equipment shall be treated or dried in one of the following manners.

3.2.1.2.1 Equipment interior and/or other surfaces shall be treated with a 10% bleach solution to kill any aquatic nuisance species. This solution must also be run through all intake lines and hoses, to sterilize interior components. When chlorine treatment is used, all chlorine runoff from equipment washing must be collected and properly treated and/or disposed of in accordance with Sec 806.

3.2.1.2.2 Equipment interior and/or other surfaces shall be treated with 140º F water for a minimum of 10 seconds contact on all surfaces. 140 º F water must also be run through all intake lines and hoses, to purge any standing water.

3.2.1.2.3 Equipment shall be flushed of all non-municipal water, and dried thoroughly, in the sun before using in or transporting between streams and lakes. Dry times will depend on the season the equipment is being used. Equipment must dry a minimum of 7 days for June-September, 18 days for March-May; 18 days for October-November, and 30 days for December-February. The drying method should be reserved as a last resort option.

3.2.2 Prior to use of equipment, contractors shall provide the MoDOT inspector written documentation of the equipment's geographic origin (including the water body it was last used in), as well as defining the specified treatment method used to adequately ensure protection against invasive species. The written documentation will include a statement indicating the contractor is aware of these provisions and will also treat the equipment appropriately after completion of the project.

3.3 Active Nests. The contractor may work on the bridge if active nests are present, as long as the work does not impact or disturb the birds and/or nests. At a minimum, work shall not be performed within 10 feet of an active nest; however, the contractor is responsible for ensuring their activities do not impact the nests, eggs, or young.

4.0 Additional Responsibilities. If active bird nests remain after all reasonable avoidance measures have been taken, or if bird nests are observed during project construction, the contractor shall notify the Resident Engineer and contact the MoDOT Environmental Section (573-526-4778) to determine if there are other allowable options.

T. Concrete Washout

1.0 Description. Concrete washout BMPs shall be established in designated areas for this project if concrete production or delivery is occurring. Washout BMPs can be non-leaking plastic or clay/bentonite lined pits, a straw bale enclosure lined with plastic, a storage tank or prefabricated BMP or other structure approved by the engineer or inspector. Designated washout areas should be located at least 50 feet away from storm drains, ditches, streams, or other water bodies. Washouts should be monitored like other BMPs to ensure there are no leaks and that they are operating effectively. They should be cleaned out when they reach 75% of their design capacity. Care should be taken to ensure these structures do not overflow during storm events. Upon completion of concrete washout on the project, the engineer or inspector should ensure proper disposal of washout materials. Washout liquids can be allowed to evaporate or be pumped out and properly disposed of. They cannot be discharged into storm drains, ditches, streams, or other bodies of water. Dried concrete can be broken up and used as clean fill on the project, recycled or properly disposed of by other means.

2.0 Basis of Payment. No direct payment will be made to the contractor for installing, maintaining, and removing concrete washout facilities or for properly disposing of materials. The cost of complying with this requirement shall be completely covered in the contract unit price of the concrete pay items included in the contract.

U. Pavement Marking Log

1.0 Description. The contractor shall log the locations of existing pavement marking prior to any construction operations that may affect the existing pavement marking. The log shall contain all existing pavement marking and shall include center stripes, no passing stripes, lane lines, turn arrows, hash bars, cross walks, and stop bars. The contractor shall provide a copy of the existing pavement marking log to the engineer. The contractor shall place the new pavement marking at the same locations as the existing pavement marking, unless otherwise directed by the engineer or shown on the plans.

2.0 Basis of Payment. No direct payment will be made for logging of existing pavement marking.

V. Disposition of Existing Signal/Lighting and Network Equipment

1.0 Description. All signal poles, luminaire poles, luminaires, signal heads, controllers, cabinets, cabinet equipment, network equipment, DMS equipment, antennas, radios, modems, and other equipment noted in the plans shall be removed by the contractor and delivered to the following location:

Troy Area Office
21 Francis Drive
Troy, MO 63379

2.0 Signal Equipment. All equipment other than network communication devices noted in 3.0 are to be transported to the address listed above. The contractor shall notify the Commission's representative 24 hours prior to each delivery by calling the phone number listed above and ask for the field traffic supervisor.

3.0 Network Communication Devices. Devices such as CCTV cameras and domes, video encoders, device servers, Ethernet switches, media converters, and radio assemblies are to be transported to the address listed below. The contractor shall notify the Commission's representative 24 hours prior to each delivery by calling phone number listed below and providing details for the delivery.

Troy Area Office
21 Francis Drive
Troy, MO 63379

4.0 The contractor shall exercise reasonable care in the handling of the equipment during the removal and transportation. Should any of the equipment be damaged by the contractor's negligence, it shall be replaced at the contractor's expense. The contractor shall dispose of any other equipment. Delivery shall be within 2 working days of removal. All items returned shall be tagged with the date removed, project number and location/intersection.

5.0 Basis of Payment. Payment for removal, handling and transportation of all equipment specified shall be considered completely covered by the contract unit price for 202-20.10, Removal of Improvements, per lump sum.

W. Traffic Signal Maintenance and Programming

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

2.0 Qualified Traffic Engineer

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

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

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

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

2.2.3 Controller Programming: Ability to program by hand and by software Phase, TBC, and Coordination levels of Siemens (M-60) controllers along with NTCIP-compatible controllers.

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

2.2.5 Signal Software: Use and understanding of both Siemens signal software.

2.3 The contractor shall submit the names(s) of proposed traffic engineer(s) and the name(s) all of other personnel on their proposed staff along with detailed experience in all tasks outlined in Paragraph 2.2 above. The Engineer reserves the right to reject any contractor traffic engineer, before the start of work, who does not have sufficient experience or, at any point during the project, 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 bid.

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

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

3.0 Existing Traffic Signals and Communication System

3.1 The contractor shall notify the Engineer 3 weeks prior to the date of ramp bridge closure and detour implementation. 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 closure and as needed between construction stages. Traffic mitigation plan should at a minimum include:

- Proposed Timing Plan changes and any models
- Anticipated locations of concern
- A map in electronic format displaying the locations and names of the signals and owning agency as detailed in Paragraphs 3.2 and 3.3 below.
- Other traffic mitigation efforts

3.2 Once a ramp closure has been implemented by the contractor, the contractor shall then be solely responsible for the following signals' controller programming until completion of all closures necessary to complete the contractor's work. Maintenance at these locations for items other than controller programming issues or incidents caused by controller programming or other construction done by the contractor shall remain with the Commission. If any part of an existing traffic signal or its controller within the limits of this project has otherwise been modified or adjusted by the contractor, or the contractor makes any roadway changes to reduce the traffic capacity through a signalized intersection within the limits of the project, or the contractor begins work at an intersection with signals already in operation, the contractor shall then be solely responsible for that signal's controller programming and all signal maintenance as specified in 902.2 and 902.3, except for power costs, until Final Acceptance of the project. Traffic signal maintenance and timing responsibilities shall be broken down in accordance with the below schedules:

Signals Affected:

- Route 47 and Lincoln Drive (Existing/Permanent)
- Route 47 and Route -61 SB Ramps (Existing/Permanent and Temporary)
- Route 47 and Route -67 NB Ramps (Existing/Permanent and Temporary)
- Route 47 and Cherry Street (Temporary)
- Lincoln Drive and Cherry Street (Existing/Permanent)
- Lincoln Drive and Old Cap au Gris (Temporary)

3.3 The Engineer shall provide to the contactor 2 weeks' notice an electronic report on the existing phasing and timing of each traffic signal, which may be the contractor's responsibility to program. The Engineer's representative shall be available to the contractor before any changes are made to a 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 signal control system. Once the contractor has modified a signal or controller for any reason, the contractor shall be solely responsible for the existing timing plans and all subsequent timing changes.

3.4 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. In addition, the Contractor shall notify the Engineer and the Commission's Traffic Engineers within one (1) hour of successful implementation of the detour plan.

3.5 The contractor shall be solely responsible for maintaining the coordination at any affected signal to the satisfaction of the Engineer or representative until completion of work as set forth in section 3.2 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 engineer. If time clock synchronization is used, the contractor shall verify all affected controllers are synchronized at least 1 time per week with a report to the Engineer or

representative. This report will be in the form of a documentation record as spelled out in the Work Zone Traffic Management Plan.

4.0 Existing Traffic Signal Maintenance and Response

4.1 The contractor shall respond to any signal timing complaints or malfunction complaints for those locations detailed in Section 3.0 of this provision and as specified in Section 902.21.1. Response time shall be 1 hour for complaints received by the contractor between 6:00 a.m. and 6:00 p.m. on non-holiday weekdays, and 2 hours for all other times. For some cases (due to travel times or other extenuating circumstances) additional time may be acceptable within reason, but must be approved by the engineer. These timeframes will replace the '24 hour' response time in Section 105.14 for any signal-related incidents, where the entire cost of the work, if performed by MoDOT personnel or a third party, will be computed as described in Section 108.9 and deducted from the payments due the contractor.

4.2 The contractor must supply a contact name and phone number who will be responsible for receiving 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 notify the Commission's Traffic Engineers and the representative within 12 hours of the complaint as to the 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.

5.0 Original Signal Controller Programming and Acceptance

5.1 The contractor will be responsible for restoring the original signal controller programming at existing intersections and coordination plans for each intersection immediately upon ramp re-opening. The Engineer shall preserve and house the original controller files and provide the contractor with access to those files to perform the restoration of the original plans. Normal plan restoration can be done by a manual command in the signal control system or a preprogrammed time-of-day command change. For any locations rendered offline at the time of re-opening, these locations shall be returned to normal operation by hand. The Contractor shall notify the Engineer and the Commission's Traffic Engineers within one (1) hour of removal of the detour plans. The contractor will be relieved of signal programming maintenance at an existing restored intersection once 48 consecutive hours have passed without a programming malfunction, including restoring normal signal programming to the satisfaction of the Commission. If an agency desires any changes from an original plan, the agency will assume immediate maintenance of the signal to implement desired changes.

6.0 Post Project Report

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

7.0 Deliverables

7.1 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.

- Experience submittal
- Preliminary Traffic Mitigation Plan
- Notification of Detour Implementation
- Time Base Reports, As Needed
- Complaint Resolutions
- Notification of Restoration to Normal Operations
- Post Project Report

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

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

10.0 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 and Programming

X. Network Connected Signal Monitor

1.0 Description. The Commission's signal cabinet shall have a flashing yellow arrow compatible monitor installed with an internal RJ-45 plug for 10/100 Ethernet communication that is connected to the Commission's computer network through Commission furnished Ethernet switch and allow a remote user running the monitor's software to interface with any specific monitor.

2.0 Performance.

2.1 Inputs. If video detection is used, inputs into controller shall be via SDLC port. Signal cabinet to be TS2 Type 2 setup with 3 ea. SDLC connectors and the monitor to be a Malfunction Management Unit (MMU).

2.2 Status and Event Logging. Monitor shall be able to remotely communicate, at a minimum, active status, current faults, and event logs for at least the previous 7 days.

2.3 Flashing Yellow Arrow. Monitor shall be capable of operating a flashing yellow arrow for left turns by utilizing unused yellow channels on the pedestrian load switches.

2.4 Software and Configuration. Software needed to communicate to any network-enabled monitor shall be provided to the Commission for an unlimited number of users.

3.0 Construction Requirements.

3.1 Requirements. Construction requirements shall conform to Sections 902 and 1092.

3.2 Setup and Training. A minimum of one day of training shall be provided in the operation, setup communication and maintenance of the monitors.

3.3 Acceptance Testing. Contractor shall demonstrate that all network-connected monitors are remotely communicating and individually addressable via supplied software and Commission furnished devices from the Commission's St. Louis Traffic Management Center in order to satisfy the requirements of this provision. No direct payment will be made for this testing.

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

5.0 Basis of Payment. No direct payment will be made for the software. Payment will be considered full compensation for all labor, equipment, and material to complete the described work other than Commission furnished devices needed to complete the network connections. Payment will be made as follows:

Item No.	Type	Description
902-99.02	Each	Network Connected Signal Monitor

Y. Combination Pad Mounted 120v/240v Power Supply And Lighting Controller With Uninterruptible Power Supply (UPS) – TS2 Traffic Signal Cabinet

1.0 Description. This work shall consist of furnishing and installing combination 120/240-volt signal and lighting power supply and uninterruptible power supply (UPS) at signalized intersections utilizing a TS2 traffic signal control cabinet.

2.0 UPS Requirements. The traffic signals being constructed on the intersections listed below shall include an "Uninterruptible Power Supply" specifically constructed and NEMA approved for traffic signal operations.

- Route 47 at Route 61 NB Ramps
- Route 47 at Frenchman Bluff

2.1 UPS Location and Cabling. The UPS shall be installed separately from the signal cabinet and shall be installed in the same cabinet as the power supply and lighting controller station. In addition to the power cables from the UPS to the signal cabinet, the contractor will route but not connect an outdoor rated CAT-6 cable between the UPS RJ-45 port and the Ethernet switch in the signal cabinet. The contractor shall also install a 7-conductor serial cable and make the appropriate connections from the UPS to the traffic signal cabinet. The **On battery** contact (C-1) on the inverter should be programmed to energize when the UPS provides battery backup. The normally open contact should be wired to provide logic ground to Alarm 2 when the UPS is in battery backup mode. This should indicate a Special Status 2 alarm in the signal controller alarm screen. The **Low Battery** contact (C-2) on the inverter should be programmed to energize when the UPS drops below a preset voltage level, typically set at 40%. The normally open contact should be wired to provide logic ground to Test Point A when the UPS is in Low Battery mode. This should indicate a Special Status 3 alarm in the signal controller alarm screen. The **Arrestor** contact should be wired to provide logic ground to Test Point B and generate a Special Status 4 alarm in the signal controller alarm screen. The **Timer #1** contact (C-4) on the inverter should be programmed to energize after the UPS is in inverter mode for **three (3)** hours. The normally closed contract should be wired in series with the remote flash output to allow for the circuit to open after **three (3)** hours and bring the signal to flash after the side streets service. The remote flash

parameters shall be programmed to red/red flash, unless directed otherwise by the Engineer. The CAT-6 cable and serial cable will be run in a separate conduit from the power cables into the cabinet. All conduits will be internal and not visible from the exterior of either the UPS or signal cabinet. The contractor shall verify all control wiring with the manufacture of the traffic signal cabinet assembly for accuracy and compatibility and perform test to ensure proper operation. The contractor shall be responsible for all controller programming to mask the TS2 features to this setup. Upon completion of all controller programming, contractor shall notify contractor's or Commission's traffic engineer (depending on assignment) for uploading into Commission's central signal control system.

2.2 UPS Input Specifications. Each UPS system shall have the following input requirements:

(a) A nominal input voltage of 120 VAC.
(b) An input voltage range of 85 to 175 VAC.
(c) Two (2) input voltage boost modes.
(d) Boost-1 shall increase the input voltage from 94 to 115 VAC.
(e) Boost-2 shall increase the input voltage from 85 to 101 VAC.
(f) Two (2) input voltages buck modes.
(g) Buck-1 shall decrease the input voltage from 154 to 124 VAC.
(h) Buck-2 shall decrease the input voltage from 175 to 142 VAC.

A user configurable power quality (PQ) option with default values of:

(a) High line disqualify shall be 130 VAC.
(b) High line qualify shall be 128 VAC.
(c) Low line qualify shall be 105 VAC.
(d) Low line disqualify shall be 100 VAC.
(e) Input current shall be less than 16A with nominal voltage, full load on the output and charger set at 10A.
(f) 50/60Hz automatic frequency detection with built-in class A EMI filter and transient suppression.

2.3 UPS Output Specifications. Each UPS system shall have the following output requirements:

(a) The output voltage of the UPS shall be 120 VAC ±10% in line mode.
(b) The output voltage of the UPS shall be 120 VAC ±6% in backup mode.
(c) The output frequency of the UPS shall be 60Hz ±5% in line mode.
(d) The output frequency of the UPS shall be 60Hz ±5% in backup mode.
(e) The output waveform of the UPS shall be sinusoidal.
(f) The output voltage total harmonic distortion (THD) shall be less than 3% with a resistive load.
(g) The efficiency of the UPS at nominal line voltage shall be greater than 98%.
(h) The efficiency of the UPS in backup mode shall be greater than 84%.
(i) The step-load response of the UPS shall be full recovery in ½-cycle @ 50% change with a resistive load.
(j) The transfer time of the UPS line to back up and backup to line shall be 5ms typical.
(k) The line qualification time of the UPS shall be user selectable at 3, 10, 20, 30, 40 and 50 seconds.
(l) The line qualification time of the UPS default shall be three (3) seconds.

2.4 UPS Battery and Charger Specifications. Each UPS system shall have the following specifications for the battery and charger:

(a) The nominal battery voltage of the UPS shall be 48 VDC.
(b) The battery charger current of the UPS shall be user programmable for 3, 6, and 10 A.

(c) The battery charger current default setting for the UPS shall be 6A.
(d) The battery charger in the UPS shall turn OFF when the battery temperature is 50°C.
(e) The UPS shall have a user programmable temperature compensated battery charger with setting for -2.5, -4, -5 and -6 mV/°C/Cell.
(f) The UPS shall have a temperature compensated battery charger with a default setting of -5 mV/°C/Cell.
(g) The UPS shall have a battery charge with a float voltage of 56VDC maximum.
(h) The UPS shall have a user configurable low battery warning.
(i) The UPS shall have a default low battery warning set at 47VDC to indication 40% remaining battery capacity.
(j) The UPS shall have a low battery shutdown set for 42VDC (10.5VDC per battery).

2.5 UPS Protection Specifications. Each UPS system shall have the following specifications for protection:
(a) The UPS shall have a 250VAC @ 20A input circuit breaker.
(b) The UPS shall have a 50A battery circuit breaker.
(c) The UPS shall have electronic short circuit protection when operating in backup mode.
(d) The UPS shall indicate an overload warning with a flashing alarm LED when the load is between 95% and 105% of the rated output for the UPS.
(e) The UPS shall shutdown in two (2) minutes when operating in backup mode when the load is between 106% and 115% of the rated output for the UPS, and the fault LED shall turn ON. The fault LED shall clear when the overload is removed and the utility line power returns.
(f) The UPS shall shutdown in one (1) minute when operating in backup mode when the load is greater than 115% and the fault LED shall turn ON. The fault LED shall clear when the overload is removed and the utility line power returns.
(g) The UPS shall disable the backup mode function when operating in line mode if the load exceeds 115% of the rated output for the UPS. The alarm shall be reset when the overload condition is removed.
(h) The UPS shall display an alarm LED if the battery ambient temperature is greater than 75°C and disable the backup mode function. The alarm shall clear when the battery ambient temperature is less than 70°C.
(i) The UPS shall display a fault LED when operating in backup mode and shutdown the inverter if the internal temperature is greater than 110°C. The fault shall clear when the utility power returns and the internal temperature is less than 90°C.
(j) The UPS shall have output over-voltage protection to electronically shutdown the UPS if the output voltage exceeds 132VAC.
(k) The UPS shall disable the battery charger in two (2) seconds and display an alarm LED if the battery voltage exceeds 59VDC. The alarm shall be cleared and charge enabled when the battery voltage drops to less than 57VDC.
(l) The UPS shall limit the charger voltage to 52VDC in the event the battery probe is not installed.
(m) The UPS shall have a battery circuit breaker with reverse polarity protection. The battery circuit breaker shall trip in the event the battery polarity is wired incorrectly.
(n) The UPS shall have protection for electrical backfeed to the utility that meets UL 1778 and CSA C22.2 No. 107.1.3 requirements.
(o) The UPS shall have user-selectable settings that are password protected.
(p) The UPS shall be cooled by a variable speed fan that is microprocessor and PWM controlled.
(q) The fan shall be OFF when the ambient temperature is less than 40°C.
(r) The UPS shall display an alarm LED to indicate the fan is enabled but not turning.
(s) The UPS shall have a fan that is field replaceable.

2.6 UPS Displays, Controls and Diagnostics Specifications. Each UPS system shall have the following specifications for the noted features:

(a) The UPS shall have a two (2) line/20-character LCD display and control panel that can be rotated for easy user interface.

(b) The UPS shall have event and alarm logging with time/date stamping for up to 100 historical events.

(c) The UPS shall have six (6) independently programmable control relays for control and report functions.

(d) The UPS shall have two (2) independently programmable timers 0 to 8hr with two (2) time-of-day restrictions on each timer.

(e) The UPS shall be equipped with a RS-232 port, which can be connected to a laptop.

(f) The UPS shall be equipped with a SNMP Ethernet card.

2.7 Programmable Dry Contacts. Each UPS system shall have the following requirements for the noted features relating to dry contacts:

(a) The UPS shall have six (6) sets of normally open (NO) and normally closed (NC) single pole double-throw (SPDT) dry contact relays rated for 250VAC @1A.

(b) The UPS shall have five (5) sets of dry contact relays that are user programmable, C1 through C5, and one relay contact that is factory configured, C6.

(c) The UPS shall have dry contact relays that are user programmable via either the RS-232 or (optional) Ethernet communication ports to activate under the following conditions:

(d) ON BATTERY. The relay is energized whenever the UPS switches to battery power.

(e) LOW BATTERY. The relay is energized when the battery has reached a user defined low battery level of remaining useful capacity. This alarm is latched when a qualified line returns or the inverter shuts down. The default setting is 47VDC (~40%) of remaining useful battery capacity.

(f) TIMER 1. The relay is energized after being in backup mode for a given amount of time. This timer is adjustable from 0 to 8hr. The default setting is two (2) hours.

(g) ALARM. The relay is activated after a specific or general alarm is detected. The alarm

(h) conditions include: line frequency, low output voltage, no temperature probe, overload,

(i) unconnected batteries, high temperature (>55°C) and low temperature (<-20°C).

(j) FAULT. The relay is activated after a specific or general fault is detected. These faults

(k) include: short circuit, low battery voltage (<41VDC), high battery voltage (> 59VDC), overload and over temperature (>75°C).

(l) OFF. The relay is disabled and will not activate under any condition.

(m) TIMER 2. Same as TIMER 1.

(n) TIMER 3. Same as TIMER 1.

(o) AC/DC FAN CONTROL. The relay is activated when the battery ambient temperature is greater than 35°C or at a user programmable threshold from 25 to 55°C @ 5°C increments.

(p) The UPS shall have a default dry contact relay configuration of:

C1	ON BATT
C2	LOW BATT
C3	LOW BATT
C4	TIMER
C5	ALARM
C6	48VDC

2.8 Mechanical. Each UPS system shall have the following mechanical requirements:

(a) The UPS shall have AC input and AC output terminal blocks mounted on the front panel. The terminal blocks shall be a 3 pole, 35 amp, 300 volt Eurostyle socket terminal strip (22-8 AWG).
(b) The UPS shall have six (6) user programmable dry contact relay terminal blocks on the front panel. The terminal blocks shall be 3 pole, 35 amp, 300 volt PLUGGABLE TERMINAL BLOCK (12-26 AWG).
(c) The UPS shall have one (1) user input and one (1) Automatic Transfer Switch (ATS) terminal block on the front panel. The terminal blocks shall be 3 pole, 35 amp, 300 volt PLUGGABLE TERMINAL BLOCK (12-26 AWG).
(d) The UPS shall have a DE-9 RS-232 connector on the front panel.
(e) The UPS shall have an RJ45 Ethernet connector on the front panel.
(f) The UPS shall have a battery connector on the front panel. The battery connector shall be a 50 amp SB® series type battery connector (16-6 AWG).
(g) The UPS shall have a RJ14 battery temperature probe connector on the front panel.

2.9 Environmental. Each UPS system shall have the following environmental requirements:
(a) The operating temperature range of the UPS shall be -40° to 55°C with the capability of operating @ 800W for up to 2hr at 74°C ambient.
(b) The storage temperature range of the UPS shall be -40° to 75°C.
(c) The operating and storage humidity (non-condensing) range of the UPS is up to 95% RH.
(d) The altitude operating range of the UPS is up to 12,000ft with a de-rating of 2°C per 1000ft above 4500ft.
(e) The UPS shall be shipped in materials designed to meet requirements for ISTA program.
(f) The UPS shall pass electrical safety standards UL1778, CSA 22.2 No. 107.3, EN50091-1-1-2 and EN60950.
(g) The UPS shall pass emission standards FCC Subpart J Level A for conducted and radiated EMI CISPR22, EN55022 Level A for conducted and radiated EMI.
(h) The UPS shall pass Immunity standards:
EN61000-4-2: ESD (Electrostatic discharge).
EN61000-4-3: Radiated immunity.
EN61000-4-4: EFT (Electrical fast transient).
EN61000-4-5: Surge.
EN61000-4-6: Conducted (Power and signal lines).
EN61000-4-8: Power frequency magnetic.
EN61000-3-2: Harmonic distortion.
(i) The UPS shall display agency approval mark “cCSAus” on the manufacturer’s nameplate label.

2.10 Manual Bypass Switch. Each UPS system shall include a manual bypass switch (MPS). UATS assemblies that include items referenced individually need not be duplicated. The MPS shall have the following specifications:
(a) The MPS shall be a self-contained module separate from the UPS
(b) The MPS shall be shelf or rack mountable.
(c) The MPS shall have terminal blocks labeled “AC Input”, AC Output”, “To UPS” and “From UPS”.
(d) The MPS shall be a Break-Before-Make rotary switch.
(e) The MPS shall be rated at 120VAC @ 20A.
(f) The MPS shall have a 5-15R duplex receptacle connected to utility line.
(g) The MPS shall have a 5-15R receptacle labeled “Optional LA-P” to facilitate a plug-in surge suppressor.

(h) The MPS shall have a 5-15R receptacle labeled “Optional Battery Heater Mat” to provide non-standby power to a battery heater mat.
(i) The MPS shall have two (2) positions: one labeled “UPS” to connect the utility line to the UPS, and one labeled “Bypass” to connect the utility line to the load.
(j) The MPS shall have a 15A circuit breaker labeled “AC Input”.
(k) The MPS shall have a 15A circuit breaker labeled “AC Output”.

2.11 Automatic Transfer Switch. Each UPS system shall include an automatic transfer switch (ATS) with the following requirements:
(a) The ATS shall be rated for 120VAC @ 40A.
(b) The ATS shall be shelf or rack mountable.
(c) The ATS shall transfer the load to UPS when the utility line fails or is unqualified.
(d) The ATS shall transfer the load to utility line when the utility line is available and qualified.
(e) The ATS shall be activated by a 48VDC input from the UPS.
(f) The ATS shall have a terminal block labeled “L IN”, “NEUT”, “GRD” and “L OUT”.
(g) The ATS shall have a six (6) foot line cord labeled “UPS IN”.
(h) The ATS shall have a six (6) foot line cord labeled “UPS OUT”.
(i) The ATS shall have a 5-15R duplex receptacle connected to utility line.
(j) The ATS shall have a 5-15R receptacle labeled “Optional LA-P” to facilitate a plug-in surge suppressor.
(k) The ATS shall have a 5-15R receptacle labeled “Optional Battery Heater Mat” to provide non-standby power to a battery heater mat.

2.12 Automatic Bypass Switch. Each UPS system shall include an automatic bypass switch (ABS) with the following requirements:
(a) The ABS shall be rated for 120VAC @ 20 amps.
(b) The ABS shall be shelf or rack mountable.
(c) The ABS shall connect the UPS to the load to allow the UPS to continuously power the load.
(d) The ABS shall transfer the load to utility line when there is no UPS output voltage.
(e) The ABS shall be activated by the 120VAC from the UPS.
(f) The ABS shall have a terminal block labeled “L IN”, “NEUT”, “GRD” and “L OUT”.
(g) The ABS shall have a six (6) foot line cord labeled “UPS IN”.
(h) The ABS shall have a six (6) foot line cord labeled “UPS OUT”.
(i) The ABS shall have a 5-15R duplex receptacle connected to utility line.
(j) The ABS shall have a 5-15R receptacle labeled “Optional LA-P” to facilitate a plug-in surge suppressor.
(k) The ABS shall have a 5-15R receptacle labeled “Optional Battery Heater Mat” to provide non-standby power to a battery heater mat.
(l) The ABS dimensions shall be 4.6"H x 4.75"W x 6.5"D.
(m) The ABS weight shall be 4lbs.

2.13 Generator Transfer Switch. Each UPS system shall include a generator transfer switch (GTS) with the following requirements:
(a) The GTS shall sense when a portable generator is connected and transfer the load to the generator after a 30s delay.
(b) The GTS shall be rated for 120VAC @ 20A.
(c) The GTS shall be shelf or rack mountable.
(d) The GTS shall have a terminal block labeled “AC INPUT”, “AC OUTPUT” and “GENERATOR INPUT”.

2.14 UPS Batteries. The batteries for the UPS system shall meet the following requirements:

(a) The batteries shall be Gel Cell Valve Regulated Lead Acid (VRLA) type specifically designed for outdoor use.

(b) The batteries shall be designed for “Float Service” to provide 100% out-of-box runtime capacity.

(c) The batteries shall have Silver Alloy positive plates.

(d) The batteries shall have a five (5) year full replacement, non-prorated warranty.

(e) The battery capacity rating at 20hr shall be 94Ah.

(f) The battery shall be 12VDC.

(g) The number of batteries in the system shall be four (4) or eight (8).

(h) The batteries shall be connected to provide 48VDC.

(i) Batteries for each location shall provide full power for all devices shown on the plans that are powered through the signal cabinet for three (3) hours and then send the signal into all red flash and power that state for an additional three (3) hours.

2.15 Battery Heater Mat.

(a) The battery heater mats shall be available in four (4) battery and single (1) battery sizes.

(b) The single battery heater mat shall allow for a Master-Slave configuration so two (2) or more mats can be ganged together.

(c) The battery heater mats shall plug into a 120VAC/5-15 receptacle.

(d) The battery mats shall be thermally controlled, turning ON at 5°C and turning OFF at 15°C.

(e) The battery mats shall be thermally fused for 82°C to prevent thermal runaway.

2.16 Battery Charge Management System. Each UPS system shall have a battery charge management system with the following requirements:

(a) The battery charge management system shall spread the charge voltage equally across all batteries.

(b) The battery charge management system shall compensate for batteries with different internal resistances.

(c) The battery charge management system shall have a quality of final balance of ±100mV maximum between any two (2) batteries in the string.

(d) The battery charge management system shall have reversed polarity protection.

(e) The battery charge management system shall be designed to CSA C22.2 No. 107.1 and UL 1778 Standards for safe unattended operation.

2.17 Surge Suppression. Each UPS system shall have the following requirements for surge suppression:

(a) The surge suppression shall provide protection from voltage transients appearing on the utility line.

(b) The surge suppression shall be a plug-in module that is field replaceable.

(c) The surge suppression shall have a LED indicator that turns OFF when the module is no longer providing protection.

(d) The surge suppression shall have a clamping voltage of 150VAC.

(e) The surge suppression shall have a response time of less than one (1) nanosecond.

2.18 Construction Requirements. Construction requirements shall conform to Sec 902. Any exceptions to these requirements will be approved by the engineer before system installation.

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

4.0 Basis of Payment. Payment for furnishing and installing pad mounted combination units shall include all excavation, materials, equipment, tools, labor, CAT-5 cable and work incidental thereto, and shall be considered to be completely covered by the contract unit price for:

Item No.	Type	Description
902-99.02	Each	Combination Pad Mounted 120V/240V Power Supply and Lighting Controller with UPS

Z. Audible Pedestrian Pushbuttons and Signing (Revised 06.09.2023)

1.0 Description. Audible pedestrian pushbuttons and signing will be required for all pedestrian indications at all the intersections.

2.0 Installation. Audible signals should be installed as part of a pushbutton assembly.

3.0 Equipment.

3.1 Walk Indications. Accessible pedestrian signals shall have both audible and vibrotactile walk indications.

3.2 Vibrotactile. Vibrotactile walk indications shall be provided by a tactile arrow on the pushbutton that vibrates during the walk interval. Tactile arrow shall be located on the pushbutton that vibrates during the walk interval. Tactile arrow shall be located on the pushbutton, have high visual contrast (light on dark or dark on light), and shall be aligned parallel to the direction of travel on the associated crosswalk.

3.3 Audible. Accessible pedestrian signals shall have an audible walk indication during the walk interval only. The audible walk indication shall be audible from the beginning of the associated crosswalk.

3.4 Pushbutton signage. In addition to standard pedestrian sign requirements, all pushbuttons for the locations mentioned in 1.0 shall have additional signage to indicate crosswalk direction by use of a tactile arrow and the name of the street containing the crosswalk served by the audible pedestrian signal. The sign shall be located immediately above the push button mechanism and parallel to the crosswalk controlled by the button. The street name shall be the name of the street or reasonable abbreviation whose crosswalk is controlled by the push button. Signage shall comply with ADA Accessibility Guidelines (ADAAG) 703.2 specifications for Braille and raised print.

3.4.1 Arrow. Signs shall include a tactile arrow aligned parallel to the crosswalk direction. The arrow shall be raised 0.8 mm (.03 inch) minimum and shall be 4 mm (1.5 in) minimum in length. The arrowhead shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft. Stroke width shall be 10 percent minimum and 15 percent maximum of arrow length. The arrow shall contrast with the background.

3.4.2 Street Name. Accessible pedestrian signals (APS) shall include street name information aligned parallel to the crosswalk direction and shall comply with Revised Draft Guidelines for Accessible Public Rights-of-Way R409.3 or shall provide street name information in audible format.

4.0 Performance.

4.1 Audible Locator Tone. Locator tone that tells the pedestrian that the intersection is equipped with APS and where it is. Pushbutton locator tones shall have duration of 0.15 seconds or less, and shall repeat at 1-second intervals. Pushbutton locator tones shall be intensity responsive to ambient sound, and be audible 6 to 12 feet from the pushbutton, or to the building line. The locator tone shall operate during the DON'T WALK and flashing DON'T WALK intervals only and shall be deactivated when the pedestrian signal is not operative.

4.2 Verbal Wait Message. Acknowledge tone that tells the pedestrian that they have placed a call and informational message that tells the pedestrian to “Wait to cross” street name at intersecting street name.

4.3 Verbal Walk Message. The verbal messages shall provide a clear message that the walk interval is in effect, as well as to which crossing it applies. If available, the audio tone feature will not be used. The verbal message that is provided at regular intervals throughout the timing of the walk interval shall be the term “walk sign,” which will be followed by the name of the street to be crossed.

4.4 Volume. Automatic volume adjustment in response to ambient traffic sound level will be provided up to a maximum volume of 100 dB. The units shall be responsive to ambient noise level changes up to no more than 5 dB louder than ambient sound. Tone or voice volume measured at 36 inches from the unit shall be 2dB minimum and 5dB maximum above ambient noise level. At installation, signal system is to be adjusted to be audible at no more than 5 to 12 feet from the system.

5.0 Documentation and Support.

5.1 Operation and Maintenance Manuals. Two copies of the operation and maintenance manuals for each station shall be included.

5.2 USB with Audible Messages. The Contractor shall provide two copies of USB data card to the Engineer that contains files for the manufacturer’s audible messages for complete operation of all APS signals at all stations.

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

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

8.0 Basis of Payment. Payment for the audible signals will be for each unit per bid item, 902-99.02, “Audible Pedestrian Pushbutton and Signing with Verbal Walk Message”, per each. This will include all wiring, power adaptors, pushbuttons and installation hardware needed. Payment for signing and mounting hardware will be included in the pay item for audible pedestrian pushbutton. All costs incurred for complying with this provision including labor shall be considered completely covered by the contract unit price for:

Item Number	Type	Description
902-99.02	EA	Audible Pedestrian Pushbutton and Signing with Verbal Walk Message

AA. Remove and Replace Existing Controller Cabinet Assembly

1.0 Description. This work shall consist of removing the existing controller cabinet assembly at the intersection of Route 47 and Lincoln Drive. A new ATC controller and cabinet assembly will be installed on the existing concrete base.

2.0 Construction Requirements. The new controller assembly will be fabricated, programmed, and installed per specifications and JSP's provided for this project. The contractor shall be responsible for verifying that fabrication of cabinet will match existing concrete base bolt pattern. The contractor shall give MoDOT's construction engineer a minimum of 72 hours' notice prior to completing this work. This work shall be completed on a Sunday morning between the hours of 6:00 a.m. and 12:00 p.m. The new controller and assembly shall be installed and operating satisfactory within four (4) hours of turn off. The contractor shall be responsible for temporary stop sign control for all approaches while the traffic signal is out of commission.

3.0 Basis of Payment. Payment for removal shall be fully covered per "Disposition Of Existing Signal/Lighting And Network Equipment" JSP. Payment for furnishing and installing ATC controller assembly, maintenance, and programming, and wiring for a complete and operational traffic signal shall be fully included in the pay items "Controller Assembly Housing, NEMA TS2 Controller ATC Traffic Signal Controller, each", "Traffic Signal Maintenance and Programming, lump sum", and "Install Communication Equipment, each". There will be no direct pay for traffic control associated with this work.

BB. Remove and Replace Existing Luminaires/Type AT Poles

1.0 Description. This work shall consist of removing the existing Type AT poles, bracket arms, and luminaire fixtures as shown on the plans, and replace with new Type AT Top Mount Poles and Top Mount LED Type B Luminaires on existing lighting bases. The existing lighting controller and circuits are to be used in place.

2.0 Construction Requirements. The poles and luminaires will be furnished and installed per specifications and JSP's provided for this project. The contractor shall give MoDOT's construction engineer a minimum of 72 hours' notice prior to completing this work. The new poles and luminaires shall be installed and operating satisfactory in such a manner that lighting function is not interrupted. The contractor shall be responsible for temporary traffic control while the traffic signal is out of commission.

3.0 Basis of Payment. Payment for removal shall be fully covered per "Disposition Of Existing Signal/Lighting And Network Equipment" JSP. Payment for furnishing and installing the pole and luminaire, and wiring for a complete and operational lighting system shall be fully included in the pay items "Misc. 45' Top Mount Poles, each", and "LED B Top Mounted Luminaire". There will be no direct pay for traffic control associated with this work.

CC. Top Mount Poles

1.0 Description. This work shall consist of furnishing and installing 45' Top mount poles as indicated in the plans.

2.0 Construction Requirements. Top mount poles shall conform to the standards for Type AT lighting poles and shall be fabricated with a circumferentially welded pole and top plate to accept top mounted luminaries. The pole shall extend 4" above the top of the pole and meet AASHTO loading requirements for the luminaires provided. The top of the pole 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.

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 to be completely covered by the contract unit price for Item 901-99.02, Misc. 45' Top Mount Pole, per each.

Item No.	Type	Description
901-99.02	Each	Misc. 45' Top Mount Pole

DD. LED B Top Mounted Luminaires

1.0 Description. This work shall consist of furnishing and installing Light-Emitting Diodes (LED) B 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. The contractor shall coordinate the pole top mount size with the luminaire to ensure compatibility.

2.1 The luminaires shall have flat glass optics and be low tilt fixtures mounted at 0 degrees horizontal.

3.0 Basis of Payment. Payment for furnishing and installing top mounted luminaries 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 for Item 901-99.02 LED B Top Mounted Luminaire.

Item No.	Type	Description
901-99.02	Each	LED B Top Mounted Luminaire

EE. Combination Pad Mounted 240 Volt Power Supply with UPS And Lighting Control Station

1.0 Description. This work shall consist of furnishing and installing combination 240 Volt lighting power supply and multi-circuit type lighting control station. Available units are listed in the lighting section of the MoDOT approved products list under Pad Mounted Lighting Controllers. Control stations shall be installed in accordance with the plans and by direction of the engineer.

2.0 Basis of Payment. Payment for furnishing and installing pad mounted combination units 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 for Item No. 901-

99.02 Combination Pad Mounted Power Supply with UPS and Lighting Control, 240 Volt Lighting Only.

Item No.	Type	Description
901-99.02	Each	Combination Pad Mounted Power Supply with UPS and Lighting Control, 240V Lighting Only

FF. Missouri Logos

1.0 Description. Generic service signs (Gas / Food / Lodging), specific information logo signs, and/or Tourist-Oriented Directional signs (TODS), which show the motorist services available on a crossroad at or near an interchange, are within the limits of the project.

1.1 These signs shall remain visible to and effective for the traveling public during all stages of construction until such time they impact activities and need to be removed.

1.2 Any work involving the relocation (permanent or temporary), repair, replacement or legend modification required for these signs is the responsibility of Missouri Logos. The contractor shall be responsible for coordinating this work with them using the contact information below and providing full cooperation during this work.

Missouri Logos
4742-A Country Club Drive
Jefferson City, Missouri 65109

(800) 666-3514
(573) 893-6662
(573) 893-7148 – Fax

missourilogos@interstatelogos.com
Missouri.interstatelogos.com
Office Hours: Monday – Friday 8:00 a.m. – 5:00 p.m.

2.0 Replacement costs of any business specific logo panels damaged by vandalism or natural forces are the responsibility of the specified business. Any logo signs damaged as a result of the contractor's action shall be replaced at the contractor's expense.

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 this provision.

GG. Pavement, Approach, and Bridge Smoothness

1.0 Description. The contractor will be responsible to provide a smooth riding surface on new pavements, approach slabs, bridges, and any transition areas within the new construction project limits.

2.0 Construction Requirements. The contractor will be required to meet Missouri Standard Specification 610 and exceptions identified in 610.4.2.2 are not applicable on the project. The

contractor will be required to meet the specifications identified for a less than or equal to 45 mph posted speed. No bonus or deductions will be based on the International Roughness Index (IRI) on this project, however the final driving surface must be within the acceptable index range.

3.0 Basis of Payment. There will be no additional pay for this item.

HH. Mowing

1.0 Description. This work shall consist of mowing all right of way within the construction limits of the project as approved or directed by the engineer.

2.0 Construction Requirements. The contractor shall be responsible for controlling the height of vegetation for traffic safety, including at approaches, crossings, and intersections with abutting property to highways, railroads, trails, roads and streets.

2.1 The contractor shall be responsible for mowing from the notice to proceed date to final acceptance of the project by the engineer. The contractor will not be responsible for mowing any section of the project where partial acceptance has been made by the engineer.

2.2 Mowing shall be performed in a workmanlike manner with no rutting, scalping or any other resulting unsightly conditions. If mowing is determined by the engineer to be unsatisfactory, the contractor shall mow the area again at no cost to the Commission. All damaged areas shall be restored to the satisfaction of the engineer by the contractor at the contractor's expense.

3.0 Method of Measurement.

3.1 Measurement of mowing will be made to the nearest 0.1 acre [0.1 ha] for the actual area mowed per mowing operation. The total quantity measured will be the summation of all of the areas approved by the engineer.

4.0 Basis of Payment. The accepted quantities of mowing will be paid for at the contract unit price.

II. Possession of Right of Way – Parcel 2

1.0 Description. The contractor's attention is directed toward the following parcel which could be subject to delayed possession, Parcel 2.

(a) **Parcel 2** (TW PROPERTIES, INC) -The Temporary Construction Easement (TCE) is being acquired for the construction of a new entrance into the subject property, which will be located at the relocated Frenchman Bluff Road Intersection and will extend through the easement area to provide access to the existing improvements. The contractor shall not enter or proceed with physical construction across said Parcel 2 until authorization is granted by the Engineer. The Contractor shall take no action that will result in unnecessary inconvenience, disproportionate injury or any other action coercive in nature to the business or operations thereon. Possession is anticipated to be obtained by 7/1/2024. This possession date is estimated and is not warranted, and a later possession date is equally possible.

1.2 The contractor is required to plan its order of work, manpower and equipment loading, and bid, taking into consideration all effects of the possible delayed possession of the parcel. Any effects, impacts, cumulative impacts, or consequences of delay in possession of the parcel shall be noncompensable. This shall include any claim for extra work, as well as delay effects on work not delayed, suspension or acceleration of the work, differing site condition, interference or otherwise.

2.0 The contractor and the Commission understand and agree that by executing this contract, the contractor releases the Commission from any possible liability under this contract or for a possible breach of this contract for failing to make the job site available until the possession of the parcel is authorized by the engineer, and for all direct and indirect, incidental, or consequential damages or losses the contractor may suffer from this delay in making the job site available or issuing a timely authorization. The contractor further waives any right the contractor may have by contract, at law or in equity to challenge the validity or enforceability of the contract, in return for the award of this contract to the contractor at its stated contract prices as bid for the required work. It is provided, however, as contractors SOLE REMEDY for any delay in possession of the above parcel that the completion date of this contract may be extended, day for day, for each day that delayed possession interferes with the major items of work as determined by the engineer.

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.

JJ. 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

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 (including on trusses) and other traffic control devices.

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

(e) Providing channelizers, directional indicator barricades, moveable barricades, drums, signs, lights, flashers, lighting, etc.

(f) Worker apparel.

(g) Flaggers, pilot vehicles, and appurtenances at flagging stations.

(h) Furnishing, installing, operating, maintaining, and removing construction related vehicle, work area, and equipment lighting.

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

(j) Pavement Edge Treatment (See Alternate Pavement JSP)

(k) Removing existing pavement markings, installing temporary pavement markings, and removing and relocating temporary markings as necessary for staging operations. Removal of pavement markings shall not mark the surface of the pavement.

(l) Steel plates utilized to cover or protect construction ongoing operations such as trenching or steel plates utilized to provide temporary access.

(m) Shoring utilized for constructing trenching operations.

(n) Lighting plants for nighttime construction operations.

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

KK. Temporary Optional Pavement and Base

1.0 Description. This work shall consist of a temporary pavement composed of either Portland cement concrete or asphaltic concrete and temporary base of Type 1 Aggregate Base 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.

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

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

2.5 No additional payment will be made for grading and preparing the necessary subgrade.

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

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid price for **Item 403-99.05, "Misc. Temporary Optional Pavement & Base", per square yard.**

4.1 No additional payment will be made for the removal of this temporary pavement and base.

Item No.	Type	Description
403-99.05	SY	Misc. Temporary Optional Pavement & Base

LL. Temporary Asphalt Surface Modification

1.0 Description. This work shall consist of either a temporary asphalt wedging/resurfacing composed of BP-1 asphaltic concrete or better, or coldmilling to create a safe transition for vehicles. This work shall be performed in accordance with the standard specifications and as shown on the plans or established by the engineer.

1.1 This work shall be done in accordance with Sec 401. Thickness of surface modification shall be verified in the field and approved by the engineer.

1.2 No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, for tack applied between lifts of asphalt, for coldmilling and/or removal of this temporary asphalt wedging.

2.0 Method of Measurement. The quantity shall be measured per square yards of surface modified.

3.0 Basis of Payment. The accepted quantity of the surface modification will be paid for by the contract unit bid price for **Item 401-99.05 "Misc. Temporary Asphalt Surface Modification", per square yards.**

Item No.	Type	Description
401-99.05	SY	Misc. Temporary Asphalt Surface Modification

MM. 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.

NN. Temporary Signals and Lighting

1.0 Description. This work involves the furnishing, installation, maintenance and removal of temporary traffic signals, lighting, and detection, etc. as shown on the plans.

2.0 Materials. Temporary traffic signals and lighting shall conform to Sec 902.

2.1 At a minimum, installation of these temporary traffic signals and lighting shall require connection to a power source and the following items:

-Signal Heads, Type 3C (3-section head with Type I Bracket)
-Signal Heads, Type 4C (4-section head with Type I Bracket)
-Optically Limited Signal Heads – as needed or as directed by the engineer.
-Wood Span Wire Poles
-Traffic Signal Signs (as shown on the plans)
-Span Wire Assembly, Double Messenger
-150 Watt 120 Volt High Pressure Sodium Luminaire
-Photoelectric Control
-Bracket Arms
-Controller Assembly Housing (see requirements below)
-Cable, 1 Conductor, Power (8 AWG minimum)
-Cable, 16 AWG 7 conductor (for traffic signal heads)
-Cable, 12 AWG 2 conductor (for luminaires)
-Conduit
-Vehicle detection
-Power Supply Assembly

This list is not intended to be all-inclusive and other items may be necessary for the proper operation of these signals.

3.0 Construction Requirements. Temporary signals and lighting shall be furnished, installed, and maintained to properly handle traffic, as required, at the locations shown on the plans. Signals and lighting shall be installed as shown on the plans and as described in this special provision.

3.1 Temporary traffic signals shall be installed, operational and approved by the engineer before the existing signals, or previous temporary signals, are removed. Suggested phases for the temporary traffic signals are shown on the plans, but the final phases shall be determined by the engineer prior to temporary signals becoming operational.

3.1.1. All temporary traffic poles not located in an existing island shall have an asphalt island poured around the pole and the curb painted yellow as directed by the engineer. See traffic control plans for the location of these poles.

3.2 The temporary traffic signal shall be equipped with a NEMA 8-phase type controller supplied and retained by the contractor and shall conform to the applicable section of the Standard Specifications.

3.3 The temporary signal and lighting installation shall be maintained in operational condition until the new permanent signals and lights are installed and operational.

3.3.1 If the temporary signal installation becomes inoperable due to alterations, malfunctions, or periods of shutdown for required maintenance or when one-way traffic control is required, the contractor shall provide adequate traffic control, including flaggers. In addition, adequate traffic control, including flaggers, shall be provided during the startup and shut down of this installation. Sign W020-7b, Flagger (Symbol), shall be displayed in advanced of the flaggers. The contractor shall submit traffic control plans to the engineer including the day and time for switching from existing signals to temporary signals for approval.

3.4 The temporary signal and lighting system shall be removed after the new signals are installed, operational, and approved by the engineer to control traffic through the diverging diamond interchange. All temporary signal and lighting equipment shall remain the property of the contractor.

3.5 The contractor shall be responsible for arranging the electrical power needs required by this installation with MoDOT's Utility Engineer, Zach Walker. For costs and arrangements, contact Zach Walker at (660) 385-8230.

3.6 The contractor shall be responsible for locating all existing utilities and coordinate directly with the utilities to modify temporary signal plans and avoid the existing utilities if possible. If any utilities need to be relocated to install temporary signals, the contractor shall coordinate their work with the utilities relocation project.

3.7 The contractor is responsible for developing and inputting the timing for the temporary signals.

4.0 Basis of Payment. Payment for furnishing, installation, operation, maintenance, programming, and removal of this temporary traffic signal and lighting installation at the locations and configuration shown on the plans – including all items required for proper operation of this installation, will be completely covered by the contract unit price for the following pay items:

Item Number	Unit	Description
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – Old Cap
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – Cherry St. Stage 2A-B
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – Cherry St. Stage 2C-3B
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – NB Ramp Stage 2A-C
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – NB Ramp Stage 3A
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – NB Ramp Stage 3B
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – SB Ramp Stagge 2A-B
902-99.01	Lump Sum	Misc. Temp. Signal & Lighting – SB Ramp Stage 3A-B

OO. ADA Compliant Movable Barricade

1.0 Description. This work shall consist of providing moveable barricades to satisfy the requirements of the pedestrian traffic control plans as shown in the bidding documents. The contractor will be responsible for moving the pedestrian barricades to coincide with their planned order of work.

2.0 Construction Requirements. The contractor shall use a movable barricade that meets the requirements as established by the ADA. The pedestrian barricades shall be of self-supporting type having a minimum length of 6 feet per unit. The face of the barricade shall not extend into

adjacent sidewalk considered open for pedestrian use. The contractor will be responsible for setting and maintaining the pedestrian barricades until all of the proposed improvements have been constructed.

3.0 Method of Measurement. Measurement for ADA Compliant Moveable Barricade will be made per each for each 6 feet (min.) unit provided.

4.0 Basis of Payment. Payment for all work necessary to fulfill the requirements noted above shall be considered completely covered in the contract unit price for **Pay Item No. 616-99.02, Misc. ADA Compliant Type III Moveable Barricade, per each.** No direct payment will be made for any necessary relocation of the ADA compliant barricade.

PP. Misc. Traffic Staging Requirements

1.0 Three (3) weeks prior to the start of any stage or substage, the contractor shall place CMS boards on Route 47 and Route 61 to warning the general public of changes to the traffic patterns or turning movement restrictions.

2.0 The contractor's construction activities on Route 47 shall not reduce the existing minimum 16'-5" vertical clearance over open US Route 61 travel lanes.

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 this provision.

QQ. 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 Permanent Sign Installation – Construction of all permanent signs throughout the project limits.

2.2 Traffic Signal Removal and Installation – Removal of traffic signal poles and installation of new traffic signal poles at Frenchman Bluff, NB Ramps and SB Ramps. Construction of temporary signals at East Cherry Street and Route 47, and at S. Lincoln Drive and Old Cap au Gris.

2.3 Lighting pole installation – Construction of all proposed, permanent street light poles throughout the project limits. Construction of street light replacements at ramp gores.

2.4 Roadside Development

(a) Culvert extension on US-61 northbound lanes
(b) Guardrail installation on Route 47
(c) Rock lining along Route 47

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.

RR. MoDOT's Construction Workforce Program NJSP-15-17A

1.0 Description.

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

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

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

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

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

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

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

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

around to just meet the workforce goals.

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

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

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

1.12 If the contractors planned project workforce plan (including OJT hours if included in the contract) is short of the goals included in Table 1, there is opportunity for the contractor to receive a reimbursement of $10.00 / hour for any new project minority and female hires needed through the remainder of the project. The reimbursement is applicable to work that qualifies for prevailing wage under the federal Davis-Bacon Act, 40 U.S.C. §§ 3141–3148, in accordance with an approved workforce plan. Any reimbursement must be pre-approved by the Engineer. The reimbursement is provided as a remedy to the contractor and as an aid in the long-term growth of experienced persons in the building of roads and bridges in Missouri. The contractor shall manage the plan through the life of the project as described in the plan or as modified, in coordination with the Engineer. The total amount available per project is not capped.

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

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

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

3.0 Methods for Securing Workforce Participation and Good Faith Efforts.

3.1 By submitting a bid, the Bidder agrees, as a material term of the contract, to carry out MoDOT's Construction Workforce Program by making good-faith efforts to utilize minority and female workers on the contractor's job sites to the fullest extent consistent with submitting the

lowest bid to MoDOT. The Bidder shall agree that the Program is incorporated into this document and agree to follow the Program. If a bidder is unable to meet the workforce goals at the time of bid, it shall be required to objectively demonstrate to MoDOT that the goals have been met or demonstrate a good faith effort has been made with the level of effort submitted prior to the start of construction.

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

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

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

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

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

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

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

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

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

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

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

10.0 Federal Workforce Goals.

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

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

TABLE 1:

County	Goal (Percent)	County	Goal (Percent)
Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4
Barry	2.3	Madison	11.4
Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4
Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4
Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4

DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4
Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3
Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4
Lawrence	2.3	Wayne	11.4
Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

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

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

As used in these specifications:

"Minority" includes;

(i) Black (all person having origins in any of the Black African racial groups not of Hispanic origin);
(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
(iii) Asian and pacific islander (all persons having origins in any of the original peoples of the Far East, southeast Asia, the Indian Subcontinent, or the

Pacific Islands; and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).