


Job No.: J4P3420
Route: 92
County: Clay

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

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	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J4P3420 CLAY COUNTY, MO DATE PREPARED: 6/29/2023
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All	

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02J

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.

Job No.: J4P3420
Route: 92
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Notice to Proceed Date: December 4, 2023
Contract Completion Date: November 1, 2024

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
J4P3420	65	\$3,200

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 **\$1,500** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified 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 to manage work zone delay in accordance with these project provisions. When requested by the engineer, the WZS shall submit a weekly report that includes a review of work zone operations for the week. The report shall identify any problems encountered and corrective actions taken. Work zones are subject to unannounced inspections by the engineer and other departmental staff to corroborate the validity of the WZS's review and may require immediate corrective measures and/or additional work zone monitoring.

1.2 Work Zone Deficiencies. Failure to make corrections on time may result in the engineer suspending work. The suspension will be non-excusable and non-compensable regardless if road user costs are being charged for closures.

2.0 Traffic Management Schedule.

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

2.2 The traffic management schedule shall conform to the limitations specified in Sec 616 regarding lane closures, traffic shifts, road closures and other width, height and weight restrictions.

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of 10 minutes to prevent congestion from escalating to 15 minute or above threshold. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable.

2.5.1 Traffic Safety.

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

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

2.6 Transportation Management Plan. The contractor Work Zone Specialist (WZS) shall review the Transportation Management Plan (TMP), found as an electronic deliverable on MoDOT's Online Plans Room and discuss the TMP with the engineer during the preconstruction conference. Throughout the construction project, the WZS is responsible for updating any changes or modifications to the TMP and getting those changes approved by the engineer a

minimum of two weeks in advance of implementation. The WZS shall participate in the post construction conference and provide recommendations on how future TMPs can be improved.

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:

Work Hour Restrictions:

Route 92 Eastbound and Westbound:

6:30 a.m. – 7:30 a.m. Monday to Friday
4:00 p.m. – 6:00 p.m. Monday to Friday
No Restrictions Saturday & Sunday

I-35 & Route 92 Interchange Ramps:

Ramps can be closed completely for resurfacing on weekends only.

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. If a CMS with Communication Interface is required, then the CMS shall be capable of communication prior to installation on right of way. All messages planned for use in the work zone shall be approved and authorized by the engineer or its designee prior to deployment. When permanent dynamic message signs (DMS) owned and operated by MoDOT are located near the project, they may also be used to provide warning and information for the work zone. Permanent DMS shall be operated by the TMC, and any messages planned for use on DMS shall be approved and authorized by the TMC at least 72 hours in advance of the work.

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

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

D. Emergency Provisions and Incident Management

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 816-622-0800
City of Kearney
Fire: 816-628-4122
Police: 816-628-3925
Clay County Sheriff (Non-Emergency) 816-858-3521

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.

Christopher West PE, Project Contact
Kansas City District
600 NE Colbern Road
Lee's Summit, MO 64086

Telephone Number: 816-607-2211
Email: Christopher.West@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-18-01Z

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.

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.

Buy America

In addition to Section 106.9 of the Missouri Standard Specifications for Highway Construction, the following requirements will also be in effect for this project.

1.0 Description. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021. The BIL includes Build America, Buy America Act Publication L. No. 117-58. This provision expands the Buy America requirements beyond what is currently only required for steel and iron products. The steel and iron provisions have not changed with the new bill. Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives are excluded from this requirement. All other materials and manufactured products permanently incorporated into the project will be subject to Buy America requirements. There are three categories requiring Buy America Certification:

- a) Iron and steel – no changes to the current specification requirements.
- b) Manufactured products – these are currently exempted under the 1983 waiver from FHWA.
- c) Construction materials consisting primarily of:
 - Non-ferrous metals;
 - Plastic and polymer-based products (including polyvinylchloride, composite build materials, and polymers used in fiber optic cables);
 - Glass (including optic glass);
 - Lumber; or
 - Drywall

1.1 All products and or materials will only be classified under one of these categories and not

under multiple categories. It is the prime contractor's responsibility to assure all submittals required for Buy America are submitted to the Engineer prior to the products and or materials being incorporated in the job. The implementation of this policy will be in effect for all projects awarded after November 10, 2022.

1.2 New items designated as construction materials under this requirement will require the prime contractor to submit a material of origin form certification prior to incorporation into the project. The Certificate of Material origin form ([link to certificate form](#)) from the supplier and/or fabricator must show all steps of the manufacturing being completed in the United States. The Certificate of Material form shall be filed with the contract documents.

1.3 Any minor miscellaneous construction material items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. The certification shall read "I certify all materials permanently incorporated in this project covered under this provision have been to the best of my knowledge procured and all manufactured domestically." The certification shall be signed by an authorized representative of the prime contractor.

1.4 The National Transportation Product Evaluation Program (NTPEP) compliance program verifies that some non-iron and steel products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and an acceptable standard per 23 CFR 635.410(d). NTPEP compliant suppliers will not be required to submit step certification documentation with the shipment for some selected non-iron and steel materials. The NTPEP compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

2.0 Basis of Payment. Any costs incurred by the contractor by reason of compliance with the above requirements shall be considered as included in and completely covered by the unit price bid for the various items of work included in the contract.

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](#).

G. Contractor Quality Control and Daily Reporting

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.

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

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

3.3.2 CDWR information:

- (a) Date and Contract Identification Number
- (b) Weather conditions, rainfall amounts, high/low ambient temperatures
- (c) List of subcontractors who performed work
- (d) Description of all work performed, including general location (ex. Sta, offset, log mile, etc.), and any testing performed.
- (e) Date range of days when no work was performed since the previous CDWR

- (f) Pertinent traffic control information (changes, delays, accidents, etc.)
- (g) Statement: "All items installed meet or exceed contract requirements."

4.0 Work Planning and Scheduling.

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

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

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

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

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

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

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

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

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

H. 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.

I. Accessible Pedestrian Signals (Pushbuttons)

1.0 General. Furnish weatherproof, vandal resistant Accessible Pedestrian Signals (Pushbuttons) that are secure from electrical shock to the user and conform to the following:

- A. Manual on Uniform Traffic Control Devices (MUTCD) Chapter 4E.
- B. PROWAG 2007 R306.

2.0 Materials. The items furnished and installed under this contract shall be new and the latest product in production for commercial trade, and shall be of the highest quality as to materials used and workmanship. Manufacturer(s) furnishing these items shall be experienced in design and construction of such items and shall furnish evidence of having supplied similar items which have been in successful operation. The bidder shall be an established supplier of the items bid.

Service information shall be furnished consisting of schematics, parts locators, parts lists and trouble-shooting guide.

3.0 System Operations Requirements.

3.1 Shall have confirmation of button activation (Push) via latching LED, sound, and vibrotactile bounce.

3.2 Shall have a standard locating tone with a nominal duration of 0.15 seconds repeated at 1 second intervals which automatically adjusts to ambient background noise.

3.3 Shall be able to program the device to broadcast a beaconing tone during the pedestrian clearance phase.

3.4 Shall broadcast a percussive tone which consists of multiple frequencies with dominant component at 880Hz or broadcast a standard voice message during the walk interval.

3.5 Shall have a Vibrating button during the walk interval.

3.6 Shall be capable of a standard locating tone, custom sound, or verbal count down during the pedestrian clearance phase.

3.7 Shall support custom voice messages, tones, and sounds.

3.8 Shall support up to two (2) languages for speech messages.

3.9 Shall have all sounds adjust automatically to ambient noise levels up to a maximum volume of 100dBA.

3.10 Shall have minimum and maximum levels independently set for all audible features on each button.

3.11 Shall have all sounds emitted by the APS at an intersection synchronized.

3.11.1 Push button locate tones are exempt from this requirement.

3.12 May provide the capability that an extended button push can turn on, boost and /or mute all sounds except those on activated crosswalk.

3.13 Shall provide for emergency messages.

3.14 The tone or voice message shall be provided during the walk display as indicated on the plans or as directed by the Traffic Engineer.

3.15 The bolt pattern of the push button station shall be compatible with older push buttons.

4.0 Mechanical Requirements Push Button Station.

4.1 Shall have a housing constructed of aluminum.

4.2 Actuator shall be of the pressure-activated type with essentially no moving parts.

4.3 Shall be black in color, shaped to fit the curvature of the post to which it is attached and shall provide a rigid installation.

4.4 Actuator shall be a minimum of 2 inches in diameter, raised, contrast visually with the housing, and be made of brass or corrosion-resistant metal alloy or non-metallic material.

4.5 Tactile arrows shall be located on the pushbutton, have high visual contrast, shall be aligned parallel to the direction of travel and be made of brass or corrosion-resistant metal alloy or non-metallic material.

4.6 Maximum force of 3.5 pounds shall be required to activate the switch.

4.7 Shall have a solid state, piezo type switch rated at a minimum of 20 million actuations.

5.0 Environmental Requirements Push Button Station.

5.1 Shall be fully operational between -30° F to +165°F (-34° C to +74° C).

5.2 Shall not allow ice to form such to impede the operation of the button.

5.3 Shall have a weatherproof speaker.

5.4 Shall have been field tested in a traffic signal application for a period of at least one (1) Year.

6.0 Electrical Requirements Push Button Station.

6.1 Shall operate at a voltage no greater than 24 volts.

6.2 Shall require only 2 wires to connect to the traffic signal cabinet.

8.0 Interface Connection Panel.

8.1 Shall have an interface panel located in the traffic signal cabinet for connecting external APS button connecting wires to the traffic signal cabinet.

9.0 Method of Measurement.

9.1 This item will be measured per each for bid Item No. 902-99.02, "Accessible Pedestrian Signals (Pushbuttons)".

10.1 Basis of Payment.

10.1 The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid at the unit price bid for 902-99.02, "Accessible Pedestrian Signals (Pushbuttons)", per each. This price shall be full compensation for furnishing, assembling, and installing the Accessible Pedestrian Signal (Pushbutton), and for all mounting attachments, labor, tools, equipment, and incidentals necessary to complete the work.

J. ADA Compliant Moveable 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, ADA Compliant Moveable Barricade, per each. No direct payment will be made for any necessary relocation of the ADA compliant barricade.

K. 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.

L. SuperPave Mixture with Contract Grade PG 70-28

1.0 Description. This work shall consist of supplying a bituminous asphalt mixture in accordance with Sec 403 with a final contract asphalt binder grade of PG 70-28.

2.0 Materials. All materials shall be in accordance with Sec 403.

3.0 Method of Measurement and Basis of Payment. Method of measurement and basis of payment shall be in accordance with Sec 403 and will be paid for at the contract unit price 403-99.10, Asphaltic Concrete Mixture PG 70-28 (SP125C Mix), per ton. Payment will be considered full compensation to recover the cost of equipment, labor, materials, or time required to fulfill the above provision.

M. Kaw River Railroad Requirements

1.0 Introduction.

1.1 This document (referred to hereinafter as "Railroad Requirements") sets forth the terms and conditions agreed between the Kaw River Railroad, L.L.C. (Railroad) and the Missouri Highways and Transportation Commission (Commission), under which Railroad will allow the Commission's contractor to enter in and upon Railroad's real property, right of way, tracks, and other facilities (Railroad's Property) to perform the contractor's work relating to this project. The term "contractor" as used in these Railroad Requirements includes any and all subcontractors.

1.2 To report an emergency on the Railroad, call: 316-262-1700.

1.3 The project is located at approximate Mile Post 200.62 on the Railroad's Brookfield Subdivision designated as USDOT #079338G.

1.4 Except when otherwise specifically defined in these Railroad Requirements, or whenever the context clearly requires otherwise, the definitions of terms set forth in the current edition of the Missouri Standard Specifications for Highway Construction shall apply to and determine the meaning of those terms as used in these Railroad Requirements.

2.0 Authority of Railroad Engineer and Commission's Representative.

2.1 The authorized representative of Kaw River Railroad, L.L.C., hereinafter called "Railroad Engineer", shall have final authority in all matters affecting the safe maintenance and operation of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks.

2.2 The Railroad designates the following individual as the Railroad Authorized Representative for this project. Except as otherwise specifically provided in these Railroad Requirements, the contractor shall address all notices concerning the project to the Railroad Authorized Representative as follows:

Mr. Justin Mahr
Sr. Manager Real Estate - Contracts
Kaw River Railroad, L.L.C.
315 W. 3rd Street
Pittsburg, KS 66762
Email: justin.mahr@watco.com
TEL: (402) 651-8238

2.3 The Railroad, or the individual identified above, may designate a different individual to act as the Railroad Engineer for this project, and may change the address information stated above, by giving written notice of the changes to the contractor and to the Engineer, as provided in these Railroad Requirements.

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

3.0 Contractor's indemnity Obligations to the Railroad.

3.1 The contractor shall indemnify, defend and hold harmless the Railroad from and against any and all loss, damage, claims, demands, causes of action, costs and expenses of whatsoever nature arising out of injury to or death of persons whomsoever, or out of damage to or destruction of property whatsoever, including, without limitation, damage to fiber optic, communication and other cable lines and systems, where such injury, death, damage or destruction results from any cause arising out of work performed by the contractor pursuant to the agreement between Railroad and the Commission for the project, and shall also release the Railroad from and shall waive any claims for injury or damage to equipment or other property, which may result from the construction, maintenance and operation of railroad tracks, wire lines,

fiber optic cable, pipe lines and other facilities on said right of way of the Railroad by the contractor. THE LIABILITY ASSUMED BY THE CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY, DEATH, CAUSE OF ACTION OR CLAIM WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF THE RAILROAD, THE RAILROAD'S AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROVEN BY ANY CLAIMANT TO HAVE BEEN PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR SOLE OR GROSS NEGLIGENCE OF THE RAILROAD. The contractor's indemnity shall include loss of profits or revenue arising from damage or destruction to fiber optic, communication and other cable lines and systems.

3.2 In addition to the indemnity obligations contained in the preceding paragraph, the contractor shall indemnify, defend, and hold harmless the Railroad from any claims, expenses, costs, actions, demands, losses, fines, penalties, and fees, of whatsoever nature arising from, related to or connected, in whole or in part, with the following:

3.2.1 The removal of the contractor's agents, servants, employees, or invitees from the Railroad's property for safety reasons.

3.2.2 Contractor's compliance or failure to comply with the provision of applicable law in connection with the performance of contractor's work.

4.0 Notice of Starting Work.

4.1 The contractor shall not commence any work on Railroad's right of way until the contractor has complied with the following conditions:

4.1.1 At least 30 days in advance of the date the contractor proposes to begin work on Railroad's right of way, the contractor shall submit a Railroad Right of Entry permit application to the Railroad's authorized representative listed above in in Section 2.2, with a copy to the Engineer.

4.1.2 The contractor shall obtain written or electronic authorization from the Railroad to begin work on the Railroad's right of way.

4.1.3 The contractor shall obtain the insurance coverage required in Section 14.0 of these Railroad Requirements, and shall submit written evidence of such coverage to Railroad prior to commencing any work.

4.1.4 Before performing any work on Railroad's property or in an area that may impact Railroad's operations, the contractor's employees, representatives, or agents who are regularly assigned to perform work on the project shall complete the safety orientation training available on the internet at www.watcocontractor.com, hereinafter called, "Internet Safety Orientation". The contractor shall ensure that any employee, representative or agent who is not regularly assigned to perform work on the project (hereinafter called a "Flexible Worker") receives appropriate safety training before performing any work on the Railroad's property or in any area that may impact the Railroad's operations. The content of safety training for Flexible Workers shall include the information covered in the Internet Safety Orientation.

4.2 The Railroad shall include in its written authorization for the contractor to proceed with the work the names, and telephone numbers of the Railroad's representatives who are to be

notified as hereinafter required. If the Railroad designates more than one representative, then it shall specify the area of responsibility of each representative. The Railroad shall provide a copy of its written authorization to proceed to the Engineer.

5.0 Interference with Railroad Operations.

5.1 The contractor shall arrange and conduct all work so that there shall be no interference with the Railroad's operations, including train, signal, telephone, and telegraphic services; or damage to the Railroad's property; poles, wires and other facilities of tenants, licensees, easement grantees and invitees on the Railroad's right of way. Whenever the contractor's work may affect the operations or safety of trains, the contractor shall first submit the method of doing such work to the Railroad Authorized Representative for approval and coordination, but such approval shall not relieve the contractor from liability. The contractor shall defer any of its work that requires flagging service or inspection service until the flagging service required by the Railroad is available at the job site.

5.2 Whenever the contractor's work within the Railroad's right of way is of such a nature that impediment to the Railroad's operations is unavoidable, such as use of runaround tracks or necessity for reduced speed, the contractor shall schedule and conduct these operations so that such impediment is reduced to the absolute minimum.

5.3 If conditions arising from, or in connection with the work require the contractor to make immediate and unusual provisions to protect the Railroad's operations and property, the contractor shall make such provisions. If such provisions, in the judgment of the Railroad Authorized Representative, or the Engineer if the Railroad Authorized Representative is absent, are insufficient, then the Railroad Authorized Representative or Engineer may require or provide such provisions as he/she deems necessary. In any event, such provisions shall be at the contractor's expense and without cost to the Railroad or the Commission.

5.4 The contractor shall be responsible for any damage to the Railroad as a result of the contractor's work on the project, which shall include but not be limited to interference with the normal movement of trains caused exclusively by the work performed by the contractor. The Railroad agrees not to perform any act to unnecessarily cause any train delay. The Railroad shall bill the contractor for damages for train delays per freight hour, at an average rate per hour as determined from the Railroad's records. The Railroad shall provide these records, upon request, to the Commission and to the contractor.

6.0 Track Clearances.

6.1 The Commission's project plans show the minimum track clearances that the contractor shall maintain during construction. However, before undertaking any work within Railroad's right of way, and before placing any obstruction over any track, the contractor shall:

6.1.1 Notify the Railroad Authorized Representative at least 72 hours in advance of the proposed work.

6.1.2 Receive assurance from the Railroad Authorized Representative that the Railroad has made any necessary arrangements for flagging service.

6.1.3 Receive permission from the Railroad Authorized Representative to proceed with the work.

6.1.4 Ascertain that the Engineer has received copies of the contractor's notice to the Railroad and of the Railroad's response.

6.2 The contractor shall fully comply with any horizontal and vertical clearance requirements imposed by Missouri state statutes and regulations and Federal statutes and regulations regarding the placement of structures or equipment near or over railroad tracks.

7.0 Construction Procedures.

7.1 General. Construction work on the Railroad's property shall be subject to the Railroad's inspection and review. The contractor shall perform all such work in accordance with these Railroad Requirements.

7.2 Excavation. The contractor shall maintain the subgrade of an operated track with the berm edge at least 12 feet from centerline of track and not more than 26 inches below top of the rail. The contractor will not be required to make existing section meet this specification if substandard, in which case the contractor shall maintain the subgrade of the existing section. The contractor shall cease all work and notify the Railroad immediately before continuing excavation in the work area if the contractor encounters any obstructions that do not appear on the plans. If the obstruction is a utility and the contractor can identify the owner of the utility, then the contractor shall also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, then the contractor shall not perform any work on the Project until it has determined the exact location. There will be no exceptions to the requirement in the next preceding sentence. Additionally, the contractor shall conduct all excavations in compliance with applicable Occupational Safety and Health Act regulations and, regardless of depth, shall shore the excavations where there is any danger to tracks, structures or personnel. The contractor shall cover, guard and/or protect any excavations, holes, or trenches on the Railroad's property when the contractor is not working there. When leaving the work site areas at night and over weekends, the contractor shall secure the areas and leave them in a condition that will ensure the protection of Railroad's employees and other personnel who may be working or passing through the area from all hazards. The contractor shall backfill all excavations as soon as possible.

7.3 Excavation for Structure. The contractor shall take special precaution and care in connection with excavating, shoring pits and in driving piles for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which the tracks carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools, or other material. The contractor shall obtain the Railroad Authorized Representative's approval for the procedure for doing such work, including the need of and plans for shoring, before the contractor performs such work, but such approval shall not relieve the contractor from liability. The contractor shall first submit such plans for approval by the Engineer in accordance with the Standard Specifications, before submitting the plans to the Railroad Authorized Representative for approval. The responsibility for the design and construction of the sheeting rests solely with the contractor. The contractor shall design all temporary shoring along the railroad tracks for the Cooper E80 loading. The design shall insure that the shoring is braced or substantially secured to prevent movement. The contractor shall submit plans for the temporary shoring for approval by the Engineer, which are signed, sealed, and stamped in accordance with the laws relating to Architects and Professional Engineers, Chapter 327, RSMo.

7.4 Demolition of Existing Structures. The contractor shall take special precaution and care in connection with demolition of the existing bridge. The contractor shall use demolition plans that have been sealed by a professional engineer registered in the State of Missouri. The contractor shall furnish the demolition plan to the Engineer and the Railroad Authorized Representative for approval at least four weeks before accomplishing the work; however, the contractor shall submit such plans for review by the Engineer before submitting the plans to the Railroad Authorized Representative. The contractor shall obtain written approval from the Engineer and Railroad Authorized Representative before proceeding with this work, but such approval shall not relieve the contractor of responsibility for the safety of the operations or for any damages caused by the demolition.

7.5 Falsework. The contractor shall take special precaution and care to prevent any material from falling on the Railroad's right of way. The contractor shall obtain approval by the Railroad Authorized Representative of the contractor's procedure for preventing material from falling, including the need of and plans for any temporary falsework; but such approval shall not relieve the contractor from liability. The contractor shall submit such plans for approval by the Engineer, before submitting the plans to the Railroad Authorized Representative.

7.6 Blasting.

7.6.1 The contractor shall obtain advance written approval of the Railroad Authorized Representative and the Engineer for use of explosives on or adjacent to the Railroad's property. If the Railroad Authorized Representative grants the contractor permission for the use of explosives, then the contractor shall comply with the following requirements:

7.6.1.1 The contractor shall perform all blasting with light charges under the direct supervision of a responsible officer or employee of the contractor.

7.6.1.2 The contractor shall not use any electric detonating fuses; electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

7.6.1.3 The contractor shall perform no blasting without the presence of designated Railroad Personnel. The contractor shall arrange for the presence of the Railroad Personnel, and such flagging as the Railroad may require, upon at least 72 hours' advance notice to the Engineer and the Railroad Authorized Representative.

7.6.1.4 The contractor shall have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting, at contractor's expense, any track misalignment or other damage to the Railroad's property resulting from the blasting as directed by the Railroad Authorized Representative. If contractor's actions result in delay of trains, the contractor shall bear the entire cost thereof.

7.6.2 The Railroad Authorized Representative shall:

7.6.2.1 Determine the approximate location of trains and advise the contractor the approximate amount of time available for the blasting operation and clean-up.

7.6.2.2 Have the authority to order discontinuance of blasting if blasting is too hazardous or is not in accordance with these Railroad Requirements.

7.7 Maintenance of Railroad Facilities. The contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from contractor's operations. The contractor shall promptly repair eroded areas within Railroad's right of way and repair any other damage to the Railroad's property, tenants, licensees, easement grantees and invitees. The contractor shall perform all such maintenance and repair of damages due to the contractor's operations at the contractor's own expense.

7.8 Storage of Materials and Equipment.

7.8.1 The contractor shall not store or stockpile construction materials or equipment closer than 25 feet to the centerline of the nearest railroad track or on the Railroad's property not covered by construction easement, contractor's permit, lease, or agreement. Additionally, the contractor shall not store or leave materials or equipment within 250 feet of the edge of any highway/rail at-grade crossings. Further, the contractor shall keep both sides of a main track shall unobstructed for a distance of 10 feet from the exterior edge of the track at all times to allow for stopped train inspection.

7.8.2 The contractor shall not leave machines or vehicles unattended with the engine running, but shall leave all parked machines or equipment in gear with brakes set and with blade, pan or bucket lowered to the ground if so equipped. The contractor shall effectively immobilize all grading or construction machinery that is left parked near the track unattended, so that unauthorized persons cannot move such equipment.

7.9 Cleanup. Upon completion of the work, the contractor shall remove from within the limits of the Railroad's right of way, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings of the contractor, and leave the Railroad's right of way in a neat condition satisfactory to the Railroad Engineer.

7.10 Buried Cable and Other Buried Facilities.

7.10.1 The contractor is placed on notice that fiber optic, communication and other cable lines and systems, collectively the "Lines", owned by various telecommunications companies, may be buried on Railroad's property. The Commission has included the locations of the buried Lines, pipelines or utility facilities in the project plans, based on information from the relevant telecommunications companies, pipeline operators, or utilities. The contractor shall be responsible for contacting the Railroad Roadmaster, the telecommunications companies, pipeline operators and utilities, and notifying them of any work that may damage the buried Lines, pipelines, utility facilities and/or interfere with their service. The contractor shall verify the location of all buried Lines, pipelines and utility facilities shown on the plans or marked in the field in order to establish their exact locations before or while doing work on the Railroad's property. The contractor shall also use all reasonable methods when working on the Railroad's property to determine if any other buried Lines, pipelines or utility facilities exist on the Railroad's property.

7.10.2 The contractor's failure to mark or identify the buried Lines, pipelines or utility facilities will be sufficient cause for the Railroad Roadmaster to stop construction at no cost to the Commission or Railroad until these items are completed. The contractor shall be responsible for the rearrangement of any buried facilities, Lines, pipelines or utility facilities determined to interfere with the construction. The contractor shall cooperate fully with any telecommunications companies, pipeline operators and utility facility owners in performing such rearrangements.

8.0 Damages. The Railroad will not assume liability for any damages to the contractor, contractor's work, employees, servants, equipment, and materials caused by railroad traffic. However, the preceding sentence shall not exempt the Railroad from liability for any loss, damage or injury proximately caused by the Railroad's intentional misconduct or sole or gross negligence. The contractor shall pay directly to the Railroad any costs incurred by the Railroad for repairing damages to Railroad's property or to property of the Railroad's tenants, licensees, easement grantees and invitees caused by or resulting from the contractor's operations.

9.0 Flagging Services.

9.1 When Required. Under the terms of the agreement between the Commission and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect the Railroad's operations. In general, the Railroad will require flagging services whenever the contractor's personnel or equipment are, or are likely to be, working on the Railroad's right of way within 25 feet of the centerline of any track, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad structure or the railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging, to avoid a reasonable probability of accidental hazard to Railroad's operations or personnel. Normally, the Railroad will assign one flagger to a project; but in some cases, more than one may be necessary, such as yard limits where the Railroad may require up to 3 flaggers. However, if the contractor works within distances that violate instructions given by the Railroad Engineer or performs work that has not been scheduled with the Railroad Engineer, then the Railroad may require flaggers full time until the completion of the project.

9.2 Scheduling and Notification.

9.2.1 Not later than the time that approval is initially requested to begin work on the Railroad's right of way, the contractor shall furnish to the Railroad and to the Commission a schedule for all work required to complete the portion of the project within Railroad's right of way, and shall arrange for a job site meeting between the contractor, the Engineer, and the Railroad Authorized Representative. The Railroad may withhold providing any flaggers until the contractor has conducted this job site meeting and scheduled the contractor's work.

9.2.2 The contractor shall give the Railroad Authorized Representative at least 30 days of advance written notice of intent to begin work within Railroad's right of way in accordance with these Railroad Requirements. Once begun, if such work is then suspended at any time, or for any reason, the contractor shall be required to give the Railroad Roadmaster at least 5 working days of advance notice before resuming work on Railroad's right of way. The contractor shall include in these notices sufficient details of the proposed work to enable the Railroad Roadmaster to determine whether to require flagging. If such notice is in writing, then the contractor shall furnish a copy to the Engineer; if the notice is given verbally, then the contractor shall confirm the notice in writing with a copy to the Engineer. If the Railroad requires flagging, then the contractor shall undertake no work until the flagger or flaggers are present at the job site. Obtaining a flagger or flaggers may take up to 30 days. When flagging begins, the Railroad usually assigns the flagger to work at the project site on a continual basis until no longer needed and flagging services cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, obtaining a flagger or flaggers again may take up to 30 days. Due to Railroad labor agreements, 10 working days' notice may be necessary before the contractor may discontinue flagging services and stop its responsibility for payment. The contractor shall address all notifications for flagging to:

Job No.: J4P3420
Route: 92
County: Clay

Mr. Rick Carter, Roadmaster
Kaw River Railroad, L.L.C.
1128 South Mill Street
Kansas City, KS 66105
Email: rcarter@watco.com Cell: (816) 244-4931

9..2.3 If, after the flagger is assigned to the project site, emergencies arise which require the flagger's presence elsewhere, then the contractor shall delay work on the Railroad's right of way until such time as the flagger is again available. Any additional costs resulting from such delay shall be borne by the contractor and not the Railroad.

9.2.4 The contractor shall provide a temporary structure to shelter the person(s) providing flagging protection service on behalf of the Railroad from weather conditions, as described herein. The contractor shall provide this structure in an area immediately accessible to the Railroad's main track and the construction site, and shall equip it with telephone service, lighting, and a desk.

9.3 Payment.

9.3.1 The Commission will pay the Railroad directly for the cost of flagging services associated with the project.

9.3.2 The Railroad shall submit progress invoices for flagging service to the Engineer. The Engineer will forward copies of these flagging invoices to the Contractor to enable the Contractor to stay informed of the total flagging days charged to the project.

9.3.3 The contractor shall be responsible for arranging the flagging services that the Railroad requires, as needed to accomplish the highway improvement.

9.3.4 The cost of flagging service is approximately \$1342.00 per flagger per day based on the contractor working 8-hour work days. The flagger typically has an hour of work before the contractor begins work each day, and typically has an hour of work after the contractor is done for the day. This estimated cost includes the base pay for the flagger, overhead, and per diem charge for travel expenses, meals, and lodging. Flagging costs are subject to change. The above estimates of flagging cost are provided for information only and are not binding in any way.

9.4 Verification.

9.4.1 Any complaints concerning flagging services shall be resolved in a timely manner. If the contractor questions the need for a flagger, it should telephone the Railroad Roadmaster at (816) 244-4931. The contractor shall confirm all oral complaints in writing within 5 working days by sending a copy of the writing to the Railroad Authorized Representative and Engineer.

9.4.2 The Railroad flagger assigned to the project will be responsible for notifying the Engineer upon arrival at the job site on the first day he/she provides flagging services, or as soon thereafter as possible, and on the last day the same flagger performs such services, for each separate period that the flagger provides these services. The Engineer will document such notification in the project records.

10.0 Temporary Crossings for Haul Road Across Railroad's Tracks.

10.1 The Commission has designed this project so that it will not be necessary for the contractor to use any temporary construction grade crossing to complete the work of the project. The Commission will not object if the contractor enters into an agreement with the Railroad providing solely for the Railroad's construction of a temporary grade crossing for the contractor's use in connection with this project. However, the terms of that agreement shall not be inconsistent with any provision in these Watco Requirements, or inconsistent with any provision in the Grade Separation Construction and Maintenance Agreement between the Commission and the Railroad pertaining to this project. The Commission shall assume no responsibility or liability whatsoever in connection with any temporary grade crossing agreement made by and between the contractor and the Railroad.

10.2 The contractor shall make all necessary arrangements, including any temporary crossing agreement, to provide means of transporting any materials or equipment across the Railroad's tracks. The contractor shall pay the costs of any temporary crossings directly to the Railroad, in accordance with the temporary crossing agreement between the contractor and the Railroad.

10.3 The contractor shall not establish any crossing for the contractor's use for transporting materials or equipment across the Railroad's track unless it has first obtained specific authority from the Railroad Engineer for the installation, maintenance, flagging and removal of the crossing. Only Railroad's personnel shall install or remove the temporary track crossings.

10.4 The cost for installing and removing a temporary track crossing is approximately \$ 1,000.00 per lineal foot width measured along the track; e.g., a crossing sixteen feet (16') wide will cost approximately \$ 16,000.00 for each track over which the crossing extends. This estimated cost includes material and labor to install, maintain and remove the crossing, but does not include the required flagging cost.

10.5 The contractor shall not be entitled to payment from the Commission or the Railroad for any inconvenience or time lost due to the contractor's compliance with these Railroad Requirements. The contractor shall not claim any type of delay due to the time required to make all the necessary arrangements with the Railroad.

11.0 Work for the Benefit of the Contractor. All temporary or permanent changes in wire lines or other facilities that are necessary to complete the project are shown on the plans, and are included in the agreement between the Commission and the Railroad or will be covered by appropriate revisions to same, which will be initiated and approved by the Commission and/or the Railroad. If the contractor desires any changes in addition to the above, then the contractor shall make separate arrangements with the Railroad for those changes to be accomplished at the contractor's expense.

12.0 Cooperation and Delays. The contractor shall arrange a schedule with the Railroad for accomplishing staged construction involving work by the Railroad or tenants, licensees, easement grantees and invitees of the Railroad. In arranging a schedule, the contractor shall ascertain, from the Railroad, the lead time required for assembling crews, materials and make due allowance. The contractor shall not be allowed any charges or claims against the Railroad in connection with any work done by the Railroad, or for hindrance or delay on account of railway traffic, or for any other delay incident to or necessary for the safe maintenance of railway traffic, or for any delay due to compliance with these Railroad Requirements.

13.0 Trainman's Walkways. Along the outer side of each exterior track of multiple operated track and on each side of single operated track, the contractor shall maintain an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 12 feet from the centerline of track. Before the close of each work day, the contractor shall remove any temporary impediments to walkways and track drainage encroachments or obstructions that are allowed during work hours while Railway's protective service is provided. The contractor shall install, along any excavation near the walkway, a handrail with a 12 feet minimum clearance from the centerline of track.

14.0 Insurance. The amount of work to be performed upon, over or under Railroad's right of way is estimated to be one percent of the contractor's total bid for the project.

14.1 In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the contractor shall carry insurance of the following kinds:

(a) **Commercial General Liability Insurance**, including contractual liability and products completed/operations, against claims arising out of bodily injury, illness, and death and from damage to or destruction of property of others, including loss of use thereof, with minimum limits for bodily injury and property damage of \$5,000,000 for each occurrence, with an aggregate of \$10,000,000.

1. The definition of "insured contract" shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.

2. Any exclusions related to the explosion, collapse and underground hazards shall be removed.

3. No other endorsements limiting the coverage required by paragraph (a) of this section shall be included on the policy with regard to the work being performed under the contract between the contractor and the Commission.

(b) **Business Automobile Policy Insurance**, including owned, non-owned, and hired vehicles with minimum limits for bodily injury and property damage of \$1,000,000 per occurrence, on all vehicles used on Railroad's property during the term of the contract between the contractor and the Commission.

(c) **Worker's Compensation Insurance** or coverage as required under the Worker's Compensation Act of the state of Missouri. The policy shall include occupational disease to required statutory limits, employer's liability of \$1,000,000 to include FELA, if appropriate, and an "all states" endorsement.

(d) **Railroad Protective Liability Insurance** shall conform to the Standard Provisions for General Liability Policies, Railroad Protective Liability Form (State or Federal Highway Projects). These provisions may not be amended and no part may be omitted. Limits of policies to be \$2,000,000 combined single limit Bodily Injury and Property Damage liability each occurrence, \$6,000,000 annual aggregate. The contractor shall keep this policy in force during the construction phase of the project and shall provide the policy to the Railroad before starting work on the Railroad's property. The policy shall include the following endorsements:

1. Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
2. Endorsed to include the Limited Seepage and Pollution Endorsement.
3. Endorsed to remove any exclusion for punitive damages.
4. Endorsed to include Evacuation Expense Coverage Endorsement.
5. No other endorsements restricting coverage may be added.
6. The contractor shall provide the original policy to the Railroad before performing any work or services upon or affecting the Railroad's property under the contract between the contractor and the Commission.

14.1.2 It is understood and agreed that this policy is primary and not contributory and release the Railroad as to payments of any earned premium. All insurance certificates provided by the contractor shall be satisfactory to the Railroad as to insurance carriers covering the risk and shall bear a cancellation clause providing that such insurance may not be canceled, amended, or allowed to lapse until the expiration of at least 30 days advance written notice to the Railroad.

14.1.3 With the exception of Workers Compensation, the Railroad shall be named an additional insured under the above mentioned policies.

14.1.4 The policy described above shall contain a "Waiver of Transfer Rights" endorsement to waive any right of recovery that the insurance company may have against Railroad because of payments made for bodily injuries or property damage.

14.1.5 Before entering upon Railroad's property, the contractor shall furnish to the Railroad for approval the original Certificate of Insurance, the original Policy, or other satisfactory evidence that the contractor has obtained and is maintaining all the insurance that the contractor is obliged to furnish under the foregoing provisions.

14.1.6 The contractor's failure to provide evidence as required by this paragraph shall entitle, but not require, the Railroad to terminate immediately its agreement with the Commission with respect to the project. Acceptance of a certificate that does not comply with this paragraph shall not operate as a waiver of the contractor's obligations.

14.1.7 The fact that insurance, including, without limitation, self-insurance, is obtained by the contractor shall not be deemed to release or diminish the liability of the contractor including, without limitation, liability under the indemnity provisions of these Railroad Requirements. Damages recoverable by the Railroad shall not be limited by the amount of the required insurance coverage.

14.1.8 For purposes of Section 14 of these Railroad Requirements, the Railroad shall mean "Watco Companies, L.L.C.", and its subsidiaries, successors, assigns and affiliates.

14.1.9 The contractor shall furnish evidence of insurance as required above to the addresses shown below for review by the Commission and approval by the Railroad:

Job No.: J4P3420
Route: 92
County: Clay

Railroad:
Attn: Real Estate
Watco
315 W. 3rd, Pittsburg, KS 66762
Email: realestate@watco.com
Fax: (620) 231-0812

Commission:
Ms. Brandi Baldwin
State Construction & Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102

14.1.10 Railroad will not accept binders as evidence of insurance, the original policy shall be provided. The named insured, description of the work and designation of the job site to be shown on the Policy are as follows:

(a) Named Insured: Watco Companies, L.L.C., and its affiliates, subsidiaries, and assigns

(b) Description and Designation:

Route 92, Clay County, MO
Job No. J4P3420
Resurfacing (mill/fill) at KAW River Railroad in Kearney, MO At Milepost 200.62,
on Kaw River RR's Brookfield subdivision USDOT # 079338G

14.2 Insurance Required of Subcontractors. If any part of the work is sublet, similar insurance and evidence thereof in the same amounts as required of the prime contractor shall be provided by or in behalf of the subcontractor to cover the subcontractor's operations. Endorsements to the prime contractor's policies specifically naming subcontractors and describing their operations will be acceptable for this purpose.

14.3 Cancellation of Insurance. All Insurance hereinbefore specified shall be carried until all work required to be performed under the terms of the contract has been satisfactorily completed within the limits of the Railroad's right of way as evidenced by the formal acceptance by the Commission. Insuring Companies may cancel insurance by permission of the Commission and Railroad or on 30 days written notice to the Railroad and Commission as follows:

Railroad:
Attn: Real Estate
Watco
315 W. 3rd, Pittsburg, KS 66762
Email: realestate@watco.com
Fax: (620) 231-0812

Copy Notice To:
Ms. Sarah Kleinschmit
State Construction & Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102

15.0 Hazardous Materials Compliance and Reporting. Contractor shall be responsible for complying with all applicable federal, state and local governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, as amended; the Oil Pollution Act, as amended; the Hazardous Materials Transportation Act, as amended; and the Comprehensive Environmental Response, Compensation and Liability Act, as amended), and health and safety laws and regulations. In addition to the liability provisions contained elsewhere in these Railroad Requirements, the contractor hereby indemnifies, defends and holds harmless the Railroad for, from and against all fines or penalties imposed or assessed by federal, state and local governmental agencies against the Railroad which arise out of contractor's work under these Railroad Requirements. Notwithstanding the preceding sentence,

the contractor will not be liable for pre-existing hazardous materials or hazardous substances discovered on Railroad's property or right of way so long as such hazardous materials or hazardous substances were not caused by (in whole or in part) contractor's work, acts or omissions. If contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railroad's property, in or near any surface water, swamp, wetlands or waterways, while performing any work under these Railroad Requirements, the contractor shall immediately:

15.1 Notify the Railroad of such discovery by telephone at (620) 231-2230.

15.2 Take safeguards necessary to protect employees, subcontractors, agents and/or third parties.

15.3 Exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

16.0 Personal Injury Reporting. The Railroad is required to report certain injuries as a part of compliance with Federal Railroad Administration ("FRA") reporting requirements. Any personal injury sustained by any employee of the contractor, subcontractor or contractor's invitees while on the Railroad's property shall be reported immediately, by phone or mail if unable to contact in person, to the Railroad's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form is to be completed and sent to the Railroad Authorized Representative, by FAX No. (913) 321-2910, no later than the close of shift on the date of the injury.

17.0 Completion of Work on Railroad's Property. The contractor shall notify the Engineer and the Railroad Authorized Representative when the contractor has completed its work on Railroad's property.

18.0 Failure to Comply. In the event the contractor violates or fails to comply with any of these Railroad Requirements, then the provisions in subsection 15.1 and 15.2 of this section shall apply and remain in effect until the contractor has remedied the situation to the satisfaction of the Railroad Authorized Representative and the Engineer.

18.1 The Railroad Engineer may require the contractor to vacate the Railroad's property.

18.2 The Engineer may withhold all monies due to the contractor until contractor has remedied the situation to the satisfaction of the Railroad Authorized Representative and the Engineer.

19.0 Payment for Cost of Compliance. The Railroad and the Commission shall not be required to make any separate payment for any extra cost incurred by the contractor on account of compliance with these Railroad Requirements. The Contractor shall include all such costs in the contract unit price for other items included in its contract with the Commission. Railroad will not be responsible for paying the contractor for any work performed under these Railroad Requirements.

Job No.: J4S3367


Route: N

County: Clay

JOB SPECIAL PROVISIONS TABLE OF CONTENTS

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 09/05/2023 8:24:36 AM CHRISTOPHER ALLAN WEST - CIVIL MO-PE-2014017034	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J4S3367 CLAY COUNTY, MO DATE PREPARED: 5/22/23
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: ALL	

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02J

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.

Job No.: J4S3367
Route: N
County: Clay

Notice to Proceed Date: December 4, 2023
Contract Completion Date: November 1, 2024

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
J4S3367	34	\$1,800

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 **\$1,500** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified 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 to manage work zone delay in accordance with these project provisions. When requested by the engineer, the WZS shall submit a weekly report that includes a review of work zone operations for the week. The report shall identify any problems encountered and corrective actions taken. Work zones are subject to unannounced inspections by the engineer and other departmental staff to corroborate the validity of the WZS's review and may require immediate corrective measures and/or additional work zone monitoring.

1.2 Work Zone Deficiencies. Failure to make corrections on time may result in the engineer suspending work. The suspension will be non-excusable and non-compensable regardless if road user costs are being charged for closures.

2.0 Traffic Management Schedule.

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

2.2 The traffic management schedule shall conform to the limitations specified in Sec 616 regarding lane closures, traffic shifts, road closures and other width, height, and weight restrictions.

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of 10 minutes to prevent congestion from escalating to 15 minute or above threshold. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable.

2.5.1 Traffic Safety.

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

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

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.

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. If a CMS with Communication Interface is required, then the CMS shall be capable of communication prior to installation on right of way. All messages planned for use in the work zone shall be approved and authorized by the engineer or its designee prior to deployment. When permanent dynamic message signs (DMS) owned and operated by MoDOT are located near the project, they may also be used to provide warning and information for the work zone. Permanent DMS shall be operated by the TMC, and any messages planned for use on DMS shall be approved and authorized by the TMC at least 72 hours in advance of the work.

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

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

D. Emergency Provisions and Incident Management

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 1-800-525-5555
City of Excelsior Springs
Fire: 816-630-3000
Police: 816-630-2000

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 West, Project Contact
Transportation Project Manager
Kansas City District
600 NE Colbern Rd
Lee's Summit, MO 64086

Telephone Number: 816-607-2211
Email: Christopher.West@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-18-01Z

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

Job No.: J4S3367
Route: N
County: Clay

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	$\leq 0.01\%$
Fiber Content	ASTM D5603	$\leq 0.5\%$
Moisture Content	ASTM D1509	$\leq 1.0\%^*$
Mineral Filler	AASHTO M17	$\leq 4.0\%$

*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.

Buy America

In addition to Section 106.9 of the Missouri Standard Specifications for Highway Construction, the following requirements will also be in effect for this project.

1.0 Description. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021. The BIL includes Build America, Buy America Act Publication L. No. 117-58. This provision expands the Buy America requirements beyond what is currently only required for steel and iron products. The steel and iron provisions have not changed with the new bill. Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives are excluded from this requirement. All other materials and manufactured products permanently incorporated into the project will be subject to Buy America requirements. There are three categories requiring Buy America Certification:

- Iron and steel – no changes to the current specification requirements.
- Manufactured products – these are currently exempted under the 1983 waiver from FHWA.
- Construction materials consisting primarily of:

- Non-ferrous metals;
- Plastic and polymer-based products (including polyvinylchloride, composite build materials, and polymers used in fiber optic cables);
- Glass (including optic glass);
- Lumber; or
- Drywall

1.1 All products and or materials will only be classified under one of these categories and not under multiple categories. It is the prime contractor's responsibility to assure all submittals required for Buy America are submitted to the Engineer prior to the products and or materials being incorporated in the job. The implementation of this policy will be in effect for all projects awarded after November 10, 2022.

1.2 New items designated as construction materials under this requirement will require the prime contractor to submit a material of origin form certification prior to incorporation into the project. The Certificate of Material origin form ([link to certificate form](#)) from the supplier and/or fabricator must show all steps of the manufacturing being completed in the United States. The Certificate of Material form shall be filed with the contract documents.

1.3 Any minor miscellaneous construction material items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. The certification shall read "I certify all materials permanently incorporated in this project covered under this provision have been to the best of my knowledge procured and all manufactured domestically." The certification shall be signed by an authorized representative of the prime contractor.

1.4 The National Transportation Product Evaluation Program (NTPEP) compliance program verifies that some non-iron and steel products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and an acceptable standard per 23 CFR 635.410(d). NTPEP compliant suppliers will not be required to submit step certification documentation with the shipment for some selected non-iron and steel materials. The NTPEP compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

2.0 Basis of Payment. Any costs incurred by the contractor by reason of compliance with the above requirements shall be considered as included in and completely covered by the unit price bid for the various items of work included in the contract.

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](#).

G. Contractor Quality Control for Plant Mix Bituminous Surface Leveling NJSP-15-21A

1.0 Description. The contractor shall provide Quality Control (QC) testing and shall perform verification procedures associated with the production and placement of Plant Mix Bituminous Surface Leveling Mixture in accordance with this provision.

2.0 Asphalt Plant Requirements. The contractor shall perform quality control testing in the production of the Surface Leveling Mixture and report the results electronically on MoDOT-provided forms. All reports shall include the Contract ID, Project Number, Route, County, and Job Mix number.

2.1 Calibration of the asphalt plant shall be in accordance with Sec 403.17.2.2. Record retention for verification of test reports shall be in accordance with Sec 403.17.3.2.

2.2 At a minimum, the contractor shall perform one QC sieve analysis test for each day of production of Surface Level mixture in excess of 100 tons to verify the aggregate is within the required gradation range. Results of the QC sieve analysis test shall be reported to the engineer daily. A split of each sample shall be clearly labeled and stored by the contractor in a manner that prevents contamination. The engineer will collect a minimum of one random QC split sample, and one full sample from plant production, for testing per each 10,000 tons of production. Uncollected QC split samples shall be retained by the contractor until the engineer authorizes disposal or until the Final Inspection, whichever occurs earlier.

2.3 The contractor shall monitor the quantity of asphalt binder used in the production of the mix, including any commercial mix, and report that quantity to the engineer. Original asphalt binder delivery tickets shall accompany the report submitted to the engineer. The engineer will perform a minimum of one asphalt binder content test per each 10,000 tons of production for any project that exceeds a total of 5,000 tons of production.

2.4 The contractor shall take a daily QC sample of the asphalt binder per instructions in EPG 460.3.13. The engineer will collect the QC samples and ship to the MoDOT Central lab for random testing. In addition, the engineer will take a minimum of one random Quality Assurance sample per project from the binder line. The engineer sample will be shipped to the Central Lab along with the daily samples and will be designated for testing.

2.5 The contractor shall perform one moisture content test for each day of production of Surface Level mixture in excess of 100 tons. The frequency of the moisture test may be reduced if approved by the engineer.

3.0 Roadway Requirements. The contractor shall perform quality control verification of the Surface Leveling Mixture on the roadway and shall monitor the asphalt tonnage placed in relation to plan quantity.

3.1 Irregularities. Additional tons of Surface Leveling mix will be provided for irregularities in the existing roadway surface. The tonnage specified for irregularities is an estimated quantity and shall only be placed at locations where it is necessary to fill ruts and other low points. Prior to placing the mix, the contractor and engineer shall evaluate the entire route and develop a plan that best utilizes the tonnage needed for irregularities. Any excess quantity of irregularities shall not be placed.

3.2 Tack. On the first day of production, the contractor shall demonstrate proper application of tack coat in the presence of the engineer. Thereafter, when the engineer is not present to witness the application of the tack coat, the contractor shall document the tack application by taking a minimum of two high-resolution date/time stamped photographs of the tacked surface per one-mile segment. Pictures should be taken just in front of the paver in order to account for loss of tack from truck tires. The contractor shall also monitor and document the application rate. The contractor shall take distributor readings at the beginning and ending of each shift and document the quantity used.

3.3 Spreading and Rolling. On the first day of production, the contractor shall demonstrate successful spreading and compaction of the mixture, including proper rolling patterns, in the presence of the engineer. Thereafter, the contractor shall monitor all roadway production procedures and document daily. Use of approved Intelligent Compaction technology is an allowable substitute for daily documentation.

3.4 Monitoring of Quantity. The contractor shall monitor the quantity of Surface Level mix placed and report that information to the engineer and production staff as specified herein.

3.4.1 The contractor shall verify that the quantity of Surface Leveling mix in the contract for each route is sufficient to cover the roadway as shown on the typical sections, including any surface irregularities. Any discrepancies shall be brought to the engineer's attention in writing prior to the pre-construction conference. Plan quantity shall be defined as the total tons computed to cover the surface area according to the typical section, plus any amount pre-approved by the engineer for pavement irregularities.

3.4.2 The contractor shall provide temporary log mile reference points at no less than ½ mile intervals along each route to monitor the tons of Surface Leveling mix laid in relation to plan quantity. Entrances, shoulders, or other irregular areas will be monitored as directed by the engineer.

3.4.3 During production, the contractor shall document the total tons placed in each one-mile segment, along with the plan quantity and the percent over/under for that segment. The cumulative quantity and percent over/under for the route should also be documented. After each one-mile segment, the contractor shall provide a status report to the production manager and the engineer. When the engineer is not present on the project, the contractor shall send an electronic status report to the engineer.

3.4.4 The goal is to keep the placed quantity within 2% of plan quantity for the project. The engineer will monitor the status reports and will advise the contractor on how to proceed when there is an excessive variance from plan quantity. The engineer may decrease the frequency of the electronic status reports when the variances are consistently low.

3.4.5 The contractor shall collect asphalt tickets from the delivery trucks and group them per each one-mile segment. The contractor shall submit to the engineer a daily summary report that includes all of the information specified in Section 3.4.3. The contractor shall sign the summary report confirming that the information is accurate and that the attached tickets represent the asphalt material placed.

3.4.6 The contractor shall be equipped with a contractor-furnished cellular device capable of providing and maintaining a reliable means of immediate communication with the engineer when the engineer is not present on the project.

4.0 Excessive Quantity. If the contractor places Surface Level mix on any one-mile segment, or any other isolated areas, in excess of plan quantity by 5% or more, without prior approval from the engineer, further investigation may be required to determine if the excess was warranted. If directed by the engineer, the contractor shall core the pavement at locations established by the engineer to determine the amount that was excessive, if any. No payment will be made for the cost to core the pavement or for the tons of Surface Level mix that the engineer determines to be excessive. If the amount of Surface Level mix is determined to be justified, payment will be made for the mix, and for the cost of coring at the fixed price established in Sec 109. Placement of asphalt in excess of plan quantity for two consecutive segments without prior approval from the engineer may result in issuance of an Order Record to stop work.

5.0 Basis of Payment. No direct payment will be made for compliance with this provision. All costs shall be considered completely covered under the pay items provided in the contract.

H. 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.

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

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

J. Contractor Quality Control and Daily Reporting

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.

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

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

3.3.2 CDWR information:

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

4.0 Work Planning and Scheduling.

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

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

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

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

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

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

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

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

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

K. Permanent Aggregate Edge Treatment NJSP-15-40B

Job No.: J4S3367
Route: N
County: Clay

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

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

3.0 Material Requirements. Material used for the aggregate edge treatment shall be Type 1, 5, or 7 Aggregate in accordance with Sec 1007 or an allowable substitute approved by the engineer. Bituminous cold millings meeting the gradation for Type 1, 5 or 7 Aggregate may be used in lieu of aggregate. Limestone screenings or other material with excessive fines will not be allowed. Material will be accepted based on certification in lieu of testing contingent upon satisfactory results being obtained in the field.

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

5.0 Basis of Payment. The accepted quantities of aggregate edge treatment will be paid for at the contract unit price for 304-99.10, Permanent Aggregate Edge Treatment, per ton and will be full compensation for all labor, equipment, and material to complete the described work. No fuel adjustment will be made for Permanent Aggregate Edge Treatment.

Job No.: J4S3413

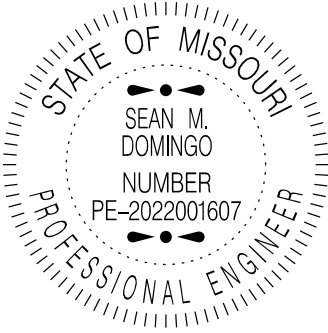
Route: 69

County: Clay

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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 09/05/2023 6:42:57 AM SEAN M. DOMINGO - CIVIL MO-PE-2022001607	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J4S3413 CLAY COUNTY, MO DATE PREPARED: 8-30-23
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All	

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02J

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 JSP-13-01C

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

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

Job No.: J4S3413
Route: 69
County: Clay

Notice to Proceed: Dec. 4th, 2023
Completion Date: Nov. 1st, 2024

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
J4S3413	76	\$2,300

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **\$1,500** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified completion date or calendar days.

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

C. Work Zone Traffic Management

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

1.1 Maintaining Work Zones and Work Zone Reviews. The Work Zone Specialist (WZS) shall maintain work zones in accordance with Sec 616.3.3 and as further stated herein. The WZS shall coordinate and implement any changes approved by the engineer. The WZS shall ensure all traffic control devices are maintained in accordance with Sec 616, the work zone is operated within the hours specified by the engineer, and will not deviate from the specified hours without prior approval of the engineer. The WZS is responsible to manage work zone delay in accordance with these project provisions. When requested by the engineer, the WZS shall submit a weekly report that includes a review of work zone operations for the week. The report shall identify any problems encountered and corrective actions taken. Work zones are subject to unannounced inspections by the engineer and other departmental staff to corroborate the validity of the WZS's review and may require immediate corrective measures and/or additional work zone monitoring.

1.2 Work Zone 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 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of 10 minutes to prevent congestion from escalating to 15-minute or above threshold. If disruption of the traffic flow occurs and traffic is backed up in queues of 15-minute delays or longer, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable.

2.5.1 Traffic Safety.

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

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

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

2.7 Traffic Management Center (TMC) Coordination. The Work Zone Specialist (WZS) or their designee shall contact by phone the MoDOT Traffic Management Center (KC Scout TMC at #816-347-2250 or Gateway Guide TMC at #314-275-1513) within five minutes of a lane or ramp closure beginning and within five minutes of a lane or ramp closure being removed. The WZS shall make this phone call 24 hours a day, 365 days of the year since the MoDOT Traffic Management Centers are always staffed.

3.0 Work Hour Restrictions.

3.1 Except for emergency work, as determined by the engineer, and long term lane closures required by project phasing, all lanes shall be scheduled to be open to traffic during the five major holiday periods shown below, from 12:00 noon on the last working day preceding the holiday until 6:00 a.m. on the first working day subsequent to the holiday unless otherwise approved by the engineer.

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

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

12:00 noon July 3, 2024 – 6:00 a.m. July 5, 2024

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.

Route 69 Northbound:

No work hour restrictions Monday through Friday
No work hour restrictions Saturday through Sunday

Route 69 Southbound:

No work 7:00 a.m. – 8:00 p.m. Monday through Friday
No work 9:00 a.m. – 7:00 p.m. Saturday
No work 11:00 a.m. – 6:00 p.m. Sunday

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

3.5 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$1,000 per 15-minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

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

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. If a CMS with Communication Interface is required, then the CMS shall be capable of communication prior to installation on right of way. All messages planned for use in the work zone shall be approved and authorized by the engineer or its designee prior to deployment. When permanent dynamic message signs (DMS) owned and operated by MoDOT are located near the project, they may also be used to provide warning and information for the work zone. Permanent DMS shall be operated by the TMC, and any messages planned for use on DMS shall be approved and authorized by the TMC at least 72 hours in advance of the work.

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

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

D. Emergency Provisions and Incident Management

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: 816-622-0800
City of Excelsior Springs:
Fire: 816-630-3000
Police: 816-630-2000

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.

Sean Domingo, Project Contact
Kansas City District
600 NE Colbern Rd
Lee's Summit, MO 64086

Telephone Number: 816-289-3185
Email: sean.domingo@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-18-01Z

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

Job No.: J4S3413
Route: 69
County: Clay

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	$\leq 0.01\%$
Fiber Content	ASTM D5603	$\leq 0.5\%$
Moisture Content	ASTM D1509	$\leq 1.0\%^*$
Mineral Filler	AASHTO M17	$\leq 4.0\%$

*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.

Buy America

In addition to Section 106.9 of the Missouri Standard Specifications for Highway Construction, the following requirements will also be in effect for this project.

1.0 Description. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021. The BIL includes Build America, Buy America Act Publication L. No. 117-58. This provision expands the Buy America requirements beyond what is currently only required for steel and iron products. The steel and iron provisions have not changed with the new bill. Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives are excluded from this requirement. All other materials and manufactured products permanently incorporated into the project will be subject to Buy America requirements. There are three categories requiring Buy America Certification:

- a) Iron and steel – no changes to the current specification requirements.
- b) Manufactured products – these are currently exempted under the 1983 waiver from FHWA.
- c) Construction materials consisting primarily of:
 - Non-ferrous metals;
 - Plastic and polymer-based products (including polyvinylchloride, composite build materials, and polymers used in fiber optic cables);
 - Glass (including optic glass);
 - Lumber; or
 - Drywall

1.1 All products and or materials will only be classified under one of these categories and not under multiple categories. It is the prime contractor's responsibility to assure all submittals required for Buy America are submitted to the Engineer prior to the products and or materials being incorporated in the job. The implementation of this policy will be in effect for all projects awarded after November 10, 2022.

1.2 New items designated as construction materials under this requirement will require the prime contractor to submit a material of origin form certification prior to incorporation into the project. The Certificate of Material origin form ([link to certificate form](#)) from the supplier and/or fabricator must show all steps of the manufacturing being completed in the United States. The Certificate of Material form shall be filed with the contract documents.

1.3 Any minor miscellaneous construction material items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. The certification shall read "I certify all materials permanently incorporated in this project covered under this provision have been to the best of my knowledge procured and all manufactured domestically." The certification shall be signed by an authorized representative of the prime contractor.

1.4 The National Transportation Product Evaluation Program (NTPEP) compliance program verifies that some non-iron and steel products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and an acceptable standard per 23 CFR 635.410(d). NTPEP compliant suppliers will not be required to submit step certification documentation with the shipment for some selected non-iron and steel materials. The NTPEP compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

2.0 Basis of Payment. Any costs incurred by the contractor by reason of compliance with the above requirements shall be considered as included in and completely covered by the unit price bid for the various items of work included in the contract.

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](#).

G. Contractor Quality Control NJSP-15-42

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

2.0 Quality Control Plan.

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

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

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

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

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

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

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

4.0 Work Planning and Scheduling.

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

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

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

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

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

4.4.2 Prior to all Hold Point inspections, the contractor shall verify the work has been completed in accordance with the contract and specifications. If the engineer identifies any corrective actions needed during a Hold Point inspection, the corrections shall be completed prior to continuing

work. The engineer may require a new Hold Point to be scheduled if the corrections require a follow-up inspection. Re-scheduling of Hold Points require a minimum 24-hour advance notification from the contractor unless otherwise allowed by the engineer.

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

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

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

H. 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.

I. 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.

J. Optional Traffic Signal Detectors - KC

1.0 Description. This work shall consist of providing detectors for signal installations. Detectors shall be in accordance with the standard specifications and installed to provide detection at locations as shown on the plans or as directed by the engineer in accordance with Section 902.

2.0 Options. The contractor can choose from the following list of detector types according to the exceptions noted below:

- Inductive loop
- Video image

If video image is chosen, the contractor shall follow section 3.0, Video Detection System Requirements.

2.1 Unless otherwise specified on the plans, the contractor may supply more than one type of detector and customize the installation based on field conditions.

3.0 Video Detection System Requirements

3.1 Description. The Contractor shall furnish and install all equipment, materials, software and other miscellaneous items that are required to provide a fully functional Video Detection System for the control of bicycle and vehicular traffic signals.

3.2 Material. The video detection system shall consist of power supply, hard-wired video cameras, all necessary video and power cabling with end connectors, mounting brackets, surge protection as recommended by the manufacturer, video detection processors/extension modules capable of processing the number of camera and phase combination video sources shown on the project plans. The video detection system will be defined as the complete assembly of all required equipment and components for detection of vehicles. Each video detection system shall consist of the video camera(s), lightning arrester for video cabling, processor unit(s), control device (mouse or keypad;), software and license for system control via a computer or USB (if applicable), communication components, and a color monitor. All camera views shall be obtainable without requiring the disconnection and reconnection of cables within the system. The video detection systems in the list below are the only systems that are tested, fully functional, and approved for use in the Kansas City District:

1. Autoscope Vision
2. Rhythm Video Detection

3. Iteris Vantage Vector

3.3 Installation Requirements. The video detection system shall be installed per the manufacturer's recommendations. The installer shall be certified by the video detection system's manufacturer to install the system. All coaxial and ethernet cable runs (if used) shall be continuous without a splice from the cabinet to the camera. If requested by the engineer, a factory certified representative from the supplier shall be available for on-site assistance for a minimum of one day during installation.

A separate grounded 120 VAC service outlet shall be provided in the controller cabinet for supplying power to the parts of the video detection system requiring AC power. Use of the grounded service outlet located on the cabinet door will not be permitted.

3.4 Detection Zones. The detection zones shall be created by drawing the detection zones on the video image (minimum 2 zones). A graphical user interface shall be built into the video detection system and displayed on a video monitor or computer. It shall be possible to edit previously defined detector configurations to fine-tune detection zone placement. When a vehicle is detected by crossing a detection zone, there shall be a visual change on the video display, such as a flashing symbol or a change in color or intensity to verify proper operation of the video detection system.

The video detection system shall have a method to send and receive communications from the system to a central location. It should be able to obtain a live video image and configured detection zones. The user should have the ability to change detection zones and detection settings in real time from the central location. The system shall be able to have re-addressable IP address or addresses.

3.5 Performance. Overall performance of the video detection system shall be comparable to inductive loops. Using camera optics and in the absence of occlusion, the video detection system shall be able to detect vehicle presence with 98% accuracy under normal day and night conditions with only slight deterioration in performance under adverse weather conditions, including fog, snow and rain. When visibility exceeds the capabilities of the camera, the video detection system shall default to placing a call on all detectors. Supportive documentation is required to meet this specification and shall be provided to the Engineer before installation.

3.6 Vehicle Data. In addition to presence detection, the video detection system shall be capable of performing at a minimum the following calculations in real time and store all values for each camera view for any visible lane without the addition of another device:

- a) Speed
- b) Volume
- c) Lane Occupancy
- d) Vehicle Classification
- e) Other available performance measures

For speed calculations thru movements are required. Turning movement measurements are desired but not required. For volume measurements/calculations both mainline thru and all turning movements are required. All values are to be assigned to detector channels within the controller. If this requirement cannot be met all values must be able to be exported thru an excel spreadsheet. Other performance measures must be clearly defined. In all cases all performances measures must be ultimately available in an easily usable, exportable format (USB, Ethernet, or

built Wi-fi Computer). The contractor shall provide documentation to the Engineer to confirm the volumes are configured and operational through the video detection system.

3.7 Monitor. The monitor shall be an LCD active matrix with a minimum 7" diagonal screen color monitor, an NTSC-M system, HDMI, VGA, and BNC video in-out connections built into the housing. The unit shall be compact and lightweight, with a stand on the cabinet shelving, have low power consumption, constructed to operate under extreme temperature conditions, and run on AC power. AC adaptor shall be included. The monitor shall be installed to automatically power on when the cabinet door is opened and automatically power off when the cabinet door is closed. A manual on/off switch shall be provided.

3.8 Video Camera and Housing. The camera shall produce a high definition (HD) color video image of vehicles during daylight hours, with an optional production of black and white images during nighttime hours. The camera shall be able to detect a minimum of 500 ft in advance of the signal. Detection shall work properly during night hours without the need of additional luminaire lighting at the signal. The video shall produce a clear image for scenes. The camera shall include an electronic shutter or auto iris control based on average scene luminance and shall be equipped with an auto iris lens, as well as sun shield that prevents sunlight from directly entering the lens. The sun shield shall include a provision for water diversion to prevent water from flowing in the camera field of view and shall be able to slide forward and back. The total weight of the enclosure, camera, lens, housing, sun shield and mounting bracket shall be less than 10 pounds.

3.9 Video Detection System Connections. The system must be able to connect through computer or mouse/video for configuring the detection zones. The equipment shall be provided with a NEMA TS2 interface as shown on the plans.

At a minimum, each lane of traffic shall be able to have its own output. A minimum of 32 detector outputs is required for the system but should be capable of expanding to 64 outputs if required based on the geometry of the intersection.

The contractor shall be responsible for any changes or additions to either an existing or new cabinet in order to provide a properly functional video detection system and monitor display. This may include, but is not limited to, additional SDLC connectors, shelf relocation and component reorganization. No direct pay for any changes or additions. All required connections will be considered part of the video detection system installation.

3.10 Construction Requirements. Construction requirements shall conform to Sec 902.

3.11 Documentation and Testing. The contractor shall provide one bound copy for the signal cabinet and one pdf version of the user's manual.

3.12 Training. MoDOT may require training on the maintenance and operation of the detection system. Maintenance and operation personnel shall be trained on troubleshooting, maintenance and repair of cameras and all serviceable equipment. Training shall include field level troubleshooting and bench repair. This training shall be for a minimum of sixteen hours over two days. Training shall be conducted at a time and location mutually agreeable by the contractor and the signal shop traffic supervisor or as directed by MoDOT.

4.0 Method of Measurement. Method of measurement will be per approach, complete in place including all necessary incidental items to complete the work. An approach is defined as all lanes of traffic moving toward an intersection or a midblock location from one direction.

5.0 Basis of Payment. Accepted Traffic Signal Detectors will be paid for at the contract unit price for item 902-99.02, Optional Traffic Signal Detectors, per each.

K. Balanced Mix Design Performance Testing NJSP-20-01C

1.0 Description. This work shall consist of providing asphalt mixture in accordance with Sec 403 and meet the Balanced Mix Design (BMD) performance requirements of cracking and rutting resistant properties at an increased density level. The BMD performance requirements will be applied to SuperPave mainline wearing surface mixtures. Bituminous binder and base, level course, shoulder, and pavement repair mixtures are excluded from the BMD requirements.

2.0 Performance Testing. Acceptable test results meeting the 100% pay criteria for both Cracking Tolerance Index (CT_{Index}) and Hamburg Wheel Track (HWT) tests shall be submitted with the mix design for approval. The contractor shall conduct Quality Control (QC) testing for CT_{Index} and HWT tests at a frequency of 1/10,000 tons for the mainline pavement. The random testing location will be determined by the engineer.

Incentive/disincentive payment will be calculated based upon the mixture cost for the tonnage represented by each sample, generally 10,000 tons. An incentive of 3% of the asphalt mixture item cost will be paid if the CT_{Index} results are within the incentive range and HWT results are below 12.5 mm. The engineer will conduct performance testing at a frequency of 1/20,000 tons for Quality Assurance (QA). A favorable comparison will be achieved if the results for QA and QC are within 20%.

Gyratory compacted samples for the Asphalt Material Performance Tester (AMPT) shall be fabricated at a minimum of once per project or as directed by the engineer and submitted to the MoDOT Central Laboratory for informational purposes only.

3.0 Mix Sampling and Preparation. Laboratory mixed samples for mix design submittal shall be short term conditioned in accordance with AASHTO R30 prior to conducting performance testing. Loose mix samples from the plant shall be taken during production in accordance with AASHTO R 97 and split to the appropriate size in accordance with AASHTO R 47. No conditioning is required on plant mixed samples. Samples shall then be heated to the compaction temperature +/- 3° C prior to compacting necessary samples for QA/QC testing. QA personnel shall be present during the sampling, splitting, and molding process. QC shall fabricate all test specimens. QA will randomly select the specimens to submit to the MoDOT Central Laboratory for performance testing. The following table details the minimum number of specimens required:

Performance Test	Minimum Number of Specimens per Set	Molded Specimen Height (mm)
Cracking Tolerance Index (CT_{Index})	3	62
Hamburg Wheel Track (HWT)	4	62
AMPT Samples for Research Purposes	5	180

When QA testing is to be performed, three sets shall be fabricated for CT_{Index} and HWT performance testing: QC, QA, and an additional set for QA retention.

AMPT samples for BMD research shall be fabricated in accordance with AASHTO PP 99-19, carefully following the exceptions noted herein:

- 1) Pour the mixture into the center of the mold to minimize air void variation between samples. Pouring material down the sides of the mold will result in lower air voids on that side of the mold.
- 2) Charge the mold in two equal lifts. After each lift, use the spatula to scrape the walls of the mold, inserting the spatula 8-10 times around the circumference of the mold. Insert the spatula into the center of the mixture 10-12 times in an evenly distributed pattern. Insert the spatula as far as possible into the mixture without damaging aggregates.
- 3) Target air void for AMPT samples should be 8.5 +/- 0.5% for non SMA specimens or 7.5 +/- 0.5 % for SMA specimens due to the lower internal air void structure with sample preparation.

3.1 Molding BMD Samples. The specimens shall be compacted to an air void content of 7.0 +/- 0.5% or $6.0 \pm 0.5\%$ for SMA mixtures. The gyratory specimen weight for each performance test shall be submitted with the mix design. The compacted test specimens shall be allowed to cool to 25 +/- 3° C prior to determining the air void content.

3.2 Determining Air Voids. The bulk specific gravity of the test specimen will be determined in accordance with AASHTO T166. Specimens shall be air dried for 24 +/- 3 hours before preconditioning the test specimens for CT_{Index} testing. Test specimens shall be preconditioned as specified in the test methods. If a water bath is utilized, it is critical that samples are kept dry.

3.3 Records. Compaction temperature, times in and out of the oven, gyratory specimen weight, and sample identification shall be recorded.

4.0 Cracking Tolerance Index (CT_{Index}) Testing. The CT_{Index} testing shall be completed in accordance with ASTM D8225 and at a test temperature of 25 C +/- 1° C. Incentive/disincentive payment will be calculated based upon the mixture cost for the tonnage represented by each sample, generally 10,000 tons. An incentive of 3% of the asphalt mixture item cost will be paid if the CT_{Index} results are within the incentive range and HWT results are below 12.5 mm.

5.0
Wheel
(HWT).
will be

Non SMA Mixtures	
Cracking Tolerance Index (CT_{Index})	Percent of Contract Price
< 45	97%
45 - 97	100%
> 97	103%
SMA Mixtures	
Cracking Tolerance Index (CT_{Index})	Percent of Contract Price
< 135	97%
135 - 240	100%
> 240	103%

Hamburg
Track
HWT testing
completed in

accordance with AASHTO T324 at test temperature of 50 C and 62 mm specimen height.

PG Grade High Temperature *	Minimum Wheel Passes	Maximum Rut Depth (mm)
58S-xx	5,000	12.5
64S-22	7,500	12.5
64H-22	15,000	12.5
64V-22	20,000	12.5

*Determined by the binder grade specified in the contract.

6.0 Design Gyration. The number (N) of gyrations required for gyratory compaction shall be in accordance with Sec 403.4.5. For Non-SMA mixtures, at the option of the contractor the number of gyrations and air voids may be lowered. Mixtures having lowered gyrations shall have a minimum volume of effective asphalt, equal to the VMA minus the air voids, as shown in the chart below, with design air voids between 3.0% to 4.0%. The minimum VMA shall be the design air voids plus the volume of effective asphalt.

Mixture	Volume of Effective Asphalt (percent)
SP125	11.0
SP095	12.0
SP048	13.0

The minimum gyration level shall be in accordance with the following:

Design	N _{design}
F	35
E	50
C	60
B	65

7.0 VFA Requirements. Section 403.4.6.3 Voids Filled with Asphalt shall be omitted provided that the HWT requirements described above are satisfied and the CT_{Index} is 45 or greater.

8.0 Sec 403 Revisions.

Delete Section 403.5.2 and replace with the following...

403.5.2 Density. The final, in-place density of the mixture shall be between 92.0 and 97.5 percent of the theoretical maximum specific gravity for all mixtures except SMA. SMA mixtures shall have a minimum density of 94.0 percent of the theoretical maximum specific gravity. The theoretical maximum specific gravity shall be determined from a sample representing the material being tested. Tests shall be taken not later than the day following placement of the mixture. The engineer will randomly determine test locations.

Delete Section 403.23.7.3 and replace with the following...

403.23.7.3 Removal of Material. All lots of material with a PFT less than 50.0 shall be removed and replaced with acceptable material by the contractor. Any subplot of material with a percent of theoretical maximum density of less than 90.0 percent or greater than 98.0 percent shall be

removed and replaced with acceptable material by the contractor. For SMA mixtures, any subplot of material with a percent of theoretical maximum density of less than 92.0 percent shall be removed and replaced with acceptable material by the contractor. Any subplot of material with air voids in the compacted specimens less than 2.0 percent shall be evaluated with Hamburg testing and removed and replaced with acceptable material by the contractor if the rut depth is greater than 14.0 mm at the designated number of wheel passes above. No additional payment will be made for such removal and replacement. The replaced material will be tested at the frequencies listed in [Sec 403.19](#). Pay for the material will be determined in accordance with the applicable portions of [Sec 403.23](#) based on the replacement material.

Delete Section 403.23.7.4.1 and replace with the following...

403.23.7.4.1 Small Quantities. Small quantities are defined in [Sec 403.19.3.2.1](#). Unless the contractor has elected to use the normal evaluation in the Bituminous QC Plan for small quantities, the following shall apply for each separate mixture qualifying as a small quantity

(a) QLA and PWL will not be required.

(b) Mixtures shall be within the specified limits for VMA, V_a , AC and density. In addition to any adjustments in pay due to profile, the contract unit price for the mixture represented by each set of cores will be adjusted based on actual field density above or below the specified density using the following schedule:

Field Density (Percent of Laboratory Max. Theoretical Density)			Pay Factor (Percent of Contract Unit Price)
For all SP mixtures other than SMA:			
		92.0 to 97.5 inclusive	100
97.6 to 98.0	or	91.5 to 91.9 inclusive	90
	or	91.0 to 91.4 inclusive	85
	or	90.5 to 90.9 inclusive	80
	or	90.0 to 90.4 inclusive	75
Above 98.0	or	Below 90.0	Remove and Replace
For SMA mixtures:			
		>94.0	100
		93.5 to 93.9 inclusive	90
		93.0 to 93.4 inclusive	85
		92.5 to 92.9 inclusive	80
		92.0 to 92.4 inclusive	75
		Below 92.0	Remove and Replace

9.0 Basis of Pavement. Payment for compliance with this provision will be made at the contract unit price for Item No. 403-10.56, Asphalt Performance Testing, lump sum.

L. Special Consideration of Change Orders and Value Engineering JSP-21-07

1.0 Description. Increased Federal Share has been approved by the FHWA for an innovative technology or practice. The Commission will receive an additional five percent Federal Share of the overall contract value due to innovations within the following pay item(s).

Pay Item Number	Pay Item Description	Innovation
430-10.56	Asphalt Performance Testing	Asphalt Performance Testing

Due to the increased Federal Share, the project components related to the innovation(s) described above must be constructed with the materials, quantities, methods and innovations as shown on the project plans and specifications. If the contractor requests materials, quantities, methods, or innovations other than those included in the plans and specifications, the request must be reviewed and approved by the Commission and FHWA. Approved changes to the innovation items above shall be at no additional cost to the Commission and shall not increase the contract time.

2.0 Special Consideration of Change Orders and Value Engineering Change Proposals (VECP). Change ordering and/or value engineering the pay item(s) listed in section 1.0 jeopardize the ability for the Commission to receive an additional Federal Share for the overall contract value. Special consideration should be given to the change order value for removing or modifying such item(s) from the contract ensuring the benefit outweighs the cost.

3.0 Contacting Financial Services. If it is determined that the proposed change order and/or VECP outweighs the additional overall five percent Federal Share value, the Engineer shall notify the MoDOT project manager.

M. Void Reducing Asphalt Membrane for Longitudinal Joints

1.0 Description. This work shall consist of applying a Void Reducing Asphalt Membrane (VRAM) at longitudinal joints at locations designated in the contract or as specified by the engineer.

2.0 Materials. The bituminous material used for the VRAM shall meet the requirements of Table 1. Elastomers shall be added to a base asphalt and shall be either a styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber. Air blown asphalt, acid modification and other modifiers will not be allowed.

Table 1: Bituminous Material Requirements

Test	Test Requirement	Test Method
Dynamic shear @ 88°C (unaged), $G^*/\sin \delta$, kPa	1.00 minimum	AASHTO T315
Creep stiffness @ -18°C (unaged) Stiffness (S), MPa m-value	300 maximum 0.300 minimum	AASHTO T313
Ash, %	1.0-4.0	AASHTO T111
Elastic recovery, 100 mm elongation, cut immediately, 25°C, %	70 minimum	ASTM D6084 Method A

Separation of Polymer, Difference in ring and Ball , °C	3 maximum	ASTM D7173
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3.0 Equipment. The equipment used for applying the VRAM shall be capable of applying the VRAM in a single pass at the specified application rate and width.

3.1 Pressure Distributor. When a pressure distributor is used to apply the VRAM, the distributor shall be equipped with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating.

3.2 Melter Kettle. When a melter kettle is used for transporting and/or application of the material. Equip the melter kettle with an oil jacketed double-boiler type with agitating and recirculating systems. Dispense material from the kettle through a pressure feed wand with an applicator shoe or with a spray bar.

4.0 Construction.

4.1 Surface Preparation. Prior to the application of the VRAM ensure the area of the intended longitudinal asphalt pavement joint is thoroughly cleaned and free of debris. Clean the area by sweeper/vacuum truck, power broom, air compressor or hand to the satisfaction of the Engineer. Ensure the existing surface is dry and free of moisture. Milled surfaces may require the use of compressed air to remove dust and fine materials from the area where VRAM will be applied.

4.2 VRAM Location and Application. When applying the VRAM material, the following location and application rate criteria shall be followed:

(a) The VRAM application shall be within 2 inches of the project established centerline or established lane edge. The entire width shall be placed on the unconfined side of the joint.

(b) The VRAM shall be applied in a single pass to the existing surface. The tack coat shall be applied after the VRAM. At the time of installation, the pavement surface temperature and the ambient temperature shall be a minimum of 40 F (4 C) and rising.

(c) The width of the VRAM shall be a minimum of 9 inches +/- 1.5 inches. If the VRAM flows more than 2 inches from the initial placement width, stop paving and take remedial action subject to the Engineer's approval.

(d) The minimum VRAM application rates shall be 0.900 lb/ft for SP125 mixes with less than 40% passing the No. 8 sieve and 0.555 lb/ft for SP 125 mixes with equal to or greater than 40% passing the No. 8 sieve.

(e) Prior to start of paving of pavement course, ensure the paver end plate and grade control device is adequately raised above the finished height of the VRAM.

(f) The VRAM shall be suitable for construction traffic to drive on without pick up or tracking within 30 minutes of placement. If pick up or tracking occurs, stop paving and take remedial action subject to the Engineer's approval.

(g) If rain is forecasted and traffic is to be on the VRAM or if pickup/tracking of the VRAM material is likely, the VRAM shall be covered immediately following its application with fine

aggregate mechanically spread uniformly at a rate of 1.5 ± 0.5 lb/sq yd. Fine aggregate landing outside of the VRAM shall be removed prior to application of tack coat.

4.3 VRAM Documentation. The contractor shall provide a daily report with the following information:

- (a) Control Section/Project Number/County/Route/Engineer.
- (b) Date/Detailed Weather Information/Pavement Temperature.
- (c) VRAM Application Temperature.
- (d) Beginning and Ending Stations of Placement.
- (e) Source, Manufacturer, and date shipped for each load of VRAM.
- (f) Dimensions: Length, Width, and Total Square Feet.
- (g) Signature of Contractor's Authorized Representative.

4.4 VRAM Sampling and Testing. A one-quart sample shall be taken randomly from the pressure distributor or melting kettle at the jobsite once for each contract and sent to the Construction and Materials Central Laboratory at 1617 Missouri Blvd, Jefferson City, MO.

4.5 VRAM Application Rate Verification. The VRAM application rate shall be verified within the first 1,000 feet of the day's placement. A suitable paper or pan shall be pre-weighed and placed in the path of the VRAM. After VRAM application, the paper or pan shall be weighed, and the application rate calculated. The tolerance between the application rate in Table 2 and the calculated rate shall be within +/- 10 percent. The VRAM shall be replaced in the area where the sample was taken.

5.0 QC/QA Changes

Delete Section 403.16.1 and substitute the following:

403.16.1 Joint Composition. Longitudinal joints shall be formed by the use of an edging plate fixed on both sides of the finishing machine. When the VRAM material is satisfactorily placed, the unconfined longitudinal joint density in the table within **Sec 403.19.3** for Test and Pay Factor Items will not be required and the pay adjustments will not apply. There will be no density requirement within 6-inches of the unconfined longitudinal joint. The joint shall be compacted as a typical unconfined longitudinal joint.

Delete Section 403.23.6 Density Adjustment in its entirety.

6.0 Method of Measurement. Final measurement of the surface treatment alone will not be made. Measurement will be made per the test section as established in JSP N.

7.0 Basis of Payment. Payment for the VRAM will be based on Section 7.0 of JSP N.

N. Unconfined Joint Study

1.0 Description. This special provision includes the description of work to be performed on three test sections located on US 69 in Clay County, project J4S3413. The purpose of the test sections is to study unconfined joint consolidation using various methods to improve joint density. Areas not described in the following Job Special Provision are to be constructed in accordance with the plans and specifications as described in the contract documents.

2.0 General. Missouri Department of Transportation will be conducting the research for the experimental test sections.

2.1.1 When conducting work in the test section areas specified in Section 3.0, the contractor shall submit a schedule of work at least seven days prior to work beginning within a test area. Any changes to the schedule, except weather related events, shall be provided to the engineer in writing at least three days prior to the change in work schedule occurring.

2.1.2 The contractor shall allow the department and other research entities access to all operations for data collection. The contractor shall assist in the collection of cores for density results.

3.0 Test Section Locations and General Descriptions. There are three test sections to be constructed in this project as listed below.

Section ID/Name** (Abbreviation on Signs)	Log Mile Locations	General Description
Void Reducing Asphalt Membrane (VRAM)	US 69 SB 92.665 to 93.411	VRAM shall be placed 9 inches wide prior to paving all unconfined joints
Overmill	US 69 SB 93.411 to 94.272	Paving a minimum of 6 inches past unconfined joint and milling of a minimum of 6 inches.
Rapid Penetrating Emulsion (RPE)	US 69 SB 94.994 to 95.820	RPE shall be applied 2 ft. wide on all unconfined joints at 0.2 gallons per square yard after the completion of paving.

4.0 General Construction Requirements. All test sections shall be constructed as described herein.

4.1 VRAM Test Section. This section shall contain VRAM applied at a minimum of 9 inches on all unconfined joints in this test section. The entire 9 inches shall be placed within the unconfined joint. VRAM shall be applied in accordance to JSP M.

4.3 Overmill Section. This section shall be over paved a minimum of 6 inches past the desired final placement of the joint. A minimum of 6 inches shall be removed by milling prior to paving of the adjoining lane. All unconfined joints shall be over-milled in this test section.

4.4 RPE Section. A Rapid Penetrating Emulsion shall be sprayed 2 ft. wide on all unconfined joints after paving has been completed in both lanes. The RPE shall be applied at 0.2 gallons per square yard.

5.0 Test Section Coring and Testing.

The contractor is responsible for identifying the beginning and ending of each test section by placing a survey lath or other marker and to record all stations or locations approved by the engineer.

The Contractor shall collect a minimum of 6 cores to be tested for density in each test section. The contractor shall provide the cores to the engineer to be tested for density. 3 cores shall be taken on the unconfined centerline joint and 3 cores shall be taken on the confined centerline joint. The unconfined cores shall be taken within 6 inches of the centerline joint.

6.0 Method of Measurement. Final measurement of the test sections will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. Where required, measurement of the test sections will be made to the nearest linear foot. The revision or correction will be computed and added to or deducted from the contract quantity.

7.0 Basis of Payment. Payment for the test sections will be paid for at the contract unit price per linear foot for one of the following pay items:

Item No.	Unit	Description
1099903	Linear Foot	Void Reducing Asphalt Membrane Test Section
2029912	Linear Foot	Rapid Penetrating Emulsion Test Section

Payment for overmill section will be paid for with quantities associated with and included in pavement.

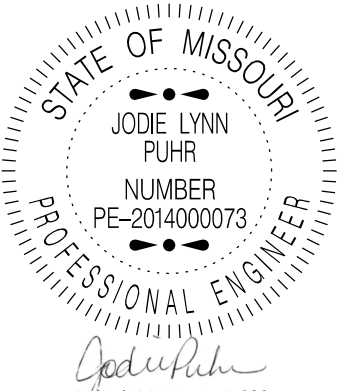
No separate payment will be made for any additional construction methods or processes.

Job No.: J4S3452
Route: 269
County: Jackson

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

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 <p>09/05/2023 9:59:51 AM JODIE LYNN PUHR - CIVIL MO-PE-2014000073</p>	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J4S3452 JACKSON COUNTY, MO DATE PREPARED: 8/21/23
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All	

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02J

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 JSP-13-01C

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.

Job No.: J4S3452
Route: 269
County: Jackson

Notice to Proceed Date: December 4, 2023
Contract Completion Date: November 1, 2024

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
J4S3452	24	\$3200

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 **\$1500** 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 JSP-02-06N

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

1.1 Maintaining Work Zones and Work Zone Reviews. The Work Zone Specialist (WZS) shall maintain work zones in accordance with Sec 616.3.3 and as further stated herein. The WZS shall coordinate and implement any changes approved by the engineer. The WZS shall ensure all traffic control devices are maintained in accordance with Sec 616, the work zone is operated within the hours specified by the engineer, and will not deviate from the specified hours without prior approval of the engineer. The WZS is responsible to manage work zone delay in accordance with these project provisions. When requested by the engineer, the WZS shall submit a weekly report that includes a review of work zone operations for the week. The report shall identify any problems encountered and corrective actions taken. Work zones are subject to unannounced inspections by the engineer and other departmental staff to corroborate the validity of the WZS's review and may require immediate corrective measures and/or additional work zone monitoring.

1.2 Work Zone Deficiencies. Failure to make corrections on time may result in the engineer suspending work. The suspension will be non-excusable and non-compensable regardless if road user costs are being charged for closures.

2.0 Traffic Management Schedule.

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

2.2 The traffic management schedule shall conform to the limitations specified in Sec 616 regarding lane closures, traffic shifts, road closures and other width, height and weight restrictions.

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of **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.

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

2.7 Traffic Management Center (TMC) Coordination. The Work Zone Specialist (WZS) or their designee shall contact by phone the MoDOT Traffic Management Center (KC Scout TMC at #816-347-2250 or Gateway Guide TMC at #314-275-1513) within five minutes of a lane or ramp closure beginning and within five minutes of a lane or ramp closure being removed. The WZS shall make this phone call 24 hours a day, 365 days of the year since the MoDOT Traffic Management Centers are always staffed.

3.0 Work Hour Restrictions.

3.1 Except for emergency work, as determined by the engineer, and long term lane closures required by project phasing, all lanes shall be scheduled to be open to traffic during the five major holiday periods shown below, from 12:00 noon on the last working day preceding the holiday until 6:00 a.m. on the first working day subsequent to the holiday unless otherwise approved by the engineer.

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

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

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

3.1.2 Except for emergency work, as determined by the engineer, and long term lane closures required by project phasing, the contractor's working hours will be restricted for the Special Events as shown below. All lanes shall be scheduled to be open to traffic during these Special Events.

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 269 Northbound (Log Mile 0.035 to 0.824):
Weekdays (Monday – Friday): No Work Hour Restrictions
Weekends: No Work Hour Restrictions

Route 269 Southbound (Log Mile 0.590 to 1.379):
Weekdays (Monday – Friday): No Work Hour Restrictions
Weekends: No Work Hour Restrictions

3.5 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$1500 per 15 minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

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

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. If a CMS with Communication Interface is required, then the CMS shall be capable of communication prior to installation on right of way. All messages planned for use in the work zone shall be approved and authorized by the engineer or its designee prior to deployment. When permanent dynamic message signs (DMS) owned and operated by MoDOT are located near the project, they may also be used to provide warning and information for the work zone. Permanent DMS shall be operated by the TMC, and any messages planned for use on DMS shall be approved and authorized by the TMC at least 72 hours in advance of the work.

4.2 At least one lane of traffic in each direction shall be maintained at all times except for brief intervals of time required when the movement of the contractor's equipment will seriously hinder

the safe movement of traffic. Periods during which the contractor will be allowed to interrupt traffic will be designated by the engineer.

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

D. Emergency Provisions and Incident Management JSP-90-11A

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

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

Missouri Highway Patrol – Troop A 816-622-0800
City of Kansas City
Fire: 816-513-4600
Police: 816-234-5000

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. Contractor Quality Control and Daily Reporting

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.

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

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

3.3.2 CDWR information:

- (a) Date and Contract Identification Number
- (b) Weather conditions, rainfall amounts, high/low ambient temperatures
- (c) List of subcontractors who performed work
- (d) Description of all work performed, including general location (ex. Sta, offset, log mile, etc.), and any testing performed.

- (e) Date range of days when no work was performed since the previous DWR
- (f) Pertinent traffic control information (changes, delays, accidents, etc.)
- (g) Statement: "All items installed meet or exceed contract requirements."

4.0 Work Planning and Scheduling.

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

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

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

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

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

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

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

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

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

F. 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 pavement marking 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 logs 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.

G. Project Contact for Contractor/Bidder Questions JSP-96-05

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

Jodie Puhr, Project Manager
Kansas City District
Lee's Summit, MO 63017

Telephone Number: 816-607-2254
Email: Jodie.Puhr@modot.mo.gov

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

H. Permanent Aggregate Edge Treatment NJSP-15-40B

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

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

3.0 Material Requirements. Material used for the aggregate edge treatment shall be Type 1, 5, or 7 Aggregate in accordance with Sec 1007 or an allowable substitute approved by the engineer. Bituminous cold millings meeting the gradation for Type 1, 5 or 7 Aggregate may be used in lieu of aggregate. Limestone screenings or other material with excessive fines will not be allowed. Material will be accepted based on certification in lieu of testing contingent upon satisfactory results being obtained in the field.

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

5.0 Basis of Payment. The accepted quantities of aggregate edge treatment will be paid for at the contract unit price for 304-99.10, Permanent Aggregate Edge Treatment, per ton and will be full compensation for all labor, equipment and material to complete the described work. No fuel adjustment will be made for Permanent Aggregate Edge Treatment.

I. Bonded Asphaltic Concrete Pavement

1.0 Description. This work shall consist of the placement a Polymer Modified Emulsion Membrane prior to a bituminous overlay of hot asphaltic concrete pavement in accordance with Sec 413.31.

2.0 Method of Measurement. Measurement of the Polymer Modified Emulsion Membrane shall be based on the volume in gallons in accordance with Sec 1015.

3.0 Basis of Payment. The accepted quantity of Polymer Modified Emulsion Membrane shall be paid for at the contract unit price 407-99.12, Misc. Bonded Asphaltic Concrete Pavement per gallons.

J. Supplemental Revisions JSP-18-01Z

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.

Buy America

In addition to Section 106.9 of the Missouri Standard Specifications for Highway Construction, the following requirements will also be in effect for this project.

1.0 Description. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021. The BIL includes Build America, Buy America Act Publication L. No. 117-58. This provision expands the Buy America requirements beyond what is currently only required for steel and iron products. The steel and iron provisions have not changed with the new bill. Cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives are excluded from this requirement. All other materials and manufactured products permanently incorporated into the project will be subject to Buy America requirements. There are three categories requiring Buy America Certification:

- a) Iron and steel – no changes to the current specification requirements.
- b) Manufactured products – these are currently exempted under the 1983 waiver from FHWA.
- c) Construction materials consisting primarily of:
 - Non-ferrous metals;
 - Plastic and polymer-based products (including polyvinylchloride, composite build materials, and polymers used in fiber optic cables);
 - Glass (including optic glass);
 - Lumber; or
 - Drywall

1.1 All products and or materials will only be classified under one of these categories and not under multiple categories. It is the prime contractor's responsibility to assure all submittals required for Buy America are submitted to the Engineer prior to the products and or materials being incorporated in the job. The implementation of this policy will be in effect for all projects awarded after November 10, 2022.

1.2 New items designated as construction materials under this requirement will require the prime contractor to submit a material of origin form certification prior to incorporation into the project. The Certificate of Material origin form ([link to certificate form](#)) from the supplier and/or fabricator must show all steps of the manufacturing being completed in the United States. The Certificate of Material form shall be filed with the contract documents.

1.3 Any minor miscellaneous construction material items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. The certification shall read "I certify all materials permanently incorporated in this project covered under this provision have been to the best of my knowledge procured and all manufactured domestically." The certification shall be signed by an authorized representative of the prime contractor.

1.4 The National Transportation Product Evaluation Program (NTPEP) compliance program verifies that some non-iron and steel products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and an acceptable standard per 23 CFR 635.410(d). NTPEP compliant suppliers will not be required to submit step certification documentation with the shipment for some selected non-iron and steel materials. The NTPEP compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

2.0 Basis of Payment. Any costs incurred by the contractor by reason of compliance with the above requirements shall be considered as included in and completely covered by the unit price bid for the various items of work included in the contract.

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](#).