

TABLE OF CONTENTS

- A. Construction Requirements
- B. Dynamic Pile Testing
- C. Galvanized Steel Reinforcing Bars
- D. Textured Epoxy-Coated Steel Reinforcing Bars
- E. Bridge Slab (with Transparent Forms)
- F. Special Consideration of Change Orders and Value Engineering
- G. Special Provisions for Protection of BNSF Railway Company Interests

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636
	Burns & McDonnell Engineering Company, Inc. 9400 Ward Parkway Kansas City, MO 64114 Certificate of Authority # 000165 Consultant Phone # (816) 333-9400
	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. J8S0836D Greene County, MO Date Prepared: 7/28/2025
Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: A, B, C, D, E, F, G	

A. CONSTRUCTION REQUIREMENTS

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

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

2.1 In order to assure the least traffic interference, the work shall be scheduled so that the bridge closure is for the absolute minimum amount of time required to complete the work. The bridge shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed bridge is opened to traffic.

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

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

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

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

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

Doe Run Company - Resource Recycling Division - Buick Facility
Highway KK
Boss, MO 65440
Telephone: (573) 626-4813

4.0 Method of Measurement. No measurement will be made.

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

B. 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

pile 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	<u>GRLWEAP</u>	<u>Pile Dynamics, Inc.</u>
Pile Driving Monitoring - Hardware & Software	Pile Driving Analyzer - Model PAK	Pile Dynamics, Inc.
Pile Driving Analysis – Signal Matching Software	<u>CAPWAP</u>	<u>Pile Dynamics, Inc.</u>

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 maximum equivalent pile driving rate of 10 blows per inch in soil and 20 blows per inch at the end of driving to seat pile in soft rock or penetrate to refusal on hard rock, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. With approval of the engineer, a pile driving rate greater than 20 blows per inch may be acceptable if a smaller hammer or shorter stroke is needed to keep pile driving stresses within the allowable range when seating pile in rock. 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 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.

JOB SPECIAL PROVISIONS (BRIDGE)

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
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 section 2.3.5.1 of this special provision	DOCS	3 After	Completion of each field test	No

Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
4	Four copies of the Summary Report as defined in section 2.3.5.2 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 days 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 this item, will be considered completely covered by the contract unit price for Dynamic Pile Testing.

C. GALVANIZED STEEL REINFORCING BARS

1.0 Description. This job special provision contains general requirements for furnishing and placing hot-dip galvanized reinforcing steel as shown on the plans and shall be in addition to the requirements of Sec 706.

2.0 Material. Reinforcing bars shall be in accordance with ASTM A 123, ASTM A 767 and ASTM A 1094. Repairs to the galvanized coating shall be in accordance with ASTM A 780.

3.0 Construction Requirements.

3.1 Fabrication. The fabricator shall consult with the hot-dip galvanizer regarding potential problems or potential handling problems during the galvanizing process that may require modifications of design before fabrication proceeds.

JOB SPECIAL PROVISIONS (BRIDGE)

3.1.1 Surface contaminants that are not removable by the normal chemical cleaning process in the galvanizing operation shall be removed by blast cleaning or an alternative method prior to delivery of steel to the galvanizer.

3.1.2 Shop or field bending of reinforcing bar before or after galvanizing shall pay special attention to the minimum bend diameters required by Table 2 of ASTM A 767.

3.2 Delivery, Storage and Handling. Materials shall be delivered in accordance with the manufacturer's written instructions and in accordance with ASTM A 1094/A 1094M. Materials shall be delivered with identification labels intact and product name and manufacturer clearly visible.

3.2.1 Storage. Galvanized bars that will be stored in the field in excess of 30 days shall be stored off the ground on dunnage to allow air circulation to prevent the formation of wet storage stain. These corrosion deposits, if present, shall be removed in a manner satisfactory to the engineer prior to incorporation of the material into the work.

3.3 Accessories. Reinforcement ties shall be galvanized steel wire in accordance with ASTM A 641/A 641M. Metal bar chairs in contact with galvanized steel shall be galvanized steel. Other materials for bar chairs may be accepted with the approval of the engineer.

3.4 Use of metal formwork shall be in accordance with ASTM A 767.

4.0 Submittals. The contractor shall submit a copy of the coating applicator's notarized Certificate of Compliance that the hot-dip galvanized coating meets or exceeds the specified requirements of ASTM A 767.

5.0 Method of Measurement. No measurement will be made.

6.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for Slab on Concrete NU-Girder (with Transparent Forms), Type D Barrier, Raised Median Barrier, and Concrete Curb (Bridge Rail) as applicable.

D. TEXTURED EPOXY-COATED STEEL REINFORCING BARS

1.0 Description. This job special provision contains general requirements for furnishing and placing textured epoxy-coated reinforcing steel as shown on the plans and shall be in addition to the requirements of Sec 706.

2.0 Material. Reinforcing bars shall be in accordance with ASTM A1124. Repairs to the textured epoxy-coating shall be in accordance with ASTM A1124.

3.0 Construction Requirements.

3.1 Fabrication. Textured epoxy-coated steel reinforcing bars shall be fabricated in accordance with ASTM A1124.

3.1.1 Surface preparation of the steel reinforcing bars shall be in accordance with ASTM A1124.

3.2 Delivery, Storage and Handling. Materials shall be delivered in accordance with the manufacturer's written instructions and in accordance with ASTM A1124. Materials shall be delivered with identification labels intact and product name and manufacturer clearly visible.

4.0 Submittals. The contractor shall submit a copy of the coating applicator's notarized Certificate of Compliance that the textured epoxy coating meets or exceeds the specified requirements of ASTM A1124.

5.0 Method of Measurement. No measurement will be made.

6.0 Basis of Payment. Payment for the above described work, including all material, equipment, labor and any other incidental work necessary to complete this item, will be considered completely covered by the contract unit price for Slab on Concrete NU-Girder (with Transparent Forms), Type D Barrier, Raised Median Barrier, and Concrete Curb (Bridge Rail) as applicable.

E. **BRIDGE SLAB (WITH TRANSPARENT FORMS)**

1.0 Description. This work shall consist of constructing the concrete bridge slab in accordance with the contract plans and Sec 703 and Sec 706 except that permanent transparent forms shall be used to the extent possible in accordance with the contract plans and the details below.

1.1 The use of precast panels or non-transparent permanent forms will not be considered.

2.0 Materials and Fabrication Requirements.

2.1 The steel for the structural joists and tracks shall be in accordance with the requirements of ASTM A 653 with a minimum yield strength of 33 ksi and shall be galvanized.

2.2 The steel for the structural support angles shall be in accordance with the requirements of ASTM A 653 with a minimum yield strength of 36 ksi and shall be galvanized.

2.3 All materials used for connections of transparent formwork to the girders/beams shall be shown on the shop drawing submittal for the review and approval by the Engineer.

2.4 The transparent acrylic plastic sheet for the fabricated formwork shall be in accordance with the requirements of ASTM D 4802-16. Dimensions of the sheet shall be specified in the approved shop drawings.

2.5 The permanent transparent forms and ancillary items associated with the pay item shall be supplied by the following:

ClearCast Forms by TrueTech
Bridge 11640 North Park Drive
Suite 110
Wake Forest, NC 27587
www.truetechbridge.com

2.6 All permanent forms shall be fabricated with the following tolerances:

Form Dimensions: $\frac{1}{4}$ "

Form Squareness: The difference between the two diagonals shall not exceed $\frac{1}{2}$ "

2.7 All fabricated permanent transparent forms delivered to the Contractor shall be stored on pallets at least three inches off the ground with one end elevated to allow for drainage. Binding on permanent transparent forms shall remain in place until immediately prior to installation. Care shall be taken to avoid damage to the transparent forms during handling and installation. Forms shall be lifted from beneath the steel track, not the plastic sheet. Any forms that are damaged shall be replaced at no additional cost, as directed by the Engineer.

2.8 The bridge deck concrete and admixtures shall contain no calcium chloride. All concrete admixtures are to be reviewed for compatibility with the acrylic sheeting of the forms.

3.0 Construction Requirements.

3.1 Shop Drawings and Design. Shop drawings and design calculations shall be submitted to the Engineer for review and approval. Submittals shall show complete details of all elements required for proper construction of the system, including complete material specifications.

3.1.1 The forms shall be designed on the basis of dead load of form, reinforcing bars, and plastic concrete plus 50 lbs / sq ft for construction loads. The allowable design pressure shall be shown on the shop drawings. Deflection under the weight of the forms, the plastic concrete and reinforcing bars shall not exceed $1 / 180$ of the form span or $\frac{1}{2}$ in., whichever is less, for spans equal to or less than 10 ft.; and shall not exceed $1 / 240$ of the form span or $\frac{3}{4}$ in., whichever is less, for spans greater than 10 ft. However, the deflection loading shall not be less than 120 lbs / sq ft total. The allowable form camber shall be based on the actual dead load condition. Camber shall not be used to compensate for deflection in excess of the foregoing limits. The design span of the form sheets shall be the clear span between the edges of the girders less the minimum bearing length specified by the manufacturer.

3.1.2 The design, materials and construction shall be in accordance with the AASHTO LRFD Bridge Design Specifications, 9th Edition; the AASHTO Guide Design Specifications for Bridge Temporary Works, 1st Edition; AISI S100-12, north American Specification for Cold-Formed Steel Structural members; ACI 318-14, Building Code Requirements for Structural Concrete; and AISC 360-10, Specification for Structural Steel Buildings.

3.2 Installation. A qualified representative of the form manufacturer shall be present at the beginning of the form installation work.

3.2.1 The masking, provided on the top surface of the transparent form, shall be left in place during installation operations to provide protection of the transparent surface. Use only plastic putty knives or scrapers to remove masking. Care shall be taken to not scratch the surface of the transparent form. Masking shall be removed immediately prior to setting reinforcing steel.

3.2.2 The installed transparent forms shall be protected from any cleaning solutions, solvents such as acetone, gasoline, alcohol or thinners. Any forms that are damaged according to the Engineer shall be replaced by the Contractor at no additional cost to the Department. Any permanently exposed steel on the forms with damaged galvanized coating shall be cleaned and repaired as directed by the Engineer with the zinc alloy stick method in accordance with ASTM A870.

3.2.3 When forms are cut or drilled, methods shall be submitted to both the supplier and to the Engineer for approval prior to work. Cutting by torch or burning will not be allowed.

3.2.4 The form supports shall be set to meet the required screed elevations, deck thickness and plan profile. All dimensions and form support elevations shall be checked and adjusted as required prior to installing the transparent forms.

3.2.4.1 Place the permanent transparent forms on form supports to meet the minimum bearing lengths shown in the plans. Do not set and attach forms directly on the top of beam flanges. All attachments for form supports shall be made by welds, bolts, clips, or other approved means. The vertical leg of angles used as form supports shall not extend higher than ¼ in. above the top of the permanent transparent form.

3.2.4.2 Form supports at prestressed concrete I-girder or NU girder bridges shall be placed in direct contact with the edge of the girder beam flange and shall be adjusted to maintain the required deck thickness. The form supports may be attached to steel inserts cast into the top of the girder, to straps extending across the top of the flange, to hangers mechanically attached to reinforcing bars extending from the top of the flange, or by other approved means. Where straps are used across the top flange, they shall be No. 8 gage thick, fit tight, and shall not be galvanized. Attachments shall not be welded directly to beam reinforcement. The use of recesses cast into the prestressed beam to serve as a form support will not be allowed.

3.2.4.3 Transparent forms shall be connected to the form supports immediately upon placement to prevent movement or uplift, before applying any load or walking on the form, and before the end of each work shift.

3.2.4.4 Joints between adjacent transparent forms and the support angle shall be mortar tight. Joints larger than ½ in. shall be sealed with an approved material to prevent leakage of the concrete.

3.2.5 All screws shall be placed such that there is a minimum distance of 0.29 inches between the center of the screw and material edge.

3.2.6 All reinforcing bars shall have a minimum clearance of 1 in. from the forms and be placed in accordance with Sec 706.

3.2.7 Prior to pouring concrete, all debris and extraneous matter shall be removed from the forms. The placement and thickness of concrete shall be controlled such that the pressure applied does not exceed the allowable design pressure.

3.2.7.1 Concrete shall be placed in accordance with Sec 703, and concrete shall not be dropped from a height greater than 10 in. above the transparent forms. Care shall be taken to avoid contact of equipment, tools, and vibrators with the top of forms. Vibrators shall be rubber tipped.

3.3 Areas Where Transparent Forms Cannot Be Used. Where transparent forms cannot be used due to restrictive geometry or where shown on the plans, the contractor may use wood or metal forms in accordance with Sec 703, as approved by the engineer.

4.0 Method of Measurement. Final measurement will not be made unless changes from contract plans are authorized by the engineer during construction, or appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity. Where required, quantities for concrete masonry will be computed from dimensions shown on the plans, or as revised in writing by the engineer because of changes to the contract plans or due to appreciable errors, and will be computed to the nearest square yard for each structure.

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 item, will be considered completely covered by the contract unit price as shown below:

Bridge No. A9472	Slab on Concrete NU-Girder (with Transparent Forms)
------------------	---

F. SPECIAL CONSIDERATIONS OF CHANGE ORDERS AND VALUE ENGINEERING

1.0 Description. Increased Federal Share has been approved by the FHWA for an innovative technology or practice. The Commission will receive an additional five percent Federal Share of the overall contract value due to innovations within the following pay item(s).

Pay Item Number	Pay Item Description	Innovation
7034234	Slab on Concrete NU-Girder (with Transparent Forms)	Transparent Forms

Due to the increased Federal Share, the project components related to the innovation(s) described above must be constructed with the materials, quantities, methods and innovations as shown on the project plans and specifications. If the contractor requests materials, quantities, methods or innovations other than those included in the plans and specifications, the request must be reviewed and approved by the Commission and FHWA. Approved changes to the innovation items above shall be at no additional cost to the Commission and shall not increase the contract time.

2.0 Special Consideration of Change Orders and Value Engineering Change Proposals (VECP). Change ordering and/or value engineering the pay item(s) listed in section 1.0 jeopardize the ability for the Commission to receive an additional Federal Share for the overall contract value. Special consideration should be given to the change order value for removing or modifying such item(s) from the contract ensuring the benefit outweighs the cost.

3.0 Contacting Financial Services. If it is determined that the proposed change order and/or VECP outweighs the additional overall five percent Federal Share value, the Engineer shall notify the MoDOT project manager.

G. SPECIAL PROVISIONS FOR PROTECTION OF BNSF RAILWAY COMPANY INTERESTS

J8S0836D Greene County, Rte MM

To Report an Emergency on the railroad call: (800) 832-5452
The bridge over the railroad will be located at Milepost 247.1 (DOT#980857R)

1.0 Authority of Railroad Engineer and Commission's Representative.

1.1 The authorized representative of BNSF Railway Company, herein called "Railroad Engineer", shall have final authority in all matters affecting the safe maintenance and operation of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks.

1.2 The authorized representative of the Missouri Highways and Transportation Commission, herein called "Engineer", shall have authority over all other matters as prescribed herein and in the project specifications.

1.3 The Contractor must adhere to all other BNSF Railway policies and procedures not specifically mentioned in these special provisions. These can be found at www.bnsf.com/in-the-community/public-projects.

2.0 Contractor's indemnity Obligations to the Railroad.

2.1 The term "contractor" as used in this special provision includes any and all subcontractors. The contractor shall indemnify, defend and hold harmless the Railroad from and against any and all loss, damage, claims, demands, causes of action, costs and expenses of whatsoever nature arising out of injury to or death of persons whomsoever, or out of damage to or destruction of property whatsoever, including, without limitation, damage to fiber optic, communication and other cable lines and systems, where such injury, death, damage or destruction results from any cause arising out of work performed by the contractor pursuant to the agreement between Railroad and the Commission for the project, and shall also release the Railroad from and shall waive any claims for injury or damage to equipment or other property, which may result from the construction, maintenance and operation of railroad tracks, wire lines, fiber optic cable, pipe lines and other facilities on said right of way of the Railroad by the contractor. **THE LIABILITY ASSUMED BY THE CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DAMAGE, DESTRUCTION, INJURY, DEATH, CAUSE OF ACTION OR CLAIM WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF THE RAILROAD, THE RAILROAD'S AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROVEN BY ANY CLAIMANT TO HAVE BEEN PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR SOLE OR GROSS NEGLIGENCE OF THE RAILROAD.** The contractor's indemnity shall

JOB SPECIAL PROVISIONS (BRIDGE)

include loss of profits or revenue arising from damage or destruction to fiber optic, communication and other cable lines and systems.

2.2 In addition to the indemnity obligations contained in the preceding paragraph, the contractor shall indemnify, defend and hold harmless the Railroad from any claims, expenses, costs, actions, demands, losses, fines, penalties, and fees, of whatsoever nature arising from, related to or connected, in whole or in part, with the following:

(a) The removal of the contractor's agents, servants, employees or invitees from the Railroad's property for safety reasons.

(b) Contractor's compliance or failure to comply with the provision of applicable law in connection with the performance of contractor's work.

3.0 Notice of Starting Work.

3.1 The contractor shall not commence any work on Railroad's right of way until the contractor has complied with the following conditions:

(a) At least 30 days in advance of the date the contractor proposes to begin work on Railroad's right of way, the contractor shall give the Railroad written notice to the address below with copy to the Engineer who has been designated to be in charge of the work.

Ms. Kara Brockamp, P.E.
Manager of Public Projects
BNSF Railway
4515 Kansas Ave. Building 4B, 3rd Floor
Kansas City, KS 66106

(b) Obtain written or electronic authorization from the Railroad to begin work on the Railroad's right of way, such authorization to include an outline of specific conditions with which contractor shall comply.

(c) Obtain the insurance coverage required in Section 13.0 of this job special provision. Contractor shall submit written evidence of such coverage to Railroad prior to commencing any work.

(d) Prior to performing any work on Railroad's property, right-of way or in an area that may impact Railroad's operations, the contractor's employees, representatives or agents who are regularly assigned to perform work on the project shall complete the safety orientation training available on the internet at www.contractororientation.com, hereinafter called, "Internet Safety Orientation". If the contractor's employee, representative or agent is not regularly assigned to perform work on the project, hereinafter called "Flexible Worker(s)", the contractor shall ensure that any Flexible Worker receives appropriate safety training prior to performing any work on the Railroad's property, right-of way or in an area that may impact the Railroad's operations. The content of safety training for Flexible Workers shall include the information covered in the Internet Safety Orientation. The approximate cost of the Internet Safety Orientation is \$11 per person, subject to annual escalation.

3.2 The Railroad's written authorization to proceed with the work, with a copy to the Engineer, will 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.

4.0 Submittals and Actions Required During Construction Phase:

4.1 The Agency shall be the main contact for BNSF throughout the project. Agency shall be included on all correspondence relating to BNSF. **BNSF will NOT accept submittals directly from the Agency's Contractor.**

4.2 BNSF will hire a consultant team to perform the duties of an Inspector/Coordinator, (I/C) on behalf of BNSF for the duration of the field construction of the project. The cost of the I/C will be reimbursable to BNSF by the Agency or their Contractor.

BNSF requires the I/C team be involved in the project throughout the construction phase to represent BNSF.

The I/C has authority to remove a contractor's employee from BNSF property if that employee fails to comply with the BNSF safety policy, does not have proper PPE or otherwise ignores instructions regarding work on BNSF right-of-way. The I/C has authority to shut down work on BNSF right-of-way if the contractor works in a manner that is in violation of BNSF's safety policy or FRA regulations.

Anytime instructions to the contractor by BNSF or the I/C are not complied with, the project may be shut down. All equipment and personnel will be removed from BNSF property until issues causing the shutdown are resolved to BNSF's satisfaction.

4.3 Agency must hold a pre-construction meeting with contractor and BNSF prior to work beginning on BNSF property.

The Pre-Construction meeting shall not be held until 30 days after I/C has been selected – this allows time for the I/C to become familiar with the project.

Recommend scheduling two weeks prior to construction commencing to allow for adjustment to work plans, if needed.

4.4 Required Construction Submittals: (Allow for 4 weeks for BNSF to review submittals)

All submittals should flow from the Contractor to the Agency, to the I/C Consultant, to the BNSF Project Engineer, (PE), and to BNSF Structures with responses back through the same communication chain. **BNSF will not accept submittals directly from the Contractor.**

Any changes to the work governed by a submittal requires that the submittal be re-accepted by BNSF before the work commences.

Examples of construction submittals required include but are not limited to:

JOB SPECIAL PROVISIONS (BRIDGE)

Contractors Safety Action Plan, Fire Prevention Plan, Proposed Project Schedule, Demolition, Shoring, Falsework and Lifting of Materials.

The following submittals will require a Professional Engineer, (PE) stamp: Critical Pick Plan (75% of capacity of crane, or multi-crane pick)
Lifted Material Plan (Placement or Removal) – When lift is within temporary construction clearances and when lift is within 25' of the centerline of the nearest track
Demolition Plan Temporary Shoring Plan
Bracing Design Plan (non-standard only per DOT)

For overpasses, Agency shall submit as-built plans of the structure, including final clearance dimensions to the I/C. Vertical clearance must be measured from the Top of Rail, horizontal clearance must be measured from the nearest track centerline.

OPERATIONALLY CRITICAL WORK AND SUBMITTALS: (4 to 6 weeks review timeline) All OC work requires a submittal and acceptance by BNSF.

Operationally Critical (OC) submittals are those that have the potential to affect the safe operation of trains and will need to be reviewed carefully. Work must be monitored to ensure it conforms to the submitted/accepted plan.

In-person safety review meetings will be required with BNSF representative, I/C, Contractor and Agency representative for all OC work and must be documented. The purpose of the meeting is to ensure all parties understand BNSF requirements and are following the applicable submittals. When a track work window is required the meeting shall occur at least 48 hours in advance of work starting.

Submittals must meet the requirements of the UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects. Submittals must also follow the requirements outlined in BNSF Review Comment Sheets, Use of Cranes & Lifting of Materials Submittal Schedule, BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan and the BNSF-UPRR Guidelines for Temporary Shoring. Some submittals are required to be sealed by a licensed professional engineer.

- a. See Table 3-1 for Overhead Structures in UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects
 - b. See Table 3-2 for Underpass Structures UP Railroad - BNSF Railway Guidelines for Railroad Grade Separation Projects
 - c. Examples of OC submittals included in the above are:
 - i. Shoring (Follow BNSF-UPRR Guidelines for Temporary Shoring)
 - ii. Falsework
 - iii. Demolition (Need plans for substructure and superstructure. Follow BNSF Guidelines for Preparation of Bridge Demolition & Removal Plan)
 - iv. Erection (overhead and underpass structures)
 - v. Construction Phasing Plans
 - d. Additional OC submittals required, but not included in the Guidelines are:
 - i. All work plans that remove tracks from service (track outage windows require a detailed Gantt chart when greater than 2 hours)
 - ii. Contingency plans
 - iii. Additional OC submittals may be required on a project by project basis.
- 4.5** Prior to any work commencing on BNSF right of way:

Contractors C/C-1 or Right of Entry must be fully executed and their insurance must be approved before they can perform work on BNSF property.

Proof of Contractors insurance approval must be produced to the BNSF PE and the I/C.

4.6 Contractor must adhere to all other BNSF policies and procedures not specifically mentioned in this agreement.

5.0 Interference with Railroad Operations.

5.1 The contractor shall arrange and conduct all work so that there shall be no interference with the Railroad's operations, including train, signal, telephone and telegraphic services; or damage to the Railroad's property; poles, wires and other facilities of tenants, licensees, easement grantees and invitees on the Railroad's right of way. Whenever work may 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 that requires flagging service or inspection service shall be deferred by the contractor until the flagging service required by the Railroad is available at the job site.

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

5.3 Should conditions arising from, or in connection with the work require that immediate and unusual provisions be made to protect the Railroad's operations and property, the contractor shall make such provisions. If in the judgment of the Railroad Engineer, or the Engineer if the Railroad Engineer is absent, such provision is insufficient, the Railroad Engineer or Engineer may require or provide such provisions as deem necessary. In any event, such provisions shall be at the contractor's expense and without cost to the Railroad or the Commission.

5.4 The contractor shall be responsible for any damage to the Railroad as a result of work on the project, which shall include but not be limited to interference with the normal movement of trains caused exclusively by the work performed by the contractor. The contractor shall be responsible for damages for the Railroad's train delays that are caused exclusively by the contractor. The Railroad agrees not to perform any act to unnecessarily cause any train delay. The damages for train delays per freight hour will be billed at an average rate per hour as determined from the Railroad's records. These records shall be provided by the Railroad, upon request, to the Commission or the Commission's contractor.

6.0 Track Clearances.

6.1 The minimum track clearances to be maintained by the contractor during construction are shown on the project plans. However, before undertaking any work within Railroad's right of way, or before placing any obstruction over any track, the contractor shall:

(a) Notify the Railroad Engineer at least 72 hours in advance of the work.

(b) Receive assurance from the Railroad Engineer that arrangements have been made for flagging service as may be necessary.

(c) Receive permission from the Railroad Engineer to proceed with the work.

(d) Ascertain that the Engineer has received copies of notice to the Railroad and of the Railroad's response.

6.2 The contractor shall fully comply with any horizontal and vertical clearance requirements imposed by Missouri state statutes and regulations and Federal statutes and regulations regarding the placement of structures or equipment near or over railroad tracks.

7.0 Construction Procedures.

7.1 General. Construction work on the Railroad's property shall be:

(a) Subject to the inspection and review of the Railroad.

(b) In accordance with the Railroad's written outline of specific conditions.

(c) In accordance with this special provision.

7.2 Excavation. The subgrade of an operated track shall be maintained with the berm edge at least 12 feet from centerline of track and not more than 26 inches below top of the rail. The contractor will not be required to make existing section meet this specification if substandard, in which case the existing section will be maintained. The contractor shall cease all work and notify the Railroad immediately before continuing excavation in the work area if obstructions are encountered which do not appear on the drawings. If the obstruction is a utility and the owner of the utility can be identified, then the contractor shall also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work shall be performed until the exact location has been determined. There will be no exceptions to these instructions. Additionally, all excavations shall be conducted in compliance with applicable Occupational Safety and Health Act regulations and, regardless of depth, shall be shored where there is any danger to tracks, structures or personnel. Any excavations, holes or trenches on the Railroad's property shall be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas shall be secured and left in a condition that will ensure that Railroad's employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations shall be back filled as soon as possible.

7.3 Excavation for Structure. The contractor shall be required to take special precaution and care in connection with excavating, shoring pits and in driving piles for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which the tracks carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material. The procedure for doing such work, including need of and plans for shoring, shall be approved by the Railroad Engineer before work is performed, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans in accordance with the Missouri

Standard Specifications for Highway Construction, hereinafter called "Standard Specifications". The responsibility for the design and construction of the sheeting rests solely with the contractor. The temporary shoring along the railroad tracks shall be designed for the Cooper E80 loading. The design shall insure that the shoring is braced or substantially securely to prevent movement. The contractor shall submit plans for the temporary shoring that shall be signed, sealed, and stamped in accordance with the laws relating to Architects and Professional Engineers, Chapter 327, RSMo. and then submitted for review by the Engineer.

7.4 Demolition of Existing Structures. The contractor shall be required to take special precaution and care in connection with demolition of existing structures. The procedure for doing such work, including need of and plans for temporary falsework, shall first be approved by Railroad Engineer before work is performed, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans.

7.5 Falsework. The contractor shall be required to take special precaution and care to prevent any material from falling on the Railroad's right of way. The procedure for preventing material from falling, including need of and plans for temporary falsework, shall first be approved by the Railroad Engineer, but such approval shall not relieve the contractor from liability. Before submission of plans to the Railroad Engineer for approval, the Engineer will first review such plans.

7.6 Blasting.

7.6.1 The contractor shall obtain advance approval of the Railroad Engineer and the Engineer for use of explosives on or adjacent to the Railroad's property. If permission for use of explosives is granted, the contractor shall be required to comply with the following:

- (a) Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the contractor.
- (b) Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
- (c) No blasting shall be done without the presence of the Railroad Engineer. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed as mentioned in Section 3.2 of this job special provision, the contractor shall be required to arrange for the presence of the Railroad Engineer and such flagging as the Railroad may require.
- (d) The contractor shall 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 contractor's expense, any track misalignment or other damage to the Railroad's property resulting from the blasting as directed by the Railroad Engineer. If contractor's actions result in delay of trains, the contractor shall bear the entire cost thereof.

7.6.2 The Railroad Engineer will:

- (a) Determine the approximate location of trains and advise the contractor the approximate amount of time available for the blasting operation and clean-up.

(b) Have the authority to order discontinuance of blasting if blasting is too hazardous or is not in accordance with this special provision.

7.7 Maintenance of Railroad Facilities. The contractor shall be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from contractor's operations. The contractor shall promptly repair eroded areas within Railroad's right of way and repair any other damage to the Railroad's property, tenants, licensees, easement grantees and invitees. All such maintenance and repair of damages due to the contractor's operations shall be done at the contractor's expense.

7.8 Storage of Materials and Equipment.

7.8.1 The contractor shall not store or stockpile construction materials or equipment closer than 25 feet to the centerline of the nearest railroad track or on the Railroad's property not covered by construction easement, contractor's permit, lease or agreement. Additionally, the contractor shall not store or leave materials or equipment within 250 feet of the edge of any highway/rail at-grade crossings. Further, both sides of a main track shall remain unobstructed for a distance of 10 feet from the exterior edge of the track at all times to allow for stopped train inspection.

7.8.2 Machines or vehicles shall not be left unattended with the engine running. Parked machines or equipment shall be in gear with brakes set and with blade, pan or bucket lowered to the ground if so equipped. All grading or construction machinery that is left parked near the track unattended shall be effectively immobilized so that unauthorized persons cannot move such equipment.

7.9 Cleanup. Upon completion of the work, the contractor shall remove from within the limits of the Railroad's right of way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the contractor, and leave said right of way in a neat condition satisfactory to the Railroad Engineer.

7.10 Buried Cable and Other Buried Facilities.

7.10.1 The contractor is placed on notice that fiber optic, communication and other cable lines and systems, collectively the "Lines", owned by various telecommunications companies may be buried on Railroad's property or right of way. The locations of the buried Lines, pipelines or utility facilities have been included on the plans based on information from the telecommunications companies, pipeline operators, or utilities, as the case may be. The contractor shall be responsible for contacting the Railroad Engineer, the Railroad's 24-hour information number (1-800-533-2891), the telecommunications companies, pipeline operators and utilities and notifying them of any work that may damage the buried Lines, pipelines, utility facilities and/or interfere with their service. The contractor shall verify the location of all buried Lines, pipelines and utility facilities shown on the plans or marked in the field in order to establish their exact locations prior to or while doing work on the Railroad's property or right of way. The contractor shall also use all reasonable methods when working on the Railroad's property or right of way to determine if any other buried Lines, pipelines or utility facilities exist on the Railroad's property or right of way.

7.10.2 Failure to mark or identify the buried Lines, pipelines or utility facilities will be sufficient cause for the Railroad Engineer to stop construction at no cost to the Commission or Railroad until these items are completed. The contractor shall be responsible for the rearrangement of any

buried facilities, Lines, pipelines or utility facilities determined to interfere with the construction. The contractor shall cooperate fully with any telecommunications companies, pipeline operators and utility facility owners in performing such rearrangements.

8.0 Damages. The Railroad will not assume liability for any damages to the contractor, contractor's work, employees, servants, equipment and materials caused by railroad traffic. Any cost incurred by the Railroad for repairing damages to Railroad's property or to property of the Railroad's tenants, licensees, easement grantees and invitees caused by or resulting from the contractor's operations shall be paid directly to the Railroad by contractor.

9.0 Flagging Services.

9.1 When Required. Under the terms of the agreement between the Commission and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect the Railroad's 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 within 25 feet of the centerline of any track, 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 flagging, or reasonable probability of accidental hazard to Railroad's operations or personnel. Normally, the Railroad will assign one flagger to a project; but in some cases, more than one may be necessary, such as yard limits where 3 flaggers may be required. However, if the contractor works within distances that violate instructions given by the Railroad Engineer or performs work that has not been scheduled with the Railroad Engineer, flaggers may be required full time until the project has been completed.

9.2 Scheduling and Notification.

9.2.1 Not later than the time that approval is initially requested to begin work on the Railroad's right of way (30 days), contractor shall furnish to the Railroad and the Commission a schedule for all work required to complete the portion of the project within Railroad's right of way and arrange for a job site meeting between the contractor, the Engineer, and the Railroad Engineer. Flaggers may not be provided until the job site meeting has been conducted and the contractor's work scheduled.

9.2.2 The contractor shall be required to give the Railroad Engineer at least 30 days of advance written notice of intent to begin work within Railroad's right of way in accordance with this special provision. Once begun, if such work is then suspended at any time, or for any reason, the contractor shall be required to give the Railroad Engineer at least 5 working days of advance notice before resuming work on Railroad's right of way. Such notices shall include sufficient details of the proposed work to enable the Railroad Engineer to determine if flagging will be required. If such notice is in writing, the contractor shall furnish the Engineer a copy; if notice is given verbally, the notice shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagger or flaggers are present at the job site. Obtaining a flagger or flaggers may take up to 30 days to obtain initially from the Railroad. When flagging begins, the flagger 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 flagging becomes unnecessary and is suspended, obtaining a flagger or flaggers may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, 10 working days

notice may be necessary before flagging services may be discontinued and responsibility for payment stopped. Due to changes in the local Roadmaster please contact Kara Brockamp @ Kara.Brockamp@bnsf.com for the most current Roadmaster contact information.

9.2.3 If, after the flagger is assigned to the project site, emergencies arise which require the flagger's presence elsewhere, then the contractor shall delay work on the Railroad's right of way until such time as the flagger is again available. Any additional costs resulting from such delay shall be borne by the contractor and not the Railroad.

9.2.4 The contractor shall provide a temporary structure to provide shelter from weather conditions for the person(s) providing flagging protection service on behalf of the Railroad as described herein. The structure shall be provided in an area immediately accessible to the Railroad's main track and the construction site, and be equipped with telephone service, lighting and desk.

9.3 Payment.

9.3.1 The Commission will pay the Railroad directly for the cost of flagging services associated with the project by deducting the amount from the normal contractor payments.

9.3.2 The Railroad shall submit progress invoice to the Engineer during the time flagging services are required. A final invoice shall be submitted to the Engineer within 180 days of completion of the project. This is defined as the point in time at which the Commission and the Railroad both accept the project, and the contractor is relieved of contractual obligation. Should the invoice not be received within this time period, the Railroad will be responsible for obtaining payment directly from the contractor.

9.3.3 Should a dispute between the Railroad, the Commission and the contractor develop concerning the cost of flagging service or should the contractor fail to promptly pay the Railroad for flagging services, the full amount of the Railroad's invoice will be deducted from the contractor's payment request. However, The Commission will send only 95 percent of the amount requested to the Railroad. The Commission will make a corrected payment once a settlement is reached between the Railroad, the Commission and the contractor.

9.3.4 The contractor shall be responsible for arranging needed flagging services as required by the Railroad to accomplish the highway improvement.

9.3.5 The cost of flagging service is approximately \$1600 per day based on an 8-hour workday and a 40-hour work week. This cost includes the base pay for the flagger, overhead, and per diem charge for travel expenses, meals and lodging.

If flagging is provided by an approved Third-Party Flagging Company, rates and billing will be governed by the agreement set up between the Contractor and the Third-Party Flagging Company at the time the services are provided. It is the responsibility of the Contractor to ensure that billing complies with applicable provisions of Volume 1, Chapter 4, §3 and Volume 6, Chapter 6 §2, Subsection 1 of the Federal-Aid Highway Program Manual issued by the Federal Highway Administration, including all current amendments.

JOB SPECIAL PROVISIONS (BRIDGE)

The charge to the contractor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required. Work by a flagger 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 1/2 times the appropriate rate. Work by a flagger in excess of 12 hours per day will result in overtime pay at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 1/2 times the normal rate. Railroad expenses incurred preparing and handling invoices will also be charged to the contractor and/or the Commission. Charges to the contractor and/or the Commission by the Railroad shall be in accordance with applicable provisions of Volume 1, Chapter 4, §3 and Volume 6, Chapter 6, §2, Subsection 1 of the Federal-Aid Highway Program Manual issued by the Federal Highway Administration, including all current amendments. Flagging costs are subject to change. The above estimates of flagging cost are provided for information only and are not binding in any way. Each time a flagger is called, the minimum period for billing will be the 8 hour basic day unless the flagger can be assigned to other Railroad work during the work day.

9.3.6 A maximum of one hour travel time each way per day per flagger will be required for travel to and from the project.

9.4 Verification.

9.4.1 Any complaints concerning a flagger shall be resolved in a timely manner. If need for a flagger is questioned, please contact the Railroad Engineer and Ms. Kara Brockamp, Manager of Public Projects at 720-355-4532. All verbal complaints shall be confirmed in writing by the contractor within 5 working days with copy to the Railroad Engineer and Engineer. All written correspondence shall be addressed to Ms. Brockamp as shown in Section 3.1 of this job special provision.

9.4.2 The Railroad flagger assigned to the project will be responsible for notifying the Engineer upon arrival at the job site on the first day, or as soon thereafter as possible, that flagging services begin and on the last day that flagger performs such services for each separate period that services are provided. The Engineer will document such notification in the project records.

10.0 Haul Across Railroads.

10.1 Where the plans show or imply that materials of any nature must be hauled across the Railroad's tracks, unless the plans clearly show that the Commission has included arrangements for such haul in the agreement with the Railroad, the contractor shall be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's tracks. The contractor shall be required to bear all costs incidental to such crossings, including flagging, whether services are performed by contractor's own forces or by Railroad's personnel.

10.2 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 the installation, maintenance, necessary watching and flagging thereof and removal, all at the expense of the contractor, is first obtained from the Railroad Engineer.

11.0 Work for the Benefit of the Contractor. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans, and are

included in the agreement between the Commission and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Commission and/or the Railroad. Should the contractor desire any changes in addition to the above, then contractor shall make separate arrangements with the Railroad for same to be accomplished at the contractor's expense.

12.0 Cooperation and Delays. The contractor shall arrange a schedule with the Railroad for accomplishing staged construction involving work by the Railroad or tenants, licensees, easement grantees and invitees of the Railroad. In arranging a schedule, the contractor shall ascertain, from the Railroad, the lead time required for assembling crews, materials and make due allowance. No charge of claims of the contractor against the Railroad will be allowed for hindrance or delay on account of railway traffic for any work done by the Railroad, other delay incident to or necessary for safe maintenance of railway traffic, or for any delays due to compliance with this special provision.

13.0 Trainman's Walkways. 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 shall be maintained extending to a line not less than 12 feet from centerline of track. 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 work day. Any excavation near the walkway, the contractor shall install a handrail with a 12 feet minimum clearance from centerline of track.

14.0 Insurance. The amount of work to be performed upon, over or under Railroad's right of way is estimated to be 1.0 percent of the contractor's total bid for the project.

14.1 In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of \$5,000,000 each occurrence and an aggregate limit of at least \$10,000,000 but in no event less than the amount otherwise carried by the contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

Bodily Injury and Property Damage
Personal Injury and Advertising Injury
Fire legal liability
Products and completed operations

This policy must also contain the following endorsements, which must be indicated on the certificate of insurance:

The definition of insured contract must be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.

Waiver of subrogation in favor of and acceptable to Railroad.

Additional insured endorsement in favor of and acceptable to Railroad.

Separation of insureds.

JOB SPECIAL PROVISIONS (BRIDGE)

The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

Business Automobile Insurance. This insurance must contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:

Bodily injury and property damage
Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

Waiver of subrogation in favor of and acceptable to Railroad.

Additional insured endorsement in favor of and acceptable to Railroad.

Separation of insureds.

The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

Waiver of subrogation in favor of and acceptable to Railroad.

Railroad Protective Liability insurance naming only the Railroad as the Insured with coverage of at least \$5,000,000 per occurrence and \$10,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 10 93 and include the following:

Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)

Endorsed to include the Limited Seepage and Pollution Endorsement.

Endorsed to include Evacuation Expense Coverage Endorsement.

Endorsed to remove any exclusion for punitive damages.

No other endorsements restricting coverage may be added.

The original policy must be provided to the Railroad prior to performing any work or services under this Agreement

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate in Licensor's Blanket Railroad Protective Liability Insurance Policy available to contractor.

14.2 Other Requirements:

14.2.1 All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

14.2.2 Contractor agrees to waive its right of recovery against Railroad for all claims and suits against Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under contractor's care, custody or control.

14.2.3 Contractor is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by contractor in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by contractor's insurance will be covered as if contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

14.2.4 Prior to commencing the Work, contractor must furnish to Railroad an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments and referencing the contract audit/folder number if available. Contractor shall notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Contractor should send the certificate(s) to the following address:

Railroad:

BNSF Railway Company
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email:
www.certfocus.com

Commission:

Mrs. Brandi Ballwin
State Construction and Materials Engineer
MoDOT
P.O. Box 270
Jefferson City, MO 65102
BNSF@certfocus.com

14.2.5 Any insurance policy must be written by a reputable insurance company acceptable to Railroad or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

14.2.6 Contractor represents that this Agreement has been thoroughly reviewed by contractor's insurance agent(s)/broker(s), who have been instructed by contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy

limits for coverages referenced above. Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

14.2.7 If any portion of the operation is to be subcontracted by contractor, contractor must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured, and requiring that the subcontractor release, defend and indemnify Railroad to the same extent and under the same terms and conditions as contractor is required to release, defend and indemnify Railroad herein.

14.2.8 Failure to provide evidence as required by this section will entitle, but not require, Railroad to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of contractor's obligations hereunder.

14.2.9 The fact that insurance (including, without limitation, self-insurance) is obtained by contractor will not be deemed to release or diminish the liability of contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

14.2.10 For purposes of this section, Railroad means "Burlington Northern Santa Fe LLC", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

14.2.11 Railroad will not accept binders as evidence of insurance, the original policy shall be provided. The named insured, description of the work and designation of the job site to be shown on the Policy are as follows:

(a) Named Insured: BNSF Railway Company
(b) Description and Designation:
Route MM Greene County
Job No. J8S0836D
Construction across BNSF
at MP 247.1 Cherokee (Subdivision)
DOT# 980857R

14.2.12 The contractor must notify BNSF Manager of Public Projects at Kara.Brockamp@bnsf.com when applying for railroad insurance coverage.

14.3 If any part of the work is sublet, similar insurance and evidence thereof in the same amounts as required of the prime contractor, shall be provided by or in behalf of the subcontractor to cover the subcontractor's operations. Endorsements to the prime contractor's policies specifically naming subcontractors and describing their operations will be acceptable for this purpose.

14.4 All Insurance hereinbefore specified shall be carried until all work required to be performed under the terms of the contract has been satisfactorily completed within the limits of the Railroad's right of way as evidenced by the formal acceptance by the Commission. Insuring Companies may cancel insurance by permission of the Commission and Railroad or on 30 days written notice to the Railroad and Commission.

15.0 Hazardous Materials Compliance and Reporting. Contractor shall be responsible for complying with all applicable federal, state and local governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, as amended; the Oil Pollution Act, as amended; the Hazardous Materials Transportation Act, as amended; and the Comprehensive Environmental Response, Compensation and Liability Act, as amended), and health and safety laws and regulations. In addition to the liability provisions contained elsewhere in this job special provision, the contractor hereby indemnifies, defends and holds harmless the Railroad for, from and against all fines or penalties imposed or assessed by federal, state and local governmental agencies against the Railroad which arise out of contractor's work under this special provision. Notwithstanding the preceding sentence, the contractor will not be liable for pre-existing hazardous materials or hazardous substances discovered on Railroad's property or right of way so long as such hazardous materials or hazardous substances were not caused by (in whole or in part) contractor's work, acts or omissions. If contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any noncontainerized commodity or material, on or adjacent to Railroad's property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this special provision, the contractor shall immediately:

- (a) Notify the Railroad's Resource Operations Center at (800) 8325452, of such discovery.
- (b) Take safeguards necessary to protect employees, subcontractors, agents and/or third parties.
- (c) Exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release

16.0 Personal Injury Reporting. The Railroad is required to report certain injuries as a part of compliance with Federal Railroad Administration ("FRA") reporting requirements. Any personal injury sustained by any employee of the contractor, subcontractor or contractor's invitees while on the Railroad's property shall be reported immediately, by phone or mail if unable to contact in person, to the Railroad's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form is to be completed and sent by Fax to the Railroad at (817) 352-7595 and to the Railroad's Project Representative no later than the close of shift on the date of the injury.

17.0 Failure to Comply. In the event the contractor violates or fails to comply with any of the requirements of this special provision, the below orders will be applied. Any such orders shall remain in effect until the contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

- (a) The Railroad Engineer may require that the contractor to vacate the Railroad's property.
- (b) The Engineer may withhold all monies due to the contractor until contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Engineer.

18.0 Payment for Cost of Compliance. No separate payment will be made for any extra cost incurred on account of compliance with this special provision. All such cost 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.

JOB SPECIAL PROVISIONS (BRIDGE)

18.1 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.

18.1.1 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

19. Environmental. Contractor shall strictly comply with all Environmental Laws (as defined below). Contractor shall not maintain a "treatment," "storage," "transfer" or "disposal" facility, or "underground storage tank," as those terms are defined by Environmental Laws, on the Railway Property or the right of way. Contractor will not handle, transport, release or suffer the release of Hazardous Materials (as defined below) on or about the Premises. Small quantities of diesel fuel, engine oil, and hydraulic fluids used in the operation of Contractor's equipment shall not be deemed a violation of this Section 18.

Contractor shall give Railroad immediate notice to Railroad's Resource Operations Center at (800) 832-5452 of any release of Hazardous Materials on, from, or affecting the Premises. Contractor shall use its best efforts to immediately respond to any release on or from the Premises. Any violation of Environmental Laws or any inspection or inquiry by governmental authorities charged with enforcing Environmental Laws with respect to Contractor's use of the Premises must be immediately reported to Railroad at EnvironmentalLeases@bnsf.com. Contractor also shall give Railroad prompt notice of all measures undertaken on behalf of Contractor to investigate, remediate, respond to or otherwise cure a release or violation.

If Railway has notice from Contractor or otherwise of a release or violation of Environmental Laws caused by Contractor or arising in any way with respect to Contractor's work which occurred or may occur during the term of this Agreement, Railway may require Contractor, at Contractor's sole risk and expense, to take timely measures to investigate, remediate, respond to or otherwise cure such release or violation affecting the Railway's Property.

If during the construction or subsequent maintenance of the work or Structures, or any other soil-disturbing activities, soils or other materials considered to be environmentally impacted are encountered, Contractor will stop work immediately and notify Railway. After consultation with Railway, Contractor shall characterize any such impacted soils. Upon receiving sampling results, Contractor shall, in consultation with Railway, manage, remove, and/or dispose any such

JOB SPECIAL PROVISIONS (BRIDGE)

impacted soils offsite at an appropriately-licensed facility in accordance with Environmental Laws. Soil characterization and applicable disposal requirements, shall be in accordance with applicable federal, state, and local Environmental Laws or in consultation with an agency having the capacity and authority to make such a determination.

All soils and materials to be removed from the Railway Property or right of way must be properly characterized, managed, transported, and disposed of at an appropriately-licensed facility in accordance with all Environmental Laws. Either Contractor or Agency shall be the "Generator" of any and all such materials and waste, as such term is defined in Environmental Laws.

All fill materials to be imported to Railway's property shall be certified clean fill or from a Railway approved source, and supporting documentation shall be provided to Railway upon request.

Contractor shall promptly report to Railroad in writing any conditions or activities upon the Railroad Property known to Contractor which create a risk of harm to persons, property or the environment and shall take all reasonable actions necessary to prevent injury to persons or property arising out of such conditions or activities; provided, however, that Contractor's reporting to Railroad shall not relieve Contractor of any obligation whatsoever imposed on it by this Agreement. Contractor shall promptly respond to Railroad's request for information regarding said conditions or activities.

Notwithstanding anything in this Section 5, the parties agree that BNSF has no duty or obligation to monitor Contractor's use of the property or right of way to determine Contractor's compliance with Environmental Laws, it being solely Contractor's responsibility to ensure that Contractor's use is compliant. Regulatory plans and a minimum of two (2) years of records/inspections shall be readily available. Contractor shall promptly provide the same to the Railroad upon request.

"Environmental Law(s)" shall mean any federal, state, local, or tribal law, statute, ordinance, code, rule, regulation, policy, common law, license, authorization, decision, order, or injunction which pertains to health, safety, any Hazardous Material, or the environment (including but not limited to ground, air, water, or noise pollution or contamination, and underground or above-ground tanks) and shall include, without limitation, CERCLA 42 U.S.C. §9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq., CERCLA; the Hazardous Materials Transportation Act, 49 U.S.C. §5101 et seq.; the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq.; the Clean Air Act, 42 U.S.C. §7401 et seq.; the Toxic Substances Control Act, 15 U.S.C. §2601 et seq.; the Safe Drinking Water Act, 42 U.S.C. §300f et seq.; the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11001 et seq.; the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. 136 to 136y; the Oil Pollution Act, 33 U.S.C. 2701 et seq.; and the Occupational Safety and Health Act, 29 U.S.C. 651 et seq.; all as have been amended from time to time, and any other federal, state, local, or tribal environmental requirements, together with all rules, regulations, orders, and decrees now or hereafter promulgated under any of the foregoing, as any of the foregoing now exist or may be changed or amended or come into effect in the future.

"Hazardous Material(s)" shall include but shall not be limited to any substance, material, or waste that is regulated by any Environmental Law or otherwise regulated by any federal, state, local, or tribal governmental authority because of toxic, flammable, explosive, corrosive, reactive, radioactive or other properties that may be hazardous to human health or the environment, including without limitation asbestos and asbestos-containing materials, radon, petroleum and petroleum products, urea formaldehyde foam insulation, methane, lead-based paint,

JOB SPECIAL PROVISIONS (BRIDGE)

polychlorinated biphenyl compounds, hydrocarbons or like substances and their additives or constituents, pesticides, agricultural chemicals, and any other special, toxic, or hazardous (i) substances, (ii) materials, or (iii) wastes of any kind, including without limitation those now or hereafter defined, determined, or identified as "hazardous chemicals," "hazardous substances," "hazardous materials," "toxic substances," or "hazardous wastes" in any Environmental Law.