

Job No. J7S3487
Route: 86
County: Newton

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
	<i>Bartlett & West, Inc.</i> <i>1824 South Lone Pine, Suite F</i> <i>Springfield, MO 65804</i> Certificate of Authority: 000167-Eng. Consultant Phone: (573) 634-3181
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J7S3487 NEWTON COUNTY, MO DATE PREPARED: AUGUST 3, 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 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.

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Notice to Proceed: November 6, 2023
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
J7S3487	174	\$3,200

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **\$750** 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.

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

2.5.1 Traffic Safety.

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

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

3.0 Work Hour Restrictions.

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

Memorial Day
Independence 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

3.2 The contractor shall not perform any construction operation on the 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 Changeable Message Signs. The contractor shall place the changeable message sign (CMS) at the location shown on the plans or as directed by the engineer. The CMS shall not be located in the median.

4.2 At least one lane of traffic in each direction shall be maintained along Route 86 at all times except for brief intervals of time required when the movement of the contractor's equipment will seriously hinder the safe movement of traffic. Periods during which the contractor will be allowed to interrupt traffic will be designated by the engineer.

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

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

Delete Sec 108.8.1.3 (a)

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

E. Emergency Provisions and Incident Management – SW

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 resident engineer's office shall also be notified when the contractor requests emergency assistance.

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

Missouri Highway Patrol – Troop D: 417-895-6868	
MoDOT Customer Service: 417-895-7600	
Newton County Sheriff's Department	(417) 457-8333
Neosho Fire Department Station 1	(417) 451-8021
Neosho Police Department	(417) 451-8012

Emergency Only Numbers	
911	
*55 cell phone – Missouri Highway Patrol	
417-864-1160 – MoDOT Incident Management Coordinator	

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 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.

F. Project Contact for Contractor/Bidder Questions

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

PRIMARY CONTACT – Supervising Engineer:
Michael Atkinson, P.E., Project Contact
Allgeier, Martin and Associates, Inc.
7231 East 24th Street
Joplin, MO 64804
Telephone Number: (417) 680-7352
Email: Michael.Atkinson@amce.com

SECONDARY CONTACT:
Craig Switzer, P.E., Project Contact
Missouri Department of Transportation, Southwest District
2915 Doughboy Drive
Joplin, MO 64804
Telephone Number: (417) 621-6331
Email: Craig.Switzer@modot.mo.gov

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

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. Utilities

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

<u>Utility Name</u>	<u>Known Required Adjustment</u>	<u>Type</u>
AT&T - Distribution Contact: Jon Fisk 417-529-0840 jf4583@att.com	Yes	Communications
MoDOT Contact: Joe Dotson 417-766-3824 Joseph.dotson@modot.mo.gov	Yes	Signals, Lighting, ITS
City of Neosho Contact: Nate Siler 417-451-8071 nsiler@neoshomo.org	Yes	Water, Sewer
New-Mac Electric Cooperative Contact: Greg Bien 417-438-8289 gbien@newmac.com	Yes	Electric

1.1 The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities.

2.0 AT&T. Plans were generated based on utility information provided during project development. Since that time, AT&T has relocated their facilities and is clear of proposed construction activities.

3.0 New-Mac Electric. New-Mac Electric has overhead and support utilities within the project limits. New-Mac Electric has agreed to relocate their utilities to accommodate the proposed intersection improvements. This utility will be relocated prior to the construction of the intersection. It will be necessary for the Contractor to coordinate with New-Mac Electric to provide power to the Power Supply as shown on the plans.

4.0 City of Neosho – Sanitary Sewer. A sanitary sewer manhole located in the southwest quadrant of the intersection will be relocated as part of this project. The limits and extent of the work is outlined and incorporated into the intersection construction plans.

5.0 City of Neosho – Water. The City of Neosho has fire hydrants and water valves located in the southeast corner of the entrance to Love’s and in the northwest and southeast quadrants of the intersection. The City of Neosho will adjust the elevation of the valve boxes and relocate the fire hydrants to accommodate the proposed grades prior to construction.

6.0 MoDOT – Signals, Lighting, ITS. The Contractor shall contact Joe Dotson, Traffic Supervisor, to coordinate the installation of the lighting.

I. Temporary Construction Easements

1.0 Description. MoDOT has obtained temporary construction easements from property owners in order to construct improvements for the project. The businesses will continue utilizing those construction easements to conduct their day to day business. The contractor shall coordinate with the business owners to minimize the amount of time and space needed to construct the improvements located inside each temporary construction easement.

2.0 Construction Requirements. The contractor shall not disturb any business improvements, besides the entrance itself, located inside each temporary construction easement. Business improvements includes such things as, but not limited to, business signs and their electrical connections, landscaping, sprinkler systems. The contractor will be solely responsible to repair or replace any improvements they disturb that are not specifically marked on the plans for removal.

3.0 The contractor shall not use any temporary easements for staging of equipment or storage of materials without prior approval from the property owner and the engineer.

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

J. Access to Commercial and Private Properties

1.0 Description. This improvement is located within a commercial and residential area. While working on entrances or adjacent properties, the contractor shall make every reasonable effort to minimize any interference to the properties and to pursue the work diligently. Under no circumstances shall the contractor block ingress/egress to and from businesses during the normal business hours of each business unless approved in advance by the property owner and the engineer.

1.1 The contractor shall notify the engineer ten (10) calendar days prior to any area of sidewalk or entrance construction. After notification from the contractor, the engineer will contact each property owner at least one week prior to any sidewalk or entrance construction within their property limits to advise them of the work that will take place and the timeframe of the work.

2.0 Construction Requirements. If there exists more than one entrance to the property, the contractor shall keep a minimum of one entrance to that property completely open at all times unless approved in advance by the property owner and the engineer. If there is only one entrance, the contractor shall only construct one half of the entrance at a time. The minimum compressive strength of the concrete shall be 2,500 psi for light traffic (residential) and 3,000 psi for commercial traffic before allowing access. All materials, mixture and placement requirements shall be in accordance with all applicable portions of Section 501, 502, and 613, except as specified herein.

3.0 Liquidated Damages Specified. If the entire entrance is not complete and open to traffic within **five (5) calendar days**, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$500 per day** for each full day that an entrance is not complete and open to traffic in excess of the limitation as specified elsewhere in the special provision.

4.0 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 documents.

K. Damage to Existing Pavement, Side Roads and Entrances

1.0 Description. This work shall consist of repairing any damage to existing pavement, ramps and/or shoulders caused by contractor operations. This shall include damage caused either directly or indirectly by contractor operations, including but not limited to, damage caused by the traffic during contractor operations.

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

3.0 Method of Measurement. No measurement of damaged pavement, ramps or shoulder areas as described above shall be made.

4.0 Basis of Payment. No payment will be made for repairs to existing pavement, ramps and/or shoulders damaged by contractor operations

L. Contractor Furnished Surveying and Staking – SW

In addition to the requirements of Section 627 of the Missouri Standard Specifications for Highway Construction, the following shall apply:

1.0 Description. The contractor shall be responsible for all layout required on the project. This responsibility shall include, but not be limited to the following: Construction signing, transition milling, pavement marking, loop detectors, etc.

1.1 The above list is not all inclusive. The contractor shall have the primary responsibility for these operations. The contractor shall provide the Resident Engineer (RE) with a staking plan layout for approval prior to the installation of signs. The RE will also provide assistance during this layout provided a request is submitted to the RE or Construction Project Manager 48 hours in advance. This will ensure that all permanently mounted traffic control devices remain consistent with District policy and avoid re-staking. If the contractor installs any signs without

engineer approval, all costs associated with re-staking and/or relocation will be at the contractor's expense.

1.2 The intent of this provision is to increase the quality of our work zones and minimize negative impacts to the contractor's schedule that can result from delays in staking.

1.3 Any adjustments to the plan quantities or line numbers established in the contract shall be approved by the Engineer.

2.0 Basis of Payment. No direct payment will be made to cover the costs associated with these additional requirements. All costs will be considered completely covered by the unit bid price submitted for Contractor Furnished Surveying and Staking.

M. Optional Pavements

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

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

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

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

2.3 The grading shown on the plans was designed for the thicker pavement option. For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for optional pavements.

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

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

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

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid price for Item 401-99.05, Optional Pavement, per square yard.

N. Sanitary Sewer Manhole (48in. diameter)

Part 1 General

1.1 Summary

- (a) This section includes design, materials, testing, and installation of precast concrete manholes and vaults.

1.2 Submittals

- (a) Submit shop drawings in accordance with the General Conditions and Section 013300.10.
- (b) Submit manufacturer's catalog data on precast concrete manholes, steps and ladders, frames and covers. Show dimensions and materials of construction by ASTM reference and grade. Show lettering on manhole covers.
- (c) Show on shop drawings for each structure all proposed pipe size openings at the proposed elevation and orientation of penetrations.
Provide product data for waterproof material, steps, ladders, and all items identified in Part 2.
- (d) The date of manufacture and name of manufacturer shall be marked inside each precast section.

1.3 Loading

- (a) All structures shall be designed for H-20 traffic loading. Access openings located in driving surfaces shall be designed for H-20 traffic loading.
- (b) Soil lateral loads shall be as determined by ASTM C857 or loadings specified in the project soils report, whichever is greater. Alternate design by the strength design method shall include a load factor of 1.7 times the lateral earth or hydrostatic pressures.

PART 2 PRODUCTS

2.1 Precast Circular Concrete Manholes

- (a) Precast manholes and circular wet wells shall conform to the requirements of ASTM Designation C 478 with reinforcement of Grade 60 bars and the following modifications thereto.
- (b) The minimum wall thickness shall be 5-inches for 4 feet diameter manholes unless otherwise noted on in the drawings. All interior and exterior surfaces shall have smooth surfaces free of surface voids. Precast structures with textured or rough surfaces will not be accepted.
- (c) Joints shall be a compression type, neoprene gasket joint meeting ASTM C923. The unfilled portion of the joint shall be filled with preformed plastic joint sealing compound that conforms to Federal Specification SS-S-0021 0.
- (d) Concrete adjusting rings (4-inch maximum) shall be standard manufactured product of the precast manhole manufacturer and conform to the requirements of ASTM C 478. All grade rings shall have integral key.
- (e) Minimum allowable steel shall be hoops of No. 4 wire cast into each unit.
- (f) Precast top sections shall be eccentric cone, except where shown otherwise in the drawings.

2.2 Inserts

- (a) Handling eyes, lifting inserts, and threaded inserts shall be galvanized steel. Design load capacity shall be 2000 pounds unless shown otherwise in the drawings.
- (b) No more than 3 lift holes may be cast or drilled in each section

2.3 Steps and Rungs

- (a) Cast structure with steps (ladder rungs). Steps shall be 1/2-inch minimum diameter steel reinforced bar with a copolymer polypropylene plastic covering (per ASTM D4101) resistant to 1,500 pounds pullout force, conform to ASTM C-478 and OSHA standards, and allow hand-driven installation into precast manholes. The tread shall be at least 3/4 inch wide.
- (b) Minimum clear length of rungs shall be 14 inches. Space rungs vertically at 16 inches on center, set between 5 and 6 inches from the face of the concrete, and align with each other in a straight vertical line (both parallel and perpendicular to ladder rungs).

2.4 Manhole Frames and Covers

- (a) Manhole frames and covers shall be made of cast iron conforming to ASTM A48, Class 35B. Castings shall be smooth, clean, and free from blisters, blowholes, and shrinkage. Frames and covers shall be designed for H20-44 traffic loads. The cover shall seat firmly into the frame without rocking.
- (b) Manhole ring and cover shall be:
 - 1. Neenah No. R-1769-A, Deeter No. 1048, Clay & Bailey No. 2032M or approved equal (minimum wt. of cover 150 lbs., and ring 250 lbs.).
- (c) Grind or otherwise finish each cover so that it will fit in its frame without rocking. Frames and covers shall be match-marked in sets before shipping to the site.
- (d) Manhole covers shall be designated as "Sanitary Sewer" and shall be cast in 2-1/2" high block letters flush with the traffic surface on all manhole covers as appropriate for the individual manhole's use.

2.5 Access Hatches

- (a) Provide single leaf access hatch with clear opening of 48" x 66". Hatch to be W2R by Halliday or equal.
- (b) The hatch shall be furnished with locking lugs to receive a padlock and recessed lifting handles.
- (c) All aluminum in contact with concrete, mortar, steel, or stainless steel shall be protected from direct contact through the use of bituminous coating or some other means.
- (d) The hatch shall be provided with 316 stainless steel hardware throughout.
- (e) The hatch shall be cast into the top slab.

2.6 Concrete

- (a) Cement for manholes shall conform to ASTM C150, Type II, 4000 psi compressive strength.

2.7 Sealing Compound and Mortar

- (a) Butyl rubber sealing compound shall comply with ASTM C990. Mortar shall comply with ASTM C387, Type S.
- (b) All grout used for sealing around pipe openings shall be of a type acceptable to the Engineer and designed for use in water. All openings and joints shall be sealed watertight.

1. Nonshrink grouts shall have a minimum 28 day compressive strength of 5000 psi, shall have no shrinkage (0.0 percent) and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C 827, and shall have no shrinkage (0.0 percent) and a maximum of 0.2 percent expansion in the hardened state when tested in accordance with CRD C 621.
- (c) Joint sealant shall be approved preformed mastic sealant. Sealant shall conform to the requirements of AASHTO M198 and shall be Kent seal or Ram Neck or pre-approved by the Engineer. Where specifically indicated, trowelable mastic sealant shall be a butyl rubber sealant, Trowelable EZ-Stik #3 as manufactured by Press-Seal Gasket Corporation or approved equal. Use Conseal CS 440 for fuel and oil resistant applications.

2.8 Pipe Connectors

- (a) Flexible resilient watertight manhole and pipe connector shall meet all material and performance requirements of ASTM C923 for pipe outside diameter 4" through 60". Gasket material shall be produced from a polyisoprene blend compound or chemically resistant neoprene EPDM flexible boot. Natural rubber gaskets will not be acceptable.
- (b) Manhole to pipe connectors shall be cast into the manhole wall during the manufacturing process.
- (c) Approved pipe connectors are:
 1. A-Lok X-CEL as manufactured by A-Lok Products, Inc.
 2. Z-Lok-XP (A-Lok Products, Inc.).
 3. Kor-N-Seal (Dukor Corporation),
 4. Storm sewer pipe connections shall be Quik-Lok or Z-Lok STM (A-Lok Products) or equal.

Part 3 Execution

3.1 Manhole Base

- (a) Excavate for the manhole and install a base of 8 inches thick washed crushed rock (3/4" max.), or as shown on the Plan details. Crushed rock base material shall extend 1 foot beyond the outside edge of the concrete manhole base.
- (b) Form and pour concrete bases as one monolithic pour. For sewer manholes, form the portion above the invert elevation of the sewer pipe to provide a smooth channel section. Channels shall vary uniformly in size and shape from inlet to outlet.

3.2 Installation

- (a) Set each precast concrete manhole unit plumb on a bed of sealant or mortar to make a watertight joint at least 1/2 inch thick with the concrete base or with the preceding unit. Point the inside joint and wipe off the excess sealant or mortar. Secure the manhole frame to the grade ring with grout and cement mortar fillet. Backfill, compact, and replace pavement.
- (b) When working inside manholes, Contractor shall exercise caution and comply with OSHA requirements when working in the presence of sewer gases, combustible oxygen-deficient atmospheres, and confined spaces.
- (c) Handle with care to avoid damage to joint ends of each section. Damaged sections may be subject to rejection at the discretion of the Engineer. All manhole and vault construction shall be watertight. The invert, walls and steps shall be cleaned of excess grout and laitance.

- (d) Precast Sections: Precast-reinforced concrete sections shall be set so as to be vertical and with sections in true alignment.
- (e) All holes in sections, used for their handling, shall be thoroughly plugged with mortar. The mortar shall be 1 part cement to 1-1/12 parts sand; mixed slightly damp to the touch (just short of "balling"): hammered into the holes until it is dense and an excess of paste appears on the surface; and then finished smooth and flush with the adjoining surfaces.
- (f) Upon installation the exterior of all structures shall be given an asphaltic waterproofing. The exterior surfaces of precast and poured-in-place manholes shall be coated with two heavy coats of a water-based asphaltic coating. Application and curing shall be in accordance with the manufacturer's specifications and instructions. Coating shall be fully dried before backfilling
- (g) Mortar
 - 1. All mortar shall be used within 40 minutes after mixing. Mortar which has begun to take on initial set shall be discarded and shall not be mixed with additional cement or new mortar.

3.3 Connection to Manholes

- (a) Connections to new manholes shall utilize flexible connections. Flexible connections allow for limited differential settlement to occur between the pipe and manhole. The uniform compaction of the bedding material under the pipe and up to the spring line or top of the pipe as detailed is essential to the control of this differential settlement. Resilient connectors shall be used with all flexible connections. A flexible preformed mastic sealant shall be installed around the bottom half of the exterior pipe surface between the resilient connector and the invert. This flexible sealant shall be installed to separate the pipe from the invert to maintain the flexibility of the pipe/manhole connection. Pipes installed with flexible connections shall not have concrete encasement at the outside of the manhole.
- (b) Connection to Existing Structures shall be done in such a manner as to prevent damage to existing structures. Hole for installation of pipe shall be approximately 4 inches larger in diameter than the outside diameter of the pipe to be installed. Annular space around the pipe or resilient connector, as required, shall be filled solid with non-shrink grout. New invert channels shall be constructed as required and shall conform to the requirements herein. For installing a new manhole on an existing pipe, a clamp-on resilient connector shall be installed on the pipe prior to grouting into the manhole wall.
- (c) DAMPPROOFING
 - 1. Manholes shall be dampproofed on the exterior. Surfaces to receive coating shall be dry. Before backfilling is started, the exterior surfaces of precast and poured-in-place manholes shall be coated with two heavy coats of a water-based asphaltic coating. Application and curing shall be in accordance with the manufacturer's specifications and instructions. Coating shall be fully dried before backfilling.

3.4 Cleaning and Testing

- (a) After all installations are complete, including all backfill and compaction, all structures and appurtenances shall be cleaned of foreign materials. Flushing of foreign materials from a newly completed section of sewer into section already in service will not be allowed. If the lining or coating system is damaged during either installation or cleaning it shall be repaired in strict accordance with and approved by the coating system manufacturer's technical field service personnel.
- (b) Contractor shall furnish all labor, tools, potable water (if a hydrostatic test is allowed) and equipment necessary to perform all tests as specified herein.

- (c) If inspection or test shows defects, such defective work or material shall be replaced and inspection and tests repeated. Repairs to piping and appurtenances shall be made with new material at no additional cost to the Owner.
- (d) Manholes structure shall be either vacuum or hydrostatically tested. Vacuum or hydrostatic testing is recommended prior to backfilling, where feasible, to assist in locating leaks. The final test and acceptance shall be based only on a test after the manhole is backfilled and the cast manhole ring is in place. Existing manholes where new connections are made will not be required to be vacuum or hydrostatically tested. These manholes shall be visually inspected for water tightness with any leakage noted and corrected prior to manhole acceptance.
- (e) Testing Methods
 1. Vacuum Test - Plug all manhole entrances and exits other than the manhole top access using suitably sized and rated pneumatic or mechanical pipeline plugs. Follow manufacturer's recommendations and warnings for proper and safe installation of such plugs, taking care to securely brace the plugs and the pipe. Attach the vacuum test device to the cast manhole ring and draw a vacuum to 10" of mercury. With the valve at the vacuum line connection closed and the vacuum pump off, measure the time required for the vacuum to drop to 9" of mercury. The manhole passes the test if the time is greater than 60 seconds for a 48" diameter manhole, 75 seconds for a 60" diameter manhole, and 90 seconds for a 72" diameter manhole. If the manhole fails the test, the Contractor shall locate the leak and make proper repairs with non-shrink grout. The manhole shall be retested until acceptable test results are obtained.
 2. Hydrostatic Test - Manholes may be tested using internal or external hydrostatic pressure with prior approval by the Engineer. External hydrostatic testing shall only be used where the groundwater level is at least 4 feet above the invert of the manhole. In all other cases, the internal hydrostatic test procedures must be followed. Sewers connected to the manhole shall be adequately plugged. For the internal hydrostatic test, the manhole shall be filled with water to the top or to a maximum depth of 25-feet above the invert. Water gain or loss shall not exceed 1.14 gallons per day per vertical foot of manhole for either external or internal hydrostatic testing. Infiltration and exfiltration shall be determined after 24 hours of hydrostatic testing by determining the gain or loss of water in the manhole. Contractor shall be responsible for retrieving any plugs or material accidentally washed down a sewer.

4.0 Method of Measurement. The quantities of sanitary sewer manholes (48in. diameter) will be measured per each.

5.0 Basis of Payment. The accepted quantity of sanitary sewer manholes (48in. diameter) will be paid for by the contract unit bid price for Item 604-99.02, Sanitary Sewer Manhole (48 in. diameter), per each

O. Seeding

1.0 Description. The contractor shall cool season seed and mulch all disturbed areas except for surfaced areas, solid rock, and slopes consisting of primarily broken rock.

2.0 Construction Requirements. The contractor shall use cool season seeding for all disturbed areas. Seedbed preparation will be in accordance with Sec 801 and mulching shall be accomplished in accordance with Sec 802. All cool season seed shall comply with Sec 805.5. The contractor shall place the seed and mulch within 7 calendar days of ground disturbance to reduce soil erosion.

2.1 Acceptance will be in accordance with Sec 805.2.1 and Sec 805.4.

3.0 Liquidated Damages Specified. If the ground is not seeded or protected by approved temporary erosion control measures within **ten (10) calendar days** of ground disturbance, the Commission, the public, and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, storm water pollution damages, and environmental regulation cost. 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 **\$500 per day** for each full day that disturbed ground is not protected by seeding or temporary erosion control measures in excess of the limitation as specified elsewhere in the special provision.

4.0 Basis of Payment. Payment for cool season seeding, including seedbed preparation and mulching will be considered completely covered by the contract unit price for Item No. 805-50.06, Mulching, per acre and Item No. 805-10.00A, Seeding – Cool Season Grasses, per acre. Disturbed areas outside of authorized construction limits shall be seeded at the contractor's expense.

P. Temporary Pavement

1.0 Description. This work shall consist of placement, maintenance and removal of temporary pavement to be utilized during traffic phasing as required by the construction plans for this project.

2.0 Construction Requirements.

2.1 The contractor shall be responsible for placing temporary pavement and aggregate base as needed to maintain traffic through the work zone for the project. The contractor shall determine the appropriate type of asphaltic concrete pavement to be used on this project.

3.0 Method of Measurement. The quantity used shall be measured in the field to the nearest 0.1 Sq. Yd.

4.0 Basis of Payment. All costs incurred for equipment, labor, materials or time required to fulfill this provision, shall be considered completely covered by the contract unit price for Item No. 401-99.05, Temporary Pavement, per square yard.

Q. Steel Casing, 3 inch

1.0 Description. This work shall consist of placing steel casing under the roadway for future City of Neosho use.

2.0 Construction Requirements. The contractor shall be responsible for coordinating with the City of Neosho on the final location of the steel casing. The contractor shall ensure the steel

casing does not interfere with any other project improvements or existing utilities. Casing will be installed by trenching.

3.0 Physical Properties.

3.1 The steel pipe shall have the following properties:

- 1) 35,000 psi conforming to ASTM A53-B.
- 2) Random lengths of pipe may be used, but all ends must be V grooved-butt welded around the complete perimeter to adjacent pipe.
- 3) All welds must be water tight and equal to or stronger than the pipe.

4.0 Method of Measurement. The quantity used shall be measured in the field to the nearest linear foot.

5.0 Basis of Payment. All costs incurred for equipment, labor, materials, and time required to fulfill this provision shall be completely covered by the contract unit price for Item No. 603-99.03 "Steel Casing for Future Utilities, 3 in. in Trench", per linear foot.

R. Notice to Bidders of Funding by Third Party

1.0 Bidders are advised that City of Neosho is required to provide substantial funds for construction of Job No. J7S3487.

2.0 Bidders acknowledge that their bids are made with knowledge of and subject to the condition of City of Neosho providing substantial funds prior to authorization of any award of a contract for this job by the Commission.

3.0 Bidders agree that they shall be estopped, both in law and equity, to assert any right to award of a contract for this job by the Commission should City of Neosho not provide substantial funds for any reason.

S. Removal and Delivery of Existing Signs

1.0 Description. All Commission-owned signs removed from the project shall remain the property of the Commission and shall be disassembled and delivered as specified herein.

2.0 Disassembly and Delivery. All Commission-owned signs, not to include abandoned billboard signs, designated for removal in the plans, and any other signs designated by the engineer, shall be removed by the contractor and delivered to the address below. The contractor shall call the phone number listed below 48 hours prior to delivery and make arrangements for delivery during normal business hours.

Commission's Joplin Maintenance Lot
2800 Stephens Boulevard
Joplin, MO 64804

Richard Starchman: Maintenance Supervisor
Office: (417) 621-6371
Cell: (417) 629-7482

2.1 Signs shall be removed from sign supports and structures prior to delivery. Sign supports and structures shall become the property of the Contractor and removed from the project. Any oversized sign panels shall be disassembled or cut into widths of 8-feet or less with no restriction on length. Signs shall be stacked neatly in bins provided by MoDOT at the delivery site.

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

T. Concrete Pavement (8" Non-Reinforced, Tinted)

1.0 Description. This work shall consist of the placement of concrete pavement as required by the construction plans for this project.

2.0 Construction Requirements.

2.1 The contractor shall be responsible for placing concrete pavement (8" non-reinforced, tinted) as shown in the plans. The tint shall be colored pigment applied in accordance with manufacturer's recommendations. The final concrete surface coloration shall be medium to dark red, as approved by the engineer. If membrane curing is allowed by the manufacturer's recommendations, the membrane shall be clear or transparent type.

3.0 Method of Measurement. The quantity used shall be measured in the field to the nearest 0.1 Sq. Yd.

4.0 Basis of Payment. All costs incurred for equipment, labor, materials and time required to fulfill this provision shall be considered completely covered by the contract unit price for Item No. 608-99.05, Concrete Pavement (8 In. Non-Reinforced, Tinted), per square yard.

U. 12 In. Yellow Standard Waterborne Marking Paint (Curb) with Type P Beads

1.0 Description. This work shall consist of the painting the 8-inch vertical face and the top 4 inches of the islands as shown in the construction plans.

2.0 Material Requirements.

2.1 The paint will meet the specifications of Sec. 620.20 Permanent Pavement Marking and Section 1048.20.1.1 Standard Acrylic Waterborne Pavement Marking Paint. The drop-on glass beads will be Type P and meet specifications in Section 1048.30.

3.0 Method of Measurement. The quantity used shall be measured in the field to the nearest 1.0 Linear Feet.

4.0 Basis of Payment. All costs incurred for equipment, labor, materials or time required to fulfill this provision, shall be considered completely covered by the contract unit price for Item No. 620-99.03, 12 In. Yellow Standard Waterborne Curb Marking Paint with Type P Beads, per linear foot.

V. 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	$\leq 0.01\%$
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](#).

W. Prime Contractor Requirements JSP-16-09

1.0 The limitation in Sec 108.1.1 of the Missouri Standard Specifications for Highway Construction that "the contractor's organization shall perform work amounting to not less than 40 percent of the total contract cost" is waived for this project. Instead, for the purposes of constructing this project only, the less restrictive terms of the Federal Highway Administration's rule at Title 23 Code of Federal Regulations (CFR) § 635.116(a) shall apply, so that the contractor must perform project work with its own organization equal to not less than 30 percent of the total original contract price. All other provisions in Sec 108.1.1 et seq. of the Missouri Standard Specifications for Highway Construction shall remain in full force and effect, and shall continue to govern the contractor and its subcontractors, in accordance with the provisions of Title 23 CFR § 635.116.