Job No.: J8P3236
Route: Various
County: Greene

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

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Job No.: J8P3236
Route: Various
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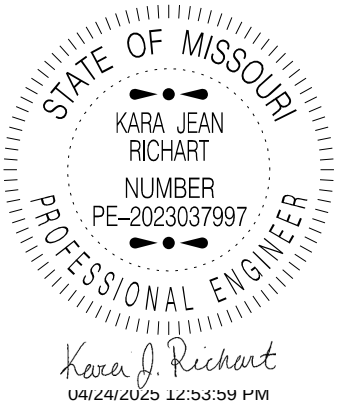
<tr>
<td> 

Kara J. Richart
04/24/2025 12:53:59 PM
KARA JEAN RICHART - CIVIL
MO-PE-2023037997</td>
<td>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 W. CAPITOL AVE.
JEFFERSON CITY, MO 65102
Phone 1-888-275-6636

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

JOB NUMBER: J8P3236
GREENE COUNTY, MO
DATE PREPARED: March 24, 2025

ADDENDUM DATE:</td>
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<td colspan="2">Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: All</td>
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Job No.: J8P3236
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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 on all projects shall be completed on or before the date specified below. Completion by this date shall be in accordance with the requirements of Sec 108.7.1.

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

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

Project	Calendar Days	Daily Road User Cost
J8P3236	**276**	**$9,800**

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **$2,000** 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 specified contract completion date or calendar days.

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

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

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

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

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

2.0 Traffic Management Schedule.

2.1 Traffic management schedules shall be submitted to the engineer for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management

schedule shall include the proposed traffic control measures, the hours traffic control will be in place, and work hours.

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

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

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

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of **10 minutes** to prevent congestion from escalating beyond this delay threshold. If disruption of the traffic flow occurs and traffic is backed up in queues equal to or greater than the delay time threshold listed above, then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable. When a Work Zone Analysis Spreadsheet is provided, the contractor will find it in the electronic deliverables on MoDOT's Online Plans Room. The contractor may refer to the Work Zone Analysis Spreadsheet for detailed information on traffic delays.

2.5.1 Traffic Safety.

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

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

2.6 Traffic Management Center (TMC) Coordination. The Work Zone Specialist (WZS) or their designee shall contact by phone the MoDOT Traffic Management Center (KC Scout TMC at #816-347-2250 or Gateway Guide TMC at #314-275-1513) within five minutes of a lane or ramp closure beginning and within five minutes of a lane or ramp closure being removed. The WZS shall make

this phone call 24 hours a day, 365 days of the year since the MoDOT Traffic Management Centers are always staffed.

3.0 Work Hour Restrictions.

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

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

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

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

3.3 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.

3.4 The contractor shall not alter the start time, ending time, or a reduction in the number of through lanes of traffic or ramp closures without advance notification and approval by the engineer. The only work zone operation approved to begin 30 minutes prior to a reduction in through traffic lanes or ramp closures is the installation of traffic control signs. Should lane closures be placed or remain in place, prior to the approved starting time or after the approved ending time, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **$500 per 15 minute increment** for each 15 minutes that the temporary lane closures are in place and not open to traffic in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of unapproved closure time.

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

4.0 Detours and Lane Closures.

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

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

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

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

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

Kara Richart, P.E., Transportation Project Manager
Missouri Department of Transportation
Southwest District
3025 E. Kearney Street, Springfield, MO 65803
o: 417.895.7622
e: kara.richart@modot.mo.gov
w: www.modot.org/sw

All questions concerning the bid document preparation can be directed to the Central Office – Design 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 law enforcement or other emergency agencies for incident management. In case of traffic accidents or the need for law enforcement to direct or restore traffic flow through the job site, the contractor shall notify law enforcement or other emergency agencies immediately as needed. The area engineer's office shall also be notified when the contractor requests emergency assistance.

Springfield Resident Engineer: Brad Gripka 417-895-6720 (Office) or 417-529-2469 (Cell)

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

Missouri Highway Patrol – Troop D: 417-895-6868
MoDOT Customer Service: 417-895-7600
Greene County Sheriff's Department: 417-868-4040
City of Springfield Police Department: (417) 864-1810
City of Springfield Fire Department: (417) 874-2300
City of Nixa Police Department: (417) 725-2510
Nixa Fire Protection District: (417) 725-4025
City of Ozark Police Department: (417) 581-6600
Ozark Fire Protection District: (417) 581-4436
Christian County Sherrif's Department: (417) 582-5330

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

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

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

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

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.

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.

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**.**

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. 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 Scott Hall 600 St. Louis, Room 630 Springfield, MO 65806 Phone: 417-849-8265 Email: sh4949@att.com	Yes	Communications
AT&T – Transmission Kevin Wingard 2749 NW Hunter Drive, Ste E Blue Springs, MO 64015 Phone: 580-931-7688 Email: kwingard@sdt-1.com	No	Communications
Bluebird Fiber David Frazier 800 NW Chipman Rd., Suite 5750 Lee's Summit, MO 64063 Phone: 816-807-0145 Email: david.frazier@bluebirdnetwork.com	No	Communications
Brightspeed Michael Edwards 2601 Waukesha Road Silom Springs, AR 72761 Phone: 479-524-9943 Email: Michael.edwards@brightspeed.com	No	Communications
Cable America Andrew Reddick 2600 Davis Blvd Joplin, MO 64804 Phone: 417-317-6900 Email: Andrew.reddick@cableone.biz	No	Communications
City of Republic – Public Works Angel Falig 4221 S Wilson's Creek Blvd Republic, MO 65738 Phone: 417-732-3415 Email: afalig@republicmo.com	No	Sewer

City of Springfield – Clean Water Services Matt Taylor 840 Boonville Ave. Springfield, MO 65802 Phone: 417-864-1934 Email: mtaylor@springfieldmo.gov	No	Sewer
City of Springfield – Traffic Brian Doubrava 1107 W. Chestnut Expressway Springfield, MO 65802 Phone: 417-864-1163 Email: bdoubrava@springfieldmo.gov	No	Signals/ITS
City Utilities of Springfield - Electric T&D Seth Day 301 E. Central St. Springfield, MO 65801 Phone: 417-831-8712 Email: seth.day@cityutilities.net	Yes	Power
City Utilities of Springfield - Gas & Water Ryan Jeppson 301 E. Central St. Springfield, MO 65801 Phone: 417-831-8643 Email: ryan.jeppson@cityutilities.net	No	Gas & Water
City Utilities of Springfield - SpringNet Eric Cochran 301 E Central St. Springfield, MO 65801 Phone: 417-831-8612 Email: ecochran@springnet.net	Yes	Communications
K-Powernet Phillip Fansler 500 South KAMO Drive Vinita, OK 74301 918-256-1819	No	Communications
Lumen Kimberly Singleton, Engineering Manager Phone: 419-631-4683 Email: kimberly.singleton@lumen.com Olsson (Lumen's contract engineer) Sandra Munoz-Cabuya 7301 W. 133rd Street, Suite 200 Overland Park, KS 66213 Phone: 913-748-2646 Email: smunozcabuya@olsson.com	No	Communications

Mediacom Kyle Keller 1533 S. Enterprise Ave. Springfield, MO 65804 Phone: 417-496-8577 Email: kkeller@mediacomcc.com	No	Communications
Net Vision Communications 1111 S Grant Ave Springfield, MO 65807 Phone: 417-851-1700 Email: support@netviscom.com	No	Communications
MoDOT – Signals, Lighting, ITS Joe Dotson 2455 N. Mayfair Ave. Springfield, MO 65803 Phone: 417-733-0664 Email: joseph.dotson@modot.mo.gov	Yes	Signals, Lighting, ITS
Ozark Electric Cooperative Dan Lohkamp 2007 James River Ct Nixa, MO 65714 Phone: 417-724-5507 Email: dan@ozarkelectric.com	No	Power
Sho-Me Technologies Jim Salaki 301 W Jackson St Marshfield, MO 65706 Phone: 417-859-2615 Email: jsalaki@shomepower.com	No	Communications
Spire Richi Garcia 7500 E 35th Terrace Kansas City, MO 64129 Phone: 816-507-0713 Email: richi.garcia@spireenergy.com	No	Gas & Water
Windstream Communications Bradley Doyle 1705 S Lillian Ave Bolivar, MO 65613 Phone: 417-399-3103 Email: Bradley.Doyle@windstream.com	No	Communications

1.1 Disclaimer and Verification of Utility Information. 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.

1.2 Potholing of Utilities. At the time of project advertisement, all potholing is anticipated to be completed prior to the scheduled project letting date. If further potholing is necessary, the potholing results will be available to the roadway contractor. The contractor is advised there may be other locations where potholing will be necessary to confirm the exact location of buried utilities. The contractor shall be responsible for any additional potholing not performed by the utility company. No direct payment will be made for compliance to this specification.

1.3 Overhead Primary Electric. Various utilities listed above have overhead lines within the project limits in the vicinity of the Contractor's work. The contractor shall comply with the Missouri Overhead Powerline Safety Act; this statute makes it illegal for an unauthorized person or entity to work or bring equipment within 10 feet of a high voltage line that has not been covered or de-energized. The purpose of the Missouri Overhead Powerline Safety Act is to ensure the safety of the public when working around overhead power lines. If the contractor needs line cover when working near a primary powerline, then the contractor shall notify that utility owner a minimum of 14 days in advance of needing line cover. Most power providers perform this service free of charge for municipally driven projects. The contractor shall be responsible for any damage to the overhead lines caused by their operations. There will be no direct payment for compliance to this specification.

1.4 Coordination with City Utilities Electric. As part of the roadway improvements, the contractor will be required to install three new Type 2 Power Supplies for the proposed signal modifications for operation with CU service. The specific details at each location are outlined in the subsections below. The roadway contractor will be required to pick up any CU provided items from their stockroom located at 742 N. Belcrest and transport these items to the site for installation. The contractor shall coordinate construction activities with CU's Contract Inspector, Corey Bryan (417-450-7347). All work performed for the future ownership/maintenance of City Utilities shall conform to their standard drawing located at: https://www.cityutilities.net/business/construction/ CU Electric will not install a meter in the new power supply until it has been inspected and approved by Springfield's Building Development Services (BDS). MoDOT will be responsible for submitting the applications to BDS. The contractor will be required to pay the $166 fee for each BDS permit. All costs required for compliance with this special provision shall be included in the contractor's submitted unit price for item 902-86.20 Power Supply Assembly, Type 2, per each.

1.5 MoDOT Signals & ITS. The proposed revisions and additions to MoDOT's signals and ITS equipment are included as part of the roadway contract. The contractor shall install and/or modify the equipment as shown in the plans and job special provisions. All cost associated with this work shall be completely covered in the contractor's submitted bid prices for the signal and ITS items included in the roadway contract.

2.0 MM & US 60 Signal.

2.1 Ozark Electric Cooperative – Electric - Secondary Power. The new Type 2 Power Supply is to be installed in the northwest quadrant next to the new signal and ITS cabinets. The power

source for the new power supply will come from the existing power pole in the northwest quadrant generally located near Sta 193+70. The contractor shall install cable-conduit with sufficient wire to go up the pole, then install from the pole to new Type 2 Power Supply. Ozark Electric will make connection on pole. Coordinate with OEC's Staking Technician Supervisor Dan Lohkamp (417-724-5507) for connection of services.

3.0 LP 44 & Broadview/Haseltine.

3.1 City Utilities – Electric - Secondary Power. CU will remove existing wood pole power source, and the power source for the new Type 2 Power Supply will come from a new pedestal and riser set by City Utilities generally located near Sta 677+15.

4.0 Bus 65 & Seminole.

4.1 City Utilities – Electric - Primary Power. CU has an existing wood pole located in NW quadrant near Sta 0+54 and a stub pole in the SW quadrant that will be moved off of MoDOT right of way.

4.2 City Utilities – SpringNet – Fiber Optic. CU SpringNet facilities will be relocated off of MoDOT right of way.

4.3 AT&T. AT&T has an existing pedestal in the NW quadrant that will be removed. All overhead telecom cable will be removed.

5.0 Bus 65 & Portland/Cinderella.

5.1 City Utilities – Electric - Secondary Power. The power source for the new Type 2 Power Supply will come from City Utilities' existing wood pole located near Sta 376+40.

6.0 Bus 65 & Barataria.

6.1 City Utilities – Electric - Secondary Power. CU will remove existing wood pole power source in NE corner, and the power source for the new Type 2 Power Supply will come from a new pedestal and riser set by City Utilities generally located near Sta 40+20.

H. Quality Management NJSP-15-22

1.0 Quality Management. The contractor shall provide Quality Management as specified herein to ensure the project work and materials meets or exceeds all contract requirements.

1.1 The contractor shall provide Quality Control (QC) of the work and material, as specified herein, to ensure all work and material is in compliance with contract requirements. QC staff shall perform and document all inspection and testing. The QC inspectors and testers may be employed by the contractor, sub-contractor, or a qualified professional service provided by the contractor.

1.2 The engineer will provide Quality Assurance (QA) inspection. The role of QA is to verify the performance of QC and provide confidence that the product will satisfy given requirements for quality.

1.3 The contractor shall designate a person to serve as the project Quality Manager (QM). The QM shall be knowledgeable of standard testing and inspection procedures for highway and bridge construction, including a thorough understanding of the Missouri Standard Specifications. The QM shall be responsible for the implementation and execution of the Quality Management Plan and shall oversee all QC responsibilities, including all sub-contract work. The QM shall be the primary point of contact for all quality related issues and responsibilities, and shall ensure qualified QC technicians and inspectors are assigned to all work activities. The QM should be separate from the manager of the work activities to effectively manage a QC program.

1.4 Any QC personnel determined in sole discretion of the engineer to be incompetent, derelict in their duties, or dishonest, shall at a minimum be removed from the project. Further investigation will follow with a stop work notification to be issued until the contractor submits a corrective action report that meets the approval of the engineer.

2.0 Quality Management Plan. The contractor shall develop, implement and maintain a Quality Management Plan (QMP) that will ensure the project quality meets or exceeds all contract requirements, and provides a record for acceptance of the work and material. A sample QMP, which shows minimum requirements, is provided on the MoDOT website at: www.modot.org/quality.

2.1 The QMP shall address all QC inspection and testing requirements of the work as described herein. A draft QMP shall be submitted to the Resident Engineer for review at least two weeks prior to the pre-construction conference. An approved QMP is required at least two weeks prior to the start of work, unless otherwise allowed by the engineer. Physical work on the project shall not begin prior to approval of the QMP by the engineer.

2.2 The approved QMP shall be considered a contract document and any revisions to the QMP will require approval from the engineer.

2.3 The following items shall be included in the Quality Management Plan:

a) Organizational structure of the contractor's project management, production staff, and QC staff, specific to this project.

b) Name, qualifications and job duties of the Quality Manager.

c) A list of all certified QC testers who will perform QC duties on the project, including sub-contract work, and the tests in which they are certified.

d) A list of all QC inspectors who will perform QC inspection duties on the project, including sub-contract work, and the areas of inspection that they will be assigned.

e) A procedure for verifying documentation is accurate and complete as outlined in Section 3.

f) A procedure describing QC Inspections as outlined in Section 4.

g) A procedure describing QC Testing, as outlined in Section 5, including a job specific Inspection and Test Plan (ITP).

h) A procedure describing Material Receiving as outlined in Section 6.

i) A list of Hold Points that are not included in the checklist forms, as outlined in Section 8.

j) A procedure for documenting and resolving Non-Conforming work as outlined in Section 9.

k) A procedure for tracking and documenting revisions to the QMP.

l) A list of any approved changes to the Standard Specifications or ITP, including a reference to the corresponding change order.

m) Format for the Weekly Schedule and Work Plans as outlined in Section 10, including a list of activities that will require pre-activity meetings.

3.0 Project Documentation. The contractor shall establish a Document Control Procedure for producing and uploading the required Quality Management documents to a MoDOT-provided server. The document management software used by MoDOT is Microsoft SharePoint®. Contractors do not need to purchase Microsoft SharePoint®, however, it is recommended that new users acquire some basic training to better understand how to use this software. MoDOT does not provide the software training, but there are several online vendors who do. Contractors are required to use Microsoft Excel® and Microsoft Word® with some documents.

3.1 The contractor shall utilize the file structure and file naming convention provided by MoDOT. A sample file structure is available on the MoDOT website.

3.2 Documents (standard forms, reports, and checklists) referenced throughout this provision are considered the minimum documentation required. They shall be obtained from MoDOT at the following web address: www.modot.org/quality. The documents provided by MoDOT are required to be used in the original format, unless otherwise approved by the engineer. Any alteration to these forms shall be approved by the engineer.

3.3 Timely submittal of the required documents to the MoDOT document storage location is essential to ensure payment can be processed for the completed work. Submittal of the documents is required within 12 hours of the work shift that the work was performed, or on a document-specific schedule approved by the engineer and included in the QMP.

3.4 The contractor shall establish a verification procedure that ensures all required documents are submitted to the engineer within the specified time, and prior to the end of each pay period for the work that was completed during that period. Payment will not be made for work that does not include all required documents. Minimum documents that might be required prior to payment include: Test Reports, Inspection Checklists, Materials Receiving Reports, and Daily Inspection Reports.

3.5 The contractor shall perform an audit at project closeout to ensure the final collection of documents is accurate and complete.

4.0 Quality Control Inspections. The QMP shall identify a procedure for performing QC inspections. QC inspections shall be performed for all project activities to ensure the work is in compliance with the contract, plans and specifications.

4.1 The QM shall identify the QC inspectors assigned to each work activity. The QC inspectors shall inspect the work to ensure the work is completed in accordance with the plans and specifications, and shall document the inspection by completing the required inspection

checklists, forms, and reports provided by MoDOT. Depending on the type of work, the checklists may be necessary daily, or they may follow a progressive work process. The frequency of each checklist shall be stated in the QMP. The contractor may propose alternate versions of checklists that are more specific to the work.

4.2 A Daily Inspection Report (DIR) is required to document pertinent activity on the project each day. This report shall include a detailed diary that describes the work performed as well as observations made by the inspection staff regarding quality control. The report shall include other items such as weather conditions, location of work, installed quantities, tests performed, and a list of all subcontractors that performed work on that date. The report shall include the full name of the responsible person who filled out the report and shall be digitally signed by an authorized contractor representative.

4.3 External fabrication of materials does not require further QC inspection if the product is currently under MoDOT inspection or an approved QC/QA program. QC inspection and testing required in the production of concrete for the project shall be the responsibility of the contractor.

4.4 The contractor shall measure, and document on the DIR, the quantity for all items of work that require measurement. Any calculations necessary to support the measurement shall be included with the documentation. The engineer will verify the measurements prior to final payment.

5.0 Quality Control Testing. The QMP shall identify a procedure for QC testing. The contractor shall perform testing of the work at the frequency specified in the Inspection and Test Plan (ITP).

5.1 MoDOT will provide a standard ITP and the contractor shall modify it to include only the items of work in the contract, including adding any Job Special Provision items. The standard ITP is available on the MoDOT website at www.modot.org/quality. The contractor shall not change the specifications, testing procedures, or the testing frequencies, from the standard ITP without approval by the engineer and issuance of a change order.

5.2 Test results shall be recorded on the standard test reports provided by the engineer, or in a format approved by the engineer. Any test data shall be immediately provided to the engineer upon request at any time, including prior to the submission of the test report.

5.3 The contractor shall ensure that all personnel who perform sampling and/or testing are certified by the MoDOT Technician Certification Program or a certification program that has been approved by MoDOT for the sampling and testing they perform.

5.4 If necessary, an independent third party will be used to resolve any significant discrepancies between QC and QA test results. All dispute resolution testing shall be performed by a laboratory that is accredited in the AASHTO Accreditation Program in the area of the test performed. The contractor shall be responsible for the cost to employ the third party laboratory if the third party test verifies that the QA test was accurate. The Commission shall be responsible for the cost if the third party test verifies that the QC test was accurate.

6.0 Material Receiving. The QMP shall identify a procedure for performing material receiving. Standard material receiving forms will be provided by the engineer.

6.1 The procedure shall address inspections for all material delivered to the site (excluding testable material such as concrete, asphalt, aggregate, etc.) for general condition of the material at the time it is delivered. The material receiving procedure shall record markings and

accompanying documentation indicating the material is MoDOT accepted material (MoDOT-OK Stamp, PAL tags, material certifications, etc.).

6.2 All required material documentation must be present at the time of delivery. If the material is not MoDOT accepted, the contractor shall notify the engineer immediately and shall not incorporate the material into the work.

7.0 Quality Assurance. The engineer will perform Quality Assurance inspection and testing (QA) to verify the performance of QC inspection and testing. The frequency of the QA testing will be as shown in the ITP, but may be more frequent at the discretion of the engineer. The engineer will record the results of the QA testing and inspection and will inform the contractor of any known discrepancies.

7.1 QA is responsible for verifying the accuracy of the final quantity of all pay items in the contract. This includes taking measurements on items that require measurement and other items that are found to have appreciable errors.

7.2 QA inspection and test results shall not be used as a substitute for QC inspection and testing.

7.3 QA will be available for Hold Point inspections at the times planned in the Weekly Schedule. The inspections may be re-scheduled as needed, but a minimum 24-hour advance notification from the contractor is required unless otherwise approved by the engineer.

8.0 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 the succeeding work depends on a QA review of the preceding work before work can continue.

8.1 A list of minimum Hold Points will be provided by the engineer and shall be included in the QMP. The engineer may make changes to the Hold Point list at any time.

8.2 Prior to all Hold Point inspections, QC shall provide the engineer with the Daily Inspection Reports, Inspection Checklists, Test Reports, and Material Receiving Reports for the work performed leading up to the Hold Point. 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.

9.0 Non-Conformance Reporting. Non-conformance reports shall be issued by the contractor for work that does not meet the contract requirements. Non-conforming work includes work, testing, materials and processes that do not meet contract requirements. The contractor shall establish a procedure for identifying and resolving non-conforming work as well as tracking the status of the reports.

9.1 Contractor QC staff or production staff should identify non-conforming work and document the details on the Non-Conformance Report form provided by MoDOT. QA staff may also initiate a non-conformance report.

9.2 In-progress work that does not meet the contract requirements may not require a non-conformance report if production staff is aware of the issue and corrects the problem during production. QC or QA may issue a non-conformance report for in-progress work when documentation of the deficiency is considered beneficial to the project record.

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

9.4 For recurring non-conformance work of the same or similar nature, a written Corrective Action Request will be issued by QC or QA. The contractor shall then establish a procedure for tracking the corrective action from issuance of the request to implementation of the solution. Approval from the engineer is required prior to implementation of the proposed corrective action. The contractor shall notify the engineer after the approved corrective action has been implemented.

10.0 Work Planning and Scheduling. The contractor shall include Quality Management in all aspects of the work planning and scheduling. This shall include providing a Weekly Schedule, a Work Plan for each work activity, and holding pre-activity meetings for each new activity.

10.1 A Weekly Schedule shall be provided to the engineer each week that outlines the planned project activities for the following two-week period. This schedule shall include all planned work, identification of all new activities, traffic control events, and requested Hold Point inspections for the period. Planned quantity of materials, along with delivery dates should also be included in the schedule.

10.2 A Work Plan shall be submitted to the engineer at least one week prior to the pre-activity meeting. The Work Plan shall include the following: a safety plan, list of materials to be used, work sequence, defined responsibilities for QC testing and inspection personnel, and stages of work that will require Hold Point inspections.

10.3 A pre-activity meeting is required prior to the start of each new activity. The purpose of this meeting is to discuss details of the Work Plan and schedule, including all safety precautions. Those present at the meeting shall include: the production supervisor for the activity, the Quality Manager, QC inspection and testing staff, and QA. The Quality Manager will review the defined responsibilities for QC testing and inspection personnel and will address any quality issues with the production staff. Attendees may join the meeting in person or by phone or video conference.

11.0 Basis of Payment. Payment for all costs associated with developing, implementing and maintaining the Quality Management Plan, providing Quality Control inspection and testing, and all other costs associated with this provision, will be considered included in the unit price of each contract item. No direct pay will be made for this provision.

I. 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.

J. ADA Material Testing Frequency Modifications JSP-23-01

1.0 Description. This provision revises the Inspection and Testing Plan (ITP) for the construction of ADA compliant features to better match the nature of the work. The Quality Control (QC) testing frequency for the Sections identified below are to be revised as specified.

2.0 Compaction Test on Base Rock Under Sidewalk, Curb Ramps and Paved Approaches. (Revises ITP Sec 304.3.4) The required test frequency will be one per 600 tons.

3.0 Gradation Test on Base Rock Under Sidewalk, Curb Ramps and Paved Approaches. (Revises ITP Sec 304.4.1) The required frequency will be one per 500 tons.

4.0 Concrete Plan Checklists. (Revises ITP Sec 501) Submittal of the 501 Concrete Plant Checklist will be once per week when the contractor is only pouring curb, sidewalk, paved approaches, and curb ramps.

5.0 Concrete Median, Median Strip, Sidewalk, Curb Ramps, and Curb. (Revises ITP Sec 608) The required frequency will be the first truckload for the project and each 100 CUYDs for air and slump thereafter. Strength will be verified by use of cylinders or maturity meters at a minimum rate of one per 100 CUYD.

6.0 Paved Approaches. (ITP Sec 608) The required testing of one test from the first truckload per day and each 100 CUYDs for air and slump will remain per ITP. Strength will be verified by use of cylinders or maturity meters at a minimum rate of one per 100 CUYD.

7.0 Curb Concrete. (Revises ITP Sec 609) The required frequency will be the same as Sec 5.0 above.

8.0 Basis of Payment. No direct payment will be made to the contractor to fulfill the above requirements.

K. 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.

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

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

M. Contractor Furnished Surveying and Staking for ADA

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 will have the primary responsibility for these operations. Concerning the traffic control devices, the contractor shall provide the Resident Engineer with a layout plan for approval prior to the installation of signs. The RE will provide assistance for 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.

N. Damage to Existing Pavement, Shoulders, Side Roads, and Entrances

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

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

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

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

O. 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.

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.

P. Linear Grading for ADA Facilities

1.0 Description. This work shall consist of altering the existing roadside features to the required grade and cross sections shown in the plans (if applicable), or to comply with typical sections, running slopes, drop-off and side-slope standards, consistent with the guidelines set forth in the Americans with Disabilities Act (ADA). This work shall be in accordance with Sections 202 and 207 and accompanying provisions except as modified herein.

2.0 Construction Requirements. The roadside shall be brought to the required grade and cross section as established in Section 1.0 of this provision, to a uniform appearance, free of sharp breaks or humps. Minor deviations will be allowed, to take advantage of favorable topography, as approved by the engineer.

2.1 The contractor shall remove all existing roadside improvements necessary to facilitate the new sidewalk and curb ramp construction, along with any other roadside removal items at, or adjacent to the pedestrian pathway, as noted in the plans or as approved by the engineer. This shall include the removal and/or saw cutting at existing raised islands or median strips to construct the pedestrian pathway. The contractor shall pay special care to existing utility facilities to be used in place or relocated by others.

2.2 The contractor shall be responsible for all excavation and embankment work necessary to facilitate construction of new ADA compliant facilities; normally consisting of subgrade and subsequent finished grading for sidewalks, curbs, curb ramps; and may include miscellaneous grading work for items such as ditches, entrances, paved approaches, driveways and pipes, at or adjacent to proposed new sidewalk facilities.

2.3 By this provision, it may be necessary to excavate, stockpile, and haul some material within the project locations limits. Due to staging and/or Right-of-Way constraints, it may be necessary to waste unusable material off of Right-of-Way, and/or haul a replacement volume of material back to achieve the desired grades.

2.4 All removals of Portland or Asphaltic Concrete performed under this provision will require saw-cutting a neat/clean edge along the removal lines at no direct pay, unless otherwise provided for in the contract.

3.0 Method of Measurement. Measurement of Linear Grading for ADA Facilities will be made along the length of the new sidewalk and/or curb ramp installed, along each side of the roadway where sidewalk work is to be performed. Measurement will be made to the nearest 1-foot for each sidewalk work area, totaled, and paid to the nearest 1-foot for final pay. Final field measurement will not be required except where appreciable errors are found, or authorized changes have been made.

4.0 Basis of Payment. The accepted quantities of Linear Grading for ADA Facilities will be paid for at the contract unit price for item 207-99.03, Linear Grading for ADA Facilities, Linear Foot, and will be considered as full compensation for all labor, equipment, material, waste fees, disposal agreements, material acquisition, or other construction costs involved to complete the described work.

4.1 No direct payment will be made for “REMOVAL OF IMPROVEMENTS” associated with the removal and disposal of sidewalks, curbs, curb ramps, entrances, and other incidentals required for construction of the new sidewalk and/or curb ramps.

Q. ADA Compliant Moveable Barricade

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

2.0 Construction Requirements. The contractor shall use a movable barricade that meets the requirements as established by the ADA. The pedestrian barricades shall be of self-supporting type having a minimum length of 6 feet per unit. The face of the barricade shall not extend into adjacent sidewalk considered open for pedestrian use. The contractor will be responsible for setting and maintaining the pedestrian barricades until all of the proposed improvements have been constructed.

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

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

R. Sodding And Fertilizing

1.0 Description. This work shall consist of installing sod and fertilizer in accordance with Sections 801 and 803 of the Standard Specification.

2.0 Construction Requirements. Sod shall be installed at all locations as shown on the plans or where the contractors operations have disturbed adjacent, existing grass landscapes or as approved by the engineer. Fertilizer shall be applied to all sodded locations per Manufacturers Recommendations. The type of sod and fertilizer shall be as noted below.

Fertilizer
Starter Fertilizer 12-12-12 or 10-10-10

Sod
Turf Type Tall Fescue

3.0 Method of Measurement. Measurement of sodded areas shall be made to the nearest square yard. The area required for fertilizer shall match the final area for sod. Plan quantities were estimated from sidewalk locations with adjacent grassy areas. More or less quantity of said materials may be needed depending upon construction requirements at each location. The Engineer shall verify and approve the contractor's location and quantity of newly sodded areas.

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 in the bid item 803-10.00A, Turf Type Tall Fescue Sodding, measured per square yard.

S. Signal Controller

1.0 Description. This work shall consist of providing and installing a new 2070 controller with cabinet at the intersections shown on the plans.

1.0 Material Requirements. The new controllers installed with this project shall consist of ATC eX 2070 controllers with OMNI-eX software as manufactured by McCain, Inc. placed inside a 332 cabinet.

2.1 The contractor shall be responsible for providing and installing all necessary items to make the new signal controllers operational. This includes but is not limited to the 2070 controller, the OMNI-eX software, and the 332 cabinet. The engineer will provide the existing cycle lengths, but the contractor shall ultimately be responsible for programming the timings into the new controllers.

3.0 Method of Measurement. Method of measurement will be made per each controller installed by the contractor and acceptable by the engineer.

4.0 Basis of Payment. Accepted signal controllers will be paid for at the contract unit price for item 902-99.02, Misc. 2070 Controller, per each.

T. Permanent Pavement Marking - SW

1.0 Description. This work shall consist of furnishing and placing permanent centerline, edge line, lane line markings, and preformed thermoplastic pavement marking, as specified, at locations shown on the plans or as approved by the engineer. The preformed thermoplastic pavement marking includes, but not limited to, 24" White (Stop Bars) and 24" Yellow (Hash Mark), 6" White for Crosswalks, Turn Arrows, Railroad Crossings, Yield Markings, and the word "ONLY". This work shall be in accordance with Section 620 and specifically as follows.

2.0 Construction Requirements. On roadways open to traffic, permanent centerline, edge line, and lane line markings shall be in place no later than five days after the final paving operations. This requirement applies per individual route if multiple routes are included in a contract or if a 15 mile section of an individual route is open to traffic within a contract. This requirement also applies to divided highways, once a directional segment of 15 mile, or the entire directional segment if less than 15 miles, is paved and open to traffic within a contract. To fulfill this requirement, the contractor may have to mobilize more than once for the installation of permanent centerline, edge line, and lane line markings. The contractor will also need to coordinate the permanent pavement marking with the installation of rumble strips.

The contractor shall place the preformed thermoplastic pavement marking after the permanent centerline, edge line, and lane line marking is installed by the contractor or by others. The contractor will have 5 five days after the permanent centerline, edge line, and lane line markings are placed to start the preformed thermoplastic pavement marking installation and shall be placed in accordance with manufacturer's recommendations or as approved by the engineer.

3.0 Basis of Payment. The accepted quantity of permanent pavement marking paint and preformed thermoplastic pavement marking will be paid for at the contract unit price for each of the pay items include in the contract. Payment will be considered full compensation for all labor, equipment, material or time necessary to complete the described work including any other incidental items.

U. Retroreflective Backplates

1.0 Description. This work shall consist of furnishing and installing new traffic signal retroreflective backplates as noted on the plans and conforming to the following standards.

2.0 System Requirements. Signal retroreflective backplates shall meet the minimum requirements in Sec 1092. Yellow reflective tape shall not be accepted.

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

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

5.0 Payment. No direct payment will be made for retroreflective backplates.

V. No Value Engineering Proposals for 2.5 Inch Perforated Square Steel Tube (PSST) Posts and Concrete Post Anchors for 2.5 Inch Perforated Square Steel Tube (PSST) Posts

This project will require 2.5 In. Perforated Square Steel Tube (PSST) Posts and Concrete Post Anchors for 2.5 In. Perforated Square Steel Tube (PSST) Posts as specified in the plans. No Contractor initiated Value Engineering Change Proposals (VECPs) or Practical Design Value Engineering Change Proposals (PDVECPs) will be accepted for any part of installing existing signs or new signs on new Perforated Square Steel Tube (PSST) Posts and Concrete Post Anchors different than the 2.5 Inch Perforated Square Steel Tube (PSST) Posts and Concrete Post Anchor for 2.5 Inch Perforated Square Steel Tube (PSST) Posts that is required.

W. Disposition of Existing Signal, Lighting and Network Equipment

1.0 Description. This work shall consist of the disposition of existing signal, lighting, and network equipment as shown on the plans and delivering it to the specified MoDOT maintenance lot.

2.0 Construction Requirements. 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:

Springfield Maintenance Lot
2455 N. Mayfair
Springfield, MO 65803

2.1 The contractor shall notify the Commission's representative 24 hours prior to each delivery by calling the contact listed below.

Joe Dotson, Urban Traffic Supervisor
Phone: (417) 895-7599 or (417) 733-0664

2.2 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. Delivery shall be within 2 working days of removal. All items returned shall be tagged with the date removed, project number and location/intersection.

2.3 Equipment shown on the plans for removal not listed in section 2.0 above shall become the property of the contractor and removed from the project.

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

X. Cooperation Between Contractors – SW

1.0 Description. The contractor shall be aware that other contracts will be administered in the vicinity and timeframe as this contract.

1.1 Job Number J8P3144 provides safety and operational improvements on Greene County LP44 and Business 65 (Chestnut Expressway in Springfield) from Interstate 44 to east of Eastgate Avenue. Construction is scheduled for 2025 and 2026.

1.2 Job Numbers J8P3050C, J8S3162, J8S3169, J8S3149, J8S3172, J8S3190, and JSU0085 provide for resurfacing, ADA, safety and operational improvements on Greene County Route 744 (Kearney Street in Springfield) from the Springfield-Branson National Airport to Mulroy Road, and on Mulroy Road from Route OO to I-44. These projects will be let in combination. Construction is scheduled for 2024 and 2025.

1.3 Job Number J8P3032C and J8P3032D is a widening project on US Route 60 (James River Freeway) from west of Route 13 (Kansas Expressway) to National Avenue in Springfield. Construction is scheduled for 2024. J8P3201 ramps and auxiliary lanes, J8P3223 bridges.

1.4 Job Numbers J8P3087E, J8P3087F, J8S3165 and J8S3173 provides for resurfacing, ADA, safety and operational improvements on Greene County Route 13 (Kansas Expressway) from north of I-44 to Route 60 (James River Freeway) in Springfield. Construction is scheduled for 2024.

1.5 Job Numbers J8S0745, J8S3215, J8S3153 and J8S3133 provides for resurfacing, ADA, safety and operational improvements on Greene County Route D (Sunshine Street) in Springfield. Construction is scheduled for 2025 and 2026.

1.6 Job Numbers J8I3044C, J8I3225, J8S3156, and JSU0076 provides for resurfacing and capacity improvements on Greene County Interstate 44 in Springfield. Construction is scheduled for 2025 and 2026.

1.7 Job Number J8S3157 provides for bridge replacement and ADA improvements on Greene County Route 413 (Sunshine Street) in Springfield. Construction is scheduled for 2024 and 2025.

2.0 Requirements. The contractor shall coordinate work so as not to interfere with or hinder the progress or completion of the work being performed by the other contractor. The contractor shall also coordinate work to minimize impacts to the traveling public between the work zones.

2.1 The contractor will not be granted additional time due to conflicts with other contractors, unless approved by the engineer.

3.0 Basis of Payment. No direct payment or additional time 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.

Y. New Concrete Apron on Existing Signal Cabinet Base

1.0 Description. At the southbound US 65 and Evans Road intersection, the contractor shall remove the existing concrete apron surrounding the base of the signal cabinet. Fill will be added in the surrounding area to make a level foundation for new concrete apron.

2.0 Construction Requirements. See Standard Plans 902.100 for additional information.

3.0 Method of Measurement. Measurement will be made per each apron installed by the contractor as approved by the engineer.

4.0 Basis of Payment. This will be included in the cubic yard quantity 902-91.00, Base, Concrete, for Evans Road Signals and cover all associated work in this description.

Z. Wireless Connection

1.0 Description. This work shall consist of removing and reinstalling an existing wireless communications Subscriber Unit (SU) at the traffic signal on Chestnut Expressway (LP 44) at Broadview/Haseltine Street that will communicate with a wireless communications Access Unit (AU) at the intersection of Chestnut Expressway and West Bypass (US 160).

2.0 Material Requirements. Wireless SU shall include the outdoor wireless unit and antenna, outdoor rated cabling (per manufacturer requirements), lightning surge protection with earth grounding, and ancillary equipment necessary to provide communications between the traffic signal on Chestnut Expressway at Broadview/Haseltine to the existing communications infrastructure along Chestnut Expressway. The installation shall include any necessary modifications to provide power connections and mounting of the unit inside the traffic signal cabinets. The contractor is responsible for communications path work, power level settings, antenna positioning, Radio Frequency Interference (RFI) studies and Electro Magnetic Interference (EMI) resolution so that the contractor delivers a fully functional, operational and secure communication network connection to the traffic signal at Chestnut Expressway and Broadview/Haseltine.

3.0 Communications. The contractor shall be responsible for installing all necessary items to provide a stable connection between the existing AU and the reinstalled SU and provide connectivity to the MoDOT area network. The unit shall be installed on the signal pole such that it provides optimal line of sight between wireless AU and SU units. Appropriate connections to the traffic signal shall be provided. The contractor shall communicate with MoDOT staff to determine appropriate set-up of wireless devices.

4.0 Method of Measurement. Measurement will be made per each Wireless connection installed by the contractor as approved by the engineer.

5.0 Basis of Payment. Accepted wireless subscriber units will be paid for at the contract unit price for item 902-99.02, Wireless Subscriber Unit, Each.

AA. Contractor Furnished, Contractor Installed Radar Detection System

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

2.0 Equipment. Radar equipment must meet or exceed all the following requirements.

(a) Equipment must be FCC certified.

(b) Equipment must meet all NEMA TS2-2003 specifications for traffic control equipment.

(c) Each radar unit must be composed of multiple sensors to establish two-dimensional coverage.

(d) Radar Detection must be compatible with SDLC inputs.

3.0 Construction Requirements. The contractor shall be responsible for providing and installing all necessary items to make the new radar detection system operational with stop bar presence detection for each lane of travel. Input BIU 9 shall be used for presence detector inputs according to the following chart.

Vehicle Detection Assignments					
	BIU	IO	Detector	Call Phase	Mvmt
PRESENCE DETECTION	BIU 9	1	1	1	SBL
		2	2	2	NBT
		3	3	3	EBL
		4	4	4	WBT
		5	5	5	NBL
		6	6	6	SBT
		7	7	7	WBL
		8	8	8	EBT
		9	9		
		10	10	2	NBR*
		11	11		
		12	12	4	WBR*
		13	13		
		14	14	6	SBR*
		15	15		
		16	16	8	EBR*

*Right turn presence detection only used if the RT lane is signalized

3.1 Presence Zones for left turn lanes shall be assigned to Radar Channel 1. Presence Zones for through lanes shall be assigned to Radar Channel 2. Presence Zones for signalized RT lanes, if needed, shall be assigned to Radar Channel 3. All detector programming shall be approved by the MoDOT signal engineer.

4.0 Method of Measurement. Method of measurement will be per intersection, complete in place including all necessary incidental items to complete the work. An intersection is defined as all legs in each direction including all lanes on each leg of the intersection.

5.0 Basis of Payment. Payment for the installation of the radar detection system will be completely covered by the contract unit price for Pay Item No. 902-99.02, Contractor Furnished, Contractor Installed Radar Detection System, per each.

BB. Reusing and Relocating/Reinstalling Wavetronix Radar Detection System

1.0 Description. This work shall consist of reinstalling the existing Wavetronix detection system at the intersections of Glenstone and Seminole, Glenstone and Portland/Cinderella, and Glenstone and Barataria.

2.0 Material Requirements. The existing radar detection materials will be reused. New cabling may be required.

3.0 Construction Requirements. Contractor shall install the existing Wavetronix Matrix sensors, sensor mounting brackets, harness, junction boxes, interface unit and cable according to the plans and all applicable User Guides provided at www.wavetronix.com.

4.0 Equipment. All equipment related to radar detection that will not be reinstalled shall be delivered to the following location. The contractor must notify Commission's representative 24 hours prior to delivery.

Springfield Maintenance Lot
2455 North Mayfair
Springfield, MO 65803
Joe Dotson, (417) 895-7599 or (417) 733-0664

4.1 The contractor shall exercise reasonable care in the handling of the equipment during the removal, transportation, and reinstallation. Should any of the equipment be damaged by the contractor's negligence, it shall be replaced at the contractor's expense.

5.0 Basis of Payment. The removal and reinstallation of the existing radar detection system shall be considered completely covered by the contract unit price for Item No. 902-99.01, "Removal and Reinstallation of Existing Radar Detection System", per lump sum.

CC. Black Powder Coating for Lighting– J8P3236

1.0 Scope. This specification covers a powder coating finish for metallic components. All galvanized exterior surfaces visually exposed for all lighting equipment are coated with the color Black as specified in the plans, J8P3236.

2.0 Basis of Acceptance. Basis of acceptance of the powder coated components will be based on a manufacturer's certification, including certified test results for all performance requirements, submitted by the contractor and upon results of any tests performed by the engineer. The contractor shall repair any areas damaged during the testing process by a written method of repair recommended by the powder coating manufacturer. All repairs shall be subject to the engineer's approval.

3.0 Material.

3.1 Color. The finished powder coating shall be in the color specified in the contract.

3.2 Powder Coating Type. The powder coating shall be a urethane or triglycidyl isocyanate (TGIC) polyester resin type.

3.3 Galvanizing. When galvanizing is specified, all surfaces of the component shall be

galvanized prior to powder coating in accordance with ASTM A 123. Components shall not be water or chromate quenched prior to powder coating.

3.3.1 Testing of Galvanizing. The procedure for determining the mass of coating shall be in accordance with ASTM A 90. This method shall be used in cases where the area of the test specimen can be accurately tested. On specimens shaped so that the area cannot be calculated, the mass of coating shall be determined with a magnetic gauge in accordance with ASTM E 376. The powder coating shall be removed by solvent removal or other any other method that does not affect the zinc coating.

4.0 Workmanship.

4.1 Fabrication. After fabrication of the component, all welds, bolted connections, holes, cut ends, etc. shall be free of slag, burrs or other imperfections that would affect the overall appearance or performance of the finished product.

4.2 Finish of Galvanized Components. When galvanizing is required prior to powder coating, all galvanized surfaces shall be in accordance with the Finish and Appearance requirements of ASTM A 123 prior to application of the powder coating. Prior to powder coating, all surfaces shall be free of uncoated areas, blisters, flux deposits, gross dross inclusions, lumps, globules, runs, drips and sags. Zinc high spots, such as metal drip line, and other rough areas shall be removed by cleaning with hand or power tools as described in SSPC Surface Preparation Specification 2 or 3. The zinc shall be removed until the zinc is level with the surrounding area, taking care that the base coating is not removed by the cleaning methods. The final galvanized surface shall be an applicable substrate to ensure proper adhesion of the powder coating. After removal of high spots and other rough areas, the coated surface shall be inspected to verify the required zinc coating thickness is in accordance with ASTM A 123 utilizing a magnetic field type thickness instrument in accordance with ASTM E 376. Any component that does not comply with the zinc coating thickness requirement before or after removal of high spots or rough areas shall be repaired in accordance with ASTM A 780.

4.3 Finish of Powder Coating. The powder coated surface shall be smooth, free of thin spots, pinholes, blemishes, and other coating imperfections.

5.0 Powder Coating Application. The powder coating shall be applied in accordance with all requirements of the supplier of the powder coating material. When powder coating is to be applied over galvanized surfaces, the powder coating application shall also be in accordance with the requirements supplied by the galvanizer. This shall include storage and pre-treatment of the component prior to application of the powder coating. If there is a conflict in application method between the powder coating supplier and the galvanizer, the powder coater shall resolve the conflict prior to application of any powder coating.

6.0 Performance Requirements. The finished components shall be delivered to the project site with no damage to the powder coating. The contractor shall repair any damaged areas in accordance with the requirements of the powder coating manufacturer at the engineer's discretion. Damage to the powder coating may be cause for rejection. The powder coating of the finished components shall be in accordance with the following requirements:

Item	Test Method	Requirement
Salt Spray Corrosion, 500 hrs, single scribe	ASTM B 117	Creepage shall not exceed ¼" in either direction from scribe
Cross Hatch Adhesion, min	ASTM D 3359	5A and 5B
Pencil Hardness, Gouge, min	ASTM D 3363	F
Pencil Hardness, Scratch, min	ASTM D 3363	F
Coating Thickness, mils, min [a]	ASTM E 376	3.0
Gloss, 60°, min	ASTM D 523	20
Chemical Resistance [b]	ASTM D 1308	Coating shall show only a slight circular mark

[a] For components with an underlying non-magnetic coating over steel, the powder coating thickness will be the difference in thickness measurements with and without the powder coating.

[b] The open spot test shall be performed with 5 drops 95% toluene/5% MEK for 30 s.

7.0 Basis of Payment. All costs for complying with this special provision shall be considered completely covered by the Pay Items:

901-99.01, Black Powder Coating, Lighting Equipment, lump sum
902-99.01, Black Powder Coating, Signal Equipment, lump sum

DD. Ethernet Network Switch

1.0 Ethernet Network Switch for Single mode fiber optics.

2.0 Ethernet Network Switch Requirements.

The Ethernet network switch requirements shall include a managed Cisco 2960C-8TC-L switch for full compatibility with upstream devices. Two SFP gigabit fiber port adapters shall be included. Two LC – ST singlemode fiber jumpers will be required for connection to the Fiber Distribution Unit.

The Cisco switch shall include all hardware necessary for mounting in 19" rack within the ITS/Fiber Splice Cabinet.

EE. ITS/Fiber Splice Cabinet

1.0 ITS/Fiber Splice Cabinet.

1.1 ITS/Fiber Splice Cabinet Requirements. The cabinet shall be a Type 332 in accordance with the Traffic Signal Control Specifications published by the California Transportation and Housing Agency, Department of Transportation (Caltrans). The aluminum housing material shall be a minimum of 0.125 inches in thickness. All cabinets shall have a natural aluminum finish, free from blemishes. All seams shall be continuously welded and ground smooth. All fasteners must be stainless steel.

The housing shall feature two doors with latches, hinges and door gaskets. One cabinet door shall have louvers in the lower quarter and a replaceable filter for ventilation. All cabinet doors shall be equipped with No. 2 Corbin locks. Two keys shall be provided with each cabinet. An EIA

19-inch rack shall be installed including side panels where cabinet power distribution components will be mounted.

A thermostatically controlled fan shall be installed in the top of the cabinet capable of moving 100 CFM of ventilation airflow.

LED lighting fixtures suitable for mounting at the top of the 19-in rack shall be installed in both the front and rear of the cabinet. Each shall be wired through door activated switches.

One aluminum 19-inch rack mountable shelf shall be provided. The shelf shall be secured to the rack rails at all four corners.

1.2 ITS/Fiber Splice Cabinet Electrical Distribution. A cabinet electrical distribution system consisting of the following elements shall be installed. Components shall be neatly arranged, mounted and wired on the lower quarter of the hinge-side rack side panel.

One power wiring block for service conductors

One 20 Amp single pole unit mount, feed-through circuit breaker

One Edco SHA1210 surge suppressor or approved equivalent

One 2 – gang outlet box with duplex outlets installed (quadraplex) with cover plate

One 12 position minimum barrier type terminal strip providing access to AC+ where cabinet fan and light circuits will be landed

One 12 position minimum copper AC neutral buss with set screws

One 12 position minimum copper earth ground buss with set screws

1.3 Fiber Distribution Unit (FDU). Each cabinet shall be equipped with a 19-inch rack mounted fiber distribution unit to provide a termination, splicing and connection point for fiber optic cables. The fiber distribution unit shall be modular in design and support a minimum termination/connection capacity of 48 fibers, four splice trays and strain relief for up to four cables.

The connector panels shall be designed to accommodate ST connectors. ST couplings with ceramic inserts shall be provided to accommodate either multi-mode or single mode fibers as appropriate. The unit shall provide both front and rear hinged door access.

The unit shall be constructed of aluminum. Plastic access doors will be permitted. The unit shall be positioned in the 19-inch rack as to allow fiber cables to be routed with bending radii exceeding manufacturer's recommendation. The unit shall not conflict with other cabinet components or panels.

1.4 Acceptance Testing. Acceptance testing shall include a visual inspection and testing of lights, fan, power outlets. Use a device that measures resistance to ground using the three point fall-of-potential method to ensure that the resistance from the cabinet's earth ground buss to ground does not exceed 5 ohms. Install additional ground rods if necessary to achieve this requirement. Provide all equipment and personnel needed to safely conduct the tests, arrange for the Engineer's representative to witness the tests, and provide a written summary indicating test results.

1.5 Basis of 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, shall be paid for under Pay Item No. 902-42.95, Splice Cabinet.

FF. Cat 5e/Cat 6 Ethernet Cable

1.0 Cat 5e/Cat 6 Ethernet Cable Requirements. The cable shall be outside plant rated (OSP), consisting of four (4) balanced twisted pairs of solid copper conductors, surrounded by a water blocking gel and designed for use in 10BASE-T through 1000BASE-T Ethernet networks. It shall be jacketed with a sunlight and abrasion resistant black, polyethylene outer jacket. The following performance compliance standards apply:

ANSI/TIA-568-C.2
ANSI/ICEA S-107-704-2012
RoHS-compliant/RoHS 2-compliant
REACH-compliant

GG. Relocate Fiber Optic (FO) Cable

1.0 Description.
MoDOT owns existing fiber optic cable at the following intersections:
Route 60 and Route MM/Republic Road
LP44 and Haseltine/Broadview
This cable is used for ITS purposes (signal interconnect, automated traffic counts, CCTV camera, etc.). The fiber optic cable is being impacted by the proposed roadway improvements. This work shall consist of disconnecting the fiber optic cable from the existing splice cabinet, pulling the fiber back to a point beyond the roadway impacts, reinstalling the existing cable back through a new conduit system, and reconnecting the fiber back up to a new fiber splice cabinet.

2.0 Construction Requirements.

2.1 Rte60 and Rte MM/Republic Rd FO West. The contractor shall disconnect the fiber from the existing splice cabinet in the northwest island then pull the cable back through the existing conduit system to the proposed pullbox F1 location, northwest near station 193+00. After the new conduit system w/ pullboxes and new fiber splice cabinet have been installed, the contractor shall pull the existing fiber back east to the new fiber cabinet and make the necessary connections.

2.2 Rte60 and Rte MM/Republic Rd FO East. The contractor shall disconnect the fiber from the existing splice cabinet in the northwest island then pull the cable back through the existing conduit system to the proposed pullbox F2 location, northeast near Sta 198+00. After the new conduit system w/ pullboxes and new fiber splice cabinet have been installed, the contractor shall pull the existing fiber back west to the new fiber cabinet and make the necessary connections.

2.3 LP44 and Haseltine/Broadview FO West. The contractor shall disconnect the fiber from the existing splice cabinet in the northeast quadrant then pull the cable back through the existing conduit system to the existing pullbox F5 location. After the new conduit system w/ pullboxes and new fiber splice cabinet have been installed, the contractor shall pull the existing fiber back east to the new fiber cabinet and make the necessary connections.

2.4 Evans Road North and South. The Contractor shall protect and safeguard fiber optic cables and conduits from damage during replacement of the pull box.

2.4 Construction Operations. The contractor shall be responsible for furnishing and installing the new conduit, pullboxes, the concrete base, and the fiber optic splice cabinet along with any necessary interface equipment. The contractor shall perform the fiber optic cable relocation as shown in the plans making all connections within the fiber optic splice cabinet. The contractor shall leave 25ft of coil in each in-line pullbox with the 100 foot of coil placed in the first pullbox from the splice cabinet. In the event the fiber is to be disconnected for an extended period of time, the contractor shall coil the fiber at the last pullbox and delineate the coil to prevent accidental damage.

2.5 Expectation. The contractor shall exercise reasonable care in the handling of the fiber optic cable during the extraction, storage and reinstallation of the fiber optic cables. MoDOT currently has a fully functional ITS network at this location. MoDOT will require a fully functional system after the contractor has performed the fiber optic relocation work. Failure to meet this expectation will result in complete replacement of the fiber optic cable in kind (24 count – 18SM/6MM) and length from splice cabinet to splice cabinet solely at the contractor's expense. Under no circumstance will the contractor be allowed to make a repair using an in-line splice between fiber splice cabinets.

3.0 Method of Measurement. Measurement for fiber relocation will be made for one direction only to the nearest linear foot. If 500ft of fiber is being pulled back and that same 500ft is reinstalled through a new conduit run, the measurement will be for 500ft. Measurement for additional one-way fiber pull will be made to the nearest linear foot.

4.0 Basis of Payment. Payment for furnishing and installing the conduit, pullboxes, and splice cabinet will be made for each respective bid item included in the roadway contract. The cost for relocating the existing ITS fiber cable shall be paid for at the contract unit bid price for Pay Item No. 902-99.03 Fiber Optic Relocation, per Linear Feet.

HH. Red Signal Ahead Wire Rerouting

1.0 Description. Red Signal Ahead signs east and west of intersection of Route 60 and Route MM/Republic Road. The 2 conductor#12 cable, used to power the Red Signal Ahead signs is being impacted by the proposed intersection improvements. This work shall consist of disconnecting the cable from the existing controller cabinet, pulling the cable back to a point beyond the roadway impacts, reinstalling the existing cable back through a new conduit system, and reconnecting the 2c#12 cable back up to a new controller cabinet.

2.0 Construction Requirements.

2.1 Rte60 and Rte MM/Republic Rd Eastbound RSA. The contractor shall disconnect the 1-2c#12 cable from the existing controller cabinet in the northwest island then pull the cable back through the existing conduit system to the existing pullbox 7 location, southwest near station 194+18. After the new conduit system w/ pullboxes and new controller cabinet have been installed, the contractor shall pull the existing cable back east to the new controller cabinet and make the necessary connections.

2.2 Rte60 and Rte MM/Republic Rd Westbound RSA. The contractor shall disconnect the 1-2c#12 cable from the existing controller cabinet in the northwest island then pull the cable back

through the existing conduit system to the existing pullbox 4 location, northeast near station 196+11. After the new conduit system w/ pullboxes and new controller cabinet have been installed, the contractor shall pull the existing cable back east to the new controller cabinet and make the necessary connections.

2.3 Construction Operations. The contractor shall be responsible for furnishing and installing the new conduit, pullboxes, the concrete base, and the controller cabinet along with any necessary interface equipment. The contractor shall perform the cable relocation as shown in the plans making all connections within the controller cabinet. The contractor shall leave 6ft of coil in each in-line pullbox with the remaining slack placed in the first pullbox from the controller cabinet. The Red Signal Ahead Signs need to be In service at all times. Only disconnected long enough for the contractor to reroute wire.

2.5 Expectation. The contractor shall exercise reasonable care in the handling of the cables during the extraction, storage and reinstallation. MoDOT currently has a fully functional Red Signal Ahead flashers at this location. MoDOT will require these to be fully functional after the contractor has performed the cable relocation work. Failure to meet this expectation will result in complete replacement of the 1-2c#12 from the existing Red Signal Ahead sign to the new controller cabinet solely at the contractor's expense. Under no circumstance will the contractor be allowed to make a repair using an in-line splice between sign & cabinet.

3.0 Method of Measurement. Measurement for 2c#12 cable relocation will be made for one direction only to the nearest linear foot. Ie: If 500ft of fiber is being pulled back and that same 500ft is reinstalled through a new conduit run, the measurement will be for 500ft.

4.0 Basis of Payment. Payment for furnishing and installing the conduit, pullboxes, and splice cabinet will be made for each respective bid item included in the roadway contract. The cost for relocating the existing cable shall be paid for at the contract unit bid price for Pay Item No. 902-99.03 Red Signal Ahead Wire Rerouting, per Linear Feet.

II. Uninterruptable Power Supply

1.0 Description. This work shall consist of providing and installing an "Uninterruptible Power Supply" (UPS) system at US 60 & MM, Loop 44 and Haseltine, Glenstone and Portland, Glenstone and Barataria, and Glenstone and Seminole. The system shall be specifically constructed and approved for the use with the 2070 signal controller.

1.1 In order to match other systems used in the area, the UPS shall be an Alpha FXM 1100 system. 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-181-230-10)

2.0 Installation. The UPS system shall be installed as per the manufacturer's recommendations. The system shall be mounted to the new Power Disconnect (paid as a Type 2 power supply) as designated in the project 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, furnishing, installing and connecting the Ethernet cable, including all incidentals shall be considered as included in and completely covered by the contract unit price for item 902-99.02, Uninterruptible Power Supply, per each.

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

MM. Signal Detection Disconnection

1.0 Description. The contractor shall contact the Traffic Management Center to coordinate a new signal timing at a minimum of 2 working days prior to the disconnection of the signal's detection capabilities or prior to the milling of an approach with inductive loop detection.

2.0 Contact Information

Melanie Belote, Traffic Studies Specialist
Southwest District Traffic Management Center
Telephone Number: 417-829-8056
Cell Number: 417-689-3783
Email Melanie.Belote@modot.mo.gov

3.0 Basis of Payment. No direct pay will be made to the contractor to recover the cost or time required to fulfill the above provisions.