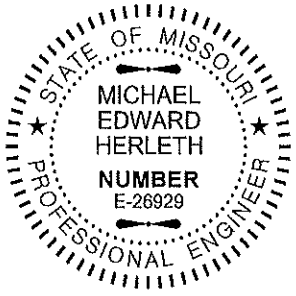
Job No.: J6M3422
Route: 370
County: St. Charles

JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)

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

Job No.: J6M3422
Route: 370
County: St. Charles



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 W. CAPITOL AVE.
JEFFERSON CITY, MO 65102
Phone 1-888-275-6636

Burns & McDonnell
425 South Woods Mill, Suite 300
Chesterfield, MO 63017
Certificate of Authority: 000165
Consultant Phone:816.627.6172

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

JOB NUMBER: J6M3422
St. Charles, MO
DATE PREPARED: Aug. 31, 2023

ADDENDUM DATE:

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

Job No.: J6M3422
Route: 370
County: St. Charles

JOB
SPECIAL PROVISION

A. General – State JSP-09-03J

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

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of worker required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations. The current State Wage Rates can be found on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT", "Contractor Resources" for the applicable bid opening. This supplemental bidding document has important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

State Wage Rates

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

General Provisions & Supplemental Specifications

Supplemental Plans to July 2023 Missouri Standard Plans
For Highway Construction

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

B. Contract Liquidated Damages JSP-13-01C

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

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

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

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

Job Number	Calendar Days	Daily Road User Cost
J6M3422	**N/A**	**$0**

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 **$500** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified contract completion date or calendar days.

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

C. Work Zone Traffic Management 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 Safety.

2.5.1 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.

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

3.0 Work Hour Restrictions.

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

Memorial Day
Labor Day
Thanksgiving
Christmas
New Year's Day

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

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

4.0 Detours and Lane Closures.

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

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

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

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

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

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

Missouri Highway Patrol 636-300-2800
City of St. Charles
Fire: 636-949-3250
Police: 636-949-3300

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

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

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

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

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

Chris Kelly, PE, Project Contact
St. Louis District
1590 Woodlake Drive
Chesterfield, MO 63017

Telephone Number: 314-453-5034
Email: Christopher.kelly@modot.mo.gov

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

F. Supplemental Revisions JSP-18-01Z

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

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

Stormwater Compliance Requirements

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

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

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

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

2.1 Duties of the WPCM:

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

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

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

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

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

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

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

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

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

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

5.1 Liquidated Damages. If the Contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the

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

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

Anti-Discrimination Against Israel Certification

By signing this contract, the Company certifies it is not currently engaged in and shall not, for the duration of the contract, engage in a boycott of goods or services from the State of Israel, companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel, or persons or entities doing business in the State of Israel as defined by Section 34.600 RSMo. This certification shall not apply to contracts with a total potential value of less than One Hundred Thousand Dollars ($100,000) or to contractors with fewer than ten (10) employees.

Ground Tire Rubber (GTR) Dry Process Modification of Bituminous Pavement Material

1.0 Description. This work shall consist of the dry process of adding ground tire rubber (GTR) to modify bituminous material to be used in highway construction. Existing GTR requirements in Section 1015 pertain to the wet process method of GTR modification that blends GTR with the asphalt binder (terminal blending or blending at HMA plant). The following requirements shall govern for dry process GTR modification. The dry process method adds GTR as a fine aggregate or mineral filler during mix production. All GTR modified asphalt mixtures shall be in accordance with Secs 401, 402, or 403 as specified in the contract; except as revised by this specification.

2.0 Materials. The contractor shall furnish a manufacturer's certification to the engineer for each shipment of GTR furnished stating the name of the manufacturer, the chemical composition, workability additives, and certifying that the GTR supplied is in accordance with this specification.

2.1 Product Approval. The GTR product shall contain a Trans-Polyoctenamer (TOR) added at 4.5 % of the weight of the crumb rubber or an engineered crumb rubber (ECR) workability additive that has proven performance in Missouri. Other GTR additives shall be demonstrated and proven prior to use such as a five-year field performance history in other states or performance on a federal or state-sanctioned accelerated loading facility.

2.2 General. GTR shall be produced from processing automobile or truck tires by ambient or cryogenic grinding methods. Heavy equipment tires, uncured or de-vulcanized rubber will not be permitted. GTR shall also meet the following material requirements:

Table 1 – GTR Material Properties		
Property	**Test Method**	**Criteria**
Specific Gravity	ASTM D1817	1.02 to 1.20
Metal Contaminates	ASTM D5603	≤ 0.01%
Fiber Content	ASTM D5603	≤ 0.5%
Moisture Content	ASTM D1509	≤ 1.0%*
Mineral Filler	AASHTO M17	≤ 4.0%

*Moisture content of the GTR shall not cause foaming when combined with asphalt binder and aggregate during mix production

2.3 Gradation. The GTR material prior to TOR or ECR workability additives shall meet the following gradation and shall be tested in accordance with ASTM D5603 and ASTM D5644.

Table 2 – GTR Gradation	
Sieve	**Percent Passing by Weight**
No. 20	100
No. 30	98-100
No. 40	50-70
No. 100	5-15

3.0 Delivery, Storage, and Handling. The GTR shall be supplied in moisture-proof packaging or other appropriate bulk containers. GTR shall be stored in a dry location protected from rain before use. Each bag or container shall be properly labeled with the manufacturer's designation for the GTR and specific type, mesh size, weight and manufacturer's batch or Lot designation.

4.0 Feeder System. Dry Process GTR shall be controlled with a feeder system using a proportioning device that is accurate to within ± 3 percent of the amount required. The system shall automatically adjust the feed rate to always maintain the material within this tolerance and shall have a convenient and accurate means of calibration. The system shall provide in-process monitoring, consisting of either a digital display of output or a printout of feed rate, in pounds per minute, to verify feed rate. The supply system shall report the feed in 1-pound increments using load cells that will enable the user to monitor the depletion of the GTR. Monitoring the system volumetrically will not be allowed. The feeder shall interlock with the aggregate weight system and asphalt binder pump to maintain correct mixture proportions at all production rates.

Flow indicators or sensing devices for the system shall be interlocked with the plant controls to interrupt mixture production if GTR introduction rate is not within ± 3 percent. This interlock will immediately notify the operator if GTR introduction rate exceeds introduction tolerances. All plant production will cease if the introduction rate is not brought back within tolerance after 30 seconds. When the interlock system interrupts production and the plant has to be restarted, upon restarting operations; the modifier system shall run until a uniform feed can be observed on the output display. All mix produced prior to obtaining a uniform feed shall be rejected.

4.1 Batch Plants. GTR shall be added to aggregate in the weigh hopper. Mixing times shall be increased per GTR manufacturer recommendations.

4.2 Drum Plants. The feeder system shall add GTR to aggregate and liquid binder during mixing and provide sufficient mixing time to produce a uniform mixture. The feeder system shall ensure GTR does not become entrained in the exhaust system of the drier or plant and is not exposed to the drier flame at any point after introduction.

5.0 Testing During Mixture Production. Testing of asphalt mixes containing GTR shall not begin until at least 30 minutes after production or per additive supplier's recommendation.

6.0 Construction Requirements. Mixes containing GTR shall have a target mixing temperature of 325 F or as directed by the GTR additive supplier. The additive supplier's recommendations shall be followed to allow for GTR binder absorption/reaction. This may include holding mix in the silo to allow time for binder to absorb into the GTR. Rolling operations may need to be modified.

7.0 Mix Design Test Method Modification. A formal mixing procedure from the additive supplier shall be provided to the contractor and engineer that details the proper sample preparation, including blending GTR with the binder or other additives. Samples shall be prepared and fabricated in accordance with this procedure by the engineer and contractor throughout the duration of the project.

8.0 Mix design Volumetrics. Mix design volumetric equations shall be modified as follows:

8.1 Additional virgin binder added to offset GTR absorption of binder shall be counted as part of the mix virgin binder

8.2 GTR shall be included as part of the aggregate when calculating VMA of the mix.

8.2.1 GTR SPG shall be 1.15

8.3 Mix G_{sb} used to determine VMA shall be calculated as follows:

$$G_{sb\,(JMF)} = \frac{(100 - P_{bmv})}{\left(\frac{P_s}{G_{sb}} + \frac{P_{GTR}}{G_{GTR}}\right)}$$

where:

$G_{sb\,(JMF)} = bulk\ specific\ gravity\ of\ the\ combined\ aggregate\ including\ GTR$
$P_{bmv} = percent\ virgin\ binder\ by\ total\ mixture\ weight$
$P_s = percent\ aggregate\ by\ total\ mixture\ weight\ (not\ including\ GTR)$
$P_{GTR} = percent\ GTR\ by\ total\ mixture\ weight$
$G_{sb} = bulk\ specific\ gravity\ of\ the\ combined\ aggregate\ (not\ including\ GTR)$
$G_{GTR} = GTR\ specific\ gravity$

8.4 G_{se} shall be calculated as follows:

$$G_{se} = \frac{(100 - P_b - P_{GTR})}{\left(\frac{100}{G_{mm}} - \frac{P_b}{G_b} - \frac{P_{GTR}}{G_{GTR}}\right)}$$

8.5 P_{be} shall be calculated as follows:

$$P_{be} = P_b - \frac{P_{ba}}{100} * (P_s + P_{GTR})$$

9.0 Minimum GTR Amount. The minimum dosage rate for GTR shall be 5 % by weight of total binder for an acceptable one bump grade or 10 % by weight of total binder for an acceptable two bump grade as detailed in the following table. Varying percentage blends of GTR and approved additives may be used as approved by the engineer with proven performance and meeting the specified requirements of the contract grade.

Contract Binder Grade	Percent Effective Virgin Binder Replacement Limits	Required Virgin Binder Grade	Minimum GTR Dosage Rate
PG 76-22	0 - 20	PG 70-22	5 %
		PG 64-22	10 %
PG 70-22	0 - 30	PG 64-22	5 %
		PG 58-28	10 %
PG 64-22	0 – 40*	PG 58-28	5 %
		PG 52-34	10 %
PG 58-28	0 – 40*	PG 52-34	5 %
		PG 46-34	10 %

* Reclaimed Asphalt Shingles (RAS) may be used when the contract grade is PG 64-22 or PG 58-28. RAS replacement shall follow the 2 x RAS criteria when calculating percent effective binder replacement in accordance Sec 401.

Buy America

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

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

a) Iron and steel – no changes to the current specification requirements.

b) Manufactured products – these are currently exempted under the 1983 waiver from FHWA.

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

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

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

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

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

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

Delete Sec 403.19.2 and substitute the following:

403.19.2 Lots. The lot size shall be designated in the contractor's QC Plan. Each lot shall contain no less than four sublots and the maximum sublot size shall be 1,000 tons. The maximum lot size shall be 4,000 tons for determination of pay factors. Sublots from incomplete lots shall be combined with the previous complete lot for determination of pay factors. When no previous lot exists, the mixture shall be treated in accordance with Sec 403.23.7.4.1. A new lot shall begin when the asphalt content of a mixture is adjusted in accordance with Sec 403.11.

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**
Ameren Missouri Luke Crain Phone: (217) 825-2282 Email: Lcrain@ameren.com	None	Power
AT&T Transmission Lenny Vohs Phone: (816) 275-4014 Email: lv2121@att.com	None	Communications
Charter Communications John Eultgen Phone: (314) 580-3908 Email: john.eultgen@charter.com	None	Communications
City of St. Charles Nicholas Galla, P.E. Phone: (636) 255-6135 Email: nicholas.galla@stcharlescitymo.gov	None	Fiber Optic, Storm Sewer, Sanitary Sewer, Water
Explorer Pipeline Darryl Kops Phone: (618) 660-3596 Email: dkops@expl.com	None – See Specific Provision in Section 2	Gas Pipeline

Marathon Pipeline, LLC Colin Carver Phone: (636) 283-8374 Email: CCarver@marathonpetroleum.com Jamie Lumpkins Phone: (618) 616-9030 Email: jlumpkins@marathonpetroleum.com	None – See Specific Provisions in Section 2	Gas Pipeline
MCI Domenic Nicastro Phone: (636) 459-1600 Email: domenic.nicastro@verizon.com	None	Communications
Phillilps 66 Pipeline, LLC Mike Codd Phone: (636) 527-8461 Email: mike.codd@p66.com	None – See Specific Provisions in Section 2	Gas Pipeline
Spire Missouri East Nick Eggert Phone: (314) 330-5720 Email: Nicholas.Eggert@spireenergy.com	None	Gas

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

2.0 Project Specific Provisions:

2.1 Explorer Pipeline – Beaver Dam Removal Site #3 is located within the limits of the Explorer Pipeline easement. Prior to the Contractor initiating work at Beaver Dam Removal Site #3, the Contractor shall notify Explorer Pipeline.

2.2 Marathon Pipeline

2.2.1 The Contractor shall contact Marathon Pipeline a minimum of 4 weeks prior to initiating any work including clearing and excavating over the pipeline easement.

2.2.2 The Contractor shall be required to prepare, submit, and implement a pipeline crossing plan approved by Marathon Pipeline prior to crossing any equipment over their easement.

2.3 Phillips 66 Pipeline – Work over the Phiilips 66 Pipeline easement shall be restricted to clearing and grubbing activities only.

H. Tree Clearing Restrictions

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

1.1 Due to the size of the forested block on the property, MoDOT has assumed that suitable roost trees exist within the project area; and the forested block contains enough mature trees to host these species during the "active season."

1.2 To avoid negative impacts to roosting Indiana and northern long-eared bats, all trees must be removed between November 1 and March 31. Tree clearing is prohibited outside these dates.

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

I. Clean Water Act Section 404 Permit Requirements

1.0 Description. The Contractor shall be aware that any work within streams, wetlands, or special aquatic sites requires a Clean Water Act Section 404 permit from the United States Army Corps of Engineers (USACE).

2.0 This project meets the conditions of the following listed permits with no pre-construction notification (No PCN) to the USACE:

Section 404 Nationwide Permit (NWP)

3.0 The Contractor shall abide by all general and regional conditions of Section 404 Permits, Section 401 Water Quality Certification, and specific conditions of the following listed Nationwide Permit found in the General Provisions and Supplemental Specifications to the current Missouri Standard Specifications for Highway Construction referenced in this contract.

NWP 13 No PCN letter attached to RES

3.1 If the Contractor makes any changes to the scope or limits of the project, the Contractor shall notify the Engineer who shall then notify the MoDOT Environmental Section to verify the project still meets permit conditions.

3.2 No additional time will be added to this contract for the Contractor to obtain any permits unless the need for additional permits is beyond the control of the Contractor.

4.0 Basis of Payment. There will be no direct payment for compliance with this provision.

J. Boschert Greenway

1.0 Description. The Boschert Greenway parallels New Town Road and crosses onto the Boschert Creek Detention Facility. The Greenway runs parallel to the western boundary of the detention facility before turning east and running along the northern border. This provision

provides specific requirements and restrictions relative to crossing Boschert Greenway, notification to St. Charles City Parks Department and Great Rivers Greenway District, and inspection of the crossing location of the Greenway upon completion of project.

2.0 General Requirements.

2.1 The Contractor shall be required to minimize the length of time equipment is required to cross Boschert Greenway. The Contractor shall notify the following individuals two weeks prior beginning work.

Chris Atkinson
St. Charles City Parks Department
Phone: 636-949-3372
Email: chris.atkinson@stcharlesparks.com

Ben Grossman
Great Rivers Greenway
Phone: 314-436-7009 Extension 120
Email: bgrossman@grgstl.com

2.2 Trail Closures. Boschert Greenway is open to public use only during daylight hours (defined as the period from thirty minutes before sunrise to thirty minutes after sunset).

2.3 During those hours when the trail is officially closed the Contractor will be permitted to fully close the trail in accordance with these Special Provisions and/or other arrangements made between the Contractor and the Engineer.

2.4 During those periods when the Boschert Greenway is officially open, closure of the trail will be prohibited anytime between thirty minutes before sunrise and 8:00 A.M. and between 5:00 P.M. and thirty minutes after sunset on weekdays or during daylight hours on weekends and holidays.

2.5 Prior to initiating any work that will require equipment to cross the greenway, the Contractor shall have in-place required temporary traffic signage along Boschert Greenway as shown in the plans.

2.6 Protection of Facilities. In performing the work under this Contract, the Contractor will not be permitted to move equipment and material along the length of any portion of the trail but will only be permitted to cross the trail at designated locations within the construction work zone. The location and width of such crossing areas will be as approved by the Engineer.

2.7 The Contractor is required to provide protection to the trail to minimize damage within the construction zone. The Contractor shall be responsible for repairing damage done to the trail and any temporary detours as a result of the Contractor's construction activities. Such repairs will be performed in a timely manner such that the trail and any temporary detours are always maintained to City of St. Charles Parks Department and Great Rivers Greenway standards.

2.8 Post-Project Inspection. The Contractor shall arrange with the Engineer, City of St. Charles Parks Department and Great Rivers Greenway a post-construction inspection of the greenway to assess condition and determine what damage, if any, will require repair.

2.9 Trail User Safety. The Contractor shall maintain an acceptable environment for trail users, even those on the trail outside the normal daytime hours of operation, safe from the hazards of the construction activities performed during the duration of this contract. The Contractor shall store all construction materials such that they are not accessible to trail users.

4.0 Method of Measurement. No measurement will be made for this item.

5.0 Basis of Payment. All costs incurred by the Contractor in complying with the requirements of this provision shall be completely covered by the contract unit prices bid for the various items of work in the contract.

K. Temporary Entrance to Project Site from New Town Boulevard

1.0 Description. Access to the Boschert Creek Detention Facility for purposes of this contract shall be from New Town Boulevard. The temporary construction access from New Town Boulevard should be located in the vicinity of the concrete section of Boschert Greenway that extends east from the greenway intersection.

2.0 General Requirements.

2.1 The Contractor shall coordinate requirements for a temporary entrance from New Town Boulevard to the project site from the City of St. Charles Public Works Department. The Contractor shall follow requirements for obtaining a temporary entrance permit.

2.2 The Contractor shall coordinate, as required, temporary protection for all utilities located within the limits of the acquired temporary entrance.

4.0 Method of Measurement. No measurement will be made for this item.

5.0 Basis of Payment. All costs incurred by the Contractor in complying with the requirements of this provision shall be completely covered by the contract unit prices bid for the various items of work in the contract. The Contractor shall be responsible to repair any damage to New Town Boulevard and existing utilities located within the limits of the acquired temporary entrance.

L. Contractor Quality Control NJSP-15-42

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

2.0 Quality Control Plan.

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

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

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

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

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

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

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

4.0 Work Planning and Scheduling.

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

4.2 Weekly Meeting. When work is active, the contractor shall hold a weekly project meeting with the engineer to review the planned activities for the following week and to resolve any

outstanding issues. Attendees shall include the engineer, the contractor superintendent or project manager and any foreman leading major activities. This meeting may be waived when, in the opinion of the engineer, a meeting is not necessary. Attendees may join the meeting in person, by phone or video conference.

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

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

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

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

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

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

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

M. No Open Burning NJSP 21-05

Delete Sec 201.2.5.1 and substitute with the following:

201.2.5.1 No Open Burning. The contractor is encouraged to harvest marketable timber, utilize mulched timber for erosion control and utilize excess mulch for composting. Open burning of trees and other brushy material shall not be allowed on the project site or on a tract immediately adjacent to the project site. No additional payment will be made for compliance with this provision.

N. Material for Levee and Weir Construction

Amend Sec 203 as follows:

203.3 Borrow. Borrow material including on-site material to be used for levee and weir construction shall be in accordance with the following:

A. Material shall be free of roots or other organic matter, refuse, ashes, cinders, frozen earth, or other unsuitable material.
B. Use suitable material sufficiently friable for embankment to provide a dense mass free of voids and capable of satisfactory compaction.
C. Do not use material containing gravel, stones, or shale particles greater in dimension than one-half the depth of the layer or lift to be compacted.
D. Cohesive materials include materials made up predominately of silts and clays generally exclusive of sands and gravel with the following properties:
    1. Impact compaction will produce a well-defined, moisture-density relationship curve.
    2. Are not free draining.
E. Moisture content shall be that required to obtain specified compaction of the soil or as indicated.

O. Embankment Protection

Amend Sec 611.30.2 as follows:

611.30.2 Material. The material for rock blanket shall be durable stone containing a combined total of no more than 5 percent of soil, sand, shale or non-durable rock. Stone shall be durable, free from cracks, seams and other defects which would tend to increase deterioration from natural causes. Not more than 10 percent of the stone shall show splitting, crumbling, or spalling when subjected to five cycles of the sodium soundness test as required by ASTM C88. The material shall contain a large percentage of pieces as large as the thickness of the blanket will permit, with enough smaller pieces of various sizes to fill the larger voids. For Type 2 Rock Blanket, at least 60 percent of the mass shall be of pieces having a volume of one cubic foot or more. Rock Blanket shall meet the following criteria:

AASHTO T 96: Less than 50 percent
AASHTO T85: Less than 2 percent
AASHTO T161: Greater than 75 percent
MoDOT TM14: Less than 18 percent

P. Check Valves

1.0 GENERAL

1.1 Submittals

1.1.1 Submit product literature that includes information on the performance and operation of the valve, materials of construction, dimensions and weights, elastomer characteristics, flow data, headloss data, and pressure ratings.

1.1.2 Provide shop drawings that clearly identify the valve dimensions.

1.2 Quality Assurance

1.2.1 Supplier shall have experience in the manufacture of “duckbill” style elastomeric valves, and shall provide references and a list of installations.

1.2.2 Manufacturer representative should be on-site for the commencement of work.

2.0 Materials

2.1 “DUCKBILL” ELASTOMERIC CHECK VALVES

2.1.1 Check Valves are to be all rubber of the flow operated check type with a slip-on connection. The Check Valve is designed to slip over the specified pipe outside diameter and attached by means of vendor furnished stainless steel clamps. The port area shall contour down to a duckbill, which shall allow passage of flow in one direction while preventing reverse flow. The valve shall be one piece rubber construction with nylon reinforcement. The duckbill shall be offset so that the bottom line of the valve is flat, keeping the invert of the pipe parallel with the invert of the valve. The top of the valve shall rise to form the duckbill shape.

2.1.2 Manufacturer must have available flow test data from an accredited hydraulics laboratory to confirm pressure drop data. Company name, plant location, valve size, and serial number shall be bonded to the check valve.

2.1.3 When line pressure inside the valve exceeds the backpressure outside the valve by a certain amount, the line pressure forces the bills of the valve open, allowing flow to pass. When backpressure exceeds the line pressure by at the same amount, the bills of the valve are forced closed. The flat bottom allows the valve to be installed where minimal bottom clearance exists.

3.0 Construction Requirements

3.1 Installation

3.1.1 Valve shall be installed in accordance with manufacturers written Installation and Operation Manual and approved submittals.

3.2 Manufacturer’s Customer Service

3.2.1 Manufacturer’s authorized representative shall be available for customer service during installation and start-up, and to train personnel in the operation, maintenance, and troubleshooting of the valve.

3.2.2 Manufacturer shall also make customer service available directly from the factory in addition personnel in the operation, maintenance and troubleshooting of the valve to authorized representatives for assistance during installation and start-up, and to train.

4.0 Method of Measurement. Measurement for check valves shall include all labor,

equipment, and materials necessary to complete this item of work. Work shall also include removal of existing and disposal of existing check valves. Measurement of check valves shall be per each.

5.0 Basis of Payment. The work performed and the materials furnished under this item will be paid for at the contract unit prices for:

Item Number	Item Name	Units
604-99.02	42 IN. Check Valve	Each

Q. Beaver Dam Removal in Boschert Creek

1.0 Description. This work shall consist of the removal of beaver dams and other obstructions as identified on the plans or as directed by the Engineer. The Contractor shall remove all trees and other debris from Boschert Creek. The contractor shall dispose of all trees, stumps, brush, roots and all other matter removed in the clearing and grubbing process.

2.0 General Requirements.

2.1 Removal activities are restricted so that equipment shall remain within the designated project limits. The Contractor shall not place equipment within Boschert Creek or cross Boschert Creek to the adjacent stream bank.

2.2 All trees and other debris shall be removed above and below the water surface elevation to a level equivalent with the natural streambed of Boschert Creek.

3.0 Method of Measurement. Measurement for beaver dam removal shall include all labor, equipment, and materials necessary to complete this item of work.

4.0 Basis of Payment. The work performed and the materials furnished under this item will be paid for at the contract unit price for:

Item Number	Item Name	Units
202-99.02	Beaver Dam Removal	Each

R. Dewatering

1.0 Description. The Contractor shall provide a dewatering system of a sufficient size and capacity as required to control ground and surface water flow into excavation and to allow all Work to be installed in a dry condition.

2.0 General Requirements.

2.1 Control, by acceptable means, all water regardless of source and be fully responsible for disposal of water.

2.2 Confine all discharge piping and/or ditches to available right of way. Provide all necessary means for disposal of water, including compliance with MoDOT SWPPP permit.

2.3 Control groundwater in a manner that preserves strength of foundation soils, does not cause instability or raveling of excavation slopes, and does not result in damage to existing structures.

(1) Where necessary to these purposes, lower water level in advance of excavation, using wells, wellpoints, jet eductors, or similar positive methods.

(2) Water level as measured in piezometers shall be maintained a minimum of 3 ft. below the prevailing excavation level.

2.4 Provide means for positive dewatering of all water sources prior to any appearance of water in excavation and continue until Work is complete to the extent that no damage results from hydrostatic pressure, flotation, or other causes.

2.5 Open pumping with sumps and ditches shall be allowed, provided it does not result in boils, loss of fines, softening of the ground, or instability of slopes.

2.6 Install wells and/or wellpoints, if required, with suitable screens and filters, so that continuous pumping of fines does not occur. Arrange the discharge to facilitate collection of samples by Owner or Resident Project Representative. During normal pumping, and upon development of well(s), levels of fine sand or silt in discharge water shall not exceed 5 ppm. Install a sand tester on discharge of each pump during testing to verify that levels are not exceeded.

2.7 Install, operate, and maintain dewatering system required to control surface and/or groundwater.

2.8 Control grading around excavations to prevent surface water from flowing into excavation areas.

2.9 Drain or pump as required to continuously maintain all excavations and trenches free of water or mud from any source, and discharge to approved drains or drainage channels. Commence when water first appears and continue until Work is complete to the extent that no damage will result from hydrostatic pressure, flotation, buoyancy, or other causes.

3.0 Basis of Payment. No direct payment will be made for dewatering efforts. Any dewatering efforts shall be incidental to excavation and embankment placement activities.

S. Clear and Grub for Haul Route

1.0 Description. The Contractor shall provide Clearing and Grubbing for Haul Route to allow for contractor operations to access work indicated in the plans.

2.0 General Requirements. ***Amend Sec 201 as follows:***

2.1 Clearing and Grubbing for Haul Route shall be limited to the area needed for the Contractor to create an access route to the work area indicated in the plans. The Contractor shall limit Clearing and Grubbing to removal of surface material needed to create the Haul Route. Scalping shall be limited to the area needed for the Haul Route.

3.0 Method of Measurement. No measurement will be made for this item.

4.0 Basis of Payment. The work performed and the materials furnished under this item will be paid for at the contract unit price for:

Item Number	Item Name	Units
201-99.19	Clear and Grub for Haul Route	Acre

T. Use of On-site Material for Levee and Weir Construction

1.0 Description. All excavated material was anticipated to be outside the requirements for placement in the levee and weir reconstruction areas for bid document preparation. The Contractor may, at their own discretion, evaluate and test the excavated material for suitability to construct the levee and weir areas.

2.0 General Requirements.

2.1 On-site material proposed to be used for levee and weir construction shall meet the requirements included in JSP O – Material for Levee and Weir Construction.

2.2 If the Contractor elects to use on-site material, the on-site material meeting the requirements for use shall be stockpiled separately from other excavated material.

3.0 Method of Measurement. Use of on-site material will be measured per cubic yard.

4.0 Basis of Payment. The use of on-site material for levee and weir construction shall be paid for as Compacting Embankment. The measured quantity of on-site material accepted and used for levee and weir construction shall reduce the quantity of Embankment in Place paid for on a 1:1 basis.

U. Optional Weir Treatment

1.0 Description. This work shall consist of installing a protective treatment on the weir structure. The Weir Treatment shall consist of a Type 2 Rock Blanket or InstaTurf armoring permanent erosion control mat. This work shall be performed in accordance with the standard specifications, Job Special Provisions, and as shown on the plans or established by the engineer.

2.0 The quantities shown reflect the total square feet of protective treatment as computed and shown on the plans.

2.1 The grading shown on the plans was designed for the use of a Type 2 Rock Blanket. A minimum of 2-foot thickness for the rock blanket was used to complete the grading plans. There will be no adjustment of the earthwork quantities due to adjusting the weir elevation for the Optional Weir Treatment.

2.4 The contractor shall comply with Section 611 for the Type 2 Rock Blanket, including amendments listed in the Job Special Provisions. The contractor shall comply with the product specification and installation instructions for InstaTurf Armoring Permanent Erosion Control Mat included as item Y in these Job Special Provisions.

3.0 Method of Measurement. The quantity of Optional Weir Treatment will be measured to the nearest square foot.

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

Item Number	Item Name	Units
611-99.05	Optional Weir Treatment	SY

V. InstaTurf Armoring Permanent Erosion Control Mat Specifications & Installation

1.0 Description. If the Contractor elects to use InstaTurf for the Optional Weir Treatment work, the following material specification and installation instructions shall govern the work. This work shall also be performed in accordance with other applicable standard specifications, Job Special Provisions, and as shown on the plans or established by the Engineer.

2.0 Materials. The InstaTurf Armoring Permanent Erosion Control Mat shall comply the material specifications listed below.

3.0 Installation.

3.1 The InstaTurf Armoring Permanent Erosion Control Mat shall be installed per manufacturer instructions included in the plans.

3.2 Anchor trenches shall be installed at all locations shown in the plans corresponding to the installation of Type 2 Rock Blanket toe walls.

3.3 The use of a soil pulverizer or soil conditioner may be helpful in efficiently preparing the soil for seeding and achieving a fairly smooth surface for mat installation.

InstaTurf® ShearForce10™ Hybrid Turf Instant Armor Mat
Product Specification

The hybrid turf instant armoring permanent erosion control mat shall provide the immediate finished look of natural grass along with the high flow erosion protection of large rock riprap, while establishing permanently reinforced vegetative cover. The mat shall consist of a UV stabilized, monolithic polyethylene simulated turf structure with approximate 7/16 inch by 5/8 inch rectangular apertures, backed with an engineered lightweight polyester geotextile. The geotextile must be dense enough to retain fine soil particles and seed, yet open enough to allow seedling emergence. The mat shall have an unvegetated permissible shear stress rating, as determined by ASTM D6460 large-scale channel testing, of 10 lbs/sf or greater for immediate as well as long-term erosion protection against high shear stress water flow. The hybrid turf instant armoring mat shall have the following characteristics and dimensions, and meet or exceed the minimum physical and performance properties as specified below.

Color: Grass green
Roll Sizes: 3ft x 45ft – 135 sf, 6ft x 45ft - 270 sf
Roll Weights: Approx. 49 lbs/99 lbs

InstaTurf ShearForce10 Index and Performance Properties			
Index Properties	**Test Method**	**Units**	**Values**
Mass Per Unit Area	ASTM D6566	lbs/sy	3.3
Tensile Strength	ASTM D6818	MD (lbs/ft)	363
		XD (lbs/ft)	164
Elongation	ASTM D6818	MD (%)	22
		XD (%)	37
Thickness	ASTM D6525	In	1.0
Ground Cover	ASTM D6567	%	85.9
UV Stability	ASTM D4355	% Tensile Retention @ 1,000 hrs	93.5
Performance Properties & Typical Design Values			
Manning's n Roughness Coefficient	ASTM D6460	<.5 ft flow depth	0.04
		.5 - 1.0 ft flow depth	0.03
		>1.0 ft flow depth	0.025
Permissible Shear Stress	ASTM D6460	Unvegetated (lbs/sf) - Cohesive Soils	12
	Recommended	Unvegetated (lbs/sf) - Non-cohesive Soils	10
Permissible Velocity	ASTM D6460	Unvegetated (ft/sec) - Cohesive Soils	25
	Recommended	Unvegetated (ft/sec) - Non-cohesive Soils	20

InstaTurf® *Shear*Force™ products are manufactured by GrassWorx LLC, 2381 Centerline Industrial Drive, St Louis, MO 63146. Insta-Turf.com