Job No.: J4P3196
Route: 50 & 291
County: Jackson

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

Job No.: J4P3196
Route: 50 & 291
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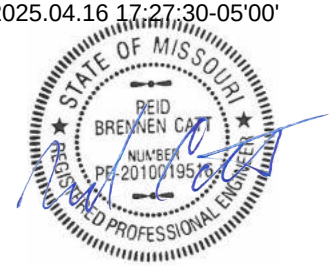
Reid Catt 2025.04.16 17:27:30-05'00' 	**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION** 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	Olsson *7301 W. 133rd Street, Suite 200* *Overland Park, KS 66213* *Certificate of Authority: 001592* Consultant Phone: 913-381-1170
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J4P3196 JACKSON COUNTY, MO DATE PREPARED: 4/8/2025
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All	

Job No.: J4P3196
Route: 50 & 291
County: Jackson

JOB
SPECIAL PROVISION

A. General - Federal JSP-09-02K

1.0 Description. The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of work required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the contractor and the contractor's subcontractors shall pay the higher of these two applicable wage rates. State Wage Rates, Information on the Required Federal Aid Provisions, and the current Federal Wage Rates are available on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT", "Contractor Resources". Effective Wage Rates will be posted 10 days prior to the applicable bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

1.2 The following documents are available on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to July 2024 Missouri Standard Plans
For Highway Construction

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

B. Contract Liquidated Damages JSP-13-01D

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

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

Notice to Proceed: July 7, 2025
Completion Date: December 1, 2026

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

Job Number	Calendar Days	Daily Road User Cost
J4P3196	NA	$9,800

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **$3,000** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified completion date or calendar days.

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

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

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

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

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

2.0 Traffic Management Schedule.

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

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

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

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

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

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

2.5.1 Traffic Safety.

2.5.1.1 Recurring Congestion. Where traffic queues routinely extend to within 1000 feet of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet of the ROAD

WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

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

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

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

3.0 Work Hour Restrictions.

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

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

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

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

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

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

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

US-50 Eastbound:
6:00 a.m. - 8:00 p.m. Monday through Friday
8:00 a.m. - 8:00 p.m. Saturday through Sunday

US-50 Westbound:
8:00 a.m. - 7:00 p.m. Monday through Friday
8:00 a.m. - 8:00 p.m. Saturday through Sunday

3.4 Any work requiring a reduction in the number of through lanes of traffic shall be completed during nighttime hours. Nighttime hours shall be considered to be 8:00 p.m. to 6:00 a.m. for this project.

3.5 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$1000 per 15 minute increment** for each 15 minutes that the

temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

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

4.0 Detours and Lane Closures.

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

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. Project Contact for Contract/Bidder Questions JSP-96-05

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

Jodie Puhr – Project Contact
Kansas City District
600 NE Colbern Rd
Lee's Summit, MO 64086

Telephone Number: 816-607-2254
Email: jodie.puhr@modot.mo.gov

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

E. 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 the police or other emergency agencies for incident management. In case of traffic accidents or the need for police to direct or restore traffic flow through the job site, the contractor shall notify police 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 police services, the following agencies may also be notified for accident or emergency situation within the project limits.

Missouri Highway Patrol (816) 622-0800
Lee's Summit Police Department (816) 969-7390
Lee's Summit Fire Department (816) 969-7407
Jackson County Sheriff Department (816) 541-8017

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 police agency.

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

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

F. Supplemental Revisions JSP-18-01FF

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

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

- Stormwater Compliance Requirements

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

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

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

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

2.1 Duties of the WPCM:

(a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT's statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project's Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;

(b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;

(c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;

(d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the engineer;

(e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer's weekly inspections;

(f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and ensure that all Stormwater Deficiencies noted on the report are corrected as soon as possible, but no later than stated in Section 5.0.

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

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

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

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

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

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

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

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

106.9.1 Buy America Requirements for Iron and Steel.
On all federal-aid projects, the contractor's attention is directed to Title 23 CFR 635.410 *Buy America Requirements*. Where steel or iron products are to be permanently incorporated into the contract work, steel and iron material shall be manufactured, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. Under a general waiver from FHWA the use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

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

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

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

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

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

106.9.4.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation

into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form (link to certificate form) from the fabricator must show all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the engineer and retained for a period of 3 years after the last reimbursement of the material.

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

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

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

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

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

106.9.7 Buy America Requirements for Manufactured Products.

Manufactured products means:

(a) Articles, materials, or supplies that have been:

(i) Processed into a specific form and shape; or
(ii) Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

(b) If an item is classified as an iron or steel product, a construction material, or a section 70917(c) material under § 184.4(e) and the definitions set forth in this section, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product under § 184.4(e) and paragraph (1) of this definition may include components that are construction materials, iron or steel products, or section 70917(c) materials.

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

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

- Pavement Marking Paint Requirements for Standard Waterborne and Temporary

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

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

- Third-Party Test Waiver for Concrete Aggregate

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

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

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

2.2 AASHTO T 161 Method B Resistance of Concrete to Rapid Freezing and Thawing, shall be used to determine the aggregate durability factor. All concrete beams for testing shall be 3-inch

wide by 4-inch deep by 16-inch long or 3.5-inch wide by 4.5-inch deep by 16-inch long. All beams for testing shall receive a 35-day wet cure fully immersed in saturated lime water prior to initiating the testing process.

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

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

3.1 The testing facility shall be AASHTO accredited.

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

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

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

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

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

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

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

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

- ***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, suppliers, manufacturers, and truckers 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.

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

1.0 Description.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3.0 Methods for Securing Workforce Participation and Good Faith Efforts.

3.1 *By submitting a bid, the Bidder agrees, as a material term of the contract, to carry out MoDOT's Construction Workforce Program by making good-faith efforts to utilize minority and female workers on the contractor's job sites to the fullest extent consistent with submitting the lowest bid to MoDOT. The Bidder shall agree that the Program is incorporated into this document and agree to follow the Program. If a bidder is unable to meet the workforce goals at the time of bid, it shall be required to objectively demonstrate to MoDOT that the goals have been met or demonstrate a good faith effort has been made with the level of effort submitted prior to the start of construction.*

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

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

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

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

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

5.0 Liquidated Damages. If the contractor elects to not submit a workforce plan prior to work starting or fails to fulfill their workforce plan committed to prior to the start of construction, the contractor will be required to establish a good-faith effort determination, as to why either of these events occurred. MoDOT may sustain damages, the exact extent of which would be difficult or impossible to ascertain, as this impacts the cost of future road and bridge

construction. Therefore, in order to liquidate those damages, MoDOT shall be entitled, at its sole discretion, to deduct and withhold the following amounts: **The sum of one thousand five hundred ($1,500)**

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

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

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

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

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

10.0 Federal Workforce Goals.

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

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

TABLE 1:

County	Goal (Percent)	County	Goal (Percent)
Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4
Barry	2.3	Madison	11.4
Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4

Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4
Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4
DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4
Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3
Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4

Lawrence	2.3	Wayne	11.4
Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

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

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

As used in these specifications:

"Minority" includes;

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

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

1.0 Description.

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

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

1.3 Tracking of DBE payments are made through the Signet™ application (Signet). Signet is a third-party service, supported by the vendor, for usage by the prime contractor and all subcontractors. Signet is only a reporting tool; it does not process financial transactions.

MoDOT does not provide direct technical support for Signet. Information about Signet may be found at https://signet-help.zendesk.com/hc/en-us.

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

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

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

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

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

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

2.2 The payer must report the following information within Signet:

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

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

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

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

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

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

I. Utilities JSP-93-26F

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

Utility Name	**Known Required Adjustment**	**Type**
AT&T – Distribution Tim Bushart 2120 E 63rd Street Kansas City, MO 64130 Phone: (816) 803-2608 Email: tb2697@att.com	Yes Section 2.0	Communications
Lee's Summit Water Utilities Jeff Thorn 1200 SE Hamblen Rd Lee's Summit, MO 64081 Phone: (816) 969-1942 Email: Jeff.Thorn@cityofls.net	Yes Section 3.0	Water & Sanitary Sewer

Spire Energy Richi Garcia 3025 SE Clover Drive Lee's Summit, MO 64082 Phone: (816) 507-0713 Email: richi.garcia@spireenergy.com	Yes Section 4.0	Gas
Evergy Jenny Casey Phone: (913) 579-8215 Email: jenny.casey@evergy.com	Yes Section 5.0	Power
MODOT KC District Alex Martinez Phone: (816) 835-5607 Email: Alejandro.Martinez@modot.mo.gov	Yes Section 6.0	Signals, Lighting, ITS
Google Fiber Lauren Marcucci Phone: (913) 663-1900 Email:lmarcucci@google.com	Yes Section 7.0	Communications
Charter/Spectrum John Laster 6555 Winchester Ave. Kansas City, MO 64133 Phone: (913) 643-1922 Email: John.Laster@charter.com	Yes Section 8.0	Communications
Lee's Summit R-7 School District Kinzie Wooderson Phone: (816) 986-1050 Email: Kinzie.Wooderson@LSR7.net	Yes Section 9.0	Communications
Bluebird Mike Sanders 800 NW Chipman Rd, Suite 5750 Lee's Summit, MO 64063 Phone: (816) 517-1876 Email: mike.sanders@bluebirdnetwork.com	Yes Section 10.0	Communications
Cable One - Formerly Fidelity Communications Andrew Reddick Phone: Email: Andrew.Reddick@cableone.biz	None	Communications

Lee's Summit Fiber Bryan Hall 220 SE Green Street Lee's Summit, MO 64063 Phone: (816) 969-1270 Email: Bryan.Hall@cityofls.net	None	Communications
KC Scout Mark Sommerhauser Phone: (816) 607-2243 Email: Karsten.Sommerhauser@modot.mo.gov	Yes Section 11.0	Communications

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

2.0 AT&T –Distribution AT&T has exiting underground lines on both sides of Route 291 north of Blue Parkway. AT&T also has existing lines on the north side of Blue Parkway and 7th Terrace. South of US 50 AT&T has lines along the south side of the west leg of Oldham, along both sides of Hamblen, along the south side of Ramp 4, and the north side of the east leg of Oldham. AT&T has crossings under US 50 at Station 713+60 and at Station 741+80. AT&T plans to have the relocations north of US 50 and the crossing under US 50 at Sation 741+80 completed prior to the contractor notice to proceed. Along the south side of Ramp 4, AT&T has a communication line approximately 2 feet deep near the waterline relocation. AT&T request to be notified prior to the excavation for the waterline along Ramp 4 and be on site during the excavation to make any necessary adjustments to the communication line.

3.0 Lee's Summit Water Utilities Lee's Summit Water Utilities has waterline and sanitary sewer line relocations as part of the roadway improvements.

4.0 Spire Energy Spire Energy has a 6” steel main along the north side of existing Blue Parkway east of Route 291 and along the east side of Route 291 north of existing Blue Parkway. Spire Energy plans to relocate this gas main around the project limits. Spire Energy also has conflicts with the gas main and the proposed storm sewer from Sta. 183+75 to Sta. 186+50 Lt. Route 291. Spire Energy also has conflicts with the gas main and the proposed storm sewer from Sta. 5+00 to Sta. 9+60 Lt. 7th Terrace. Spire Energy plans to have the relocations completed prior to the contractor notice to proceed.

5.0 Evergy Evergy has a power distribution line along the north side of existing Blue Parkway east of Route 291 and along the east side of Route 291 north of existing Blue Parkway. Evergy plans to relocate this powerline along the north side of relocated Blue Parkway. Evergy also has conflicts from Sta. 0+75 Rt. to Sta. 3+00 Ramp 4 and at Sta. 184+40 Lt. Route 291. Evergy plans to have the relocations completed prior to the contractor notice to proceed.

Evergy is to be notified to brace the power pole on the south side of Ramp 4 near Station 3+15 during the waterline relocation.

6.0 MoDOT KC District MoDOT KC District has traffic signals, lighting, and fiber line relocations as part of the roadway improvements.

7.0 Google Fiber Google Fiber has a fiber line along the north side of existing Blue Parkway east of Route 291 and along the east side of Route 291 north of existing Blue Parkway. Google Fiber plans to relocate this fiber line along the north side of relocated Blue Parkway. Google Fiber plans to have the relocations completed prior to the contractor notice to proceed.

9.0 Charter/Spectrum Spectrum has a fiber line along the north side of existing Blue Parkway east of Route 291 and along the east side of Route 291 north of existing Blue Parkway. Spectrum plans to relocate this fiber line along the north side of relocated Blue Parkway.
Spectrum also has a conflict with proposed storm sewer at 713+40 Lt. Blue Parkway. Spectrum plans to have the relocations completed prior to the contractor notice to proceed.

9.0 Lee's Summit R-7 School District Lee's Summit R-7 School District has a fiber line along the north side of existing Blue Parkway east of Route 291 and along the east side of Route 291 north of existing Blue Parkway. Lee's Summit R-7 School District plans to relocate this fiber line along the north side of relocated Blue Parkway. Spectrum plans to have the relocations completed prior to the contractor notice to proceed. Lee's Summit R-7 School District plans to have the relocations completed prior to the contractor notice to proceed.

10.0 Bluebird Bluebird has a fiber line along the north side of existing Blue Parkway. Bluebird has relocated their fiber line to the south side of US 50. Bluebird would like a 2-month notice prior to start of construction to salvage existing equipment and fiber lines along Blue Parkway. Bluebird would like to be invited to the pre-construction meeting.

11.0 KC Scout KC Scout has equipment and fiber line relocations as part of the roadway improvements.

J. Coordination with Other Entities

1.0 Description. The contractor shall coordinate traffic control, staging and any other items as determined by the engineer with other entities. The contractor will be required to attend coordination meetings and provide information regarding the project as directed by the engineer to the affected entities.

City of Lee's Summit. – Must be invited to pre-construction conference and notified 2 weeks in advance of work on City streets and 1 week in advance of changes in traffic patterns on City streets.

Contact:

Craig Kohler, Project Contact
City of Lee's Summit
220 SE Green Street
Lee's Summit, MO 64063

Telephone Number: 816-969-1800
Email: craig.kohler@cityofls.net

2.0 Basis of Payment. No direct payment will be made to the contractor to recover the cost of equipment, labor, materials, or time required to fulfill the above provision.

K. Notice to Bidders of Funding by Third Party JSP-18-02A

1.0 Bidders are advised that City of Lee's Summit, Missouri is required to provide substantial funds for construction of Job No. J4P3196.

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

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

L. Notice to Bidders of Third Party Concurrence in Award JSP-98-19

1.0 Bidders are advised that Commission is party to a contract with City of Lee's Summit, Missouri which provides that City of Lee's Summit, Missouri shall provide substantial funds for construction of Job No. J4P3196 by reason of which City of Lee's Summit, Missouri has the right to concur or not concur in Commission's award of a contract for this job.

2.0 Bidders acknowledge that their bids are made with knowledge of and subject to the condition of City of Lee's Summit, Missouri concurrence in and prior authorization of any award of a contract for this job by Commission.

3.0 Bidders agree that they shall be estopped, both in law and equity, to assert any right to award of a contract for this job by Commission should City of Lee's Summit, Missouri not concur in that award for any reason.

M. Liquidated Damages Specified – Blue Parkway (East Leg)

1.0 Description. To construct the east leg of Blue Parkway, the contractor is to construct a temporary roadway to allow access to and from 7th Terrace and close various sections of 7th Terrace as detailed in the plans (Phase 1B and Phase 1C). The duration of the use of this temporary access roadway and closures of 7th Terrace shall be no more than 50 calendar days as determined by the contractor in consultation with the engineer. If east leg of Blue Parkway and 7th Terrace are not open to traffic prior to the 50 calendar days following the opening of the temporary access road, the Commission, the traveling public, and state and local police, and

governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$2,300 per day** for each full day that east leg of Blue Parkway and 7th Terrace are 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 excess closure time. Contractor shall provide a four (4) week notice to MODOT prior to opening of the temporary access road and closing sections of 7th Terrace.

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

N. Alternates for Pavements

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

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

2.0 Mainline Pavements

2.0.1 A sum of $547,100 will be added by the Commission to the total bid using an asphalt alternate for the **Alternate A – Mainline 50** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.0.2 A sum of $250,700 will be added by the Commission to the total bid using an asphalt alternate for the **Alternate C – Route 291 and Ramps 1 & 2** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.0.3 A sum of $87,100 will be added by the Commission to the total bid using an asphalt alternate for the **Alternate E – Ramps 3 & 4** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.1 City Pavements

2.1.1 A sum of $224,800 will be added by the Commission to the total bid using an asphalt alternate for the **Alternate G – Blue Prkwy** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.2 A2 Shoulders

2.2.1 A sum of $21,700 will be added by the Commission to the total bid using an asphalt A2 Shoulder alternate for the **Alternate I – A2 Shoulder** pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.3 The quantities shown for each alternate reflect the total square yards of pavement surface designated for alternate pavement types as computed and shown on the plans. No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, or for tack applied between lifts of asphalt.

2.4 The quantities shown for Alternate G and H include aggergate base and geogrid / geotextile as shown in the pavement design as shown in the plans.

2.5 The grading shown on the plans was designed for the thinner concrete pavement alternate.

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

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

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

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

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

O. Optional Pavements

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

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

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

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

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

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

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

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

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for at the contract unit bid price for Item:

401-99.05, Temporary Optional Pavement (Blue Parkway and City Streets), per SY
401-99.05, Temporary Optional Pavement (Route 50 and Ramps), per SY

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

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

P. Alternate Technical Concepts – Grading, Base, and Paving

1.0 Description. This specification allows the use of alternate grading, base, and pavement sections. The Commission has provided a complete set of plans, quantities and cross sections to construct this project if the contractor does not elect to use the alternate grading, base, and pavement concepts.

2.0 General Conditions.

2.1 The contractor may consider one, all, or a combination of the following approved alternate grading, base and pavement concepts listed below. The contractor shall not be allowed to construct pavements with combination of asphalt and concrete layers.

Route 50		
Rock Base	**Asphalt Concrete Alternative**	**Portland Cement Concrete Alternate**
6-in Type 5 Base	As shown in the plans	As shown in the plans
12-in Rock Base	12.0-in HMA Surface Course: 2.00-in SP125BSM (PG 76-22) Base Course 1: 2.00-in SP125BSM (PG 76-22) Base Course 2: 8.00-in SP250C (PG 64-22)	10.0-in Jointed PCCP

Blue Parkway		
Subgrade Treatment	**Asphalt Concrete Alternative**	**Portland Cement Concrete Alternate**
No Chemical Stabilization	As shown in the plans	As shown in the plans
With Chemical Stabilization	9.5-in HMA Surface Course: 2.00-in SP125C (PG 70-22) Base Course 1: 3.00-in SP250C (PG 70-22) Base Course 2: 4.50-in SP250C (PG 64-22) 6.00-in Type 5 Aggr. Base 9.00-in Stabilized Subgrade*	9.5-in Jointed PCCP (KCMMB 4K Mix) 4.00-in Type 5 Aggr. Base 9.00-in Stabilized Subgrade*
* Chemically stabilized with 5% Hydrated Lime, Portland Cement, or Lime Kiln Dust (LKD). Percentages based on dry unit weights.		

2.2 The life cycle cost analysis factor shall apply to the asphalt alternates regardless of the technical concept elected.

2.3 The contractor shall build the roadway to the final profile as shown in the plans, regardless of the approved paving concept elected.

2.4 If Rock Base is used, Sec 303 shall be deleted and replaced as follows:

> **303.1 Description.** This work shall consist of furnishing and placing select rock excavation material in the top 12 inches of the subgrade for use as a base to provide pavement support and drainage as shown on the plans or as directed by the engineer. This work includes daylighting the 12-inch rock base and finishing the slopes.
>
> **303.2 Material.** This material source for rock base shall be in accordance with approval from the engineer. Geologic conditions may vary from available subsurface information. Approval from the engineer of source for the inherent stone will not constitute approval of the final rock base.

3.0 Method of Measurement Final measurement of the compacted rock base or subgrade treatment will not be made, except for authorized changes during construction. 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 for Type 5 Aggregate for Base or Pavement Alternate to the nearest squared yard.

4.0 Basis of Payment.

4.1 Payment for the alternate technical concepts will be considered completely covered by the bid items in the contract documents for Pavement Alternate and Type 5 Aggregate for Base, per square yard. There will be no additional compensation for any items associated with the use of an alternate technical concept. The quantities for Pay Items 304-99.05 Rigid Geogrid to Enhance Aggregate or Rock Base, per square yard, 304-99.10 Permanent Aggregate Edge Treatment, per ton, and 408-10.18 Prime-Liquid Asphalt MC 800, and 624-01.04A Separation Geotextile, per square yard, will be underrun in the areas where the contractor elects to use 12-inch rock base.

4.2 The Commission does not warrant that there are sufficient quantities of Class C material within the project limits to construct the 12-inch rock base alternate technical concepts. If the contractor elects to provide additional material to construct the 12-inch rock base for any of these concepts, the additional material will be considered included in the plan quantity for items set up in the contract. No additional pay will be provided for any material needed to accomplish any of these concepts.

Q. Rigid Geogrid to Enhance Aggregate Base or to Enhance Rock Base NJSP-18-11B

1.0 Description. This work shall consist of furnishing and installing rigid geogrid base reinforcement, over a separation geotextile, on a prepared subgrade prior to the placement of the aggregate base or rock base as shown in the plans or as directed by the engineer.

2.0 Materials. The rigid geogrid shall be manufactured from a punched and drawn polypropylene sheet integrally formed into a biaxial or triaxial grid structure designed to provide significant mechanical interlock with the aggregate material being reinforced. The rigid geogrid structure shall be dimensionally stable to retain its reinforcement and interlock capabilities under repeated dynamic loads while in service and shall have high resistance to damage during construction, ultraviolet degradation, and all naturally encountered forms of chemicals, alkalis, acids, and biological degradation encountered in the materials being reinforced. Woven or flexible geogrids will not be allowed. A separation geotextile meeting the requirements of Sec 1011.3.4 shall be used in conjunction with the rigid geogrid. All aggregate base shall comply with Sec 304 and all rock base shall comply with Sec 303.

2.1 Physical Properties. The rigid geogrid shall meet the following properties:

Property	Test Method	Units	Geogrid Requirements1	
			MD	XMD
Rigid Geogrid Type	Observed	Punched & Drawn Polypropylene		
Aperture Shape	Observed	Equilateral Triangular, Rectangle, or Square		
Minimum Roll Width	Observed	feet	9	
Minimum Index Proerties (Unless indicated otherwise)				
Rib Thickness	Observed	inch	0.05	0.05
Maximum Aperture Dimensions[6,7]	Calipered	inch	1.3	1.3

Tensile Strength @ 2 % Strain	ASTM D6637	lbs/ft	410	620
Tensile Streingth @ 5 % Strain	ASTM D6637	lbs/ft	810	1340
Ultimate Tensile Strength	ASTM D6637	lbs/ft	1310	1970
Structural Integrity				
Junction Efficiency[2]	ASTM D7737 Method A	Percent	93	
Flexural Stiffness[3]	ASTM D7748	mg-cm	750,000	
Aperture Stability[4]	GRI GG9	m-N/deg	0.65	
Durability				
Resistance to Installation Damage[5]	ASTM D 6637	%SC / %SW / %GP	95 / 93 / 90	
UV Resistance @ 500 hours	ASTM D 4355	Percent	100	
Resistance to Chemical Degradation	EPA 9090 Emersion Testing	Percent	100	

Notes:
1. Minimum Average Roll Values (MARVs) determined in accordance with ASTM 4759, unless indicated otherwise. MD = Machine Direction; XMD = Cross-Machine Direction
2. Load transfer capability expressed as a percentage of ultimate tensile strength.
3. Resistance to bending force determined in accordance with ASTM D7748, using specimens of width two ribs wide, with transverse ribs cut flush with exterior edges of longitudinal ribs (as a “ladder”), and of length sufficiantly long to enable measurement of the overhang dimension.
4. Resistance to in-plane rotational movement measured by applying a 20 kg-cm (2 m-N) moment to the central junction of a 9 inch x 9 inch specimen restrained at its perimeter in accordance with GRI GG9.
5. Resistance to loss of load capacity or structural integrity when subjected to mechanical installation stress in clayey sand (SC), well-graded sand (SW), and crushed stone classified as poorly graded gravel (GP). The rigid geogrid shall be sampled shall be in accordance with ASTM D5818 and load capacity shall be determined in accordance with ASTM D6637.
6. Nominal dimensions rounded to the nearest one tenth of an inch.
7. Maximum MD or XMD shall be no greater than or equal to 2*D85 of the aggregate base. Minimum MD or XD shall be no less than 1.0 inches.

2.2 Acceptance. 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 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. A rigid geogrid will be rejected at installation if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transport, handling or storage.

2.3 Handling. Each roll shall be clearly marked with manufacturer’s name, brand name, lot number. During all periods of shipping and storage, the separation geotextile and rigid geogrid shall be protected from temperatures greater than 140 deg. F and all deleterious materials that might otherwise become affixed to the rigid geogrid and affect its performance. The manufacturer’s recommendations shall be followed regarding protection from direct sunlight. The separation geotextile and rigid geogrid shall be stored off the ground in a clean, dry environment.

3.0 Construction. The separation geotextile and rigid geogrid shall be installed in accordance with the manufacturer’s recommendations and with this job special provision.

3.1 Site Preparation. The surface shall be smooth and free of stumps, large stones, sharp objects, and debris that may puncture the separation geotextile or damage the rigid geogrid.

3.2 Separation Geotextile.

3.2.1 The separation geotextile fabric shall be used on all subgrades that require the rigid geogrid to prevent the infiltration of fines.

3.2.2 Separation Geotextile Installation. The separation geotextile shall be laid out smooth and applied with tension to minimize wrinkles or folds on the prepared subgrade. The separation geotextile shall be oriented such that the roll length runs parallel to the construction centerline.

3.2.3 Exposure. The separation geotextile shall be covered with rigid geogrid material the same day of placement to protect against unnecessary exposure.

3.2.4 Overlaps. The end of separation geotextile rolls and adjacent separation geotextile rolls shall be overlapped a minimum of 3 feet. The overlap shall be in the direction of anticipated aggregate placement and shall be held in place by U-staples, washer pins or aggregate piles.

3.3 Rigid Geogrid Installation. The ridid geogrid shall be laid out smooth and applied with tension to minimize wrinkles or folds on the separation geotextile. The rigid geogrid shall be oriented such that the roll length runs parallel to the construction centerline.

3.3.1 Exposure. The rigid geogrid shall be covered with aggregate base material the same day of placement to protect against unnecessary exposure.

3.3.2 Overlaps. The end of rigid geogrid rolls and adjacent rigid geogrid rolls shall be overlapped a minimum of 3 feet. The overlap shall be in the direction of anticipated aggregate placement and shall be held in place by U-staples, washer pins or aggregate piles.

3.3.3 Intermediate Splicing. The rigid geogrid may require intermediate splices to provide for a smooth layout minimizing wrinkles or folds around curves. Each splice shall be overlapped a minimum of 3 feet and kept taut with fasteners.

3.4 Aggregate Placement. Materials shall be placed onto the rigid geogrid from the edge or over previously placed aggregate. A minimum of 6 inches of crushed aggregate shall be placed over the rigid geogrid before construction equipment is allowed on the material. Construction equipment will not be allowed directly on the rigid geogrid. Rollers shall not use vibratory compaction. Avoid sudden stops or sharp turns when operation construction equipment over the rigid geogrid.

3.5 Damaged Areas. If any separation geotextile or rigid geogrid is damaged during installation, the contractor shall repair or replace the separation geotextile and rigid geogrid in accordance with manufacturer's recommendations. The contractor shall replace any separation geotextile and rigid geogrid damaged prior to or during installation at no expense to the commission.

4.0 Method of Measurement. Measurement of the separation geotextile and rigid geogrid will be made to the nearest square yard. Incidental overlaps for connections and splices are not included in the pay item.

5.0 Basis of Payment. Payment for the rigid geogrid will be paid for at the contract unit price for 304-99.05, Rigid Geogrid to Enhance Aggregate or Rock Base, per square yard. Payment for the separation geotextile will be paid for at the contract unit price for 624-01.04A, Separation Geotextile, per square yard.

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

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

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

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

2.1 The ADA Checklist is not to be considered all-inclusive, nor does it supersede any other contract requirements. The ADA checklist is a required guide for the contractor to use during the construction of the pedestrian facilities and a basis for the commission's acceptance of work. Prior to work being performed, the contractor shall bring to the engineer's attention any planned work that is in conflict with the design or with the requirement shown in the checklist. This notification shall be made in writing. Situations may arise where the checklist may not fully address all requirements needed to construct a facility to the full requirements of current ADA law. In those situations, the contractor shall propose a solution to the engineer that is compliant with current ADA law using the following hierarchy of resources: 2010 ADA Standards for Accessible Design, Draft Public Rights of Way Accessibility Guidelines (PROWAG) dated November 23, 2005, MoDOT's Engineering Policy Guidelines (EPG), or a solution approved by the U.S. Access Board.

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

3.0 Coordination of Construction.

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

3.2 When consultant survey is included in the contract, the contractor shall use their survey crews to verify that the intended design can be constructed to the full requirements as

established in the 2010 ADA Standards. When 2010 ADA Standards do not give sufficient information to construct the contract work, the contractor shall refer to the PROWAG.

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

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

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

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

5.1 No direct payment will be made to the contractor to recover the cost of equipment, labor, materials, or time required to fulfill the above provisions, unless specified elsewhere in the contract documents.

S. 8" Tinted Stamped Concrete Median Strip

1.0 Description. This work shall consist of constructing 8-inch tall median strip tinted taupe as shown on the plans or as directed by the engineer. Color of tint is Prism P5040 Taupe (Dark Brown). The stamped median shall have a Brick Running Bond Pattern. Contractor shall follow Lee's Summit Standard Specification Section 2300 - Incidental Construction Appendix for Stamped Concrete Construction: LS Section 2300 - APPENDIX - Stamped Concrete Construction

2.0 Method of Measurement. The quantities of tinted stamped concrete median strip will be measured in accordance with Sec 608.4.

5.0 Basis of Payment. The cost of all materials, mock ups, labor, and equipment necessary for the complete in place installation shall be included in the unit bid price for:

Item 608-99.05, Tinted Stamped Concrete Median Strip, 8 IN., per square yard

T. Paved Approach

1.0 Description. This work shall consist of the construction of the Concrete Paved Approaches as indicated in the plans. Constuction of paved approaches within City R/W shall be in accordance with APWA Section 2300 and LS section 2300 – Incidental Construction. Paved Approaches shall be constructed with KCMMB 4k Concrete.

2.0 Method of Measurement. The quantities of paved approaches will be measured in accordance with Sec 608.4.

3.0 Basis of Payment. All costs incurred by the contractor by reason of compliance to satisfy the above requirements shall be considered incidental to and completely covered by the contract unit price for each of the pay items within the contract. Accepted construction of the Paved Approaches will be paid for at the contract unit price bid for item:

608-50.08, “Paved Approach, 8 in.”, per square yard
608-99.05, “LS Paved Approach, 8 in.”, per square yard

U. Truncated Domes

1.0 Description. This work shall consist of the construction of the Truncated Domes as indicated in the plans.

2.0 Materials. ADA Detectable Warning Surfaces: The material used to provide contrast shall be an integral part of the walking surface. The material for detectable surface shall be: Cast-in-Place Tiles: Acceptable products include ceramic composites, composites, reinforced concrete, or materials of strength and durability similar to that of the concrete walking surface. Proposed materials shall be approved by the City prior to installation.

2.1 Color for all surface options shall be ‘brick red’ (Federal Standard Color No. 22144). Any color variation to meet contrast requirements must be approved by the Engineer.

2.2 Surface applied retrofit tiles shall not be allowed.

3.0 Method of Measurement. The quantities of Truncated Domes will be measured in accordance with Sec 608.4.3.

4.0 Basis of Payment. All costs incurred by the contractor by reason of compliance to satisfy the above requirements shall be considered incidental to and completely covered by the contract unit price for each of the pay items within the contract.

V. Curb Ramps and Sidewalk

1.0 Description. Construction of concrete curbs, aprons, curb ramps, transition areas, sidewalk and landings shall be in accordance with applicable portions of Sections 608 & 609 of the Standard Specification and Standard Plans for Highway Construction 608.10, as shown on the plans, and meet ADA requirements. Constuction of Curb ramps and Sidewalks within City R/W shall be in accordance with APWA Section 2300 and LS section 2300 – Incidental Construction. Concrete Sidewalks and Concrete Curb Ramps shall be constructed with KCMMB 4k Concrete.

2.0 Construction Requirements. This work shall include, but is not limited to, sidewalk construction including landings, joint construction, aggregate base, compaction, apron modifications, transition area, curb ramp construction, Type S Curb or Type A Curb installation (as required), tie bars or dowel bars (as required), clean-up, etc. for each location shown on the plans.

The following requirements shall be applicable to construction of this project:

- Existing curb, curb and gutter, sidewalk, shoulders, etc. that are adjacent to a designated curb ramp and/or sidewalk improvement area that is damaged during construction shall be replaced/repaired to match existing materials and condition.

- Variable height curb along the roadside may be constructed monolithic or separate depending on construction operations. Integral curb shall be doweled to the existing gutter or pavement. - Integral or Type S-curb shall be used along the existing right-of-way when constructing curb ramps as shown on the plans. The cost of the curb is included in pay limits of the curb ramp.

- The transition area shall be 8" thick and tied to the existing roadway pavement and existing paved approach or sidewalk it is matching.

- Curing compound for all concrete construction shall be a clear or translucent color. The white pigmented option or other colored compound will not be allowed.

- Adjacent grass areas, landscaping, irrigation lines, pavement, etc. disturbed by curb ramp or sidewalk construction shall be repaired or replaced to match or exceed existing conditions. Sod quantities are included for adjacent areas. More or less sod may be required depending on actual field conditions.

3.0 Method of Measurement. Curb ramps and concrete sidewalk will be measured to the nearest 1/10 square yard. Measurement of incidental items required to complete all aspects of construction for the above noted items at each new curb ramp and sidewalk location will not be made individually unless specified elsewhere in the contract.

4.0 Basis of Payment. All costs incurred by the contractor by reason of compliance to satisfy the above requirements shall be considered incidental to and completely covered by the contract unit price for each of the pay items within the contract. Accepted construction of the Concrete Curb Ramps and Concrete Sidewalks will be paid for at the contract unit price bid for item:

608-10.10, "Concrete Curb Ramp", per square yard
608-99.05, "LS Concrete Curb Ramp", per square yard
608-86.04, "Concrete Sidewalk, 4 in.", per square yard
608-99.05, "LS Concrete Sidewalk, 4 in", per square yard

W. Concrete Trail

1.0 Description. This work shall consist of the construction of the Concrete Trail as indicated in the plans. Constuction of Concrete Trail within City R/W shall be in accordance with APWA Section 2300 and LS section 2300 – Incidental Construction.

2.0 Materials. Concrete Trail shall be constructed with KCMMB 4k Concrete.

3.0 Method of Measurement. The Concrete Trail will be measured to the nearest 1/10 square yard.

4.0 Basis of Payment. Accepted construction of the Concrete Trail will be paid for at the contract unit price bid for item:

608-99.05, "Concrete Trail, 6 in.", per square yard
608-99.05, "LS Concrete Trail, 6 in.", per square yard

Such payment shall constitute full compensation for all materials, labor, tools, and equipment necessary to complete the construction item. Items not specifically called out in the contract for the installation of this item shall be considered subsidiary to other related items.

X. Special Concrete Curb & Gutter

1.0 Description. This work shall consist of constructing the Special Concrete Curb & Gutter as shown on the plans and shall meet all requirements of APWA Section 2200 and LS Section 2200 - Paving. Concrete Curb & Gutter shall be constructed with KCMMB 4k Concrete.

2.0 Basis of Payment. Section 609.20.5 is supplemented by the following:

2.1 All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price for:

Item No. 609-99.03, "Lee's Summit Type CG-1 Curb & Gutter", per linear feet

Y. Modified Type S Curb

1.0 Description. This work shall consist of constructing the Modified Type S Curb as shown on the plans and shall meet all requirements of Section 609.10. Modified Type S Curb shall be constructed with KCMMB 4k Concrete.

2.0 Basis of Payment. Section 609.10.5 is supplemented by the following:

2.1 All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price for Item No. 609-99.03, "Modified Type S Curb", per linear feet.

Z. Pipe Culverts

1.0 Description. This work shall consist of providing pipe of the diameter or shape designated, laid upon a firm bed and backfilled as specified. Pipes installed within City R/W shall be in accordance with all requirements of APWA Section 2600 and LS Section 2600 – Storm Sewers.

1.1 Backfill of trenches within City R/W shall be in accordance with all requirements of LS Section 2100 – Grading and site Preperation.

2.0 Materials. Delete Section 724.1.1 and replace with:

2.1 Permissible types for Group A Pipe are as shown in the table. The contractor may use any of the types listed within the specified group and size range as follows:

		Group A
Rigid Pipe		**Size**
Reinforced Concrete Culvert Pipe		All
Flexible Pipe - Thermoplastic		**Size**
Polypropylene Pipe	Double Wall	≤ 30”
	Triple Wall	30” – 60”
Polyethylene Pipe	Corrugated	≤ 24”
	Steel Reinforced	≤ 24”

No other substitutions will be allowed.

3.0 Method of Measurement. The quantities of Group A Pipe will be measured in accordance with Sec 724.4.

4.0 Basis of Payment. The accepted quantities of pipe, complete in place, including all necessary tees, bends, wyes, coupling bands, cutting and joining new pipe to existing pipe or structures, unless otherwise specified, will be paid for at the contract unit price for each of the pay items included in the contract.

4.1 Unless specified otherwise, no direct payment will be made for the following:
(a) Beveling, skewing or additional work required in laying pipe with beveled or skewed ends.
(b) Work involved in elongating pipe.
(c) Any required backfilling, except as specified in Sec 206.6.3.
(d) Construction of bedding or for bedding material.
(e) Furnishing and installing plugs.
(f) Material or work required for placing couplings on exposed ends of pipe.

AA. Special Inlets

1.0 Description. This work shall consist of constructing special precast Inlets as shown on the plans and meet all requirements of APWA Section 2600 and LS Section 2600 – Storm Sewers. Concrete shall be KCMMB 4k or 5k Concrete.

1.1 Backfill around structures within City R/W shall be in accordance with all requirements of LS Section 2100 – Grading and site Preperation.

2.0 Method of Measurement. The quantities will be paid for in accordance with Section 731.4.

3.0 Basis of Payment. Section 731.5 is supplemented by the following:

3.1 All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price per each for the following:

Item No. 731-99.02, “4 ft. x 4 ft. LS Curb Inlet”, per each.
Item No. 731-99.02, “6 ft. x 4 ft. LS Curb Inlet”, per each.
Item No. 731-99.02, “8 ft. x 4 ft. LS Curb Inlet”, per each.
Item No. 731-99.02, “8 ft. x 5 ft. LS Curb Inlet”, per each.
Item No. 731-99.02, “5 ft. x 5 ft. LS Field Inlet”, per each.
Item No. 731-99.02, “2 ft. x 10 ft. Trench Drain”, per each.
Item No. 731-99.02, “2 ft. x 12 ft. Trench Drain”, per each.

BB. Blue Parkway Pavement

1.0 Description. This work shall consist of constructing Blue Parkway Pavement as shown in the plans. The conceret pavement alternate for Blue Parkway pavement shall meet all requirements of APWA Section 2200 and LS Section 2200 - Paving. Concrete shall be constructed with KCMMB 4k Concrete.

2.0 Basis of Payment. There will be no direct payment for any work associated with this provision.

CC. Lee’s Summit Geogrid / Geotextile

1.0 Description. Geogrid / Geotextile used for the Blue Parkway Pavement Alternates shall follow Lee’s Summit Public Works Approved Products List for Geogrid / Woven Geotextiles for Roadway Construction: LS Approved Product Lists – Public Works

2.0 Basis of Payment. There will be no direct payment for any work associated with this provision.

DD. Lee’s Summit Chemical Subgrade Stabilization

2.0 Description. This work shall consist of instalation of Portland Cement or Lime Kiln Dust, mixing the material, compacting to the required density, and weatherproofing to develop a stabilized subgrade under the Blue Parkway Pavement Alternates as shown in JSP O Alternate Technical Concepts – Grading, Base, and Paving. Contractor shall follow Lee’s Summit Standard Specification for Chemical Stabilization in the areas where the contractor elects to use the alternate technical concept for Subgrade Treatment with Chemical Stabilization: LS Section 2200 - Appendix - Subgrade Stabilization

2.0 Basis of Payment. There will be no direct payment for any work associated with this provision.

EE. Parapet Wall

1.0 Description. This work shall consist of constructing the Parapet Wall as shown on the plans and shall meet all requirements of Section 617.

2.0 Basis of Payment. Section 617.10.5 is supplemented by the following:

2.1 All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price for Item

617-99.03, "Parapet Wall", per linear feet.

FF. Type H Barrier

1.0 Description. This work shall consist of constructing the Type H Barrier as shown on the plans and shall meet all requirements of Section 617.

2.0 Basis of Payment. Section 617.10.5 is supplemented by the following:

2.1 All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price for Item

617-99.03, "Type H Barrier", per linear feet.

GG. Use of Temporary Easements

1.0 Description. Temporary easements cannot be used for material storage, parking, etc. unless written approval is provided by MoDOT and the City of Lee's Summit.

2.0 Basis of Payment. No direct payment will be made to the contractor for all costs incurred with compliance of this provision.

HH. Access to Commercial and Private Properties

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

1.1 The contractor shall contact each business to advise them of the work that will take place before working around each business entrance. In some cases where a property has more than one entrance, the property owner may have a preference on whether to have one entrance closed at a time or whether to have each entrance constructed one-half at a time. The contractor is required to work according to each property owner's preference. The contractor shall notify each property owner at least one-week prior entrance construction within their property limits to advise them of the work that will take place and the timeframe of the work.

2.0 Basis of Payment. No direct payment will be made to the contractor for all costs incurred with compliance of this provision

II. Damage to Existing Pavement, Side Roads and Entrances

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

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

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

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

JJ. Contractor Quality Control and Daily Reporting

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

2.0 Quality Control Plan.

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

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

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

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

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

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

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

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

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

3.3.2 CDWR information:

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

4.0 Work Planning and Scheduling.

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

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

4.3 Pre-Activity Meeting. A pre-activity meeting is required in advance of the start of each new activity, except when waived by the engineer. The purpose of this meeting is to review construction details of the new activity. Discussion topics should include: safety precautions, QC testing, traffic impacts, and any required Hold Points.

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.

KK. Contractor Furnished Surveying and Staking

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

1.0 Description. The contractor will be responsible for all layout required on the project. Any and all staking required to ensure that improvements installed on this project meet the ADA requirements is the sole responsibility of the contractor. This responsibility will include, but not limited to the following: Construction signs, curb ramp, landing, and sidewalk construction, truncated dome installation, quantity verification, curb construction, pavement marking, pedestrian signal modifications, median strip/island construction and modifications, etc.

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

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

1.3 Any adjustments to the plan quantities or line numbers established in the contract shall be

approved by the Engineer.

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

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

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

2.0 Disassembly and Delivery.

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

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

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

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

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

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

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

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

2.0 Construction Requirements. Aggregate shall be simultaneously deposited and spread on the sub-grade and shall not be deposited on the pavement or shoulder and bladed into place.

Aggregate material shall be shaped according to the typical section and compacted until there is no visible evidence of further consolidation.

2.1 Prime-Liquid Asphalt MC 800 shall be applied to sections of the edge treatment shown in the plans or designated by the engineer. Prime-Liquid Asphalt MC 800 will be paid for separately.

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

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

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

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

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

2.0 Material.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PP. Disposition of Existing Signal/Lighting and Network Equipment JSP-15-05A

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

MoDOT Maintenance Lot
9101 East 40th Terrace
Kansas City, MO 64133
Phone: 816-317-5201

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

3.0 Network Communication Devices. Devices such as CCTV cameras and domes, video encoders, device servers, Ethernet switches, media converters, and radio assemblies are to be

transported to the address listed below. The contractor shall notify the Commission's representative 24 hours prior to each delivery by calling phone number listed below and providing details for the delivery.

Scout TMC
600 NE Colbern Rd.
Lee's Summit, MO 64086
Phone: 816-607-2000

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

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

QQ. Ornamental Pedestrian Fence (48") (Retaining Walls)

1.0 Description. This work shall consist of furnishing and installing 48 in. ornamental pedestrian fence as shown on the plans and shall meet all requirements of Section 607, except as otherwise noted.

2.0 Materials and Construction Requirements. Material requirements shall conform to the manufacturer's specifications. Fencing shall be constructed behind MSE wall coping and attached to the concrete gutter in a 6 inch tube as shown on the special sheet.

3.0 Method of Measurement. Measurement of ornamental pedestrian fence will be made per linear foot.

3.0 Basis of Payment. All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the contract unit price for Item No 607-99.03, "(48 IN.) Decorative Pedestrian Fence (Structures)", per linear foot.

RR. Guardrail Grading Requirements JSP-17-02B

1.0 Description. Guardrail installation and grading shall be in accordance with Missouri Standard Specifications for Highway Construction, Missouri Standard Plans for Highway Construction, and as described herein.

2.0 Construction Requirements. When guardrail and/or end treatment removal and replacement requires grading of the shoulder and/or slopes, Section 606.3.1(b), (c), and 606.3.1.1 of the Missouri Standard Specifications shall be waived and the following shall apply:

a) Along roadways and shoulders, remove no more guardrail than can be reconstructed within seven (7) calendar days, including weekends and holidays. The seven day counting period shall start when the first piece of safety hardware is removed.

b) The active work zone area that encompasses the guardrail and/or end treatment reconstruction, shall not exceed one (1) mile in length. The contractor shall be required to provide and maintain approved channelizing devices adjacent to the reconstruction area.

c) Only one-side of the roadway shall be worked on at the same time. Divided facilities shall be limited to work on one-side of each direction at the same time.

d) When the removal of any existing safety hardware device exposes non-breakaway obstacles, the reconstruction of the safety hardware device protecting the obstacle shall be replaced within 48 hours of removal or an approved temporary crashworthy device shall be provided, installed and maintained at the contractor's expense until the non-breakaway obstacle is permanently protected. The 48 hour counting period shall start when the first piece of safety hardware is removed.

e) Areas where guardrail and/or end treatments have been removed, but not yet replaced, shall be delineated in accordance with plans or as directed by the Engineer.

3.0 Non-Compliance. Non-compliance with this provision shall result in the immediate suspension of work in accordance with Sec 105.1.2. No work, including but not limited to additional guardrail removal and grading, shall be allowed to proceed except for work necessary to restore guardrail installation.

4.0 Basis of Payment. No direct payment will be made for compliance with this provision. Guardrail items, grading, and temporary traffic control devices will be paid for as provided in the contract.

SS. Tree Pruning

1.0 Description. This work shall consist of trimming or pruning vegetation next to the sidewalks within the project limits. This work shall be done within right of way or easement.

2.0 Construction Requirements. All tree limbs or other vegetation encroaching onto or over the sidewalk shall be removed to provide a minimum overhead clearance of at least 80 inches from the elevation of the existing sidewalk and shall provide a horizontal clearance to at least the edge of the existing sidewalk.

2.1 Any tree limbs or vegetative clippings removed by the contractor shall be disposed of off the right of way at the contractor's expense.

3.0 Basis of Payment. No direct pay shall be provided for any labor, equipment, time, or materials necessary to complete this work.

TT. Tree Clearing Restriction JSP-07-05C

1.0 Description. The project is within the known range of the federally endangered Indiana bat, northern long-eared bat, and proposed endangered tricolored bat. These bats are known to roost in trees with suitable habitat characteristics during summer months.

1.1 MoDOT has determined that suitable trees for one or more of these bat species exist within the project area.

1.2 To avoid negative impacts to these bat species, removal of any trees/limbs greater than three (3) inches in diameter shall only occur between October 16 and March 31.

2.0 Basis of Payment. No direct pay shall be provided for any labor, equipment, time, or materials necessary to complete this work.

UU. Temporary Shoring

1.0 Description. This section shall govern installation and removal of the temporary shoring required to construct the MSE Walls as specified within the plans. All work shall be completed in accordance with Section 206.

2.0 Approvals. Contractor shall have the temporary shoring designed. Detailed shoring plans and submittals shall be submitted for review and concurrence by the Engineer. Temporary shoring plans shall be signed and sealed by a professional engineer registered in the State of Missouri.

3.0 Method of Measurement. No special measurement will be made.

4.0 Basis of Payment. Payment for temporary shoring shall be paid for at the contract unit price per lump sum. The lump sum price shall include full compensation to the Contractor for all labor, equipment and materials necessary, including but not limited to: design of temporary shoring, excavation, installation, removals, maintenance, inspection, haul-off and disposal of unsuitable material for backfill, transportation, and all other work items incidental thereto. All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the unit price bid for Item:

206-55.00, Temporary Shoring (Wall A9329), per lump sum.
206-55.00, Temporary Shoring (Wall A9330), per lump sum.

VV. Airport Requirements

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

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

2.0 The maximum height of the improvement and the equipment operating while performing the improvements was assumed to be **150.0 feet** above the current travelway during the process of evaluating the project for compliance with FAA Reg Part 77.

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

2.2 If the contractor's height of equipment and the improvement itself is below the assumed height as indicated in Sec 2.0, no further action is necessary to fulfill the requirements set forth in FAA Reg Part 77.

2.3 A minimum of 3 business days prior to the temporary structure being erected and a maximum of 3 days following the structure removal from the constructon site, the contractor shall notify the manager of KANSAS CITY/LEE'S SUMMIT RGNL at (816) 969-1186.

2.4 The applicable determination of No Hazard to Air Navigation for Temporarry Structures were issued 2/10/2025 and are set to expire on 8/10/2026. The deturmination will be required to be extended or revised by the contractor if the cosntruction is not subtantally complete prior to expiration.

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

WW. Water Service Connections

1.0 Description. This work shall consist of connecting water services to the new water main and shall include all fittings, testing and disinfection requirements necessary for a fully operational water service connection. Work may include installing curb stops and water service lines to the meter, installing new meter and/ or relocation of meter.

2.0 Material. All material shall be in accordance with City of Lee's Summit standard plans (8x11 P) and specifications per Section 3900 – Water Mains (WATER LINES).

3.0 Construction Requirements. All construction requirements shall be in accordance with City of Lee's Summit standard plans (8x11 P) and construction and installation specifications per Section 3900 – Water Mains (WATER LINES).

4.0 Method of Measurement. Measurement of each service connection will be made per each connection.

5.0 Basis of Payment. Payment for the service connections will be a unit price per each and shall include all materials necessary for a fully operational water service connection.
Payment for the following bid items made as follows:

Item No.	Description	Unit
6039902	Service Connections	Ea.

XX. Gate Valves

1.0 Description. This work shall consist of installing gate valves on the water main at locations indicated on the plans. Work shall include all fittings, testing and disinfection requirements necessary to complete the installation.

2.0 Material. All material shall be in accordance with City of Lee's Summit standard plans (8x11 P) and specifications per Section 3900 – Water Mains (WATER LINES).

3.0 Construction Requirements. All construction requirements shall be in accordance with City of Lee's Summit standard plans (8x11 P) and construction and installation specifications per Section 3900 – Water Mains (WATER LINES).

4.0 Method of Measurement. Measurement will be made per each gate valve.

5.0 Basis of Payment. Payment for as unit price per each.
Payment for the following bid items made as follows:

Item No.	Description	Unit
6039902	12" Gate Valve	Ea.
6039902	8" Gate Valve	Ea.
6039902	6" Gate Valve	Ea.

YY. Fire Hydrant Assembly

1.0 Description. This work shall consist of installing fire hydrant assemblies at locations indicated on the plans. Work shall include all fittings, testing and disinfection requirements necessary to complete the installation.

2.0 Material. All material shall be in accordance with City of Lee's Summit standard plans (8x11 P) and specifications per Section 3900 – Water Mains (WATER LINES).

3.0 Construction Requirements. All construction requirements shall be in accordance with City of Lee's Summit standard plans (8x11 P) and construction and installation specifications per Section 3900 – Water Mains (WATER LINES).

4.0 Method of Measurement. Measurement will be made per fire hydrant assembly installed.

5.0 Basis of Payment. Payment for as unit price per each fire hydrant assembly.
Payment for the following bid items made as follows:

Item No.	Description	Unit
6039902	Fire hydrant assembly	Ea.

ZZ. Water Mains

1.0 Description. This work shall consist of installing water main at locations indicated on the plans. Work shall include all fittings, testing and disinfection requirements necessary to complete the installation.

2.0 Material. All material shall be in accordance with City of Lee's Summit standard plans (8x11 P) and specifications per Section 3900 – Water Mains (WATER LINES).

3.0 Construction Requirements. All construction requirements shall be in accordance with City of Lee's Summit standard plans (8x11 P) and construction and installation specifications per Section 3900 – Water Mains (WATER LINES).

4.0 Method of Measurement. Measurement of measurement shall be to the nearest linear foot as indicated on the plans.

5.0 Basis of Payment. Payment will be made per linear foot as noted on the plans. Payment for the following bid items made as follows:

Item No.	Description	Unit
6039903	12" Water Main (Including Fittings)	LF
6039903	8" Water Main (Including Fittings)	LF
6039903	6" Water Main (Including Fittings)	LF
6039903	20" Steel Casing	LF

AAA. Sewer Mains

1.0 Description. This work shall consist of installing sewer main at locations indicated on the plans. Work shall include all necessary fittings and testing requirements necessary to complete the installation.

2.0 Material. All material shall be in accordance with City of Lee's Summit standard plans (0_Complete D&C Sanitary Details.pdf) and specifications per Section 3900 – Water Mains (LS Section 3500).

3.0 Construction Requirements. All construction requirements shall be in accordance with City of Lee's Summit standard plans (0_Complete D&C Sanitary Details.pdf) and construction and installation specifications per Section 3900 – Water Mains (LS Section 3500).

4.0 Method of Measurement. Measurement of measurement shall be to the nearest linear foot as indicated on the plans.

5.0 Basis of Payment. Payment will be made per linear foot as noted on the plans. Payment for the following bid items made as follows:

Item No.	Description	Unit
6039923	8" PVC Sewer Pipe	LF
6039923	20" Steel Casing	LF

BBB. Fiber Distribution Unit (FDU)

1.0 Description. Fiber distribution unit (FDU) shall be removed by Contractor and relocated and re-installed by the Contractor at the locations shown on the Plans. It is anticipated that the FDU located at US-50 and Bayberry Lane shall remain in place, but connected accordingly.

The section includes material and installation for FDU.

2.0 Special Specification. The FDU shall act as the demarcation point between the fiber optic cable via the fiber pigtail from the splice closure and the terminal equipment via the fiber optic patch cords. The Contractor shall re-connect the 6 port ST connector panels and pre-termintated pigtails to be spliced to the backbone fiber. The approved type optical connectors on the one end of each of the pigtails shall be ST and screw into a sleeve securely mounted to a patch panel within the FDU enclosure. The maximum optical loss across the connection shall not exceed 0.4 dB.

The FDU housings relocated by Contractor shall be rack mounted, as shown on the plans. The FDU shall accept a minimum of forty-eight (48) fiber terminations. The cabinet shall have fiber optic cable entrances with cable sheath strain relief, leading to the FDU.

3.0 Basis for Payment. Payment for the above items shall include all costs necessary to complete the work including installation, incidentals, and testing of a fully functional system.

Item No.	Description	Unit
9109902	REMOVE AND RESET 48 PORT FIBER DISTRIBUTION UNIT	EA

CCC. Ethernet Switch

1.0 Description. This work shall consist of re-installing ethernet switches at locations indicated in the plans.

2.0 Ethernet Switch. The Ethernet Switches and power supplies shall be removed, relocated and re-installed by the Contractor. Contractor shall furnish and install CAT6 cable as required. The fiber optic jumpers shall be re-located and re-utilized to complete connections to fiber patch panel and installed hardware. All necessary items for complete and working system whether shown or indicated shall be included with this item.

The Ethernet switches and power supplies shall be rack mounted on the inside wall of the Splice cabinet, as directed by Engineer. Contractor shall furnish and install rack as required for mounting.

Coordination with MoDOT staff is necessary for configuration of the Ethernet switches.

3.0 Basis for Payment. This item shall be measured as each Ethernet Switch installed complete in place.

3.1 The contract unit price for removed, relocated, and re-installed Ethernet Switch in Cabinet shall include full compensation for re-installing the Ethernet Switch, and for furnishing all labor, materials, appropriate connectors, fiber optic jumpers, tools, equipment and incidentals, and for doing all the work involved in installing Ethernet Switch, complete in place, as shown on the plans and specified in the Standard Specifications and these Special Provisions, and directed by the Engineer. No additional compensation shall be allowed.

Item No.	Description	Unit
9109902	REMOVE AND RESET ETHERNET SWITCH	EA

DDD. Fiber Optic Cable and Equipment

1.0 Description. All fiber optic cable required for this project shall be all dielectric, gel filled, duct type, with loose buffer tubes and shall conform to these special provisions. The fiber optic cables shall connect the ITS field. The Single Mode Fiber Optic (SMFO) fibers shall contain single mode (SM) dual-window (1310 nm and 1550 nm) fibers.

The optical fibers shall be contained within loose buffer tubes. The loose buffer tubes shall be stranded around an all dielectric central member. Aramid yarn and/or fiberglass shall be used as a primary strength member, and a polyethylene outside jacket shall provide for overall protection.

Fiber optic cables shall be provided and installed as shown in the plans and specifications. The fiber optic cable shall be installed with a minimum number of splices. No additional splice vault locations will be permitted. The contractor shall utilize the maximum cable lengths possible, and avoid additional splices in the backbone 24 count cable and 48 count cable.

All fiber optic cable on this project shall be from the same manufacturer, who is regularly engaged in the production of this material. If availability and delivery schedule does not allow fiber optic cable to be from the same manufacturer, multiple manufacturers may be used if approved by the engineer.

All fiber optic cable shall be installed with a tracer wire in the same conduit occupied by the fiber cable. Install a blue jacketed No. 14 AWG (2.5 mm^2) stranded copper wire for locating purposes in the conduit. The tracer wire shall be pulled into all cabinets and device bases. Inside cabinets or device bases the tracer wire shall be terminated on a protected terminal that is isolated from the cabinet or base ground and labeled "TRACER". Tracer wire shall be continuously connected along the fiber so the tracer wire only has to be toned and energized at the cabinet or equipment location. When continuous runs of tracer wire cannot be installed, connectors approved by the engineer shall be used in a splice vault to electrically bond the tracer wires. These connectors shall be insulated. Tracer wires ending in a splice vault shall be capped and labeled "TRACER". One loop of slack tracer wire shall be installed in each pull box, but additional slack is not required inside cabinets or equipment bases.

The fiber optic cable shall be qualified as compliant with Chapter XVII, Title 7, Part 1755.900 of the Code of Federal Regulations, "REA specification for filled fiber optic cables".

Each buffer tube shall be terminated in its own splice tray and each tray shall contain a maximum of 12 splices. Pictures must be taken of each fiber splice enclosure when all work has been completed and that documentation must be submitted to the engineer along with

OTDR traces. The first splice location must be inspected and approved by the engineer and Scout technical staff before the contractor continues with fiber optic cable splicing.

1.1 Material. Each optical fiber shall be made of glass that is manufactured by Corning or licensed by Corning and consist of a doped silica core surrounded by concentric silica cladding. All fibers in the buffer tube shall be usable fibers, and shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of these specifications.

The individual fiber coating shall be a dual layered, UV cured acrylate. The coating shall be mechanically or chemically strippable without damaging the fiber.

The cable shall comply with the optical and mechanical requirements over an operating temperature range of -40° F. to +158° F. The cable shall be tested in accordance with EIA-455-3A (FOTP-3), "Procedure to Measure Temperature Cycling Effects on Optical Fiber, Optical Cable, and Other Passive Fiber Optic Components." The attenuation shall be measured at 1310 nm and 1550 nm.

Fibers within the finished cable shall meet the requirements in the following table:

Fiber Characteristics Table

Parameters	Value
Mode	Single
Type	Step Index
Core diameter	8.3 µm (nominal)
Cladding diameter	125 µm ±1.0 µm
Core to Cladding Offset	≤ 0.6 µm
Coating Diameter	245 µm ±10 µm
Cladding Non-circularity defined as: [1-(min. cladding dia ÷max. cladding dia.)]x100	≤ 1.0%
Proof/Tensile Test	100 kpsi, min.
Attenuation @ 1,310 nm	≤ 0.40 dB/km
Attenuation @ 1,550 nm	≤ 0.35 dB/km
Attenuation at the Water Peak	≤ 2.1 dB/km @ 1383 ±3nm
Chromatic Dispersion:	
Zero Dispersion Wavelength	1301.5 to 1321.5 nm
Zero Dispersion Slope at zero dispersion wavelength	≤ 0.092 ps/(nm^2*km)
Maximum Dispersion:	3.3 ps/(nm*km) for 1285 - 1330 nm <18 ps/(nm*km) for 1550 nm
Cut-Off Wavelength	<1260 nm
Mode Field Diameter (Petermann II)	9.3 ±0.5 µm at 1310 nm 10.5 ±1.0 µm at 1550 nm

1.2 Color Coding. Optical fibers shall be distinguishable from others in the same buffer tube by means of color coding according to the following:

1. Blue (BL)	5. Slate (SL)	9. Yellow (YL)
2. Orange (OR)	6. White (WT)	10. Violet (VL)
3. Green (GR)	7. Red (RD)	11. Rose (RS)
4. Brown (BR)	8. Black (BK)	12. Aqua (AQ)

The colors shall be targeted in accordance with the Munsell color shades and shall meet EIA/TIA-598A "Color Coding of Fiber Optic Cables." The color formulation shall be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. It shall not fade or smear or be susceptible to migration and it shall not affect the transmission characteristics of the optical fibers and shall not cause fibers to stick together.

1.3 Cable Construction. The fiber optic cable shall consist of, but not be limited to, the following components:

A. Buffer tubes
B. Central member
C. Filler rods if needed
D. Stranding
E. Core and cable flooding
F. Tensile strength member
G. Ripcord
H. Outer jacket
I. Glass fibers as described above

1.3.1 Buffer Tubes. Loose buffer tubes shall provide clearance between the fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers shall be loose or suspended within the tubes and shall not adhere to the inside of the tube.

The loose buffer tubes shall be extruded from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. The material shall be tough and abrasion resistant to provide mechanical and environmental protection of the fibers, yet designed to permit safe intentional "scoring" and breakout, without damaging or degrading the internal fibers.

Buffer tube filling compound shall be a homogenous hydrocarbon-based gel with anti-oxidant additives. It shall prevent water intrusion and migration. The filling compound shall be non-toxic and dermatologically safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hydroscopic and electrically non-conductive. The filling compound shall be free from dirt and foreign matter and shall be readily removable with conventional nontoxic solvents.

Buffer tubes shall be stranded around a central member by a method, such as the reverse oscillation stranding process that will prevent stress on the fibers when the cable jacket is placed under strain.

Each buffer tube shall be distinguishable from other buffer tubes in the cable by using the same color coding as specified above for fibers.

1.3.2 Central Member. The central member, which functions as an anti-buckling element, shall be a glass reinforced plastic rod with similar expansion and contraction characteristics as the optical fibers and buffer tubes. To provide the proper spacing between buffer tubes during

stranding, a symmetrical linear overcoat of polyethylene may be applied to the central member to achieve the optimum diameter.

1.3.3 Filler rods. Fillers may be included in the cable cross-section. Filler rods shall be solid medium or high-density polyethylene. The diameter of filler rods shall be the same as the outer diameter of the buffer tubes.

1.3.4 Stranding. Completed buffer tubes shall be stranded around the overcoated central member using stranding methods, lay lengths and positioning such that the cable shall meet mechanical, environmental and performance specifications. A polyester binding shall be applied over the stranded buffer tubes to hold them in place. Binders shall be applied with sufficient tension to secure the buffer tubes to the central member without crushing the buffer tubes. The binders shall be non-hydroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.

1.3.5 Core and Cable Flooding. The cable core interstices shall be filled with a polyolefin based compound to prevent water ingress and migration. The flooding compound shall be homogeneous, non-hydroscopic, electrically non-conductive, and non-nutritive to fungus. The compound shall also be nontoxic, dermatologically safe and compatible with all other cable components.

1.3.6 Tensile Strength Member. Tensile strength shall be provided by high tensile strength aramid yarns and/or fiberglass which shall be helically stranded evenly around the cable core and shall not adhere to other cable components.

1.3.7 Ripcord. The cable shall contain at least one ripcord under the jacket for easy sheath removal.

1.3.8 Outer jacket. The jacket shall be free of holes, splits, and blisters and shall be medium or high density polyethylene (PE), or medium density cross-linked polyethylene with minimum nominal jacket thickness of 37 mils. Jacketing material shall be applied directly over the tensile strength members and flooding compound and shall not adhere to the aramid yarn strength material. The polyethylene shall contain carbon black to provide ultraviolet light protection and shall not promote the growth of fungus. The jacket or sheath shall be marked with the manufacturer's name, the words "Optical Cable" or "Fiber Optic Cable", the number of fibers, "SM" or "Single Mode", year of manufacture, and sequential measurement markings every 3 feet. The actual length of the cable shall be within 1 percent of the length marking. The marking shall be in a contrasting color to the cable jacket (Yellow or White are preferred). The height of the marking shall be approximately 2.5 mm (.098 inch).

1.4 General Cable Performance Specifications. The fiber optic cable shall withstand water penetration when tested with a one-meter static head or equivalent continuous pressure applied at one end of a one-meter length of filled cable for one hour. No water shall leak through the open cable end. Testing shall be done in accordance with EIA-455-82A (FOTP-82), "Fluid Penetration Test for Fluid-Blocked Fiber Optic Cable."

A representative sample of cable shall be tested in accordance with EIA-455-81B (FOTP-81), "Compound Flow (Drip) Test for Filled Fiber Optic Cable". No preconditioning period shall be conducted. The cable shall exhibit no flow (drip or leak) at 176° F as defined in the test method.

Crush resistance of the finished fiber optic cables shall be 220 N/cm applied uniformly over the length of the cable without showing evidence of cracking or splitting when tested in accordance with EIA-455-41A (FOTP-41), "Compressive Loading Resistance of Fiber Optic Cables". The average increase in attenuation for the fibers shall be ≤ 0.10 dB/km at 1550 nm for a cable subjected to this load. The cable shall not exhibit any measurable increase in attenuation after removal of load. Testing shall be in accordance with EIA-455-41A (FOTP-41), except that the load shall be applied at the rate of 3 mm to 20 mm per minute and maintained for 10 minutes.

The cable shall withstand 25 cycles of mechanical flexing at a rate of 30 ±1 cycles/minute. The average increase in attenuation for the fibers shall be ≤ 0.20 dB/km at 1550 nm at the completion of the test. Outer cable jacket cracking or splitting observed under 10x magnification shall constitute failure. The test shall be conducted in accordance with EIA-455-104A (FOTP-104), "Fiber Optic Cable Cyclic Flexing Test," with the sheave diameter a maximum of 20 times the outside diameter of the cable. The cable shall be tested in accordance with Test Conditions I and II of (FOTP-104). Impact testing shall be conducted in accordance with EIA-455-25B (FOTP-25) "Impact Testing of Fiber Optic Cables and Cable Assemblies." The cable shall withstand 20 impact cycles. The average increase in attenuation for the fibers shall be ≤ 0.20 dB/km at 1550 nm. The cable jacket shall not exhibit evidence of cracking or splitting.

The finished cable shall withstand a tensile load of 2669 N (600 lbs.) without exhibiting an average increase in attenuation of greater than 0.20 dB. The test shall be conducted in accordance with EIA-455-33A (FOTP-33), "Fiber Optic Cable Tensile Loading and Bending Test." The load shall be applied for one-half hour in Test Condition II of the EIA-455-33A (FOTP-33) procedure.

1.5 Packaging and Shipping Requirements. Documentation of compliance to the required specifications shall be provided to the engineer prior to ordering the material.

Attention is directed to "Fiber Optic Testing," elsewhere in these special provisions.

The completed cable shall be packaged for shipment on reels. The cable shall be wrapped in weather and temperature resistant covering. Both ends of the cable shall be sealed to prevent the ingress of moisture.

Each end of the cable shall be securely fastened to the reel to prevent the cable from coming loose during transit. Six feet of cable length on each end of the cable shall be accessible for testing. The complete outer jacket marking shall be visible on this six feet of cable length.

Each cable reel shall have a durable weatherproof label or tag showing the manufacturer's name, the cable type, the actual length of cable on the reel, the contractor's name, the contract number, and the reel number. A shipping record shall also be included in a weatherproof envelope showing the above information and also include the date of manufacture, cable characteristics (size, attenuation, bandwidth, etc.), factory test results, cable identification number and any other pertinent information.

The minimum hub diameter of the reel shall be at least thirty times the diameter of the cable. The F/O cable shall be in one continuous length per reel with no factory splices in the fiber. Each reel shall be marked to indicate the direction the reel should be rolled to prevent loosening of the cable.

Installation procedures and technical support information shall be furnished at the time of delivery.

2.0 Cable Installation. The contractor shall submit for review the planned procedures for pulling and or blowing the fiber optic cable to the engineer for review and approval at least 20 working days prior to installing cables. Mechanical aids may be used to assist cable installation.

If cable is pulled a tension measuring device or break away swivel shall be incorporated into the pulling line and attached to the cable, to ensure that the tension does not exceed 2669N (600lb). The cable grips for installing fiber optic cable shall have a ball bearing swivel attached to prevent the cable from twisting during installation. Pulling of fiber optic cable shall be with even tension. F/O cable ends shall be properly sealed during installation.

The break away tension limiting device shall be set to release at or below the manufacturer's maximum recommended pulling tension. One break away tension limiting device is required for each cable being pulled.

During cable installation, the bend radius shall be maintained at a minimum of twenty times the outside diameter of the cable. The cable shall not be stressed beyond the minimum bend radius at any time during installation and handling.

Fiber optic cable shall be installed using a cable pulling lubricant recommended by the fiber optic cable manufacturer and/or the inner duct or conduit manufacturer and a non-abrasive pull tape conforming to the provisions described under "Conduit" elsewhere in these special provisions. When lubricant is used, lubricant shall cover the fiber optic cable for entire pull.

Fiber optic cable shall be installed without splices except where specifically allowed on the plans or described in these special provisions. The fiber optic cables shall be spliced only at splice vault/handholes associated with bandwidth managers, aggregators, CCTV camera sites, DMS sites, radar detector sites or other VDS sites, unless shown otherwise in the plans. The engineer may allow additional splices between these specified locations. The slack shall be divided equally on each side of the splice enclosure.

Six feet of slack fiber optic cable shall be provided in all splice vaults/handholes that do not contain splices unless noted otherwise on the plans. At splice vaults/handholes that contain splices 50 feet of slack fiber shall be provided on each side of the splice enclosure. At cabinet assemblies, 50 feet of slack fiber shall be stored in the adjacent splice vaults/handholes and 10 feet stored within the cabinet and fiber distribution unit.

The contractor shall record sequential markings at all splice vault/handholes. The contractor shall after pulling, cut off and discard the first 10 feet of the fiber optic cable. This 10 feet has not been included in the conduit and cable routing tables on the plan sheets and shall be considered incidental to other items of work. The contractor shall account for this length. The remaining cable length in the splice vault/handhole must meet the slack cable length requirements.

Following installation of the cable in conduit, all conduit entrances in cabinet assemblies, pull boxes and splice vault/handholes shall be sealed with duct plugs and sealing compound to prevent the ingress of moisture, foreign materials and rodents. No residual tension should remain on the cable after installation, except the weight of the cable.

2.1 Splicing. The contractor shall submit a splicing plan for the engineer's review and approval. Approval of the splicing plan shall occur prior to any installation of fiber optic cable. The contractor's splicing plan shall include all information shown in the splicing diagrams, included in the plans, and be in a similar format.

The contractor shall cut only the fibers to be terminated/spliced at a location according to the design plans. Unused fibers or fibers that are continuous through a splice location are to be coiled, labeled and left loose in the tray.

Optical fibers shall be spliced using the fusion type method. Alignment shall be via fiber cores and not via fiber diameters. Mechanical splices shall not be permitted.

Splice losses shall average less than or equal to 0.05 dB/splice between any two optical ports and shall not exceed 0.10 dB for any splice.

The completed splices shall be placed in a splice tray. The splice tray shall then be placed in the splice enclosure.

Termination splices shall join the fibers in the fiber optic cable span to the fibers in pigtails. The termination splices shall be placed in a splice tray and the splice tray(s) shall then be placed in the fiber distribution unit (FDU). The individual fibers shall be looped a minimum of one full turn within the splice tray to avoid micro bending. A 51 mm (2 inches) minimum bend radius shall be maintained during installation and after placing in the optical fiber splice tray. Each fiber shall be individually restrained in a splice tray. The optical fibers in buffer tubes and the placement of the optical fibers in the splice tray shall be such that there is no discernable tensile force on the optical fiber.

All splices shall be protected with a thermal shrink sleeve.

All fiber cables shall be labeled in the cabinet assemblies and splice vault/handholes with permanent vinyl markers. Labels shall identify the destination cabinet assembly number or splice vault/handhole number of the fiber. Pigtail ends shall also be labeled to identify the destination cabinet assembly number or splice vault/handhole number of the fiber.

3.0 Passive Cable Assemblies and Components. The fiber optic cable assemblies and components shall be compatible components, designed for the purpose intended, and manufactured by a company regularly engaged in the production of material for the fiber optic industry. All components or assemblies shall be best quality, non-corroding, with a design life of at least 20 years. All components or assemblies of the same type shall be from the same manufacturer.

3.1 General. Fiber optic cable terminations shall include pigtails and jumpers. Breakout cables shall comply with the specifications for pigtails.

All components shall be the size and type required for the specified fiber.

All fiber optic cable on this project shall be from the same manufacturer, who is regularly engaged in the production of this material.

3.2 Fiber Optic Splice Enclosures. The fiber optic splice enclosure (also referred to as simply "closures") shall consist of an outer enclosure, an inner enclosure and splice trays, and shall conform to the following special provisions.

The fiber optic splice enclosure shall be designed for a temperature range of -40° F. to +158° F. The fiber optic splice enclosure shall be designed for splice vault/handhole applications. The splice enclosure shall and have enough room for up to 144 splices and shall have a length of 28 inches and a diameter of 6.6 inches. The enclosures shall be designed for cable entrance into the end of the enclosure.

All materials in the enclosures shall be non-reactive and shall not support galvanic cell action. The outer enclosure shall be compatible with the other enclosure components, the inner enclosure, splice trays, and cables.

The outer enclosure shall protect the splices from mechanical damage, shall provide strain relief for the cable, and shall be resistant to salt corrosion. The outer enclosure shall be waterproof, and re-enterable, corrosion resistant, rodent proof, and air tight. The outer enclosure shall be flash-tested at 103 kPa. (15 psi.). The inner enclosure shall be of metallic construction.

The inner enclosure shall be compatible with the outer enclosure and the splice trays and shall allow access to and removal of individual splice trays.

The splice trays shall be constructed of rigid plastic or metal.

Adequate splice trays shall be provided to splice all fibers entering the enclosure, plus 12 additional fibers.

The contractor shall install the fiber optic splice enclosure in the splice vault/handholes where splicing is required. The fiber optic splice enclosures shall be securely fastened to the splice vault/handhole using standard hardware. The contractor shall provide all mounting hardware required to securely mount the enclosures to the splice vault/handhole.

The fiber optic splice enclosure shall be mounted in a manner that allows the cables to enter at the end of the enclosure without exceeding the minimum bending radius specification for any of the cables contained within the splice vault/handhole. A vertical mounting bracket made for the splice enclosure shall be installed and the splice enclosure shall be securely strapped to that mounting bracket.

Upon completion of the splices, the splice trays shall be secured to the inner enclosure. The enclosure shall be sealed using a procedure recommended by the manufacturer that will provide a waterproof environment for the splices.

Care shall be taken at the cable entry points to ensure a tight waterproof seal is made which will not leak upon aging. It is acceptable to have multiple pigtail-fibers enter the fiber optic splice enclosure through one hole as long as all spaces between the cables are adequately sealed.

3.3 Fiber Optic Cable Assemblies. Cable assemblies (jumpers and pigtails) shall be products of the same manufacturer. The cable used for cable assemblies shall be made of fiber meeting the performance requirements of these special provisions for the fiber optic cable being connected, except that the operating temperature shall be modified to -4° F. to +158° F. Manufacturer's attenuation test results shall be provided for all cable assemblies.

3.3.1 Pigtails. Pigtails shall be of simplex (one fiber) construction, in 900 micrometer tight buffer form, surrounded by aramid yarn for strength, with a connector on one end. The outer jacket shall be yellow PVC with a nominal diameter of 3 mm (.118 inch), marked with the manufacturer's identification information. All pigtails shall be at least one meter in length. Pigtails installed in conduit shall follow the installation procedures outlined for fiber optic cables, except that the pulling tension shall not exceed 890 N (200 lb.). Pigtail connectors shall be factory terminated. Field terminations shall not be permitted.

3.3.2 Jumpers. Jumpers may be of simplex or duplex design. Duplex jumpers shall be of duplex round cable construction and shall not have zip cord (Siamese) construction. All jumpers shall be at least 2 meters (6.5 feet) in length, sufficient to avoid stress and allow orderly routing. Jumpers shall have connectors on both ends.

The outer jacket of duplex jumpers shall be yellow. The two inner simplex jackets shall be contrasting colors to provide easy visual identification for polarity. Jumper connectors shall be factory terminated. Field terminations shall not be permitted.

3.3.3 Connectors. Connectors shall be of the type shown on the plans. No index-matching fluids, gels or anti-reflection coating shall be applied to the end of the fiber. The connector operating temperature range shall be -4°F to +158°F. Insertion loss shall not exceed 0.4 dB and the return reflection loss shall be at least 35 dB. Connection durability shall be less than a 0.2 dB change per 500 mating cycles per EIA-455-21A (FOTP-21). All terminations shall provide a minimum 222 N (50 lb.) pull out strength. The installed connector loss shall be less than 0.9 dB. Connectors shall have a yellow color body or boot.

All connectors installed on pigtails and jumpers shall be factory-installed and tested. Factory test results shall be documented and submitted to the engineer prior to installing any connectors. There shall be no installation of connectors in the field.
All unmated connectors shall have protective caps installed.

3.4 Fiber Testing. The contractor shall test and document any fibers that are spliced and terminated at both ends. The contractor shall complete power meter and OTDR traces in both directions and document that those results meet the loss requirements listed above. The contractor shall complete a summary worksheet for each test and also provide the actual fiber trace for each test. The fiber trace shall be formatted and scaled so losses can be recognized when visually reviewing the fiber trace report. The contractor shall submit a proposed testing summary worksheet to the Engineer for review before any fiber splicing work begins on the project.

4.0 Method of Measurement. Measurement of fiber optic cable and tracer wire will be made to the nearest linear foot as shown on the plans. Contract quantities will be verified using the documented fiber sheath readings in and out of every fiber pull box and splice enclosure. Fiber optic splicing, testing and documentation is considered subsidiary to the fiber optic cable line item.

5.0 Basis of Payment. Accepted fiber optic cable will be paid for at the unit price for each of the pay items included in the contract. No direct payment will be made for pigtails, jumpers, or connectors, fiber optic splice closure, fiber optic distribution units, fiber distribution frames or any other incidental items necessary to complete the fiber splicing work unless specifically provided as a pay item in the contract.

Item No.	Description	Unit
9109903	Fiber Optic Cable, 24-Strand, 24 Single Mode	LF
9109903	Fiber Optic Cable, 48-Strand, 48 Single Mode	LF
9109903	#14 Tracer Wire	LF

EEE. KC Scout Vault

1.0 Description. All KC Scout vaults that contain fiber optic splices (splice vaults) in this contract shall be circular and constructed and installed as detailed on the plans or as directed by the engineer. These circular pull boxes shall be constructed of one piece polymer concrete and shall be referred to as splice vaults. The splice vault shall have a minimum depth of 48" and come with a minimum of four stainless steel hooks to be used for hanging the fiber optic cable. For those locations where fiber and conduit is routing through the box, the preformed Class 2 Pull Box shall be used.

Covers on all KC Scout splice vaults shall be embossed with "KC SCOUT ITS" unless otherwise directed by the engineer.

1.1 Conduit Openings. Conduit shall enter the splice vault through the side of the box. If it is necessary to increase the excavation depth and extend the pull box or splice vault, no direct payment will be made. The holes shall be round and no more than 1/2 inch larger than the conduit and shall be made as recommended by the manufacturer. All conduit entrances into pull boxes shall be sealed with an expandable foam sealer around the conduits to prevent the entering of foreign material into the pull boxes. .

1.2 Excavation and Backfilling. The excavated opening outside pull boxes or splice vaults shall be wide enough to allow compaction of the backfill material. Cinders, broken concrete, broken rock or other hard or undesirable material shall not be used for backfilling. The backfill material shall be placed in layers not to exceed 6 inches deep and each layer shall be thoroughly compacted before the next layer is placed. All disturbed areas shall be seeded and mulched in accordance with Sec 802 and 805. No direct pay will be made for seeding and mulching disturbed areas.

Removed concrete and soil shall become the property of the contractor and shall be disposed of off the right of way. No direct pay will be made for removal of paved surfaces or the disposition of excess material off of the right of way.

1.3 Drains. All ITS pull boxes will be constructed with a stone drain that is 2' deeper than the bottom of the pull box. No direct pay will be made for stone drains.

2.0 Method of Measurement. Measurement all pull boxes shall be made per each structure. All concrete pads, special covers, and grounding requirements for splice locations shall be included in the unit price for Fiber Splice Vault.

No additional pay will be made for installation of splice vault in rock.

3.0 Basis of Payment. The pay items for Splice Vaults are:

Item No.	Description	Unit
9109902	KC Scout Fiber Optic Splice Vault	EA

FFF. Radar Cable

1.0 Description. This work shall consist of furnishing and installing radar detection cables for use in traffic signal systems, in accordance with these provisions, the plans, and as directed by the Engineer.

2.0 Materials. The radar detection cable shall meet the following minimum specifications, or as required by manufacturer:

- Shielded, weatherproof, and UV-resistant cable suitable for outdoor installation.
- Compatible with the specified radar detection system, including connectors and power/data transmission requirements.
- Rated for a minimum operating temperature range of -40°F to 158°F (-40°C to 70°C).
- Designed for low signal attenuation over the maximum distance specified in the project plans.

3.0 Construction Requirements.

3.1 Installation

The radar detection cable shall be installed in conduits as shown in the project plans. The cable shall be pulled using appropriate techniques to prevent damage to the insulation or internal conductors. No splices will be permitted unless explicitly approved by the Engineer and performed in a weatherproof enclosure. Cable lengths, routing, and termination points shall comply with the project plans and manufacturer's installation guidelines.

3.2 Connections

Connections between the radar detection cable and the radar detection unit shall be made using manufacturer-approved connectors and methods. All connections must be weatherproof and securely fastened to prevent moisture ingress and signal degradation.

3.3 Testing

After installation, the radar detection cable shall be tested to ensure signal integrity and compatibility with the radar detection system. Any deficiencies shall be corrected at the Contractor's expense. The Contractor shall coordinate with the Engineer to demonstrate the proper operation of the radar detection system.

3.0 Basis of Payment. Radar detection cable will be measured per linear foot of cable installed and accepted by the Engineer. Payment for radar detection cable will be made at the contract unit price per linear foot, which shall include all labor, materials, equipment, and incidentals required to complete the work.

Bid Item No.	Description	Units
910-99.03	Radar Cable	Lin. Ft.

GGG. SCOUT ITS CONDUITS

1.0 General. These plans depict conduit routing in schematic form only. The contractor shall determine final routing based on actual field conditions prior to construction at each site, including utility locator service markings, to assure no conflicts with existing utilities, including

State owned underground lighting, ITS, traffic signal, or cathodic protection facilities. The contractor shall field review necessary routing of conduit and location of pull boxes and splice vaults prior to submittal of bid to determine the types and extent of incidental removal, relocation and replacement items to include in the price of conduit, pull boxes, and splice vaults. Section 902.16 shall apply except as modified herein.

Before preparing a bid, the contractor shall visit the site of the work and make his own determination of the amount of rock, unclassified, or other materials that might be encountered in his trenching or pushing operations. No additional pay will be made for differences in material encountered.

1.1 Material. All material shall conform specifically as follows:

Item	Section
Electrical Conduit	1060
Junction Boxes	1062

All non-metallic conduits shall be color-coded yellow for electrical cables, and powder blue for fiber optic cable. Any conduit on structure shall be galvanized rigid metallic conduit.

All HDPE conduit and materials shall have a minimum SDR of 11 and be compliant with ASTM D3035.

All conduit splices shall be made with conduit couplers in accordance with conduit manufacturer recommendations. Coupler materials to be used for conduit splices shall be submitted to the engineer for review and approval along with the manufacturer's recommendations and installation procedures. All conduit couplers are incidental to the linear feet of conduit being installed.

HDPE SDR11 conduit shall be required for all trenched or bored conduits.

Trenching and Pushing depths and installation shall be constructed with the following minimum covers:

Conduit under Paved areas including Roadway, Shoulders, Paved Medians and Sidewalks:

Pushed Conduit - minimum 42 inches below top of paved areas.

Conduit under Non-Paved Areas:

Conduit in Trench - minimum 30 inches of cover

Conduit shall slope to a pull box at a minimum rate of 0.5 percent, unless otherwise shown on plans. A change in direction of conduit shall be accomplished by bending the conduit uniformly to a radius that will fit the location or by the use of standard bends. The minimum bending radius of all conduits shall be the greater of the following: 20 times the diameter of the fiber optic cable or six times the internal diameter of the conduit.

Open ends of conduit placed for future use shall be capped or plugged with water tight mechanical terminations. Pull ropes shall be placed in all empty conduits. Pull ropes shall be polypropylene with a minimum tensile strength of 1,250 lbs.

All conduit ends shall be deburred before installing any cabling, including fiber optic cable and power cable.

If approved by the engineer, conduit may be installed by trenching, plowing, pushing or directional boring; however, payment will be made by the method specified in the contract for that conduit.

1.2 Conduit in Trench. Trenches shall be excavated to the width and depth necessary for conduit installation. Material which might cause mechanical damage to the conduit shall not be used for backfilling below an elevation 6 inches above the conduit. The bottom of the trench shall be free of such material before the conduit is placed. No conduit shall be placed without approval of the trench by the engineer. All trenches shall be backfilled as soon as practicable after installation of conduit. Backfill material shall be deposited in the trench in layers not exceeding 6 inches deep.

1.2.1 In lieu of trenching, conduits may be installed by plowing. When installation is accomplished by plowing, it shall be done with a vibratory type plow which will place conduits at the minimum depths shown above and recompact the soil over the installation approximately to original in-place density. The contractor shall not plow conduit in areas of rock.

1.2.2 Orange burial tape imprinted with “CAUTION-BURIED FIBER OPTIC CABLE BELOW” shall be installed at approximately 1/3 to1/2 of the depth of cover over any trenched conduits. The orange burial tape shall be color durable, and chemically resistant. Where excavation is made across parkways or driveways, sod, topsoil and crushed stone or gravel shall be replaced as soon as practicable to its former condition. Concrete or bituminous surfaces and stabilized bases shall be restored to their former condition. The entire area involved shall be left in a neat, presentable condition.

1.3 Pushed Conduit. If pushed conduit is specified or shown on the plans, the conduit shall be installed without disturbing the existing surface. Pushed conduit may be placed by jacking, pushing, boring or other approved means.

1.4 Power Service Conduit. Conduit between the contractor installed power supply pedestal and the utility service point shall meet the requirements of the specific electric utility company. This utility conduit must be installed by the contractor according to the utility company’s requirements and the cost of this conduit is incidental to the cost of the Type 2 power supply.

2.0 Method of Measurement. Measurement of conduit in trench and pushed conduit will be made to the nearest linear foot as shown on the plans. Contract quantities will be adjusted using the documented fiber cable sheath readings along all conduit runs. If the contractor decides to bore conduit runs instead of trenching, then those additional boring lengths will only be measured and paid as trenched conduit.

No additional pay will be made for trenching or pushing operations in rock, unclassified, or other materials.

No additional pay will be made for conduit couplers or conduit splicing. Couplers used for conduit splicing are incidental to the linear feet of conduit installed.

Contractor shall not damage paved drainage ditches or unmarked pavement underdrains. Contractor has the option to bore under or trench around concrete drainage ditches or

underdrains. No additional pay will be made for routing around paved drainage ditches or underdrains. Any damage to paved drainage ditches or underdrains due to contractor's operations shall be replaced at contractor's expense.

3.0 Basis of Payment. The accepted conduit system will be paid for at the unit price for each of the pay items included in the contract. No direct payment will be made for any incidental items necessary to complete the work unless specifically provided as a pay item in the contract.

4.0 Conduit shall only be paid as Pushed Conduit for only the length that is specified in the plans. Conduit couplers that are utilized to connect pushed conduit to trenched conduit shall be incidental to the linear feet of conduit installed.

Item No.	Type	Item Description
910-52.00	LF	Conduit, 2 in. Rigid, in Trench
902-72.00(1)	LF	Conduit, 2 in. Pushed

HHH. Scout ITS Pull Boxes

1.0 Description. All ITS pull boxes that contain fiber optic cable (splice vaults) in this contract shall be circular and constructed and installed as detailed on the plans or as directed by the engineer. These circular pull boxes shall be constructed of one piece polymer concrete and shall be referred to as splice vaults. The splice vault shall have a minimum depth of 48" and come with a minimum of four stainless steel hooks to be used for hanging the fiber optic cable. The installation of all pull boxes shall conform to the locations, lines, grades, and details shown on the plans. All pull boxes shall be surrounded by a concrete pad and shall withstand a wheel load of 9,000 kg. Each pull box shall be equipped with a bolt down cover of the same material. All fiber and power pull boxes shall include a protective concrete pad around each pull box according to the details provided in the plans. Concrete for the pad shall be Class B, or a commercial mixture meeting the requirements of Sec 501. The concrete pad for the Class 2 Pull Box should extend for 10" around the entire outside of the box perimeter with a 6-inch minimum concrete depth. The top surface edges of all pull boxes and splice vaults shall be flush with surfaced areas and earth or sodded areas. For those locations where only power cable has been installed, the preformed Class 2 Pull Box shall be used.

Covers on pull boxes shown on the plans that contain 480-volt circuits shall be embossed with "CAUTION-HIGH VOLTAGE". Covers on all other pull boxes or splice vaults shall be embossed with "KC SCOUT ITS" unless otherwise directed by the engineer.

1.1 Conduit Openings. Conduit shall enter the splice vault through the side of the box. If it is necessary to increase the excavation depth and extend the pull box or splice vault, no direct payment will be made. The holes shall be round and no more than 1/2 inch larger than the conduit and shall be made as recommended by the manufacturer. All conduit entrances into pull boxes shall be sealed with an expandable foam sealer around the conduits to prevent the entering of foreign material into the pull boxes. Since Class 2 power pull boxes are too shallow for conduit openings, the conduit shall enter the pull box from underneath through the rock drain area. The top of the conduit must be installed a minimum of 6" below the bottom edge of the pull box in order to avoid future crushing of the conduit.

1.2 Excavation and Backfilling. The excavated opening outside pull boxes or splice vaults shall be wide enough to allow compaction of the backfill material. Cinders, broken concrete,

broken rock or other hard or undesirable material shall not be used for backfilling. The backfill material shall be placed in layers not to exceed 6 inches deep and each layer shall be thoroughly compacted before the next layer is placed. All disturbed areas shall be seeded and mulched in accordance with Sec 802 and 805. No direct pay will be made for seeding and mulching disturbed areas.

Removed concrete and soil shall become the property of the contractor and shall be disposed of off the right of way. No direct pay will be made for removal of paved surfaces or the disposition of excess material off of the right of way.

1.3 Drains. All ITS pull boxes will be constructed with a stone drain that is 2' deeper than the bottom of the pull box. No direct pay will be made for stone drains.

2.0 Method of Measurement. Measurement all pull boxes shall be made per each structure. All concrete pads, special covers, and grounding requirements for splice locations shall be included in the unit price for Fiber Optic Pull Box or Preformed Class 2 Pull Box.

No additional pay will be made for installation of pull box or splice vault in rock.

3.0 Basis of Payment. The pay items for Pull Boxes and Splice Vaults are:

Item No.	Type	Item Description
910-99.02	EA	Scout Fiber Optic Pull Box
910-99.02	EA	Scout ITS Power Pull Box, Preformed Class 2

III. CCTV Foundations Base

1.0 Description. This work shall consist of furnishing all labor, materials, and equipment necessary to construct a reinforced concrete foundation for a CCTV camera pole, including excavation, formwork, reinforcement, anchor bolts, concrete placement, and backfilling, in accordance with these provisions, the project plans, and as directed by the Engineer

2.0 Materials. Concrete shall meet the Missouri Department of Transportation (MoDOT) standards and specifications.

3.0 Basis of Payment. Concrete foundations for CCTV camera poles will be measured and paid for as each unit installed and accepted by the Engineer. Payment shall include all labor, materials, equipment, and incidentals required to complete the work.

Bid Item No.	Description	Units
910-99.02	CCTV Foundations Base	Each

JJJ. Adaptive Traffic Signal Control System

1.0 DESCRIPTION.

This work shall consist of furnishing, configuring and placing into operation an adaptive traffic signal control system that detects and collects vehicle data and automatically optimizes the changing of traffic signals to instantly adapt to real-time traffic demand. The system shall include the components, adaptive operations software, installation, training, technical support,

and warranty described herein. The system supplier must be able to provide ample evidence, both of a quantitative and qualitative nature, of the adaptive system's successful performance in multiple locations and public transportation agencies' positive experience with the supplier.

1.1 Rhythm Engineering's InSync® system shall be installed at the intersections of Route 291 and Blue Parkway as well as the Route 291 and US-50 interchange intersections.

1.2 The system shall be fully integrated with the existing adaptive traffic signal control system on Route 291 (North).

2.0 SYSTEM COMPONENTS.

2.1 Material Adherence to Quality Standards. Equipment and material shall be of new stock unless the contract provides for relocation of existing units or use of units furnished by others. New equipment and material shall be the product of reputable manufacturers and conform to all relevant requirements including the requirements of Caltrans, ICEA, IMSA, ITE, MUTCD, NEMA, RETMA, NEX and regulations of the National Board of Fire Underwriters, as applicable, and meet the approval of the engineer.

2.2 System Compatibility. Installation of the adaptive traffic signal control system shall not require the replacement of any signal controller cabinets, or modification thereof. The adaptive traffic control system must be compatible with all major makes and models of digital traffic controllers and cabinets, including but not limited to those associated with NEMA, Caltrans, Econolite, Eagle, McCain, Peek, Naztec and other prominent controllers manufactured currently or in the last 15 years. For controllers, this includes compatibility with all prominent types including but not limited to 170, 2070 and NEMA TS-1 and TS-2 styles. For cabinets, this includes compatibility with all prominent types including but not limited to 332 and NEMA styles. The system shall be able to coordinate a minimum of fifty signals regardless of controller types at those intersections to allow for future expansion as desired.

2.3 System Components. The adaptive traffic signal control system shall consist of Internet-protocol (IP) color video cameras enclosed in secure housings, a shelf or rack mounted processing unit, appropriate connection cables, software and licenses for system control via a web browser such as Microsoft Internet Explorer on any authorized computer, and a switch with the capability of independently networking a minimum of four video cameras and the processor.

2.4 Processing Unit (PU).

2.4.1 General. The adaptive traffic signal control system shall include a separate processor unit (PU) mounted in the traffic cabinet that connects to the controller which is running in free mode. The processor shall intercept detection calls, hold and analyze them, and place calls passively to the traffic controller. The PU may be shelf or rack mounted, and shall be modular in design. It shall support on-site configuration using a USB keyboard and VGA monitor, or remote configuration over an IP Network. It shall support on-site backup to restore from a USB memory stick for rapid replacement. The PU shall contain at least 2 USB ports to allow simultaneous connection of peripherals and storage devices.

2.4.2 Communications. Communications from the PU to any computer shall be through RJ45 (8P8C) connector over a regular IP network connection at the installation location or over a network. The computer shall have the capability to download detection data as well as the real-time detection information needed to show detector actuations. The user shall also have the capability of connecting directly to the detection cameras over the IP network and display post-processed and pre-processed color video in the MPEG 4 and Motion JPEG format.

2.4.3 Compatibility with NEMA Standards. The PU shall be available with NEMA TS1/TS2 detector interface. Output levels shall be compatible with the NEMA TS1 and NEMA TS2 Type 2 standards.

2.4.4 Historical Green Time Information. The PU shall store historical information of the green time allotted to each phase and, when the system goes into fog mode or emergency mode, shall compute and deploy optimized signal green times based on historical information.

2.4.5 Free Mode Controller Operations. The PU shall input optimized detector calls into a controller that is running in free mode.

2.4.6 Suspension of Inputs When Needed. The PU shall suspend, for the necessary time, its inputs to a controller when calls of a higher priority are put into the controller by preemption vehicles or the pre-determined parameters set by traffic officials.

2.4.7 Transmission of Information to Adjacent Intersections. The PU shall automatically send all necessary information to system processors at adjacent upstream and downstream intersections in order to facilitate the progression of traffic flow along the arterial. Furthermore, the system shall have a communications failure strategy implemented that maintains near-optimal performance in the event communications between cabinets fails.

2.4.8 Optimization of Traffic Flow.

2.4.8.1 The adaptive traffic control system must be able to assess volume and delay in real time to optimize signalization. The system shall adapt to traffic demand changes immediately, not in future cycles. The PU shall optimize the flow of traffic at both intersections and arterials based on the possible states unbound by traditional cycles. The system must be able to perform adaptive calculations without regularly relying on recalculating offsets to perform adaptive operations.

2.4.8.2 The system shall be able to serve a non-coordinated phase multiple times or no times between serving the coordinated movement. The sequence of phase pairs must be dynamic allowing for serving one phase twice before first serving another phase once. The system must have the ability to adjust green time without a per cycle maximum permitted adjustment.

2.4.8.3 The system shall not require the creation or maintenance of time-of day plans. The system shall not require the agency to develop new timing plans, modify existing timing plans or maintain timing plans for adaptive operation.

2.4.9 Pedestrian Calls. The PU shall incorporate the optional capability to include pedestrian calls in the optimization algorithms.

2.4.10 Time Clock Synchronization. The PU shall keep accurate time using a mechanism that synchronizes the clocks at least weekly.

2.4.11 Time of Day Operation. The PU shall be capable of functioning in a detector mode or adaptive mode selectable by time of day and day of week.

2.4.12 Emergency Vehicle Preemption. Emergency vehicle preemption capability may need to be added to the signalized intersections in the future. The PU shall be capable of functioning in preemptive mode, and shall be capable of altering the normal signal timing and phasing plan during the approach and passage of emergency vehicles.

2.5 Vehicle Detection.

2.5.1 General.

2.5.1.1 The adaptive traffic signal control system must include in its base product standard Internet protocol (IP) cameras which allow for real-time images to be viewed remotely via the Internet using a standard browser, not proprietary software. The video cameras shall be digital cameras and their video feeds shall be available over standard Internet Protocol (IP) connection in Motion JPEG and MPEG 4 formats using the latest IP technology. All camera views shall be obtainable simultaneously without cable swaps. The system shall be capable of displaying post-processed video on a web browser such as Microsoft Internet Explorer. The engineer shall have the option to view one camera at a time, all cameras at an intersection, or some or all of the cameras along an arterial in a single browser window.

2.5.1.2 The video detection system shall be included and provide flexible detection zone and/or count sensor placement anywhere and at any orientation within the combined field of view of the image processors. Preferred presence detector zone configurations shall be a box or polygon across lanes of traffic placed parallel with lanes of traffic. A single detector zone shall be able to replace multiple conventional detector loops. Detection zones shall be capable of overlapping. Detection zones shall detect multiple vehicles within a single detection zone.

2.5.2 Detection Zones. The detection zones shall be created by using a pointing device and a graphical user interface (GUI) displayed on any computer connected directly to the PU or a GUI available to any authorized remote terminal over an IP network connection. It shall be possible to add,

edit or remove previously defined detector configurations to fine-tune detection zone placement.

2.5.3 Detection System Outputs. When a vehicle is detected by entering a detection zone, there shall be a visual change on the video display, such as a change in color or intensity, thereby verifying proper operation of the detection system. The system shall compute and display real-time queue information per lane. The system shall compute and store traffic volumes, stopped time delay and Level of Service per phase, and display such information on demand over an Internet Browser.

2.5.4 Detection System Performance Standards. Using camera optics, and in the absence of occlusion, the system shall be able to detect vehicle presence with 93% accuracy under normal (day and night) conditions and with only a slight deterioration in performance under adverse (fog, snow, rain) conditions. During extremely adverse conditions or camera failures the system shall default to emergency mode or fog mode. The processor shall store historical split information and shall compute and deploy optimized signal splits based on historical split information when the system goes into fog mode or emergency mode.

2.5.5 Camera Operation. The camera shall automatically function in a special mode at night and the processor shall utilize such images and conduct image processing after filtering out a high degree of reflected and ambient lighting. The PU shall change image parameters such as sharpness and contrast based on the lighting conditions.

2.5.6 Camera Notifications. The system shall be able to automatically generate notifications to one or more email addresses and other communication devices when a camera has failed or the view is obstructed (e.g. fog or ice).

2.6 Video Camera and Housing.

2.6.1 General. The PU supplier shall furnish the video camera for traffic detection. The camera shall produce a usable color video image of vehicles under normal roadway lighting conditions regardless of time of day. Usable video in color shall be produced for scenes with a minimum luminance of 0.65 lux at aperture f-value 1.0.

2.6.2 Camera System Sensing and Video Streams. The camera system shall use a CMOS sensing element and be capable of delivering Motion JPEG and MPEG 4 video streams simultaneously.

2.6.3 Camera Lens and Control. The camera shall include an electronic shutter or auto iris control based upon average scene luminance, and shall be equipped with an auto iris lens.

2.6.4 Camera Focal Length. The camera shall have a variable focal length. The maximum aperture of the lens shall not be smaller than f1.8 and the minimum aperture shall not be larger than f360.

2.6.5 Camera Environmental Parameters. The camera shall be able to operate under harsh environmental conditions, including temperatures of -30F (-34C) to 165F (74C), heavy rain, and ice. The enclosure shall allow the camera to be adjusted in the field during installation.

2.6.6 Camera Enclosure. The enclosure shall be equipped with a sun shield that prevents sunlight from directly entering the lens. The sun shield shall include a provision for water diversion to prevent water from flowing in the camera field of view.

2.6.7 Camera System Access. The camera system shall be Ethernet-centric. The system shall be capable of delivering MPEG-4 and Motion JPEG video to the switch in the cabinet. The user shall be able to access the camera directly over the network and configure the camera parameters using a standard Internet Browser.

2.7 Cable.

2.7.1 Ethernet Cable. Any Ethernet cable run outside of the traffic cabinet shall be environmentally hardened, shielded, and outdoor rated 350 MHz Category 5e cable. The cable shall be riser rated, 24 AWG solid copper, have Polyolefin insulation, UV and oil resistant PVC jacket. Pair 1 shall be Blue, White/Blue, Pair 2 shall be Orange, White/Orange, Pair 3 shall be Green, White/Green and Pair 4 shall be Brown, White/Brown. The operating temperature shall be from -40° C to +70° C. The cable shall conform to the following standards: ISO/IEC 11801 Category 5e, NEMA WC 63, and ANSI/TIA/EIA 568-B.2 Category 5e. The cable shall be without splicing or joints for any single run. The contractor shall obtain instructions from the manufacturer about alternate architecture when length of a single run of CAT 5e cable exceeds 320 feet.

2.7.2 RJ-45. The RJ-45 plug connectors shall be used at both the camera and cabinet ends. The supplier of the video detection systems shall approve the Category 5e cable, RJ-45 connector and crimping tool, and the manufacturer's instructions must be followed to insure proper connection.

2.7.3 Power Cable. Power cable shall be 14 AWG three-conductor cable. This cable shall comply with the requirements of IMSA Specification 19-1.

2.8 System Software.

2.8.1 The system shall include software that detects vehicles in multiple lanes using the video image and an option for integrating existing detection, such as inductive loops. The software shall automatically account for changes in scene including but not limited to lighting conditions or adverse weather. The engineer shall have the dual benefit of defining detection zones via a web interface accessible from any regular computer with an IP network connection, or via a computer physically connected to the network (which may include a laptop computer). A minimum of 12 detection zones per camera shall be available. The detection zones must be capable of counting

multiple vehicles within a single detection zone. The system software shall communicate to an existing signal controller passively, allowing the signal controller to still handle emergency pre-empts. The software shall determine and display real-time queue lengths along each approach.

2.8.2 The software/hardware shall have the capability to seamlessly intercept existing detection status. If the option is chosen, the detection logic used for integrating system video detection with existing detection shall work as follows:

1. If existing detection is positive and video detection is negative, the result shall be positive.
2. If existing detection is negative and video detection is positive, the result shall be negative.
3. If existing detection is negative and video detection is negative, the result shall be negative.

2.8.3 The adaptive traffic control system shall use a distributed intelligence architecture and not rely on a central server or central software for regular adaptive operations.

2.8.4 Access to Detection System Data. The video detection system shall be programmable via a web browser using the same IP network connection that delivers the video camera output, and thus allow the engineer to have complete control of the system without being physically present at the intersection. It shall provide still image and real time detection displays in color video to a remote computer using a web browser such as Microsoft Internet Explorer. The system shall collect real-time traffic data such as vehicle counts, stop delay and level of service. Real-time and historical statistical information must be available to the engineer in graphical and/or tabular form as and when required.

2.9 Configuration of User Software. The system shall include software that enables local traffic engineers and technicians to review, modify, and deploy changes to the adaptive protocols and operational preferences. The software shall use a user-friendly graphical interface. The software shall not require licenses or fees, but rather be available for use on as many computers as requested for as long as needed without per-user or time-based fees. All training and documentation necessary for proficiency in the software shall be provided.

3.0 ADAPTIVE TRAFFIC CONTROL OPERATIONS.

3.1 General. The adaptive traffic control module shall be contained within the PU. The PU shall communicate with neighboring PUs over an IP network. The PUs shall be capable of communicating information to other signals and the network of signals so as to account for changes in demand, therefore the progression protocols and configurations.

3.2 Optimization of Green Time Allocation. The adaptive traffic signal control system shall not use common cycle lengths, but shall use algorithms and artificial intelligence to optimize traffic flow. The optimization shall be real time using the principles of a finite state changing machine, and shall not involve switching between cycle lengths or timing plans. The system shall not be in transition at any time, but shall respond to real-time inputs with

changing of states. Guaranteed arterial progression shall be created using dynamic green bands. Non-arterial traffic at each intersection shall be served adequately without interfering with the green bands.

3.3 Configuration of Signal Control. The supplier's engineers shall configure the adaptive traffic signal control system for optimal operation of the arterial or arterial network. Traffic flow and anomalous traffic conditions shall be programmed into the adaptive traffic signal control system.

3.4 Configuration Via IP Network. The parameters for the adaptive traffic signal control shall be capable of being configured remotely over the IP network. Parameters shall be adjustable via a web browser capable of running Java, such as Internet Explorer. The software shall also display traffic signal green status and up to 48 camera views. All configuration information shall be stored in easily backed-up and humanly readable XML files.

3.5 Monitoring of Arterials. The system shall allow monitoring via a web browser such as Microsoft Internet Explorer on any authorized computer. It shall be possible to view a single camera, multiple cameras from a single intersection, or multiple cameras from multiple intersections. This system must be capable of displaying these views even under limited network bandwidth. It must be possible to format these views to support different size viewing screens.

3.5.1 The system shall have remote monitoring and configuring capability using IEEE 802.3 standards. The equipment shall meet the NEMA environmental, power and surge ratings according to the latest NEMA Specifications.

3.6 Failure Mitigation Mechanisms. The system shall be able to automatically generate notifications to one or more email addresses when it detects disruption of the communications network, failure of PUs, intersections going into flash, or other such events that would impact the operation of the arterial. The system shall maintain near-optimal adaptive operation in the event of a communications failure, and rely on historical data specific to the time-of-day and day-of-week in the event of detector failure.

4.0 INSTALLATION.

A factory-certified representative from the supplier shall be on-site at the beginning of installation. The adaptive traffic signal control system shall be installed as recommended by the manufacturer, and as documented in the installation materials provided by the supplier.

5.0 EVIDENCE OF OPERATIONAL PERFORMANCE.

5.1 The adaptive traffic signal control system selected shall be deployed and currently operating at a minimum of 20 independent, noncontiguous corridors in the United States.

5.2 The system shall have independent engineering studies using industry-accepted methods demonstrating the system's field results in at least three non-contiguous corridors in which the adaptive system reduced travel times by at least 30% in at least one peak-period per corridor.

5.3 The system shall have field evidence from a source not related to the vendor or manufacturer of the system's ability to reduce traffic accidents.

5.4 The system supplier shall supply no fewer than five positive references from public agencies operating the system speaking directly to the quality of post-sale support.

6.0 WARRANTY AND SUPPORT.

6.1 Warranty Period. The adaptive traffic signal control system hardware and software shall be warranted to be free of defects in material and workmanship for a minimum of two years.

6.2 Technical Support. The system supplier shall maintain a 24/7 x 365 support hotline, available on an unlimited basis during the warranty period. This support shall be available from factory certified personnel or factory certified installers.

7.0 BASIS OF PAYMENT.

7.1 All costs associated with furnishing, configuring, and placing into operation the adaptive traffic signal control system shall be included in the unit bid price for ADAPTIVE TRAFFIC SIGNAL CONTROL SYSTEM, per lump sum. Payment will be considered as full compensation for all labor, equipment and materials required to complete the described work.

7.2 The City acknowledges that the adaptive traffic signal control system is a proprietary system, and that the system components will be furnished by a third-party supplier. It shall be the contractor's sole responsibility to review the supplier's bid for conformance with the contract documents. No additional payment will be made for items of work that are included in the contract but that are omitted from the supplier's estimate. No direct payment will be made to the contractor to recover the cost of fulfilling this requirement.

KKK. Temporary Traffic Signals

1.0 Description. This work involves the furnishing, installation, maintenance, relocations and removal of temporary traffic signal through all phases of construction.

2.0 Materials. Temporary signals conform to Sec 902.

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

Vehicle Detection System
Signal Heads, Type 3C (3-section head with Type I bracket)
Trailer Mounted Traffic Signal
Controller Assembly Housing (see requirements below)
Cable, 1 Conductor, Power (8 AWG minimum)
Cable, 12 AWG 5 or 7 conductor (for signal heads)
Power Supply Assembly

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

3.0 Construction Requirements. Temporary signals shall be furnished, installed, relocated and maintained to properly handle traffic, as required, at the Route 291 and Blue Parkway as well as the Route 291 and US-50 interchange intersections (3). Signal modifications necessary at the Todd George Parkway/Ranson Road and Oldham Road intersection shall be included in this bid item and include modifying the existing span-wire signal indications, controller programming, and cabinet wiring to provide split phased operations for east/west traffic at the intersection during construction (and returned to original configuration following construction). It is anticipated that east/west signal indications will be provided one (1) 3-section arrow indication (red/yellow/green arrow) and one (1) 3-section solid ball indication (red/yellow/green) indication for split-phased operations. Signing for the movements shall also be modified to reflect these operations, including temporary removal of the existing R10-12 and R10-27 signing on the span-wire and replacement upon removal of split phased operations.

Signals shall be installed as shown on the plans and as described in this special provision or as directed by the engineer. Exact placement of temporary signals may be adjusted to improve visibility or operations, with approval of the engineer.

3.1 The temporary signal installation and relocation during different phases of construction shall be maintained in operational condition until the new permanent signals and street lights are installed and operational.

3.1.1 If the temporary signal installations becomes inoperable due to alterations, malfunctions or periods of shutdown for required maintenance or when one-way traffic control is required, the contractor shall provide adequate traffic control, including flaggers. In addition, adequate traffic control, including flaggers, shall be provided during the startup and shut down of this installation. Sign WO20-7b, Flagger (Symbol), shall be displayed in advance of the flaggers. The contractor shall submit traffic control plans to the engineer for approval at least five (5) business days prior to implementation.

3.2 The temporary signals shall be removed after the new signals are up and operational. All equipment shall remain the property of the contactor.

3.4 The contractor shall be responsible for arranging the electrical power needs required for the installation and operation of the temporary traffic signals with Evergy.

4.0 Basis of Payment. Payment for furnishing, installation, operation, relocation, maintenance and removal of this temporary traffic signal installation, including all items required for proper operation of this installation, will be completely covered by the contract unit price for Pay Item No. 902-94.00 Temporary Traffic Signals, per lump sum.

LLL. Temporary Signal Timing

1.0 Description. The contractor is responsible for developing and inputting the timing for the temporary signals. Traffic signals shall include non-intrusive detection for all approaches and be capable of running in time-base coordination (if required). All movements will be provided with permissive green ball signal indications and include phasing for north/south traffic to run concurrently, with the US-50 Exit Ramps phased separately. Signal timings for temporary traffic signals shall be developed by the Contractor and submitted to MoDOT for approval at least ten (10) business days prior to implementation. Signal timings shall be monitored and adjusted as required throughout construction.

2.0 Basis of Payment. All expenses incurred by the contractor by reason of their compliance with this provision shall be considered as completely covered by the unit prices bid for Pay Item No. 902-94.00 Temporary Traffic Signals, per lump sum.

MMM. Uninterruptible Power Supply

1.0 Description. This work shall consist of providing and installing an "Uninterruptible Power Supply" (UPS) interruptible at the Route 291 intersection signals with Blue Parkway and US-50. The system shall be specifically constructed and approved for the use with signal controller cabinet.

1.1 The UPS shall be an Alpha FXM 1100 system or approved equal. The system shall be comprised of the following items:

1 each Alpha outdoor enclosure S6, w/Generator option ATS/MBS & Auto GTS, battery cable kit (Alpha-026-53-26)
1 each Novus FXM 1100 Battery backup unit without Ethernet (ALPHA-017-230-21)
1 each 48V Alpha guard battery monitor (ALPHA-012-306-21)
4 each Alpha Gel battery 195GXL (ALPHA-181230-10

2.0 Installation. The UPS system shall be installed as per the manufactures recommendations. The system shall be mounted to the new Type 2 power supply as designated in the plans. The UPS cabinet shall contain circuitry to separate auxiliary equipment (lighting) from primary equipment (signal controller cabinet) during battery backup operation. In addition, the cabinet shall have circuitry to switch the signal from normal operation to flash operation during battery backup operation,

3.0 Communications.

3.1 The UPS cabinet shall have Ethernet connection capability.

3.1.1 Ethernet Cable. Any Ethernet cable run outside of the signal cabinet shall be environmentally hardened shielded and outdoor rated 350 MHz Category 5e cable. The cable shall be riser rated, 24 AWG solid copper, have Polyolefin insulation, UV and oil resistant PVC jacket. Pair 1 shall be Blue, White/Blue, Pair 2 shall be Orange, White/Orange, Pair 3 shall be Green, White/Green and Pair 4 shall be Brown, White/Brown. The operating temperature shall be from -40° C to +70°C. The cable shall conform to the following standards: ISO/IEC 11801 Category 5e, NEMA WC 63, and ANSI/TIA/EIA 568-B.2 Category 5e. The cable shall be without splicing or joints for any single run. The contractor shall obtain instructions from the manufacturer about alternate architecture when length of a single run of CAT 5e cable exceeds 320 feet.

3.1.2 RJ-45. The RJ-45 plug connectors shall be used at the UPS, and signal cabinet. The supplier of the UPS shall approve the Category 5e cable, RJ-45 connector and crimping tool, and the manufacturer's instructions must be followed to insure proper connection.

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

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

6.0 Basis of Payment. All costs incurred by the contractor for furnishing, installing, configuring, and placing the UPS into operation shall be considered as included in and completely covered by the contract unit price for item 902-99.02, Uninterruptible Power Supply, per each. Payment will be considered full compensation for all labor, equipment, materials and incidentals required to complete the described work. Ethernet cabling is considered subsidiary to this bid item.

6.1 No direct payment will be made for programming the UPS.

NNN. Traffic Signal Controller Assembly, NEMA

1.0 Description. The MoDOT Kansas City district is developing a plan to update all signal controllers in the district to utilize TransSuite.

1.1 All traffic signal controllers purchased and installed on this project shall be selected from the list below and match the cabinet type indicated on the D-37C sheet for each intersection(s). These are the only controllers that are fully functional with the version of TransSuite that the Kansas City district is currently operating (TCS 16.2.2):

Controller/Firmware Type	Firmware Supported	Cabinet Type
Eagle SEPAC	4.57	NEMA
Econolite Cobalt	2.65.30 or newer	NEMA
Intelight X3c, X3, X3L	2.1	NEMA

2.0 Basis of Payment. Payment will be made, at the contract unit bid price, for each of the pay items shown in the contract pay item 9029902, per each. No direct payment will be made for any incidental items necessary to complete the work unless specifically provided as a pay item in the contract.

OOO. Video Detection System

1.0 Description. This work shall consist of providing video detectors for the existing traffic signal at Hamblen Road and Oldham Parkway (South). Detectors shall be in accordance with the City of Lees Summit standard specifications and installed to provide detection at locations as shown on the plans or as directed by the engineer in accordance with Section 2900, specifically referencing part 2912.4 and the City's Approved Products List.

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

Video image

2.1 Exceptions. None.

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

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

4.0 Basis of Payment. Accepted Video Detection System will be paid for at the contract unit price for item 902-99.02 Video Detection System, per each.

PPP. Wall-Pack LED Fixture

1.0 Description. This provision establishes the requirements for the installation of wall pack lighting, conduit, and electrical cable in accordance with the project specifications. All materials and work shall comply with the latest applicable Missouri Department of Transportation (MoDOT) standards and requirements.

2.0 Materials. Wall pack lighting shall be Holophane W4GLED Wallpack IV Glass LED, with the following specifications:

- 20C1000
- 40K (4000K color temperature)
- T3M (Type III Medium distribution)
- Multi-Volt (120-277V) with Surge Protection
- P7 NEMA Twistlock 7-Pin Receptacle-Control
- Single Fusing
- Gray Super Durable Paint
- Shorting Cap

2.1 Construction Requirements. Wall pack lighting shall be installed in accordance with the manufacturer's instructions and industry best practices. Conduit shall be securely fastened and routed to minimize exposure to potential damage. Electrical cable shall be properly terminated and connected in compliance with MoDOT specifications and the National Electrical Code (NEC). Surge protection devices shall be installed per manufacturer recommendations.

3.0 Method of Measurement. Wall pack lighting will be measured per each wall pack fixture installed.

4.0 Basis of Payment. Accepted Wall Pack fixtures, including any additional materials, equipment, and labor, shall be considered completely covered by the contract unit price for the following items:

Item Number	Type / Description	Unit
901-99.02	WALLPACK 150W HPS EQ. LED FIXTURE	EACH

QQQ. City Lighting Equipment

1.0 Description. This work shall consist of furnishing and installing street lighting systems, including all labor, materials, equipment, and incidental work necessary to complete the installation in accordance with the City of Lee's Summit Standard Specifications, Section 2800, the project plans, and as directed by the Engineer.

The work includes, but is not limited to:

- Poles, luminaires, and associated hardware
- Foundations
- Wiring, conduits, and grounding systems
- Connections to the power source
- Testing and commissioning of the street lighting system

2.0 Materials. All materials shall conform to the requirements outlined in the City of Lee's Summit Standard Specifications, Section 2800, and the approved project plans.

2.1 Construction Requirements. The installation of street lighting systems shall be performed in accordance with the City of Lee's Summit Standard Specifications, Section 2800. Specific requirements include:

a. Foundations
- Install pole foundations as detailed in the project plans. Foundations shall be constructed to meet specified tolerances for alignment and level.

b. Poles and Luminaires
- Poles and luminaires shall be installed as shown on the plans, ensuring proper orientation, alignment, and height.
- Luminaires shall be installed to provide uniform illumination as specified.

c. Wiring and Electrical Components
- All wiring and conduits shall be installed per applicable codes and standards, including the National Electrical Code (NEC) and City of Lee's Summit regulations.
- Connections to the power source and grounding shall be performed in a safe and approved manner.

d. Testing and Commissioning
- Upon completion of the installation, the Contractor shall test the street lighting system to ensure proper operation.
- All defects or deficiencies identified during testing shall be corrected at the Contractor's expense.

3.0 Method of Measurement. The street lighting system shall be measured and paid for as a outlined in City standard specifications, Section 2800. The payment will include full compensation for all labor, materials, equipment, and incidentals necessary to complete the work as specified.

4.0 Basis of Payment. Accepted City Lighting Equipment, including any additional materials, equipment, and labor, shall be considered completely covered by the contract unit price for the following items:

Item Number	Type / Description	Unit
901-99.02	STREET LIGHT POLE (P30S)	EACH
901-99.02	10’ BRACKET ARM	EACH
901-99.02	B30 SCREW-IN FOUNDATION	EACH
901-99.02	COBRA-HEAD LUMINAIRE (250W HPS EQ LED)	EACH
901-99.02	TYPE 1 JUNCTION BOX	EACH
901-99.02	TYPE 2 JUNCTION BOX	EACH
901-99.02	CLASS 1 PULL BOX	EACH
901-99.02	4-CIRCUIT POWER SUPPLY ASSEMBLY	EACH
901-99.02	FOUNDATION FOR POWER SUPPLY	EACH
901-99.03	3” SCHEDULE 40 PVC CONDUIT	LIN. FT.
901-99.03	2” HDPE CONDUIT (GRAY)	LIN. FT.

901-99.03	3c No. 2 DISTRIBUTION CABLE	LIN. FT.
901-99.03	3c No. 4 DISTRIBUTION CABLE	LIN. FT.
901-99.03	1c No. 10 POLE AND BRACKET CABLE	LIN. FT.
901-99.02	BREAK-AWAY FUSED CONNECTOR KIT	EACH
901-99.02	BREAK-AWAY NON-FUSED CONNECTOR KIT	EACH
901-99.02	MULTI-TAP CONNECTOR KIT	EACH
901-99.02	CONDUIT MARKER	EACH

RRR. School Lighting Systems

1.0 Description. This work shall consist of furnishing and installing lighting equipment to complete the school districts lighting systems, including all labor, materials, equipment, and incidental work necessary to complete the installation in accordance with the City of Lee's Summit Standard Specifications, Section 2800, the project plans, and as directed by the Engineer.

The work includes, but is not limited to:

- Installation of approximately 200 LF of conduit and cable (to be supplied by others)
- Supply and Install 1 Concrete Foundation (design by others)
- Final pole Wiring, and grounding systems connection (design by others)

2.0 Materials. All materials shall conform to the requirements outlined in the City of Lee's Summit Standard Specifications, Section 2800, and the approved project plans.

2.1 Construction Requirements. The installation of street lighting systems shall be performed in accordance with the City of Lee's Summit Standard Specifications, Section 2800. Specific requirements include:

a. Foundations

- Install pole foundations as detailed in the project plans. Foundations shall be constructed to meet specified tolerances for alignment and level.

b. Poles and Luminaires

- Poles and luminaires shall be installed as shown on the plans, ensuring proper orientation, alignment, and height.
- Luminaires shall be installed to provide uniform illumination as specified.

c. Wiring and Electrical Components

- All wiring and conduits shall be installed per applicable codes and standards, including the National Electrical Code (NEC) and City of Lee's Summit regulations.
- Connections to the power source and grounding shall be performed in a safe and approved manner.

3.0 Method of Measurement. The street lighting system shall be measured and paid for as a single Lump Sum unit. The payment will include full compensation for all labor, materials, equipment, and incidentals necessary to complete the work as specified.

4.0 Basis of Payment. Accepted School Lighting Systems will be paid for at the contract unit price for item 901-99.01 School Lighting Systems, per lump sum.

SSS. Overhead Signing

1.0 Description. This work shall consist of furnishing and installing Type S Tubular Support Steel and/or Truss Type Overhead Sign Structures as shown on the plans, including concrete footing(s). All materials and construction procedures shall meet MoDOT specifications and specifically the applicable requirements listed in Section 903.

2.0 Basis of Payment. All costs associated with furnishing and installing the Type S Tubular Support Steel, and/or Truss Type Overhead Sign Structures, including concrete footing(s) any additional materials, equipment, and labor, shall be considered completely covered by the contract unit price for the following items:

Item Number	Type / Description	Unit
903-99.01	SIGN, OVERHEAD TRUSS TYPE, CANTILEVER, 36 FT. – 0 IN.	LUMP SUM
903-99.01	SIGN, OVERHEAD TRUSS TYPE, 71 FT. – 6 IN.	LUMP SUM
903-99.01	SIGN, OVERHEAD TRUSS TYPE, 75 FT. – 0 IN.	LUMP SUM
903-99.02	SIGN, TYPE S TUBULAR TWO TUBE, 81 FT. -3 IN.	EACH
903-99.02	SIGN, TYPE S TUBULAR TWO TUBE, 75 FT. - 0 IN.	EACH

TTT. Relocating and Mounting Existing Signs to New Posts

1.0 Description. This item provides for relocating and mounting existing signs of various sizes to new posts at locations shown on the signing sheets.

2.0 Construction Requirements. The contractor shall install new posts at the locations shown and then mount existing signs to the appropriate post type as summarized on sheet D-29 and D-30 of the signing sheets. All work shall be in accordance with the construction requirements of Section 903.

3.0 Method of Measurement. Measurement for any concrete footings, structural steel posts, pipe posts, perforated square steel tubes and anchor sleeves, and breakaway assemblies will be made in accordance with Section 903.

4.0 Basis of Payment. All cost incurred for removal, storage of equipment, and reinstallation of existing signs to new posts at the locations shown, complete in place, will be considered subsidiary to other pay items. Payment for all other labor, equipment, material, and incidental items will be made in accordance with Section 903 and paid for at the contract unit price for each of the pay items included in the contract.

UUU. Signs on Sign Truss Poles, Signal Poles, and Mast Arms

1.0 Description. This item provides for the furnishing and installing of new signs on the sign truss poles, signal poles and mast arms.

2.0 Construction Requirements. Contractor shall furnish and install the appropriate signs on the sign truss poles, signal poles and mast arms as summarized on sheet D-30 and D-37A.

3.0 Method of Measurement. Measurement will be made in accordance with Section 903. Any revision or correction from plan quantities will be computed and added or deducted from the contract quantities.

4.0 Basis of Payment. All costs for complying with this special provision shall be considered completely covered by the contract unit price for Pay Items 902-08.33 FH-Flat Sheet - Signal Sign, 0.1 SQ. FT. and 903-50.04 SH Flat Sheet Sign, 1.0 SQ. FT.

VVV. Liquidated Damanges Specified for KC Scout ITS & MoDOT Communications

1.0 Description. If the KC Scout Fiber Optic cabling is not complete and fully operational within a forty-eight (48) hour period from the time of disconnect, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of behing computed or quantified.

Therefore, if the contractor fails to complete the work within the specified timelines or exceeds the maximum allowable downtime for KC Scout Fiber Optic Equipment, liquidated damages shall be assessed at a rate of **$75 per hour** for each full hour beyond the allowable downtime that the backbone fiber optic network is not complete and operational. Liquidated damages shall also apply for delays in restoring MoDOT Traffic Signal equipment if downtime exceeds the approved limits. The rate for these damages shall be **$75 per hour**. The liquidated damages outlined herein are not penalties but are intended to compensate MoDOT and KC Scout for additional costs and disruptions resulting from delays.

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

All work performed under this provision shall conform to the standards and specifications of the Missouri Department of Transportation (MoDOT) and KC Scout, including all applicable design, installation, and operational guidelines. The contractor shall coordinate with MoDOT and KC Scout to ensure compliance with all applicable requirements.

2.0 General Requirements. The contractor shall disconnect, and re-install existing KC Scout Backbone Fiber Optic equipment in accordance with the approved plans and specifications. All necessary permits and approvals shall be obtained by the contractor prior to the commencement of work. Contact **Mark Sommerhauser (816-607-2243)** for construction scheduling and timeline related discussions. The contractor shall provide qualified personnel experienced in the installation and maintenance of fiber optic and ITS equipment to perform the work.

3.0 Construction Requirements and Downtime Management.

1. To minimize disruption, the contractor shall plan and execute work to limit the downtime of KC Scout Backbone Fiber Optic Equipment to a maximum of 1 consecutive 48 hour period. This includes all tasks necessary to restore the backbone connection of KC Scout equipment. Ancillary equipment, such as Radar and CCTV detection devices may be down for a longer duration if required due to construction phasing requirements.
2. Any downtime required for MoDOT Traffic Signal equipment beyond the 48-hour limit for KC Scout equipment shall be coordinated with MoDOT and approved in advance.
3. The contractor shall provide a detailed work schedule and outage plan for review and approval by MoDOT and KC Scout at least 14 days prior to the start of construction.

4. The contractor shall notify MoDOT and KC Scout at least 48 hours before initiating any downtime.
5. The contractor shall ensure that all materials and installations meet or exceed the requirements of MoDOT and KC Scout standards.
6. The work shall be subject to inspection by MoDOT and KC Scout personnel to verify compliance with specifications and standards. The contractor shall address any deficiencies identified during inspections promptly and to the satisfaction of MoDOT and KC Scout.
7. The contractor shall submit a final report summarizing the work performed, including a record of downtimes and compliance with the 48-hour limitation for KC Scout Fiber Optic Equipment.
8. Failure to restore KC Scout Fiber Optic Equipment within the 48-hour downtime limit shall result in penalties as outlined in the contract documents.
9. Additional penalties may apply for unauthorized or unapproved downtime of MoDOT Traffic Signal equipment.

WWW. Service Signing

1.0 Description. All installation, relocation and repair of Missouri LOGO and Tourist Oriented Destination Signs (TODS) shall be coordinated between the engineer, contractor, and the designated Missouri LOGO representative.

1.1 It shall be noted by the contractor that Missouri LOGOS is responsible for the installation, relocation and repair of all LOGO and TODS Signs on MoDOT owned right of way. The contractor shall be solely responsible and liable for determining any impact to LOGO or TODS Signing due to contractor operations during construction of this contract. The contractor shall be responsible for notifying Missouri LOGOS at the time of the preconstruction meeting when a service sign is determined to be impacted and advise Missouri LOGOS of the project details. The Missouri LOGO representative will attend these meetings at their discretion. The Missouri LOGO representative shall be contacted 24 hours a day, 7 days per week at (573) 291-6788.

1.2 When Missouri LOGOS has to perform work within the limits of the project, Missouri LOGOS will conduct work so as not to interfere with or hinder the progress or completion of the work being performed by the contractor. Full cooperation of the contractors involved, in careful and complete coordination of their respective activities in the area, will be required.

2.0 Basis of Payment. No direct payment will be made to the contractor to recover the cost of equipment, labor, materials, or time required to fulfill this provision.

XXX. High-Build Pavement Marking Pain (4” White and Yellow)

1.0 Description. This provision establishes the requirements for the application of high-build pavement marking paint for 4-inch white and yellow markings. All materials and work shall comply with the latest applicable City of Lee’s Summit specifications, specifically Section 3022.

2.0 Materials.

2.1 High-Build Pavement Marking Paint

The pavement marking paint shall conform to the requirements set forth in Section 3022 of the City of Lee's Summit specifications. The paint shall be high-build, fast-drying, and formulated for durability and reflectivity in roadway applications.

2.2 Glass Beads
Glass beads shall be applied to enhance retroreflectivity and shall meet the requirements outlined in Section 3022.

3.0 Construction Requirements.

3.1 Surface Preparation
- All surfaces shall be clean, dry, and free of contaminants before application.
- Any existing pavement markings that interfere with the new markings shall be removed as directed by the Engineer.

3.2 Application
- Paint shall be applied at the thickness and rate specified in **Section 3022**.
- Pavement markings shall be applied using approved equipment that ensures uniform coverage and sharp edges.
- Glass beads shall be applied immediately after the paint to ensure proper adhesion and reflectivity.

3.3 Curing and Protection
- Traffic shall not be allowed on the newly applied markings until they have adequately cured to prevent tracking or smearing.
- The contractor shall be responsible for protecting markings until they are sufficiently dry.

4.0 Method of Measurement. Measurement will be based on the actual linear feet of 4-inch white and yellow pavement markings applied and accepted by the Engineer.
5.0 Basis of Payment Payment will be made at the contract unit price per linear foot for 4-inch white and yellow pavement markings under bid items 6209903 for applicable type. The payment shall be full compensation for all labor, materials, equipment, surface preparation, application, protection, and incidental costs necessary to complete the work. This Job Special Provision shall govern the work described herein and take precedence over any conflicting provisions in the contract documents.

YYY. Right of Way Clearance

1.0 **Description.** The right of way for this project has been acquired except for:
Parcel No. 1, Lees Summit School District R-7;
Parcel No. 2, Office of Administration - State of Missouri;
Parcel No. 3, Donald and Barbara Wright Trustee;
Parcel No. 4, Kraft Thomas Anthony – Trustee;
Parcel No. 6, Max Re Preowned of Lees Summit, LLC;
Parcel No. 7, QuikTrip Corporation.

1.1 The contractor shall inform itself of the location of these tracts. No encroachment, storage of equipment and materials or construction on these tracts shall be

permitted until notification by the engineer is given that these tracts have been acquired.

1.2 The contractor shall schedule its work utilizing the available right of way until these tracts are cleared for construction, which is estimate to be July 7, 2025. However, this date expressly is not a warranty by or contractually binding on the Commission as the date the tracts will be clear for construction. No encroachment, storage of equipment and materials or construction on these tracts shall be permitted until the contractor is notified by the engineer that the tracts have been acquired.

1.3 The contractor shall have no claim for damage, disruption, interference or otherwise because of the unavailability of the previously name tracts. The contractor may be given an extension of the time upon proof of actual delay caused by the unavailability of these tracts as approved by the engineer.