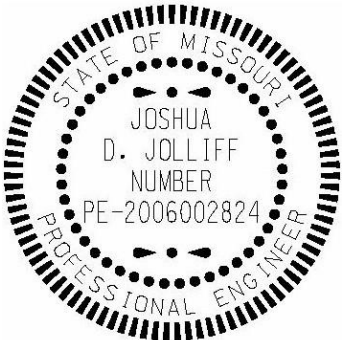


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 12/29/2024 1:27:17 PM Joshua D. Jolliff MO PE-2006002824	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636
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	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. J8S3156 Greene County, MO Date Prepared: 12/29/2024

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

JOB SPECIAL PROVISIONS (BRIDGE)

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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 the bridge closure is for the absolute minimum amount of time required to complete the work. The bridge shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed bridge is opened to traffic.

**2.2** 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.

**2.3** 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.

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

**4.0 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. DECORATIVE PEDESTRIAN FENCE

**1.0 Description.** This work shall consist of fabricating and installing a steel decorative pedestrian fence to provide a complete and properly functioning fence system as indicated on the plans and in this specification.

**2.0 Performance Requirements.**

**2.0.1** The fence design shall allow for thermal movement of 1/4 inch per 30 feet of fence, minimum. The fence design shall account for the differential thermal expansion characteristics of the fence and concrete to which it is mounted.

**2.0.2** Base plate shall be furnished for mounting posts to top of concrete. Base plate anchors shall be cast into the concrete.

**2.1 Materials.** Decorative fence system products shall meet or exceed the following requirements.

**2.1.1 Acceptable Manufacturer Systems.** The chosen decorative fence system shall be the same for all bridges in this project. Decorative fence system shall meet the performance

JOB SPECIAL PROVISIONS (BRIDGE)

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requirements as stated in this special provision and shall consist of one of the approved decorative fence systems listed on the Bridge Pre-qualified Product Listing.

**2.1.2 Visual Condition.** Metal free from surface blemishes shall be provided where exposed to view in the finished unit. Exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, stains, discolorations, or other imperfections on finished units are not acceptable.

**2.1.3 Surface Coatings.** The steel shall be hot-dip galvanized to meet the requirements of ASTM A 653 with a minimum zinc coating weight of 0.90 oz/sf, coating designation G-90. Surface preparation of galvanized surface for the aliphatic polyurethane finish coat shall be in accordance with the product specifications for the finish coat. The exterior of all fence components shall be coated with an aliphatic polyurethane finish coat to provide a total dry film thickness of 4 mils minimum and 6 mils maximum. The color of the finish coat shall be black (Federal Standard #17038).

**2.2 Construction Requirements.**

**2.2.1** Delivery, storage, handling and installation methods shall be per fence manufacturer's recommendations.

**2.2.2** Fence posts shall be spaced no greater than the maximum post spacing shown on the plans, plus one-half inch. For installations along sloping grades, the post spacing will be measured along the grade. Separation gaps shall be provided at a minimum of every six panels.

**2.2.3** For field assembly, zinc-rich primer shall be applied to thoroughly cover field-cut or field-drilled edges. Two coats of manufacturer supplied finish paint shall be applied to match fence color.

**2.3 Warranty.** All structural fence components shall be warranted by the manufacturer for a period of ten (10) years from the date of final acceptance by the engineer. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering, or corrosion and necessary labor required to replace or restore such parts.

**3.0 Method of Measurement.** Measurement shall be made horizontally and to nearest linear foot of fence installed.

**4.0 Basis of Payment.** Payment for the work described above and on the contract plans, including all material, equipment, labor, and any other incidental work necessary, will be considered completely covered by the contract unit price for Item 607-99.03 "Curved Top Decorative Fence (Structures)".

C. FORM LINERS

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

**2.0 Materials.**

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

**2.2 Formwork.** Formwork for aesthetic treatment of the cast-in-place concrete, concrete facing panels for the MSE wall systems, and architectural elements 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 aggregate incorporated into the concrete mix of all aesthetic concrete bridge components shall be from the same source as the balance of the bridge concrete work. 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

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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 form liners on MSE wall systems shall be made.

**4.2 Architectural Elements.** Measurement will be made per each.

**4.3 Form Liners for Cast-In-Place Concrete.** Measurement of form liners 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 this item, will be considered completely covered by the contract unit price for "MSE Wall Systems".

**5.2 Architectural Elements.** Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for "Architectural Element".

**5.3 Form Liners for Cast-In-Place Concrete.** Payment for form liners will be based on the contract plan quantities. Payment for the above described work, including all material, additional concrete, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for "Form Liners". 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

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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.

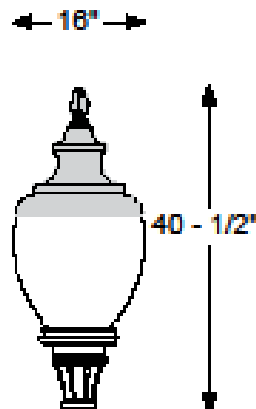
**5.0 Basis of Payment.** Payment for furnishing and installing pipe pile spacers or pile jackets complete in place including all equipment, labor, and any other incidental work necessary to complete this item will be considered completely covered by the contract unit price for Pipe Pile Spacers.

E. ORNAMENTAL LUMINAIRE

**1.0 Description.** This work shall consist of furnishing materials, labor and equipment required to install ornamental luminaires in conjunction with decorative pedestrian fencing. Installation details shall be in accordance with the plans. This work shall conform with applicable portions of Sec 901, as herein modified.

**2.0 Materials.**

**2.1 Luminaire.** The ornamental luminaire shall consist of an acorn shaped glass refractor, base housing, and lamp socket assembly. The shield shall be plastic. Acrylic or Lexan shall not be used. The luminaire base housing shall house the ballast and electrical components and shall be cast from copper free aluminum. The housing shall be painted with a polyester powder paint to match the fencing. Luminaires shall generally conform with the following detail drawings:



The luminaire shall be approved by the engineer and accepted by The City of Springfield.

**2.2 Mounting Adapter.** Luminaires shall be provided with an adapter housing if required to ensure proper mating of luminaires with fence posts. Adapter housings shall fit inside the post

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and inside the luminaire to ensure a proper and tight installation. Adapter materials and coatings shall meet the requirements of section 2.1 above, except that only exposed adapter surfaces shall be painted.

**2.3 Electrical.** The luminaire shall house a 240 volt line to line.

**2.4 Photometrics.** The luminaire shall be constructed to reduce the amount of veiling luminance. Prior to ordering luminaires, the contractor shall submit computer lighting calculations demonstrating a neutral effect on the veiling luminance conditions existing with the roadway luminaires already in place. These calculations shall indicate that the installation of the ornamental luminaires does not increase the maximum veiling luminance to average pavement luminance above existing conditions. The calculations shall indicate a graphical representation of each bridge and roadway configuration with all input values associated with the luminaire locations, photometric data, and lamp lumen rating. The calculation output shall clearly indicate luminance values at the pavement elevation on a grid no larger than 10 feet along the roadway and 6 feet across the roadway in accordance with IES recommendations. The calculations shall indicate the overall statistics showing average, maximum, minimum, average to minimum ratio, veiling luminance ratio and any other pertinent information as may be required by the engineer.

**2.5 LED lighting.** Use the most current optics per Industry Standards of LED for Longevity.

**2.6 Pole.** The Decorative Pole base shall be cast in 1 piece with an integral color matching the fence. No Welds within floor.

**2.7 Manufacturers.** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Sternberg Lighting
2. McGraw-Edison
3. Sun Valley / US Architectural

**3.0 Construction Requirements.** Luminaires shall be installed in accordance with the manufacturer's recommendations.

**4.0 Measurement and Payment.** The accepted quantities of luminaires, including any indicated units furnished for spare parts, shall be included in the unit price per linear foot for Item 607-99.03 "Curved Top Decorative Fence (Structures)" established in the contract. This contract unit price shall include the cost of all work to install ornamental luminaires including: furnishing, painting and installing all light poles and luminaires including wire from the luminaire to the access hole in the light pole and other necessary work as shown on the plans.

F. STAMPED CONCRETE PATTERN

**1.0 Description.** The raised sidewalk ribbon (4'-6" wide), as shown on the construction plans, shall be stamped with an Ashlar Stone pattern and stained as directed shown in the plans, as approved by the engineer and the City of Springfield.

**2.0 Construction Requirements.** This work shall be done in accordance with the requirements of Section 608 and 703 as applicable.



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**2.1 Sample Test Panels.** Sample test panels shall be constructed to demonstrate the contractor's workmanship for all form liner textures, patterns and aesthetic concrete stain 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 feet x 6 feet x 6 inches.

**3.0 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.

**4.0 Basis of Payment.** The accepted quantity of stamped sidewalk shall include all materials, equipment, tools and labor necessary to complete this work, and shall be considered completely covered by the unit bid price for Item 703-99.04 "Stamped Concrete Pattern".

G. 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".