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	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NO. J2P3357 Hannibal, MO Date Prepared: 06/30/2023
Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: ALL	

## **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 lane bridge is opened to traffic. Demolition of the existing bridge shall not commence until both shafts and columns have been placed for Bents 4-7 and the west shafts and columns have been placed for Bents 2 and 3.

**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 into the waterway or 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** No later than 30 days prior to starting work, the contractor shall submit a plan to the engineer for approval, outlining a plan to prevent damage to existing structures aligned with the provisions of Sec 701.4.1. The plan shall indicate methods of minimizing and monitoring vibrations from construction activities during pile driving, drilled shaft construction, bridge demolition and other activities with the potential for damage due to vibrations.

**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** A washer shall be required under head and nut when any reaming is performed for bolt installation.

## **3.0 Navigation Requirements.**

**3.1** All work shall be performed so that the free flow of navigation is not unreasonably interfered with, the navigable depths are not impaired and navigation lighting is visible at all times. Any floating equipment or vessels working in the channel shall display lights and signals as required by the current "Handbook of Missouri Boating Laws and Responsibilities" available on the Missouri Water Patrol web site. If scaffolding or nets are suspended below low steel in the navigation span, the engineer shall be advised so that the temporary reductions in clearance for river traffic can be checked for reasonableness and appropriate notices can be published.

Positive precautions shall be taken to prevent the accidental dropping of spark producing, flame producing, lighted or damaging objects onto barges or vessels passing beneath the bridge. All flame cutting, welding or other similar spark producing operations shall be ceased over the channel when vessels are passing beneath the bridge.

**3.2** The contractor shall be responsible for submitting a work plan to the engineer for review. When the engineer is in concurrence with the work plan, the engineer will forward the material to the appropriate agency or agencies for approval.

**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. DYNAMIC PILE TESTING

### 1.0 General.

**1.1 Scope of Work.** Scope of work shall include furnishing all labor, equipment and analysis associated with dynamic testing of driven piles as specified in this special provision. Dynamic restrike testing is not required on this project, and references to restrike testing in this special provision will not apply.

**1.2 Performance and Design Requirements.** Performance and design conditions for dynamic testing of driven piles shall be in accordance with [section 4.0](#) of this special provision.

**1.3 Approved Manufacturers.** For the following hardware and software components, only the listed manufacturer is recognized as providing the level of quality required. If the contractor wants to propose a non-listed manufacturer that is considered to provide an equivalent level of quality, this manufacturer shall be identified and supporting documentation provided. Acceptance of the manufacturer as a substitute will be at the discretion of the engineer.

Component	Product	Manufacturer
Pile Driving Modeling - Wave Equation Software	GRLWEAP	Pile Dynamics, Inc.
Pile Driving Monitoring - Hardware & Software	Pile Driving Analyzer - Model PAK	Pile Dynamics, Inc.
Pile Driving Analysis – Signal Matching Software	CAPWAP	Pile Dynamics, Inc.

**1.4 Test Requirements.** Dynamic pile testing shall be conducted in accordance with the standard test method indicated below.

Standard Test Method	Designation	Conducted By
High-Strain Dynamic Testing of Piles	ASTM D 4945	Contractor

**1.5 Qualifications.** The contractor shall perform dynamic pile testing utilizing the services of an independent dynamic pile testing consultant and qualified personnel. An engineer with a minimum of three years of dynamic pile testing and analysis experience or who has achieved Basic or better certification under the High-Strain Dynamic Pile Testing Examination and

Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving monitoring. An engineer with a minimum of five years of dynamic pile testing and analysis experience or who has achieved Advanced or better certification under the High-Strain Dynamic Pile Testing Examination and Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving modeling and pile driving analyses.

## **2.0 Execution.**

**2.1 Pile Driving Modeling.** The contractor shall perform preconstruction wave equation analyses and prepare a summary report of the results. The wave equation analyses shall be used to assess the ability of all proposed pile driving systems to install piles to the required capacity and the desired penetration depth within allowable driving stresses. The report shall include a drivability graph relating pile capacity, blow count and driving stresses to depth. The report shall include a bearing graph relating the pile capacity to the pile driving resistance. The bearing graph shall indicate blow count versus capacity and stroke. The report shall also contain a constant capacity analysis or inspectors' chart to assist the engineer in determining the required driving resistance at other field observed strokes. The contractor shall perform wave equation analyses in accordance with [section 4.0](#) of this special provision. Acceptability of the wave equation report and the adequacy of analyses will be determined by the engineer.

**2.1.1** Approval by the engineer of the proposed pile driving system will be based upon the wave equation analyses indicating that the proposed system can develop the specified pile capacity at a pile driving rate of 2 to 10 blows per inch at the end of driving, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. The contractor shall provide preliminary pile driving criteria based on wave equation analyses and any anticipated capacity changes after driving, set-up or relaxation, subject to revision based upon dynamic pile testing field measurements.

**2.1.2** If any changes or modifications are made to the approved pile driving system, additional wave equation analyses in accordance with [section 2.1](#) of this special provision shall be required.

## **2.2 High-Strain Dynamic Pile Testing.**

**2.2.1** The contractor shall perform dynamic pile testing at the locations and frequency required in accordance with [section 4.0](#) of this special provision.

**2.2.2** Dynamic pile testing involves monitoring the response of a pile subjected to heavy impact applied by the pile hammer at the pile head. The testing shall provide information on the driving stresses, pile capacity, structural integrity and hammer efficiency.

**2.2.3** The contractor shall engage an independent dynamic pile testing consultant and qualified personnel in accordance with [section 1.5](#) of this special provision. Prior to testing, the engineer will review and approve the proposed independent dynamic pile testing consultant, the experience and qualifications of assigned personnel, details of the method of testing, a list of equipment, and the method of analysis of test results. The contractor shall provide all available details of the subsurface conditions, pile dimensions and properties, and pile driving systems to the independent dynamic pile testing consultant.

**2.2.4** All field testing and measurements shall be made in the presence of the engineer.

## **2.3 Field Testing.**

**2.3.1 Equipment.** Dynamic pile testing field measurements shall be carried out using approved equipment, software and recording equipment. The data collected at the end of initial driving and the beginning of restrike shall be analyzed using approved signal matching techniques and software.

**2.3.2 Monitoring During Driving.** During pile driving, piles shall be instrumented and monitored with testing equipment satisfying the requirements of [section 1.3](#) of this special provision.

**2.3.2.1** The contractor shall install two sets of strain transducers and accelerometers near the top of each pile to be tested and shall use a compatible measuring and recording system to record the data during driving.

**2.3.2.2** The equipment required to be attached to the pile shall be appropriately positioned and fixed to the approval of the engineer.

**2.3.2.3** The hammer and all site equipment used shall be capable of delivering an impact force sufficient to mobilize the specified pile capacity indicated in [section 4.0](#) of this special provision without damaging the pile.

**2.3.2.4** The testing equipment shall monitor pile stresses during driving to prevent pile damage and ensure pile integrity and capacity. If the testing equipment indicates overstressing or damage to the pile, the contractor shall immediately discontinue driving and notify the engineer.

**2.3.2.5** If the testing equipment determines that pile stresses during driving exceed acceptable levels, a new pile driving system, modifications to existing system or new pile installation procedures shall be proposed by the contractor. Approval by the engineer of any proposed changes to the pile driving system or pile installation procedures will be based upon the results of additional wave equation analyses in accordance with [section 2.1.2](#) of this special provision.

**2.3.3 Preparation of the Pile Head.** The preparation of the pile head for the application of dynamic test load shall involve, where appropriate, trimming the head, cleaning, and building up the pile using materials that shall, at the time of testing, safely withstand the impact stresses. The impact surface shall be flat and at right angles to the pile axis.

**2.3.4 Dynamic Measurement and Analysis.** Monitoring of pile driving shall begin when pile driving begins. The data shall be recorded and processed immediately in the field by the pile driving monitoring equipment and software. Unless monitoring indicates that additional driving will damage the pile, pile driving and monitoring shall continue until both the specified pile tip elevation and the specified pile capacity are reached. For each pile tested, pile driving analysis using signal matching techniques shall be performed for a selected blow at the end of driving to determine the relative capacities from end bearing and skin friction along the pile.

**2.3.4.1** Restrike tests shall be performed at the frequency indicated in [section 4.0](#) of this special provision. The time interval between end of initial driving and beginning of restrike shall be in accordance with [section 4.0](#) of this special provision. During restrike, the pile shall be instrumented and monitored similar to during initial driving. For each restrike test, pile driving analysis using signal matching techniques shall be performed for a selected blow from the

beginning of restrike to determine the relative capacities from end bearing and skin friction along the pile.

**2.3.4.2** The restrike test shall be performed with a warmed-up hammer and shall consist of striking the pile for 20 blows or until the pile penetrates an additional 3 inches whichever occurs first unless testing equipment indicates overstressing or damage to the pile. If such overstressing or damage to the pile is indicated, the contractor shall immediately discontinue driving and notify the engineer. In the event initial restrike testing indicates a pile capacity below the specified capacity additional driving may be required as directed by the engineer.

**2.3.4.3** The engineer may request use of pile driving monitoring equipment and software on additional piles if inconclusive results are obtained or unusual driving conditions are encountered.

**2.3.4.4** Pile bearing capacity and integrity shall be evaluated based on the standard procedure used in practice.

**2.3.4.5** Tabular records of the dynamic pile testing field measurements obtained at the end of initial driving and at the beginning of restrike shall be immediately provided to the engineer by the contractor.

## **2.3.5 Results.**

**2.3.5.1 Preliminary Reports.** The contractor shall prepare a preliminary report for each pile tested for review by the engineer. Each report shall contain tabular as well as graphical presentation of the dynamic test results versus depth. Each report shall also indicate the pile driving criteria for the additional piles to be installed at the substructure unit of the pile tested. Each preliminary report shall include the following:

- (a) The maximum force applied to the pile head.
- (b) The maximum pile head velocity.
- (c) The maximum energy imparted to the pile.
- (d) The assumed soil damping factor and wave speed.
- (e) Static capacity estimate.
- (f) The maximum compressive and tensile forces in the pile.
- (g) Pile integrity.
- (h) Blows per inch.
- (i) Stroke.
- (j) Summary results of pile driving analysis from selected blow analyzed using signal matching techniques and software.

**2.3.5.2 Summary Report.** The contractor shall prepare a summary report of all piles tested for review by the engineer. The report shall include the results of hammer performance, pile driving stresses, and pile capacity during initial driving and restrike for all piles tested. The report shall also include the following:

- (a) Date of testing and date of pile installation.
- (b) Pile identification number and location.
- (c) All information given in preliminary reports as follows:
  - (1) Length of pile below commencing surface.
  - (2) Total length of pile, including projection above commencing surface at time of test.
  - (3) Length of pile from instrumentation position to tip.
- (d) Hammer type, drop and other relevant details.
- (e) Blow selected for signal matching analysis.
- (f) Maximum compressive and tensile stresses, stroke, and capacity versus penetration depth.
- (g) Temporary compression.
- (h) Pile integrity and location of damage, if any.
- (i) Force/velocity versus time trace.
- (j) Force/velocity match curve.
- (k) Resistance distribution along the pile.
- (l) Detailed graphical and tabular results from blow analyzed using signal matching techniques and software.

### 3.0 Schedule of Contract Submittals.

Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
1	Proposed independent dynamic pile testing consultant, and a listing of assigned personnel and their experience and qualifications.	DOCS	45 Before	Start of pile driving monitoring	No

Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
2	Details of the components, method of testing, pile driving equipment and materials to be used, and the results of wave equations analyses.	DOCS	15 Before	Start of pile driving monitoring	No
3	Two copies of each Preliminary Report as defined in <a href="#">section 2.3.5.1</a> of this special provision	DOCS	3 After	Completion of each field test	No
4	Four copies of the Summary Report as defined in <a href="#">section 2.3.5.2</a> of this special provision	DOCS	7 After	Completion of all field tests	No

#### 4.0 High-Strain Dynamic Pile Testing Specification.

Item	Requirement
Wave Equation Analysis	Minimum of one and sufficient additional analyses as needed to define performance for all combinations of piles, driving systems and subsurface conditions anticipated.
Dynamic Testing Pile Capacity	Nominal Axial Pile Compressive Resistance or 2.25 times the Design Bearing shown on the plans or as required by engineer
End of Initial Driving Test Frequency	As shown in the contract plans
Restrike Test Frequency	As shown in the contract plans
Time Interval between End of Initial Driving and Restrike	Minimum of 7 or as required by the engineer.
Pile Driving Analyses using Signal Matching Techniques	For each End of Initial Driving Test and each Restrike Test

**5.0 Method of Measurement.** Dynamic pile testing will be measured per each.

**6.0 Basis of Payment.** Payment for the above-described work, including all material, equipment, tools, labor and any other incidental work necessary to complete these items, will be considered completely covered by the contract unit price for Dynamic Pile Testing.

#### C. BEAM AND PANEL WALLS

**1.0 Description.** This work shall consist of all labor, materials, and equipment necessary to fabricate, furnish, and place posts into position in drilled holes to the specified elevations. Also included in this work is the furnishing and installation of precast wall panels between beams. All work shall be according to the details shown on the plans.

**2.0 Material.** The materials for the Beam and Panel Wall shall satisfy the following requirements.



**2.1** The galvanized structural steel piles shall be the grade and size specified on the drawings. Repairs to the galvanized coating and field galvanizing shall be in accordance with ASTM A780. Repairs and field galvanizing will not be required where the pile will be encased in concrete.

**2.2** The concrete used for backfilling shaft excavations shall be Class B-2 Concrete, in accordance with Sec 701.3.1.

**2.3** The precast panels shall be Class B concrete of the strength specified in the plans and in accordance with Sec. 1029. The exposed surfaces of all precast panels shall be finished in an identical manner (float finish, formed surface, etc.). Lifting inserts shall have a total minimum design capacity based on a yield strength of 4 times the calculated dead load

**2.4** Steel Reinforcement shall be epoxy coated and in accordance with Sec 1036.

### **3.0 Construction Requirements.**

**3.1** Contractor shall expose storm sewer and water lines along the north side of Lyon Street prior to construction of the wall. Lines shall be shifted and coordinated with new manhole locations to avoid the shaft and post locations. In the event that complete avoidance is not achievable by shifting the lines, shaft and post locations may be shifted to the south as necessary. The width of Panels "Z" would be reduced accordingly.

**3.2** Construction Tolerances. The bottom of the shaft shall be excavated to a level plan within tolerance of 1 to 12 horizontal. The requirements of Sec 206.1 and 206.2 shall apply.

**3.3** The requirements of Sec 701.4.1, 701.4.4, 701.4.4.2, 701.4.7.2, and 701.4.8 shall apply. At the contractor's discretion, temporary steel casing may be utilized in accordance with Sec 701.4.4.2.3.

**3.4** The posts shall be placed within 1" of plan location and held in a secure, vertical position until concrete backfill is placed. Location and plumbness of posts shall be verified prior to, during and immediately following completion of concrete placement.

**3.5** Direct concrete placement to each side of the HP16 section so that the drilled shaft is filled with concrete equally from each side and does not disturb the sides of the excavated shaft. Concrete shall be placed in one continuous operation unless otherwise permitted by the engineer. The requirements of Se 701.4.13.1.1, 701.4.13.1.2 and 701.4.13.2.1 shall apply.

**3.6** The approach slab and approach pavement shall not be constructed until three weeks after completion of placement of the select granular backfill material within the retaining walls. The intent of this provision is to provide a preload period to minimize settlement experienced by the approach slab and pavement.

**4.0 Method of Measurement.** Beam and Panel Wall - Panel in place will be the actual area of the panels in square feet. No adjustment from plan quantity will be allowed unless additional wall length is added.

**5.0 Basis of Payment.** The cost of excavation, coping, drainage and temporary casing shall be considered completely covered by the contract unit price for other items. No direct payment will be made for incidental items necessary to complete the work unless specifically provided as a pay item in the contract.

#### D. AESTHETIC CONCRETE STAIN

**1.0 Description.** This work shall consist of applying aesthetic concrete stain to the wall panels.

**2.0 Concrete Stain.** The concrete stain shall be applied to the exposed surface of the precast panels and as shown on the contract plans.

**2.1** The color of the stain shall be opaque gray, matching Sherwin Williams exterior satin latex paint, color "7066 Gray Matters". The concrete stain manufacturer shall submit a sample to the engineer for approval and provide documentation stating that the color of the stain will not be altered or deteriorated.

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

**4.0 Basis of Payment.** Payment for all work associated with the concrete stain, including all material, material property verifications, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the lump sum price for Item 703-30.09 Aesthetic Concrete Stain.

#### E. FABRIC TROUGH

**1.0 Description.** This specification covers a material to be installed as a trough below the finger type expansion joints (or for other applications as shown on the Plans) to carry drainage, to the drainage system, and prevent saltwater and debris from running onto other bridge members.

##### **2.0 Materials.**

**2.1** The fabric trough material shall be resistant to abrasion, sunlight, oils, and saltwater and be composed of one or two ply tightly woven nylon fabric bonded to, laminated, or covered on both sides with a high density neoprene, ethylene-propylene-diene-monomer (EPDM), or buna-nitrile PVC, and shall comply with the requirements listed below:

- (a) Thickness (inches) - 0.115-0.195
- (b) Weight (minimum) - 105 oz./sq.yd.
- (c) Durometer Hardness (Shore A) - 50A to 75A. ASTM test method, D2240.
- (d) Low Temperature Brittleness, No Cracking (wrapped around a 3" dia. Mandrel for 22 hrs. @ -20°F)
- (e) Tensile Strength - 800 lbs./in. (minimum, both directions). ASTM test method, D412.
- (f) Elongation (maximum) - 30%. ASTM test method, D412.
- (g) Tear (Die C) - 120 lbs./in. ASTM test method, D624.
- (h) Ozone Resistance - No Cracks for 100 hours of exposure of 20% elongated samples @ 100°F and 100 PPHM ozone. ASTM test method, D1149.

**2.2** The contractor shall furnish a manufacturer's certification to the engineer for each lot furnished, certifying that the materials supplied are in accordance with all requirements specified. The certification shall include results of all required tests. Acceptance of the material will be based on the manufacturer's certification and upon results of such tests as may be performed by the engineer. The certification shall show the quantity and lot number that is represented.

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

**4.0 Basis of Payment.** Payment for the above described work, including all material, equipment, labor and any other incidental work necessary, will be considered completely covered under the contract unit price for "Expansion Device (Finger Plate)".

#### F. SLAB DRAIN WITH GRATE

**1.0 Description.** This item of work consists of furnishing, fabricating and installing the drainage items necessary to complete the drainage system as shown on the bridge plans.

##### **2.0 Materials.**

**2.1** See bridge plans for material requirements for drain and grate (scupper) and hardware.

**2.2** Detailed shop drawings of the drainage system shall be prepared and submitted to the engineer. Shop drawings shall be in accordance with [Sec 1080](#). Catalog data may be furnished for components that are standard manufactured items in lieu of detailed drawings, providing governing dimensions are given.

**2.3** All material for the deck inlets and grates may be castings in lieu of ASTM A 709 Grade 36 (250) structural steel as shown on the plans. Castings shall be cast gray iron in accordance with Sec 614. A standard manufactured grate of similar size and meeting the above material requirements may be submitted to the engineer for approval.

**2.4** Drainage pipes and elbows shall be ASTM A 500 or A 501 with a minimum wall thickness of 0.322 inches (8 mm). Joints and openings shall be accurately cut and carefully welded to result in watertight and neat appearing joints. All welding shall be in accordance with AWS D1.5-95 and [Sec 1080](#).

**3.0 Construction Requirements.** The slab drain with grate shall be handled and installed in accordance with guidelines and procedures as recommended by the manufacturer and as shown on the plans.

**4.0 Method of Measurement.** Measurement for slab drain with grate will be made per each.

**5.0 Basis of Payment.** Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this work, will be considered completely covered by the contract unit price for "Slab Drain with Grate".

## G. DECORATIVE PEDESTRIAN FENCE

### **1.0 Decorative Fence.**

**1.1** The work under this item shall consist of fabricating and installing steel decorative fence to provide a complete and properly functioning fence system as indicated in the plans and this specification.

**1.2** Detailed shop drawings of the system shall be submitted to the engineer for review and approval prior to beginning fabrication.

**1.3** Structural calculations shall be provided on the fence components and details for attachment to the concrete sidewalk for the design loads and thermal movements, indicating compliance with the requirements specified herein. Calculations shall be stamped by a professional engineer, licensed in the state of Missouri.

**1.4** Shop drawings shall indicate component dimensions, sizes, details, materials, finishes, connection and joining methods, expansion joints, embedment installation details and the relationship to adjoining work. All materials shall meet the requirements of Sec 106.9.

**1.5** Manufacturer's installation instructions shall be submitted for the fence mounting method shown.

### **2.0 Performance Requirements.**

**2.1** Fence systems shall be designed to meet the requirements of Section 13.8 of the *2020 AASHTO LRFD Bridge Design Specifications*. 50 lb/ft and 200 lb loading shall not be applied simultaneously.

**2.2** Apply each load to produce the maximum stress in each of the respective components comprising the fence system.

**2.3** Allow for thermal movement of the system with consideration of differential thermal expansion characteristics of the fence and concrete sidewalk to which it is mounted.

**2.4** Design and furnish flanged base plate and anchor system for mounting. Anchors shall be galvanized and shall be cast into concrete.

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

**3.1 Acceptable Manufacturer Systems.** Fence system shall meet the performance requirements as stated in this provision and shall consist of one of the following fence styles or an approved equal. Selection of one of these systems does not waive the performance requirements as stated in this specification.

Ameristar Fence Products, Inc.  
1555 N. Mingo  
Tulsa, OK 74116  
Phone: (800) 321-8724  
www.ameristarfence.com

Iron Eagle Industries, Inc.  
1256 Cardiff Blvd.  
Mississauga, Ontario Canada L5S1R1  
(905) 670-2558  
www.ironeagleind.com

Betafence USA  
3309 S.W. Interstate 45  
Ennis, TX 75119  
Phone: (888) 650-4766  
www.betafenceusa.com

Merchants Metals  
6575 Romiss Court  
St. Louis, MO 63134  
(800) 293-3363  
www.merchantsmetals.com

**3.2 Visual Condition.** Provide metal, free from surface blemishes 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.

**3.3 Surface Coatings.** Finish coating and base coatings shall be per the manufacturer's recommendations. Finish coat shall be colored Federal Standard # 17038 (black).

#### **4.0 Construction Requirements.**

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

**4.2** Fence posts shall be spaced per the approved shop drawings, plus or minus  $\frac{1}{2}$ ". For installations along sloping grades, the post spacing will be measured along the grade. Separation gaps shall be provided at a minimum of every 6 panels.

**4.3** Fence posts shall have one draft hole near base of pole. Hole shall be drilled into the post during the fabrication process and prior to application of any coatings. Draft hole will be  $\frac{3}{8}$ " diameter, approximately 3" above the mounting plate or the finished concrete.

**4.4** For field assembly, apply zinc-rich primer to thoroughly cover field-cut or field-drilled edges. Apply two coats of manufacturer supplied finish paint to match fence color.

**5.0 Warranty.** All structural fence components shall be warranted by the manufacturer for a period of 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.

**6.0 Method of Measurement.** Measurement shall be to nearest linear foot of fence installed.

**7.0 Basis of Payment.** Payment for the work described above and in 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 "(Size) Decorative Pedestrian Fence".

#### **H. SPECIAL PROVISIONS FOR PROTECTION OF NORFOLK SOUTHERN RAILWAY INTEREST**

##### **1.0 Authority of Railroad Engineer and Department Engineer:**

**1.1** Norfolk Southern Railway Company, hereinafter referred to as "Railroad", and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the

railroad tracks. For Public Improvement Projects impacting the Railroad, the Railroad's Public Improvements Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

**1.2** The authorized representative of the Project Sponsor ("Sponsor"), hereinafter referred to as the "Sponsor's Engineer", shall have authority over all other matters as prescribed herein and in the Project Specifications.

**1.3** The Sponsor's Prime Contractor, hereinafter referred to as "Contractor" shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice at the sole discretion of the Railroad. The Contractor must request the latest version of these provisions from the Railroad prior to commencing work and must follow the requirements outlined therein.

## **2.0 Notice of Starting Work:**

**2.1** The Contractor shall not commence any work on Railroad rights-of-way until the Contractor has complied with the following conditions:

**2.1.1** Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement. Contractor Right of Entry Agreements to be submitted via email to Jake Watson, Public Projects Engineer, Telephone: 404-529-1225; email [Jacob.Watson@nscorp.com](mailto:Jacob.Watson@nscorp.com).

**2.1.2** Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor's Engineer who has been designated to be in charge of the work, at least ten days in advance of the date the Contractor proposes to begin work on Railroad rights-of-way.

**2.1.3** Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

**2.1.4** Obtained Railroad Protective Services as required by paragraph 7 herein.

**2.1.5** Obtained written authorization from the Railroad to begin work on Railroad's rights-of-way, such authorization to include an outline of specific conditions with which the Contractor must comply. Written Authorization will be issued by the Railroad once all items on the NS Construction Checklist (refer to Norfolk Southern Public Improvement Projects Manual Appendix J) have been completed.

**2.1.6** Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

**2.2** The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

**2.3** All project-related utility work that is to occur on, over, or under Railroad right-of-way must be coordinated with the Norfolk Southern Pipe and Wire Program. The Contractor must receive approval from the Norfolk Southern Pipe and Wire Program prior to commencing any utility work.

**2.4** Norfolk Southern representative contact information: Jake Watson, Public Projects Engineer, Telephone: 404-529-1225; email [Jacob.Watson@nscorp.com](mailto:Jacob.Watson@nscorp.com).

### **3.0 Interference with Railroad Operations:**

**3.1** The Contractor shall so arrange and conduct the Contractor's work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires Railroad Protective Services or inspection service shall be deferred by the Contractor until the Railroad Protective Services or inspection service required by the Railroad is available at the job site.

**3.2** Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct the Contractor's operations so that such impediment is reduced to the absolute minimum.

**3.3** Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in the Railroad Engineer's absence, the Railroad's Division Engineer, such provisions are insufficient, either may require or provide such provisions as the Railroad deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.

**3.4.** "One Call" Services do not locate buried Norfolk Southern Signals and Communications Lines. The contractor shall contact the Railroad's representative 7 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Sponsor, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.

### **4.0 Track Clearances:**

**4.1** The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.

**4.1.1** A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.

**4.1.2** A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.

**4.1.3** All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.

**4.1.4** The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

**4.2** Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

**4.2.1** Notify the Railroad's representative at least 72 hours in advance of the work.

**4.2.2** Receive assurance from the Railroad's representative that arrangements have been made for Railroad Protective Services as may be necessary.

**4.2.3** Receive permission from the Railroad's representative to proceed with the work.

**4.2.4** Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

## **5.0 Construction Procedures:**

### **5.1 General:**

**5.1.1** Construction work and operations by the Contractor on Railroad property shall be:

- a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.
- b. In accordance with the Railroad's written outline of specific conditions.
- c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
- d. In accordance with these Special Provisions.

### **5.1.2 Submittal Requirements**

- a. The contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.



b. The contractor should anticipate a minimum of 45 days for NS and their GEC to complete the review of all construction submittals. Time frames for reviews can vary significantly depending on the complexity of the project and the quality of submittals. Submittals requiring input from other departments may require additional time.

c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.

d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.

e. All submittals shall first be approved by the Sponsor's Engineer prior to submission to the Railroad Engineer for review. Submittals are reviewed by the Railroad for impacts to Railroad operations only; therefore, approval from the Railroad Engineer shall not relieve the Contractor from liability.

f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:

- 1) General Means and Methods
- 2) Ballast Protection
- 3) Construction Excavation & Shoring
- 4) Pipe, Culvert, & Tunnel Installations
- 5) Demolition Procedure
- 6) Erection & Hoisting Procedure
- 7) Debris Shielding or Containment
- 8) Blasting
- 9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
- 10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.

g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:

- 1) Girder Shop Drawings including welding/fabrication procedures
- 2) Bearing Shop Drawings and Material Certifications
- 3) Shop Drawings for drainage, handrails/fencing, and expansion dams
- 4) Concrete Mix Design
- 5) Structural Steel, Rebar, and/or Strand Certifications
- 6) 28-day Cylinder Test for Concrete Strength
- 7) Waterproofing Material Certification
- 8) Dampproofing materials
- 9) Test Reports for all steel
- 10) Foundation Construction Reports

Other submittals may be required upon request from the Railroad. Fabrication may not begin until the Railroad has approved the required shop drawings

h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance, or safety related issues. Submissions shall also provide: a listing of the anticipated equipment to be used, plan and profile views showing the location of all equipment to be used relative to the track centerline(s) shown, and a contingency plan of action covering the event that a primary piece of equipment malfunctions.

i. **Payment for plan submittal, Railroad plan review and Railroad inspection fees.** The contractor shall be responsible for all costs associated with the generation and submittal of Railroad plans required for the right of entry agreement. The Commission will be responsible for and directly pay the Railroad for all Railroad review fees associated with these plan submittals and any onsite inspection and management fees charged by the Railroad. A line item (Railroad Plan Submittal) is provided for all costs associated with the generation and submittal of plans required for the Railroad right of entry agreement.

Item No.	Unit	Description
618-10.15	LS	Railroad Plan Submittal

## **5.2 Ballast Protection**

**5.2.1** The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

**5.2.2** The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.

## **5.3 Excavation**

**5.3.1** The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case the existing section will be maintained.

**5.3.2** Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

## **5.4 Excavation for Structures and Shoring Protection:**

**5.4.1** The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.

**5.4.2** The use of shoring systems utilizing tiebacks shall not be permitted without written approval from the Railroad Engineer.

**5.4.3** Shoring systems utilizing trench boxes shall not be permitted within the Theoretical Railroad Embankment (Zones 1, 2, or 3) as shown on NS Typical Drawing No. 4 – Shoring Requirements without written approval from the Railroad Engineer.

**5.4.4** All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6 - Construction Excavation (Refer to Norfolk Southern Public Improvement Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.

**5.4.5** The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.

**5.4.6** The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.

**5.4.7** Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed 1/2".

**5.4.8** Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.

**5.4.9** The front face of shoring located closest to the NS track for all shoring setups located in Zone 2 (shown on NS Typical Drawing No. 4 – Shoring Requirements in Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.

## **5.5 Pipe, Culvert, & Tunnel Installations**

**5.5.1.** Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:

**5.5.1.1** For Open Cut Method refer to Norfolk Southern Public Improvement Projects Manual Appendix H.4.6.

**5.5.1.2.** For Jack and Bore Method refer to Norfolk Southern Public Improvement Projects Manual Appendix H.4.7.

**5.5.1.3.** For Tunneling Method refer to Norfolk Southern Public Improvement Projects Manual Appendix H.4.8.

**5.5.2.** The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8.

## **5.6 Demolition Procedures:**

### **5.6.1. General**

5.6.1.1. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

5.6.1.2. Railroad tracks and other Railroad property must be protected from damage during the procedure.

5.6.1.3. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.

5.6.1.4. The Railroad Engineer or the Railroad Engineer's designated representative must be present at the site during the entire demolition procedure period.

5.6.1.5. Demolition of existing bridge decks in spans over the Railroad shall be performed in a controlled manner (i.e. saw-cutting). No impact equipment (track-mounted hoe-ram, jackhammers, etc.) may be used over the Railroad without approval by the Railroad Engineer.

5.6.1.6. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.

### **5.6.2. Submittal Requirements**

**5.6.2.1.** In addition to the submittal requirements outlined in Section 5.1.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:

**5.6.2.1.1.** A plan showing the location of cranes, horizontally and vertically, with proposed boom lengths, operating radii, counterweights, and delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

**5.6.2.1.2.** Rating sheets showing that cranes or lifting devices are adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety

**5.6.2.1.3.** Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations

**5.6.2.1.4.** The Contractor shall provide a sketch of all rigging components from the crane's hook block to the object being hoisted. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad

**5.6.2.1.5.** A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes

**5.6.2.1.6.** Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

### **5.6.3. Overhead Demolition Debris Shield**

**5.6.3.1.** The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.

**5.6.3.2.** The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.1.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.1.1.

**5.6.3.3.** The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.

**5.6.3.4.** The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

**5.6.3.5.** The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.

**5.6.3.6.** The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.

**5.6.3.7.** The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.

### **5.6.4. Vertical Demolition Debris Shield**

**5.6.4.1.** A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

### **5.6.5. Vertical Demolition Debris Shield**

**5.6.5.1.** A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

## **5.7. Erection & Hoisting Procedures**

### **5.7.1. General**

**5.7.1.1.** Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.

**5.7.1.2.** Neither crane handoffs nor "walking" of cranes with suspended load will be permitted for erection on or over Railroad right-of-way

**5.7.1.3.** Railroad tracks and other Railroad property must be protected from damage during the erection procedure.

**5.7.1.4.** A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure

**5.7.1.5.** The Railroad Engineer or the Railroad Engineer's designated representative must be present at the site during the entire erection procedure period.

**5.7.1.6.** For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Improvement Projects Manual Appendix H.1, Section 4.A.3.).

### **5.7.2. Submittal Requirements:**

**5.7.2.1.** In addition to the submittal requirements outlined in Section 5.1.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer.

**5.7.2.1.1.** As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.

**5.7.2.1.2.** A plan showing the location of cranes, horizontally and vertically, with proposed boom lengths, operating radii, counterweights, and delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

**5.7.2.1.3.** Rating sheets showing that cranes or lifting devices are adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.

**5.7.2.1.4.** Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations

**5.7.2.1.5.** The Contractor shall provide a sketch of all rigging components from the crane's hook block to the object being hoisted. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.

**5.7.2.1.6.** A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

**5.7.2.1.7.** Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

## **5.8. Blasting:**

**5.8.1** The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:

**5.8.1.1** Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.

**5.8.1.2** Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.

**5.8.1.3** No blasting shall be done without the presence of the Railroad Engineer or the Railroad Engineer's authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such Railroad Protective Services as the Railroad may require.

**5.8.1.4** Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at the Contractor's expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If the Contractor's actions result in delay of trains, the Contractor shall bear the entire cost thereof.

**5.8.1.5** The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.

**5.8.1.6** Explosive materials or loaded holes shall not be left unattended at the blast site.

**5.8.1.7** A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.

**5.8.1.8** After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.

**5.8.1.9** The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.

**5.8.2** The Railroad representative will:

**5.8.2.1** Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.

**5.8.2.2** Have the authority to order discontinuance of blasting if, in the Railroad representative's opinion, blasting is too hazardous or is not in accord with these special provisions.

**5.8.3** The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:

**5.8.3.1** Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.

**5.8.3.2** Confirm that the minimum amounts of explosives are used to remove the rock.

**5.8.3.3** Be empowered to intercede if the blasting consultant concludes that the Contractor's blasting operations are endangering the Railway.

**5.8.3.4** Submit a letter acknowledging that the blasting consultant has been engaged to oversee the entire blasting operation and that the blasting consultant approves of the blasting plan.

**5.8.3.5** Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.

**5.8.3.6** Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.

**5.8.4** The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:

- a) A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.
- b) Hole diameter.



- c) Hole spacing and pattern.
- d) Maximum depth of hole.
- e) Maximum number of decks per hole.
- f) Maximum pounds of explosives per hole.
- g) Maximum pounds of explosives per delay.
- h) Maximum number of holes per detonation.
- i) Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.
- j) Approximate dates and time of day when the explosives are to be detonated.
- k) Type of flyrock protection.
- l) Type and patterns of audible warning and all clear signals to be used before and after each blast.
- m) A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address, and telephone number.
- n) A copy of the Authority's permit granting permission to blast on the site.
- o) A letter from the blasting consultant acknowledging that the blasting consultant has been engaged to oversee the entire blasting operation and that the blasting consultant approves of the blasting plan.
- p) In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.
- q) A copy of the borings and Geotechnical information or report.

## **5.9 Track Monitoring:**

**5.9.1** At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.

**5.9.2** The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.

**5.9.3** The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.

**5.9.4** If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

#### **5.10 Maintenance of Railroad Facilities:**

**5.10.1** The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from the Contractor's operations and provide and maintain any erosion control measures as required. The Contractor will promptly repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.

**5.10.2** If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.

**5.10.3** All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

#### **5.11 Storage of Materials and Equipment:**

**5.11.1** Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.

**5.11.2** All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save the Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

#### **5.12 Cleanup:**

**5.12.1** Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or the Railroad Engineer's authorized representative.

#### **6.0 Damages:**

**6.1** The Contractor shall assume all liability for any and all damages to the Contractor's work, employees, servants, equipment, and materials caused by Railroad traffic.

**6.2** Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

## **7.0 Railroad Protective Services:**

### **7.1 Requirements:**

**7.1.1** Railroad Protective Services will not be provided until the Contractor's insurance has been reviewed and approved by the Railroad.

**7.1.2** Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for Railroad Protective Services required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are, or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by Railroad Protective Services.

**7.1.3** Normally, the Railroad will assign one Railroad Protective Services personnel to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) Railroad Protective Services personnel may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, Railroad Protective Services personnel may be required full time until the project has been completed.

**7.1.4** For Projects exceeding 30 days of construction, Contractor shall provide the Railroad Protective Services personnel a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the Railroad Protective Services personnel can check in/out with the Project, as well as to the Railroad Protective Services personnel's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the Railroad Protective Services personnel's time and efficiency on the Project.

### **7.2 Scheduling and Notification:**

**7.2.1** The Contractor's work requiring Railroad Protective Services should be scheduled to limit the presence of such personnel at the site. Railroad approval will be required for any Railroad Protective Services requests in excess of 40 hours per week, and in such cases, should be limited to a maximum of 50 hours per week.

**7.2.2** Not later than the time that approval is initially requested to begin work on Railroad right-of-way, the Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. The Railroad Protective Services personnel may not be provided until the job site meeting has been conducted and the Contractor's work has been scheduled.

**7.2.3** The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of the intent to begin work within Railroad right-of-way in accordance with this special provision, and must receive written or verbal confirmation of this request from the Railroad representative. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 10 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if Railroad Protective Services will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If Railroad Protective Services are required, no work shall be undertaken until the Railroad Protective Services personnel is present at the job site. It may take 30 days or longer to obtain Railroad Protective Services initially from the Railroad. When Railroad Protective Services begin, the Railroad Protective Services personnel is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If Railroad Protective Services become unnecessary and are suspended, it may take 30 days or longer to again obtain Railroad Protective Services from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before Railroad Protective Service may be discontinued and responsibility for payment stopped.

**7.2.4** If, after the Railroad Protective Services personnel is assigned to the project site, an emergency arises that requires the personnel's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the personnel is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

### **7.3 Payment:**

**7.3.1** The Sponsor will be responsible for paying the Railroad directly for any and all costs of Railroad Protective Services which may be required to accomplish the construction. These costs will be deducted from the Contractor's payments.

**7.3.2** The estimated cost of Railroad Protective Services is the current rate per day based on a 12-hour workday (approximately \$1,500 per day). This cost includes the base pay for the Railroad Protective Services personnel, overhead, and includes a per diem charge for travel expenses, meals, and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the personnel who is available Railroad Protective Services at the time the service is required.

**7.3.3** Work by Railroad Protective Services in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by Railroad Protective Services in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the Railroad Protective Services rate is 2 and 1/2 times the normal rate.

**7.3.4** Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Railroad Protective Services costs are subject to change. The above

estimates of Railroad Protective Services costs are provided for information only and are not binding in any way.

#### **7.4 Verification:**

**7.4.1** The Railroad's Protective Services personnel will electronically enter Railroad Protective Services time via the Railroad's electronic billing system. Any complaints concerning Railroad Protective Services must be resolved in a timely manner. If the need for Railroad Protective Services is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to the Railroad Engineer.

**7.4.2** The Railroad Protective Services personnel assigned to the project will be responsible for notifying the Sponsor's Representative upon arrival at the job site on the first day (or as soon thereafter as possible) that Railroad Protective Services begin and on the last day that the Railroad Protective Services personnel performs such services for each separate period that services are provided. The Sponsor's Representative will document such notification in the project records. When requested, the Sponsor's Representative will also sign the Railroad Protective Services personnel's document(s) showing daily time spent and activity at the project site.

#### **8.0 Haul Across Railroad Track:**

**8.1** Where the plans show or imply that materials of any nature must be hauled across the Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by the Contractor's own forces or by Railroad personnel.

**8.2** No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and Railroad Protective Services thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

#### **9.0 Work for the Benefit of the Contractor:**

**9.1** All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.

**9.2** Should the Contractor desire any changes in addition to the above, then the Contractor shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

## **10.0 Cooperation and Delays:**

**10.1** It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging the Contractor's schedule, the Contractor shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

**10.2** No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

## **11.0 Trainman's Walkways:**

**11.1** Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's Protective Service is provided shall be removed before the close of each workday. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

## **12.0 Guidelines for Personnel on Railroad Right-of-Way:**

**12.1** The Contractor and/or the Sponsor's personnel authorized to perform work on the Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway Worker Protection Training; However, the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

**12.2** All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots and reflective vests are required.

**12.3** No one is allowed within 25' of the centerline of track without specific authorization from the Railroad.

**12.4** All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.

**12.5** No one is allowed to cross tracks without specific authorization from the Railroad.

**12.6** All welders and cutting torches working within 25' of track must stop when train is passing.

**12.7** No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

### **13.0 Guidelines for Equipment on Railroad Right-of-Way:**

**13.1** No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and Railroad Protective Services personnel.

**13.2** No crane or boom equipment will be allowed to foul track or lift a load over the track without Railroad Protective Services personnel authorized to obtain track time.

**13.3** All employees will stay with their machines when crane or boom equipment is pointed toward track.

**13.4** All cranes and boom equipment under load will stop work while train is passing (including pile driving).

**13.5** Swinging loads must be secured to prevent movement while train is passing.

**13.6** No loads will be suspended above a moving train.

**13.7** No equipment will be allowed within 25' of centerline of track without specific authorization of the Railroad official and Railroad Protective Services personnel.

**13.8** Trucks, tractors, or any equipment will not touch ballast line without specific permission from Railroad official and Railroad Protective Services personnel. At the beginning of each project that involves the Contractor working within 25' of the centerline of any track, orange construction fencing must be established. Orange construction fencing shall be established in accordance with the minimum temporary horizontal clearances contained in Section 4.1.2 and shall be maintained for the duration of construction.

**13.9** No equipment or load movement is permitted within 25' or above a standing train or Railroad equipment without specific authorization of the Railroad Protective Services personnel.

**13.10** All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the Railroad Protective Services personnel if said personnel views the operation to be dangerous to the passing train.

**13.11** All equipment, loads and cables are prohibited from touching rails.

**13.12** While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and Railroad Protective Services personnel.

**13.13** No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.

**13.14** All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

**13.15** All cranes and boom equipment will be turned away from track after each workday or whenever unattended by an operator.

**13.16** Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad Protective Services personnel to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

#### **14.0 Insurance:**

**14.1** In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

**14.1.1** A Commercial General Liability (“CGL”) policy containing products and completed operations, bodily injury, property damage, and contractual liability coverage, with a combined single limit of not less than \$5,000,000 for each occurrence with a general aggregate limit of not less than \$5,000,000. Any portion of this requirement may be satisfied by a combination of General Liability and/or Excess/Umbrella Liability Coverage. The CGL policy shall provide additional insured coverage equivalent to at least as broad as ISO CG 20 10 11/85.

**14.1.2** Automobile Liability Insurance with a current ISO occurrence form policy (or equivalent) and apply on an “any auto” (Symbol 1) basis, including coverage for all vehicles used in connection with the Work or Services on the leased property, providing annual limits of at least \$1,000,000 per occurrence for bodily injury and property damage combined including uninsured and underinsured motorist coverage, medical payment protection, and loading and unloading. This policy shall be endorsed to include Transportation Pollution Liability Broadened Coverage ISO CA 99 48 03 06 or MCS-90 if vehicles are subject to Federal jurisdiction. If this coverage is on a claims-made form, the Retro Active Date must be prior to the date of this Agreement and the policy endorsement must be maintained for not less than seven (7) years.

**14.1.3** Workers’ Compensation Insurance to meet fully the requirement of any compensation act, plan, or legislative enactment applicable in connection with the death, disability or injury of Licensee’s officers, agents, servants, or employees arising directly or indirectly out of the performance of the work.

**14.1.4** Employers’ Liability Insurance with limits of not less than \$1,000,000 each accident, \$1,000,000 policy limit for disease, and \$1,000,000 each employee for disease.

**14.1.5** All insurance required in Section 14.1 (excluding any Workers’ Compensation policy) shall name Norfolk Southern Railway and its parent, subsidiary, and affiliated companies as additional insureds with an appropriate endorsement to each policy.

**14.1.6** All policies secured by Contractor, whether primary, excess, umbrella or otherwise, and providing coverage to the Railway as an additional insured (i) are intended to take priority in responding and to pay before any insurance policies Railway may have secured for itself must respond or pay and (ii) may not seek contribution from any policies the Railway may have secured for itself.

**14.1.7** No cross-liability exclusions are permitted that would apply to the additional insureds, and there may not be any restrictions in any policy that limits coverage for a claim brought by an additional insured against a named insured.



**14.1.8** To the fullest extent permitted by law, all insurance furnished by Contractor in compliance with Section 14.1 shall include a waiver of subrogation in favor of Railway with an appropriate endorsement to each policy.

**14.1.9** All policies required in Section 14.1 shall not be subject to cancellation, termination, modification, changed, or non-renewed except upon thirty (30) days' prior written notice to the additional insureds.

**14.1.10** The insurance coverages maintained by Contractor shall not limit any indemnity obligations or other liabilities. The insurance available to Norfolk Southern Railway and its parent, subsidiary and affiliated companies as additional insureds shall not be limited by these requirements should Licensee maintain higher coverage limits.

**14.1.11** Any deductibles or retentions in excess of \$50,000 maintained on any insurance required in 14.A shall be disclosed and approved by Norfolk Southern Railway with a request made for approval to NSRISK3@nscorp.com.

**14.1.12** Anyone subcontractor providing work on this project must extend CG 20 38 (or broader coverage) additional Insured endorsement to provide coverage for up stream parties.

**14.1.13** Contractor shall require all subcontractors who are not covered by the insurance carried by Contractor to obtain commercially reasonable insurance coverage, but not less than the requirements of 14.A.

**14.2** In addition to the insurances required in Section 14.1, the Contractor shall also procure on behalf of the Railroad for the entirety of the project:

**14.2.1** Railroad Protective Liability (RPL) Insurance having a combined single limit of not less than \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

**14.2.2** The standards for the Railroad Protective Liability Insurance are as follows:

- a) The insurer must be rated A- or better by A.M. Best Company, Inc.
  - b) The policy must be written using one of the following combinations of Insurance Services Office ("ISO") RPL Insurance Form Numbers:
    - 1) CG 00 35 01 96 and CG 28 31 10 93; or
    - 2) CG 00 35 07 98 and CG 28 31 07 98; or
    - 3) CG 00 35 10 01; or
    - 4) CG 00 35 12 04; or
    - 5) CG 00 35 12 07; or
    - 6) CG 00 35 04 13.
  - c) The named insured shall read:
    - Norfolk Southern Corporation and its subsidiaries and affiliates
    - 650 West Peachtree Street NW – Box 46
    - Atlanta, GA 30308
    - Attn: Risk Manager
- (NOTE: Railroad does not share coverage on RPL with any other entity on this policy)

- d) The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.
- e) The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.
- f) The name and address of the prime Contractor must appear on the Declarations.
- g) The name and address of the Sponsor must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."
- h) Endorsements/forms that are **required** are:
  - 1) Physical Damage to Property Amendment
  - 2) Terrorism Risk Insurance Act (TRIA) coverage must be included
- i) Other endorsements/forms that will be accepted are:
  - 1) Broad Form Nuclear Exclusion – Form IL 00 21
  - 2) 30-day Advance Notice of Non-renewal or cancellation
  - 3) Required State Cancellation Endorsement
  - 4) Quick Reference or Index Form CL/IL 240
- j) Endorsements/forms that are NOT acceptable are:
  - 1) Any Pollution Exclusion Endorsement except CG 28 31
  - 2) Any Punitive or Exemplary Damages Exclusion
  - 3) Known injury or Damage Exclusion form CG 00 59
  - 4) Any Common Policy Conditions form
  - 5) An Endorsement that limits or excludes Professional Liability coverage
  - 6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
  - 7) An Endorsement that excludes TRIA coverage
  - 8) A Sole Agent Endorsement
  - 9) Any type of deductible endorsement or amendment
  - 10) Any other endorsement/form not specifically authorized in item no. 14.2.2.h above.

**SPONSOR:**

Mr. Dave Ahlvers  
 State Construction & Materials Engineer  
 Missouri Department of Transportation  
 P.O. Box 270  
 Jefferson City, MO 65102

**RAILROAD:**

Risk Management  
 Norfolk Southern Corporation  
 and its subsidiaries  
 650 West Peachtree Street – NW  
 Box 46 Atlanta, GA 30308  
[NSRISK3@NSCORP.COM](mailto:NSRISK3@NSCORP.COM)

**14.3** All insurance required under Section 14.1 and 14.2 shall be underwritten by insurers and be of such form and content, as may be acceptable to the Railway. Prior to entry on Railroad right-of-way, the original electronic RPL Insurance Policy shall be submitted by the Prime Contractor to the Railway at [NSRISK3@NSCORP.COM](mailto:NSRISK3@NSCORP.COM) for review and approval. In addition, certificates of insurance evidencing the Prime Contractor's insurance compliant with the requirements in 14.1 shall be issued to the Railway at [NSRISK3@NSCORP.COM](mailto:NSRISK3@NSCORP.COM) at the same time the RPL Policy is submitted.

**14.4** The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.

## **14.5 Insurance Submission Procedures**

**14.5.1** The Railroad will only accept initial insurance submissions via email to NSRISK3@NSCORP.COM. The Railroad will NOT accept initial insurance submissions via hard copies that would be sent either US Mail or Overnight carrier or faxes as only electronic versions only are to be submitted to Railroad. **Please provide point of contact information with the submission including a phone number and email address.**

For email insurance submissions, the subject line should follow the format provided unless otherwise directed by the Railroad Engineer:

Insurance Submittal: City, State – NS File Number – NS Milepost – Project Name – Sponsor Project #

**14.5.2** Railroad requires the following two (2) forms of insurance in the initial electronic insurance submission to NSRISK3@NSCORP.COM to be submitted under a cover letter providing details of the project and containing the contact information:

a. The full original or certified true electronic countersigned copy of the RPL Insurance Policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements as required in Section 14.2.

b. A certificate of insurance from the Contractor evidencing the Contractor's insurance in Section 14.1 (i.e. the Contractor's commercial general, automobile, and workers' compensation liability insurance, etc.). The certificate must show Norfolk Southern Railroad and its subsidiaries and affiliated companies as an additional insured on the General Liability and Auto policies. The certificate should also indicate that the Workers' Compensation policy waives subrogation against Norfolk Southern Corporation and its subsidiaries. See Norfolk Southern Public Improvement Projects Manual Appendix J for a Sample Certificate of Insurance.

## **15.0 Failure to Comply:**

**15.1** In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:

**15.1.1** The Railroad Engineer may require that the Contractor vacate Railroad property.

**15.1.2** The Sponsor's Engineer may withhold all monies due the Contractor on monthly statements.

**15.2** Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor's Engineer.

## **16.0 Payment for Cost of Compliance:**

**16.1** No separate payment will be made for any other cost incurred on account of compliance with this special provision. All such costs shall be included in the contract unit price for other items included in the contract. Railroad will not be responsible for paying the contractor for any work performed under this special provision.

### **16.2 Payment responsibilities for submittal of construction plans and reviews**

If applicable to the project, the contractor must submit a plan for demolition, falsework, lifting plans over the Railroad property, shoring plans and any other applicable plans the Railroad may require as well as means and methods to the Railroad for review and approval. All plans submitted to the Railroad must be signed and sealed by Professional Engineer licensed in the State of Missouri. These plans can be submitted along with the Right of Entry application; however, the Right of Entry will not be approved until all required plan submittals are approved by the Railroad. The Railroad may also require an onsite inspector to assure the work is carried out in accordance with the Railroad approved plans. (Refer to paragraph 5.1.2.i for payment responsibilities for submittals, review and inspection.)

### **17.0 Project Information:**

Date: 3/22/2022  
NS File No.: BR0006837  
NS Milepost: H – 0.540  
Sponsor's Project No.: J2P3357