

Job No.: JSL0138

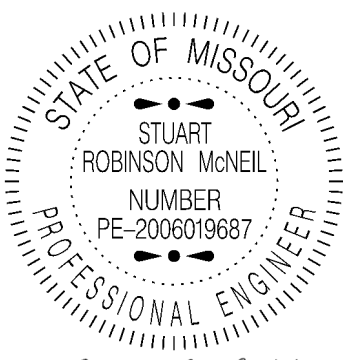
Route: I-64

County: St. Louis

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 <i>Stuart McNeil</i> 09/16/2026 12:44:57 PM STUART ROBINSON McNEIL - CIVIL MO-PE-2006019687	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: JSL0138 ST. LOUIS COUNTY, MO DATE PREPARED: 9/8/2026
	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-09-02M

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 2026 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- 13-01E

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 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.: JSL0138
Route: I-64
County: St. Louis

Notice to Proceed: December 21, 2026
Contract Completion Date: October 1, 2027

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

Project	Calendar Days	Daily Road User Cost
JSL0138	N/A	\$11,400.00
JSL0168	N/A	\$2,300.00
JSL0168B	N/A	\$1,800.00

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with [Sec 108.8](#) in the amount of **\$2,000.00** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the specified contract completion date or calendar days.

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

5.0 Liquidated Damages for Winter Months. 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.

C. Work Zone Traffic Management JSP-02-06N

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

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

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

2.0 Traffic Management Schedule.

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

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

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

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

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

3.2 The contractor shall not perform any construction operation on the roadway, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The contractor shall 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:

I-64 Eastbound and Westbound Single Lane closures are not allowed from
6:00 a.m. - 8:00 p.m. Monday through Friday
10:00 a.m. - 5:00 p.m. Saturday and Sunday

I-64 Eastbound and Westbound Double Lane closures not allowed from
5:00 a.m. - 10:00 p.m. Monday through Friday
5:00 a.m. - 10:00 p.m. Saturday and Sunday

3.4 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$1,000.00 per 15 minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

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

4.0 Detours and Lane Closures.

4.1 When a changeable message sign (CMS) is provided, the contractor shall use the CMS to notify motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The CMS shall be installed at a location as approved or directed by the engineer. 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 work.

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

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

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

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

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

Missouri Highway Patrol 636-300-2800		
City of Town and Country	City of Chesterfield	City of Frontenac
West County EMS & Fire 636-256-2000	West County EMS & Fire 636-256-2000	Fire: 314-994-1801
Police: (Non-emergency) Dispatch 314-737-4600	Police: 636-537-3000 Dispatch: 636-529-8210	Police: 314-737-4600 (Non-emergency)
City of Ladue (Non-emergency)		
Fire: 314-993-0181		
Police: 314-737-4600		

2.1 This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate law enforcement agency.

2.2 The contractor shall notify law enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with law enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 No direct pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

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

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

Stuart McNeil, PE - Project Contact
St. Louis District
1590 Woodlake Drive
Chesterfield, MO 63017

Telephone Number: (314) 453-5402

Job No.: JSL0138
Route: I-64
County: St. Louis

Email: Stuart.McNeil@modot.mo.gov

1.1 All questions concerning the bid document preparation can be directed to the Central Office – Design as listed below.

Telephone Number: (573) 751-2876

Email: BCS@modot.mo.gov

2.0 Upon award and execution of the contract, the successful bidder/contractor shall forward all questions and coordinate the work with the engineer listed below:

Chris Morgan, Resident Engineer
St. Louis District – Southwest Area
Chesterfield Project Office
601 Salt Mill Road
Chesterfield, MO 63017

Telephone Number: (314) 453-1753

Email: Christopher.Morgan@modot.mo.gov

F. Utilities

1.0 The Contractor shall be aware there are numerous utilities present along the routes in this contract. Given the nature of the proposed work, utility conflicts are not anticipated, and utility locates were not performed during the design phase of the project. Therefore, the extent of conflicts with utilities is unknown. It is the inherent risk of the work under this contract that the contractor may encounter utilities above and/or below the ground or in the vicinity of any given work item which may interfere with their operations. The contractor expressly acknowledges and assumes this risk even though the nature and extent are unknown to both the contractor and the Commission at the time of bidding and awarding the contract.

2.0 Utility conflicts not noted. If utility facilities are found to conflict with the contract work that aren't noted on the plans or in the Job Special Provisions, the Contractor shall contact the MoDOT Area Utility Coordinator, Steve Belcher at (314) 624-7382. District Utility Staff will determine whether adjustment of the utility is necessary, if alternate construction methods will be required, or if the work can be installed in accordance with Missouri Standard Plans for Highway Construction for the specified item of work.

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

G. Optional Temporary Pavement Marking Paint NJSP-18-07H

1.0 Description. This provision provides the contractor with the option to either complete all Permanent Pavement Marking Paint (PPMP) prior to the time limits specified herein or to apply Temporary Pavement Marking Paint (TPMP) in accordance with [Sec 620.10.2](#) (4 inch width) in all locations shown on the plans as PPMP and delay application of the PPMP until the spring of 2028, as allowed herein. PPMP is defined as Class 1 Pavement Marking Paint and Class 2 Pavement Marking Paint and does not include [Sec 620.20.3](#) Durable Pavement Markings.

1.1 No application of PPMP shall occur between October 1, 2027 and March 1, 2028, both dates inclusive, except as stated herein. When the contractor has begun application of PPMP prior to October 1, 2027, and weather limitations stated in [Sec 620.20.2.4](#) can be met, the contractor may complete the PPMP within the first seven (7) calendar days of October. If all (100%) of the PPMP is not completed on or before October 7, 2027, all previously applied PPMP, including any painted markings applied prior to October 1, shall be considered TPMP, and the contractor shall complete the remaining marking with TPMP, and then re-apply PPMP in all planned locations after March 1, 2028. All PPMP shall be completed prior to June 1, 2028. No additional payment will be made for PPMP that is later determined to be TPMP due to the contractor's failure to complete the PPMP within the time specified.

1.2 Use of TPMP Prior to October 1. The contractor has the option to apply TPMP in lieu of PPMP prior to October 1, 2027, even when there is sufficient time to complete the PPMP prior to October 1, 2027. For example, the contractor may choose to use TPMP as a base coat for the PPMP on open-graded surfaces in order to achieve higher retroreflectivity readings on the surface coat as compared to a single application.

1.2.1 The contractor has the option of using TPMP in lieu of Temporary Raised Pavement Markers if applied each day that existing markings are obliterated.

2.0 Construction Requirements. TPMP shall be accurately placed in the final planned location and shall be completely covered by the final application of PPMP. Any failure to comply with this requirement shall be corrected by removal of the misplaced pavement markings at the contractor's expense and without marring of the pavement surface.

2.1 Prior to application of the PPMP on TPMP, TPMP shall be fully cured in accordance with the manufacturer's recommendation, or for a period of 12 hours, whichever is greater.

3.0 Weather Limitations. All weather limitations specified in [Sec 620](#) for PPMP and TPMP shall apply. Cold Weather Pavement Marking Paint, in accordance with [Sec 620.10.6](#), shall be used for TPMP when specified weather limitations do not allow the use of waterborne paint. No additional payment will be made for the use of Cold Weather Pavement Marking Paint as TPMP. Cold Weather Pavement Marking Paint is not an allowable substitute for PPMP and shall subsequently be covered with PPMP.

4.0 Time Exception. If application of PPMP is to be delayed to the spring of 2028, the contractor shall submit a request to the engineer for a time exception and shall provide a revised work schedule that shows the planned completion of the PPMP.

4.1 Upon receipt of the time exception request in Section 4.0, the engineer will list "Application of Permanent Pavement Marking Paint" as an exception on the Semi-Final Inspection form, thus granting an exception to the count of contract time thru June 1, 2028, solely for the purpose of delaying application of PPMP. This time exception shall not apply to any time needed to complete any other work items. Liquidated Damages, as specified elsewhere in this contract, shall remain in effect for all other work items not completed by the contract time limits, as specified elsewhere in this contract, and for PPMP not completed by June 1, 2028.

5.0 Method of Measurement. No final measurement will be made for TPMP.

6.0 Basis of Payment. Full payment for TPMP will be made at the contract lump sum price even when PPMP is completed prior to the time limitation and TPMP is not used or only partially used.

6.2 If a \$0 bid is entered for TPMP, no payment will be made should TPMP become necessary.

Item Number	Description	Unit
6209901	TEMPORARY PAVEMENT MARKING PAINT	LS

H. Site Restoration

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

2.0 Materials. Any areas of concrete paved ditch, pavement, and shoulders as well as any similar improvements shall be replaced with improvements of similar composition and thickness. Removals shall be achieved by means of full depth saw cut, the resulting subgrade compacted to minimum density requirements and topped with 4 inches of compacted aggregate base course prior to replacement of surface materials. Concrete materials used in replacement shall be approved by the engineer. A commercial asphalt mix may be used for replacement of asphaltic surfacing upon approval of the engineer.

2.1 Unless quantities and pay items for removal and subsequent replacement of improvements are contained in the plans for a specific location of removal work, no direct payment will be made for full depth saw cutting and the removal and subsequent replacement of asphalt, pavement, shoulders etc. This work will be considered as included in the various unit bid prices established in the contract, and no additional payment will be made.

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

2.3 Any sidewalks and curb ramps that are disturbed as described in this provision shall be replaced to meet current ADA standards.

2.4 All guardrail post holes remaining from the removal of existing guardrail posts in existing concrete or asphalt pavement, or ditch shall be backfilled with a granular material and sealed with a ½ inch hot-poured elastic type material in accordance with Section 1057 or as approved by the Engineer. Any concrete or asphalt pavement or ditch damaged in the process of fulfilling this provision shall be replaced in kind and considered incidental to the installation of the new guardrail at the disturbed location

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

3.0 Basis of Payment. The cost of restoration of disturbed areas will be incidental to the unit price of the items associated with the disturbance. No direct payment will be made for any materials, equipment, time, or labor, which is performed under this provision.

I. Adjust to Grade Items

1.0 Description. This work shall consist of adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes that are within areas where either new sidewalks, curb ramps, approaches or pavements are to be constructed as shown on the plans. The contractor shall verify the type of frame and cover in the field before performing the work. The adjustment shall be made to match the final proposed grade.

2.0 Construction Requirements. Adjusting manholes and adjusting basins or inlets shall be done in accordance with Sec 604 except as modified herein.

2.1 Adjustments, extensions, and/or lowering of utility and any related excavation and backfill shall be constructed as approved by the Engineer. For MoDOT owned facilities, adjustments shall conform to current Missouri Standard Specifications for Highway Construction. For MSD owned facilities, adjustments shall conform to the 2018 MSD Construction Specifications for Sewer and Drainage Facilities and the 2009 MSD Standard Detail Sheets. Adjustments for inlets require the top lid slopes to be adjusted to less than 2% slope in all directions and some of these inlets need to be raised to the final sidewalk grade. These locations are to be determined in the field by the Engineer. Adjustments shall be completed so that the finished sidewalk, ramp, approach, or pavement meets current ADA standards.

3.0 Basis of Payment. All costs for materials, equipment, labor, and installation shall be included in the cost for adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes.

Item No.	Description	Unit
604-20.10	Adjusting Manhole	Each
604-99.02	Adjusting Valves	Each

J. Concrete Manhole Apron (Version 07/13/26)

1.0 Description. The Contractor shall install a reinforced concrete apron around a manhole frame and cover as indicated in the plans and as approved by the Engineer.

2.0 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Reinforcing Steel for Concrete	1036

2.1 Concrete used for manhole apron shall be the same used for full depth pavement repairs as specified in Section 613.10 of the Standard Specifications.

3.0 Construction Requirements. Manhole aprons shall be provided in locations within the plans or as directed by the Engineer but generally shall be located where a manhole is adjusted to grade due to the cold-milling and overlaying of an existing roadway. The use of an apron can also be considered for new installations within new full depth asphalt pavement.

3.1 Steel Plate. If approved by the Engineer, a steel plate may be installed over the void created by the removal of pavement next to a manhole or utility valve prior to the installation of the manhole apron concrete. Asphalt wedging surrounding the steel plate shall be included when using a steel plate. No direct payment shall be made to provide this steel plate and asphalt wedging.

3.2 Joint Sealing. Per MoDOT Standard Specification 613.3.3, the contractor shall seal the joint between the asphalt surface and the new concrete apron along with seal any overcut created from the sawcutting operation when removing the portion of pavement to be replaced with manhole apron concrete. This joint shall be filled with either an expansive mortar, epoxy, polyester or joint material as approved by the Engineer. In addition, the contractor shall install tar paper between the new concrete and the existing manhole frame and cover as directed by the Engineer.

4.0 Method of Measurement. Measurement for installation of a reinforced concrete manhole apron will be made per each. Adjusting to grade the frame as approved by the Engineer shall be paid as a separate pay item.

5.0 Basis of Payment. Payment for the installation of a reinforced concrete manhole apron, including all materials, equipment, labor, saw cuts before and/or after installation and all necessary work shall be completely covered by the contract unit price paid for the item listed below. Adjusting to grade the actual frame and cover shall be paid for separately. Please see JSP – Adjusting Manholes, Valves and Pullboxes for additional details regarding the adjustment to grade for those items.

Item No.	Type	Description
604-99.02	Each	Concrete Manhole Apron

K. Modified Bonded Asphaltic Concrete Pavement NJSP-15-11C

1.0 Description. This work shall consist of the placement of a Polymer Modified Emulsion Membrane (PEM) or Cationic Modified Emulsion Membrane (CPEM) prior to a bituminous overlay of hot asphaltic concrete pavement. At the contractor's option, the contractor may replace the PEM/CPEM with a Performance Graded (PG) Asphalt Binder prior to a bituminous overlay of hot asphaltic concrete pavement. The PEM/CPEM or PG Asphalt Binder shall be spray applied prior to the application of the hot asphaltic concrete pavement so as to produce a homogeneous surface in accordance with Secs 401, 402, or 403.

2.0 Materials. All materials shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
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Polymer Modified Emulsion Membrane (PEM or CPEM)	1015.20.6.2
Performance Graded (PG) Asphalt Binder	1015.10

The PG Asphalt Binder shall be modified to meet the following performance parameters. The test results shall be submitted to the engineer for approval at least 30 days prior to use. The PG binder component shall account for at least 95% of the total product composition by volume.

Parameters*	Test Method	Min	Max
No-Pick-Up Time for Tack Coats; minutes	MoDOT TM 87	-	5
Average Bond Strength; psi	MoDOT TM 88 or alternate method	75	-
Elastic Recovery, percent	AASHTO T 301	60	-

*The PG Asphalt Binder product shall exhibit a laboratory "no-pick-up" time of 5 minutes or less per MoDOT TM-87. The PG Asphalt Binder product shall exhibit laboratory bond pull-off strengths (average of three test specimens) of a minimum of 75 psi in accordance with MoDOT TM-88 method or other approved research test methods at the target application rate prescribed within this specification. The elastic recovery may be waived if the product has proven performance in cold weather climates with freeze/thaw conditions.

3.0 Construction Requirements. The PEM/CPEM or PG Asphalt Binder shall be applied in accordance with Sec 407 except as modified herein.

3.1 Coldmilled Surfaces. All coldmilled surfaces shall be thoroughly cleaned with air blowing, air vacuuming, or other approved methods resulting in a cleaned surface free of all dust, loose material, grease, or other foreign material at the time the tack is applied to the satisfaction of the engineer. Historically, conventional sweeping equipment has not produced satisfactory results and will not be acceptable as the sole operation. .

3.2 Requirements of Polymer Modified Emulsion Membrane (PEM or CPEM).

3.2.1 Equipment. No wheel, track or other part of the paving machine or any hauling equipment shall come in contact with the PEM/CPEM before the asphaltic concrete pavement mixture is applied.

3.2.2 Application. The target application rate of the PEM/CPEM shall be 0.20 gallons per square yard. The application rate shall be within +/- 0.02 gallons per square yard of the target application rate during construction. The average application rate used within the entire areas of the job limits shall be within +/- 1% of the target application rate. The PEM/CPEM shall be sprayed at a temperature of 120 - 180°F. The sprayer shall accurately and continuously monitor the application rate and provide a uniform coverage across the entire width to be overlaid.

3.2.2.1 The application rate of the PEM/CPEM shall be verified by dividing the volume (of PEM/CPEM used) by the area of paving for that day.

3.2.2.2 No water shall be added to the PEM/CPEM.

3.3 Requirements of Performance Graded (PG) Asphalt Binder

3.3.1 Equipment. The PG Asphalt Binder product shall be applied with an asphalt distributor that has been properly cleaned and set-up specifically for use of hot applied PG Asphalt Binder products. The distributor shall have the full circulating and heating capabilities in the tank and a heated spray bar.

3.3.2 Application. The target application rate of the PG Asphalt Binder shall be 0.15 gallons per square yard. The application rate shall be within +/- 0.02 gallons per square yard of the target application rate during construction. The average application rate used within the entire area of the job limits shall be within +/- 1% of the target application rate.

3.3.3 Non-Tracking. The PG Asphalt Binder shall be modified to be non-tracking that does not stick to the tires, tracks or other parts of paving equipment or vehicles such that the surface to be overlaid becomes visible or void of tack prior to the placement of the asphaltic concrete pavement mixture. A test strip using the PG Asphalt Binder product of 200 feet long (maximum) shall be applied to the roadway. After application, the PG Asphalt Binder shall be non-tracking within 10 minutes or less. If the test strip exhibits unacceptable tracking, then work shall cease until the PG Asphalt Binder product is either reformulated, switched to a different PG Asphalt product, or a spray paver application method is utilized. The test strip shall be conducted until satisfactory results are achieved.

3.3.4 Safety. Proper storage, handling, and application guidelines shall be followed carefully in accordance with the product manufacturer. A copy of this information shall be provided to the engineer. The information shall include the application temperature range, maximum allowable temperature for the product, and the particle charge.

3.3.4.1 Safety procedures of all products shall be addressed in the contractor's safety plan and a pre-construction meeting shall be held with the employees involved with the construction of the asphalt overlay to address all safety procedures, protocols, and personal protective equipment (PPE) of hot applied PG Asphalt Binder prior to application.

4.0 Method of Measurement. Measurement of the Polymer Modified Emulsion Membrane or PG Asphalt Binder shall be based on the volume in gallons in accordance with Sec 1015. Where required, measurement for coldmilling existing asphalt materials and cleaning the underlying pavement will be computed to the nearest square yard.

5.0 Basis of Payment. The accepted quantity of Polymer Modified Emulsion Membrane (PEM/CPEM) or PG Asphalt Binder shall be paid for at the contract unit price for 407-99.12, Misc. Modified Bonded Asphaltic Concrete Pavement, per gallon.

Where required, the accepted quantity for coldmilling and cleaning underlying pavement will be paid for at the contract unit price per square yard for Misc. Coldmilling Bituminous Pavement with Additional Cleaning, Item number 622-99.05.

L. Geosynthetic Interlayer Specification for Highway Applications JSP-04-01

1.0 Description. This work shall consist of furnishing and placing a geosynthetic interlayer within the pavement structure as shown on the plans or directed by the engineer. The geosynthetic interlayer shall provide a moisture barrier/stress relieving membrane and shall be placed beneath a hot-mix asphalt (HMA) overlay.

2.0 Material.

2.1 Geosynthetic Interlayer. The geosynthetic interlayer shall consist of geosynthetic material, saturated with asphalt binder.

2.1.1 Geosynthetic Material. The geosynthetic material shall be of the system specified on the plans and in accordance with Appendix A: Geosynthetic Material.

2.1.2 Tack Coat. The tack coat material for the geosynthetic material shall be a PG 64-22 asphalt binder, unless the manufacturer of the geosynthetic material recommends a higher performance grade asphalt binder. The asphalt binder shall be in accordance with Sec 1015. No emulsions will be allowed.

2.2 Clean Sand. Clean sand shall be sand meeting Sec 1005.2 or a washed sand meeting the approval of the engineer.

3.0 Equipment. Equipment used to place the asphalt tack on the geosynthetic material, to install the geosynthetic material or to roll the geosynthetic material into the tack coat shall be in accordance with the manufacturer's recommendations.

4.0 Construction Requirements.

4.1 The geosynthetic material shall be stored as per the manufacturer's recommendations in a dry covered condition free from dust, dirt and moisture.

4.2 The geosynthetic material shall be installed in accordance with the manufacturer's specifications and this specification. Where a conflict exists between the specifications, the more stringent specification will apply. A copy of the manufacturer's specifications shall be provided to the engineer at the pre-construction meeting or no later than five working days prior to installation.

4.3 A manufacturer representative shall be present, at minimum, for the first two days of installation of the geosynthetic interlayer and available thereafter upon request by the engineer.

4.3.1 This requirement may be waived by the engineer under the following conditions:

(a) The contractor has been certified by the manufacturer for installation of the geosynthetic material.

(b) A copy of the written certification is provided to the engineer and the contractor certification is approved by the engineer prior to installation of any material.

4.3.2 If a manufacturer representative has been waived in accordance with Section 4.3.1, the engineer will still maintain the right to require a representative to be present if the engineer deems it necessary due to poor installation practices by the contractor.

4.4 The surface on which the geosynthetic material is to be placed shall be reasonably free of dirt, water, vegetation or other debris. The geosynthetic interlayer shall be placed on a drainable surface, and any rutting or low spots in the pavement shall be removed by milling or by the use of a leveling course as shown on the plans. Cracks exceeding 1/8 inch (3 mm) in width shall be filled with suitable crack filler. Potholes shall be properly repaired as directed by the engineer. Fillers shall be allowed to cure prior to placement of the geosynthetic material.

4.5 Neither the asphalt binder nor the geosynthetic material shall be placed when weather conditions, in the judgement of the engineer, are not suitable. Air and pavement temperatures

shall be sufficient to allow the tack coat to hold the geosynthetic material in place. The air temperature shall be 50 F (10 C) and rising for placement of the asphalt tack coat.

4.6 The specified application rate of tack coat shall be sufficient to satisfy the asphalt retention properties of the geosynthetic material and to bond the geosynthetic material and HMA overlay to the existing pavement.

4.7 Application of the tack coat shall be by a calibrated distributor truck spray bar. Hand spraying, squeegee and brush application will only be allowed where the distributor truck does not have room to operate and shall be kept to a minimum. Temperature of the tack coat shall be sufficiently high enough to permit uniform spray pattern and shall be at minimum 290 F (145 C). To avoid damage to the geosynthetic material, distributor tank temperatures shall not exceed 325 F (163 C).

4.8 The target width of the tack coat application shall be the geosynthetic material width plus 6 inches (150 mm). Tack coat application shall be wide enough to cover the entire width of geosynthetic material overlaps. The tack coat shall be applied only as far in advance of the geosynthetic material installation as is appropriate to ensure a tacky surface at the time of the geosynthetic material placement. Traffic shall not be allowed on the tack coat.

4.9 The geosynthetic material shall be placed onto the tack coat with minimum folds or wrinkles and before the tack coat has cooled and lost tackiness. As directed by the engineer, wrinkles or folds in excess of 1 inch (25 mm) shall be slit and laid flat or pulled out and replaced. In these repaired areas, additional tack coat shall be applied as needed to achieve a sound bond to the substrate. Damaged geosynthetic material shall be removed and replaced, per the manufacturer's recommendations, at the contractor's expense with the same type of material.

4.10 Overlap of geosynthetic material joints shall be sufficient to ensure full closure of the joint, but shall not exceed 6 inches (150 mm). Transverse joints shall be lapped in the direction of paving to prevent edge pickup by the paver. A second application of tack coat shall be placed beneath the overlapping geosynthetic material to ensure proper bonding of the double material layer.

4.11 Brooming, squeegee or pneumatic rolling shall be used to remove any air bubbles and to maximize geosynthetic material contact with the pavement surface and shall be done in accordance with the manufacturer's specifications and to the satisfaction of the engineer.

4.12 Excess tack coat that bleeds through the geosynthetic material shall be removed by broadcasting clean sand or other material approved by the engineer on the geosynthetic interlayer. Broadcasting of clean sand may also be used to facilitate movement of equipment during construction, to prevent tearing or delamination of the geosynthetic material or to prevent pickup by the paving machine. If sand or other approved material is applied, any excess material shall be removed from the interlayer prior to placing the HMA overlay. Scattering loose HMA mix out in front of the paver tires will also be permissible. No other material, such as asphalt release agents or diesel, shall be used for this purpose.

4.13 No traffic, except necessary construction traffic or emergency vehicles, shall be driven on the geosynthetic interlayer, unless approved by the engineer. If traffic on the interlayer is approved by the engineer, clean sand shall be lightly broadcasted over the geosynthetic interlayer, and any loose sand shall be removed prior to paving.

4.14 Placement of the first lift of the HMA overlay shall closely follow placement of the geosynthetic interlayer. All areas in which the geosynthetic interlayer has been placed shall be paved during the same day, unless approved otherwise by the engineer. In the event of rainfall on the geosynthetic interlayer prior to the placement of the first HMA overlay lift, the geosynthetic interlayer shall be allowed to dry before the HMA is placed. The compacted thickness of the first lift of the HMA overlay on the geosynthetic interlayer shall not be less than 1.5 inches (38 mm), and the temperature of the mix at placement shall not exceed the geosynthetic material melting point temperature, unless approved otherwise by the engineer. Approval by the engineer may be based upon a test strip or evaluation of the material when taking QC/QA cores. Where the total HMA overlay thickness is less than 1.5 inches (38 mm), geosynthetic material shall not be placed.

5.0 Method of Measurement. Measurement for furnishing and installing the geosynthetic interlayer will be made to the nearest square yard (m²) of pavement specified to be covered.

6.0 Basis of Payment. The accepted quantities of geosynthetic interlayer will be paid for at the unit price for each of the pay items included in the contract.

403-99-05	1.0	SQUARE YARDS	SYSTEM B GEOSYNTHETIC INTERLAYER (COMPOSITE PAVING FABRIC/REINFORCING GRID)
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Appendix A: Geosynthetic Material

1.0 Scope. This specification covers geosynthetic material, which is to be saturated with asphalt binder to form a geosynthetic interlayer, for use as a moisture barrier and a stress relieving membrane within the pavement structure.

2.0 Acceptance. Acceptance of the material will be based on the manufacturer's certification and upon the results of such tests as may be performed by the engineer.

3.0 Material.

3.1 System A Geosynthetic Material. System A shall be a non-woven paving fabric composed of 85 percent or more polyolefin, polyester or polypropylene fibers. The paving fabric shall meet the following requirements:

Property	Test Method	Requirements ^a
Grab Strength	ASTM D 4632	100 lbs. (450 N)
Ultimate Elongation	ASTM D 4632	>50 %
Weight (Mass) per Unit Area	ASTM D 5261	4.0 oz./s.y. (135 g/m ²)
Asphalt Retention ^{b, c} , Min.	ASTM D 6140	0.20 gal./s.y. (0.9 l/m ²)
Melting Point, Min.	ASTM D 276	300 F (150 C)

^a All numeric values shall represent Minimum Average Roll Values (MARV) in the weaker principle direction.

^b The asphalt binder retention value shall be the amount required to saturate the paving fabric only. Asphalt retention shall be provided in the manufacturer's certification. Numerical value does not indicate the asphalt application rate required for construction.

^c Product asphalt retention property shall meet the specified MARV value.

3.2 System B Geosynthetic Material. System B shall be a composite paving fabric consisting of paving fabric bonded to a reinforcement grid. The paving fabric shall be in accordance with Section 2.1. The reinforcement grid shall be either an epoxy or elastomeric polymer coated glass fiber structural grid. The composite shall be in accordance with the following physical properties:

Properties	Test Method	Requirement
Grid Tensile Strength ^a	ASTM D 6637	560 lbs/in. (100 kN/m)
Grid Elongation at Break	ASTM D 6637	< 5 %
Grid Junction Strength ^b	GSI/GG-2	15 lbs. (67 N)
Grid Melting Point, Min.	ASTM D 276	425 F (218 C)
Aperture Size, Max., MD/XD ^c	- -	1.02/1.2 in. (26/30 mm)
Peel Strength, Fabric to Grid	ASTM D 413	10 lbs/ft (146 N/m)

^a All numeric values shall represent MARV in the weaker principle direction.

^b Tested with grid attached to the paving fabric.

^c Shall be centerline to centerline, where MD = machine direction and XD = cross-machine direction.

3.3 System C Geosynthetic Material. System C shall be a geotextile paving mat composed of 50 percent or more fiberglass fibers. The paving mat shall meet the following requirements:

Properties	Test Method	Requirement ^a
Breaking Strength, Min.	ASTM D 5035	45 lbs/2 in. (200 N/50 mm)
Ultimate Elongation.	ASTM D 5035	< 5 %
Weight (Mass) Per Unit Area, Min.	ASTM D 5261	4.0 oz./s.y. (136 g/m ²)
Asphalt Retention ^{b, c} , Min.	ASTM D 6140	0.20 gal./s.y. (0.9 l/m ²)
Melting Point, Min.	ASTM D 276	400 F (205 C)

^a All numeric values shall represent MARV in the weaker principle direction.

^b The asphalt binder value shall be the amount required to saturate the paving fabric only. Asphalt retention shall be provided in the manufacturer's certification. Numerical value does not indicate the asphalt application rate required for construction.

^c Product asphalt retention property shall meet the specified MARV value.

4.0 Prequalification. Prior to approval and use of this material, the manufacturer shall submit to Construction and Materials a certified test report showing specific test results from an independent laboratory in accordance with all requirements of these specifications. The certified test report shall contain the manufacturer's name, brand name of material, lot tested and date of manufacture. In addition, the manufacturer shall submit a one square yard (m²) sample for laboratory testing accompanied by a technical data sheet and an MSDS. New certified test results and samples shall be submitted any time the manufacturing process or the material formulation is changed and may be required when random sampling and testing of material offered for use indicates nonconformity with any of the requirements specified. Those products that have been prequalified can be found in [Field Section 1011 Table 2](#) and may be used on projects upon acceptance of the material in accordance with Section 5.0.

5.0 Certification. The contractor shall furnish a manufacturer's certification to the engineer for each lot of material furnished stating the name of the manufacturer, the chemical composition of the filaments or yarns and certifying that the material supplied is in accordance with this specification. The certification shall include or have attached typical results of tests from specific lots for all specified requirements.

5.1 The manufacturer shall be responsible for establishing and maintaining a QC program to assure compliance with the requirements of this specification. Documentation describing the QC program shall be made available to the engineer upon request.

5.2 The manufacturer's certificate shall state that the furnished material meets MARV requirements as evaluated under the manufacturer's QC program. A person having legal authority to bind the manufacturer shall attest to the certificate.

M. Transverse Rumble Strip

1.0 Description. Two sets of five permanent transverse rumble strips shall be ground into the existing concrete pavement on the I-64 eastbound exit ramp to Spoede Road.

2.0 Construction Requirements. The locations and dimensional details are shown in the plan. This work shall be performed during nighttime hours only. The public shall be informed by use of CMS boards a week in advance of any planned ramp closure. No posted detour will be required.

3.0 Method of Measurement. Measurement will be made by linear foot of each transverse cut and rounded to the nearest foot once all the cuts are totaled.

4.0 Basis of Payment. Transverse rumble strips shall be fully paid by the bid item listed below. The accepted quantity of Transverse Rumble Strip will be paid per linear foot at the contract unit price for 626-99.03, Transverse Rumble Strip, per linear foot. No additional payment will be made for costs including but not limited to materials, equipment, and labor to perform the required work.

Item No.	Description	Unit
626-99.03	Transverse Rumble Strip	Linear Foot

N. MoDOT ITS Assets Relocation

1.0 Description. The work consist of relocating existing MoDOT Intelligent Transportation System (ITS) facilities (conduit, cable, and/or pull boxes) that may be in conflict with this project construction sections as noted in the plans or in case of conflict with other MoDOT facilities.

2.0 Materials. The materials used for relocating MoDOT ITS facilities shall be per MoDOT Approved Product List (APL) and meet all MoDOT Specifications. If the material is not in the APL, the contractor shall submit material specification documents to the Engineer and the MoDOT ITS group (via an email in advance to SLITS@modot.mo.gov) for review and approval.

3.0 Construction Requirements. The Contractor shall be aware there are numerous utilities present along the route in this contract. Utility locates were not performed during the design phase of the project; therefore, the extent of conflicts with utilities are unknown.

3.1 The contractor shall exercise reasonable care relocating MoDOT ITS Assets. Damage to any MoDOT facilities within the area of work caused by the contractor will be deemed by the Engineer

as either “non-emergency” or “emergency” upon notification of the damages. Repair to damages will be performed as follows:

- a) Non-Emergency: Contractor will have 4 hours to propose a repair plan to the Engineer for a complete repair within 3 business days.
- b) Emergency: Upon notification of the damage, Contractor must immediately submit a repair plan to the Engineer which will take no more than 4 hours to respond on-site and complete repairs within 48 hours of notification of damage.
- c) In either case, if the proposed plan is unacceptable for any reason to MoDOT, repairs will be made by MoDOT with all costs billed to the Contractor.

3.2 The ITS In-Ground Facilities located within the project limits are a crucial part of the traffic operation system for this area. It is imperative that the downtime be kept to a minimum when replacing, removing, or modifying any existing ITS In-Ground Facilities.

3.3 Prior to any in-ground work, the Contractor shall request for utility locates by contacting Missouri One Call (1-800 DIG-RITE or mo1call.com) for any in-ground installation locations as per plans. If there are any conflicts with MoDOT ITS Assets, the Contractor is responsible for relocation to the satisfaction of the Engineer prior to any in-ground work.

3.4 In the case of a conduit conflict, the Contractor shall trench an area beyond the in-ground work limits, install one or two conduits (must be the same quality as the existing conduit) using Split Duct Method, relocate the existing cables into the new conduit, and seal the conduit joints per manufacturer specifications.

3.5 The Contractor shall coordinate this work with the MoDOT ITS group and have the Engineer’s approval prior to performing this task.

3.6 The contractor shall perform a fiber testing (see below requirements) before and after relocating MoDOT fiber cables at the nearest Node Cabinet at each site as shown on the plans and submit that report to the SLITS Group for review and approval.

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

- a) If the link includes fiber installed by others, use an optical loss test set to measure and record the optical loss over that portion of the link before it is spliced to new fiber.
- b) Calculate the maximum allowable loss for the completed link, both at 1310 nm and at 1550 nm. Use the following formula:

$$\begin{aligned} \text{Maximum link loss} = & \text{Measured loss over portion installed by others} \\ & + (\text{Fiber length in km}) \times (0.35 \text{ for } 1310 \text{ nm and } 0.25 \text{ for } 1550 \text{ nm}) \\ & + (\text{Number of fusion splices}) \times (0.05) \\ & + (\text{Number of mechanical splices [for temp. connection]}) \times (0.3) \\ & + (\text{Number of connections}) \times (0.5) \end{aligned}$$

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

- c) Calibrate an optical loss test set and provide evidence satisfactory to the engineer that the set produces accurate results at both wavelengths. This can be a

demonstration that the set correctly measures the loss of a test fiber whose loss is known.

- d) Use the test set to measure the loss of the link under test. Record the result at both 1310 nm and 1550 nm. Arrange for the engineer or his representative to witness these tests.
- e) If the measured loss exceeds the calculated maximum, use an optical time domain reflectometer and other test equipment to troubleshoot the link. Take whatever corrective action is required, including cable replacement, to achieve a loss less than the calculated maximum.

3.6.02 Test Result Documentation. Prepare a diagram showing all of the links tested in this project. For the portions installed in this project, show the equipment cabinets, splices, and pigtails. On each line representing a link, show the maximum allowable loss and the actual loss. The actual loss shall be the one measured after all corrective actions have been taken. Submit 5 copies of this diagram to the engineer, along with the calculations for the maximum allowable loss. Submit the diagrams and calculations in an electronic format acceptable to the engineer.

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

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

3.7 The Contractor shall trench an area beyond the in-ground work limits, install one or two conduits (must be the same quality as the existing conduit) using Split Duct Method, relocate the existing cables into the new conduit, and seal the conduit joints per manufacturer specifications.

3.8 Upon completion of this work, the Contractor shall contact the MoDOT ITS group (via email at slits@modot.mo.gov) to verify that all existing MoDOT ITS devices are online and request inspection of this work. Acceptance of this work shall be the sole judgment of the Engineer and the MoDOT ITS group's engineer.

3.9 The contractor shall restore those areas disturbed by this work or installation according to specifications herein.

4.0 Basis of Payment. Payment for "MoDOT ITS Assets Relocation" shall be paid as Linear Feet and shall include the trenching, conduit installation, conduit coupling, pull boxes, sealing materials, cable relocation, needed fiber testing, restoration of all disturbed area, all labor and work incidental thereto, and shall be considered to be completely covered by the contract unit price for the following pay item:

Item No.	Unit	Description
910-99.03	Linear Feet	MoDOT ITS Assets Relocation

- O. Partial Depth Concrete Pavement Repair Using Hot Applied Polymer Modified Repair Material NJSP-19-01B

1.0 Description. This work shall consist of removal, furnishing, and placing material to repair existing concrete pavement by performing partial depth concrete pavement repairs as specified in plans or as approved by the engineer. All work shall be in accordance with [Sec 613](#) except as herein modified.

2.0 Construction Requirements.

2.1 Individual repair areas shall be limited to approximately 24 square feet in area. Repair areas larger than 24 square feet shall be patched with a cementitious based material in accordance with [Sec 613](#).

2.2 Removal of the existing patched, spalled, delaminated, or otherwise deteriorated concrete surface shall be limited to 1/3 (one third) of the pavement thickness or 4 inches, whichever is less. Removal of concrete shall be accomplished with light jack hammers and/or a mill head designed for concrete milling. All loose materials, including milled or broken concrete or asphalt, crack seal materials, oil, sand, dust, grit, or other contaminants, shall be completely removed. Removal of material shall be in accordance with [Sec 202.2](#).

2.3 All surfaces shall be cleaned with compressed air at a minimum of 100 psi.

2.4 Partially exposed reinforcing steel mesh shall be sandblasted clean or removed before placing patch materials. If sandblasting is used, all surfaces shall be cleaned of loose sandblasting grit with compressed air.

2.5 All surfaces of the repair area shall be primed using a primer and procedure recommended and approved by the manufacturer. Any costs related to primer shall be included in the unit cost. No direct payment will be made for the priming of the repair areas.

2.6 Material shall be placed in 1 inch lifts until the repair is level with the existing pavement. Each lift shall be adequately cooled, based on manufacturer recommendations, prior to subsequent lift placement.

2.7 Repairs that are greater than 1 inch in depth require the addition of bulking aggregate 20 percent to 50 percent by volume, as recommended by the manufacturer. The bulking stone shall be double washed, dust-free 5/8 inch to 1 inch sized granite. The bulking aggregate shall be adequately heated and dried prior to placement. No direct payment will be made for costs associated with bulking stone placement.

2.8 Topping stone shall be placed on the surface of the patch to improve surface friction using a procedure recommended by the manufacturer. The topping stone shall be double washed, dust-free, angular, hard aggregate. The topping stone shall be adequately heated and dried prior to placement. No direct payment will be made for costs associated with topping stone placement.

2.9 Traffic shall not be allowed on the repair area until the patching material has adequately cooled and gained strength, as recommend by the manufacturer.

2.10 Repair areas in the roadway and shoulders shall be swept clean of all loose debris before opening to traffic.

2.11 Any patches that vary by more than ¼ inch from the existing profile of the roadway or of poor workmanship shall be removed and replaced by the contractor at the contractor's expense.

3.0 Material Requirements.

3.1 The contractor shall submit the manufacturer's specifications for the material for patching and repair to the engineer for approval. The contractor shall follow manufacturer's specifications for material preparation and placement.

3.2 Material shall be hot pour, polymer modified, resin-based concrete repair material, flexible and grey or black in color. Material shall provide an impermeable, voidless mass at ambient temperatures. Material is to be mixed and heated on site as recommended by the product manufacturer. The repair material shall be factory blended and in meltable bags.

4.0 Additional or Reduced Work. If additional repair work is necessary beyond what is specified in the work order or the required repair is not as extensive as originally viewed, the contractor shall contact the engineer for authorization to proceed with the additional or reduced work. The contractor shall note that with this authorization to proceed with additional or reduced work may change which unit bid item is used to calculate final payment depending on final repair quantities. Any work performed without authorization of the engineer shall be at the contractor's expense.

5.0 Method of Measurement. Measurement shall be made to the nearest pound based on the actual material used with an acceptable form of package documentation.

6.0 Basis of Payment. Payment shall be paid by the pound and shall be full compensation for all repair work including removal of loose materials, cleaning of concrete surface, and furnishing and placing material for Partial Depth Pavement Repair using flexible, hot polymer-modified repair material. All cost for the repair work, including labor, equipment, materials, and containment and disposal of material shall be included in Item 613-99.11, Partial Depth Concrete Pavement Repair Using Flexible, Hot Polymer Modified Repair Material, per pound.

P. Pavement Marking Removal within Concrete Surfaces

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

Where required, measurement for the removal of pavement markings will be made to the nearest linear foot per 4-inches of width. No additional pay factor, based upon 4-inches of width, shall be included for removals unless the striping width is greater than 6-inches. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

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

3.0 Construction Requirements. Removal of all pavement markings within the project limits shall be as shown on the plans or as approved by the engineer. Pavement marking shall be completely removed to the satisfaction of the engineer with minimal damage to the pavement. The contractor shall use an approved water blasting method to remove the pavement marking on concrete surfaces. No more than five percent of the existing marking shall remain. The pavement surface shall not be left scarred with an image that might mislead traffic. Any excess damage or

scarring of the pavement shall be repaired at the contractor's expense. It shall be the contractor's responsibility to determine what type of material needs to be removed.

4.0 Method of Measurement. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

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

Item Number	Unit	Description
620-99.01	Lump Sum	Pavement Marking Removal within Concrete Surfaces

Q. Lump Sum Temporary Traffic Control JSP-22-01B

1.0 Delete Sec 616.11 and insert the following:

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

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

2.0 Delete Sec 616.12 and insert the following:

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

- (a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.
- (b) Installing, operating, maintaining, cleaning, repairing, removing, or replacing traffic control devices.
- (c) Covering and uncovering existing signs and other traffic control devices.

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

(e) Worker apparel.

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

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

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

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

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

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

(a) The first payment will be made when five (5) percent of the original contract amount is earned. The payment will be 50 percent of the price for LSTTC, or five (5) percent of the original contract amount, whichever is less.

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

(c) The third payment will be made when 75 percent of the original contract amount is earned. The payment will be 20 percent of the price for LSTTC, or two (2) percent of the original contract amount, whichever is less.

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

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

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

R. Inlaid Pavement Marker Installation

1.0 Description. This work shall consist of furnishing and installing inlaid pavement markers as shown on the plans or as directed by the engineer. An inlaid pavement marker shall consist of a retro-reflective pavement marker installed below the pavement surface. The marker shall be installed with a cradle device which supports the reflector at the proper depth below the pavement and attached to the pavement with adhesive. In addition to cutting a location for the marker, a slot shall be grooved into the pavement both before and after the marker for visibility of the marker and drainage. Final product shall have two markers in place at each location.

2.0 Material. All material shall be in accordance with the following.

2.1 Marker. The marker shall have two retro-reflective lenses white facing traffic and red facing opposing / wrong way traffic to reflect incident light from opposite directions. The lens shall be hermetically sealed and permanently bonded to the marker base. The manufacturer's identification shall be molded in the face of the marker lens or on the marker body so as to be visible after installation. The reflector color shall be as shown on the plans.

2.1.1 The marker shall have nominal dimensions of 2.0 x 5.0 x 0.7 inches. The reflective surface of each lens shall be a nominal 1.93 square inches in area.

2.1.2 In addition to the requirements described, the marker/cradle system shall be National Transportation Product Evaluation Program (NTPEP) approved. The marker shall receive at a minimum an average rating of 3.0 for lens and visibility after one year of exposure on both concrete and asphalt test decks. A written request for qualification shall be sent by the manufacturer to Construction and Materials with the following information:

- (a) Brand name of the product.
- (b) A copy of the actual test results from NTPEP.
- (c) Certification that the material meets this specification and is intended for use as described.
- (d) Specific installation instructions.

2.2 Adhesive. The adhesive used to bond the marker to the pavement shall be an epoxy approved by the engineer or meet the manufacturers specifications.

3.0 Construction Requirements.

3.1 Reflector placement. A cradle shall be used to hold the marker at the correct nominal depth of 0.12 inch. The cradle shall be made of polycarbonate plastic and the net weight of the cradle and marker shall be less than 5 ounces. When installed, the marker shall be perpendicular to traffic.

3.2 Pavement groove. There shall be a groove cut both in advance and behind the marker using diamond tipped blades. The entire groove shall be cut in accordance with the manufacturers recommendations. The groove should be straight to within 1/2 inch in 10 feet. The width of the groove shall be 5 inches or per manufacturer's specifications.

The overall length of the groove cut in the pavement surface shall be 9 feet, with markers placed 3.5 feet from either end and spaced 2.0 feet apart.

3.3 Installation. The groove and the bottom surface of the marker shall be free of scale, dirt, rust, oil, grease or any other contaminant that might reduce bonding to the adhesive.

3.3.1 The adhesive used to install the marker shall be machine applied unless otherwise approved by the engineer. The machine mixer and applicator shall be capable of accurately and uniformly proportioning the components. The mixing chamber shall produce an epoxy adhesive of uniform color with no visible evidence of streaks on the surface or within the mixed epoxy adhesive.

3.3.2 No markers shall be installed when the ambient temperature is below 50 F (10 C), the relative humidity is above 80 percent, or the pavement surface is wet.

3.3.3 Newly placed bituminous pavement surfaces shall be allowed to cure for a minimum of seven days prior to installing reflectors.

3.3.4 A longitudinal adjustment to the location of a marker shall be made in order to avoid damage to deteriorated pavement or transverse joints. In locations where concrete and bituminous surfaces abut, markers shall be installed in the concrete surface.

3.3.5 The pavement shall be accurately cut to the marker manufacturer's specifications. The depth of the groove where the marker is to be placed shall be in accordance with manufacturer's specifications.

3.3.6 If necessary, installation grooves on crowned pavements, superelevated pavements, or ramps shall be cut as needed to provide proper marker fit.

3.3.7 The groove shall be clean and dry prior to application of the adhesive.

3.4.9 There shall be no adhesive on the lens or top of the marker.

3.4.10 When hand mixing of epoxy adhesive is permitted, no more than one quart (L) of epoxy adhesive shall be mixed at one time. The marker shall be installed within five minutes after mixing operations are started.

3.4.11 The installed marker shall be protected from traffic until the adhesive has cured according to manufacturer's recommendations. If, after the manufacturer's recommended cure time, epoxy adhesive can be penetrated by a screwdriver or other pointed instrument, the marker shall be removed, cleaned, and reinstalled.

4.0 Method of Measurement. Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. When required, measurement of inlaid pavement markers will be measured per each. The revision or correction will be computed and added to or deducted from the contract quantity.

5.0 Basis of Payment. The accepted quantity of inlaid pavement markers will be paid at the contract unit price for:

Item No.	Unit	Description
620-99.02	Each	Misc. Inlaid Pavement Marker Installation

5.1 Payment for the Inlaid Pavement Marker Installation per each includes all labor, equipment and materials necessary to fulfill the requirements of the above provision. The cost of grooving, adhesive, and installation of two pavement markers per groove will be included in the unit cost per marker each installation.

S. Rapid Strength Concrete for Pavement Repair NJSP-19-02A

1.0 Description. This specification covers the requirements of rapid strength concrete that is suitable for full depth pavement repairs. The work shall be in accordance with Sec 613.10, unless otherwise specified with this special provision.

2.0 Materials. All material, proportioning, air-entraining, mixing and transporting of concrete shall be in accordance with Sec 501 as applicable to pavement concrete, except as noted herein.

2.1 Cement. The cement shall meet the requirements of ASTM C1600 for Type VRH or Type URH. Other cement types are not allowed.

2.2 Admixtures. The use of chemical admixtures is allowed and shall be in accordance with AASHTO M 194. Chloride accelerators are not allowed.

2.3 Mix Requirements. The concrete mix design shall meet a minimum compressive strength of 3000 psi within 4-hours; while maintaining initial workability to effectively place the concrete and meet the requirements of this specification.

The concrete mix design shall not exceed 700 lb/yd³ of cement.

The concrete mix design shall not exceed 0.04% shrinkage at 28 days in accordance with ASTM C 157 with the following modifications:

1. The demold time shall be determined by ASTM C 403 Final Set plus 25% of that time.
2. Initial measurement shall be taken immediately after demolding.
3. The shrinkage specimens shall be air cured until 28 days.

2.4 Certification. In addition to the mix design information required in Sec 501.3; the contractor shall submit ASTM C 666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing test results from an independent laboratory with a concrete mixture containing similar cement type and amount in comparison to the approved mix design. For acceptance, the concrete mixture tested, shall meet a minimum durability factor of 80 percent.

3.0 Construction. All construction requirements shall be in accordance with Sec 502 except as follows:

3.1 General Inspection. All materials shall be subject to inspection and sampling by MoDOT at the source of manufacture, intermediate shipping terminal or destination. MoDOT will be allowed free access to all facilities and records as required for inspection and sampling.

3.2 Trial Mix Requirement. The contractor shall construct a test pad (used during maturity testing) or a small pavement repair location using the approved mix design prior to production. The test pad or repair area will be evaluated and will be subject for approval from the engineer before any further production.

3.3 Mix Design Representative. During construction and concrete placement, the cement manufacturer's representative shall be present on the project to provide technical expertise.

3.4 Compressive Strength Requirements. The concrete opening strength to all traffic shall be a minimum compressive strength of 3000 psi. Light construction traffic is allowed when the concrete achieves a minimum compressive strength of 2000 psi. The opening strength shall be verified by the maturity method in accordance with Sec 507, except the strength-maturity relationship shall be developed using 2-hour, 4-hour, 6-hour, 1-day, 7-day, and 28-day time intervals.

3.5 Curing. After concrete placement and after surface irregularities have been removed, the concrete surface shall be given a uniform roughened finished by a broom, wet burlap drag, or other methods approved by the engineer for a temporary surface texture. Immediately after texturing, the concrete shall have a wet burlap cure until the concrete has achieved a minimum compressive strength of 2000 psi. When the wet burlap is removed, the concrete shall have a white pigmented membrane applied in accordance with Sec 502.

3.6 Testing. The concrete mixture shall be within the specified limits for compressive strength, pavement thickness, and air content. The QC and QA test frequencies shall follow Sec 613.10.

4.0 Method of Measurement and Basis of Payment. The method of measurement and basis of payment shall be in accordance with Sec 613.10. The accepted quantity of pavement repair shall be paid for at the contract unit price for Item No. 613-99.05, Rapid Strength Concrete for Pavement Repair, per square yard.

T. Supplemental Revisions JSP-18-01KK

- Compliance with [2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment](#).

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

- Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes land disturbance on the project site and the total area of land disturbance, both on the project site, and all Off-site support areas, is one (1) acre or more. Regardless of the area of Off-site disturbance, if no land disturbance occurs on the project site, these provisions do not apply. When a WPCM is required, all sections within this provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein. This provision is in addition to any other

stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

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

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

2.0 Water Pollution Control Manager (WPCM). The contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

- (a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT’s statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project’s Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;
- (b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;
- (c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;
- (d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the engineer;
- (e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer’s weekly inspections;
- (f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and

ensure that all Stormwater Deficiencies noted on the report are corrected as soon as possible, but no later than stated in Section 5.0.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity meeting for grading/land disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity meeting except work necessary to install perimeter controls and entrances. Discussion items at the pre-activity meeting shall include a review of the Project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

3.1 Hold Point. Following the pre-activity meeting for grading/land disturbance and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).

5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period granted by the engineer when weather or field conditions prohibit the corrective work. If the contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the contractor. Work shall not resume until the engineer approves the corrective work.

5.1 Liquidated Damages. If the contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines, and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of \$2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

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

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

106.9 Buy America Requirements.

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

106.9.1 Buy America Requirements for Iron or Steel Products.

The contractor's attention is directed to Title 23 CFR 635.410 *Buy America Requirements*. Where articles, materials or supplies that consist wholly or predominantly of iron or steel or a combination of both are to be permanently incorporated into the contract work, steel and iron material shall be manufactured, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. Under a general waiver from FHWA the use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

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

106.9.1.2 "Minimal use" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent (0.1 percent) of the total contract cost or \$2,500.00, whichever is greater. If foreign steel, iron, or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

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

106.9.1.3.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.1.3.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form ([link to certificate form](#)) from the fabricator must show all steps of manufacturing,

including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.1.3.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read "I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage". The certification shall be signed by an authorized representative of the prime contractor.

106.9.1.4 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded in the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

106.9.2 Buy America Requirements for Construction Materials other than iron or steel products.

Construction materials mean articles, materials, or supplies that consist of only one of the items listed. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material. Upon request by the engineer, the contractor shall submit a domestic certification for all construction materials listed that are incorporated into the project.

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

106.9.3 Buy America Requirements for Manufactured Products.

Manufactured products mean articles, materials or supplies that have been processed into a specific form and shape, or combined with other articles, materials or supplies to create a product with different properties than the individual articles, materials or supplies. If an item is classified as an iron or steel product, an excluded material, or other product category as specified by law or in 2 CFR part 184, then it is not a manufactured product. However, an article, material or supply classified as a manufactured product may include components that are iron or steel products, excluded materials, or other product categories as specified by law or in 2 CFR part 184. Mixtures

of excluded materials delivered to a work site without final form for incorporation into a project are not a manufactured product.

106.9.3.1 Produced in the United States, in the case of manufactured products, means:

(A) For projects obligated on or after October 1, 2025, the product was manufactured in the United States; and

(B) For projects obligated on or after October 1, 2026, the product was manufactured in the United States and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

106.9.3.2 (i) With respect to precast concrete products that are classified as manufactured products, components of precast concrete products that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of such components shall be included in the applicable calculation for purposes of determining whether the precast concrete product is produced in the United States.

(ii) With respect to intelligent transportation systems and other electronic hardware systems that are installed in the highway right of way or other real property and classified as manufactured products, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of cabinets or other enclosures shall be included in the applicable calculation for purposes of determining whether systems referred to in the preceding sentence are produced in the United States.

106.9.4 Waiver for De Minimis Costs for Manufactured and Construction Materials other than iron or steel products.

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

- Third-Party Test Waiver for Concrete Aggregate

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

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

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

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

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

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

3.1 The testing facility shall be AASHTO accredited.

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

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

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

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

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

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

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

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

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

15.0 Bidder's List Quote Summary. MoDOT is a recipient of federal funds and is required by 49 CFR 26.11 to provide data about its DBE program. All bidders who seek to work on federally assisted contracts must submit data about all DBE and non-DBEs in accordance with Sec 102.7.9. MoDOT will not compare the submitted Bidder's List Quote Summary to any other documents or submittals, pre or post award. All information will be used by MoDOT in accordance with 49 CFR 26.11 for reporting to USDOT and to aid in overall DBE goal setting.

- **Add Sec 102.7.9 to include the following:**

102.7.9 Bidder's List Quote Summary. Each bidder shall submit with each bid a summary of all subcontractors, material suppliers, and service providers (e.g. hauling) considered on federally funded projects pursuant to 49 CFR 26.11. The bidder will provide the firm's name, the corresponding North American Industry Classification System (NAICS) code(s) the firm(s) were considered for, and whether or not they were used in the bid. The information submitted should be the most complete information available at the time of bid. The information shall be disclosed on the Bidder's List Quote Summary form provided in the bidding documents and submitted in accordance with Sec 102.10. Failure to disclose this information may result in a bid being declared irregular.

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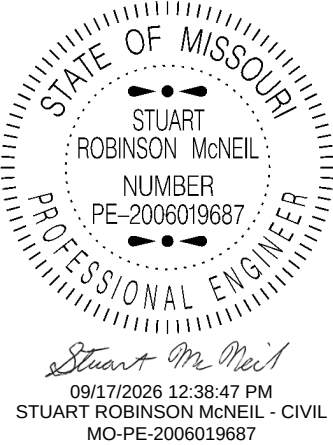
Route: I-64

County: St. Louis

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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: JSL0168 ST. LOUIS COUNTY, MO DATE PREPARED: 7/27/2026
	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-09-02M

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 2026 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- 13-01E

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 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.: JSL0168
Route: I-64
County: St. Louis

Notice to Proceed: December 21, 2026
Contract Completion Date: October 1, 2027

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

Project	Calendar Days	Daily Road User Cost
JSL0138	N/A	\$11,400.00
JSL0168	N/A	\$2,300.00
JSL0168B	N/A	\$1,800.00

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with [Sec 108.8](#) in the amount of **\$2,000.00** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the specified contract completion date or calendar days.

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

5.0 Liquidated Damages for Winter Months. 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.

C. Work Zone Traffic Management JSP-02-06N

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

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

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

2.0 Traffic Management Schedule.

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

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

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of 10 minutes to prevent congestion from escalating to 15 minute or above threshold. If disruption of the traffic flow occurs and traffic is backed up in queues of 10 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 (TMC), Gateway Guide 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 (2027)	Monday	Noon on Friday	6:00 a.m. on Tuesday
Tuesday (2028)	Tuesday	Noon on Monday	6:00 a.m. on Wednesday

3.2 The contractor shall not perform any construction operation on the roadway, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The contractor shall 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 Zone Time Restrictions

North Outer Forty Drive

6:00 a.m. - 9:00 a.m. and 2:30 p.m. to 5:00 p.m. Monday through Friday

No weekend restrictions

South Outer Forty Drive

7:30 p.m. - 6:00 a.m. Monday through Friday

No weekend restrictions

South Forty Drive from Clayton Road to Eastbound I-64 On-Ramp

5:00 a.m. to 8:00 p.m. Monday through Friday

3.4 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$1,000.00 per 15 minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

3.4.1 The said liquidated damages specified will be assessed regardless of 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.

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

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

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

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

Missouri Highway Patrol 636-300-2800		
City of Town and Country	City of Chesterfield	City of Frontenac
West County EMS & Fire 636-256-2000	West County EMS & Fire 636-256-2000	Fire: 314-994-1801
Police: (Non-emergency) Dispatch 314-737-4600	Police: 636-537-3000 Dispatch: 636-529-8210	Police: 314-737-4600 (Non-emergency)
City of Ladue (Non-emergency)		
Fire: 314-993-0181		
Police: 314-737-4600		

2.1 This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate law enforcement agency.

2.2 The contractor shall notify law enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with law enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 No direct pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

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

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

Stuart McNeil, PE - Project Contact
St. Louis District
1590 Woodlake Drive
Chesterfield, MO 63017

Telephone Number: (314) 453-5402
Email: Stuart.McNeil@modot.mo.gov

1.1 All questions concerning the bid document preparation can be directed to the Central Office – Design as listed below.

Telephone Number: (573) 751-2876

Email: BCS@modot.mo.gov

2.0 Upon award and execution of the contract, the successful bidder/contractor shall forward all questions and coordinate the work with the engineer listed below:

Chris Morgan, Resident Engineer
St. Louis District – Southwest Area
Chesterfield Project Office
601 Salt Mill Road
Chesterfield, MO 63017

Telephone Number: (314) 453-1753

Email: Christopher.Morgan@modot.mo.gov

F. Utilities

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

<u>Utility Name</u>	<u>Known Required Adjustment</u>	<u>Type</u>
Lumen Rich Obremski Phone: (314) 378-9931 Email: Richard.Obremski@Lumen.com	None	Communications
MoDOT ITS Leah Haines Phone: (314) 624-7448 Email: Richard.Obremski@Lumen.com	None	Communications

1.1 The Contractor shall be aware there are numerous utilities present along the routes in this contract. Utility locates were not performed during the design phase of the project. The above utilities were identified through facility maps as having facilities within the project area. Therefore, the extent of conflicts with utilities are unknown. It is the inherent risk of the work under this contract that the contractor may encounter these utilities above and/or below the ground or in the vicinity of any given work item which may interfere with their operations. The contractor expressly acknowledges and assumes this risk even though the nature and extent are unknown to both the contractor and the Commission at the time of bidding and award of the contract. It is the responsibility of the contractor to comply with Missouri CSR 319 to get utilities marked and verify the existence, location, and status of any marked utility prior to any excavations. Such verification may require direct contact with the listed utilities.

2.0 Guardrail Locations. The contractor shall be aware there are numerous utilities present along the route in this contract. The full extent of conflicts with utilities are unknown. There may be underground utilities that run parallel or cross the route that are in close proximity to guardrail work locations. The contractor shall take necessary precautions and measures to verify locations and depths of utilities by any necessary means to determine exact impacts to their work and may require direct contact with the listed utilities.

3.0 Utility conflicts not noted. If utility facilities are found to be in conflict with the contract work that aren't noted on the plans or in the Job Special Provisions, the Contractor shall contact the MoDOT Area Utility Coordinator, Steve Belcher at (314) 624-7382. District Utility Staff will determine whether adjustment of the utility is necessary, if alternate construction methods will be required, or if the work can be installed in accordance with Missouri Standard Plans for Highway Construction for the item of work specified.

4.0 Basis of Payment. No direct payment shall be made for compliance with this provision unless specified elsewhere in the contract document.

G. Pot Holing Utility Facilities

1.0 Description: Pot Holing Utility Facilities. The Contractor shall notify the utility prior to potholing the utilities marked facility. The utility may want to have a representative on site to observe the contractor's pothole work. The Contractor shall be responsible to pothole any existing utility facility under the pavement or outside the pavement, to verify the utilities depth and location for all the Contractor's needs to construct the project. Core drilling pavement prior to pot holing for utilities may be necessary. Any potholed utility facility determined to conflict with construction of the work for the project, shall be brought immediately to the attention of MoDOT's area utility coordinator and the Engineer for the project. The Engineer will determine whether relocation of the utility is necessary to accommodate construction of the project or if the proposed work can be adjusted to avoid any utility relocation. The Contractor is responsible for the costs to repair any utility or MoDOT facility damaged by their work to pothole the utility.

1.1 A utility pothole unit shall be defined for this project as a single continuous excavation effort, by the Contractors chosen method, to expose a buried utility at the location marked by the utilities locator and approved by the Engineer. The excavation limits of a single pothole unit shall be any excavation taking place within a 2 feet radius around the center of the locate mark provided by the utilities locator, to a depth where either the utility has been satisfactorily exposed for the Engineer to see or to a depth where the search for the marked utility is terminated by the Engineer and the pothole location abandoned without exposing the utility.

2.0 Basis of Payment. All labor, equipment, materials and restoration necessary to pot hole and core drill to verify buried utilities shall be paid for under:

	Pay Item Number	Unit
902-99.02	Potholing Utility Facilities	Each

H. 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.

I. Lump Sum Temporary Traffic Control JSP-22-01B

1.0 Delete Sec 616.11 and insert the following:

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

616.11.1 Lump Sum Temporary Traffic Control. No measurement will be made for temporary traffic control items grouped and designated to be paid per lump sum. The list of lump sum items

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

2.0 Delete Sec 616.12 and insert the following:

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

- (a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.
- (b) Installing, operating, maintaining, cleaning, repairing, removing, or replacing traffic control devices.
- (c) Covering and uncovering existing signs and other traffic control devices.
- (d) Relocating temporary traffic control devices, including permanent traffic control devices temporarily relocated, unless specifically included as a pay item in the contract.
- (e) Worker apparel.
- (f) Flaggers, AFADs, PFDs, pilot vehicles, and appurtenances at flagging stations.
- (g) Furnishing, installing, operating, maintaining, and removing construction-related vehicle and equipment lighting.
- (h) Construction and removal of temporary equipment crossovers, including restoring pre-existing crossovers.
- (i) Provide and maintaining work zone lighting and work area lighting.

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

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

(a) The first payment will be made when five (5) percent of the original contract amount is earned. The payment will be 50 percent of the price for LSTTC, or five (5) percent of the original contract amount, whichever is less.

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

(c) The third payment will be made when 75 percent of the original contract amount is earned. The payment will be 20 percent of the price for LSTTC, or two (2) percent of the original contract amount, whichever is less.

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

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

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

J. Optional Temporary Pavement Marking Paint NJSP-18-07H

1.0 Description. This provision provides the contractor with the option to either complete all Permanent Pavement Marking Paint (PPMP) prior to the time limits specified herein or to apply Temporary Pavement Marking Paint (TPMP) in accordance with [Sec 620.10.2](#) (4 inch width) in all locations shown on the plans as PPMP and delay application of the PPMP until the spring of 2028, as allowed herein. PPMP is defined as Class 1 Pavement Marking Paint and Class 2 Pavement Marking Paint and does not include [Sec 620.20.3](#) Durable Pavement Markings.

1.1 No application of PPMP shall occur between October 1, 2027 and March 1, 2028, both dates inclusive, except as stated herein. When the contractor has begun application of PPMP prior to October 1, 2027, and weather limitations stated in [Sec 620.20.2.4](#) can be met, the contractor may complete the PPMP within the first seven (7) calendar days of October. If all (100%) of the PPMP is not completed on or before October 7, 2027, all previously applied PPMP, including any painted markings applied prior to October 1, shall be considered TPMP, and the contractor shall complete the remaining marking with TPMP, and then re-apply PPMP in all planned locations after March 1, 2028. All PPMP shall be completed prior to June 1, 2028. No additional payment will be made for PPMP that is later determined to be TPMP due to the contractor's failure to complete the PPMP within the time specified.

1.2 Use of TPMP Prior to October 1. The contractor has the option to apply TPMP in lieu of PPMP prior to October 1, 2027, even when there is sufficient time to complete the PPMP prior to October 1, 2027. For example, the contractor may choose to use TPMP as a base coat for the PPMP on open-graded surfaces in order to achieve higher retroreflectivity readings on the surface coat as compared to a single application.

1.2.1 The contractor has the option of using TPMP in lieu of Temporary Raised Pavement Markers if applied each day that existing markings are obliterated.

2.0 Construction Requirements. TPMP shall be accurately placed in the final planned location and shall be completely covered by the final application of PPMP. Any failure to comply with this requirement shall be corrected by removal of the misplaced pavement markings at the contractor's expense and without marring of the pavement surface.

2.1 Prior to application of the PPMP on TPMP, TPMP shall be fully cured in accordance with the manufacturer's recommendation, or for a period of 12 hours, whichever is greater.

3.0 Weather Limitations. All weather limitations specified in [Sec 620](#) for PPMP and TPMP shall apply. Cold Weather Pavement Marking Paint, in accordance with [Sec 620.10.6](#), shall be used for TPMP when specified weather limitations do not allow the use of waterborne paint. No additional payment will be made for the use of Cold Weather Pavement Marking Paint as TPMP. Cold Weather Pavement Marking Paint is not an allowable substitute for PPMP and shall subsequently be covered with PPMP.

4.0 Time Exception. If application of PPMP is to be delayed to the spring of 2028, the contractor shall submit a request to the engineer for a time exception and shall provide a revised work schedule that shows the planned completion of the PPMP.

4.1 Upon receipt of the time exception request in Section 4.0, the engineer will list "Application of Permanent Pavement Marking Paint" as an exception on the Semi-Final Inspection form, thus granting an exception to the count of contract time thru June 1, 2028, solely for the purpose of delaying application of PPMP. This time exception shall not apply to any time needed to complete any other work items. Liquidated Damages, as specified elsewhere in this contract, shall remain in effect for all other work items not completed by the contract time limits, as specified elsewhere in this contract, and for PPMP not completed by June 1, 2028.

5.0 Method of Measurement. No final measurement will be made for TPMP.

6.0 Basis of Payment. Full payment for TPMP will be made at the contract lump sum price even when PPMP is completed prior to the time limitation and TPMP is not used or only partially used.

6.2 If a \$0 bid is entered for TPMP, no payment will be made should TPMP become necessary.

Item Number	Description	Unit
6209901	TEMPORARY PAVEMENT MARKING PAINT	LS

K. Modified Bonded Asphaltic Concrete Pavement NJSP-15-11C

1.0 Description. This work shall consist of the placement of a Polymer Modified Emulsion Membrane (PEM) or Cationic Modified Emulsion Membrane (CPEM) prior to a bituminous overlay of hot asphaltic concrete pavement. At the contractor's option, the contractor may replace the PEM/CPEM with a Performance Graded (PG) Asphalt Binder prior to a bituminous overlay of hot asphaltic concrete pavement. The PEM/CPEM or PG Asphalt Binder shall be spray applied prior to the application of the hot asphaltic concrete pavement so as to produce a homogeneous surface in accordance with Secs 401, 402, or 403.

2.0 Materials. All materials shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Polymer Modified Emulsion Membrane (PEM or CPEM)	1015.20.6.2
Performance Graded (PG) Asphalt Binder	1015.10

The PG Asphalt Binder shall be modified to meet the following performance parameters. The test results shall be submitted to the engineer for approval at least 30 days prior to use. The PG binder component shall account for at least 95% of the total product composition by volume.

Parameters*	Test Method	Min	Max
No-Pick-Up Time for Tack Coats; minutes	MoDOT TM 87	-	5
Average Bond Strength; psi	MoDOT TM 88 or alternate method	75	-
Elastic Recovery, percent	AASHTO T 301	60	-

*The PG Asphalt Binder product shall exhibit a laboratory "no-pick-up" time of 5 minutes or less per MoDOT TM-87. The PG Asphalt Binder product shall exhibit laboratory bond pull-off strengths (average of three test specimens) of a minimum of 75 psi in accordance with MoDOT TM-88 method or other approved research test methods at the target application rate prescribed within this specification. The elastic recovery may be waived if the product has proven performance in cold weather climates with freeze/thaw conditions.

3.0 Construction Requirements. The PEM/CPEM or PG Asphalt Binder shall be applied in accordance with Sec 407 except as modified herein.

3.1 Coldmilled Surfaces. All coldmilled surfaces shall be thoroughly cleaned with air blowing, air vacuuming, or other approved methods resulting in a cleaned surface free of all dust, loose material, grease, or other foreign material at the time the tack is applied to the satisfaction of the engineer. Historically, conventional sweeping equipment has not produced satisfactory results and will not be acceptable as the sole operation. .

3.2 Requirements of Polymer Modified Emulsion Membrane (PEM or CPEM).

3.2.1 Equipment. No wheel, track or other part of the paving machine or any hauling equipment shall come in contact with the PEM/CPEM before the asphaltic concrete pavement mixture is applied.

3.2.2 Application. The target application rate of the PEM/CPEM shall be 0.20 gallons per square yard. The application rate shall be within +/- 0.02 gallons per square yard of the target application rate during construction. The average application rate used within the entire areas of the job limits shall be within +/- 1% of the target application rate. The PEM/CPEM shall be sprayed at a temperature of 120 - 180°F. The sprayer shall accurately and continuously monitor the application rate and provide a uniform coverage across the entire width to be overlaid.

3.2.2.1 The application rate of the PEM/CPEM shall be verified by dividing the volume (of PEM/CPEM used) by the area of paving for that day.

3.2.2.2 No water shall be added to the PEM/CPEM.

3.3 Requirements of Performance Graded (PG) Asphalt Binder

3.3.1 Equipment. The PG Asphalt Binder product shall be applied with an asphalt distributor that has been properly cleaned and set-up specifically for use of hot applied PG Asphalt Binder

products. The distributor shall have the full circulating and heating capabilities in the tank and a heated spray bar.

3.3.2 Application. The target application rate of the PG Asphalt Binder shall be 0.15 gallons per square yard. The application rate shall be within +/- 0.02 gallons per square yard of the target application rate during construction. The average application rate used within the entire area of the job limits shall be within +/- 1% of the target application rate.

3.3.3 Non-Tracking. The PG Asphalt Binder shall be modified to be non-tracking that does not stick to the tires, tracks or other parts of paving equipment or vehicles such that the surface to be overlaid becomes visible or void of tack prior to the placement of the asphaltic concrete pavement mixture. A test strip using the PG Asphalt Binder product of 200 feet long (maximum) shall be applied to the roadway. After application, the PG Asphalt Binder shall be non-tracking within 10 minutes or less. If the test strip exhibits unacceptable tracking, then work shall cease until the PG Asphalt Binder product is either reformulated, switched to a different PG Asphalt product, or a spray paver application method is utilized. The test strip shall be conducted until satisfactory results are achieved.

3.3.4 Safety. Proper storage, handling, and application guidelines shall be followed carefully in accordance with the product manufacturer. A copy of this information shall be provided to the engineer. The information shall include the application temperature range, maximum allowable temperature for the product, and the particle charge.

3.3.4.1 Safety procedures of all products shall be addressed in the contractor's safety plan and a pre-construction meeting shall be held with the employees involved with the construction of the asphalt overlay to address all safety procedures, protocols, and personal protective equipment (PPE) of hot applied PG Asphalt Binder prior to application.

4.0 Method of Measurement. Measurement of the Polymer Modified Emulsion Membrane or PG Asphalt Binder shall be based on the volume in gallons in accordance with Sec 1015. Where required, measurement for coldmilling existing asphalt materials and cleaning the underlying pavement will be computed to the nearest square yard.

5.0 Basis of Payment. The accepted quantity of Polymer Modified Emulsion Membrane (PEM/CPEM) or PG Asphalt Binder shall be paid for at the contract unit price for 407-99.12, Misc. Modified Bonded Asphaltic Concrete Pavement, per gallon.

Where required, the accepted quantity for coldmilling and cleaning underlying pavement will be paid for at the contract unit price per square yard for Misc. Coldmilling Bituminous Pavement with Additional Cleaning, Item number 622-99.05.

L. Partial Depth Concrete Pavement Repair Using Hot Applied Polymer Modified Repair Material NJSP-19-01B

1.0 Description. This work shall consist of removal, furnishing, and placing material to repair existing concrete pavement by performing partial depth concrete pavement repairs as specified in plans or as approved by the engineer. All work shall be in accordance with [Sec 613](#) except as herein modified.

2.0 Construction Requirements.

2.1 Individual repair areas shall be limited to approximately 24 square feet in area. Repair areas larger than 24 square feet shall be patched with a cementitious based material in accordance with [Sec 613](#).

2.2 Removal of the existing patched, spalled, delaminated, or otherwise deteriorated concrete surface shall be limited to 1/3 (one third) of the pavement thickness or 4 inches, whichever is less. Removal of concrete shall be accomplished with light jack hammers and/or a mill head designed for concrete milling. All loose materials, including milled or broken concrete or asphalt, crack seal materials, oil, sand, dust, grit, or other contaminants, shall be completely removed. Removal of material shall be in accordance with [Sec 202.2](#).

2.3 All surfaces shall be cleaned with compressed air at a minimum of 100 psi.

2.4 Partially exposed reinforcing steel mesh shall be sandblasted clean or removed before placing patch materials. If sandblasting is used, all surfaces shall be cleaned of loose sandblasting grit with compressed air.

2.5 All surfaces of the repair area shall be primed using a primer and procedure recommended and approved by the manufacturer. Any costs related to primer shall be included in the unit cost. No direct payment will be made for the priming of the repair areas.

2.6 Material shall be placed in 1 inch lifts until the repair is level with the existing pavement. Each lift shall be adequately cooled, based on manufacturer recommendations, prior to subsequent lift placement.

2.7 Repairs that are greater than 1 inch in depth require the addition of bulking aggregate 20 percent to 50 percent by volume, as recommended by the manufacturer. The bulking stone shall be double washed, dust-free 5/8 inch to 1 inch sized granite. The bulking aggregate shall be adequately heated and dried prior to placement. No direct payment will be made for costs associated with bulking stone placement.

2.8 Topping stone shall be placed on the surface of the patch to improve surface friction using a procedure recommended by the manufacturer. The topping stone shall be double washed, dust-free, angular, hard aggregate. The topping stone shall be adequately heated and dried prior to placement. No direct payment will be made for costs associated with topping stone placement.

2.9 Traffic shall not be allowed on the repair area until the patching material has adequately cooled and gained strength, as recommend by the manufacturer.

2.10 Repair areas in the roadway and shoulders shall be swept clean of all loose debris before opening to traffic.

2.11 Any patches that vary by more than ¼ inch from the existing profile of the roadway or of poor workmanship shall be removed and replaced by the contractor at the contractor's expense.

3.0 Material Requirements.

3.1 The contractor shall submit the manufacturer's specifications for the material for patching and repair to the engineer for approval. The contractor shall follow manufacturer's specifications for material preparation and placement.

3.2 Material shall be hot pour, polymer modified, resin-based concrete repair material, flexible and grey or black in color. Material shall provide an impermeable, voidless mass at ambient temperatures. Material is to be mixed and heated on site as recommended by the product manufacturer. The repair material shall be factory blended and in meltable bags.

4.0 Additional or Reduced Work. If additional repair work is necessary beyond what is specified in the work order or the required repair is not as extensive as originally viewed, the contractor shall contact the engineer for authorization to proceed with the additional or reduced work. The contractor shall note that with this authorization to proceed with additional or reduced work may change which unit bid item is used to calculate final payment depending on final repair quantities. Any work performed without authorization of the engineer shall be at the contractor's expense.

5.0 Method of Measurement. Measurement shall be made to the nearest pound based on the actual material used with an acceptable form of package documentation.

6.0 Basis of Payment. Payment shall be paid by the pound and shall be full compensation for all repair work including removal of loose materials, cleaning of concrete surface, and furnishing and placing material for Partial Depth Pavement Repair using flexible, hot polymer-modified repair material. All cost for the repair work, including labor, equipment, materials, and containment and disposal of material shall be included in Item 613-99.11, Partial Depth Concrete Pavement Repair Using Flexible, Hot Polymer Modified Repair Material, per pound.

M. Rapid Strength Concrete for Pavement Repair NJSP-19-02A

1.0 Description. This specification covers the requirements of rapid strength concrete that is suitable for full depth pavement repairs. The work shall be in accordance with Sec 613.10, unless otherwise specified with this special provision.

2.0 Materials. All material, proportioning, air-entraining, mixing and transporting of concrete shall be in accordance with Sec 501 as applicable to pavement concrete, except as noted herein.

2.1 Cement. The cement shall meet the requirements of ASTM C1600 for Type VRH or Type URH. Other cement types are not allowed.

2.2 Admixtures. The use of chemical admixtures is allowed and shall be in accordance with AASHTO M 194. Chloride accelerators are not allowed.

2.3 Mix Requirements. The concrete mix design shall meet a minimum compressive strength of 3000 psi within 4-hours; while maintaining initial workability to effectively place the concrete and meet the requirements of this specification.

The concrete mix design shall not exceed 700 lb/yd³ of cement.

The concrete mix design shall not exceed 0.04% shrinkage at 28 days in accordance with ASTM C 157 with the following modifications:

1. The demold time shall be determined by ASTM C 403 Final Set plus 25% of that time.
2. Initial measurement shall be taken immediately after demolding.
3. The shrinkage specimens shall be air cured until 28 days.

2.4 Certification. In addition to the mix design information required in Sec 501.3; the contractor shall submit ASTM C 666 – Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing test results from an independent laboratory with a concrete mixture containing similar cement type and amount in comparison to the approved mix design. For acceptance, the concrete mixture tested, shall meet a minimum durability factor of 80 percent.

3.0 Construction. All construction requirements shall be in accordance with Sec 502 except as follows:

3.1 General Inspection. All materials shall be subject to inspection and sampling by MoDOT at the source of manufacture, intermediate shipping terminal or destination. MoDOT will be allowed free access to all facilities and records as required for inspection and sampling.

3.2 Trial Mix Requirement. The contractor shall construct a test pad (used during maturity testing) or a small pavement repair location using the approved mix design prior to production. The test pad or repair area will be evaluated and will be subject for approval from the engineer before any further production.

3.3 Mix Design Representative. During construction and concrete placement, the cement manufacturer's representative shall be present on the project to provide technical expertise.

3.4 Compressive Strength Requirements. The concrete opening strength to all traffic shall be a minimum compressive strength of 3000 psi. Light construction traffic is allowed when the concrete achieves a minimum compressive strength of 2000 psi. The opening strength shall be verified by the maturity method in accordance with Sec 507, except the strength-maturity relationship shall be developed using 2-hour, 4-hour, 6-hour, 1-day, 7-day, and 28-day time intervals.

3.5 Curing. After concrete placement and after surface irregularities have been removed, the concrete surface shall be given a uniform roughened finished by a broom, wet burlap drag, or other methods approved by the engineer for a temporary surface texture. Immediately after texturing, the concrete shall have a wet burlap cure until the concrete has achieved a minimum compressive strength of 2000 psi. When the wet burlap is removed, the concrete shall have a white pigmented membrane applied in accordance with Sec 502.

3.6 Testing. The concrete mixture shall be within the specified limits for compressive strength, pavement thickness, and air content. The QC and QA test frequencies shall follow Sec 613.10.

4.0 Method of Measurement and Basis of Payment. The method of measurement and basis of payment shall be in accordance with Sec 613.10. The accepted quantity of pavement repair shall be paid for at the contract unit price for Item No. 613-99.05, Rapid Strength Concrete for Pavement Repair, per square yard.

N. Linear Grading Class 2 – Modified

1.0 Description. Modified Linear Grading, Class 2 shall consist of any necessary clearing and grubbing in accordance with Sec 201, preparing the subgrade for shoulder, pavement widening, sidewalk, curb and gutter, paved approaches, roadside retaining wall, or other roadside appurtenance by excavating, compacting, fine-grading, and shaping existing shoulder and ditch

fore-slope, conforming to the typical section shown on the plans. It may be necessary to haul material.

2.0 Construction Requirements. The shoulder, pavement widening, sidewalk, curb and gutter, roadside retaining wall, or other roadside appurtenance shall be excavated and graded as shown on the typical section with minimal disturbance of the existing sub-grade and fore slope. Density shall be obtained from reasonable compactive efforts consisting of no less than three passes with a roller until no further visible compaction can be achieved, or by other methods approved by the Engineer. Subgrade preparation and compaction shall also be in accordance with Sections 203, 209 and 210.

2.1 All ditches shall be graded to drain and maintain existing flow capacity, unless approved by the engineer. If fill material for the shoulder widening work impacts the ditch capacity, the contractor shall re-grade the backslope to maintain the flow capacity of the ditch. Fore slopes and back slopes shall be constructed at 3:1, except as noted on the plans or approved otherwise by the engineer.

2.2 It may be necessary to go outside the limits of the right of way to obtain additional material or to dispose of excess material. All costs for providing additional material or disposing of excess material shall be included at the contract unit price for pay item 207-99.09, Modified Linear Grading, Class 2. All contractor furnished material shall be approved by the Engineer prior to being incorporated into the project. Quarry screenings will not be considered an approved contractor furnished material.

2.3 Included in this work is any pavement edge treatment that might be necessary to stay in compliance with the Standard Plans. The need for edge treatment is determined by the contractor's method of operations.

3.0 Method of Measurement. Measurement will be made to the nearest 1/10 station separately for the length of pavement edge along each side of the roadway, measured along centerline of the traveled way and totaled to the nearest Station for the sum of all segments in accordance with Section 207.

4.0 Basis of Payment. Payment for Modified Linear Grading, Class 2 as described in this provision will be made at the contract unit price for:

Item Number	Unit	Description
207-99.09	Station	Linear Grading Class 2, Modified

O. Site Restoration

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

2.0 Materials. Any areas of concrete paved ditch, pavement, and shoulders as well as any similar improvements shall be replaced with improvements of similar composition and thickness. Removals shall be achieved by means of full depth saw cut, the resulting subgrade compacted to minimum density requirements and topped with 4 inches of compacted aggregate base course prior to replacement of surface materials. Concrete materials used in replacement shall be approved by the engineer. A commercial asphalt mix may be used for replacement of asphaltic surfacing upon approval of the engineer.

2.1 Unless quantities and pay items for removal and subsequent replacement of improvements are contained in the plans for a specific location of removal work, no direct payment will be made for full depth saw cutting and the removal and subsequent replacement of asphalt, pavement, shoulders etc. This work will be considered as included in the various unit bid prices established in the contract, and no additional payment will be made.

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

2.3 Any sidewalks and curb ramps that are disturbed as described in this provision shall be replaced to meet current ADA standards.

2.4 All guardrail post holes remaining from the removal of existing guardrail posts in existing concrete or asphalt pavement, or ditch shall be backfilled with a granular material and sealed with a ½ inch hot-poured elastic type material in accordance with Section 1057 or as approved by the Engineer. Any concrete or asphalt pavement or ditch damaged in the process of fulfilling this provision shall be replaced in kind and considered incidental to the installation of the new guardrail at the disturbed location

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

3.0 Basis of Payment. The cost of restoration of disturbed areas will be incidental to the unit price of the items associated with the disturbance. No direct payment will be made for any materials, equipment, time, or labor, which is performed under this provision.

P. Access to Commercial and Private Entrances

1.0 Description. While work on entrances or adjacent properties, the contractor shall make every reasonable effort to minimize any interference to the properties and to complete 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 as approved by the property owner and engineer.

2.0 Construction Requirements.

2.1 Commercial Entrances. On all commercial entrances, the contractor shall keep one-half of the entrance open at all times. On commercial entrances less than 20' wide, it may be necessary for the contractor to provide temporary aggregate to provide access to the property. The contractor shall remove and dispose of the temporary aggregate following the completion of the entrance. For properties with more than one entrance, the contractor may construct one entire entrance at a time with the approval of the property owner and the engineer. Some businesses have already agreed to allowed full driveway closures, see **Right of Way Requirements provisions** for those locations.

2.1.1 The contractor shall complete the entrances as quickly as possible and shall take **no longer than 4 Weeks** to complete any one entrance.

2.2 Private Entrances. The contractor shall complete the entrances as quickly as possible and shall **take no longer than seventy-two (72) hours** to complete any one entrance, unless otherwise approved by the engineer and the property owner. This may require the use of concrete strength accelerators.

2.2.1 Entrances 20 feet or wider may be constructed half at a time. One half of the entrance shall be open at all times and the contractor shall take **no longer than 10 days** to complete the entrance.

3.0 Basis of Payment. No direct payment shall be made to the contractor for the labor, equipment, material, or time required to comply with this provision.

Q. Property Owner Notification

1.0 Description. It shall be the contractor's responsibility to inform and notify the adjacent property owner 48 hours prior to starting any construction activities that may impact driveway access or occur along the frontage of the property owner's parcel. Notification shall be in written form and include the contractor's contact information, the engineer's contact information, and an estimated schedule of work and the associated impacts.

2.0 Basis of Payment. No direct payment will be made to the contractor for the labor, equipment, material, or time required to comply with this provision.

R. Construction Impacts to Privately Owned Sprinkler Systems

1.0 This work includes relocation or replacement of all sprinkler heads and sprinkler system pipes that are impacted by construction activities and installation of improvements.

2.0 The contractor is advised that various properties along the project length have irrigation systems whose sprinkler heads and associated pipe systems are located within or in close proximity to the proposed sidewalk. The contractor shall relocate undamaged sprinkler heads or replace damaged sprinkler heads as directed by the engineer.

2.1 The contractor shall check with individual property owners to shut off watering as necessary and be aware of the location of said systems. Any damage to the watering system, sprinkler

heads, etc. will be repaired or replaced at the contractor's expense and at no direct cost to MoDOT.

2.2 The contractor is strongly advised to field check the project to determine the extent of impact to the existing sprinkler systems located along the route and adjust the bid accordingly.

3.0 Method of Measurement: No measurement shall be made.

4.0 Basis of Payment: No direct payment will be made for the relocation or replacement of sprinkler systems located along the project limits. All costs associated with this work shall be considered incidental to other pay items provided in the contract.

S. Adjust to Grade Items

1.0 Description. This work shall consist of adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes that are within areas where either new sidewalks, curb ramps, approaches or pavements are to be constructed as shown on the plans. The contractor shall verify the type of frame and cover in the field before performing the work. The adjustment shall be made to match the final proposed grade.

2.0 Construction Requirements. Adjusting manholes and adjusting basins or inlets shall be done in accordance with Sec 604 except as modified herein.

2.1 Adjustments, extensions, and/or lowering of utility and any related excavation and backfill shall be constructed as approved by the Engineer. For MoDOT owned facilities, adjustments shall conform to current Missouri Standard Specifications for Highway Construction. For MSD owned facilities, adjustments shall conform to the 2018 MSD Construction Specifications for Sewer and Drainage Facilities and the 2009 MSD Standard Detail Sheets. Adjustments for inlets require the top lid slopes to be adjusted to less than 2% slope in all directions and some of these inlets need to be raised to the final sidewalk grade. These locations are to be determined in the field by the Engineer. Adjustments shall be completed so that the finished sidewalk, ramp, approach, or pavement meets current ADA standards.

3.0 Basis of Payment. All costs for materials, equipment, labor, and installation shall be included in the cost for adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes.

Item No.	Description	Unit
604-20.10	Adjusting Manhole	Each
604-99.02	Adjusting Valves	Each

T. Grated Inlet Repair/Replacement

1.0 Description. This work shall consist of removing the deteriorated or otherwise unacceptable top of an existing drop inlet as directed by the engineer and rebuilding as per the plans. The work shall include replacement of the frame and grate and any surrounding concrete and rebar in the gutter section.

2.0 Construction Requirements. The contractor shall be responsible for removing the existing grate and bearing plate, and a minimum of 6 inches from the top of the existing inlet, or down to sound material as per the Engineer. The contractor shall then rebuild the inlet top as per the plans to the existing elevation and as per Section 604. The contractor shall field verify the size of the inlet and required grate opening prior to ordering the corresponding curved vane grate, drop inlet top, grates and bearing plates. The contractor shall saw cut the existing pavement or shoulder around the inlet to provide a concrete pad and shall adjust to grade.

2.1 Measurement and payment for grated inlet repair/replacement includes the frame and grate and all concrete work including removal, forming, and reinforcing necessary to replace the inlet top. No direct payment will be made for epoxy coated reinforcing steel, dowel bars, tie bars, or manhole frame and covers and shall be included in the measurement and payment of Grated Inlet Repair/Replacement.

3.0 Basis of Payment. Payment for replacing the top of the inlet shall include all excavation, materials, equipment, tools, labor, and work incidental thereto, and shall be considered completely covered by the contract unit price as indicated in the plans for:

Item Number	Unit	Description
604-99.03	LF	Misc. Grated Inlet Repair/Replacement

U. Curb Inlet Top Repair/Replacement

1.0 Description. This work shall consist of removing the deteriorated or otherwise unacceptable top of an existing curb inlet as directed by the engineer and rebuilding as per the plans.

2.0 Construction Requirements. The contractor shall be responsible for removing and replacing the existing inlet top, saw cutting and repairing the existing inlet wall so that it may be adjusted to plan elevation and as per Sec 604. A minimum of 6 inches from the top of the existing inlet structure, or down to sound material as per the Engineer. Items may include repairing part of the structure that will require additional structural steel and dowels to tie the existing structure together.

2.1 The existing inlet top within areas of new sidewalk and curb ramps shall be adjusted to the final grade of the adjacent proposed sidewalk or curb ramp so that the cross-slope of the inlet surface shall be less than 2% in all directions to meet ADA standards.

2.2 Measurement and payment for curb inlet top repair/replacement includes all concrete work including removal, forming, and reinforcing necessary to replace or repair the curb inlet top. Grates and bearing plates in the gutter section shall be included in the measurement and payment of Curb Inlet Top Repair/Replacement.

3.0 Examples of Existing Cast-In-Place Inlets



4.0 Basis of Payment. Payment for repairing the inlet shall include all saw cuts, excavation, materials, equipment, tools, labor, and work incidental thereto, and shall be considered to be completely covered by the contract unit price for:

Item Number	Unit	Description
604-99.02	EACH	Misc. Curb Inlet Top Repair/Replacement

V. Concrete Manhole Apron (Version 07/13/26)

1.0 Description. The Contractor shall install a reinforced concrete apron around a manhole frame and cover as indicated in the plans and as approved by the Engineer.

2.0 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Reinforcing Steel for Concrete	1036

2.1 Concrete used for manhole apron shall be the same used for full depth pavement repairs as specified in Section 613.10 of the Standard Specifications.

3.0 Construction Requirements. Manhole aprons shall be provided in locations within the plans or as directed by the Engineer but generally shall be located where a manhole is adjusted to grade due to the cold-milling and overlaying of an existing roadway. The use of an apron can also be considered for new installations within new full depth asphalt pavement.

3.1 Steel Plate. If approved by the Engineer, a steel plate may be installed over the void created by the removal of pavement next to a manhole or utility valve prior to the installation of the manhole apron concrete. Asphalt wedging surrounding the steel plate shall be included when using a steel plate. No direct payment shall be made to provide this steel plate and asphalt wedging.

3.2 Joint Sealing. Per MoDOT Standard Specification 613.3.3, the contractor shall seal the joint between the asphalt surface and the new concrete apron along with seal any overcut created from the sawcutting operation when removing the portion of pavement to be replaced with manhole apron concrete. This joint shall be filled with either an expansive mortar, epoxy, polyester or joint material as approved by the Engineer. In addition, the contractor shall install tar paper between the new concrete and the existing manhole frame and cover as directed by the Engineer.

4.0 Method of Measurement. Measurement for installation of a reinforced concrete manhole apron will be made per each. Adjusting to grade the frame as approved by the Engineer shall be paid as a separate pay item.

5.0 Basis of Payment. Payment for the installation of a reinforced concrete manhole apron, including all materials, equipment, labor, saw cuts before and/or after installation and all necessary work shall be completely covered by the contract unit price paid for the item listed below. Adjusting to grade the actual frame and cover shall be paid for separately. Please see JSP – Adjusting Manholes, Valves and Pullboxes for additional details regarding the adjustment to grade for those items.

Item No.	Type	Description
604-99.02	Each	Concrete Manhole Apron

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

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

2.0 Disassembly and Delivery.

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

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

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

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

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

3.0 Basis of Payment. All costs associated with removing, disassembling and/or cutting, storing, transporting, and disposing of signs shall be considered as completely covered by the contract unit price for 202-20.10, Removal of Improvements, per lump sum.

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

Delete Sec 215.1.3 and 215.1.3.1 and substitute the following:

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

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

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

Y. Close Fit Pipe Liner

1.0 Description. This work consists of designing a close-fit pipe liner for thickness per ASCE MOP-145, furnishing, and installing either a Cured-In-Place Pipe (CIPP) or *thermoformed Polyvinyl Chloride (PVC) liner in a host conduit for gravity storm water flow.*

1.1 CIPP is inserted into the host conduit using hydrostatic head or is mechanically pulled into place. The liner is then expanded and cured with steam, hot water, or UV light. The liner material used for CIPP can be a resin-impregnated felt or Glass Reinforced Plastic (GRP).

1.2 PVC liner is heated and mechanically pulled into place in a folded shape. expanded with pressurized steam and then cooled to an installed shape.

1.3 When installed, the close-fit pipe liner extends the length of the host conduit in a continuous tight-fitting manner.

2.0 Materials. Furnish CIPP tube materials that are Needled Felt, Reinforced Needled Felt, or Glass Fibers. Use thermosetting resins that are either Polyester, Vinyl Ester, or Epoxy in either Neat (without inert filler) or Filled (with inert filler). Use materials conforming to:

Test Method	Test Property	Needled Felt Tubew/ Neat Resin	Needled Felt tubew/ Filled Resin	Reinforced Felt Tubew/ Neat Resin	Glass Fiber Tubew/ Neat Resin
ASTM D790	Initial Flexural Strength (psi)	4,500 min	4,500 min	4,500 min-12,000 max	20,000 min
ASTM D790	Initial Modulus of Elasticity (psi)	300,000 min	400,000 min	500,000 min-750,000 max	1,250,000 min-2,500,000 max
ASTM D2990	Creep retention factor (Flexural Modulus)	0.5	0.5	0.5 -0.75	0.5-0.75

*Furnish plasticized (Plasticizers added to make PVC more malleable) PVC liner materials conforming to ASTM F1871 with the following properties:

Test Method	Test Property	Requirement
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ASTM F1871	Flexural Strength	Minimum	4.000 psi
ASTM F1871	Flexural Modulus	Minimum	145.000 psi
ASTM F1871	Creep Retention Factor	Range	0.25-0.5

- Provide the strength-regression curves used to determine the testing values. Provide the creep and strength retention factors for a service life of 50 years.
- Provide Poisson's ratio as determined by ASTM E132.
- Submit to the Engineer certified test data and a letter of certification from the manufacturer that states the material conforms to the specification requirements.

3.0 Shipment and Storage. Follow the manufacturer's recommendations for shipment and storage for all materials. Ensure that the material safety data sheet accompanies the material.

Submittals. Submit detailed liner installation procedures to the Engineer for acceptance at least ten working days before beginning work including the following information:

- Calculations performed and sealed by a Registered Engineer.
- Design the liner according to ASCE Manual of Practice No. 145 "Design of Close-Fit Liners for the Rehabilitation of Gravity Pipes" (ASCE MOP-145) using Design State III. The load on the liner includes groundwater pressure, full soil overburden pressure, and surface loads. The liner is also subjected to the load imposed from deferred ovality (parallel plate loading) at the end of the liner's design life of 50 years. The liner is assumed to deflect over the service life and is not composite with the host conduit.
- Design the liner using the following load and resistance factors:

Design Load Factors

Load	Load Factor
Ground Water	1.6*
Dead Load	1.2
Live Load	1.6

*Value of 1.2 may be used if seasonal ground water table observations are used to determine the maximum ground water height

Design Resistance Factors

Design Parameter	Resistance Factor
Long-term flexural strength	0.85-1.0**
Long-term flexural modulus	0.80
Long-term buckling stability	0.80

Constrained soil modulus of reaction for the backfill soil	0.80***
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**0.85 for CIPP impregnated and cured on site, 0.9 for CIPP impregnated off site and cured on site, 1.0 for other.

***value of 0.9 may be used if geotechnical investigations are performed to verify the use of structural backfill.

Use the following variables for State III liner design:

Liner Design Variables

Variable	Value	Units
Ground Water Height	1.5 feet above the top of the pipe and 5 feet from the invert not to exceed the surface elevation above the pipe unless site conditions or plans indicate a higher value	ft
Soil Density	120minimum	lbs./ft ³
Lateral earth pressure coefficient	0.5	n/a

Liner Design Variables

Variable	Value	Units
Constrained Modulus of Backfill Soil	1000 max	psi
Modulus of Subgrade Reaction	300max	psi
Soil Poisson's Ratio	0.3	n/a
Minimum Liner Imperfections	Annular Gap, Deferred Ovality	n/a
Liner Shrinkage	0.005 minimum	%
Deferred Ovality and Deferred Hinge Rotation angle	2 (0.02) - 5 (0.05) minimum+	% (~radians)
Maximum Host Pipe Deflection	Less than or equal to 20++	%
Design for other observed imperfections such as hinge rotation, flattening or intrusions as deemed necessary by the Registered Engineer. Noncircular shapes may require additional design considerations in the design (refer to MOP-145). Document all assumptions and origin of all other variables used in the design.		

+ Use 2% for typical soils; for altered soils use 5%.

++Use host pipe nominal dimension when calculating deflection.

- d) Thickness of pipe liner to be installed in the host pipe rounded to the next commercially available thickness.
- e) Number and type of liner imperfections used in the design approach beyond the minimum required in the design variables.
- f) Methods of cleaning the host pipe.
- g) Plan to bypass flow around the host pipe.
- h) Methods of repairing existing pipe walls.
- i) Pipe liner curing plan (CIPP).
- j) Methods for finishing liner pipe ends.
- k) Methods for collecting process water (CIPP).
- l) Methods of repairing pipe liner after installation if defective.
- m) Site specific health and safety plan.
- n) Certification letter from the manufacturer stating that the contractor is an approved installer of the liner system.

3.1 Allow at least ten working days for review. Do not begin work until the submittals have been accepted by the Engineer. Any changes or deviations from the accepted submittals must be resubmitted. The Engineer will not grant an extension of time because of incomplete submittals.

4.0 Construction

4.1 Preparation. Clean and remove debris, including any obstructions, from the host pipe to the extents necessary for proper installation of the pipe liner prior to installation.

4.2 Flow Bypass. Prevent the accumulation and flow of water through the host pipe and liner until after the work is complete. Where necessary to adequately complete the Work, bypass flows around the host pipe. Ensure conformance with all Waterway Special Provisions requirements associated with the Project and all applicable environmental laws. After the lining process begins, maintain the bypass flow until the lining process is complete.

4.3 Pre-Installation Inspection. After cleaning and before beginning the lining process, have experienced personnel inspect the host pipe to ensure there are no obstructions that would hinder the lining process. Note the locations of all lateral connections and imperfections in the host pipe. If imperfections are identified, coordinate with the Registered Engineer to ensure they are accounted for in the design. Perform a pre-installation video survey of the host pipe and provide a copy of the video to the Engineer.

4.4 Material. Inspect all pipe liner materials for defects in the presence of the Engineer prior to installation. CIPP liner must be homogeneous throughout, uniform in color, free of tears, holes, foreign materials, blisters, or other deleterious faults. Any material found to have flaws or defects will be rejected and must be replaced. Follow all procedures to prepare the material for installation in compliance with the manufacturer's recommendations. Any material not properly prepared will be rejected.

4.5 Installation. Install CIPP liner per ASTM F1216, ASTM F1743, ASTM F2019, or ASTM 05813. Hot water, steam, or UV curing is permitted. Submit a copy of the cure logs

for each run. Manage all process water and condensate from steam used in the installation and curing process as a liquid waste per CMS 107.19. Do not discharge any liquid waste from process water, condensate, or cleaning of installed pipe liner without appropriate regulatory permits. Install PVC liner per ASTM~F1867.

4.6 Finish. Cut excess liner pipe flush with the host pipe or as recommended in the manufacturer's installation procedures. The finished product must be continuous over the length of the area of the pipe relined and be without dry spots, wrinkling, lifts, delamination, splitting and ruptures. If any unsatisfactory condition is present in the lined pipe, provide a suitable repair as accepted by the Engineer. Collect and appropriately dispose of all liner shavings and excess materials created during prosecution of the work.

4.7 Liner Thickness. For CIPP, ensure the final installed liner thickness is not less than the specified thickness. Ensure the liner thickness is not more than ten (10) percent thicker than the specified thickness. Measure from pipe liner sample coupons prepared per ASTM F1216 sec. 8.1. For PVC, ensure the final installed liner thickness is not less than the specified thickness.

4.8 After Installation. Restore all active lateral connections. Perform a post-installation video survey of the pipe as per supplemental specification 902.I and provide a copy of the video to the Engineer.

4.8.1 Provide a written analysis of the inspection video identifying all defects including but not limited to dry spots (CIPP), wrinkling, lifts, delamination, splitting, and ruptures.

5.0 Method of Measurement. The Department will measure pipe liner by the number of feet of host pipe lined.

6.0 Basis of Payment. Payment for Pipe Liner includes pipe cleaning, pipe preparation, flow bypass, liner pipe, liner resins (CIPP), water, equipment, labor, testing, inspections, clean up, proper disposal of any waste.

7.0 Basis of Payment. Payment for Close Fit Pipe Liner shall include all excavation, materials, equipment, tools, labor, and work incidental thereto, and shall be completely covered by the contract unit price for:

Item Number	Unit	Description
735-00.01	Linear Foot	Pipe Liner for Existing Culvert

Z. MoDOT ITS Assets Relocation

1.0 Description. The work consists of relocating existing MoDOT Intelligent Transportation System (ITS) facilities (conduit, cable, and/or pull boxes) that may be in conflict with this project construction sections as noted in the plans.

2.0 Materials. The materials used for relocating MoDOT ITS facilities shall be per MoDOT Approved Product List (APL) and meet all MoDOT Specifications. If the material is not in the APL, the contractor shall submit material specification documents to the Engineer and the MoDOT ITS group (via an email in advance to SLITS@modot.mo.gov) for review and approval.

3.0 Construction Requirements. The Contractor shall be aware there are numerous utilities present along the route in this contract. Utility locates were not performed during the design phase of the project; therefore, the extent of conflicts with utilities are unknown.

3.1 The contractor shall be aware there are numerous utilities present along the route in this contract. Utility locates were not performed during the design phase of the project; therefore, the extent of conflicts with utilities are unknown

3.2 The contractor shall exercise reasonable care relocating MoDOT ITS Assets. Damage to any MoDOT facilities within the area of work caused by the contractor will be deemed by the Engineer as either “non-emergency” or “emergency” upon notification of the damages. Repair to damages will be performed as follows:

- a) Non-Emergency: Contractor will have 4 hours to propose a repair plan to the Engineer for a complete repair within 3 business days.
- b) Emergency: Upon notification of the damage, Contractor must immediately submit a repair plan to the Engineer which will take no more than 4 hours to respond on-site and complete repairs within 48 hours of notification of damage.
- c) In either case, if the proposed plan is unacceptable for any reason to MoDOT, repairs will be made by MoDOT with all costs billed to the Contractor.

3.3 The ITS In-Ground Facilities located within the project limits are a crucial part of the traffic operation system for this area. It is imperative that the downtime be kept to a minimum when replacing, removing, or modifying any existing ITS In-Ground Facilities.

3.4 Prior to any in-ground work, the Contractor shall request for utility locates by contacting Missouri One Call (1-800 DIG-RITE or mo1call.com) for any in-ground installation locations as per plans. If there are any conflicts with MoDOT ITS Assets, the Contractor is responsible for relocation to the satisfaction of the Engineer prior to any in-ground work.

3.5 In the case of a conduit conflict, the Contractor shall trench an area beyond the in-ground work limits, install one or two conduits (must be the same quality as the existing conduit) using Split Duct Method, relocate the existing cables into the new conduit, and seal the conduit joints per manufacturer specifications.

3.6 The Contractor shall coordinate this work with the MoDOT ITS group and have the Engineer’s approval prior to performing this task.

3.7 The contractor shall perform a fiber testing (see below requirements) before and after relocating MoDOT fiber cables at the nearest Node Cabinet at each site as shown on the plans and submit that report to the SLITS Group for review and approval.

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

- (a) If the link includes fiber installed by others, use an optical loss test set to measure and record the optical loss over that portion of the link before it is spliced to new fiber.
- (b) Calculate the maximum allowable loss for the completed link, both at 1310 nm and at 1550 nm. Use the following formula:

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

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

- (c) Calibrate an optical loss test set and provide evidence satisfactory to the engineer that the set produces accurate results at both wavelengths. This can be a demonstration that the set correctly measures the loss of a test fiber whose loss is known.
- (d) Use the test set to measure the loss of the link under test. Record the result at both 1310 nm and 1550 nm. Arrange for the engineer or his representative to witness these tests.
- (e) If the measured loss exceeds the calculated maximum, use an optical time domain reflectometer and other test equipment to troubleshoot the link. Take whatever corrective action is required, including cable replacement, to achieve a loss less than the calculated maximum.

3.7.02 Test Result Documentation. Prepare a diagram showing all of the links tested in this project. For the portions installed in this project, show the equipment cabinets, splices, and pigtails. On each line representing a link, show the maximum allowable loss and the actual loss. The actual loss shall be the one measured after all corrective actions have been taken. Submit 5 copies of this diagram to the engineer, along with the calculations for the maximum allowable loss. Submit the diagrams and calculations in an electronic format acceptable to the engineer.

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

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

3.8 The Contractor shall trench an area beyond the in-ground work limits, install one or two conduits (must be the same quality as the existing conduit) using Split Duct Method, relocate the existing cables into the new conduit, and seal the conduit joints per manufacturer specifications.

3.9 Upon completion of this work, the Contractor shall contact the MoDOT ITS group (via email at slits@modot.mo.gov) to verify that all existing MoDOT ITS devices are online and request inspection of this work. Acceptance of this work shall be the sole judgment of the Engineer and the MoDOT ITS group's engineer.

3.10 The contractor shall restore those areas disturbed by this work or installation according to specifications herein.

4.0 Basis of Payment. Payment for "MoDOT ITS Assets Relocation" shall be paid as Linear Feet and shall include the trenching, conduit installation, conduit coupling, pull boxes, sealing materials, cable relocation, needed fiber testing, restoration of all disturbed area, all labor and work incidental thereto, and shall be considered to be completely covered by the contract unit price for the following pay item:

Item No.	Unit	Description
910-99.03	Linear Feet	MoDOT ITS Assets Relocation

AA. Supplemental Revisions JSP-18-01KK

- Compliance with [2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment](#).

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

- Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes land disturbance on the project site and the total area of land disturbance, both on the project site, and all Off-site support areas, is one (1) acre or more. Regardless of the area of Off-site disturbance, if no land disturbance occurs on the project site, these provisions do not apply. When a WPCM is required, all sections within this provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

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

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

2.0 Water Pollution Control Manager (WPCM). The contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

- (a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT's statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project's Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;
- (b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;
- (c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;
- (d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the engineer;
- (e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer's weekly inspections;
- (f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and ensure that all Stormwater Deficiencies noted on the report are corrected as soon as possible, but no later than stated in Section 5.0.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity meeting for grading/land disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity meeting except work necessary to install perimeter controls and entrances. Discussion items at the pre-activity meeting shall include a review of the Project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

3.1 Hold Point. Following the pre-activity meeting for grading/land disturbance and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).

5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period granted by the engineer when weather or field conditions prohibit the corrective work. If the contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the contractor. Work shall not resume until the engineer approves the corrective work.

5.1 Liquidated Damages. If the contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines, and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of \$2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

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

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

106.9 Buy America Requirements.

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

106.9.1 Buy America Requirements for Iron or Steel Products.

The contractor's attention is directed to Title 23 CFR 635.410 *Buy America Requirements*. Where articles, materials or supplies that consist wholly or predominantly of iron or steel or a combination of both are to be permanently incorporated into the contract work, steel and iron material shall be manufactured, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. Under a general waiver from FHWA the use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

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

106.9.1.2 "Minimal use" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent (0.1 percent) of the total contract cost or \$2,500.00, whichever is greater. If foreign steel, iron, or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

106.9.1.3 Buy America requirements include a step certification for all fabrication processes of all steel or iron materials that are accepted per Sec 1000. The AASHTO Product Evaluation and

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

106.9.1.3.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.1.3.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form ([link to certificate form](#)) from the fabricator must show all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.1.3.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read "I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage". The certification shall be signed by an authorized representative of the prime contractor.

106.9.1.4 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded in the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

106.9.2 Buy America Requirements for Construction Materials other than iron or steel products.

Construction materials mean articles, materials, or supplies that consist of only one of the items listed. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material. Upon request by the engineer, the contractor shall submit a domestic certification for all construction materials listed that are incorporated into the project.

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

106.9.3 Buy America Requirements for Manufactured Products.

Manufactured products mean articles, materials or supplies that have been processed into a specific form and shape, or combined with other articles, materials or supplies to create a product with different properties than the individual articles, materials or supplies. If an item is classified as an iron or steel product, an excluded material, or other product category as specified by law or in 2 CFR part 184, then it is not a manufactured product. However, an article, material or supply classified as a manufactured product may include components that are iron or steel products, excluded materials, or other product categories as specified by law or in 2 CFR part 184. Mixtures of excluded materials delivered to a work site without final form for incorporation into a project are not a manufactured product.

106.9.3.1 Produced in the United States, in the case of manufactured products, means:

- (A) For projects obligated on or after October 1, 2025, the product was manufactured in the United States; and
- (B) For projects obligated on or after October 1, 2026, the product was manufactured in the United States and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

106.9.3.2 (i) With respect to precast concrete products that are classified as manufactured products, components of precast concrete products that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of such components shall be included in the applicable calculation for purposes of determining whether the precast concrete product is produced in the United States.

(ii) With respect to intelligent transportation systems and other electronic hardware systems that are installed in the highway right of way or other real property and classified as manufactured products, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of cabinets or other enclosures shall be included in the applicable calculation for purposes of determining whether systems referred to in the preceding sentence are produced in the United States.

106.9.4 Waiver for De Minimis Costs for Manufactured and Construction Materials other than iron or steel products.

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

- Third-Party Test Waiver for Concrete Aggregate

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

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

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

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

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

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

3.1 The testing facility shall be AASHTO accredited.

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

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

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

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

testing facility shall be in accordance with this provision. The comparison test can be from a different sample of the same ledge combination.

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

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

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

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

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

15.0 Bidder's List Quote Summary. MoDOT is a recipient of federal funds and is required by 49 CFR 26.11 to provide data about its DBE program. All bidders who seek to work on federally assisted contracts must submit data about all DBE and non-DBEs in accordance with Sec 102.7.9. MoDOT will not compare the submitted Bidder's List Quote Summary to any other documents or submittals, pre or post award. All information will be used by MoDOT in accordance with 49 CFR 26.11 for reporting to USDOT and to aid in overall DBE goal setting.

- ***Add Sec 102.7.9 to include the following:***

102.7.9 Bidder's List Quote Summary. Each bidder shall submit with each bid a summary of all subcontractors, material suppliers, and service providers (e.g. hauling) considered on federally funded projects pursuant to 49 CFR 26.11. The bidder will provide the firm's name, the corresponding North American Industry Classification System (NAICS) code(s) the firm(s) were considered for, and whether or not they were used in the bid. The information submitted should be the most complete information available at the time of bid. The information shall be disclosed on the Bidder's List Quote Summary form provided in the bidding documents and submitted in accordance with Sec 102.10. Failure to disclose this information may result in a bid being declared irregular.

Job No.: JSL0168B

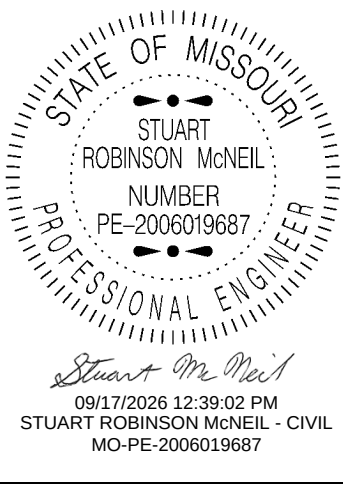
Route: I-64

County: St. Louis

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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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: JSL0168B ST. LOUIS COUNTY, MO DATE PREPARED: 7/27/2026
	ADDENDUM DATE:

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

JOB
SPECIAL PROVISION

A. General – State JSP-09-03M

1.0 Description. The Federal Government is not participating in the cost of construction of this project.

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of worker required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations. The current State Wage Rates can be found on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT", "Contractor Resources" for the applicable bid opening. This supplemental bidding document has 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.

State Wage Rates

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 2026 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- 13-01E

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 shall be completed on or before the date specified below. Completion by this date shall be in accordance with the requirements of [Sec 108.7.1](#).

Notice to Proceed: December 21, 2026
Contract Completion Date: October 1, 2027

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

Project	Calendar Days	Daily Road User Cost
JSL0138	N/A	\$11,400.00
JSL0168	N/A	\$2,300.00
JSL0168B	N/A	\$1,800.00

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with [Sec 108.8](#) in the amount of **\$2,000.00** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the specified contract completion date or calendar days.

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

5.0 Liquidated Damages for Winter Months. 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.

C. Work Zone Traffic Management JSP-02-06N

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

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

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

2.0 Traffic Management Schedule.

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

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

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of **10 minutes** to prevent congestion from escalating beyond this delay threshold. If disruption of the traffic flow occurs and traffic is backed up in queues equal to or greater than the delay time threshold listed above, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable. 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 (TMC), Gateway Guide 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 (2027)	Monday	Noon on Friday	6:00 a.m. on Tuesday
Tuesday (2028)	Tuesday	Noon on Monday	6:00 a.m. on Wednesday

3.2 The contractor shall not perform any construction operation on the roadway, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The contractor shall be aware that traffic volume data indicates construction operations on the roadbed between the following hours will likely result in traffic queues greater than 10 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 10-minute queue in traffic. It shall be the responsibility of the engineer to determine if the work hours below may be modified. Working hours for evenings, weekends and holidays will be determined by the engineer. The contractor may work during the following listed hours:

Allowed Work Hours:

North Outer Forty Drive and South Forty Drive

8:30 a.m. to 7:30 p.m. Monday through Friday

No restrictions on Saturday and Sunday

Spoeede Road

9:00 a.m. to 2:30 p.m. Monday through Friday

7:00 p.m. to 6:00 a.m. Monday through Friday

No restrictions on Saturday and Sunday

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 **\$1,000.00 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 of 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.

ADD THIS PARAGRAPH AS REQUIRED

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

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

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

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

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

Missouri Highway Patrol 636-300-2800	
City of Town and Country	City of Frontenac
West County EMS & Fire 636-256-2000	Fire: 314-994-1801
Police: (Non-emergency) Dispatch 314-737-4600	Police: 314-737-4600 (Non-emergency)

2.1 This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate law enforcement agency.

2.2 The contractor shall notify law enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with law enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 No direct pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

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

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

Stuart McNeil, PE - Project Contact
St. Louis District
1590 Woodlake Drive
Chesterfield, MO 63017

Telephone Number: (314) 453-5402
Email: Stuart.McNeil@modot.mo.gov

1.1 All questions concerning the bid document preparation can be directed to the Central Office – Design as listed below.

Telephone Number: (573) 751-2876
Email: BCS@modot.mo.gov

2.0 Upon award and execution of the contract, the successful bidder/contractor shall forward all questions and coordinate the work with the engineer listed below:

Chris Morgan, Resident Engineer
St. Louis District – Southwest Area
Chesterfield Project Office
601 Salt Mill Road
Chesterfield, MO 63017

Telephone Number: (314) 453-1753
Email: Christopher.Morgan@modot.mo.gov

F. Utilities

1.0 The Contractor shall be aware there are numerous utilities present along the routes in this contract. Given the nature of the proposed work utility conflicts are not anticipated, and utility locates were not performed during the design phase of the project. Therefore, the extent of conflicts with utilities is unknown. It is the inherent risk of the work under this contract that the contractor may encounter these utilities above and/or below the ground or in the vicinity of any given work item which may interfere with their operations. The contractor expressly acknowledges and assumes this risk even though the nature and extent are unknown to both the contractor and the Commission at the time of bidding and award of the contract. It is the responsibility of the contractor to comply with Missouri CSR 319 to get utilities marked and verify the existence, location, and status of any marked utility prior to any excavations. Such verification may require direct contact with the listed utilities.

2.0 Utility conflicts not noted. If utility facilities are found to be in conflict with the contract work that aren't noted on the plans or in the Job Special Provisions, the Contractor shall contact the MoDOT Area Utility Coordinator, Steve Belcher at (314) 624-7382. District Utility Staff will determine whether adjustment of the utility is necessary, if alternate construction methods will be required, or if the work can be installed in accordance with Missouri Standard Plans for Highway Construction for the item of work specified.

3.0 Basis of Payment. No direct payment shall be made for compliance with this provision unless specified elsewhere in the contract document.

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. Concrete Manhole Apron (Version 07/13/26)

1.0 Description. The Contractor shall install a reinforced concrete apron around a manhole frame and cover as indicated in the plans and as approved by the Engineer.

2.0 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Reinforcing Steel for Concrete	1036

2.1 Concrete used for manhole apron shall be the same used for full depth pavement repairs as specified in Section 613.10 of the Standard Specifications.

3.0 Construction Requirements. Manhole aprons shall be provided in locations within the plans or as directed by the Engineer but generally shall be located where a manhole is adjusted to grade due to the cold-milling and overlaying of an existing roadway. The use of an apron can also be considered for new installations within new full depth asphalt pavement.

3.1 Steel Plate. If approved by the Engineer, a steel plate may be installed over the void created by the removal of pavement next to a manhole or utility valve prior to the installation of the manhole apron concrete. Asphalt wedging surrounding the steel plate shall be included when using a steel plate. No direct payment shall be made to provide this steel plate and asphalt wedging.

3.2 Joint Sealing. Per MoDOT Standard Specification 613.3.3, the contractor shall seal the joint between the asphalt surface and the new concrete apron along with seal any overcut created from the sawcutting operation when removing the portion of pavement to be replaced with manhole apron concrete. This joint shall be filled with either an expansive mortar, epoxy, polyester or joint material as approved by the Engineer. In addition, the contractor shall install tar paper between the new concrete and the existing manhole frame and cover as directed by the Engineer.

4.0 Method of Measurement. Measurement for installation of a reinforced concrete manhole apron will be made per each. Adjusting to grade the frame as approved by the Engineer shall be paid as a separate pay item.

5.0 Basis of Payment. Payment for the installation of a reinforced concrete manhole apron, including all materials, equipment, labor, saw cuts before and/or after installation and all necessary work shall be completely covered by the contract unit price paid for the item listed below. Adjusting to grade the actual frame and cover shall be paid for separately. Please see JSP – Adjusting Manholes, Valves and Pullboxes for additional details regarding the adjustment to grade for those items.

Item No.	Type	Description
604-99.02	Each	Concrete Manhole Apron

I. Lump Sum Temporary Traffic Control JSP-22-01B

1.0 Delete Sec 616.11 and insert the following:

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

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

2.0 Delete Sec 616.12 and insert the following:

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

- (a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.
- (b) Installing, operating, maintaining, cleaning, repairing, removing, or replacing traffic control devices.
- (c) Covering and uncovering existing signs and other traffic control devices.
- (d) Relocating temporary traffic control devices, including permanent traffic control devices temporarily relocated, unless specifically included as a pay item in the contract.
- (e) Worker apparel.
- (f) Flaggers, AFADs, PFDs, pilot vehicles, and appurtenances at flagging stations.
- (g) Furnishing, installing, operating, maintaining, and removing construction-related vehicle and equipment lighting.
- (h) Construction and removal of temporary equipment crossovers, including restoring pre-existing crossovers.
- (i) Provide and maintaining work zone lighting and work area lighting.

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

with [Sec 109.4](#). No adjustment to the price will be made for overruns or underruns of other work or for added work that is completed within existing work zones.

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

- (a) The first payment will be made when five (5) percent of the original contract amount is earned. The payment will be 50 percent of the price for LSTTC, or five (5) percent of the original contract amount, whichever is less.
- (b) The second payment will be made when 50 percent of the original contract amount is earned. The payment will be 25 percent of the price for LSTTC, or 2.5 percent of the original contract amount, whichever is less.
- (c) The third payment will be made when 75 percent of the original contract amount is earned. The payment will be 20 percent of the price for LSTTC, or two (2) percent of the original contract amount, whichever is less.
- (d) Payment for the remaining balance due for LSTTC will be made when the contract has been accepted for maintenance or earlier as approved by the engineer.

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

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

J. Optional Temporary Pavement Marking Paint NJSP-18-07H

1.0 Description. This provision provides the contractor with the option to either complete all Permanent Pavement Marking Paint (PPMP) prior to the time limits specified herein or to apply Temporary Pavement Marking Paint (TPMP) in accordance with [Sec 620.10.2](#) (4 inch width) in all locations shown on the plans as PPMP and delay application of the PPMP until the spring of 2028, as allowed herein. PPMP is defined as Class 1 Pavement Marking Paint and Class 2 Pavement Marking Paint and does not include [Sec 620.20.3](#) Durable Pavement Markings.

1.1 No application of PPMP shall occur between October 1, 2027 and March 1, 2028, both dates inclusive, except as stated herein. When the contractor has begun application of PPMP prior to October 1, 2027, and weather limitations stated in [Sec 620.20.2.4](#) can be met, the contractor may complete the PPMP within the first seven (7) calendar days of October. If all (100%) of the PPMP is not completed on or before October 7, 2027, all previously applied PPMP, including any painted markings applied prior to October 1, shall be considered TPMP, and the contractor shall complete the remaining marking with TPMP, and then re-apply PPMP in all planned locations after March 1, 2028. All PPMP shall be completed prior to June 1, 2028. No additional payment will be made for PPMP that is later determined to be TPMP due to the contractor's failure to complete the PPMP within the time specified.

1.2 Use of TPMP Prior to October 1. The contractor has the option to apply TPMP in lieu of PPMP prior to October 1, 2027, even when there is sufficient time to complete the PPMP prior to

October 1, 2027. For example, the contractor may choose to use TPMP as a base coat for the PPMP on open-graded surfaces in order to achieve higher retroreflectivity readings on the surface coat as compared to a single application.

1.2.1 The contractor has the option of using TPMP in lieu of Temporary Raised Pavement Markers if applied each day that existing markings are obliterated.

2.0 Construction Requirements. TPMP shall be accurately placed in the final planned location and shall be completely covered by the final application of PPMP. Any failure to comply with this requirement shall be corrected by removal of the misplaced pavement markings at the contractor's expense and without marring of the pavement surface.

2.1 Prior to application of the PPMP on TPMP, TPMP shall be fully cured in accordance with the manufacturer's recommendation, or for a period of 12 hours, whichever is greater.

3.0 Weather Limitations. All weather limitations specified in [Sec 620](#) for PPMP and TPMP shall apply. Cold Weather Pavement Marking Paint, in accordance with [Sec 620.10.6](#), shall be used for TPMP when specified weather limitations do not allow the use of waterborne paint. No additional payment will be made for the use of Cold Weather Pavement Marking Paint as TPMP. Cold Weather Pavement Marking Paint is not an allowable substitute for PPMP and shall subsequently be covered with PPMP.

4.0 Time Exception. If application of PPMP is to be delayed to the spring of 2028, the contractor shall submit a request to the engineer for a time exception and shall provide a revised work schedule that shows the planned completion of the PPMP.

4.1 Upon receipt of the time exception request in Section 4.0, the engineer will list "Application of Permanent Pavement Marking Paint" as an exception on the Semi-Final Inspection form, thus granting an exception to the count of contract time thru June 1, 2028, solely for the purpose of delaying application of PPMP. This time exception shall not apply to any time needed to complete any other work items. Liquidated Damages, as specified elsewhere in this contract, shall remain in effect for all other work items not completed by the contract time limits, as specified elsewhere in this contract, and for PPMP not completed by June 1, 2028.

5.0 Method of Measurement. No final measurement will be made for TPMP.

6.0 Basis of Payment. Full payment for TPMP will be made at the contract lump sum price even when PPMP is completed prior to the time limitation and TPMP is not used or only partially used.

6.2 If a \$0 bid is entered for TPMP, no payment will be made should TPMP become necessary.

Item Number	Description	Unit
6209901	TEMPORARY PAVEMENT MARKING PAINT	LS

K. Non-Tracking Tack JSP-24-02A

1.0 Description. This work requires application of tack in accordance with [Sec 407](#) and prevention of tack loss from the surface as specified herein. Tack loss prevention shall be

accomplished with successful usage of a MoDOT-approved non-tracking tack, or other acceptable non-tracking means, as approved by the engineer.

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

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

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

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

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

L. Site Restoration

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

2.0 Materials. Any areas of concrete paved ditch, pavement, and shoulders as well as any similar improvements shall be replaced with improvements of similar composition and thickness. Removals shall be achieved by means of full depth saw cut, the resulting subgrade compacted to minimum density requirements and topped with 4 inches of compacted aggregate base course prior to replacement of surface materials. Concrete materials used in replacement shall be approved by the engineer. A commercial asphalt mix may be used for replacement of asphaltic surfacing upon approval of the engineer.

2.1 Unless quantities and pay items for removal and subsequent replacement of improvements are contained in the plans for a specific location of removal work, no direct payment will be made for full depth saw cutting and the removal and subsequent replacement of asphalt, pavement, shoulders etc. This work will be considered as included in the various unit bid prices established in the contract, and no additional payment will be made.

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

2.3 Any sidewalks and curb ramps that are disturbed as described in this provision shall be replaced to meet current ADA standards.

2.4 All guardrail post holes remaining from the removal of existing guardrail posts in existing concrete or asphalt pavement, or ditch shall be backfilled with a granular material and sealed with a ½ inch hot-poured elastic type material in accordance with Section 1057 or as approved by the Engineer. Any concrete or asphalt pavement or ditch damaged in the process of fulfilling this provision shall be replaced in kind and considered incidental to the installation of the new guardrail at the disturbed location

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

3.0 Basis of Payment. The cost of restoration of disturbed areas will be incidental to the unit price of the items associated with the disturbance. No direct payment will be made for any materials, equipment, time, or labor, which is performed under this provision.

M. Access to Commercial and Private Entrances

1.0 Description. While work on entrances or adjacent properties, the contractor shall make every reasonable effort to minimize any interference to the properties and to complete 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 as approved by the property owner and engineer.

2.0 Construction Requirements.

2.1 Commercial Entrances. On all commercial entrances, the contractor shall keep one-half of the entrance open at all times. On commercial entrances less than 20' wide, it may be necessary for the contractor to provide temporary aggregate to provide access to the property. The contractor shall remove and dispose of the temporary aggregate following the completion of the entrance. For properties with more than one entrance, the contractor may construct one entire entrance at a time with the approval of the property owner and the engineer. Some businesses have already agreed to allowed full driveway closures, see **Right of Way Requirements provisions** for those locations.

2.1.1 The contractor shall complete the entrances as quickly as possible and shall take **no longer than 4 Weeks** to complete any one entrance.

2.2 Private Entrances. The contractor shall complete the entrances as quickly as possible and shall **take no longer than seventy-two (72) hours** to complete any one entrance, unless otherwise approved by the engineer and the property owner. This may require the use of concrete strength accelerators.

2.2.1 Entrances 20 feet or wider may be constructed half at a time. One half of the entrance shall be open at all times and the contractor shall take **no longer than 10 days** to complete the entrance.

3.0 Basis of Payment. No direct payment shall be made to the contractor for the labor, equipment, material, or time required to comply with this provision.

N. Property Owner Notification

1.0 Description. It shall be the contractor's responsibility to inform and notify the adjacent property owner 48 hours prior to starting any construction activities that may impact driveway access or occur along the frontage of the property owner's parcel. Notification shall be in written form and include the contractor's contact information, the engineer's contact information, and an estimated schedule of work and the associated impacts.

2.0 Basis of Payment. No direct payment will be made to the contractor for the labor, equipment, material, or time required to comply with this provision.

O. Construction Impacts to Privately Owned Sprinkler Systems

1.0 This work includes relocation or replacement of all sprinkler heads and sprinkler system pipes that are impacted by construction activities and installation of improvements.

2.0 The contractor is advised that various properties along the project length have irrigation systems whose sprinkler heads and associated pipe systems are located within or in close proximity to the proposed sidewalk. The contractor shall relocate undamaged sprinkler heads or replace damaged sprinkler heads as directed by the engineer.

2.1 The contractor shall check with individual property owners to shut off watering as necessary and be aware of the location of said systems. Any damage to the watering system, sprinkler

heads, etc. will be repaired or replaced at the contractor's expense and at no direct cost to MoDOT.

2.2 The contractor is strongly advised to field check the project to determine the extent of impact to the existing sprinkler systems located along the route and adjust the bid accordingly.

3.0 Method of Measurement: No measurement shall be made.

4.0 Basis of Payment: No direct payment will be made for the relocation or replacement of sprinkler systems located along the project limits. All costs associated with this work shall be considered incidental to other pay items provided in the contract.

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

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

2.0 Disassembly and Delivery.

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

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

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

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

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

3.0 Basis of Payment. All costs associated with removing, disassembling and/or cutting, storing, transporting, and disposing of signs shall be considered as completely covered by the contract unit price for 202-20.10, Removal of Improvements, per lump sum.

Q. Adjust to Grade Items

1.0 Description. This work shall consist of adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes that are within areas where either new sidewalks, curb ramps, approaches or pavements are to be constructed as shown on the plans. The contractor shall verify the type of frame and cover in the field before performing the work. The adjustment shall be made to match the final proposed grade.

2.0 Construction Requirements. Adjusting manholes and adjusting basins or inlets shall be done in accordance with Sec 604 except as modified herein.

2.1 Adjustments, extensions, and/or lowering of utility and any related excavation and backfill shall be constructed as approved by the Engineer. For MoDOT owned facilities, adjustments shall conform to current Missouri Standard Specifications for Highway Construction. For MSD owned facilities, adjustments shall conform to the 2018 MSD Construction Specifications for Sewer and Drainage Facilities and the 2009 MSD Standard Detail Sheets. Adjustments for inlets require the top lid slopes to be adjusted to less than 2% slope in all directions and some of these inlets need to be raised to the final sidewalk grade. These locations are to be determined in the field by the Engineer. Adjustments shall be completed so that the finished sidewalk, ramp, approach, or pavement meets current ADA standards.

3.0 Basis of Payment. All costs for materials, equipment, labor, and installation shall be included in the cost for adjusting basins/inlets, manholes, valves, and pull boxes as well as relocating pull boxes.

Item No.	Description	Unit
604-20.10	Adjusting Manhole	Each
604-99.02	Adjusting Valves	Each

R. Supplemental Revisions JSP-18-01KK

- Compliance with [2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment](#).

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

- Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes land disturbance on the project site and the total area of land disturbance, both on the project site, and all Off-site support areas, is one (1) acre or more. Regardless of the area of Off-site disturbance, if no land disturbance occurs on the project site, these provisions do not apply. When a WPCM is required, all sections within this provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein. This provision is in addition to any other

stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

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

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

2.0 Water Pollution Control Manager (WPCM). The contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

- (a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT’s statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project’s Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;
- (b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;
- (c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;
- (d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the engineer;
- (e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer’s weekly inspections;
- (f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and

ensure that all Stormwater Deficiencies noted on the report are corrected as soon as possible, but no later than stated in Section 5.0.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity meeting for grading/land disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity meeting except work necessary to install perimeter controls and entrances. Discussion items at the pre-activity meeting shall include a review of the Project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

3.1 Hold Point. Following the pre-activity meeting for grading/land disturbance and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).

5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period granted by the engineer when weather or field conditions prohibit the corrective work. If the contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the contractor. Work shall not resume until the engineer approves the corrective work.

5.1 Liquidated Damages. If the contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines, and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of \$2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

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

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

106.9 Buy America Requirements.

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

106.9.1 Buy America Requirements for Iron or Steel Products.

The contractor's attention is directed to Title 23 CFR 635.410 *Buy America Requirements*. Where articles, materials or supplies that consist wholly or predominantly of iron or steel or a combination of both are to be permanently incorporated into the contract work, steel and iron material shall be manufactured, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. Under a general waiver from FHWA the use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

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

106.9.1.2 "Minimal use" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent (0.1 percent) of the total contract cost or \$2,500.00, whichever is greater. If foreign steel, iron, or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

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

106.9.1.3.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.1.3.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form ([link to certificate form](#)) from the fabricator must show all steps of manufacturing,

including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.1.3.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read "I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage". The certification shall be signed by an authorized representative of the prime contractor.

106.9.1.4 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded in the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

106.9.2 Buy America Requirements for Construction Materials other than iron or steel products.

Construction materials mean articles, materials, or supplies that consist of only one of the items listed. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material. Upon request by the engineer, the contractor shall submit a domestic certification for all construction materials listed that are incorporated into the project.

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

106.9.3 Buy America Requirements for Manufactured Products.

Manufactured products mean articles, materials or supplies that have been processed into a specific form and shape, or combined with other articles, materials or supplies to create a product with different properties than the individual articles, materials or supplies. If an item is classified as an iron or steel product, an excluded material, or other product category as specified by law or in 2 CFR part 184, then it is not a manufactured product. However, an article, material or supply classified as a manufactured product may include components that are iron or steel products, excluded materials, or other product categories as specified by law or in 2 CFR part 184. Mixtures

of excluded materials delivered to a work site without final form for incorporation into a project are not a manufactured product.

106.9.3.1 Produced in the United States, in the case of manufactured products, means:

(A) For projects obligated on or after October 1, 2025, the product was manufactured in the United States; and

(B) For projects obligated on or after October 1, 2026, the product was manufactured in the United States and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product.

106.9.3.2 (i) With respect to precast concrete products that are classified as manufactured products, components of precast concrete products that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of such components shall be included in the applicable calculation for purposes of determining whether the precast concrete product is produced in the United States.

(ii) With respect to intelligent transportation systems and other electronic hardware systems that are installed in the highway right of way or other real property and classified as manufactured products, the cabinets or other enclosures of such systems that consist wholly or predominantly of iron or steel or a combination of both shall meet the requirements of paragraph (b) of this section. The cost of cabinets or other enclosures shall be included in the applicable calculation for purposes of determining whether systems referred to in the preceding sentence are produced in the United States.

106.9.4 Waiver for De Minimis Costs for Manufactured and Construction Materials other than iron or steel products.

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

- Third-Party Test Waiver for Concrete Aggregate

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

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

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

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

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

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

3.1 The testing facility shall be AASHTO accredited.

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

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

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

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

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

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

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

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

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

15.0 Bidder's List Quote Summary. MoDOT is a recipient of federal funds and is required by 49 CFR 26.11 to provide data about its DBE program. All bidders who seek to work on federally assisted contracts must submit data about all DBE and non-DBEs in accordance with Sec 102.7.9. MoDOT will not compare the submitted Bidder's List Quote Summary to any other documents or submittals, pre or post award. All information will be used by MoDOT in accordance with 49 CFR 26.11 for reporting to USDOT and to aid in overall DBE goal setting.

- **Add Sec 102.7.9 to include the following:**

102.7.9 Bidder's List Quote Summary. Each bidder shall submit with each bid a summary of all subcontractors, material suppliers, and service providers (e.g. hauling) considered on federally funded projects pursuant to 49 CFR 26.11. The bidder will provide the firm's name, the corresponding North American Industry Classification System (NAICS) code(s) the firm(s) were considered for, and whether or not they were used in the bid. The information submitted should be the most complete information available at the time of bid. The information shall be disclosed on the Bidder's List Quote Summary form provided in the bidding documents and submitted in accordance with Sec 102.10. Failure to disclose this information may result in a bid being declared irregular.