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	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636
	Burns & McDonnell 9400 Ward Parkway Kansas City, MO 64114 Certificate of Authority: 000165 Consultant Phone: (816) 333-9400
	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. JSU0076 Greene County, MO Date Prepared: 8/20/2024
	Addendum:
Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: A & D	

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	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. JSU0076 Greene County, MO Date Prepared: 8/20/2024
	Addendum:
Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: B, C, & E	

A. CONSTRUCTION REQUIREMENTS

1.0 Description. This provision contains general construction requirements for this project.

2.0 Construction Requirements. The plans and the asbestos and lead inspection report for the existing structure(s) and the geotechnical report for the new structure(s) are included in the contract in the bridge electronic deliverables zip file for informational purposes only.

2.1 In order to assure the least traffic interference, the work shall be scheduled so that a lane closure is for the absolute minimum amount of time required to complete the work. A lane 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.

2.2 Bridge work by contractor forces, including erection, rehabilitation or demolition, shall not be allowed over traffic unless a bridge platform protection system is installed below the work area except for work performed above a deck that is intact. The protection system shall be capable of catching all falling objects such as tools, overhang brackets or materials. Lifting of objects that are heavier than the capacity of the bridge protection system shall not be permitted.

2.3 Provisions shall be made to prevent any debris and material from falling onto the roadway. If determined necessary by the engineer, any debris and material that falls below the bridge outside the previously specified limits shall be removed as approved by the engineer at the contractor's expense. Traffic under the bridge shall be maintained in accordance with the contract documents.

2.4 Any damage sustained to the remaining structure as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

2.5 Provisions shall be made to prevent damage to any existing utilities. Any damage sustained to the utilities as a result of the contractor's operations shall be the responsibility of the contractor. All costs of repair and disruption of service shall be as determined by the utility owners and as approved by the engineer.

2.6 The contractor shall be responsible for the sufficiency of the existing structures to carry traffic during staged construction including the use of any temporary support that may be required.

3.0 Environmental Contact. Environmental Section may be contacted at the below address or phone number. The Missouri Department of Health may be contacted at (573) 751-6102.

MoDOT - Design Division - Environmental Section
P.O. Box 270
105 W. Capitol Ave., Jefferson City, MO 65102
Telephone: (573) 526-4778

3.1 Approved Smelter and Hazardous Waste Treatment, Storage and Disposal Facility. The following is the approved smelter and hazardous waste treatment, storage and disposal facility:

Doe Run Company - Resource Recycling Division - Buick Facility
Highway KK
Boss, MO 65440

Telephone: (573) 626-4813

4.0 Method of Measurement. No measurement will be made.

5.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for other items included in the contract.

B. AESTHETIC CONCRETE STAIN

1.0 Description. This work consists of applying solvent-based solid color concrete sealer to all exposed concrete surfaces of installed MSE wall systems, including MSE wall panels & coping.

2.0 Materials. H&C Solvent Based Solid Concrete Sealer, or Loxon Vertical Concrete Stain, or an equivalent product as approved by the engineer, shall be applied to MSE walls.

2.1 The aesthetic stain used on the panels, posts and copings will be tinted to match Sherwin Williams color “Gray Area” #SW 7052. All exposed concrete surfaces shall have a minimum of two coats of “Gray Area” applied.

2.2 Before staining all walls, a sample (8 ft by 8 ft minimum) area will be tinted and must meet the approval of the engineer.

3.0 Construction Requirements. Contractor will follow manufacturer’s directions for preparation of surface and product application. Contractor should be aware new concrete must cure as per manufacturer’s direction before being stained. All surfaces must be covered to the satisfaction of the engineer. A minimum of two coats shall be applied.

4.0 Basis of Payment. All cost for preparation of surfaces, materials and application of the product shall be considered completely covered by the contract unit price for “Aesthetic Concrete Stain”.

C. FORM LINERS

1.0 Description. This work item shall consist of constructing the form liner aesthetic treatment on mechanically stabilized earth (MSE) wall systems as shown on the plans and described in this special provision.

2.0 Materials.

2.1 Shop Drawings. Contractor shall provide complete shop drawings of all aesthetic treatments.

2.2 Formwork. Formwork for aesthetic treatment of concrete facing panels for the MSE wall systems shall be a type that produces uniform results consistent in both, pattern and depth of relief with the project design aesthetics. The contractor shall be responsible to coordinate the aesthetic treatments of all components to meet the design aesthetic criteria described herein and as shown on plans. No mixing of pattern numbers or manufacturers will be permitted. The form liner pattern shall be one of the patterns listed on the plans or approved equal.

2.3 Form Ties. Wall form ties shall be placed in a uniform pattern. In surface areas receiving the aesthetic treatment form liner, all form ties shall be placed in the simulated stone surface. Form ties shall be fiberglass ties that shall hold the forms in the correct alignment. The color of

the ties shall closely match the concrete wall color. Ties shall be ground flush with the surface of concrete prior to pressure washing.

2.4 Form Release Agent. Form release agents shall be the manufacturer's standard non-staining, non-petroleum based and compatible with surface sealer finish coating. Form release agents shall be applied to all surfaces of the form liner at the manufacturer's recommended rate.

2.5 Gaskets. Closed cell compressible neoprene of such thickness as is appropriate to assure leakage prevention shall be used to prevent joint leakage. One face shall be coated with an adhesive tape to assure proper positioning at the time of form closure. The neoprene shall be sufficiently compressible as to assure virtual "zero" separation of the forms as a result of the use of this product.

2.6 Aggregates.

2.6.1 Aggregate Source. The aggregate incorporated into the concrete mix of all aesthetic concrete MSE Wall components shall be from the same source. The purpose for this provision is to ensure uniformity of materials and color once areas are pressure washed and aggregates become exposed. Single-source shall be interpreted as one contiguous rock quarry, gravel pit or dredging location. This provision in no way alters the specification requirements for aggregate quality specified in other sections of the project specifications.

2.6.2 Aggregate Gradation. Concrete mixes supplied for the construction of the aesthetic treatments shall be in accordance with the following requirements. The concrete aggregate for the aesthetic treatment mix shall be Gradation E in accordance with Sec 1005 for any areas where aesthetic treatment is formed monolithically with the structure. This requirement for aggregate size is necessary to permit concrete mixture to flow freely and fill completely into reveals and form liner proposed in the aesthetic treatment. Gradation E aggregate shall meet the aggregate source requirements.

2.7 Joint Materials. Bond breaker material shall be polyethylene tape, coated paper, metal foil or similar type materials. The backup material shall be compressible, non-shrink, non-reactive with the sealant and non-absorptive material type such as extruded butyl or polychloroprene foam rubber. The joint sealant shall be an elastomeric, multi-component sealant, in accordance with Federal Specification TT-S-227, Type II. The sealant color shall match the pressure washed concrete surface color.

3.0 Construction Requirements.

3.1 Reveals and Texture. All reveals and texture shall be continuous from element to element through construction joints and around corners. Techniques shall be utilized to ensure true continuous texture between separate elements. Sand blasting will not be permitted for cleaning concrete surface, as sand blasting will reduce the special surface texture specified. Pressure washing with water is the preferred method of removing laitance. Pressure washing cleaning shall provide a minimum pressure of 3000 psi at a rate of 3 to 4 gallons per minute (11.4 to 15.1 L/min) using a fan nozzle held perpendicular to the surface at a distance of 2 to 3 feet. The completed surface shall be free of blemishes, discolorations, surface voids and conspicuous form marks to the satisfaction of the engineer.

3.2 Sample Test Panels. Sample test panels shall be constructed to demonstrate the contractor's workmanship for all form liner textures and patterns as shown on the plans. The sample test panels may also be used for demonstration special surface finish if approved by the

engineer. The architectural surface treatment of the finished work shall achieve the same final effect as demonstrated on the approved sample test panels. The materials used in construction of the sample test panels shall be in accordance with all standards as listed in this specification and the plans. The concrete mix shall be consistent with the project specifications and criteria. The minimum size of the sample test panels shall be 6 x 6 feet x 8 inches. The form liner finish shall be demonstrated in a vertical strip covering one-half to three-quarters of the sample test panel(s).

3.3 Patches. Holes and defects in concrete surface shall be filled within 48 hours of when the forms are removed. The same patching materials and techniques shall be used that were approved on sample test panels. The patches shall be made with a stiff mortar made with the same material sources as the concrete. The mortar mix proportions shall be adjusted so the dry patch matches the dry adjacent concrete. White cement shall be added to the mortar mix if necessary to lighten the mortar mix.

3.4 Joints. Joints shall be sealed when the sealant, air and concrete temperatures are above 40°F. Joints shall be primed and filled flush with joint sealant in accordance with the manufacturer's recommendation. All construction control and expansion joints shall occur within the vertical joints as shown in the elevation views on the plans. All vertical expansion joints shall be filled with preformed fiber expansion joint filler covered with bond break tape and sealed with elastomeric, multi-component sealant.

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

4.1 Form Liners on MSE Wall Systems. No measurement of ashlar stone form liners on MSE wall systems shall be made. Measurement for the inset logo form liner will be made to the nearest square yard.

5.0 Basis of Payment.

5.1 Form Liners on MSE Wall Systems. Payment for the above described work, including all material, additional concrete, equipment, labor and any other incidental work necessary to complete the ashlar stone form liner, will be considered completely covered by the contract unit price for "Mechanically Stabilized Earth Wall Systems". Payment for the above described work, including all material, additional concrete, equipment, labor and any other incidental work necessary to complete the logo form liner, will be considered completely covered by the contract unit price for "Form Liners for MSE Wall Systems". Any change in the contract plan quantities, based on approved change orders, will be paid for at the contract unit price.

D. PIPE PILE SPACERS

1.0 Description. In lieu of using pipe pile spacers, the contractor will have the option to use pile jackets. This job special provision contains general requirements for furnishing and placing pile jackets on piles.

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

2.1 Pile Jackets.

2.1.1 The pile jacket material shall meet or exceed the following physical requirements:

Pile Jackets		
Property	**Specification**	**Requirement**
Specific Gravity	ASTM D 1505	0.906 g/cc
Tensile @ Yield	ASTM D 638	4,000 psi
Flexural Modulus	ASTM D 790	195,000 psi
Elongation @ Break	ASTM D 638	> 500%
Heat Deflection Temperature @ 66 psi	ASTM D 648	190°F
Impact Strength, Notched Izod @ 73°F	ASTM D 256	No Break ft-lb/in
Rockwell Hardness	ASTM D 785	75 R scale

3.0 Construction Requirements.

3.1 For pile jacket option, the contractor shall drive piles before construction of the mechanically stabilized earth (MSE) wall. Pile jackets shall be installed on each pile and placed in the zone between the bottom of the levelling pad and the bottom of beam cap. The pile jacket shall be installed and backfill and soil reinforcements shall be placed around the pile jacket per the pile jacket manufacturer's installation requirements and recommendations. The contractor shall adequately support the piling to ensure that proper pile alignment is maintained during wall construction. The contractor's plan for bracing the pile shall be submitted to the engineer for review. The contractor shall avoid any damage to pile jacket during MSE wall construction. For damaged pile jacket sections, the contractor shall follow manufacturer's recommendations for the proper methods of in-place repair.

4.0 Method of Measurement. The pipe pile spacer or pile jacket will be measured per each.

5.0 Basis of Payment. Payment for furnishing and installing pipe pile spacers or pile jackets complete in place including all equipment, labor, and any other incidental work necessary to complete this item will be considered completely covered by the contract unit price for Pipe Pile Spacers.

E. TEMPORARY MSE WALL SYSTEM

1.0 Description. This work shall consist of furnishing material and placement of a temporary mechanically stabilized earth (MSE) wall system constructed in accordance with these special provisions and in reasonably close conformance with the location shown on the plans or otherwise established.

1.1 The temporary MSE wall system (temporary wire face wall) is located on the plans for staging of the permanent precast MSE wall system (MSE wall). The contractor may locate the temporary wall differently than that shown on the plans with the approval of the engineer. No additional payment will be made for change in wall location or subsequent changes in labor or material for the relocation.

1.2 The contractor will be solely responsible for determining the dimensions of the temporary MSE wall and ensuring that the temporary MSE wall is compatible with the construction of the MSE walls and bridges.

2.0 Design Requirements. The design by the wall system supplier shall be in accordance with acceptable engineering practice and these special provisions. The design life of the structure shall be 3 years unless otherwise specified by the owner. Design calculations in accordance with the AASHTO specifications shown on the plans shall be provided to the engineer.

2.1 Temporary MSE wall shall be designed and detailed by the same wall designer and wall manufacturer responsible for the design of the MSE wall.

2.2 The contractor shall be responsible for the internal stability, external stability, compound stability, and overall global stability of the structure.

2.3 The contractor shall ensure that the temporary MSE wall is capable of supporting all applicable dead loads, any contributed live load from staged traffic handling, and any construction loads while not interfering with load distribution of final roadway and MSE wall configuration. Submittals shall be required in accordance with Secs 720.3.3, 720.3.4, 720.3.5 and 720.3.6.

2.4 The structure's design height, H, shall be from the bottom of the excavation cut to the top of the roadway/approach slab or where the ground surface intercepts the temporary MSE wall facing. The temporary MSE wall shall extend past the end of the bottom layer of MSE wall soil reinforcement a minimum of one foot and then step up to the final grade at a 1:1 maximum slope. Any deviation to wall extents shall be approved by the engineer.

2.5 The soil reinforcement length shall be the same length from top to bottom of the wall. The minimum soil reinforcement length shall be greater than or equal to 70 percent of the design height, H. The minimum reinforcement length shall be 8 feet.

2.6 The soil parameters assumed for the temporary MSE wall design shall be those shown on the plan details for the MSE wall and shown in the foundation report.

2.7 The lateral earth pressure to be resisted by the reinforcement at each reinforcement layer shall be calculated using the appropriate coefficient of earth pressure, K, times the vertical stress at each reinforcement layer. The vertical soil stress at each reinforcement layer shall consider the local equilibrium of all the forces acting above the layer under investigation.

2.8 For temporary MSE walls, the contractor may adjust the stiffness of the facing and spacing of the reinforcements such that the local deformation between the reinforcement is within the elastic range in bending and tension, and the overall geometry meets the line and grade requirements for the temporary walls.

3.0 Material. The contractor shall make arrangements to purchase the material covered by this section of the special provisions.

3.1 Select granular backfill shall be in accordance with Sec 1010.

3.2 Geotextile fabric shall be in accordance with Sec 1011.

3.3 Soil reinforcement and attachment devices shall be in accordance with Sec 1052. Metallic or non-metallic soil reinforcement may be used for temporary MSE walls.

3.4 Metallic soil reinforcement, fasteners, and wire facing for temporary MSE wall will not require galvanization in accordance with Sec 1052 if the contractor ensures that a 3-inch minimum

clearance will be provided between any ungalvanized steel used in the temporary wall and the galvanized steel provided for the MSE wall. Damage done to the galvanization prior to the soil reinforcement installation shall be repaired in accordance with ASTM A 780.

3.5 Wire facing shall be shop fabricated of cold drawn steel wire and welded into the finished configuration in accordance with AASHTO M 32 (ASTM A 1064).

3.6 Inspection of the foundation conditions, the materials of construction, and the construction procedures will be the responsibility of the owner or their agents.

4.0 Construction Requirements.

4.1 Foundation preparation shall be in accordance with Sec 720.

4.2 The wall system components for the temporary MSE wall shall be constructed in accordance with the wall system supplier's recommendations and construction manual. The temporary MSE wall shall be constructed vertical or as near vertical as the wall system will allow. The erection of the first level of facing elements requires only a level grade. Wire face panel height shall be limited to a maximum of 18 inches. The overall vertical tolerance of the wall and the horizontal alignment tolerance shall not exceed 3 inches per 10 feet. Batter requirements shall be in accordance with Sec 720.

4.3 The contractor shall coordinate construction of the MSE wall and temporary MSE wall, and the walls shall be constructed simultaneously. Backfill material shall be placed and compacted in layers not exceeding a loose lift thickness of 8 inches and brought up evenly. A minimum fill thickness of 6 inches over non-metallic and 3 inches over metallic reinforcement shall be required prior to operating any compaction equipment. Lifts within 3 feet of the wall shall not exceed 6 inches. Placement of select granular backfill for temporary MSE walls and MSE walls shall be in accordance with Sec 720.

4.4 Wall materials damaged during backfill placement shall be removed and replaced at the contractor’s expense.

4.5 Technical assistance shall be in accordance with Sec 720.

5.0 Method of Measurement. No measurement will be made.

6.0 Basis of Payment. Payment for the above described work including all material, equipment, labor, and any other incidental work necessary to complete the temporary MSE wall will be considered completely covered by the contract lump sum price for Temporary MSE Wall System for each MSE wall where a temporary MSE wall is required.